Goodell-Pratt Company

COMPLETE CATALOG

NUMBER

16

THE LIST PRICES SHOWN IN THIS BOOK ARE
SUBJECT TO CHANGE WITHOUT NOTICE

Greenfield, Massachusetts, U. S. A.

Cable Address "PRATTGOOD" Greenfield

NEW YORK  CHICAGO  LONDON
BUENOS AIRES  SYDNEY  MILANO  RIO DE JANEIRO
Important Information

This edition of our No. 16 Catalog shows every tool that we manufacture, although pages 17 to 32 inclusive have been omitted.

LIST PRICES

The list prices shown in this catalog are those in effect January 4, 1926, and are subject to change without notice. For latest list prices apply to your hardware or supply dealer.

MANUFACTURE

Every tool shown in this catalog is made directly from the raw material in one of our own factories. We are in every sense of the word manufacturers, not merely assemblers or selling agents. The workmen that we employ are experienced; our equipment is up to date in every respect; and our buildings are light and clean.

DESIGN AND MATERIALS

These tools are designed to be as simple and efficient as possible. They are made for men who know and appreciate good tools. The mechanical principles are correct and the materials are selected that give the longest service.

INSPECTION

Every part put through our factories is inspected at various stages of its manufacture and every completed tool is carefully tested out before being packed. The tool is then wrapped and placed in its box. Great care is used in packing shipments and each one is checked several times before being sent out. All of our goods are shipped in strong new cases and will arrive in good condition.

FINISH

Goodell-Pratt tools have always been finished attractively. This makes them less liable to become shopworn or rusty.

All enamel used is the best obtainable, and is baked on whenever practical to do so, giving a smooth and handsome finish. The “Goodell-Pratt Red,” which is used in the finish of many of our tools, is famous the world over.

This distinctive combination of high gloss vermilion red and black enamel constitutes a trademark duly registered in the United States Patent Office under dates of September 11, 1923, and December 16, 1924.

WARRANTY

Every tool of our manufacture is warranted free from imperfections of material or defects in workmanship, and, when so defective, will be repaired or replaced without charge; but under no circumstances will we assume the responsibility for breakage where flaws do not appear, nor will we replace tools which have suffered from abusive treatment or have been stamped with the owner’s name, changed, or otherwise experimented upon. No dealer is authorized to make replacements for us. Articles claimed defective must be returned direct, charges paid, for inspection.

REPAIRS

We can furnish repairs for any tool of our manufacture, if our customers will make it plain to us what new parts are wanted; and where the owner of the tool is sufficiently mechanical to enable him to make repairs himself after receiving the new part, it is quite practical and profitable for him to do it, but it seldom pays to return by express or otherwise tools of small value, as the transportation charges and the cost of repairs are oftentimes more than the cost of a new tool.

NEW TOOLS

Since our No. 15 Catalog was issued we have added quite a number of new tools to the line, the most important of which is a very complete line of Electric Drills from ¼-inch capacity to ½-inch capacity. These Drills will be found on pages 13, 14, 15, and 16. Other new tools will be found on the following pages:

| 38  | 183  | 276  | 316  |
| 39  | 208  | 281  | 318  |
| 44  | 229  | 282  | 321  |
| 67  | 231  | 296  | 328  |
| 72  | 236  | 297  | 330  |
| 74  | 252  | 299  | 333  |
| 81  | 265  | 300  | 349  |
| 94  | 269  | 301  | 366  |
| 137 | 270  | 303  | 367  |
| 143 | 272  | 310  |      |

QUALITY

The rapid growth of this company and the ever-increasing demand for GOODELL-PRATT TOOLS are due entirely to their quality, of which it is surely proof enough.

There is good old-fashioned honesty in every one of these good tools

GOODELL-PRATT COMPANY,

GREENFIELD, MASSACHUSETTS, U. S. A.

January 1, 1926.

President.
Combination Squares and Sets
Pages 48 to 51 and 330 to 331 inclusive

Steel Rules and Straight Edges
Pages 33 to 43 inclusive
Bit Braces
Pages 318 to 325 inclusive

Hand Vises and Bench Vises
Pages 227 to 233 inclusive
Goodell-Pratt Color Combination Registered U. S. Patent Office
Hand Drills with Malleable Iron Frames
Pages 139 to 151 inclusive
Goodell-Pratt Color Combination Registered U. S. Patent Office

Breast Drills with Malleable Iron Frames
Pages 164 to 175 inclusive
Goodell-Pratt Color Combination Registered U. S. Patent Office
Electric Drills
Patented December 8, 1925; Others Pending

No. 1043 for 110-Volt Current
No. 2043 for 220-Volt Current

THIS Drill is built to handle any drilling job within its rated capacity and to withstand overloads for reasonable periods without injury. This means that a big factor of safety has been carried right straight through every vital part. The Steel Gears, running in bronze bearings and graphited grease, have wide faces with carefully heat-treated machine-cut teeth. The motor bearings are of a special patented self-oiling type sealed against leakage, and while regular oiling of the motor bearings is recommended, the initial oiling has been known to furnish sufficient lubrication for months of hard service. The key-operated Chuck centers drills very accurately and has a grip that precludes any worry at this point. The Switch is conveniently located where it can be operated with the thumb without shifting either hand. There are no wire connections between the handle and the body, so that this whole end can be removed easily and quickly, exposing the commutator, bearing and brushes. In fact the whole Drill can be completely taken down and reassembled in a very short time. Each Drill equipped with 12 feet of rubber-covered cable. The cable is so locked to the Frame that it cannot possibly pull out.
PORTABLE ELECTRIC DRILLS

5/8 Inch Heavy Duty

Patented December 8, 1925
Others Pending

No. 1048 for 110-Volt Current
No. 2048 for 220-Volt Current
No Load Speed, 550 R.P.M.

Both these Drills are equipped with powerful Universal Motors for Alternating or Direct Current and constructed throughout to withstand heavy overloads and the severe strains that a Drill of this capacity is invariably subjected to.

The aluminum housing is nicely finished, provides ample ventilation and is easily taken down to reach any point inside. In addition to the fixed Handle, in which the Starting Switch is located, an aluminum Breast Plate and Grip Handle of generous proportions are provided. These are interchangeable without the use of any tool. A straight round Handle is also provided directly opposite the Switch Handle. This Handle and its bracket can be easily removed when desirable for close-up drilling. Any tube or bar 1 1/8 inch in diameter can be substituted for the End or Side Handles.

The Armature Bearings are of special high speed, patented, self-oiling type sealed against leakage. The 500-hour brushes are mounted in a rocker ring, allowing exact adjustment for maximum efficiency. By removing the handle cap the Brushes, Commutator and Upper Bearing are all readily accessible. None of these parts are disturbed when this Cap is removed.

The Gears are made of steel accurately machine cut and heat treated. The faces are wide. The Gear Shafts run in bronze bearings and the whole train runs in a grease-packed, grease-tight compartment.

A three-jawed key-operated Chuck of 5/8-inch capacity is provided. The Spindle is equipped with a ball bearing to take up the end thrust.

No. 1008 Drill Stand

A strong, well-made device which converts the No. 1048 and No. 2048 5/8-inch capacity Drills into a Heavy Duty Bench Drill. Screw Feed No. 1009, described below, is inserted in the Drill in place of the End Handle. All assembling ready for use done without tools of any kind.

Length of upright column, 31 inches
Height above bench, 37 inches
Size of table, 12 x 11 inches
Bench space required, 12 1/2 x 18 inches
Extreme distance between chuck and table, 14 inches
Drills to center of 10-inch circle
Net weight, 87 pounds

No. 1009 Screw Feed

A very unique attachment for use with No. 1048 and No. 2048 5/8-inch Heavy Duty Drills. It can be used in the No. 1008 Drill Stand as illustrated, or in an "old man," or with a lever. Note particularly that this Screw Feed does not interfere with the close-up drilling ability of these Drills.

Length over all, 9 inches
Length of feed, 3 3/8 inches
Net weight, 2 3/4 pounds
### Type Schedule

Universal Motors for A.C. or D.C. Current

<table>
<thead>
<tr>
<th>Type</th>
<th>Lbs.</th>
<th>Wgt.</th>
<th>Capacity</th>
<th>Approx. Speed</th>
<th>Volts</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1042</td>
<td>6</td>
<td>¾&quot;</td>
<td>Heavy Duty</td>
<td>2000</td>
<td>110</td>
<td>ZUABI</td>
</tr>
<tr>
<td>1043</td>
<td>11</td>
<td>3/8&quot;</td>
<td>Heavy Duty</td>
<td>1100</td>
<td>110</td>
<td>ZUAGM</td>
</tr>
<tr>
<td>1044</td>
<td>12</td>
<td>½&quot;</td>
<td>Light Duty</td>
<td>700</td>
<td>110</td>
<td>ZUAHN</td>
</tr>
<tr>
<td>1045</td>
<td>18</td>
<td>½&quot;</td>
<td>Standard</td>
<td>650</td>
<td>110</td>
<td>ZUAIJP</td>
</tr>
<tr>
<td>1046</td>
<td>21</td>
<td>¼&quot;</td>
<td>Heavy Duty</td>
<td>600</td>
<td>110</td>
<td>ZUAMS</td>
</tr>
<tr>
<td>1048</td>
<td>22</td>
<td>⅖&quot;</td>
<td>Heavy Duty</td>
<td>550</td>
<td>110</td>
<td>ZUARY</td>
</tr>
<tr>
<td>2042</td>
<td>6</td>
<td>¼&quot;</td>
<td>Heavy Duty</td>
<td>2000</td>
<td>220</td>
<td>ZUASO</td>
</tr>
<tr>
<td>2043</td>
<td>11</td>
<td>3/8&quot;</td>
<td>Heavy Duty</td>
<td>1100</td>
<td>220</td>
<td>ZUASZ</td>
</tr>
<tr>
<td>2044</td>
<td>12</td>
<td>½&quot;</td>
<td>Light Duty</td>
<td>700</td>
<td>220</td>
<td>ZUAWD</td>
</tr>
<tr>
<td>2045</td>
<td>18</td>
<td>¾&quot;</td>
<td>Standard</td>
<td>650</td>
<td>220</td>
<td>ZUBAH</td>
</tr>
<tr>
<td>2046</td>
<td>21</td>
<td>¾&quot;</td>
<td>Heavy Duty</td>
<td>600</td>
<td>220</td>
<td>ZUBHA</td>
</tr>
<tr>
<td>2048</td>
<td>22</td>
<td>⅖&quot;</td>
<td>Heavy Duty</td>
<td>550</td>
<td>220</td>
<td>ZUBJE</td>
</tr>
</tbody>
</table>

1008 Stand and Feed complete for 1048, 2048, 1046, 2046 ZOYAZ
1009 Feed only, can be used with or without Stand ZOYBE

**Goodell-Pratt** Electric Drills embody the same exceptional value that is found in the balance of our product. They are guaranteed against all defects of workmanship. No guarantee of an electrical device can be made broad enough to cover accidents.

### Tempered Steel Rules

Our Steel Rules are made from the best quality of Crucible Steel, carefully tempered, accurately graduated, and ground. They are graduated on our perfected Dividing Engines, and have as high a finish and accuracy as are obtainable.

Our Standard Yard or Correcting Gauge, used in determining the accuracy of these instruments, was produced directly from the original Standards of Lord Whitworth. These standards have been subdivided with the greatest care and accuracy. Our Rules are as perfect reproductions as expert mechanics assisted by precision machinery can produce.

One of the important points about a Rule is that it should give a correct measurement from the end to the first inch line. By our improved method of manufacture, we can guarantee these measurements to be as near absolute accuracy as it is possible commercially to make them.

All of our Rules are now made with heavy shaded figures that are very much easier to read than the light figures formerly used.

We manufacture Rules in a number of different sizes and lengths graduated in either English or Metric divisions. A complete price list of all these Rules is given on the following pages.

#### Standard English Graduations

<table>
<thead>
<tr>
<th>No. 4</th>
<th>No. 7</th>
<th>No. 8</th>
<th>No. 16</th>
</tr>
</thead>
<tbody>
<tr>
<td>8ths</td>
<td>16ths</td>
<td>8ths</td>
<td>32ds</td>
</tr>
<tr>
<td>16ths</td>
<td>32ds</td>
<td>32ds</td>
<td>64ths</td>
</tr>
<tr>
<td>32ds</td>
<td>64ths</td>
<td>12ths</td>
<td>50ths</td>
</tr>
<tr>
<td>64ths</td>
<td>100ths</td>
<td>48ths</td>
<td>100ths</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No. 10</th>
<th>No. 11</th>
<th>No. 12</th>
<th>No. 13</th>
<th>No. 14</th>
</tr>
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<tbody>
<tr>
<td>32ds</td>
<td>64ths</td>
<td>50ths</td>
<td>8ths</td>
<td>8ths</td>
</tr>
<tr>
<td>64ths</td>
<td>100ths</td>
<td>100ths</td>
<td>16ths</td>
<td>32ds</td>
</tr>
</tbody>
</table>

Be sure to specify what graduation is desired.
# Heavy Tempered Rules

<table>
<thead>
<tr>
<th>Length</th>
<th>Approximate Width</th>
<th>Thickness</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 197</td>
<td>2 inches</td>
<td>1 inch</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 198</td>
<td>3 inches</td>
<td>1 inch</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 199</td>
<td>4 inches</td>
<td>1 inch</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 200</td>
<td>6 inches</td>
<td>1 inch</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 201</td>
<td>9 inches</td>
<td>1½ inches</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 202</td>
<td>12 inches</td>
<td>1⅛ inches</td>
<td>⅛ inch</td>
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<tr>
<td>No. 203</td>
<td>18 inches</td>
<td>1⅛ inches</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 204</td>
<td>24 inches</td>
<td>1⅜ inches</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 205</td>
<td>36 inches</td>
<td>1⅝ inches</td>
<td>⅛ inch</td>
</tr>
</tbody>
</table>

Graduated full length in No. 4, No. 7, or No. 16 graduation.

Packed one half dozen in a pasteboard box.

# Light Tempered Rules

2 to 12 inch Rules are end graduated

<table>
<thead>
<tr>
<th>Length</th>
<th>Approximate Width</th>
<th>Thickness</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 209</td>
<td>1 inch</td>
<td>½ inch</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 210</td>
<td>2 inches</td>
<td>1 inch</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 211</td>
<td>3 inches</td>
<td>1 inch</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 212</td>
<td>4 inches</td>
<td>1½ inches</td>
<td>⅛ inch</td>
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<tr>
<td>No. 213</td>
<td>6 inches</td>
<td>1⅛ inches</td>
<td>⅛ inch</td>
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<tr>
<td>No. 214</td>
<td>9 inches</td>
<td>1½ inches</td>
<td>⅛ inch</td>
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<tr>
<td>No. 215</td>
<td>12 inches</td>
<td>1⅛ inches</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 216</td>
<td>18 inches</td>
<td>1⅝ inches</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 217</td>
<td>24 inches</td>
<td>1⅝ inches</td>
<td>⅛ inch</td>
</tr>
</tbody>
</table>

Graduated full length in No. 4, No. 7, or No. 16 graduation.

Packed one half dozen in a pasteboard box.

# Semi-Flexible Rules

2 to 12 inch Rules are end graduated

<table>
<thead>
<tr>
<th>Length</th>
<th>Approximate Width</th>
<th>Thickness</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 249</td>
<td>1 inch</td>
<td>¼ inch</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 250</td>
<td>2 inches</td>
<td>1½ inch</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 251</td>
<td>3 inches</td>
<td>1½ inch</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 252</td>
<td>4 inches</td>
<td>1½ inch</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 253</td>
<td>6 inches</td>
<td>1½ inch</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 254</td>
<td>9 inches</td>
<td>1½ inch</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 255</td>
<td>12 inches</td>
<td>1½ inch</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 256</td>
<td>18 inches</td>
<td>1½ inch</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 257</td>
<td>24 inches</td>
<td>1½ inch</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 258</td>
<td>36 inches</td>
<td>1½ inch</td>
<td>⅛ inch</td>
</tr>
</tbody>
</table>

Graduated full length in No. 4 or No. 7 graduation.

Packed one half dozen in a pasteboard box.

# Flexible Rules

Graduated on one side only

<table>
<thead>
<tr>
<th>Length</th>
<th>Approximate Width</th>
<th>Thickness</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 260</td>
<td>1 inch</td>
<td>⅛ inch</td>
<td>100 inch</td>
</tr>
<tr>
<td>No. 261</td>
<td>2 inches</td>
<td>⅛ inch</td>
<td>100 inch</td>
</tr>
<tr>
<td>No. 262</td>
<td>3 inches</td>
<td>⅛ inch</td>
<td>100 inch</td>
</tr>
<tr>
<td>No. 263</td>
<td>4 inches</td>
<td>⅛ inch</td>
<td>100 inch</td>
</tr>
<tr>
<td>No. 264</td>
<td>6 inches</td>
<td>⅛ inch</td>
<td>100 inch</td>
</tr>
<tr>
<td>No. 265</td>
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<td>100 inch</td>
</tr>
<tr>
<td>No. 266</td>
<td>12 inches</td>
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<td>100 inch</td>
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<tr>
<td>No. 267</td>
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<td>100 inch</td>
</tr>
<tr>
<td>No. 268</td>
<td>24 inches</td>
<td>⅛ inch</td>
<td>100 inch</td>
</tr>
<tr>
<td>No. 269</td>
<td>36 inches</td>
<td>⅛ inch</td>
<td>100 inch</td>
</tr>
</tbody>
</table>

Graduated full length in No. 10, No. 11, or No. 12 graduation.

Packed one half dozen in a pasteboard box.
Standard Tempered Rules

These Rules are accurately graduated in 8ths and 32ds Inches on one side only. One end of the Rule is rounded and provided with a hole in order that it may be hung up when not in use.

These Rules are made of the finest quality of tempered Rule Steel with plain, deeply etched graduations and large clear figures.

<table>
<thead>
<tr>
<th>Length</th>
<th>Approximate Width</th>
<th>Thickness</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 763</td>
<td>6 inches</td>
<td>3/16 inch</td>
<td>$0.60</td>
</tr>
<tr>
<td>No. 765</td>
<td>12 inches</td>
<td>3/16 inch</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Packed one half dozen in a pasteboard box.

Standard Tempered Rules

Metric Graduation

These Rules are accurately graduated in Millimeters and 1/4 Millimeters, with a line across the end of the graduation marks for convenience in quick-reading.

One end of the Rule is rounded and provided with a hole in order that it may be hung up when not in use.

These Rules are made from the finest quality of light tempered Rule Steel, nicely finished, with plain, clear graduations, and heavy shaded figures.

These Rules are graduated on one side only.

<table>
<thead>
<tr>
<th>Length</th>
<th>Approximate Width</th>
<th>Thickness</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 653</td>
<td>15 cm.</td>
<td>19 mm.</td>
<td>.3 mm.</td>
</tr>
<tr>
<td>No. 654</td>
<td>20 cm.</td>
<td>19 mm.</td>
<td>.3 mm.</td>
</tr>
</tbody>
</table>

Packed one half dozen in a pasteboard box.

Semi-Flexible Rules

Metric Graduation

These Steel Rules are similar in every way to the No. 653 and 654 illustrated and described above. They are made of lighter material, as noted below, making them semi-flexible.

These Rules are graduated on one side only.

<table>
<thead>
<tr>
<th>Length</th>
<th>Approximate Width</th>
<th>Thickness</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 693</td>
<td>15 cm.</td>
<td>16 mm.</td>
<td>.5 mm.</td>
</tr>
<tr>
<td>No. 694</td>
<td>20 cm.</td>
<td>16 mm.</td>
<td>.5 mm.</td>
</tr>
</tbody>
</table>

Packed one half dozens in a pasteboard box.

No. 763 Steel Rule Counter Display

This is a very attractive Counter Card carrying twelve No. 763 6-inch Steel Rules, illustrated and described on the preceding page. The very modest price at which the Rules can be sold make it a particularly brisk seller from a display of this character.

The Card, which is of heavy stock, is printed in red and black, giving a three-color effect. Measures 10 3/4 x 13 1/2 inches and is fitted with a substantial casing.

Price, with twelve Rules attached ........................................... ($7.20
Shipping weight, 1 1/2 pounds.

No. 765 Steel Rule Counter Display

Identical with above, but carrying twelve No. 765 12-inch Steel Rules. Measures 13 1/4 x 16 1/4 inches.

Price, with twelve Rules attached ........................................... ($12.00
Shipping weight, 2 1/4 pounds.

Narrow Tempered Rules

Graduated on one edge of each side

<table>
<thead>
<tr>
<th>Length</th>
<th>Approximate Width</th>
<th>Thickness</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 270</td>
<td>1 inch</td>
<td>1/8 inch</td>
<td>.040</td>
</tr>
<tr>
<td>No. 271</td>
<td>2 inches</td>
<td>1/8 inch</td>
<td>.50</td>
</tr>
<tr>
<td>No. 272</td>
<td>3 inches</td>
<td>1/8 inch</td>
<td>.70</td>
</tr>
<tr>
<td>No. 273</td>
<td>4 inches</td>
<td>1/8 inch</td>
<td>.80</td>
</tr>
<tr>
<td>No. 274</td>
<td>6 inches</td>
<td>1/8 inch</td>
<td>1.00</td>
</tr>
<tr>
<td>No. 275</td>
<td>9 inches</td>
<td>1/8 inch</td>
<td>1.40</td>
</tr>
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<td>No. 276</td>
<td>12 inches</td>
<td>1/8 inch</td>
<td>1.80</td>
</tr>
</tbody>
</table>

Graduated full length in No. 10, No. 11, or No. 12 graduation. Packed one half dozen in a pasteboard box.
Stop Rule
No. 971

This consists of a narrow tempered steel rule provided with a thumb slide for measuring against a projection. A thumb screw is provided to hold the slide in any desired position. The Rule is 6 inches long, 1 inch wide by 1/8 inch thick. Graduated in No. 10 or Metric graduation.

Price, each ........................................... (ZEBKE) $2.25

Packed one in a pasteboard box, 6 x 1 x 1/4 inch. Weight, 1 ounce.

Slide Caliper Rule
No. 1771

This useful little tool can be used for three distinct purposes. It is primarily intended for use as a caliper rule, for which purpose it will be found extremely convenient as measurements are read directly from the end of the slide without the necessity of making any allowances.

By reversing the thumb slide the tool becomes a Stop Rule, and, by removing it entirely, a Narrow Hook Rule.

The tempered steel rule is 6 inches long, 1 inch wide by 1/8 inch thick. Graduated in No. 10 or Metric graduation.

Price, each ........................................... (ZEBKE) $2.75

Packed one in a pasteboard box, 6 x 1 x 1/4 inch. Weight, 1 1/2 ounces.

Slide Caliper Rule
No. 871

This is the same as our No. 1771 described above, with the addition of a means for fine adjustment of the slide. When the fine adjustment feature is used the locking slide is locked with the set screw and final movement of the thumb slide made by turning the knurled adjusting nut.

By reversing the thumb slide the tool becomes a Stop Rule, or, by removing it entirely, a Narrow Hook Rule.

The tempered steel rule is 6 inches long, 1 inch wide and 1/8 inch thick. Graduated in No. 10 or Metric graduation.

Price, each ........................................... (ZEBKE) $3.75

Packed one in a pasteboard box, 6 x 1 x 1/4 inch. Weight, 2 ounces.

No. 657 Trammel Rule

A very compact and useful Trammel for all measurements within the capacity of the Steel Rule which forms the beam. The Rule is 6 inches long, 1 inch wide, and 1/8 inch thick. The hardened points can be set very accurately directly from the graduations on the Steel Rule. The thumb nuts that lock the points are designed to make it easy to describe circles. For this purpose the point at the left with the flat top is made the center and the point at the right the scribe.

Graduated in either No. 10 or Metric graduation.

Price, each ........................................... (ZEBKE) $2.75

Packed one in a pasteboard box, 6 x 2 x 1/4 inch. Weight, 1 1/2 ounces.

Narrow Hook Rules

These Rules will be found convenient for taking measurements over rounded corners, through hubs of wheels or pulleys, or in setting Dividers or Inside Calipers. The hardened Steel Hook is locked on to the Rule by a harden eccentric bolt; readily detached when not wanted. Graduated in No. 10 or Metric graduation.

<table>
<thead>
<tr>
<th>Length</th>
<th>Width</th>
<th>Thickness</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 770</td>
<td>4 inches</td>
<td>1/4 inch</td>
<td>(ZEBKE) $1.20</td>
</tr>
<tr>
<td>No. 771</td>
<td>6 inches</td>
<td>1/4 inch</td>
<td>(ZEBKE) $1.50</td>
</tr>
<tr>
<td>No. 72</td>
<td>9 inches</td>
<td>1 inch</td>
<td>(ZEBKE) $2.10</td>
</tr>
<tr>
<td>No. 73</td>
<td>12 inches</td>
<td>1 inch</td>
<td>(ZEBKE) $2.60</td>
</tr>
</tbody>
</table>

Graduated in No. 4, No. 7, or Metric graduation.

Each Hook Rule is packed in a separate pasteboard box.

Hook Rules

Similar to the Hook Rules above, but heavier, as noted below.

<table>
<thead>
<tr>
<th>Length</th>
<th>Width</th>
<th>Thickness</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 70</td>
<td>4 inches</td>
<td>1/4 inch</td>
<td>(YAMDA) $1.20</td>
</tr>
<tr>
<td>No. 71</td>
<td>6 inches</td>
<td>1/4 inch</td>
<td>(YAMDA) $1.50</td>
</tr>
<tr>
<td>No. 72</td>
<td>9 inches</td>
<td>1 inch</td>
<td>(YAMDA) $2.10</td>
</tr>
<tr>
<td>No. 73</td>
<td>12 inches</td>
<td>1 inch</td>
<td>(YAMDA) $2.60</td>
</tr>
</tbody>
</table>

Graduated in No. 4, No. 7, or Metric graduation.

Each Hook Rule is packed in a separate pasteboard box.
# Goodell-Pratt

## Standard Tempered Rules

<table>
<thead>
<tr>
<th>Length</th>
<th>Approximate Width</th>
<th>Thickness</th>
<th>Price/Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 222 5 cm.</td>
<td>¼ inch</td>
<td>⅛ inch</td>
<td>$0.50</td>
</tr>
<tr>
<td>No. 223 10 cm.</td>
<td>¾ inch</td>
<td>⅛ inch</td>
<td>.80</td>
</tr>
<tr>
<td>No. 224 15 cm.</td>
<td>½ inch</td>
<td>⅛ inch</td>
<td>.90</td>
</tr>
<tr>
<td>No. 225 20 cm.</td>
<td>½ inch</td>
<td>⅛ inch</td>
<td>1.30</td>
</tr>
<tr>
<td>No. 226 25 cm.</td>
<td>1 inch</td>
<td>⅛ inch</td>
<td>1.50</td>
</tr>
<tr>
<td>No. 227 30 cm.</td>
<td>1 inch</td>
<td>⅛ inch</td>
<td>1.90</td>
</tr>
<tr>
<td>No. 228 40 cm.</td>
<td>1 inch</td>
<td>⅛ inch</td>
<td>2.50</td>
</tr>
<tr>
<td>No. 229 50 cm.</td>
<td>1 inch</td>
<td>⅛ inch</td>
<td>3.00</td>
</tr>
<tr>
<td>No. 230 60 cm.</td>
<td>1¼ inches</td>
<td>⅛ inch</td>
<td>4.00</td>
</tr>
<tr>
<td>No. 231 80 cm.</td>
<td>1½ inches</td>
<td>⅛ inch</td>
<td>8.00</td>
</tr>
<tr>
<td>No. 232 1 m.</td>
<td>1½ inches</td>
<td>⅛ inch</td>
<td>11.00</td>
</tr>
</tbody>
</table>

Packed one half dozen in a pasteboard box.

## Semi-Flexible Rules

<table>
<thead>
<tr>
<th>Length</th>
<th>Approximate Width</th>
<th>Thickness</th>
<th>Price/Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 289 5 cm.</td>
<td>¼ inch</td>
<td>⅛ inch</td>
<td>$0.50</td>
</tr>
<tr>
<td>No. 290 10 cm.</td>
<td>¾ inch</td>
<td>⅛ inch</td>
<td>.80</td>
</tr>
<tr>
<td>No. 291 15 cm.</td>
<td>½ inch</td>
<td>⅛ inch</td>
<td>.90</td>
</tr>
<tr>
<td>No. 292 20 cm.</td>
<td>¼ inch</td>
<td>⅛ inch</td>
<td>1.30</td>
</tr>
<tr>
<td>No. 293 25 cm.</td>
<td>1 inch</td>
<td>⅛ inch</td>
<td>1.50</td>
</tr>
<tr>
<td>No. 294 30 cm.</td>
<td>1 inch</td>
<td>⅛ inch</td>
<td>1.90</td>
</tr>
<tr>
<td>No. 295 40 cm.</td>
<td>1 inch</td>
<td>⅛ inch</td>
<td>2.50</td>
</tr>
<tr>
<td>No. 296 50 cm.</td>
<td>1 inch</td>
<td>⅛ inch</td>
<td>3.00</td>
</tr>
<tr>
<td>No. 297 60 cm.</td>
<td>1 inch</td>
<td>⅛ inch</td>
<td>4.00</td>
</tr>
<tr>
<td>No. 298 80 cm.</td>
<td>1 inch</td>
<td>⅛ inch</td>
<td>8.00</td>
</tr>
<tr>
<td>No. 299 1 m.</td>
<td>1 inch</td>
<td>⅛ inch</td>
<td>11.00</td>
</tr>
</tbody>
</table>

Packed one half dozen in a pasteboard box.

## Flexible Rules

<table>
<thead>
<tr>
<th>Length</th>
<th>Approximate Width</th>
<th>Thickness</th>
<th>Price/Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 233 5 cm.</td>
<td>¼ inch</td>
<td>⅛ inch</td>
<td>$0.50</td>
</tr>
<tr>
<td>No. 234 10 cm.</td>
<td>⅛ inch</td>
<td>⅛ inch</td>
<td>.80</td>
</tr>
<tr>
<td>No. 235 15 cm.</td>
<td>⅛ inch</td>
<td>⅛ inch</td>
<td>.90</td>
</tr>
<tr>
<td>No. 236 20 cm.</td>
<td>⅛ inch</td>
<td>⅛ inch</td>
<td>1.30</td>
</tr>
<tr>
<td>No. 237 25 cm.</td>
<td>⅛ inch</td>
<td>⅛ inch</td>
<td>1.50</td>
</tr>
<tr>
<td>No. 238 30 cm.</td>
<td>⅛ inch</td>
<td>⅛ inch</td>
<td>1.90</td>
</tr>
<tr>
<td>No. 239 40 cm.</td>
<td>⅛ inch</td>
<td>⅛ inch</td>
<td>2.50</td>
</tr>
<tr>
<td>No. 240 50 cm.</td>
<td>⅛ inch</td>
<td>⅛ inch</td>
<td>3.00</td>
</tr>
<tr>
<td>No. 241 60 cm.</td>
<td>⅛ inch</td>
<td>⅛ inch</td>
<td>4.00</td>
</tr>
<tr>
<td>No. 242 80 cm.</td>
<td>⅛ inch</td>
<td>⅛ inch</td>
<td>8.00</td>
</tr>
<tr>
<td>No. 243 1 m.</td>
<td>⅛ inch</td>
<td>⅛ inch</td>
<td>11.00</td>
</tr>
</tbody>
</table>

Packed one half dozen in a pasteboard box.

## Narrow Tempered Rules

<table>
<thead>
<tr>
<th>Length</th>
<th>Approximate Width</th>
<th>Thickness</th>
<th>Price/Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 280 10 cm.</td>
<td>¼ inch</td>
<td>⅛ inch</td>
<td>$0.80</td>
</tr>
<tr>
<td>No. 281 15 cm.</td>
<td>⅛ inch</td>
<td>⅛ inch</td>
<td>1.00</td>
</tr>
<tr>
<td>No. 282 20 cm.</td>
<td>⅛ inch</td>
<td>⅛ inch</td>
<td>1.20</td>
</tr>
<tr>
<td>No. 283 30 cm.</td>
<td>⅛ inch</td>
<td>⅛ inch</td>
<td>2.00</td>
</tr>
</tbody>
</table>

Packed one half dozen in a pasteboard box.
**Straight Edges**
Tempered Steel

These Straight Edges are made from the best quality of Crucible Steel accurately ground with parallel edges, tempered, and nicely polished. Not graduated.

<table>
<thead>
<tr>
<th>Length</th>
<th>Approximate Width</th>
<th>Thickness</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 300</td>
<td>6 inches</td>
<td>1 inch</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 301</td>
<td>9 inches</td>
<td>1 inch</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 302</td>
<td>12 inches</td>
<td>1½ inches</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 303</td>
<td>18 inches</td>
<td>1⅛ inches</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 304</td>
<td>24 inches</td>
<td>2 inches</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 305</td>
<td>36 inches</td>
<td>3 inches</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 368</td>
<td>48 inches</td>
<td>3 inches</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 860</td>
<td>60 inches</td>
<td>3 inches</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 872</td>
<td>72 inches</td>
<td>3 inches</td>
<td>⅛ inch</td>
</tr>
</tbody>
</table>

Packed one in a pasteboard box.

---

**Graduated Straight Edges**
Tempered Steel

These Straight Edges are made from the best quality of Crucible Steel accurately ground with parallel edges, tempered, and nicely polished. They are graduated on one side only in 8ths and 16ths of an Inch.

<table>
<thead>
<tr>
<th>Length</th>
<th>Approximate Width</th>
<th>Thickness</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 702</td>
<td>12 inches</td>
<td>1½ inches</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 703</td>
<td>18 inches</td>
<td>1⅛ inches</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 704</td>
<td>24 inches</td>
<td>2 inches</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 705</td>
<td>36 inches</td>
<td>2 inches</td>
<td>⅛ inch</td>
</tr>
</tbody>
</table>

Packed one in a pasteboard box.

---

**Bevel Straight Edges**
Tempered Steel

These Straight Edges are made from the best quality of Crucible Steel accurately ground, tempered, and nicely polished. One edge only is beveled. Beveled edge is ⅛ inch thick. Not graduated.

<table>
<thead>
<tr>
<th>Length</th>
<th>Approximate Width</th>
<th>Thickness</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 320</td>
<td>12 inches</td>
<td>1½ inches</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 321</td>
<td>18 inches</td>
<td>1⅛ inches</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 322</td>
<td>24 inches</td>
<td>1⅜ inches</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 323</td>
<td>36 inches</td>
<td>2 inches</td>
<td>⅛ inch</td>
</tr>
</tbody>
</table>

Packed one in a pasteboard box.

---

**Graduated Bevel Straight Edges**
Tempered Steel

These Straight Edges are made from the best quality of Crucible Steel accurately ground, tempered, and nicely polished. One edge only is beveled. Beveled edge is ⅛ inch thick. Graduated on beveled edge only in 32ds of an Inch.

<table>
<thead>
<tr>
<th>Length</th>
<th>Approximate Width</th>
<th>Thickness</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 802</td>
<td>12 inches</td>
<td>1⅛ inches</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 803</td>
<td>18 inches</td>
<td>1⅛ inches</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 804</td>
<td>24 inches</td>
<td>2 inches</td>
<td>⅛ inch</td>
</tr>
<tr>
<td>No. 805</td>
<td>36 inches</td>
<td>2 inches</td>
<td>⅛ inch</td>
</tr>
</tbody>
</table>

Packed one in a pasteboard box.
ROSE TOOLS, INC.

No. 751 Height Gauge Attachment
This little tool slipped on the blade of any of our 12-inch Combination Squares or Sets transforms it into a very dependable Height Gauge. A friction spring beneath the set screw holds the attachment at any given position while the set screw is being tightened. The bottom is accurately ground at right angles to the scale so that it can be set directly to the graduation lines on the Square Blade, and measurements can be transferred within very close limits.

It is made of steel carefully hardened, and has a mottled finish.

Price, each (2 each) $1.30

Packed one in a pasteboard box, 2 1/2 x 1 x 1 inch. Weight, 2 ounces.

No. 77 Keyseating Rule Blocks
These Blocks enable one to convert any Steel Rule or Straight Edge of regular thickness into a keyseat or parallel rule, making it unnecessary to hum the kit with an extra appliance to scribe parallel lines on round stock. They are made of hardened steel, with ground faces, making them light and accurate.

Price, per pair (2 pairs) $1.00

Packed one pair in a box, 2 1/2 x 1 1/2 x 1 inch. Weight, 2 ounces.

No. 76 Steel Rule Clamps
These Clamps are a convenient and useful addition to any machinist's kit. They will clamp two Steel Rules of the same or different widths and hold them firmly end to end, enabling the user to make two Rules of short into one of longer length, saving both the expense and bother of the long Rules. The Clamps are made of case-hardened steel, and will hold Rules from 1/2 to 1 1/2 inches wide.

Price, each (3 each) $1.00

Packed one in a box, 3 x 2 1/2 x 1 inch. Weight, 2 1/2 ounces.

Rule Depth Gauges
These Depth Gauges have a milled and ground Base 3 inches long and a narrow tempered Steel Rule either 4 or 6 inches long. The Blade can be turned parallel to the base so as to occupy but little room in the tool chest or in one's pocket. The tool also makes a useful T-square. Rule graduated in either No. 10 or No. 11 graduation. The Head is graduated with lines indicating 30°, 45°, and 60°.

No. 79. 4 inch (YAPEO) $2.40
No. 80. 6 inch (YAPUL) 2.60

Metric
No. 79M. 10 cm (YAPMY) $2.40
No. 80M. 15 cm (YAPMJ) 2.60

Depth Gauge
No. 64

This Gauge is carefully constructed, and is a thoroughly dependable little tool. The milled and ground Base is 3 inches long. The Rod is best quality cast steel, 4 1/2 inches long, with a hardened point. It is graduated in half inches. The rod is held accurately in place perpendicular to the base, but can be turned parallel if desired.

Price, each (YAPUG) $1.75

Steel Center Square
No. 78

This all-steel tool combines the most, in the smallest compass and lightest weight, that has ever been offered to tool maker or machinist. It is a Center Square, T-Square, Depth Gauge, Center Gauge, and Steel Rule. The narrow tempered Steel Rule furnished with the tool is 6 inches in length.

Price, each (YAPAO) $4.00

Furnished in No. 10, No. 11, or Metric graduation, as specified.
Solid Beam Squares
With Tempered Steel Blades

These Squares are designed to be as accurate and well finished as special machinery and skillful operatives can produce. The Blade is of crucible steel carefully tempered. Beam is of hard gray iron, carefully machined and ground, and every means possible used to insure the edges of Blade being at right angles to the beams. Length of Blade given is from inner edge of beam.

<table>
<thead>
<tr>
<th>Length of Blade</th>
<th>Length of Beam</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 86 3 inches</td>
<td>2 inches</td>
<td>$3.80</td>
</tr>
<tr>
<td>No. 87 4 inches</td>
<td>2½ inches</td>
<td>$6.00</td>
</tr>
<tr>
<td>No. 88 6 inches</td>
<td>3½ inches</td>
<td>$7.70</td>
</tr>
<tr>
<td>No. 89 9 inches</td>
<td>5 inches</td>
<td>$8.80</td>
</tr>
<tr>
<td>No. 90 12 inches</td>
<td>6 inches</td>
<td>$11.00</td>
</tr>
</tbody>
</table>

Packed one in a pasteboard box.

Pattern Makers’ Precision Squares
Tempered Blades

These are excellent Try Squares for the use of Pattern Makers and Woodworkers. The Blades are made of tempered steel, accurately parallel ground. The Beam is provided with a rest so that the square will lie flat on the work without being held in position. The opening in handle gives a firm and comfortable grip. Handles are nickel plated and Blades polished.

We guarantee the accuracy of these Squares.

<table>
<thead>
<tr>
<th>Length of Blade</th>
<th>Length of Beam</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 806 6 inches</td>
<td>4 inches</td>
<td>$2.75</td>
</tr>
<tr>
<td>No. 808 8 inches</td>
<td>5 inches</td>
<td>$3.75</td>
</tr>
<tr>
<td>No. 810 10 inches</td>
<td>6 inches</td>
<td>$4.50</td>
</tr>
</tbody>
</table>

Each Square packed in a separate pasteboard box.

Pattern Makers’ Precision Squares
Tempered and Graduated Blades

We have made these Squares as accurate and as finely finished as possible, with every detail carefully considered, and every means used to produce instruments as near to absolute accuracy as human skill and mechanical ingenuity can make them. These tools are square and they will stay true. The Blades are engine graduated on one side of each in 32nds and 64ths. They are made of carefully tempered crucible steel. Beams are hard gray iron.

<table>
<thead>
<tr>
<th>Length of Blade</th>
<th>Length of Beam</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 906 6 inches</td>
<td>4 inches</td>
<td>$3.25</td>
</tr>
<tr>
<td>No. 908 8 inches</td>
<td>5 inches</td>
<td>$4.50</td>
</tr>
<tr>
<td>No. 910 10 inches</td>
<td>6 inches</td>
<td>$5.00</td>
</tr>
</tbody>
</table>

These Try Squares are exactly the same as those above, except that the Blades are graduated on dividing engines, on one side in 8ths and the other side in 16ths of an inch.

Both the accuracy of the Square and the accuracy of the graduations are guaranteed.

Each Square can be furnished with Metric graduation if desired.

Each Square is packed in a separate pasteboard box.
Combination Sets

Steel Heads  Iron Protractor  Tempered Steel Blades

These Sets are an exceedingly useful combination for machinists or tool makers. They are provided with drop-forged steel Beams and Center Heads, and a Bevel Protractor No. 180, shown on page 51, all finished in ebony enamel.

The Blades are tempered crucible steel, engine graduated, in either No. 4, No. 7, No. 8, Metric, or Metric and English graduation.

Price, Each
No. 190. 9 inch or 20 cm. blade .......... (YEROK) $9.00
No. 191. 12 inch or 30 cm. blade .......... (YERUL) 9.35
No. 192. 18 inch or 50 cm. blade .......... (YERLAD) 10.75
No. 193. 24 inch or 60 cm. blade .......... (YERLHA) 11.50

Packed one in a pasteboard box.

Combination Squares

Steel Heads  Tempered Steel Blades

These excellent Combination Squares have drop-forged steel Beams and Center Heads that are finished in ebony enamel. No Protractor is provided.

The Blades are tempered crucible steel, engine graduated, in No. 4, No. 7, No. 8, Metric, or Metric and English graduation.

Price, Each
No. 161. 6 inch blade .................. (YEGDE) $4.65
No. 162. 9 inch or 20 cm. blade .......... (YEGED) 5.40
No. 163. 12 inch or 30 cm. blade .......... (YEGGO) 5.75
No. 164. 18 inch or 50 cm. blade .......... (YERGGP) 7.20
No. 165. 24 inch or 60 cm. blade .......... (YERGVY) 7.90

Packed one in a pasteboard box.

Combination Sets

Iron Heads  Tempered Steel Blades

These Sets are exactly the same as those described above, except that the Beams and Center Heads are made of hard gray iron.

The Blades are tempered crucible steel, engine graduated, in either No. 4, No. 7, No. 8, Metric, or Metric and English graduation.

Price, Each
No. 390. 9 inch or 20 cm. blade .......... (YERKES) $7.20
No. 391. 12 inch or 30 cm. blade .......... (YERKVD) 7.80
No. 392. 18 inch or 50 cm. blade .......... (YERKVF) 9.00
No. 393. 24 inch or 60 cm. blade .......... (YERKHL) 10.00

Packed one in a pasteboard box.

Combination Squares

Iron Heads  Tempered Steel Blades

These Squares have hard gray iron Beams and Center Heads that are finished in ebony enamel. No Protractor is provided.

The Blades are tempered crucible steel, engine graduated, in No. 4, No. 7, No. 8, Metric, or Metric and English graduation.

Price, Each
No. 361. 6 inch blade .................. (YEREH) $2.85
No. 362. 9 inch or 20 cm. blade .......... (YERAGM) 3.60
No. 363. 12 inch or 30 cm. blade .......... (YERAN) 4.30
No. 364. 18 inch or 50 cm. blade .......... (YERAPP) 5.40
No. 365. 24 inch or 60 cm. blade .......... (YERAM) 6.40

Packed one in a pasteboard box.
**Combination Squares**
Steel Heads  Tempered Steel Blades

These Squares have drop-forged steel Beams that are finished in ebony enamel. No Protractor or Center Head is provided.

The Blades are tempered crucible steel, engine graduated, in No. 4, No. 7, No. 8, Metric, or Metric and English graduation.

<table>
<thead>
<tr>
<th>No.</th>
<th>Blade</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>171</td>
<td>6 inch blade</td>
<td>$8.00</td>
</tr>
<tr>
<td>172</td>
<td>9 inch or 20 cm. blade</td>
<td>$4.30</td>
</tr>
<tr>
<td>173</td>
<td>12 inch or 30 cm. blade</td>
<td>$4.00</td>
</tr>
<tr>
<td>174</td>
<td>18 inch or 50 cm. blade</td>
<td>$6.10</td>
</tr>
<tr>
<td>175</td>
<td>24 inch or 60 cm. blade</td>
<td>$6.80</td>
</tr>
</tbody>
</table>

Packed one in a pasteboard box.

---

**Sliding Blade Squares**

These Squares have iron beams with polished edges, and depressed parts finished in black enamel. All of the larger sizes have a Level set in the beam.

The Blades are made of tempered steel, accurately graduated on dividing engines.

Smallest size has no Level.

<table>
<thead>
<tr>
<th>No.</th>
<th>Blade</th>
<th>Beam</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>150</td>
<td>4 inches</td>
<td>24 inches</td>
<td>$8.75</td>
</tr>
<tr>
<td>151</td>
<td>6 inches</td>
<td>36 inches</td>
<td>$2.85</td>
</tr>
<tr>
<td>152</td>
<td>9 inches or 20 cm.</td>
<td>48 inches</td>
<td>$4.30</td>
</tr>
<tr>
<td>153</td>
<td>12 inches or 30 cm.</td>
<td>60 inches</td>
<td>$5.50</td>
</tr>
</tbody>
</table>

Furnished with No. 4, No. 7, Metric, or Metric and English graduation.

Packed one in a pasteboard box.

---

**Combination Squares**
Iron Heads  Tempered Steel Blades

These Squares have hard gray iron Beams that are finished in ebony enamel. No Protractor or Center Head is provided.

The Blades are tempered crucible steel, engine graduated, in No. 4, No. 7, No. 8, Metric, or Metric and English graduation.

<table>
<thead>
<tr>
<th>No.</th>
<th>Blade</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>371</td>
<td>6 inch blade</td>
<td>$2.15</td>
</tr>
<tr>
<td>372</td>
<td>9 inch or 20 cm. blade</td>
<td>$2.85</td>
</tr>
<tr>
<td>373</td>
<td>12 inch or 30 cm. blade</td>
<td>$3.50</td>
</tr>
<tr>
<td>374</td>
<td>18 inch or 50 cm. blade</td>
<td>$4.65</td>
</tr>
<tr>
<td>375</td>
<td>24 inch or 60 cm. blade</td>
<td>$5.75</td>
</tr>
</tbody>
</table>

Packed one in a pasteboard box.

---

**Bevel Protractors**

In the manufacture of these Protractors every attention is paid to have them accurate, complete, and well finished. The blade is held in a revolving turret by a round-ended bolt. Turret is accurately fitted and engine graduated to 90° either side of zero, and every care taken to insure its being at right angle to face of head. It carries a level which is accurately set and fastened to the side of the turret. Blade is of crucible tempered steel. Head is about 7 inches long.

<table>
<thead>
<tr>
<th>No.</th>
<th>Protractor head only</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>180</td>
<td>Protractor head only</td>
<td>$8.30</td>
</tr>
<tr>
<td>181</td>
<td>9 inch or 20 cm. complete</td>
<td>$5.40</td>
</tr>
<tr>
<td>182</td>
<td>12 inch or 30 cm. complete</td>
<td>$6.10</td>
</tr>
<tr>
<td>183</td>
<td>18 inch or 50 cm. complete</td>
<td>$7.20</td>
</tr>
<tr>
<td>184</td>
<td>24 inch or 60 cm. complete</td>
<td>$8.25</td>
</tr>
</tbody>
</table>

Blades furnished graduated in either No. 4, No. 7, No. 8, Metric, or Metric and English graduation.

Packed one in a pasteboard box.
Round Leg Calipers

Round Leg Tool Makers' and Post Calipers are now very popular with all users. Our line of these tools will be found well made and very nicely finished. The legs are rolled down, making them very hard and rigid.

We call particular attention to the shape of our Inside Caliper Legs, which enable them to make smaller measurements than are generally possible with tools of this kind.

Spring Calipers and Dividers

Our Spring Calipers and Dividers will appeal to all particular mechanics on account of the careful workmanship used in their manufacture, and their exceptionally fine finish. The line is very complete, comprising all styles for regular and special work. The legs of these Calipers are made from hard crucible steel, well shaped. Every part subject to wear is hardened. Springs are stiff and properly tempered.

The screws in all sizes of these Calipers are extra long, giving a much greater measuring capacity. Quick nuts slide freely on the screw when tension of the spring is removed, without the bother of pulling the nut over screw threads.

Firm Joint Calipers

Especial attention is called to the fine proportions of the legs of these Calipers. They are made of hard finished crucible steel and are stiff and solid. All sizes of these Calipers have friction adjusting screws with hexagon heads in order that the tension may be changed with a wrench. They are made with legs of all sizes up to 24 inches long, but are capable of measurements much larger than their ratings.
### Outside Spring Calipers

<table>
<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>500</td>
<td>2½ inches (Yowda)</td>
<td>$0.95</td>
</tr>
<tr>
<td>501</td>
<td>3 inches</td>
<td>1.00</td>
</tr>
<tr>
<td>502</td>
<td>4 inches</td>
<td>1.05</td>
</tr>
<tr>
<td>503</td>
<td>5 inches</td>
<td>1.15</td>
</tr>
<tr>
<td>504</td>
<td>6 inches</td>
<td>1.25</td>
</tr>
<tr>
<td>505</td>
<td>8 inches</td>
<td>1.40</td>
</tr>
<tr>
<td>550</td>
<td>10 inches</td>
<td>2.00</td>
</tr>
<tr>
<td>551</td>
<td>12 inches</td>
<td>2.20</td>
</tr>
</tbody>
</table>

With Quick Nut

<table>
<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>600</td>
<td>2½ inches (Yuptr)</td>
<td>$1.15</td>
</tr>
<tr>
<td>601</td>
<td>3 inches</td>
<td>1.20</td>
</tr>
<tr>
<td>602</td>
<td>4 inches</td>
<td>1.25</td>
</tr>
<tr>
<td>603</td>
<td>5 inches</td>
<td>1.35</td>
</tr>
<tr>
<td>604</td>
<td>6 inches</td>
<td>1.45</td>
</tr>
<tr>
<td>605</td>
<td>8 inches</td>
<td>1.60</td>
</tr>
<tr>
<td>650</td>
<td>10 inches</td>
<td>2.20</td>
</tr>
<tr>
<td>651</td>
<td>12 inches</td>
<td>2.40</td>
</tr>
</tbody>
</table>

Packed one fourth dozen in a pasteboard box.

### Inside Spring Calipers

<table>
<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>506</td>
<td>2½ inches (Yumx)</td>
<td>$0.95</td>
</tr>
<tr>
<td>507</td>
<td>3 inches</td>
<td>1.00</td>
</tr>
<tr>
<td>508</td>
<td>4 inches</td>
<td>1.05</td>
</tr>
<tr>
<td>509</td>
<td>5 inches</td>
<td>1.15</td>
</tr>
<tr>
<td>510</td>
<td>6 inches</td>
<td>1.25</td>
</tr>
<tr>
<td>511</td>
<td>8 inches</td>
<td>1.40</td>
</tr>
<tr>
<td>560</td>
<td>10 inches</td>
<td>2.00</td>
</tr>
<tr>
<td>561</td>
<td>12 inches</td>
<td>2.20</td>
</tr>
</tbody>
</table>

With Quick Nut

<table>
<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>606</td>
<td>2½ inches (Yusjo)</td>
<td>$1.15</td>
</tr>
<tr>
<td>607</td>
<td>3 inches</td>
<td>1.20</td>
</tr>
<tr>
<td>608</td>
<td>4 inches</td>
<td>1.25</td>
</tr>
<tr>
<td>609</td>
<td>5 inches</td>
<td>1.35</td>
</tr>
<tr>
<td>610</td>
<td>6 inches</td>
<td>1.45</td>
</tr>
<tr>
<td>611</td>
<td>8 inches</td>
<td>1.60</td>
</tr>
<tr>
<td>660</td>
<td>10 inches</td>
<td>2.20</td>
</tr>
<tr>
<td>661</td>
<td>12 inches</td>
<td>2.40</td>
</tr>
</tbody>
</table>

Packed one fourth dozen in a pasteboard box.

### Spring Dividers

<table>
<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>512</td>
<td>2½ inches (Yozul)</td>
<td>$0.95</td>
</tr>
<tr>
<td>513</td>
<td>3 inches</td>
<td>1.00</td>
</tr>
<tr>
<td>514</td>
<td>4 inches</td>
<td>1.05</td>
</tr>
<tr>
<td>515</td>
<td>5 inches</td>
<td>1.15</td>
</tr>
<tr>
<td>516</td>
<td>6 inches</td>
<td>1.25</td>
</tr>
<tr>
<td>517</td>
<td>8 inches</td>
<td>1.40</td>
</tr>
<tr>
<td>570</td>
<td>10 inches</td>
<td>2.00</td>
</tr>
<tr>
<td>571</td>
<td>12 inches</td>
<td>2.20</td>
</tr>
</tbody>
</table>

With Quick Nut

<table>
<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>612</td>
<td>2½ inches (Yoziv)</td>
<td>$1.15</td>
</tr>
<tr>
<td>613</td>
<td>3 inches</td>
<td>1.20</td>
</tr>
<tr>
<td>614</td>
<td>4 inches</td>
<td>1.25</td>
</tr>
<tr>
<td>615</td>
<td>5 inches</td>
<td>1.35</td>
</tr>
<tr>
<td>616</td>
<td>6 inches</td>
<td>1.45</td>
</tr>
<tr>
<td>617</td>
<td>8 inches</td>
<td>1.60</td>
</tr>
<tr>
<td>670</td>
<td>10 inches</td>
<td>2.20</td>
</tr>
<tr>
<td>671</td>
<td>12 inches</td>
<td>2.40</td>
</tr>
</tbody>
</table>

Packed one fourth dozen in a pasteboard box.

### Hermaphrodite Spring Calipers

<table>
<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>540</td>
<td>3 inches</td>
<td>$1.00</td>
</tr>
<tr>
<td>541</td>
<td>4 inches</td>
<td>1.10</td>
</tr>
<tr>
<td>542</td>
<td>5 inches</td>
<td>1.20</td>
</tr>
<tr>
<td>543</td>
<td>6 inches</td>
<td>1.30</td>
</tr>
</tbody>
</table>

With Solid Nut

<table>
<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>640</td>
<td>3 inches</td>
<td>$1.20</td>
</tr>
<tr>
<td>641</td>
<td>4 inches</td>
<td>1.30</td>
</tr>
<tr>
<td>642</td>
<td>5 inches</td>
<td>1.40</td>
</tr>
<tr>
<td>643</td>
<td>6 inches</td>
<td>1.50</td>
</tr>
</tbody>
</table>

With Quick Nut

Packed one fourth dozen in a pasteboard box.
Outside Thread Spring Calipers
These Calipers have the ends of their legs flattened for calipering the diameter at the bottom of the thread of bolts, screws, etc.

<table>
<thead>
<tr>
<th>With Solid Nut</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 530. Size 3 inches... (YUGOS)</td>
<td>$1.00</td>
</tr>
<tr>
<td>No. 531. Size 4 inches... (YUGNO)</td>
<td>1.05</td>
</tr>
<tr>
<td>No. 532. Size 5 inches... (YUDUT)</td>
<td>1.15</td>
</tr>
<tr>
<td>No. 533. Size 6 inches... (YUDUT)</td>
<td>1.25</td>
</tr>
<tr>
<td>No. 545. Size 8 inches... (YUGOV)</td>
<td>1.60</td>
</tr>
<tr>
<td>No. 547. Size 10 inches... (YUGSE)</td>
<td>2.00</td>
</tr>
</tbody>
</table>

With Quick Nut
Price, Each

| No. 630. Size 3 inches... (ZADMA) | $1.20 |
| No. 631. Size 4 inches... (ZABNE) | 1.25 |
| No. 632. Size 5 inches... (ZABRE) | 1.35 |
| No. 633. Size 6 inches... (ZABRE) | 1.45 |
| No. 645. Size 8 inches... (ZADIB) | 1.80 |
| No. 647. Size 10 inches... (ZADPA) | 2.20 |

Packed one fourth dozen in a pasteboard box.

Inside Thread Spring Calipers
These Calipers have their points shaped correctly for measuring the diameter at the bottom of the thread of nuts, etc.

<table>
<thead>
<tr>
<th>With Solid Nut</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 535. Size 3 inches... (YUGOS)</td>
<td>$1.00</td>
</tr>
<tr>
<td>No. 536. Size 4 inches... (YUZME)</td>
<td>1.05</td>
</tr>
<tr>
<td>No. 537. Size 5 inches... (YUZEP)</td>
<td>1.15</td>
</tr>
<tr>
<td>No. 538. Size 6 inches... (YUZEH)</td>
<td>1.20</td>
</tr>
</tbody>
</table>

With Quick Nut
Price, Each

| No. 635. Size 3 inches... (ZACAN) | $1.20 |
| No. 636. Size 4 inches... (ZACER) | 1.25 |
| No. 637. Size 5 inches... (ZACNA) | 1.35 |
| No. 638. Size 6 inches... (ZACOR) | 1.40 |

Packed one fourth dozen in a pasteboard box.

Thread Spring Calipers

With Solid Nut
Price, Each

| No. 519. Size 3 inches... (YUBST) | $1.25 |
| No. 520. Size 4 inches... (YUBUR) | 1.30 |
| No. 521. Size 5 inches... (YUBYS) | 1.35 |

With Quick Nut
Price, Each

| No. 619. Size 3 inches... (YULAA) | $1.45 |
| No. 620. Size 4 inches... (YULAB) | 1.50 |
| No. 621. Size 5 inches... (YULOF) | 1.55 |

Packed one fourth dozen in a pasteboard box.

Keyhole Spring Calipers

With Solid Nut
Price, Each

| No. 525. Size 3 inches... (YUCPE) | $1.00 |
| No. 526. Size 4 inches... (YUCRO) | 1.05 |

With Quick Nut
Price, Each

| No. 625. Size 3 inches... (ZAAPF) | $1.20 |
| No. 626. Size 4 inches... (ZAAPF) | 1.25 |

Packed one fourth dozen in a pasteboard box.
Outside Transfer Spring Calipers

These Transfer Calipers are rapid and positive in action, advantages that every mechanic will appreciate. When the Calipers are adjusted, all that is necessary to do to transfer, is to tighten the set screw and pull the legs apart. They will then spring back themselves to the same position without the slightest possibility of error.

<table>
<thead>
<tr>
<th>No.</th>
<th>Size (inches)</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>554.</td>
<td>4</td>
<td>2.00</td>
</tr>
<tr>
<td>556.</td>
<td>6</td>
<td>2.20</td>
</tr>
<tr>
<td>558.</td>
<td>8</td>
<td>2.40</td>
</tr>
</tbody>
</table>

Packed one fourth dozen in a pasteboard box.

Inside Transfer Spring Calipers

These Calipers have a special form of nut that prevents any slipping and insures accurate transferring on inside work.

<table>
<thead>
<tr>
<th>No.</th>
<th>Size (inches)</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>544.</td>
<td>4</td>
<td>2.00</td>
</tr>
<tr>
<td>546.</td>
<td>6</td>
<td>2.20</td>
</tr>
<tr>
<td>548.</td>
<td>8</td>
<td>2.40</td>
</tr>
</tbody>
</table>

Packed one fourth dozen in a pasteboard box.

Tool Makers’ Outside Spring Calipers

The Calipers shown on this page are particularly adapted for tool makers’ use, being designed for delicate and accurate work. The springs are strong and stiff; the spools are hardened; the legs, which are made from round stock, are rolled down to make them hard and rigid.

We recommend these tools for the finest class of work.

Furnished with solid nut only.

<table>
<thead>
<tr>
<th>No.</th>
<th>Size (inches)</th>
<th>(Specification)</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>732.</td>
<td>2</td>
<td>(ZATUL)</td>
<td>1.40</td>
</tr>
<tr>
<td>733.</td>
<td>3</td>
<td>(ZAUCH)</td>
<td>1.70</td>
</tr>
<tr>
<td>734.</td>
<td>4</td>
<td>(ZAUDP)</td>
<td>2.10</td>
</tr>
<tr>
<td>736.</td>
<td>6</td>
<td>(ZAUSK)</td>
<td>2.50</td>
</tr>
</tbody>
</table>

Packed one fourth dozen in a pasteboard box.

Tool Makers’ Inside Spring Calipers

<table>
<thead>
<tr>
<th>No.</th>
<th>Size (inches)</th>
<th>(Specification)</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>742.</td>
<td>2</td>
<td>(ZAVLO)</td>
<td>1.40</td>
</tr>
<tr>
<td>743.</td>
<td>3</td>
<td>(ZAVNY)</td>
<td>1.70</td>
</tr>
<tr>
<td>744.</td>
<td>4</td>
<td>(ZAVOL)</td>
<td>2.10</td>
</tr>
<tr>
<td>746.</td>
<td>6</td>
<td>(ZAVYN)</td>
<td>2.50</td>
</tr>
</tbody>
</table>

Packed one fourth dozen in a pasteboard box.
Tool Makers' Spring Dividers

These Round Leg Dividers are companion tools to the Calipers shown on the previous page. The points are rolled down, making them extra hard; they are thoroughly well made and will be found satisfactory for the finest work.

Furnished with solid nut only

<table>
<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>752</td>
<td>2 inches</td>
<td>$1.40</td>
</tr>
<tr>
<td>753</td>
<td>3 inches</td>
<td>$1.70</td>
</tr>
<tr>
<td>754</td>
<td>4 inches</td>
<td>$2.10</td>
</tr>
<tr>
<td>756</td>
<td>6 inches</td>
<td>$2.50</td>
</tr>
</tbody>
</table>

Packed one fourth dozen in a pasteboard box.

Inside Round Leg Spring Calipers

POST PATTERN

The "Post Pattern" Inside Spring Calipers are of the same design as the Outside Calipers of this pattern, and we are likewise offering them at moderate prices.

<table>
<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>842</td>
<td>2 inches</td>
<td>$1.30</td>
</tr>
<tr>
<td>843</td>
<td>3 inches</td>
<td>$1.60</td>
</tr>
<tr>
<td>844</td>
<td>4 inches</td>
<td>$2.00</td>
</tr>
<tr>
<td>846</td>
<td>6 inches</td>
<td>$2.40</td>
</tr>
</tbody>
</table>

Packed one fourth dozen in a pasteboard box.

Outside Round Leg Spring Calipers

POST PATTERN

In bringing out the "Post Pattern" Round Leg Spring Calipers, in which the adjusting screw works through the post instead of through the legs, we are offering at a moderate price a Round Leg Spring Caliper of excellent design and attractive finish, quite as desirable in many instances as the more expensive tool makers' line.

<table>
<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>832</td>
<td>2 inches</td>
<td>$1.30</td>
</tr>
<tr>
<td>833</td>
<td>3 inches</td>
<td>$1.60</td>
</tr>
<tr>
<td>834</td>
<td>4 inches</td>
<td>$2.00</td>
</tr>
<tr>
<td>836</td>
<td>6 inches</td>
<td>$2.40</td>
</tr>
</tbody>
</table>

Packed one fourth dozen in a pasteboard box.

Round Leg Spring Dividers

POST PATTERN

The Round Leg Spring Dividers of the "Post Pattern" are of the same design and operated in the same manner as the Outside and Inside Calipers of this pattern previously described.

<table>
<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>852</td>
<td>2 inches</td>
<td>$1.30</td>
</tr>
<tr>
<td>853</td>
<td>3 inches</td>
<td>$1.60</td>
</tr>
<tr>
<td>854</td>
<td>4 inches</td>
<td>$2.00</td>
</tr>
<tr>
<td>856</td>
<td>6 inches</td>
<td>$2.40</td>
</tr>
</tbody>
</table>

Packed one fourth dozen in a pasteboard box.
Firm Joint Outside Calipers

These Calipers are made of a hard finished crucible steel and are stiff and solid. The firm joint is designed so as to give any desired degree of friction, maintaining a smooth, even tension as desired. Friction adjusting screw has hexagon head for wrench on all sizes. The sizes refer to the length of the different legs. Their capacity to measure is much greater than their ratings. Especial attention is called to the fine proportion of the different sizes.

<table>
<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>400</td>
<td>3 inches outside</td>
<td>$0.70</td>
</tr>
<tr>
<td>401</td>
<td>4 inches outside</td>
<td>$0.80</td>
</tr>
<tr>
<td>402</td>
<td>5 inches outside</td>
<td>$0.90</td>
</tr>
<tr>
<td>403</td>
<td>6 inches outside</td>
<td>$1.00</td>
</tr>
<tr>
<td>404</td>
<td>8 inches outside</td>
<td>$1.20</td>
</tr>
<tr>
<td>405</td>
<td>10 inches outside</td>
<td>$1.30</td>
</tr>
<tr>
<td>406</td>
<td>12 inches outside</td>
<td>$1.40</td>
</tr>
<tr>
<td>407</td>
<td>14 inches outside</td>
<td>$2.10</td>
</tr>
<tr>
<td>408</td>
<td>16 inches outside</td>
<td>$2.50</td>
</tr>
<tr>
<td>409</td>
<td>18 inches outside</td>
<td>$3.00</td>
</tr>
<tr>
<td>410</td>
<td>20 inches outside</td>
<td>$3.75</td>
</tr>
<tr>
<td>411</td>
<td>24 inches outside</td>
<td>$4.50</td>
</tr>
</tbody>
</table>

Packed one fourth dozen in a pasteboard box.

Firm Joint Hermaphrodite Calipers

With Solid Leg

These Calipers are just the same as our regular Firm Joint Calipers shown on the previous page, with the exception of the legs, one of which is an inside caliper leg and the other a divider leg.

<table>
<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>384</td>
<td>4 inches</td>
<td>$0.80</td>
</tr>
<tr>
<td>386</td>
<td>6 inches</td>
<td>$1.00</td>
</tr>
<tr>
<td>388</td>
<td>8 inches</td>
<td>$1.20</td>
</tr>
</tbody>
</table>

Packed one fourth dozen in a pasteboard box.

Firm Joint Inside Calipers

<table>
<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>420</td>
<td>3 inches inside</td>
<td>$0.70</td>
</tr>
<tr>
<td>421</td>
<td>4 inches inside</td>
<td>$0.80</td>
</tr>
<tr>
<td>422</td>
<td>5 inches inside</td>
<td>$0.90</td>
</tr>
<tr>
<td>423</td>
<td>6 inches inside</td>
<td>$1.00</td>
</tr>
<tr>
<td>424</td>
<td>8 inches inside</td>
<td>$1.20</td>
</tr>
<tr>
<td>425</td>
<td>10 inches inside</td>
<td>$1.30</td>
</tr>
<tr>
<td>426</td>
<td>12 inches inside</td>
<td>$1.40</td>
</tr>
<tr>
<td>427</td>
<td>14 inches inside</td>
<td>$2.10</td>
</tr>
<tr>
<td>428</td>
<td>16 inches inside</td>
<td>$2.50</td>
</tr>
<tr>
<td>429</td>
<td>18 inches inside</td>
<td>$3.00</td>
</tr>
<tr>
<td>430</td>
<td>20 inches inside</td>
<td>$3.75</td>
</tr>
<tr>
<td>431</td>
<td>24 inches inside</td>
<td>$4.50</td>
</tr>
</tbody>
</table>

Packed one fourth dozen in a pasteboard box.

Firm Joint Hermaphrodite Calipers

With Adjustable Point

The adjustable point on these Calipers is made of the best crucible steel properly tempered, and is firmly fastened to the leg by a bolt with a knurled-headed nut.

<table>
<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>442</td>
<td>5 inches</td>
<td>$1.05</td>
</tr>
<tr>
<td>443</td>
<td>6 inches</td>
<td>$1.15</td>
</tr>
<tr>
<td>444</td>
<td>8 inches</td>
<td>$1.40</td>
</tr>
<tr>
<td>445</td>
<td>10 inches</td>
<td>$1.70</td>
</tr>
</tbody>
</table>

Packed one fourth dozen in a pasteboard box.
Universal Caliper
No. 1917

This remarkable instrument can be used for making any inside, outside, or depth measurements, both English and Metric, up to 4 inches or 10 centimeters. It is graduated on one side in 32nds of an inch and on the other side in millimeters. A thumb screw enables the operator to lock the jaws and depth rod in any desired position. The jaws can be easily adjusted to compensate for wear.

The entire tool is polished. Length over all, 7 1/2 inches. Net weight, 4 ounces.

Price, each ........................................... $2.65

Packed one in a pasteboard box, 7 1/2 x 2 3/4 x 3/4 inch.

Indicating Calipers

These tools will be found much more convenient than Caliper Rules for making all outside measurements of either lengths or diameters up to 2 inches.

The tool is made from a hard stock and is stiff and rigid. The arc is accurately divided to read 16ths of an inch. The entire tool is very nicely finished.

Length over all, 3 inches. Net weight, 1 ounce.

No. 662. 2 inch.

Price, each ........................................... $1.30

Metric

No. 672. 50 mm.

Price, each ........................................... $1.30

Packed one fourth dozen in a pasteboard box, 3 1/2 x 2 x 3 1/2 inch.

Micrometers

The Frames of Goodell-Pratt one, two, three, and six inch Micrometer Calipers are drop forged from steel bars. They are carefully machined, well polished, and excellently finished by hand. The Frames of the larger sizes are made with an I beam section, the web black enameled, and the balance of the tool highly polished and hand finished.

The lead screw and spindle of each Micrometer is made of tool steel in a single piece and is hardened, ground, and lapped. The lead screw is extra large and runs in a hard steel bushing of more than the usual length. This construction insures long life with minimum wear, for which adequate adjustment is furnished. Great care is taken to have the hardened face of the Anvil in perfect alignment with the Spindle.

The Ratchet device used is unique in that it is so located that it can be used while the Micrometer is held in one hand, leaving the other free to hold the piece to be measured. The Eccentric Locking Device used is positive in action.

The accuracy, workmanship, and finish of Goodell-Pratt Precision Tools is guaranteed unconditionally.

How to Read a Micrometer

To the Frame "F" is immovably fixed the Barrel "B." On the inside of this Barrel is a very accurately threaded bushing with a pitch of 40 threads per inch. The unseam portion of the Spindle "S" is also threaded with 40 threads per inch and runs in the nut formed by the Barrel "B." The extreme right end of the Spindle is fastened to the Thimble "T." These are the only moving parts and they move in unison.

An inch of the line on the Barrel "B" parallel to its axis is graduated into 40 equal parts corresponding exactly to the threads per inch on the screw of the Spindle "S." When the Thimble "T" is given one complete rotation the Spindle must move just one graduation, or 1/40 of an inch, which is 25/1000 of an inch. The beveled edge of the Thimble "T" is divided into 25 equal graduations; each of these must represent 1/25 of 1/40 of an inch, or 1/1000 of an inch. The instrument is so graduated and adjusted that when the face of the Spindle "S" just touches the fixed Anvil "A" the 0 graduation on the Thimble "T" exactly coincides with the 0 graduation on the Barrel "B."

To get the measurement between the fixed Anvil "A" and the face of the Spindle "S," multiply the number of divisions visible on the Barrel "B" by 25 and add the number of divisions on the Thimble "T" from 0 to the graduation opposite the longitudinal line on the Barrel "B."

To facilitate reading, every fourth graduation on the Barrel "B" is numbered 1, 2, 3, 4, etc., the figure representing respectively 0, .100", .200", .300", .400", etc. For the same reason every fifth division on the thimble graduation is numbered.

Reading Ten- Thousandths Micrometers

Micrometers that read to one ten-thousandths of an inch have exactly the same graduations as those reading to one-thousandths, with the addition of a Vernier reading in 1/10 of the 1/1000 graduations.

There are ten Vernier divisions which run the entire length of the Barrel "B" and are numbered on the top of the Frame, as shown in the cut of the No. 902. These ten Vernier divisions correspond exactly to nine of the divisions on the Thimble "T." So that the number opposite the line on the Vernier that exactly corresponds with a line on the Thimble graduations gives the number of ten-thousandths of an inch the Micrometer has been opened beyond the last .001 inch graduation.
Micrometer Caliper
No. 2

This Micrometer is graduated to read by 1/1000 inch from 0 to 1 inch. Decimal equivalents are etched on the drop-forged steel Frame. An eccentric Locking Device is provided to hold the Screw in any desired position. The peculiar shape of the Thimble gives the operator a more delicate touch than is otherwise possible. Every necessary compensation for wear is provided.

Price, each ................. (WYCEF) $11.50
Price of leather case ......... (WYDDA) 1.50

No. 2 M. Same as No. 2, for measurements by 1/100 mm. from 0 to 25 mm.
Price, each ................. (WYECF) $11.50

Micrometer Caliper
With Ratchet Stop
No. 2 R

This Micrometer is similar to the one described above with the addition of a ratchet mechanism on the Thimble in a position where it is easily reached by the fingers of the operator. The Ratchet, by always applying an equal amount of pressure, enables more uniform and accurate measurements to be taken when the tool is used by a number of different persons, or by an unskilled operator. The end of the Thimble is provided with a speeder by means of which the screw can be rapidly run back and forth.

Price, each .................. (WYCCD) $12.00
Price of leather case ......... (WYDDA) 1.50

No. 2 MR. Same as No. 2 R, for measurements by 1/100 mm. from 0 to 25 mm.
Price, each .................. (WYCYD) $12.00

Micrometer Caliper
No. 902

This Micrometer is graduated to read by 1/10000 of an inch from 0 to 1 inch. Decimal equivalents are etched on the drop-forged steel Frame. An eccentric Locking Device is provided to hold the Screw in any position. The peculiar shape of the Thimble gives the operator a more delicate touch than is otherwise possible. Every necessary compensation for wear is provided.

Price, each .................. (ZERXY) $13.50
Price of leather case ......... (WYDDA) 1.50

Micrometer Caliper
No. 902 R

This Micrometer is the same as the one described above, reading by 1/10000 of an inch from 0 to 1 inch, with the addition of a ratchet mechanism on the Thimble in a position where it is easily reached by the fingers of the operator. The Ratchet, by always applying an equal amount of pressure, enables more uniform and accurate measurements to be taken when the tool is used by a number of persons, or by an unskilled operator. The end of the Thimble is provided with a speeder by means of which the screw can be rapidly run back and forth.

Price, each .................. (ZIARX) $14.00
Price of leather case ......... (WYDDA) 1.50
**No. 3 Micrometer Caliper**

With Depth Gauge Attachment
Patented February 20, 1894

This Micrometer is similar to the No. 2 described on page 66, with the addition of a Depth Gauge Attachment. This consists of a flat Base, and a steel Rod which can be inserted through the Anvil. Accurate measurements of slots, key-ways, and shoulders are obtained by means of the double graduation. When the Rod is used, read the lower row of figures on the Barrel and the outer row on the Thimble.

Price, each .................................................. $15.50
Price of leather case .................. (wylpr) 1.50

**Metric**

No. 3 M. Same as No. 3, for measurements by 1/100 mm. from 0 to 25 mm.
Price, each .................................................. (wylm) $15.50

---

**No. 3 R Micrometer Caliper**

With Depth Gauge Attachment and Ratchet Stop

This Micrometer is similar to the one described above with the addition of a ratchet mechanism on the Thimble in a position where it is easily reached by the fingers of the operator. The Ratchet, by always applying an equal amount of pressure, enables more uniform and accurate measurements to be taken when the tool is used by a number of different persons, or by an unskilled operator. The end of the Thimble is provided with a speeder by means of which the screw can be rapidly run back and forth.

Price, each .................................................. (wylkr) $16.00
Price of leather case .................. (wydda) 1.05

**Metric**

No. 3 MR. Same as No. 3 R, for measurements by 1/100 mm. from 0 to 25 mm.
Price, each .................................................. (wylmr) $16.00

---

**Micrometer Caliper No. 12**

With Depth Gauge Attachment

This Micrometer is graduated to read by 1/1000 inch from 0 to 1 inch. Decimal equivalents are etched on the drop-forged steel Frame. An eccentric Locking Device is provided to hold the Screw in any desired position. The Thimble is large and nicely knurled. Every necessary compensation for wear is provided.

Price, each .................................................. (wylup) $11.20
Price of leather case .................. (wydda) 1.50

**Metric**

No. 12 M. Same as No. 12, for measurements by 1/100 mm. from 0 to 25 mm.
Price, each .................................................. (wylml) $11.20

---

**Micrometer Caliper No. 13**

With Depth Gauge Attachment

This Micrometer is similar to the one described above with the addition of a Depth Gauge Attachment. This consists of a flat Base and steel Rod which is inserted through the Anvil. Accurate depth measurements are obtained by means of the double graduations, reading the lower row of figures on the Barrel and the outer row on the Thimble.

Price, each .................................................. (wylmr) $15.20
Price of leather case .................. (wydda) 1.50

**Metric**

No. 13 M. Same as No. 13, for measurements by 1/100 mm. from 0 to 25 mm.
Price, each .................................................. (wylm) $15.20
Micrometer Caliper

No. 155

This Micrometer is graduated to read by 1/1000 inch from 0 to 1 inch. Decimal equivalents are stamped on the drop-forged steel Frame. It has a large square end Thimble, nicely knurled. All necessary compensation for wear is provided.

Price, each 

(TEPTO) $10.00

Price of leather case 

(WYDDA) 1.50

Metric

No. 155 M. Same as No. 155, for measurements by 1/100 mm. from 0 to 25 mm.

Price, each 

(YEPH) $9.00

Two-inch Micrometer Caliper

No. 20

This Micrometer is graduated to read by 1/1000 inch from 1 to 2 inches, either lengths or diameters. Decimal equivalents are etched on the Frame which is drop-forged from a solid steel bar. An eccentric Locking Device is provided to hold the Screw in any desired position. Every necessary compensation for wear is provided.

Price, each 

(WYUFK) $12.50

Price of leather case 

(WYUSD) 2.00

No. 20 M. For measurements by 1/100 mm. from 25 mm. to 50 mm.

Price, each 

(WYUCN) $12.50

Micrometer Caliper

No. 156

This Micrometer is graduated to read by 1/1000 inch from 0 to 1 inch. Although its price is moderate, its accuracy is guaranteed. It has a large square end Thimble, well knurled. Frame is drop-forged steel, nicely finished. Every necessary compensation for wear is provided.

Price, each 

(YEPID) $7.50

Price of leather case 

(WYDDA) 1.50

Two-inch Micrometer Caliper

With Ratchet Stop

No. 20 R

This Micrometer is similar to the one described above with the addition of a ratchet mechanism on the Thimble in a position where it is easily reached by the fingers of the operator. The end of the Thimble is provided with a speeder by means of which the screw can be rapidly run back and forth.

Price, each 

(YEUM) $13.20

Price of leather case 

(WYUSD) 2.00

No. 20 MR. For measurements by 1/100 mm. from 25 mm. to 50 mm.

Price, each 

(WYUFT) $13.20
No. 21 Three-inch Micrometer Caliper

This Micrometer is graduated to read by 1/1000 inch from 2 to 3 inches, either lengths or diameters. The Frame is drop-forged from a solid steel bar and is of such a size that it has great strength and rigidity without undue weight. An eccentric Locking Device is provided to hold the Screw in any desired position. Every necessary compensation for wear is provided.

Price, each ........................................... (wtyxv) $12.00
Price of leather case ............................... (wtyxv) 3.60

No. 21M. For measurements by 1/100 mm. from 50 mm. to 75 mm.
Price, each ........................................... (wtyxk) $12.00

Three-inch Micrometer Calipers

These Micrometer Calipers are provided with extra Anvils enabling them to make a greater range of measurements. Each Anvil is carefully hardened and provided with special means of adjustment. They are quickly and easily adjusted in the Frame.

No. 14. With three Anvils, for measurements by 1/1000 inch from 0 to 3 inches.
Price, each ........................................... (wynor) $23.00
Price of leather case ................................ (wynro) 3.60

No. 14R. Same as above, but with Ratchet Stop.
Price, each ........................................... (wynox) $23.50
Price of leather case ................................ (wynro) 3.60

No. 141. With two Anvils, for measurements by 1/100 inch from 1 to 3 inches.
Price, each ........................................... (wynro) $22.00
Price of leather case ............................... (wynro) 3.60

No. 14M. With three Anvils, for measurements by 1/100 mm. from 0 to 75 mm.
Price, each ........................................... (wypk) $23.00

No. 14MR. Same as above, but with Ratchet Stop.
Price, each ........................................... (wypk) $23.50
No. 141M. With two Anvils, for measurements by 1/100 mm. from 25 to 75 mm.
Price, each ........................................... (yroc) $22.00

No. 22 Four-inch Micrometer Caliper

This Micrometer has an I section Frame which gives strength and rigidity without adding too much to the weight. It is graduated to read by 1/1000 inch from 3 to 4 inches, either lengths or diameters. An eccentric Locking Device is provided to hold the Screw in any desired position. It is provided with every necessary adjustment to compensate for wear.

Price, each ........................................... (wtyv) $13.00
Price of leather case ............................... (wtyv) 4.20

No. 22 M. For measurements by 1/100 mm. from 75 mm. to 100 mm.
Price, each ........................................... (wtyv) $13.00

No. 23 Five-inch Micrometer Caliper

This Micrometer is similar in design and construction to the one shown above. It is graduated to read by 1/1000 inch from 4 to 5 inches, either lengths or diameters.

Price of leather case ............................... (wvzo) $14.25

No. 23 M. For measurements by 1/100 mm. from 100 mm. to 125 mm.
Price, each ........................................... (wvz) $14.25

No. 24 Six-inch Micrometer Caliper

This Micrometer has an I section Frame of drop-forged steel. It is graduated to read by 1/1000 inch from 5 to 6 inches, either lengths or diameters.

Price, each ........................................... (wypk) $15.50
Price of leather case ............................... (wypk) 5.00

No. 24 M. For measurements by 1/100 mm. from 125 to 150 mm.
Price, each ........................................... (wypk) $15.50
Six-inch Micrometer Calipers

These Micrometer Calipers are provided with extra Anvils enabling them to make a greater range of measurements. Each Anvil is carefully hardened and provided with special means of adjustment.

They are quickly and easily adjusted in the Frame.

No. 15. With three Anvils, for measurements by 1/1000 inch from 3 to 6 inches.
Price, each .................. [WYOD] $23.50
Price of leather case ....... [WYPK] 5.00

Metric
No. 15 M. With three Anvils, for measurements by 1/100 mm. from 75 to 150 mm.
Price, each .................. [WYPF] $23.50

Six-inch Micrometer Calipers

These Micrometer Calipers are provided with extra Anvils enabling them to make a greater range of measurements. Each Anvil is carefully hardened and provided with special means of adjustment.

They are quickly and easily adjusted in the Frame.

No. 622. With four Anvils, for measurements by 1/1000 inch from 2 to 6 inches.
Price, each .................. [YUP0] $24.00
Price of leather case ....... [YUPF] 5.00

NEW TOOL
No. 622 R. Same as above, but with Ratchet Stop.
Price, each .................. [YUP2] $24.50
Price of leather case ....... [YUPF] 5.00

Metric
No. 622 M. With four Anvils, for measurements by 1/100 mm. from 50 to 150 mm.
Price, each .................. [YUFY] $24.00

NEW TOOL
No. 622 MR. Same as above, but with Ratchet Stop.
Price, each .................. [YUTF] $24.50

Inside Micrometer

No. 618
Patented May 17, 1921

This Inside Micrometer, which makes all inside measurements by 1/1000 inch from 2 to 6 inches, possesses many special features which will commend it to any one who has ever used such a tool.

The lead screw is accurately made and has a ½-inch run. Four measuring rods are furnished, and also a hardened steel collar ½ inch in length, which can be slipped over any rod between the shoulder and the chuck. A lower row of figures is graduated on the barrel from which the measurement can be read directly, when this collar is in use, without the necessity of making allowances for the length of the collar.

The correctness of the measuring capacity and the distances between the anvils are insured by the shoulder on each rod which comes to a positive seat against the end of the chuck. This does away with the possibility of dirt collecting inside of the chuck and preventing the rods from seating properly. Wear of the rods may be compensated for by loosening the binding nut and adjusting the hardened steel anvil in the end of each rod.

Each Micrometer is furnished with a long handle for use in places that cannot be reached with the hand. Extra rods not in use are kept inside of this hollow handle where they are always readily accessible and are protected from dirt or damage.

Price, each, complete with handle, rods and collar .......... [YUFZ] $12.00
Price of leather case ........................................... [YUFZ] 2.00
These Micrometer Gauges possess a number of special features not found in other tools of this character. Particular attention is called to the fact that the screws of these tools, which have the same high degree of accuracy as in all our other Micrometers, have a full ONE INCH RUN, which greatly facilitates their use on large work.

The correctness of the measuring capacity of these tools, and the distance from one anvil to the other, are governed by the ring on the measuring rod which comes to a positive seat against the end of the chuck. This does away with the possibility of dirt collecting inside the chuck and preventing the rods from seating properly. Wear of the rods can be compensated for by loosening the binding nut and adjusting the hardened steel anvil in the end of the rod.

These Micrometers are furnished with various assortments of rods for measuring different lengths and each one has a small ring in which the Micrometer may be set when used as a height gauge.

No. 10. For measurements by 1/1000 inch from 3 to 7 inches.
Price, each .................................................. (WYKJ) $11.50
Price of leather case ........................................ (WYHL) 2.00

No. 17. For measurements by 1/1000 inch from 3 to 10 inches.
Price, each .................................................. (WYUX) $14.00
Price of leather case ........................................ (WYWO) 2.60

No. 18. For measurements by 1/1000 inch from 10 to 18 inches.
Price, each .................................................. (WYTOY) $15.50
Price of leather case ........................................ (WYUS) 3.30

No. 19. For measurements by 1/1000 inch from 3 to 18 inches.
Price, each .................................................. (WYTO) $24.00
Price of leather case ........................................ (WYUG) 3.30

Special combinations of any length furnished to order.

This Micrometer measures from 0 to 6 inches by 1/1000, and diameters up to 2½ inches. Three Standard Plugs—one, two, and three inch—are placed in the tubular beam of the frame, which is slotted to allow a key fastened to the traveling head to come in contact with the ends of the Standards. This enables setting the Traveler, which carries the Micrometer Head, at any even inch from 0 to 6. The Standards not in use are placed to the right of the key, as illustrated. The Test Screw at the extreme right is turned down tight so that the 0 mark on it and the frame coincide.

The Micrometer Head, Anvil and Locking Device are exactly the same as in our other Micrometers.

No. 6 M. For all measurements from 0 to 15 cm.
Price, each .................................................. (WYDQ) $55.00
Price of leather case ........................................ (WYDL) 4.00

No. 563 Standards

These Standards are made of tool steel, hardened and ground. The ends are lapped parallel, which makes them easier to use in setting or testing a Micrometer, and more accurate than when lapped spherical. The rods are provided with hard rubber holders in order that they may not be affected by the heat of the hand. These holders are octagon in shape so that they will not roll.

One inch and 25 mm. standards are round discs; all other sizes are ¼-inch rods with rubber holders.

<table>
<thead>
<tr>
<th>English</th>
<th>Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-inch disc</td>
<td>(YUZU) $1.75</td>
</tr>
<tr>
<td>2-inch rod</td>
<td>(YUKY) 2.50</td>
</tr>
<tr>
<td>3-inch rod</td>
<td>(YUKI) 2.75</td>
</tr>
<tr>
<td>4-inch rod</td>
<td>(YUKA) 3.00</td>
</tr>
<tr>
<td>5-inch rod</td>
<td>(YUKY) 3.50</td>
</tr>
<tr>
<td>6-inch rod</td>
<td>(YUKP) 4.00</td>
</tr>
</tbody>
</table>

Each standard packed in a separate pasteboard box.
No. 31 Micrometer Depth Gauge

This Depth Gauge is designed to make accurate measurements of the depth of holes, slots, shoulders, and projections of any distance from 0 to 3 inches. The Spindle, which is adjusted to a very sensitive touch, has a full one-inch movement, and is graduated to read by 1/100 inch.

Each Depth Gauge is furnished with three Measuring Rods with hardened ends, carrying an adjusting device to compensate for wear. The rods are inserted through a hole in the measuring screw by removing the knurled End Nut of the Spindle. They are brought to a positive bearing against a finished seat on the end of the Screw. When the Nut is screwed down, this gives a positive end contact that does not depend on any device liable to be lost or worn, and without rods projecting above the top of the Thimble.

The Base is 2½ inches long, ½ inch wide, hardened, ground and accurately hand lapped at right angles to the rod.

Price, each $10.00
Price of leather case $2.00

No. 31 M. For measurements by 1/100 mm. from 0 to 75 mm.
Price, each $11.00
Extra Set of 3 Rods for measurements 3 to 6 inches $3.50
Extra Set of 6 Rods for measurements 6 to 12 inches 10.00

Micrometer Depth Gauge

With Ratchet Stop
No. 31 R

This Depth Gauge is similar to the one described above with the addition of a ratchet mechanism, which is particularly useful on a tool of this character where a very delicate touch is essential. The Ratchet is operated by a ring placed in a position on the Thimble where it is convenient to the fingers of the operator. It is provided with three Measuring Rods, and graduated to read by 1/100 inch from 0 to 3 inches.

Price, each $11.00
Price of leather case $2.00

No. 31 MR. For measurements by 1/100 mm. from 0 to 75 mm.
Price, each $11.00

Micrometer Depth Gauge

No. 32

This Depth Gauge is exactly the same as our No. 31 shown on the opposite page, except for the base, which is 4 inches long instead of 2½ inches.

Each Gauge is furnished with three measuring rods, giving a capacity of from 0 to 3 inches.
Price, each $12.00
Price of leather case, 2.40

For prices of extra length rods, see opposite page.

Screw Thread Micrometers

These Micrometers will measure the actual Wall Size of U.S. or V-threads on screws, taps, or thread gauges. The Spindle Point measures all pitches, but the Anvil is limited to its capacity, being correct for only a few pitches.

One Inch

No. 33. For 8 to 13 Pitch $14.25
No. 33A. For 14 to 20 Pitch $14.25
No. 33B. For 22 to 30 Pitch $14.25
No. 33C. For 32 to 40 Pitch $14.25

Two Inch

No. 34. For 4½ to 7 Pitch $18.25

Metric

No. 32 M. For measurements by 1/100 mm. from 0 to 75 mm.
Price, each $12.00
No. 38 Micrometer Head

For use on special gauges and machines where close measurements are required. This is the same carefully manufactured and accurate head that is used on our No. 2 Micrometer.

Price, each .................................................. $6.00

Micrometer Sets

We are in a position to make up any Sets of one to three inch Micrometers, desired by our customers, in velvet-lined leather cases.

We carry in stock two sizes of cases, one to hold any one, two, and three inch Micrometer Calipers; the other to hold the three Micrometer Calipers and a No. 31 or 31 R Micrometer Depth Gauge.

Any of our Micrometers will fit these cases, so that each user can select exactly the assortment that he prefers.

No. 586. For One, Two, and Three Inch Micrometers.

Price of case only ........................................... $5.00

No. 587. For One, Two, and Three Inch Micrometers and Micrometer Depth Gauge.

Price of case only ........................................... $6.50

Special Cases can be made up to order to contain other assortments.

No. 135 Screw Pitch Gauge

This Gauge has 22 Pitches for V-threads, as follows: 9, 10, 11, 11½, 12, 13, 14, 15, 16, 18, 20, 22, 24, 26, 27, 28, 30, 32, 34, 36, 38, 40. Length of Leaves, 1 inch.

Price, each .................................................. $1.30

Packed one in a pasteboard box, 100 boxes in a carton.

No. 136 Metric Screw Pitch Gauge

This Screw Pitch Gauge is similar to the one above, but has 20 Pitches, and instead of giving the number of threads to the inch, this Gauge gives the distance from center to center of teeth in millimeters. The Leaves are as follows: .50, .60, .70, .75, .80, .90, 1.00, 1.10, 1.20, 1.25, 1.30, 1.40, 1.50, 1.60, 1.70, 1.75, 1.80, 1.90, 2.00, 2.50 mm. Length of Leaves, 1 inch.

Price, each .................................................. $1.30

Packed one in a pasteboard box, 100 boxes in a carton.

No. 698 Metric Screw Pitch Gauge

Same as No. 136 above, but with 28 Pitches as follows: .25, .30, .35, .40, .45, .50, .55, .60, .65, .70, .75, .80, .85, .90, 1.00, 1.10, 1.20, 1.25, 1.30, 1.40, 1.50, 1.60, 1.70, 1.75, 1.80, 1.90, 2.00, 2.50 mm. Length of Leaves, 1 inch.

Price, each .................................................. $1.50
Whitworth Screw Pitch Gauge
No. 137

This Gauge is larger than those previously shown; it has 26
Pitches made on 55° Whitworth angles, as follows: 4, 4½, 5, 6, 7,
8, 9, 10, 11, 12, 13, 14, 16, 18, 19, 20, 22, 24, 25, 26, 28, 30, 32, 40,
48, 60. Length of Leaves, 1½ inches.
Price, each ........................................ (YEDAI) $1.60
Packed one in a pasteboard box, 100 boxes in a carton.

Whitworth Screw Pitch Gauge
No. 138

This Gauge is the same size as those shown on the preceding
page, but has 22 Pitches made on 55° Whitworth angles, as follows:
7, 8, 9, 10, 11, 12, 13, 14, 16, 18, 19, 20, 22, 24, 25, 26, 28, 30, 32,
40, 48, 60. Length of Leaves, 1 inch.
Price, each ........................................ (YEDRE) $1.30
Packed one in a pasteboard box, 100 boxes in a carton.

Screw Pitch Gauge
No. 437

This Gauge has 24 Pitches for V-threads, as follows: 4, 4½,
5, 5½, 6, 7, 8, 9, 10, 11, 11½, 12, 13, 14, 15, 16, 18, 20, 22, 24, 26,
27, 28, 30. Length of Leaves, 1⅛ inches.
Price, each ........................................ (YOLYN) $1.65
Packed one in a pasteboard box, 100 boxes in a carton.

Screw Pitch Gauge
No. 436

This Gauge has 30° Pitches for V-threads, as follows: 4, 4½,
5, 5½, 6, 7, 8, 9, 10, 11, 11½, 12, 13, 14, 15, 16, 18, 20, 22, 24, 26,
27, 28, 30, 32, 34, 36, 38, 40, 42. Length of Leaves, 1¾ inches.
Price, each ........................................ (YOLYO) $1.90
Packed one in a pasteboard box, 100 boxes in a carton.
**International Screw Pitch Gauge**

No. 446

This Gauge has 17 Pitches and one Center Gauge Leaf. The Pitches, which are for the French International System, show both the Pitch and the diameter of bolt. Pitches are as follows: 0.5, 0.75, 1, 1.25, 1.5, 1.75, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7 mm. Length of Leaves, 1⅛ inches.

Price, each (Yonek) $1.35

Packed one in a pasteboard box, 50 boxes in a carton.

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**Metric French System Screw Pitch Gauge**

No. 447

This Gauge has 22 Pitches of the Metric French System, as follows: 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7, 7.5, 8, 8.5, 9, 9.5, 10, 10.5, 11, 11.5 mm. Length of Leaves, 1⅛ inches.

Price, each (Yonek) $1.90

Packed one in a pasteboard box, 50 boxes in a carton.

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**U. S. S. Screw Pitch Gauge**

No. 448

This Gauge has 25 Pitches and a Center Gauge Leaf. The Pitches are for United States Standard Threads, as follows: 2, 2½, 2, 2½, 2, 2½, 3, 3½, 4, 4½, 5, 5½, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 20. Length of Leaves, 1⅛ inches.

Price, each (Yonek) $2.10

Packed one in a pasteboard box, 50 boxes in a carton.

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**Thickness or Feeler Gauge**

No. 735

This Gauge is especially designed for garages and service stations for measuring piston clearances in addition to the other uses for a gauge of this sort. The extra long leaves make it possible to accurately gauge piston clearances in any part of the cylinder. There are four Leaves, .004, .006, .008, and .010 thick, giving a number of thicknesses singly or in combination.

Leaves are 6 inches long by ¼ inch wide. They are held together by a screw and nut, which are readily removable for inserting or replacing new leaves. There is no case or sides to this gauge, the leaves not in use forming the handle. Each gauge furnished in a metal bound leather pocket.

Price, each (Earle) $1.30

Packed one in a pasteboard box.
Thickness or Feeler Gauge
No. 569

This Gauge is particularly adapted to the needs of the motor car owner and mechanic for use in setting valve tappets, timers, spark plug points, gauging shims, clearances, etc. It has six leaves,.002,.003,.004,.005,.010, and .015 inch thick, making possible in combination all thicknesses by thousandths from .002 to .039 (except .038).

Leaves are 2½ inches long by ½ inch wide. They are held together by a screw and nut, which are readily removable for inserting or replacing leaves. There is no case, or sides, for this Gauge; the leaves not in use forming the handle.

Price, each .......................................................... (YULWA) $0.70

Packed ten in a pasteboard box.

No. 569 Feeler Gauge Display

This Display consists of a very attractive counter card with substantial easel printed in red and black on stiff white stock. To it are metal stitched fourteen No. 569 Feeler Gauges illustrated and described above. A fifteenth Gauge is fanned out, showing the six different leaves.

Given a chance to demonstrate its worth, this Display has proven itself an unusually efficient salesman.

Height, 11½ inches. Width, 6½ inches.

Display, complete, with 15 Gauges mounted .................................................. (YUXNO) $10.50

Packed one in an envelope.

Weight, 6 ounces.

Thickness or Feeler Gauge
No. 359

Although these are primarily tool makers’ tools, this particular size is now widely used for setting automobile valves. It has 9 leaves of the following thicknesses: .0015,.002,.003,.004,.006,.008,.010,.012,.015 inch. These make possible in combination almost any thickness by half-thousandths from .0015 to .0015.

Length of leaf, 2½ inches. Width of leaf, ½ inch. Length over all, 2½ inches.

Price, each .......................................................... (YIZOF) $1.80

Packed one in a pasteboard box, 100 boxes in a carton.

Metric Thickness Gauge
No. 588

This Gauge has 9 Leaves of the following thicknesses: .04,.05,.06,.07,.08,.10,.15,.20,.25 mm. By using the various leaves in combination a great variety of different thicknesses is obtainable.

Length of leaf, 57 mm. Width of leaf, 13 mm. Length over all, 7 cm.

Price, each .......................................................... (YV94A) $1.80

Packed one in a pasteboard box, 100 boxes in a carton.
Thickness or Feeler Gauge
No. 480

This Gauge will be found very useful for comparing or testing thicknesses. It has 24 Leaves from .002 to .025 inch thick. The thickness in thousandths of an inch is marked on each leaf. By using different Leaves together a great variety of combinations is possible.

Length of Leaf, 2½ inches. Width of Leaf, ½ inch. Length over all, 2½ inches.

Price, each .................................. (Tordo) $3.00

Packed one in a pasteboard box, 100 boxes in a carton.

Metric Thickness Gauge
No. 590

This Gauge has 14 Leaves of the following thicknesses: .04, .05, .06, .07, .08, .10, .15, .20, .25, .30, .40, .50, .75, 1 mm. By using various Leaves in combination a great variety of different thicknesses is obtainable.

Length of Leaf, 57 mm. Width of Leaf, 13 mm. Length over all, 7 cm.

Price, each .................................. (Tordo) $3.00

Packed one in a pasteboard box, 100 boxes in a carton.

Thickness or Feeler Gauge
With Long Leaves
No. 1359

This Gauge is provided with long Leaves which can be used in many places to better advantage than the shorter ones. It has 9 Leaves of the following thicknesses: .002, .003, .004, .005, .006, .008, .010, .012, .015 inch. These make possible in combination a great variety of different thicknesses.

Length of Leaf, 4½ inches. Width of Leaf, ½ inch. Length over all, 5½ inches.

Price, each .................................. (Tordo) $2.60

Packed one in a pasteboard box, 50 boxes in a carton.

Metric Thickness Gauge
With Long Leaves.
No. 1588

This Gauge is provided with 9 long Leaves of the following thicknesses: .04, .05, .06, .07, .08, .10, .15, .20, .25 mm. By using the various Leaves in combination a great variety of different thicknesses is obtainable.

Length of Leaf, 11 cm. Width of Leaf, 13 mm. Length over all, 12 cm.

Price, each .................................. (Tordo) $2.60

Packed one in a pasteboard box, 50 boxes in a carton.
Improved Center Gauges

These Center Gauges are made from the very best quality of spring tempered crucible steel, graduated on our perfected Dividing Engines. They are accurately ground on all faces, and are lapped in the notches to a light tight fit with a standard. They have the highest possible finish and are guaranteed accurate.

No. 40. 60° angles. Graduated one corner each in 32ds, 24ths, 20ths, and 14ths. Thickness, 1/30 inch.
Price, each \( \$$0.65 \)

No. 41. Whitworth. 55° angles. Graduated one corner each in 32ds, 24ths, 20ths, and 14ths. Thickness, 1/30 inch.
Price, each \( \$$0.65 \)

No. 42. Metric. 60° angles. Graduated one corner ½ mm., 3 corners mm. Thickness, .8 mm.
Price, each \( \$$0.65 \)
Packed one half dozen in a pasteboard box.

Center Gauges

These Center Gauges are made from the very best quality of spring tempered crucible steel, graduated on our perfected Dividing Engines. They are accurately ground on all faces, and are lapped in the notches to a light tight fit with a standard. They have the highest possible finish and are guaranteed accurate.

No. 438. 60° angles. Graduated one corner each in 32ds, 24ths, 20ths, and 14ths. Thickness, 1/30 inch.
Price, each \( \$$0.60 \)

Price, each \( \$$0.60 \)

No. 440. Metric. 60° angles. Graduated one corner ½ mm., 3 corners mm. Thickness, .8 mm.
Price, each \( \$$0.60 \)
Packed one half dozen in a pasteboard box.
Adjustable Notch Center Gauge 60°
No. 44
(Tempered)

These Center Gauges are made of tempered crucible steel, and all angles are accurately ground. The notch, being made of separate pieces, insures a perfect angle to the extreme point. By tightening thumbscrew the Sliding Blade is held firmly in any position desired. It is the only center gauge that will fit any size inside threading tool. The Sliding Blade, together with the size of the tool, makes it very useful in many other ways. Graduated one corner each in 32nds, 24ths, 20ths, and 14ths.

Price, each ........................................ (YALE) $1.50
Packed one half dozen in a pasteboard box.

Adjustable Notch Center Gauge 55°
No. 45
(Tempered)

Graduated same as No. 44.

Price, each ........................................ (YALE) $1.50
Packed one half dozen in a pasteboard box.

Adjustable Notch Center Gauge 60°
No. 46
(Tempered)

Metric

Graduated one corner ½ mm., 3 corners mm.

Price, each ........................................ (YALE) $1.50
Packed one half dozen in a pasteboard box.

Surface Gauge
No. 115

This is a very useful and efficient Surface Gauge. The Base is solid and stands square on the work. The Spindle has a fine adjustment operated by turning the knurled headed nut on top of the Base; after setting, this can be locked firmly by means of the tightening screw shown in the illustration. The Scribe is made of carefully tempered tool steel, 4 inches long.

The Base is 2½ inches in diameter, finished in black enamel, with polished bearing surfaces. Height, 9 inches. Net weight, 1 pound.

Price, each ........................................ (YALE) $4.00
Packed one in a pasteboard box, 10½ x 3½ x 3 inches. Weight, 1½ pounds.

Surface Gauge
No. 116

This Surface Gauge is similar to the No. 115 shown above, except that it is larger and has a heavier base.

The Gauge has a fine adjustment of the Spindle and can be locked by the Tightening Screw. The Base is 3½ inches in diameter, finished in black enamel, with polished bearing surfaces. The Scribe is made of tempered tool steel, 7½ inches long. Height, 12 inches. Net weight, 1½ pounds.

Price, each ........................................ (YALE) $5.50
Packed one in a pasteboard box, 13½ x 4½ x 4 inches. Weight, 2½ pounds.
Surface Gauge
No. 755

This Gauge has a 5-inch spindle, a 5-inch scriber, and a hardened steel base measuring $2\frac{1}{2} \times 1\frac{1}{4} \times \frac{3}{4}$ inch. The Base is carefully ground for work on a surface plate and also grooved for use on cylindrical surfaces. Corrugated finger grips are milled in the sides. The base front is slotted so that the spindle can be turned down and the tool used as a Depth Gauge. Also by loosening the thumb screw of the binder head, the spindle can be dropped down through the slot and the marker on its end used as a Scratch Gauge.

The Scriber Head has a spring control which holds both scriber and head at any desired point while the thumb nut is being tightened. This feature, with the fine adjustment provided in the base, allows very quick, accurate settings.

Height, $5\frac{1}{2}$ inches. Weight, 11 ounces.

Price, each ........................................ (CATLE) $4.20
Packed one in a pasteboard box.

Surface Gauge
No. 56

This Gauge is simple in construction, but accurate. The face of the Base and the angles formed by the two lugs in front are milled and finished. The rest of the Base is finished in black enamel. The Standard is highly polished steel and the Scriber, best drill rod. It has a fine adjustment by means of the knurled nut and base screw. It can be used as a Depth Gauge and, for many cases, makes a useful Scratch Gauge. Spindle is 8 inches long. Net weight, $\frac{1}{2}$ pound.

Price, each ........................................ (YAGOE) $3.30
Packed one in a pasteboard box, $10\frac{1}{2} \times 3 \times 2\frac{1}{2}$ inches. Weight, 1 pound.

Universal Surface Gauge
With Micrometer Adjustment
No. 55

Designed especially to meet the demands of the most critical mechanics, its range of capabilities is almost limitless. It is at once within itself a Surface Gauge, Depth Gauge, Marking Gauge, Trammel Points, Set or Height Gauge. The small base of this gauge permits accurate work at close quarters otherwise impossible and at the same time decreases the weight and space occupied.

At whatever angle the standard is set, the adjustment of the scriber is always vertical when used as a Surface Gauge, or horizontal when used as a Marking Gauge. Adjustment is by means of a slide (with compensating take-up for any wear) fed by a screw graduated to read to .001 inch. This screw is parallel with one base face and at 90 degrees with the other, making a Micrometer Surface, Depth, or Height Gauge. By removing the standard and spindle from the base, and using the two-scribers with them, a most convenient set of Trammel Points is arranged. For low work remove the standard from base and use scriber in slide spindle. Has V-slot in one base for cylindrical work. Extra length standards (jointed for folding) can be furnished at small cost, so that circles of almost any diameter may be described to a nicety by means of the Micrometer Adjustment. Furnished as shown above, with two standards, 5 inches and 10 inches long, and two scribers. Net weight, 2$\frac{1}{4}$ pounds.

Price, each ........................................ (YAGOE) $13.20
Packed one in a pasteboard box, $10\frac{1}{2} \times 3 \times 2\frac{1}{2}$ inches. Weight, 2$\frac{1}{4}$ pounds.
Surface Gauge
No. 57

This large Surface Gauge with a solid Base is one of the best ever offered to mechanics for large or heavy duty, both on account of its range of work and its practical uses.

The Spindle has a movement of 180 degrees with a fine adjustment. After tightening the slide on the Spindle, close adjustment is made by turning the knurled head nut on the Screw through the long lever.

The tool can also be used as a Depth Gauge. By removing the Spindle and inserting the Scriber in the clamping stud it makes a satisfactory Scratch Gauge.

The angle milled on top of the base is of great convenience while working against a surface plate or planer bed. The Base is 4 3/4 inches, all finished in black enamel except the bearing surfaces which are polished.

Three 12-inch jointed standards, that can be screwed together for large work, are furnished with each tool. Net weight, 6 1/2 pounds.

Price, each ........................................... $1.75

Packed one in a pasteboard box, 13 1/2 x 4 3/4 x 4 inches. Weight 7 pounds.

Speed Indicator
No. 449

This Speed Indicator is provided with a double end spindle, with a handle that can be placed on either end. This enables the operator to take the speed of either right or left hand shafts without the use of any confusing double numbers on the dial. Both ends of the spindle are hardened.

The body of the tool is neatly finished in black. Spindle and handle are nicely polished. Two rubber points are furnished with each tool.

Price, each ........................................... $2.40
Price of leather case ................................ $1.50

Packed one in a pasteboard box, 4 1/2 x 2 1/2 x 3/4 inch. Weight, 6 ounces.

Speed Indicator
No. 387
Patented February 22, 1916

This Speed Indicator has two separate and distinct dials, one recording the units and another recording the hundreds up to one thousand. The dial for recording the hundreds is fitted with a friction ratchet mechanism so that it can instantly be set back to 0 by turning the knurled ring.

The spindle has a double end for taking either right or left hand shafts. Both ends of the spindle are hardened. The entire tool is fully polished and nickel plated. Two rubber points are furnished.

Price, each ........................................... $2.90
Price of leather case ................................ $1.50

Packed one in a pasteboard box, 4 1/2 x 2 1/2 x 1 inch. Weight, 6 ounces.
Extension Beam Trammels

No. 62

These Trammels move freely on a steel Beam that is flattened on one side. They are instantly fastened or released by rotating the knurled Handle part of a turn. Points are carefully hardened and tempered. Each set is furnished with one Beam 13 inches long.

Additional 13-inch Beam sections with couplings may be procured at any time.

Price, per set .......................................................... ( Такел ) $2.00
Packed one set in a pasteboard box, 14 1/2 x 1 x 3/4 inch. Weight, 6 ounces.
Price of extra beam section, 13-inch ........................... $0.50
Price, each coupling .................................................... .50

Parallel Dividers

No. 63

This tool has a Beam and Points made of the best quality drill rod. The Points are carefully tempered. The Beam will extend from 0 to 34 inches, or to describe a 7-inch circle. A Pump Center is furnished for use with holes of large diameter.

Price, each .......................................................... ( Такел ) $2.00
Packed in a pasteboard box, 4 1/2 x 1 1/2 x 3/4 inch. Weight, 3 ounces.

Precision Extension Steel Beam Trammels

No. 134

This tool consists of a polished steel Beam 16 inches long, flattened on one side, two movable Clamping Heads, and a pair of Dividers made of the best quality cast steel with hardened points. A fine adjustment is secured by rotating the divider points, which are made slightly eccentric.

Each Clamping Head has two knurled-headed Thumb Screws. The Divider Points pass through the Heads and are held lightly by a friction spring or locked fast by turning the screw. The other screw fastens the head securely to the Beam. This allows the Clamping Heads to be moved freely along the Beam without interfering with the adjustment of the Divider Points, a valuable feature that is not found on any other similar tool.

Please note that the Caliper Legs illustrated above are not regularly furnished with the tool, but may be obtained for a slight additional charge.

One Beam Section, with Divider Points ......................... ( Такел ) $3.00
Packed in a pasteboard box, 16 x 1 1/4 x 1 inch. Weight, 1/2 pound.

Extra Beams, 16-inch .................................................. $0.50
Couplings, each ......................................................... .50
Caliper Points, per pair ............................................. .75
Single Point Scriber
No. 58

Tempered cast steel, 4½ inches long, ⅛-inch diameter.
Price, each \(\text{(YAROC)}\) \$0.40
Packed one quarter dozen in a pasteboard box, 5½ x 1½ x ⅛ inch. Weight, 1½ ounces.

Double Point Scriber
No. 61

This tool has points of the best quality of cast steel correctly tempered. The Points are firmly fixed in the long knurled center that forms a satisfactory handle. Points can be removed from center for replacement if desired. Length, 6½ inches.
Price, each \(\text{(YAGIZ)}\) \$0.60
Packed one half dozen in a pasteboard box, 7 x 1½ x ⅛ inch. Weight, 5 ounces.

Tool Makers' Precision Scratch Gauge
No. 60

This tool has a marker of the best quality tool steel. It is a beveled scratch point, the only shape that can satisfactorily do the finest class of precision work, and be kept always at a point. The Sliding Head can be used with either side towards the point. One side has an angle milled in its edge so that it can be kept on a line level with the marker. Length of Rod, 5 inches. Width of Base, 1 inch.
Price, each \(\text{(YAWY)}\) \$1.50
Packed one in a pasteboard box, 5½ x ⅛ x 1⅛ inches. Weight, 2 ounces.

Scratch Gauge
No. 228

This tool has a beam nearly 7 inches long, graduated 6 inches of its length. The traveling Head is split so that it can be tightened in any desired position, without marring the graduations, by turning the binding ring. Beam is polished and nickel plated: other parts, white nickel plated. The marker is a formed cutter, the face of which can be ground and the cutter always kept sharp.
Price, each \(\text{(YEVER)}\) \$2.00
Packed one in a pasteboard box, 7½ x 1½ x 1½ inches. Weight, 6 ounces.

Precision V-Blocks or Bench Parallels

These Blocks are very useful for machinists and tool makers, as they are almost a necessity in doing many classes of fine work. They are made of steel, case hardened and accurately ground in the angle, on the Base, and one End.

<table>
<thead>
<tr>
<th>No.</th>
<th>Height</th>
<th>Width</th>
<th>Per Pair</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>1½</td>
<td>1½</td>
<td>(\text{(YAWTY)}) $5.00</td>
</tr>
<tr>
<td>101</td>
<td>2</td>
<td>2½</td>
<td>(\text{(YAWTY)}) $8.00</td>
</tr>
</tbody>
</table>

Packed one pair in a pasteboard box.

Precision Parallel Steel Clamps

These Clamps are made entirely of steel, case hardened, and nicely finished, and are designed especially for accurate work.

The larger sizes have pivot bearings for eliminating all frictional strain, and screw heads of equal diameter drilled for tightening bars.

<table>
<thead>
<tr>
<th>No.</th>
<th>Length</th>
<th>Opening</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>91</td>
<td>1 inch</td>
<td>½ inch</td>
<td>(\text{(YAUOP)}) $0.80</td>
</tr>
<tr>
<td>92</td>
<td>1½ inches</td>
<td>1 inch</td>
<td>(\text{(YAYAM)}) .90</td>
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<tr>
<td>93</td>
<td>2 inches</td>
<td>1½ inches</td>
<td>(\text{(YAVIP)}) 1.00</td>
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<tr>
<td>94</td>
<td>2½ inches</td>
<td>1½ inches</td>
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<tr>
<td>95</td>
<td>3 inches</td>
<td>2 inches</td>
<td>(\text{(YAVUN)}) 1.40</td>
</tr>
<tr>
<td>96</td>
<td>4 inches</td>
<td>2½ inches</td>
<td>(\text{(YAYUN)}) 1.60</td>
</tr>
</tbody>
</table>

Packed one pair (2 clamps like illustration) in a pasteboard box.
Machinists' Tool Kit
No. 597

This is a small and compact set of Machinists' Tools put up in a genuine leather case, lined with canvas. All of the tools are of the finest quality.

The following tools are contained in this set:

No. 135  Screw Pitch Gauge
No. 253  Semi-Flexible Steel Rule, 6 inch
No. 361  Combination Square
No. 438  Center Gauge

Size of case, 7½ x 4½ x 1½ inches. Net weight, 1½ pounds.

Price, each .................................... (Yupid) $10.00

Each set packed in a separate pasteboard box.

This set can also be furnished with tools of Metric Graduation, or with Whitworth Center and Screw Pitch Gauges, if so specified.

Machinists' Tool Kit
No. 598

This is a very complete and convenient set of Machinists' Tools put up in a handsome hardwood case. All of the tools are of the very highest quality and finest grade.

The following tools are contained in this set:

No. 2R  Ratchet Micrometer, 1 inch
No. 61  Double Point Scriber
No. 88  Tap Holder
No. 135  Screw Pitch Gauge
No. 253  Semi-Flexible Steel Rule, 6 inch
No. 361  Combination Square, 6 inch
No. 438  Center Gauge
No. 502  Outside Spring Calipers, 4 inch
No. 508  Inside Spring Calipers, 4 inch
No. 514  Spring Dividers, 4 inch
No. 515  Center Punch
No. 995  Center Punch

Size of case, 10½ x 7½ x 2 inches. Net weight, 3 pounds.

Price, each .................................... (Yupid) $22.50

Each set packed in a separate pasteboard box.

This set can also be furnished with tools of Metric Graduation, or with Whitworth Center and Screw Pitch Gauges, if so specified.
Adjustable Bench Table
No. 195

This little device will be found very convenient on a machinist's workbench. Its height can be varied from 4½ to 6½ inches and it is 5 inches in diameter. It has a turned and polished top, practically true, although we do not pretend that it is equal to a Surface Plate; in proportion to the price charged it represents equal value.

Price, each... (Yelke) $2.75

Weight, 3½ pounds.
Packed one in a pasteboard box, 7½ x 7½ x 3½ inches.

Tool Makers' Punch
No. 65

This little tool is of great convenience in laying out precision work, particularly in centering for fine drilling. It has a slot and a hole milled and drilled so that the Punch can be brought to the exact center and its setting verified; at the same time the Punch is always exactly perpendicular to the surface of the work, an absolute necessity for the finest class of work.

The tool is made entirely of steel, well finished. The Punch is made from the best quality cast steel, properly tempered.

Price, each... (Yaito) $2.40

Packed one in a box, 2½ x 1½ x 1½ inches. Weight, 2 ounces.

Double Centering Punch
No. 97

This tool was designed to facilitate the marking of holes directly opposite each other in round or square stock. This makes it particularly useful for laying out precision work for drilling from two sides. The use of this device insures accuracy and rapidity on a class of work that has previously caused much bother and delay.

A hole is first made by the Top Punch, then the work is reversed and the Bottom Punch is placed in the hole previously made by the Top Punch, where it is held by a spring. If another hole is now made by the Top Punch, the two will come directly opposite each other.

The V-Block is removable when it is desired to use the Punch on flat work.

This device will punch round stock up to 1 inch in diameter, and square stock, 1½ inches thick, 1½ inches from the edge.

Price, each... (Yawep) $8.50

Packed one in a pasteboard box, 4½ x 3 x 1½ inches. Weight, 1½ pounds.

Universal Bench Anvils

These little Anvils will be found very convenient and practical for use upon any tool maker's bench; they have planed and squared surfaces, milled grooves and slots; in fact, the faces of the tool are sufficiently accurate to admit of its being used as a surface plate for laying out small work.

No. 110. Size, 4½ x 2½ x 2½ inches. Price, each... (Yawee) $4.40

Weight, 2 pounds.

No. 111. Size, 6 x 3 x 3 inches. Price, each... (Yaker) 6.00

Weight, 5 pounds.
Hack-Saw Blades

All Hard Tungsten

TRADE MARK REGISTERED
U. S. PATENT OFFICE

We believe that our G Brand Hack-Saw Blades are the best that it is possible to manufacture. They are made from a special high grade of hot-rolled tungsten sheet steel, .025 inch thick, cut so that the length of the blade runs with the grain. The teeth are formed, sharpened, and set by our special processes which insure exceptionally fast cutting qualities.

Extreme care is used in tempering these Blades, which we endeavor to make as nearly perfect as possible. They are subjected to rigid inspection after the various operations of their manufacture; and their quality is being continually proven by careful and exhaustive tests. While many Blades are sold at much lower prices, we have never yet seen one that could equal this Brand in either speed or endurance.

The materials which we use, the workmen whom we employ, the special methods that we have devised, and the care that we exercise, all combine to make possible a standard of excellence known and recognized the world over.

The life of a Hack-Saw Blade and the speed with which it cuts depend largely upon the conditions under which the Blade is used, and the pitch of the teeth. For general work, such as cutting iron or steel rods or bars, Blades with 14 teeth to the inch should be used; for brass, heavy tubing, or pipe, Blades with 20 teeth to the inch; and for thin steel tubing, Blades of short lengths with 32 teeth to the inch.

A list of all G Brand Hack-Saw Blades will be found on the opposite page. Information about other styles and sizes of Hack-Saw Blades will be found on the following pages.

Standard length measurements of Hand Blades are taken from the center of one hole to the farther end of the Blade.

---

### REGULAR

<table>
<thead>
<tr>
<th>Width</th>
<th>Weight</th>
<th>Price per Gross</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 inch</td>
<td>( \frac{3}{4} ) inch</td>
<td>4 pounds (WYNE)</td>
</tr>
<tr>
<td>9 inch</td>
<td>( \frac{3}{4} ) inch</td>
<td>5 pounds (WYTS)</td>
</tr>
<tr>
<td>10 inch</td>
<td>( \frac{3}{4} ) inch</td>
<td>6 pounds (WYTH)</td>
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<tr>
<td>11 inch</td>
<td>( \frac{3}{4} ) inch</td>
<td>6( \frac{1}{4} ) pounds (WYTO)</td>
</tr>
<tr>
<td>12 inch</td>
<td>( \frac{3}{4} ) inch</td>
<td>7 pounds (WYSH)</td>
</tr>
<tr>
<td>13 inch</td>
<td>( \frac{3}{4} ) inch</td>
<td>7( \frac{1}{4} ) pounds (WYSR)</td>
</tr>
<tr>
<td>14 inch</td>
<td>( \frac{3}{4} ) inch</td>
<td>7( \frac{1}{4} ) pounds (WYRE)</td>
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</table>

### FINE

<table>
<thead>
<tr>
<th>Width</th>
<th>Weight</th>
<th>Price per Gross</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 inch</td>
<td>( \frac{3}{4} ) inch</td>
<td>4 pounds (WYVE)</td>
</tr>
<tr>
<td>9 inch</td>
<td>( \frac{3}{4} ) inch</td>
<td>5 pounds (WYAP)</td>
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<tr>
<td>10 inch</td>
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<td>6( \frac{1}{4} ) pounds (WYLH)</td>
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<td>6 pounds (WYPD)</td>
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<tr>
<td>12 inch</td>
<td>( \frac{3}{4} ) inch</td>
<td>6( \frac{1}{4} ) pounds (WYTF)</td>
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</table>

### EXTRA FINE

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>8 inch</td>
<td>( \frac{3}{4} ) inch</td>
<td>4 pounds (WYUR)</td>
</tr>
<tr>
<td>9 inch</td>
<td>( \frac{3}{4} ) inch</td>
<td>5 pounds (WYUD)</td>
</tr>
<tr>
<td>10 inch</td>
<td>( \frac{3}{4} ) inch</td>
<td>5( \frac{3}{4} ) pounds (WYMK)</td>
</tr>
<tr>
<td>12 inch</td>
<td>( \frac{3}{4} ) inch</td>
<td>6( \frac{1}{4} ) pounds (WYTV)</td>
</tr>
</tbody>
</table>

Packed one half gross in a pasteboard box.

The following quantities of Blades make a full case lot: 8 inch, 45 gross; 9 inch, 60 gross; 10, 11, and 12 inch, 25 gross.

Regular Blades, 14 teeth to the inch, will always be sent unless otherwise specified.
These Blades were placed on the market several years ago to meet the demand for a first class Hack-Saw Blade suitable for all-around work, that could be sold in competition with the many other brands of Blades now on the market. With our present equipment we can produce these Blades in large quantities and we endeavor to maintain, at all times, a large stock of Blades ready for shipment.

These Blades are made from a high grade of hot-rolled sheet steel, .025 inch thick, cut so that the length of the Blade runs with the grain. The teeth are formed, sharpened, and set, and the holes punched, by our own special labor-saving machinery. The shape of teeth and the even set are responsible for their cutting speed.

A method of hardening has been evolved that will turn out Blades of a uniform degree of quality, in quantities, and our methods of tempering insure evenly tempered Blades with lasting qualities. We are continually testing these Blades under actual shop conditions, requiring them to meet an exceptionally high standard and we know that it is an excellent Blade for all-around work and one that has no superior at its price.

The life of any Hack-Saw Blade and its cutting speed depend largely upon the conditions under which it is being used, the material being cut, and the pitch of the teeth. In order to obtain the best results, use a Blade with 14 teeth to the inch for cutting iron or steel rods and bars; 20 teeth to the inch, for pipe, tubing, or brass rod; 24 teeth to the inch, for light tubing or soft metals; 32 teeth to the inch, for thin steel sheets or tubing.

Standard length measurements of Hand Blades are taken from the center of one hole to the farther end of the Blade.
Trade Mark Registered  
U. S. Patent Office

For many kinds of work where a hand frame is used, a Blade is desired that will not break, even when subjected to severe twists and side strains. The Teeth, however, must be as hard as in any other Blade in order to insure its cutting qualities.

To meet this demand, we are making this line of Blades from the best hot rolled sheet steel with hardened teeth and back, but soft centers. The result is that we have produced a fast cutting serviceable Blade that will not break under ordinary usage.

14 teeth to the inch. For Iron or Steel.

<table>
<thead>
<tr>
<th>Width</th>
<th>Weight per Gross</th>
<th>Price per Gross</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 inch</td>
<td>1/8 inch</td>
<td>4 pounds</td>
</tr>
<tr>
<td>9 inch</td>
<td>1/8 inch</td>
<td>5 pounds</td>
</tr>
<tr>
<td>10 inch</td>
<td>1/8 inch</td>
<td>5 1/2 pounds</td>
</tr>
<tr>
<td>11 inch</td>
<td>1/8 inch</td>
<td>6 pounds</td>
</tr>
<tr>
<td>12 inch</td>
<td>1/8 inch</td>
<td>6 1/2 pounds</td>
</tr>
</tbody>
</table>

20 teeth to the inch. For Brass, Tubing, or Pipe.

<table>
<thead>
<tr>
<th>Width</th>
<th>Weight per Gross</th>
<th>Price per Gross</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 inch</td>
<td>1/8 inch</td>
<td>4 pounds</td>
</tr>
<tr>
<td>9 inch</td>
<td>1/8 inch</td>
<td>5 pounds</td>
</tr>
<tr>
<td>10 inch</td>
<td>1/8 inch</td>
<td>5 1/2 pounds</td>
</tr>
<tr>
<td>11 inch</td>
<td>1/8 inch</td>
<td>6 pounds</td>
</tr>
<tr>
<td>12 inch</td>
<td>1/8 inch</td>
<td>6 1/2 pounds</td>
</tr>
</tbody>
</table>

24 teeth to the inch. For Soft Metals or Light Tubing.

<table>
<thead>
<tr>
<th>Width</th>
<th>Weight per Gross</th>
<th>Price per Gross</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 inch</td>
<td>1/8 inch</td>
<td>4 pounds</td>
</tr>
<tr>
<td>9 inch</td>
<td>1/8 inch</td>
<td>5 pounds</td>
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<tr>
<td>10 inch</td>
<td>1/8 inch</td>
<td>5 1/2 pounds</td>
</tr>
<tr>
<td>11 inch</td>
<td>1/8 inch</td>
<td>6 pounds</td>
</tr>
<tr>
<td>12 inch</td>
<td>1/8 inch</td>
<td>6 1/2 pounds</td>
</tr>
</tbody>
</table>

32 teeth to the inch. For Thin Tubing.

<table>
<thead>
<tr>
<th>Width</th>
<th>Weight per Gross</th>
<th>Price per Gross</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 inch</td>
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<td>4 pounds</td>
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<tr>
<td>9 inch</td>
<td>1/8 inch</td>
<td>5 pounds</td>
</tr>
<tr>
<td>10 inch</td>
<td>1/8 inch</td>
<td>5 1/2 pounds</td>
</tr>
<tr>
<td>12 inch</td>
<td>1/8 inch</td>
<td>6 pounds</td>
</tr>
</tbody>
</table>

Packed one half gross in a pasteboard box.

Regular Blades, 14 teeth to the inch, always sent unless otherwise specified.

Circular Saws
No. 70

For Metal, Bakelite, Fibre, Bone, or Ivory

These moderately priced Circular Saws are most satisfactory for cutting copper, brass, silver, bakelite, fibre, ivory, bone, and similar materials.

Exceptional quality is obtained by use of the highest grade of hot rolled sheet steel. The teeth are carefully cut and oil tempered, making them well suited for screw slotting or cutting shallow slots in iron or steel.

These saws are made in six sizes and thicknesses as follows:

<table>
<thead>
<tr>
<th>Thickness</th>
<th>1 inch</th>
<th>1 1/4 inch</th>
<th>1 1/2 inch</th>
<th>2 inch</th>
<th>2 1/4 inch</th>
<th>3 inch</th>
</tr>
</thead>
<tbody>
<tr>
<td>.016 inch</td>
<td>$2.20</td>
<td>$2.60</td>
<td>$2.80</td>
<td>$3.60</td>
<td>$4.40</td>
<td>$5.50</td>
</tr>
<tr>
<td>.021 inch</td>
<td>$2.20</td>
<td>$2.60</td>
<td>$2.80</td>
<td>$3.60</td>
<td>$4.40</td>
<td>$5.50</td>
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<tr>
<td>.028 inch</td>
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<td>$2.80</td>
<td>$3.60</td>
<td>$4.40</td>
<td>$5.50</td>
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<tr>
<td>.032 inch</td>
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<td>$2.60</td>
<td>$2.80</td>
<td>$3.60</td>
<td>$4.40</td>
<td>$5.50</td>
</tr>
<tr>
<td>.040 inch</td>
<td>$2.20</td>
<td>$2.60</td>
<td>$2.80</td>
<td>$3.60</td>
<td>$4.40</td>
<td>$5.50</td>
</tr>
<tr>
<td>.050 inch</td>
<td>$2.20</td>
<td>$2.60</td>
<td>$2.80</td>
<td>$3.60</td>
<td>$4.40</td>
<td>$5.50</td>
</tr>
</tbody>
</table>

Packed one dozen in a box.
Heavy Hack-Saw Blades
No. 300
.035 Inch Thick

These Blades are intended for heavy work or for use in power machines. They are made of special hot-rolled tungsten steel ½ inch wide, No. 21 Gauge (about .035 inch thick). The teeth are shaped and set for fast cutting. Blades are tempered all over to give long service.

The G stamped on these Blades is proof of their quality.

Lengths are from center of hole to center of hole, except in the case of the 14 and 17 inch blades, which are 13½ and 16½ inches from center of hole to center of hole respectively.

COARSE. 12 teeth to the inch.

<table>
<thead>
<tr>
<th>Width</th>
<th>Weight per Gross</th>
<th>Price per Gross</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 inch</td>
<td>14 pounds</td>
<td>$17.00</td>
</tr>
<tr>
<td>14 inch</td>
<td>16 pounds</td>
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</tr>
<tr>
<td>16 inch</td>
<td>18 pounds</td>
<td>$21.00</td>
</tr>
<tr>
<td>17 inch</td>
<td>19 pounds</td>
<td>$23.00</td>
</tr>
</tbody>
</table>

Packed one half gross in a pasteboard box.

Extra Heavy Hack-Saw Blades
No. 500
.050 Inch Thick

These Blades are intended for heavy work in power machines. They are made of special hot-rolled tungsten steel ½ inch wide, No. 18 Gauge (about .050 inch thick). The teeth are shaped and set for fast cutting. Blades are tempered all over to give long service.

The G stamped on these Blades is proof of their quality.

Lengths are from center of hole to center of hole, except in the case of the 14 and 17 inch blades, which are 13½ and 16½ inches from center of hole to center of hole respectively.

COARSE. 10 teeth to the inch.

<table>
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<tr>
<th>Width</th>
<th>Weight per Gross</th>
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</tr>
</thead>
<tbody>
<tr>
<td>12 inch</td>
<td>1 inch</td>
<td>25 pounds</td>
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<tr>
<td>14 inch</td>
<td>1 inch</td>
<td>28 pounds</td>
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<tr>
<td>16 inch</td>
<td>1 inch</td>
<td>33 pounds</td>
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<tr>
<td>17 inch</td>
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<td>34 pounds</td>
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<tr>
<td>18 inch</td>
<td>1 inch</td>
<td>35 pounds</td>
</tr>
<tr>
<td>20 inch</td>
<td>1 inch</td>
<td>40 pounds</td>
</tr>
</tbody>
</table>

Packed one half gross in a pasteboard box.

Extra Heavy Hack-Saw Blades
No. 800
.065 Inch Thick

These Blades are designed to stand up under the very heaviest work. They are made of special hot-rolled tungsten steel 1 inch wide, No. 16 Gauge (about .065 inch thick). The teeth are shaped and set for fast cutting. Blades are tempered all over to give long service. Lengths are from center of hole to center of hole, except in the case of the 14 and 17 inch blades.

COARSE. 8 teeth to the inch.

<table>
<thead>
<tr>
<th>Width</th>
<th>Weight per Gross</th>
<th>Price per Gross</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 inch</td>
<td>1 inch</td>
<td>35 pounds</td>
</tr>
<tr>
<td>17 inch</td>
<td>1 inch</td>
<td>43 pounds</td>
</tr>
<tr>
<td>18 inch</td>
<td>1 inch</td>
<td>46 pounds</td>
</tr>
<tr>
<td>20 inch</td>
<td>1 inch</td>
<td>51 pounds</td>
</tr>
<tr>
<td>24 inch</td>
<td>1 inch</td>
<td>63 pounds</td>
</tr>
</tbody>
</table>

Packed one quarter gross in a pasteboard box.

We will be glad to quote prices on any size of Blades not listed here up to 24 x 1½ x .065 inch.
No. 1 Bench Hack Saw

This machine will be found very useful in any shop where power is not available. By its use, even an unskilled operator can cut metal rods or tubing rapidly and smoothly without breaking Blades. The Vise attached to the Bed can be set to saw at any desired angle.

Made entirely of iron and steel, this machine is capable of long service under hard use. Iron parts are all finished in red and black enamel. Either 8-inch or 9-inch Blades can be used.


Price, complete, with one 9-inch Blade. (wybro) $10.00

Packed one in a wooden case, 18½ x 11 x 5 inches. Shipping weight, 16 pounds.

No. 237 Keyhole Hack Saw

Every one who has occasion to use a Keyhole Saw will appreciate the convenience of a tool like this that will not be damaged by nails. The Handle is finished in black enamel; it is light and fits the hand well. The Blade is made of the same materials and with just as much care as our regular Hack-Saw Blades.

Length over all, 9½ inches. Cutting edge, 5½ inches. Net weight, 2 ounces.

Price, each. (wyta) $0.45

Packed one half dozen in a box, 10½ x 3 x 1½ inches. Weight, 1½ pounds.

Extra Keyhole Hack-Saw Blades, per dozen. (wybl) $2.20

Adjustable Hack-Saw Frames

These Hack-Saw Frames are made entirely of steel, except the handle, which is polished hard wood with a mahogany finish. They are very serviceable and are adjustable from 8 to 12 inches, and so designed that the blade can be faced in four different ways. Proper tension on the blade is secured by turning the handle.

One 8-inch Blade furnished with each Frame.


No. 1. Bright Nickel Finish. (wybco) $2.40
No. 2. White Nickel Finish. (wygcd) 1.85

Same as No. 1 above, except finish.

One 8-inch Blade furnished with each Frame. Price, Each

No. 02. Natural Steel. (wybco) $1.65

The above Frames packed one in a pasteboard box, 11 x 3½ x 1½ inches. Shipping weight, 1 pound.

Solid Hack-Saw Frames

These Frames are made of cast iron, nicely black enameled. Handles are polished hard wood with a mahogany finish. Blades can be faced four ways.

One 8-inch Blade furnished with each Frame.

Depth of throat, 2½ inches. Price, Each.

No. 4. For 8-inch Blades. (wybr) $0.80
No. 5. For 9-inch Blades. (wygr) .90
No. 6. For 10-inch Blades. (wyob) 1.00
Solid Hack-Saw Frames

This Frame is made of solid steel fully polished and nickel plated, making a very handsome tool. The proper tension on the Blade is obtained by turning the polished hardwood handle. The Blade can be faced four ways. For 8-inch Blades only, depth of throat, 2 1/2 inches. Net weight, 11 ounces.

One 8-inch Blade furnished with each Frame.
No. 3. Price, each ........................................ (wycu) $1.55
Packed one in a pasteboard box, 11 x 3 1/2 x 14 inches. Weight, 15 ounces.

These Frames are made of solid steel, natural finish. They have polished hardwood Handles. The proper tension on the Blade is obtained by turning the handle. Blade can be faced four ways. Depth of throat, 2 1/2 inches. No Blades furnished.

No. 8. For 8-inch Blade ................................ (wylho) $0.90
No. 9. For 9-inch Blade ................................ (wlycf) 1.00
No. 10. For 10-inch Blade .............................. (wyjaj) 1.10
No. 11. For 11-inch Blade .............................. (wykel) 1.20
No. 12. For 12-inch Blade .............................. (wryko) 1.30
Packed one in a pasteboard box.

Hack-Saw Sets
With Frame and 12 Blades

These Sets, consisting of a solid steel, natural finish Frame and one dozen of our best Hack-Saw Blades to fit, have proved popular with both the trade and the consumer.

The Frames used are our Nos. 8, 9, 10, 11, and 12 illustrated and described above.

No. 812. 8-inch Frame and 12 Blades .............. (zebje) $1.50
No. 912. 9-inch Frame and 12 Blades .............. (zicfu) 1.70
No. 1012. 10-inch Frame and 12 Blades .......... (zirho) 1.90
No. 1112. 11-inch Frame and 12 Blades .......... (zisbo) 2.10
No. 1212. 12-inch Frame and 12 Blades .......... (zisbo) 2.20
Packed one set in a pasteboard box.

Adjustable Hack-Saw Frames
With Pistol Grip

These Frames are adjustable from 8 to 12 inches, but are very much more rigid than most adjustable frames because they are made of \( \frac{1}{4} \times \frac{1}{4} \) inch steel with an extra heavy back.

The black composition handles are molded in a single piece, peculiarly shaped to give a very comfortable grip. The Frames are so designed that they balance well and hang nicely.

Depth of throat, 3 1/4 inches. Net weight, 1 1/2 pounds.
One Blade furnished with each Frame.

No. 247. Fully Polished and Nickel Plated .......... (yeerug) $3.85
No. 247B. Black Finish ................................ (yeyya) 3.10
Packed one in a pasteboard box, 15 1/2 x 5 1/2 x 1 1/2 inches.
Weight, 2 1/2 pounds.

Heavy Adjustable Hack-Saw Frames

These Frames are adjustable from 8 to 12 inches, and as the backs are made from one solid piece of \( \frac{1}{4} \times \frac{1}{4} \) inch stock, they are always rigid, even when fully extended. The two handles are polished Hard Wood.

Blades can be faced in four different ways and are strained in the frame by turning the handle.

Depth of throat, 3 1/4 inches. Net weight, 1 1/2 pounds.
One Blade furnished with each Frame.

No. 69. Polished and Nickel Plated Back .......... (yalun) $3.30
No. 69B. Black Finish ................................ (yaly) 2.75
Packed one in a pasteboard box, 16 x 4 3/4 x 1 1/4 inches.
Weight, 2 1/2 pounds.
Heavy Hack-Saw Frames

These Frames are made very much heavier than the solid frames on the preceding pages, and will be found much more satisfactory by any one who has much heavy sawing to do by hand. They are made of heavy steel with smooth, even bends. They are made for Blades of different lengths, but all throats are 3½ inches deep. Blades are strained in the Frames by turning the polished hardwood Handles.

One Blade furnished with each Frame.

Depth of throat, 3½ inches.

<table>
<thead>
<tr>
<th>No.</th>
<th>Blades</th>
<th>Finish</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>64</td>
<td>8-inch</td>
<td>Full Nickel</td>
<td>$2.00</td>
</tr>
<tr>
<td>64B</td>
<td>8-inch</td>
<td>Black</td>
<td>$1.55</td>
</tr>
<tr>
<td>65</td>
<td>10-inch</td>
<td>Full Nickel</td>
<td>$2.20</td>
</tr>
<tr>
<td>65B</td>
<td>10-inch</td>
<td>Black</td>
<td>$1.85</td>
</tr>
<tr>
<td>66</td>
<td>12-inch</td>
<td>Full Nickel</td>
<td>$2.65</td>
</tr>
<tr>
<td>66B</td>
<td>12-inch</td>
<td>Black</td>
<td>$2.20</td>
</tr>
</tbody>
</table>

Depth of throat, 5½ inches.

<table>
<thead>
<tr>
<th>No.</th>
<th>Blades</th>
<th>Finish</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>12-inch</td>
<td>Full Nickel</td>
<td>$2.75</td>
</tr>
<tr>
<td>14B</td>
<td>12-inch</td>
<td>Black</td>
<td>$2.40</td>
</tr>
<tr>
<td>67</td>
<td>13-inch</td>
<td>Full Nickel</td>
<td>$3.00</td>
</tr>
<tr>
<td>67B</td>
<td>13-inch</td>
<td>Black</td>
<td>$2.65</td>
</tr>
<tr>
<td>68</td>
<td>14-inch</td>
<td>Full Nickel</td>
<td>$3.30</td>
</tr>
<tr>
<td>68B</td>
<td>14-inch</td>
<td>Black</td>
<td>$2.75</td>
</tr>
</tbody>
</table>

Same as above, but with Saw Handle and wing nut blade tension. Stock, ¼ x 1 inch steel. One 14-inch Blade furnished with each Frame.

No. 240. Nickel Plated | $3.30
No. 240B. Black Finish | $2.75

Packed one in a pasteboard box, 25½ x 7 x 1½ inches. Weight, 3 pounds.

Heavy Hack-Saw Frames

These Frames are made entirely of steel, ¼ x 1 inch. They are equipped with one Hack-Saw Blade. They are intended to cut rails, girders, or other large work where depth of throat is an essential feature.

<table>
<thead>
<tr>
<th>No.</th>
<th>Blades</th>
<th>Throat</th>
<th>Finish</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>244</td>
<td>10-inch</td>
<td>9-inch</td>
<td>Full Nickel</td>
<td>$3.30</td>
</tr>
<tr>
<td>15</td>
<td>12-inch</td>
<td>10½-inch</td>
<td>Full Nickel</td>
<td>$3.85</td>
</tr>
<tr>
<td>15B</td>
<td>12-inch</td>
<td>10½-inch</td>
<td>Black</td>
<td>$3.30</td>
</tr>
</tbody>
</table>

Packed one in a pasteboard box.

These Frames are made entirely of ¼ x 1 inch steel. They are equipped with two Handles for use in cutting rails, girders, or other large pieces. They are made 10½ inches from Blade to back, in black finish only. One Blade furnished with each Frame.

No. 238B. For 14-inch Blades only | $3.65
No. 239B. For 17-inch Blades only | $4.00

Packed one in a pasteboard box.

We will gladly quote on special Frames similar to the above to take Blades up to and including 24 inches in length.
Power Hack Saw
No. 30

No up-to-date shop of any kind can afford to be without a Power Hack Saw and many shops would find more equally profitable. This Power Hack Saw is a simple but efficient machine. The Raising and Stop Levers and Vise Handle are all at one end of the machine, which occupies very little floor space. These features will be appreciated in a large shop where one workman operates a battery of these machines.

The illustration on the opposite page conveys a good idea of the general characteristics of the machine. The Pulleys are small and the machine is geared down to the proper speed. The gears are machine cut, eliminating all noise, and are carefully fitted so that they will not slip.

The machine is provided with an adjustable Automatic Stop which can be set to stop the saw at any desired depth or as soon as the work is completely cut off. This Stop is connected with the Clutch on the Drive Pulley so that it acts instantaneously.

The back of the Saw Frame runs in a guide, which in turn slides up and down on two perpendicular Guide Rods. The traveling motion is conveyed to it by a horizontal guide which runs parallel to the bottom of the Vise. This feature enables the machine to be used for slotting of any desired depth.

The Vise will take work 4½ x 4½ inches. It is operated by a handled Screw at the front of the machine. The bed of the Vise extends beyond the Jaws, another feature of practical advantage.

The Tight and Loose Pulleys are 7 inches in diameter, geared 3 to 1. The Pulley should run 150 revolutions per minute, making the Blade travel at 50 strokes per minute in order to obtain the best results.

The Frame is made to take either 10 or 12 inch Hack-Saw Blades. One dozen 12-inch Blades with each machine.

Floor space, 25 x 15 inches. Height, 42 inches. Net weight, 155 pounds.

Price, each: $66.00

Crated, 46 x 26 x 17 inches. Weight, 214 pounds.
Boxed for export, 45½ x 26 x 17 inches. Weight, 235 pounds.
Machinists' Hammers

These Ball Peen Hammers have heads of excellent design, forged from a high grade of very tough steel properly hardened and the temper scientifically distributed over the face and peen.

The Hickory Handles are shorter than those generally furnished with hammers of similar size, in order that they may fit into tool rolls or small tool boxes.

<table>
<thead>
<tr>
<th>No.</th>
<th>Head</th>
<th>Length</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>557</td>
<td>12 oz</td>
<td>9 1/2 in</td>
<td>$1.75</td>
</tr>
<tr>
<td>559</td>
<td>16 oz</td>
<td>12 in</td>
<td>$2.00</td>
</tr>
</tbody>
</table>

Each Hammer packed in a separate pasteboard box.

Combination Pliers

6 1/2 inch

These Combination Pliers are drop forged, carefully hardened and tempered. Each pair has a cutting slot and a pipe grip and is provided with a slip joint. Both handles are scored, and one has a screw-driver end.

These tools are made just as well as they can be made and are sold at a price as low as is consistent with the quality of the article.

These Pliers are made in one size only, 6 1/2 inches, with two different finishes: black finish; or fully polished, nickel plated, and buffed.

Net weight, 9 ounces.

<table>
<thead>
<tr>
<th>No.</th>
<th>Finish</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>376</td>
<td>Black Finish</td>
<td>$1.25</td>
</tr>
<tr>
<td>377</td>
<td>Polished and Nickel Plated</td>
<td>$2.00</td>
</tr>
</tbody>
</table>

Packed one in a pasteboard box, 7 x 2 x 1 1/2 inch. Weight, 10 ounces.

Scroll Chucks

With Outside and Inside Jaws

These are very strong and serviceable Chucks for use with small Lathes. Although their cost is moderate, they have a number of improvements over other tools of this kind.

Each Chuck has a hole through the body so that it can be used for holding rods.

The jaws are case hardened and all other parts are polished bright. The jaws are not interchangeable, each one being carefully fitted to its own Chuck. These Chucks have both outside and inside jaws; one set can be easily removed and the other inserted, but each jaw is numbered and must be inserted in the slot of corresponding number.

No Face Plates are furnished.

<table>
<thead>
<tr>
<th>No.</th>
<th>Diameter</th>
<th>Hole</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>180</td>
<td>2 in</td>
<td>1/4 in</td>
<td>$16.00</td>
</tr>
<tr>
<td>181</td>
<td>3 in</td>
<td>1/4 in</td>
<td>$17.50</td>
</tr>
<tr>
<td>182</td>
<td>4 in</td>
<td>1 in</td>
<td>$21.00</td>
</tr>
</tbody>
</table>

Each Chuck packed in a separate pasteboard box.

Scroll Chucks

With Outside Jaws Only

These Chucks are exactly the same as those described above, except that they have outside jaws only. They are accurate, strong, and serviceable, although their prices are moderate.

<table>
<thead>
<tr>
<th>No.</th>
<th>Diameter</th>
<th>Hole</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>180</td>
<td>2 in</td>
<td>1/4 in</td>
<td>$12.75</td>
</tr>
<tr>
<td>181</td>
<td>3 in</td>
<td>1/4 in</td>
<td>$14.50</td>
</tr>
<tr>
<td>182</td>
<td>4 in</td>
<td>1 in</td>
<td>$16.50</td>
</tr>
</tbody>
</table>

Each Chuck packed in a separate pasteboard box.

Notice: These Scroll Chucks can be fitted to Face Plates for use with our small Lathes.
Drill Chucks

We offer these Drill Chucks to you as excellent devices of moderate cost. Their construction is extremely simple, yet we are sure that they will meet all requirements. They are well finished, strong, and accurate.

They are made entirely of steel in two different patterns with various capacities and many different shanks. The fact that Shanks come fitted to the Chucks is a great convenience.

We invite the comparison of these Chucks with many of the more expensive kinds. We believe that you will find them equal both in accuracy and durability, while their first cost is extremely low, and the cost of repairs is negligible.

Goodell-Pratt Drill Chucks

These Chucks do not require any Spanner Wrench, as they can be easily tightened or loosened without one. The Shank is arranged to receive a stud which, as the shell is turned, forces the jaws forward and tightens the Chuck. The three hardened steel Jaws are held apart by separating Springs which draw the Jaws back as the Chuck is loosened.

Greenfield Drill Chucks

These Chucks are a little more complicated in construction than those described above. No Spanner is required to tighten these Chucks, but one is provided to loosen the two large sizes. The Shell of the Chuck is all one piece. The Shank forms the Back of the Chuck; the thread being concealed so that it cannot be damaged by rough handlings. These Chucks have a Ball Bearing in the center, making its grip tighter and giving a little more accuracy than when the bearing is at the extreme rear.

Goodell-Pratt Drill Chucks

These Chucks are fitted with lathe-turned ½-inch or ¾-inch Shanks. In ordering, be sure to specify which size is desired.

<table>
<thead>
<tr>
<th>No.</th>
<th>Capacity</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>0 to 3/8 inch</td>
<td>$1.40</td>
</tr>
<tr>
<td>15</td>
<td>0 to 1/2 inch</td>
<td>$1.80</td>
</tr>
<tr>
<td>15½</td>
<td>0 to 3/4 inch</td>
<td>$2.20</td>
</tr>
<tr>
<td>16</td>
<td>0 to 1 inch</td>
<td>$3.00</td>
</tr>
</tbody>
</table>

Each Chuck packed in a separate pasteboard box.

Half-inch Shanks sent unless otherwise specified.

Goodell-Pratt Drill Chucks

Left Hand

These Chucks are exactly the same as those described above, except that the Shanks are made with left-handed threads, and can be used only with machines that run left-handed. They are made with ¾-inch Shanks only.

<table>
<thead>
<tr>
<th>No.</th>
<th>Capacity</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>14L.H</td>
<td>0 to 3/8 inch</td>
<td>$2.25</td>
</tr>
<tr>
<td>15L.H</td>
<td>0 to 1/2 inch</td>
<td>$2.75</td>
</tr>
<tr>
<td>15½L.H</td>
<td>0 to 3/4 inch</td>
<td>$3.25</td>
</tr>
<tr>
<td>16L.H</td>
<td>0 to 1 inch</td>
<td>$4.50</td>
</tr>
</tbody>
</table>

Each Chuck packed in a separate pasteboard box.
Goodell-Pratt Drill Chucks
With Morse Taper Shanks
Patented August 13, 1895

These Drill Chucks are provided with standard No. 1 and No. 2 Morse Taper Shanks. In ordering, please specify which size is desired.

<table>
<thead>
<tr>
<th>Size</th>
<th>Capacity</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 14M.T.</td>
<td>0 to (\frac{1}{2}) inch</td>
<td>$2.00</td>
</tr>
<tr>
<td>No. 15M.T.</td>
<td>0 to 1 inch</td>
<td>$2.50</td>
</tr>
<tr>
<td>No. 15(\frac{1}{2})M.T.</td>
<td>0 to (\frac{3}{4}) inch</td>
<td>$3.00</td>
</tr>
<tr>
<td>No. 16M.T.</td>
<td>0 to 1 (\frac{1}{4}) inch</td>
<td>$4.00</td>
</tr>
</tbody>
</table>

Each Chuck packed in a separate pasteboard box.

Goodell-Pratt Drill Chucks
With Cross Handles
Patented August 13, 1895

These Chucks are exactly the same as those with \(\frac{1}{4}\)-inch Shanks, with the addition of a Cross Handle that will be found very convenient for holding Reamers and Taps for cleaning out holes and removing burrs. The Cross Handle can be removed when not desired and the Chuck used as a regular Straight Shank Chuck.

<table>
<thead>
<tr>
<th>Size</th>
<th>Capacity</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 14C.</td>
<td>0 to (\frac{1}{2}) inch</td>
<td>$1.60</td>
</tr>
<tr>
<td>No. 15C.</td>
<td>0 to 1 inch</td>
<td>$2.00</td>
</tr>
<tr>
<td>No. 15(\frac{1}{2})C.</td>
<td>0 to (\frac{3}{4}) inch</td>
<td>$2.40</td>
</tr>
<tr>
<td>No. 16C.</td>
<td>0 to 1 (\frac{1}{4}) inch</td>
<td>$3.20</td>
</tr>
</tbody>
</table>

Each Chuck packed in a separate pasteboard box.

Goodell-Pratt Drill Chucks
With Bit Brace Shanks
Patented August 13, 1895

These Drill Chucks have taper square Shanks that can be held in an ordinary Bit Brace Chuck. The Shanks are milled on centers to keep them in perfect alignment and are hardened so that they will not be damaged by the jaws in which they are held.

<table>
<thead>
<tr>
<th>Size</th>
<th>Capacity</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 14B.</td>
<td>0 to (\frac{1}{2}) inch</td>
<td>$1.80</td>
</tr>
<tr>
<td>No. 15B.</td>
<td>0 to 1 inch</td>
<td>$2.20</td>
</tr>
<tr>
<td>No. 15(\frac{1}{2})B.</td>
<td>0 to (\frac{3}{4}) inch</td>
<td>$2.60</td>
</tr>
<tr>
<td>No. 16B.</td>
<td>0 to 1 (\frac{1}{4}) inch</td>
<td>$3.50</td>
</tr>
</tbody>
</table>

Each Chuck packed in a separate pasteboard box.

Goodell-Pratt Drill Chucks
With Taper Square Shanks

These Chucks will be found very useful when it is desired to use Round Shank Twist Drills in connection with a Ratchet Drill. They have \(\frac{3}{4} \times \frac{3}{4}\) inch taper square Shanks fitting No. 2 Ratchets. The Shanks are milled on centers, and carefully hardened.

<table>
<thead>
<tr>
<th>Size</th>
<th>Capacity</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 14R.</td>
<td>0 to (\frac{1}{2}) inch</td>
<td>$2.25</td>
</tr>
<tr>
<td>No. 15R.</td>
<td>0 to 1 inch</td>
<td>$2.75</td>
</tr>
<tr>
<td>No. 15(\frac{1}{2})R.</td>
<td>0 to (\frac{3}{4}) inch</td>
<td>$3.25</td>
</tr>
<tr>
<td>No. 16R.</td>
<td>0 to 1 (\frac{1}{4}) inch</td>
<td>$4.50</td>
</tr>
</tbody>
</table>

Each Chuck packed in a separate pasteboard box.
Goodell-Pratt Drill Chuck

No. 13½
Capacity 0 to 3/8 inch

Although it has an extremely small capacity, this Chuck will be found excellent for any kind of small work. We sell them in very large quantities for use upon small Multiple Spindle Drilling Machines, Button Machinery and Dental Drills.

Each Chuck is made entirely of steel, with three hardened jaws that will hold Round Shank Drills of all sizes up to 3/8 inch. The construction of these Chucks is extremely simple and they are not easy to get out of order.

Each Chuck is furnished with a 3/8-inch shank unless otherwise specified. Length over all, 4 inches. Net weight, 4 ounces.

Price, each ............................................. (w/etam) $1.30

Packed one in a pasteboard box, 4 1/2 x 1 1/4 x 1 3/4 inches.

We shall be pleased to quote special prices on these Chucks when ordered without shanks in large quantities.

Goodell-Pratt Drill Chuck

No. 16½
Capacity 0 to 3/4 inch
Patented August 13, 1890

This Chuck is very much the same as the other Goodell-Pratt Drill Chucks, but it is of greater capacity and consequently is very much larger and heavier. It has a capacity up to 3/8 inch and will be found an excellent tool for holding Drills up to its extreme capacity.

Price, each, with 1-inch Straight Shank .................................................. (wybrv) $7.70
Price, each, with No. 3 Morse Taper Shank .............................................. (wybra) 10.00

Packed one in a pasteboard box, 10 3/8 x 2 1/2 x 2 1/2 inches.
Weight, 4 1/2 pounds.

Greenfield Drill Chucks

With Straight Round Shanks

The Shell of these Chucks is all one piece, the Shank forming the Back of the Chuck. The shank thread is concealed and cannot be damaged by rough handling. These Chucks have a Ball Bearing in the center, as shown in the illustration on page 124. They are regularly furnished with 3/8-inch round shanks and 7/8-inch round shanks.
Half-inch shanks will always be furnished unless otherwise ordered.

<table>
<thead>
<tr>
<th>Capacity</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 1501. 0 to 3/8 inch</td>
<td>(ztyfl) $2.00</td>
</tr>
<tr>
<td>No. 1502. 0 to 1 inch</td>
<td>(ztyoy) 2.50</td>
</tr>
<tr>
<td>No. 1503. 0 to 1 1/4 inch</td>
<td>(ztyav) 3.50</td>
</tr>
<tr>
<td>No. 1504. 0 to 1 1/2 inch</td>
<td>(ztyya) 5.00</td>
</tr>
</tbody>
</table>

Each Chuck packed in a separate pasteboard box.

Greenfield Drill Chucks

With Bit Brace Shanks

These Chucks are provided with taper square shanks that can be held in any two-jawed chuck on a Bit Brace, Breast Drill, or similar tool.

<table>
<thead>
<tr>
<th>Capacity</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 1501B. 0 to 3/8 inch</td>
<td>(ztymp) $2.75</td>
</tr>
<tr>
<td>No. 1502B. 0 to 1 inch</td>
<td>(ztyur) 3.25</td>
</tr>
<tr>
<td>No. 1503B. 0 to 1 1/4 inch</td>
<td>(ztyvs) 4.50</td>
</tr>
<tr>
<td>No. 1504B. 0 to 1 1/2 inch</td>
<td>(ztyzo) 5.50</td>
</tr>
</tbody>
</table>

Each Chuck packed in a separate pasteboard box.
Greenfield Drill Chucks
With Morse Taper Shanks

These Chucks are provided with standard Morse Taper Shanks Nos. 1, 2, 3, and 4. Each Chuck will run accurately on its own shank. In ordering be sure to specify which size shank is desired.

<table>
<thead>
<tr>
<th>Capacity</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 1501 M.T.</td>
<td>0 to 3/4 inch</td>
</tr>
<tr>
<td>No. 1502 M.T.</td>
<td>0 to 3/8 inch</td>
</tr>
<tr>
<td>No. 1503 M.T.</td>
<td>0 to 1 inch</td>
</tr>
<tr>
<td>No. 1504 M.T.</td>
<td>0 to 1 1/4 inch</td>
</tr>
</tbody>
</table>

Each Chuck packed in a separate pasteboard box.

Greenfield Drill Chucks
No. 1505
Capacity 0 to 3/4 inch

These Chucks are similar in construction to the smaller sizes of Greenfield Drill Chucks but are very much larger and heavier. They are built to stand up under the hardest kind of shop use, and will hold accurately all sizes of drills up to their extreme capacity.

These Chucks can be provided with either a No. 3 Morse Taper Shank, a No. 4 Morse Taper Shank, or with a taper hole instead of a shank.

<table>
<thead>
<tr>
<th>Capacity</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 1505 M.T. With Morse Taper Shank</td>
<td>$(17.50)</td>
</tr>
<tr>
<td>No. 1505 S.S. With Taper Hole</td>
<td>$(17.50)</td>
</tr>
</tbody>
</table>

Each Chuck packed in a separate pasteboard box.

Arbors for
Greenfield Drill Chucks

For the convenience of customers who do not care to make their own shanks, we can supply Arbors fitting the taper holes of the Chucks shown above.

<table>
<thead>
<tr>
<th>Arbor</th>
<th>Fitting No. Of Arbor</th>
<th>Fitting No. Of Arbor</th>
<th>Fitting No. Of Arbor</th>
<th>Fitting No. Of Arbor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4-inch Blacksmith</td>
<td>$0.90</td>
<td>$0.90</td>
<td>$0.90</td>
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Fluted Shank Drill Points

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These Drill Points have fluted shanks for use in the two-jawed chucks of Automatic Drills. They are manufactured from the finest grade of tool steel, are very carefully hardened and oil tempered. The straight flutes are very desirable for drilling wood or soft metals.

Length over all, about 2 inches.

Price, per dozen ........................................ (Zotol) $0.90

These Drill Points can be furnished in sets of eight if desired.

Plain Shank Drill Points

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These Drill Points are exactly the same as those shown above, except that they have plain round shanks that can be held in any three-jawed chuck.

Price, per dozen ........................................ (Zotub) $0.50

These Drill Points can be furnished in sets of eight when desired.

No. 34 Punch Points

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Used in an Automatic Drill these hollow Steel Punches cut smooth round holes in paper, cloth, leather, etc.

Price, per set of 4 .................................... (Yacel) $1.00

Drill Point Stock Cabinet

A very neat little Stock Cabinet for holding Fluted or Round Shank Drill Points will be furnished Dealers stocking these points in good quantities.

Automatic Drill

No. 185

Registered U.S. Patent Office as

Mr. Punch

This Automatic Drill embodies all the special features that twenty-five years of experience in the manufacture of these tools has shown to be necessary or desirable.

Eight Drill Points are contained within the Magazine Handle, each in a separate numbered compartment, from which they are released, one at a time, through a hole in the rotating cap. A Drill Point Gauge shows the exact size of the Drill Point in each compartment, a patented feature that is not found in any other similar tool.

The Center Nut, which is the most important part of any spiral-driven tool, is made of a very hard grade of brass and will give lasting service. The front portion of the tool is made of hollow brass tubes.

All exposed metal parts are polished, nickel plated and buffed, giving a bright and lasting finish.

The Chuck has two hardened steel jaws for holding Fluted Shank Drill Points securely. It has an extra long shell, which is held in place by a spring so that it cannot be completely unscrewed and lost.

Eight Fluted Drill Points, 1/16 to 1/4 inch in diameter, are furnished with each tool.

The tool is 10 inches long and weighs 8 ounces net.

Price, each ............................................ (Yekil) $2.75

Packed one in a pasteboard box, 10 1/2 x 1 1/2 x 1 1/2 inches.

Weight, 9 ounces.

Mr. Punch Counter Display

When ordered in dozen lots Mr. Punch will be packed in a very attractive Counter Display Carton without extra charge.
No. 108 Automatic Drill

This Automatic Drill has a patented Magazine Handle, holding eight Drill Points, each in a separate numbered compartment, from which they are removed through a hole in the rotating cap. The Handle is knurled its entire length, giving a firm grip. The Center Nut, which is the most important part of any spiral-driven tool, is made of a very hard grade of brass and will give lasting service. The front portion of the tool is made of hollow brass tubes. All exposed metal parts are polished, nickel plated, and buffed, giving a bright and lasting finish.

The Chuck has two hardened steel Jaws for holding Fluted Shank Drill Points securely. It has an extra long Shell, which is held in place by a spring so that it cannot be completely unscrewed and lost.

Eight Fluted Shank Drill Points, \(\frac{1}{8}\) to \(\frac{1}{4}\) inch in diameter, are furnished with each tool.

The tool is 10 inches long, and weighs 8 ounces net.

Price, each .................................. \$2.45
Packed one in a pasteboard box, 10\(\frac{1}{4}\) x 1\(\frac{1}{4}\) x 1\(\frac{1}{4}\) inches. Weight, 7 ounces.

No. 3 Automatic Drill

Similar to No. 108, except for the Handle, which is polished and nickel plated without being knurled. Each of the Drill Point compartments is numbered. All exposed metal parts are polished, nickel plated, and buffed.

Eight Fluted Shank Drill Points, \(\frac{1}{8}\) to \(\frac{1}{4}\) inch in diameter, furnished with each tool.

Length, 9\(\frac{1}{2}\) inches. Weight, 7 ounces net.

Price, each .................................. \$2.30
Packed one in a pasteboard box, 10 x 1\(\frac{1}{4}\) x 1\(\frac{1}{4}\) inches. Weight, 9 ounces.

No. 3\(\frac{1}{2}\) Automatic Drill

Same as No. 3, but with a polished Hardwood Magazine Handle with a nickel plated Flange and Cap. Each Drill Point compartment is numbered. All exposed metal parts are polished, nickel plated, and buffed.

Eight Fluted Shank Drill Points, \(\frac{1}{8}\) to \(\frac{1}{4}\) inch diameter, furnished with each tool.

Length, 10 inches. Weight, 7 ounces net.

Price, each .................................. \$2.40
Packed one in a pasteboard box, 10\(\frac{1}{4}\) x 1\(\frac{1}{4}\) x 1\(\frac{1}{4}\) inches. Weight, 9 ounces.
Automatic Drills
With Dull Nickel Finish

These tools are exactly the same in mechanical construction as our more expensive styles, but are not polished. The dull nickel finish affords a considerable saving in the cost without detracting in any way from the efficiency of the tool.

No. 01. Corrugated Brass Handle; Dull Nickel Finish. Furnished with eight hardened tool steel Drill Points ranging in size from \( \frac{1}{8} \) to \( \frac{3}{4} \) inch.

Price, each ........................................ (wzuy) $1.65
Packed one in a box, 10 x 1\( \frac{1}{2} \) x 1\( \frac{1}{2} \) inches. Weight, 7 ounces.

No. 02. Polished Hardwood Handle; Dull Nickel Finish. Furnished with eight hardened tool steel Drill Points ranging in size from \( \frac{1}{8} \) to \( \frac{3}{4} \) inch.

Price, each ........................................ (wyhtop) $1.65
Packed one in a box, 10 x 1\( \frac{1}{2} \) x 1\( \frac{1}{2} \) inches. Weight, 8 ounces.

No. 03. Patented Magazine Handle holding eight Drill Points from \( \frac{1}{8} \) to \( \frac{3}{4} \) inch, each in an individual numbered compartment. Dull Nickel Finish.

Price, each ........................................ (wythde) $2.00
Packed one in a box, 10 x 1\( \frac{1}{2} \) x 1\( \frac{1}{2} \) inches. Weight, 9 ounces.

No. 0 Reciprocating Drill
Capacity 0 to \( \frac{3}{4} \) inch
Chuck Patented August 12, 1895

This tool is designed for rapid drilling in iron, brass, or wood, as well as for use in places where a Bit Brace or Breast Drill cannot be used. The polished Hardwood Traveling Handle contains the flanges and hard bronze nuts which constitute the simple and durable driving mechanism, which causes the Chuck to revolve continuously to the right when the traveling handle is moved either forward or backward. The polished Hardwood Head has a heavy steel quill running on ball bearings. The polished steel Spiral, 12\( \frac{1}{2} \) inches long, is accurately cut to a 20° slant, giving ample power.

The Chuck is all steel, with three hardened jaws holding Round Shank Drills 0 to \( \frac{3}{4} \) inch.

The tool is 16\( \frac{1}{2} \) inches long and weighs 15 ounces net.
No Drills furnished with this tool.

Price, each ........................................ (wyteo) $3.00
Packed one in a pasteboard box, 16\( \frac{1}{2} \) x 2\( \frac{1}{2} \) x 2\( \frac{1}{2} \) inches. Weight, 14 pounds.

No. 101 Reciprocating Drill
Capacity 0 to \( \frac{3}{4} \) inch
Chuck Patented August 12, 1895

Identical to No. 0 Drill above, except for the Traveling Handle, which is longer, giving a firmer and more comfortable grip. No Drills furnished with this tool.

Length, 16\( \frac{1}{2} \) inches. Weight, 1 pound net.

Price, each ........................................ (yawur) $3.00
Packed one in a pasteboard box, 16\( \frac{1}{2} \) x 2\( \frac{1}{2} \) x 2\( \frac{1}{2} \) inches. Weight, 14 pounds.

No. 656 Sensitive Drill

Similar to No. 0 above, but with a slightly shorter spiral and a polished Hardwood Handle in place of a Head. Designed primarily for work around radio panels. No Drills furnished.

Length, 14\( \frac{1}{4} \) inches. Weight, 13 ounces.

Price, each ........................................ (zaeewk) $2.50
Packed one in a pasteboard box, 15\( \frac{1}{2} \) x 1\( \frac{1}{2} \) x 1\( \frac{1}{2} \) inches. Weight, 1 pound.
Reciprocating Drill
No. 102
Capacity 0 to ½ inch
Patented September 26, 1890; November 17, 1891; August 13, 1895

This tool will be found valuable wherever a hand tool is required for rapidly drilling small holes. The nickel plated handle, which runs on ball bearings, contains a magazine holding the drill points.

The Hardwood Traveling Handle contains the flanges and hard bronze nuts which constitute the driving mechanism. The accurately cut steel spiral is 6½ inches long.

The Chuck is all steel, with three hardened jaws for holding Round Shank Drills 0 to ½ inch in diameter.

Eight Round Shank Drill Points, ½ to ¾ inch in diameter, are contained in the handle.

The tool is 12½ inches long and weighs 12 ounces net.

Price, each ........................................ (TAVAP) $3.00

Packed one in a pasteboard box, 13½ x 1¼ x 1½ inches. Weight, 1 lb.

Reciprocating Breast Drill
No. 103
Capacity 0 to ¼ inch
Patented August 13, 1895

This tool was designed for but it can also be used for runs on ball bearings. The contains the driving mechanism, which side handles enabling the operator to apply both hands to the work. The 12½-inch steel spiral is accurately cut to a 20° slant and is capable of generating all necessary power.

The Chuck is all steel, with three hardened jaws for holding Round Shank Drills 0 to ½ inch in diameter.


No Drills furnished with this tool.

Price, each ........................................ (TAVGD) $3.50

Packed one in a pasteboard box, 17 x 5½ x 2½ inches. Weight, 2 pounds.

Hand Drill
No. 110
For Fluted Drill Points

This tool is a low priced Hand Drill for use with Fluted Shank Drill Points, the same as those furnished with our Automatic Drills.

The Handle is Hollow Brass, white nickelered. It can be quickly removed and used to hold Drills.

The Frame is Malleable Iron, black enameled.

The Gears are nickel plated to prevent rusting. All teeth are machine cut. Gears are held together by a steel Guard which prevents slipping.

Two-jawed Chuck holds Drill Points with fluted shanks only.


Eight Fluted Drill Points, ½ to ¾ inch, furnished with each tool.

Price, each ........................................ (TAYUT) $2.20

Packed one in a pasteboard box, 8 x 3½ x 2 inches.

Weight, 1 pound.
Hand Drill
No. 49
Capacity 0 to \( \frac{1}{2} \) inch
Chuck Patented August 13, 1895

This is a small Drill of very good quality at an extremely moderate price.

The Handle is hollow brass, white nickel plated. It can be quickly unscrewed and used for holding Drills. Frame is Malleable Iron, black enameled.

Gears are nickel plated to prevent rusting. All teeth are machine cut. The Gears are held together by a steel Guard which prevents slipping.

All-steel Chuck, with three hardened jaws, holds Round Shank Drills 0 to \( \frac{1}{2} \) inch in diameter. Bright nickel finish.

Length, 10\( \frac{1}{4} \) inches. Net weight, 14 ounces.

No Drill Points furnished with this tool.

Price, each...........(YAPAY) $1.60

Packed one in a pasteboard box, 8 x 3\( \frac{1}{4} \) x 2 inches.

Weight, 1 pound.

Hand Drill
No. 41/2
Capacity 0 to \( \frac{1}{2} \) inch
Chuck Patented August 13, 1895

This Drill is exactly the same as our other small Hand Drills, except that it has a Handle of wood instead of brass.

Polished Rosewood Handle, with Screw Cap, can be used for holding Drills. The Frame is Malleable Iron, black enameled.

Large Gear and Steel Pinion are nickel plated to prevent rusting. All teeth are machine cut. The Gears are held together by a hardened steel Guard which prevents slipping.

All-steel Chuck, with three hardened jaws, holds Round Shank Drills 0 to \( \frac{1}{2} \) inch in diameter. Bright nickel finish.

Length, 10\( \frac{1}{4} \) inches. Net weight, 14 ounces.

Eight Drill Points, \( \frac{1}{4} \) to \( \frac{1}{4} \) inch, are furnished with each tool.

Price, each...........(WYFEO) $2.70

Packed one in a pasteboard box, 11 x 3\( \frac{1}{4} \) x 2\( \frac{1}{4} \) inches.

Weight, 1\( \frac{1}{4} \) pounds.
Hand Drill
No. 4
Capacity 0 to \(\frac{1}{2}\) inch

Patented September 30, 1880; November 17, 1881;
August 12, 1889.

This very handsome little Hand Drill is extremely well made.

The Handle is hollow brass, polished and nickel plated. It contains a magazine, holding the eight Drill Points, each in a separate compartment, from which they can be removed through a hole in the rotating cap.

The Malleable Iron Frame is black enameled. Both the large Gear and the Steel Pinion are nickel plated to prevent rusting. Large Gear is finished in red enamel. All teeth are machine cut. The Gears are held together by a hardened steel Guard which prevents slipping.

The Chuck is all steel, with three hardened jaws for holding Round Shank Drills 0 to \(\frac{3}{4}\) inch in diameter. Bright nickel finish.

Length, 10\(\frac{1}{2}\) inches. Net weight, 15 ounces.

Eight Drill Points, \(\frac{1}{4}\) to \(\frac{1}{4}\) inch, furnished with each tool.

Price, each \((\text{wverty})\) $3.00

Packed one in a pasteboard box,
11 x 3\(\frac{1}{2}\) x 2\(\frac{1}{2}\) inches.
Weight, 1\(\frac{1}{2}\) pounds.

Hand and Breast Drill Display Stand

A very neat and practical cast aluminum Hand and Breast Drill Display is available to Dealers stocking a good assortment. It holds four Drills and is attractively finished in polished aluminum and red and black enamel.
Hand Drill
No. 05
Capacity 0 to \(\frac{1}{4}\) inch
Chuck Patented August 13, 1895

This is a very strong, well made Hand Drill of \(\frac{1}{4}\) -inch capacity.

Both the End Handle and the Side Handle are hard wood with polished mahogany finish. The Frame is Malleable Iron, black enameled.

All Gear Teeth are machine cut. Gear and Steel Pinion are nickel plated.

Large Gear is finished in red enamel. Gears are held together by a hardened steel Guard that prevents slipping.

All-steel Chuck, with three hardened jaws, holds Round Shank Drills 0 to \(\frac{1}{4}\) inch. Bright nickel finish.

Length, 12\(\frac{1}{4}\) inches. Net weight, 1\(\frac{1}{4}\) pounds.

No Drills furnished with this tool.

Price, each \(\ldots\) ($3.25)

Packed one in a pasteboard box, 12\(\frac{3}{4}\) x 3\(\frac{3}{4}\) x 2\(\frac{3}{4}\) inches.

Weight, 1\(\frac{1}{4}\) pounds.

Hand Drill
No. 379
Capacity 0 to \(\frac{1}{4}\) inch
Chuck Patented August 13, 1895

This tool is sold at a very moderate price for a Drill with \(\frac{1}{4}\)-inch capacity.

Polished Rosewood Handle has a screw cap containing eight tool steel Drills. A large knob Side Handle of polished hard wood is provided.

The Frame is Malleable Iron, black enameled.

All teeth are machine cut. Gear and Steel Pinion are white nickled. The Gears are held together by a hardened steel Guard that prevents slipping.

The all-steel Chuck has three hardened jaws; holds Round Shank Drills 0 to \(\frac{1}{4}\) inch. Bright nickel finish.

Length, 11\(\frac{1}{4}\) inches. Net weight, 1\(\frac{1}{2}\) pounds.

Eight Drill Points, \(\frac{1}{6}\) to \(\frac{1}{4}\) inch, furnished with each tool.

Price, each \(\ldots\) ($3.65)

Packed one in a pasteboard box, 12 \(\times\) 3\(\frac{1}{2}\) x 2\(\frac{1}{2}\) inches.

Weight, 1\(\frac{1}{4}\) pounds.
Hand Drill
No. 5
Capacity 0 to ¼ inch

These Drills are very similar in construction to those previously described.

The Hardwood Handle, with polished mahogany finish, has a patented magazine for holding eight Drill Points, each in a separate numbered compartment, from which they can be released through a hole in the rotating cap. A polished Hardwood Side Handle 3½ inches long is provided; it can be quickly removed when not desired.

The Frame is Malleable Iron, black enameled.

The large Gear and Steel Pinion are nickel plated, and the large Gear is finished with red enamel. All teeth are machine cut. Gears are held together by a hardened steel Guard that prevents slipping.

The Chuck is all steel, with three hardened jaws for holding Round Shank Drills 0 to ¼ inch in diameter. Bright nickel finish.

Length, 12 inches. Net weight, 1½ pounds.

Eight Drill Points, ½ to ¼ inch, are contained in the handle.

Price, each...$3.95

Packed one in a pasteboard box, 12½ x 4½ x 2½ inches.

Weight, 1½ pounds.

Hand and Breast Drill
No. 1616
Capacity 0 to ¾ inch
Chuck Patented August 13, 1895

This Hand and Breast Drill is of unique design and construction, embodying features that make it an unusually good general purpose drill.

The Hardwood Handle with polished mahogany finish has a large head upon which pressure can be exerted comfortably when using large drills. Large, comfortable knob Side and Crank Handles are provided.

The Frame of this drill is aluminum alloy of great strength but light weight. It incloses the pinion and is so shaped that it can be used as a grip instead of the side handle if desired.

The Large Gear is solid, finished in red enamel. Pinion is steel. All gear teeth are machine cut. The Gears are held together by a hardened steel Guard that prevents slipping without causing undue friction.

The accurately turned Spindle runs in ball bearings which take up all end thrust.

The all-steel Chuck has three hardened jaws for holding Round Shank Drills of all sizes from 0 to ¾ inch. Bright nickel finish.

Length, 14½ inches. Net weight, 2 pounds.

No Drills furnished with this tool.

Price, each...$4.80

Packed one in a pasteboard box, 15½ x 4½ x ¾ inches.

Weight, 2½ pounds.
Hand Drill
No. 1515
Capacity 0 to 3/4 inch
Chuck Patented August 13, 1895

This Hand Drill is modern in design and construction and has many features that have made it very popular with all classes of mechanics.

The polished Rosewood Handle has a Screw Cap containing eight tool steel Drills. Large, comfortable knob Side and Crank Handles are provided.

The Frame of this tool is aluminum, which gives as great strength as iron, but is much lighter in weight. The Frame is so shaped that it can be readily gripped, instead of the Side Handle, if desired. It is finished in ebony enamel.

All gear teeth are machine cut. Pinion is steel. Large Gear is finished in red enamel. Gears are held together by a hardened steel Guard that prevents slipping without causing undue friction.

The accurately turned steel Spindle runs in ball bearings, which take up all end thrust.

The all-steel Chuck has three hardened jaws for holding Round Shank Drills of all sizes from 0 to 3/4 inch. Bright nickel finish.

Length, 14 1/4 inches. Net weight, 1 1/2 pounds.

Eight Drill Points, 1/8 to 1/4 inch, furnished with each tool.

Price, each ................. (eloit) $4.80

Packed one in a pasteboard box, 15 1/2 x 4 1/4 x 3 1/2 inches.
Weight, 2 1/2 pounds.

Hand Drill
No. 5 1/2
Capacity 0 to 3/4 inch
Patented August 13, 1895; March 31, 1896

This Hand Drill is provided with two speeds which enable it to be used on all classes of work up to its extreme capacity. The two speeds are changed by turning the Shifter Knob marked "Fast" and "Slow." The recently improved clutch makes shifting mechanism stronger and easier to operate.

The polished Rosewood Handle has a Screw Cap that can be removed when Handle is used for holding Drills. Large, comfortable knob Side and Crank Handles are provided.

The Frame is Malleable Iron, black enameled.

All gear teeth are accurately cut by automatic machinery. Pinions are steel. Large Gear is finished with red enamel.

The accurately turned steel Spindle runs in Ball Bearings. It has a hardened end that runs in a hardened steel Cone Bearing.

The all-steel Chuck has three hardened jaws for holding Round Shank Drills 0 to 3/4 inch. Bright nickel finish.

Length, 14 1/4 inches. Net weight, 2 1/2 pounds.

No Drills furnished with this tool.

Price, each ................. (etoit) $5.50

Packed one in a pasteboard box, 15 1/2 x 4 1/4 x 3 1/2 inches.
Weight, 2 1/2 pounds.
Hand and Breast Drill
No. 5½ B
Capacity 0 to 3/8 inch
Patented August 13, 1896; March 31, 1896

This tool is the same as No. 5½, shown on the preceding page, except that it has a different End Handle.

The Hardwood Handle with polished mahogany finish has a large head upon which pressure can be exerted comfortably when using large Drills. Large, comfortable knob Side and Crank Handles are provided.

The Frame is Malleable Iron, black enameled.

All gear teeth are machine cut. Pinions are steel. Large Gear is finished in red enamel.

This Drill has two speeds, changed by turning the Shifter Knob marked "Fast" and "Slow." The recently improved clutch makes shifting mechanism stronger and easier to operate.

The accurately turned steel Spindle runs on Ball Bearings. End runs in a hardened steel Cone Bearing.

The all-steel Chuck has three hardened jaws for holding Round Shank Drills 0 to 3/8 inch. Bright nickel finish.

Length, 14¾ inches. Net weight, 2½ pounds.

No Drills furnished with this tool.

Price, each. . . . . . . . . (wholesale) $5.50
Packed one in a pasteboard box, 15½ x 4½ x 3½ inches.
Weight, 2½ pounds.

Ratchet Hand and Breast Drill
No. 259
Capacity 0 to 3/8 inch
Patented Aug. 13, 1896; March 31, 1896; Sept. 16, 1904

This tool is identical with No. 5½ B described on the preceding page with the addition of a new, powerful, trouble-proof ratchet mechanism.

The ratchet teeth are broached in the drop-forged Steel Crank. The hardened Steel Dogs that engage these teeth are located in recesses cut directly in the shaft and are both operated by one cleverly protected spring. The position of the Ratchet Dogs is such that the forces to which they are subjected are almost wholly compressive, making breakage impossible.

The actions, Fast Right Hand Ratchet, Fast Left Hand Ratchet, Slow Right Hand Ratchet, Slow Left Hand Ratchet, Fast Positive and Slow Positive, are all controlled by a slight turn of the knurled dial on the end of the shaft, in combination with the change speed mechanism on the side of the frame.

The all-steel Chuck has three hardened jaws for holding Round Shank Drills 0 to 3/8 inch. Bright nickel finish.

Length, 14½ inches. Net weight, 2½ pounds.

No Drills furnished with this tool.

Price, each. . . . . . . . (Retail) $6.60
Packed one in a pasteboard box, 15½ x 4½ x 3½ inches.
Weight, 3 pounds.
No. 385 High Speed Hand Drill
Capacity 0 to \( \frac{1}{4} \) inch

This Hand Drill is particularly useful for wood finishers, floor layers, or any one else who must drill a large number of small holes very rapidly.

Instead of the usual Hand Drill speeds, this Drill has the very high speed of seven revolutions of the Chuck to one turn of the Crank.

The Gears are inclosed in an aluminum casing to protect them from dirt or breakage, and packed in grease to insure proper lubrication. All the Gears are machine cut and carefully fitted.

The large End Handle enables the tool to be used either as a Hand or Breast Drill. The long Drop-Forged Crank with a large Crank Handle insures ample power. The Aluminum Casing makes the Drill as light as possible. Ball Bearings make the Spindle run easily.

All the aluminum parts are polished and the steel parts are polished and nickel plated.

The three-jawed Chuck holds Round Shank Drills from 0 to \( \frac{1}{4} \) inch in diameter. Bright nickel finish.

The tool is 15\( \frac{1}{2} \) inches long and weighs 2\( \frac{1}{2} \) pounds.

No Drill Points furnished with this tool.

Price, each \( \text{(Yonde)} \) $6.00

Packed one in a pasteboard box, 15\( \frac{1}{2} \) x 3\( \frac{1}{2} \) x 2\( \frac{1}{2} \) inches.

Weight, 2\( \frac{1}{2} \) pounds.

No. 486 High Speed Hand Drill
Capacity 0 to \( \frac{1}{4} \) inch

Same as No. 385 above, except for the End Handle, which is polished Rosewood fitted with a Screw Cap in which Drills may be kept. No Drills furnished with this tool.

Length, 15\( \frac{1}{2} \) inches. Weight, 2\( \frac{1}{2} \) pounds net.

Price, each \( \text{(Youze)} \) $6.00

Packed one in a pasteboard box, 15\( \frac{1}{2} \) x 3\( \frac{1}{2} \) x 2\( \frac{1}{2} \) inches.

Weight, 2\( \frac{1}{2} \) pounds.
Hand Drill
No. 52
Capacity 0 to $\frac{3}{8}$ inch
Chuck Patented August 13, 1896

This is a very strong and easy running light Hand Drill of small capacity.

HANDLE.—Polished Rosewood, with a Screw Cap. Can be used for holding Drills.

FRAME.—All Steel, polished and nickel plated.

GEARS.—Teeth are all machine cut, Gears and Steel Pinions are nickel plated. Large Gear finished in red enamel with polished edges.

BEARING.—The second Pinion forms an excellent bearing, practically without friction.

CHUCK.—All steel, with three hardened jaws for holding Round Shank Drills 0 to $\frac{3}{8}$ inch. Bright nickel finish.

SIZE.—10½ inches long. Net weight, 14 ounces.

EQUIPMENT.—Eight Drill Points, $\frac{1}{4}$ to $\frac{3}{4}$ inch, are contained in the Handle of each tool.

Price, each .............. (Boxed) $3.70

PACKING.—One in a pasteboard box, 11 x 3½ x 2½ inches.

WEIGHT.—1 pound.

Hand Drill
No. 53
Capacity 0 to $\frac{3}{8}$ inch
Chuck Patented August 13, 1896

This Hand Drill is exactly the same as No. 52, shown on the preceding page, except that the Gear has a wide face. This wide Gear face can be used in place of the crank handle in starting a Drill or for delicate work.

HANDLE.—Polished Rosewood with Screw Cap. Can be used for holding Drills.

SIDE HANDLE.—A small knob Side Handle of polished Rosewood is attached to the Frame.

FRAME.—All Steel, polished and nickel plated.

GEARS.—Large Gear is finished in red enamel, with a polished face $\frac{1}{4}$ inch wide. Teeth are all machine cut, Gear and Steel Pinions are nickel plated.

BEARING.—The second Pinion forms an excellent bearing, practically without friction.

CHUCK.—All steel, with three hardened jaws for holding Round Shank Drills 0 to $\frac{3}{8}$ inch. Bright nickel finish.

SIZE.—10½ inches long. Net weight, 1 pound.

EQUIPMENT.—Eight Drill Points, $\frac{1}{4}$ to $\frac{3}{4}$ inch, contained in the Handle.

Price, each .............. (Boxed) $3.90

PACKING.—One in a pasteboard box, 10½ x 4 x 3½ inches.

WEIGHT.—1½ pounds.
Hand Drill  
No. 329  
Capacity 0 to ¼ inch  
Chuck patented August 13, 1905  

This will be found an excellent Drill of ¼-inch capacity, at a very reasonable price.

**Handles.**—Hard Wood, with a fine polished mahogany finish pinned securely to the frame. A small Side Handle is provided.

**Frame.**—All Steel, polished and nickel plated.

**Gears.**—Teeth are all machine cut. Gear and Steel Pinions are nickel plated. Large Gear is finished in red enamel with polished edges.

**Bearings.**—The second Pinion forms an excellent bearing, practically without friction.

**Chuck.**—All-steel, with three hardened jaws for holding Round Shank Drills 0 to ¼ inch. Bright nickel finish.

**Size.**—11½ inches long. Net weight, 1½ pounds.

No Drills furnished with this tool.

Price, each .......... $3.70

**Packing.**—One in a pasteboard box, 12 x 3¼ x 3½ inches.

**Weight.**—1½ pounds.

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Hand Drill  
No. 487  
Capacity 0 to ¼ inch  
Chuck patented August 13, 1905  

This Hand Drill is the same as the one previously described except that the gear has a wide face that is a great convenience in starting Drills and for delicate work.

**Handles.**—Hard Wood with a fine polished mahogany finish pinned securely to the frame. A small Side Handle is provided.

**Frame.**—All Steel, polished and nickel plated.

**Gears.**—Teeth are all machine cut. Gear and Steel Pinions are nickel plated. Large Gear is finished in red enamel with a polished edge.

**Bearings.**—The second Pinion forms an excellent bearing, practically without friction.

**Chuck.**—All-steel, with three hardened jaws for holding Round Shank Drills 0 to ¼ inch. Bright nickel finish.

**Size.**—11½ inches long. Net weight, 1½ pounds.

No Drills furnished with this tool.

Price, each .......... $3.75

**Packing.**—One in a pasteboard box, 12 x 3¼ x 3½ inches.

**Weight.**—1½ pounds.
Hand Drill
No. 54
Capacity 0 to \( \frac{1}{4} \) inch
Chuck Patented August 13, 1895
Handle Patented September 30, 1899, November 17, 1899

This tool is the same as No. 329, shown on page 156, with the addition of a magazine handle containing Drill Points.

HANDLE.—Polished Hard Wood, with patented magazine holding eight Drill Points, each in a separate numbered compartment.

FRAME.—All Steel, polished and nickel plated.

GEARS.—Teeth are all machine cut. Gear and Steel Pinions are nickel plated. Large Gear is finished in red enamel with a polished edge.

BEARING.—The second Pinion forms an excellent bearing, practically without friction.

CHUCK.—All steel, with three hardened jaws for holding Round Shank Drills 0 to \( \frac{1}{4} \) inch. Bright nickel finish.

SIZE.—11\( \frac{1}{4} \) inches long. Net weight, 1\( \frac{1}{4} \) pounds.

EQUIPMENT.—Eight Drill Points, \( \frac{1}{8} \) to \( \frac{3}{8} \) inch, contained in the Handle.

Price, each... (yd) $4.50

PACKING.—One in a pasteboard box, 12 x 3\( \frac{1}{2} \) x 3\( \frac{1}{2} \) inches.

Weight.—1\( \frac{1}{4} \) pounds.

Breast Drill
No. 57
For Square Shanks

This Breast Drill is the same as our other Steel Frame Drills, except that the Chuck holds Square instead of Round Shank Drills.

HEAD.—Enamelled Iron, adjustable.

FRAME.—All Steel, polished and nickel plated.

HANDLE.—Polished Hard Wood.

GEARS.—Teeth are all machine cut. Pinions are steel. Large Gear is finished in red enamel with a polished edge.

BEARING.—The second Pinion forms an excellent bearing, practically without friction.

CHUCK.—All steel, with two forged steel jaws for holding Square or Bit Brace Shank Drills only. Bright nickel finish.

SIZE.—14\( \frac{1}{4} \) inches long. Net weight, 4 pounds.

Price, each... (yarm) $5.20

PACKING.—One in a pasteboard box, 15 x 6\( \frac{1}{4} \) x 2\( \frac{1}{4} \) inches.

Weight.—4\( \frac{1}{4} \) pounds.
No. 55 Breast Drill  
Capacity 0 to 3/8 inch  
Chuck patented August 13, 1895

As these Breast Drills have only one speed they are sold at prices that are very reasonable. The steel frames make very attractive Drills, however, and are preferred by many mechanics.

Head.—Enamelled iron, adjustable.

Frame.—All steel, polished and nickel plated.

Handles.—Polished hard wood.

Gears.—Teeth are all machine cut. Pinions are steel. Large gear is finished in red enamel with a polished edge.

Bearing.—The second pinion forms an excellent bearing, practically without friction.

Chuck.—All steel, with three hardened jaws for holding round Shank Drills 0 to 3/8 inch. Bright nickel finish.

Length.—14½ inches long. Net weight, 3½ pounds.

Price, each.......................... (YAGOB) $5.00

Packing.—One in a pasteboard box, 15 x 6½ x 2½ inches.

Weight.—4½ pounds.

No. 56 Breast Drill  
Capacity 0 to 1/2 inch

This Breast Drill is the same as No. 55, but it has a larger Chuck, all steel, with three hardened jaws for holding round Shank Drills 0 to 3/8 inch.

Length.—14½ inches long. Net weight, 4 pounds.

Price, each.......................... (YAGWA) $5.30

No. 493 Breast Drill  
With Level Attachment  
Capacity 0 to 1/2 inch

Same as No. 56 above, with the addition of a small Level to the frame as a convenience in starting drills horizontally.

Length.—14½ inches long. Net weight, 4 pounds.

Price, each.......................... (YOUMT) $5.50

Packing.—One in a pasteboard box, 15 x 6½ x 2½ inches.

Weight.—4½ pounds.
Breast Drill
No. 1200
For Square Shanks

Owing to economies in design and finish, this Breast Drill is sold at a much lower price than our other styles. It is not as efficient a tool as the others, but will be perfectly satisfactory for mechanics who have only slight use for such a tool.

The Frame of this tool is one solid piece of polished steel. Gear teeth are all machine cut. Pinion is steel. Large Gear is finished in red enamel with a polished edge.

All-steel Chuck has two forged steel jaws for holding Square or Bit Brace Shank Drills only.

Length, 14½ inches. Net weight, 4½ pounds.

Price, each .......... (wholesale) $4.40

Packed one in a pasteboard box, 10½ x 6½ x 2¼ inches.

Weight, 4½ pounds.

Automatic Feed Frame
No. 277
Patented June 30, 1908

Fitting Breast Drills Nos. 6, 6A, 07, 7, 7½, 61, 62, and 245

When any of the Goodell-Pratt Breast Drills mentioned above is fastened into this device by means of the three screws provided it is converted into a Bench Drill with Automatic Feed.

Two different ratios of feed can be obtained by turning the adjusting screw provided for that purpose; combined with the two speeds on the Breast Drill, this makes four different feeds available.

The Automatic Feed can be instantly thrown out and the Table raised or lowered by the hand feed. The extreme distance between the Chuck and the Table is about 9 inches, and the tool will drill to the center of a 5-inch circle.

Iron parts are finished in black enamel, all steel parts are polished.

Net weight, 12 pounds.

No Breast Drills are included with this Feed Frame. They must be purchased separately.

Price, each .......... (retail) $8.80

Each one packed in a wooden case, 23 x 9 x 8 inches. Shipping weight, 18½ pounds.
Breast Drill
No. 6
Capacity 0 to ½ inch
Patented August 18, 1896; March 31, 1896

This Breast Drill is very popular because it represents such great value for the price at which it is sold. Please notice particularly the provision made to prevent wear on the Spindle, the steel Pinions, and the strength and reliability of the gear shifting device.

**Breast Plate.**—Enamel Iron, adjustable.

**Frame.**—Malleable Iron, black enameled.

**Handles.**—Polished Hard Wood.

**Gears.**—All teeth are machine cut. Pinions are steel. Large Gear is finished in red enamel.

**Speeds.**—Two Speeds, changed by turning the Shifter Knob marked “Fast” and “Slow.”

**Spindle.**—Accurately turned steel Spindle; has a hardened end that runs in a hardened steel Cone Bearing.

**Chuck.**—All-steel, with three hardened jaws for holding Round Shanks 0 to ½ inch. Shell is polished and nickel plated.

**Size.**—16 inches long. Net weight, 4½ pounds.

Price, each .............................................. (WYGGA) $6.20

Packing.—One in a pasteboard box, 17 x 5½ x 2½ inches.

Weight.—5 pounds.

Breast Drills
With Morse Taper Sockets

These Drills are exactly the same as No. 6 described above, except that they have Morse Taper Sockets instead of Chucks.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 61</td>
<td>With No. 1 Morse Taper Socket</td>
<td>(TAIFFY) $6.00</td>
</tr>
<tr>
<td>No. 62</td>
<td>With No. 2 Morse Taper Socket</td>
<td>(TAIFFD) 6.00</td>
</tr>
</tbody>
</table>

Packing and weight same as No. 6.

These three Drills used with No. 277 Feed Frame (page 163) make a serviceable Automatic Feed Bench Drill.
Breast Drill

No. 6A

Capacity 0 to \( \frac{1}{2} \) inch

Patented August 13, 1895; March 31, 1896.

This Drill is the same as No. 6, shown on pages 164 and 165, but with the addition of Ball Bearings. These make the tool run easier on heavy work and by reducing the wear on the Spindle greatly increase the amount of service that may be obtained from the Drill.

**Breast Plate.**—Enameled Iron, adjustable.

**Frame.**—Malleable Iron, black enameled.

**Handles.**—Polished Hard Wood.

**Gears.**—All teeth are machine cut. Pinions are steel. Large Gear is finished in red enamel.

**Speeds.**—Two Speeds, changed by turning the Shifter Knob marked "Fast" and "Slow."

**Spindle.**—Accurately turned steel Spindle runs in Ball Bearings. It also has a hardened end that runs in a hardened steel cone bearing.

**Chuck.**—All-steel, with three hardened jaws for holding Round Shanks of all sizes from 0 to \( \frac{1}{4} \) inch in diameter.

**Size.**—16 inches long. Net weight, 4\( \frac{1}{2} \) pounds.

**Price, each** .................................................. (wholesale) $6.50

**Packing.**—One in a pasteboard box, 17 x 5\( \frac{3}{4} \) x 2\( \frac{3}{4} \) inches.

**Weight.**—5 pounds.

This Drill used with No. 277 Feed Frame (page 163) makes a serviceable Automatic Feed Bench Drill.
Breast Drill
No. 20
Capacity 0 to ½ inch
Patented August 13, 1895; March 31, 1896

This Drill is similar to those previously described, but is intended for heavy duty or continuous use.

Breast Plate.—Saddle design, with broad leather strap. This is much easier on the chest than the ordinary iron head.

Frame.—Malleable Iron, black enameled.

Handles.—Crank handle is Polished Hard Wood. Side Handle is a heavy grip pattern.

Gears.—All teeth are machine cut. Pinions are steel. Large Gear is finished in red enamel.

Speeds.—Two Speeds, changed by turning the Shifter Knob marked "Fast" and "Slow."

Spindle.—Accurately turned steel Spindle runs in adjustable Ball Bearings. It also has a hardened end that runs in a hardened steel cone bearing.

Chuck.—All Steel, with three hardened jaws for holding Round Shanks of all sizes from 0 to ½ inch in diameter.

Size.—18½ inches long. Net weight, 6½ pounds.

Price, each ....................................................... (WYCH) $7.70

Packing.—One in a pasteboard box, 17 x 5½ x 2½ inches.

Weight.—7 pounds.

Hand and Breast Drill Display Stand
A very neat and practical cast aluminum Hand and Breast Drill Display is available to Dealers stocking a good assortment. It holds four Drills and is attractively finished in polished aluminum and red and black enamel.
Breast Drill
No. 245
Capacity 0 to ½ inch
Patented August 13, 1895; March 31, 1896

This Breast Drill is similar in design and construction to those previously described, but the metal parts are without the protection of nickel plate. Certain other economies are also introduced into its finish and construction which enable us to sell it at a very moderate price.

Breast Plate.—Enamel Iron; adjustable.

Frame.—Malleable Iron, well japanned.

Handles.—Polished Hard Wood.

Gears.—All teeth are machine cut. Pinions are steel. Large Gear is finished in red enamel with a polished edge.

Speeds.—Two Speeds, changed by turning the Shifter Knob marked “Fast” and “Slow.”

Spindle.—Accurately turned steel Spindle; has a hardened end that runs in a hardened steel Cone Bearing.

Chuck.—All-steel, with three hardened jaws for holding Round Shanks 0 to ½ inch.

Size.—16 inches long. Net weight, 4½ pounds.

Price, each ........................................... (Yeast) $5.50

Packing.—One in a pasteboard box, 17 x 5½ x 2½ inches.

Weight.—5 pounds.

This Drill used with No. 277 Feed Frame (page 163) makes a serviceable Automatic Feed Bench Drill.
Breast Drill

No. 7

For Round or Square Shanks

Patented March 31, 1896

This Drill has an improved Bit Brace Chuck with two sets of jaws, one for holding Round and the other for Square Shank Drills.

**Breast Plate.**—Enamelled Iron, adjustable.

**Frame.**—Malleable Iron, well japanned.

**Handles.**—Polished Hard Wood.

**Gears.**—All teeth are machine cut. Pinions are steel. Large Gear is finished in red enamel.

**Speeds.**—Two Speeds, changed by turning the Shifter Knob marked "Fast" and "Slow."

**Spindle.**—Accurately turned steel Spindle; has a hardened end that runs in a hardened steel Cone Bearing.

**Chuck.**—A strong all-steel Chuck with two pairs of forged steel jaws, one for holding Round and the other for Square Shanks.

**Size.**—17½ inches long. Net weight, 4½ pounds.

Price, each .................................. (WYKHA) $6.60

**Packing.**—One in a pasteboard box, 17 x 5½ x 2½ inches.

**Weight.**—5½ pounds.

Breast Drill

No. 7½

This Drill is exactly the same as No. 7, except that it has a Spade Handle instead of a Breast Plate.

Price, each .................................. (WTHK) $6.60

These Drills used with No. 277 Feed Frame (page 163) make a serviceable Automatic Feed Bench Drill.
Breast Drill
No. 07
For Square Shank Drills
Patented March 31, 1896

This Breast Drill will be found most satisfactory for use with Bit Brace, or Square Shank Drills, or Auger Bits.

Breast Plate.—Enameled Iron, adjustable.

Frame.—Malleable Iron, black enameled.

Handles.—Polished Hard Wood.

Gears.—All teeth are machine cut. Pinions are steel. Large Gear finished in red enamel.

Speeds.—Two Speeds, changed by turning the Shifter Knob marked "Fast" and "Slow."

Spindle.—Accurately turned steel Spindle; has a hardened end that runs in a hardened steel Cone Bearing.

Chuck.—All-steel, with two hardened forged steel jaws. This Chuck is very strong and will hold Square Shank Drills firmly and accurately.

Size.—16½ inches long. Net weight, 4½ pounds.

Price, each ..........................................................\(\text{each} \) $5.70

Packing.—One in a pasteboard box, 17 x 5½ x 2½ inches.

Weight.—5½ pounds.

This Drill used with No. 277 Feed Frame (page 163) makes a serviceable Automatic Feed Bench Drill.

Spade Handles

These Spade Handles have red enameled iron frames and comfortable polished hardwood grips. They are used in place of a breast plate in car shop and other heavy work. Particularly desirable when auger bits are used.

No. 188. Fitting Breast Drills Nos. 55, 56, 57, 219, 245, 246, 473, 477, 483, 493, 1200. Price, each ................. $0.60

No. 189. Fitting Breast Drills Nos. 6, 6A, 07, 7, 7½, 61, 62, 7307, 7310. Price, each ......................... $0.60
Breast Drill
No. 246
Capacity 0 to 3/8 inch
Patented November 26, 1912

This Breast Drill has two speeds and a Chuck for holding Round Shank Drills, yet its price is very low.

Breast Plate.—Black Enameded Iron, adjustable.

Frame.—Black Enameded Iron. A polished steel Shank connects the Frame with the Breast Plate.

Gears.—All teeth are machine cut. Large Gear is finished in red enamel. Please note that there are two steel Pinions, one for each speed.

Speeds.—Two, changed by pushing the pin on the side of the Frame; this releases the Gear Shaft, which is then drawn out and inserted in the other bearing, where a spring latch holds it in place.

Ball Bearings.—The Spindle runs in ball bearings.

Chuck.—All-steel, with three hardened jaws for holding Round Shank Drills 0 to 3/8 inch in diameter.

Size.—16 1/2 inches long. Net weight, 4 1/2 pounds.

Price, each ............................................. ($4.50)

Packing.—One in a pasteboard box, 10 1/2 x 5 1/2 x 3 1/2 inches.

Weight.—4 1/2 pounds.

Breast Drill
No. 477
Capacity 0 to 3/2 inch
Patented November 26, 1912

This Breast Drill is exactly the same as No. 246 above, except that the Chuck of this tool has a capacity for holding Round Shanks 0 to 3/2 inch in diameter.

Size.—16 1/2 inches long. Net weight, 4 1/2 pounds.

Price, each ............................................. ($5.00)

Packing.—One in a pasteboard box, 10 1/2 x 5 1/2 x 3 1/2 inches.

Weight.—5 pounds.
Breast Drill
No. 219
For Square Shank Drills

This Breast Drill is exactly the same as those described on the preceding pages, except that it has a Chuck for holding Square instead of Round Shank Drills.

Breast Plate.—Black Enameled Iron, adjustable.

Frame.—Black Enameled Iron. A polished steel Shank connects the Frame with the Breast Plate.

Gears.—All teeth are machine cut. Large Gear is finished in red enamel. Please note that there are two steel Pinions, one for each speed.

Speeds.—Two, changed by pushing the pin on the side of the Frame; this releases the Gear Shaft, which is then drawn out and inserted in the other bearing, where a spring latch holds it in place.

Ball Bearings.—The Spindle runs in ball bearings.

Chuck.—All-steel, with two forged jaws for holding Square or Bit Brace Shanks only.

Size.—16\frac{1}{2} inches long. Net weight, 4\frac{1}{2} pounds.

Price, each .................................................. (YEVUS) $4.60

Packing.—One in a pasteboard box, 10\frac{1}{2} x 5\frac{1}{2} x 3\frac{1}{2} inches.

Weight.—5\frac{1}{4} pounds.
Breast Drill
With Level Attachment
No. 483
Capacity 0 to 3/4 inch
Patented November 25, 1912

This Breast Drill is the same as the No. 246, shown on pages 176 and 177, with the addition of a small Level for convenience in starting Drills accurately.

**Breast Plate.**—Black Enamed Iron, adjustable.

**Frame.**—Black Enamed Iron.

**Level.**—A Level Vial is accurately set in the polished steel Shank that connects the Breast Plate with the Frame.

**Gears.**—All teeth are machine cut. Large Gear is finished in red enamel. Please note that there are two steel Pinions, one for each speed.

**Speeds.**—Two, changed by pushing the pin on the side of the Frame; this releases the Gear Shaft, which is then drawn out and inserted in the other bearing, where a spring latch holds it in place.

**Ball Bearings.**—The Spindle runs in Ball Bearings.

**Chuck.**—All steel, with three hardened jaws for holding Round Shank Drills 0 to 3/4 inch in diameter.

**Size.**—16 1/2 inches long. Net weight, 4 1/2 pounds.

Price, each.............. (York) $4.80
PACKING. — One in a pasteboard box, 10 1/2 x 5 1/2 x 3 1/2 inches.
WEIGHT. — 4 1/2 pounds.

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Breast Drill
With Level Attachment
No. 473
For Square Shank Drills
Patented November 25, 1912

This Breast Drill is the same as the No. 219, shown on pages 178 and 179, with the addition of a small Level for convenience in starting Drills accurately.

**Breast Plate.**—Black Enamed Iron, adjustable.

**Frame.**—Black Enamed Iron.

**Level.**—A Level Vial is accurately set in the polished steel Shank that connects the Breast Plate with the Frame.

**Gears.**—All teeth are machine cut. Large Gear is finished in red enamel. Please note that there are two steel Pinions, one for each speed.

**Speeds.**—Two, changed by pushing the pin on the side of the Frame; this releases the Gear Shaft, which is then drawn out and inserted in the other bearing, where a spring latch holds it in place.

**Ball Bearings.**—The Spindle runs in Ball Bearings.

**Chuck.**—All steel, with two forged jaws for holding Square or Bit Brace Shanks.

**Size.**—16 3/4 inches long. Net weight, 4 1/2 pounds.

Price, each.............. (York) $5.00
PACKING. — One in a pasteboard box, 10 1/2 x 5 1/2 x 3 1/2 inches.
WEIGHT. — 5 1/2 pounds.
Ratchet Breast Drill
No. 678
Capacity 0 to ½ inch
Patented July 24, 1923

This is a very sturdy, compact Breast Drill with an ingeniously simple and powerful Ratchet and Two Speed Mechanism. Changes of speed and ratchet action are both made by turning the large knurled dial on the back of the frame, giving the following actions: Fast; Slow; Fast Right Hand Ratchet; Slow Right Hand Ratchet. Elimination of the little used left hand actions makes this Drill as dependable and trouble-proof as the ordinary two speed breast drill.

The Breast Plate is cast from aluminum alloy nicely finished in ebony enamel. It is 6½ inches wide, giving a comfortable bearing for heavy drilling. The Breast Plate is connected to the frame by a nickel plated steel tube.

The Frame is aluminum alloy of great strength and light weight. It is finished in ebony enamel.

The Large Gear and Steel Pinions have all teeth machine cut from solid blanks. Pinions inclosed. Large Gear is finished in red enamel.

The accurately lathe-turned Spindle runs in ball bearings which take up the end thrust. The ball bearing is adjustable.

The all-steel Chuck has three hardened jaws for holding Round Shank Drills from 0 to ¼ inch diameter.

Length, 17½ inches. Weight, 4½ pounds net.

Price, each .......................................................... 88.80

Packed one in a pasteboard box, 17 x 5½ x 3½ inches.

Weight, 4½ pounds.
Ratchet Breast Drill

No. 677

Capacity 0 to 1/2 inch

Patented July 31, 1928

This is a very sturdy, compact Breast Drill with an ingeniously simple and powerful Ratchet and Two Speed Mechanism. Changes of speed and ratchet action are both made by turning the large knurled dial on the back of the frame, giving the following actions: Fast, Slow, Fast Right Hand Ratchet, Slow Right Hand Ratchet. Elimination of the little used left hand actions makes this Drill as dependable and trouble-proof as the ordinary two speed breast drill.

The Breast Plate is of the saddle type with a broad leather strap; easier on the chest than other styles. The casting is aluminum nicely ebony enameled. The Breast Plate is connected to the frame by a bright nickeled steel tube.

The Frame is aluminum alloy of great strength and light weight. It is finished in ebony enameled.

The Large Gear and Steel Pinions have all teeth machine cut from solid blanks. Pinions inclosed. Large Gear is finished in red enamel.

The accurately lathe-turned Spindle runs in ball bearings which take up the end thrust. The ball bearing is adjustable.

The all-steel Chuck has three hardened jaws for holding Round Shank Drills from 0 to 1/4 inch diameter.

Length, 18 1/4 inches. Weight, 4 3/4 pounds net.

Price, each .................................................. (MAKES) $9.70

Packed one in a pasteboard box, 17 x 5 1/2 x 3 1/2 inches.

Weight, 5 3/4 pounds.
Ratchet Breast Drill
No. 186
Capacity 0 to ½ inch
Patented March 31, 1906; September 16, 1924

This Drill is provided with a new ratchet mechanism of great simplicity and strength, making it as dependable a tool as the ordinary breast drill, without excessive weight.

The Ratchet Teeth are broached in the hubs of the two large gears. The Ratchet Dogs are made of hardened tool steel set in the steel shaft in such a way that the force exerted on them is almost entirely compressive, making them unbreakable. We believe this to be the most dependable ratchet mechanism ever devised.

Four actions at either "Fast or Slow" speed are available as follows: Right Hand Ratchet; Left Hand Ratchet; Reciprocating or Double Ratchet, and Direct. Change of action is controlled by the knurled Dials on either end of the shaft. Change of speed is controlled by the Shifter Knob at the side of the frame.

The Breast Plate is of the saddle type with a broad leather strap, insuring comfort. It is connected to the black enameled aluminum frame by a nickel plated steel tube.

The Gears have machine-cut teeth which mesh closely and quietly. The Large Gears are finished in red enamel. The Steel Pinions are entirely enclosed.

The accurately turned Steel Spindle runs in ball bearings. It has a hardened end that runs in a hardened steel cone bearing.

The extra heavy all-steel Chuck has three hardened jaws holding Round Shank Drills from 0 to ¼ inch in diameter.


Price, each ...........................................

Packed one in a pasteboard box, 18½ x 5½ x 4½ inches.
Weight, 8½ pounds.

Ratchet Breast Drill
No. 187
For Square Shank Drills

This Drill is exactly the same as the one described above, except the Chuck, which is all steel, with two hardened forged steel jaws for holding Square Shank Drills firmly and accurately.

Length, 18½ inches. Net weight, 7¼ pounds.

Price, each ...........................................

Packed one in a pasteboard box, 18½ x 5½ x 4½ inches.
Weight, 8½ pounds.
High Speed Breast Drill

No. 279

Capacity 0 to \( \frac{1}{2} \) inch

Patented October 19, 1915

This Breast Drill is a marvel of mechanical ingenuity and expert workmanship. The unusual construction embodies features that are invaluable to any one having a large amount of drilling to do.

Instead of the usual Breast Drill speeds, this tool has the very high speed of seven revolutions of the Chuck to one turn of the Crank. The slow speed is two to one.

The Speeds are changed, or the Spindle locked for opening and closing the Chuck, by simply turning the Knurled Ring between the Crank Handle and the Gear Casing.

The Gears, which are inclosed in an aluminum casing and packed in heavy grease, are all machine cut and carefully fitted.

The construction of this tool is up to date in every particular, with many conveniences for the operator. The Saddle Breast Plate has an aluminum Frame with leather strap, which is very much easier on the chest than the old style iron head. The hollow Steel Tubes and the Aluminum Casing make the Drill as light as possible. Ball Bearings make the Spindle run easily.

All the aluminum parts are polished and the steel parts are polished and nickel plated.

The three-jawed Chuck holds Round Shank Drills 0 to \( \frac{1}{2} \) inch in diameter.

The tool is 20 inches long and weighs 6\( \frac{1}{2} \) pounds.

Price, each .......................... (Yd. 1) $13.20

Packed one in a pasteboard box, 19 x 5\( \frac{1}{2} \) x 3\( \frac{3}{4} \) inches.

Weight, 6\( \frac{1}{2} \) pounds.
Giant Breast Drills

For work that is continuously ¼ inch or larger, these tools will be found more satisfactory than ordinary Breast Drills.

**Breast Plate.**—Saddle design; much easier on the chest than a plain iron head.

**Frame.**—Heavy Iron, black enameled.

**Side Handle.**—A heavy grip Side Handle is provided.

**Gears.**—Teeth are all machine cut.

**Speeds.**—Two, changed by turning the Shifter Knob marked "Fast" and "Slow."

**Spindle.**—Lathe turned; the end runs against ball bearings.

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**No. 58**

**Capacity** 0 to ½ inch

Chuck patented August 13, 1895

**Chuck.**—All-steel, with three hardened jaws. Holds Round Shanks 0 to ½ inch.

**Size.**—20½ inches long. Net weight, 10 pounds.

Price, each: $14.30

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**No. 59**

**Capacity** 0 to ¾ inch

Chuck patented August 13, 1895

**Chuck.**—Strong and well made. Holds Round Shanks 0 to ¾ inch.

**Size.**—22½ inches long. Net weight, 12½ pounds.

Price, each: $17.00

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**No. 60**

**Socket.**—This Drill has a No. 2 Morse Taper Socket instead of a Chuck.

**Size.**—21½ inches long. Net weight, 10 pounds.

Price, each: $14.30

Each one packed in a wooden case, 14¼ x 7¾ x 6¼ inches.

Weight of Nos. 58 and 60, 14 pounds. Weight of No. 59, 16½ pounds.
Combination Breast and Chain Drill
No. 7307
For Square Shanks
Patented March 31, 1896

This combination tool consists of a No. 307 Chain Drill, shown on page 195, on a special long Spindle attached to one of our regular malleable iron frame Breast Drills. This brings the work nearer to the operator than is possible where the shank of the Chain Drill is inserted in a Breast Drill Chuck.

This Breast Drill has two Speeds, cut Gears, and other improvements; and the Chain Drill has Ball Bearings and an Automatic Feed.

The Chuck is all steel, with two hardened jaws for holding Square Shank Drills.

Length over all, 20\% inches. Net weight, 6\% pounds.

Price, each. (20cts) $8.25

Packed one in a pasteboard box, 21 x 5\% x 3\% inches.

Weight, 7\% pounds.

Combination Breast and Chain Drill
No. 7316
Capacity 0 to 1/2 inch
Patented August 13, 1885; March 31, 1896

This combination tool consists of a No. 316 Chain Drill, shown on page 195, on a special long Spindle attached to one of our regular malleable iron frame Breast Drills. This brings the work nearer to the operator than is possible when the shank of a Chain Drill is inserted in a Breast Drill Chuck.

The Breast Drill has two Speeds, cut Gears, and other improvements; and the Chain Drill has Ball Bearings and an Automatic Feed.

The Chuck is all steel, with three hardened jaws for holding Round Shank Drills of all sizes from 0 to 1/2 inch in diameter.

Length over all, 19\% inches. Weight, 6\% pounds.

Price, each. (20cts) $9.35

Packed one in a pasteboard box, 21 x 5\% x 3\% inches.

Weight, 7\% pounds.
**No. 326 Automatic Chain Drill**

Capacity 0 to 1/2 inch

This Chain Drill is equipped with a sensitive Automatic Feed, reducing drill breakage to a minimum. The Feed does not operate until the Drill actually engages the work. This permits running the Drill rapidly to and away from the work.

The Feed is governed by the Knurled Nut on the Frame. This Nut is marked with different drill diameters. If a 1-inch drill is being used the 1/4 mark on the nut dial should be opposite the fair mark on the frame.

The carefully machined Spindle runs in ball bearings, reducing the thrust. The squared end of the Spindle is case hardened.

Each Drill is equipped with three feet of strong steel chain. Special lengths are furnished on order.

The Chuck is all steel, with three hardened jaws for holding Round Shank Drills 0 to 1 inch in diameter.

Length without chain, 9 1/2 inches. Weight, 3 1/2 pounds net.

Price, each ........................................................(YMPO) $5.50

Packed one in a pasteboard box, 9 1/2 x 4 1/2 x 3 1/2 inches.
Weight, 3 1/2 pounds.

**No. 327 Automatic Chain Drill**

For Square Shank Drills

Identical to No. 326 above, except for the Chuck, which has two forged steel jaws for holding Square Shank Drills.

Length without chain, 9 1/2 inches. Weight, 3 1/2 pounds net.

Price, each ........................................................(YMPO) $5.30

Packed one in a pasteboard box, 10 x 4 1/2 x 3 1/2 inches.
Weight, 3 1/2 pounds.

**No. 316 Automatic Chain Drill**

Capacity 0 to 1/2 inch

This Chain Drill has a very simple and serviceable Automatic Feed Device that has proved its value by many years of satisfactory use. It is not adjustable, however, like those just shown.

The square end of the Ball Bearing Spindle, which also forms the Feed Screw, is case hardened to prevent damage. Each Drill is equipped with three feet of strong steel chain of our own manufacture. Special lengths can be furnished to order. The Iron Frame of this tool is black enameled. The Chuck is all steel, with three hardened jaws for holding Round Shank Drills of all sizes from 0 to 1/2 inch.

The tool is 9 inches long and weighs 2 1/2 pounds net.

Price, each .....................................................(YMPO) $4.50

Packed one in a pasteboard box, 9 1/2 x 4 1/2 x 2 1/2 inches. Weight, 2 1/2 lbs.

**No. 307 Automatic Chain Drill**

For Square Shank Drills

This Drill is identical with the No. 316 shown above, with the exception of the Chuck, which is all steel, with two forged jaws for holding Square Shank Drills.

The tool is 9 1/2 inches long and weighs 2 1/2 pounds net.

Price, each .....................................................(YMPO) $4.30

Packed one in a pasteboard box, 9 1/2 x 4 1/2 x 2 1/2 inches. Weight, 3 pounds.
Many mechanics prefer a Chain Drill with a plain Screw Feed, as they can absolutely control the pressure upon their Twist Drill at all times. The Hand Feed is much simpler and Drills so equipped can be sold at lower prices. The Feed on this tool is very easily controlled by the large Knurled Ring on the Feed Screw.

Each Drill is equipped with three feet of strong steel chain of our own manufacture. Special lengths can be furnished to order.

The Chuck is all steel, with three hardened jaws for holding Round Shank Drills of all sizes from 0 to 1/4 inch.

The tool is 9 inches long and weighs 2 1/2 pounds net.

**No. 0307 Chain Drill**

For Square Shank Drills

This Drill is identical with the No. 0316 shown above, with the exception of the Chuck, which is all steel, with two forged jaws for holding Square Shank Drills.

The tool is 9 1/2 inches long and weighs 2 1/2 pounds net.

Price, each .................................................. $4.10

Packed one in a pasteboard box, 9 1/2 x 4 1/2 x 2 1/4 inches.

Weight, 3 pounds.

**Automatic Chain Drill**

No. 308

For 1/2 inch Round Shanks only

This Drill is identical with the Nos. 316 and 307 illustrated and described on page 195, with the exception of the Chuck, which consists of a socket with a hardened steel set screw for holding 1/2-inch Round Shanks only.

The tool is 7 1/2 inches long and weighs 2 1/2 pounds net.

Price, each .................................................. $3.50

Packed one in a pasteboard box, 8 1/2 x 4 1/2 x 2 1/4 inches.

Weight, 2 1/4 pounds.

**Chain Drill**

No. 0308

With Hand Feed

This Drill is identical with the Nos. 0316 and 0307 illustrated and described on page 196, with the exception of the Chuck, which consists of a socket with a hardened steel set screw for holding 1/2-inch Round Shanks only.

The tool is 7 1/2 inches long and weighs 2 1/4 pounds net.

Price, each .................................................. $3.30

Packed one in a pasteboard box, 8 1/2 x 4 1/2 x 2 1/4 inches.

Weight, 2 1/4 pounds.
Giant Chain Drills

These Chain Drills are very much larger and heavier than any other Chain Drills ever manufactured.

They have two 5-foot steel sash chains attached to a 4 x 6 inch iron Frame. Ball bearing reduce the end thrust. Spindles have case-hardened ends.

The Frames are black enameled and all bright steel parts are polished.

No. 317

This Drill has a ¾-inch Round Socket with a Set Screw for holding Drills with ¾-inch Round Shanks.

It is 9 inches long and weighs 5½ pounds net.

Price, each (Yale) $6.60

No. 318

This Drill has a No. 1 Morse Taper Socket instead of a Chuck.

It is 10½ inches long and weighs 6 pounds net.

Price, each (Yale) $8.25

No. 319

This Drill has a No. 2 Morse Taper Socket instead of a Chuck.

It is 11 inches long and weighs 6 pounds net.

Price, each (Yale) $8.35

Packed one in a pasteboard box, 11 x 6½ x 4½ inches.

Weight of No. 317, 6 pounds. Weight of Nos. 318 and 319, 6½ pounds.

No. 83 Universal Ratchet Handle

This tool has a 7-inch black enameled iron Handle and a very strong Ratchet that can be used for either right or left hand work. The hardwood Head runs on ball bearings. The polished Socket has a square taper hole provided with a set screw for holding square shank tools.

The tool is 4½ inches high and weighs 1½ pounds net.

Price, each (Yale) $3.30

Packed one in a pasteboard box, 8½ x 4½ x 2½ inches.

No. 81 Universal Ratchet Handle

Identical to No. 83 above, except that it has a polished hardwood Handle in place of the Ball Bearing Head. The tool is 6½ inches high and weighs 1½ pounds net.

Price, each (Yale) $2.75

Packed one in a pasteboard box, 8½ x 2½ x 2½ inches.

No. 85 Universal Ratchet Handle

This tool has a 7-inch black enameled iron Handle and a very strong Ratchet that can be used for either right or left hand work. The hardwood Head runs on Ball Bearings.

The all-steel Chuck is polished and nickel plated. It has three hardened steel jaws for holding Round Shank Drills from 0 to ½ inch in diameter.

Tool is 5½ inches high. Weight, 2 pounds net.

Price, each (Yale) $4.40

Packed one in a pasteboard box, 8½ x 6½ x 2½ inches.

No. 84 Universal Ratchet Handle

Same as No. 85 above, except for the Chuck, which has two forged steel jaws for holding Square Shank Drills.

Tool is 6½ inches high. Weight, 2½ pounds net.

Price, each (Yale) $4.20

Packed one in a pasteboard box, 8½ x 6½ x 2½ inches.
No. 86 Ratchet Drill
Capacity 0 to ½ inch

This Ratchet Drill is provided with a Screw Feed for use in connection with an "old man" or clamp. The Feed can be operated by turning the Knurled Handle or by using a lever in the steel center provided for this purpose.

This tool has a 7-inch enameled iron Handle and a strong and positive Ratchet for either right or left hand work. The Knurled Feed Handle and the Chuck are polished and nickel plated.

The all-steel Chuck has three hardened jaws for holding Round Shank Drills 0 to ½ inch.

The tool is 7½ inches high and weighs 2½ pounds net.

Price, each........................................ (Yatka) $4.80
Packed one in a pasteboard box, 8¼ x 8½ x 2¼ inches.

No. 87 Ratchet Drill
Capacity 0 to ½ inch

Identical to No. 86 above, with addition of the Friction Feed Device illustrated, which automatically regulates the feed.

Tool is 8½ inches high with Feed Device attached. Weight, 3 pounds.

Price, each, complete............................... (Yatka) $6.00
Packed one in a pasteboard box, 8½ x 8½ x 2½ inches.

No. 99 Ratchet Drill
Capacity 0 to ¾ inch

This is a very serviceable Ratchet Drill with a three-jawed Chuck, sold at a moderate price. The tool has a 7-inch black enameled iron Handle and a strong Ratchet for either right or left hand work. The Feed Screw is controlled by a case-hardened hexagon nut that can be operated by an ordinary wrench. The Chuck holds Round Shank Drills 0 to ¾ inch.

The tool is 6 inches high and weighs 1½ pounds net.

Price, each........................................ (Yatka) $4.40
Packed one in a pasteboard box, 8¼ x 6½ x 2½ inches.

Universal Ratchet Handle
No. 107
With Five Wrench Sockets

This tool has an iron Handle with a strong Ratchet that can be used for either right or left hand work.

The Head runs on Ball Bearings. The Socket has a square taper hole for holding the five malleable iron nut wrenches furnished with each tool.

<table>
<thead>
<tr>
<th>Socket No.</th>
<th>Size</th>
<th>Set Screws</th>
<th>Sq. Head</th>
<th>Cap Screws</th>
<th>Hex. Head</th>
<th>Cap Screws</th>
<th>Sq. and Hex.</th>
<th>Nuts</th>
<th>Lg. Screws</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1/8</td>
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<td>3</td>
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</tbody>
</table>

Price, per set, complete............................... (Yatka) $3.85
Packed one in a pasteboard box, 8½ x 4½ x 2½ inches.
Weight, 2½ pounds.

Chain Attachment for Ratchet Drills
No. 309

This ingenious little device can be used with Ratchet Drills as a clamp wherever a chain can be passed around the work. For use in connection with the No. 99 Ratchet Drill, shown on the preceding page, it makes a very satisfactory substitute for an automatic feed.

Four feet of heavy steel sash chain is attached.

Price, each........................................ (Yatka) $1.30
Packed one in a pasteboard box, 5¼ x 4½ x 1½ inches.
Weight, 1½ pounds.
Bench Drill
No. 148
Capacity 0 to 1/2 inch
Chuck Patented August 13, 1895

This small lever-feed Bench Drill will be found convenient for any small work. It is well designed and well made; the Gears are machine cut. The iron parts are finished in black and red enamel; steel parts are polished.
The Spindle has a travel of 1 1/2 inches. Extreme distance from Chuck to Table is 3 1/2 inches. The Table has a working surface, 3 x 31 inches. Height above Table, 11 inches. Net weight, 3 1/2 pounds.
Three-jawed Chuck holds Round Shank Drills 0 to 1/2 inch.
Eight Drill Points, 1/16 to 1/4 inch, are furnished.
Price, each (yerex) $5.50
Packed one in a pasteboard box, 10 1/2 x 6 1/2 x 4 1/2 inches.
Weight, 4 1/2 pounds.

Universal Bench Drill
No. 145
Capacity 0 to 1/2 inch
Chuck Patented August 13, 1895

This Bench Drill has many unique features that are not to be found in any other similar tools. It will be found very useful in any workshop where there is much small work to be done.
The Rod which supports the Table will hold the Drill accurately in a vertical position. It can be readily set at any other angle and held firmly in place by the Thumb screw. The Table is adjustable. Extreme distance between Chuck and Table, 7 1/2 inches.
The whole tool is 12 inches high over all, and weighs 3 pounds. It has a Lever Feed, cut Gears, a Steel Feed Screw, and many other features. The Chuck is all steel, with three hardened jaws for holding Round Shank Drills of all sizes up to 1/2 inch in diameter. It will drill to the center of a 2-inch circle when in the vertical position. Net weight, 3 pounds.
Each Drill is furnished with eight Tool Steel Drill Points 1/16 to 1/4 inch in diameter.
Price, each (yerew) $8.25
Packed one in a pasteboard box, 10 1/2 x 5 1/2 x 3 1/2 inches.
Weight, 3 1/2 pounds.

Bench Drill and Vise
No. 147
Capacity 0 to 1/2 inch
Patented August 13, 1895

This machine is a combination of a small Drill with our 2-inch Bench Vise No. 161. The Drill has a Lever Feed, cut Gears, and is equipped with a three-jawed Chuck, capacity 0 to 1/2 inch.
This Vise is very strong and well made. Drill can be readily removed from Vise if desired.
Eight Drill Points, 1/16 to 1/4 inch, are furnished.
Net weight, 6 pounds.
Price, each (yerel) $8.75
Packed one in a pasteboard box, 10 1/2 x 6 1/2 x 4 1/2 inches.
Weight, 6 1/2 pounds.

Universal Bench Drill and Vise
No. 146
Capacity 0 to 1/2 inch
Chuck Patented August 13, 1895

This is a combination of Universal Bench Drill No. 145, which is described above, and the 2-inch Bench Vise No. 161, shown on page 220. The Drill is mounted upon the Vise with the Chuck directly above the Jaws when in a vertical position.
The Drill, which can be readily removed from the Vise when it is not desired, has all the features of the No. 145: cut Gears, Lever Feed, Steel Feed Screw, and an even greater possibility of adjustment.
The whole tool is 15 inches over all and weighs 6 1/2 pounds net. The Chuck is all steel, with three hardened jaws for holding Round Shank Drills of all sizes up to 1/2 inch.
Eight Tool Steel Drill Points, 1/16 to 1/4 inch, are furnished with each tool.
Net weight, 6 1/2 pounds.
Price, each (yerex) $11.00
Packed one in a pasteboard box, 10 1/2 x 6 1/2 x 4 1/2 inches.
Weight, 7 pounds.
**Goodell-Pratt**

**No. 8 Bench Drill**
**Capacity 0 to \( \frac{1}{4} \) inch**

This Bench Drill has a solid cast iron Frame which is designed to give the maximum strength with the lightest consistent weight. It has a Hand Feed that is controlled by the Feed Wheel on the top of the steel Feed Screw.

The Gears of these Drills are all turned and cut from solid blanks, and are fitted carefully so that they run smoothly and easily.

The Table has a turned and polished top and is adjustable for height.

The iron parts of this machine are finished in red and black machine enamel. The steel parts are polished.

The all-steel Chuck has three hardened jaws for holding Round Shank Drills of all sizes from 0 to \( \frac{1}{4} \) inch.

Eight Tool Steel Drill Points, \( \frac{1}{6} \) to \( \frac{1}{4} \) inch, are furnished with each machine.

Height above bench, 13 inches. Net weight, 7\( \frac{1}{2} \) pounds.

Price, each. \( \$8.80 \)

Packed one in a wooden case, 16\( \frac{1}{4} \) x 10 x 6\( \frac{1}{2} \) inches.

Shipping weight, 12\( \frac{1}{2} \) pounds.

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**No. 8\( \frac{1}{2} \) Bench Drill**

Same as No. 8 above, with the addition of a special Vise which fits in the table bracket. The jaws of the Vise are opened equally by a right and left hand screw. The jaws are 2 inches wide and open 1\( \frac{1}{2} \) inches.

Net weight, 9 pounds.

Price of Machine and Vise, complete. \( \$11.55 \)

Packed one in a wooden case, 16\( \frac{1}{4} \) x 10 x 6\( \frac{1}{2} \) inches.

Shipping weight, 13\( \frac{1}{2} \) pounds.

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**No. 9 Bench Drill**
**Capacity 0 to \( \frac{3}{4} \) inch**

This Bench Drill has a solid cast iron Frame designed to give maximum strength with the lightest consistent weight. It has a Hand Feed controlled by the Feed Wheel on the top of the steel Feed Screw.

The Gears and steel Pinions are cut from solid blanks and are carefully fitted to run smoothly.

There are two Speeds which are changed by turning the Knurled Knob on the side of the Frame.

The Table, which is adjustable for height, has a turned and polished top.

All the iron parts of the Drill are finished in red and black enamel and the steel parts are polished.

The Chuck is all steel, with three hardened jaws for holding Round Shank Drills of all sizes up to \( \frac{3}{4} \) inch in diameter.

Eight Drill Points, \( \frac{1}{6} \) to \( \frac{1}{4} \) inch in diameter, furnished with each machine.

Height above table, 18 inches. Net weight, 13\( \frac{1}{2} \) pounds.

Price, each. \( \$12.70 \)

Packed one in a wooden case, 21 x 12 x 6 inches.

Shipping weight, 19 pounds.

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**No. 9\( \frac{1}{2} \) Bench Drill**

Same as No. 9 above, with the addition of a special Vise which fits the table bracket. The jaws of the Vise are opened equally by a right and left hand screw. The jaws are 2\( \frac{1}{4} \) inches wide and open 2 inches.

Price of Machine and Vise, complete. \( \$16.00 \)

Packed one in a wooden case, 21 x 12 x 6 inches.

Shipping weight, 22 pounds.

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**No. 9\( \frac{3}{4} \) Bench Drill Vise**

Price of Separate Vise, each. \( \$2.75 \)

Net weight, 3\( \frac{1}{4} \) pounds.
**Bench Drill No. 90**

Capacity 0 to \(\frac{7}{8}\) inch

This Drill is exactly the same as the No. 9 shown on page 205, except that it has a Lever Feed in addition to the Screw Feed ordinarily provided. This will be found a great convenience for certain classes of work. For further particulars, see the description of Bench Drill No. 9.

Net weight, 13\(\frac{1}{2}\) pounds.

Price, each .......................... (YARDS) $16.00

Packed one in a wooden case, 21 x 12 x 6 inches.
Shipping weight, 19\(\frac{1}{2}\) pounds.

**Bench Drill No. 490**

With Patent Automatic Feed

Capacity 0 to \(\frac{7}{8}\) inch

This Drill has an Intermittent Friction Feed controlled by a Nut on the top of the Frame. This Nut can be set to regulate the pressure properly for the size of Drill in use, saving much Drill breakage where operator is inexperienced. The Feed does not operate until the Drill actually strikes the work. Reversing the Handle instantly releases the Feed and runs the Feed Screw back rapidly to its original position.

The steel Spindle is topped by a Balance Wheel that equalizes its movement.

There are two Speeds that are easily changed by turning the Shifter Knob on the front of the Frame.

All Gears are cut from solid blanks, and are carefully fitted to run smoothly.

The Adjustable Table has a turned and polished top; other iron parts are finished in red and black enamel, and all steel parts are polished.

The Chuck is all steel, with three hardened jaws for holding Round Shank Drills of all sizes from 0 to \(\frac{3}{8}\) inch in diameter. Eight Tool Steel Drill Points, \(\frac{1}{8}\) to \(\frac{1}{4}\) inch, are furnished with each tool.

Height above table, 18 inches. Net weight, 14\(\frac{1}{2}\) pounds.

Price, each ................................ (YOTIO) $16.50

Packed one in a wooden case, 21 x 12 x 6 inches.
Shipping weight, 20 pounds.

**No. 90\(\frac{1}{2}\) Bench Drill**

This is our No. 90 Bench Drill, described above, with the additional equipment of a No. 9\(\frac{1}{2}\)-inch Bench Drill Vise, with jaws opening 2 inches.

Net weight, 16\(\frac{1}{2}\) pounds.

Price of Machine, complete with Vise .......................... (YAPBT) $10.30

Packed one in a wooden case, 21 x 12 x 6 inches.
Shipping weight, 22\(\frac{1}{2}\) pounds.

**Special Short Twist Drills**

We can furnish Special Short Twist Drills in Sets, particularly adapted for use in our smaller Bench Drills where Drills of regular length take up too much room. All of these Drills are 2\(\frac{1}{2}\) inches long.

<table>
<thead>
<tr>
<th>Price per Set</th>
</tr>
</thead>
<tbody>
<tr>
<td>SET No. 080. 1 each, (\frac{1}{6}, \frac{1}{8}, \frac{1}{4}, \frac{3}{4}, \frac{1}{4}, \frac{7}{8}, \frac{3}{4}, \frac{7}{16}) inch .......................... (YAPOR) $2.20</td>
</tr>
<tr>
<td>SET No. 090. 1 each, (\frac{1}{16}, \frac{1}{8}, \frac{3}{32}, \frac{1}{4}, \frac{5}{32}, \frac{1}{8}, \frac{7}{32}, \frac{\frac{1}{4}}{\frac{1}{4}}, \frac{1}{8},\frac{1}{16}, \frac{3}{32}, \frac{1}{8}, \frac{7}{32}, \frac{\frac{1}{4}}{\frac{1}{4}}) inch .......................... (YAUIC) 4.40</td>
</tr>
</tbody>
</table>

**Bench Drill No. 490\(\frac{1}{2}\)**

Same as No. 490 above, with the addition of a No. 9\(\frac{1}{2}\) Bench Drill Vise. This Vise has 21-inch jaws and opens 2 inches.

Height above table, 18 inches. Net weight, 18 pounds.

Price of Drill and Vise .................................. (YOTOR) $19.80

Packed one in a wooden case, 21 x 12 x 6 inches.
Shipping weight, 24 pounds.
Bench Drill
No. 675
Capacity 0 to \(\frac{1}{2}\) inch

All the working parts of this machine are clamped to a 24-inch steel tube of 1\(\frac{1}{4}\) inch diameter, which sets into a black enameled Base that takes a bench space 8\(\frac{1}{4}\) x 12 inches. The feed is operated by a Hand Wheel on the top of the Steel Feed Screw.

Gears and Pinions are machine cut from solid blanks.

There are two Speeds which are changed by turning the Shifter Knob in the rear of the Frame.

The Table proper is 6 x 7 inches. All iron parts are finished in red and black enamel and all steel parts polished.

Each machine is fitted with an all-steel Chuck that has three hardened jaws for holding Round Shank Drills from 0 to \(\frac{1}{2}\) inch in diameter.

Height above bench, 28\(\frac{1}{2}\) inches.

Net weight, 28 pounds.

Price, each ........................................... (Ea) $18.50

Packed one in a wooden case, 26\(\frac{1}{2}\) x 11 x 10 inches.

Shipping weight, 38 pounds.

No. 10 Bench Drill
Capacity 0 to \(\frac{1}{2}\) inch

This is a two speed machine similar to No. 675 on the preceding page. The steel tube clamps into the bench plate and the 6 x 6\(\frac{1}{2}\) inch milled and T-slotted table is likewise clamped on. This table can be swung to one side or removed entirely and work blocked up from the floor.

The Gear and Pinions are accurately machined from solid blanks.

The two Speeds are changed by turning the Shifter Knob at the back of the Frame.

Iron parts are finished in red and black enamel and all steel parts polished. The all-steel Chuck has three hardened steel jaws for holding Round Shank Drills from 0 to \(\frac{1}{4}\) inch in diameter. Weight, 30 pounds.

Price, each ........................................... (W111) $23.00

Packed one in a wooden case, 27 x 11 x 10 inches.

Shipping weight, 40 pounds.

Bench Drill
No. 10\(\frac{1}{2}\)

This machine is the same as No. 10 above, with the addition of a Vise and three Steel Centers. The jaws of the Vise are opened equally by a right and left hand screw. The jaws are 2\(\frac{1}{2}\) inches wide and open 2 inches. The sides of the Vise engage the table slots.

A Point Center, \(\frac{1}{8}\) inch in diameter; A Cup Center, 1 inch in diameter; and a V Center, 1 inch in diameter, are also furnished, fitting the hole in the center of the table.

Weight of Machine, Vise, and Centers, 33\(\frac{1}{2}\) pounds net.

Price, each, complete ................................ (W112) $28.25

Packed one in a wooden case, 27 x 11 x 10 inches.

Shipping weight, 43\(\frac{1}{2}\) pounds.

No. 10\(\frac{1}{2}\) Bench Drill Vise and Centers

Price of Separate Vise, each ................................ (W133) $3.75

Price of Centers, per set of three ................................ (W134) 1.50

Net weights: Vise, 3 pounds. Centers, \(\frac{1}{4}\) pound.
Bench Drill
No. 11
Capacity 0 to ½ inch

This Drill has an Automatic Cam Feed in addition to the Hand Feed ordinarily provided. This Feed is simple and practical and will be appreciated wherever such a Feed is desired.

All the working parts of this machine are clamped on a 1½-inch steel tube that is 24 inches long.

Gears and Pinions are cut from solid blanks and are carefully fitted to run smoothly.

There are two speeds, which are changed by turning the Shifter Knob in the rear of the Frame.

The Table is 6 x 6½ inches, milled and T-slotted. It is adjustable up or down and right or left. It can be entirely removed if desired, and the work blocked up from the floor.

Iron parts are finished in red and black enamel, and all steel parts are polished.

Each machine is fitted with an all-steel Chuck that has three hardened jaws for holding Round Shank Drills 0 to ½ inch in diameter.

Net weight, 30 pounds.

Price, each (wyrak) $25.50

Packed one in a wooden case, 27 x 11 x 10 inches.
Shipping weight, 40 pounds.

No. 11½ Bench Drill

Same as No. 11 above, with the addition of a No. 10½ Vise and set of Centers described and priced on page 209.
Net weight, 33 pounds.

Price of Machine, complete (wykler) $30.75

Packed one in a wooden case, 27 x 11 x 10 inches.
Shipping weight, 43 pounds.

Wall Drilling Machine
No. 63
Capacity 0 to ½ inch

This Machine is provided with two iron brackets so arranged that it can be fastened to a post or to the wall making it a very convenient drilling machine without occupying space upon the bench. The shaft is hollow steel tube 1½ inches in diameter and 33 inches long.

The Drill has a Hand Feed controlled by turning the Feed Wheel on top of the steel Feed Screw.

All Gears and Pinions are turned and cut from solid blanks and are carefully fitted to run smoothly.

There are two speeds that are readily changed by turning the Shifter Knob in the rear of the Frame.

The Table is milled and T-slotted, and can be adjusted up or down and right or left. Extreme distance between the Chuck and Table is 11½ inches.

Iron parts are finished in red and black enamel. All steel parts are polished.

Each machine is provided with an all-steel Chuck that has three hardened jaws for holding Round Shank Drills of all sizes from 0 to ½ inch.

Net weight, 35 pounds.

Price, each (yazek) $24.50

Packed one in a wooden case, 37 x 10 x 9 inches.
Shipping weight, 49 pounds.

Wall Drilling Machine
No. 63½

Same as No. 63 above, with addition of a No. 10½ Vise and set of Centers described and priced on page 209. Net weight, 39 pounds.

Price of Machine, complete (yazek) $29.75

Packed one in a wooden case, 37 x 10 x 9 inches.
Shipping weight, 53 pounds.
Bench Drill
No. 491
With Patent Automatic Feed
Capacity 0 to ½ inch
Patented October 25, 1909

This Drill is the same as No. 10 illustrated and described on page 209, with the addition of a sensitive Automatic Feed Device and a heavy Balance Wheel on the spindle.

The Automatic Feed is controlled by a nut on the top of the Frame. This nut can be set to regulate the pressure properly for the size of Drill in use, saving much Drill breakage where the operator is inexperienced. The Feed does not operate until the Drill actually strikes the work, but runs the Feed Screw rapidly down to the work, saving a great deal of time. Reversing the Handle releases the Feed instantly.

The two Speeds are changed by turning the Shifter Knob at the back of the Frame. The Table is 6 x 6½ inches, milled and T-slotted. It is adjustable for height or can be removed entirely if desired. Iron parts are finished in red and black enamel and steel parts nicely polished.

The all-steel Chuck has three hardened steel jaws for holding Round Shank Drills from 0 to ½ inch in diameter.

Net weight, 35 pounds.

Price, each.................. (yotyn) $27.30

Packed one in a wooden case, 27 x 11 x 10 inches.
Shipping weight, 45 pounds.

No. 491½ Bench Drill
Same as No. 491 above, with addition of a No. 10½ Vise and set of Centers described and priced on page 209.

Net weight, 38 pounds.

Price of Machine, complete.................. (yotyn) $32.75

Packed one in a wooden case, 27 x 11 x 10 inches.
Shipping weight, 48 pounds.

No. 72 Bench Drill
Capacity 0 to ½ inch
Patented August 15, 1885; March 31, 1886

All the working parts of this machine are clamped on a 1½-inch steel Tube. This is a light but strong construction. The Spindle is provided with a heavy Balance Wheel 8 inches in diameter, 1½-inch face, that gives it momentum and equalizes its movement. The Spindle runs inside of the Feed Screw, and the Balance Wheel rests on a Knurled Nut, which is turned to run the Feed Screw up or down.

The Gears, which are turned and cut from blanks, are carefully fitted to run smoothly. There are two Speeds, which are changed by turning the Shifter Knob in the rear of the Frame.

Two Tables are furnished: a Round Table, 7 inches in diameter, that can be swung out of the way; and a 6 x 7 inch Rectangular Table. The extreme distance from the Chuck to the Round Table is 4½ inches; from the Chuck to the Rectangular Table is 11 inches.

All steel parts and also Table Tops and edge of Balance Wheel are polished, other iron parts are finished in red and black enamel.

Each machine is furnished with an all-steel Chuck that has three hardened jaws for holding Round Shank Drills 0 to ½ inch.

Height of tube, 24¼ inches. Net weight of machine, 47 pounds. Great care must be exercised when this machine is used with a Drill under ½ inch in size.

Price, each.................. (yotyn) $33.00

Packed one in a wooden case, 28 x 14 x 12 inches.
Shipping weight, 65 pounds.

No. 72½ Bench Drill
Same as No. 72 above, except that a special Vise is furnished in place of the round table. The Vise Jaws are 2½ inches wide and open 2½ inches. Jaws opened equally by turning the right and left hand screw.

Net weight, 45 pounds.

Price of Machine, complete.................. (yotyn) $36.00

Packed one in a wooden case, 28 x 14 x 12 inches.
Shipping weight, 63 pounds.

No. 72½ Bench Drill Vise
Price of Separate Vise, each.................. (yotyn) $3.75

Net weight, 4 pounds.
No. 492 Bench Drill
With Patent Automatic Feed
Capacity 0 to ½ inch

This Drill has an Intermittent Friction Feed controlled by a Nut on the top of the Frame. This Nut can be set to regulate the pressure properly for the size of Drill in use, saving much Drill breakage, where the operator is inexperienced. The Feed does not operate until the Drill actually strikes the work, but runs the Feed Screw rapidly down to the work, saving a great deal of time. Reversing the Handle also releases the Feed instantly. The steel Spindle is topped by an 8 x 1 ½ inch Balance Wheel which gives it momentum and equalizes its movement.

The Gears which are turned and cut from solid blanks are carefully fitted to run smoothly. There are two Speeds which are changed by turning the Shifter Knob in the rear of the Frame.

Two Tables are furnished: a Round Table 7 inches in diameter that can be swung out of the way; and a 6 x 7 inch Rectangular Table. The extreme distance from the Chuck to the Round Table is 4 ½ inches; from the Chuck to the Rectangular Table is 11 inches.

All steel parts and also Table Top and edge of Balance Wheel are polished, other iron parts are finished in red and black enamel.

Each machine is furnished with an all-steel Chuck that has three hardened jaws for holding Round Shank Drills 0 to ½ inch.

Height of tube, 24 ½ inches. Net weight of machine, 48 pounds. Great care must be exercised when this machine is used with a Drill under ½ inch in size.

Price, each. .................................................. $36.50
Packed one in a wooden case, 28 x 14 x 12 inches.
Shipping weight, 66 pounds.

No. 492½ Bench Drill

Same as No. 492 above, with the addition of a No. 72½ Vice described and priced on the preceding page. Net weight, 52 pounds.

Price of Machine, complete. .............................. (Youth) $40.00
Packed one in a wooden case, 28 x 14 x 12 inches.
Shipping weight, 70 pounds.

Power Bench Drill
No. 12
Capacity 0 to ¼ inch
Chuck Patented August 13, 1895

This little machine is a Sensitive Bench Drill for light work. It is of good quality but it is sold for a very low price. The Head is enameled iron attached to a polished steel Shank.

Each machine is fitted with a three-jawed steel Chuck for holding Round Shank Drills of all sizes up to ½ inch in diameter.

The machine drills to the center of a 6½-inch circle. The Spindle can be set for any movement 3½ inches or less. The Table is 4½ inches in diameter and has a 2½-inch adjustment. Extreme distance from Chuck to Table is 8 inches.

The loose pulley is 3 inches in diameter with a 1-inch face. The steps are 3½ and 4½ inches made for ½-inch round belt. No belt is furnished.


Price, each. .................................................. (Wyko) $24.00
Packed one in a wooden case, 20 x 17 x 8 inches.
Shipping weight, 32 pounds.
**Bench Drill**  
No. 18  
Capacity 0 to ½ inch  
Patented August 13, 1895

This Bench Drill is attached to a rigid wall plate by means of a swinging arm 24 inches long. It can be used over a wide bench to good advantage as it will drill to the center of a 54-inch circle and will swing back against the wall when not in use.

The Feed is operated by a Hand Wheel on the top of the steel Feed Screw. There are two speeds which are readily changed by turning the Shifter Knob on the back of the Frame.

Gears and Pinions are turned and cut from solid blanks and carefully fitted to run smoothly.

Each machine is fitted with an all-steel Chuck that has three hardened jaws for holding Round Shank Drills of all sizes up to ½ inch in diameter.

Iron parts are finished in red and black enamel; all steel parts are polished.

Net weight of complete machine, about 53 pounds.

Price, each ........................................... $27.00

Packed one in a wooden case, 27 x 11 x 10 inches.  
Shipping weight, 65 pounds.

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**Countershaft**  
No. 47  
This Countershaft is designed to operate small machines driven by a round belt.

Shaft, ½-inch diameter.
Loose Pulley, 3-inch diameter, 1-inch face.
Tight Pulley, 3-inch diameter, 1½-inch face.

1st Step, 3½-inch diameter.  
2d Step, 4½-inch diameter.

Base Plate, 4 inches by 8 inches.
Net weight, 10½ pounds.

Price, each ........................................... $8.80

Packed one in a pasteboard box, 10 x 7½ x 7½ inches.  
Weight, 11½ pounds.

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**Countershaft**  
No. 48  
This Countershaft is similar to the one shown above, but has steps for ½-inch flat instead of round belt.

Shaft, ½ inch.  
Loose Pulley, 3 inches by 1 inch.  
Tight Pulley, 3 inches by 1½ inches.

1st Step, 5 inches by 1 inch.  
2d Step, 6 inches by 1 inch.

Base Plate, 9 inches by 5 inches.
Net weight, 12½ pounds.

Price, each ........................................... $11.00

Each one packed in a wooden case, 11½ x 8½ x 8½ inches.  
Shipping weight, 17 pounds.
Polishing Head
No. 21

This little machine has a ½-inch steel Spindle, 8 inches long. It is provided with carefully threaded Taper Screws on each end. One end is also provided with Flanges for holding a wheel ½ inch thick. Screws and Caps are of brass. The Pulley is 1½ inches in diameter, will take ½ inch round or ½-inch flat Belt. Iron parts are finished in red and black enamel; steel parts, polished. Height, 7 inches. Net weight, 2½ pounds.

Price, each .................................................. (wyyav) $2.70

Packed one in a pasteboard box, 9½ x 7½ x 3 inches.
Weight, 2½ pounds.

Polishing Head
No. 22

This Polishing Head is somewhat larger and stronger than those shown on the preceding page. It has a ½-inch steel Spindle, 10 inches long, provided with Taper Screws on each end. One end is also provided with Flanges for holding a wheel ¾ inch thick. The Pulley is 2½ inches in diameter. It will take ¼-inch round or ½-inch flat Belt. Screws and Caps are brass. Iron parts are finished in red and black enamel; steel parts, polished. Height, 7 inches. Net weight, 4½ pounds.

Price, each .................................................. (wyyva) $3.60

Packed one in a pasteboard box, 10½ x 7½ x 3½ inches.
Weight, 4½ pounds.

Polishing Head
No. 23

Chuck Patented August 13, 1905

This little machine has a ½-inch steel Spindle, 8 inches long. It is provided with a Taper Screw on one end, and a three-jawed Chuck, capacity 0 to ⅜ inch, on the other. It also has Flanges for holding a wheel ¾ inch thick. The Pulley is 1½ inches in diameter and will take ¼-inch round or ½-inch flat Belt. Iron parts are finished in red and black enamel; steel parts, polished. Height, 7 inches. Net weight, 2½ pounds.

Price, each .................................................. (wywob) $3.20

Packed one in a pasteboard box, 9½ x 7½ x 3 inches.
Weight, 2½ pounds.

Polishing Head
No. 24

Chuck Patented August 13, 1905

This little machine has a ½-inch steel Spindle, 10 inches long, provided with a Taper Screw on one end, and a three-jawed Chuck, capacity 0 to ½ inch, on the other. It also has Flanges for holding a wheel ¾ inch thick. The Pulley is 2½ inches in diameter and will take either ¼-inch round or ½-inch flat Belt. Iron parts are finished in red and black enamel; steel parts, polished. Height, 7 inches. Net weight, 4½ pounds.

Price, each .................................................. (wyzae) $4.50

Packed one in a pasteboard box, 10½ x 7½ x 3½ inches.
Weight, 4½ pounds.
Grinding Head
No. 25

This Grinding Head is similar to the little machines on the preceding page, but it has a ¾-inch Spindle 7 inches long, provided with two sets of Flanges for holding wheels ¾ inch thick. The Pulley is 2½ inches in diameter, and will take either ¼-inch round or 1/4-inch flat Belt. Screws and Caps are brass. Iron parts are finished in red and black enamel; steel parts, polished. Height, 7 inches. Net weight, 4½ pounds.

Price, each. .................................. (wyrzr) $4.20

Packed one in a pasteboard box, 8½ x 7½ x 3¼ inches. Weight, 4½ pounds.

Grinding Head
No. 26

This machine is larger and heavier than those previously described. It has a 1-inch Spindle, 9 inches long, provided with two sets of Flanges for holding wheels ¾ inch thick with a ¾-inch hole. It will hold Wheels up to 8 inches in diameter, but we recommend Wheels 6 inches in diameter with a ¾-inch face for use in connection with it. The Pulley is 1½ inches in diameter with a ¾-inch face for flat Belts. Among many other features this machine has patent Oil Cups, case-hardened Nuts, and a Base designed for great rigidity. Iron parts finished in red and black enamel; steel parts, polished. Height, 7 inches. Net weight, 7 pounds.

Price, each. .................................. (wyrzc) $6.60

Packed one in a wooden case, 12½ x 9 x 7 inches. Shipping weight, 12½ pounds.

Grinding Head
No. 25½

This machine is exactly the same as the No. 25 shown above, except that it is furnished with two high grade abrasive Wheels, 4 inches in diameter, ¼-inch face. These Wheels are of different grades, suitable for such small work as they would naturally be used for. Height, 7 inches. Net weight, 4½ pounds.

Price, each. .................................. (wyzes) $6.60

Packed one in a pasteboard box, 8½ x 7½ x 3¼ inches. Weight, 5½ pounds.

Grinding Head
No. 26½

This machine is identical with the No. 26 shown above, except that it has the additional equipment of adjustable and detachable Work Rests, as shown in the illustration. These Work Rests add greatly to the usefulness of the machine without a large increase in cost. Work Rests cannot be used with wheels larger than 6 inches by ¼ inch. Height, 7 inches. Net weight, 9 pounds. No Emery Wheels are furnished.

Price, each. .................................. (wyzoq) $8.80

Packed one in a wooden case, 12½ x 9 x 7 inches. Shipping weight, 14½ pounds.
Polishing Head
No. 27

This machine has a 3/4-inch steel Spindle, 11 inches long, provided with a Taper Screw on one end, and a three-jawed Chuck, capacity 0 to 1/4 inch, on the other. It also has Flanges for holding a wheel 6 inches in diameter, 3/4 inch thick, with a 3/8-inch hole. The Pulley is 1 1/2 inches in diameter with a 1 1/2-inch face for flat Belt only. This machine has adjustable Boxes and patent Oil Cups. Iron parts are finished in black and red enamel; steel parts, polished. Height, 7 inches. Net weight, 9 pounds.

Price, each........................................ (WYKUP) $8.00

Packed one in a wooden case, 12 1/2 x 9 x 7 inches.
Shipping weight, 12 1/2 pounds.

Polishing Head
No. 31

This machine carries a Wheel 8 inches from the standard. This makes it very useful for buffing odd-shaped pieces. It has a 1-inch Spindle 14 inches long that will take wheels 8 inches in diameter, up to 1 1/2 inches thick, with 3/4-inch hole. The Spindle is oiled by two dust-proof, self-closing Oil Cups. The Pulley is 2 1/2 by 1 1/2 inches. Net weight, 16 pounds.

Price, each........................................ (YAATL) $11.00

Packed one in a wooden case, 15 1/2 x 7 1/2 x 7 inches.
Shipping weight, 20 pounds.

No. 38 Grinding Head

This machine is much larger and heavier than any of those previously shown. It has a 1-inch Spindle, 12 1/2 inches long, provided with two sets of Flanges for holding wheels with 3/4-inch holes of any size up to 8 inches in diameter and 1 inch thick. The Pulley is 2 inches in diameter with a 1 1/2-inch face. Boxes are adjustable; Bearings are oiled by patent Oil Cups; Nuts are case hardened. The Base is designed to give the greatest possible rigidity. Iron parts are finished in red and black enamel; steel parts, polished. Height, 8 inches. Net weight, 21 pounds.

Price, each........................................ (YACZY) $13.25

Packed one in a wooden case, 16 x 11 1/2 x 9 inches.
Shipping weight, 26 pounds.

No. 40 Grinding Head
No Emery Wheels Furnished with This Machine

This machine is in every way identical with the No. 38 shown above, except that it is supplied with the additional equipment of adjustable and detachable Work Rests, as shown in the illustration, which add greatly to the usefulness of the machine. Height, 8 inches. Net weight, 25 pounds. No Emery Wheels are furnished.

Price, each........................................ (YADOY) $16.50

Packed one in a wooden case, 16 x 11 1/2 x 9 inches.
Shipping weight, 32 pounds.
No. 43 Polishing Head

This machine has a ¾-inch steel Spindle, 14½ inches long, provided with a Taper Screw on one end, and a three-jawed Chuck, capacity 0 to ¾ inch, on the other. It also has Flanges for holding Wheels up to 8 inches in diameter with a 1½-inch face. The machine has adjustable Boxes and patent Oil Cups. Iron parts are finished in red and black enamel; steel parts, polished. Height, 8 inches. Net weight, 19 pounds.

Price, each ........................................ (YARDS) $15.50

Packed one in a wooden case, 16 x 11½ x 9 inches.
Shipping weight, 23½ pounds.

No. 28 Polishing Head

This Head has a lathe type base with an 8½-inch bed to which may be adjusted various Jigs and Attachments for special work.

The ¼-inch Spindle is 10 inches long, equipped with a Taper Screw on one end and a three-jawed Chuck with 0 to ¼-inch capacity on the other. Flanges are also provided for holding wheels up to 4 inches with a ¼-inch face.

The Pulley is 2½ inches in diameter and has a ½-inch face that can be used for either round or flat belts.

The Base is black enameled and all steel parts polished.

Length over all, 14½ inches; height, 6½ inches. Net weight, 8½ pounds.

Price, each ........................................ (wTbba) $5.00

Packed one in a pasteboard box, 13 x 8 x 4½ inches.
Weight, 10 pounds.

Polishing Lathe

No. 29

This Polishing Lathe enables the operator to do a large variety of polishing, grinding, and other similar operations not possible with the ordinary styles of Polishing Heads.

The illustration conveys a good idea of the general characteristics of this Lathe. It is furnished complete with Tail Stock, Tee Rest, Face Plate, Saw Arbor, and a three-jawed Chuck; capacity, 0 to ¾ inch. The Bed is milled its entire length. The Head Stock has a hollow Spindle. Length of Bed, 12 inches. Extreme distance between Centers, 3½ inches. Swing, 5 inches. Width of Pulleys, ¾ inch. Diameter of Steps, 1 inch and 1½ inches. The large step is grooved so that round belt may be used if desired. Net weight, 9½ pounds.

All iron parts except bearing surfaces are finished in red and black enamel; steel parts are polished.

Price, each ........................................ (YARDS) $12.00

Packed one in a wooden case, 14 x 9½ x 5½ inches.
Shipping weight, 14 pounds.
**Hand Vise**

**No. 96**

**Parallel Jaws**

This Hand Vise is provided with parallel Jaws, a form of construction that, although it adds to the cost, greatly increases the convenience and utility of the tool.

The Jaws are drop forged from steel bars. The Jaw Faces are scored and case hardened. Jaw Faces are $1\frac{1}{2}$ inches long and $\frac{3}{4}$ inch wide. They will open $1\frac{1}{2}$ inches and are always parallel whether open or closed.

The entire tool has a mottled finish except the edges of the Jaws, which are polished. Length, 4$\frac{1}{2}$ inches. Net weight, 12 ounces.

Price, each \( \text{Pax} \) 3.10

Packed one in a pasteboard box, $5\frac{1}{2} \times 3 \times 1\frac{1}{2}$ inches.

Weight, 14 ounces.

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**Lineman's Hand Vise**

**No. 360**

**Parallel Jaws**

This Tool is exactly the same as the Hand Vise shown above, except that it has a ring to hold it on a lineman's belt.

The Jaws are drop-forged steel, with Jaw Faces scored and case hardened. Jaws are $1\frac{1}{2}$ inches by $\frac{3}{4}$ inch and open $1\frac{1}{2}$ inches. They are always parallel.

This tool is finished entirely in black except the edges of the Jaws, which are polished. Length, 6 inches. Net weight, 14 ounces.

Price, each \( \text{Pax} \) 3.30

Packed one in a pasteboard box, $6\frac{1}{2} \times 3 \times 1\frac{1}{2}$ inches.

Weight, 1 pound.

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This Polishing Lathe has a Screw Tail Stock, a Taper Hole in both ends of the Live Spindle, and a Special Spindle for carrying Buffing Wheels. In every other particular it is identical with the No. 29 shown on the preceding page.

It is furnished complete with Tail Stock, Tee Rest, Face Plate, Saw Arbor, and a three-jawed Chuck: capacity, 0 to $\frac{3}{2}$ inch.

Net weight, 9$\frac{1}{2}$ pounds.

Price, each \( \text{Tawt} \) 13.00

Packed one in a wooden case, $14 \times 9\frac{1}{2} \times 5\frac{1}{2}$ inches.

Shipping weight, 14 pounds.
Hand Vises
Parallel Jaws

These Vises are provided with a double screw, geared together, insuring parallel Jaw Faces up to extreme capacity. This makes possible a firmer hold than could be secured by the use of a single screw.

The Jaws are drop-forged steel with the Faces scored and hardened.

All other working parts are made of steel. The Jaws are tightened by means of a sliding handle that will be found convenient.

Each Vise has a taper square shank that can be removed from the polished Hardwood Handle if desired, and held in any two-jawed Chuck.


Price, Each
No. 97 Polished and nickel plated (tawea) $4.40
No. 98 Black finish (tawor) 4.00

Packed one in a pasteboard box, 9 1/2 x 5 x 1 3/4 inches.

Weight, 1 3/4 pounds.

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Swivel Bench Vise
No. 679

This Vise will be found most convenient for holding material or parts for light operations at the bench. It will swing freely or can be solidly fixed by tightening the set screw at the side. The same set screw can be used to vary the height from 5 3/4 to 7 3/4 inches.

The Vise Jaws are both movable, opening or closing equally by a right and left hand screw. The Jaws are 2 3/4 inches wide and will open 2 inches. Diameter of Base, 4 3/4 inches. Attractively finished in polished steel, black and red enamel.

Net weight, 5 pounds.

Price, each ........................................ (2 axes) $4.40

Packed one in a pasteboard box.

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Bench Vises

No. 160

These Bench Vises are different in design and general appearance from any other small tools of this character. They are constructed to meet the demand for a small vise of better construction than those which have previously been made.

These Vises are operated by an accurately cut steel feed screw. Two steel Guide Rods are provided to insure rigidity. All parts are carefully fitted so that the Jaws are easily operated, but without lost motion. After the Vise is completely assembled, the Jaws are machined so that they will meet accurately.

All steel parts are polished and all iron parts are finished with enamel baked on.

<table>
<thead>
<tr>
<th>No.</th>
<th>Width of Jaws</th>
<th>Jaws Open</th>
<th>Net Weight (lbs)</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>160</td>
<td>1 inch</td>
<td>1 3/4 inches</td>
<td>1 3/4 pounds</td>
<td>$2.00</td>
</tr>
<tr>
<td>663</td>
<td>1 1/2 inches</td>
<td>1 1/2 inches</td>
<td>2 pounds</td>
<td>2.40</td>
</tr>
<tr>
<td>161</td>
<td>2 inches</td>
<td>2 inches</td>
<td>3 1/2 pounds</td>
<td>2.60</td>
</tr>
<tr>
<td>708</td>
<td>2 1/2 inches</td>
<td>2 inches</td>
<td>3 1/2 pounds</td>
<td>3.10</td>
</tr>
<tr>
<td>664</td>
<td>2 3/4 inches</td>
<td>2 3/4 inches</td>
<td>7 1/4 pounds</td>
<td>4.20</td>
</tr>
</tbody>
</table>

Each Vise is packed in a separate pasteboard box.
This is an excellent Bench Vise of medium size. The steel Feed Screw and two \( \frac{3}{4} \) inch steel Guide Rods give it rigidity and the careful fitting makes it work smoothly and grip tightly. The special thread on the Feed Screw was designed to give it great strength.

The Jaw Faces are made of a very tough steel, \( 2\frac{1}{2} \times \frac{3}{4} \) inch. They are scored and case hardened. The taper-headed Screws by which the Jaws are fastened to the Vise will take up any looseness. Jaws open \( 2\frac{3}{4} \) inches. Net weight, 10 pounds.

Iron parts are finished in red and black enamel; steel parts are polished.

Price, each .................. \( \text{(regular)} \) $7.50

Packed one in a pasteboard box, \( 9\frac{3}{4} \times 6\frac{1}{4} \times 4\frac{3}{4} \) inches.

Weight, 11 pounds.

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**Bench Vise**

**No. 709**

This Vise is exactly the same as No. 168 described above, except that the Jaws are plain gray iron. Net weight, 10 pounds.

Price, each .................. \( \text{(rapid)} \) $5.00

Packed one in a pasteboard box, \( 9\frac{3}{4} \times 6\frac{1}{4} \times 4\frac{3}{4} \) inches.

Weight, 11 pounds.

---

This Assortment consists of the following Vises:

2 No. 160 2 No. 663 1 No. 168
2 No. 161 2 No. 664 1 No. 709
2 No. 708

These are packed in an individual wooden case with the attractive Display Stand shown in the cut. This Stand holds the entire Assortment; the eight smaller Vises are clamped to the cross rods with their own clamps, while the Nos. 709 and 168 Vises are fastened to the bottom of the stand with stove bolts. The holes for setting these two Vises are already drilled.

The Stand is very sturdily built of wood with a large base, measuring \( 9 \times 16 \) inches, to prevent any possibility of overturning. To this base are attached the two racks that hold the smaller Vises and the polished aluminum sign. The entire Stand, with exception of the sign, is nicely black enameled.

Price, complete, with Display Stand .................. \( \text{(rapid)} \) $42.00

Packed in a wooden case, \( 20\frac{3}{4} \times 13\frac{3}{4} \times 12\frac{3}{4} \) inches.

Shipping weight, 85 pounds.
Swivel Bench Vise
No. 738

This is our No. 168 Vise, described on page 230, bolted to a swivel base, which in turn is bolted to the bench.

The Base is heavy, with a quick, positive lock controlled by the Lever Handle shown, allowing the Vise to be swung to and locked at any position instantly.

The Jaw Faces are made of very tough steel, 2½ x ⅜ inch, scored and case hardened. They are held in position by taper-headed Screws. Jaws open 2½ inches.

Net weight, 16 pounds.

Price, each .................................................. (ZAYAN) $11.00

Packed one in a wooden case, 12½ x 9 x 7½ inches.
Weight, 20 pounds.

Swivel Vise Base
No. 737

This is the Swivel Base only, as shown above, fitted with the necessary screws for attaching without alteration our Nos. 168 and 709 Vises shown on page 230.

Net weight, 6 pounds.

Price, each .................................................. (ZAULT) $8.30

Packed one in a pasteboard box, 7½ x 4½ x 14 inches.
Weight, 6½ pounds.

Mechanics' Vises

These Vises are designed to be stronger and more rigid than such tools are usually made, in order that they will stand the hard usage generally given them in machine shops.

The Jaws are peculiarly shaped to give them great strength and the two ½-inch steel Guide Rods and the large steel Feed Screw with a special square thread give it rigidity. The Jaw Faces are made of very tough steel scored and case hardened. They are fastened in place by taper-headed Screws that will readily take up any looseness.

All iron parts are finished in red and black enamel; steel parts are polished.

Net weight, 40 pounds. Price, each .......... (YORK) $16.00

Packed one in a wooden case, 16 x 10½ x 8½ inches.
Shipping weight, 49 pounds.

Net weight, 41 pounds. Price, each .......... (YORK) $17.00

Packed one in a wooden case, 16 x 10½ x 8½ inches.
Shipping weight, 50 pounds.
This High Speed and High Power Bench Grinder will be greatly appreciated by all mechanics who desire to carry a serviceable but compact Grinder in their tool chests. It is also a particularly handy little Grinder for household use.

A series of gears causes the wheel to make 22 revolutions to each turn of the crank. These gears are completely inclosed and are packed in grease in order that they may run silently and have proper lubrication.

A high grade Abrasive Wheel, 5 x 1 inch, is furnished with each. The wheels are particularly selected for sharpening edge tools. An adjustable Work Rest is provided.

Finished in red and black enamel; 6½ inches high above bench. Will clamp to any bench less than 2½ inches thick. Net weight, 10 pounds, 10 ounces.

Price, each .................................................. (Toryo) $10.00

Packed one in a wooden case, 12½ x 8½ x 7 inches.
Shipping weight, 15 pounds.

This High Speed and High Power Bench Grinder is very much larger and heavier than the one shown on the preceding page. It is particularly adapted for use in shops which are not provided with power, on an automobile service truck, or in a contractor’s tool house.

A series of machine-cut gears causes the wheel to make 22 revolutions to each turn of the drop-forged steel crank. These gears are completely inclosed and packed in grease in order that they may run silently and have proper lubrication.

A high grade Abrasive Wheel, 7 x 1½ inches, is furnished with each tool. The Wheel is of a grain and grade particularly adapted for sharpening edge tools. An adjustable Work Rest is provided.

Finished in red and black enamel; 9½ inches high above the bench. Will clamp to any bench less than 3 inches thick. Net weight, 22 pounds.

Price, each .................................................. (Tunor) $15.00

Packed one in wooden case, 16 x 11½ x 9 inches.
Shipping weight, 30 pounds.
Bench Grinder
No. 665

This is a thoroughly efficient and dependable machine for grinding cutlery, small edge tools, and innumerable other household grinding jobs.

It has all the features desirable in a machine of this nature. The large solid gear is set deeply into the frame, giving as complete protection as though wholly inclosed. The wide machine-cut teeth insure smooth operation. The long steel crank, with its highly mahogany finished handle, insures power with comfort. The shafts are steel of ample diameter, running in long reamed bearings. The steel pinion is entirely inclosed and carries a medium grit abrasive wheel, 4 inches in diameter with 4-inch face. The work rest is adjustable from two points. A clamp is furnished which will hold the Grinder rigidly to any table or bench from 1/2 to 2 1/2 inches thick. If preferred, the Grinder can be screwed down.

The iron frame and clamp are finished in glossy black enamel and the large gear in red enamel. Height above bench, 9 1/2 inches. Gear ratio, 18 to 1. Net weight, 10 1/2 pounds.

Price, each .................................................. (FAGRA) $4.00

Packed one in a pasteboard box, 8 1/4 x 6 1/2 x 5 1/2 inches.
Weight, 11 pounds.

No. 115 Bench Grinder

This is a thoroughly well made household Grinder. It has cut Gears and reamed Bearings. Smooth running insured by the careful fitting of all parts.

The high grade Abrasive Wheel is 4 inches in diameter with 1-inch face, particularly suited for grinding small edge tools. Gear ratio, 22 to 1.

Work Rests are provided for both right and left hand work. All iron parts finished in red and black enamel. Exposed steel parts are polished. Clamps to any bench not over 2 inches thick. Net weight, 9 pounds.

Price, each .................................................. (REALLY) $7.70

Packed one in a wooden case, 11 1/2 x 8 1/4 x 8 1/4 inches.
Shipping weight, 13 pounds.

No. 142 Bench Grinder
With Drilling Attachment

This is identical to No. 115 above, with the addition of a three-jawed steel Chuck on the Spindle, which holds Rods or Drills from 0 to 1 inch in diameter. This greatly increases the usefulness of the machine, as it makes possible many small jobs of drilling and polishing.

A high grade Abrasive Wheel, 4 inches in diameter with a 1-inch face, furnished with each machine. Net weight, 9 pounds.

Price, each .................................................. (REALLY) $8.80

Packed one in a wooden case, 11 1/2 x 8 1/4 x 8 1/4 inches.
Shipping weight, 13 pounds.
This Bench Grinder is particularly recommended for household use because it is convenient in size and the Gears are completely inclosed to prevent pinching the fingers or tearing the clothes. Knives, shears, chisels, and all other kinds of edge tools are quickly and easily sharpened on this little Grinder.

The Gears are all turned and the teeth accurately cut by machinery. The Bearings are reamed to just the right size. All parts are carefully fitted by skillful mechanics so that the machines run smoothly.

A high grade Abrasive Wheel is furnished, the best that we can buy, for sharpening small edge tools. It is 4 inches in diameter with a 1-inch face. The Wheel makes 22 revolutions for each turn of the crank.

An Adjustable Work Rest that can be used on either side of the Wheel is provided.

All steel parts are polished and iron parts are finished in red and black enamel. Net weight, 10 pounds.

Price, each.................................(T-Cds) $8.50

Packed one in a wooden case, 11½ x 8½ x 8½ inches.
Shipping weight, 14 pounds.

This machine is larger and considerably different in design from those shown on the preceding pages. It is so arranged that when two men are using it, the man turning the crank is entirely out of the way of the other. In addition to this, the tool makes a most convenient one-man machine.

Each Grinder is fitted with a high grade Abrasive Wheel, 5 x 1 inch. An adjustable Tool Rest and a reversible Half Guard for the Wheel are also provided. The Gear Teeth are all covered.

The Gears are all cut, Bearings are reamed, and all parts carefully fitted. The Spindle runs in an oil bath. Finished in red and black enamel. Height above bench, 10 inches. Net weight, 18 pounds.

Price, each.................................(Yowd) $11.00

Packed one in a wooden case, 16 x 11½ x 9 inches.
Shipping weight, 26 pounds.
**Bench Grinder No. 149**

The Most Powerful Bench Grinder ever Made

This machine is much larger and heavier than those previously shown. Strongly made and very powerful, it is an excellent machine for carpenters or small shops. It carries a 7 x 1½ inch high grade Abrasive Wheel that makes 20½ revolutions to every turn of the crank. It has cut gears and reamed bearings. All parts are carefully fitted. All gearing is covered. The Wheel is provided with a reversible Half Guard and Work Rest. The Spindle runs in an oil bath. The machine can be clamped to any bench less than 4 inches thick. Height above bench, 19½ inches. Net weight, 18 pounds.

Price, each .......................... $13.20

Packed one in a wooden case, 16 x 11½ x 9 inches.

Shipping weight, 27 pounds.

---

**No. 158 Sickle Grinder**

A finely designed and constructed machine with newly designed holder for grinding mowing machine knives. The Gears are all cut. Spindles are steel; Bearings reamed, and the Gears guarded.
The adjustable Bar Holder can be stopped at any desired point.
The Blade has an oscillating motion that can be thrown out at will.
The machine will clamp to a bench or to a mowing machine wheel.
The high grade Abrasive Wheel furnished with this machine is 3½ inches long, 3½ inches in diameter at the center, beveled to 2¼ inches at each end.

All iron parts nicely finished in red and black enamel; steel parts are polished. Net weight, 26 pounds.

Price, each, with bevel wheel .......................... $22.00

Packed one in a wooden case, 16 x 11½ x 9 inches.

Shipping weight, 36 pounds.

---

**No. 159 Sickle Grinder**

This Grinder is exactly the same as the one described above, except that it has two high grade Abrasive Wheels, one beveled 3½ x 2¼ x 3½ inches and one straight, 3½ x 3½ inches. Net weight, 28 pounds.

Price, each, with two wheels .......................... $24.00

Packed one in a wooden case, 16 x 11½ x 9 inches.

Shipping weight, 38 pounds.
Bench Shear
No. 150

The construction of this Shear will be appreciated by every one having use for such a tool. The Frame is so designed that sheets of any width can be readily cut. The Lever is 20 inches long, and the tool steel Blades have 4-inch cutting edges. All iron parts are finished in red and black enamel; steel parts are polished. Net weight, 31 pounds.

Although the opening is \( \frac{1}{4} \) inch at the front, no iron or steel larger than \( \frac{1}{8} \) inch round or flat should be cut. This machine will also be found useful for cutting Brake Lining. Not intended to cut tempered steel.

Price, each ........................................ (Vedes) $33.00
Extra Blades, per set ................................ 6.60

Packed one in a wooden case, 24 1/2 x 11 x 6 inches.
Shipping weight, 46 pounds.

Bench Punching Machine
No. 140

This Bench Punch will be found an excellent machine for punching holes in thin sheet iron or steel. Each machine is provided with a Handle, 24 inches long, and a 3/8-inch round Punch and Die. The machine is well designed and carefully made. Iron parts are finished in red and black enamel; steel parts are polished. Depth of Throat, 4 inches. Net weight, 54 pounds.

Holes up to 3/8 inch can be readily punched in soft iron or steel 1/4 inch thick, but no heavier work should be attempted.

Price, each, with 3/8-inch Punch and Die, ....................... (Vedes) $33.00

Packed one in a wooden case, 26 x 12 x 6 inches.
Shipping weight, 72 pounds.

Extra Punches and Dies 1/8, 3/16, 1/4, or 3/8 inch for round holes,
per set of one Punch and Die of a size ................. $4.40
Butchers' Saw Coils
50-Foot

These Butchers' Saws are made from the finest quality of spring steel, tempered, ground, and polished. The Teeth are filed, set, and re-filed after setting, and are consequently ready for immediate use. The Teeth are correctly shaped for free cutting. They can be re-filed, but their first cost is so low that it is hardly profitable. Nothing that we can say about these Saws will be so convincing as an actual trial.

These Blades are put up in coils fifty feet long in order that the dealer need not carry all lengths in stock. It is only necessary to cut off the right length from one of these coils.

<table>
<thead>
<tr>
<th>Length</th>
<th>Weight</th>
<th>Width</th>
<th>Teeth per inch</th>
<th>Price per Coil</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 feet</td>
<td>2 pounds</td>
<td>½ inch</td>
<td>13 (YiJin)</td>
<td>$6.20</td>
</tr>
<tr>
<td>50 feet</td>
<td>2½ pounds</td>
<td>½ inch</td>
<td>11 (YiJuP)</td>
<td>6.60</td>
</tr>
<tr>
<td>50 feet</td>
<td>3 pounds</td>
<td>¼ inch</td>
<td>11 (YiKai)</td>
<td>7.00</td>
</tr>
<tr>
<td>50 feet</td>
<td>4 pounds</td>
<td>1 inch</td>
<td>11 (YiReM)</td>
<td>7.50</td>
</tr>
<tr>
<td>50 feet</td>
<td>5½ pounds</td>
<td>1½ inch</td>
<td>11 (YiKeLa)</td>
<td>8.80</td>
</tr>
</tbody>
</table>

A Saw Punch suitable for punching these Blades is shown on page 249.

Butchers' Saw Coils
25-Foot

Many users of Butcher Saws now buy them in coils, and as 50 feet is more than the average user cares to purchase, we are making coils 25 feet long.

They are made from the very finest quality of spring steel, tempered, ground, and polished. The Teeth are filed, set, and re-filed after setting, leaving them sharp and ready for use.

<table>
<thead>
<tr>
<th>Length</th>
<th>Weight</th>
<th>Width</th>
<th>Teeth per inch</th>
<th>Price per Coil</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 feet</td>
<td>1 pound</td>
<td>½ inch</td>
<td>13 (YiJin)</td>
<td>$3.10</td>
</tr>
<tr>
<td>25 feet</td>
<td>1½ pounds</td>
<td>½ inch</td>
<td>11 (YiJin)</td>
<td>3.30</td>
</tr>
<tr>
<td>25 feet</td>
<td>1¼ pounds</td>
<td>½ inch</td>
<td>11 (YiJin)</td>
<td>3.50</td>
</tr>
<tr>
<td>25 feet</td>
<td>2 pounds</td>
<td>1 inch</td>
<td>11 (YiRe)</td>
<td>3.70</td>
</tr>
<tr>
<td>25 feet</td>
<td>2½ pounds</td>
<td>1½ inch</td>
<td>11 (YiKe)</td>
<td>4.40</td>
</tr>
</tbody>
</table>

A Saw Punch suitable for punching these Blades is shown on page 249.
These Blades are made from the finest quality of spring steel, tempered, ground, and polished. The Teeth are filed, set, and re-filed after setting. We make these Blades in four widths, $\frac{3}{4}$ inch, 1 inch, 1$\frac{1}{4}$ inches; all with 11 teeth to the inch.

As the length of different makes of Frames varies considerably, these Blades are not punched. A Saw Punch suitable for punching them is shown on page 249.

<table>
<thead>
<tr>
<th>Length, inches</th>
<th>Per Dozen</th>
<th>Per Dozen</th>
<th>Per Dozen</th>
<th>Per Dozen</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\frac{3}{4}$ inch wide</td>
<td>1 inch wide</td>
<td>$\frac{1}{4}$ inches wide</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>$1.90$</td>
<td>$2.00$</td>
<td>$2.30$</td>
<td>$2.50$</td>
</tr>
<tr>
<td>14</td>
<td>$2.10$</td>
<td>$2.20$</td>
<td>$2.50$</td>
<td>$2.90$</td>
</tr>
<tr>
<td>16</td>
<td>$2.40$</td>
<td>$2.50$</td>
<td>$3.00$</td>
<td>$3.30$</td>
</tr>
<tr>
<td>18</td>
<td>$2.70$</td>
<td>$3.00$</td>
<td>$3.40$</td>
<td>$3.70$</td>
</tr>
<tr>
<td>20</td>
<td>$3.10$</td>
<td>$3.30$</td>
<td>$4.00$</td>
<td>$4.20$</td>
</tr>
<tr>
<td>22</td>
<td>$3.40$</td>
<td>$3.70$</td>
<td>$4.30$</td>
<td>$4.60$</td>
</tr>
<tr>
<td>24</td>
<td>$3.70$</td>
<td>$4.00$</td>
<td>$4.70$</td>
<td>$5.00$</td>
</tr>
<tr>
<td>26</td>
<td>$4.00$</td>
<td>$4.20$</td>
<td>$5.00$</td>
<td>$5.50$</td>
</tr>
<tr>
<td>28</td>
<td>$4.20$</td>
<td>$4.50$</td>
<td>$5.20$</td>
<td>$5.70$</td>
</tr>
</tbody>
</table>

No. 71 Butchers' Saw Blades
Black Finish

These Blades are offered to meet the demand for a good Blade at a moderate price. They can be re-sharpened if desired. They are made from a good quality of steel, tempered but not polished. The Teeth are filed, set, and re-filed after setting. All of these Blades are $\frac{3}{4}$ inch wide and have 11 teeth to the inch. The holes are punched.

<table>
<thead>
<tr>
<th>Length, inches</th>
<th>Net Weight</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 inch</td>
<td>$2\frac{1}{2}$ pounds</td>
<td>$(YANE)$ $2.80$</td>
</tr>
<tr>
<td>16 inch</td>
<td>$2\frac{1}{2}$ pounds</td>
<td>$(YANE)$ $2.90$</td>
</tr>
<tr>
<td>18 inch</td>
<td>$2\frac{1}{2}$ pounds</td>
<td>$(YANE)$ $3.00$</td>
</tr>
<tr>
<td>20 inch</td>
<td>$2\frac{1}{2}$ pounds</td>
<td>$(YANE)$ $3.10$</td>
</tr>
<tr>
<td>22 inch</td>
<td>$2\frac{1}{2}$ pounds</td>
<td>$(YANE)$ $3.20$</td>
</tr>
<tr>
<td>24 inch</td>
<td>$2\frac{1}{2}$ pounds</td>
<td>$(YANE)$ $3.30$</td>
</tr>
<tr>
<td>26 inch</td>
<td>3 pounds</td>
<td>$(YANE)$ $3.40$</td>
</tr>
</tbody>
</table>

Packed one third dozen in a pasteboard box.
**No. 78 Dehorning Saw**

This Saw has a strong steel Frame, white nickel finish, and a black enameled iron Handle. It is furnished complete with a special 10-inch Blade. Net weight, 1½ pounds.

Price, each: $1.55

Packed one in a pasteboard box, 14½ x 6½ x 1½ inches. Weight, 2 pounds.

**Dehorning Saw Blades**

These Blades are made 10 inches long only, and are particularly adapted for dehorning. For best results, they should be used in the Frames described above.

Price, per dozen: $1.10

**No. 549 Horseshoers’ Butteris**

This Butteris is a well designed tool for paring hoofs. The Handle is adjustable for length, and shaped to fit the arm, making it very easy to use.

The Blade is made of crucible steel, hardened, tempered, and ground. It will hold a good edge.

Price, each: $3.30

Extra Blades, each: $.55

**No. 551 Horseshoers’ Butteris**

This Butteris is exactly the same as the one described above, except that it has a large hardwood Handle.

Price, each: $3.30

Packed one in a pasteboard box, 18 x 4½ x 3½ inches. Weight, 2½ pounds.

---

**No. 200 Saw Punch**

There is so much variation in the sizes of various styles of Butchers’ Saw Frames that most of the better class of Butchers’ Saw Blades are not punched when they leave the factory. All dealers in and users of these blades will find this inexpensive device very convenient for punching the necessary holes.

The Frame is made of nickel plated, malleable iron. The Screw and Crossbar are polished steel. The Punch and Die are made from fine tool steel, carefully tempered.

Length over all, 5½ inches. Size of punch, 3/64 inch. Net weight, 7 ounces.

Price, each: $1.00

Packed one in a pasteboard box, 6½ x 2½ x ½ inch. Weight, 8 ounces.

**Hand Punches**

These little Hand Punches have nickel plated, malleable iron Frames, and polished steel Screws, Crossbars, and Stripers. Punches and Dies are carefully tempered tool steel. The Stripper is so arranged that no work too large for the Punch can be inserted. These Punches are 5½ inches long over all, and weigh 7 ounces each net.

<table>
<thead>
<tr>
<th>Size</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/8 inch</td>
<td>$1.30</td>
</tr>
<tr>
<td>3/16 inch</td>
<td>$1.30</td>
</tr>
<tr>
<td>1/4 inch</td>
<td>$1.30</td>
</tr>
<tr>
<td>5/32 inch</td>
<td>$1.30</td>
</tr>
</tbody>
</table>

Packed one in a pasteboard box, 6½ x 2½ x ½ inch. Weight, 8 ounces.
Turret Head Glass Cutters

Patented March 31, 1896

This is the original Turret Head Glass Cutter that has maintained such a remarkable reputation ever since its introduction; and is in great demand, not only by manufacturers of plate and window glass, but dealers and glaziers the world over.

Six tested Cutter Wheels are mounted on the hardened shafts of the Turret. Each Wheel is numbered and the Turret can be turned so as to put the six Wheels in action successively by merely loosening the turret screw, which holds the Turret to the nicely polished and nickel plated Frame. The comfortably shaped Handle is nicely finished in mahogany enamel and has a nickel plated ferrule.

The Frame and Handle are so substantial that the Turret can be refilled with new Wheels many times before the tool need be discarded.

No. 1. Price, per dozen .................. (WYRE) $4.40

Each Cutter packed in an individual carton; 12 cartons in a pasteboard box, 6½ x 3½ x 1¼ inches. Weight, 14 ounces.

No. 400. Price, per dozen .................. (TODY) $7.80

Each Cutter in a separate carton; 12 cartons in a pasteboard box, 6½ x 3½ x 1¼ inches. Weight per dozen, 1 pound.

This Glass Cutter is similar to the No. 1, described above, but is furnished with twelve Wheels, six in the Turret and six in the Magazine Compartment shown in the illustration. A steel Ball for glass breaking is attached to the end of the handle.

No. 2. Price, per dozen .................. (WYRD) $4.60

Packed one dozen in a pasteboard box, 6 x 2½ x 1 inch. Weight per dozen, 1½ pounds.

Goodell-Pratt Glass Cutter Wheels are made from a very high grade of Special Tool Steel, hardened by a special process and honed twice to a perfect edge at a critical angle. To check up and insure that clean-cut characteristic of the best cutting wheels, each wheel is actually tested on glass before it can be passed for shipment.

These tested Wheels are used in every Glass Cutter that we manufacture.
Price, per dozen ........................................ (ZOTVA) $0.66

Glass Cutters

No. 3. Price, per dozen .................. (WYRON) $2.90
Packed one dozen in a pasteboard box, 6 x 3½ x 1¼ inches. Weight, 10 ounces.

No. 4. Price, per dozen .................. (WYRY) $2.90
Packed one dozen in a pasteboard box, 6 x 2½ x 1 inch. Weight, 1½ pounds.

No. 5. Price, per dozen .................. (WYFFA) $2.90
Packed one dozen in a pasteboard box, 6½ x 2 x 1 inch. Weight, 14 ounces.

No. 216. Price, per dozen .................. (YEBEP) $2.50
Packed one dozen in a pasteboard box, 6 x 3½ x 1¼ inches. Weight, 10 ounces.

No. 217. Price, per dozen .................. (YEBOR) $2.00
Packed one dozen in a pasteboard box, 5½ x 2 x 1½ inches. Weight, 14 ounces.
Glass Cutters

Red enameled iron Handle with a polished Head. One Cutter Wheel.

No. 337. Price, per dozen $2.00
Packed one dozen in a pasteboard box, 5½ x 3 x 1½ inches. Weight, 1 pound.

No. 338. Price, per dozen $2.00
Packed one dozen in a pasteboard box, 5½ x 3 x 1½ inches. Weight, 1½ pounds.

No. 658 Gauge Glass Cutter

This tool is designed specially for cutting ½ and ¾ inch High Pressure Gauge Glasses. By tightening the Thumb Screw at the end of the Handle the end of the tool is expanded until a bearing is obtained on both sides of the internal wall. Such a positive pressure exerted directly back of the Cutter Wheel insures a deep cut and a clean break. The heavy knurled Ferrule and Handle provide a good grip for turning. The rod which carries the tested Wheel is ½ inch in diameter and carries a sliding collar with a lock screw for cutting various lengths. The Cutter Wheel is easily replaceable when dull.

Length, 10 inches. Net weight, 5 ounces.

Price, each $3.00
Packed one in a pasteboard box.

No. 218 Glass Tube Cutter

This Cutter is 12½ inches long over all, provided with a Graduated Steel Beam. 6 inches long, with a Gauge Stop that can be set at any desired point. The Cutter Wheel is honed and tested; and as it can be easily replaced as it becomes dull, the tool will always be in a serviceable condition. The Beams of this tool are nickel plated and the Handles finished in red enamel. Net weight, 10 ounces.

Price, each $1.60
Packed one in a pasteboard box, 13½ x 2½ x 7¼ inches. Weight, 12 ounces.

Circular Glass Cutter

No. 478

This Glass Cutter has a graduated Beam that can be quickly and firmly set to cut circles of any size from 2 to 12 inches in diameter.

Each of these Glass Cutters is provided with one of our high grade Cutter Wheels. Each Wheel is honed twice, and tested by actually cutting glass before being mounted in the tool.

The Standard has a rubber Base to prevent slipping. Net weight, 5 ounces.

Price, each $1.30
Packed one in a pasteboard box, 7½ x 2½ x 2½ inches. Weight, 8 ounces.

No. 354

This Glass Cutter has a double Beam so that it can be set to cut circles of any size from 2 to 48 inches in diameter. The Beams are graduated, and one of them is fitted with one of our high grade Cutter Wheels. The Standard has a rubber Base. Net weight, 9 ounces.

Price, each $2.00
Packed one in a pasteboard box, 13½ x 2½ x 2½ inches. Weight, 14 ounces.

No. 167

This Glass Cutter will cut circles of all sizes from ½ to 48 inches in diameter. Circles smaller than 2 inches are cut by means of the mechanism shown at the extreme left of the illustration. The Beams are graduated. The Standard has a rubber Base. One of our high grade Cutter Wheels is provided with each tool. Net weight, 10 ounces.

Price, each $3.00
Packed one in a pasteboard box, 14 x 2½ x 2½ inches. Weight, 15 ounces.

All of these Circular Glass Cutters can be furnished with Metric Graduation if desired.
Reversible Automatic Screw-Driver
No. 555

This tool can be used as an Automatic Screw-Driver for either driving or drawing screws, but it has no ratchet or locking device. The shifting mechanism is contained within the knurled ferrule nearest the handle, and is regulated by turning this ferrule to the right or left as it is desired that the Spiral should run.

Every part is so constructed as to make the tool not only practical but very durable. The Spiral and Spiral Nuts are hardened steel. The Springs and Dogs are spring steel, oil tempered. The Handle is polished hard wood. All exposed steel parts, except the Spiral and Blades, are polished and nickel plated.

Three interchangeable tool steel Blades, hardened, tempered, and polished, are furnished with each Screw-Driver.

Length, extended, with Blade in place, 18\(\frac{1}{2}\) inches; closed, without Blade, 9\(\frac{1}{4}\) inches. Net weight, 14 ounces.

Price, each ................................................. $2.75
Packed one in a pasteboard box, 10\(\frac{1}{2}\) x 1\(\frac{1}{2}\) x 1\(\frac{3}{4}\) inches. Weight, 1 pound.

Reversible Automatic Screw-Driver
No. 22
Patented October 5, 1897

This tool contains the simplest mechanism possible for both driving or drawing screws automatically. It has two separate and distinct Spirals, each working independently of the other. The inner Spiral is used for driving and the outer for drawing screws, the one not in use being held in place by a locking nut.

The Handle is polished hard wood. All exposed steel parts, except the Spiral and Blades, are polished and nickel plated.

Three interchangeable tool steel Blades, hardened, tempered, and polished, are furnished with each tool.

Length, with one Spiral extended and Blade in place, 16\(\frac{1}{2}\) inches; closed, without Blade, 9 inches. Net weight, 13 ounces.

Price, each ................................................. $2.75
Packed one in a pasteboard box, 9 x 2 x 1\(\frac{3}{4}\) inches. Weight, 15 ounces.

For Drill Attachments fitting these Screw-Drivers, see page 256.

Spiral Ratchet Screw-Driver
No. 111
Patented May 12, 1908

This is a strong, powerful Automatic Screw-Driver capable of either driving or drawing screws automatically, as a Ratchet Screw-Driver or as a Plain Screw-Driver. The Shifter Knob controls the motion right or left, and when in the neutral position opposite the star on the ferrule the hardened Dogs are locked and the tool acts like a plain screw-driver. The Knurled Nut just above the ferrule, when tightened, locks the tool closed when the automatic action is not wanted. This Lock does not interfere with use of the tool as a ratchet or plain Screw-Driver.

The mechanism is as simple as it is possible to make it and provide for the various changes necessary. Moving the Shifter Knob moves a formed ring which shifts the Dogs to the required position. The Dogs which act upon the Spiral Nuts are hardened steel.

The entire bearing of an Automatic Screw-Driver is upon the internal thread of the Spiral Nuts. The Spiral Nuts and the Spiral are now made of hardened steel. This form of construction prolongs the life of these parts which, owing to the great power of the tool, are subjected to a tremendous strain.

Length extended, with Blade in place, 19 inches. Length closed, without Blade, 10\(\frac{1}{2}\) inches. Angle of Spiral, 20°. Net weight, 14 ounces.

Each Screw-Driver is provided with three tool steel Blades, hardened, tempered, and polished.

Price, each ................................................. $3.10
Packed one in a pasteboard box, 10\(\frac{1}{2}\) x 1\(\frac{3}{4}\) x 1\(\frac{3}{4}\) inches.

Shipping weight, 1 pound.
Automatic Screw-Drivers

These tools can be used as Automatic Screw-Drivers for driving screws. The Spirals can be locked, however, for use as Plain Screw-Drivers for either driving or drawing screws. They are simple in construction, but are strong and durable, and will not get out of order.

The Handles are polished hard wood, mahogany finish. All exposed steel parts except the Spiral are polished.

Each Screw-Driver is supplied with three interchangeable tool steel Blades that are hardened, tempered, and polished.

Made in three sizes for driving small, ordinary, or very large screws.

<table>
<thead>
<tr>
<th>No.</th>
<th>Length extended with blade</th>
<th>Length closed without blade</th>
<th>Angle of Spiral</th>
<th>Set Weight</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>14 inches</td>
<td>7½ inches</td>
<td>40°</td>
<td>8 ounces</td>
<td>$2.00</td>
</tr>
<tr>
<td>2</td>
<td>16 inches</td>
<td>8½ inches</td>
<td>30°</td>
<td>10 ounces</td>
<td>2.10</td>
</tr>
<tr>
<td>3</td>
<td>18 inches</td>
<td>9½ inches</td>
<td>20°</td>
<td>13 ounces</td>
<td>2.40</td>
</tr>
</tbody>
</table>

Each Screw-Driver packed in a separate pasteboard box.

For Drill Attachments fitting these Screw-Drivers, see below.

No. 66 Ratchet Screw-Driver

These Ratchet Screw-Drivers have already made a reputation for themselves because of their strength and durability, and the steady increase in the sale of these tools proves that they are giving satisfaction.

The mechanism is very simple; the Ratchet Teeth are cut directly into the shank of the Blade, a very strong method of construction. The two Springs and two Dogs which make up the entire ratchet mechanism are oil-tempered tool steel. Changes from right to left or rigid are accomplished by simply turning the knurled Ferrule.

Blades are hammer forged from a high grade of tool steel. Handles of the three smallest sizes are knob shaped; other sizes are like illustration above.

<table>
<thead>
<tr>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>1½ inch</td>
</tr>
<tr>
<td>2 inch</td>
</tr>
<tr>
<td>3 inch</td>
</tr>
<tr>
<td>4 inch</td>
</tr>
</tbody>
</table>

Packed one half dozen in a pasteboard box.

Drill Attachments

For Goodell-Pratt Automatic Screw-Drivers

These Sets can be used in connection with our Automatic Screw-Drivers to do small jobs of drilling. They are not as convenient as Automatic Drills, but are perfectly satisfactory for occasional use.

These Sets consist of a Chuck for holding Fluted Drill Points, attached to a steel shank fitting the sockets of our Automatic Screw-Drivers.

Eight Fluted Tool Steel Drill Points, 7/8 to 1¼ inch, are furnished with each set.

No. 1. Fitting No. 1 Screw-Driver...
No. 2. Fitting No. 2, 22, 111 or 555 Screw-Driver...
No. 3. Fitting No. 3 Screw-Driver...

Each Set packed in a pasteboard box, 4½ x 1½ x 1½ inches. Weight, 2½ ounces.

No. 325 Spiral Ratchet Screw-Driver

With Spring for Quick Return For Driving Small Screws

This Screw-Driver, for right-hand work only, can be used with great rapidity for driving small screws. The mechanism consists of a brass Spiral, driven by a hard brass Center Nut, and a right-hand ratchet mechanism. A light coil Spring inside of the Handle gives a quick return without being stiff enough to make the tool more difficult or tiring to operate.

The tool is made of brass, polished and nickel plated. The Handle is polished Rosewood.

Two small interchangeable Blades are furnished with each tool. They are made of good tool steel, hardened, tempered, and polished.

Length, with Blade in place, 12½ inches. Net weight, 7 ounces.

Price, each...

Packed one in pasteboard box, 11½ x 1½ x 1½ inches. Weight, 9 ounces.
No. 676 Screw-Driver
Tool Steel Blade Locked to Steel Head
Patented May 6, 1923

This new line of Steel Headed Screw-Drivers is made in seven lengths of blade from 3 inches to 12 inches. The highly finished tool steel Blades are hammer forged and carefully hardened and tempered. The end of the Shank is forged square and is pressed through the ferrule and handle preventing any possibility of turning in the handle and is ingeniously locked into the heavy Steel Head set nearly flush into the end of the nicely mahogany finished Handle. The heavy steel Ferrule is nickel plated and buffed.

<table>
<thead>
<tr>
<th>Blade</th>
<th>Per Dozen</th>
<th>Blade</th>
<th>Per Dozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 inch</td>
<td>(ZAIIX)</td>
<td>$4.60</td>
<td>8 inch</td>
</tr>
<tr>
<td>4 inch</td>
<td>(ZAIIX)</td>
<td>5.00</td>
<td>10 inch</td>
</tr>
<tr>
<td>5 inch</td>
<td>(ZAIIX)</td>
<td>6.40</td>
<td>12 inch</td>
</tr>
<tr>
<td>6 inch</td>
<td>(ZAIIX)</td>
<td>7.20</td>
<td></td>
</tr>
</tbody>
</table>

PAGE 258
Packed one half dozen in a pasteboard box.

No. 909 Screw-Driver

These plain Screw-Drivers are made in twelve sizes, with Blades 2 inches to 18 inches long. They are designed on modern lines, well made and well finished. The Blades are hammer forged from a high grade of tool steel and are carefully hardened and oil tempered. A square tang holds the Blade in place. The Handles are polished Hard Wood with longitudinal corrugations to keep the hand from slipping. The Handles are protected from splitting by heavy steel Ferrules. Every one of these Screw-Drivers is tested to break a Screw-Head.

<table>
<thead>
<tr>
<th>Blade</th>
<th>Per Dozen</th>
<th>Blade</th>
<th>Per Dozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 inch</td>
<td>(ZIAW)</td>
<td>$3.90</td>
<td>8 inch</td>
</tr>
<tr>
<td>3 inch</td>
<td>(ZIAW)</td>
<td>4.20</td>
<td>10 inch</td>
</tr>
<tr>
<td>4 inch</td>
<td>(ZIAW)</td>
<td>4.50</td>
<td>12 inch</td>
</tr>
<tr>
<td>5 inch</td>
<td>(ZIBO)</td>
<td>4.80</td>
<td>14 inch</td>
</tr>
<tr>
<td>6 inch</td>
<td>(ZIBE)</td>
<td>5.50</td>
<td>16 inch</td>
</tr>
<tr>
<td>7 inch</td>
<td>(ZIBOR)</td>
<td>6.60</td>
<td>18 inch</td>
</tr>
</tbody>
</table>

Packed one half dozen in a pasteboard box.

Screw-Driver
No. 350

This is a very good moderate-priced Screw-Driver, well designed, well balanced, strong, and serviceable. The Handle is Hard Wood, mahogany finish, fluted to prevent the hand from slipping and protected by a heavy steel Ferrule. The Blades are hammer forged from a good grade of steel, and carefully hardened and tempered.

<table>
<thead>
<tr>
<th>Blade</th>
<th>Per Dozen</th>
<th>Blade</th>
<th>Per Dozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 inch</td>
<td>(TIYUB)</td>
<td>$3.50</td>
<td>8 inch</td>
</tr>
<tr>
<td>3 inch</td>
<td>(TIYUA)</td>
<td>3.80</td>
<td>10 inch</td>
</tr>
<tr>
<td>4 inch</td>
<td>(TIYUE)</td>
<td>4.20</td>
<td>12 inch</td>
</tr>
<tr>
<td>5 inch</td>
<td>(TIYUE)</td>
<td>4.60</td>
<td>14 inch</td>
</tr>
<tr>
<td>6 inch</td>
<td>(TIYUM)</td>
<td>4.80</td>
<td>16 inch</td>
</tr>
<tr>
<td>7 inch</td>
<td>(TIYUN)</td>
<td>5.40</td>
<td>18 inch</td>
</tr>
</tbody>
</table>

Packed one half dozen in a pasteboard box.

Cabinet Screw-Driver
No. 355

These Cabinet Screw-Drivers are carefully manufactured from the best materials obtainable for this purpose.
- The Handles are Hard Wood, mahogany finish, fluted to prevent the hand from slipping. The Handle is protected by a heavy steel Ferrule.
- The Blades are hammer forged from an extra good grade of tool steel, very carefully hardened and tempered. Every Screw-Driver is tested before leaving our factory.

<table>
<thead>
<tr>
<th>Blade</th>
<th>Per Dozen</th>
<th>Blade</th>
<th>Per Dozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>2½ inch</td>
<td>(TIYTA)</td>
<td>$3.65</td>
<td>7½ inch</td>
</tr>
<tr>
<td>3½ inch</td>
<td>(TIYER)</td>
<td>3.85</td>
<td>8½ inch</td>
</tr>
<tr>
<td>4½ inch</td>
<td>(TIYIR)</td>
<td>4.00</td>
<td>9½ inch</td>
</tr>
<tr>
<td>5½ inch</td>
<td>(TIYOC)</td>
<td>4.60</td>
<td>10½ inch</td>
</tr>
<tr>
<td>6½ inch</td>
<td>(TIYUD)</td>
<td>5.30</td>
<td>12½ inch</td>
</tr>
</tbody>
</table>

Packed one half dozen in a pasteboard box.
No. 332 Screw-Driver

This is as good a line of plain Screw-Drivers as can be made. Each Blade is pinned through the Handle so that it cannot possibly turn, and is tested to break a Screw Head. The Handles are Hard Wood, mahogany finish, protected by nickel-plated Ferrules. The Blades are hammer forged from the best steel that can be bought for the purpose, and are very carefully hardened and tempered.

<table>
<thead>
<tr>
<th>Blade</th>
<th>Per Dozen</th>
<th>Blade</th>
<th>Per Dozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 1/4 inch</td>
<td>$3.60</td>
<td>6 inch</td>
<td>$5.50</td>
</tr>
<tr>
<td>2 inch</td>
<td>3.80</td>
<td>7 inch</td>
<td>6.60</td>
</tr>
<tr>
<td>3 inch</td>
<td>4.20</td>
<td>8 inch</td>
<td>7.20</td>
</tr>
<tr>
<td>4 inch</td>
<td>4.50</td>
<td>10 inch</td>
<td>8.40</td>
</tr>
<tr>
<td>5 inch</td>
<td>5.00</td>
<td>12 inch</td>
<td>10.50</td>
</tr>
</tbody>
</table>

Packed one half dozen in a pasteboard box.

No. 330 Electricians' Screw-Driver

This Screw-Driver was designed especially for electricians, and is insulated to protect the user from electric shocks. The Handle is Hard Wood, mahogany finish, and is made six sided to insist a firm grip. The Blade is set in a hard rubber Socket that is solidly set in the Handle. The Blade is hammer forged from the best tool steel, hardened and tempered.

<table>
<thead>
<tr>
<th>Blade</th>
<th>Net weight</th>
<th>Price/Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 inch</td>
<td>3 ounces</td>
<td>$0.70</td>
</tr>
<tr>
<td>6 inch</td>
<td>4 ounces</td>
<td>$0.85</td>
</tr>
<tr>
<td>8 inch</td>
<td>5 ounces</td>
<td>$1.00</td>
</tr>
</tbody>
</table>

Packed one half dozen in a pasteboard box.

No. 331 Jewelers' Screw-Driver

This is a slim, light Screw-Driver of the very best quality, suitable for the most delicate work. The Handles are Hard Wood, mahogany finish, protected by nickel-plated Ferrules. The Blades are hammer forged from the best steel drill rod, carefully hardened and tempered.

<table>
<thead>
<tr>
<th>Blade</th>
<th>Per Dozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 inch</td>
<td>$3.30</td>
</tr>
<tr>
<td>3 inch</td>
<td>$3.60</td>
</tr>
<tr>
<td>4 inch</td>
<td>$4.00</td>
</tr>
<tr>
<td>5 inch</td>
<td>$4.40</td>
</tr>
</tbody>
</table>

Packed one half dozen in a pasteboard box.

No. 278 Pocket Screw-Driver

This extremely popular little Screw-Driver has a polished Rosewood Handle, a nickel plated Ferrule, and a high grade tool steel Blade, carefully tempered. The Blade is knurled for convenience in rapid rotation and will drive or draw surprisingly large screws.

Price, per dozen ................................................ $2.20

Packed one dozen in a pasteboard box, 3 1/2 x 3 1/2 x 2 1/2 inches. Weight, 1 1/2 ounces.

No. 367 Machinists' Screw-Driver

These powerful Screw-Drivers have short, heavy Blades that are hammer forged from high grade steel. They are particularly useful for machinists' heavy work. The Handles are polished Hard Wood, very large, with heavy steel Ferrules.

<table>
<thead>
<tr>
<th>Blade</th>
<th>Length over all</th>
<th>Price, per Dzen</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 inch</td>
<td>7 1/2 inches</td>
<td>(YINPA) $5.00</td>
</tr>
<tr>
<td>3 inch</td>
<td>8 1/2 inches</td>
<td>(YINPA) $5.20</td>
</tr>
<tr>
<td>4 inch</td>
<td>9 1/2 inches</td>
<td>(YINPA) $5.40</td>
</tr>
</tbody>
</table>

Packed one half dozen in a pasteboard box.

No. 33 Gunsmiths' Screw-Driver

Every Blade Warranted

This is a very fine tool for the reasonable price at which it is sold. The Blade is made of the very best steel obtainable, and is securely fastened into the polished Hardwood Handle. Made with a 1-inch Blade only. Length, 4 inches over all; weight, 1 ounce.

Price, per dozen .................................. (YARBA) $4.40

Packed one half dozen in a pasteboard box, 6 1/2 x 4 1/2 x 1 1/2 inches. Weight, 9 ounces.
No. 231 Pocket Screw-Driver Set

This is a convenient, practical, and justly popular tool that every one has use for. Particularly useful for repairing firearms, fishing tackle, clocks, radios, sewing machines, etc. The Set consists of a Hollow Handle, with a Chuck, three small Screw-Driver Blades, \( \frac{1}{4} \), \( \frac{3}{8} \), and \( \frac{1}{2} \) inch, and a Reamer. When not in use the Chuck and Blades are contained inside the Handle, as shown in the illustration.

The Blades are made of tool steel and will give satisfactory service. The Handle is handsomely polished, nickel plated, and buffed. It is 3\( \frac{1}{2} \) inches long when closed and weighs 4 ounces.

Price, each ..................................................\( \text{(yenyo)} \) $1.20

Packed one in a pasteboard box, 3\( \frac{1}{2} \) x 1\( \frac{1}{2} \) x 1\( \frac{1}{2} \) inches. Weight, 5 ounces.

Screw-Driver Sets

These Sets consist of a polished hardwood Handle, a strong steel Chuck, and three Blades made of the very best steel, carefully tempered and highly polished.

Price, Each
No. 620, with 2 Screw-Driver Blades and 1 Reamer ...........................................\( \text{(wyzre)} \) $1.10
No. 625, with 2 medium and 1 large Screw-Driver Blade ...........................................\( \text{(wyzdo)} \) 1.10

Packed one in a pasteboard box, 6\( \frac{1}{2} \) x 1\( \frac{1}{2} \) x 1\( \frac{1}{2} \) inches. Weight, 8 ounces.

No. 583 Tack Claw

This is a handsome, practical, and serviceable tool for pulling all sizes of tacks. The Blade is forged from a high grade of \( \frac{1}{4} \) inch steel, hardened, tempered, and polished. The Handle is Hard Wood, nicely polished. Length over all, 7 inches. Length of Blade, 3 inches. Net weight, 3 ounces.

Price, each ..................................................\( \text{(yenyo)} \) $0.55

Packed one half dozen in a pasteboard box, 7\( \frac{1}{2} \) x 4\( \frac{1}{2} \) x 1\( \frac{1}{2} \) inches. Weight, 1\( \frac{1}{2} \) pounds.

No. 724 File Handle Assortment

These Handles are made of thoroughly seasoned Hard Wood with polished mahogany finish. The shape is a most comfortable one in use. The polished nickel Ferrule is amply heavy to allow firm seating of the file tang without danger of splitting. The assortment consists of twelve Handles made up of five different sizes from 3 inches to 4\( \frac{1}{2} \) inches in length.

Price, per assortment of twelve ..................................................\( \text{(zasbke)} \) $2.40

Packed one dozen assorted in a pasteboard box, 6 x 4\( \frac{1}{2} \) x 2\( \frac{1}{2} \) inches. Weight, 1\( \frac{1}{2} \) pounds.

Screw-Driver Handle Assortment No. 726

These Handles will be found most excellent for replacements and for handling any tool with a round shank within their capacity. They are made of thoroughly seasoned Hard Wood with a highly polished mahogany finish fluted to give a sure grip. This is the same Handle used on our No. 909 Screw-Driver and the assortment is made up of twelve Handles as used on the 2, 4, 5, 6, and 8 inch sizes.

Price, per assortment of twelve ..................................................\( \text{(zatag)} \) $2.40

Packed one dozen assorted in a pasteboard box, 7\( \frac{1}{2} \) x 4\( \frac{1}{2} \) x 2\( \frac{1}{2} \) inches. Weight, 1\( \frac{1}{2} \) pounds.
No. 339 Ice Pick

This is a strong, well made Ice Pick that will stand a great deal of hard service. The Handle is large so that it may be used for cracking ice. The Blade is hammer forged from tool steel, carefully hardened, tempered, and polished. The Handle is Hard Wood, mahogany finish, 1\(\frac{1}{4}\) inches in diameter. It is protected by a heavy steel Ferrule.

The tool has a 5\(\frac{1}{4}\)-inch Blade, is 9 inches long over all, and weighs over 3 ounces net.

Price, per dozen .................................................... (Trey) $4.80

Packed one half dozen in a pasteboard box, 9\(\frac{1}{2}\) x 5\(\frac{1}{4}\) x 2 inches. Weight, 1\(\frac{3}{4}\) pounds.

No. 169 Ice Pick

This is a long, thin Ice Pick of the style generally preferred by ice men. It has a good steel Blade, well tapered, tempered, and polished. The Handle is made of Hard Wood, enameled to render it as near moisture-proof as possible, and protected by a nickel plated Ferrule.

The tool has a 6-inch Blade, is 10 inches long over all, and weighs slightly less than 2 ounces net.

Price, per dozen .................................................... (Yerad) $2.20

Packed one dozen in a pasteboard box, 10\(\frac{1}{4}\) x 4 x 2\(\frac{3}{4}\) inches. Weight, 1\(\frac{1}{4}\) pounds.

Ship Carpenters' Awl

No. 335

This is a short, stocky Awl of the kind generally used by bridge builders and ship carpenters. It is a strong, serviceable tool. The Blade is hammer forged from good tool steel, and is carefully hardened, tempered, and polished. The Handle, which is polished Hard Wood, mahogany finish, 1\(\frac{1}{4}\) inches in diameter, is protected by a heavy Ferrule.

The tool has a 2\(\frac{1}{4}\)-inch Blade, is 5 inches long over all, and weighs about 1 ounce net.

Price, per dozen .................................................... (Yirba) $3.30

Packed one dozen in a pasteboard box, 5\(\frac{1}{4}\) x 4 x 2\(\frac{3}{4}\) inches. Weight, 15 ounces.

No. 749 Scratch Awl

This fine Awl is provided with a fluted steel Head that is locked on to the hammer-forged tool steel Blade, which is carefully hardened, tempered, and polished. The Handle is Hard Wood, mahogany finish, protected by a heavy steel Ferrule, and having five flat faces that give an exceptional grip and also prevent rolling.

The tool has a 4\(\frac{1}{2}\)-inch Blade, is 8\(\frac{1}{2}\) inches long over all, and weighs about 4 ounces.

Price, each .......................................................... (Lawil) $0.70

Packed one half dozen in a pasteboard box, 8\(\frac{1}{4}\) x 5\(\frac{1}{2}\) x 1\(\frac{1}{2}\) inches.

No. 344 Scratch Awl

This is an exceptionally well made and nicely balanced Awl. The Blade is hammer-forged tool steel, carefully hardened, tempered, and polished. The Handle is Hard Wood, mahogany finish, 1\(\frac{1}{4}\) inches in diameter, protected by a heavy steel Ferrule.

The tool has a 4-inch Blade, is 7 inches long over all, and weighs about 2 ounces.

Price, per dozen .................................................... (Yisiv) $4.10

Packed one dozen in a pasteboard box, 7\(\frac{1}{4}\) x 3 x 1\(\frac{3}{4}\) inches. Weight, 14 ounces.

No. 336 Belt Awl

This is a thin, nicely tapered, and well balanced Awl for making holes in Belts and for other similar purposes. The Blade is 4\(\frac{1}{2}\) inches long, hammer forged, hardened, tempered, and polished. The Handle is Hard Wood, mahogany finished, corrugated to prevent the hand from slipping, and protected by a heavy steel Ferrule.

The tool is 8\(\frac{1}{2}\) inches long over all, and weighs about 2 ounces.

Price, per dozen .................................................... (Yibera) $5.00

Packed one half dozen in a pasteboard box, 9\(\frac{1}{4}\) x 3\(\frac{1}{2}\) x 1\(\frac{1}{2}\) inches. Weight, 1 pound.
No. 366 Offset Screw-Driver

9½ inch

This Screw-Driver is forged from a high grade of ½-inch round tool steel, hardened, ground, tempered, with points polished. Blades are placed at right angles to each other. Length over all, 9½ inches. Net weight, 9 ounces.

Price, each ........................................... (Y00NT) $1.00

Packed one half dozen in a pasteboard box, 10½ x 3½ x 1½ inches. Weight, 3½ pounds.

No. 579 Offset Screw-Driver

8 inch

This Screw-Driver is forged from a high grade of ⅜-inch octagon tool steel, hardened, ground, tempered, and points polished. Length over all, 8 inches. Net weight, 5 ounces.

Price, each ........................................... (Y00N0) $0.65

Packed one dozen in a pasteboard box, 8½ x 2¼ x 2¼ inches. Weight, 4 pounds.

No. 346 Hand Rimmer

This is a very fine little tool for removing the burr around the edge of a hole and for many other little jobs. Every gunsmith, assembler, or repairman will find a great deal of use for this tool of this kind.

The Blade is hammer forged from good tool steel, and is carefully hardened, tempered, and polished. The Handle is made of polished Hard Wood, and is protected by a heavy Ferrule.

The tool is 6½ inches long over all and weighs nearly 2 ounces.

Price, per dozen ........................................... (Y00N0) $4.80

Packed one half dozen in a pasteboard box, 6½ x 3½ x 1½ inches. Weight, 11 ounces.

Screw-Driver Bits

These Bits are hammer forged from the very best quality of steel that can be procured for the purpose. Hammer forging gives the steel a fibrous structure which when carefully hardened and tempered insures the toughness so desirable in this class of tool. They have a bright polished finish.

| No. 351 | 5 inches, ½ inch | (Y00B0) | $3.00 |
| No. 352 | 5 inches, ¾ inch | (Y00V0) | 3.30 |
| No. 353 | 5 inches, 1 inch | (Y00WA) | 3.60 |
| No. 552 | 5 inches, 1¼ inch | (Y00TB) | 3.90 |
| No. 553 | 5 inches, 1½ inch | (Y00EX) | 4.10 |
| No. 584 | 5 inches, 3/8 inch Assorted | (Y00NC) | 3.30 |

Packed one dozen in a pasteboard box, 5½ x 2 x 1½ inches. Weight, 1½ pounds.

Cabinet Screw-Driver Bits

These Screw-Driver Bits are exactly the same as those described above, except that they are longer and have a straw color instead of a bright finish.

| No. 356 | 6 inches, ½ inch | (Y00N0) | $3.75 |
| No. 358 | 8 inches, ¾ inch | (Y0000) | 4.00 |

Packed one dozen in a pasteboard box.

No. 397 Square Reamer

These Reamers are made of the very best steel that can be procured for the purpose. They are hammer forged and very carefully hardened, polished, and tempered to a straw color. Length over all, 6½ inches.

Price, per dozen ........................................... (Y00N0) $9.00

Packed one dozen in a pasteboard box, 6½ x 2½ x 1½ inches. Weight, 2½ pounds.

No. 398 Octagon Reamer

This Reamer is exactly the same as the one described above, except that it has eight cutting edges instead of four. Length over all, 6½ inches.

Price, per dozen ........................................... (Y00N0) $11.00

Packed one dozen in a pasteboard box, 6½ x 2½ x 1½ inches. Weight, 2½ pounds.
No. 444 Gimlet Bits

If you are looking for the very finest Gimlet Bit ever made, we know that these will give you absolute satisfaction. They are the best and quickest Bits for drilling small holes in wood.

Every one of these Bits is hand forged from crucible steel and is sharpened by hand, very carefully hardened, and oil tempered.

Every one of these Bits will bore faster and will last longer than any other brand on the market.

These are very strong statements, but we back them up by warranting every single one of these Bits, and we will gladly replace any Bit that is not perfectly satisfactory.

These Bits have shanks that will fit any Bit Brace or two-jawed Chuck. Length over all, 4 to 6\(\frac{1}{2}\) inches.

The sizes given below are standard gimlet sizes which are slightly over the actual size of the smaller Bits:

<table>
<thead>
<tr>
<th>Per Dozen</th>
<th>Per Dozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(\frac{1}{16}) inch</td>
<td>2.20</td>
</tr>
<tr>
<td>1(\frac{1}{32}) inch</td>
<td>2.20</td>
</tr>
<tr>
<td>1(\frac{1}{64}) inch</td>
<td>2.20</td>
</tr>
<tr>
<td>1(\frac{1}{128}) inch</td>
<td>2.20</td>
</tr>
<tr>
<td>Assorted 4(\frac{1}{16}) to 1(\frac{1}{128}) inch</td>
<td>2.20</td>
</tr>
<tr>
<td>Assorted 4(\frac{1}{16}) to 1(\frac{1}{128}) inch</td>
<td>2.20</td>
</tr>
</tbody>
</table>

Packed one dozen in a pasteboard box, 6\(\frac{1}{2}\) x 2\(\frac{1}{16}\) x 3\(\frac{1}{16}\) inch.

Average weight per box, 10 ounces.

No. 577 Gimlet Bit Set

This Set consists of twelve Gimlet Bits, 1\(\frac{1}{16}\) to 1\(\frac{1}{16}\) inch, put up in a handy round wooden box, where they are always readily available when desired.

Each one of these Bits is hand forged from crucible steel, carefully hardened, oil tempered, and sharpened by hand. This will be found a most convenient outfit upon any woodworker’s workbench.

Price, per set, complete ........ (YUMY) $3.10

Packed one in a pasteboard box, 7\(\frac{1}{2}\) x 3\(\frac{1}{2}\) x 3 inches.

Weight, 1\(\frac{1}{2}\) pounds.

Countersinks

This is an unusually fine line of Countersinks, hammer forged—not drop forged—from the very best quality of tool steel that can be procured for this class of tool. Their hammer refined steel is correctly hardened and well polished, and then carefully tempered to a straw color to withstand the grueling work expected of them. The cutting edges are clean and sharp. Easy cuts can be expected on the materials for which each is designed.

Two-lipped for wood, brass, copper, bakelite, fibre, etc. Round shank, 1\(\frac{1}{8}\) inch in diameter, for use in three-jawed chucks.

<table>
<thead>
<tr>
<th>Extreme Diameter</th>
<th>Length</th>
<th>Price, per Dozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(\frac{1}{8}) inch</td>
<td>1(\frac{1}{4}) inch</td>
<td>$4.00</td>
</tr>
</tbody>
</table>

Weight, per dozen, 6 ounces.

Two-lipped Wood Countersinks with square bit brace shanks.

<table>
<thead>
<tr>
<th>Extreme Diameter</th>
<th>Length</th>
<th>Price, per Dozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(\frac{1}{8}) inch</td>
<td>4(\frac{1}{2}) inches</td>
<td>$4.50</td>
</tr>
<tr>
<td>1(\frac{1}{8}) inch</td>
<td>4(\frac{1}{2}) inches</td>
<td>$5.00</td>
</tr>
</tbody>
</table>

Weights, per dozen, 15 ounces and 1\(\frac{1}{2}\) pounds, respectively.

Single-lipped Metal Countersink with square bit brace shank.

<table>
<thead>
<tr>
<th>Extreme Diameter</th>
<th>Length</th>
<th>Price, per Dozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(\frac{1}{8}) inch</td>
<td>4(\frac{1}{2}) inches</td>
<td>$4.50</td>
</tr>
</tbody>
</table>

Weight, per dozen, 14 ounces.

Flat Metal Countersink with bit brace shank.

<table>
<thead>
<tr>
<th>Extreme Diameter</th>
<th>Length</th>
<th>Price, per Dozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>2(\frac{1}{16}) inch</td>
<td>4(\frac{1}{2}) inches</td>
<td>$4.50</td>
</tr>
</tbody>
</table>

Weight, per dozen, 1\(\frac{1}{2}\) pounds.

Rose Countersinks for metals with bit brace shanks.

<table>
<thead>
<tr>
<th>Extreme Diameter</th>
<th>Length</th>
<th>Price, per Dozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>3(\frac{1}{16}) inch</td>
<td>4(\frac{1}{2}) inches</td>
<td>$5.00</td>
</tr>
<tr>
<td>4(\frac{1}{16}) inch</td>
<td>4(\frac{1}{2}) inches</td>
<td>$8.00</td>
</tr>
</tbody>
</table>

Weights, per dozen, 1\(\frac{1}{2}\) pounds and 3 pounds, respectively.

All of the above Countersinks are packed one dozen in a pasteboard box.
No. 997 Saddlers’ Drive Punches

These Punches are made from a very high grade of round tool steel about 4 inches long. The centers are knurled to insure a firm grip. These Punches are very carefully hardened and tempered their entire length. The cutting edges are sharpened.

These Punches are made in fifteen different sizes.

<table>
<thead>
<tr>
<th>No.</th>
<th>Size of Knurling</th>
<th>Hole</th>
<th>Price, per Dozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3/16 inch</td>
<td>3/16 inch</td>
<td>$4.00</td>
</tr>
<tr>
<td>2</td>
<td>3/32 inch</td>
<td>3/32 inch</td>
<td>4.00</td>
</tr>
<tr>
<td>3</td>
<td>3/32 inch</td>
<td>3/32 inch</td>
<td>4.00</td>
</tr>
<tr>
<td>4</td>
<td>3/16 inch</td>
<td>3/16 inch</td>
<td>4.00</td>
</tr>
<tr>
<td>5</td>
<td>1/8 inch</td>
<td>1/8 inch</td>
<td>4.00</td>
</tr>
<tr>
<td>6</td>
<td>1/8 inch</td>
<td>1/8 inch</td>
<td>4.00</td>
</tr>
<tr>
<td>7</td>
<td>1/8 inch</td>
<td>1/8 inch</td>
<td>4.00</td>
</tr>
<tr>
<td>8</td>
<td>1/8 inch</td>
<td>1/8 inch</td>
<td>4.30</td>
</tr>
<tr>
<td>9</td>
<td>1/8 inch</td>
<td>1/8 inch</td>
<td>4.30</td>
</tr>
<tr>
<td>10</td>
<td>1/8 inch</td>
<td>1/8 inch</td>
<td>4.30</td>
</tr>
<tr>
<td>11</td>
<td>1/8 inch</td>
<td>1/8 inch</td>
<td>4.30</td>
</tr>
<tr>
<td>12</td>
<td>1/8 inch</td>
<td>1/8 inch</td>
<td>4.30</td>
</tr>
<tr>
<td>13</td>
<td>1/8 inch</td>
<td>1/8 inch</td>
<td>4.85</td>
</tr>
<tr>
<td>14</td>
<td>1/8 inch</td>
<td>1/8 inch</td>
<td>4.85</td>
</tr>
<tr>
<td>15</td>
<td>1/8 inch</td>
<td>1/8 inch</td>
<td>4.85</td>
</tr>
</tbody>
</table>

Packed one dozen in a pasteboard box.

No. 950 Saddlers’ Drive Punch Set

This Set consists of one each of our No. 997 Drive Punches, sizes 1 to 12, put up in a round wooden box. This makes a very handy outfit.

Price, per set, complete ($1.00) $4.85

Packed one set in a pasteboard box, 5 1/2 x 3 1/2 x 3 1/2 inches. Weight, 2 pounds.

No. 368 Heavy Center Punch

These Punches are made from a high grade of 1/4-inch round tool steel, 5 inches long, properly tempered. The centers are knurled. Blued finish.

Price, per dozen .................................. (york) $4.40

Packed one dozen in a pasteboard box, 5 1/2 x 2 1/2 x 1 1/2 inches. Weight, 2 1/2 pounds.

No. 347 Nail Set

These Nail Sets are hammer forged from high grade tool steel, and are very carefully hardened and tempered. They are 3 1/2 inches long, 1/4 inch square. They are furnished with 1/8, 1/16, 1/32 inch, or assorted points. Blued finish.

Price, per dozen .................................. (TAM) $1.65

Packed one dozen in a pasteboard box, 4 1/2 x 2 x 3 1/2 inch. Average weight, 11 ounces.

No. 348 Center Punch

These Punches are hammer forged from high grade tool steel, carefully hardened and tempered. They are 3 1/4 inches long, 1/8 inch square. Blued finish.

Price, per dozen .................................. (york) $2.00

Packed one dozen in a pasteboard box, 4 1/2 x 2 x 3 1/2 inch. Weight, 1 pound.

No. 349 Tinners’ Punch

These Punches are hammer forged from high grade tool steel, and are carefully hardened and tempered. They are 4 1/4 inches long, 1/4 inch diameter. Furnished with 1/16, 1/32, 1/64 inch, or assorted points. Blued finish.

Price, per dozen .................................. (TAM) $1.65

Packed one dozen in a pasteboard box, 4 1/2 x 1 1/2 x 1 1/2 inches. Average weight, 1 1/2 pounds.
No. 890 Nail Set

A slim Nail Set ¼ inch in diameter with a Square Collar to prevent rolling located just above the nicely knurled center. The Points are cupped and the whole tool carefully hardened and tempered its entire length. Blued finish.

Made with ⅛, ¼, ⅜ inch, or assorted points.

Price, per dozen ........................................ (ZAP) $2.20

No. 990 Nail Set

These slim Nail Sets are only ¼ inch in diameter. They are equal in every way to our other styles. Blued finish.

Made with ⅛, ¼, ⅜ inch, or assorted points.

Price, per dozen ........................................ (ZAP) $2.00

No. 996 Solid Punch

These Punches are exactly the same as our No. 999 Nail Sets, but they have solid instead of cupped points.

Price, per dozen, assorted points, ¼ to ⅜ inch ........ (ZAP) $2.20

Center Punches

No. 995. With Regular Point, per dozen, ⅛ inch... (ZAP) $2.40
No. 994. With Special Small Point, per dozen, ⅛ inch... (ZAP) $2.40

No. 998 Prick Punch

Same as No. 995, but with longer point.

Price, per dozen ........................................ (ZAP) $2.20

All packed one dozen in a pasteboard box.

No. 999 Nail Set

These Nail Sets are made from a very high grade of ¼-inch round tool steel about 4 inches long. The centers are knurled and the points are cupped. These Nail Sets are very carefully hardened and are tempered their entire length. Blued finish.

Made with ⅛, ¼, ⅜ inch, or assorted points.

Price, per dozen ........................................ (ZAP) $2.20

Pocket Set of Nail Sets

No. 900

This Set consists of four of our high grade No. 999 Nail Sets, one each ⅛, ¼, ⅜, and ½; put up in a convenient pocket case.

Net weight, 7 ounces.

Price, per set, complete.................... (ZAP) $0.90

Packed three sets in a pasteboard box, 4½ x 2½ x 2 inches.

Weight, 1½ pounds.

Pocket Set of Nail Sets

No. 901

This Set consists of four of our high grade No. 999 Nail Sets, one each ⅛, ¼, ⅜, and ½; put up in a leather pocket case.

Net weight, 6 ounces.

Price, per set, complete.................... (ZAP) $1.00

Packed three sets assorted leather cases in a pasteboard box, 4½ x 2½ x 1½ inches.

Weight, 1½ pounds.
**Concave Chisel**

No. 983

All of these tools are made from a fine quality of 1/2-inch round tool steel, 4 inches long. The points are carefully shaped and properly tempered. The centers are knurled to give a firm grip.

1/4-inch Point, 3/8-inch Diameter. Per dozen (ZILLO) $4.00

**Concave Chisel**

No. 984

3/16-inch Point, 3/8-inch Diameter. Per dozen (ZILNY) $3.65

**Straight Angle Chisel**

No. 985

1/8-inch Point, 3/8-inch Diameter. Per dozen (ZILOL) $3.30

**Straight Angle Chisel**

No. 986

1/8-inch Point, 3/8-inch Diameter. Per dozen (ZILUM) $3.30

**Rivet Set**

No. 987

3/8-inch Point, 3/8-inch Diameter. Per dozen (ZILYN) $3.65

All packed one dozen in a pasteboard box, 4 1/2 x 1 1/2 x 1 1/2 inches. Average weight, per box, 1 1/2 pounds.

**Round Nose Punch**

No. 988

All of these tools are made from a fine quality of 1/2-inch round tool steel, 4 inches long. The points are carefully shaped and properly tempered. The centers are knurled to give a firm grip.

1/4-inch Point, 3/8-inch Diameter. Per dozen (ZIMAJ) $3.30

**Round Nose Punch**

No. 989

1/8-inch Point, 3/8-inch Diameter. Per dozen (ZIMEK) $3.30

**Small Center Punch**

No. 991

1/4-inch Point, 3/8-inch Diameter. Per dozen (ZIMJA) $2.40

**Cold Chisel**

No. 992

1/4-inch Blade, 3/8-inch Diameter. Per dozen (ZIMKE) $3.30

**Cold Chisel**

No. 993

1/4-inch Blade, 3/8-inch Diameter. Per dozen (ZIMMO) $3.30

All packed one dozen in a pasteboard box, 4 1/2 x 1 1/2 x 1 1/2 inches. Average weight, per box, 1 1/2 pounds.
Nail Set Display
No. 891

A very neat Display, holding four dozen No. 890 Square Shoulder Nail Sets in assorted sizes, as shown in the illustration. Net weight, 4½ pounds.

Price, per set, complete ........................................ (LEYL) $9.30
Packed one display in a pasteboard box, 6½ x 6½ x 2½ inches.
Shipping weight, 4½ pounds.

Nail Set Display
No. 936

This assortment consists of three dozen No. 999 Nail Sets in assorted sizes, put up on a neat Display Board, as shown in the illustration. Net weight, 4 pounds.

Price, per set, complete ........................................ (ZIPPO) $8.15
Packed one set in a pasteboard box, 6½ x 6½ x 4½ inches.
Weight, 4½ pounds.

Machinists' Handy Set
No. 975

This Set consists of one each of the following Punches and Chisels: Nos. 983, 984, 985, 986, 987, 988, 989, 991, 992, 993, 995, 996, 997, 998, and 999—⅔, described on pages 272 to 275. These tools are put up in a wooden box, as shown in the illustration, and will be found very handy on any workbench. Net weight, 2 pounds.

Price, per set, complete ........................................ (ZIKKO) $4.40
Packed one in a pasteboard box, 5½ x 3½ x 3½ inches.
Weight, 2½ pounds.

No. 524 Carpenters' Handy Set

This Set consists of ten small tools that will be found most convenient upon any carpenter's workbench. These tools are all forged from a high grade of tool steel, hardened, ground, and very carefully tempered.

The following tools are contained in this Set: 5 Screw-Driver Bits, 1 Counter-sink, 1 Cold Chisel, 1 Solid Punch, 1 Nail Set, 1 Prick Punch.

Each Set is put up in a handy round wooden box where the tools are always readily available when desired.

Price, per set, complete ........................................ (YUCOM) $3.30
Packed one in a pasteboard box, 6½ x 3½ x 3 inches.
Weight, 2½ pounds.
**Precision Center Punches**

No. 140

**BODY SIZES**

This Set consists of nine Center Punches, \( \frac{1}{2}, \frac{3}{8}, \frac{1}{4}, \frac{5}{32}, \frac{7}{64}, \frac{1}{8}, \frac{3}{32}, \frac{7}{64}, \frac{1}{8} \), and \( \frac{1}{4} \) inch in diameter, put up in a handy wooden box.

The Punches are made of a fine grade of cast steel, 4 inches long, hardened, tempered, and polished. They are accurately ground to standard body sizes in order that they may be used for accurately centering the bottom of holes for drilling or for transferring from one piece of work to another. For such classes of work they will be greatly appreciated, as there are no other similar tools designed for this purpose. In addition to these special uses, they will do the work of ordinary Center Punches.

Price, per set, complete ................................................. (YEDGY) $4.50

Packed one set in a box, 5\( \frac{1}{2} \) x 3\( \frac{1}{2} \) x 3 inches.

Weight, 1\( \frac{1}{2} \) pounds.

**Bell Centering Punches**

These very useful tools are so designed that they will quickly and accurately center both round and square stock. Each tool has four case-hardened steel Bearings against which the work rests to make it less liable to be thrown out of center by any unevenness of the stock. The Punch runs through a Guide which rests against the end of the stock to be centered, giving the Punch an accurate bearing throughout its length. The Punch is made of \( \frac{1}{8} \) inch tool steel, hardened and tempered. The entire tool is polished.

Price, each

No. 529. Centers up to 1 inch ........................................ (YUDAP) $1.80
No. 534. Centers up to 1\( \frac{1}{2} \) inches ............................... (YUDYV) 2.00

Packed one in a pasteboard box.

**Hand Cut Steel Letters**

No. 978

This Set consists of 26 Hand Cut Steel Letters, A to Z, \( \frac{1}{8} \)-inch, also one each "&" sign and period. Every one of these Letters is carefully hand cut, and not stamped or pressed out. The Knurled Centers are milled off on one side so that when the thumb rests on the flat part the Letter is sure to be right side up and perpendicular.

Price, per set ................................................................. (SIXTE) $17.60
Price, per letter ............................................................ .70

Packed one set in a pasteboard box. Weight, per set, 3\( \frac{1}{2} \) pounds.

**Hand Cut Steel Figures**

No. 980

This Set consists of 9 Hand Cut \( \frac{1}{8} \)-inch Steel Figures, 1, 2, 3, 4, 5, 6 (or 9), 7, 8, and 0. These are manufactured exactly the same as the Letters described above, every Figure being strictly hand cut, and the bodies made in such a manner that the Figures are always right side up and perpendicular when in use.

Price, per set ................................................................. (SILHA) $6.60
Price, per figure .......................................................... .70

Packed one set in a pasteboard box. Weight, per set, 1\( \frac{1}{2} \) pounds.
Machinists' Pin Puncthes

These Punches are made from a very high grade of round tool steel about four inches long. The centers are knurled and the points and shanks nicely polished. Every Punch is very carefully hardened and tempered its entire length. Blued finish.

<table>
<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>Point</th>
<th>Stock</th>
<th>Price per Dozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>681</td>
<td>3/32</td>
<td>5/32</td>
<td>ZALIZ</td>
<td>$2.85</td>
</tr>
<tr>
<td>682</td>
<td>7/32</td>
<td>7/32</td>
<td>ZALOR</td>
<td>2.85</td>
</tr>
<tr>
<td>683</td>
<td>9/32</td>
<td>9/32</td>
<td>ZALUC</td>
<td>2.85</td>
</tr>
<tr>
<td>684</td>
<td>1/8</td>
<td>1/8</td>
<td>ZALWA</td>
<td>2.85</td>
</tr>
<tr>
<td>685</td>
<td>5/32</td>
<td>5/32</td>
<td>ZALYR</td>
<td>2.85</td>
</tr>
<tr>
<td>686</td>
<td>7/32</td>
<td>7/32</td>
<td>ZAMAY</td>
<td>2.85</td>
</tr>
<tr>
<td>687</td>
<td>9/32</td>
<td>9/32</td>
<td>ZAMCO</td>
<td>2.85</td>
</tr>
<tr>
<td>688</td>
<td>1/8</td>
<td>1/8</td>
<td>ZAMES</td>
<td>2.85</td>
</tr>
</tbody>
</table>

Packed one dozen in a pasteboard box. Average weight, 1 pound.

Machinists' Punch Set
No. 690

This Set consists of eight Machinists' Punches, one of each of the following sizes, 7/32, 9/32, 1/8, 5/32, 7/32, 1, and 9/32, put up in a handsome square box as shown in the illustration.

Price, per set, complete (ZAMOC) $2.30

Packed one set in a pasteboard box, 4 1/2 x 2 1/2 x 2 1/2 inches.
Weight, 1 1/2 pounds.

Pin Punches

These Pin Punches are forged from a high grade of octagon tool steel, 3/4 inch in diameter, about 6 inches long. They are hardened, ground, tempered, and have polished points.

<table>
<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>Price per Dozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>573</td>
<td>3/32</td>
<td>(ZUMEX) $2.25</td>
</tr>
<tr>
<td>413</td>
<td>7/32</td>
<td>(ZUMYR) 2.25</td>
</tr>
<tr>
<td>574</td>
<td>1/8</td>
<td>(ZUMIB) 2.25</td>
</tr>
<tr>
<td>415</td>
<td>5/32</td>
<td>(ZUMOT) 2.25</td>
</tr>
<tr>
<td>575</td>
<td>7/32</td>
<td>(ZUMOC) 2.25</td>
</tr>
<tr>
<td>416</td>
<td>9/32</td>
<td>(ZUMPO) 2.25</td>
</tr>
<tr>
<td>417</td>
<td>1/4</td>
<td>(ZUMPO) 2.25</td>
</tr>
<tr>
<td>418</td>
<td>1/2</td>
<td>(ZUMPO) 2.25</td>
</tr>
</tbody>
</table>

Packed one dozen in a pasteboard box, 6 1/2 x 2 x 1 1/2 inches. Average weight, 2 pounds.

No. 472 Pin Punch Set

This Set consists of 5 Pin Punch, one of each of the following sizes: 3/32, 1/8, 5/32, and 1/4 inch.

Price, per set (ZUMC) $0.95

Packed one set in a pasteboard box, 6 1/2 x 2 1/2 x 1 inch.
Weight, 13 ounces.

No. 572 Pin Punch Set

This Set consists of 8 assorted Pin Punches, 3/32 to 1/4 inch points, put up in a handy round wooden box, as shown in the illustration.

Price, per set, complete (ZUMCO) $2.00

Packed one in a pasteboard box, 7 1/2 x 3 1/2 x 3 inches.
Weight, 2 pounds.

Long Heavy Pin Punches

These Punches are heavier and longer than those listed above. The Points are 3 1/2 inches long and are made of tool steel carefully hardened and polished. The Shanks are made of hexagonal steel with a hardened and polished head. Over-all length, 9 inches.

<table>
<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>Shank</th>
<th>Price per Dozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>792</td>
<td>3/32</td>
<td>inch</td>
<td>(ZEFUB) $5.00</td>
</tr>
<tr>
<td>793</td>
<td>7/32</td>
<td>inch</td>
<td>(ZEFVA) 5.00</td>
</tr>
<tr>
<td>794</td>
<td>1/8</td>
<td>inch</td>
<td>(ZEFWE) 5.00</td>
</tr>
<tr>
<td>795</td>
<td>5/32</td>
<td>inch</td>
<td>(ZEFIO) 5.00</td>
</tr>
<tr>
<td>796</td>
<td>Set of Four Sizes</td>
<td>(ZEGBO) 1.70</td>
<td></td>
</tr>
</tbody>
</table>
Cold Chisels

All of the tools shown on this page are forged from a high grade of octagon tool steel, hardened, ground, and carefully tempered. All the points are polished.

<table>
<thead>
<tr>
<th>Tool</th>
<th>Width of Point</th>
<th>Dia. of Stock</th>
<th>Length Over All</th>
<th>Price Per Dozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 766</td>
<td>1/4 inch</td>
<td>1/4 inch</td>
<td>5 inches</td>
<td>($2.70)</td>
</tr>
<tr>
<td>No. 456</td>
<td>1/4 inch</td>
<td>1/4 inch</td>
<td>5 inches</td>
<td>($2.90)</td>
</tr>
<tr>
<td>No. 767</td>
<td>1/4 inch</td>
<td>1/4 inch</td>
<td>5 inches</td>
<td>($3.00)</td>
</tr>
<tr>
<td>No. 455</td>
<td>1/4 inch</td>
<td>1/4 inch</td>
<td>5 inches</td>
<td>($3.10)</td>
</tr>
<tr>
<td>No. 623</td>
<td>1/4 inch</td>
<td>1/4 inch</td>
<td>6 inches</td>
<td>($3.30)</td>
</tr>
<tr>
<td>No. 627</td>
<td>1/4 inch</td>
<td>1/4 inch</td>
<td>7 inches</td>
<td>($3.80)</td>
</tr>
<tr>
<td>No. 629</td>
<td>1/4 inch</td>
<td>1/4 inch</td>
<td>7 1/2 inches</td>
<td>($4.00)</td>
</tr>
<tr>
<td>No. 769</td>
<td>1 inch</td>
<td>1/4 inch</td>
<td>8 inches</td>
<td>($5.00)</td>
</tr>
</tbody>
</table>

Cape Chisels

<table>
<thead>
<tr>
<th>Tool</th>
<th>Width of Point</th>
<th>Dia. of Stock</th>
<th>Length Over All</th>
<th>Price Per Dozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 458</td>
<td>1/4 inch</td>
<td>1/4 inch</td>
<td>5 inches</td>
<td>($3.00)</td>
</tr>
<tr>
<td>No. 785</td>
<td>1/4 inch</td>
<td>1/4 inch</td>
<td>5 inches</td>
<td>($3.30)</td>
</tr>
<tr>
<td>No. 457</td>
<td>1/4 inch</td>
<td>1/4 inch</td>
<td>5 inches</td>
<td>($3.50)</td>
</tr>
<tr>
<td>No. 786</td>
<td>1/4 inch</td>
<td>1/4 inch</td>
<td>6 inches</td>
<td>($3.80)</td>
</tr>
<tr>
<td>No. 787</td>
<td>1/4 inch</td>
<td>1/4 inch</td>
<td>7 inches</td>
<td>($4.00)</td>
</tr>
<tr>
<td>No. 788</td>
<td>1/4 inch</td>
<td>1/4 inch</td>
<td>7 1/2 inches</td>
<td>($4.50)</td>
</tr>
</tbody>
</table>

Square Chisel

<table>
<thead>
<tr>
<th>Tool</th>
<th>Width of Point</th>
<th>Dia. of Stock</th>
<th>Length Over All</th>
<th>Price Per Dozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 459</td>
<td>1/4 inch</td>
<td>1/4 inch</td>
<td>5 inches</td>
<td>($2.65)</td>
</tr>
</tbody>
</table>

Diamond Point Chisel

<table>
<thead>
<tr>
<th>Tool</th>
<th>Width of Point</th>
<th>Dia. of Stock</th>
<th>Length Over All</th>
<th>Price Per Dozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 460</td>
<td>1/2 inch</td>
<td>1/4 inch</td>
<td>5 inches</td>
<td>($2.65)</td>
</tr>
</tbody>
</table>

Half Round Chisel

All of the tools shown on this page are forged from a high grade of octagon tool steel, hardened, ground, and carefully tempered. All the points are polished.

<table>
<thead>
<tr>
<th>Tool</th>
<th>Width of Point</th>
<th>Dia. of Stock</th>
<th>Length Over All</th>
<th>Price Per Dozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 461</td>
<td>1/2 inch</td>
<td>3/16 inch</td>
<td>5 inches</td>
<td>($3.30)</td>
</tr>
</tbody>
</table>

Cape Chisel

<table>
<thead>
<tr>
<th>Tool</th>
<th>Width of Point</th>
<th>Dia. of Stock</th>
<th>Length Over All</th>
<th>Price Per Dozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 462</td>
<td>1/2 inch</td>
<td>3/16 inch</td>
<td>5 inches</td>
<td>($3.30)</td>
</tr>
</tbody>
</table>

Solid Punch

<table>
<thead>
<tr>
<th>Tool</th>
<th>Width of Point</th>
<th>Dia. of Stock</th>
<th>Length Over All</th>
<th>Price Per Dozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 463</td>
<td>1/2 inch</td>
<td>3/16 inch</td>
<td>5 inches</td>
<td>($2.65)</td>
</tr>
</tbody>
</table>

Cup Punch

<table>
<thead>
<tr>
<th>Tool</th>
<th>Width of Point</th>
<th>Dia. of Stock</th>
<th>Length Over All</th>
<th>Price Per Dozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 464</td>
<td>1/2 inch</td>
<td>1/4 inch</td>
<td>5 inches</td>
<td>($2.65)</td>
</tr>
</tbody>
</table>

Prick Punch

<table>
<thead>
<tr>
<th>Tool</th>
<th>Width of Point</th>
<th>Dia. of Stock</th>
<th>Length Over All</th>
<th>Price Per Dozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 465</td>
<td>1/2 inch</td>
<td>3/16 inch</td>
<td>5 inches</td>
<td>($2.65)</td>
</tr>
</tbody>
</table>

Center Punch

<table>
<thead>
<tr>
<th>Tool</th>
<th>Width of Point</th>
<th>Dia. of Stock</th>
<th>Length Over All</th>
<th>Price Per Dozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 466</td>
<td>1/2 inch</td>
<td>3/16 inch</td>
<td>5 inches</td>
<td>($2.65)</td>
</tr>
</tbody>
</table>
Chisel and Punch Set
No. 470

This Set consists of 12 octagon Chisels and Punches, 5 inches long and \( \frac{3}{4} \) inch in diameter. The tools are forged from a very high grade of tool steel. They are hardened, ground, tempered, and have polished points.

Each Set is put up in a handy wooden box and will be found convenient on any workbench.

Price, per set, complete ........................................ (YOBAY) $3.30
Packed one in a pasteboard box, 6½ x 3½ x 3 inches. Weight, 2½ pounds.

No. 399 Motor Set

This Set consists of 12 octagon Chisels and Punches, 5 inches long and \( \frac{3}{4} \) inch in diameter. The tools are forged from a very high grade of tool steel. They are hardened, ground, tempered, and have polished points. The tools in this set are carefully selected to meet the needs of automobilists. The tools are shown and listed separately on pages 282 and 283.

Each Set is put up in an attractive leather-clutch case. The tools are held in place by a leather strap. Net weight, 2 pounds.

Price, per set, complete in case .................................. (YOFYR) $4.20
Packed one set in a pasteboard box, 6½ x 3½ x 3 inches. Weight 2½ pounds.

No. 499 Motor Set

This Motor Set contains 12 good tools in a strong, leather-bound Canvas Case, where they are held in place by strong leather straps.

The tools are selected to make any ordinary road repairs on a small car. Every tool in the set is fully up to the highest standards, and can be depended upon in any emergency. This Set will also be found exceedingly well adapted for motorcycle repairs and will easily pack into any motorcycle tool box. Net weight, 4 pounds.

The following tools are included:

No. 231 Screw-Driver Set.
No. 376 Combination Pliers.
No. 456 Cold Chisel.
No. 457 Cape Chisel.
No. 463 Solid Punch.
No. 465 Prick Punch.
No. 466 Center Punch.
No. 481 Adjustable Wrench.
No. 557 Ball Peen Hammer.
No. 909 Screw-Driver, 2-inch.
No. 909 Screw-Driver, 5-inch.
Half Round File, 6-inch.

Price, per set, complete ........................................ (YOBAY) $10.00
Packed one set in a pasteboard box, 12½ x 4½ x 3½ inches. Weight, 4½ pounds.
Motor Set
No. 599

Knowing that there is a demand among discriminating motorists for extra fine Motor Kits containing an assortment of high-grade tools, we have prepared these Sets.

This Set contains 27 good tools for making all ordinary road repairs. They are all tools that will do good work and can be depended upon.

The tools are contained in an extra heavy leather-bound Canvas Roll, and are held in place by strong leather straps.

The following tools are included:

No. 82 Rim Wrench.
No. 278 Screw-Driver.
No. 359 Thickness Gauge.
No. 366 Offset Screw-Driver.
No. 367 Screw-Driver, 4-inch.
No. 376 Combination Pliers.
No. 413 Pin Punch.
No. 416 Pin Punch.
No. 455 Cold Chisel.
No. 457 Cape Chisel.
No. 462 Half Round Chisel.
No. 463 Solid Punch.
No. 464 Cup Punch.

8-inch Round File.

Net weight, 11½ pounds.

Price, per set, complete ............................................ $21.00

Packed one complete set in a pasteboard box, 16 x 9½ x 4 inches.

Weight, 12 pounds.
General Repair Kit
No. 1111

This Set consists of 33 high-grade tools especially selected for general field or road repairs on automobiles, trucks, tractors, gas engines, etc.

The tools are all contained in pockets in the extra heavy leather-bound Canvas Case from which they can be instantly removed or replaced. Net weight, 11½ pounds.

The following tools are included:

No.  8 Hack Saw Frame.  No.  458 Cold Chisel.
No. 93 Brass Hammer.        No.  464 Round Cup Punch.
No. 96 Hand Vise.            No.  466 Center Punch.
No. 135 Screw Pitch Gauge.   No.  474 Double End Wrench.
No. 278 Pocket Screw-Driver. No.  475 Double End Wrench.
No. 346 Hand Rimmer.         No.  476 Double End Wrench.
No. 350 3-inch Screw-Driver. No.  479 Cotter Pin Puller.
No. 350 6-inch Screw-Driver. No.  481 Adjustable Wrench.
No. 350 8-inch Screw-Driver. No.  484 Adjustable Wrench.
No. 359 Thickness Gauge.     No.  498 Single End Wrench.
No. 367 3-inch Screw-Driver. No.  557 Machinists' Hammer.
No. 376 Combination Plier.   No.  579 Offset Screw-Driver.
No. 413 Pin Punch.           No.  595 Chauffeur's Universal Wrench.
No. 415 Pin Punch.           No.  623 Cold Chisel.
No. 416 Pin Punch.           No.  662 Indicating Caliper.
No. 456 Cold Chisel.         8-inch Fine, 1 Dozen.

List price ........................................... $27.50

Packed one in a pasteboard box, 17½ x 5 x 4 inches. Weight, 12½ pounds.
No. 699 Complete Motor Set

This Kit was designed for the use of small garages or for long tours. It consists of 53 good tools in a strong khaki-colored Canvas Case.

Every tool in these kits is the best of its kind and can be depended upon in any emergency.

The following tools are contained in this outfit:

No. 93 Brass Hammer. No. 434 Hexagon Socket.
No. 96 Hand Vise. No. 435 Hexagon Socket.
No. 135 Screw Pitch Gauge. No. 436 Cold Chisel.
No. 214 Steel Rule. No. 441 Washer Cutter.
No. 231 Screw-Driver Set. No. 455 Cold Chisel.
No. 237 Keyhole Hack Saw. No. 456 Cold Chisel.
No. 278 Screw-Driver. No. 457 Cape Chisel.
No. 332 Screw-Driver, 3-inch. No. 458 Cape Chisel.
No. 332 Screw-Driver, 8-inch. No. 459 Square Chisel.
No. 359 Feeler Gauge. No. 460 Diamond Point Chisel.
No. 366 Offset Screw-Driver. No. 461 Half Round Chisel.
No. 367 Screw-Driver, 4-inch. No. 462 Half Round Cape Chisel.
No. 376 Combination Pliers. No. 463 Solid Punch.
No. 381 Bearing Scraper. No. 464 Cup Punch.
No. 382 Bearing Scraper. No. 465 Prick Punch.
No. 383 Bearing Scraper. No. 466 Center Punch.
No. 389 Ratchet Rim Wrench. No. 474 Double End Wrench.
No. 396 Rose Countersink. No. 475 Double End Wrench.
No. 398 Octagon Reamer. No. 476 Double End Wrench.
No. 403 Firm Joint Caliper. No. 479 Cotter Pin Puller.
No. 413 Pin Punch. No. 481 Adjustable Wrench.
No. 415 Pin Punch. No. 484 Adjustable Wrench.
No. 416 Pin Punch. No. 559 Ball Peen Hammer.
No. 417 Pin Punch. No. 997 Drive Punch, No. 6.
No. 418 Pin Punch. 6-inch Three-Square File.
No. 432 Hexagon Socket. 8-inch Flat File.
No. 433 Hexagon Socket. 8-inch Half Round File.

For complete information regarding these tools, refer to the other pages of this catalog. Net weight, 19 pounds.

Price, per set, complete ........................................ (E.A.N.C.C.) $44.00

Each complete set is packed in a pasteboard box, 16 x 11½ x 6 inches.

Weight, 20 pounds.
Single End Wrenches

These Wrenches have large black enameled Handles that will start the hardest screws. They are forged from a very tough wrench steel, properly hardened and tempered. Heads are polished. Length over all, 5 ¼ inches. Average weight, 6 ounces.

<table>
<thead>
<tr>
<th>No.</th>
<th>Opening</th>
<th>For Hex Cap Screws</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>495</td>
<td>½ inch</td>
<td>½ inch</td>
<td>$0.25</td>
</tr>
<tr>
<td>496</td>
<td>1/16 inch</td>
<td>¼ inch</td>
<td>$0.25</td>
</tr>
<tr>
<td>497</td>
<td>¼ inch</td>
<td>1/16 inch</td>
<td>$0.25</td>
</tr>
<tr>
<td>498</td>
<td>¼ inch</td>
<td>¼ inch</td>
<td>$0.25</td>
</tr>
<tr>
<td>488</td>
<td>Set of 4 Wrenches</td>
<td>Price, per set...</td>
<td>$0.95</td>
</tr>
</tbody>
</table>

Adjustable Wrenches

These attractive and serviceable Wrenches will be appreciated by all automobilists; the small size will also be found useful in any home. The Jaws are case-hardened steel, running on two steel Guide Rods, a very light but strong method of construction. Aluminum handles are cast on the rods. These handles are handsomely polished.

The adjusting nut of the small size wrench runs on Roller Bearings.

<table>
<thead>
<tr>
<th>No.</th>
<th>Weight</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>481</td>
<td>6 inch</td>
<td>$1.30</td>
</tr>
<tr>
<td>484</td>
<td>10 inch</td>
<td>$2.20</td>
</tr>
</tbody>
</table>

Each Wrench packed in a separate pasteboard box.

Chauffeurs' Universal Wrench

No. 595
Patented May 29, 1923
6 inch

This Chauffeurs' Universal Wrench is so named because it is self-adjusting for any size square or hexagon nut up to ½ inch, and will hold round rods from 1/16 inch to ½ inch in diameter. The jaws are opened by pressing the trigger and automatically closed by means of a spring. It will firmly grip any shaped piece within its capacity.

The entire tool is strongly made from steel with hardened jaws. The handle is shaped to give a good grip.

Length over all, 7 inches. Net weight, 8 ounces.

Price, each................................................. $1.65

Packed one in a pasteboard box, 7½ x 2¼ x ½ inch. Weight, 10 ounces.

Double End Wrenches

These Wrenches are forged from a special tough wrench steel. The openings are milled. They are carefully hardened. Handles are finished in black enamel. Heads are polished.

<table>
<thead>
<tr>
<th>No.</th>
<th>Length</th>
<th>Weight Per Box</th>
<th>Openings</th>
<th>Price, Per Dozen</th>
</tr>
</thead>
<tbody>
<tr>
<td>474</td>
<td>4 inches</td>
<td>3/4 pound</td>
<td>1/16, 1/16</td>
<td>$3.85</td>
</tr>
<tr>
<td>475</td>
<td>5 inches</td>
<td>1 ½ pounds</td>
<td>1/8, 1/8</td>
<td>4.40</td>
</tr>
<tr>
<td>476</td>
<td>6 inches</td>
<td>2 ½ pounds</td>
<td>1/16, 1/16</td>
<td>5.50</td>
</tr>
</tbody>
</table>

Packed one half dozen in a pasteboard box.
Socket Wrench Set
No. 378

This Set consists of two Wrenches, each with two hexagon Sockets, which are made from malleable iron, broached to exact size. The four sizes of Sockets are $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{2}$, and $\frac{3}{4}$ inch. Handles are polished steel.

Length of each Wrench over all, 8$\frac{1}{2}$ inches. Net weight, 1$\frac{3}{4}$ pounds.

Price, per set ........................................ (Yonil) $2.00

Each set packed in a pasteboard box, 9$\frac{3}{4}$ x 2$\frac{1}{4}$ x 2 inches. Weight, 1$\frac{1}{2}$ pounds.

Socket Wrench
No. 380

This Set consists of four Sockets, sizes $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{2}$, and $\frac{3}{4}$ inch, all fitting one knurled steel Handle.

Length over all, 10$\frac{1}{2}$ inches. Net weight, 1$\frac{3}{4}$ pounds.

Price, per set ........................................ (Yonche) $2.00

Packed one set in a pasteboard box, 10 x 2 x 1$\frac{1}{4}$ inches. Weight, 1$\frac{1}{4}$ pounds.

Offset Wrench
No. 482

This Wrench can be used in a great many places that no ordinary Wrench will reach. It will be found particularly useful on several places in a Ford car. The Handle is polished steel, knurled to give a good grip. The Socket is very strong, and is broached to exact $\frac{1}{4}$-inch hexagon size.

Length over all, 10$\frac{1}{2}$ inches. Net weight, 11 ounces.

Price, each ........................................ (Yonic) $1.00

Packed three in a pasteboard box, 11 x 2$\frac{1}{2}$ x 2 inches. Weight, 2$\frac{1}{4}$ pounds.

Ratchet Socket Wrench
No. 419

This tool has a 7-inch black enameled iron Handle, provided with a very strong ratchet that can be used for either right or left hand work. The polished hardwood Head runs on Ball Bearings. The $\frac{1}{2}$-inch hexagon Socket is made from solid steel and broached to accurate size.

The tool is 3$\frac{1}{2}$ inches high, and weighs 1$\frac{1}{2}$ pounds net.

Price, each ........................................ (Yonin) $3.60

Packed one in a pasteboard box, 8$\frac{1}{2}$ x 4$\frac{1}{2}$ x 2$\frac{1}{4}$ inches.

Weight, 1$\frac{1}{4}$ pounds.

Hexagon Socket

These Sockets can be used with our Rim Wrenches, Socket Wrenches, or in any other $\frac{1}{2}$-inch hexagon socket. They are made of steel castings, white nickeled, with a spring pin to hold them in place. Sockets are broached to accurate size.

<table>
<thead>
<tr>
<th>Hexagon Opening</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 591 $\frac{1}{4}$ inch (Yowm)</td>
<td>$0.25</td>
</tr>
<tr>
<td>No. 592 $\frac{1}{8}$ inch (Yupab)</td>
<td>$0.25</td>
</tr>
<tr>
<td>No. 432 $\frac{1}{4}$ inch (Yolit)</td>
<td>$0.25</td>
</tr>
<tr>
<td>No. 433 $\frac{1}{2}$ inch (Yolov)</td>
<td>$0.25</td>
</tr>
<tr>
<td>No. 434 $\frac{3}{4}$ inch (Yolna)</td>
<td>$0.25</td>
</tr>
<tr>
<td>No. 435 1 inch (Yolse)</td>
<td>$0.25</td>
</tr>
<tr>
<td>No. 593 $\frac{1}{4}$ inch (Yupflo)</td>
<td>$0.30</td>
</tr>
<tr>
<td>No. 594 1 inch (Yupcpe)</td>
<td>$0.30</td>
</tr>
</tbody>
</table>

Packed one dozen in a pasteboard box.

Average weight per box, 2$\frac{1}{4}$ pounds.

No. 564 Socket Wrench Extension

This device will be found very convenient in connection with a Socket Wrench to reach into many places that are otherwise inaccessible. One end is provided with a $\frac{1}{4}$-inch hexagon socket, while the other will fit into a similar socket on any other wrench.

The tool is made of solid steel, 9 inches long over all. Net weight, 11 ounces.

Price, each ........................................ (Yuzko) $1.10

Packed one fourth dozen in a pasteboard box, 9$\frac{1}{2}$ x 3$\frac{1}{2}$ x 1$\frac{1}{4}$ inches.

Weight, 2$\frac{1}{4}$ pounds.
**No. 926 Ratchet Socket Wrench**

The carefully hardened Socket of this Wrench takes ½-inch hexagon stock and is specially designed to operate the Attachments shown on this and the following page. The Ratchet is extremely powerful and reliable and can be used either right or left hand. The over-all length is 7½ inches, giving a good leverage. Nicely finished in black enamel.

Price, each ........................................... $3.00

Packed one in a pasteboard box.

---

**No. 959 Drill Attachment**

For Socket Wrench

This Attachment consists of a ½-inch hexagon Shank with a Chuck on the lower end and a Feed Screw on the other end, controlled by a case-hardened hexagon nut that can be operated with an ordinary wrench. The all-steel Chuck has three hardened jaws that hold Round Shank Drills from 0 to ½ inch in diameter. The hexagon Shank is fitted with a steel ball friction to hold the Ratchet Wrench in proper position. Weight, ½ pounds.

Price, each ........................................... $4.00

Packed one in a pasteboard box.

---

**No. 929 Universal Joint**

A smooth-working Universal Joint for use with No. 926 Ratchet Handle, No. 957 Speed Wrench, and Attachments.

Price, each ........................................... $2.50

Packed six in a pasteboard box.

---

**No. 955 Bit Brace Shank**

A well-made tool for adapting the Hexagon Sockets on the following page for use in an ordinary bit brace. The ½-inch hexagon end is provided with a steel ball friction. The entire tool is carefully hardened. Length, 3½ inches.

Price, each ........................................... $1.00

Packed six in a pasteboard box.

---

**Hexagon Steel Sockets**

These Sockets are turned from solid bar stock with backs broached with a ½-inch hexagon opening to fit the Handles, Wrenches, and Extensions shown below, and the Universal Joint and Bit Brace Shank on the preceding page. The openings are sharply broached to exact size and the walls thin but very tough. Length, ½ inches, with broaching ½ inch deep. A knurled band gives a good grip for changing.

<table>
<thead>
<tr>
<th>Size</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 938 ½ inch (21017)</td>
<td>$0.30</td>
</tr>
<tr>
<td>No. 939 ½ inch (21018)</td>
<td>.30</td>
</tr>
<tr>
<td>No. 940 ½ inch (21019)</td>
<td>.30</td>
</tr>
<tr>
<td>No. 941 ½ inch (21020)</td>
<td>.30</td>
</tr>
<tr>
<td>No. 942 ½ inch (21021)</td>
<td>.30</td>
</tr>
</tbody>
</table>

---

**Handles and Extensions**

These Handles and Extensions will be found most useful alone or in combination with other units to reach nuts easily under almost any conditions. They are made of ½-inch hexagon steel, hardened, and the ends provided with steel ball frictions.

<table>
<thead>
<tr>
<th>Length</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 927 Extension 1½ inches (21072)</td>
<td>$0.40</td>
</tr>
<tr>
<td>No. 928 Extension 1 inch (21073)</td>
<td>.60</td>
</tr>
<tr>
<td>No. 951 L Handle 8 inches (21074)</td>
<td>.80</td>
</tr>
<tr>
<td>No. 953 Tee Handle 6 inches (21075)</td>
<td>.50</td>
</tr>
</tbody>
</table>

---

**No. 957 Speed Wrench Handle**

A well-made Wrench with heavy 10-inch steel Sweep, comfortable Head, and a steel Shank to fit the ½-inch hexagon opening in the back of the Sockets shown above. Length over all, 16 inches; below Sweep, 6 inches.

Price, each ........................................... $1.40

Packed 6 in a pasteboard box.

---

**No. 925 Socket Wrench Set**

A very complete and convenient Set put up in a neat, substantial wood case consisting of the following:

1. No. 926 Ratchet Wrench.
1. No. 926 Long Extension.
1. No. 927 Short Extension.
1. No. 925 Universal Joint.
1. 10 Hexagon Sockets, Nos. 938 to 947.

Price, per set ........................................... $12.00

Packed one set in a pasteboard box.
Socket Wrench Sets

No. 489
This Set consists of a No. 419 Ratchet Socket Wrench with a 
\( \frac{1}{4} \) -inch hexagon Socket, and 4 extra Sockets fitting it. Extra Sockets have 
\( \frac{3}{4}, \frac{1}{4}, \frac{3}{8}, \frac{1}{8} \) inch hexagon openings.

Each Set is packed in a strong, attractive hardwood box, 9 x 
\( 4\frac{1}{4} \times 3 \) inches. Net weight, 34 pounds.

Price, per set, complete .................................. (orally) $0.60

Each complete set is packed in a pasteboard box, 9\( \frac{1}{2} \) x 5\( \frac{1}{2} \) x 3\( \frac{1}{2} \) inches. Weight, 4\( \frac{1}{2} \) pounds.

No. 589
This Set consists of a No. 419 Ratchet Socket Wrench, a No. 564 Extension fitting it, and 8 extra Sockets, which will fit either the Wrench or the Extension.

Each Set is packed in a strong, attractive hardwood box, 10 x 
\( 5\frac{1}{4} \times 3\frac{1}{4} \) inches. Net weight, 5\( \frac{1}{4} \) pounds.

Price, per set, complete .................................. (orally) $0.70

Each complete set is packed in a pasteboard box, 10\( \frac{1}{2} \) x 6\( \frac{1}{2} \) x 3\( \frac{1}{2} \) inches. Weight, 6 pounds.

No. 673 Radio Socket Wrench
A finely manufactured and finished Set for tightening and loosening the small hexagon nuts and thumb screws encountered in radio construction and repair.

The Set consists of a polished, mahogany-finish, Hardwood Handle, with a polished steel Shank \( \frac{1}{4} \) inch in diameter. The end of the Shank is squared and slit to hold the Sockets securely when it is sprung into them.

Four Sockets are furnished: one each for hexagon nuts measuring 
\( \frac{3}{4}, \frac{1}{4}, \frac{3}{8}, \frac{1}{8} \) inch between flats, and a four-jawed Socket for handling knurled thumb screws such as found on dry cells, etc. The Sockets are deeply drilled to accommodate screw ends and the hexagon portion accurately broached to size. The Sockets are steel, well case-hardened.

Length over all, 8\( \frac{1}{2} \) inches. Net weight, 4 ounces.

Price, per set .............................................. (ea) $1.30

Packed one set in a pasteboard box, 8\( \frac{1}{2} \) x 1\( \frac{1}{2} \) x 1\( \frac{1}{2} \) inches.

Weight, 5 ounces.

No. 674 Radio Tool Set
This convenient Set consists of a complete No. 673 Radio Wrench Set, as described above, and one each, No. 355 6\( \frac{1}{4} \)-inch Screw-Driver and No. 331 8-inch Screw-Driver. These Screw-Drivers will be found fully described on pages 259 and 260.

Net weight of set, 7 ounces.

Price, per set .............................................. (ea) $2.30

Packed one set in a pasteboard box, 12 x 2 x 1\( \frac{1}{4} \) inches.

Weight, 8 ounces.
Radio Tool Set
No. 696

A very complete set of tools selected to meet the requirements of the enthusiast who builds his own set or who is constantly experimenting with new hook-ups and units. It consists of the following tools:
1. Ratchet Tool Holder.
2. 8½-inch Screw-Driver; Blade ¼ inch wide.
3. 4½-inch Screw-Driver; Blade, ¾ inch wide.
4. 2-inch Screw-Driver; Blade, 1 inch wide.
5. Countersink.

Each and every tool is finely finished and thoroughly practical and dependable for the work for which it is designed.

Weight, 10 ounces.

Price, per set, complete ........................................ (ZANDO) $4.00
Packed one in a box, 10½ x 1½ x 1½ inches.

Prong Wrench for Thumb Nuts
No. 764

This is the same handle and shank used in the No. 673 Set, with a four-jawed Socket for thumb nuts solidly affixed.

Net weight, 3 ounces.

Price, each ......................................................... (ZARIO) $0.55
Packed six in a pasteboard box, 9½ x 3½ x 1½ inches.

No. 695 Coil Winder

An inexpensive machine that will be found ideal for winding induction and transformer coils for use in Neutrodyne and Superdyne circuits on cylinders of bakelite, fibre, etc., up to 4¾ inches in diameter and 7 inches long.

The cone-shaped aluminum drive discs automatically center the cylinders placed between them. The sliding disc is set and held in position by the sliding collar. The right-hand face of this collar is finished at an angle and bears against the nib on the disc hub, so that any slippage of the disc is immediately transformed into a tightening pressure on the cylinder.

The spring on the spindle between the bearings prevents the coil from unwinding and releasing the tension on the coil wire. This lock can be released when desired by raising the loop end of the wire.

The base is substantial and finished in black enamel, and can be fastened to any table or bench. The discs are finished in red enamel and natural aluminum. All exposed steel parts nicely polished.

Length over all, 14½ inches.

Weight, 3 pounds.

Price, each ......................................................... (ZANNE) $4.80
Packed one in a pasteboard box, 12½ x 7 x 3 inches.

Weight, 3¾ pounds.
Rim Wrenches

No. 82

This tool embodies all the features that years of experience have proven necessary or desirable. The built-in strength and reliability insure the user satisfactory service in spite of the severe demands made on this class of tool.

It has a 10-inch steel sweep which is nicely polished and nickel-plated. The powerful steel Socket is broached out, giving it sharp corners and accurate size and is carefully hardened to withstand the severest requirements. The Socket is finished in red enamel with polished and nickel-plated edges. The Handle, which runs in adjustable collars, is large to prevent hurting the hand. Both the Head and the Handle are finished with black rubber enamel.

In ordering be sure to specify which size is desired, as otherwise the 3-inch size will be sent. Net weight, 1½ pounds.

With 1-inch socket, 10-inch sweep $1.25
With 1¼-inch socket, 10-inch sweep $1.25
With 1½-inch socket, 10-inch sweep $1.25
With 1¾-inch socket, 10-inch sweep $1.25
With 1½-inch socket, 10-inch sweep $1.25

Packed two in a pasteboard box, 14 x 7½ x 3 inches.

No. 389 Ratchet Rim Wrench

Patented September 14, 1924

The new patented Ratchet Mechanism, which we have recently brought out, has been applied to this old favorite, making it more rugged and dependable than ever. The hardened tool steel dogs, set directly in the steel socket shaft, engage the teeth broached on the inside of the forged steel Ratchet Head. The contact between the dogs and teeth is four or five times as great as in any other ratchet.

The shift from right to left hand ratchet or positive action is accomplished by turning the knurled shifter dial less than one third of a turn.

The Socket is steel, broached to exact size and hardened. The Ratchet Head is a drop forging finished in red enamel, and screwed and pinned to the polished steel Sweep. Both the large, comfortable Hardwood Handle and Head are finished in black rubber enamel, and turn freely on the Sweep.

In ordering be sure to specify size of Socket wanted. Otherwise 3-inch will be sent.

Net weight, 2½ pounds.

Price, Each
With 1-inch socket, 10-inch sweep $3.90
With 1¼-inch socket, 10-inch sweep $3.90
With 1½-inch socket, 10-inch sweep $3.90

Packed two in a pasteboard box, 14 x 7½ x 3½ inches.

No. 692 Ratchet Rim Wrench

For Disc Wheels

Exactly the same as the No. 389 Wrench above, except for the steel Socket, which is longer so that the Sweep will clear the hub cap when the nuts that hold the disc wheels are to be removed.

Net weight, 2¾ pounds.

Price, each, with 1½-inch Socket only $4.00

Packed two in a pasteboard box, 15½ x 7½ x 3 inches.

Notice.—For Hexagon Sockets of various sizes fitting the 1½-inch Socket of these Rim Wrenches, see page 295.
Valve Grinder
No. 747
Patented December 9, 1924

This tool will commend itself instantly for its flexibility of action. One upward or downward stroke of the operating handle at the side gives 1 1/2 complete revolutions of the spindle. This makes possible any variation from short, quick reciprocations to longer ones at the discretion of the operator.

Each grinder is furnished with an easily attached extension, giving 5 inches additional length or a total below the gear of 11 1/2 inches, ample to reach the deepest valve.

The mechanism is simple but powerful. The leverage obtained through the long operating handle and transmitted through the Ball Bearing Spindle makes grinding of the larger size valves an easy task even though they be badly gummed up. The blade furnished will fit either slotted or spotted valves.

The tool is made of nicely finished steel, with comfortable handles of polished hard wood in mahogany finish.

Length over all, without extension, 12 1/2 inches.
Length over all, with extension, 17 1/2 inches.
Weight, 1 1/4 pounds.

Price, each, complete with extension, $5.00

Packed one in a pasteboard box.
Weight, 2 pounds.

Automobile Valve Grinders
Patented July 7, 1914

These tools will be found a great convenience in grinding Automobile Valves. Although this was formerly drudgery, it is now done easily and rapidly with these tools. By means of a simple operating mechanism, the Spindle is caused to rotate back and forth when the Crank is turned continuously in one direction.

The tools are designed to have sufficient weight so that additional pressure need not be applied to the valve seat.

Both an adjustable Spanner and a Blade are provided with each of these tools in order that they may be used on different types of cars.

Length over all, 10 1/2 inches.

Weight, 3 1/2 pounds.
Price, each.... (YIFAG) $4.00

No. 467. Polished Aluminum Frame. Weight, 2 1/4 pounds.
Price, each.... (YOPVA) $5.00

Packed one in a pasteboard box, 10 1/2 x 3 1/2 x 3 inches.

Valve Grinder Blade
No. 518

The use of this Blade in the Valve Grinders, shown above, enables the user to grind valves that he would otherwise be unable to reach with these tools.

The Blade is made of case-hardened steel, 8 inches long. Net weight, 2 1/4 ounces.

Price, each.... (YURKE) $0.45

Packed one half dozen in a pasteboard box, 8 1/2 x 1 1/2 x 1/2 inch.
Weight, 1 1/2 pounds.
Valve Spring Compressor
No. 680
Patented April 5, 1924

This Compressor is designed as a serviceable tool for use in compressing the springs of overhead valves. It is strongly made of forged steel and positive in action.

Springs are compressed by a single throw of the lever and held under compression so that both hands can be used for removing or inserting the valve stem washer. The distance between the fork and the center is changed by placing the lever in various grooves on the back of the frame. A closer adjustment is obtainable by adjusting the length of connecting rods. Extreme depth of throat, 4 inches.

The distance from center to frame is adjustable and when extended is great enough to reach the valve on any standard overhead valve automobile.

Net weight, 1\(\frac{1}{2}\) pounds.
Price, each .................................................. $4.40
Packed one in a pasteboard box, 9\(\frac{1}{2}\) x 4\(\frac{1}{4}\) x 1\(\frac{1}{4}\) inches. Weight, 2 pounds.

Valve Lifter
No. 596
Patented September 11, 1924

This Valve Lifter is a strong and powerful all-steel tool that will be appreciated by all automobile mechanics. It is short and compact enough to be used in any car, and powerful enough to compress any valve spring and hold it under compression. It is used by inserting the jaws beneath the valve spring, which is compressed as the jaws are opened by turning the handle. As the jaws move on hardened rollers, and the screw on ball bearings, the tool is very easy to operate.

The design of the larger circular opening in the upper jaw allows this jaw to extend above the small connecting parts on and about the valve stem, thus allowing them to be easily removed.

The arms of this tool are drop-forged steel. All exposed parts are nicely polished.

Length over all, 6 inches. Net weight, 9 ounces.
Price, each .................................................. $2.75
Packed one in a pasteboard box, 6\(\frac{1}{4}\) x 2\(\frac{3}{4}\) x 1\(\frac{1}{8}\) inches. Weight, \(\frac{1}{2}\) pound.

Cotter Pin Puller
No. 479

This Cotter Pin Puller is forged from a high grade of 1\(\frac{1}{2}\)-inch hexagon tool steel, carefully hardened, ground, and tempered.

Length from point to spreader, 8 inches. Net weight, 3\(\frac{1}{2}\) ounces.
Price, per dozen ................................................. $4.40
Packed one dozen in a pasteboard box, 8\(\frac{1}{2}\) x 2\(\frac{3}{4}\) x 1\(\frac{1}{2}\) inches. Weight, 2\(\frac{1}{2}\) pounds.
Carbon Scrapers

These Carbon Scrapers are forged from a high grade of 3/16-inch round tool steel, hardened and tempered to have good scraping edges and yet be as springy as possible. The Blades are 9 inches long and 1/4 inch wide, with polished Shanks.

The Handles are nicely polished and properly shaped, making them very easy to use. The tools are attractive in appearance and well made.

Each Scraper is 13 1/2 inches long over all. Net weight, 3 ounces.

No. 565. Round end. Curved blade. (YULBO) $0.55
No. 566. Round end. Bent blade. (YULIS) .55
No. 567. Square end. Bent blade. (YULON) .55

Packed one half dozen in a pasteboard box, 13 1/2 x 4 1/2 x 1 1/2 inches. Weight, 1 1/2 pounds.

Carbon Scraper Set

No. 568

This Set consists of one of each of the Carbon Scrapers shown above. Price, per set. (YULUC) $1.65

Packed one set in a pasteboard box, 13 1/2 x 2 1/2 x 1 1/2 inches. Weight, 11 ounces.

Bearing Scrapers

We unreservedly recommend these Bearing Scrapers as the best made. The slightly curved, tapering, and recessed Blade is designed to do nice scraping without chattering. The Blades are forged from a very high grade of tool steel correctly hardened and so carefully tempered that they will scratch glass and hold their keen razor-like edge over a long period. After being dulled by long usage they can be easily sharpened by a few strokes on an oil stone.

The polished round Shanks and large polished mahogany finished Handle make a most attractive tool and a comfortable one to use.

No. 740 Bearing Scraper Set

This Set consists of one each, No. 581, No. 381, and No. 382 Bearing Scrapers, described above, put up in a neat leather case to protect their cutting edges.

Price, per set. (ZAVIK) $3.40

Packed one set in a pasteboard box.

No. 471 Bearing Scraper Set

This Set consists of one of each of the following Bearing Scrapers which are described above: No. 381, No. 382, and No. 383. Net weight, 1 pound.

Price, per set. (YORCO) $3.00

Packed one set in a pasteboard box, 12 1/2 x 3 1/2 x 1 1/2 inches. Weight, 1 1/2 pounds.
Machinists’ Scrapers

These Scrapers will be found most useful wherever there is any hand “tooling” of metal to be done. The Blades are made of high quality three-cornered tool steel carefully tempered. The ends are curved to a point and ground, giving three keen, convex cutting edges. The Blades are highly polished and fitted with comfortable hardwood Handles with a polished mahogany finish.

<table>
<thead>
<tr>
<th>Blade</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 778</td>
<td>2 1/2 inches</td>
</tr>
<tr>
<td>No. 779</td>
<td>3 1/2 inches</td>
</tr>
<tr>
<td>No. 780</td>
<td>4 1/2 inches</td>
</tr>
<tr>
<td>No. 781</td>
<td>Set of three sizes</td>
</tr>
</tbody>
</table>

Right-Angle Ratchet Screw-Driver
No. 668
Patented September 16, 1928

There are innumerable places around automotive, radio, and electrical equipment where this unique little Screw-Driver will perform quickly and easily where an ordinary screw-driver cannot be used advantageously.

The ratchet mechanism is entirely inclosed in the head, through which runs a square socket to hold the bit. The bit is 1/2 inch wide, 1/2 inch long, and has a squared shank with a spring retainer to hold it firmly in the square ratchet socket.

The ratchet mechanism is one way only, the Screw-Driver Blade being shifted from one side to the other as right or left hand ratchet action is wanted.

The tool is 4 inches long over all. The Handle and Head are finished in black enamel, and all exposed steel parts are nicely polished.

Weight, 3 ounces.

Price, each: ........................................ (in box) $1.10

Packed one in a pasteboard box.

Counter Display

When ordered in dozen lots this Screw-Driver will be packed in a very attractive Counter Display carton without any extra charge.

Brake Lining Cutter
No. 739
Not designed for cutting iron or steel

This machine is designed to cut all widths and thicknesses of the toughest brake lining up to six inches in width by one-half inch thick. The long handle gives an unusually powerful leverage, which is transmitted to the upper blade by means of a rack and pinion and transformed into a shearing motion by means of two cams, insuring an easy, clean cut. The knurling on the handle gives an easy grip even when hands are greasy.

The construction is simple and rugged, insuring uninterrupted service. The Blades are made of carefully hardened and tempered steel and are easily removable for sharpening. The Cutter will also be found convenient for cutting belting, shim material, etc. Iron parts are attractively finished in red and black enamel and the exposed steel parts nicely polished.

Net weight, 33 pounds.

Price, each: ........................................ (in box) $18.00

Packed one in a wooden case, 10 1/2 x 5 1/2 x 9 inches.
Shipping weight, 36 pounds.
Washer Cutter
No. 41

This is a very useful device for cutting washers of leather, fiber, cloth, or very thin sheet metal. It is strong and well made, capable of cutting any size washer from 1 inch to 5 inches.

The Blades are adjustable as to length of cutting edge as well as to position. They can be easily removed for sharpening or for replacement when worn out. The tool is made entirely of steel and is nicely polished everywhere except on the end of the Shank, which is case hardened. Net weight, 8 ounces.

Price, each .......................................................... $2.00
Extra Blades, per set ................................................... .50

Packed one in a pasteboard box, 5\(\frac{1}{2}\) x 5\(\frac{1}{2}\) x 1\(\frac{3}{4}\) inches.
Weight, 10 ounces.

Washer Cutter
No. 441

This tool is similar to that described above, but is equipped with an Offset Blade with which it is possible to cut washers of all sizes from \(\frac{1}{2}\) to 5\(\frac{1}{2}\) inches.

Made entirely of steel, all polished except the end of Shank. Net weight, 8 ounces.

Price, each .......................................................... $2.90
Extra Blades, per set ................................................... .65

Packed one in a pasteboard box, 5\(\frac{1}{2}\) x 5\(\frac{1}{2}\) x 1\(\frac{1}{2}\) inches.
Weight, 10 ounces.

Brass Hammers

These Brass Hammers will be found convenient and practical for use on finished work, or in any place where a soft hammer is desired. The Brass Heads and Steel Shanks are both nicely polished, and the three largest sizes have polished hardwood handles.

No. 91. Head, \(\frac{1}{2}\) x 1\(\frac{1}{2}\) inches. Steel handle with knurled grip. Length over all, 5\(\frac{1}{2}\) inches. Net weight, 2 ounces. Price, each ................................................... $0.90

Packed one in a pasteboard box, 6 x 2 x 4 inches. Weight, 3 ounces.

No. 92. Head, \(\frac{3}{4}\) x 1\(\frac{3}{4}\) inches. Length over all, 7\(\frac{1}{2}\) inches. Net weight, 4 ounces. Price, each ................................................... $1.10

Packed one in a pasteboard box, 8 x 2\(\frac{1}{4}\) x 1\(\frac{3}{4}\) inches. Weight, 6 ounces.

No. 93. Head, \(\frac{1}{2}\) x 2\(\frac{1}{2}\) inches. Length over all, 8 inches. Net weight, 8 ounces. Price, each ................................................... $1.30

Packed one in a pasteboard box, 8\(\frac{1}{2}\) x 2\(\frac{1}{2}\) x 1\(\frac{3}{4}\) inches. Weight, 10 ounces.

No. 94. Head, 1 x 3 inches. Length over all, 10 inches. Net weight, 16 ounces. Price, each ................................................... $1.80

Packed one in a pasteboard box, 10\(\frac{1}{2}\) x 3\(\frac{1}{2}\) x 1\(\frac{1}{4}\) inches. Weight, 1\(\frac{1}{4}\) pounds.
Tool or Tap Holder
No. 88

This tool will be found very convenient for holding small Drills, Taps, Reamers, or other small tools to be turned by hand. The Chuck Shell is extra long, and is knurled to give a firm grip. The Jaws are forged steel, hardened and tempered. They are so designed that they will not break with any ordinary use. Length of Handle, 3½ inches. Net weight, 3 ounces. Capacity up to 3/16-inch taps.

Price, each ........................................... (YATPO) $0.65
Packed one in a pasteboard box, 4 x 3 x 3/4 inch. Weight, 4 ounces.

Tool or Tap Holder
No. 89

This tool is similar to the one shown above, but is somewhat larger. The Chuck Shell is extra long and is knurled to give a good grip. The Jaws are forged steel, hardened and tempered. They are so designed that they will not break with ordinary use. Length of Handle, 4½ inches. Net weight, 4½ ounces. Capacity to 3/8-inch taps.

Price, each ........................................... (YATBR) $0.85
Packed one in a pasteboard box, 5 x 3 x 1 inch. Weight, 6 ounces.

Tool or Tap Holder
With Long Shanks
Capacity 3/4 inch

These tools have been brought out to meet the demand for a Holder with long Shank to reach otherwise inaccessible positions.

The Knurled Chuck with capacity to 3/8-inch taps is identical with our No. 89 on the preceding page.

The Cross Handles of these Holders are held in position by the knurled screw shown in the end of the Shank. This permits shifting the length to one side, giving a much greater leverage than in the central position. By removing the knurled screw the Handle can be carried in the hollow Shank, conserving space.

<table>
<thead>
<tr>
<th>Length of Shank</th>
<th>Length over all</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 inches</td>
<td>8 1/2 inches</td>
</tr>
<tr>
<td>10 inches</td>
<td>12 1/2 inches</td>
</tr>
</tbody>
</table>

Packed one in a pasteboard box.

No. 730 Tool or Tap Holder
Capacity 1/2 inch

This tool is heavier than those shown heretofore having a capacity to 1/4-inch taps. The Handle is 10 inches long, affording ample leverage to perform any work within its capacity easily and quickly. Net weight, 1 pound.

Price, each ........................................... (ZATKO) $2.75
Packed one in a pasteboard box.
Ratchet Tap Holders
Patented September 16, 1924

These Tap Holders are equipped with our new patented ratchet mechanism. Three actions—Right Hand Ratchet, Left Hand Ratchet, and Rigid—are controlled by turning the knurled shifter dial at the top of the tool less than a quarter turn. The shifter dial is protected with a plate so that the action cannot be unintentionally shifted while the tool is in use.

The Chucks have capacity for holding 1/4-inch taps and are the same chucks that have proved so reliable on our No. 89 Tap Holder. The Shell is extra long and knurled to give a good grip.

Steel throughout, nicely polished except for the ratchet body, which has a mottled case-hardened finish.

Length over all  Price, Each
No. 774. 3 1/2 inches .......... (ZEARK) $2.50
No. 775. 9 1/2 inches .......... (ZEATL) 2.90
No. 776. 12 1/2 inches .......... (ZEAWS) 3.30

No. 328 Ratchet Tool or Tap Holder

This tool has a Ratchet Mechanism that is operated by turning the knurled Shell nearest to the Handle. The Chuck is made entirely of steel, with a long knurled Shell. The Jaws are forged, hardened, and tempered. They are so designed that they will not break. The Handle is polished Hard Wood. All exposed metal parts are also polished. Length over all, 4 1/2 inches. Net weight, 4 ounces. Capacity up to 7/8-inch taps.

Price, each .......... (ZIMRS) $1.50

Packed one is a pasteboard box, 5 x 1 1/2 x 1 1/2 inches. Weight, 5 ounces.

Tool Wrenches

These Tool Wrenches are so constructed that they will hold any small tools, round, square, or oval, that can be put into them. They are made entirely of case-hardened steel, and have hardened cast steel Screws.

Length  Capacity  Price, Each
No. 66 3 1/2 inches Up to 5/8 inch (YALAC) $1.10
No. 157 6 inches Up to 7/8 inch (YEPET) 2.20

Packed one in a pasteboard box.

Drill and Reamer Holders

These little tools are always very convenient, particularly for holding small stock or small tools in a Lathe or Drill Press. They are made entirely of steel with case-hardened Bodies and hardened Screws.

Length  Diameter of Handle  Extreme Capacity  Price, Each
No. 67 3 1/2 inches 1 1/2 inch 7/8 inch (YALCA) $0.90
No. 68 4 1/2 inches 1 1/2 inch 7/8 inch (YALGO) 1.00
No. 69 5 1/2 inches 1 1/2 inch 7/8 inch (YALGO) 1.65

Packed one in a pasteboard box.
Ratchet Bit Braces
Patented September 18, 1921. Others Pending

ROSE TOOLS, INC.

HARDENED STEEL SHELL AND JAWS
ADJUSTABLE COLLARS
ROLLER BEARING STEEL CLAD HEAD

This Heavy Duty Brace is equipped with a new Universal Chuck and a very powerful Ratchet Mechanism capable of meeting the severest requirements.

The Chuck is universal, holding round, square, or taper shanks. Its capacity is greater than usual and it will hold the largest sizes of bit brace shanks. The Chuck Shell, which is turned from a solid steel bar, has a 1 1/2-inch hole for inserting bits, is carefully hardened, and has a nice black oil finish. The end of the Shell is a hexagon so it can be tightened with a wrench or in a vise if desired. The Chuck Jaws are carefully hardened steel.

The Ratchet Mechanism is tremendously powerful. The teeth are broached the entire length of the drop-forged steel socket. The hardened tool steel dogs are set directly in the chuck shank and engage the ratchet teeth 1 1/2 inches, giving tremendous strength. The Ratchet is shifted by turning the nickel plated knurled dial on the end of the Chuck Shank.

The Head is rosewood, steel clad, and running on dust-proof Roller Bearings. The Rosewood Handle runs between nickel plated adjustable collars. The heavy Steel Sweep has smooth, even bends and is nicely polished and nickel plated.

No. 2510 Brace Display
A decidedly helpful Counter and Window Display for the No. 2510 Brace will be sent any Dealer on request.

No. 2510
Sweep Weight Price Each
10 inches 3 1/2 pounds (zorom) 8.75
12 inches 3 1/2 pounds (zorom) 7.20

Packed two in a pasteboard box.

Ratchet Bit Braces
With Quick-Action Chuck
Patented December 27, 1992. September 18, 1921

This series of Braces is equipped with the Hay Patent Quick Action Chuck; differing from the ordinary chuck in that the shell is not revolved, but slid up and down to close or open the jaws, the final tightening and locking being accomplished by a half turn of the knurled steel collar that runs around the Chuck Shell. Large or small Square Shanks instantly centered and locked. The Chuck Socket and Shell are malleable iron; the Jaws are forged steel.

The Ratchet Mechanism is sturdy and easily controlled by a small lever. The Sweep is steel, with smooth, even bends. The polished Rosewood Head is steel clad, running on dust-proof roller bearings. The Handle is polished rosewood and runs between adjustable steel collars.

All exposed steel parts are handsomely polished and heavily nickel plated.

Price, Each
No. 1308. 8-inch sweep .................. (21126) 8.50
No. 1310. 10-inch sweep .................. (21126) 6.20
No. 1312. 12-inch sweep .................. (21126) 6.40
No. 1314. 14-inch sweep .................. (21126) 6.60

Packed two in a pasteboard box. Weight, per dozen, 34 to 39 pounds.
These Braces have steel-clad Rosewood Heads that run on roller bearings, which are contained in a dust-proof compartment. The Rosewood Handles run in adjustable collars.

The Sweeps are steel, with smooth and even bends. The Ratchets are strong and easily operated by a small lever.

The Chuck Sockets and Shells are malleable iron; Jaws are forged steel. Chucks hold all sizes of square shank Bits.

All exposed steel parts are polished and heavily nickel plated.

<table>
<thead>
<tr>
<th>Price, Each</th>
<th>No. 408. 8-inch sweep</th>
<th>(YORKA) 8.40</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. 410. 10-inch sweep</td>
<td>(YORKO) 4.60</td>
</tr>
<tr>
<td></td>
<td>No. 412. 12-inch sweep</td>
<td>(YORKS) 4.80</td>
</tr>
<tr>
<td></td>
<td>No. 414. 14-inch sweep</td>
<td>(YORK) 5.00</td>
</tr>
</tbody>
</table>

Packed two in a pasteboard box. Weight, per dozen, 33 to 38 pounds.

These Braces have steel-clad Heads that run on roller bearings, which are contained in a dust-proof compartment. The Handles run in adjustable collars. The hardwood Heads and Handles are finished in mahogany enamel.

The Sweeps are steel, with smooth and even bends. The Ratchets are very strong and easily operated by turning the large knurled ring.

The Chuck Sockets and Shells are malleable iron; Jaws are forged steel. Chucks hold all sizes of square shank Bits.

All exposed steel parts are polished and heavily nickel plated.

<table>
<thead>
<tr>
<th>Price, Each</th>
<th>No. 6006. 6-inch sweep</th>
<th>(YORKO) 8.00</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. 6008. 8-inch sweep</td>
<td>(YORKA) 4.00</td>
</tr>
<tr>
<td></td>
<td>No. 6010. 10-inch sweep</td>
<td>(YORK) 4.10</td>
</tr>
<tr>
<td></td>
<td>No. 6012. 12-inch sweep</td>
<td>(YORKX) 4.20</td>
</tr>
<tr>
<td></td>
<td>No. 6014. 14-inch sweep</td>
<td>(YORKO) 4.30</td>
</tr>
</tbody>
</table>

Packed two in a pasteboard box. Weight, per dozen, 35 to 39 pounds.
These Braces have steel-clad Heads that run on roller bearings, which are contained in a dust-proof compartment. The Handles run on adjustable steel collars. The Heads and Handles are finished with rubber enamel, ebony finish.

The Sweeps are steel, with smooth and even bends. Ratchets are very strong and easily operated by turning the large knurled ring.

The Chuck Sockets and Shells are malleable iron; Jaws are forged steel. The Chucks hold all sizes of square shank Bits.

All exposed steel parts are polished and nickel plated.

<table>
<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>7008</td>
<td>8-inch sweep</td>
<td>(ZOBAY) $3.65</td>
</tr>
<tr>
<td>7010</td>
<td>10-inch sweep</td>
<td>(ZOBAY) 3.75</td>
</tr>
<tr>
<td>7012</td>
<td>12-inch sweep</td>
<td>(ZOBAY) 3.95</td>
</tr>
<tr>
<td>7014</td>
<td>14-inch sweep</td>
<td>(ZOBAY) 4.05</td>
</tr>
</tbody>
</table>

Packed two in a pasteboard box. Weight, per dozen, 35 to 39 pounds.

These Braces have steel-clad Heads that run on roller bearings, which are contained in a dust-proof compartment. The Handles run in adjustable collars. Heads and Handles are hard wood, with a mahogany enamel finish.

The Sweep is steel, with smooth and even bends. Chuck Socket and Shell are malleable iron; Jaws are forged steel. Chuck holds all sizes of square shank Bits.

All exposed steel parts are polished and heavily nickel plated.

<table>
<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>208</td>
<td>8-inch sweep</td>
<td>(YEMON) $2.20</td>
</tr>
<tr>
<td>210</td>
<td>10-inch sweep</td>
<td>(YEPAL) 2.30</td>
</tr>
<tr>
<td>212</td>
<td>12-inch sweep</td>
<td>(YEPFE) 2.50</td>
</tr>
<tr>
<td>214</td>
<td>14-inch sweep</td>
<td>(YEPRY) 2.75</td>
</tr>
</tbody>
</table>

Packed two in a pasteboard box. Weight, per dozen, 30 to 35 pounds.

Bit Brace Extensions

These Bit Brace Extensions are very simple in construction, being made of only two pieces. The Shank has a square taper hole swaged in one end; and the Sleeve has a milled opening through which the bit shank can be inserted. The Sleeve runs on a fine thread, insuring a strong and positive grip. They are made entirely of steel, nicely polished, and knurled, as shown in the illustration.

These tools are made in two sizes, one for Bits $\frac{3}{8}$ to $\frac{3}{4}$ inch, and the other for $\frac{1}{2}$-inch Bits.

To follow $\frac{3}{8}$-inch Bits:

<table>
<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>450</td>
<td>12 inch (YONVE)</td>
<td>$1.40</td>
</tr>
<tr>
<td>451</td>
<td>15 inch (YONYO)</td>
<td>1.50</td>
</tr>
</tbody>
</table>

To follow $\frac{1}{2}$-inch Bits:

<table>
<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>452</td>
<td>18 inch (YOHNS)</td>
<td>1.60</td>
</tr>
<tr>
<td>453</td>
<td>21 inch (YOINS)</td>
<td>1.70</td>
</tr>
</tbody>
</table>

To follow $\frac{3}{4}$-inch Bits:

<table>
<thead>
<tr>
<th>No.</th>
<th>Size</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>530</td>
<td>18 inch (YUDIR)</td>
<td>2.00</td>
</tr>
<tr>
<td>531</td>
<td>24 inch (YUDPA)</td>
<td>2.20</td>
</tr>
</tbody>
</table>

Packed one in a pasteboard box.
Wimble Braces

These Double Sweep or Wimble Braces for ship carpenters are made in two sizes. The design and finish are similar to the other Goodell-Pratt Braces.

No. 260. 10-inch. ...(yiboo) $4.20
No. 262. 12-inch. ...(yicad) 4.80
Packed two in a pasteboard box.

Price, each.

No. 230 Brace Screw-Driver Set

6-inch Sweep. Steel-clad hardwood Head. Heavily nickel plated.
Combinations: 4, 8, 12, 16, 20, or 24 inches.

Price, each, complete, as shown. ...(yevov) $3.50
Packed one in a box, 12½ x 4½ x 3½ inches. Weight, 2½ pounds.

Universal Corner Brace
No. 215
Patented May 9, 1905

This tool is in every way a Universal Corner Brace. The steadying Handle attached to the knurled sleeve can be used in any one of the eight positions shown in the illustration. The Crank Handle is adjustable to two different lengths.

The geared drive is completely enclosed in a casing that protects it from dirt or breakage. The Chuck holds all sizes of square shank Bits.

All exposed steel parts are polished and nickel plated; iron parts are finished in red and black enamel.

Distance from gearing to end of Chuck is 6 inches. Net weight, 3 pounds.

Price, each. ...(yevhe) $5.00
Packed one in a pasteboard box, 7½ x 7½ x 1½ inches.
Weight, 3½ pounds.

Angular Brace
No. 345

This Angular Brace can be securely fastened at any desired angle. The setting mechanism absolutely prevents slipping. Chuck holds all sizes of square shank Bits. Length over all, 13 inches.

Price, each. ...(yive) $3.30
Packed one in a pasteboard box, 13½ x 2½ x 2 inches.
Weight, 2½ pounds.
Hollow Auger
No. 248½
Patented December 5, 1911

This tool is designed to combine many new features with the best of the old ones. The cutter cannot slip in use. The thickness of the cut can easily be changed without changing the cutter. It is graduated for both diameter and length of cut and can be instantly set to cut any size Tenon from ½ inch to 1½ inches in diameter and up to 4 inches in length. All parts are carefully fitted; iron parts are enameled and steel parts polished. Length over all, 7½ inches. Net weight, 2½ pounds.

Price, each. ............................................. (Yezlo) $6.60

Packed one in a pasteboard box, 7½ x 4½ x 3 inches. Weight, 2½ pounds.

No. 248 Hollow Auger
Patented December 5, 1911

This is a Hollow Auger, like above, attached to a Plain Bit Brace with 14-inch sweep. Brace is nickel plated, and has steel-clad hardwood Head.

Length over all, 18 inches. Net weight, 3½ pounds.

Price, each. ............................................. (Yezwe) $8.25

Packed one in a pasteboard box, 19 x 9 x 3 inches. Weight, 4½ pounds.

Combination Butt Gauge
No. 227
Patented December 18, 1904

This tool is designed especially for door hanging and mortise work. It is provided with three hardened double edge Spurs, the one on the back of the double end bar being adjustable for the regulation of clearance.

The tool is well made, entirely of steel, and is polished and nickel plated.

Price, each. .......................................... (Yezre) $1.75

Packed one in a pasteboard box, 3½ x 2½ x 1½ inches. Weight, 8 ounces.

Roller Gauges

These Gauges have round graduated steel beams with roller markers. The graduations are very clear and distinct, and are in 32ths of an inch. The Head is fitted with a knurled thumb screw for each Beam. Each tool is fully polished and nickel plated.

Price, Each

No. 220. With One Single 8-inch Beam ............... (Yervy) $1.20
No. 221. With Two Beams, 4 and 8 inches .......... (Yersy) 1.45
No. 222. With Three Beams, 3, 4, and 8 inches .... (Yersos) 1.75

Packed one in a pasteboard box, 8½ x 2½ x 2½ inches. Weights, 10 to 12 ounces.
**Engineers' Plumb Bobs**

The bodies of these fine Bobs are turned from a solid brass rod. The shank of the hardened steel point runs up through the body and neck and is locked with the nickel plated screw cap at the top, through which the line runs. The long neck not only provides ample space for winding on the line, but it may be used between the steel point and body when a smaller diameter near the point is desirable. Both body and point accurately ground. Nicely finished throughout and each Bob supplied with six feet of laid twine.

<table>
<thead>
<tr>
<th>Weight</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 782. 8 ounces</td>
<td>$2.00</td>
</tr>
<tr>
<td>No. 783. 12 ounces</td>
<td>$2.50</td>
</tr>
<tr>
<td>No. 784. 16 ounces</td>
<td>$3.00</td>
</tr>
</tbody>
</table>

Packed one in a pasteboard box.

**Plumb Bobs**

These Plumb Bobs are made to satisfy the most particular workmen. The bodies are brass, knurled, polished, and nickel plated, and filled with heavy metal to give the required weight. The points are steel, tempered, ground, and polished. Every one is furnished with six feet of laid twine.

<table>
<thead>
<tr>
<th>Weight</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 539. 8 ounces</td>
<td>$1.40</td>
</tr>
<tr>
<td>No. 540. 12 ounces</td>
<td>$1.80</td>
</tr>
<tr>
<td>No. 541. 16 ounces</td>
<td>$2.00</td>
</tr>
</tbody>
</table>

Packed one in a pasteboard box.

**No. 562 Stair Gauge Attachments**

For Steel Squares

These Attachments, for a Carpenter's Steel Square, can be readily clamped in place on the blade to form a gauge for laying out stair stringers, marking any desired angle for sawing, or many other uses. These Attachments are small and compact; nicely finished in white nickel. The set screws are polished. No Squares furnished.

Price, per pair of Attachments ........................................... $1.00

Packed three pair in a pasteboard box, 3½ x 2½ x 1½ inches. Weight, 10 ounces.

**No. 44 Draw Shave Guides**

These Draw Shave Guides, or Chamfer Gauge, are particularly useful in cornering timber, as they enable the operator to do a good even job in a very short time. They are made in a medium size and will fit any ordinary Draw Shave. The backs of the Guides are polished, and the Faces and Thumb Screws are nickel plated.

Illustration shows Guides attached to Blade. No Blades furnished.

Price, per pair ......................................................... (YAEKY) $1.75

Packed one pair in a box, 4½ x 1½ x 1½ inches. Weight, 9 ounces.
Carpenters’ Combination Squares

These Squares have 12-inch heavy steel blades 1 inch wide, graduated on both sides in 8ths and 16ths by our improved dividing engines, and accurately ground to length. The figures are large and clear, and the graduation lines deeply etched.

The Beams of improved shape are large, being 4 1/2 inches long, and are made of either cast iron or aluminum. The aluminum Beam makes a very light weight tool. The Bearing Faces of the Beams are machined, and the remaining portions finished in red enamel.

As there are no levels or scribers included with these tools we are enabled to sell them at a very moderate price while maintaining the desired accuracy.

No. 707 With Iron Beam 15 ounces (ZAFEC) $1.45
No. 807 With Aluminum Beam 7 ounces (ZAFIV) 1.60

Each Square packed in a separate pasteboard box, 12 1/2 x 4 x 1 inch.

Carpenters’ Bevels

These handsome and accurate Carpenters’ Bevels will be appreciated by all particular mechanics. The Handles are rosewood, fully brass bound rods dovetailed the entire length of the handle, and dovetailed to heavy brass end plates. The polished Steel Blades have accurate parallel edges. The Blades can be fastened in any position by turning the large polished thumb screw.

<table>
<thead>
<tr>
<th>Length of Blade</th>
<th>Length of Beam</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 576 6 inches</td>
<td>4 1/2 inches</td>
<td>(YUMUD) $1.65</td>
</tr>
<tr>
<td>No. 578 8 inches</td>
<td>5 1/2 inches</td>
<td>(YUNEE) 1.85</td>
</tr>
<tr>
<td>No. 580 10 inches</td>
<td>6 1/2 inches</td>
<td>(YUNBE) 2.20</td>
</tr>
<tr>
<td>No. 582 12 inches</td>
<td>8 1/2 inches</td>
<td>(YUNED) 2.55</td>
</tr>
</tbody>
</table>

Each Bevel packed in a separate pasteboard box.

Carpenters’ Combination Square

Hard Cast Iron Head Steel Blade
No. 666

These Squares are so useful that no good carpenter should be without them, and their price is sufficiently low that every carpenter can well afford one. The uses of these tools are too well known to require any description. Each one is well made, well finished, and accurate. Blades are graduated in 8ths, 32ds, 12ths, and 48ths.

<table>
<thead>
<tr>
<th>Size</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 inch</td>
<td>(ZAHED) $3.30</td>
</tr>
<tr>
<td>12 inch</td>
<td>(ZAHIB) $5.20</td>
</tr>
</tbody>
</table>

Packed one in a pasteboard box.

Combination Square

Hard Cast Iron Head Steel Blade
No. 667

This tool is in every way identical with the one shown above, except that it has the additional equipment of a Center Head. The Blade is graduated in 8ths, 16ths, 32ds, and 64ths, but can be furnished like the No. 666 if desired.

<table>
<thead>
<tr>
<th>Size</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 inch</td>
<td>(ZAHEM) $3.30</td>
</tr>
<tr>
<td>12 inch</td>
<td>(ZAHIB) $3.80</td>
</tr>
</tbody>
</table>

Packed one in a pasteboard box.
Saw Set
No. 201

This Saw Set is so designed that it can be used on either wide or narrow saws; and it is so constructed that the teeth of the saw are always in sight of the operator, insuring accuracy in setting. The frame and handles are made of malleable iron, finished in red and black enamel. The jaw and inserted anvil are made of tempered steel, and are polished. The adjustable gauge is very easily set in position.

This is well made, and is a very practical tool. It is 8 inches long over all, and weighs 14 ounces.

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Price, each .................................. (US$) $2.00

Packed one in a box, 8½ x 3½ x 1½ inches. Weight, 1 pound.

Saw Set
No. 206
Patented February 14, 1911

Although this Saw Set is not quite as powerful as the one described above, it is simpler in design and a little quicker in action. The frame and handles are malleable iron, finished in red and black enamel. The jaws and anvil are tempered steel, well polished.

It is readily adjusted, making a thoroughly efficient tool. Length over all, 6½ inches. Net weight, 9 ounces.

Price, each .................................. (US$) $2.00

Packed one in a box, 7½ x 3½ x 1½ inches. Weight, ½ pound.

We have added this Saw Vise to our line because we are convinced that a great many carpenters would willingly pay more money for a really fine tool that would take the curse out of saw filing.

The jaw construction of this new Saw Vise eliminates the chatter, squeal, and vibration. The Jaws are of steel, concaved, giving an even double contact on both sides of the saw for their entire length of 10 inches.

The Jaws are self-aligning, which insures the clamping pressure from the knurled thumb screw being equally distributed over their entire length. By removing a single screw both Jaws can be taken out and the Vise packed away in a comparatively small space.

Light weight with ample strength is secured by using aluminum in this Vise wherever possible. Finished in red and black enamel and natural aluminum, with all exposed steel parts nicely polished.

The ball and socket joint gives unusual flexibility in filing position. The tool clamps to any bench ½ to 2½ inches thick. Height above bench, 9½ inches. Weight, 5 pounds.

Price, each .................................. (US$) $5.00

Packed one in pasteboard box, 17½ x 4½ x 4½ inches.
Iron Plane Gauge
No. 333

Illustration shows Gauge attached to Plane. No Plane furnished.

When this tool is attached to any Iron Plane by means of the Thumb Screws provided, it enables the operator to accurately plane bevels of any desired angle or make even joints without the continuous use of a Bevel or Try Square. The device is so simple that even inexperienced workmen can do accurate work in a very short time.

The tool is made entirely of iron and steel, fully nickel plated. The flat surface of the Guide is ground to insure its accuracy.

Price, each ........................................... (TIRET) $2.00

Packed one in a pasteboard box, 8 1/2 x 5 x 2 inches. Weight, 1 1/2 pounds.

Wood Plane Gauge
No. 334

This device can be attached to any Wood Plane by means of two screws. It is in every way the same as the No. 333, described above, except that it fits Wood Planes instead of Iron ones. It is made entirely of iron and steel, nickel plated. No Plane furnished.

Price, each ........................................... (TIRET) $1.40

Packed one in a pasteboard box, 8 1/2 x 4 1/2 x 1 1/2 inches. Weight, 1 1/2 pounds.

No. 36 Pattern Makers' Spoke Shave

This Spoke Shave was designed particularly for the use of Pattern Makers.

The Frame is made of black enameled iron, shaped to fit the hand of the operator, making possible a more delicate touch than can be otherwise obtained.

The Blade is polished steel, 2 inches wide; it is well made and can be easily adjusted, back and forward.

Length over all, 9 1/2 inches. Net weight, 10 1/2 ounces.

Price, each ........................................... (YACUX) $0.90

Packed one in a pasteboard box, 10 x 2 1/2 x 1 1/2 inches. Weight, 13 ounces.

No. 196 Bench Hook

This Hook can be readily inserted in any Bench by boring two holes of the proper size. The height is easily adjusted without any tools. It is provided with four different faces, any one of which can be used at will. The entire tool is nickel plated.

Price, each ........................................... (YELL) $1.60

Packed one in a pasteboard box, 3 1/2 x 2 1/2 x 2 1/2 inches.

Weight, 10 ounces.

No. 357 Scraper Steel

This Scraper Steel, or Burnisher, has a round tool steel Blade correctly tapered for turning a scraper edge. The Blade is 4 3/4 inches long, hardened and polished. The Handle is polished hard wood, protected by a nickel plated steel ferrule.

Length over all, 8 3/4 inches. Net weight, 4 ounces.

Price, each ........................................... (TIRET) $0.55

Packed one in a pasteboard box, 9 1/2 x 1 3/4 x 1 1/2 inches. Weight, 5 ounces.
Floor Scraper
No. 369
Patented March 6, 1917

This Floor Scraper has a selected hardwood Handle with polished mahogany finish, 11 inches long, turned down to afford a comfortable grip, and set at the correct angle. The weight of the large Adjusting Knob, which also acts as a handle, supplies most of the necessary pressure to the Blade, making wood scraping a comparatively easy operation.

The Blade, which is reversible, is made from the finest quality of tool steel, 3 x 4 1/2 inches. It is hardened and tempered in such a way that it will hold a good cutting edge.

Net weight of tool, 1 1/2 pounds.

Price, each.......................... $1.65
Packed one in a pasteboard box, 12 x 3 1/2 x 1 1/2 inches. Weight, 1 1/4 pounds.

Floor Scraper
No. 469
Patented March 6, 1917

This Floor Scraper has a selected hardwood Handle with polished mahogany finish, 11 inches long, turned down to afford a comfortable grip, and set at the correct angle. It has a Wing Adjusting Nut instead of a knob, and is provided with a curved plate for applying pressure to the Blade.

The Blade, which is reversible, is made from the finest quality of tool steel, 3 x 4 1/2 inches. It is hardened and tempered in such a way that it will hold a good cutting edge.

Net weight of tool, 1 1/2 pounds.

Price, each.......................... $1.65
Packed one in a pasteboard box, 11 1/2 x 3 1/2 x 2 inches. Weight, 1 1/4 pounds.

No. 634 Pocket Nail Puller
Patented June 5, 1923

This tool is sure to be most popular with carpenters and householders on account of its simple construction, compactness and strength. It is small enough to be dropped into the pocket and yet is as strong as a tool of this kind needs to be. It is made entirely of drop-forged steel.

To use this Pocket Nail Puller, open jaws and place them over the nail head. Drive in the jaws by pounding on the head of the puller with a hammer. When the jaws have engaged the nail head, insert the claws of the hammer under the head of the puller and the compound leverage enables any nail to be pulled with ease. It will pull cement coated nails out of knots without difficulty.

This Pocket Nail Puller is quicker, more convenient, and easier to operate than a large nail puller. Weight, 6 ounces.

Price, each.................................. $1.00
Packed one in a pasteboard box, 3 1/4 x 3 3/8 x 1 1/2 inch. Weight, 8 ounces.

Universal Center Finders
Patented July 3, 1900

This device accurately locates the center of any round, square, rectangular, or oval piece of material within its capacity, by merely drawing two lines the intersection of which must be the center point. Made entirely of steel, and nickel plated.

No. 341. Capacity 0 to 2 inches. Price, each........ $1.40
No. 342. Capacity 0 to 3 1/2 inches. Price, each..... 1.70
No. 343. Capacity 0 to 5 1/2 inches. Price, each..... 2.00

Packed one in a pasteboard box.
All-Steel Mitre Boxes
Patented February 9, 1904; December 2, 1924; Others Pending

Because every single part of the Goodell Mitre Box is made entirely of steel, there is absolutely no breakage, and consequently no expense for repairs. The total repairs and replacements since their introduction have amounted to almost nothing.

This wonderful durability is due not only to the fact that every piece is steel, but also to the design and workmanship. You will notice from the illustration on the opposite page that the Frame is built in the form of a truss bridge, making it absolutely rigid. The different portions of the truss frame are strongly welded together. The very careful workmanship insures absolute accuracy not only when the box is new, but after years of daily use.

When this Mitre Box was first put on the market, it was said that although it would not break, it could be bent. Years of use have proved, however, that strains and blows that would break an iron box leave this one entirely unharmed.

Durability is but one of many reasons why you will prefer the Goodell Mitre Box.

There are two separate Scales on the quadrant. One is graduated in Degrees, and the other, a new Patented Framing Scale, will give the proper angle at which finish and trim for roofs, staircases, etc., should be cut for any given rise per foot. For instance, if the pitch of a roof is 8 inches to the foot, simply set the brass indicator on the Saw Carriage at 8 on the Framing Scale and the Saw is at the correct angle at which the trim should be cut, without any figuring or laying out whatsoever.

The Saw when elevated is held in place by a spring lock, which is easily released by a slight downward pressure.

The Saw Carriage can be swung from 45 to 90 degrees either right or left. It locks automatically at all the most desired angles. At all other angles, it can be locked by pulling forward a small knob on the side of the saw carriage.

Angles more acute than 45 degrees are obtained by an extra angle attachment fastened to the left side of the box. This attachment can also be used as a molding holder. A length gauge is fastened to the right side of the box. This can be quickly set in position for cutting duplicate pieces of any length up to 20 inches. Both of these attachments can be removed or replaced by means of four screws.

The steel Bottom Plates are scored to keep the work from slipping.

Saw Guides are extra long, giving great rigidity and absolute accuracy when the saw is raised.

The stops can be readily regulated to saw to any desired depth.
These Mitre Boxes are furnished with high-grade Back Saws made especially for us and can be guaranteed only when supplied with saws fitted to the boxes by ourselves.

All sizes have a capacity of 10½ inches at Right Angles and 7½ inches at Mitre.

For full particulars, see pages 338 and 339.

No. 1244. With 24 x 4 inch Saw. Price, each... (ziitrr) $24.50
Packed one in a case, 32 x 10 x 7½ inches.

No. 1264. With 26 x 4 inch Saw. Price, each... (ziituvy) 25.50
Packed one in a case, 32½ x 10½ x 7½ inches.

No. 1285. With 28 x 5 inch Saw. Price, each... (ziitwy) 27.50
Packed one in a case, 35 x 10 x 10 inches.
Gross weight, 35 pounds. Net weight, 24 pounds.

No. 1305. With 30 x 5 inch Saw. Price, each... (ziitugh) 28.00
Packed one in a case, 37 x 10½ x 10½ inches.

No. 1306. With 30 x 6 inch Saw. Price, each... (ziitun) 33.00
Packed one in a case, 37 x 10½ x 10½ inches.
Gross weight, 38 pounds. Net weight, 26 pounds.

These Mitre Boxes can only be guaranteed when supplied with Back Saws fitted to the boxes by ourselves. We can, however, furnish them without saws if desired.

All sizes have a capacity of 10½ inches at Right Angles and 7½ inches at Mitre.

For full particulars, see pages 338 and 339.

No. 1002. For 4-inch Saw. Price, each... (ziirna) $20.00
Each Mitre Box packed in a wooden case, 24 x 10 x 8½ inches.

No. 1003. For 5-inch Saw. Price, each... (ziiron) 22.00
Each Mitre Box packed in a wooden case, 24 x 10 x 8½ inches.

No. 1004. For 6-inch Saw. Price, each... (ziirpe) 26.50
Each Mitre Box packed in a wooden case, 35 x 10 x 9½ inches.
Gross weight, 32 pounds. Net weight, 21½ pounds.
Iron Mitre Box

The Bed and Back of this strong and accurate small Mitre Box are made of a single piece of iron, the legs are steel. Emery Boards keep the work from slipping. The Saw Guides can be quickly adjusted for any thickness of Back or Panel Saw. Stops are provided to regulate the depth of cut when a Back Saw is used. Rawhide in the Gib prevents a Panel Saw from striking metal. Screws on the inside of the posts can be taken up to compensate for wear on the saw guides.

The Saw Lever not only locks automatically at all regular angles, but can also be instantly locked at any angle.

Capacity 7¼ inches at Right Angles, 4½ inches at Mitre.

No. 1000. Without Saw.

Price, Each $14.50

Packed one in a wooden case, 20 x 10 x 8½ inches. Shipping weight, 22 pounds.

No. 1001. With 24 x 4 inch Back Saw.

Price, Each $20.00

Packed one in a wooden case, 30½ x 10 x 9 inches. Shipping weight, 28 pounds.

Steel Clamps

These Clamps will be found very satisfactory for light or medium work. They are so constructed that they can be quickly adjusted and will lock themselves the moment pressure is applied to the Screw. The Bar is 3½ inches from the center of the Screw: the lengths given below are opening lengths not over-all measurements. They are furnished with a steel button, steel screw, malleable iron arms, and drawn steel bar ½ x ½ inch. The Bars are polished bright, and the arms black enameled.

No. 170. 4 inch (YRKD) $2.00
No. 171. 6 inch (YRFB) 2.10
No. 172. 8 inch (YRFG) 2.20
No. 173. 10 inch (YRSH) 2.30

Packed two clamps in a pasteboard box.

Wood Levels

Several years ago we purchased the Stratton Level Company and installed it in our factory with modern facilities, which has resulted in further refinements in a product whose superiority has been acknowledged and accuracy unquestioned for fifty years.

We have recently improved and simplified this line: First, because simplification will be of assistance and convenience to our many level customers; second, because the Government through the Division of Simplified Practice is urging that such simplification be made wherever possible; and, lastly, because only through simplification can we effect those economies in manufacture which we must make to keep our costs and selling prices from being radically advanced on account of difficulties of obtaining suitable lumber, the increased costs of labor, and the improvements which we have made in the finish of these tools.

In making these changes we have eliminated nothing which could seriously inconvenience any of our customers, as we have retained other styles or sizes sufficiently similar to furnish a satisfactory substitute in every case.

Brass Binding

The brass binding on these Levels is a real binding, dovetailed the entire length of the Level, and each is laced to the heavy brass end plates. A pressure of over half a ton is required to force the rods in.

All lumber used in these Levels is carefully cured under personal supervision. Every glass used is rigidly tested before setting. The Stratton Adjustment is simple and practical. By using this adjustment, it is possible to have every vial set solid; this makes any accidental displacement of the vial impossible.

Adjusting Goodell-Pratt Levels

Place the Level on a solid bench and mark the exact position of all four corners. Loosen the screws in the top plate so that the adjusting bars can be moved. If the bubble runs to the right move the right hand adjusting bar to the right hand end of the bubble. Reverse the Level, being careful to have the base in exactly the same position as before, and move the right hand (left hand when first adjustment was made) adjusting bar to the right hand end of the bubble. Now block up the Level so that the bubble is midway between the adjusting bars and then move the bars up to the ends of the bubble. Reverse the Level again, and if the adjusting has been done carefully the bubble should lie exactly between the two bars. If not, repeat the operation until it does.

A perfect adjustment can be secured by this procedure. When the adjustment is finally made, seat the two screws in the top plate to lock the bars.

The Plumbs are adjusted in a similar manner.

Repairs

All transportation charges must be prepaid on all Levels returned to us for repairs. As these charges often amount to more than the cost of a moderate priced Level, we wish to caution our customers against returning any but the very expensive Levels to have repairs made at the factory.
Sectional Rosewood Levels

Each of these Levels is made of four pieces of selected Rosewood, thoroughly seasoned, built up around a solid Mahogany core. The brass Binding Rods are dovetailed into the wood their entire length and doweled to the heavy brass End Plates. A heavy brass Top Plate protects the Level Vial. Double Hand Grips on both sides assure safe handling.

Both Level and Plumb Vials are very accurately ground internally and are very sensitive. The Vials are set solid in the stock. A double Movable Bar Adjustment is used on the Level, and a similar adjustment on the Plumbs. Made with Double Plumb only.

An exceptionally fine finish is used on these Levels.

<table>
<thead>
<tr>
<th>Size, Inches</th>
<th>Approximate Weight</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 4024</td>
<td>24 x 2½ x 1⅜</td>
<td>3½ pounds</td>
</tr>
<tr>
<td>No. 4026</td>
<td>26 x 2½ x 1⅘</td>
<td>3½ pounds</td>
</tr>
<tr>
<td>No. 4028</td>
<td>28 x 2½ x 1⅝</td>
<td>3½ pounds</td>
</tr>
<tr>
<td>No. 4030</td>
<td>30 x 2½ x 1⅞</td>
<td>6¼ pounds</td>
</tr>
</tbody>
</table>

Each Level packed in an individual carton.

Narrow Rosewood Levels

Made from a solid stick of selected Rosewood, thoroughly seasoned. The Brass Binding Rods are dovetailed into the wood their entire length and doweled to the heavy brass End Plates. A heavy brass Plate protects the Level Vial from above.

The Vials used are accurately ground internally and very sensitive. They are set solid in the stock. A double Movable Bar Adjustment is used on the Level Vial, and a similar adjustment on the Plumbs. Made with Double Plumb only.

An exceptionally fine finish is used on these Levels.

<table>
<thead>
<tr>
<th>Size, Inches</th>
<th>Approximate Weight</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 4418</td>
<td>18 x 2 x 1</td>
<td>1½ pounds</td>
</tr>
<tr>
<td>No. 4424</td>
<td>24 x 2 x 1</td>
<td>2½ pounds</td>
</tr>
</tbody>
</table>

Each Level packed in an individual carton.

Mahogany Levels

These Levels are made from a solid stick of selected Mahogany, thoroughly seasoned. The brass Binding Rods are dovetailed into the wood their entire length, and doweled to the heavy brass End Plates. The Level Vial is protected from above by a heavy brass Plate. Double Hand Grips on both sides assure safe handling.

The Vials are drawn to a true curve and are thoroughly tested. They are accurate and sensitive. Vials are set solid in the stock. A double Movable Bar Adjustment is used on the Level, and a similar adjustment on the Plumbs. Made with Double Plumb only. Highly finished in natural Mahogany.

<table>
<thead>
<tr>
<th>Size, Inches</th>
<th>Approximate Weight</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 4124</td>
<td>24 x 3 x 1⅛</td>
<td>3 pounds</td>
</tr>
<tr>
<td>No. 4126</td>
<td>26 x 3 x 1⅛</td>
<td>3¼ pounds</td>
</tr>
<tr>
<td>No. 4128</td>
<td>28 x 3 x 1⅛</td>
<td>3½ pounds</td>
</tr>
<tr>
<td>No. 4130</td>
<td>30 x 3 x 1¼</td>
<td>3¾ pounds</td>
</tr>
</tbody>
</table>

Each Level packed in an individual carton.

Mahogany Levels

These Levels are exactly the same as the series above, but slimmer, being made of 2½ x 1⅛ inch Mahogany instead of 3 x 1⅛ inch stock.

**SINGLE PLUMB**

<table>
<thead>
<tr>
<th>Size, Inches</th>
<th>Approximate Weight</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 1324</td>
<td>24 x 2½ x 1⅛</td>
<td>2¼ pounds</td>
</tr>
<tr>
<td>No. 1326</td>
<td>26 x 2½ x 1⅛</td>
<td>2½ pounds</td>
</tr>
<tr>
<td>No. 1328</td>
<td>28 x 2½ x 1⅛</td>
<td>3 pounds</td>
</tr>
<tr>
<td>No. 1330</td>
<td>30 x 2½ x 1⅛</td>
<td>3½ pounds</td>
</tr>
</tbody>
</table>

**DOUBLE PLUMB**

<table>
<thead>
<tr>
<th>Size, Inches</th>
<th>Approximate Weight</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 4324</td>
<td>24 x 2½ x 1⅛</td>
<td>2¼ pounds</td>
</tr>
<tr>
<td>No. 4326</td>
<td>26 x 2½ x 1⅛</td>
<td>2½ pounds</td>
</tr>
<tr>
<td>No. 4328</td>
<td>28 x 2½ x 1⅛</td>
<td>3 pounds</td>
</tr>
<tr>
<td>No. 4330</td>
<td>30 x 2½ x 1⅛</td>
<td>3½ pounds</td>
</tr>
</tbody>
</table>

Each Level packed in an individual carton.
Narrow Mahogany Levels

These Levels are made from a solid stick of selected Mahogany, thoroughly seasoned. The Level top view and the ends are protected by heavy brass Plates.

The Vials are drawn to a true curve and are carefully tested. Each one is sensitive and accurate. They are set solid in the stock, as a double Movable Bar Adjustment is used. The Plumb has a similar adjustment. Highly finished in natural Mahogany.

<table>
<thead>
<tr>
<th>Single Plumb</th>
<th>Size, Inches</th>
<th>Approximate Weight</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 1508</td>
<td>8 x 1½ x 1</td>
<td>½ pound</td>
<td>$2.65</td>
</tr>
<tr>
<td>No. 1512</td>
<td>12 x 2 x 1</td>
<td>1 pound</td>
<td>3.10</td>
</tr>
<tr>
<td>No. 1518</td>
<td>12 x 2 x 1</td>
<td>1½ pounds</td>
<td>3.85</td>
</tr>
<tr>
<td>No. 1524</td>
<td>24 x 2 x 1</td>
<td>1½ pounds</td>
<td>4.40</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Double Plumb</th>
<th>Size, Inches</th>
<th>Approximate Weight</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 4512</td>
<td>12 x 2 x 1</td>
<td>1 pound</td>
<td>3.90</td>
</tr>
<tr>
<td>No. 4518</td>
<td>18 x 2 x 1</td>
<td>1½ pounds</td>
<td>4.60</td>
</tr>
<tr>
<td>No. 4524</td>
<td>24 x 2 x 1</td>
<td>2 pounds</td>
<td>5.30</td>
</tr>
</tbody>
</table>

For lengths longer than 24 inches, see preceding page. Each Level packed in an individual carton.

Mahogany Levels

These Levels are made from a solid stick of thoroughly seasoned Mahogany, with the ends protected by heavy brass End Plates. To facilitate safe handling, double Hand Grips are provided.

The Vials are drawn to a true curve and are carefully tested. Each one is sensitive and accurate. They are set solid in the stock, as a double Movable Bar Adjustment is used. The Plumb has a similar adjustment. Made with Double Plumb only.

<table>
<thead>
<tr>
<th>Size, Inches</th>
<th>Approximate Weight</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 4724</td>
<td>24 x 2 ½ x 1½</td>
<td>2 pounds</td>
</tr>
<tr>
<td>No. 4726</td>
<td>28 x 2 ½ x 1½</td>
<td>2 pounds</td>
</tr>
<tr>
<td>No. 4728</td>
<td>30 x 2 ½ x 1½</td>
<td>2½ pounds</td>
</tr>
<tr>
<td>No. 4730</td>
<td>30 x 2 ½ x 1½</td>
<td>2½ pounds</td>
</tr>
</tbody>
</table>

These Levels are made of thoroughly seasoned Mahogany, with heavy brass Top Plates. The Vials are drawn to a true curve and are carefully tested. Vials are set solid, as a double Movable Bar Adjustment is used.

<table>
<thead>
<tr>
<th>Size, Inches</th>
<th>Approximate Weight</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 2406</td>
<td>6 x 1½ x 1</td>
<td>3 ounces</td>
</tr>
</tbody>
</table>

Packed one dozen in a box.

Mahogany Levels

These Levels are made of thoroughly seasoned hard wood, stained to imitate Mahogany, and nicely finished. The Vials are drawn to a true curve and set solid in the stock, as a double Movable Bar Adjustment is used. The Plumb has a similar adjustment.

<table>
<thead>
<tr>
<th>Size, Inches</th>
<th>Approximate Weight</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 2312</td>
<td>12 x 2 x ½</td>
<td>¼ pound</td>
</tr>
<tr>
<td>No. 5312</td>
<td>12 x 2 x ½</td>
<td>¾ pound</td>
</tr>
</tbody>
</table>

Packed one fourth dozen in a box.
Carpenters' Levels

These Levels are made from a solid stick of thoroughly seasoned hard wood, with the ends protected by heavy brass Channel End Plates. They are stained to imitate Mahogany and nicely finished. Double Hand Grips provided for safe handling.

The Vials are drawn to a true curve and are carefully tested. Each one is sensitive and accurate. They are set solid in the stock, as a double Movable Bar Adjustment is used. The Plumb has a similar adjustment.

<table>
<thead>
<tr>
<th>Size, Inches</th>
<th>Approximate Weight</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 4924</td>
<td>24 x 3 x 1 1/2</td>
<td>21 pounds</td>
</tr>
<tr>
<td>No. 4926</td>
<td>26 x 3 x 1 1/2</td>
<td>21 pounds</td>
</tr>
<tr>
<td>No. 4928</td>
<td>28 x 3 x 1 1/2</td>
<td>3 pounds</td>
</tr>
<tr>
<td>No. 4930</td>
<td>30 x 3 x 1 1/2</td>
<td>31 pounds</td>
</tr>
</tbody>
</table>

Each Level packed in an individual carton.

Carpenters' Levels

These Levels are made from a solid stick of thoroughly seasoned hard wood. They are stained to imitate Mahogany and nicely finished.

The Vials are drawn to a true curve and are carefully tested. Each one is sensitive and accurate. They are set solid in the stock, as a double Movable Bar Adjustment is used. The Plumb has a similar adjustment.

**Single Plumb**

<table>
<thead>
<tr>
<th>Number</th>
<th>Size, Inches</th>
<th>Approximate Weight</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>12 x 2 1/4 x 1 1/4</td>
<td>13 pounds</td>
<td>$1.70</td>
</tr>
<tr>
<td>2014</td>
<td>14 x 2 1/2 x 1 1/2</td>
<td>15 pounds</td>
<td>1.80</td>
</tr>
<tr>
<td>2016</td>
<td>16 x 2 1/2 x 1 1/2</td>
<td>17 pounds</td>
<td>1.90</td>
</tr>
<tr>
<td>2018</td>
<td>18 x 2 1/4 x 1 1/4</td>
<td>19 pounds</td>
<td>2.00</td>
</tr>
<tr>
<td>2020</td>
<td>20 x 2 1/2 x 1 1/2</td>
<td>21 pounds</td>
<td>2.20</td>
</tr>
<tr>
<td>2022</td>
<td>22 x 2 1/2 x 1 1/2</td>
<td>23 pounds</td>
<td>2.30</td>
</tr>
<tr>
<td>2024</td>
<td>24 x 2 1/2 x 1 1/2</td>
<td>25 pounds</td>
<td>2.40</td>
</tr>
<tr>
<td>2126</td>
<td>26 x 2 1/2 x 1 1/2</td>
<td>27 pounds</td>
<td>2.50</td>
</tr>
<tr>
<td>2128</td>
<td>28 x 2 1/2 x 1 1/2</td>
<td>29 pounds</td>
<td>2.65</td>
</tr>
</tbody>
</table>

Each Level packed in an individual carton.

Carpenters' Levels

These Levels are made from a solid stick of thoroughly seasoned hard wood. They are stained to imitate Mahogany and nicely finished. Not adjustable.

The Vials are drawn to a true curve and are all carefully tested. Made with Single Plumb only, and packed one dozen of a size in a wooden case.

<table>
<thead>
<tr>
<th>Number</th>
<th>Size, Inches</th>
<th>Approximate Weight</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>2712</td>
<td>12 x 2 1/4 x 1 1/4</td>
<td>13 pounds</td>
<td>$1.20</td>
</tr>
<tr>
<td>2718</td>
<td>18 x 2 1/2 x 1 1/2</td>
<td>15 pounds</td>
<td>1.35</td>
</tr>
<tr>
<td>2724</td>
<td>24 x 2 1/2 x 1 1/2</td>
<td>17 pounds</td>
<td>1.50</td>
</tr>
</tbody>
</table>

*No. 2700 Assortment consisting of 6 No. 2712, 12 No. 2718 and 6 No. 2724 packed in a wooden case.*

<table>
<thead>
<tr>
<th>No. 2712</th>
<th>12 x 2 1/4 x 1 1/4</th>
<th>37 pounds</th>
<th>$34.20</th>
</tr>
</thead>
</table>
Mahogany Masons' Levels

These Levels are made from a solid stick of thoroughly seasoned Mahogany, making excellent Levels for the reasonable prices at which they are sold.

The Vials are drawn to a true curve and are carefully tested. Each one is sensitive and accurate. Vials are set solid, as a double Movable Bar Adjustment is used. The Plumb has a similar adjustment.

<table>
<thead>
<tr>
<th>Size, Inches</th>
<th>Approximate Weight</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 5436</td>
<td>36 x 2½ x 1½</td>
<td>2½ pounds</td>
</tr>
<tr>
<td>No. 5442</td>
<td>42 x 2½ x 1½</td>
<td>3 pounds</td>
</tr>
</tbody>
</table>

Masons' Levels

These Levels are made from a solid stick of thoroughly seasoned hard wood, stained to imitate Mahogany. The Vials are drawn to a true curve and are carefully tested. Vials are set solid in the stock, as a double Movable Bar Adjustment is used. The Plumb has a similar adjustment.

<table>
<thead>
<tr>
<th>Size, Inches</th>
<th>Approximate Weight</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 5530</td>
<td>36 x 2½ x 1½</td>
<td>2½ pounds</td>
</tr>
</tbody>
</table>

Nickel-Plated Pocket Levels

These Levels are made from hexagon brass tubing fully polished and nickel plated. They make very convenient and serviceable Pocket Levels.

No. 611. Length, 2½ inches. Price, each $0.55
No. 612. Length, 3½ inches. Price, each $0.80

Packed one half dozen in a pasteboard box.

Electric Levels

Used as Attachments for Electric and Other Machines

These Levels are made of brass tubing, ground flat on the Base. They are particularly designed to be attached to various kinds of machinery, but they also make an attractive Pocket Level. They are fully polished and nickel plated.

No. 624. Length, 2 inches. Price, each $0.35
No. 625. Length, 3 inches. Price, each $0.45

Packed one half dozen in a pasteboard box.

Iron Pocket Levels

These Levels are made of cast iron, with milled Bases.

<table>
<thead>
<tr>
<th>Length</th>
<th>Finish</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 501</td>
<td>2½ inches</td>
<td>Black enameled $0.65</td>
</tr>
<tr>
<td>No. 502</td>
<td>3½ inches</td>
<td>Black enameled $0.75</td>
</tr>
</tbody>
</table>

Iron Bench Levels

These Levels have accurately milled faces and ends.

<table>
<thead>
<tr>
<th>Length</th>
<th>Finish</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 503</td>
<td>4 inches</td>
<td>Black enameled $1.00</td>
</tr>
<tr>
<td>No. 504</td>
<td>6 inches</td>
<td>Black enameled $1.20</td>
</tr>
</tbody>
</table>
Iron Bench Levels
With Double Plumb

The frames of these Levels are made of well-seasoned gray iron castings with tops and bottoms accurately ground and the edges polished. Each Level is fitted with one high-grade Level and two Plumb Vials accurately set. Bodies of the frames finished in glossy black enamel.

No. 513. Length, 6 inches, open ends...........(YUHAS) $1.90

No. 505. Length, 6 inches, closed ends...........(YOYAR) $2.20

No. 506. Length, 9 inches, closed ends...........(YOYGE) $2.65

No. 507. Length, 12 inches, closed ends.........(YOYNB) $2.75

No. 509. Length, 18 inches, open ends..........(YOZAG) $4.00
No. 510. Length, 24 inches, open ends..........(YOZIS) 4.60

All packed one in a box.

Iron Levels
With Grooved Base and Double Plumb

These Levels will be found very convenient for lining shafting or other similar work. All edges are accurately milled and bases are grooved; 6, 9, and 12 inch Levels also have milled ends. Bodies are black enameled and edges are polished. The Level Vial and two Plumb Glasses are set solid in the stock.

We do not recommend a Level with a Grooved Base except for use on shafting or other similar work.

<table>
<thead>
<tr>
<th>Length</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 505V. 6 inches</td>
<td>(YOYEC) $2.20</td>
</tr>
<tr>
<td>No. 506V. 9 inches</td>
<td>(YOYJO) 2.65</td>
</tr>
<tr>
<td>No. 507V. 12 inches</td>
<td>(YOYOC) 2.75</td>
</tr>
<tr>
<td>No. 509V. 18 inches</td>
<td>(YOYOA) 4.00</td>
</tr>
<tr>
<td>No. 510V. 24 inches</td>
<td>(YOYKO) 4.60</td>
</tr>
</tbody>
</table>

Aluminum Levels

The frames of these Levels are cast from a very light, strong aluminum alloy. The Cross Section is similar to an I beam, giving maximum rigidity with minimum weight. Both the top and bottom faces are accurately ground and the edges nicely finished. Both the Level and Plumb Vials are carefully selected and tested. They are all set solidly in the frame.

<table>
<thead>
<tr>
<th>Length</th>
<th>Weight</th>
<th>Price, Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 913</td>
<td>12 inches</td>
<td>18 ounces</td>
</tr>
<tr>
<td>No. 918</td>
<td>18 inches</td>
<td>23 ounces</td>
</tr>
<tr>
<td>No. 924</td>
<td>24 inches</td>
<td>29 ounces</td>
</tr>
</tbody>
</table>

Packed one in a pastelboard box.
Adjustable Bench Levels
With Plain Vials

All the Levels shown on this page are so constructed that they admit of close and accurate adjustment, and, when so adjusted, are not liable to get out of true as the Vials are set in tubes having solid ends which are firmly clamped to the Base. The Bases of these Levels are accurately ground and are finished in black enamel. The Tubes are polished and nickel plated.

No. 514. Length, 4 inches ...........................................(YUAD) $2.10
No. 515. Length, 6 inches ...........................................(YUAN) 2.40
No. 516. Length, 8 inches ...........................................(YUBEN) 2.75

Adjustable Bench Levels
With Plain Vials

These Levels are provided with Handles that are not only convenient, but will also be found better protectors of the Vial than the slide covers sometimes used. Tubes and Handles nickel plated; Base finished in black enamel.

No. 717. Length, 12 inches ................................ ...........(ZARUD) $3.85
No. 718. Length, 18 inches ................................ ...........(ZANUK) 4.85

4, 6, and 8 inch Levels are packed, one in a pasteboard box.
12 and 18 inch Levels are packed, one in a wooden box.

Adjustable Bench Levels
With Ground and Graduated Vials

These Levels will meet the requirements of the most particular users. All the Vials used are accurately ground and graduated, and each one is inspected before and after being set. The adjustment is close and positive.

The Handles not only add to the convenience and attractiveness of the tools, but also form efficient protectors for the Vials. On all the larger sizes, the supports for the Handles are fastened directly to the Base, so that the tube containing the Vial is not disturbed in handling. Where accurate work is essential, this feature is particularly valuable, as it enables the operator to handle the Level without danger of affecting its accuracy by the heat of the hand.

The Bases of these Levels are accurately ground and are finished in black enamel. All the Tubes are polished and nickel plated.

No. 719. Length, 4 inches ...........................................(ZARAF) $3.85
No. 720. Length, 6 inches ...........................................(ZARAF) 4.60
No. 721. Length, 8 inches ...........................................(ZARAF) 5.40
No. 722. Length, 12 inches ...........................................(ZARAF) 7.15
No. 723. Length, 18 inches ...........................................(ZARAF) 9.25

4, 6, and 8 inch Levels are packed, one in a pasteboard box.
12 and 18 inch Levels are packed, one in a wooden box.

Engineers' Iron Level

This Level is provided with a device for accurately giving the rise and fall of piping, shafting, a roof, or any other object. Each Level is fitted with a Double Plumb so that the slant of uprights can also be taken. The tool is graduated to read by sixteenths up to 1 inch. This device in no way interferes with the use of the level for ordinary purposes.

This Level has black enameled body, and polished face and edges.

No. 528. Length, 24 inches ...........................................(YUYD) $5.50
Bench Lathes

These Lathes are moderate in price, yet they are thoroughly serviceable, practical, and reasonably accurate. They are substantially constructed from good materials and are designed especially for amateurs, experimenters, craftsmen, and designers. They will handle a wide range of work, making them particularly useful in laboratories, repair shops, and trade schools.

The construction and fitting of these Bench Lathes are done with great care and reasonable accuracy. We do not claim to make a precision tool for the selling price of these Lathes; but they can, and do, practically fill all the requirements of the average user.

The No. 121 Foot Power Table, shown on page 364, will fit the No. 125 Lathe only. The other attachments, shown on the following pages, will fit both No. 125 and No. 494 Lathes. Besides the attachments shown on pages 358 to 366, we can also recommend the 2-inch and 3-inch Scroll Chucks, shown on page 123, for use in connection with these Lathes.

Bench Lathe
No. 125
12 inches between Centers, 7-inch Swing

This Lathe has a Milled Bed and a Tail Stock with a milled base. The Live Spindle has a cone bearing to take up wear, and is provided with a No. 1 Morse Taper Socket and has a ½-inch hole clear through. The Tail Stock has both Screw and Lever Feed. Tail Stock Spindle has a No. 0 Morse Taper Socket. The Cone Pulley has three steps, 1½, 2½, and 3½ inches in diameter.

The Lathe is finished with black and red enamel; the bed is milled; all working parts are polished.

Every Lathe is provided with an adjustable Tee Rest, a Slotted Face Plate, a Saw Arbor, and a Drill Chuck with a No. 1 Morse Taper Shank. The Chuck holds round shanks of all sizes from 0 to ½ inch. Both the Head Stock and the Tail Stock are provided with Point Centers.

Length over all, 25 inches. Height, 11½ inches. Swing, 7 inches.
Extreme distance between centers, 12 inches. Net weight, 30 pounds.

No Countershaft is furnished with this machine.

Price, each ........................................ (yedwa) $40.00

Each Lathe packed in a wooden case, 28 x 13 x 6½ inches.
Shipping weight, 42 pounds.

Bench Lathe
No. 494
18 inches between Centers, 7-inch Swing

This Lathe is the same as the No. 125 described above, but has a larger Tee Rest and a longer Bed. The swing is the same.

Length over all, 31 inches. Height, 11½ inches. Swing, 7 inches.
Extreme distance between centers, 18 inches. Net weight, 36 pounds.

Price, each ........................................ (yend) $44.00

Each Lathe packed in a wooden case, 34 x 13 x 6½ inches.
Shipping weight, 50 pounds.
No. 132 Slide Rest

This Slide Rest is made especially for use with our Bench Lathes, and with it, it is possible to do work of reasonable accuracy. It is a strong and thoroughly well made device although not a precision tool. It has a longitudinal motion of 3\(\frac{3}{4}\) inches and a cross motion of 2\(\frac{3}{4}\) inches. The Tool Post holds \(\frac{1}{4}\) x \(\frac{1}{4}\) inch Lathe Tools. Net weight, 6\(\frac{1}{2}\) pounds.

Price, each.......................... $17.50
Packed in a wooden case, 14 x 9\(\frac{1}{2}\) x 5\(\frac{1}{2}\) inches.
Shipping weight, 11 pounds.

No. 126 Lathe Tools

These Lathe Tools are made especially for use with our No. 132 Slide Rest. The tools are about 3 inches long by \(\frac{1}{4}\) inch square.

Price, per set of twelve.................. $6.00
Price for separate tool.................. $.50

No. 701 Sanding Disc

This Disc, 6\(\frac{1}{2}\) inches in diameter, screws on to the live spindle of our Bench Lathes. Its grooved face gives a surface to which sandpaper and other abrasive sheets can be solidly glued. Net weight, 3\(\frac{1}{4}\) pounds.

Price, each.......................... $4.40
Packed in a pasteboard box, 7\(\frac{1}{2}\) x 7\(\frac{1}{2}\) x 1\(\frac{1}{2}\) inches.

Protractor Attachment No. 639

This Attachment is for use on our No. 132 Slide Rest to permit the operator to cut bevels and tapers at any desired angle. It is locked to the Slide Rest by means of the lever and the indicator reads from 0 to 90 degrees right and left.

Net weight, 4 ounces.

Price, each.......................... $7.50
Packed in a pasteboard box, 3\(\frac{3}{4}\) x 3\(\frac{3}{4}\) x 2\(\frac{1}{2}\) inches.
Weight, 6 ounces.

No. 129 Compression Chuck

This Chuck is made for use with our Bench Lathes, and it will prove a very useful addition to it particularly for holding round rods to be machined.

Each Chuck consists of a Collar, Collet, and Bushing. Bushings are furnished in the following sizes: \(\frac{1}{4}\), \(\frac{1}{8}\), \(\frac{1}{16}\), and \(\frac{1}{32}\) inch. No larger sizes can be used, but other intermediate sizes can be made to order at special prices.

Price of Chuck, with one Bushing............... $10.00
Packed in a pasteboard box, 2\(\frac{1}{2}\) x 2\(\frac{1}{2}\) x 2\(\frac{1}{2}\) inches. Weight, \(\frac{1}{2}\) pound.
Extra Bushings, regular sizes listed above, each........ $2.80

Buffing Spindle No. 706

This Spindle is for operating wood centered polishing wheels, brushes, etc. It is easily installed by being screwed on to the end of the lathe spindle in place of the original adjusting and lock nut.

Net weight, 4 ounces.

Price, each.......................... $3.30
Packed in a pasteboard box.
Milling Attachment
No. 522

This Attachment for our Bench Lathes enables the operator to do all kinds of small milling. It can be quickly clamped on to the Lathe, where the work is held by bolting to the T-slots on the top and one side of this fixture; or held in the vise, or centers, shown on page 369. The Table of this Attachment is 7 inches and has a 5-inch movement. The longitudinal movement is 1½ inches, and the vertical, 1½ inches. Extreme distance from spindle center to table, 2½ inches. Hand wheels feed the Table in any one of the three ways. The lathe spindle will hold any end milling cutters with a No. 1 Morse Taper Shank; or the milling cutters on page 373 can be used by holding them in a chuck.

No milling cutters furnished with this Attachment.
Net weight, 11½ pounds.

Price of Attachment only........................................ (Yucan) $45.00
Packed one in a wooden case, 16 x 10½ x 8½ inches. Shipping weight, 20 pounds.

Turret Attachment
No. 128

This Attachment for our Bench Lathes has a Turret 3 inches in diameter, provided with six holes ½ inch in diameter. It has a travel of 2½ inches, but will shift and throw automatically only when cuts of ½ inches or less are made. This Attachment enables the operator to turn out small duplicate parts economically.

TURRET MUST BE ORDERED WITH THE LATHE in order to have the holes drilled and aligned. When Turrets are furnished separately, the holes will be left undersized and the purchaser must re bore them on the Lathe to which the Turret is attached.
Net weight, 9 pounds.

Price, each....................................................... (Yecay) $50.00
Packed one in a box, 14 x 9½ x 5½ inches. Shipping weight, 13½ pounds.

No. 741 Fret Saw Attachment

This Attachment is designed to fit the bed of our Bench Lathes and is driven from the Lathe Spindle by means of the slotted face plate.

The table is 6½ inches in diameter and can be tilted right or left and locked at any angle by means of the set screw at the back.

The saw has a 1½-inch travel and the depth of throat is 8½ inches. Designed for 6-inch loop end coping saw blades. No saws furnished. Net weight, 6½ lbs.

Price, each................................................................. (Zavie) $18.00
Packed one in a wooden case.

No. 194 Sawing Attachment

This Attachment consists of a solid base, which clamps to the bed of Nos. 125 and 494 Lathes, a Table, 8½ x 9½ inches, and a special Arbor which swings between the lathe centers and is driven from the live spindle. Two guides run in the slots in the table top. One guide is used for ripping and the other for cross cutting and mitering. Depth of cut is controlled by a screw in the base. A clamp screw is provided for locking the table at the desired point. Cut does not show latest improvements in this Attachment. A circular saw 5 inches in diameter with a ½-inch hole is recommended. It runs in a slot in a 1½-inch wood insert in the machined top. This insert can be removed and a small dado head used if desired. The portion of the saw below the table is well guarded. Nicely finished throughout in red and black enamel and polished steel. Net weight, 10½ pounds.

Price, each, complete with Arbor but no Saw............. (Yelik) $17.50
Packed one in a wooden case, 14½ x 9½ x 5½ inches. Shipping weight, 15 pounds.
Screw Cutting Attachment
No. 166

We can build Screw Cutting Attachments for our Bench Lathes: they must, however, be ordered at the same time as the Lathe, and fitted to it. They can be supplied with Master Screws for any lead, but 24 threads to the inch will be furnished unless otherwise specified. Shipping weight, 10 pounds.

Price of Attachment, with one Master Screw. $50.00
Extra Master Screws and Nuts (regular threads), each. 5.00

Countershaft
No. 130

This Countershaft for use with our Bench Lathes is so arranged that a treadle can be attached to the pull. The belt is held on the Tight Pulley as long as pressure remains on the treadle. Diameter of tight and loose pulleys, 2\(\frac{1}{4}\) inches. Cone pulley has three steps, 1\(\frac{1}{2}\), 2\(\frac{1}{4}\), and 3\(\frac{1}{4}\) inches in diameter, 11\(\frac{1}{4}\) inches in width. Net weight, 10 pounds.

Price, each. $12.00
Packed one in a wooden case, 14\(\frac{1}{2}\) x 7 x 6\(\frac{1}{2}\) inches. Shipping weight, 14 pounds.

Attachments for Bench Lathes

Lathe Dog No. 139
Clamp Dog No. 127

Square Center No. 137

Diameter, 1\(\frac{1}{4}\) inches. Screw projects 1\(\frac{1}{4}\) inch. Shank No. 1 Morse Taper. Price, $1.50.

Screw Center Face Plate No. 136

Made of Tool Steel for light turning of wood or steel. Shank No. 1 Morse Taper. Price, $1.25.

Wood Center No. 134

Spur Center No. 135

Diameter, 1 inch, for use in Tail Stock. Shank No. 0 Morse Taper. Price, $1.00.

One inch in diameter for wood turning. Shank No. 1 Morse Taper. Price, $1.50.

Tail Stock Face Plate No. 133

For use in Tail Stock. 1 Cone, 1 Cup, and 1 V Center, all 1 inch outside diameter. Shank No. 0 Morse Taper fitting all centers. Price, per set, $2.00.

Table Rest No. 138

Diameter, 3 inches. Shank No. 0 Morse Taper. Price, $1.50.
For use in Tool Rest. Two inches square. Shank, 1 inch. Price, each, $1.00.
No. 121 Foot Power Table

This Foot Power Table is designed especially for use in connection with our No. 125 Bench Lathe, and is provided with slots for bolting this Lathe to the Table. It is strongly constructed entirely of iron and steel even to the Table Top. A rim around the edge prevents tools from rolling off. The Tool Rack at the back is provided with 11 small and 12 large holes. The smallest Step of the Cone Pulley is 18 inches; second and third Steps are proportionate to the size of the Pulley on the No. 125 Bench Lathe.

The Foot Power runs very smoothly and easily. The Table Top, Legs, and Treadle are finished in black enamel. The Foot Power Wheel is finished in red enamel with a polished edge. All steel parts are polished. The Table is 35 inches high, 31 inches long, and 14 inches wide, exclusive of the tool rack. Net weight, about 160 pounds.

Price of Table only ........................................... (Yrbd) $40.00
Crated, 38 x 32 x 22 inches. Weight, 194 pounds.
Boxed, 41 x 22 x 13 inches. Weight, 200 pounds.

Aluminum Shaft Hanger

No. 727

A cast aluminum Adjustable Hanger with a 6½-inch drop fitted with an oilless bearing for ¾-inch shaft. Designed and ideal for a small shop line shaft for driving light machinery. Net weight, 2½ pounds.

Price, each ................... (Expons) $6.60
Packed one in a pasteboard box.

Aluminum Pulleys

These Pulleys are cast aluminum, with machined hubs, bores, and crowned faces ready to assemble on ¾-inch shafting for driving light machinery.

No. 728 3½ inches 1½ inches (Lathes) 83.30
No. 729 11½ inches 1½ inches (Lathes) 6.60

Packed one in a pasteboard box.

No. 731 Steel Shafting Collars

A carefully machined Collar to fit ¾-inch shafting, especially in connection with our No. 727 Hangers. Headless set screw.

Price, each ................... (Expons) $1.10
Packed one in a pasteboard box.
Saw or Emery Wheel Arbors

These polished steel Saw Arbors will be found convenient for holding Saws or Emery Wheels in Lathes. They are made in four sizes. The smallest is made specially for use with electric drills of ¼-inch capacity.

No. 748 4 inches ¼ inch ¼ inch ¼ inch (ZAWEN) $1.00
No. 321 4 inches ¼ inch ¼ inch ¼ inch (YILNE) 1.00
No. 322 4⅜ inches ¼ inch ¼ inch ¼ inch (YILYS) 1.00
No. 323 7 inches ¼ inch ¼ inch ¼ inch (YIMEP) 1.40
No. 324 10 inches 1 inch 1 inch ¾ inch (YIMNA) 3.30

Packed one in a pasteboard box.

No. 95 Hand Knurling Tool

This is a very convenient outfit for hand knurling. The knurl in use is held in the forged steel shank. Extra knurls are contained in the rosewood handle. The shank is polished and nickel plated.

The three knurls are ⅛ inch in diameter and ⅛ inch thick, with a ¼-inch face. They are finely cut by automatic machinery. “A” Knurl is plain straight. “B” Knurl is fine cross. “C” Knurl is medium cross.

Length of tool, 9½ inches. Net weight, 7 ounces.

Price of set, complete with 3 Knurls .................................. (YAVBY) $2.75
Extra Knurls, each .......................................................... .55

Packed one set in a pasteboard box, 10 x 1½ x 1½ inches. Weight, 9 ounces.

Small Motor Attachments
Fitting Motors with ½-inch Shaft

No. 761 Drill Chuck

This is our regular No. 15½ Chuck, described on page 125, mounted on a special arbor to fit a ¼-inch shaft. Arbor is fitted with two set screws. Chuck has three hardened steel jaws for holding round shank drills from 0 to ½ inch in diameter. Length over all, 4¼ inches. Weight, 11 ounces.

Price, each ................................................................. (ZLALE) $3.30

No. 762 Saw Arbor and Buffing Spindle

This combined Arbor and Spindle has a shank that can be fitted on to a ¼-inch shaft and held by the two set screws provided. Arbor takes Saws or Wheels with ¼-inch hole. Flanges open ¼ inch. The Taper Spindle on the end of the Arbor has a deep, clean thread for handling wood centered wheels. Length, 5½ inches. Weight, 11 ounces.

Price, each ................................................................. (ZLYME) $3.30

Small Motor Attachments
Fitting Motors with ¾-inch Shaft

No. 757 Drill Chuck

This Chuck is similar to No. 761, except that it is smaller. The three hardened steel jaws hold round shank drills from 0 to ¾ inch. The special shank fits a ¾-inch shaft. Length, 3½ inches. Weight, 3 ounces.

Price, each ................................................................. (ZAYON) $2.50

No. 758 Saw Arbor

Smaller than No. 762 above and without the tapered Spindle. The shank fits a ¾-inch shaft and the Arbor will take saws or wheel with a ¾-inch hole. Opening between flanges, ¼ inch. Length over all, 3½ inches. Weight, 4 ounces.

Price, each ................................................................. (ZAYUP) $1.65

Buffing Spindles

These Buffing Spindles have a clean, deep tapered thread for holding wood centered wheels. They are made with both right and left hand threads. The shank is made to fit a ¼-inch shaft. Length, 3½ inches. Weight, 2 ounces.

Price, Each
No. 759. Spindle with R. H. Threads .................................. (ZAEZT) $1.10
No. 760. Spindle with L. H. Threads .................................. (ZAEZM) 1.10
No. 644 Bench Milling Machine

This Bench Milling Machine is designed to give compactness and solidity in a machine having a remarkably wide range of work at a price within reach of amateurs, experimenters, and every small shop.

This machine has a three step cone pulley, 1½, 2½, and 3½ inches in diameter, for 1-inch driving belt. The live spindle is ground to size and has a cone bearing to take up wear. Spindle has a No. 1 Morse Taper hole and the nose is threaded to take the Compression Chuck which is furnished with each machine.

The table is accurately machined 11½ x 3½ inches and can be fed three ways by hand wheels. It is provided with a ½-inch T-slot for fastening work to bed. Feed screw can be disconnected and a lever feed used for longitudinal travel. Feed screws on both top and cross slides have graduations for fine adjustment and are provided with means for taking up wear. Knee is elevated by a screw operated by a hand wheel at the back of the frame. The ways to which the knee is fitted are a part of the frame. Provision is made to take up wear on all slides. The large bearing surfaces of all slides insure rigidity of the table. The machine is mounted in a cast iron bed or pan for holding oil and chips.

Longitudinal feed of table: With screw, 7 inches; with lever, 48 inches.

Traverse feed, 2 inches. Vertical motion of knee, 7 inches. Height over all, 14 inches. Bench space required, 15½ x 21 inches without lever, 21 x 24 inches with lever. Bench space of pan or bed, 8 x 12 inches. Net weight, 51 pounds.

Maximum distance between center of spindle and table, 5½ inches.

This machine is furnished complete with a Compression Chuck with ½-inch bushing. No countershaft, arbor, vise, or centers are furnished but must be purchased separately.

Price ........................................... (zadap) $125.00

Packed in a wooden case, 20 x 16½ x 10 inches. Shipping weight, 73 pounds.

Milling Machine Vises

No. 616. This Vise has 2 x ½ inch jaws that open 1 inch. It is provided with clamps for fastening it to the table of the No. 522 Milling Attachment and No. 644 Milling Machine. Net weight, 1½ pounds.

Price of Vise, complete with Clamps .................. (zados) $8.50

Packed one in a pasteboard box, 4 x 4 x 1½ inches. Weight, 1¼ pounds.

No. 659. This Vise is the same as No. 646 described above, but is equipped with a swivel base graduated over an arc of 90 degrees. Net weight, 1¼ pounds.

Price, each ........................................ (zafoto) $16.50

Packed one in a pasteboard box, 5½ x 4½ x 1½ inches. Weight, 1¼ pounds.

No. 648 Plain Index Centers

Readily clamped in position on the table of the No. 522 Milling Attachment or No. 644 Milling Machine, greatly increasing the range of work. The extreme distance between these centers on the No. 522 Attachment is 3 inches; on the No. 644 Milling Machine 5½ inches; the swing is 1½ inches. The Index Plate is provided with 36, 40, and 48 holes, making possible any indexing desired. Special Index Plates made to order. Net weight, 1¾ pounds.

Price, per set ........................................ (zadaro) $55.00

Packed one set in a pasteboard box, 6 x 4½ x 3½ inches. Weight, 1¾ pounds.

No. 649 Universal Index Centers

These Centers make possible the accurate milling of tapers, in making small cutters, reamers, etc. They are exactly the same size as those described above, but the center head can be set at any angle from 0 to 90 degrees. The other center is adjustable for height. Net weight, 1¾ pounds.

Price, per set ........................................ (zafot) $100.00

Packed one set in a pasteboard box, 4½ x 4½ x 3½ inches. Weight, 1¾ pounds.

No. 669 Milling Machine Arbor

This Arbor fitted with a No. 1 M. T. Shank to fit the Spindle of No. 644 Milling Machine is designed for cutters with a ½-inch hole. This Arbor carries five collars of varying widths.

Price, each ........................................ (zahwo) $13.20

Packed one in a pasteboard box.
Precision Model Lathe

No. 700

Skilled mechanics, watchmakers, and experimenters who desire a Lathe of moderate price that will handle small, delicate work will find that this machine fulfills their requirements. It is thoroughly practicable in every way, and capable of all classes of work within its capacity, yet all unnecessary expense has been eliminated in its construction.

It is thoroughly well made, and in perfect alignment. The Bed is carefully scraped by hand. All iron parts except the polished bearing surfaces are finished in black enamel; steel parts are polished.

The Lathe has a 12-inch Bed, an extreme distance between centers of 3½ inches, and swings 5 inches. It is furnished complete with a draw-in Spindle with a ¾-inch hole clear through. A Hand Rest and a Tail Stock are also provided. The Pulley has four steps for ¼-inch round belt.

Height above bench, 8½ inches. Net weight, 9½ pounds.

Price, each .............................................. (net) $44.00

Packed one in a pasteboard box, 13½ x 8½ x 4½ inches.

Weight, 10½ pounds.

Attachments and accessories for use in connection with this Lathe are shown on pages 372 to 377. We can also recommend the No. 180 and No. 180½ Scroll Chucks on page 123.

This Set consists of 1 No. 700 Precision Model Lathe; 1 Fig. Z Countershaft; 1 Fig. G Table Rest; 1 Fig. D Saw Arbor (without saw); 1 Fig. V Step Chuck; 4 Fig. A Round Wire Chucks to hold ¼, ½, ⅜, and ⅜ inch. The Lathe and Attachments are put up in a nicely finished hardwood case, as shown in the illustration.

Price, per set, complete in case ....................... (wholesale) $72.00

Size, 14½ x 11½ x 5½ inches. Weight, 17 pounds.
No. 710 Compound Slide Rest

Our Compound Slide Rest has a double micrometer adjustment, exceptionally wide bearing surfaces, is solid and perfectly adapted for all possible requirements of one of its size. It clamps directly to the lathe bed, being held firmly. It may be set to turn at any angle, the whole circle being graduated in degrees. Its tool post takes a lathe tool ½ x 1 inch. It has micrometer lead screw. Gibs are provided to take up all wear of the slides. Bearing surfaces are scraped to a perfect fit. It has 21-inch movement on bottom slides and ways, 21-inch cross feed, 21-inch longitudinal feed.

Price, each ................................................. (EAMO) $85.00
Packed one in a pasteboard box, 10 x 6½ x 3½ inches. Weight, 3½ pounds.

No. 714 Lathe Tools
For use with No. 710 Slide Rest
Size ½ x ¾ inch

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Milling Attachment
No. 715

This Milling Attachment is designed for use on our No. 710 Slide Rest and can be instantly and firmly clamped on. It is possible to perform many intricate milling operations with it, including both straight and bevel gear cutting. The spindle of this Attachment will hold any of the regular Chucks made for the No. 700 Lathe. The Screw has a fine adjustment reading to .001 inch. The Spindle swivels 90°. Each attachment is furnished with one 48-tooth Index Plate. Interchangeable Index Plates can be furnished to order.

Price of Attachment, complete ................................................. (EAMO) $60.00
Packed one in a pasteboard box, 7¼ x 3½ x 3½ inches. Weight, 2 pounds.

Milling Cutters
For use with No. 715 Attachment
Shanks ½ inch diameter

These Milling Cutters are made of the best grade of cutter steel, properly tempered and capable of giving good service. They are made with ¼-inch round shanks to fit our No. 715 Milling Attachment, but they will be found extremely useful in any shop for use with other machines in doing many small special jobs.

Price, each ................................................. $3.00
Boring Attachment
No. 720

This comprehensive and complete fixture for boring or truing small holes can be instantly clamped to the Tail Stock and is then ready for work, no matter at what angle the Slide is set. The tool has a 4-inch movement off center by turning the screw. It can also be set to bore the smallest hole with almost absolute trueness. The Disc on the Screw is graduated with a vernier to .000125. Gibs are provided to take up all wear on the slides.

Price, complete with \( \frac{1}{8} \) inch Boring Tool ............. (ZANOY) $40.00

We also make \( \frac{1}{4} \) inch and \( \frac{1}{2} \) inch Chucks for holding Boring Tools. The Boring Tools are made \( \frac{1}{4} \) and \( \frac{1}{2} \) inch to fit the \( \frac{1}{4} \) inch Chuck; and \( \frac{1}{2} \) inch fitting the \( \frac{1}{2} \) inch Chuck.

Chucks. Price, each ............... $2.00
Boring Tools. Price, each .......... 2.00

Countershafts

Figure Z

This Countershaft is adapted for use when driving the No. 700 Lathe by Foot Power. It is also a convenient tool for many other uses.

The Cone Pulley has four steps from 2 to 3 inches in diameter for \( \frac{1}{4} \) inch round belt. The Receiving Pulley is 2 \( \frac{1}{4} \) inches in diameter with a \( \frac{1}{4} \) inch face grooved so that either \( \frac{1}{4} \) inch round or 1-inch flat belt may be used.

Fig. Z. Price, each (ZANOY) $8.00

This Wall Countershaft is designed for driving the No. 700 Lathe by steam or electric power. It is, however, solid and well made so that it can be used for any other small machine.

The Cone Pulley has four steps 2 to 3 inches in diameter for \( \frac{1}{4} \) inch round belt. The Tight and Loose Pulleys are 2 inches by 1 inch for 1-inch flat belt.

Fig. PZ. Price, each ............. (ZANOY) $10.00

Sawing Attachment
No. 725

This useful attachment adds quite a little to the Lathe’s capacity for small pattern or model work, as well as for many intricate parts. It is easily attached to the Lathe, making a well made and serviceable Saw for light wood work.

The adjustable Table is 4 inches in diameter. The Saw Frame holds \( \frac{1}{4} \) inch Saws and has a 5-inch Throat. Length of stroke, 1 inch.

We do not furnish Saws for this attachment.

Price, each (ZANOY) $17.50

Round Wire Chuck
Figure A

Regular Sizes

\[ \begin{align*}
1 & : 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7, 7.5, 8
\end{align*} \]

Price, each ................... $1.60
Other standard sizes \( \frac{1}{2} \) to \( \frac{1}{2} \), each ........... 2.20
Special dimensions, prices on application.

Expansion Chuck
Figure B

5 Sizes

\[ \begin{align*}
\frac{1}{4}, \frac{3}{8}, 1, 1\frac{1}{8}, 1\frac{1}{4}, 1\frac{1}{2}, 2
\end{align*} \]

Price, each ................... $2.70

Three Jaw Chuck
Figure C

\( 0 - \frac{1}{8} \), Capacity

Price, each ................... $4.50

Square Wire Chuck
Figure D

5 Sizes

\[ \begin{align*}
\frac{1}{4}, \frac{3}{8}, 1, 1\frac{1}{8}, 1\frac{1}{4}, 1\frac{1}{2}, 2
\end{align*} \]

Price, each ................... $2.25

Right Angle Chuck
Figure N

5 Sizes

\[ \begin{align*}
\frac{1}{4}, \frac{3}{8}, 1, 1\frac{1}{8}, 1\frac{1}{4}, 1\frac{1}{2}, 2
\end{align*} \]

Price, each ................... $2.25
**Shoulder Chucks**

Fig. II. 1/2", each $2.50
Fig. P. Special sizes to order 3.00

**Step Chucks**

Fig. V. 1 1/2" diam., each $5.00
Fig. Q. 1/2" diam., each 3.50

**Saw Arbor Figure D**

**Cement Chucks**

Fig. I. 1/2" diam., each $1.00
Fig. J. 3/4" diam., each 1.50

**Tail Stock Center**

Fig. W. Price, each $1.00

**V-Center for Tail Stock**

Fig. K. Price, each $1.25

**Center Face Plate**

Fig. F. 1 1/2". Price, each $5.00

**Screw Center Face Plate**

Fig. Y. Price, each $4.00

**Clamp Face Plate**

Fig. L. 2". Price, each $7.00
Fig. S. 4". Price, each 10.00

**Screw Face Plate**

Fig. U. 4". Price, each $10.00

**Lead Lap**

Fig. T. 4". Price, each $10.00

**Table Rest**

Fig. M. Price, each $3.50

**V-Slot Clamp Plate**

Fig. R. 1 1/2". Price, each $4.00
Fig. G. Price, each $4.50
No. 116 Foot Power


Price, each $12.00
Packed one in a wooden case, 19 x 17 x 8 inches.
Shipping weight, 34 pounds.

No. 35 Foot Power

A heavier Wheel, 20 inches in diameter, with a turned and grooved face 1½ inches wide for round or flat belt. Treadle remains stationary when not being worked. No dead center. Finished in red and black enamel. Net weight, 64 pounds.

Price, each $18.00
Packed one in a wooden case, 25 x 21 x 8 ½ inches.
Shipping weight, 82 pounds.

No. 117 Foot Power

Similar to No. 35 above, but with a leather strap pull instead of chain. Heavy return spring. No dead center. Finished in red and black enamel. Net weight, 64 pounds.

Price, each $24.00
Packed one in a wooden case, 24½ x 21 x 10 inches.
Shipping weight, 81 pounds.

Geared Foot Power

No. 122

A powerful double treadle Machine geared 3 to 1, giving the heavy Drive Wheel great power. Wheel has a turned and grooved face 1½ inches wide for flat or round belt. Finished in red and black enamel. Height, 23 inches. Net weight, 81 pounds.

Price, each $27.50
Packed one in a wooden case, 28 x 14 x 12 inches.
Shipping weight, 101 pounds.

Turret Head Tool Set

No. 10

Handle Patentd September 30, 1910; November 17, 1911

This Set consists of a polished hardwood Handle with a patented magazine containing five Fluted Awls, two small Screw-Driver Blades, and a Scratch Awl, each in a separate compartment. The Fluted Awls will be found vastly superior to other kinds, as they are very much less liable to split the work. All tools are made of tool steel drill rod and are carefully tempered. All the metal parts of the Handle are polished and nickel plated.

Length of Handle, 5 inches. Length of Tools, 2 inches.

Price, each $1.45
Packed one in a pasteboard box, 5½ x 1½ x 1½ inches.
Weight, 6 ounces.

Universal Tool Handle

No. 13

This Handle will hold any small square shank tools similar to those furnished with our Hollow Handle Tool Sets. The Handle is polished hard wood. All metal parts are polished and nickel plated.

Length over all, 7½ inches. Net weight, 7 ounces.

Price, each $1.10
Packed one in a pasteboard box, 7½ x 2 x 1½ inches.
Weight, ½ pound.
Hollow Handle Tool Set
No. 11

We have recently provided this popular tool with a new style of Chuck which greatly increases its effectiveness.

This tool has a beautifully polished Rosewood Handle with a screw cap. The cap can be easily removed for access to the tools which are contained inside of the Handle when not in use.

There are ten small tools in this Set. They are all made in our own forging plant under the same careful supervision as our other high-grade forged tools. They are made of a good grade of tool steel, correctly hardened and tempered.

The all-steel Chuck on this tool is extra long, giving a very firm grip that is easily tightened or loosened. It is nickel plated and polished.

Length of Tool Handle, without tools, 6½ inches. Approximate length of tools, 2½ inches. Weight, complete, 6 ounces.

Price, each................................................. (WYSSA) $2.20

Packed one set in a pasteboard box, 7 x 1¼ x 1¾ inches.

Weight, 8 ounces.
Hollow Handle Tool Set
No. 12

This Set is of exactly the same quality as the No. 11 shown on pages 380 and 381. It is very much larger, however, and is equipped with only eight tools.

The Handle of this tool is beautifully polished Rosewood with a screw cap. The cap can be easily removed for access to the tools which are contained inside of the Handle when not in use.

There are eight tools in this Set. They are all made in our own forging plant under the same careful supervision as our other high-grade forged tools. They are made of a good grade of tool steel, correctly hardened and tempered.

The all-steel Chuck on this tool is extra long, giving a very firm grip that is easily tightened or loosened. It is polished and nickel plated.

Length of Tool Handle, without tools, 7 1/2 inches. Approximate length of tools, 4 inches. Weight, complete, 12 ounces.

Price, each ........................................... (Wylem) $3.30

Packed one set in a pasteboard box, 8 x 2 x 2 inches.
Weight, 14 ounces.

Hollow Handle Tool Set
No. 12½

Same as above, but with two different size awls in place of the large size gouge.

Price, each ........................................... (Wylla) $3.30

Packed one set in a pasteboard box, 8 x 2 x 2 inches.
Weight, 14 ounces.
This Set contains an assortment of high-grade tools of exceptional value in the home, the office, or the workshop. They are conveniently arranged in a handsome hardwood case. The attractiveness of this Set will be appreciated at once by any one.

The following tools are contained in the Set:

No. 2 Rosewood Handle Automatic Drill,
with 8 Drill Points \( \frac{1}{32} \) to \( \frac{1}{16} \) inch.
No. 13 Universal Tool Handle for Holding:
2 Chisels
1 Reamer
1 Screw-Driver
1 Saw
No. 66 Ratchet Screw-Driver, 1\( \frac{1}{2} \)-inch
No. 66 Ratchet Screw-Driver, 6-inch
No. 997 Saddlers' Drive Punch
No. 998 Prick Punch
No. 999 Nail Set

Size of case, 13 x 5\( \frac{1}{2} \) x 3 inches. Net weight, 3\( \frac{1}{2} \) pounds.

Price, each, complete as shown .............................................. (ZANZA) \$8.80

Each complete set is packed in a pasteboard box, 13\( \frac{1}{2} \) x 5\( \frac{1}{2} \) x 3\( \frac{1}{2} \) inches.

Weight, 3\( \frac{1}{2} \) pounds.

This Set is somewhat larger than the one shown on the preceding page and contains a more complete assortment of high-grade tools as follows:

No. 2 Automatic Drill
No. 13 Tool Handle for Holding:
8 Drill Points, \( \frac{1}{32} \) to \( \frac{1}{16} \) inch
2 Chisels
2 Brad Awls

No. 3 Glass Cutter
No. 3 Hack Saw Frame
6 Coarse Hack Saw Blades
3 Fine Hack Saw Blades
2 Extra Fine Hack Saw Blades
1 Reamer
1 Polished Bone Saw
1 Saw

No. 36 Spoke Shave
No. 996 Solid Punch
No. 66 Ratchet Screw-Driver, 1\( \frac{1}{2} \)-inch
No. 997 Saddlers' Punch
No. 66 Ratchet Screw-Driver, 6-inch
No. 998 Prick Punch
Small Oil Stone
No. 999 Nail Set

Size of case, 16 x 8\( \frac{1}{4} \) x 3\( \frac{1}{4} \) inches. Net weight, 6 pounds.

Price, each .............................................................. (ZAPUG) \$13.75

Each one packed in a pasteboard box, 16\( \frac{1}{2} \) x 8\( \frac{1}{4} \) x 3\( \frac{1}{2} \) inches.

Weight, 7 pounds.
**No. 711 Home Companion Tool Set**

This Set and the two that follow are the same as Set No. 710, with the addition of a drawer holding this additional equipment:

- No. 41 Hand Drill.
- No. 200 Metal Punch.
- No. 92 Brass Hammer.
- No. 503 Iron Level.
- No. 33 Gunsmith's Screw-Driver.

Size of case, 16 x 8 1/2 x 5 1/2 inches. Net weight, 10 1/2 pounds.

Price, per set, complete .............................................. \( \text{ZARAD} \) $22.00

Each complete set is packed in a pasteboard box.

Weight, 11 1/2 pounds.

---

**No. 712 Home Companion Tool Set**

Same as Set No. 710, with the addition of a drawer containing the following equipment:

- No. 221 Roller Gauge.
- No. 513 Iron Level.
- No. 93 Brass Hammer.
- No. 33 Gunsmith's Screw-Driver.
- No. 89 Tap Holder.
- No. 41 Washer Cutter.
- No. 200 Metal Punch.
- No. 906 Try Square.

Size of case, 16 x 8 1/2 x 5 1/2 inches. Net weight, 13 pounds.

Price, per set, complete .............................................. \( \text{ZARAD} \) $30.00

Each complete set is packed in a pasteboard box.

Weight, 14 pounds.

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**No. 713 Home Companion Tool Set**

Same as Set No. 710, with the addition of a drawer containing the following equipment:

- No. 4 Hand Drill.
- No. 906 Try Square.
- No. 221 Roller Gauge.
- No. 96 Hand Vise.
- No. 89 Tap Holder.
- No. 33 Gunsmith's Screw-Driver.
- No. 513 Iron Level.

Size of case, 16 x 8 1/2 x 5 1/2 inches. Net weight, 13 pounds.

Price, per set, complete .............................................. \( \text{ZARAD} \) $33.00

Each complete set is packed in a pasteboard box.

Weight, 14 pounds.
Sundry Tools

At different times in the past we have been prevailed upon to bring out tools for more or less specialized operations, the demand for which is of a sectional or local character. These tools are carried in our regular stock and can be furnished very promptly on order. With our line constantly growing, however, we do not feel justified in devoting as much space to these items as heretofore. Larger cuts and more complete descriptions will be gladly furnished on request.

No. 105 Automatic Drill

Of simpler construction than our other Automatic Drills. A thoroughly practical tool, which represents a big drill value. Steel Spiral, brass Center Nut, with nicely polished Handle. Eight Fluted Drill Points, \( \frac{1}{8} \) to \( \frac{1}{4} \) inch in diameter, furnished. Length, 13 inches.
Price each. \( \frac{M}{Y} \) 2.00

No. 315 Surgeons' Drill

A light, smooth running Bone Drill for surgeons' use. Construction simplified to the utmost for thorough sterilization. Finish, white and full nickel. Four special Drill Points, \( \frac{1}{4}, \frac{3}{16}, \frac{1}{8}, \) and \( \frac{3}{64} \) inch in diameter, furnished. Length, 10 inches.
Price each. \( \frac{M}{Y} \) 3.00

No. 154 Hand Drill

Similar in all respects to our other Steel Frame Hand Drills, but considerably larger, having a three-jawed steel Chuck holding Round Shanks 0 to \( \frac{1}{2} \) inch in diameter. Polished Rosewood Handle with screw cap. Length, 10\( \frac{1}{2} \) inches.
Price each. \( \frac{M}{Y} \) 5.00

No. 19 Horizontal Bench Drill

Fitted with a milled Bed and adjustable Bracket. Steel Spindle has adjustable friction feed. Chuck has three hardened jaws holding Round Shank Drills 0 to \( \frac{1}{2} \) inch in diameter. Length over all, 25\( \frac{1}{2} \) inches.
Price each. \( \frac{M}{Y} \) 16.50

No. 113 Track Drilling Machine

A heavy-duty two-speed Drill for track drilling. Spindle adjustable, 7\( \frac{1}{4} \) to 13\( \frac{1}{4} \) inches, from the center tube. Boring Head travels 22 inches. Sliding Rest travels 29 inches. Total length, 66\( \frac{1}{4} \) inches. Weight, 67 pounds. Spindle has a \( \frac{1}{4} \) inch steel Socket for holding \( \frac{1}{4} \) inch Round Shank Drills. A chuck with 0 to \( \frac{1}{2} \) inch capacity furnished.
Price each. \( \frac{M}{Y} \) 45.00

No. 74 Clamp Drill

A fine Drill for heavy repair work. Two Speeds, Cut Gears, and Hand Feed. Fitted with a three-jawed Chuck with 0 to \( \frac{1}{2} \) inch capacity. Tube, 24 inches long. Drills to center of 16-inch circle. Weight, 42 pounds.
Price each. \( \frac{M}{Y} \) 15.00

No. 76 Clamp Drill

This tool is much larger and heavier than No. 74. Tube, \( \frac{1}{2} \) inches in diameter. Fitted with Socket for holding \( \frac{1}{2} \) inch Shank Drills. Also supplied with Chuck for holding Drills 0 to \( \frac{1}{2} \) inch diameter. Length, 30 inches. Weight, 75 pounds.
Price each. \( \frac{M}{Y} \) 30.00

No. 112 Clamp Drill

A \( \frac{1}{2} \) inch capacity Drill with two speeds, Screw Feed and Ratchet Attachment. Drilling Head adjustable to many angles at different distances from Standard. Both Hand and Chain Clamp provided. Length over all, 34 inches. Weight, 33 pounds.
Price each. \( \frac{M}{Y} \) 10.00

No. 79 Foot Power Drilling Machine

A sensitive high-speed Drill with a No. 122 double treadle Foot Power with geared drive. Feed operated by raising table. Drills to center of 6\( \frac{1}{2} \) inch circle. Fitted with all-steel Chuck with 0 to \( \frac{1}{2} \) inch capacity. Height, 54 inches. Height to table, 36 inches. Weight, 110 pounds.
Price, complete, with belt. \( \frac{M}{Y} \) 70.00

No. 51 Vise Drilling Attachment

Clamps into any but the smaller size vises, and can be used for many small drilling jobs. Handle-operated Chuck of all-steel three-jawed construction. Holds Drills up to \( \frac{1}{2} \) inch in diameter.
Price each. \( \frac{M}{Y} \) 5.00

No. 50 Wire Threader

Clamped in a vise, this tool cuts threads on wire spokes or rods up to \( \frac{1}{2} \) inch in diameter by simply turning a handle. Collet holds \( \frac{1}{4} \) or \( \frac{1}{2} \) inch diameter Dies. Specify which size wanted.
Price, each, without Dies. \( \frac{M}{Y} \) 4.50
No. 120 Foot Power Table
A complete equipment in itself of Foot Power, Countershaft, and Bench, so arranged that almost any kind of small machine can be set on the bench and driven from the countershaft below. Pulleys grooved for round belt, but flat belt can be used if desired. Height, 39 inches. Top, 24 x 14 inches. Drive Wheel, 20 inches in diameter. Countershaft Receiving Wheel, 3 inches in diameter. Countershaft Driving Wheel, 8 1/2 inches in diameter. Weight, 115 pounds. Price, complete, with belt shown. (Yeast) $37.50

No. 306 Bench Grinder with Lathe Attachment
This Grinder is similar to No. 109, with lathe bed 18 inches long and a tredle added. Spur Center combined with wheel nut. Adjustable Tailstock and TEE Rest provided. Distance between centers, 12 inches. Swing, 5 inches. Fitted with high-grade abrasive Wheel, 4 x 1 inch. Clamps to any ordinary table or bench. Weight, 29 pounds. Price, each, complete. (Yeast) $16.50

No. 143 Bench Grinder
This is the regular No. 142 Grinder fitted with a special Pin-Pointing Device. Attachment easily removed if desired. Supplied with 4 x 1 inch high-grade abrasive Wheel, also a Chuck for holding Round Rods or Drills from 0 to 1 inch in diameter. Price, each. (Yeast) $22.00

No. 118 Tool Grinder
A powerful Foot Power Grinding Machine. Foot Power is geared and has double tredle. In every respect same as No. 122 Foot Power. Speed up to 3000 revolutions. The Grinding Head mounted on the table is No. 264, which will take Wheels up to 10 inches in diameter with 3-inch face and 1/4-inch hole. Floor space required, 18 x 12 inches. Height to top of wheel, 44 inches. Table, 10 x 9 inches. Weight, 109 pounds. Necessary belt furnished. Price, each. (Yeast) $45.00

No. 119 Tool Grinder
The same as No. 118 above, except for the head, which is our No. 27, with a Taper Screw on one end of the spindle and a three-jawed Chuck of 0 to 1/2 inch capacity, and Flanges for a 6 x 1/2 inch wheel on the other. Price, each. (Yeast) $47.00

No. 123 Polishing Machine
A useful combination of a Foot Power with No. 23 Polishing Head. Spindle has a Tapper Screw on one end and a three-jawed Chuck of 0 to 1/2 inch capacity, and a set of Flanges for holding 10 x 1/2 inch wheels on the other. Height, 45 inches. Necessary belt furnished. Drive Wheel, 29 inches in diameter. Table, 10 x 5 inches. Weight, 64 pounds. Price, each. (Yeast) $28.00

No. 124 Polishing Machine
This machine is identical to No. 123 above, except the head, which is our No. 24, and is heavier, having a three-jawed Chuck with 0 to 1 inch capacity. Price, each. (Yeast) $30.00

No. 77 Kitchen Saw
An unusually good inexpensive Kitchen Meat Saw. Frame is made of 1/2-inch nickel plated steel shaped so that the natural spring gives the proper tension on the blade. Blade is 12 inches long and 1/4 inch wide. There is no better blade made than this. Length over all, 15 inches. Depth of throat, 4 1/2 inches. Price, each. (Yeast) $0.70

No. 527 Cutting-Off Tool
An efficient tool for cutting off any kind of round stock up to 1 1/2-inch diameter in a lathe. Set screw for setting the hardened guides to a running fit on the rod. Length gauge for cutting short pieces, pins, dowels, etc. Cutter made of hardened tool steel. Price, each. (Yeast) $4.50

No. 12 Tail Stock
Set up for use with a Polishing or Grinding Head, this Tail Stock permits drilling and other useful operations. Vertical adjustment 6 to 9 inches. Lever arm has two different throws. Face plate, 3 inches in diameter. Price, each. (Yeast) $6.25

No. 225 Circular Gauge
Similar in construction to our No. 220, illustrated and described on page 327, but with two-point contact so that circles and ovals may be gauged. Has 8-inch graduated beam. Full nickel finish. Price, each. (Yeast) $1.30

No. 226 Circular Gauge
Same as No. 225, with addition of a fine screw adjustment for close work. Full nickel finish. Price, each. (Yeast) $2.20
**No. 114 Doweling Machine**

An adjustable jig for boring dowel pin holes, 1/8, 1/4, 1/2, and 3/4 inches in diameter, for exact fits. Fitted with screw clamp and steel rule gauges.

**Price, each** ($10.00)

---

**No. 468 Cabinet Scraper**

A very compactly built Scraper for close work inside of cabinets, boxes, etc. Large hardwood handle. Reversible blade, 3 x 4 1/2 inches, is made of the finest hardened and tempered tool steel.

**Price, each** ($1.65)

---

**No. 37 Spoke Shave**

A tool for pattern makers for finishing shoulders, corners, grooves, and similar places where the ordinary spoke shave cannot be used. A protector is furnished so that one knife can be covered. Length, 3 3/4 inches. Weight, 4 ounces.

**Price, each** ($1.25)

---

**No. 32 Screw-Driver**

A bench tool for rapidly driving small screws in assembling hardware, firearms, or parts of machines. Blades rotate in one direction continuously by moving the handle back and forth over the steel spiral.

**Price, each** ($5.50)

---

**No. 232 Pocket Screw-Driver**

Blade slides into the handle when nut is loosened and locks closed. Blade forced out by spring when wanted. Blade tempered tool steel. Handle made of brass beautifully nicked and buffed. Length closed, 4 inches; open, 5 1/2 inches. Weight, 4 ounces.

**Price, each** ($1.10)

---

**No. 100 Automatic Screw-Driver**

This is our No. 101 Reooprator fitted with three tempered steel Screw-Driver Blades and a Chuck that holds them securely. A practical tool for driving small and medium size screws very rapidly. Length over all, 12 1/2 inches.

**Price, each** ($3.00)

---

**No. 207 Bit Brace Chuck**

These Chucks are all steel, with two hardened forged jaws for holding square shank drills. The hardened ends are to fit bit brace or other two-jawed chucks.

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<th>Length Over All</th>
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<td>12 inches</td>
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<td>15 inches</td>
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<td>18 inches</td>
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<td>20 inches</td>
<td>($2.00)</td>
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<tr>
<td>24 inches</td>
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**No. 17 Chuck for Square Shanks**

An all-steel Chuck with two hardened jaws for square shank drills. It is fitted with either 1/4 or 1/2 inch round shanks as specified. Useful for using square shank drills in machines with round sockets or three-jawed chucks.

**Price, each** ($2.20)

---

**No. 340 Clapboard Marker**

A greatly improved marker for right or left hand use. Cutters beveled on one side only, insureing close joints. Accommodates itself to varying thicknesses. White nickel finish.

**Price, each** ($2.00)

---

**No. 39 Belt Tightener**

A strong, rapid device for pulling together belt ends for lacing or cementing. Handles belting up to and including 10 1/2 inches wide.

**Price, each** ($3.00)

---

**No. 179 Odd Jobs Chuck**

Holds almost any shape within its capacity. Diameter, 5 1/2 inches; thickness, 1 inch. Four studs with hardened set screws fit accurately into five rows of holes. Back recessed to fit 3-inch face plate and drilled and tapped for fitting. Set screws furnished. Weight, 4 1/2 pounds.

**Price, each** ($13.50)

---

**Pole Collars**

This set consists of one solid and one adjustable collar, each with an opening 1 inch square, for use on either solid or adjustable measuring poles. Where adjustable bars are used they should be about 1 inch by 1 inch.

No Bars are furnished.

No. 45. Black enamelled. Price, per set ($1.00)
No. 46. Polished and nickel plated. Price, per set ($1.10)
Dealers' Display and Stock Cabinet

The Cabinets shown on the following pages are made of selected quarter-sawed oak, beautifully finished. The construction is as near dust and moisture proof as is possible to make it. They measure 20 x 20 x 30 inches high.

You will find that these Displays not only stimulate your sales of fine tools, but will create an atmosphere decidedly helpful to other departments. They are silent salesmen and fixtures of the highest order.

The spacious stock shelves, reached through the door at the back, more than offset the small amount of counterspace required.

Assortment A is made up entirely of Machinists' and Precision Tools, a complete list of which will be furnished on request.

Assortment B is made up of tools of special interest for the Carpenter, Cabinetmaker and Home Workshop.

Assortment C is a general one made up of fast selling items covering a broad classification.

Assortment D is made up of tools designed especially for automobile maintenance and repair.
Dealers’ Display and Stock Cabinet

Assortment E. This is a single front wall cabinet similar to the foregoing, 24 inches wide, 30 inches high and 4 inches deep. This Assortment shows only the very fastest selling items in the Machinists’ and Precision Tool line.

Special display boards and panels will be made up for Dealers to match their fixtures. Complete specifications should be furnished, together with samples of the desired finish. More leeway in the assortment of tools to be shown results in more attractive displays.

Complete details and prices on the foregoing Stock Cabinets gladly furnished on request.
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