For ninety-nine years, Henry Disston & Sons, Inc., Philadelphia, has been manufacturing the saw that—
"For Beauty, Finish and Utility—cannot be excelled".
Disston Saws, Tools and Files have done much to
improve both wood and metal working the world
over. When a need arose for a new type of saw, a
better saw or a more efficient saw, Disston created it.
In this book, the new

you will find illustrated and described the Disston
Saws, Tools and Files which today are to be found in
the hands of thousands of craftsmen all over the
world. To those men and the thousands of younger
men who will turn to tools for a livelihood or for re-
creation, this Disston Manual is presented. It con-
tains useful and valuable information relative to the
selection of the proper tools for the job, and the
correct use and care of tools. Reference to this
up-to-date Manual will help every user of Disston
Saws, Tools and Files to keep his tools in condition
to do a better piece of work.
1840 Henry Disston began the manufacture of saws in Philadelphia, and trained saw makers in his methods. Disston saws rapidly displaced imported saws throughout America.

1855 Disston built his own furnace and cast the first crucible saw steel ever made in America. Disston steel has always been famous for the service it renders to users.

1865 Because he needed better files, Henry Disston began the manufacture of files in 1865. Today, Disston makes 250 kinds—more than 1,000 different cuts and sizes.

1874 Henry Disston designed the skew-back saw. Until then all hand saws had straight backs. He called it his engineer and with a piece of crayon drew the design on the office floor.

1894 Disston made America's first machine-hack saw blades. Millions of Disston Machine and Hand Hack Saw Blades are now in use throughout the world.

1906 Disston cast first heat of electric tool steel of crusible quality in America. Today, giant furnaces in Disston Steel Works make tool steel of this quality every day.

1918 Disston introduced the Sectional Inserted Tooth Milling Saw. In 1922, Disston was awarded the Franklin Institute Medal for this improvement.

1924 Disston made 110-inch Spiral Inserted Tooth Cut-off Saw for cutting single bolts from the large bags on the Pacific Coast. Each saw weighed 675 pounds; each had 110 teeth.

1929 Disston perfected and introduced Disston Carbon-steel, Riffle Knives, and Knives with cutting edges tipped with Carbide, the hardest alloy ever used for saws and knives.

1932 Disston metallurgists developed a new steel for thin planers and similar knives—a steel superior in many respects to high speed steel. It is called Dissteel.

1935 Disston developed the D-95 Masterpiece, a hand saw with new type handle, made of toughest, strongest molded material ever developed. Will not chip, shrink or warp.

99 YEARS OF DISSTON LEADERSHIP

In the United States, before 1840, American carpenters used saws made in Europe. Henry Disston, however, felt that he could make a finer saw than the European manufacturers, so he set to work in a cellar in Philadelphia.

Henry Disston was then twenty-two years old, a young man with vision, for he saw a need that he could fulfill. It was necessary to create a finer saw than the imported tool then in use, for the existent demand was for foreign goods.

Within a few years, saws made by Disston and his skilled workmen became known as “The Saw Most Carpenters Use”. Demand for foreign saws gave way to American workmanship and the Disston Saw Works was well under way. In time, foreign demand for quality tools and saws created export trade for Disston. Today, there is no place in the world where tools are used, which does not know the name, Disston.

For nearly a century, Disston has made advance after advance in the production of high grade saws. Today, Disston is looked upon as the leader in saw manufacturing.

Even though Disston Saws, Tools and Files are known all over the world, there are thousands of boys and young men who are now students in vocational schools and workshops, who may not know how important it is to use tools of Disston quality. Such tools, when properly taken care of, will last longer, give better service and in the end prove to be cheaper. A careful reading of this Manual will repay any one who may be interested in the use of tools.
DISSTON STEEL

Henry Disston, in his early years of saw making, was obliged to use foreign made steel. Having difficulty in obtaining high grade steel of uniform quality which he required for the production of hand saws, he determined to make his own steel. He then set about mastering the art of steel making, turning to crucible steel in order to obtain the highest grade steel of that day.

In 1885 Henry Disston built his own furnaces and melted the first Crucible Saw Steel ever made in America, becoming a pioneer in fine steel making. From that day on, Disston has been making its own saw and tool steel.

In 1906, faced with the necessity of making steel in larger heats, Disston again made a pioneering step. Electricity was used in heating the furnace and the first commercial heat of Electric Tool Steel of crucible quality ever made in America was cast in the Disston plant. Since then, Herolt Electric Furnaces, capable of pouring from three to six tons at a heat, have been placed in operation.

The steel mill in the Disston plant today is equipped with modern steam hammers, steel rolling mills, annealing furnaces and all other modern devices for making high grade saw and tool steels. Heat is controlled in the furnaces to the closest degree by pyrometers; testing is done by skilled men in the laboratories under the close supervision of Disston's nationally known metallurgists. Exacting tests and laboratory checks control the output of the Disston Steel Works at all times.

Disston Steel is known the world over and is famous for its toughness, stamina and long cutting life.

The high quality and uniformity of Disston Steels is such that manufacturers of other products who require steel to meet the most exacting requirements, come to Disston for their finer steels.

How to choose and use Hand Saws

To many persons, a saw is just a saw, but to the skilled mechanic there is one saw intended for each specific job. When choosing a hand saw it is important that the buyer consider the work to be done and not buy just a saw.

Disston Sawars are improved in every feature; lighter blades for easier sawing, narrower blades to save the user's strength, true taper ground from tooth edge to back and from butt to point on back, with even gauge along the entire tooth edge for easier, faster cutting.

Disston saws always run true. They will run with less set and stay sharp longer than any other saw made.

There are saws in the Disston line for every kind of sawing—wide blades (regular pattern), narrow blades (lightweight pattern) for ripping or cross cutting—each pattern made with fine, medium or coarse teeth—the right saw for your job.

TO MAKE a perfectly square end cut is easy, when the face of the board is marked square and a try square used, as illustrated, to keep the saw in a perfectly vertical position.
RIP SAWS

The rip saw is made for cutting with the grain. The teeth have an angle of 8° on the front and 52° on the back. The upper half of each tooth is set alternately, one to the right, one to the left, to give clearance. This set is equal to one-third or less of the thickness of the blade.

Distan Rip Saws have finer teeth at the point of the blade on saws points and coarser. Rip saws are made this way to make it easier to start the cut. The edge of a rip saw acts like vertical chisels, each tooth chipping out a small portion of the wood from the kerf.

How to Use a Rip Saw

The position for ripping should be such as to permit long, easy strokes. The user who does most of the cutting with a few inches of blade in the middle of the saw, has difficulty in keeping the line of the cut straight. He also dulls the saw more rapidly. To overcome this, he should do all the cutting in one pass, using the rip saw in both ripping and cross-cutting.

In ripping, the cut should be started with the finer teeth, at the point of the blade. The back stroke is done with the work supported on saw horses, but if the back stroke is kept in a fixed place, the teeth are kept in the proper cutting angle. An angle of 60° between the edge of the saw and the face of the work, as illustrated below, gives best results when using a rip saw.

Distan Rip Saws cut with extreme ease when kept properly sharpened. It is not necessary or desirable to force them in the cut.

No saw can be expected to give good service indefinitely without sharpening. Owners claim Distan saws require less sharpening than others when sharpened, their keen edges longer.

CROSS-CUT SAWS

The cross-cut saw, being designed to cut across the grain, cuts with an action similar to a number of small knife blades. The front faces of the teeth of a cross-cut saw have an angle of 15°, the back of the teeth have an angle of 45°. The teeth are usually filed with a bevel of about 24°. The upper half of each tooth is set alternately, one to the right, the other to the left, to give clearance. The true taper grind of Distan Hand Saws gives them additional clearance and makes them run easily with less force than is the case with saws ground in the ordinary manner.

The amount of set given a saw is highly important because it determines the ease with which the saw runs; it insures accuracy of cutting; and it helps keep the saw sharp for a longer time.

How to Use a Cross-cut Saw

Keep your saw SHARP and properly set. Instructions for setting and filing are given on pages 10 to 22. The correct position for cross-cutting is shown at right. An imaginary line through the saw arm and shoulder should be slightly to the left of the saw blade, permitting view of the line where the work is to be cut.

To start the cut, rest the blade on the waste side of the work under the arm. The edge of the saw blade with the thumb and draw the saw toward you a few times until a slight groove is formed; then cut straight with a full stroke. In cross-cutting, it is best to maintain an angle of 45° between the saw and the face of the work. Extending the forefinger along the side of the handle aids in guiding the blade. Take long, easy strokes and make each stroke do its work.

Supporting the waste side of the work will prevent the wood from splintering on the under side when the cut is nearly completed. Do not twist or pull the saw blade.

Look carefully at repair work to see that there are no nubs in the path of the saw. Don't throw the saw around; keep blade covered with a thin coat of light oil and hang it up when not in use.
DISSTON D-95 MASTERPIECE

The Disston D-95 Masterpiece Hand Saw is the finest saw ever made. Streamlined for beauty, action, service! Blade of the finest Disston Steel, perfectly ground, set and filed; polished to a brilliant lustre. Entirely new design in handle construction. Handle made of the toughest, strongest molded material ever developed for practical industrial purposes. Blade fits snugly into recess of handle and over 4 hollow-molded dowels. Shield, over dowels, is attached with 4 chrominum-plated screws, lock washers and nuts. Cannot work loose. Color combinations:

- Oxy Green and Red Shield;
- Brown and Green Shield;
- Brown and Orange Shield

Packed individually in an attractive box.

D-15 Lightweight Pattern

Straight-back

Cover-top, carved rosewood handle, weatherproof finish, roomy comfortable grip. Nickel-plated screws. Disston Steel blade, striped back, true taper ground. Beautifully finished. This saw, the D-15 and D-16 are three of the finest hand saws ever manufactured.

Lengths:

- 24" - 8.9.10.11 points.
- 26" - 8.9.10.11 points.

D-12 Lightweight Pattern

Straight-back

Cover-top, carved applewood handle, weatherproof finish. Nickel-plated screws. Disston Steel blade, striped back, high polish, true taper ground. Beautifully finished. This saw, the D-15 and D-16 are three of the finest hand saws ever manufactured.

Lengths:

- 24" - 8.9.10.11 points.
- 26" - 8.9.10.11 points.

D-15 Regular Pattern

Skew-back


Lengths:

- 26" - 8.9.10.11 points.

D-12 Regular Pattern

Skew-back

Cover-top, carved applewood handle, weatherproof finish. Nickel-plated screws. Disston Steel blade, striped back, high polish, true taper ground.

Lengths:

- 24" - 8.9.10.11 points.
- 26" - 8.9.10.11 points.

D-23 Lightweight Pattern

Straight-back

Cover-top, carved applewood handle, weatherproof finish, brass screws. Disston Steel blade, striped back, true taper ground. Beautifully finished. This saw, the D-15 and D-16 are three of the finest hand saws ever manufactured.

Lengths:

- 20" - 8.10.12 points.
- 22" - 8.10.12 points.

D-25 Lightweight Pattern

Straight-back

Cover-top, carved applewood handle, weatherproof finish, brass screws. Disston Steel blade, striped back, true taper ground. Beautifully finished. This saw, the D-15 and D-16 are three of the finest hand saws ever manufactured.

Lengths:

- 20" - 8.9.10.11 points.
- 22" - 8.9.10.11 points.
- 24" - 8.9.10.11 points.
- 26" - 8.9.10.11 points.

D-8 Lightweight Pattern

Skew-back

Cover-top, carved applewood handle, weatherproof finish. Nickel-plated screws. Disston Steel blade, striped back, true taper ground. Beautifully finished. This saw, the D-15 and D-16 are three of the finest hand saws ever manufactured.

Lengths:

- 24" - 8.9.10.11 points.

D-7 Lightweight Pattern

Straight-back

Cover-top, carved applewood handle, weatherproof finish, brass screws. Disston Steel blade, striped back, true taper ground. Beautifully finished. This saw, the D-15 and D-16 are three of the finest hand saws ever manufactured.

Lengths:

- 20" - 8.9.10.11 points.
- 22" - 8.9.10.11 points.

D-8 Regular Pattern

Skew-back

Disston Hand Saws are made for every kind of sawing job. Saws with wide or regular pattern blades; narrow or light-weight pattern blades, sometimes called ship pattern or ship saws; saws for ripping or cross-cutting; saws for fine, medium or coarse teeth. The true taper grind reduces weight and prevents the saw from binding.

The temper of the Disston Saw is such that the saw will remain keen, true and fast-cutting, without refining, for a longer time than ordinary saws. The handles are comfortable, with large hand holes and covered tops which add strength and prevent triple anchorage of the blade in the handle. They are weatherproof finished, which seals the pores and prevents warping, making the finished saw a modern, beautiful and long-lasting tool.

D-17 Regular Pattern

Skew-back

This is a double duty type saw. Can be used for either ripping, cross-cutting or cutting diagonally. Alternate sections of five cross-cutting and two ripping teeth with fine teeth at point for starting cut. Hardwood handle, weatherproof finish. Brass screws. Disston Steel blade, striped back, true taper ground.

Length - 26".

D-8 Regular Pattern

Skew-back

Cover-top applewood handle, weatherproof finish, brass screws. Disston Steel blade, polished, striped back, true taper ground. The original skew-back saw.

Lengths:

- 20" - 8.10.12 points.
- 22" - 8.10.12 points.
- 24" - 8.9.10.11 points.
- 26" - 8.9.10.11 points.

D-7 Regular Pattern

Straight-back

Cover-top, carved applewood handle, weatherproof finish, brass screws. Disston Steel blade, striped back, true taper ground. Beautifully finished. This saw, the D-15 and D-16 are three of the finest hand saws ever manufactured.

Lengths:

- 20" - 8.9.10.11 points.
- 22" - 8.9.10.11 points.
- 24" - 8.9.10.11 points.
- 26" - 8.9.10.11 points.

D-8 Lightweight Pattern

Straight-back

Cover-top, carved applewood handle, weatherproof finish, brass screws. Disston Steel blade, striped back, true taper ground. Beautifully finished. This saw, the D-15 and D-16 are three of the finest hand saws ever manufactured.

Lengths:

- 20" - 8.9.10.11 points.
- 22" - 8.9.10.11 points.
- 24" - 8.9.10.11 points.
- 26" - 8.9.10.11 points.

D-7 Lightweight Pattern

Straight-back

Cover-top, carved applewood handle, weatherproof finish, brass screws. Disston Steel blade, striped back, true taper ground. Beautifully finished. This saw, the D-15 and D-16 are three of the finest hand saws ever manufactured.

Lengths:

- 20" - 8.9.10.11 points.
- 22" - 8.9.10.11 points.

D-8 Lightweight Pattern

Skew-back

Cover-top, carved applewood handle, weatherproof finish, brass screws. Disston Steel blade, striped back, true taper ground. Beautifully finished. This saw, the D-15 and D-16 are three of the finest hand saws ever manufactured.

Lengths:

- 20" - 8.10.12 points.
- 22" - 8.10.12 points.
- 24" - 8.9.10.11 points.
- 26" - 8.9.10.11 points.

D-7 Regular Pattern

Skew-back

Cover-top, carved applewood handle, weatherproof finish, brass screws. Disston Steel blade, polished, striped back, true taper ground. The original skew-back saw.

Lengths:

- 20" - 8.10.12 points.
- 22" - 8.10.12 points.
- 24" - 8.9.10.11 points.
- 26" - 8.9.10.11 points.
How to choose and use Back Saws

One of the handiest and most useful saws for fine joinery and cabinet work is the Diston Back Saw. Its fine teeth and stiff back make it possible for the user to do smooth, accurate cutting in making mitres, tenons, etc. It is the saw to use for cutting moldings, picture frames and other light stock.

Diston Back Saws are made of the same fine steel as Diston hand saws. They have the famous Diston temper and edge-holding qualities so vital to the craftsman who wants high quality tools.

Diston Back Saws are made in 8, 10, 12, 14 and 16 inch lengths, with from 12 to 16 points to the inch. The 12-inch length, 14 points, is the most popular.

In using a back saw in a mitre box be sure that the cut to be made lines up with the slots in the box. Hold work against back of box and start cut carefully with a back stroke, holding handle of saw slightly upward. Gradually level the saw and continue cutting with blade horizontal. Hold saw firmly for clean, straight and accurate cutting.

When not using a mitre box it is advisable to use a bench hook to support the work. For long material use two bench hooks. In making mortises, etc., keep saw level after starting cut and watch depth at both ends of cut. Use a light, even, level stroke.

To sharpen a back saw proceed as in sharpening a hand saw. Use a 4½-inch Diston Extra Slim Taper File.

Diston No. 4 Back Saw

The handiest of all small saws, a saw necessary for fine joinery and cabinet work. The blade is of Diston Steel, hard and tough, with teeth shaped for fast, accurate cutting. The back is extra heavy, of bright, polished steel. The handle is hardwood, with Diston weatherproof finish. Brass screws.

### Diston No. 4 Mitre Box Saw

Mitre Box Saws, owing to the length and general construction are extremely delicate tools. When not in use they should be put away with the teeth edge protected from contact with other tools.

Every Diston Mitre Box Saw is tested for accuracy. Every one will run true and cut a smooth, accurate point. The blade is placed deep into the handle, and the back is extra heavy to prevent twisting in the cut. All blades are made 11 points to the inch. Blade of Diston Steel, with hard, tough Diston temper. Back of bright, polished steel. Hardwood handle, Diston weatherproof finish; brass screws.

Diston Mitre Box Saws are made in all required sizes; those 4 inches under back in 18 to 20-inch lengths; 5 inches under back, 28 and 30-inch lengths; 6 inches under back, 30 inches in length.

The following sizes are most popular:

<table>
<thead>
<tr>
<th>Length of Blade</th>
<th>Width Under Back</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 inches</td>
<td>3/4 inches</td>
</tr>
<tr>
<td>8 inches</td>
<td>3/8 inches</td>
</tr>
<tr>
<td>10 inches</td>
<td>1/2 inches</td>
</tr>
<tr>
<td>12 inches</td>
<td>5/8 inches</td>
</tr>
<tr>
<td>14 inches</td>
<td>3/4 inches</td>
</tr>
<tr>
<td>16 inches</td>
<td>1 inch</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Length of Blade</th>
<th>Width Under Back</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 inches</td>
<td>1 inch</td>
</tr>
<tr>
<td>16 inches</td>
<td>1 1/8 inches</td>
</tr>
</tbody>
</table>

### Diston Dovetail Saws Nos. 68, 70, 71

Wherever the finest possible joint is needed, and for dovetailing, tenoning, mold building, pattern making, etc., a Diston Dovetail Saw is needed. No. 68 has straight handle; No. 70, open grip handle. No. 71 is same as No. 68, with handle and blade offset. All are extremely thin (.018), with fine teeth

No. 68

(17 points). Sturdy brass-plated steel back supports the Diston Steel blade. No. 71 Dovetail saw, is made with offset handle, for cutting in close quarters, this saw can be supplied with the handle offset for either left or right-hand cutting.

<table>
<thead>
<tr>
<th>Length of Blade</th>
<th>Width Under Back</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 inches (No. 68)</td>
<td>1 inch</td>
</tr>
<tr>
<td>8 inches (No. 68 and 70)</td>
<td>1 1/8 inches</td>
</tr>
<tr>
<td>10 inches (Nos. 68, 70, 71)</td>
<td>1 1/8 inches</td>
</tr>
<tr>
<td>12 inches (No. 71)</td>
<td>1 3/8 inches</td>
</tr>
</tbody>
</table>

A SIMPLE method of keeping bits and drills in order. Wood blocks drilled with holes are hinged to bottom of drawer. They lie flat when drawer is closed.
There are many uses for compass saws in the shop, in the home, on the farm and in manual training schools. Just the saw for cutting curves and circles, and when starting a cut from a hole bored in the wood. Handy for cutting holes in board and plater to receive gas or water pipes, cutting floor boards, etc. To make brackets for a shelf or round the corners of bookshelves, etc., just mark a line as a guide and saw along it.

Dinston Compass Saws and Nest Saws are made tough and strong, yet flexible enough to stand the strain of cutting a curve. All are made of Diston Steel and tempered for long cutting life. They are taper ground from teeth edge to a thin back which allows for clearance. They also taper to a sharp point, and are toothed to the point for easy access to holes and for cutting sharp curves.

The new flat-top, hardwood handle, with its comfortable grip, furnished on No. 4 Compass Saws, Nos. 3 and 7 Nest Saws and No. 8 Plumbers' Compass Saws, adds much to the usefulness of these saws. It permits undercutting with the blade in reverse position.

The Dinston No. 8 Plumbers' Compass Saw has an extra heavy Diston Steel blade, specially tempered for plumbing work and other tough, heavy cutting. It is taper ground to give clearance in the kerf and make sawing easy. 9 points to inch. The butt of the blade is slotted; hole directly in front of slot receives bolt; cluster bolt and wing nut clamps blade securely in handle—no moving front or back, up or down. Can be used in either regular or reverse position. Square top hardwood handle, comfortable open grip; Diston weatherproof finish. Made in 12 and 14-inch lengths.

The Dinston No. 3 Nest of Saws can be used for a wide range of work. Keyhole blade, 10 inches long; points to inch, for cutting keyholes, sharp curves, and other small work. Compass blade, 14 inches long; 8 points for cutting shapes and curves in heavier work. Pruning blade, 16 inches long; 8 points, for pruning fruit and ornamental trees, shrubbery, etc. Can also be used as a general purpose saw. All blades of Diston Steel; all fit same flat-top handle, which permits use in regular or reverse position. Handle has weatherproof finish. Cluster bolt and wing nut adjustment.

The Dinston No. 7 Nest is widely used by plumbers, electricians, and others. One of the 14-inch blades has special temper for cutting lead pipe, thin metals and wood in which nails are embedded; 12 points to inch. The other 14-inch blade is for regular compass saw work; 8 points to inch. Both are tempered to withstand strain of curve cutting. The keyhole blade is 10 inches long; 10 points to inch, tempered; tapered to sharp point for keyhole and other sharp curve cutting. All blades of Diston Steel taper ground—used in the same handle, in either regular or reverse positions. The improved square top handle has weatherproof finish; cluster bolt and wing nut adjustment.

TO DRILL a hole at an angle, clamp block of wood cut to desired angle and use as guide. Holding head of brace against body at exact height of hole will insure horizontal accuracy.
DISSTON KEYHOLE SAW

To cut a keyhole it is good practice to mark with pencil or scriber, shape and size of hole desired, then bore a hole through the door, chest, drawer, etc., and with this handy little saw cut along the marked line.

No. 95 Keyhole Saw

Made for small work in close quarters cutting keyholes, fret work, model work, etc. The blade is made of Disston Steel; thin back, tapering to a sharp point; 10 points to the inch. The handle is made of hardwood, polished and rounded. Blade is inserted in handle to receive blade; steel ferrule. Blade inserted at butt end of handle; held at required length by steel thumb screw. Handles and blades supplied separately if desired. Handle is 7 inches long; blade 10 inches long.

No. 15 Keyhole Saw

The Disston No. 15 Keyhole Saw has an open grip, hardwood handle, weatherproof finish. Fine for cutting frets and other fine work. Disston Steel blade, thin back, tapered to sharp point; 10 points to inch; two brass screws. Made 10 and 12-inch lengths.

No. 1 Bead Saw for Weather Stripping

The Disston No. 1 Bead Saw is used for scoring window frames, door frames, etc., preparatory to inserting metal or other weather stripping. Disston Steel blade, 10 inches long, 1½ inches wide at handle, curving to point; 8 teeth at point of blade have ½-inch spacing. Curved hardwood handle; orange lacquer; 3 screws.

No. 1 Pattern Maker's Saw

The blade of the No. 1 Disston Pattern Maker's Saw is thin. This saw is designed for small, accurate work in pattern and cabinet-making. The teeth are shaped to make a fine, exact cut. 15 points to the inch. Blade of Disston Steel with Disston temper, is 7½ inches long and 1½ inches wide. Open handle, applewood; varnished edges; brass screws.

No. 6 Stair Builders' Saw

Used for trenching out stringers, making slots in stair treads or risers, cutting dadoes, etc. Removable blade may be raised or lowered to cut any depth up to 3 inches. Blade of Disston Steel with Disston temper, is 6 inches long and 1½ inches wide, toothed 8 points to inch. Hardwood handle, weatherproof finish.

Disston Veneer Saw Knife

Specially designed for cutting veneer and for inlay work. Blade of Disston steel, 016" thick, with convex edges. Toothed 12 points to inch. Blade is removable and fastened to malleable iron tang with countersunk screws. Lacquered handle, nickel-plated ferrule. One of the edges of the blade has the teeth on one side beveled to cutting edge; other edge with regular saw teeth for sawing. Blade is 2½" long and 2½" wide at widest part. Length overall, 8 inches.

Disston No. 10 Coping Saw

The Disston Coping Saw is designed for cutting curves. It is also used for shaping the ends of molding for joints, for scroll work, making shelf brackets, wooden toys, etc. It takes narrow blades, only ½ inch wide, fitted at each end with a pin which is inserted in stretcher at each end of the frame. Blades are 6½ inches long between pins.

A square nut forced into the handle engages threaded end of stretcher. By turning handle blade is strained. The blade when strained tight in the frame may be turned as desired for cutting sharp angles, etc. It is customary in placing blades in frame to have the teeth pointing toward the handle. This will give better control of the saw when cutting. The frame is made of Disston Steel. It is ⅜ inch wide; ¾ inch thick; and 4½ inches deep from tooth edge to inside of back. Handle is of polished hardwood, with nickel plated ferrule and machined stretchers.

A coping saw is generally used with a saddle, as illustrated, to support the work. It consists of a board cut with a V notch about 3 inches wide and 3½ inches deep, attached to a support as shown. The stroke should be as long as possible, to avoid overheating the blade.

In cutting scroll work, furniture overlays, etc., the piece marked with the design is held on the saddle and shifted so that the saw can accommodate the curves as they are encountered. Change the angle of the blade in the frame when making sharp turns, to avoid breakage of blades.

Disston Coping Saw Blades

No. 10

For wood; made of spring saw steel. Bright blade. Filed to fit Disston No. 10 frame. Length overall 6¾ inches; ½ inches pin to pin; ¾ inch wide; 16 points to inch.

No. 20 (pin-end)

For cutting wood, bakelite, brass, celluloid, bone, composition board, copper, and other metals. Oil hardened and tempered, both set and filed; black finish. Length 6¾ inches overall; ½ inches between pins, ½ inch wide, 16 points.

No. 2 Coping Saw Blades (loop-end)

An all-purpose blade for cutting wood, bakelite, brass, celluloid, bone, composition board, copper, etc. These blades cannot be used in No. 10 frame but are for use in the common wire frame. Oil hardened and tempered; teeth set and filed; black finish. Ends of blade are looped and tempered to stand strain of tension. Length 6¾ inches overall, ½ inch wide; 16 points to the inch.
How to sharpen a Hand Saw

A Disston Saw is a fine tool, accurately made by master-craftsmen and will give a life-time of service if properly handled. Use it as a fine tool should be used. When necessary to set and file it, follow these directions carefully.

Before starting work, read ALL the directions. Then, as you work, read them step by step.

Examine the tooth-edge of your saw to see if the teeth are uniform in size and shape and to see that they are properly set.

It is not necessary to reset the teeth of a well-tempered saw every time it needs sharpening. If the teeth are touched up with a file from time to time as the saw is used (on the same principle as stropping a razor) the saw will cut longer and better, and sufficient set will remain to enable the saw to clear itself. The proper amount of set is shown in illustration at right.

Now study the shape of the teeth. Teeth of saws for cross-cutting should be shaped as illustrated on opposite page; teeth of saws for ripping should be like those shown in second illustration on preceding page. A saw cannot give good service unless the teeth are even (of the same size and regular) and properly shaped.

If the teeth are uneven, it is necessary to Joint the Saw and Shape the Teeth in accordance with the following instructions:

**Jointing**

To be done only when the teeth are uneven or incorrectly shaped, or when too much depth is not straight or slightly bent. Unless the teeth are regular in size and shape, it is useless to attempt to set and file a saw. In such cases jointing is necessary to bring all teeth to the same shape and height.

**Looking**

From the back of a saw. This shows how the teeth, when set, extend beyond the sides of the blade.

of all the teeth until it touches every tooth. The teeth then will be of equal height. Do not allow the file to tip to one side or the other. Hold file flat.

The Disston hand saw jointer, described on page 22, is made to help you do this work accurately. This tool holds the file squarely on the tooth edges. This eliminates any chance of tipping the file to one side or the other and thus rounding the points of the teeth.

**Shaping the Teeth**

To be done only when the saw has been jointed. After jointing, all teeth must be filed to the correct shape. The gullets must be of equal depth. The front and backs of the teeth must have the proper shape and angle. The teeth must be uniform in size. See page 16 for shape. (Doregard bevel, which will be taken care of later). To do this, place the file well down in the gullet and file straight across the saw, at right angles to the blade (under no conditions make file hold the file at any other angle). If the teeth are filing are of unequal size, press the file against the teeth having the largest tops, until you reach the center of the flat top made by jointing.

Then move the file to the next gullet, and file until the rest of the top disappears and the tooth has been brought up to a point. Make no effort to bevel the teeth at this time.

The teeth, now shaped and of an even height, are ready to be set.

**Setting the Teeth**

As mentioned before, one need not reset the teeth of a well-tempered hand saw every time it needs sharpening. If it is not necessary to joint and shape the teeth, examine the saw to see if the teeth have the proper amount of set indicated in upper right illustration this page and those shown on next page. If they have proper set the saw is ready for filing. If they do not, set them in accordance with the following instructions:

---

Shape of cross-cut saw teeth

Shape of rip saw teeth

THE ABOVE illustrations are photographic reproductions showing actual condition of some saws returned to us. They are typical of the manner in which many saws are used and abused. It is best to have saws, such as these, reconditioned at the factory.
Note—It is always necessary to set the teeth when you have jointed and shaped the teeth of your saw.

The teeth of a hand saw should be set before filing to avoid injury to the cutting edges.

**Purpose of Set.** The purpose of setting the teeth of saws, that is, springing over the upper part of each tooth (not more than the half of the tooth nearest the point), one to the right, the next to the left, and so on alternately throughout the entire tooth edge, is to make the saw cut a kerf slightly wider than the thickness of the blade. This gives clearance and prevents friction which would cause the saw to bind and pull hard in the cut.

**Depth of Set.** Whether the saw is fine or coarse, the depth of the set should not be higher than that of the tooth. This is important. If deeper than this it is likely to spring, crimp or crack the blade, if it does not break out the teeth.

A taper ground saw requires very little set, for the blade, being of uniform thickness along the entire tooth edge, tapers thinner to the back and also tapers from butt to point along the back which provides the means of clearance necessary for easy running.

Soft, wet woods require more set and courser teeth than dry, hard woods. For fine work on either hard or soft dry woods, it is best to have a saw with fine teeth and only a slight set.

**Setting with Saw Set.** The general practice, outside a saw factory, is to test the teeth by bending over the point of tooth by pressure with a special tool known as a saw set. Many so-called saw sets are impractical; they give too deep a set, or the pressure is improperly applied. Recognizing this difficulty years ago, Diston invented and produced the Triumph Saw Set. We fully recommend it as a tool that will do this work properly. The Triumph Saw Set is illustrated and described on page 22.

In setting teeth, particular care must be taken to see that the set is regular. It must be the same width from end to end of the blade, and the same width on both sides of the blade, otherwise the saw will not cut true, it will run out of line and the cut will be "snaky." Frequency with which this have been made that the saw is soft and will not hold an edge, when the main trouble is the irregularity of the width of the set.

**Filing the Teeth.** There are a variety of shapes in teeth, variation in angles, bevel, etc., each adapted for a special work, such as cutting dry, seasoned lumber; wet or green lumber; hardwood; soft wood; etc. The saw user should follow these instructions for saws in ordinary use, for the teeth, whether large or small, are alike. All the most experienced should follow these recommendations for the best results.

**Necessary Equipment.** The only equipment necessary consists of a clamp and files. The clamp should be sufficiently strong to hold the blade firm enough to prevent chattering, and one in which the blade can be placed and tightened easily and quickly. The top of the clamp should be on line with the operator's elbows for best working position.

Use the Diston Extra Slim Taper File. Following table indicates length of file to be used:

<table>
<thead>
<tr>
<th>Points</th>
<th>Description</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>6 point cross-cut, 7-inch.</td>
<td>7-inch</td>
</tr>
<tr>
<td>6</td>
<td>9 point rip, 7-inch.</td>
<td>6-inch</td>
</tr>
<tr>
<td>10</td>
<td>12 point cross-cut, 14-inch.</td>
<td>12-inch</td>
</tr>
</tbody>
</table>

To determine the point of a saw, count the number of teeth points to the point of the blade, measuring one inch from the point of any tooth. Note that in rip saws, 6 points and coarser, the teeth at the point of the blade are finer than the balance of the blade; therefore in measuring rip saw teeth, take the regular teeth at butt of blade.

Place the saw in filing clamp WITH HANDLE AT RIGHT. The bottom of the gullets of teeth should be ¾ inch above the jaws of the clamp. If more of the blade projects the file will chatter or screech. This dulls the file quickly.

It will assist you to file a saw properly, if at the start, you pass a file lightly down the top of the teeth (just as instructed under Jointing page 17) to form a VERY SMALL flat top on each tooth. The purpose of this is to provide a guide for filing. It does, however, again even up the teeth—which was the main purpose of jointing explained on page 17. Now, file the teeth as instructed in the following paragraphs.

**Filing Hand Saws for Cross-cutting.**

Stand at First Position, illustration shown at right. Start at the point. Pick out the first tooth that is set rearward. Place file in the gullet to the LEFT of this tooth. Hold file directly across the blade. Then swing the file handle toward the LEFT to the desired angle. Correct angle is shown in first illustration at right.

Hold the file level and at this angle. Do not allow file to tip upward or downward. Be sure the file sets down well into the gullet. Let it find its own bearing against the teeth it touches. It will help the beginner if he will first observe the shape and bevel of some of the used teeth that can most always be found near the handle-end of a saw.

**POSITION of file for beveling teeth**
PROPER SHAPE AND ANGLE OF SAW TEETH

Some additional information about the angle of the teeth in saws for cross-cutting may be of use. The angle of the tooth is one of the important features and too much care cannot be taken to have the correct angle for the duty required.

Imagine the accompanying illustration as representing a board, across which you wish to make a deep mark with the point of a knife. Suppose we hold the knife nearly perpendicular as at B. It is evident that it will pull harder, and will not cut as smoothly as if it were inclined forward as at A. It follows, therefore the cutting edge of the cross-cut saw should be at an acute angle as at C, rather than perpendicular as at D.

The angles 15° front and 45° back are for cross-cut saws; and 12° front and 52° back for rip saws as the saws are made at factory will prove most satisfactory for general use. When a saw has less angle at the front of the teeth than these recommendations, it is said to have more hook or pitch. If too much hook is given to the teeth the saw often takes hold too keenly causing it to "hang up" suddenly in the cut—resulting sometimes in a kinked blade. When there is too much set, the teeth may become, because the strain caused by the unnecessary amount of set is out of proportion to the strength of the blade.

PROPER CARE OF SAWS, TOOLS AND FILES

Moisture against a steel face, unless that face is well protected, means almost immediate rust. In order to keep the saw in the most perfect working condition, it must be entirely smooth on both sides. Rust means pitting, and therefore, a rough surface. When you finish using a saw, rub it down with light oil. In case the saw is slightly rusted, rub it down first with fine emery cloth and then apply the oil.

Another important thing is the way edge tools are put away. Whether a saw is placed in a tool box or on a shelf, or hung from a nail or hook, always take care that the tooth edges are placed so that no other tools will knock against the teeth and injure them.

Tools should always be placed with the cutting edges away from the person using them. Never hang a saw from a hook where the teeth can scratch a leg or knee.

When you are through using a tool lay it down carefully. Do not drop it. A file, for instance, is an edge tool. Its teeth, to give the greatest efficiency, are very hard. When one carelessly throws a file across his bench he is likely to break the edges of several teeth. A good tool deserves good treatment, and the more care you give it the better service it will give you.

Common sense will suggest many necessary rules for caring for your tools. Keep in good working order, in a clean container or neatly arranged on hooks and keep them in a dry place. All Distson Saws, Tools and Files are guaranteed to be perfect in workmanship and material. But it is not to be expected that we can make a tool that will do good work when it is not properly used and cared for.

Nearly every day we hear from some one who has used one of our saws 20, 30, and up to 50 and 60 years. On the other hand, some of our files, after being used for a few months, are returned to us as defective when they are perfect as far as workmanship and material are concerned, but have been made useless through abuse or lack of care.
TOOLS FOR REFITTING HAND Saws

Any one can sharpen a saw with the following Disston tools. They are the best and most practical tools made for the purpose.

No. 10 Hand Saw Jointer

The Disston No. 10 Hand Saw Jointer is a simple, practical tool for dressing uneven saw teeth to uniform height before sharpening or resharpening a saw. Made of malleable iron, formed to fit the hand. It opens and closes like a hinge, and is fitted with a file of the proper cut to joint a saw. The file can be replaced readily by the turn of a set screw. File furnished with each jointer.

D-3 Filing Guide and Clamp

The D-3 Filing Guide and Clamp is especially designed for those not experienced in filing hand saws. It enables the user to file each tooth at the same angle. It is made to file both cross-cut or rip saws. The length of the jaw is 12½ inches.

Clamp is japanned; strong and durable; readily adjusted; eccentric lever opens and closes jaws; thumb screw attaches clamp to bench.

Any three-cornered file with tapered end can be used in filing guide and clamp.

No. 28 Triumph Saw Set

The Disston Triumph Saw Set makes saw setting easy. It is a strong tool, powerful in action, easily operated. The double plunger is the principal feature—one plunger holds the saw set securely in position against the saw while the other plunger sets the teeth. Can be adjusted to any set required; malleable iron head and handle; head polished, handle black finish; hardened steel plunger; coil spring safety handle.

No. 28 Triumph Saw Set for hand saws, back saws, web saws, narrow hand saws, 10 gauge and thinner, 10 points to the inch and coarser.

The No. 280 Triumph Saw Set is made for setting hand saws, back saws, butcher saws and other saws with 10 to 16 points to inch.

Star Saw Set

The Disston Star Saw Set is made for setting hand, back, hand, web, wood, and small circular saws not thicker than 18 gauge. The only practical set that can be operated by striking the plunger with a mallet, or working the plunger by foot power.

Japanned; frame plunger and anvils of hardened steel; set can be regulated; coil spring returns plunger to position; frame shaped to fasten on work bench or in vise. Gauge supplied with each set to hold narrow hand and web saws.

Guide frame is made of heavy steel wire; japanned iron swivel attachment; hardwood file handle turned for a comfortable grip. 5½-inch Disston Slim Taper File supplied with the D-3 Filing Guide and Clamp.

How to choose and use Circular Saws

For the home workshop, training school and the small bench saws used in industry, Disston Small Circular Saws are ideal. These saws are made from the famous Disston Steel, hardened and tempered to give long and lasting service.

When buying, the user should give consideration to the following: Is it for ripping, crosscutting, notching, grooving? Is it for cutting wood, metal or other material? Is a smooth edge desirable?

A well equipped shop should have a rip, a cross-cut, a combination flat ground and a combination hollow ground saw. Disston makes a full line of these small saws, especially for workshop use. The Disston De Luxe Homework shop line is described on the next page.
DISSTON DE LUXE
HOME WORKSHOP
CIRCULAR SAWS

The World’s Finest Home Workshop
Saw... made for the man who
insists upon having the best

The kind of craftsmanship you wish to turn
out has a good deal to do with the grade of saw
you buy. Fine tools help fine work. In these
new De Luxe Saws, you get Disston Steel and
Disston workmanship of the same high stand-
ards, same guarantee, as the famous Disston
Circular Saws used by the world’s leading
lumber mills.

De Luxe saws are made in four types: Cross-
cut, Rip, Flat Ground Combination, Hollow
Ground Combination. They have a high,
smooth finish, keen teeth, accurate fitting.
These fine blades mean easier and more
accurate cutting. You will want these bet-
saw to help you to do better work.

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Number and Type</th>
<th>Gauge</th>
<th>Center Hole</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 inches</td>
<td>D-40 Cross-cut</td>
<td>18</td>
<td>⅛</td>
</tr>
<tr>
<td></td>
<td>D-120 Rip</td>
<td>19/16</td>
<td>⅛</td>
</tr>
<tr>
<td></td>
<td>D-320 Combination</td>
<td>18/16</td>
<td>¼</td>
</tr>
<tr>
<td></td>
<td>D-3200 Hollow Ground</td>
<td>18/16</td>
<td>¼</td>
</tr>
<tr>
<td>7 inches</td>
<td>D-40 Cross-cut</td>
<td>18</td>
<td>⅛</td>
</tr>
<tr>
<td></td>
<td>D-120 Rip</td>
<td>19/16</td>
<td>¼</td>
</tr>
<tr>
<td></td>
<td>D-320 Combination</td>
<td>18/16</td>
<td>¼</td>
</tr>
<tr>
<td></td>
<td>D-3200 Hollow Ground</td>
<td>18/16</td>
<td>¼</td>
</tr>
<tr>
<td>8 inches</td>
<td>D-40 Cross-cut</td>
<td>18</td>
<td>⅜, ⅜, ⅜</td>
</tr>
<tr>
<td></td>
<td>D-120 Rip</td>
<td>18/15</td>
<td>⅜, ⅜, ⅜</td>
</tr>
<tr>
<td></td>
<td>D-320 Combination</td>
<td>18/15</td>
<td>⅜, ⅜, ⅜</td>
</tr>
<tr>
<td></td>
<td>D-3200 Hollow Ground</td>
<td>18/15</td>
<td>⅜, ⅜, ⅜</td>
</tr>
<tr>
<td>10 inches</td>
<td>D-40 Cross-cut</td>
<td>16</td>
<td>⅜, ⅜</td>
</tr>
<tr>
<td></td>
<td>D-120 Rip</td>
<td>17/14</td>
<td>⅜, ⅜</td>
</tr>
<tr>
<td></td>
<td>D-320 Combination</td>
<td>17/14</td>
<td>⅜, ⅜</td>
</tr>
<tr>
<td></td>
<td>D-3200 Hollow Ground</td>
<td>17/14</td>
<td>⅜, ⅜</td>
</tr>
</tbody>
</table>

PUTTING SAW ON MACHINE

In putting the saw on the machine, make
sure that the arbor hole in the saw fits
the mandrel snugly and that the
tooth of the saw point toward operator.
Tighten the collar and nut securely
on the mandrel. See that the belt is
sufficiently tight. Slipping causes loss
of power and makes saw cut poorly. See
that saw has ample clearance at sides
and ends of table slot. To test this,
rotate the saw by hand. If table can be
moved up and down, set it so cut will
come as near center of saw as possible.
Be sure you have enough speed and
power to run the saw properly. The
average small motor runs 1750 revolu-
tions per minute, and is usually belted
to run the saw at 3500 r.p.m. or more.
Disston small circular saws are
tensioned to run at 4000 to 4500 r.p.m.
In operating the saw, stand to one
side, not back of, material to be cut.
Hold down work with one hand. Push
work through with other hand. When
gauge or fence is close to saw, use a
push stick notched on the end. Do
not cross the saw; if it binds, ease up
on the feed.

CUTTING TAPERS. A hinged jig with
thumb-screw attachment for holding one end
of the work the desired distance away from
fence makes the cutting of tapers accurate
and easy.

WHEN RIPPING or leveling narrow pieces,
hold-downs like these prevent the saw from
getting away without endangering the fingers.

REFITTING SMALL
CIRCULAR SAWS

Jointing the Saw
The first step in refitting circular saws
is jointing; getting all the teeth the same
height. Joint the teeth by running the
saw slowly backward by hand on the
mandrel, while holding a piece of emery
stone or a flat file, lightly against the
tops of teeth. Continue until the tops
of all the teeth show that they have
been touched by the emery stone.

Shaping the Teeth
After jointing, put the saw in the fil-
ing clamp and shape the teeth as near
to the original shape as possible. Have
all the teeth of the same shape with
gullets of even depth and width. Use a
Disston 6" or 7" Taper File for fine
tooth cross-cut saws and combination
saws, and a Disston 6" or 7" Mill file,
with one round edge, for rip saws and
course tooth cross-cut saws.

Setting the Teeth
After the teeth have been shaped,
they should be set with a Disston No.
18 Triumph Saw Set. The saw should
project fairly well above the clamp
paws. Place the die and anvil of the saw
set on the tooth to be set, taking care
to not carry the set down too far on
the tooth. If this is done the body of blade
(below the gullets) will be distorted. Be
sure each tooth is set in the same direc-
tion it was when the saw was new.
After setting, any teeth which are not
in alignment with the others, should be
corrected.
Some users prefer to set the teeth with a bevel-faced anvil and a hammer; but in all cases the principle is the same.

This method of setting applies to all saws except combination saws having raker teeth. The raker teeth of combination saws should not be set.

Filing Small Circular Saws

After setting, file the teeth as nearly as possible the same shape as they were when the saw was new. You probably noticed, when your saw was new, that the teeth were beveled alternately; one tooth was filed or sharpened with the bevel on the right hand side and the next tooth had the bevel on the left hand side. They are filed in this manner to sever the fibers of the wood more easily. In resharpening, bevel the teeth as they originally were beveled.

Saws usually are sharpened for all around cutting. If your work is mostly in soft wood, you may carry a wider bevel on the teeth. In filing, do not reduce the length of the teeth; simply bring them up to a sharp point. If the teeth are uneven, the saw cannot cut properly. Have all teeth of the same shape, with gullets of even depth and width.

Do not file sharp corners or nicks in the bottom of the gullets. This usually results in cracks in the gullets.

Bevel the teeth in cross-cut saws on both the face and back edges. More bevel, however, is filed on the face than on the back of the teeth.

Give a rip a very slight bevel on the back of the teeth. In filing any saws, take care that the bevel does not run down into the gullets. The bevel on both the face and back should be about one-third the length of the teeth. In filing a flat ground combination saw, which cross-cuts,rip and miters, use the same method for beveling the scoring teeth as is used in sharpening a cross-cut saw. Some combination saws have rakers, or cleaner teeth, to remove the material left in the cut by the beveled cutting teeth. Hence the points of these rakers or cleaner teeth should be 1/4" shorter than the points of the beveled cutting teeth. After filing to 1/4" shorter, then also file these rakers square across so they will act like a plane and present a chisel-like edge.

In sharpening a hollow ground combination saw, follow the same method as used with a flat ground combination saw, but do not set the teeth, as ample clearance is given by the hollow grinding.

TOOLS FOR REFITTING SMALL CIRCULAR SAW

Disston Taper File

Best adapted for filing teeth of cross-cut and combination saws. Use 6" or 7" size.

Disston Mill File

One Round Edge

Will give best service for filing rip saws. Use 9" or 7" size.

Disston Triumph Saw Set

The No. 18 Triumph Saw Set gives a perfect set on small circular saws. The best tool for the purpose.

Circular Saw Filing Vise No. 7

Handy, well-built, tool for holding small circular saw when filing. Fastens to bench with thumb screw; elevating joint tilts vise to any angle. Place saw on movable bracket. Thumb screw raises or lowers saw to correct position for filing. Curved jaws grip rim of saw.

Disston Narrow Band Saws for cutting wood, thin metal, fiber, etc., are made of the famous Disston Steel recognized by thousands of users for its toughness and temper. These saws are of sufficient resiliency to withstand the constant strain and bends to which they are subjected when operating.

The blades are straight and true; the teeth are set with proper pitch, size, space and depth to do good work. Disston Narrow Band Saws will cut fast, easy, smooth and true.

Thin Gauge Band Saws

Thin Gauge Band Saws are a special development of Disston, which are thinner than the standard narrow band saw. This type of band saw is capable of standing severe bending strain on small machines, having been made specially for use on wheels of small diameter—10, 12, 14 and 16 inch.

On wheels 10" to 16" in diameter Disston Thin Gauge Band Saws will give longer, better service.
How to use a Band Saw for Best Results

See that band saw is not too wide for the cut to be made. Use narrow saws for sharp curves and angles. Be sure your saw is sharp and has sufficient set to prevent binding.

Wheels should be clean and run true. Strain blade over wheels to give correct tension, so saw will not slip. Guide wheel must turn freely; it should not press against blade when saw is not cutting.

Close both guard doors. Set guides just high enough to clear work to be cut. Get full speed before starting cut. Follow outside of line marked on work; leave line on the finished piece.

In cutting curves, use one hand as pivot and turn work with other hand. Never try to pick pieces of wood out of the table slot while saw is running. In backing out of cut, do not twist saw.

Refitting Narrow Band Saws by Hand

Those who do not have an automatic filing machine may sharpen narrow band saws by hand. Disston’s Adjustable Band Saw Clamp, No. 4, is used for hand sharpening.

Place the saw to be sharpened on a long bench so that it is supported throughout its length on the same level during filing. The clamp will hold a section of approximately 50 teeth at one setting. The saw is then moved so that one section after another is worked on until the entire length of the saw has been sharpened.

It is usual to joint the section slightly before beginning to file the teeth. This is done by lightly running a mill file over the tops of the teeth to make them all of a uniform height. Jointing will also assist as a guide in filing, as explained later.

Before starting to file, consider the shape of the teeth. Keep the teeth on your saw the same as when new. Use a 6" band saw taper file for all band saws of less than 6 points per inch; a band saw slim taper file for saws of 6 points or more per inch. Place the file in the gullet between the teeth and allow it to find its own bearing against the teeth it touches. Hold the file in a horizontal position. File back across the saw at right angles to the blade, raising your file on the back stroke.

If the point of any tooth is not brought up sharp after the stroke of the file, do not do extra filing to sharpen this particular tooth. Instead, continue until you have filed the section you are working on. By this method, each section may require two or three goings-over.

Teeth may be set with a Disston Triumph No. 28 Saw Set, in the same manner as hand saw teeth are set. When setting is necessary, it should be done before the teeth are filed. It should be remembered that if the saw is to do only straight line cutting, best results are obtained by the least set possible. In this connection, remember that sufficient set is necessary to clear the blade in the cut, particularly when cutting on curved lines. Study the illustration above. In setting band saw teeth keep these points in mind.

Dimensions Disston Narrow Band Saws for larger wheel machines

<table>
<thead>
<tr>
<th>Width of Blade</th>
<th>Standard Points Per Inch</th>
<th>Gauge</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4 inch</td>
<td>7</td>
<td>22</td>
</tr>
<tr>
<td>3/8 inch</td>
<td>6</td>
<td>22</td>
</tr>
<tr>
<td>1/2 inch</td>
<td>5</td>
<td>21</td>
</tr>
<tr>
<td>5/8 inch</td>
<td>4</td>
<td>21</td>
</tr>
</tbody>
</table>

How to choose and use Hack Saws

Millions of Disston Hack Saws are used annually in metal working plants, vocational schools, and home workshops, for cutting metals of all kinds and materials other than wood. Disston makes a full line of hack saw frames and five kinds of hand blades; also three kinds of machine blades.

Here are four important suggestions on how to choose a hack saw:
1—Be sure the frame is strongly built, and suitable for the job.
2—Stretcher should be simply made, yet efficient, allowing for easy removal, replacement and straining of blades.
3—Handle should be comfortable, grip located on frame so as to bring pressure on the blade with least effort.
4—Blades should have correct number of teeth for material to be cut.

When cutting off bolts, remember to screw nut all the way up on the threads first. Then when bolt is cut, unscrewing nut will straighten any battered threads.
USE THE RIGHT HACK SAW BLADE

Hack saw blades are made for both hand and machine use. They are used to cut a wide variety of materials—mostly metal—which varies in size, shape, hardness and structure. Disston Blades are accurate cutting tools, made in a plant internationally known as makers of tools of quality.

STEELS

Disston Hack Saw Blades are made of three kinds of steel:

1. Molybdenum Steel
2. High Speed Tool Steel (Tungsten)
3. Full High Speed Tool Steel (18% Tungsten)

The cutting which a hack saw blade will do depends on the steel out of which it is made and its proper heat treatment. The steel must be good to begin with and it must be heat treated to proper hardness and uniform structure.

Distant Blades are made of the finest steels. They are properly heat treated in automatically controlled furnaces. They are uniform and of proper hardness.

The hardness of Disston Blades is left down at the holes in order to prevent their snapping when the blades are strained in the frame or a machine. Teeth remain intact on each end to assure rigidity and proper alignment in machine and frame.

Teeth and set: For straight, accurate and fast cutting, the teeth must be correctly and accurately shaped and set. This means that each tooth is exactly the same in shape and size as every other tooth. The setting is done in a machine which does this work automatically and accurately.

The shape of the teeth in Disston Blades and the amount of set are correct. They have proved to be the best through years of research and test.

Every third tooth in Disston Hack Saw Blades (except Double-Flex) is straight. This is the raker tooth which clears the chips from the kerf. It makes an easier cutting blade than one with only right and left set teeth.
**HOLDING WORK IN VISE**

Above are suggestions for clamping irregular shapes. To hold oval or circular work in square jaw vise, use wood, leather or copper filler pieces to grip work and to prevent scarring.

It should be borne in mind that in general the coarser tooth blades cut faster and the finer tooth blades cut slower with less risk of tooth breakage.

**PROPER NUMBER OF TEETH**

Importance of selecting hand hack saw blades with proper number of teeth for cutting various kinds of work of different metals is shown in the following:

- **Use 14 teeth for cutting material thicker than 3/4” in sections of cast iron, machine steel, brass, copper, aluminum, bronze, slate.**

**CORRECT**

- Plenty of chip clearance

**INCORRECT**

- Fine teeth. No chip clearance. Teeth chipped

- **Use 18 teeth for cutting materials thicker than 3/4” in sections of annealed tool steel, high speed steel, mild steel, wrought iron pipe, pipe, drill rod, conduit, light structural shapes, copper.**

**CORRECT**

- Plenty of chip clearance

**INCORRECT**

- Fine teeth. No chip clearance. Teeth chipped

- **Use 24 teeth for cutting material thicker than 1/2” in sections of iron, steel, brass and copper tubing, wrought iron pipe, drill rod, conduit, light structural shapes, metal trim.**

**CORRECT**

- Two teeth and more on section

**INCORRECT**

- Coarse pitch strands work stripping teeth

**CORRECT**

- Two of more teeth on section

**INCORRECT**

- Coarse pitch strands work

**How to use a Hack Saw**

To use a hack saw correctly, a few points are important. Be sure to strain the blade tight in the frame and when cutting do not twist or bend the blade. Make slow strokes with even pressure, putting the greatest amount of pressure on the forward stroke and lifting slightly on the back stroke. Make each stroke do its full amount of work.

If the blade is not tight in the frame, breakage will result, as may also occur when undue strain is placed on the blade by twisting the frame sideways while cutting. It is also important that the correct number of teeth per inch be used on the specific metal for which it is intended. Using the wrong blade will only shorten the life of the blade and cause undue breakage.

**How to choose and use Files**

Diston Files are made of tough, high grade steel to enable them to cut faster and last longer than ordinary files. They are correct in pattern, have clean, sharp teeth cut uniformly in width and depth. Improved heat treatment gives them unusually long life; rigid tests and inspection follow them through every operation to assure the user a good file—always!

Files are classified in types according to shape, cut and length. The shapes are flat, hand, round, half round, mill, square, three square and many other special shapes, such as regular taper, slim taper, etc. All have a very definite use. The cut means the kind or character of teeth in the file—single cut, double cut, rasp cut, and the degree of coarseness or fineness of the teeth—broad, bastard, second cut and smooth cut.

The length of a file is measured from the heel to the point, which does not include the tang.
CUTS OF FILES

DOUBLE CUT

Bastard cut
Second cut
Smooth cut

Double cut file—has two courses of teeth or chisel cuts crossing each other, one course being finer than the other. Double cut is used on all machinists' files, such as Flat, Hand, Square, Round, Half Round, etc.

SINGLE CUT

Bastard cut
Second cut
Smooth cut

Single cut file—has one unbroken course of teeth or chisel cuts across its surface, parallel with each other, but at an oblique angle to the length of the file. The single cut is used on Mill files, on the Taper files and on special types of saw files.

RASP CUT

Bastard rasp
Second cut rasp
Smooth rasp

Rasp cut—differs from both single cut and double cut in that the teeth are not placed in parallel rows across the file, but each tooth is put in separately by a single pointed tool or punch. Rasp cut files are used by blacksmiths, plumbers, cabinet-makers, wood-workers and others, for rough work.

NOTE—All regular files have a standard character of tooth; for instance, all regular Flat, Half Round, Round, Square and other machine shop files, are double cut. Most Mill files, all Tapers and certain special types of saw files, are single cut.

A FEW TYPES OF DISSTON FILES

Desston makes more than 250 styles, and more than 1000 different cuts and sizes, including Superfine files.

Taper (Single cut)
The principal use for taper files is for filing saws. Made in 3, 3 1/2, 4, 4 1/2, 5, 5 1/2, 6, 7, 8, 10, 12, 14, 16, 18-inch lengths. Desston also makes Slim, Extra Slim and Double Extra Slim Taper Files for the same purpose.

Special Extra Slim Blunt (Single cut)This file is made blunt to assist the unskilled filer in making a level, uniform stroke. Designed especially for filing saws. Has unusually long sweep for its length; made in 5, 5 1/2, 6 and 7 inch lengths.

Mill (Single cut)The Mill file is made in bastard, second and smooth cut. It is tapered in both width and thickness. Used for lathe work and draw filing by mechanics for sharpening one and two-man cross-cut saws, lawn mower blades, garden tools and other edged tools. Made with square edges, one round edge, and two round edges. Also made blunt in bastard and second cut. The Mill file, bastard cut, is made in 3, 4, 5, 6, 7, 8, 9, 10, 12, 14, 16, 18 inches in length.

Round (Double cut)Round holes larger. Made in bastard, second and smooth cut, in 4, 5, 6, 7, 8, 9, 10, 12, 14, 16, 18-inch lengths; also 20-inch length in bastard.

Flat (Double cut)For wood; for metal

Square (Double cut)Square files are made both tapered and blunt. Used principally by mechanics for enlarging rectangular holes. Made in bastard, second cut and smooth, in 4, 5, 6, 7, 8, 9, 10, 12, 14, 16, 18-inch lengths, and also 20-inch length in bastard.

Half Round (Double cut)For wood; for metal

Half Round files are made for both wood and metal filing. The Half Round cabinet file is made in bastard cut in 4, 5, 6, 7, 8, 9, 10, 12, 14, 16, 18 inch lengths. Half Round wood file is made of bastard cut, in 4, 5, 6, 7, 8, 9, 10, 12, 14, 16, 18 inch lengths.

Half Round files for metal are made in 4, 5, 6, 7, 8, 9, 10, 12, 14, 16, 18 inch lengths in bastard, second, and smooth cut.

The Half Round cabinet rasp, for coarse filing, is made in second and smooth cuts, 6, 8, 10, 12, 14, and 16-inch lengths.

TO CUT circular discs on jig saw: clamp plywood board to table; use sharpened brad placed at one side of saw as center of disc. Pivot work on brad and revolve against saw.
WHEN USING A FILE...

1—Be sure the material to be filed is held securely. Loose work permits the file to chatter, which dulls the teeth.

2—In placing the handle on the tang of the file, do not hit the end of the file to drive it into the handle. Push the handle on, and holding the point of the file up, tap the butt end of the handle on the bench to drive the tang into place.

3—Do not exert undue pressure but keep the file cutting—do not allow it to slip over work, as this dulls the teeth.

4—Be sure to raise the file slightly during the return stroke in order to clear the work and prevent dulling by wearing away the back of the teeth, thus destroying the cutting edges. This does not hold true in the filing of soft metals, such as lead, aluminum, etc. The correct procedure in this case is to draw the file back along the metal on the return stroke as an aid in cleaning the teeth.

5—If the file is not cutting and you find that the spaces between the teeth are choked, you should use a Diston File Card and Brush. Never tap the file to clear its gullets of clogged material. This may break the teeth.

6—On completing your work, do not throw the file on the bench. Lay it down with all the respect due a quality tool. Remember that to do their work effectively, files must be made as hard as fire and water can make them. Consequently the teeth are easily chipped and dulled by rough handling.

Diston File Card and Brush

Lengthens life of file; assures faster, better work. When a file is clogged a few strokes across its surface with a file card and brush will clean out the gullets and allow the file to cut into the metal. The card wire is fine enough to enter the fine-tooth file and loosen clogged chips; brush cleans it out. Strongly built, light in weight; comfortable handle—face of card and brush, 5" x 1 1/2", overall 9 1/2".

Diston Stronghold File Handles

Made from selected wood, in five sizes. Shaped for comfortable grip; smooth, sanded surface. Ferrule end is slit to allow for expansion and contraction when tang is inserted or removed.

The outstanding feature of the Diston Stronghold Handle is the coiled spring-steel ferrule. It expands to allow the tang of file to enter the handle, and then holds it rigidly. No more loose file handles.

The coiled spring-steel ferrule and slant-end handle permit the use of several sizes of files to one handle. Tap lightly with hammer at ferrule end to remove handle from file.

<table>
<thead>
<tr>
<th>Number of Handle</th>
<th>Length of Handle (inches)</th>
<th>Lengths of Files used in Handle</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 1</td>
<td>4</td>
<td>3 to 6 inches</td>
</tr>
<tr>
<td>No. 2</td>
<td>4 3/4</td>
<td>6 to 10 inches</td>
</tr>
<tr>
<td>No. 3</td>
<td>5</td>
<td>10 to 14 inches</td>
</tr>
<tr>
<td>No. 4</td>
<td>5 1/2</td>
<td>14 to 18 inches</td>
</tr>
<tr>
<td>No. 6</td>
<td>6</td>
<td>18 to 22 inches</td>
</tr>
</tbody>
</table>

The No. 0 is a special shape used in the Diston Works by expert mechanics for filing hand saws.

How to choose and use Hand Tools

The careful craftsman will find many uses for Diston Squares and Bevels. They are absolutely true, accurately ruled on square blade, graduated to eights of an inch. Durable stocks. Sliding T-bevels have a positive locking device.

Squares must be perfectly square; a Diston Square is made to give the best service in accuracy and wear.

The Try Square is a laying out and testing tool. It serves as a guide in marking lines at right angles to any straight edge or flat surface. It determines whether surfaces or edges are square with adjoining surfaces, or edges; serves as a straight edge to test surfaces.

The Diston Mitre Square is made with an L-shaped piece of Diston Steel. The upper end of stock is cut at a 45 degree angle for mitre work. The mitre ends and sides of the stock are reinforced with brass for strength, accuracy and long life.
SQUARING END
FROM EDGE

The material to be tested should be held in one hand, and the stock of square held against the edge to be tested so that the blade will show squareness.

MITRE SQUARES

ROSHTOOLS, INC.

Bevels are closely related to squares. They are sometimes called bevel squares.

In laying out work, these hand tools provide a reliable means of duplicating any angle, by locking the blade on stock at angle desired.

Blades on Diston Bevels are made of Diston Steel. They are perfectly true on both edges, and slotted to move to and fro on bolt of locking device in end of stock, for setting at any desired angle. Some of the Diston Bevels are made with rosewood stocks, others with metal stocks. They will give excellent service.

Metal stock bevels are made so that blade is locked through a special device that holds blade rigid and is easily released with half-turn of screw in end of stock. Wood stock bevels are held with bolt and nut through top end of stock.

The Diston No. 10 Mitre Square is a very substantial tool. Blade is one piece of steel, L-shaped, one arm of which extends through slotted rosewood stock, and securely fastened with heavy rivets, making it practically impossible for the blade to get out of true. Square inside and out.

The Diston Steel blade, bright finished, is machined parallel; graduated eighteens of an inch from end to end of blade.

The Diston Steel blade, bright finished, is machined parallel; graduated eighteens of an inch from end to end of blade.

ROSHTOOLS, INC.

Rosewood stock, inside edge brass plated; blade end cut at an angle of 45 degrees for mitring purpose.

Lengths of blade, 6, 12, 18, 24, and 30 inches.

The Diston No. 11 Mitre Square has a metal stock, anvil-plated, cut at an angle of 45 degrees on blade end, for mitring purposes. Square inside and out.

Bright Diston Steel blade—edges of blade machined parallel; graduated eighteens of an inch, both sides, from end to inside of stock; also made with metric graduations on both sides; or graduated inches on one side and metric graduations on other side.

Lengths of blade, 3, 6, 9, 12, 15, 18, 24, and 30 inches.

TRY SQUARES

The Diston No. 1 Try Square is made also with metric graduations both sides, or with metric graduations one side and graduated inches on other side of blade.

Lengths of blade, 4 1/2, 6, 7 1/2, 8, 9, 10, and 12 inches.

The Diston No. 5 1/2 Try Square has a cadmium-plated, metal stock. Its strength and durability make it popular with many users. Square inside and out.

Diston Steel blade, bright; machined parallel. Graduated in eighths of an inch, both sides, from stock to end of blade; also made with metric graduations both sides, or with metric graduations one side and inch graduations on other side.

Lengths of blade, 4, 6, 8, 10, 12 inches.

BEVELS

DISTON NUMBER 1 TRY SQUARE

After the angle is determined, hold the blade against the edge and adjust it so the lower edge of the blade meets the line, then tighten the wing-nut and the bevel is set.

The Diston No. 2 Bevel has a genuine rosewood handle, grooved to form comfortable grip; fitted with heavy brass face plates, tapered toward blade on lever side, bringing the lever in line with handle, permitting bevel to lay flat on either of its surfaces.

Diston Steel blade, blued finish. Half of blade has slot to move on tightener bolt; is adjustable to any desired angle; one end of blade rounded; other end has a 45 degree angle.

Lengths of blade, 6, 8, 10 and 12 inches.

The Diston No. 3 Bevel is strong, durable; has metal stock, cadmium-plated; blade finish on both sides.

The blade is tightened or released by a patented bail-hearing mechanism controlled by a thumb screw at butt of stock; a quarter turn of the thumb screw locks the blade in place, will not work loose or slip.

Blade of Diston Steel, bright finish. Slot practically 1/2 the length of the blade, permits placing blade at any angle desired. One end of blade is rounded, other end cut at an angle of 45 degrees.

Lengths of blade, 6, 8 and 10 inches.
GAUGES

For craftsmen who work regularly in wood, a gauge is a necessary tool for his kit. For marking lines parallel to straight working surfaces and to provide a straight line to guide planing or sawing, or to lay out mortises, tenons, etc., a gauge is the tool to use.

Disston Marking or Mortise Gauges are made from hardwoods, beautifully finished, and built for wear and accuracy in marking. The heads are oval shaped for comfortable grip. Some of the beams have graduated inches, others are plain. Some are adjusted with knurled set screws, others with wing nut screws—a variety of styles.

Plain beam can easily be set with rule

When gauge does not have rule on beam, set and test with a foot rule. (See illustration). Hold the head of the gauge firmly against the front edge of the stock to be marked and score it on the face, pushing the gauge away from you. Keep the spur and line always visible.

No. 83 Cutting Gauge and No. 90 Mortise Gauge are the most popular among craftsmen.

Disston No. 83 Cutting Gauge

The Disston No. 83 Cutting Gauge is made from hardwood, weatherproof finish, oval-shaped head for comfortable grip. The stem is plain, not graduated. The cutting pin, through stem, is adjustable and so shaped as not to follow grain of wood when used; held in position by a flat-head, countersunk screw. The head of a brass plate, placed on end of stem, prevents head from sliding off.

A knurled-head adjustable screw bears against a brass plate in the beam and prevents wear. A brass plate, 1/2 inch wide, placed across the face of the head, also prevents wear.

Dimensions of stem, 83/4 x 1 x 7/16 inches. Dimensions of head, 3/4 x 3/4 inches.

Disston No. 90 Mortise Gauge

Scribing with a marking gauge

Stem showing brass plates with movable and stationary pins

The Disston No. 90 Mortise Gauge is made of hardwood, lacquered. A fine, well made tool. The head is oval-shaped for a comfortable grip.

Stem is not graduated. Knurled head thumb screw in end of stem adjusts the scoring pins. The head is adjusted on stem by a knurled-head thumb screw which bears against brass plate in head.

Dimensions of stem, 61/2 x 11/4 x 1/4 inches. Dimensions of head, 2 1/2 x 2 x 1 inches.

LEVELS

Carpenters, masons, farmers, mechanics and the handy man around the home will find many uses for a good plum and level.

Disston makes just the style of plum and level suited to your particular job—all styles and sizes, and they are accurate and dependable in every respect.

The wooden levels are made from straight-grained hardwoods, carefully selected, air and kiln dried. Some of them have the fixed or locked-type level and plumb glasses, others have the adjustable type, which may be adjusted to suit your needs. They are made of oak, cherry, and mahogany. All glasses are made of heavy brass, and they are weatherproof.

The Disston aluminum alloy Featherweight Levels are the lightest weight levels on the market, yet exceptionally strong.

Disston No. 255 Plum and Level

The Disston No. 255 Plum and Level will be a credit to any mechanic's kit. Rosewood stock, nicely finished, showing the beautiful grain of the wood. Sides are grooved for sure grip. The top plate is nickel-plated. Both plum and level glasses are proved.

Length, 10 inches; depth, 1 1/2 inches; width, 3/4 inch.

Disston No. 16 Plum and Level

The Disston No. 16 Plum and Level is very popular. It has given complete satisfaction to carpenters and mechanics for years. Both plum and level glasses are proved, and adjustable. The stock is thoroughly seasoned cherry-wood, stained and lacquered; arch top plate; side views. Solid brass ends protect it against rough usage; corrugated sides to afford sure grip.

Made in the following dimensions:

<table>
<thead>
<tr>
<th>Lengths</th>
<th>Depths</th>
<th>Widths</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 inches</td>
<td>3 inches</td>
<td>1 1/4 inches</td>
</tr>
<tr>
<td>26 inches</td>
<td>3 inches</td>
<td>1 1/4 inches</td>
</tr>
<tr>
<td>28 inches</td>
<td>3 inches</td>
<td>1 1/4 inches</td>
</tr>
<tr>
<td>30 inches</td>
<td>3 1/4 inches</td>
<td>1 1/4 inches</td>
</tr>
</tbody>
</table>
SCRAPERS

Cabinet scrapers play a much more important part in cabinet-making, hardwood floor finishing and in smoothing wood surfaces in general, than their plain appearance would indicate.

Scrapers are used, principally, for smoothing a surface after it has been planed; or smoothing a surface that cannot be planed readily. In refinishing furniture, scrapers are about the only tool that will give satisfactory results. Veneers, generally, are not planed, but are scraped.

A mistaken idea prevails that scrapers should remove only fine dust. If properly sharpened and skillfully operated they will actually plane—remove a fine shaving.

In use, the scraper may be either pushed or pulled. When pushed, the scraper is held firmly in both hands, the fingers on the forward and the thumb on the back side. It is tilted forward, away from the operator, far enough to prevent chattering. When pulled, the angle of the blade is reversed.

The Diston Line of Cabinet Scrapers comprises various styles and sizes, all made from the famous Diston Saw Steel, even gauge throughout, and ground to a perfectly smooth surface. They can be used by hand, in holders, and in scraper planes. The blades are edge holding, made with either straight-edged edges, or with edges dressed and ground, ready to be burnedished.

Diston No. 120 Acme Cabinet Scraper

The Diston No. 120 Acme Cabinet Scraper is made of extra high-tempered hard saw steel with dressed edges and true flat surface. It is the finest and best scraper made. Used by hand, in holders and in scraper planes. Made 19 gauges thick for regular work; for floor layers, cabinet-makers, golf professionals, etc. Sizes, inches: 2 x 4, 5, 6; 2 1/2 x 5, 6; 3 x 4, 5, 6; 2 1/2 x 5, 6.

Diston No. 20 Cabinet Scraper

The Diston No. 20 Cabinet Scraper is similar in shape to the No. 120. It is made of hardened and tempered Diston Steel; plain edges; easy to burnish; 20 gauges thick for use by hand or scraper plane. Sizes: inches: 2 x 4, 5, 6; 2 1/2 x 5, 6; 3 x 4, 5, 6; 2 1/2 x 5, 6.

Diston No. 50 Cabinet Scraper

Known as the “French pattern”, Made of Diston Steel—two straight edges, also concave and convex curves for joinery, cabinet-making and pattern work. 19 gauges thick. 2 1/2 x 5”. Edges dressed. Uniformly hardened and capable of taking a smooth cutting edge when properly burnedished.

Diston No. 40 Cabinet Scraper

Known as the “Swan Neck pattern”, this scraper is very handy and efficient for concave curves, pattern and cabinet-making. The peculiar shape adapts it for use on curved surfaces of varying degree. Made of Diston Steel, uniformly hardened and edges dressed. 19 gauges thick. Size 3” x 5”.

Diston Cabinet Burnishers

Diston Cabinet Burnishers are made in four different patterns. All blades are of highly polished Diston Steel; will turn the edges of cabinet scrapers and other edged tools without defacing the burnisher.

Round hardwood handle, shaped for comfortable grip, varnished; nickel-plated ferrule.

Blade Length
No. 6 Ovoid—heavy
6 inches
No. 1 Ovoid—light
4 1/8 inches
No. 2 Round
4 1/8 inches
No. 3 Square—ed. pt., not cut.
4 1/8 inches

SHARPENING SCRAPERS

For Square Edge Scraping

Some cabinet scrapers are supplied with dressed edges, ready for use; others with plain edges which must be dressed before using. In dressing an edge:

1—Place scraper in vise and draw file on all edges at right angles to face of scraper. This operation will give you a perfectly square but rough edge.

2—Run smooth-cut file back and forth along the edge of scraper (holding the file at right angles to the scraper's face), until the edge is smooth.

3—Lay scraper flat on oil stone and rub until all edges are sharp.

NOTE: In refitting dressed edged scrapers, follow these instructions also.

For Fast Cutting

To put a fast-cutting edge on a cabinet scraper it must be filed to a 30-degree bevel, similar to a bevel on a chisel. Next, place scraper in a vise and run a burnisher along the keen edge, first at an angle of about 8 degrees and finally at about 15 degree angle.

Draw-filing edge of cabinet scraper

Then an oil stone should be run along the edge to make it smooth. This puts a hook on the edge which cuts, or shears off the fiber ends that project from the wood after square scraping, and makes a very smooth surface.

The following illustration and accompanying legend will make clear how to put a faster cutting edge on your scraper.

Turning the edge of a cabinet scraper, using a 4 1/8-inch No. 3 Ovoid Burnisher.

In this manner, the steel is first pressed out from the edge, then tipped over slightly, and finally bent at about 15 degrees from the edge.
OTHER DISSTON TOOLS

No. 10 Plumbers' Saw

The Disston No. 10 Plumbers' Saw is a handy tool for plumbers, carpenters and electricians. Specially tempered to cut pipes, cast iron, iron, etc., it can cut 6-inch pipe in 14 seconds. Blade of Disston Steel, 14 inches wide, half oval, hardened and tempered, with one edge bevel ground. Taper ground; long, slender, needle teeth. Beechwood handle, lacquered. No. 10, 12, 14 inch lengths.

No. D-19 Flooring Saw

The Disston No. D-19 Flooring Saw is for general repair work. A favorite with electronics, plumbers and carpenters. Blade of Disston Steel; 26-inch length; 9 points to the inch; 5/8 inch at butt. Beginning at the center of the blade, the blade is toothed and curved to the point. Teeth on curved edges are shaped to enter a flat surface. Weight of finished blade: curved, reversible and adjustable to various positions; nickel-plated cluster bolt and wing nut.

No. 166 Pruning Saw

The Disston No. 166 Pruning Saw has taper ground, crescent-shaped blade; reverse teeth. Most popular saw of its type made. Cuts fast. Blade taper to point for use in close quarters. Disston Steel Blade; 8 points to the inch; 11 1/2 inches at handle. Hardwood handle, lacquered orange color; three rivets fasten blade to handle. Made in 12 and 14 inch lengths.

No. 38 Pruning Saw

The Disston No. 38 Pruning Saw has crescent-shaped blade, tapering to the point, for work in close quarters. Can be folded and carried in pocket when not in use. Blade of Disston Steel. Taper ground; long, slender, needle teeth. Beechwood handle, lacquered. Has nose at point and is completely adjustable. Made in 10, 12, and 14 inch lengths.

No. 4 Pruning Saw

The Disston No. 4 Pruning Saw has tapering blade to both edges. Made for general pruning. Blade of Disston Steel, one edge has plain cross-cut teeth. 8 points to the inch; other edge has patent teeth, known as Lambs' Ear. Blade of Disston Steel, 14 inches wide, half oval, hardened and tempered, hollow ground. Taper ground; long, slender, needle teeth. Beechwood handle, lacquered. Handle is 10 inches long. Made in 14 inch lengths.

No. 5 Lopping Shear

The Disston No. 5 Lopping Shear has ample leverage for easy operation. Made in 5-inch size; blade 1 1/2 inches long, adapted to light pruning of trees, shrubs, etc., in close quarters. Blades of Disston Steel; 1 1/2 inches wide. Blade and hook are forged from Disston Steel. Blade and hook are hardened and tempered. Blade has a hook held by fine threaded bolt and nut, which permits accurate tensioning. Arm and blade are one piece of steel. Stop lug on arm. Hardwood handles, 8 inches long, lacquered orange and reinforced with one inch ferrule. Ferrules and arm lacquered black. Dimensions: Length of blade 5 1/2 inches; handles 16 inches.

No. 7 Lopping Shear

The Disston No. 7 Lopping Shear is designed to make a shearing cut. Has long, narrow handles. Blade and hook are held in place by a fine thread bolt and fastened with a nut. This permits tension adjustment. Arm and blade are one piece of steel. A stop lug on the arm prevents arms from opening. The blade and hook are fastened with a nut. The blade and hook are held in place by a fine thread bolt and fastened with a nut. This permits tension adjustment. Arm and blade are one piece of steel. A stop lug on the arm prevents arms from opening. Ferrules and arm lacquered black. Dimensions: Hook 4 1/4 inches; arm 20 inches; length overall 25 inches.

No. 30 Hedge Shear

The Disston No. 30 Hedge Shear is made of best materials, finely finished. Properly balanced; stays sharp. Blade of Disston Steel, 14 1/2 inches wide, half oval, hardened and tempered, hollow ground. Full polish, yellow ground. Taper ground; long, slender, needle teeth. Beechwood handle, lacquered. Handle is 12 inches long. Made in 14 inch lengths.

No. 30 Hedge Shear

The Disston No. 30 Hedge Shear is made of best materials, finely finished. Properly balanced; stays sharp. Blade of Disston Steel, 14 inches wide, half oval, hardened and tempered, hollow ground. Full polish, yellow ground. Taper ground; long, slender, needle teeth. Beechwood handle, lacquered. Handle is 12 inches long. Made in 14 inch lengths.

No. 30 Hedge Shear

The Disston No. 30 Hedge Shear is made of best materials, finely finished. Properly balanced; stays sharp. Blade of Disston Steel, 14 inches wide, half oval, hardened and tempered, hollow ground. Full polish, yellow ground. Taper ground; long, slender, needle teeth. Beechwood handle, lacquered. Handle is 12 inches long. Made in 14 inch lengths.

No. 40 Hedge Shear

The Disston No. 40 Hedge Shear is the most durable, lightweight hedge shears made; easy motion, cuts clean. Blades made flat, 14 inches wide. Disston Steel; hardened and tempered. Taper ground; long, slender, needle teeth. Beechwood handle, lacquered. Handle is 12 inches long. Made in 14 inch lengths.

No. 47 Garden Trowel

The Disston No. 47 Garden Trowel. Blade point and tang forged from one-piece Disston Steel; 15 inches wide at blade tip; 15 inches wide at tip and handle. Designed for hard work. Blade is 14 1/2 inches long. Made in 14 1/2 inch lengths.

No. 543 Wood Saw

The Disston No. 543 Wood Saw is a combination of the No. 600 Frame and the No. 45 Disston Blade. Selected hardwood, stained walnut and varnished; double brace stretcher; double rivet. Blade has thin back; plain teeth; round handle; 15 inches wide; 41 1/2 points to inch. Rustproof Jumbo Rod. Length of blade, 30 and 32 inches.

No. 156 Professional Pruner

The Disston No. 156 Professional Pruner is one of the finest pruners made. The hook and cutter lever are drop forged from high carbon tool steel. Hook specially heat treated; ground and polished. Blade of special alloy steel; hardened, tempered, finely ground and highly polished; securely attached to cutter handle with double blind rivets. Equipped with the Disston patented tension adjustment. Drop forged hook point, end latch. Shears will not pinch hand. Handles lacquered and highly polished. Bladed wood is spring 8 1/4 inches overall.
TROWELS

No. 28 Finishing Trowel

The Disston No. 28 Finishing Trowel has improved mounting of specially treated metal that gives perfect balance. Disston Steel blade, hardened and tempered; especially ground. Lacquer finish blade, 24 gauge, thick. Long mounting securely fastened to blade and with ten counterbore rivets; fast thumb rest; narrow handle, smooth finish. Tang extends through handle and threaded to receive steel hexagon barreled nut.

Lengths: 10 1/4, 11, 11 1/2, 12 inches
Widths: 4 3/4, 4 7/8, 5, 6 inches
Mounting: 9/16, 5/8, 3/4, 1 inch.

No. 338 Flexotide Finishing Trowel

The Disston No. 338 Flexotide Finishing Trowel is a modern trowel to meet the needs of modern plastering. It has the "California Pattern" handle. Disston Steel blade, hardened and tempered, lacquer finish, 24 gauge, thick. Long aluminum mounting, with fast thumb rest, is fastened to the blade with ten rivets. Hardwood handle, smooth finish. Tang extends through handle and threaded to receive steel hexagon barreled nut and washer.

Lengths: 10 1/4, 11, 11 1/2, 12 inches
Widths: 4 3/4, 4 7/8, 5, 6 inches
Mounting: 9/16, 5/8, 3/4, 1 inch.

No. 10 Brick Trowel

The Disston No. 10 "Philadelphia Pattern" Brick Trowel is true taper ground from heel to point and from center to edges. Post at right angles to the blade; handle set for proper lift and balance; edges shaped for striking brick. This pattern trowel is more universally used than any other pattern. Blade, post, and tang are forged from one piece of Disston Steel; hardened and tempered; lacquered. Hickory handle, lacquered, shaped to hand; heavy steel ferrule 1 1/2 inches long. Tang extends through handle and threaded to receive steel hexagon barreled nut.

Lengths: 10 1/4, 11, 11 1/2, 12 inches
Widths: 4 3/4, 4 7/8, 5, 6 inches
Mounting: 9/16, 5/8, 3/4, 1 inch.

No. 5 Brick Trowel

Disston Steel insures the flexibility and durability of Disston Trowels.

No. 114 Lance Perfected

14 - 18 Gauge. Made in 4, 4 1/2, 5, 5 1/2, 6, 6 1/2, 7, 7 1/2, 8, 8 1/2 foot lengths.

No. 152 Champion

14 - 16 Gauge. Made in 4, 4 1/2, 5, 5 1/2, 6, 6 1/2, 7, 7 1/2, 8, 8 1/2 foot lengths.

No. 214 Triumph Lance Perfected

Taper Ground 2 Gauges. 3/4" wide. Made in 4 1/2, 5, 5 1/2, 6 foot lengths.

No. 554 Champion One-man

THE DISSTON Taper Ground line of Cross-cut Saws contains all popular patterns of teeth and lengths.
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