

**MECHANIX  
ILLUSTRATED**

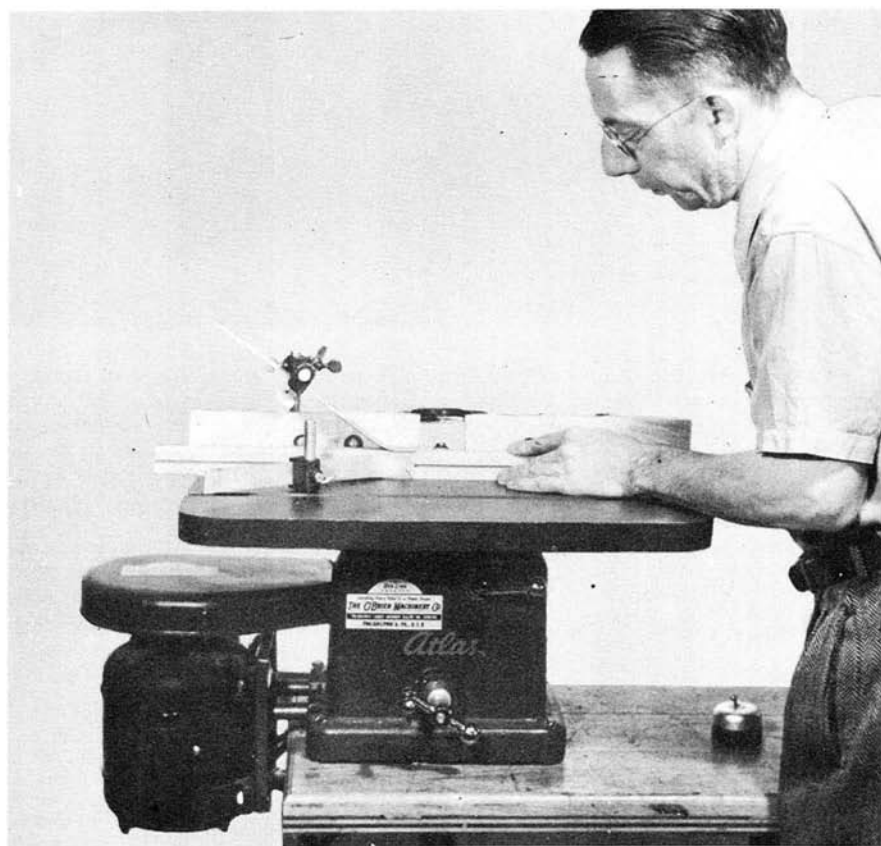
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**MECHANIX ILLUSTRATED**

TOM MCCAMILL BUILDS  
HIS DREAM CAR

DOES POLAR ICE THREATEN  
TO UNBALANCE THE WORLD?

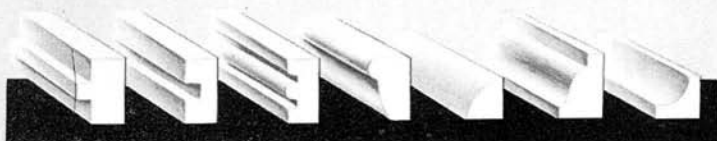
See Automobile Society page



# HOW TO USE THE SHAPER...

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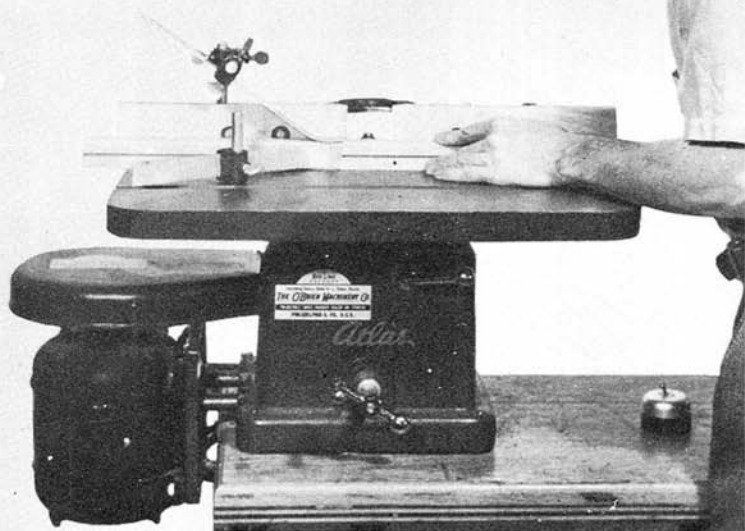




## How to Use the Shaper

Add a guide (awl/bores) to your work with this compact and versatile power-operated tool.

By John P. Arnold

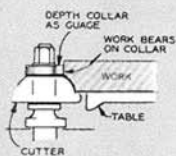


**L**ET'S put it briefly: the shaper is probably the last power tool you'll buy to round out and complete your shop. As a universal finishing tool for piecework or production runs, it gives that professional touch which characterizes the finest examples of modern workmanship. A canvass of its possibilities should convince you that ultimately you should own one.

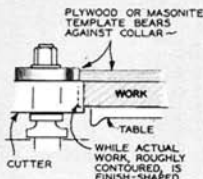
There are few professionally made wood products that haven't undergone a shaping

operation in some stage of construction. Cabinetmakers, toy-and-novelty manufacturers, and general woodworkers employ single-spindle shapers, such as the one shown here, for making joints and adding whatever embellishments the work requires.

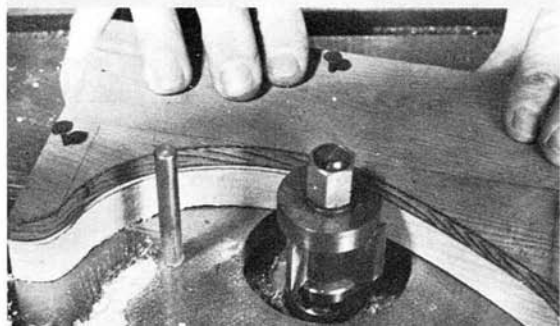
Hundreds of operations can be done on it. The sign of a competent operator is his ability to set up the machine for a particular job and to devise new methods when

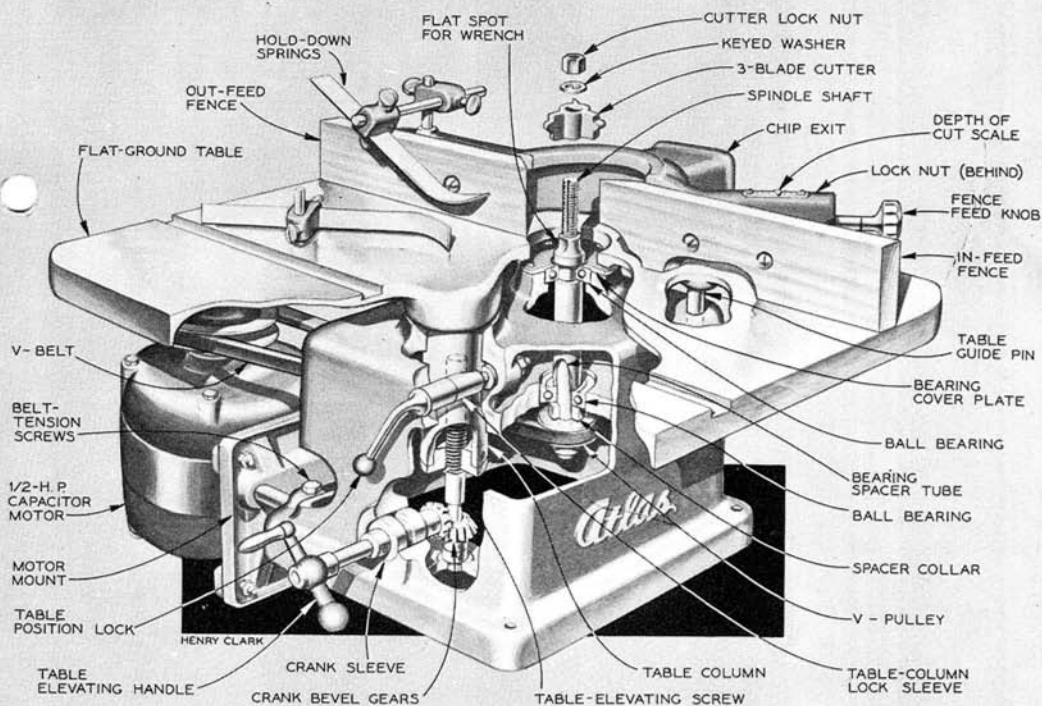


To shape stock that has irregular contours, take the fence off and place a collar on the spindle above the cutter for the project to ride against. Starting pin is at left.



When the entire edge of irregular work is to be cut away, nail a pattern to the stock. Its edge runs against the collar while the cutter shaves surplus wood from work.



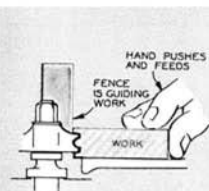


necessary. Such knowledge, naturally, must be picked up by the beginner as he goes along, but the basic principles and fundamentals of operation are readily acquired.

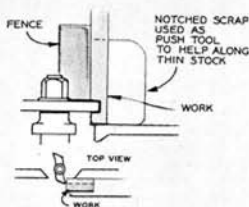
The bench shaper described here is suitable for either the amateur or the professional. Its  $\frac{3}{4}$ -in. alloy-steel spindle, rigidly supported by widely spaced ball bearings, is belt-driven by a  $\frac{1}{2}$ -hp. motor at 8,270 r.p.m. The 15x21-in. table, which is grooved for a miter gauge and other fixtures, can be

raised and lowered a full 2 inches. One section of the fence can be moved in and out  $\frac{1}{2}$  inch for operations in which entire edges of the work are to be cut away.

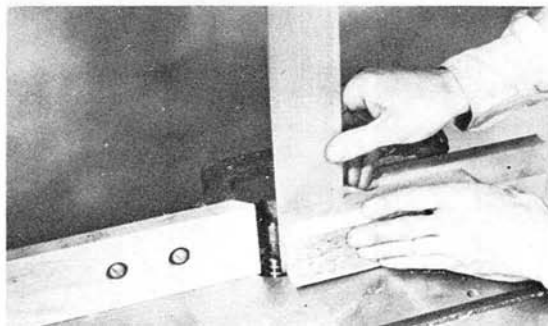
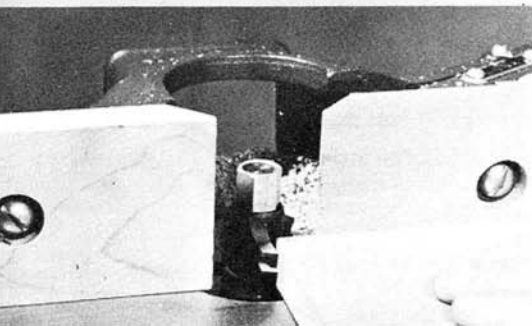
The spindle takes three-bladed cutters, which are capable of producing hundreds of varied moldings. These cutters are safe and require little experience to set up. They are easily sharpened merely by grinding across the flat faces of the blades. There are many other attachments that



**Cutting in a molding on the straightway is the most common operation. The two sections of the fence, which is used as a guide, must be trued up in perfect alignment.**

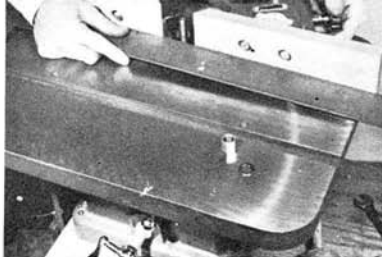


**Making a box joint with the stock held on end. A notched scrap of wood is used as combination backing block and push stick to guide and move the work past the blade.**

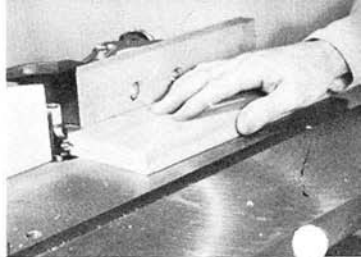




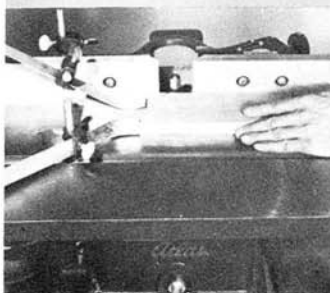
One of the advantages of the three-bladed cutters is that they are easily sharpened by grinding over the flat faces.



Using straightedge as a guide while setting the two halves of the fence in alignment so straight moldings can be run.



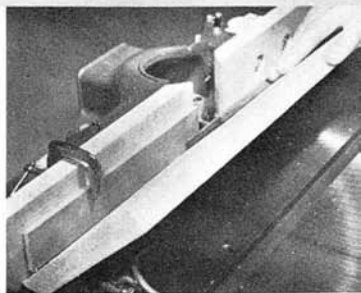
To position work vertically, a knob is turned, raising or lowering the table and stock in relation to fixed spindle.



Spring hold-downs are used to keep lengthy or bulky work in position under the rapid-fire impacts of the cutter blades.



End-grain shapes are cut with work held against miter gauge. Note the protective facing of wood that is added to gauge.



Miter cuts are made with the stock held at correct angle by an auxiliary table that's secured in place with clamps.

can be used for special operations, including sanding drums, saws, grinding wheels, router bits, special knives in safety cutter-heads or clamp-type heads, fly cutters, planer heads, and rotary files.

The most common setup requires both sections of the fence to be in perfect alignment. This is done by holding a straight-edge against the left or outfeed section and moving the other section up to it. A cutter of the required shape is placed on the spindle with several collars to fill the unoccupied space, the table is raised or lowered so the cutters will strike the work at the right point, and the entire fence is moved in or out to expose the blade contour and limit the depth of cut; then the motor is started and the molding is run.

To take fullest advantage of three-bladed cutters, a reversing switch should be connected to the motor to change the direction of spindle rotation. The spindle normally turns counterclockwise (as viewed from the top), the work is fed from the right, and the cutter must be placed on the spindle so the flat faces of the blades enter the work first. With the direction of the rotation reversed, the cutter is inverted and the work is fed from the left side. Thus it is possible to make the cuts on the lower edges of the work, which is a safer way to operate and

avoids unevenness due to possible variations in the thickness of the lumber.

When the entire edge of the work is to be cut away, the right fence is moved back the desired depth of cut and the left section is adjusted to support the work after it passes the cutter. When running long moldings, hold-downs keep the work flat against the fence and table. The miter gauge is useful for end-grain shaping. A wood facing should be fastened to it to avoid splintering the work at the end of the cut. Work stood on end for shaping can be guided with a notched backing block. Various special fences can be made for running moldings on either the inside or the outside of circular work or segments of circles. Matched cutters are used to run tongue-and-groove and drop-leaf joints.

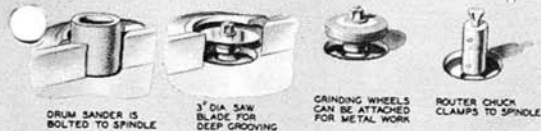
When running mitered work, an auxiliary table, blocked up to whatever angle is required, is clamped to the machine. If the entire mitered edge is to be cut away, a strip of wood of suitable thickness is clamped to the outfeed fence to support the work.

With irregular or curved work, where it is impossible to use a fence, a collar of the correct diameter to limit the depth of cut is placed on the spindle. This collar rides against the edge of the work, which must



TYPICAL CUTTER—ALONG WITH A FEW OF THE MORE-COMMON CUTS PRODUCED

SOME OF THE ATTACHMENTS THAT MAKE THE SHAPER VERSATILE—

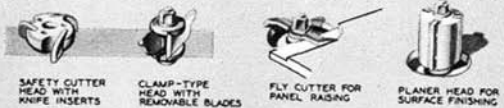


DRUM SANDER IS BOLTED TO SPINDLE

3" DIA SAW BLADE FOR DEEP GROOVING

GRINDING WHEELS CAN BE ATTACHED FOR METAL WORK

ROUTER CHUCK CLAMPS TO SPINDLE

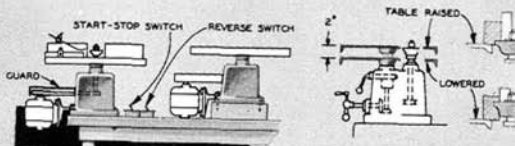


SAFETY CUTTER HEAD WITH KNIFE INSERTS

CLAMP-TYPE HEAD WITH REMOVABLE BLADES

FLY CUTTER FOR PANEL RAISING

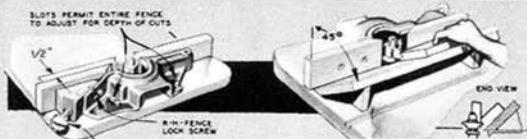
PLANER HEAD FOR SURFACE FINISHING



MACHINE MUST BE MOUNTED NEAR TABLE END TO CLEAR MOTOR—

—OR MOUNTED ON BLOCKS ELSEWHERE

TABLE RAISES AND LOWERS WORK FOR CUTTING WHILE SPINDLE REMAINS STATIONARY

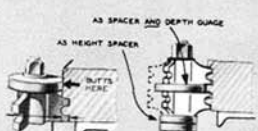


SLOTS PERMIT ENTIRE FENCE TO ADJUST FOR DEPTH OF CUTS

AUXILIARY TABLE IS SET UP FOR MAKING SHAPES ON BEVEL EDGES



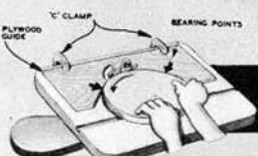
TO TIGHTEN OR LOOSEN NUT, WRENCH UNDER TABLE ENGAGES FLAT SPOT ON SPINDLE



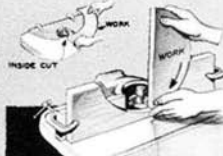
DEPTH COLLARS GAUGE AMOUNT OF WOOD CUT AWAY WHEN FENCE CANNOT BE USED



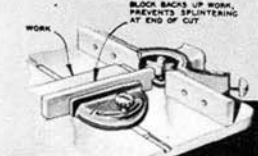
ON IRREGULAR WORK, FENCE IS REMOVED WHILE GUIDE POST ACTS AS STARTING FULCRUM



EDGE SHAPING ON CIRCULAR WORK REQUIRES ANOTHER JIG AS SHOWN—



—WHILE FACE SHAPING NEEDS THIS JIG



MITER GAUGE IS USED FOR MOST END WORK

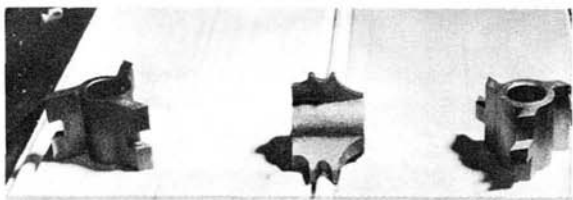
be quite smooth to avoid irregularities. Keep the stock moving to prevent the collar from scoring.

Collars must be ground true to diameter and should not be allowed to become incrustated with resinous deposits picked up from the wood. They can be cleaned with alcohol and covered with a light film of grease when stored away.

A starting pin, against which the irregular work can be held at the beginning of a cut, allows the operator to ease the wood into the cutter without any danger of its being thrown forcibly from his hands should the cutter grab. Because the cutter is not enclosed, cutting irregular work is the most hazardous of shaper operations. The beginner should take only light cuts on work large enough to keep the hands far away from the spindle until he becomes familiar with this method.

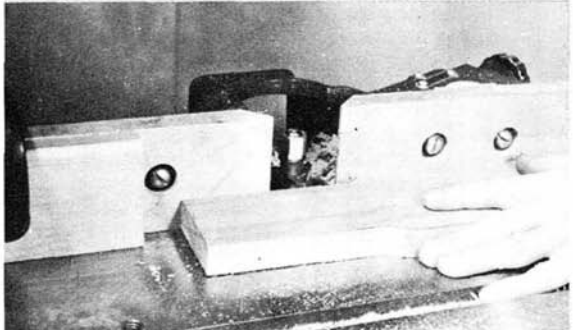
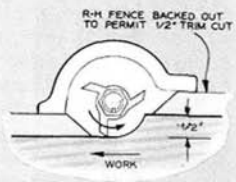
When the whole edge of irregular work is cut away, leaving no bearing surface for the collar, lightly brad a 1/4-in. plywood pattern to the work. This pattern should be finished to the required outline shape. Its edge rides against the collar as the cut is made.

There's almost no end to the types of work that can be turned out on a shaper. Buy one and see for yourself! •



Sets of matched cutters can be obtained with which to shape tongue-and-groove joints and other special jobs such as drop-leaf joints.

If the entire edge of a straight piece is to be cut away, set the right part of the fence back the distance of the cut.



# Atlas SPINDLE SHAPER ACCESSORIES



## SHAPER STAND

No. 9018 SHAPER STAND. Heavy gauge steel—provides a permanently rigid shaper support. Top is ready drilled for bolting shaper in place. Assembles easily with bolts furnished. 16" x 16" x 27" high. 31 lb.

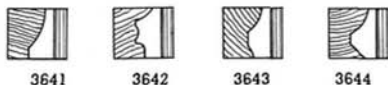
## SHAPING CUTTERS

Select tool steel, carefully heat-treated and ground for clean cutting and long service. Easily resharpened by grinding across the face of the cutting edges. All are 1-11/16" in diameter, have 1/2" hole.

No. 3620 SET OF 11 SHAPING CUTTERS, shown and listed below. 1 1/2 lb.



No.	Cutter	Wt. Oz.
3621	1/4" Tongue	2 3/4
3622	1/4" Groove	2 1/2
3623	Glue Joint	2 1/2
3624	Screen Mould	2 1/2
3625	Moulding	2 1/2
3626	Beading	2 1/2
3627	Table Edge	2 1/2
3628	Moulding	2 1/4
3629	1" Straight Face	2 3/4
3630	1/2" Straight Face	1 3/4
3631	1/4" Straight Face	1 1/4



No.	Cutter	Wt. Oz.
3641	Moulding	2 1/4
3642	Moulding	2 1/4
3643	Radius Edging	2 1/4
3644	Moulding	2 1/4



## DEPTH COLLARS

No. LS-31 SET OF SIX DEPTH COLLARS. Necessary for gauging depth of cut—also used as height spacers. 1/2" hole, 1/4" wide. Outside diameters: 7/8", 15/16", 1", 1-1/16", 1 1/8", 1 1/4". 4 1/2 oz.

## SASH CUTTER AND SPACERS



Equip your shaper for quick, accurate handling of door, window, and storm and screen sash work. Cutter has 1/2" hole, 1/2"—24 thread—threads directly on shaper spindle.

No. 3675 SASH AND DOOR CUTTER AND SET OF FOUR SPACERS. 4 1/2 oz.



## SASH AND DOOR CUTTER

No. 3645 SASH AND DOOR CUTTER only. 1/2" hole, 1/2"—24 thread. 1 1/2 oz.



## SPACERS

No. 3670 SET OF FOUR SPACERS. Shoulder cutter at desired position on spindle. All are 3/4" dia., have 1/2" hole. Lengths: 1/4", 5/16", 1/2", 1". 3 oz.



## MITRE GAUGE

No. 3259 MITRE GAUGE. Essential for holding end grain work, and for shaping jobs requiring special jigs. Gauge is graduated 60° left and right locks rigidly in desired position. Slides smoothly in table slot. Face 2" x 6 1/4". 4 lb.

No. 3261 EXTENSION STOP ROD ASSEMBLY. For use with No. 3259 Mitre Gauge. Simplifies duplicate work. 10 oz.