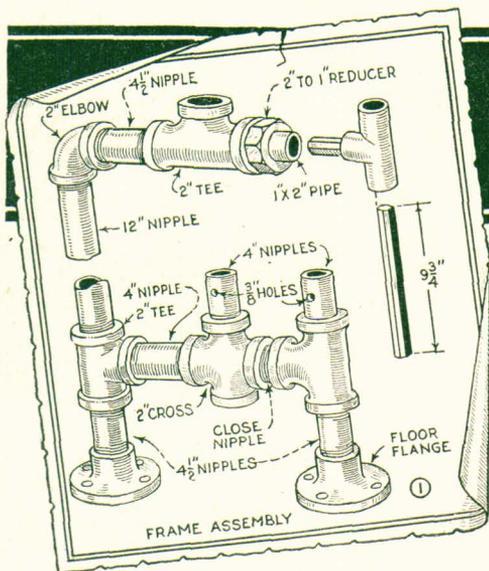
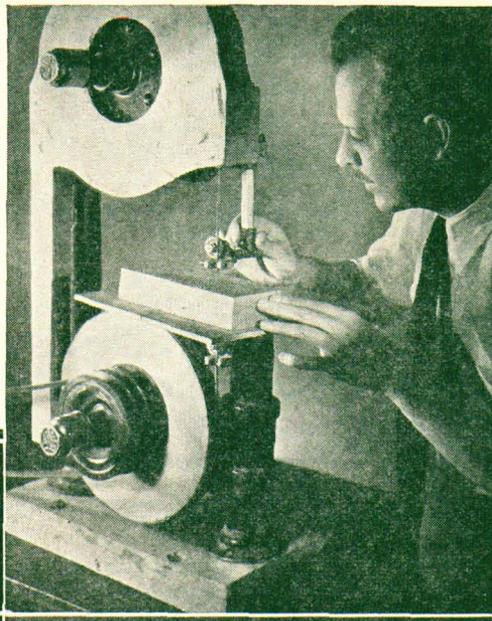


Homemade BANDSAW

from Pipe Fittings and Auto Parts

YOU can build this efficient ball-bearing bandsaw easily from standard iron-pipe fittings, two discarded model-T Ford front wheels, a single piston from the same car, and a few other pieces of scrap materials. The frame is assembled from 2-in. pipe fittings as in Fig. 1. First drill and tap the tees and the single elbow for $\frac{1}{4}$ by 1-in. set screws, placing these as in Fig. 8 to prevent the parts of the frame from shifting out of line. Screw the parts together tightly, line up the upper arm with



the lower cross member, and then tighten the set screws.

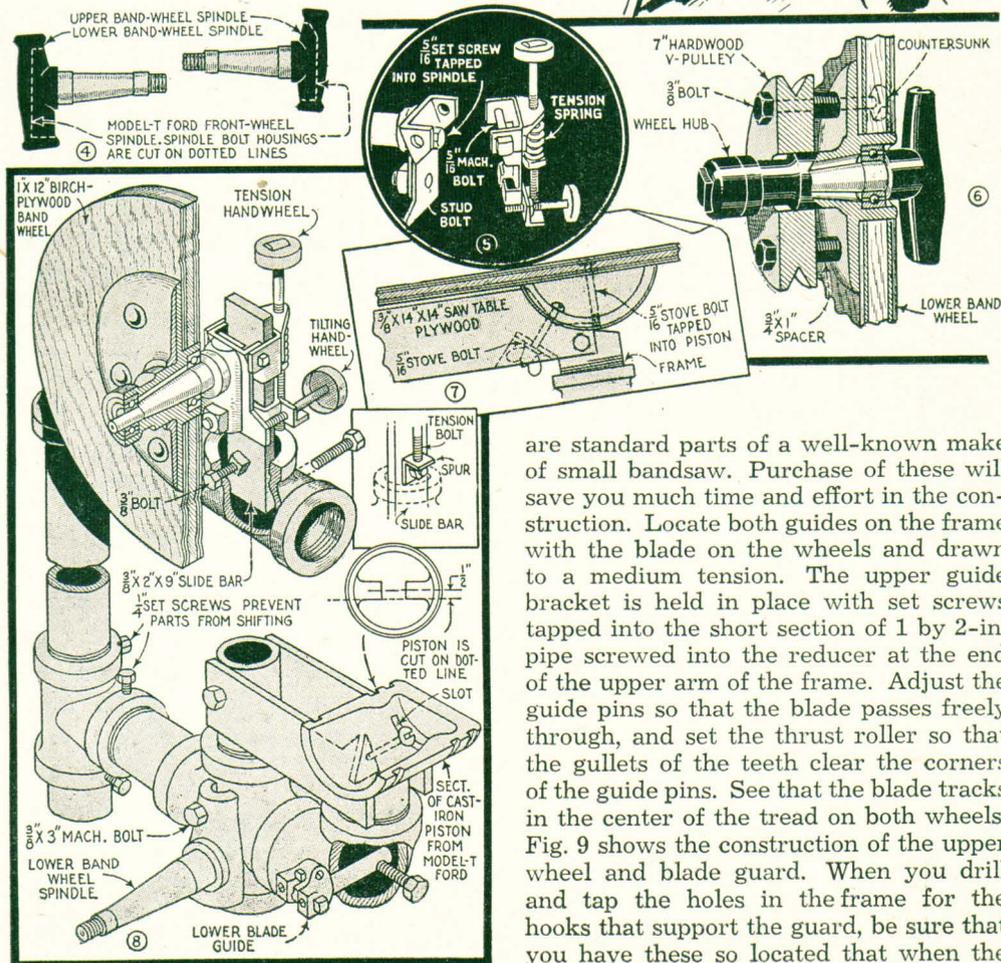
Next, you remove the spokes from the hubs of the two model-T Ford front wheels. Drive the outer flange up to the inner flange on both hubs, then with a hacksaw cut the spindle-bolt housings as shown by the dotted lines in Fig. 4. The exact size of the remaining portion of the housings is not important as filing will be necessary in fitting the spindles to the frame and the upper slide. Two disks are cut from 1-in.

birch plywood, each $12\frac{1}{2}$ in. diameter, and the center is bored out to fit over the wheel hub as in Figs. 6 and 8. Remove the hubs from the spindles and bolt the disks in place.

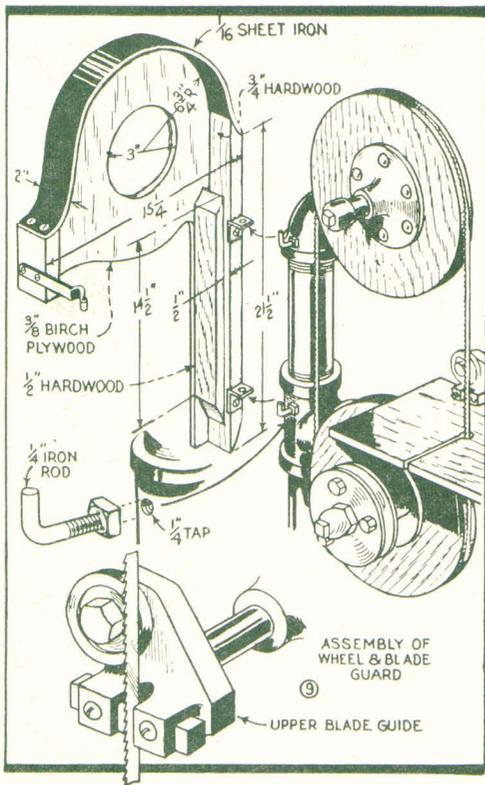
Now bolt the lower spindle to the frame as in Fig. 8. Make sure that the spindle is square with the frame both ways so that the wheel will run true. This will likely require some filing on both the spindle and the frame. Then fit the upper slide as in Fig. 8, from which you will see that a single bolt passes through the slide bar with a nut on each side; a set screw is tapped through the tee from the opposite side and bears against the lower end of the slide bar. Polish the bar so that the slide will move freely up and down. Fig. 3 dimensions the two parts of the slide which carries the upper wheel when assembled as in Figs. 5 and 8. Flat iron $\frac{1}{8}$ in. thick is used for both pieces. Bend the slide over a piece of $\frac{3}{8}$ by 2-in. iron to get the proper size and fit. Smooth the corners with a file

tion on the frame. Provide a wing nut for the trunnion screw so that you can loosen it quickly and easily when necessary to tilt the table. By placing a blade on the wheels you then can determine the correct location of the holes for the bolts holding the plates. Though not essential, it is better to cover the plywood table top with a sheet of 1/8-in. aluminum. This is slotted for insertion of the blade and is held in place with countersunk screws. If desired, the table may be made larger than indicated in Fig. 7.

Figs. 8 and 9 show the type of blade guides used above and below the table. The roller guide, Fig. 9, may be used also below the table in place of the pin guide shown. The upper and lower guides and the upper guide bracket shown in Fig. 1



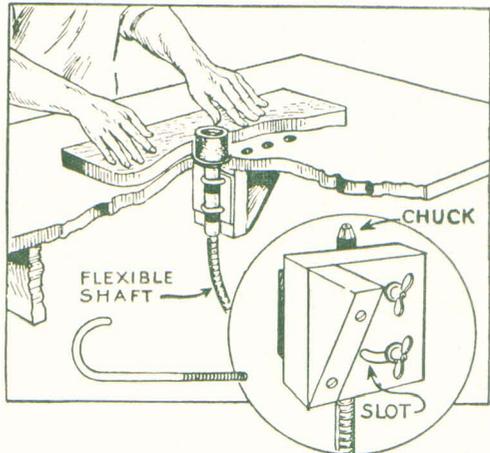
are standard parts of a well-known make of small bandsaw. Purchase of these will save you much time and effort in the construction. Locate both guides on the frame with the blade on the wheels and drawn to a medium tension. The upper guide bracket is held in place with set screws tapped into the short section of 1 by 2-in. pipe screwed into the reducer at the end of the upper arm of the frame. Adjust the guide pins so that the blade passes freely through, and set the thrust roller so that the gullets of the teeth clear the corners of the guide pins. See that the blade tracks in the center of the tread on both wheels. Fig. 9 shows the construction of the upper wheel and blade guard. When you drill and tap the holes in the frame for the hooks that support the guard, be sure that you have these so located that when the



Spindle Sander Has Flexible Shaft

For edge-sanding irregular work, an efficient spindle sander can be made from a table, a small sand drum, a length of flexible shafting and a 1/4-hp. motor. Bore a hole in the center of the table top just large enough to admit the drum. From 1 3/4-in. hard-maple stock cut a 4 by 6-in. block, and from 1-in. stock a triangular brace. Screw these parts together as shown. Drill the block to receive two 1/4-in. iron rods, 7 in. long, bent to form a hook at one end and threaded for wingnuts at the other. Drill and saw out a slot as shown and also drill and slot a 4 by 5-in. block of 1/2-in. stock to correspond with the hole and slot in the 4 by 6-in. piece. Attach the flexible shaft by means of the hooked rods and wingnuts to the block assembly and tighten the sanding drum in the chuck, after which the drum is inserted through the hole in the table and the whole is fastened securely with heavy screws countersunk in the table top and projecting into both brace and block. Connect the end of the flexible shaft to the motor mounted under the table.

guard is in position the top will clear the upper band wheel by at least 1 in. This will allow sufficient space for the necessary up-and-down movement of the wheel. Blades for the standard 12-in. bandsaw can be used on this machine. These are 78 in. long, measured around the wheels, and come in widths from 1/8 to 1/2 in. Your machine should be mounted on a solid bench or stand and should be driven with a 1/4-hp. motor of 1,750 r.p.m. Use a 2-in. V-pulley on the motor to give proper blade speed. When using the machine, the blade should be drawn just tight enough to prevent its vibrating when the machine is running. To get the proper tension adjustment, start the motor and draw up slowly on the tension screw until the blade runs smoothly through the guides.



Inexpensive spindle sander with flexible shaft for edge-sanding curved and irregular work

☛An excellent bright dip for iron and steel consists of sulphuric acid, 7 oz., slowly added to water, 2 1/4 pints, zinc, 1/2 oz., nitric acid, 3 oz., and a small piece of

Lathe Centers From Drills

Broken taper-shank drills can be ground easily to provide good lathe centers in less time than they can be made from rough