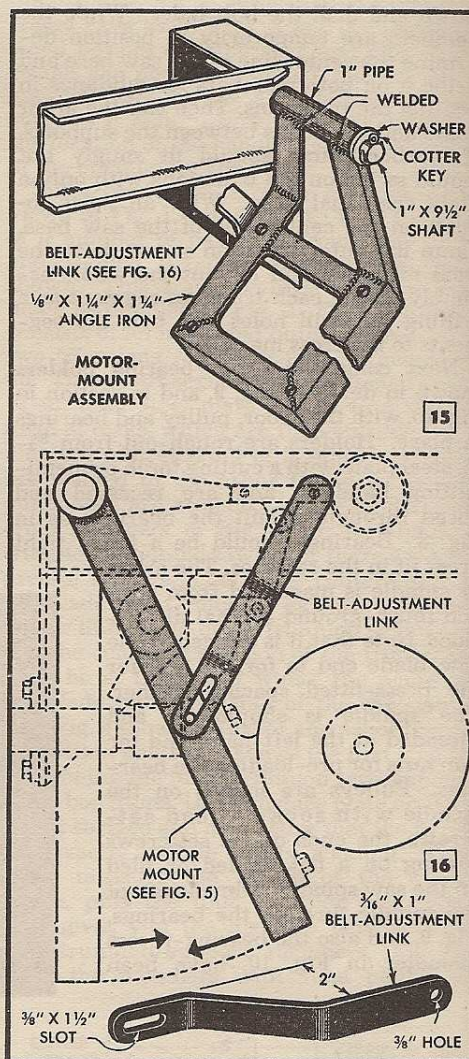


purposely omitted. These measurements must be taken from the bearings at hand.

Now, before going further, study carefully sections A-A and B-B in Fig. 13, also the perspective and top views in Figs. 11 and 12. From Fig. 11 you will see that a 1/2-in. steel plate forms the mounting base for the saw-arbor assembly. Notches milled in opposite edges take the ends of the bearing holders, and rocker arms welded to the mounting base allow it to pivot on a rocker shaft for raising and lowering the saw blade and motor as a unit. When this assembly is complete, the saw spindle should turn freely in the bearings. Check this before finally welding the bearing holders in place. The motor mount, a separate assembly built up by welding together steel angles and flats, is welded to a length of 1-in. pipe which telescopes over the rocker shaft and fits snugly against the rocker arms. See Fig. 13, section A-A, and also the top view, Fig. 12. Shaft, pipe sleeve and arbor mounting are held in place in the arbor frame by washers and cotter keys. When assembled, the parts should move freely but without any end play. The motor mount is not fully dimensioned as it must be made to fit the base of the motor you are to use. Final unit in this assembly is the belt-adjustment link, Figs. 15 and 16. It's made from flat iron, bent to approximately a 2-in. offset and drilled and slotted as indicated. Upper end is bolted to the left bearing holder, Fig. 12, and the lower end to the motor mount. Loosening the lower bolt allows the motor to be moved up or down to obtain correct belt tension.

The raising-and-lowering mechanism consists of a worm and worm-gear segment, the latter made from an ordinary gear by simply cutting away all but a 120-deg. segment. An arm made from 1/4-in. flat iron is welded or brazed to the segment as in Figs. 11 and 13. This arm is connected to



a lug welded to the underside of the arbor plate by two links as shown. The gear segment turns on a shaft passing through the sides of the boxed end of the arbor frame as in Fig. 14. The shaft is made a drive fit in the holes drilled in the frame. Spacers cut from pipe position the worm-gear segment on the shaft, as shown in Fig. 13, section A-A. Although not detailed, the raising mechanism will operate more smoothly if the gear segment is fitted with a bronze bushing. If this is done, the bushing should be a tight drive fit in a reamed hole. Fig. 13 shows worm and worm shaft in position.

❏ A set of socket wrenches can be made by using the heads of hexagon socket screws and welding handles to them.



# 10-in. TABLE SAW HAS TILTING ARBOR

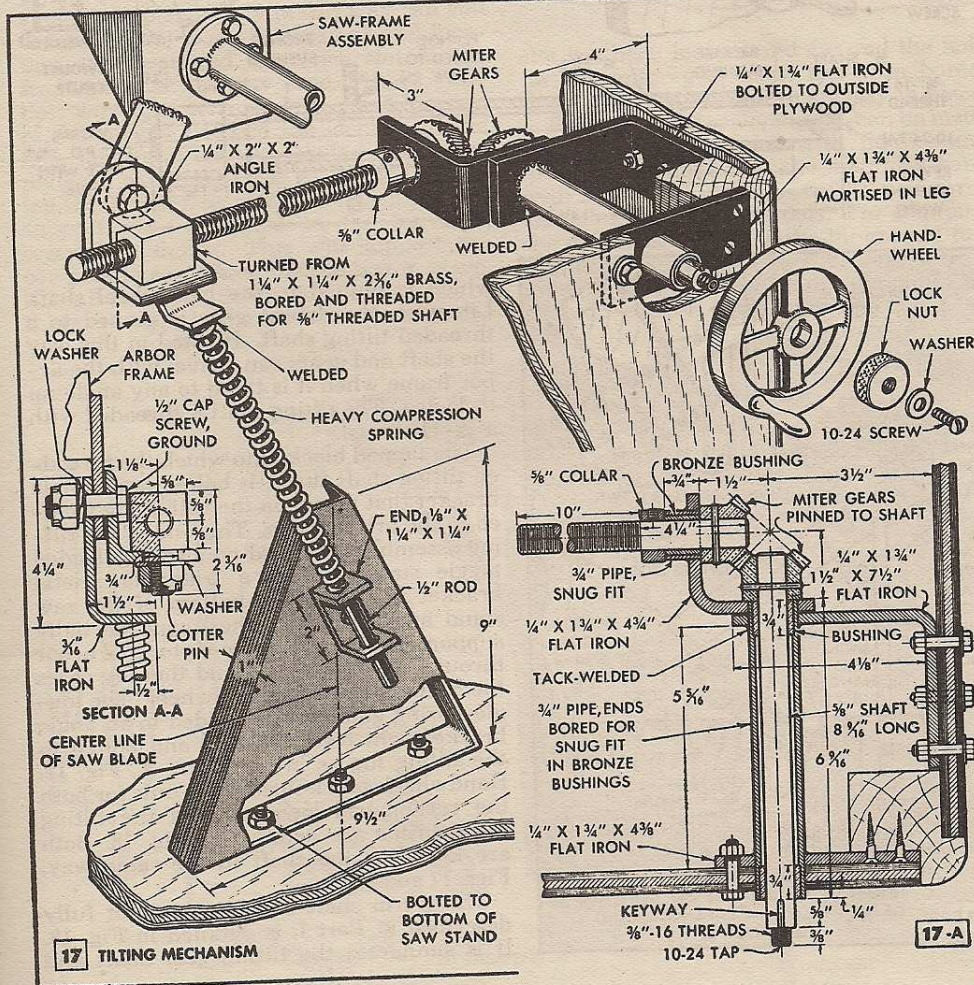
WITH THE SAW completed to the stage described in Part I, the assembly is ready for installation of the arbor-tilting mechanism, Fig. 17. Here the handwheel drives the tilting screw through miter gears which are  $1\frac{1}{2}$ -in. pitch diameter, 12 pitch, 18 teeth with a  $\frac{7}{16}$ -in. face. A frame, assembled from flat iron, supports the handwheel-shaft housing and the miter-gear drive. As will be seen from Fig. 17-A, this frame consists of two angle brackets and one straight support piece, the latter mortised into the leg of the frame. Both the

## Part II

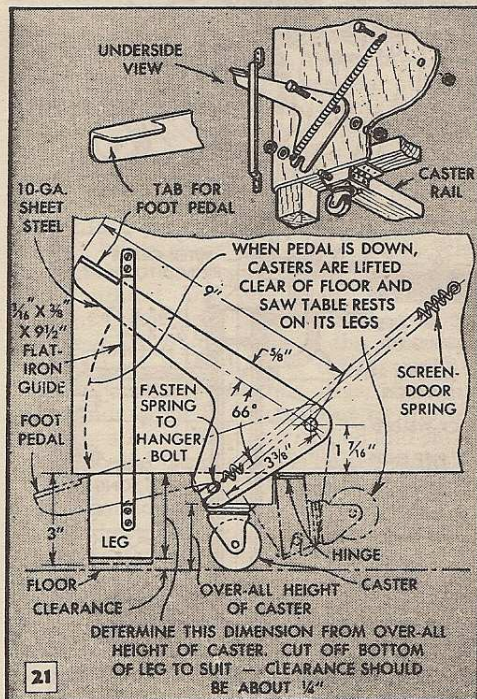
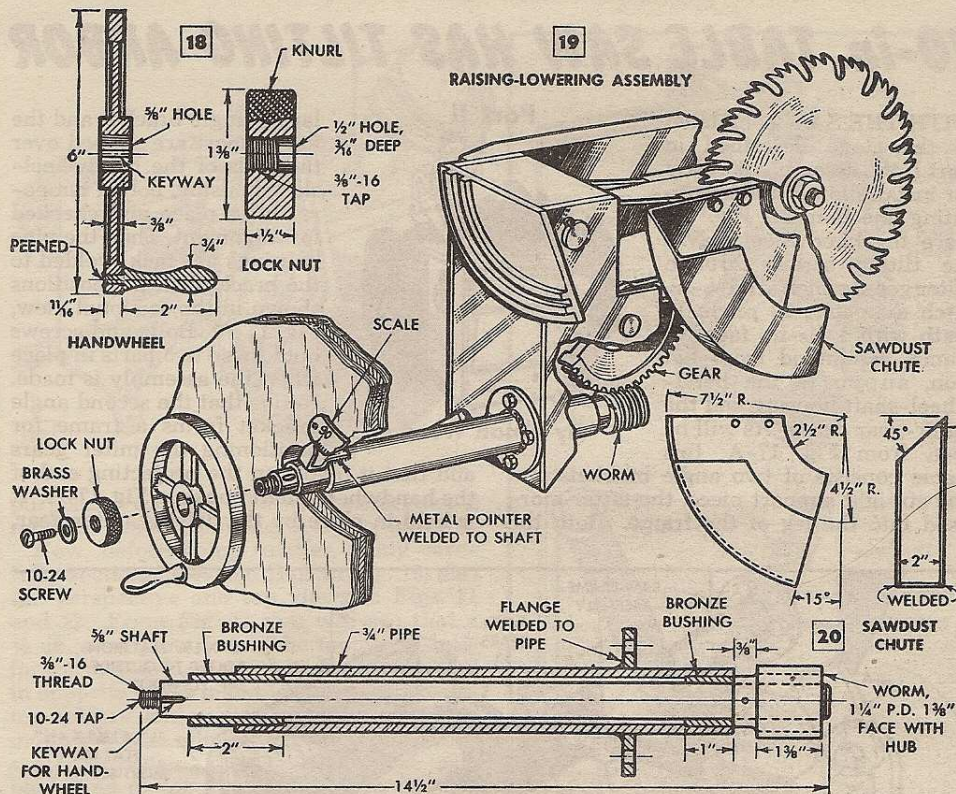


By Elman Wood

larger angle bracket and the flat support are slipped over the ends of the handwheel-shaft housing, bolted temporarily in place and checked for alignment. Then the pipe housings are tack-welded to the brackets in the positions shown in the sectional view, Fig. 17-A. Bolts and screws hold these two parts in place when the assembly is made. Notice that the second angle bracket forms a frame for positioning the miter gears and that it pivots on the projecting end of the handwheel-shaft housing, Fig. 17-A. It is held in place by the driving miter gear,







which is pinned to the handwheel shaft. Likewise, the driven gear is pinned to a threaded tilting shaft. Pivoted in this way the shaft and gears can swivel with the arbor frame when it is tilted to any angle up to 45 deg. The tilting shaft is threaded with a  $\frac{5}{8}$ -11 thread.

The tapped block, into which the threaded tilting shaft turns, is bolted to an angle bracket that pivots on the tilting lug welded to the arbor frame. This end of the tilting assembly is carried on a spring-loaded toggle supported by a triangular metal bracket bolted to the bottom of the saw stand as in Fig. 17. The toggle partially supports the weight of the motor and arbor through the 45-deg. tilt and thereby eases the load on the tilting handwheel. The toggle-spring guide rod is welded to an angle bracket bent from flat iron and bolted to the tilting lug as in section A-A, Fig. 17. Handwheels and knurled lock nuts for both the raising-and-lowering and the tilting mechanisms are detailed in Fig. 18. Both are keyed to the shaft in the same way, Figs. 17 and 19.

The worm shaft and housing, not fully described in Part I, is detailed in Fig. 19. It is similar to the tilting-gear shaft and