

WOOD JOINTS



with POWER TOOLS

CUTTING wood joints with power tools differs from hand methods not only in the use of power but also in the greater use of mechanical methods to set off dimensions. This principle, faster and more accurate than cutting to a pencil line, is illustrated especially well



in the case of the halved or half-lap joint.

Halved Joints: Most common of these is the end half lap, Fig. 6. Both pieces are identical; either part is cut first. Set the saw to depth. Check by cutting from each side of a scrap piece. Set the shoulder cut by placing the end of the work against the saw blade and setting the fence at the opposite end, as in Fig. 3. A scrap piece of stock used as a setting-out block will locate the shoulder cut exactly, Fig. 4. When the cut is to be made in the middle of

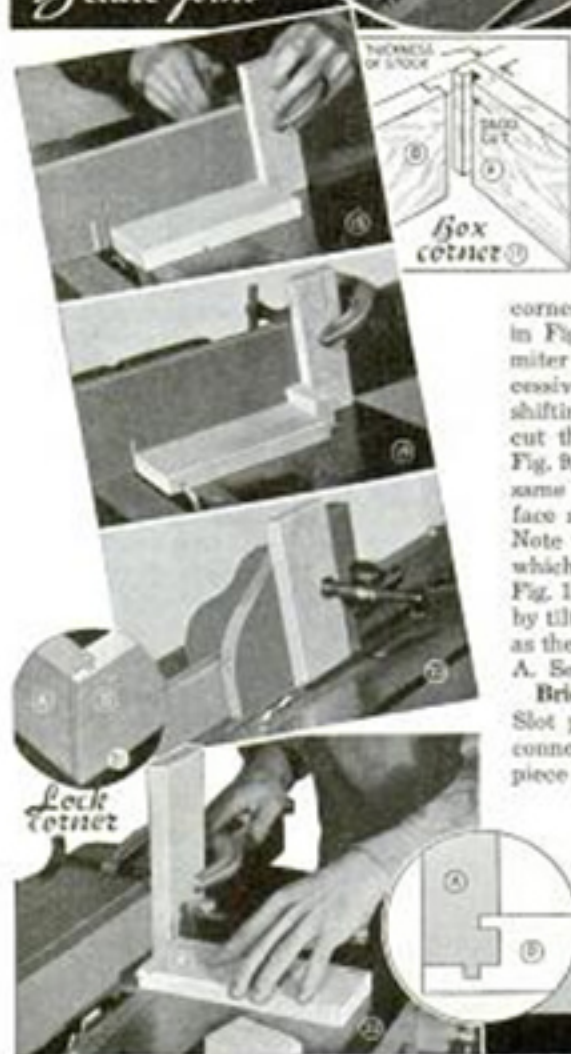
the work, as in the case of the middle half lap, Fig. 5, the setting-out block is a scrap of the stock ripped down the center and nailed together, as in Fig. 2. Fig. 1 shows this block in use. The first cut is set to a pencil mark and a stop block is clamped to the miter gauge. Fitting the setting-out block in place, as shown, then locates the second cut, after which successive cuts across the work will remove excess material.





Bridle joint

A simple tenoning jig



The mitred half lap, Fig. 7, is cut in the same manner as the end lap except that the miter gauge is used at 45 degrees as required. In cutting the dovetail half lap, Fig. 8, start with piece A. If the stock is $\frac{3}{8}$ in. thick, the depth of cut will be $\frac{1}{8}$ in. Swing the miter gauge until a dimension taken at the corner of the work equals $\frac{1}{8}$ in., as shown in Fig. 10. Note how many degrees the miter gauge is swung, and then make successive cuts to remove excess material, shifting the gauge to the opposite side to cut the other side of the opening, as in Fig. 9. To cut piece B, leave the saw at the same depth and cut shoulders from the face side and edges, as shown in Fig. 11. Note the saw cut at the end of the work, which is used to set the face cheek cut, Fig. 12. The slanting cheek cuts are made by tilting the saw table to the same setting as the miter gauge was set in cutting piece A. See Fig. 13.

Bridle Joint: This is shown in Fig. 14. Slot piece B first, using a single saw in connection with the tenoning jig, then cut piece A in the same manner as for a middle half-lap joint. See Fig. 15. Details of the tenoning jig used for all joint work are shown in Fig. 16.

Successive steps



Shouldered mortise and tenon

Box Corner: Detailed in Fig. 17, the box corner is cut with the dado head, $\frac{1}{4}$ in. being the usual standard for $\frac{3}{4}$ -in. stock. Set the work against the side of the saw and clamp a stop block to the miter gage, as in Fig. 18. A scrap piece of the stock sets the dado cut, as in Fig. 19. With the saw set at the same depth, cut the rabbet in piece B. This operation is shown in Fig. 20. The work is moved until the remaining tenon fits the groove in piece A.

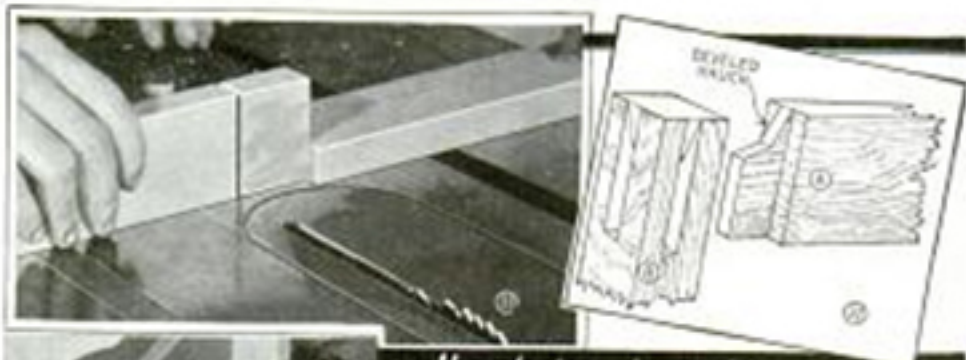
Lock-Corner Joint: Fig. 21 shows this joint. It is cut with a single dado saw, $\frac{1}{2}$ in. thick. The saw is set to a depth of $\frac{5}{16}$ in. and the first and second cuts are made on piece A. The third cut on piece A is of such a depth as to leave a tenon the same thickness as the dado saw ($\frac{1}{2}$ in.). Fig. 22 shows this cut being made. The first cut on piece B is set in $\frac{1}{8}$ in. from the edge, and is carried across until the groove fits the first piece. The final cut on piece B cuts the tongue to the right length and also cuts the groove for the tongue at the end of the first piece. See Fig. 23 for successive steps in forming a lock-corner joint.

Milled Corner: This is an excellent box or drawer joint. Notice in Fig. 27 the dimensions marked DD (double dado). If a $\frac{1}{4}$ -in. thick dado combination is used, these dimensions would be $\frac{1}{2}$ in. Place the ten-



in making lock corner joint





Haunched mortise and tenon

oning jig over the saw fence and use it as a stop block, making the adjustment so the dado cut will be $\frac{1}{2}$ in. from the end of the work, as in Fig. 23. Make the cut, completing piece A. Now, without moving the fence, place piece B in the tenoning jig, Fig. 29, and cut the slot. The joint, fitted together, will look like Fig. 30.

Mortise-and-Tenon Joints: A typical example is the shouldered mortise and tenon shown in Fig. 34. Start by making the shoulder cuts, as in Fig. 31, cutting in on all four sides. Next, cut the cheeks, making all cuts on the inside, Fig. 33. An optional method of cutting the tenon is shown in Fig. 35. This makes use of a backing block of a thickness equal to the width of the tenon plus the thickness of the saw blade. After the first cheek cut is made, the backing block is removed and the second cheek cut is made, keeping the same face side of the work against the jig. Another method is to use two saws with a spacing collar, as in Fig. 26. The collar, Fig. 25, plus paper disks, spaces for loose or tight tenons. When cutting mortise for any mortise-tenon joint check the fence setting by nibbling off a corner of the tenon, Fig. 34, and then set the chisel to the proper depth, as in Fig. 36.

Haunched Tenons: These can be either square or beveled. The cutting of a beveled hauch is shown in Fig. 32. Make the shoulder cuts first, tilting the



table to shoulder the hauch, as in Fig. 37. Then make the cheek cuts, as in Fig. 38. In cutting the mortise, tilt the drill table for the hauch, checking by holding the tenon in place against the fence. Make the angle cuts first, as in Fig. 39, then level the table and cut the rest of the mortise.

Nut Holder on Wheel Wrench



Wheel nuts will not be lost when removed if they are slipped under a short length of spring wire, which has been brazed to the wrench as indicated. The wire should be of a good quality so that it

will not bend out of shape when the nuts are slipped on it.—E. Hanson, Argyle, Wis.

Auto Fan Exhausts Paint Fumes from Spray Booth

Desiring to economize on equipment for my paint-spraying shop, I rigged up an exhaust fan to remove paint fumes from the spraying booth by using an auto fan, which was driven by the belt that run the compressor. The drawing shows the arrangement. A model-T Ford fan was used.

—Walter Cox, Dundas, Ontario, Can.



Tailboard on Luggage Carrier Aids in Loading Packages



Bumper guards do not interfere when loading heavy luggage into your car trunk if the latter is provided with a tailboard, which folds down over the guards as shown. The board tends to provide a platform from the trunk to the edge of the bumper. The front edge of the shelf over the spare tire in the trunk is cut away an amount equal to a little more than the thickness of the board, which is then hinged in place as indicated. After the trunk has been loaded, the board is raised up against the luggage.

Wet Blotter or Cardboard Used in Cutting Tire Patches

Sheet rubber for repairing inner tubes may be cut to the desired shape much more easily, and without sticking to the shears, if the sheet is first placed upon a moist blotter or piece of heavy cardboard as shown. When shaping the patch, cut through both the rubber and blotter.



Paint can be removed from window glass with a strong solution of washing soda.