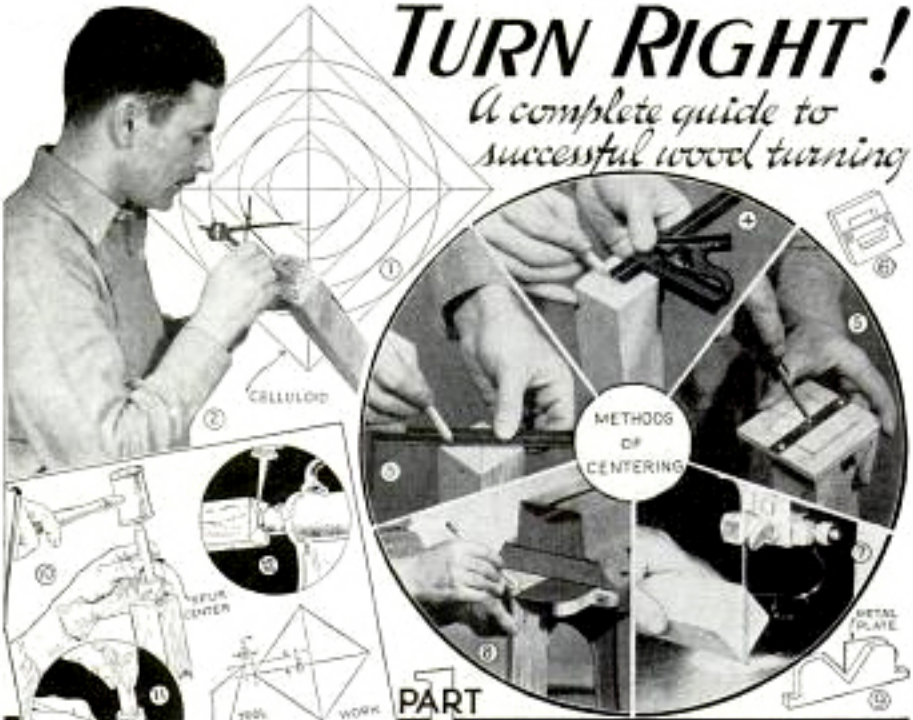
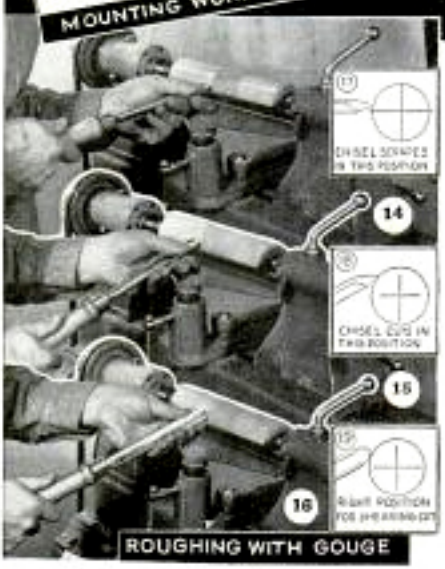
TURN RIGHT!

A complete guide to successful wood turning



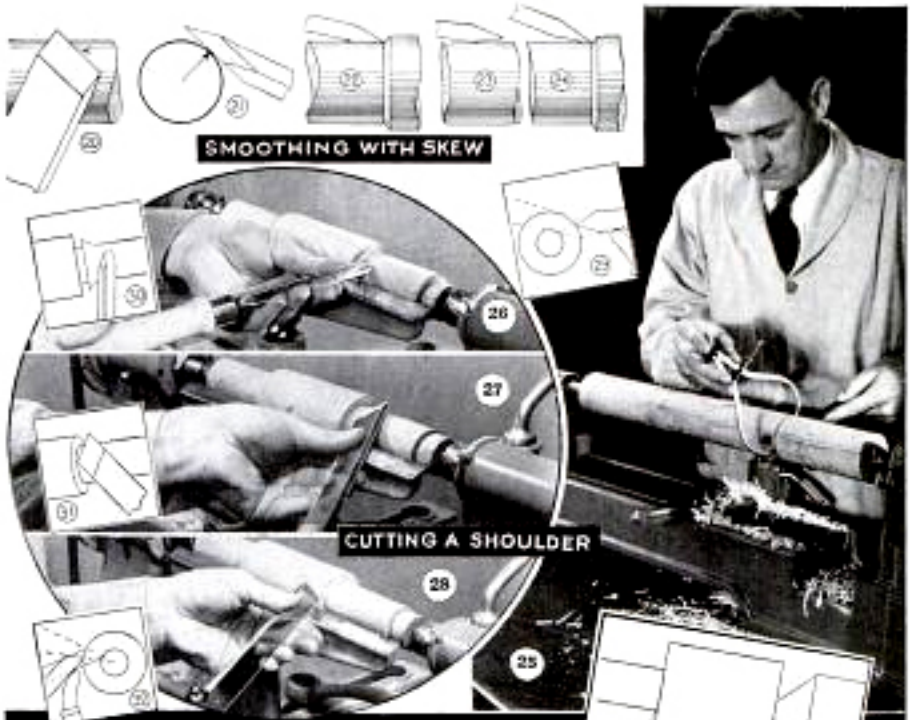
MOUNTING WORK IN LATHE

PART 1 SPINDLE



ROUGHING WITH GOUGE

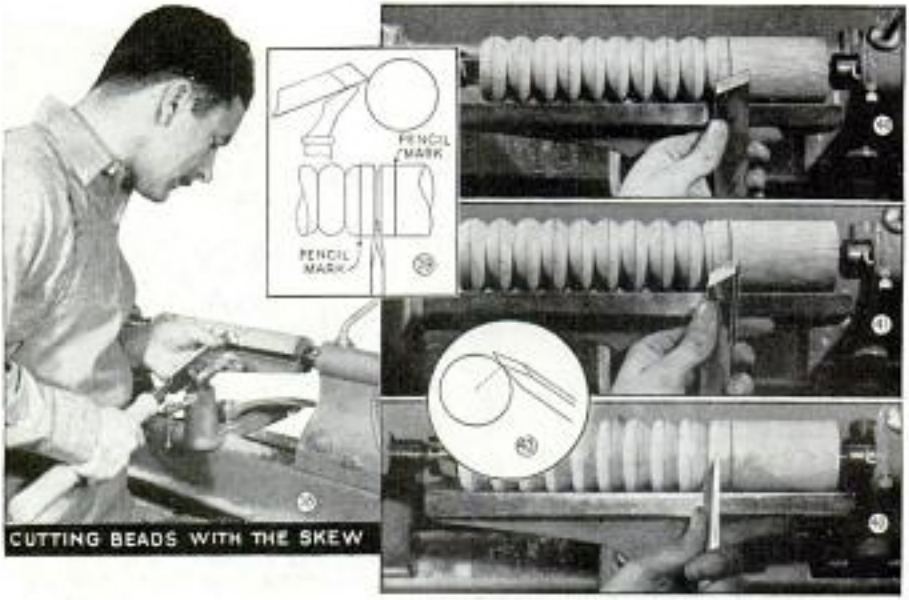
SPINDLE turning between centers is the groundwork for all wood lathe operations. The first step in making a spindle turning is centering the stock. The latter should be square, or nearly so, and the center at either end located and marked by any of the methods shown in Figs. 1 to 9 inclusive. After centering, the spur center is driven into one end of the work with a mallet, as shown in Fig. 10. Never drive the work onto the spur center in the lathe. Since the spurs of the center may not be exactly alike, nick one of them with a file and make a pencil mark opposite the nicked spur as in Fig. 11. Thus marked, the work may be removed from the lathe at any time and accurately re-centered when it is again mounted for turning. Mounting the work between centers is done by advancing the tailstock cup center



TURNING

into the work while the latter is being turned by hand. When the stock binds, the tailstock is backed off about one-quarter turn and locked. Apply a few drops of oil, as in Fig. 12, to prevent the wood from burning the cup center. Many turners use tallow or wax for lubricant, since this does not stain the wood. Fig. 13 shows the relative position of the tool rest with the axis of the work. As the square is turned into round, the rest is moved up by stages. About ⅛ in. above the axis and the same distance from the surface, is a fair rule to follow, although there are variations, of course.

The first turning operation is the "roughing cut," made with the gouge. Figs. 16 and 19 show the proper position—the bevel should be tangent to the work, and the tool rolled on its side. Figs. 14 and 17 show the wrong position, resulting in a scraping action. The position shown in Figs. 15 and 18 permits the chisel to cut, but lack



CUTTING BEADS WITH THE SKEW

of clearance prevents the easy, shearing cut possible with the correct position, Fig. 16. The final smoothing of the cylinder after roughing is done with the large skew chisel, the correct position being shown in Fig. 20, with the cut moving toward the right. By reversing the position of the chisel, the cut can be carried equally well to the left. The edge of the chisel should be tangent to the work, Fig. 21, and should contact the surface at the point indicated. The secret of successful smoothing with the skew lies in using the bevel of the chisel as a fulcrum, Fig. 22. If the handle is too low, the edge will not cut, Fig. 23, while if the handle is too high, Fig. 24, the edge will not be supported and will have a tendency to draw into the wood.

Next, the various diameters of the turning are set off with the parting tool, Fig. 25. The calipers are set slightly oversize, and are held against the revolving work until they slip over the stock remaining at the bottom of the groove. This is a scraping cut, which is the safest. A better action is obtained if the lower edge of the chisel is kept approximately tangent to the cylinder, Fig. 29, but the tool is a bit more tricky to handle.

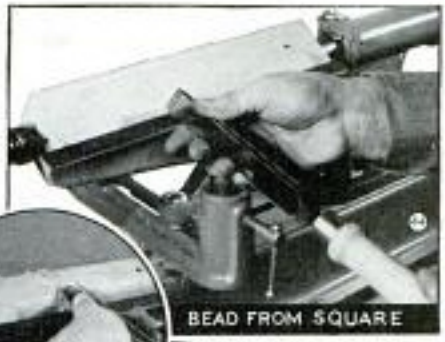
Following the parting tool, Figs. 26, 27, and 28 picture the cutting of a shoulder. In the first operation, the waste is cleared away with the gouge, Figs. 26 and 30. The heel of the skew is then used to smooth the new surface squarely into the shoulder, Figs. 27 and 31, while the toe of the skew is used to dress the shoulder smooth and to exact size, Figs. 28 and 32. When using the skew in this last position, the cutting edge should at all times point toward the center of the work, Fig. 32. A still more important point in making this cut is shown in Fig. 33. Here the line "B" is the cutting edge of the chisel; line "A" is the bevel. Notice particularly that the bevel A is exactly parallel with the cut surface, while the cutting edge is slightly turned away. The same general technique used in cutting a shoulder can be used for clearance cuts or for making vee grooves, as in Fig. 34. Vee grooves can also be made with the heel of the skew, as in Fig. 37. From this position, the handle of the chisel is raised to hinge the cutting edge into the wood. The same rule about not engaging the full cutting edge applies. Slightly exaggerated, Fig. 35 shows how the edge of the chisel is almost, but not quite, parallel with the surface being cut. This is correct. Fig. 36 shows the edge of the chisel exactly parallel with the cut surface, which is incorrect. When the edge is thus engaged, a

"run" invariably results. Keep in mind that a point, either toe or heel, cannot run. It is only when the whole edge or a considerable part of it is engaged, as in Fig. 36, that runs occur.

Figs. 38 to 42 inclusive show successive stages in cutting a bead. The center of the depression should be marked first by running in with the toe of the skew, as shown in Figs. 38 and 39. Starting the cut from the position shown in Fig. 40, the chisel is slowly rolled to the left and simultaneously the handle is raised to keep the bevel in contact with the wood. The essential point in cutting a bead is shown in Fig. 43—the bevel of the chisel should be tangent to the work. In this position, the chisel cannot run.

Quite often, a bead must be cut from a square portion of the turning. When this is done, the work is first nicked with the point of the skew, Fig. 44. After nicking, the round portion of the turning can be roughed out without any danger of splintering the square part, Fig. 45. After the round portion is turned down to a true cylinder—this is easily checked by placing the chisel flat on the revolving work to detect any "hammering" action, as shown in Fig. 46—the bead itself can be cut. This can be done in the same manner as previously described, although many turners prefer the simpler scraping operation with the toe of the skew, Fig. 47.

Figs. 51 and 52 show the start of the difficult cove cut, and Figs. 53 and 54 show the slight rolling action of the gouge as the cut progresses. Pencil marks are first made to indicate the edges of the cut, and the excess wood inside the marks is removed with the gouge, using a scraping position,



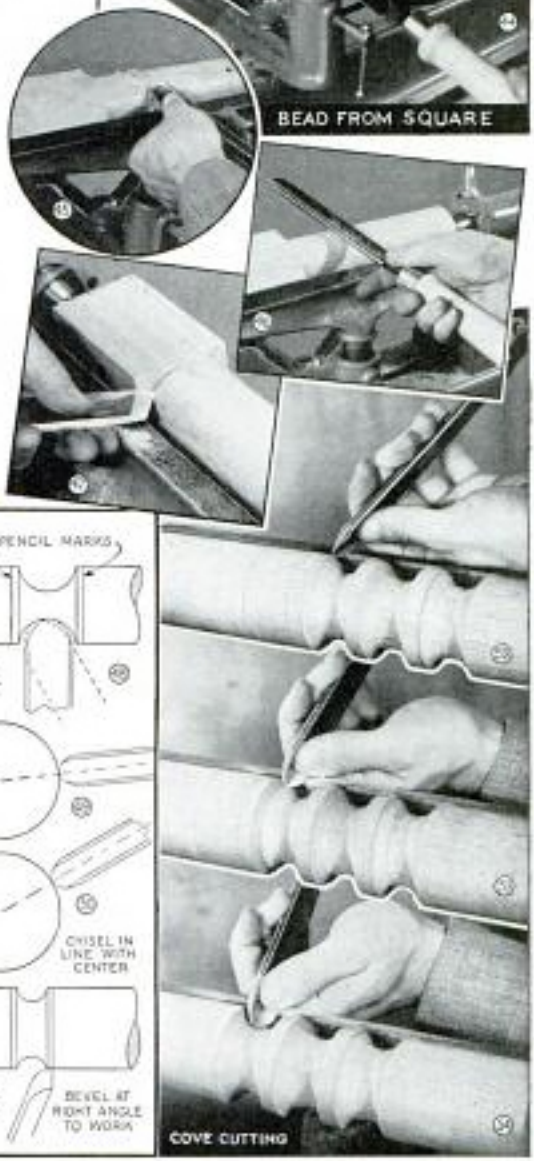


Fig. 48. The entire cut can, of course, be made in this manner, the practice being quite common even among experienced turners. To proceed with the rolling cut, the first essential point is that the gouge must point to the exact center of the work. Whether the tool rest is low, Fig. 49, or high, Fig. 50, this same rule applies. The reason for this is simple: The exact point of the gouge which is thus engaged cannot run. The second essential point is shown in Fig. 51—the bevel of the gouge must form an exact right angle to the surface of the work. From this position the gouge is rolled into the cove, making one-half of the cut in one operation, and the opposite side of the cut in a second operation which is a reverse of the first. It's important that the tool handle be swung through an arc simultaneously, so that the bevel will assume the same relative position throughout the operation.

When the basic cuts have been mastered the turner can do any ordinary spindle turning. The essential points are illustrated in Figs. 55 to 60 inclusive. The first step after smoothing the cylinder is to mark off the dimensions. This is best done with a layout board. A layout board is simply a thin piece of wood on which is drawn a full-size half section of the proposed turning. Placing the board against the cylinder, the turner can quickly mark the various points along the turning, as in Fig. 55. Many turners place the board flat on the tool rest, Fig. 56, and mark the work while it is revolving. After marking the required lengths, the diameters are picked off, as shown in Fig. 57, and the caliper setting is then used in making the initial parting-tool cuts, and then the various forming cuts are made. A spindle turning properly cut is perfectly

smooth and should require but very little sanding. When sanding, remove the tool rest. Use very fine sandpaper, and keep it constantly in motion along the length of the turning to avoid scoring. The usual practice is to reduce the diameter at either end of the turning to about 5/16 in., and then cut the work free with the skew chisel at the driven end, as in Fig 58. The left hand lightly encircles the work, and prevents it from being thrown from the lathe. Slender spindle turnings will vibrate under the pressure of the chisel, making smooth cutting impossible. To eliminate this vibration, a center rest should be used. If the turner is not equipped with a center rest, good results can be obtained by using a simple back rest or back stick, as shown in Fig. 60.

(To be continued)

Walking Plow Pulled on Runner to Keep It Out of Ground

When moving a walking plow from field to field, a section of auto tire fastened to the beam to extend back under the point

When a piece of auto tire is held under the plowshare you can move a walking plow easily

of the plowshare will keep it from digging into the ground. When not in use, the piece of tire can be removed or tied up to the beam out of the way.

—G. E. Hendrickson, Argyle, Wis.

Dolly to Move Heavy Boxes in Your Store

Heavy boxes and crates up-ended on this V-block dolly are easily moved

In stores where an occasional job of moving heavy boxes does not warrant the purchase of a hand truck, this dolly will enable you to do the job easily. It is made by sawing out a large V-block from a piece of wood and screwing it to a roller skate. A small rope fastened to one end of the block with an eye bolt serves as a handle.

Microscope Specimen Measured with Thickness Gauge

Microscopists will find a thickness gauge a handy tool in their work, as it enables them to determine readily the thickness of any section. This may be done by using a high-power objective and focusing very sharply on the top of the section to be examined. Then, leaving the setting fixed, move the slide so that the specimen is out of range and insert the gauge under the objective, trying different combinations of the gauge leaves until a sharp focus on the top leaf results. A good gauge will measure a specimen as thin as .0015 in., or, if a metric gauge is used, .04 mm. This method can be used in the shop for determining thickness of shim stock, paper, etc., when no micrometer caliper is available.

—W. C. Wilhite, Hornsby, Ill.