Metal-Turning TOOL SLIDE fits Your Wood Lathe

by W.R. Bell

A NY good wood-turning lathe may be used for metal turning, boring, milling and facing with the addition of this compound tool slide. It is easily made from cold-rolled steel with a few common tools.

Make two each of the upper and lower cross slides shown in Figs. 1 and 2, the parts being clamped together while drilling the holes for screws, which hold the assembly together. Means of attaching the lower cross slide to the lathe bed must be worked out to suit the individual lathe. Fig. 4 gives suggested mountings for the more common types of lathe beds, the parts being screwed together. In each case, the mounting consists of a hold-down screw or stud, a key for alinement and a spacer block. The block should be \( \frac{1}{2} \) in. thick for lathes having an 8-in. swing, 1 in. for a 9-in. swing, and proportionally thicker for larger sizes. For a 7-in. swing, omit the block and attach the key and stud directly to the bottom surface of the lower slide.

Fig. 5 shows the swivel arrangement for making angular cuts, using two metal disks. The handles shown for the lead screws may be replaced by turned handles and dial indicators, which can be marked in thousandths of an inch, as the 20 threads per inch on the lead screws permit .050 in. movement of the slide for each complete turn of the screw. Thus, fifty equal spaces on the longitudinal dial and one hundred equal spaces on the cross-slide dial will give .001 in. cut at the tool. The reason for twice as many marks on the cross slide is
due to the fact that a half thousandth cut on the radius reduces the diameter of the work twice that amount. The swivel turret may also be marked or scribed in degrees for accurate work. The removable tool post and holder, Fig. 3, permit the top surface of the slide to be cleared for clamping down work to be milled. For this use, the spindle rotation is reversed, the work is fed with the cutter teeth pushing toward the travel and pressure, and the speed is reduced greatly. About 60 r.p.m. works well with small cutters. It is important that the work be fed to the cutter uniformly throughout the length of the cut. Any irregularity in the feed is likely to cause breakage.

Bluing and Blackening Brass Ware

Brass articles may be given a blue or black color by first cleaning and then immersing them in a solution made by dissolving hypo, \( \frac{1}{2} \) lb., and lead acetate, 2 oz., in 1 gal. of water. More lead acetate may be added to deepen the color and to speed up the action. To use the solution, heat it almost to the boiling point and immerse the work, watching carefully to remove it when the color is of a suitable shade. Brass wire should be used to suspend the work in the solution, and the finished work should be protected with clear lacquer to preserve the finish.