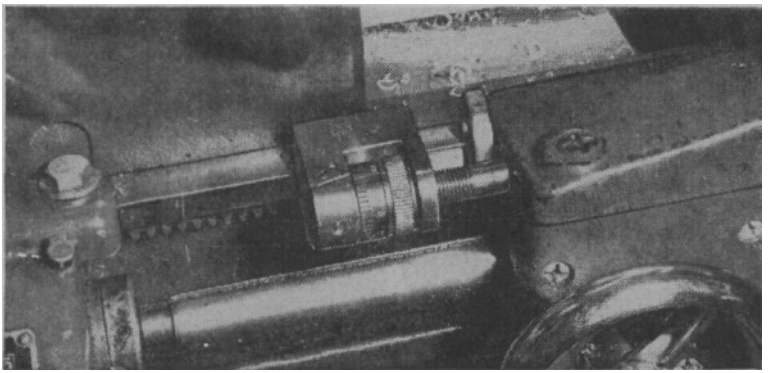
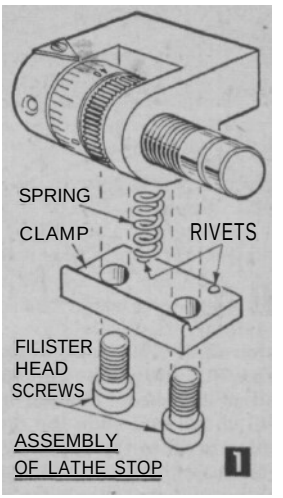


Micrometer Lathe Stop

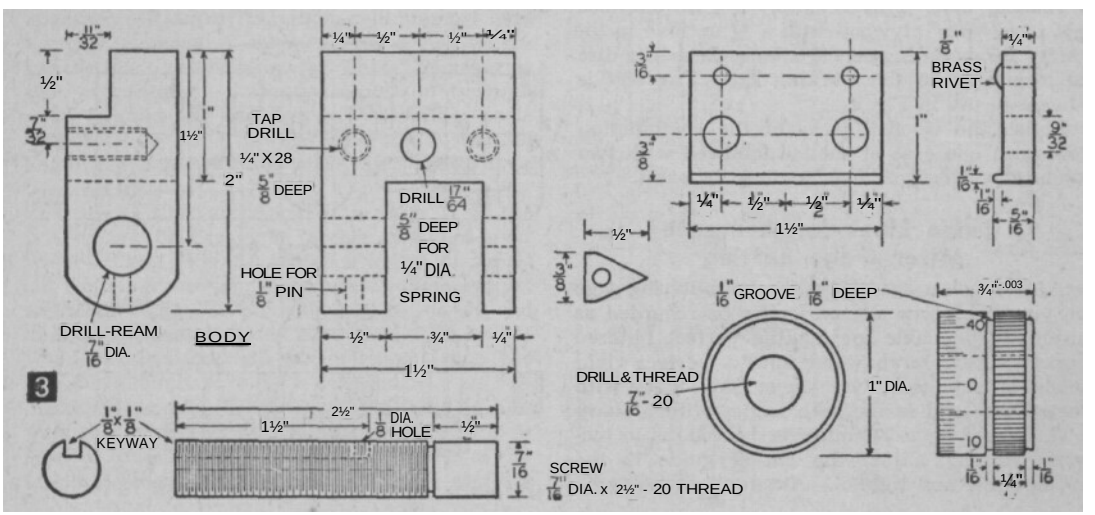
By JOEL B. LONG

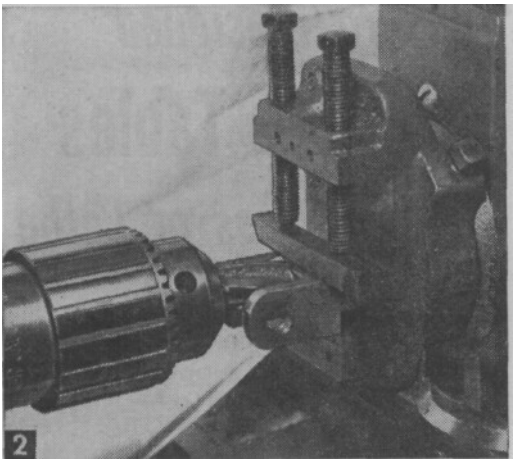


ACCURATE location of shoulders and quick and accurate duplication for short production runs make a micrometer stop for a lathe carriage a near necessity for turning, boring and facing.

The body of this micrometer stop withstands little strain as it is not an automatic stop and can be made from brass or aluminum. Lay out the slot for the graduated collar first. Drill and saw away the waste stock, leaving just enough to true up the slot. Secure the body in the lathe milling attachment, and mill slot to size (Fig. 2). Reposition the body and mill the step for mounting the stop onto the lathe bed way. To drill and ream the .437 in. hole, mount body in 4-jaw chuck (Fig. 4). Remove from chuck and carefully lay out the two ¼ in. dia. holes for the cap screws on bottom side, and also the .266 in. hole for the spring. Drill and tap the ¼-28 holes and also drill the spring hole and the hole for .125 in. pin (Fig. 3). Round outer edge of body to a 1 in. radius.

Turn the micrometer collar from steel, brass



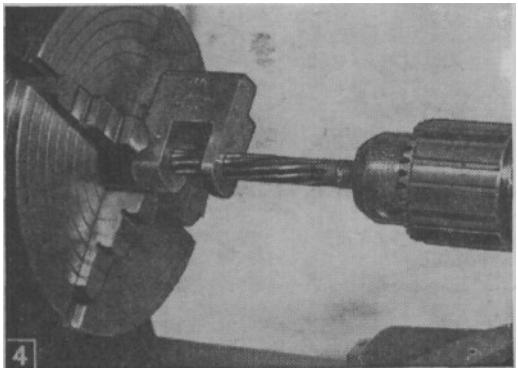


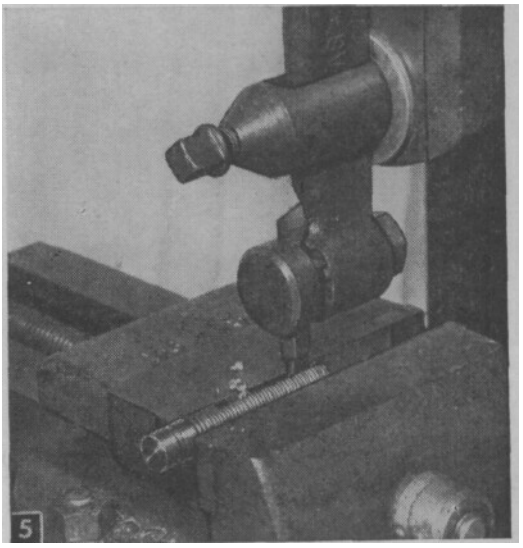
or aluminum solid bar stock and knurl as shown. Center drill, drill and ream a .375 in. hole through collar. Cut off and finish ends smoothly bringing collar to exact width for snug fit in body slot. Mount collar on .375 in. lathe mandrel between centers in the index head on milling machine. Index and cut the 50 graduation marks. Stamp numbers in multiples of 10. Mount collar in 3-jaw chuck and bore hole to .391 in. Thread with a .437-20 tap held in tailstock chuck. (NOTE: If milling machine and index head are not available, leave collar plain and insert a feeler gage of desired thickness between stop screw and carriage to set distance of travel.)

Make the screw from cold-rolled steel. Center drill one end and chuck with extended stock in

MATERIALS LIST-
MICROMETER LATHE STOP

Part	Material	Size
Body	brass or aluminum	.875x1½x2"
Clamp	steel	.312x1x1½"
Screw	steel	.437x 2½"
Spring	steel	½O.D.x 1"
2 Capscrews	steel	¼-28x ¾"
Micrometer collar	steel or brass	1" dia. stock
Pin	.125"drill rod	
Rivets	.125body x .312" length	
Washers for capscrews		





3-jaw chuck supporting outer end with tail stock center. Bring stock .002 in. under diameter called for in Fig. 3. Cut the threads with a tool bit ground to 60 degree point and set exactly on center line. Use the threaded collar as a gage when you cut the threads for a good snug fit. Finish screw before removing tail center and then cut off to length.

Mount screw between soft jaws in shaper vise and cut the .125 in. keyway (Fig. 5). Drill .125 in. hole in screw body for cutter to run into at end of forward stroke.

Make the clamp (Fig. 3) from .312 in. steel plate shaped down to ¼ in. thickness except for the .062 in. ridge which acts as a "rocker" when the clamp is tightened. Lay out and drill all holes as shown. Press in the brass rivets which prevent damage to bed way when clamp is tightened, and smooth off the heads.

When assembling the screw in body and collar, insert the little pin that engages the screw slot and prevents screw from turning. The pin should slip freely in the screw slot. A drop of solder from the front of body keeps the pin in place. Make up a little index pointer (Fig. 1) and fasten with 3-48 screw to micrometer body.