

Cylinders

I keep stressing 'Hard Brass' and it is essential to the life of drills. For the scavenger of bits, anything brass that has been machined is usually safe - electric plug pins and fittings come to mind. The old round ones make lovely cylinders and, of course, add weight. Brass rod can be obtained in many diameters and, as we do not require machining limits, you should be able to drill a hole near enough to the centre for our purposes.

The secret of assembling lots of bits which need soldering in stages is to drill and pin at each stage. This will retain stage one in position while you solder stage two, and drill and pin that. Cylinder covers can be made to fit over the piston shaft tube, soldered, and then drilled for the slide bars. I always make cylinders as separate 'bolt on' items, they are much easier to modify, paint, or repair, but making them separate could entail drilling and tapping into the cylinder and 14 BA taps are expensive. What I suggest here is not to tap the hole, but to drill its clearance diameter so that the thread can be pushed in and be soldered and, then used as a stud. To this end, always save the surplus bit for a stud, when you shorten a screw. See Figure 3 for details.

Valve Gear

This is a variation of the hand wheel system (see the previous issue of Scalefour News) but used when we want two to four identical parts. In this instance, solder two pieces of nickel silver of the required thickness together, mark out the outside shape and using your small hand vice, file out the outline. Now flux it well, tin a piece of scrap brass and sweat it to the brass, keeping it pressed down firmly. You can now safely drill the holes right through into your brass holding unit. Now join up your holes using files or burrs, then 'sweat' the nickel silver piece off the brass, separate it into the original number of pieces, clean them up and polish on some fine abrasive paper. See figure 4 for details.

Signal Ladders

We now move on to our bench drill and cross slides. Have handy a collection of flat square pieces of wood that will fit the slide jaws, and stick some double-sided sticky tape to the wood. Then stick your sheet of nickel silver to the tape and work out in one corner how many divisions will give you the spacing of the rungs which you need. Taking up the backlash, proceed across your sheet producing a row of holes. Now come back, move sideways and start again and so on. Now **carefully**, to avoid distortion, remove the sheet and cut the ladder sides off it. To do this, use the scoring method with a 'Scrawker' made from an old hacksaw blade - Figure 5. Do not cut with the tin snips, they will make it curl up! To assemble the ladders, cut as many lengths of fine wire as you require rungs and feed the whole batch of ladders on together. It will be easier to

Sand Boxes, etc. from solid

Here we are going to produce some quite complex items with flanges and ribs of different shapes.

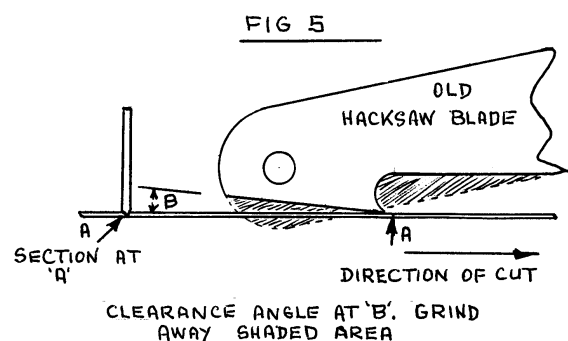
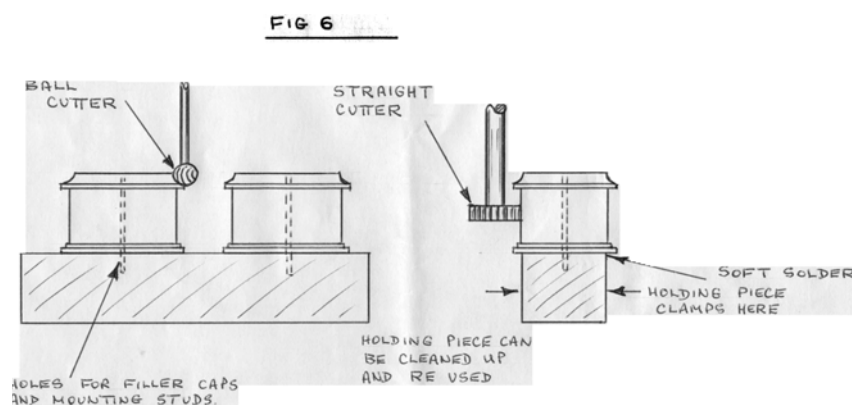
on very small bits of brass. Select some square section brass slightly larger than you require for the finished object. Sweat them to another piece of brass that will be held in the cross slide clamp. Select your cutter, line up your brass with the cutter and make a gentle pass along the sides and ends producing the shape you require. Change cutters for the curved bits.

When you are happy with the result, drill the hole for the filler cap and the mounting stud, remove the assembly from the clamp, sweat the pieces apart and clean them up. Now sweat your mounting stud into the base and the item is ready for the painting and lining shop. Save the filler cap, so that it can be painted separately and then fitted with a dab of 'instant' glue.

In fact, all brass fittings can best be fitted into pre-drilled holes with glue after painting and before the light varnish spray.

See Figure 6 for details.

Happy finger singeing!



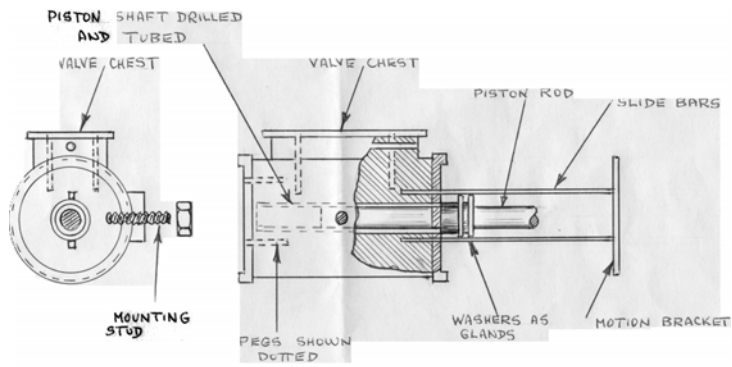


FIG 3

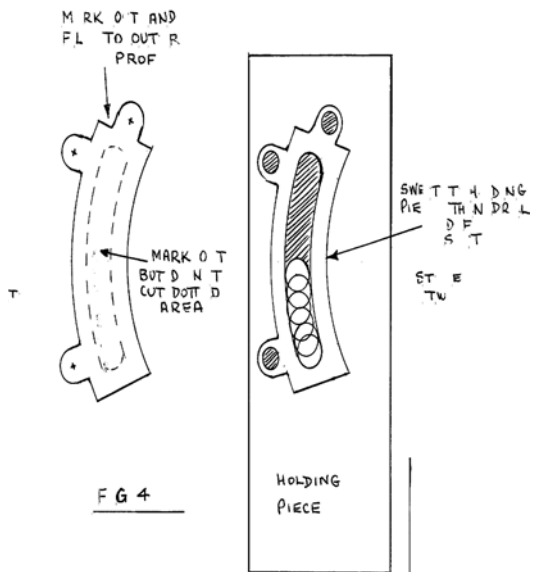


FIG 4