

A **DIEHOLDER** for fitting into the tailstock of the lathe can be obtained from tool makers, and it is a very useful accessory for screwing rods, etc., held in the headstock chuck.

I am not aware of a similar small unit for tapping, although larger ones with a spring-release device are used for drilling machines in engineering works. I concluded there was nothing for it . . . I made my own tapholder.

Figs 1 and 2 show two sectional assemblies together with the appropriate details. The letters on the assemblies correspond with those on the details.

Details of the tool

The body **A** is made of cast iron so that the 1/2 in. square hole could be cast in and cleaned out with a square file. It is a well-known fact that a long hole cannot be drilled true between centres. Consequently both ends of the casting were first centred by a Slocombe drill. It was then fitted firmly between centres with the square hole end at the headstock centre, and the body, which was cast parallel, was held by the clamp of the toolpost, shim packing being fitted underneath.

The tailstock and the saddle were then moved back and the three-jaw,

With details supplied by J. E. FOSTER make this..

TAPHOLDER for the lathe

holding a 9/32in. drill, was screwed on to the headstock mandrel. The reason for this size of drill is that it is clearance for the shank of the largest taps intended to be used, namely 1/4 in. Whit., and B.S.F. The saddle and the tailstock were moved up, the centre of the latter serving the purpose of putting pressure on the drill, and the hole was drilled about half-way through.

Completing the drilling

The body was then reversed, set up as before and the drilling completed. This was followed by a 31/64in. drill to a depth of 1 7/8 in. (as shown) allowing for the unmachined, end of the casting, and finally by a 1/2in. reamer. The body was then turned on the outside, knurled, and the ends

faced, all between the centres, using a carrier and carrier plate.

To bore the 3/4 in. dia. x 5/16 in. deep recess it was found necessary for rigidity to hold the 1/2 in. bore end in the four-jaw, and bring up the tailstock centre to assist in setting to run true. The 1/4 in. and 3/8 in. reamed holes, the 4B.A. and 1/4 in. B.S.F. tapping holes were all drilled by the use of a tailstock vee pad.

The No 2 Morse mandrel **B** for the tailstock is shown hollow as it is used for a dieholder., but for the tapholder it may be solid. It was drilled in the same way as for the cast-iron body by holding in the toolpost and turned between centres, the Morse taper being turned by setting over the tailstock.

The disc tap guides **C** were made

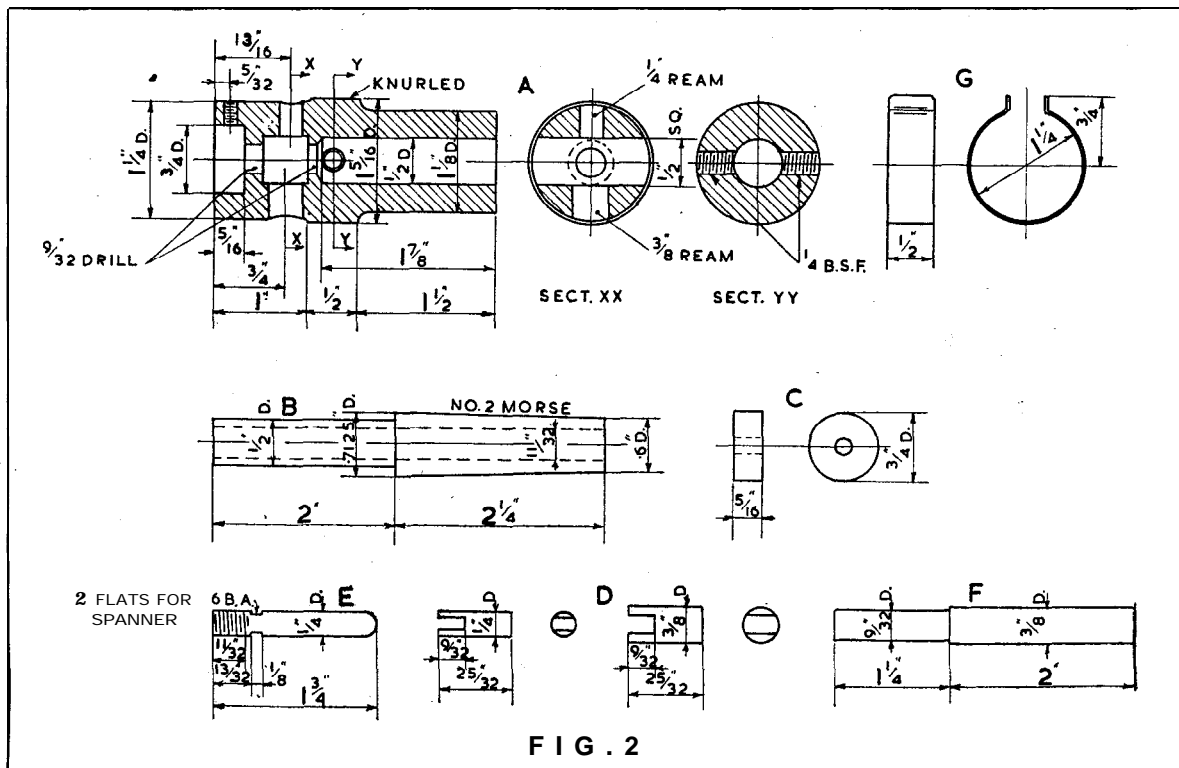
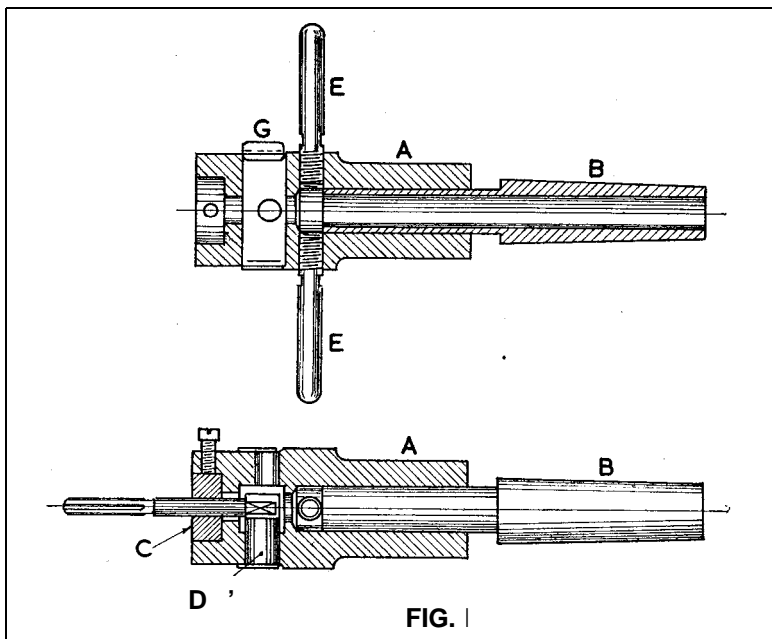


FIG. 2



out of two short lengths of 3/4 in. steel bar held in the three-jaw, centred by a Slocombe drill fitted in a Morse socket in the tailstock, drilled and parted off. The bores were made to suit the shanks of taps from 10 to 2 B.A., #in. to 1/4 in. Whit., and 1/4 B.S.F. Nine in all were necessary, drilled 33, 1/8in., 30, 9/64 in., 26, 20,

10, D and G and stamped accordingly.

The keys D, to keep the taps from turning, were made out of silver steel in two sizes 1/4in. and 3/8 in. dia., the slots being cut by a 1/16 in. circular saw running on a mandrel between centres. During the operation a short length of bar was held in the toolpost at right angles to the lathe

centres and cut to length after each slot was the correct size for the square on the taps. Five were found to be required for all the taps mentioned, namely two 1/4in. dia. with slots 0.10 and 0.115 in. in width, and three 3/8in. dia. with slots 0.13, 0.15 and 0.20 in. wide.

Final details

Where the squares-sometimes two flats-on the taps were found to be only a few thou above these sizes they were ground down in order to keep the number of keys to a minimum. The keys were stamped with the stated sizes at the opposite end to the slot and finally hardened.

The handles E are of silver steel for strength with two flats as shown for a No 6 B.A. spanner, the rod F is made of brass and is used for knocking out the discs if they stick in the body and the spring clip G is to prevent the key from dropping out of the body during use.

In order to ascertain quickly the disc and key required for a particular tap, a table was made from 10 B.A. and upwards. A few examples are given below:

Tap size	Drill size of discs	Key diameter	Key size
4B.A.T	26	1/4	0.15
4 " " P.	30	1/4	0.10
2 " T. Land P.	10	3/8	0.15
1/4 Whit. "	G	3/8	0.20
1/4 B.S.F. "	G	3/8	0.20

T = Taper I = Intermediate P = Plug

Some Kent and East Sussex memories ...

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1910, SR-1934, and even some tiny two-hole chairs of Colonel Stevens' day. My thoughts were whisked back down the years at every step, and after tempting Providence a dozen times a neat sprained ankles at as many cattle-grids and gateless crossings, I at length rounded a curve which brought me in sight of a fantastic triple-armed signal whose duty it apparently had at one time been to sort out the traffic into Tenterden Town Station.

I took a few photographs and as I was closing my camera a ganger hove into view and we fell to chatting about the old Rother Valley Railway in the days before 1904. He vividly remembered the opening of the Rolvenden to Tenterden Town portion three years later, and could even recall the jubilation in Tenterden when, after a further two years, on 15 May

1905, communication with Headcorn and the South Eastern main line was established.

I left that ganger with a very wholesome respect for the "men o' the road" who could heave chairs about and man-handle rail with brawn and brain without doing themselves serious physical injury. But as I stepped out towards Headcorn I couldn't help thinking of the price these men sometimes pay for an instant's mental lapse. Of the unfortunate member of a fettleing gang at Sydenham who, for some incredible reason, failed to hear the look-out's whistle and paid the supreme penalty for his lapse. Track-walking is just like that.

I was passed by my train between Tenterden Town and Tenterden St Michaels and when I arrived at the latter ivy-grown halt, I found that the old Stirling 02 had set fire to the dry grass in a lineside orchard; so

my first duty became that of a fire-beater-much to the amusement of the locals.

This job accomplished, I vanished from the scene as mysteriously as I arrived, and round a bend came upon an unrecorded tunnel the length of a cricket pitch, two rail-lengths. Yet none the less there was a force pump and some steel re-inforcing material lying about. Truly, railway work is never finished.

It is impossible to describe all I saw in those last few weary miles. However, my ramble eventually finished at Headcorn, and as I tramped the last few yards of the K. and ES. road into the "East Sussex Bay" what should flash past on the up main but the *Golden Arrow*, screaming along at a good 80 on arrow-straight main lines with the Bullied Pacific *Spitfire* at its head. They say life is made up of contrasts-and surely this was one!