

## A MIXED BAG . . .

in having two lathes—a Myford Super 7 and a 5 in. Harrison.

Mr Wellands stays on for an hour or so two evenings a week to allow his boys full opportunity to make further progress with their work. The boys need no second bidding! As soon as ordinary school ends, there is a mad rush for the workshop.

Besides *Virginia*, other smaller models are being built-individually. One of these is Edgar T. Westbury's *Theseus*, which is being constructed by young Raymond Hasler. He has built up his cylinder, and fixed the flanges. One cylinder cover is in place, and he now has to turn and fit his piston. At present he is making the trunk guide and standard.

Another enterprising lad is at work on a space rocket—and it is giving him plenty of engineering practice in turning and fitting.

R. W. TANDY.

## AN OLD-TIMER

**T**HE pictures on the next page are of an old-timer, which is supposed to be a model of the Webb compound 4-4-G *Iron Duke* of the L.N.W.R. It is of an unusual gauge, i.e., 4in. (which represents a full-size gauge of 5 ft 4 in., slightly more than the present Irish gauge of 5 ft 3 in.). The engine seems to have been built in 3/4 in. scale.

There are only two cylinders, of course, and the bore is 13/16 in. and the stroke 1 1/4 in. Cylinders, valve gear and all wheels are of hard brass. The cab is fitted with Ramsbottom spring-loaded arm, handle regulator, water and pressure-gauges and level cocks. Stephenson's double-eccentric link-motion valve gear is fitted with reversing lever in the cab.

There are also three four-wheel passenger coaches, one directors' saloon, and one guard's van all made of mahogany, the interiors being complete with upholstered seats. The entire train-engine, tender and coaches-is sprung throughout.

Firing is by ordinary six-burner spirit lamp, and the boiler has four firetubes.

Unfortunately, a lot of the paint-work has been burnt but where it is undamaged the old L.N.W.R. livery looks very fine. The brass plates on the sides of the cab bear the number 1903, which may also refer to the date of building.

M. K. HUGGARD.

## A TAPER TURNING ATTACHMENT

**T**HIS is a device which I fitted to my ML7, and I feel it has much to 'commend' it for simplicity, ease of construction, and accuracy in setting up, besides convenience in use.

First, you will need a sine table—they are to be found in any engineer's pocket diary and are obtainable at any bookseller's for a few coppers.

Now suppose you need to turn a taper of 1 deg. 26 sec. You will find the sine to be 0.025, so move the decimal point one place to the right which will give 0.25 or 250 thou on your cross-slide index. Mount your dial gauge on the cross-slide and feed until it just makes contact with pivots pillar C at the headstock end, then rack to the sliding pillar and feed 250 divisions of the index with the dial gauge just making the same contact. Clamp both pillars and check. Remove the cross-slide leadscrew, fit the connecting plate A to the cross-slide and sliding bush B and you are all set for your taper of 1 deg. 26 sec. on the radius. And I have no doubt you can use test blocks instead of the dial gauge if you wish.

You can use a feeler gauge with a bit of care, but you will need a lot of care in setting the tool to centre height with any taper turning.

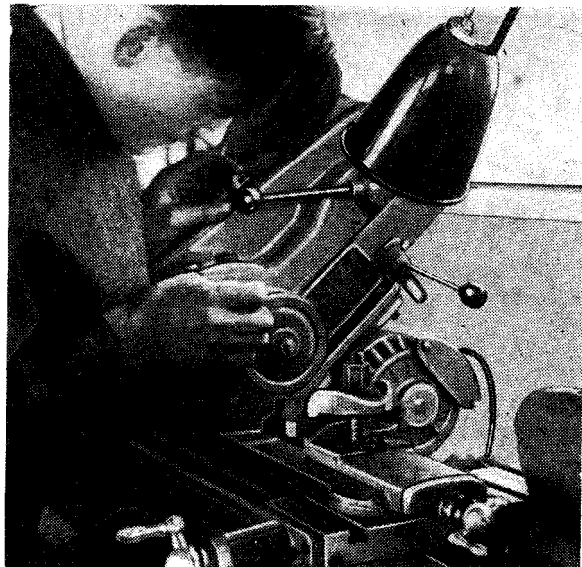
I was rather diffident about putting any dimensions on the drawing because there are so many owners of lathes other than ML7s—and they may feel neglected in this matter of attachments. But with a little in-



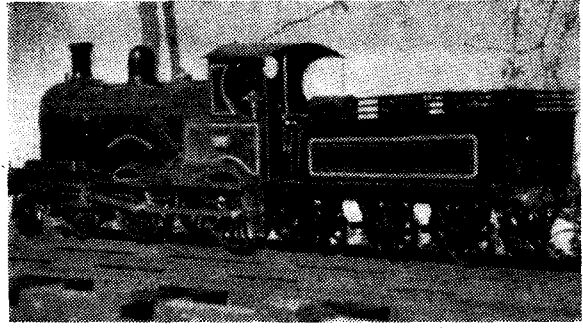
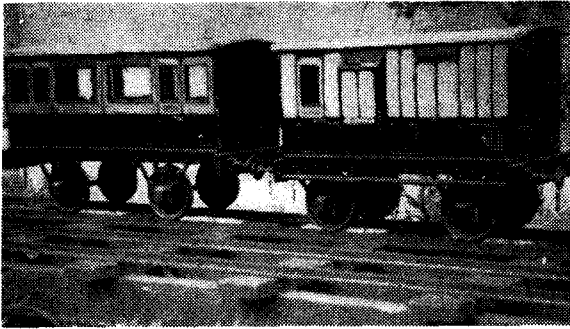
genuity one can soon adapt. Thus, if your lathe is smaller than the ML, make the sine bar 5 in. instead of 10 in.

The bracket D in my case is an iron casting, but if this is out of the question use a piece of stout angle with brackets of 5/16 in. plate riveted on. The pillars C can be of any convenient diameter, but the diameters of each must be identical. I used a piece of 9/16 in. silver steel for the sine bar E. The bar was reduced at both ends to form dowels and sweated into holes in the milled faces of the pillars while they were clamped in the bracket

*Top: Raymond Hasler machining the standard for THESEUS on a 5 in. Harrison*



*Right: A keen Audley Park pupil polishing a VIRGINIA driving wheel on a Myford Super Seven*



A real old-timer ... supposed to be a model of the Webb compound 4-4-0 IRON DUKE of the L.N. W.R.

casting. The critical part of this is that the centres of the pillars must be spot on loin.

The capacity is about 25 deg., including the angle, and the length of taper is about 8 1/2 in. It can be left

set-up-but with a reduced cross-slide travel with a standard **ML7** cross-slide. The bracket may be left permanently attached to the lathe, and then the fitting of the sine bar is the work of a moment. You can

set up to a tapered article mounted between centres.

Finally, I have no doubt it could be adapted as a copy-turning device.

R. MATTHEWMAN.

Working drawing of the sine bar taper turning attachment described on the preceding page and above

