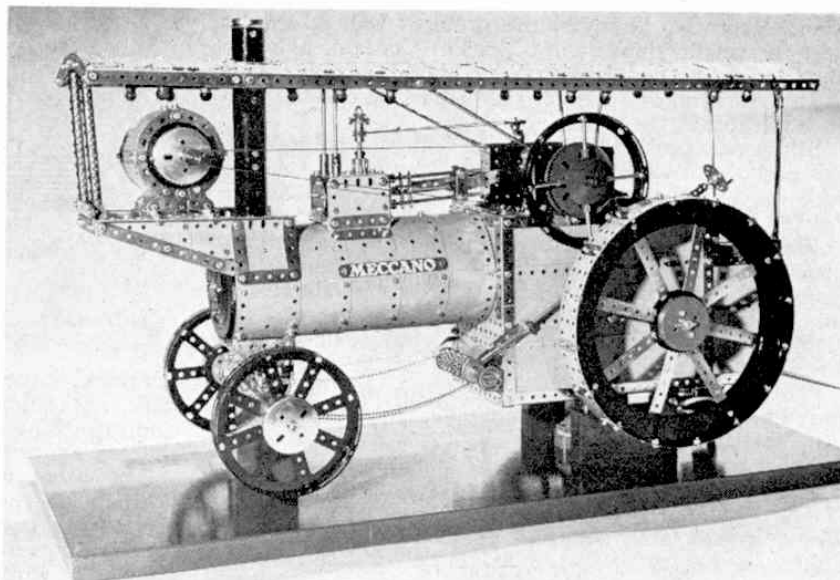


THE SHOWMAN'S ENGINE

Described by
'SPANNER'

Conclusion



Front Axle and Wheels

This brings us to the rather substantial front axle incorporated in the Traction Engine. A $7\frac{1}{2}$ in. channel girder 113 is constructed from two $7\frac{1}{2}$ in. Angle Girders, bolted together at the ends, the securing Bolts also fixing the road spring to the top of the girder. This spring consists of one $7\frac{1}{2}$ in., one $5\frac{1}{2}$ in. and one $3\frac{1}{2}$ in. Strip and a Double Arm Crank 114, all bolted together. Two Angle Brackets 115 are then fixed to the forward flange of the channel girder, while a Double Bracket 116 is bolted to the inside of the rear flange, in the centre. Journalled in this and in two $1 \times \frac{1}{2}$ in. Angle Brackets 117, bolted to the end of the same flange, is an $11\frac{1}{2}$ in. Rod held in place by a Collar and a 1 in. Pulley 118. Two $3\frac{1}{2}$ in. Strips 119 are bolted to the forward flange of the girder, as shown.

Mounted on the ends of the $11\frac{1}{2}$ in. Rod are the front road wheels, each of these being built up from two Hub Discs 120, to which a $5\frac{1}{2}$ in. Circular Girder is bolted, as well as two 8-hole Bush Wheels 121, one each side. The Rod, of course, is fixed in the boss of the Bush Wheel. With the wheels in place, hubs are supplied by Boiler Ends 122, these being mounted on the $11\frac{1}{2}$ in. Rod where they are held by Collars.

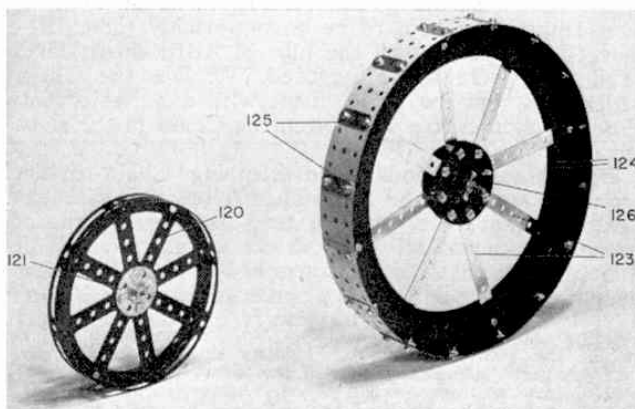
The rear road wheels are a little more complicated in design than those at the front. Four $4\frac{1}{2}$ in. Strips 123 are first bolted to each of two $9\frac{1}{2}$ in. Flanged Rings 124 which are connected together by sixteen $2\frac{1}{2} \times 1\frac{1}{2}$ in. Flexible Plates, the joints between the Plates being overlaid by $1\frac{1}{2}$ in. Strips 125. Two Face Plates 126 are then fixed to the free ends of Strips 123, the four Strips attached to the left-hand Flanged Ring being secured to the right-hand Face Plate, and vice versa. In each case the fixture is made by a $\frac{1}{2}$ in. Bolt which passes through both Face Plates, a Collar being mounted on the shank of each Bolt to separate the Face Plates. In the accompanying illustration of the wheel, by the way, a short Rod can be seen mounted in the boss of the Face Plates. This was placed there to ensure proper alignment during construction and must of course be removed before the wheels can be fixed on the main axle.

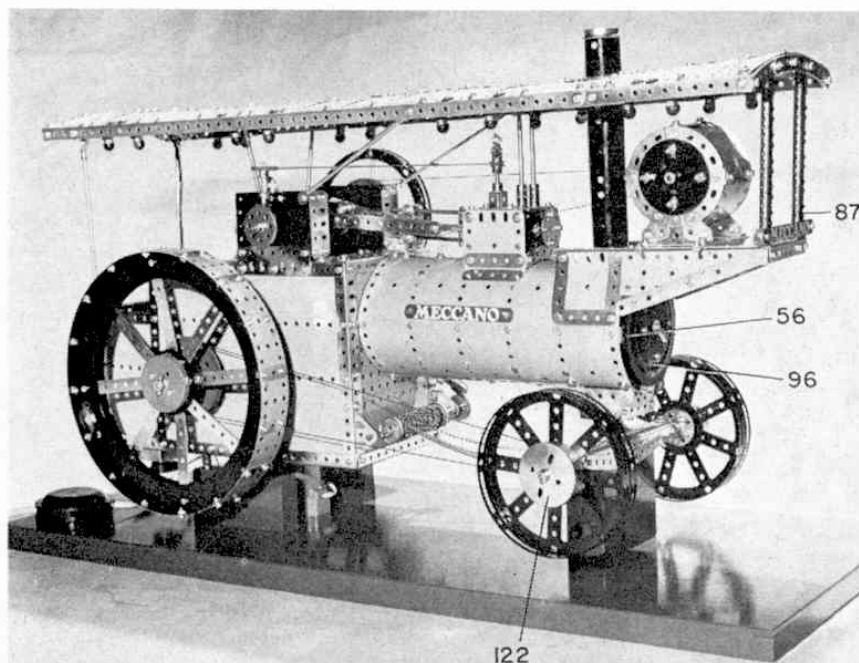
Single examples of both the front and rear wheels, both of which must be specially built up to give a realistic appearance to the model.

Assembly

All the individual sections of the model now having been built, they can be fixed together to form the complete Traction Engine. First of all the boiler assembly is secured to the body, this being achieved by means of Rod Sockets 21, 25 and the Socket fixed to the centre of Girder 22. The boiler is arranged so that its four internal formers line up with the Rod Sockets, after which Bolts are screwed through the boiler and into the transverse bores of the Rod Sockets. Strip 31 is then connected by a Strip Coupling 127 to Rod 96, while Strips 32 are lock-nutted to a Rod and Strip Connector fixed on a $2\frac{1}{2}$ in. Rod sliding in rear Flanged Plate 57.

Next, the front axle is mounted in position on the $1\frac{1}{2}$ in. Rod projecting from the perch bracket, the Rod being fixed in the boss of Double Arm Crank 114. A length of Sprocket Chain is secured to one end of channel girder 113, is brought back and wound several times round Sleeve Pieces 45 (or their substitute), then is taken forward again and secured to the other end of channel girder 113 to complete the steering linkage. Before the rear road wheels are fixed in place, however, the drive system should be completed. A $1\frac{1}{2}$ in. Sprocket Wheel mounted on the crankshaft between left-hand Flanged Plates 13 and 14 is connected by Chain to Sprocket Wheel 50, Sprocket Wheel 52 also being connected by Chain to Sprocket Wheel 47 on the main





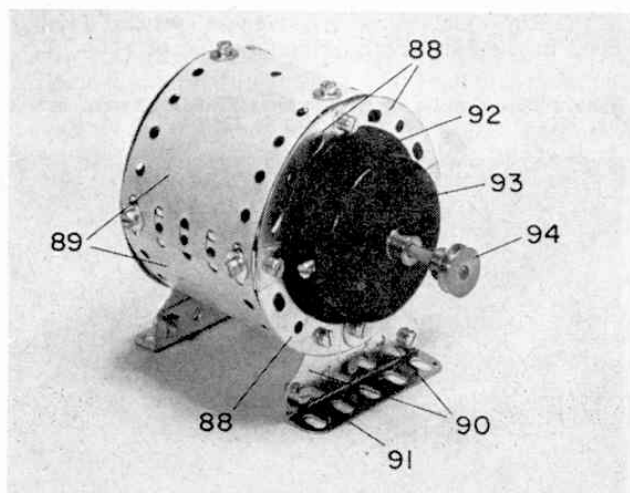
Left: This general view of the completed Showman's Traction Engine shows the model as it leaves the Meccano factory, mounted ready to go on display.

Below left: The complete generator as it appears when removed from its bracket on the boiler section of the model.

Below right: A sturdy front axle is one of the things to be expected on a Traction Engine. This Meccano unit fits the bill splendidly.

axle. Sprocket Wheel 51 is connected by Chain to the driving motor. In the original display models Meccano Limited use special long-running mains motors, bolted to Flat Plates 16, for driving purposes, but in a "private" model, a Meccano E15R Motor or Power Drive Unit would suffice. The best place to mount this unit would probably still be on Flat Plates 16.

Both rear wheels can now be added, followed by the canopy. The latter is supported by no less than eight stays, those at the rear consisting of two $6\frac{1}{2}$ in. Rods, the upper ends of which are held in the Rod and Strip Connectors bolted to Corner Brackets 104 and the lower ends of which are fixed in Rod Sockets secured in the end holes of Angle Girder 17. Two more $6\frac{1}{2}$ in. Rods are held in the bosses of Cranks bolted to the underside of the canopy, the Rods also being held in Handrail Supports fixed in the fourth holes from each end in the vertical flange of Angle Girder 24. The Cranks are secured to the canopy by Bolts passing through the holes marked X in the accompanying photographs and through the end holes in the arms of the Cranks which point straight forward from here.



Further forward still along the canopy, two diagonally-mounted $5\frac{1}{2}$ in. Rods are fixed in Rod and Strip Connectors 111, their lower ends being held in yet another two Rod and Strip Connectors bolted one to each Flanged Plate 13. The front stays, on the other hand, are supplied by two 5 in. Rods held in the longitudinal bores of Threaded Couplings 87. Mounted on each of these Rods are six Couplings, the top one being attached to the canopy by a Bolt screwed through front compound curved strip 102 and into the end transverse tapped bore of the Coupling.

All that now remains to be done is to fit coloured Elektrikit Lamps in the Lamp Holders and to connect the two leads from the earlier described Lamp Holder circuits to the two lower Wiper arms fixed to Insulating Spacers 46. The upper Wiper Arm is connected to one terminal of the power source for the Lamps, the other terminal of this power source being earthed by connecting it to a metal part of the model. This electrical system, if followed correctly, causes the Lamps to flash on and off, allowing only one set of Lamps to be illuminated at a time. When one set switches off the other set flashes on, giving a very striking effect, and one ideal for display.

It must be remembered, of course, that the model is designed specifically for display. It is despatched from the Meccano factory ready mounted on a wooden baseboard with the Traction Engine blocked-up to lift the wheels clear of the base. In fact, Angle Brackets 115 are incorporated in the front axle to serve as the anchoring points for the forward block and it is only because of the model's display role that Corner Angle Brackets 86 are included in the generator bracket—a "Meccano" nameplate is bolted to them. Whether displayed or not, however, it still makes a really impressive model that shows the Meccano system to its best advantage.

