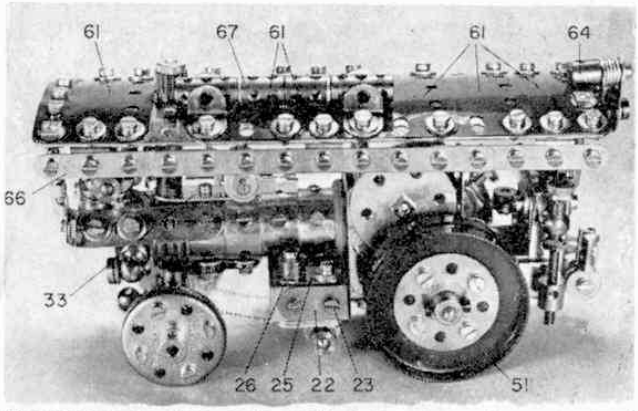
MEET THE CUP WINNER

described by 'Spanner'

PART II



Considering its size—only eight inches long—the amount of detail built into the Traction Engine is amazing, as this general view of the finished model suggests.

Belly Tank

Fitted to the front of the body, beneath where the boiler will later be positioned, is a feature known as a "belly tank". This is built up from a $2\frac{1}{2} \times 1$ in. Double Angle Strip 21, to each lug of which a 1×1 in. Angle Bracket 22 is bolted, the forward securing Bolt fixing an Angle Bracket through its circular hole to the inside of each lug. The rear securing Bolt, numbered 23 in the accompanying illustration, is actually a Set Screw and is screwed, not into a Nut, but into the transverse bore of a Threaded Boss. Bolted to the free lug of Angle Bracket 22 at each side is an Obtuse Angle Bracket 24 and a Fishplate 25, but note that the securing Bolt in the case of the left-hand assembly is a $\frac{1}{2}$ in. Bolt which is also fitted with a Collar 26. An ordinary Bolt with a Washer is used in the right-hand assembly. A second Obtuse Angle Bracket is fixed to the free end of the Fishplate, the securing Bolt being screwed into the longitudinal bore of the above Threaded Boss.

The base of the tank is supplied by three $2\frac{1}{2}$ in. Flat Girders 27, one on top of the other, with similar-shaped holes coinciding. Bolted to the top of these Girders, through the centre circular holes, is a $\frac{1}{2} \times \frac{1}{2}$ in. Reversed Angle Bracket, free lug pointing outwards, the securing Bolt passing through the lug with the circular hole. Two Angle Brackets are then bolted to the underside of the Girders in the positions shown, each Bracket being spaced from the Girder by a Washer on the shank of the securing Bolt which, incidentally, passes through the elongated holes both of the Bracket and the Girder. The Brackets are adjusted forward in the Girder's elongated holes. A $2\frac{1}{2}$ in. Rod is journalled in the circular holes in the Angle Brackets, where it is held in place by a Collar and a Driving Pinion from a No. 1 Clockwork Motor 28. The whole assembly is then screwed to the above-mentioned Threaded Bosses, as well as being fixed to Fishplates 3 by a $\frac{3}{8}$ in. Bolt, shank pointing downwards, with two Washers fitted beneath its head.

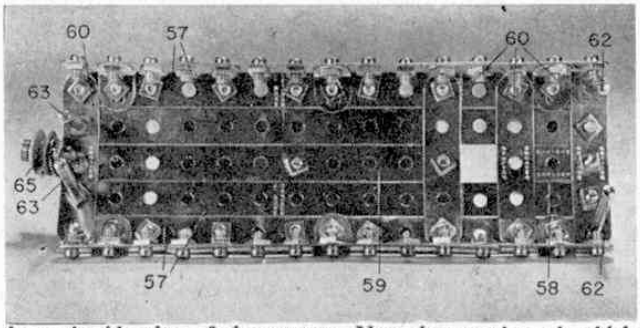
Boiler

Coming to the boiler, two $3\frac{1}{2}$ in. Strips 29 are formed into a complete circle, the ends overlapping one hole, two $2\frac{1}{2}$ in. Strips 30 being bent to follow the same radius. Using Set Screws 31, all these Strips are fixed to two 2 in. Slotted Strips, bent longitudinally to follow the curve of the Strips, the forward end securing Set Screws also fixing two further 2 in. Slotted Strips 32 in position. A $\frac{3}{4}$ in. Bolt, shank upwards, is then inserted through the centre hole in the rearmost Strip 29, is fitted with a Crank 33 and a Washer, after which it is secured by a Nut. Fixed by Nuts on the protruding shank of the Bolt are a Double Bracket 34 and an Angle Bracket, the latter with a $\frac{1}{2}$ in. Bolt secured in its free lug, as shown. Two Rod and Strip Connectors 35 are bolted, one to each lug of the Double Bracket. Crank 33 is further bolted to foremost Strip 29 through the centre hole in the arm of the Crank.

Attached to the underside of the boiler, but spaced from it by a Washer on the shank of the securing $\frac{3}{8}$ in. Bolt, is a Threaded Crank 36, the Bolt also passing through the holes in the overlapped ends of forward Strip 29. An Angle Bracket, later acting as the steering check-stop, is held by the same Bolt, this Bracket being spaced from the arm of the Threaded Crank by another Washer. The end of the Threaded Crank is now bolted to rear Strip 29, being spaced from it by a Washer, the securing Bolt also fixing the boiler to the free lug of the $\frac{1}{2}$ in. Reversed Angle Bracket included in the belly tank. Note that the lug fits behind the overlapped ends of the Strip, inside the boiler.

It will be noticed at this stage that a gap remains between rear Strip 30 and the front of the tender. Inserted into this gap is a 1 in. loose Pulley fitted with a Rubber Ring 37, after which a $3\frac{1}{2}$ in. Rod is mounted in the centre hole of the Pulley and secured in the Threaded Coupling carried inside the tender. Mounted on the front end of the Rod are three further 1 in. loose Pulleys 38, all clamped tightly against forward Strip 29 by a 1 in. fixed Pulley. The Boss of this last Pulley is fitted with a Set Screw to represent the smokebox door handle.

In building the Chimney, a 1 in. Rod is fixed in the boss of Crank 33, the Rod then being fitted with two Washers and a Threaded Coupling 39. Screwed into the longitudinal tapped bore of this Coupling is a 1 in. Screwed Rod, on which a $\frac{7}{16}$ in. Pinion 40 is held by an electrical Terminal Nut. Secured to the



An underside view of the canopy. Note the gap through which the chimney protrudes.