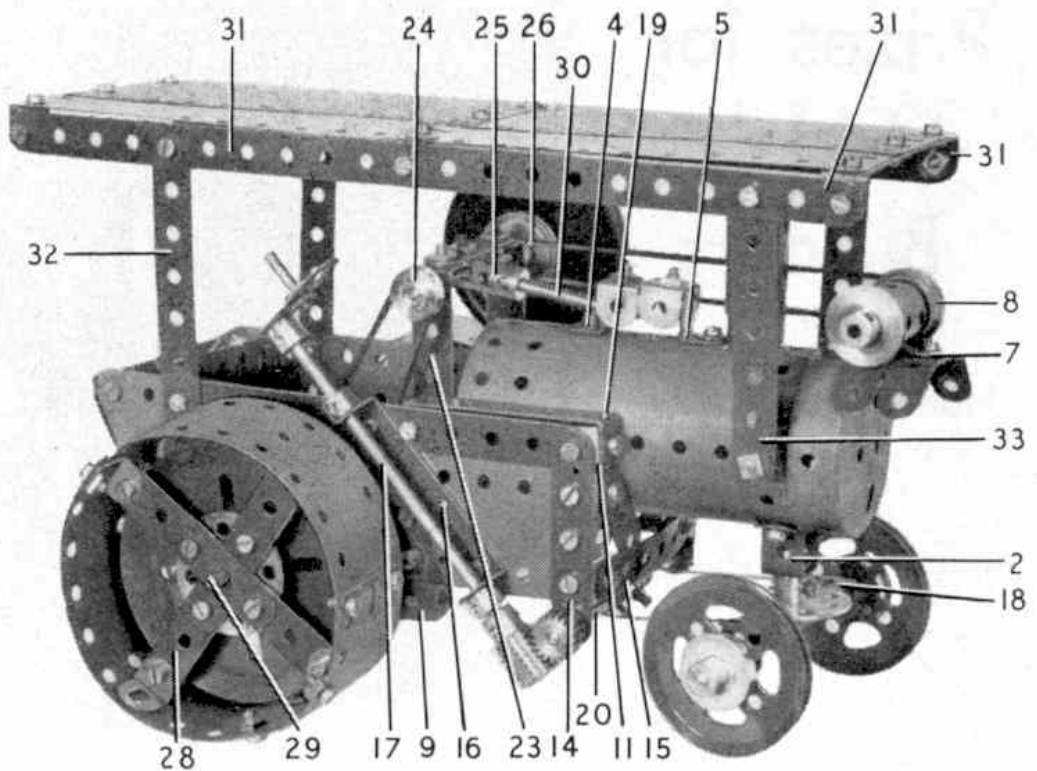


Fig. 1. A very happy hour or two can be spent in assembling this Traction Engine. All the parts used in it are contained in Outfit No. 7.



New Meccano Model:

## Traction Engine (Outfit No. 7)

OWNERS of Outfit No 7 will find the Traction Engine shown in Fig. 1 a good subject for their attention. It was designed by H. H. Taylor, Huddersfield, and its constructional details are as follows.

A Boiler 1 has a Double Bent Strip 2 bolted to it at the front, and a nut and bolt at the rear. Two  $\frac{1}{2}$ " Reversed Angle Brackets 4 and 5, each with a Double Bracket attached, and a Chimney Adaptor and Sleeve Piece 6, are secured to the top of the Boiler as shown. The Boiler End is placed in position at the front, and on the nut and bolt securing this is a  $1\frac{1}{2}$ " Strip 7 that supports two  $2\frac{1}{2}$ " Strips, bent slightly, and a Sleeve Piece fitted with two  $\frac{3}{4}$ " Flanged Wheels 8. A  $3\frac{1}{2}$ "  $\times$   $2\frac{1}{2}$ " Flanged Plate 9 is extended by a  $5\frac{1}{2}$ " Strip 10, and is attached by a Double Bracket 11 to the Boiler. On the inner end of Bolt 12 is an Angle Bracket that is bolted to another Angle Bracket fixed to the Boiler. Then a  $2\frac{1}{2}$ "  $\times$   $1\frac{1}{2}$ " Flexible Plate 13 is bolted to the Plate 9. A  $2\frac{1}{2}$ " Strip 14, fastened to the Strip 10 and the Flexible Plate 13 has three Angle Brackets bolted to it, the lower pair being connected by a 3" Strip 15. A  $1\frac{1}{2}$ " Strip is attached to one of the other

Angle Brackets and placed behind the Strip 15. On one side a  $2\frac{1}{2}$ "  $\times$   $\frac{1}{2}$ " Double Angle Strip 16 is bolted and this supports a 4" Rod 17 that is held in position by Collars. A Crank with a Threaded Pin is secured at one end of this Rod, and at the other end is a Worm Wheel. A  $3\frac{1}{2}$ " Rod 20 is passed through the Strips 14 and fitted with a  $\frac{1}{2}$ " Pinion and a Collar

Next a  $2\frac{1}{2}$ "  $\times$   $\frac{1}{2}$ " Double Angle Strip 18 is bolted to a Bush Wheel mounted on a Rod placed in the Double Bent Strip 2 and the Boiler, and a Collar is used to hold it in position. Two 2" Pulley Wheels are mounted freely on a  $4\frac{1}{2}$ " Rod together with two fixed  $\frac{3}{4}$ " Flanged Wheels.  $2\frac{1}{2}$ "  $\times$   $\frac{1}{2}$ " Double Angle Strips 19 are bolted to the Double Bracket 11. A length of Cord is fastened to the Double Angle Strip 18, after being wound a few turns around the Rod 20. Spring Clips on this Rod help the Cord to grip.

The rear of the cab consists of two  $2\frac{1}{2}$ "  $\times$   $2\frac{1}{2}$ " Flexible Plates bolted to the Flanged Plate 9. Two  $2\frac{1}{2}$ "  $\times$   $1\frac{1}{2}$ " Triangular Flexible Plates are attached to the Flanged Plate 9, and then two  $2\frac{1}{2}$ "  $\times$   $2\frac{1}{2}$ " Flexible Plates 21 are added, these being attached to the

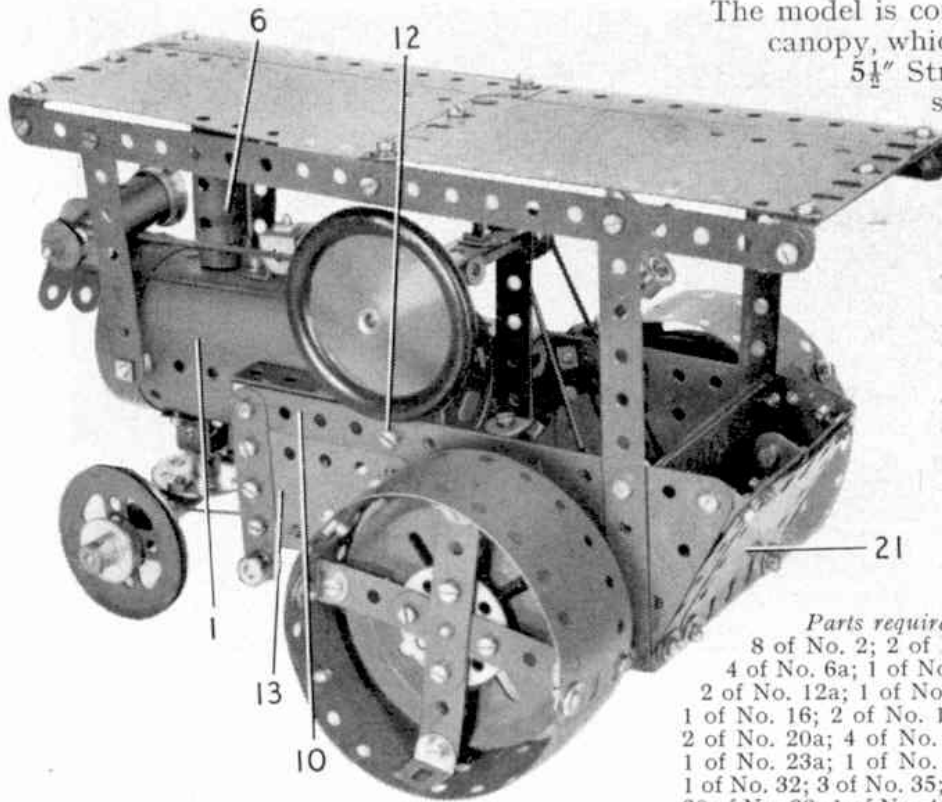


Fig. 2. The near side of the Traction Engine.

Triangular Flexible Plates by two  $1\frac{1}{2}'' \times \frac{1}{2}''$  Double Angle Strips.

Two  $1'' \times 1''$  Angle Brackets 22 bolted to the Flanged Plate 9, are each extended by means of  $2\frac{1}{2}'' \times \frac{1}{2}''$  Double Angle Strips 23 which are connected at their upper ends by a  $1\frac{1}{2}''$  Strip and a Fishplate. On a  $3\frac{1}{2}''$  Rod that is pushed through the Double Angle Strips 23, a  $\frac{1}{2}''$  Pulley Wheel 24, a Coupling 25, a  $1''$  Pulley 26, and a Road Wheel are fixed. A  $2''$  Rod, with a  $\frac{1}{2}''$  Pulley secured to it, is mounted in the bosses of the Flanged Wheels 8, and the  $\frac{1}{2}''$  Pulley 24 and  $1''$  Pulley 26 are linked with a  $10''$  Driving Band.

To assemble the rear wheels two  $2\frac{1}{2}''$  Strips are bolted to an eight-hole Wheel Disc by  $\frac{1}{2}''$  or  $\frac{3}{4}''$  Bolts, and two more  $2\frac{1}{2}''$  Strips are attached at right-angles by  $\frac{3}{8}''$  Bolts. At the ends of the Strips Angle Brackets are fixed. The Wheel Disc is fastened to a  $3''$  Pulley Wheel with the  $\frac{3}{4}''$  or  $\frac{1}{2}''$  Bolts, with nuts on each side of the Pulley Wheel to space it away. The rims consist of two  $5\frac{1}{2}'' \times 1\frac{1}{2}''$  and a  $2\frac{1}{2}'' \times 1\frac{1}{2}''$  Flexible Plate. These are curved and bolted to two of the Angle Brackets. The Wheels are secured to a  $6\frac{1}{2}''$  Rod 29, held centrally in the body by a  $1''$  Pulley and a Collar. The  $1''$  Pulley is linked by a Driving Band with the  $\frac{1}{2}''$  Pulley 24.

A  $2''$  Rod 30 fixed in the Coupling 25, is placed in the  $\frac{1}{2}''$  Reversed Angle Bracket 4.

The model is completed by building the canopy, which is made by joining two  $5\frac{1}{2}''$  Strips 31 together on each side and then connecting the two sides by a  $3\frac{1}{2}'' \times \frac{1}{2}''$  Double Angle Strip at each end. Four  $5\frac{1}{2}'' \times 2\frac{1}{2}''$  Flexible Plates are bolted to the Double Angle Strips and supported with Angle Brackets in the centre. The canopy is supported by two  $5\frac{1}{2}''$  Strips 32 bolted to the Flanged Plate 9 and two  $3\frac{1}{2}''$  Strips 33 which are fixed on a  $3''$  Screwed Rod passed through the Boiler.

*Parts required to build the Traction Engine:*  
 8 of No. 2; 2 of No. 3; 2 of No. 4; 12 of No. 5;  
 4 of No. 6a; 1 of No. 10; 4 of No. 11; 18 of No. 12;  
 2 of No. 12a; 1 of No. 14; 1 of No. 15; 2 of No. 15a;  
 1 of No. 16; 2 of No. 17; 1 of No. 18a; 2 of No. 19b;  
 2 of No. 20a; 4 of No. 20b; 2 of No. 22; 1 of No. 23;  
 1 of No. 23a; 1 of No. 24; 2 of No. 24a; 1 of No. 26;  
 1 of No. 32; 3 of No. 35; 130 of No. 37a; 120 of No. 37b;  
 20 of No. 38; 1 of No. 45; 2 of No. 48; 6 of No. 48a; 2 of  
 No. 48b; 2 of No. 53; 5 of No. 59; 1 of No. 62; 1 of No.  
 63; 1 of No. 80c; 2 of No. 111; 2 of No. 111a; 1 of No.  
 115; 2 of No. 125; 1 of No. 162; 2 of No. 163; 1 of No.  
 164; 1 of No. 186a; 1 of No. 186b; 1 of No. 187; 4 of No.  
 188; 4 of No. 189; 4 of No. 190; 4 of No. 192; 2 of No. 221.

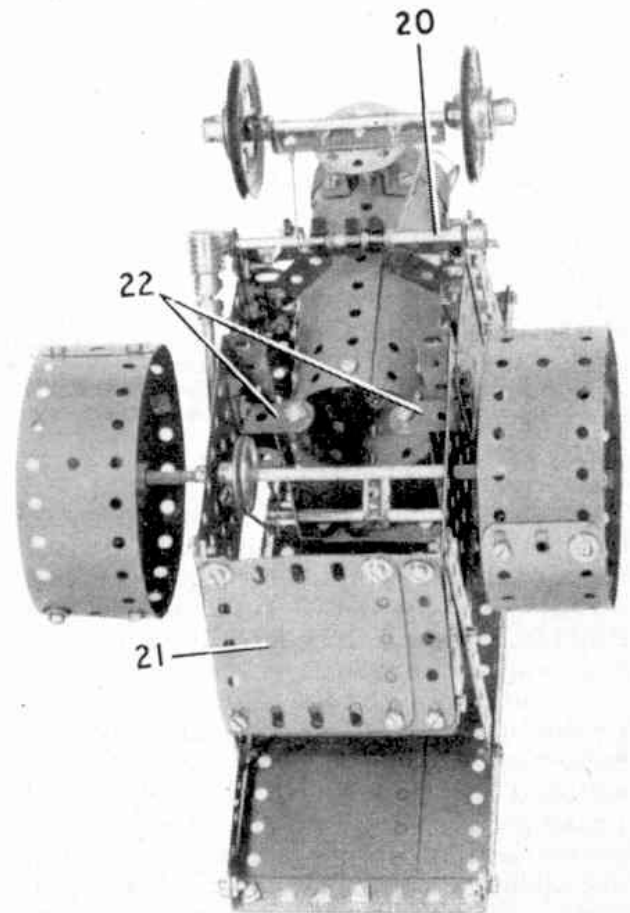


Fig. 3. An underneath view of the Traction Engine.