

Among the Model- Builders

By "Spanner"

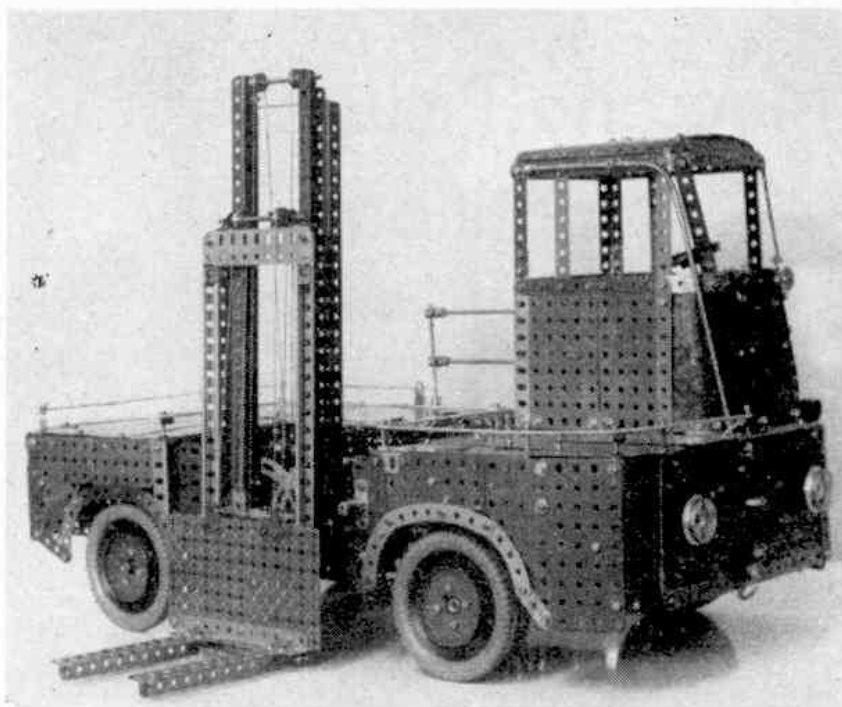
A Motorised Fork Lift Truck from Luxembourg

A correspondent in Luxembourg, Mr. Guy Kind, wrote to me recently enclosing some photographs and a few details of a very attractive model of a motorised Fork Lift Truck he had built, and which is designed for handling tree trunks, planks, steel plates and girders and similar loads. One of the photographs is reproduced on this page.

The model takes its motive power from two Electric Motors, one of which is situated at the forward end of the chassis and drives the front road wheels of the vehicle through a six-speed gear-box that gives three forward speeds and three reverse.

The second motor is placed at the rear and operates all the movements of the fork lifting apparatus. In addition to the normal raising and lowering, the forks and guide structure can be moved laterally across the chassis. The model is distinguished by its remarkably neat and finished appearance

and its excellent proportions.



The motorised fork lift truck built by Mr. Guy Kind, Luxembourg, which is referred to on this page.

Simple Expanding Brake

A simple example of an internal expanding brake suitable for use in a model car chassis is shown in Fig. 1. The brake disc consists of two Semi-Circular Plates bolted together. Two Angle Brackets 2 are pivoted freely on bolts lock-nutted in the disc. The brake shoes are two $3\frac{1}{2}$ " Strips bent to shape as shown and bolted at one end to the free lugs of the Angle Brackets. The shoes are caused to expand by means of an operating piece consisting of two $\frac{3}{8}$ " Bolts each fixed by a nut in the spider from a Swivel Bearing 3. These Bolts press against the free ends of the brake shoes. The spider carries also a $\frac{1}{2}$ " Bolt 4, and a $2\frac{1}{2}$ " Driving Band 5 is looped over the shanks of the bolts holding the $3\frac{1}{2}$ " Strips to the Angle Brackets.

A $\frac{3}{4}$ " Bolt 6 is held very loosely in the brake disc by means of two sets of nuts locked together on each side of the disc. The Bolt shank is therefore free to move or wobble sideways.

This Bolt is connected by any suitable method to the brake operating pedal of the car. If the Bolt 6 is pulled sideways its shank, pressing against the Bolt 4, forces the $\frac{3}{8}$ " Bolts in the spider against the ends of the brake shoes, so

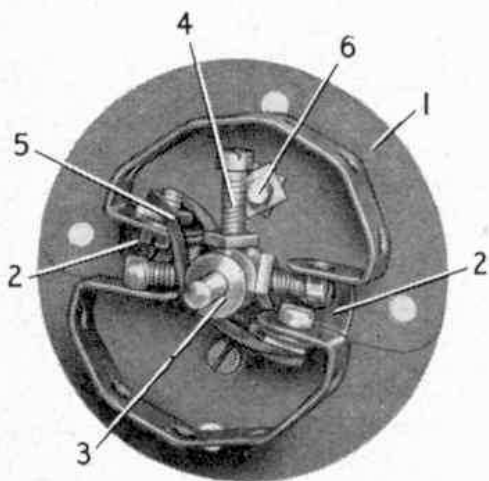
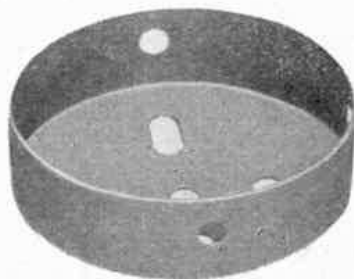


Fig. 1. A simple expanding brake for use in a car chassis.



forcing them apart to press against the brake drum. The latter is a Boiler End, and in Fig. 1 is shown detached in order to reveal the interior arrangement.

A Compact Winding Drum and Gear-Box Unit

Model crane builders will be interested in the compact gear-box and winding drum arrangement shown in Figs. 2 and 3, which is suitable for use in models of the larger and more advanced type. It contains many novel features, particularly in the form of gear-lock used, and it was designed by Mr. G. Th. van Beusekom, Oosterbeek, Holland.

It is best to commence building the mechanism by bolting two Trunnions 1 and 2, spaced away with a $1\frac{1}{2}$ " Strip, to a $5\frac{1}{2}$ " x $2\frac{1}{2}$ " Flanged Plate. Two Double Bent Strips 3 and 4 are attached to the underneath side of the Plate. To a $1\frac{1}{2}$ " Rod 5 a $\frac{3}{4}$ " Contrate Wheel is fixed and a similar Wheel is secured on Rod 6, but is spaced away from the Plate by means of two Washers. A $3\frac{1}{2}$ " Rod 7 is passed through the Trunnions 1 and 2 and a $\frac{1}{2}$ " Pinion 8 is fastened to it. A $\frac{3}{4}$ " Pinion 9 is attached to a 1" Gear Wheel by means of a Socket Coupling, and the unit is free on the Rod 7, but is held in place by a Collar. Three Washers are placed between the 1" Gear Wheel and the Trunnion 2. These Pinions engage with the $\frac{3}{4}$ " Contrate Wheels on the Rods 5 and 6.

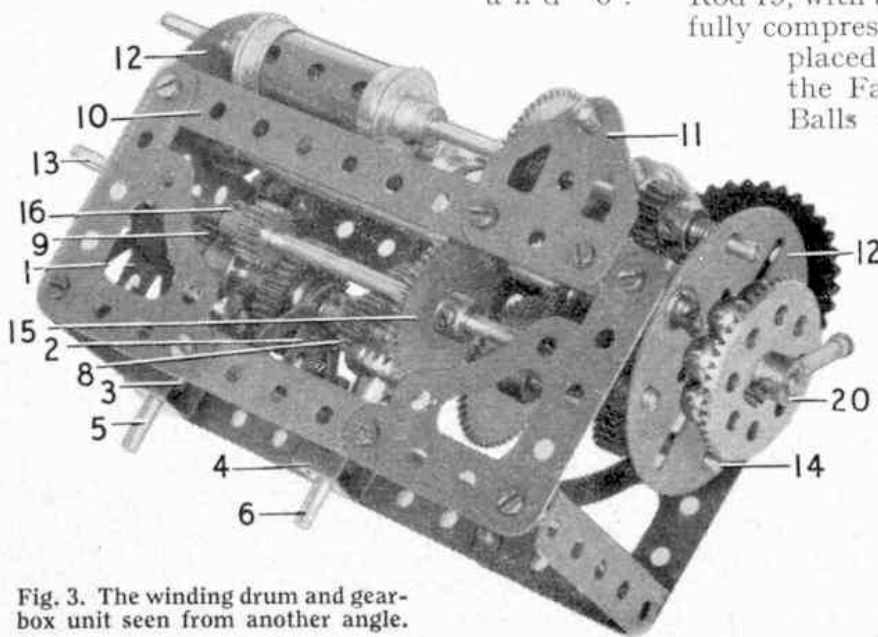


Fig. 3. The winding drum and gear-box unit seen from another angle.

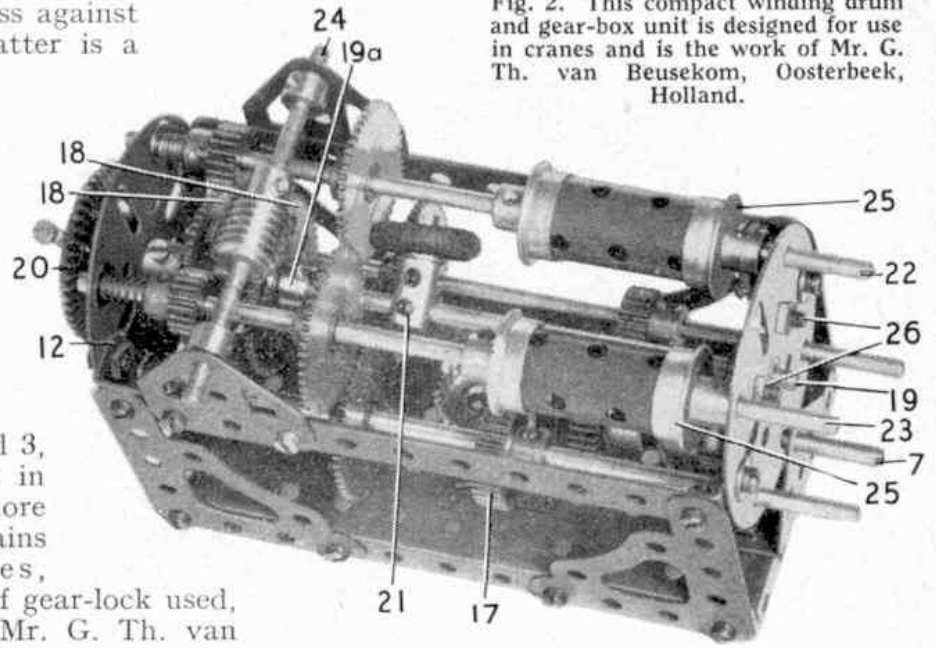


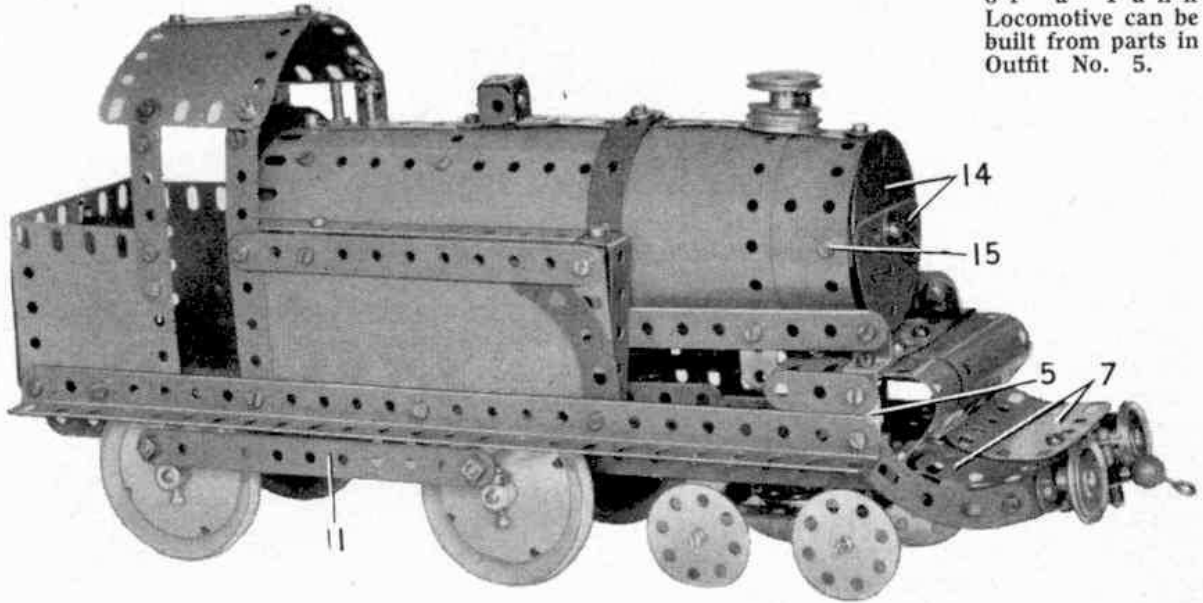
Fig. 2. This compact winding drum and gear-box unit is designed for use in cranes and is the work of Mr. G. Th. van Beusekom, Oosterbeek, Holland.

Four Corner Gussets are now bolted to the Flanged Plate and each pair is joined at the side by a $5\frac{1}{2}$ " x $\frac{1}{2}$ " Double Angle Strip 10, which has a Flat Trunnion 11 attached to it. To the lugs of the Double Angle Strips 10 Face Plates 12 are bolted. One of the $6\frac{1}{2}$ " Rods 13 and 14 carries a Washer, a Compression Spring, a $\frac{1}{2}$ " Pinion, a 50-tooth Gear Wheel 15, another $\frac{1}{2}$ " Pinion and a Collar. The other Rod carries similar parts except that the $\frac{1}{2}$ " Pinion is replaced by a 1" Gear Wheel 17. Two 57-tooth Gear Wheels 18 are bolted apart on two $\frac{3}{4}$ " Bolts with three nuts and are free to turn on the $6\frac{1}{2}$ " Rod 19. A Washer, a Compression Spring and another Washer are placed between the boss of the Face Plate and the Gear Wheels 18. A Collar 19a is fixed to the Rod 19, with the Compression Spring almost fully compressed. A loose $\frac{1}{2}$ " Pulley is then placed on the $6\frac{1}{2}$ " Rod 19, outside the Face Plate, with eight $\frac{3}{8}$ " Steel Balls placed around it. A $1\frac{1}{2}$ "

Bevel Wheel 20 is secured to the Rod so that the Steel Balls rest in the eight holes of the Bevel Wheel and Face Plate. The Bevel Wheel can be rotated by means of a $\frac{3}{8}$ " Bolt fixed in its boss. A Short Coupling 21, carrying a $\frac{1}{2}$ " loose Pulley fitted with a Dinky Toys Tyre is fixed to the Rod 19 so that with the Steel Balls resting in the holes, the $\frac{3}{8}$ " Bolt in the

(Continued on page 472)

Fig. 1. This model of a Tank Locomotive can be built from parts in Outfit No. 5.



Tank Locomotive

A New Model for Outfit No. 5

CONSTRUCTION of the model Tank Locomotive shown in Fig. 1 is begun by bolting a $12\frac{1}{2}$ " Angle Girder to each of the larger flanges of a $5\frac{1}{2}$ " \times $2\frac{1}{2}$ " Flanged Plate 1. A Flanged Sector Plate, and a $2\frac{1}{2}$ " \times $1\frac{1}{2}$ " Flanged Plate are then bolted to the $12\frac{1}{2}$ " Angle Girders. A $3\frac{1}{2}$ " Strip 2 is bolted across the Flanged Plate and a similar Strip is used to connect the $12\frac{1}{2}$ " Angle Girders at their forward ends. Two more $12\frac{1}{2}$ " Angle Girders 3 are attached to the $3\frac{1}{2}$ " Strips by Angle Brackets, the bolts at the front holding also a $2\frac{1}{2}$ " Curved Stepped Strip 4 and a Fishplate 5 in place, while those at the rear hold also a $2\frac{1}{2}$ " \times $2\frac{1}{2}$ " Flexible Plate.

The buffer beam is made from two $2\frac{1}{2}$ " Strips overlapped and is fixed by 1 " \times 1 " Angle Brackets to the Curved Strips 4. A Reversed Angle Bracket 6 and a $1\frac{1}{2}$ " Strip are bolted to the Fishplates 5 and a $2\frac{1}{2}$ " \times $1\frac{1}{2}$ " Flexible Plate is bolted to each Reversed Angle Bracket to provide a saddle for the tank. Two U-section Curved Plates are then bolted to the $2\frac{1}{2}$ " \times $1\frac{1}{2}$ " Flexible Plates. Two slightly curved $2\frac{1}{2}$ " \times $1\frac{1}{2}$ " Flexible Plates 7 are bolted to a Double Bracket attached to the buffer beam. A $5\frac{1}{2}$ " Strip is bolted at each side of the locomotive to the upper lug of the Reversed Angle Bracket 6.

Each of the side water tanks is made

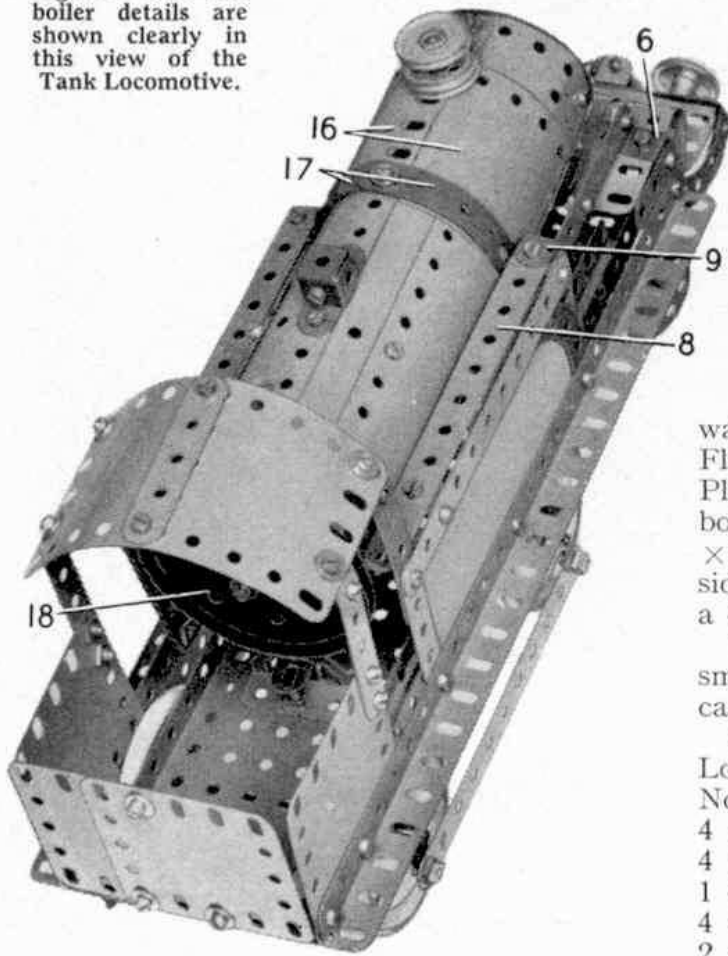
from a $5\frac{1}{2}$ " \times $2\frac{1}{2}$ " Flexible Plate edged by a $2\frac{1}{2}$ " Curved Strip and a $5\frac{1}{2}$ " Strip and two $2\frac{1}{2}$ " Strips overlapped two holes and fixed to the main $12\frac{1}{2}$ " Angle Girders 3. A $5\frac{1}{2}$ " Strip 8 is attached to the top of each tank by Angle Brackets and the front is filled in by a Double Angle Strip 9.

Each side of the coal bunker is a $2\frac{1}{2}$ " \times $2\frac{1}{2}$ " Flexible Plate to which a $2\frac{1}{2}$ " Strip 10 is bolted, and the rear consists of two $2\frac{1}{2}$ " \times $2\frac{1}{2}$ " Flexible Plates.

The cab roof is made from two $\frac{11}{16}$ " radius Curved Plates bolted together, the same bolts holding also a $2\frac{1}{2}$ " Strip on the outside as shown in Fig. 2. It is supported by Obtuse Angle Brackets fixed to the $2\frac{1}{2}$ " and $5\frac{1}{2}$ " strips. The driving wheels are Road Wheels fixed on 4" Rods mounted in Flat Trunnions and Fishplates bolted to the inner pair of $12\frac{1}{2}$ " Angle Girders. The Coupling Rods 11 on each side and $5\frac{1}{2}$ " Strips lock-nutted at each end to an Angle Bracket that is fixed by a nut and bolt to the boss of one of the Road Wheels. Each bolt is fitted with a nut and then passed through the slotted hole of the Angle Bracket and screwed into the boss of a Road Wheel. The nut is then tightened against the boss to fix the Angle Bracket firmly in place.

The bogie unit consists of two $2\frac{1}{2}$ " \times $\frac{1}{2}$ " Double Angle Strips and three $2\frac{1}{2}$ " Strips, the centre one of which is bolted to a Bush

Fig. 2. Cab and boiler details are shown clearly in this view of the Tank Locomotive.



The smoke-box door of the boiler is made from two Semi-Circular Plates 14 (Fig. 1), fitted with a $2\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strip. Two $5\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible Plates are curved to fit round the Semi-Circular Plates and are fixed to the lugs of the Double Angle Strip, one of the bolts holding them to the Double Angle Strip is marked 15. The $5\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible Plates are extended to the rear by two $4\frac{1}{2}'' \times 2\frac{1}{2}''$ Flexible Plates 16 bolted together to form a cylinder. The section of the boiler above the water tank is made from two $5\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible Plates and two $5\frac{1}{2}'' \times 2\frac{1}{2}''$ Flexible Plates. Two Formed Slotted Strips are bolted around the boiler as shown. A $2\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strip is fixed to the boiler sides and a 3" Pulley 18 is attached to it by a $\frac{1}{2}''$ Bolt.

The boiler is completed by adding the smoke stack and dome, details of which can be seen in the illustrations.

Parts required to build the Tank Locomotive: 10 of No. 2; 2 of No. 3; 12 of No. 5; 2 of No. 6a; 4 of No. 8; 4 of No. 10; 4 of No. 11; 11 of No. 12; 2 of No. 12a; 4 of No. 12c; 2 of No. 15b; 1 of No. 17; 1 of No. 18a; 1 of No. 18b; 1 of No. 19b; 4 of No. 22; 2 of No. 22a; 1 of No. 24; 2 of No. 24a; 2 of No. 24c; 2 of No. 35; 118 of No. 37a; 110 of No. 37b; 20 of No. 38; 1 of No. 45; 1 of No. 48; 6 of No. 48a; 1 of No. 51; 1 of No. 52; 1 of No. 54; 4 of No. 90a; 2 of No. 111a; 5 of No. 111c; 1 of No. 115; 4 of No. 125; 2 of No. 126; 2 of No. 126a; 1 of No. 147b; 1 of No. 176; 4 of No. 187; 4 of No. 188; 4 of No. 189; 4 of No. 190; 2 of No. 191; 2 of No. 192; 2 of No. 199; 2 of No. 200; 1 of No. 212; 2 of No. 214; 4 of No. 215.

Wheel 12. The Wheels are six-hole and eight-hole Wheel Discs. The complete bogie swivels on a $1\frac{1}{2}''$ Rod 13 that is held in the boss of the Bush Wheel and passes through a hole in a Reversed Angle Bracket and the $2\frac{1}{2}'' \times 1\frac{1}{2}''$ Flanged Plate at the front end of the loco chassis. A Cord Anchoring Spring keeps the $1\frac{1}{2}''$ Rod in place.

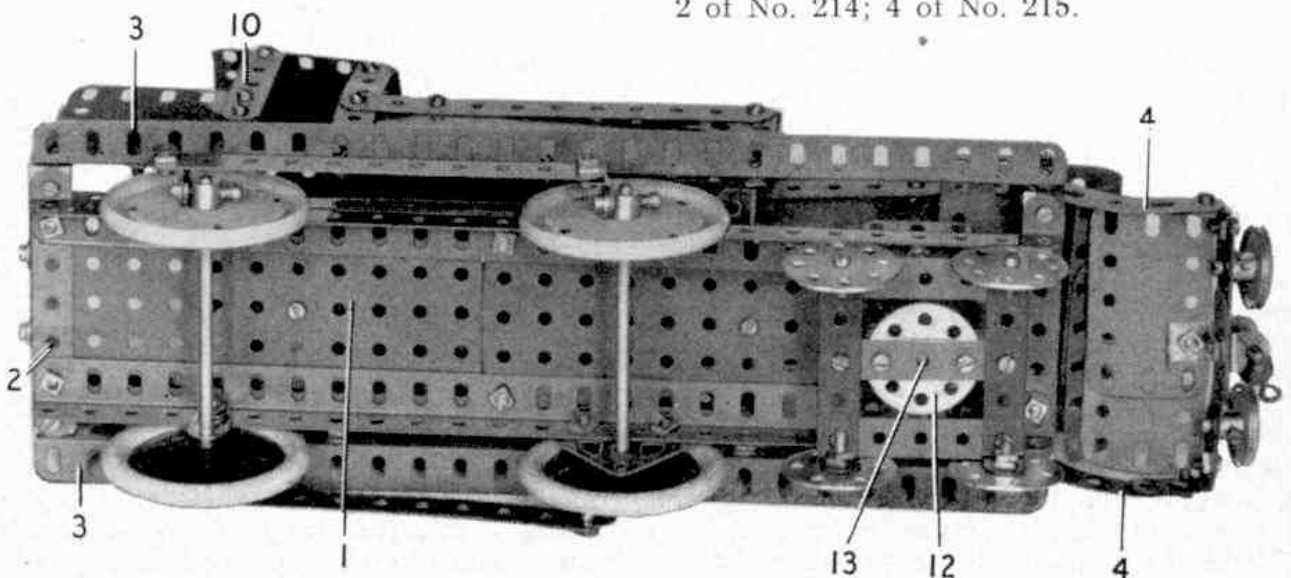


Fig. 3. An underneath view of the Tank Locomotive.