

Prizes for Meccano Models

Still Time to Send in Your Entry

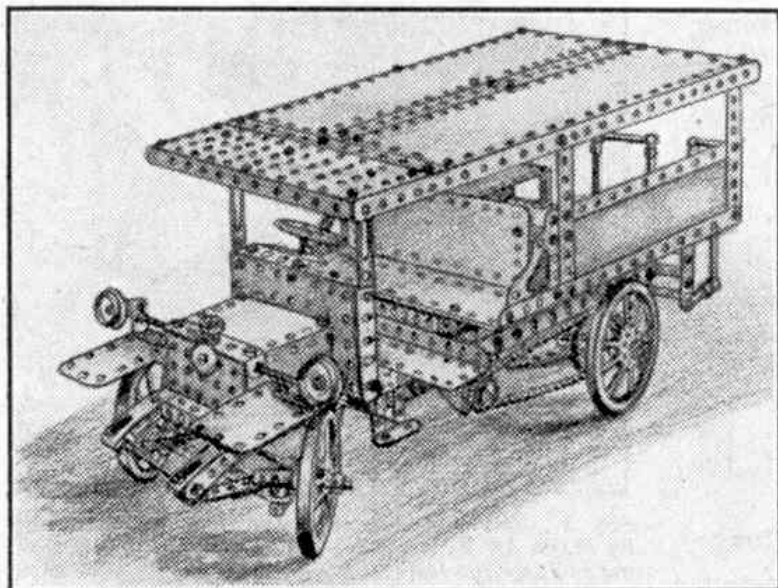
We wish to remind model-builders that there is always at least one model-building competition open for entries and we invite every reader to take part in these contests. At present the "October" Competition is open, and in this Contest fine cash prizes are offered for the best Meccano models of any kind sent in by "M.M." readers, no matter where they live.

All a competitor has to do is to think of a new model, and then to set to work to construct it as neatly and

be submitted, and any number of parts may be used in building models, but good solid construction will count more than mere size alone.

Before posting their entries competitors must take care to write their age, name and address clearly on the back of each photograph or drawing submitted.

Closing dates: Home Section, 30th November, 1951; Overseas, 29th February, 1952. Envelopes should be addressed "October Model-Building Competition, Meccano Ltd., Binns Road, Liverpool 13."



Not many "M.M." readers will have seen the original of this fine model of an Albion 2-cylinder Shooting Brake, which was in use in 1911. The model was built by George S. Henderson, Edinburgh, and was awarded First Prize in the "Transport Past and Present" Competition.

realistically as possible from standard Meccano parts.

When the model is completed it is only necessary to obtain either a photograph or a good sketch of it and send this to us. *The actual model must not be sent.* The photograph or drawing need not be the competitor's own work, but it is absolutely essential that the model itself should be the result of his or her own unaided efforts. The competition is open to readers of all ages living in any part of the world.

The judges will award the prizes for those models that are the most original in subject and are neatly designed and proportioned, and which are built on correct mechanical principles.

The Contest will be divided into the following two Sections: A, for competitors of all ages living in the British Isles, B, for competitors of all ages living Overseas.

The following prizes will be awarded in each of the Sections A and B: First, Cheque for £4/4/-; Second, Cheque for £2/2/-; Third, Cheque for £1/1/-. Ten Prizes each of 10/6, and Ten Prizes each of 5/-. Certificates of Merit also will be awarded.

Models of any kind whatever may

MECCANO COMPETITIONS RESULTS

By "Spanner"

"Transport Past and Present" Competition (Home Section)

First Prize: Cheque for £3/3/-; G. S. Henderson, Edinburgh 7. Second Prize: Cheque for £2/2/-; S. Reid, Aberdeen. Third Prize: Cheque for £1/1/-; J. Thorpe, Sidcup, Kent.

Five Prizes each of 10/-: S. Edmonds, Shorne, Kent; M. Bunten, Newport, Essex; C. Webb, Garstang, Nr. Preston; T. B. Bindoff, New Malden; A. W. Miller, Rutherglen, Glasgow.

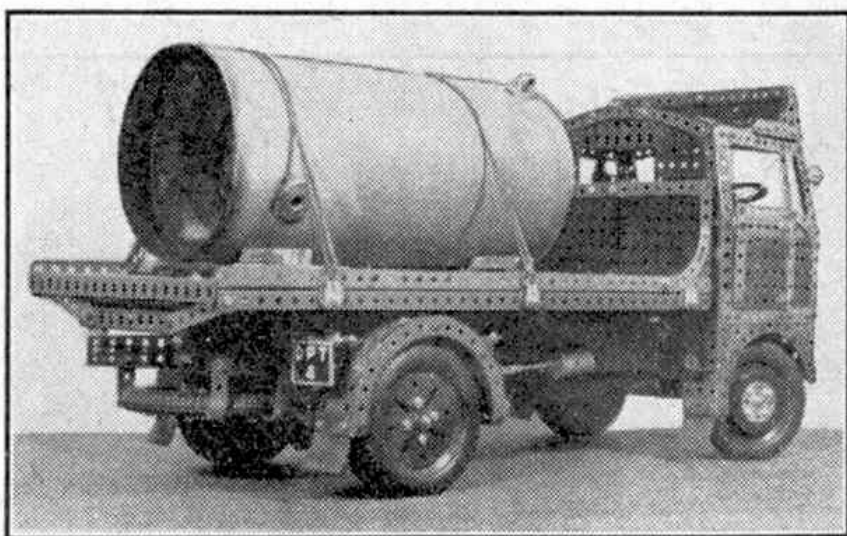
Five Prizes each of 5/-: K. Nash, Norwich; W. R. Tandy, Coleford, Glos.; D. Armitage, Doncaster; F. G. Glass, Warlingham, Surrey; B. R. Harris, London S.E.18.

"Meccano Mechanisms" (Home Section)

First Prize: Cheque for £3/3/-; C. F. Price, Epsom, Surrey. Second Prize: Cheque for £2/2/-; A. J. Doggett, Iver, Bucks. Third Prize: Cheque for £1/1/-; D. Irving, Hutton, Essex.

Five Prizes each of 10/-: R. Waterlow, North Wembley; J. Winney, Hatch End, Middx.; M. C. Murphy, Sheffield; P. Ross, Ilford, Essex; B. Brasier, Ruislip, Middx.

The "Transport Past and Present" Competition produced some very fine and interesting entries and the subjects ranged from early mail coaches to a pair of roller skates!



A heavy motor lorry in which much interesting detail work can be seen. It was built by J. Thorpe, Sidcup.

Among the Model-Builders

By "Spanner"

Interesting Power Driven Crane

A model of a level-luffing crane, in which the mechanical arrangements are of particular interest, came to my notice recently. The model is the work of Major D. F. Densham-Booth, R.E., Surbiton, who is seen with it in the upper picture on this page. It is based on an illustration in a manufacturers' catalogue, and its various motions are actuated by two 6-volt Motors and a Clockwork Motor.

All the operations are controlled from a central position in the engine housing, the mechanism of each motion being equipped with band brakes and sliding driving shafts, to facilitate individual control. Although the model is approximately 5 ft. in height, it is very stable, due to the care taken in the proportions of the structure and in the design of the superstructure bearing.

A Four-Speed and Reverse Gear-Box

Roland Brown, Oakham, sent details of a four-speed and reverse gear-box he has designed. It is illustrated on this page and is intended primarily for use in model tractors, although it can of course be used in other ways.

This gear-box is 4" long. The input shaft 15 carries a 1" Gear 1 and a $\frac{3}{4}$ " \times $\frac{1}{2}$ " Pinion 2. The shaft is journalled in the centre hole of a $1\frac{1}{2}$ " Strip at the front of the $2\frac{1}{2}$ " \times $1\frac{1}{2}$ " Flanged Plates, which form

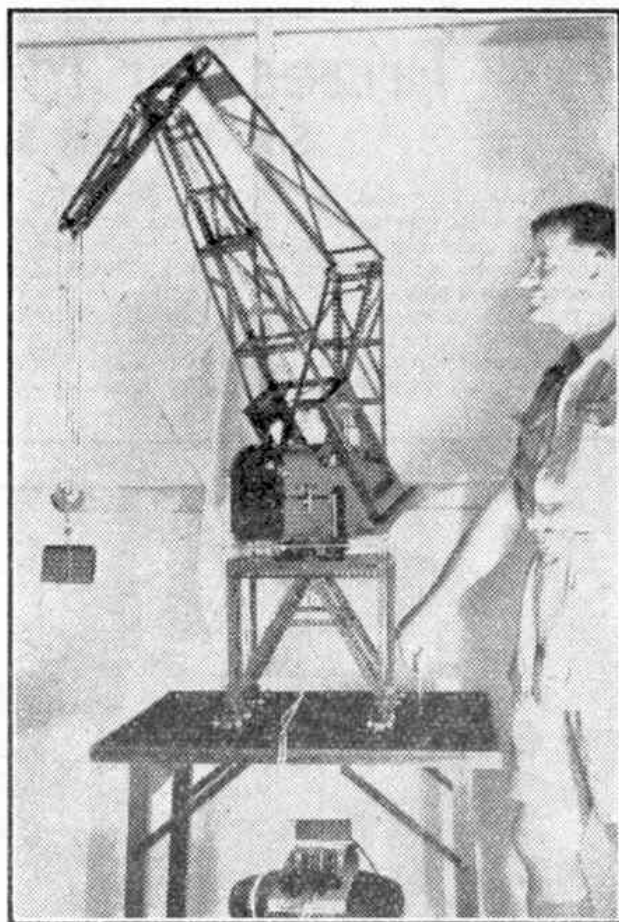


Fig. 1. This imposing level-luffing crane was built by Major D. F. Densham-Booth, R.E. The model is particularly interesting in view of the fact that each of its motions has a separate power drive.

the main part of the sides of the gear-box, and in the Flat Trunnion bolted at the front of the gear-box between two $1\frac{1}{2}$ " Angle Girders 14. These Angle Girders are joined to the Flanged Plates by two $3\frac{1}{2}$ " Strips, which overlap the Flanged Plates four holes, and the end of the shaft protrudes into the boss of the 57-tooth Gear 4. This Gear 4 has a Wheel Disc bolted to it so as to form a better rod socket for the Rod 15 and reduce end play.

The layshaft 9 carries a 1" Gear 3 and a 50-tooth Gear 5, which mesh with Gears 1 and 2 on the Rod 15. It also carries two $\frac{1}{2}$ " \times $\frac{1}{4}$ " Pinions 6 and 7 in the positions shown, and a $\frac{3}{4}$ " \times $\frac{1}{4}$ " Pinion 8. These Pinions mesh with the 57-tooth Gear 4, the 50-tooth Gear 10

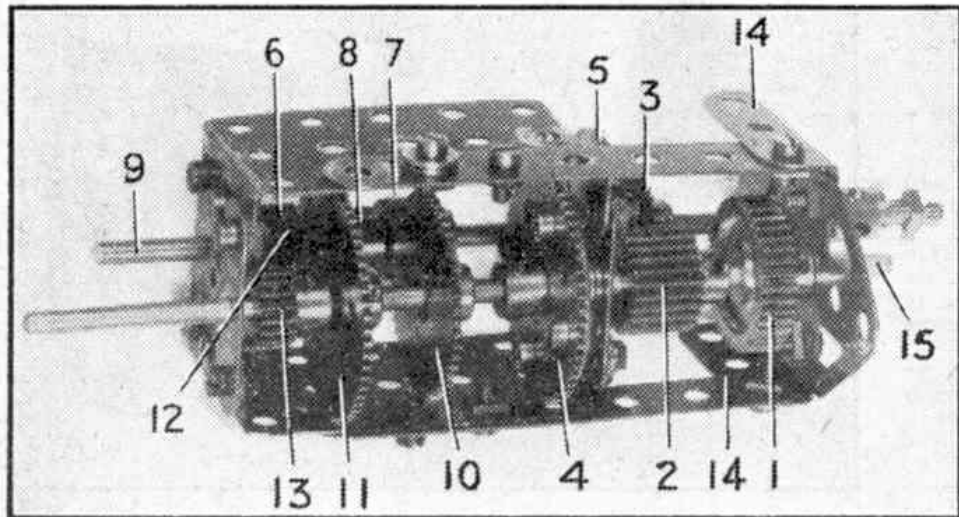


Fig. 2. A four-speed and reverse gear-box built by Roland Brown, Oakham.

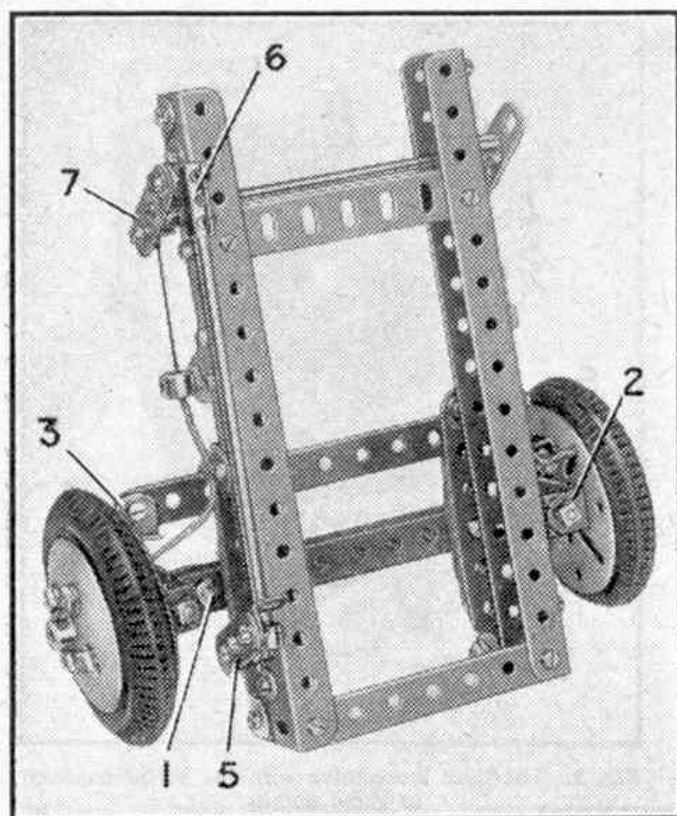


Fig. 3. A front axle unit incorporating internal expanding brakes, designed for use in model motor lorries.

and a 57-tooth Gear 11, while for reverse, the $\frac{1}{2}$ " Pinion 6 meshes with the second $\frac{1}{2}$ " Pinion 12 loose on a Bolt fixed to a $1\frac{1}{2}$ " Strip at the rear of the gear-box. Pinion 12 meshes also with another $\frac{1}{2}$ " Pinion 13 on the output shaft, which is journaled in a $1\frac{1}{2}$ " Strip at the top of the rear of the gear-box.

Top gear is obtained by meshing Gears 1 and 3 and 8 and 10. Second gear is obtained by meshing Gears 2 and 5 and 8 and 10. Third gear is obtained by sliding the layshaft to the extreme right so that Gears 1 and 3 mesh and the Pinion 7 meshes with the Gear 4. Bottom gear is obtained by meshing Gears 2 and 5 and 6 and 11.

Reverse is obtained by sliding the layshaft to the extreme left so that Gears 2 and 5 and 6, 12 and 13 engage.

The ratios of the gears are, top 2:1, third, 3:1, second 4:1, bottom 6:1 reverse, 2:1.

Front Axle Unit for Lorries

Figs. 3 and 4 show a complete front axle unit specially designed for model lorries. The road wheels are fitted with simple internal expanding brakes operated from a foot pedal through flexible cables. The main feature of the unit is that the 2" Pulleys normally used with the Motor Tyres are replaced by Boiler Ends, which serve also as the brake drums. This arrangement greatly reduces the distance between the point of contact of the tyre with the ground and the axis of the stub axle, and so provides much more accurate steering.

The axle beam is made from three or four $4\frac{1}{2}$ " Strips clamped together, and it is attached to leaf springs each built up from two $3\frac{1}{2}$ ", two $2\frac{1}{2}$ " and two $1\frac{1}{2}$ " Strips. The springs are pivotally attached to the chassis by Double Brackets at the front and by Angle Brackets and Fishplates at the rear.

Two $\frac{1}{2}$ " Reversed Angle Brackets 1 are bolted at each end of the axle beam, and these are connected by lock-nutted bolts to $1\frac{1}{2} \times \frac{1}{2}$ " Double Angle Strips 2. The Double Angle Strips are fixed to Face Plates used as the back-plates of the brakes. A Corner Angle Bracket 3 is bolted to each Face Plate, and these are linked by a $5\frac{1}{2}$ " Strip held by lock-nutted bolts.

The brake shoes are $4\frac{1}{2}$ " Strips curved to a slightly smaller radius than that of the Boiler Ends. An (Continued on page 526)

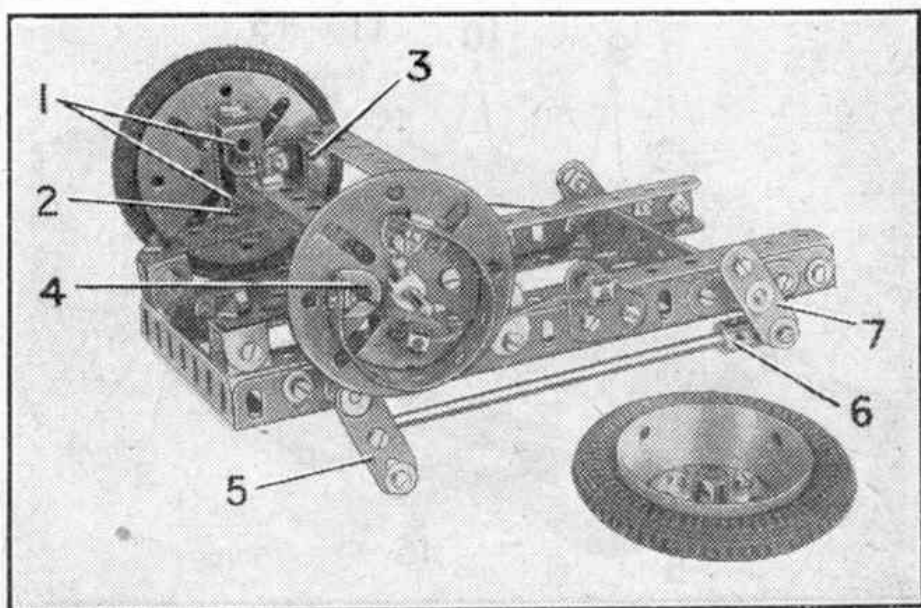


Fig. 4. The front axle unit with one of the wheels removed to reveal the details of the brake mechanism.

slotted hole of the Angle Bracket and screwed into the boss of the Road Wheel. The nut is then tightened against the boss to hold the Angle Bracket firmly in place.

The bogie unit is a $2\frac{1}{2}'' \times 1\frac{1}{2}''$ Flanged

The boiler is completed by adding the chimney and dome made as shown in Figs. 1 and 3, and it is attached to the body of the model by Reversed Angle Brackets 14.

Two U-section Curved Plates 15 are opened out slightly and one is bolted to the Girder 1 on each side.

Parts required to build the model Tank Locomotive: 10 of No. 2; 2 of No. 3; 12 of No. 5; 2 of No. 6a; 4 of No. 8; 1 of No. 10; 4 of No. 11; 12 of No. 12; 2 of No. 12a; 4 of No. 12c; 2 of No. 15b; 2 of No. 16; 1 of No. 17; 1 of No. 18a; 1 of No. 19b; 5 of No. 22; 2 of No. 22a; 1 of No. 23; 1 of No. 24; 4 of No. 24a; 5 of No. 35; 98 of No. 37; 10 of No. 37a; 12 of No. 38; 1 of No. 44; 1 of No. 45; 8 of No. 48a; 1 of No. 51; 1 of No. 52; 1 of No. 54; 1 of No. 57c; 2 of No. 90a; 2 of No. 111a; 6 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; 6 of No. 190; 2 of No. 191; 4 of No. 192; 2 of No. 199; 1 of No. 212; 2 of No. 214; 3 of No. 215.

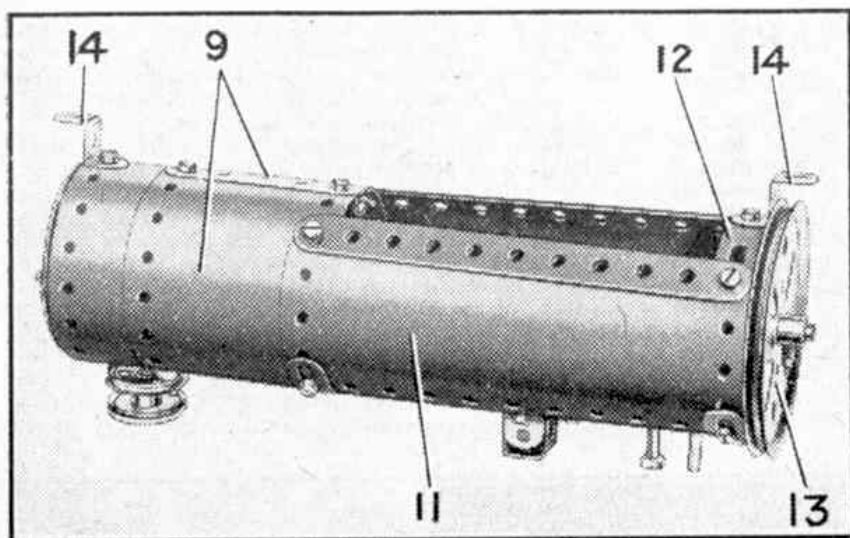


Fig. 3. The boiler of the locomotive photographed upside down to demonstrate its construction.

Plate fitted at each end with a $2\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strip. The bogie wheels are Wheel Discs, and each is free to turn on a $\frac{3}{8}''$ Bolt attached by two nuts to one of the lugs of the Double Angle Strips. The bogie unit pivots on a 2" Rod fixed in a Bush Wheel 8. The unit is held in place by a Spring Clip and a Cord Anchoring Spring.

The boiler is shown separately in Fig. 3. The smoke-box door is made from two Semi-Circular Plates, 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 the same diameter as the Semi-Circular Plates, and are fixed to the lugs of the Double Angle Strip. The $5\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible Plates are extended by two $4\frac{1}{2}'' \times 2\frac{1}{2}''$ Flexible Plates 9, bolted together to form a cylinder. The section of the boiler above the water tanks is made from two $5\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible Plates 10, and two $5\frac{1}{2}'' \times 2\frac{1}{2}''$ Flexible Plates 11. The lower edges of Plates 11 are braced by $5\frac{1}{2}''$ Strips, and they are connected across by two Formed Slotted Strips 12. A $2\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strip is fixed between Plates 10 and Strips 12, and a 3" Pulley 13 is attached to it by a $\frac{1}{2}''$ Bolt.

The simple mobile crane shown in Fig. 4 can be built from the parts in Outfit No. 1 and is fitted with mechanisms for luffing the jib and raising or lowering the load.

The base of the model is a $5\frac{1}{2}'' \times 2\frac{1}{2}''$ Flanged Plate, to which Flat Trunnions are bolted to carry a $3\frac{1}{2}''$ Rod on which the front wheels are mounted. The rear wheels are fixed on a 2" Rod mounted in a bogie unit formed (Continued on page 526)

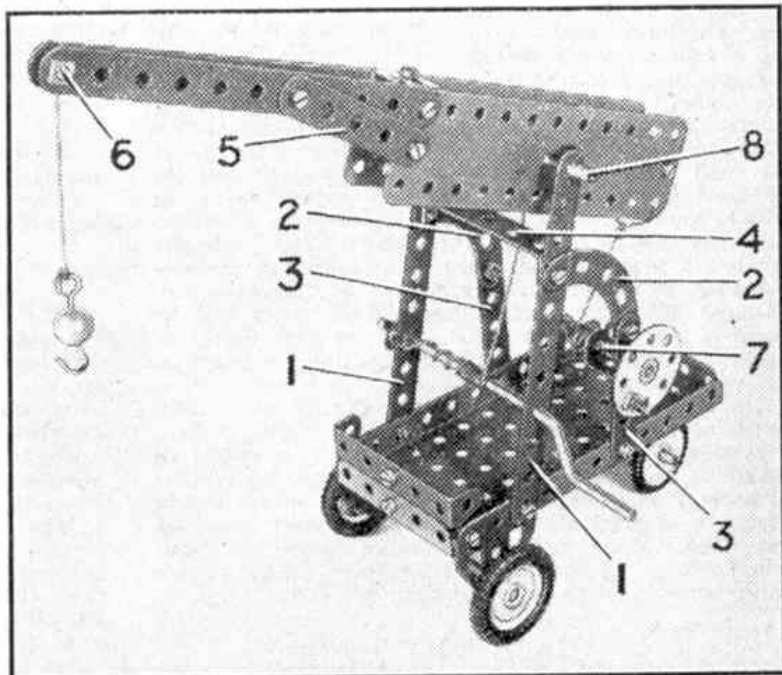


Fig. 4. A three-wheeled mobile crane that can be built from parts in a No. 1 Outfit.

New Meccano Models

Good Subjects for Outfits No. 1 and No. 5

CONSTRUCTION of the model tank locomotive shown in Fig. 1 is begun by bolting a $12\frac{1}{2}$ " Angle Girder 1 to each of the longer flanges of a $5\frac{1}{2}$ " \times $2\frac{1}{2}$ " Flanged Plate 2. A $3\frac{1}{2}$ " Strip 3 is bolted across the Flanged Plate, and a similar Strip is used to connect the Angle Girders 1 at their forward ends.

The main frames are $12\frac{1}{2}$ " Angle Girders 4, and they are attached to the $3\frac{1}{2}$ " Strips by Angle Brackets. The buffer beam is made from two $2\frac{1}{2}$ " Strips overlapped, and is fixed by Angle Brackets to the Curved Strips 5. The Curved Strips support also a $1\frac{1}{2}$ " Strip on each side, and a $2\frac{1}{2}$ " \times $1\frac{1}{2}$ " Flexible Plate, bent as shown in Fig. 2, is fixed to a Reversed Angle Bracket 6. Two $2\frac{1}{2}$ " \times $1\frac{1}{2}$ " Flexible Plates are shaped to the same radius as the Curved Strips and are bolted to a Double Bracket attached to the buffer beam.

The water tanks are made from $5\frac{1}{2}$ " \times $2\frac{1}{2}$ " Flexible Plates edged by $2\frac{1}{2}$ " and $5\frac{1}{2}$ " Strips, and they are fixed to the main frames. A $5\frac{1}{2}$ " Strip is attached to the top of each tank by Angle Brackets,

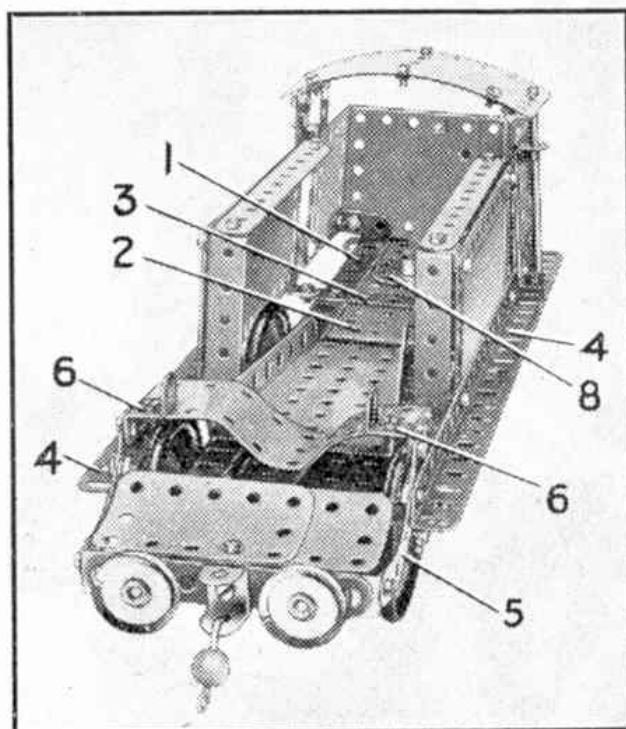


Fig. 2. The tank locomotive with the boiler removed to show details.

and the front is filled in by a $2\frac{1}{2}$ " \times $1\frac{1}{2}$ " Double Angle Strip.

The sides of the coal bunker are $2\frac{1}{2}$ " \times $2\frac{1}{2}$ " Flexible Plates, braced by $2\frac{1}{2}$ " \times $1\frac{1}{2}$ " Double Angle Strips 7, which serve also as supports for the Rods representing the handrails. The rear of the bunker consists of two $2\frac{1}{2}$ " \times $2\frac{1}{2}$ " Flexible Plates and it is fixed to Angle Brackets bolted to the sides.

The cab roof is made from two $1\frac{1}{8}$ " radius Curved Plates bolted together. It is supported by Obtuse Angle Brackets fixed to $2\frac{1}{2}$ " Strips.

The driving wheels are Road Wheels fixed on 4" Rods mounted in Trunnions and Flat Trunnions bolted to the Girders 1. The coupling rods are $5\frac{1}{2}$ " 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

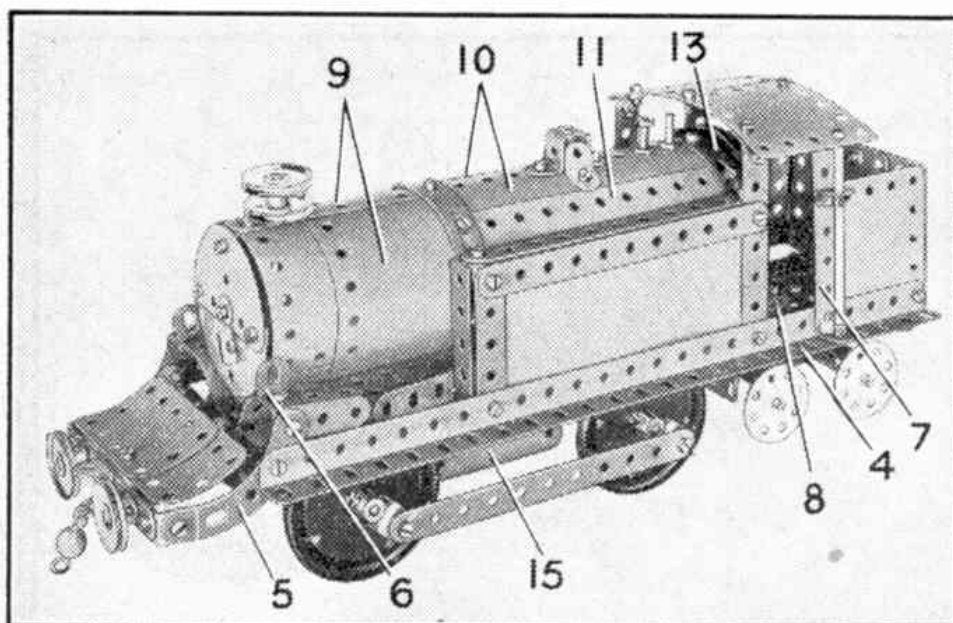


Fig. 1. Outfit No. 5 contains all the parts required to build this typical tank locomotive.