

# Meccano Model-Building Competitions

By "Spanner"

## Fine Prizes for Good Models

Model-builders can still build entries for the great "New Year" Contest announced in our January issue. Models of any size or type are eligible, and there will be equal chances for all, since there is a special section for competitors under 14, and ingenuity and realism in construction rather than mere size will be looked for by the judges.

In entering this contest all that is necessary after a suitable model has been built is to have it photographed, or to make a good drawing of it, and to add brief notes on points that require special explanation. Competitors should then put their names, ages and addresses on the sheets comprising their entries, and forward them to "New Year Model - Building Contest, Meccano Magazine, Binns Road, Liverpool 13," to arrive not later than 31st March. Entries from competitors over 14 years of age should be marked Section A, and entries from younger competitors should have the words Section B on them.

In each Section the First Prize will be a cheque for £2/2/- and the Second and Third Prizes will be £1/1/- and 10/6 respectively. Other good entries will be awarded Consolation Prizes of 5/- each. Send in your entries now.

## Prize-winning Models in the "New Year" Contest

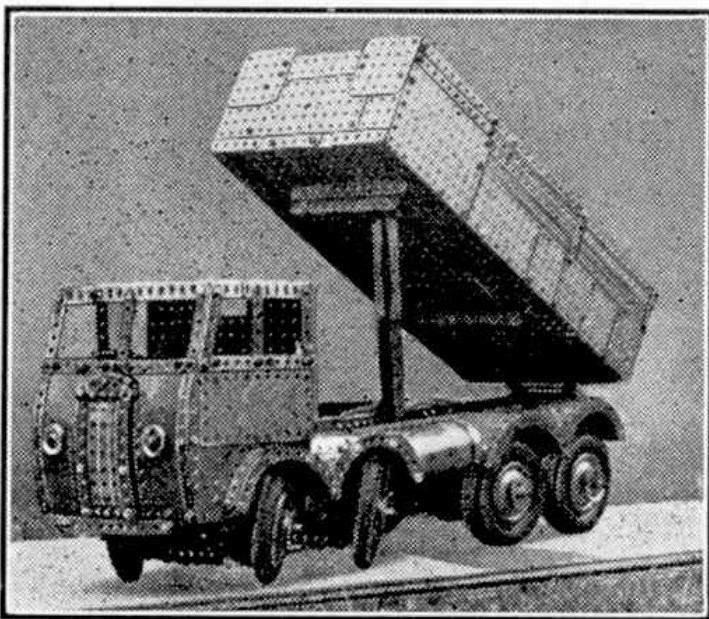
The entries in "B" Section of the September Model-building Contest, "A" Section of which was dealt with last month, were of a very high standard indeed and were remarkable for the variety and range of the models submitted. The list of prize-winners in this

Section was given in last month's "M.M.," and we now give details of specially interesting entries.

First Prize was awarded to J. H. Smith, Teddington, for a very fine model tractor and straw baler. The straw baler follows the harvester, which leaves the straw in rows on the ground, to be scooped up by a rotating spiked drum on this machine. Conveyors at right angles to each other pass it on to a double ram that compresses it and pushes it to an automatic knife that cuts off each bale at the correct length. The finished bale is tied up by wire and is ejected at the end of the machine. It will be seen that the

subject gives scope for intricate detail work, and Smith has taken full advantage of the adaptability of the Meccano system in designing his reproduction of it.

Second Prize in this Section was won by F. Rowland, Hazel Grove, nr. Stockport, who submitted two remarkably neat model haulage lorries of the 10 and 12 wheeler types. The 12-wheeler is illustrated on this page. Each model is fitted with a backward tipping device, in which a long Screwed Rod journaled in the chassis is driven from the engine, and both incorporate all the major details to be found in their prototypes, together with very efficient springs of the semi-elliptic type. Clever arrangement of Plates and Strips give a very



This fine 12-wheeled motor lorry won Second Prize for F. Rowland, Hazel Grove, nr. Stockport, in our September Model-building Contest, the results of which were announced last month. The tipping movement is driven by a separate mechanism placed at the back of the cab.

pleasing appearance to these entries.

Two models totally different in type, yet alike in their sturdy construction, won Third Prize for A. Short, Birmingham 17. One is a reproduction of a railway breakdown crane, an interesting feature of which is the gear-box, which allows slewing, luffing and hoisting to be carried out from a No. 1 Clockwork Motor accommodated at the back of the cab, and is remarkably compact, while giving ample room for the careful positioning of the various controls. The second model, a cargo boat, has a single funnel and a well-designed superstructure. Derricks fitted to the masts are used in conjunction with the three holds provided with detachable hatches. Many other working devices add to the interest of the model.

One of the most original entries was the model gramophone submitted by M. Davies, which was awarded a Consolation Prize. This is very simple, yet actually reproduces recorded sounds. It has a square soundboard suitably mounted on a base and fitted at one of its lower corners with a Coupling holding the needle. The record is placed on a 3" Pulley fitted with a Motor Tyre, and the drive may be effected through a Motor or by hand.

The appearance of new Army vehicles challenges model-builders to exercise their ingenuity in reproducing them. An excellent example of this is a prize-winning model "Jeep" submitted by W. Ralph, Pulborough.

# New Meccano Models

ONE of two new models we are describing this month is a streamlined locomotive, which is shown in Fig. 1.

In building the model two  $9\frac{1}{2}$ " Angle Girders are spaced apart at their forward ends by a  $4\frac{1}{2}$ " Angle

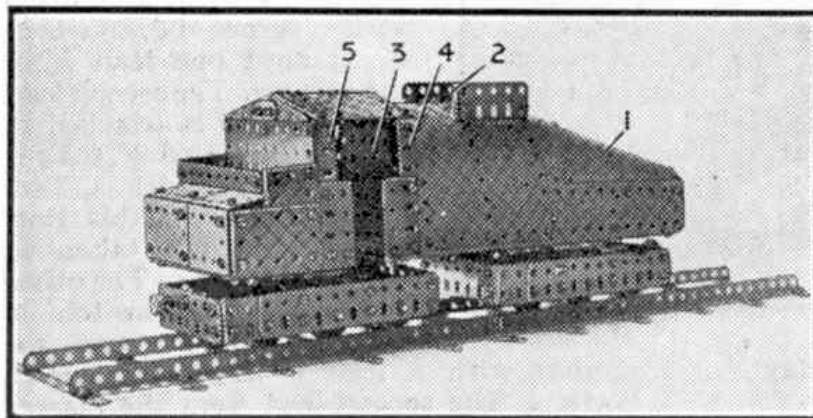


Fig. 1. A streamliner in Meccano. Good use is made of Flexible Plates in the construction of this fine model.

Girder, to which are bolted two  $2\frac{1}{2}$ "  $\times$   $1\frac{1}{2}$ " Flexible Plates overlapped. At their other ends the  $9\frac{1}{2}$ " Girders are extended by two  $3\frac{1}{2}$ " Strips, which are attached to  $3\frac{1}{2}$ " Angle Girders that support the water tank and coal bunker. The other ends of the  $3\frac{1}{2}$ " Girders are bolted to a  $4\frac{1}{2}$ " Angle Girder. The space between the side-members is filled by  $4\frac{1}{2}$ "  $\times$   $2\frac{1}{2}$ " Flexible Plates and  $4\frac{1}{2}$ "  $\times$   $2\frac{1}{2}$ " Flat Plates.

How the bogies are constructed is shown by our illustration, and each is attached to a Face Plate by  $2\frac{1}{2}$ " Strips. A  $1\frac{1}{2}$ " Rod fixed in the boss of the Face Plate is free to pivot in Double Arm Cranks bolted to the Plates of the chassis.

To form the boiler and fire-box three  $5\frac{1}{2}$ "  $\times$   $2\frac{1}{2}$ " Flexible Plates 1 are fixed by  $\frac{1}{2}$ "  $\times$   $\frac{1}{2}$ " Obtuse Angle Brackets to the  $4\frac{1}{2}$ "  $\times$   $1\frac{1}{2}$ " compound flexible plate already mentioned, those at the sides being attached to other Flexible Plates as shown. The smoke deflectors are then fitted, together with a Chimney Adaptor 2.

A  $3\frac{1}{2}$ "  $\times$   $2\frac{1}{2}$ " Flanged Plate 3 is fixed to the chassis by a  $4\frac{1}{2}$ " Angle Girder and is attached to the boiler by an Angle Bracket. Two  $2\frac{1}{2}$ " Curved Strips are bolted to the upper end of the Flanged Plate by a  $1\frac{1}{2}$ " Triangular Plate. Two  $3\frac{1}{2}$ " Angle Girders 4 and 5 are attached to the chassis by  $4\frac{1}{2}$ " Angle Girders, and to these are fixed the back and the roof of the cab as shown.

The construction of the water tank and coal bunker are clear from the illustration.

Parts required to build model Locomotive: 4 of No. 2; 1 of No. 2a; 2 of No. 3; 8 of No. 5; 2 of No. 8a; 4 of No. 9a; 6 of No. 9b; 4 of No. 9f; 2 of No. 10; 34 of No. 12; 8 of No. 12a; 9 of No. 12c; 6 of No. 15a; 4 of No. 18a; 12 of No. 20; 2 of No. 23a; 172 of No. 37; 1 of No. 53; 4 of No. 53a; 16 of No. 59; 4 of No. 62b; 2 of No. 77; 4 of No. 90; 4 of No. 103; 4 of No. 103d; 10 of No. 103f; 2 of No. 109; 2 of No. 120b; 1 of No. 164; 10 of No. 188; 2 of No. 189; 4 of No. 190; 4 of No. 191; 7 of No. 192.

Our second model is a fine three-wheeler fire-engine of the type that is particularly suited for dealing with small outbreaks of fire in confined areas, as the three-wheeler chassis allows them to be readily manoeuvred in awkward places.

Construction of the model should commence

with the engine bonnet of the forward end of the chassis. Four  $5\frac{1}{2}$ " Strips are bolted to a  $5\frac{1}{2}$ "  $\times$   $2\frac{1}{2}$ " Flanged Plate, and those at the front end are attached to a further  $5\frac{1}{2}$ " Strip forming the bumper. A  $5\frac{1}{2}$ "  $\times$   $1\frac{1}{2}$ " and a  $2\frac{1}{2}$ "  $\times$   $1\frac{1}{2}$ " Flexible Plate form the bonnet. A  $2\frac{1}{2}$ "  $\times$   $2\frac{1}{2}$ " Flexible Plate is bolted to the front of the Flanged Plate 1 and is attached to the top of the bonnet by a  $\frac{1}{2}$ "  $\times$   $\frac{1}{2}$ " Angle Bracket. This Plate and one of the Double Angle Strips of the radiator provide the bearings for the steering column 2. The front wheel is built in as shown and is connected to the steering column 2 by a short length of Cord that is passed round two  $1\frac{1}{2}$ " Rods, mounted in the  $2\frac{1}{2}$ "  $\times$   $2\frac{1}{2}$ " Flexible Plate at the back of the bonnet and also in  $\frac{1}{2}$ "  $\times$   $\frac{1}{2}$ " Angle Brackets attached to each side. The ends are fastened centrally to the steering column by a Cord Anchoring Spring so that one end winds on it as the other unwinds on operation of the steering wheel 3, a Bush Wheel.

At the rear end of the chassis a  $2\frac{1}{2}$ "  $\times$   $2\frac{1}{2}$ " Flexible Plate is bolted at each side of the Plate 1 and a bent  $4\frac{1}{2}$ "  $\times$   $2\frac{1}{2}$ " Flexible Plate forms the front and top of the tank. The back of the tank also is a  $2\frac{1}{2}$ "  $\times$   $2\frac{1}{2}$ " Flexible Plate, and it is fitted with a  $2\frac{1}{2}$ "  $\times$   $1\frac{1}{2}$ " Flanged Plate 4 bolted between the Strips at each side of the chassis to form the pumping unit. A  $2\frac{1}{2}$ "  $\times$   $1\frac{1}{2}$ " Flexible Plate is also fitted to the Plate 4, together with a  $\frac{1}{2}$ " Pulley representing a clock dial and two  $\frac{1}{2}$ " Bolts forming the pump connections.

The ladder and its supports are assembled on the model together with other details such as the reel for carrying the hose, and the seats for the cab.

Parts required to build model Fire Engine: 2 of No. 1; 7 of No. 2; 2 of No. 3; 8 of No. 5; 4 of No. 10; 2 of No. 11; 8 of No. 12; 4 of No. 12c; 1 of No. 16; 2 of No. 17; 2 of No. 18a; 1 of No. 18b; 3 of No. 22; 1 of No. 23; 1 of No. 24; 7 of No. 35; 78 of No. 37a; 73 of No. 37b; 8 of No. 38; 1 of No. 40; 1 of No. 44; 1 of No. 48; 6 of No. 48a; 1 of No. 51; 1 of No. 52; 3 of No. 90a; 3 of No. 111c; 1 of No. 125; 2 of No. 126; 1 of No. 126a; 2 of No. 155a; 1 of No. 176; 3 of No. 187; 2 of No. 188; 1 of No. 189; 4 of No. 190; 1 of No. 191; 1 of No. 192; 2 of No. 199; 1 of No. 200; 2 of No. 214; 4 of No. 215; 2 of No. 217a; 1 Magic Motor.

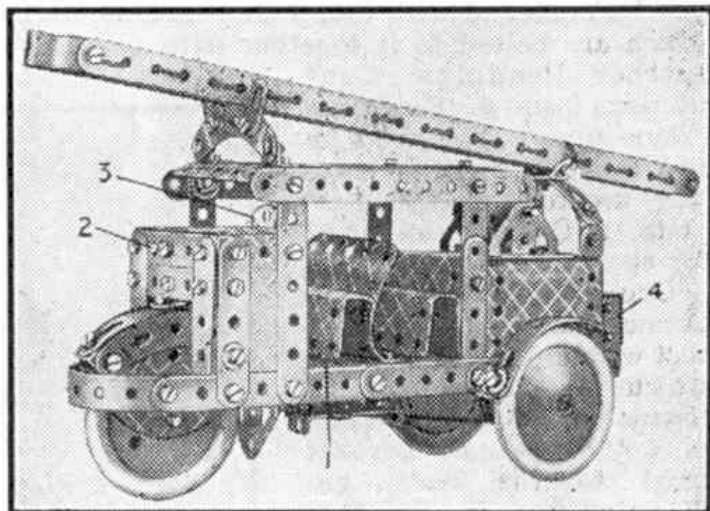


Fig. 2. A fine model of a three-wheeler fire engine, fitted with foam generating equipment. It is built with No. 4 Outfit.



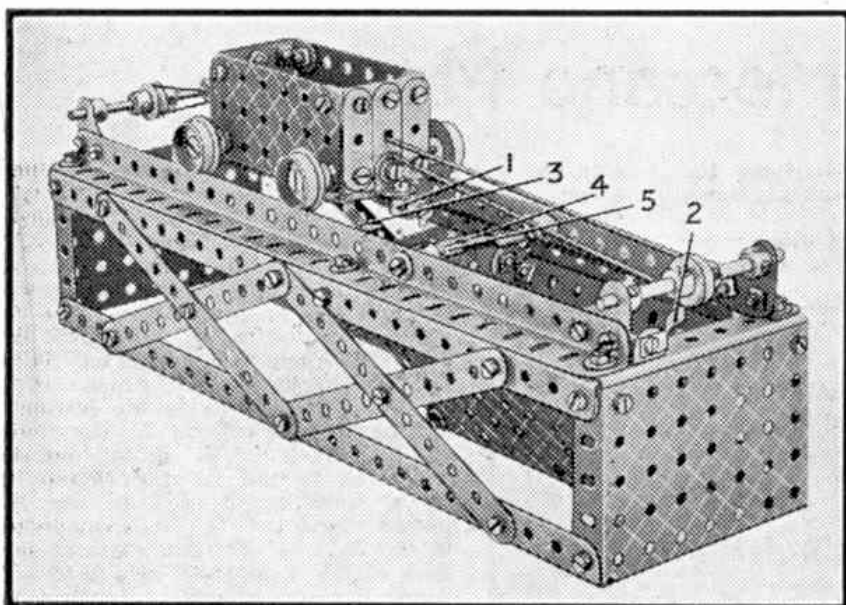


Fig. 589.

**(590) Continuous Action Relay**  
(D. Brown, Uttoxeter)

The unusual type of relay shown in Fig. 590 is specially suitable for use in connection with burglar alarm systems, and is designed so that an alarm bell connected to it rings continuously when the alarm switch is closed. It continues to ring even when the alarm switch is re-opened, which may well occur when a burglar closes behind him the window or door through which he gained access to the premises.

The device consists of an ordinary type relay fitted with an additional pair of contacts. An Elektron Magnet Coil is fixed by means of several  $1\frac{1}{2}$ " Strips to a  $3\frac{1}{2} \times 2\frac{1}{2}$ " Flanged Plate, to which are bolted two  $3\frac{1}{2}$ " Angle Girders. A Magnet Core is placed inside the Coil, and when current from a battery is passed through the core attracts a vibrating armature consisting of a Pendulum Connection 1 fitted at one end with four Flat Brackets, which are bolted to it together with two further Pendulum Connections 2 and 4. Pendulum Connection 1 is gripped by two Bolts in a Strip Coupling secured to the base plate, a Collar being used for spacing purposes.

One of the Pendulum Connections, 2, makes contact with a  $\frac{1}{2}$ " 6 B.A. Bolt 3, which is adjustable by means of two 6 B.A. Nuts in a  $\frac{1}{2} \times \frac{1}{2}$ " Angle Bracket fixed to the base, but insulated from it. The other Pendulum Connection 4 is

bent round and makes contact with a further 6 B.A. Bolt 5 that also is adjustable in a second  $\frac{1}{2} \times \frac{1}{2}$ " Angle Bracket insulated from the base.

The relay is wired as follows. One lead from the Magnet Coil is taken to an insulated  $\frac{1}{2}$ " 6 B.A. Bolt fitted with a Terminal 6, to which is attached one lead from the battery. The second lead from the Coil is attached to another insulated  $\frac{1}{2}$ " 6 B.A. Bolt 7 fitted with a Terminal, and from this Bolt also a lead 8 is taken to the alarm switch. The other wire from the switch is earthed to the base, together with a lead 9 from the master switch. The second lead from the master switch is taken to an insulated  $\frac{1}{2}$ " 6 B.A. Bolt and Terminal 10. A further wire is taken from the Terminal 6 to the alarm bell, the return lead from which is made fast to the contact screw 3, and a wire from contact screw 5 is attached to the Bolt 7.

**(591) Silent Free Wheel**  
(G. Owen, Wrexham)

A reliable free wheel that will be found useful in many types of models where a compact free wheel is required can be built from only four parts. It is of the coil type, which will take a remarkably great strain but can only be used to good effect when operated by hand.

The coil forming the free wheel in this mechanism is admirably represented by the Meccano Cord Anchoring Spring, Part No. 176. This is mounted on the Rod where it is required, and the looped end is fixed to the bearing, or in some cases to a rotating part by a  $\frac{3}{4}$ " Disc.

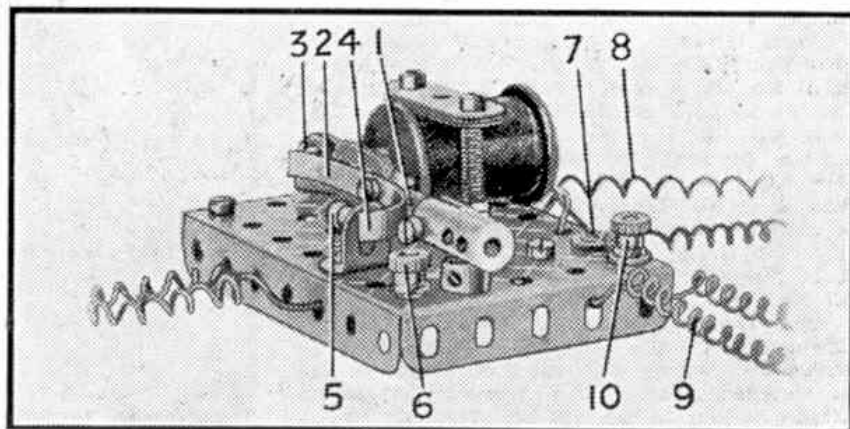


Fig. 590.

# Suggestions Section

By "Spanner"

## (588) Mine Cage Depth Indicator ("Spanner")

The indicator shown in Fig. 588 will add interest to any Meccano model pit-head gears, and is quite easy to assemble. It is intended to show the depth of the cage from ground level at any point in its descent or ascent.

The frame of the model consists of two Flat Plates connected by Angle Girders bolted to Flat Girders. The dial is a piece of cardboard and should be marked in divisions to represent feet or inches

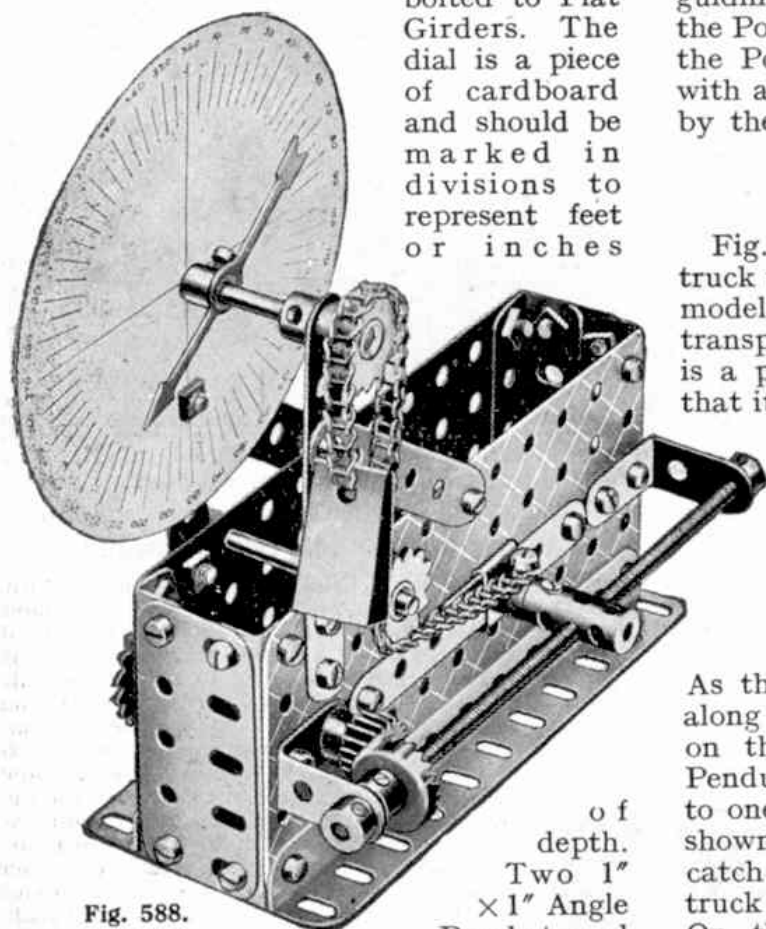


Fig. 588.

a  $3\frac{1}{2}$ " Strip are secured to one of the side Plates, a washer on each of the bolts serving to space the parts from the Plate. Before the Strip is fixed in position, however, an Eye Piece is placed on it as shown. A 1" Rod is fixed in the boss of the Eye Piece and a Coupling is fitted on the projecting end of the Rod and a 6" Screwed Rod is passed through the centre tapped bore. The Screwed Rod, which is journalled in the  $1" \times 1"$  Angle Brackets, carries a  $\frac{3}{4}$ " Contrate Wheel, with which a  $\frac{1}{2}$ " Pinion mounted on a Rod journalled in the Flat Plates meshes.

A 1" Sprocket Wheel on the other end

of the Rod is connected by Sprocket Chain to a second Sprocket driven from the winding drum, so that it is rotated in accordance with the movement of the latter. A length of Chain is fixed to the Eye Piece, and is then led over a guide Sprocket and the Sprocket on the pointer shaft before being attached to a 25-gramme Weight. As the driven Sprocket turns the Eye Piece mounting travels along its guiding Strip, and in turn the shaft of the Pointer is rotated. The disc over which the Pointer moves can easily be marked with a scale to show the position occupied by the cage.

## (589) Self-Discharging Truck (A. Williams, Derby)

Fig. 589 shows a novel self-discharging truck that can be used in conjunction with models such as Ship Coalers and ore transporters. The bottom of the truck is a plate that is hinged at one end, so that it is free to fall downward. The plate is held in place by a simple catch 1, formed from a Bolt inserted together with a  $\frac{3}{8}$ " Bolt, on which is fitted a Cord Anchoring Spring, in a Collar pivoted to a  $\frac{1}{2}" \times \frac{1}{2}"$  Angle Bracket at the front of the truck.

The catch operates as follows. As the truck nears the end of its travel along the rails, the Cord Anchoring Spring on the  $\frac{3}{8}$ " Bolt makes contact with a Pendulum Connection 2, which is fixed to one of the rails, and bent to the shape shown in the illustration. This turns the catch aside, so that the bottom of the truck falls and the contents are discharged. On the return journey of the truck a Pendulum Connection 3, which is curved slightly and fitted to the bottom of the truck, makes contact with a  $3\frac{1}{2}"$  Strip 4 bolted across the rails, and pushes the bottom plate back into position. During this process the catch, which is still in the "open" position, makes contact with one of the Threaded Pins 5 fixed to the rails by Threaded Bosses, and this returns the catch to the "closed" position.

The method of discharging the truck is unique in the fact that, when the truck is required to carry heavy loads, little effort is required to slip the catch even with such a weight resting on it.