

New Meccano Models

Motor Truck—Spring Pistol

FEW parts are needed to build the model truck illustrated in Fig. 1 and it will certainly prove an interesting subject for the young model-builder. It is typical of a truck used by the Army for light transportation duties. A *Magic Motor* is used to drive the model and it is great fun to see it rumbling across the floor at high speed.

It is best to start building the model by bolting a 1" Triangular Plate 1 to each side of a $5\frac{1}{2}" \times 2\frac{1}{2}"$ Flanged Plate 2. The points of the Triangular Plates are extended by Fishplates to form supports for the rear axle, which is a $3\frac{1}{2}"$ Rod.

The front Stub axles are 2" Rods locked in each end of a Coupling 3. A $1\frac{1}{2}"$ Rod is held in the middle of the Coupling and passes through two 1" Pulleys, one with boss and one without. The $1\frac{1}{2}"$ Rod is then passed through the middle hole of the second row from the front of the Flanged Plate and held in place by a 1" Pulley. The front wheels are 1" Pulleys without bosses, and they are held in position by Collars and Washers.

The radiator is built from two Flat Trunnions, two 2" Strips and two $1\frac{1}{2}"$ Strips. Two $2\frac{1}{2}" \times 1\frac{1}{2}"$ Flexible Plates form the sides of the bonnet. They are braced on each side of the radiator by $1\frac{1}{2}" \times \frac{1}{2}"$ Double Angle Strips 4 and their ends are attached at each side to $1\frac{1}{2}"$ Strips.

The steering is arranged by passing a $2\frac{1}{2}"$ Rod 5, carrying a $\frac{1}{2}"$ Pulley, through the second hole in the $2\frac{1}{2}" \times \frac{1}{2}"$ Double Angle Strip on the dashboard and then through the corresponding hole on the $5\frac{1}{2}" \times 1\frac{1}{2}"$ Flanged Plate. The $\frac{1}{2}"$ Pulley is connected by a driving cord to the 1" Pulley on the $1\frac{1}{2}"$ Rod.

Two 3" Flat Girders are bolted to the Flanges of a $2\frac{1}{2}" \times \frac{1}{2}"$ Plate to make up the sides of the framework. The tailboard is a $2\frac{1}{2}"$ Flat Girder and is connected to the sides with Angle Brackets. The sides and back of the truck are attached to the $5\frac{1}{2}" \times 2\frac{1}{2}"$ Plate with two Angle Brackets.

Two $2\frac{1}{2}" \times \frac{1}{2}"$ Double Angle Strips are fastened inside the back of the truck to form seats. Another two $2\frac{1}{2}" \times \frac{1}{2}"$ Double Angle Strips 6 are fitted over the rear wheels to serve as mudguards, and are held in position by Fishplates attached to the $5\frac{1}{2}" \times 2\frac{1}{2}"$ Plate.

The front mudguards are two 2" Strips 7 bolted together as shown. The inner Strip is joined to the front of the $5\frac{1}{2}" \times 2\frac{1}{2}"$ Plate. An Obtuse Angle Bracket 8 is

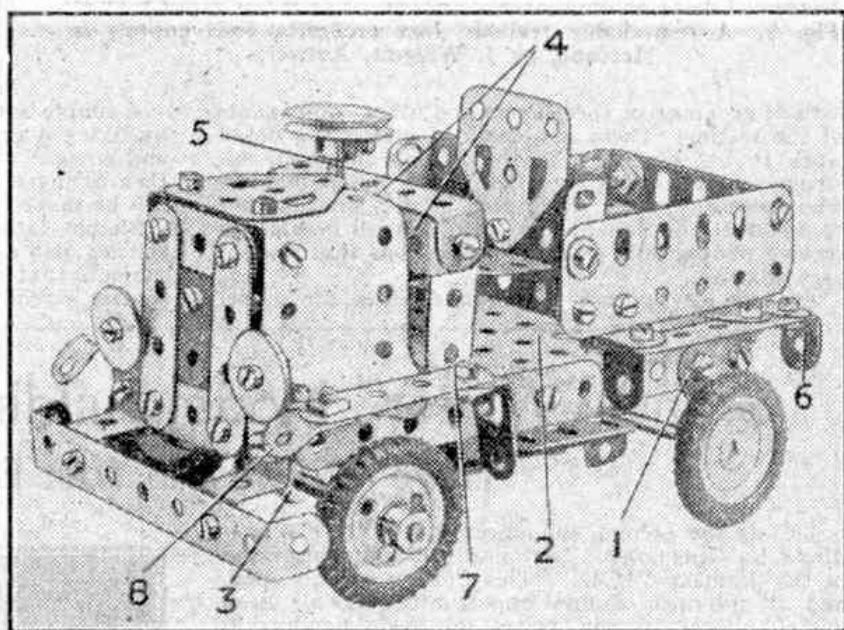


Fig. 1. A small military truck driven by a Magic Motor.

attached to the front of the outer Strip, and an Angle Bracket and a Fishplate are bolted to its other end. A $1\frac{1}{2}"$ Angle Girder is bolted to each side of the Flanged Plate to form a running board. The bumper is a $3\frac{1}{2}" \times \frac{1}{2}"$ Double Angle Strip and is attached to the baseplate by $\frac{1}{2}"$ Reversed Angle Brackets. Two $\frac{3}{4}"$ Washers form each headlight and are bolted to Fishplates.

A *Magic Motor* is fitted under the baseplate and it drives a 1" Pulley on the rear axle.

Parts required for Model Lorry: 1 of No. 3; 6 of No. 6; 4 of No. 6a; 2 of No. 9f; 8 of No. 10; 5 of No. 12; 2 of No. 12c; 1 of No. 16; 1 of No. 16a; 2 of No. 17; 1 of No. 18a; 4 of No. 22; 3 of No. 22a; 1 of No. 23a; 65 of No. 37; 12 of No. 38; 4 of No. 38d; 2 of No. 48; 6 of No. 48a; 1 of No. 48b; 1 of No. 51; 1 of No. 52; 4 of No. 59; 1 of No. 63; 4 of No. 77; 2 of No. 103c; 1 of No. 103f; 2 of No. 125; 4 of No. 126a; 1 of No. 161; 1 of No. 185; 2 of No. 188.

The pistol shown in Figs. 2 and 3 can be built quite easily and requires only a

few parts. Small projectiles such as peas or marbles make excellent missiles and are muzzle-loaded into the barrel of the gun. Two Springs 1 mounted one each side of the barrel provide the propelling power.

It is best to start building the model by bolting two 5½" Angle Girders 3 together overlapping their elongated holes to form a 5½" channel girder. One Bolt passes from the inside through the fourth slots, and holds an Angle Bracket in position; another Bolt passes through the end holes and supports an Angle Bracket on the inside and a Double Bracket on the opposite side of the Angle Girders.

The firing piston is a 5" Axle Rod 4, that carries a Collar at its front end. One of the Grub Screws in the Collar bears a nut that engages the end of a Pawl to hold the firing rod at full cock. The firing rod is passed through the Angle Brackets in the barrel of the gun and then through the centre hole in a Coupling. Each end of the Coupling carries a ¼" Bolt that is used to support one end of a Spring, which is spaced from the Coupling by Washers. The other ends of the Springs are attached to ¼" Bolts, one on each side in the fourth holes along the barrel. Five Washers are used to space each of the Springs from the Angle Girders.

A 3½" Flat Girder 5 is attached to

each side of the barrel by a Fishplate bolted in the fifth hole from the rear of the barrel. The other end of the Flat Girder is attached to one side of the Double Bracket. The Bolt used to attach the Fishplate to the barrel supports also a second Fishplate, which is attached to a

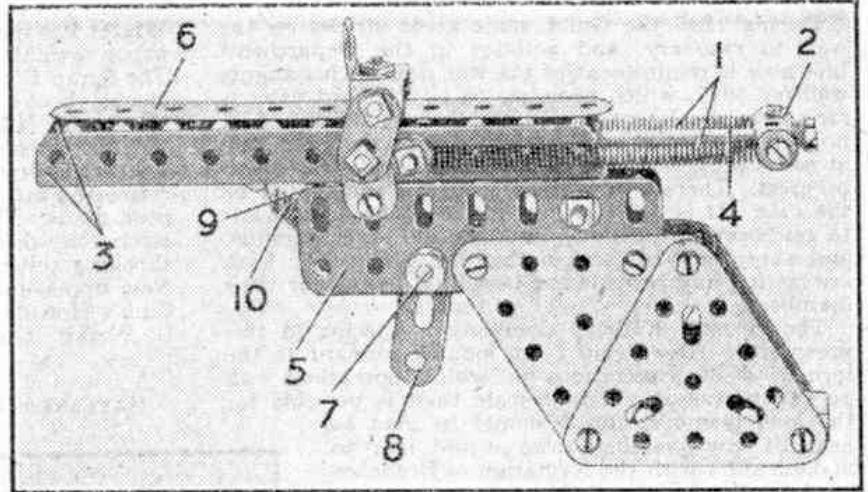


Fig. 2. A spring-operated pistol, which will "fire" peas and similar missiles.

Double Angle Bracket. This Double Angle Bracket is used to fix a 5½" Strip 6 along the top of the barrel.

A 1½" Axle Rod 7 held in place with Collars carries a Boss Bell Crank 8, one arm of which acts as a trigger. A Pawl 9 is attached to the other arm of the Bell Crank and its point passes through the sixth holes in the underside of the Angle Girders forming the barrel. It is kept in position by a small piece of a Spring 10, which is fastened at one end by the Bolt that holds the Pawl in position. At its other end the Spring is hooked in the fourth holes in the Angle Girders.

The butt is made from four 2½" Triangular Plates spaced by Double Brackets.

If properly constructed and adjusted the pistol will fire with a considerable degree of accuracy, and it is unnecessary to remind our readers we hope that the pistol should be used with care. For missiles, peas are best, but if these are not available in these days of "points," good substitutes are small pieces of wood shaped like bullets.

Parts required to build the Pistol: 1 of No. 2; 2 of No. 9; 4 of No. 10; 4 of No. 11; 2 of No. 12; 1 of No. 15; 1 of No. 18a; 23 of No. 37; 2 of No. 37a; 30 of No. 38; 3 of No. 43; 3 of No. 59a; 1 of No. 63, 4 of No. 76; 2 of No. 103d; 4 of No. 111; 1 of No. 128; 1 of No. 147.

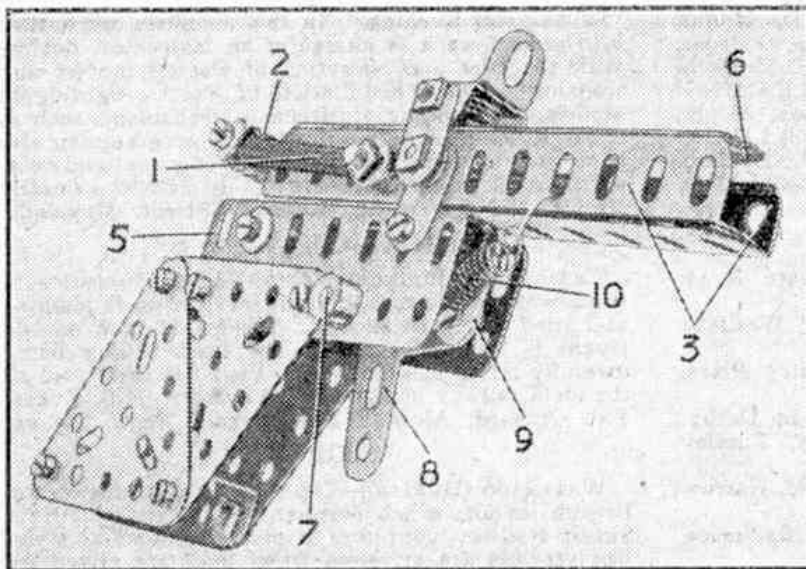


Fig. 3. Another view of the Meccano pistol.

Among the Model-Builders

By "Spanner"

A Fine Remote Controlled Crane

An excellent model crane using an electro-magnetic system of gear selection, which operates on a 250-volts A.C. supply, was built recently by J. S. Edmonston, Swansea. The model ran for three days, working for nine hours each day, during a Hobbies Exhibition held at Swansea Grammar School. The crane is operated from a remote control unit, and carries out all the normal operations.

Electro-magnets are used for changing the gears and a Meccano 20-volt Motor supplies the driving power. The reversing switch from the Motor was transferred to the remote control panel, and the Transformer is housed in the control box itself. Four gears control the luffing, hoisting and swivelling and the drive to the bogie.

The drive from the Motor is taken from a Pinion by a Contrate, on the Rod of which is a $\frac{1}{2}$ " Pinion that transmits the power to the gears driving the four movements. Any one of these

gears is brought into mesh with the $\frac{1}{2}$ " Pinion by energising the respective electro-magnet from the remote control panel.

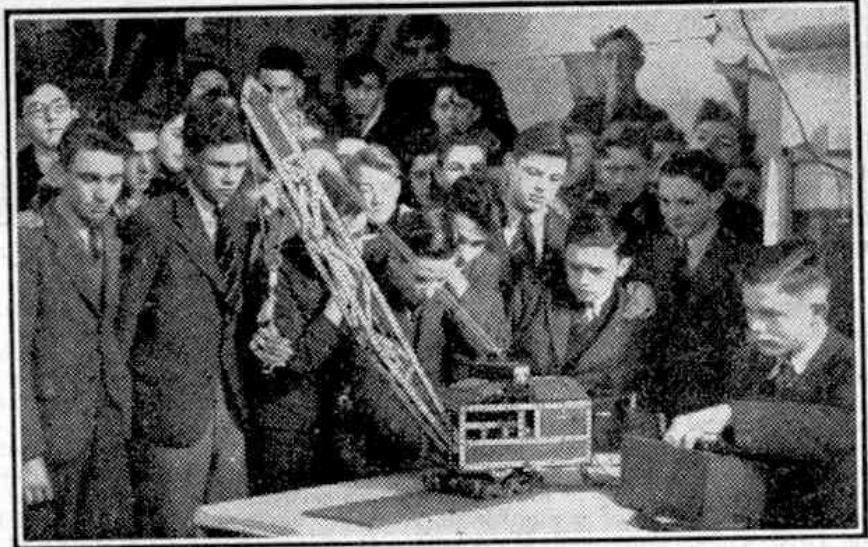


Fig. 2. A fine remote controlled crane, built by J. S. Edmonston, Swansea, who is seen demonstrating the model at a school exhibition. A South Wales "Evening Post" photograph.

Crane Winding Mechanism

An interesting winding gear for a model crane or derrick is illustrated in Fig. 1. It incorporates two drums for hoisting and luffing and is fitted with lever-controlled ratchets and an efficient foot brake.

The winding drums 2 and 3 are Wood Rollers. The drum 2 is mounted on a $5\frac{1}{2}$ " Axle Rod 4 and is locked to it by Collars and Bolts. Bush Wheels 5 are locked on the $6\frac{1}{2}$ " Rod at each end of the Roller 2 to form flanges for the winding drum. The drum 3 is also mounted on a $6\frac{1}{2}$ " Rod. The flanges for this drum are provided by a Bush Wheel and a 57-teeth Gear. The Gear meshes with a $\frac{1}{2}$ " Pinion on a third $6\frac{1}{2}$ " Rod and this provides the drive to the drum.

A Pawl 7 mounted on a Rod journalled in the 3" Strips engages the Ratchet Wheel 6 and is kept in position by a Spring. One end of the Spring is attached to the end of a $\frac{1}{2}$ " Bolt mounted in a Collar fixed on the Rod supporting the Pawl. The other end of the Spring is hooked to the side of the framework. A lever is used to

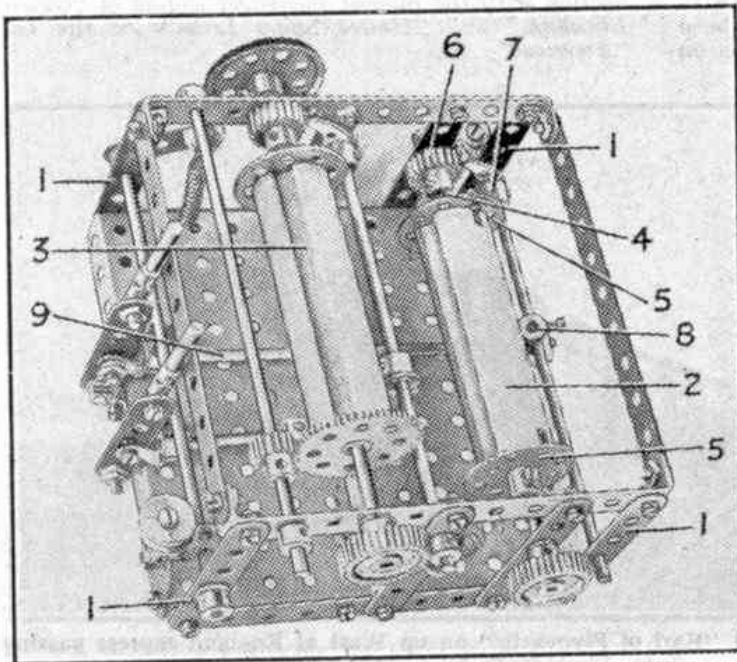


Fig. 1. The crane winding gear described on this page.

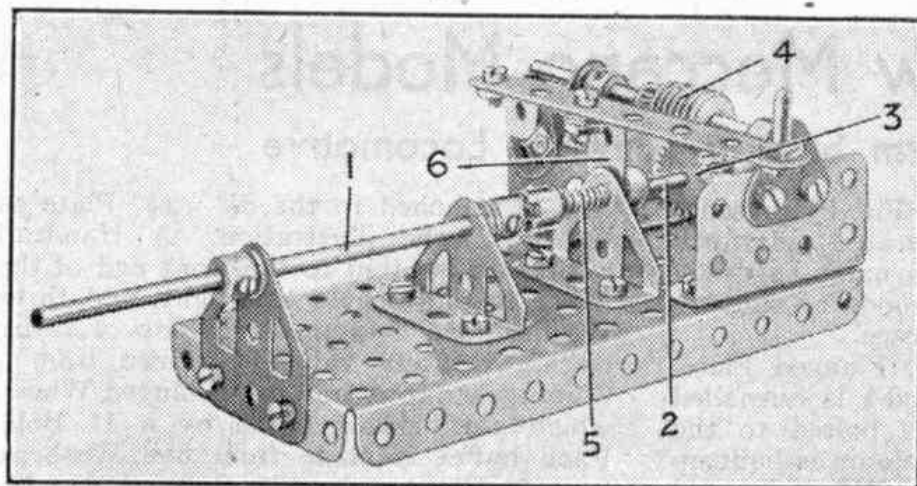


Fig. 3. A useful drive de-coupling mechanism.

disengage the Pawl and is connected by together and

a small Fork Piece to a Coupling 8 locked to the Rod carrying the Pawl. The Fork Piece on the end of a $5\frac{1}{2}$ " Rod 9 is attached to a lever, seen at the side of the model, by an End Bearing. The lever, a 2" Strip, is pivoted on a $\frac{3}{8}$ " Bolt lock-nutted to an Angle Bracket. A small piece of a Spring is used to hold the lever against the framework to take up the play and avoid chatter.

A ratchet control similar to the above is fitted to the drum 3 and is released by means of a second lever shown in the illustration.

A foot brake is provided for the drum 3 which is the main hoist. A 2" Pulley is used for the brake drum and a length of cord is taken over it, one end being attached to the framework and the other end to the end of a Single Arm Crank mounted on a $6\frac{1}{2}$ " Rod. The end of the Crank is attached to a Spring by means of an Angle Bracket. A Coupling is attached to the Rod supporting the brake Crank and is used as a footbrake. A $\frac{1}{2}$ " Pulley attached to the end of the Coupling forms a pedal.

Dog Clutch Mechanism

A useful de-coupling arrangement using a Dog Clutch and sliding Pinion may be built up as shown on this page. The arrangement is mounted on a $5\frac{1}{2}$ " x $2\frac{1}{2}$ "

Flanged Plate. The Rod 1 takes the drive to the model and is connected to the de-coupling device by means of a Dog Clutch. The other member of the Clutch is locked to the end of Rod 2 that also carries a $\frac{1}{2}$ " Pinion 3. The Pinion engages a Worm 4 that takes the drive to the mechanism. A compression Spring 5 is used to hold the members of the clutch together and maintain the two Gears in mesh.

A lever mounted over the top of the mechanism has a $\frac{1}{2}$ " x 1" Angle Bracket 6 attached to it. The Rod 2 is passed through the end of the Angle Bracket.

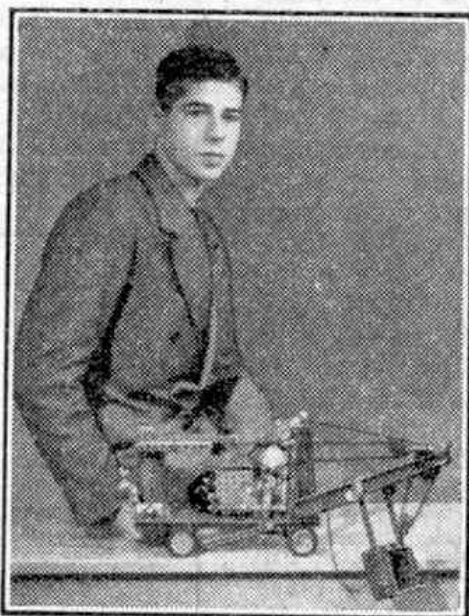


Fig. 4. Hrch. Wellenmann, Winterthur, Switzerland, who won a prize in a recent "M.M." Competition.

"SEPTEMBER MODEL-BUILDING CONTEST" RESULTS (OVERSEAS SECTION)

The principal prizes in this competition were awarded as follows: 1st, Cheque for £2/2/-: Pablo Giese, Buenos Aires; 2nd, Cheque for £1/1/-: H. Wellenmann, Winterthur, Switzerland; 3rd, P.O. for 10/6: Pierre Cumbeaux, Meaux, France.

P. Giese was awarded First Prize for the fine model of an underground railway station complete with an electric train, which is illustrated below. The train is fitted with two pantographs made from Collars and Screwed Rods, and these pick up electric current for a 20-volt Motor built into one of the travelling bogies.

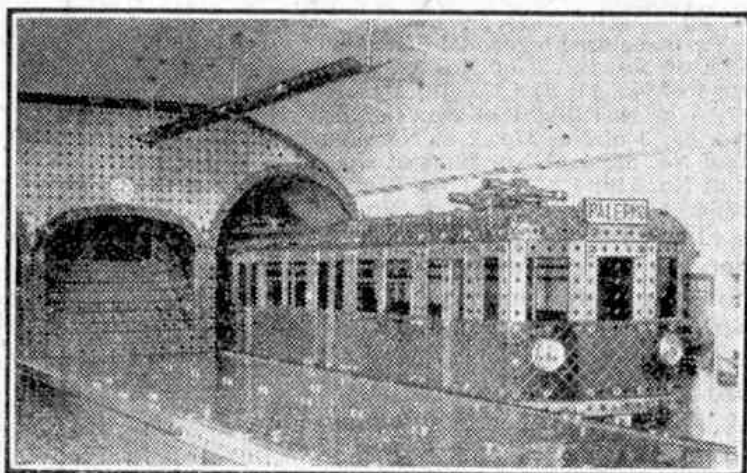


Fig. 5. A reproduction of a station and train on the Buenos Aires underground railway system. It is the work of Pablo Giese, Buenos Aires.