

A Fascinating Fun Fair Model

Roundabout with Dinky Toy Horses

ALTHOUGH many modern sources of amusement and entertainment are now available, the old-fashioned fun fair has not been pushed completely into the background, as the popularity of pleasure grounds at popular seaside resorts shows. Almost everyone has experienced the fascination and thrill of joy riding on the roundabouts that are such prominent features of fun fairs, and among these the hobby-horses are still favourites, in spite of competition from similar devices equipped with motor cars or flying boats.

It is good fun to build a working model of a roundabout with Meccano parts, and this is a much more simple task than at first appears.

A typical example is the model illustrated on this page. This is made entirely from Meccano parts, with the addition of Dinky Toy Horses; it incorporates neat and interesting mechanisms, is easy to build, and will provide great amusement for its constructors.

The base of the model is a Geared Roller Race, but model-builders who do not possess this part can substitute a frame of Angle Girders, or a base made of Flat Plates. Four $3\frac{1}{2}'' \times \frac{1}{2}''$ Double

Angle Strips are first of all secured in place, as shown in the lower illustration on the opposite page, two washers being used on each holding-down bolt to raise them slightly above the base. Each Double Angle Strip carries a $4\frac{1}{2}''$ Rod, at one end of which is a $\frac{1}{2}''$ Pinion and at the other a $\frac{1}{2}''$ fast Pulley. The Pinion is spaced from the Double Angle Strip by a washer and the Pulley by two washers. A Bush Wheel with its boss uppermost is bolted in the centre of the base. Two pairs of $2\frac{1}{2}''$ Angle Girders are bolted to the base so that they are parallel to one pair of diametrically opposed Double Angle Strips. These form supports for $3'' \times 1\frac{1}{2}''$ Flat Plates on which the Electric Motor is mounted, as shown in the detailed illustration of this section of the model.

A $2\frac{1}{2}''$ Rod journalled in the lower centre hole of the Motor side plates carries on the outside a 50-teeth Gear Wheel, which is spaced from the Motor side plate by a Collar, and on the same Rod, but between the side plates, are a $\frac{3}{4}''$ Pinion, a Coupling and a Collar. A $1\frac{1}{2}''$ Rod is journalled in the Bush Wheel already mentioned and in the longitudinal bore of the Coupling, and carries two $1\frac{1}{2}''$ Contrates 1 and 2. The Contrate 1 is in mesh with the $\frac{3}{4}''$ Pinion on Rod 15, and Contrate 2 makes contact with the

four $\frac{1}{2}''$ Pinions mounted on the base plate. The drive is taken from the 50-teeth Gear Wheel on Rod 15 to 12 by means of a $\frac{3}{4}''$ Pinion. On Rod 12 there is also a 57-teeth Gear Wheel, and this engages a $\frac{1}{2}''$ Pinion on Rod 14, which carries also a second 57-teeth Gear Wheel. A $\frac{3}{4}''$ Pinion on the Armature Shaft of the Motor drives this Gear Wheel by means of a 50-teeth Gear Wheel and a $\frac{1}{2}''$ Pinion on Rod 13. Clearance for the various Gears and Pinions is given by washers and Collars.

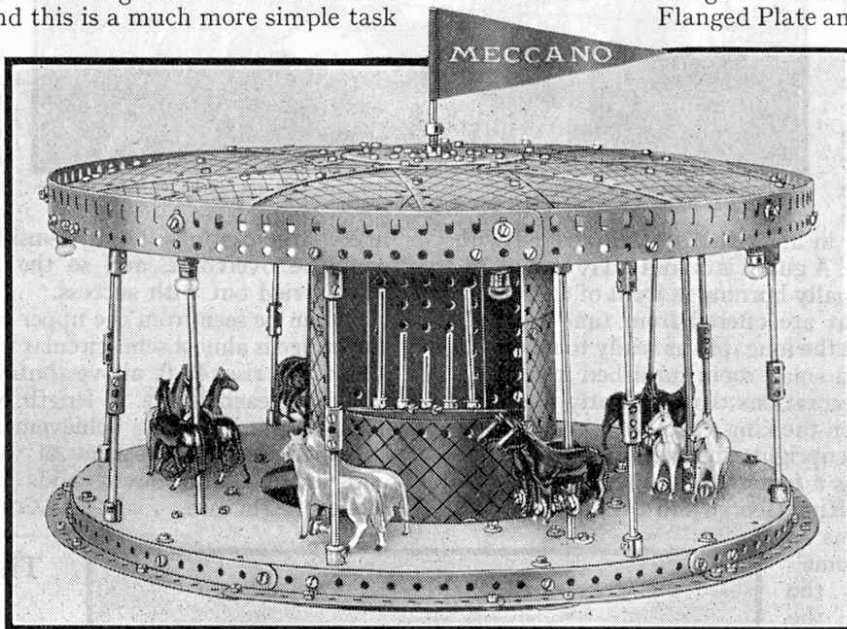
The imitation organ in the centre of the machine forms the container for the gear-box. It consists of one $3\frac{1}{2}'' \times 2\frac{1}{2}''$ Flanged Plate and four $2\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible

Plates bolted to the flanges of an E6 Electric Motor, the Flexible Plates being strengthened by means of $3\frac{1}{2}''$ Strips. The organ pipes are two 3", two 2" and one $1\frac{1}{2}''$ Rod. These are pushed through the lower flange of the $3\frac{1}{2}'' \times 2\frac{1}{2}''$ Flanged Plate and held in position by means of Collars.

The driving mechanism is enclosed in a cylinder made by bolting $9\frac{1}{2}'' \times 2\frac{1}{2}''$ and $12\frac{1}{2}'' \times 2\frac{1}{2}''$ Strip Plates to the rims of a Circular Girder and a Hub Disc, a space $4\frac{1}{2}''$ wide being left to

accommodate the organ. The Hub Disc is used at the top and in its centre is placed boss downward, a $1\frac{1}{2}''$ Contrate, which is spaced from the Hub Disc by Collars on the shanks of the four $\frac{1}{2}''$ securing bolts. A 5" Rod is secured in the boss of the Contrate, and around it is placed a $3\frac{1}{2}''$ Gear Ring that is held in position by four 6BA Screws and is insulated from the Hub Disc by Insulating Bushes and Washers. Four Flat Brackets are bolted to the bottom of the cylinder, and bolts pushed through these are screwed into the Threaded Bosses 4.

For the base of the rotating structure a ring of tin-plate or cardboard having an external diameter of $15\frac{3}{4}''$ and an internal diameter of $7\frac{1}{2}''$ is used. Readers who constructed the model Roundabout described on page 105 of the February "M.M." will be interested to know that the circular track of tin-plate or cardboard used in that model can be used equally well in the Hobby-Horse. A Ring Frame is bolted to the inner rim of the base, and twelve $\frac{1}{2}'' \times \frac{1}{2}''$ Reversed Angle Brackets are bolted at regular intervals around the outer rim. Eight Rod Sockets also are secured to the outer rim. Curved $12\frac{1}{2}''$ Strips are fixed to the centre holes of the Reversed Angle Brackets, either by bolting direct or, where the holes do not coincide, by



This fine model Roundabout is easy to build, and its construction is detailed in the accompanying article.

clamping with Flat Brackets; and a similar method is used to fix a Ring of 5½" Curved Strips to the free ends of the Reversed Angle Brackets, the object of this being to form a step around the base of the machine. When this part is completed it can be placed over the gear box so that the Ring Frame rests in the grooves of the four Pulleys 6.

The roof of the model is shown in detail in the upper illustration on this page. The centre is a 4" Circular Plate, to which are bolted eight 7½" Strips radially disposed and curved to the required shape, with a Bush Wheel in the centre. To the ends of the Strips is bolted a circle of Flat Girders, connection being made by means of Angle Brackets. Alternate 7½" Strips are provided with 2½" x 1" Double Angle

Strips 11, which form bearings for four 5" Rods. A special E1 Motor combined pinion and pulley 10 is fitted to the inner end of each Rod, and these are spaced from the Double Angle Strips by two washers. The Rods are prevented from sliding inward by Collars and at their outer ends each carry a Coupling 8. A lock-nutted Pivot Bolt in each Coupling carries a small Fork Piece 7, which is free to rotate and is fitted with a 6½" Rod. A ½" x ½" Reversed Angle Bracket is bolted to the end of each radial Strip, and to this is secured a Threaded Coupling, and a compound rod consisting of a 3" and a 2½" Rod is held in each Coupling.

The model is provided with 16 Horses (Dinky Toys No. 2A). Eight of these are fixed rigidly in position but the other eight are fitted with operating mechanism that causes them to move up and down as the structure rotates.

In order to mount each Horse, a washer is first of all pushed on to a ¾" Bolt and clamped tightly in place by a nut. A second washer and nut are then screwed loosely on to the bolt, which slides into place between the fore legs of one of the Horses. The first nut fits between the Horse's legs, which are then clamped securely between the two washers by tightening the outer nut.

Each of the 16 Horses is similarly dealt with, care being taken not to damage the legs in the process. The Horses of

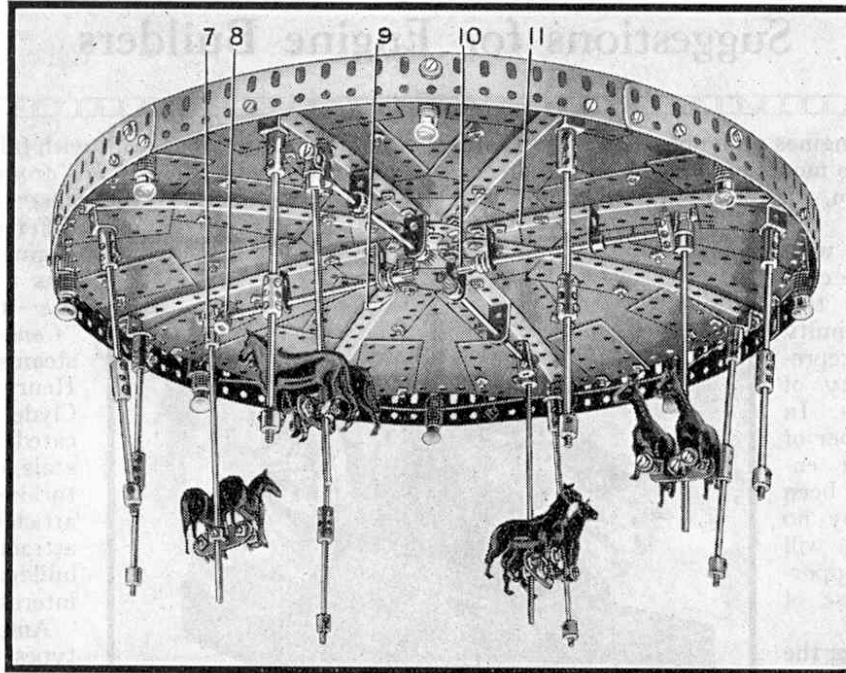
each pair are connected by 1½" Strips, in the end holes of which the ¾" Bolts are lock-nutted, and the centre holes of the 1½" Strips are used to attach each unit to Collars on the Rods in the Fork Pieces 7. Eight equally-spaced holes

should be made in the tinplate or cardboard ring, four of which form bearings for the sliding Rods, while the others enable the stationary Horses to be fixed in place. The holes for the moving Rods of the jumping Horses should be reinforced by 1½" Strips.

When the roof is in position the eight vertical Rods are pushed into the Rod Sockets of the circular platform, and the sliding Rods also are placed in their respective bearings. The lengths of the eight vertical Rods are then adjusted so that the Ring Frame rests evenly on the four Pulleys 6, and the special Pinions 10 engage with the 1½" Contrate on top of the gear-box casing. A Compression Spring and a Collar hold the revolving structure in position, the former making allowance for any inequalities in the moving parts. The stationary Horses are held in place on Rods journaled at the top in the radial Strips of the roof and at the bottom in Couplings secured to the tinplate ring by Angle Brackets.

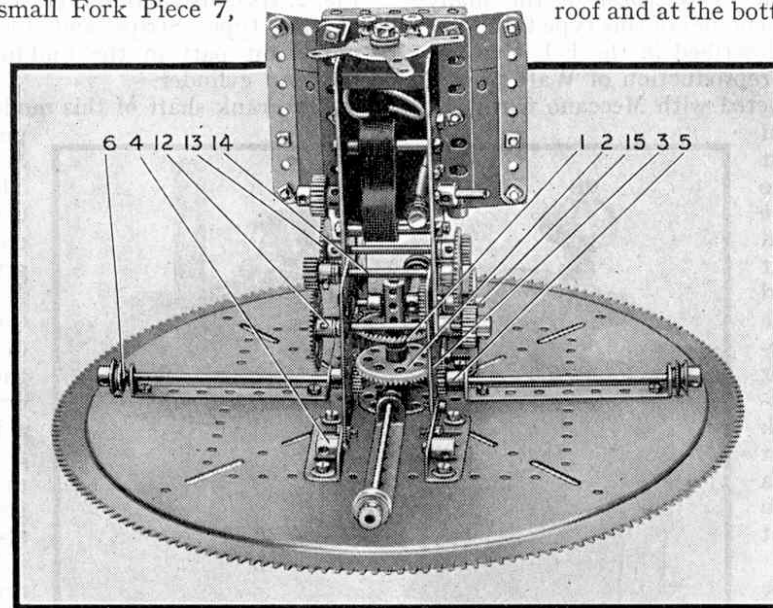
One of the most attractive features of the model is the electric lighting system with which it is equipped. Details of this and the position of the Lamps can be seen in the illustration of the roof of the model reproduced on this page.

The Lamp Holders are held in place by Angle Brackets, and their insulated Screws are connected together, and also to the insulated Pendulum Connection 9, by a length of wire. The outsides of the Lamp Holders make contact with the Flat Girders.



The roof of the model, showing the lighting system and the operating mechanism for the jumping Horses.

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The Electric Motor and the gear-box. These form a neat and compact unit.

PARTS REQUIRED:

- 6 of No. 1a; 8 of No. 1b; 2 of No. 3; 1 of No. 4; 12 of No. 6a; 4 of No. 9d; 22 of No. 10; 1 of No. 11; 20 of No. 12; 8 of No. 14; 5 of No. 15; 4 of No. 15a; 11 of No. 16a; 11 of No. 16b; 2 of No. 17; 2 of No. 18a; 4 of No. 23a; 2 of No. 24; 3 of No. 25; 6 of No. 26; 2 of No. 27; 2 of No. 27a; 3 of No. 28; 260 of No. 37; 150 of No. 38; 4 of No. 46; 4 of No. 48b; 1 of No. 53; 26 of No. 59; 17 of No. 63; 8 of No. 63c; 4 of No. 64; 4 of No. 73; 11 of No. 89; 1 of No. 103a; 4 of No. 103b; 16 of No. 111; 4 of No. 111c; 4 of No. 116a; 1 of No. 118; 1 of No. 120b; 20 of No. 125; 8 of No. 133a; 1 of No. 143; 1 of No. 146a; 4 of No. 147b; 1 of No. 167; 1 of No. 167b; 1 of No. 172; 8 of No. 179; 1 of No. 180; 13 of No. 182; 8 of No. 183; 8 of No. 184; 28 of No. 188; 16 of No. 192; 2 of No. 196; 2 of No. 197; 5 of No. 156i; 13 of No. 1575; 14 of No. 1583; 1 E6 Electric Motor; 4 E1 Electric Motor Pinions; 1 Meccano Pennant; 16 Dinky Toys No. 2a; 1 piece of tin-plate or cardboard 16" x 16".