

FAIRGROUND amusements have always proved fascinating subjects for Meccano model-builders, a fact that was recently strengthened by Mr. Bob Moy, head of our Model-building Department. This department spends a good deal of time producing special display models for dealers, who choose their requirements from an illustrated list of various standard constructions available. Of all the many different types of models on the list, by far the most requested is a particularly attractive Big Wheel. In fact, Mr. Moy tells me that to meet the demand, he must build two Big Wheels for every one of the other models. Both he and I felt that readers might like to try their hand at it themselves; therefore I give full building instructions for it below, with a few modifications.

Triangular Support

This part of the model can be built in two similar sections. A 12½ in. Angle Girder 1, extended by a 2½ in. Strip 2, is connected to another 12½ in. Angle Girder 3 by a 12½ in. Braced Girder 4, overlaid at the top by a 2 in. Strip. An Angle Bracket is used to fix the Braced Girder to Strip 2.

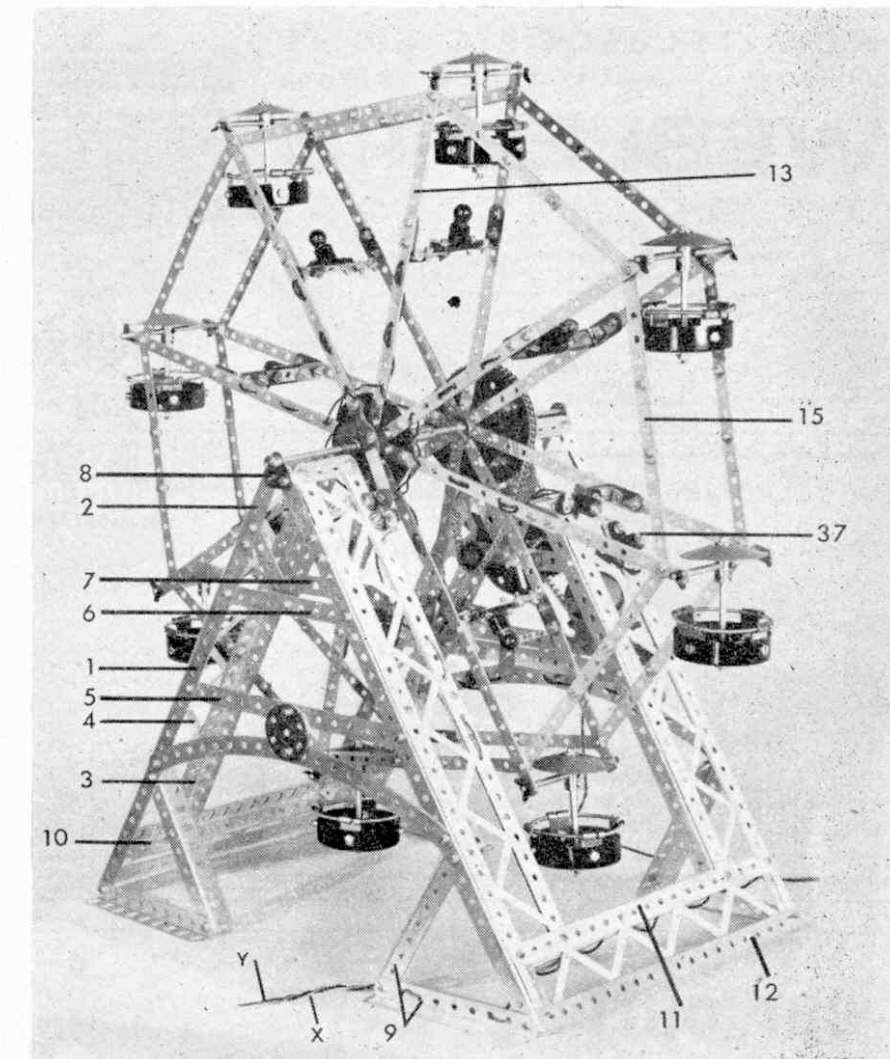
Another similar construction is built up and the two are joined together by two 5½ in. Curved Strips, a 7½ in. Strip 5, a 4½ in. Angle Girder 6 and a 4½ in. Strip 7. Two 2½ in. Strips are bolted between Girders 6 and 1, and another two between Strip 7 and Girders 3, to

act as bracers. Further bracing is supplied by a 6-hole Wheel Disc fixed to Strip 5 and the two Curved Strips. Two 1 in. Triangular Plates 8 are bolted, one to the top of Girders 1 and the other to the top of Girders 3. These will later serve as the bearings for the Wheel, itself.

At the lower ends of Girders 1, two 4½ in. Angle Girders 9 are bolted in position as shown to form two small triangles. Each main triangular section is now joined at the two lower corners by a 9½ in. Angle Girder 10 and a 9½ in. Braced Girder 11, overlaid by a 9½ in. Strip 12.

Wheel and Chairs

While being rather complex in appearance the Wheel is really quite easy to build. You will note, however, that it is made up mainly of narrow Strips. This need not deter you as they could be



This Meccano Big Wheel is of a type built specially for display purposes by the Model-building Department of Meccano Limited

all the fun of the fair!

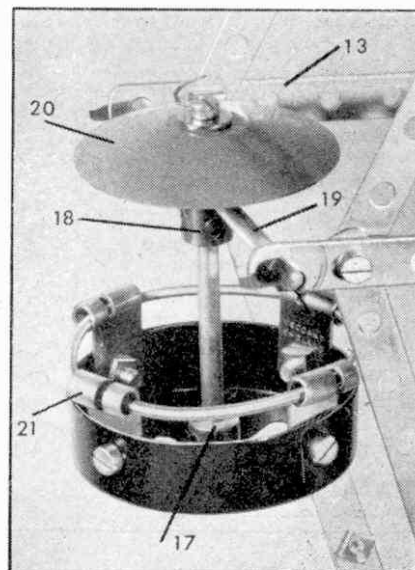
replaced by ordinary Strips, although it may not be possible to have as many arms.

Eight compound 9 in. narrow Strips. 13 are each built-up from two 5½ in. and two 4½ in. Narrow Strips, arranged in pairs. With Narrow Strips this is advisable for strength. The strips are then bolted to a Face Plate 14, care being taken to see that in each case the 5½ in. Narrow Strips lie one on either side of the Face Plate. Strips 13 are connected by eight compound 7 in. narrow strips 15, obtained from two 4½ in. Narrow Strips.

Another similar construction is built up and the two are then joined by eight compound 3 in. by 1 in. double Angle Strips. These are obtained from two 1 in. by 1 in. Angle Brackets connected by a 3 in. Narrow Strip 16.

All the chairs are similarly built from a Boiler End, to which a Rod Socket 17 is fixed. A 2 in. Rod, mounted in the

One of the eight chairs, all of which are similarly built



longitudinal bore of a Threaded Coupling 18, is secured in the Rod Socket. Mounted in the transverse bore of Coupling 18 is a $3\frac{1}{2}$ in. Rod 19 while a Bolt carrying a Washer and a Conical Disc 20 is screwed into its threaded longitudinal bore. Four right-angled Rod and Strip Connectors 21 are bolted to the Boiler End, and through these is threaded a length of spring cord to serve as a safety rail. Rod 19 is journalled in the end holes of Narrow Strips 13, being held by Angle Brackets. Note that the rod must turn freely in these strips.

The completed Wheel is mounted, along with a 3 in. Sprocket Wheel 22, on a compound rod 23, made-up from a $5\frac{1}{2}$ in. and a 5 in. Rod joined by a Coupling and journalled in Triangular Plates 8. Collars hold it in place. The Sprocket is fixed to the Wheel by four $1\frac{1}{8}$ in. Bolts, but is spaced from it by a Coupling 24 on the shank of each Bolt.

Motor and Gear Arrangement

A $7\frac{1}{2}$ in. Strip 25, overlaid by a $2\frac{1}{2}$ in. Strip 26, is secured between one set of Angle Girders 3. Strip 25 is connected to Strip 5 by a 2 in. Strip 27 and two 1 in. by 1 in. Angle Brackets, at the same time bolting a $2\frac{1}{2}$ in. Strip 28 to Strip 5. An Emebo Motor with a $\frac{1}{2}$ in. Sprocket Wheel 29 on its output shaft is also fixed to Strip 5 by Angle Brackets.

Mounted on a $2\frac{1}{2}$ in. Rod, held in Girder 6 and Strip 7 by Collars, is a $\frac{1}{2}$ in. Pinion 30 and a 1 in. Sprocket Wheel 31. Sprocket Wheel 31 is joined to Sprocket Wheel 29 by a length of Chain, while Pinion 30 meshes with a $2\frac{1}{2}$ in. Gear 32 on a 3 in. Rod, also held in Girder 6 and Strip 7 by Collars. On the end of this Rod is fixed another $\frac{1}{4}$ in. Sprocket

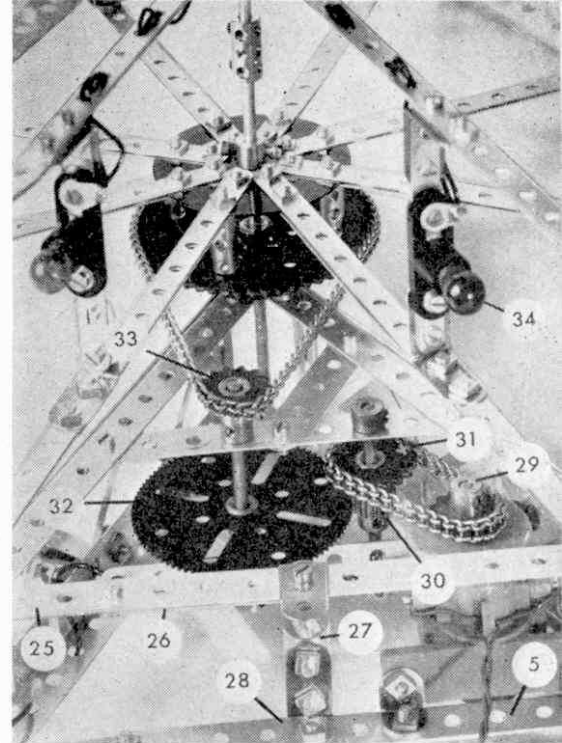
Wheel 33 which is connected by Chain to Sprocket Wheel 22.

Electrical System

It is not, of course, essential to fit flashing lights to the model, but they do greatly add to it. An Elekkit Lamp-holder with Lamp 34 is secured to each compound 3 in. by 1 in. double angle strip, one terminal being "earthed" by bolting it direct to one of the 1 in. by 1 in. Angle Brackets. The other terminal must be insulated from the rest of the model. On the special display model shown in the accompanying illustrations this was done by using a thin 6 B.A. bolt and a fibre washer to hold the Lamp-holder in place, care being taken to see that the bolt did not touch Narrow Strip 16 or the other 1 in. by 1 in. Angle Bracket. You, however, can avoid this by substituting a $2\frac{1}{2}$ in. Insulating Strip (Elekkit Part No. 502) for Narrow Strip 16.

The insulated terminals of four of the Lampholders are connected together by wire, which is then connected to one terminal of a flat Commutator (Elekkit Part No. 551), fixed on compound Rod 23. The insulated terminals of the remaining four Lampholders are similarly connected to the other terminal of Commutator 35.

A 2 in. radius Wiper Arm 36 (Elekkit Part No. 533) is fixed to, but is insulated from, two Angle Brackets bolted to one Braced Girder 4. In our model this has again been done by using 6 B.A. bolts and fibre washers. You could bolt, say, a $1\frac{1}{2}$ in. Insulating Flat Girder to the Angle Brackets and attach the Wiper Arm to this. A length of wire X for the battery is connected to the Wiper Arm. The position of the Wiper Arm on the



The motor and gear arrangement viewed from beneath

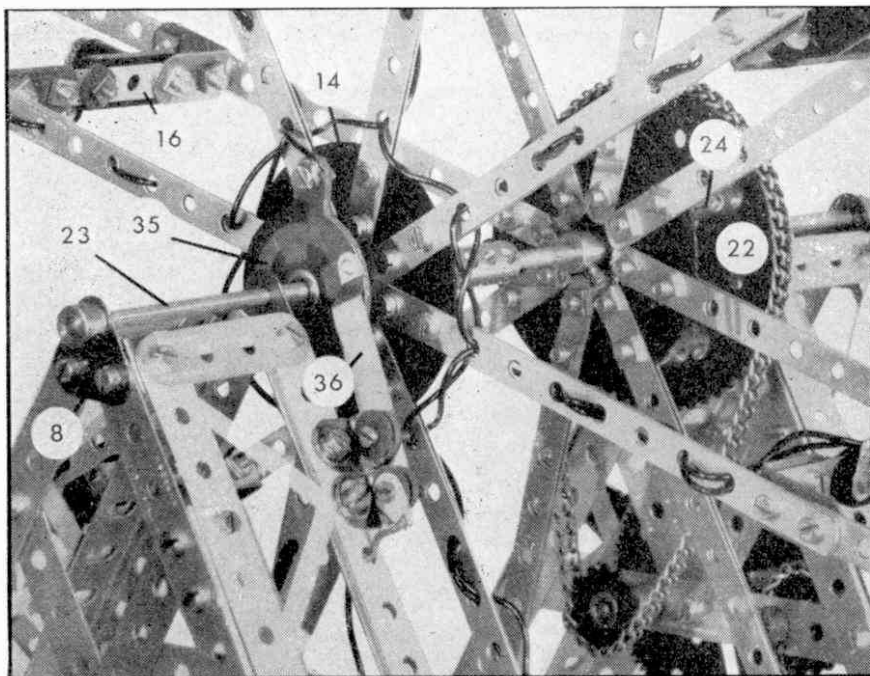
Commutator, of course, determines the number of times the lights flash on and off per revolution of the Wheel.

Another four Lampholders with Lamps are bolted to the side of the triangular support carrying the Motor. One of these can be seen at 37. Another is in a corresponding position on the other side of the triangle while the remaining two are fixed to the $5\frac{1}{2}$ in. Curved Strips bolted between Girders 1. Again, one terminal of each Lampholder is "earthed" while the other is insulated. Unfortunately the only way I can see of insulating it in this case is to use a 6 B.A. bolt and a fibre washer.

As before, the insulated terminals of these four Lampholders are connected together by wire, which is then extended, as Y, to be used as a battery lead.

Both the Lamps and the Motor can be powered from the same battery, but I advise you to use two different sources. Leads X and Y are connected to one terminal of the battery, while a wire from its other terminal is earthed by attaching it to any of the Bolts used in the triangular support.

A close-up view showing the Commutator and Wheel mounting



Parts required

2 of No. 1a	16 of No. 35	8 of No. 187a
3 of No. 1b	265 of No. 37a	32 of No. 212a
2 of No. 2a	265 of No. 37b	8 of No. 235a
2 of No. 4	32 of No. 38	64 of No. 235d
14 of No. 5	2 of No. 58	32 of No. 235f
5 of No. 6	6 of No. 59	1 of No. 533
8 of No. 8	5 of No. 63	12 of No. 539
2 of No. 8a	8 of No. 63c	3 of No. 540c
10 of No. 9a	4 of No. 77	3 of No. 540j
8 of No. 12	4 of No. 89	3 of No. 540r
18 of No. 12a	1 of No. 94	3 of No. 540v
1 of No. 14a	1 of No. 95b	1 of No. 551
1 of No. 15	2 of No. 96a	$14\frac{7}{8}$ " 6 B.A.
8 of No. 16	4 of No. 99	Bolts
1 of No. 16a	2 of No. 99a	14 6 B.A. Nuts
1 of No. 16b	2 of No. 109	28 Fibre
8 of No. 17	2 of No. 111a	Washers
2 of No. 24c	16 of No. 111c	1 Emebo
1 of No. 26	8 of No. 162a	Electric Motor
1 of No. 27c	8 of No. 179	