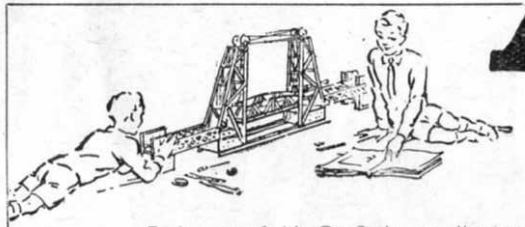
MECCANO

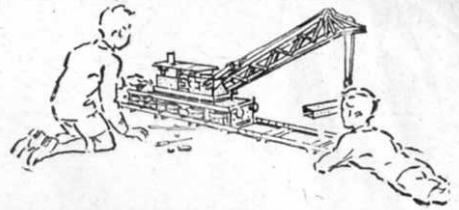
No. 51.O

INSTRUCTIONS
for
No. O OUTFIT

ENG—UNIV.



MECCANO



REAL ENGINEERING IN YOUR PLAY HOURS

HOW TO BEGIN

Each part of this Outfit is actually a real engineering part in miniature. The only tools required for fitting them together and making the splendid models illustrated in this book are a Spanner and a Screwdriver, both of which you will find in the Outfit.

First choose the model you want to build, and then lay out on the table all the parts detailed in the "Parts Required" list. Look at the pictures in the list below.

To help you to start building, we will describe how Model O.1, Garden Seat, is made. Begin by bolting to the Flanged Plate the 5½" Strips that form the back legs of the seat. Then attach the upper ends of these Strips to two further 5½" Strips to form the back. Two 2½" Strips are then bolted to the front flange of the Plate to form the front legs. The model is completed by fixing two 2½" × ½" Double Angle Strips to the back to form arm rests.

In some models it is necessary to join certain parts together so that, although they cannot come apart, they are free to pivot or move in relation to one another. To do this the parts are bolted together as usual but the nut is not screwed up tightly, so that the parts are not gripped. Then, to prevent the nut from unscrewing, a second nut is screwed up tightly against it, the first nut meanwhile being held with a spanner. This method of using a second nut is known as **Lock-nutting:**

A Rod is usually mounted in a support or bearing, such as a hole in a Strip, so that it is free to revolve. The Rod is then said to be **journalled** in the Strip.

When you have built all the models shown in this Book the fun is not over but is just beginning ! Now comes the chance to make use of your own ideas. First of all rebuild some of the models with small changes in construction that may occur to you ; then try building simple models entirely of your own design. In doing this you will feel the real thrill of the engineer and the inventor.

This No. O is the smallest of the Meccano Outfits. In order to build bigger and more attractive models you need a larger Outfit containing a greater number and variety of parts. To convert your Outfit into the next larger one, the No. 1, you need a No. Oa Accessory Outfit. Turn to the back cover of this Book for further details and pictures of some of the fine models you will then be able to build.

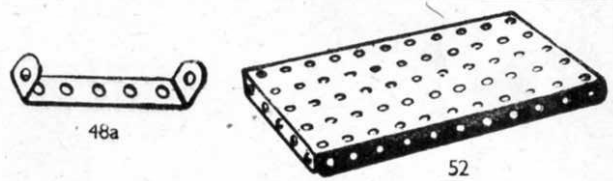
If you ever meet with any small difficulty, or if you wish to have further information on any point in connection with your model-building, write to Meccano Ltd., Binns Road, Liverpool 13.

CONTENTS OF MECCANO No. O OUTFIT

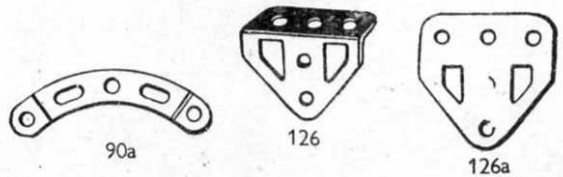
No.	Description	Quantity
2	Perforated Strip, 5½"	4
5	,, ,, 2½"	2
10	Fishplate	4
12	Angle Bracket, ½" × ½"	4

16	Axle Rod, 3½"	1
17	,, ,, 2"	1
19s	Crank Handle, 3½" shaft	1

No.	Description	Quantity
22	Pulley, 1" diam. with boss and screw	2
24	Bush Wheel, 1⅜" diam.	1
34	Spanner	1
35	Spring Clip	4
36	Screwdriver	1
37a	Nuts	22
37b	Bolts, 7/32"	18
38	Washers	2



No.	Description	Quantity
48a	Double Angle Strip, 2½" × ½"	2
52	Perforated Flanged Plate, 5½" × 2½"	1

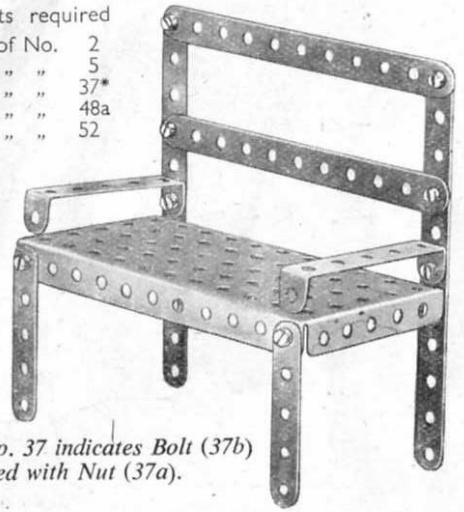


90a	Curved Strip, 2½" stepped, 1⅜" radius	2
111c	Bolts, ⅜"	2
126	Trunnion	2
126a	Flat Trunnion	2
142c	Motor Tyres to fit 1" Pulley	2

O.1 GARDEN SEAT

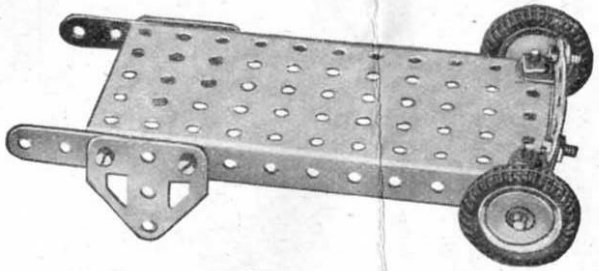
Parts required

4 of No.	2	
2 „ „	5	
10 „ „	37*	
2 „ „	48a	
1 „ „	52	



**No. 37 indicates Bolt (37b) fitted with Nut (37a).*

O.2 FLAT TRUCK



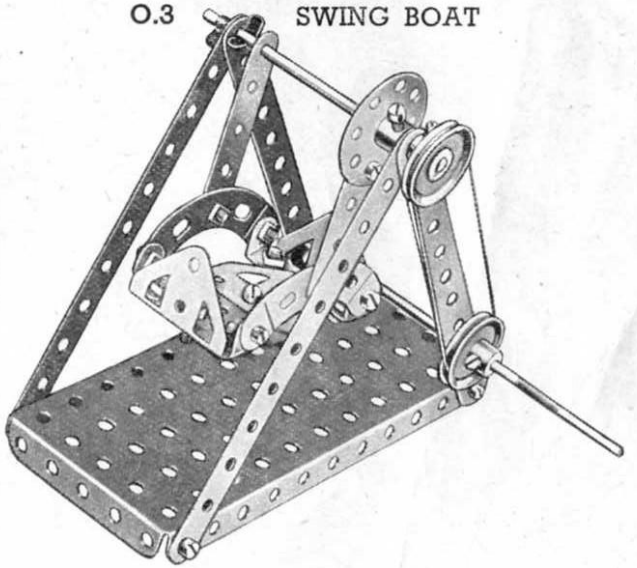
Parts required

2 of No.	5	2 of No.	22	1 of No.	90a
2 „ „	12	8 „ „	37	2 „ „	126a
1 „ „	16	1 „ „	52	2 „ „	142c

O.3 SWING BOAT

Parts required

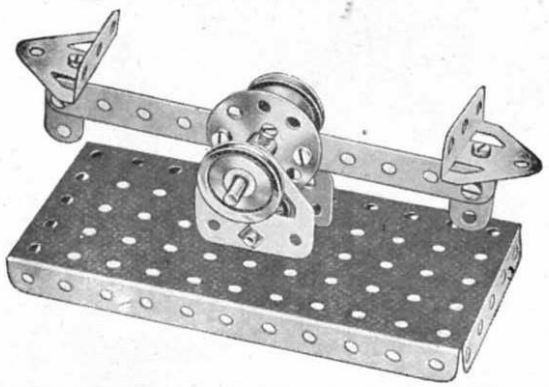
4 of No.	2
2 „ „	5
4 „ „	12
1 „ „	16
1 „ „	19s
2 „ „	22
1 „ „	24
3 „ „	35
18 „ „	37
1 „ „	52
2 „ „	90a
2 „ „	126
2 „ „	126a



O.4 COUNTER SCALES

Parts required

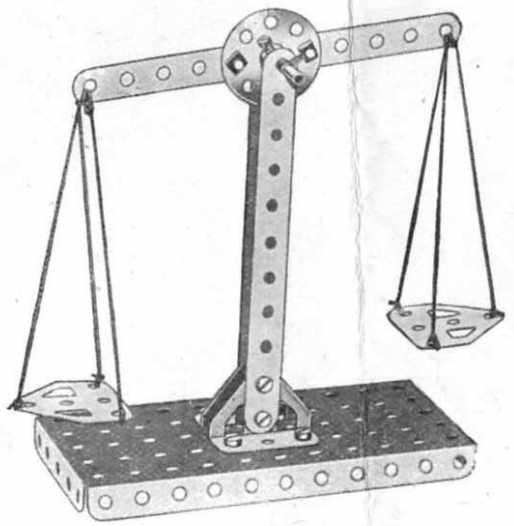
1 of No.	2	2 of No.	22	1 of No.	52
2 „ „	10	1 „ „	24	2 „ „	126
4 „ „	12	9 „ „	37	2 „ „	126a
1 „ „	17	2 „ „	38		



O.5 SCALES

Parts required

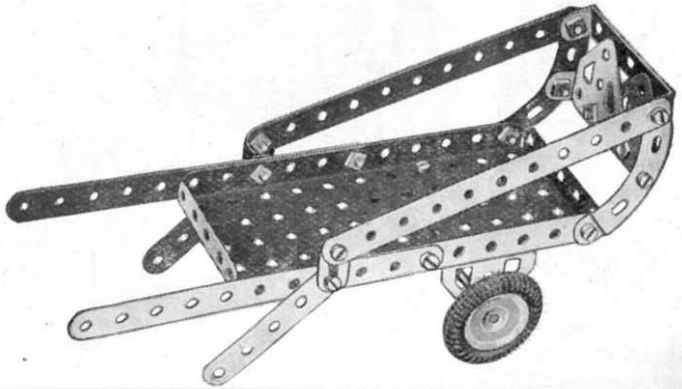
3 of No.	2	2 of No.	35	2 of No.	126
1 „ „	17	10 „ „	37	2 „ „	126a
1 „ „	24	1 „ „	52		



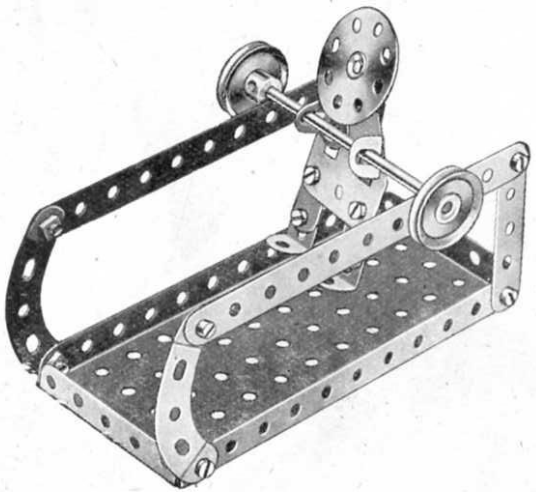
O.6 COSTER'S BARROW

Parts required

4 of No.	2	2 of No.	22	2 of No.	90a
2 „ „	5	16 „ „	37	2 „ „	126
2 „ „	10	2 „ „	48a	2 „ „	126a
1 „ „	16	1 „ „	52	2 „ „	142c



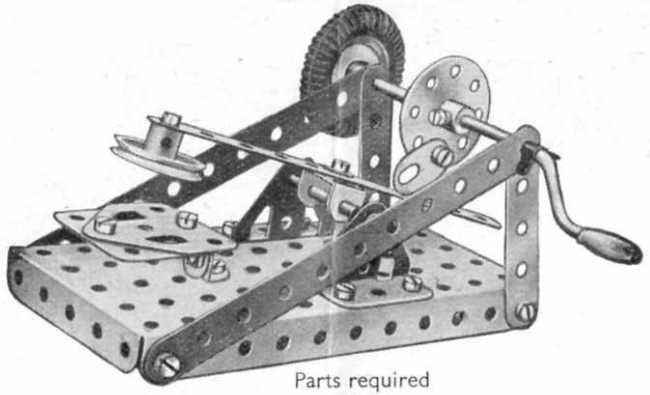
O.7 ACROBAT



Parts required

2 of No.	2		
2 „ „	5		
3 „ „	10		
4 „ „	12		
1 „ „	16		
2 „ „	22		
1 „ „	24		
15 „ „	37		
1 „ „	52		
2 „ „	90a		
1 „ „	111c		
1 „ „	126a		

O.8 MECHANICAL HAMMER



Parts required

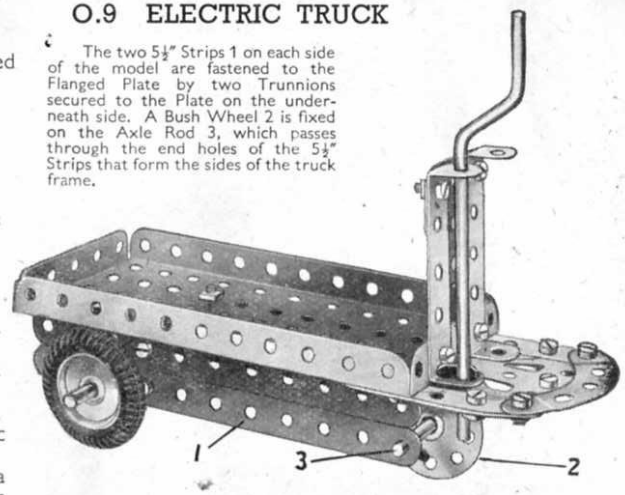
3 of No.	2	1 of No.	17	3 of No.	35	1 of No.	111c
2 „ „	5	1 „ „	19s	15 „ „	37	2 „ „	126
1 „ „	10	2 „ „	22	1 „ „	38	2 „ „	126a
4 „ „	12	1 „ „	24	1 „ „	52	1 „ „	142c

O.9 ELECTRIC TRUCK

Parts required

4 of No.	2
2 „ „	5
2 „ „	10
2 „ „	12
1 „ „	16
1 „ „	17
1 „ „	19s
2 „ „	22
1 „ „	24
4 „ „	35
17 „ „	37
2 „ „	37a
2 „ „	38
2 „ „	48a
1 „ „	52
2 „ „	90a
2 „ „	111c
2 „ „	126
2 „ „	126a
2 „ „	142c

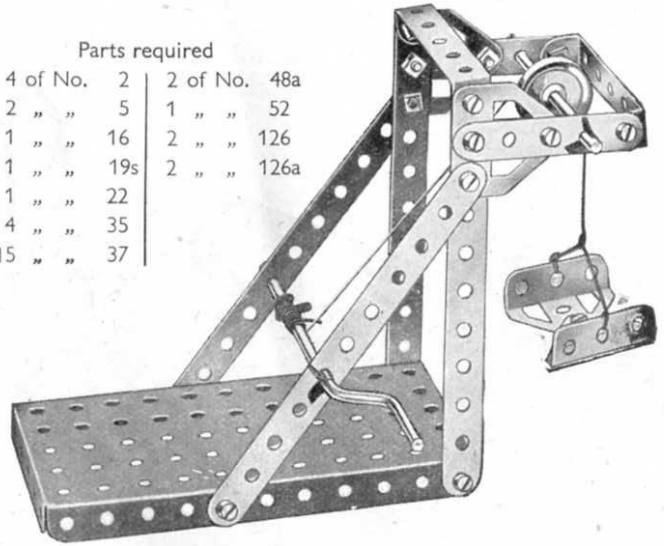
The two 5½" Strips 1 on each side of the model are fastened to the Flanged Plate by two Trunnions secured to the Plate on the underneath side. A Bush Wheel 2 is fixed on the Axle Rod 3, which passes through the end holes of the 5½" Strips that form the sides of the truck frame.



O.10 ELEVATOR

Parts required

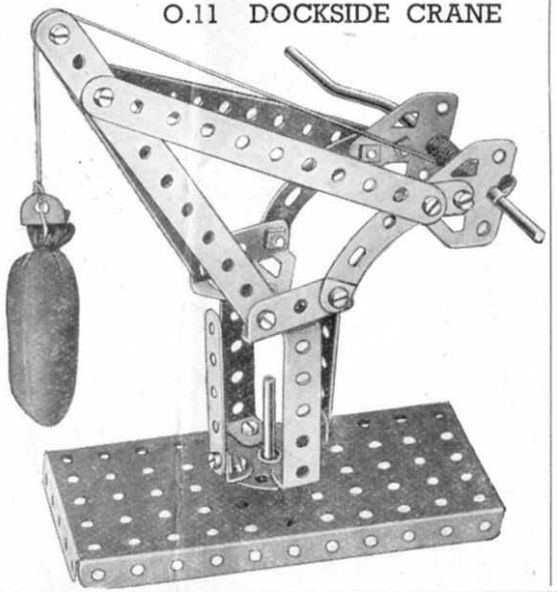
4 of No.	2	2 of No.	48a
2 „ „	5	1 „ „	52
1 „ „	16	2 „ „	126
1 „ „	19s	2 „ „	126a
1 „ „	22		
4 „ „	35		
15 „ „	37		



O.11 DOCKSIDE CRANE

Parts required

4 of No.	2
2 „ „	5
3 „ „	12
1 „ „	17
1 „ „	19s
1 „ „	22
1 „ „	24
2 „ „	35
18 „ „	37
2 „ „	37a
2 „ „	38
2 „ „	48a
1 „ „	52
2 „ „	90a
2 „ „	111c
2 „ „	126
2 „ „	126a



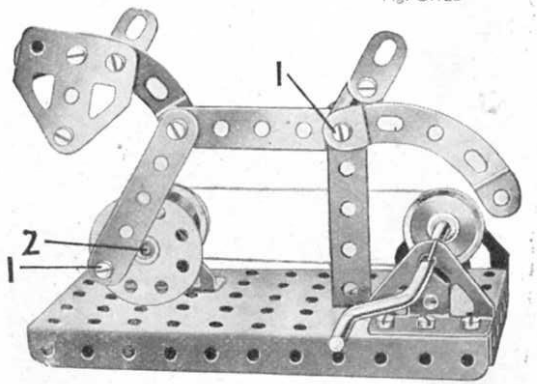
O.12 BUCKING BRONCHO

Parts required

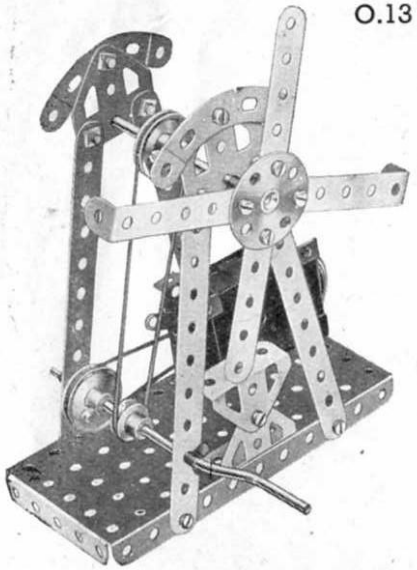
2 of No.	5
4 „ „	10
1 „ „	12
1 „ „	17
1 „ „	19s
2 „ „	22
1 „ „	24
4 „ „	35
15 „ „	37
5 „ „	37a
1 „ „	38
1 „ „	48a
1 „ „	52
2 „ „	90a
2 „ „	111c
2 „ „	126
2 „ „	126a

The Bolts 1 are fitted with locknuts, so that the parts they attach are free to pivot. Bearings for a 2" Rod, the end of which is seen at 2, are provided by a Fishplate 3, bolted to an Angle Bracket 4, and a Trunnion 5.

Fig. O.12a



O.13 WINDMILL



Parts required

4 of No.	2	18 of No.	37
2 „ „	5	2 „ „	38
1 „ „	16	2 „ „	48a
1 „ „	19s	1 „ „	52
2 „ „	22	2 „ „	90a
1 „ „	24	2 „ „	126
3 „ „	35	2 „ „	126a

Magic Motor (not included in Outfit)

A Driving Band connects the pulley of the *Magic* Motor to a 1" Pulley fastened on the Crank Handle. The Crank Handle carries also a ½" Pulley, which is connected by a second Driving Band with a further 1" Pulley fixed to the 3½" Rod on which the sails are mounted. The 3½" Rod is held in place by Spring Clips, one behind the Bush Wheel, and one on its rear end. If a Motor is not used the ½" Pulley (supplied with Motor) is replaced by a 1" Pulley.

O.14 INVALID CARRIAGE

Parts required

4 of No.	2	2 of No.	38	1 of No.	126
2 „ „	5	2 „ „	48a	2 „ „	126a
2 „ „	12	1 „ „	52	2 „ „	142c
1 „ „	16	2 „ „	90a		
1 „ „	17	1 „ „	111c		
2 „ „	22				
1 „ „	24				
2 „ „	35				
17 „ „	37				

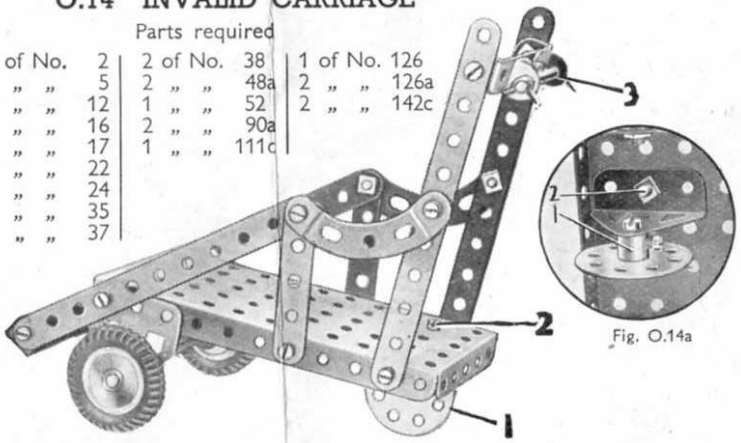
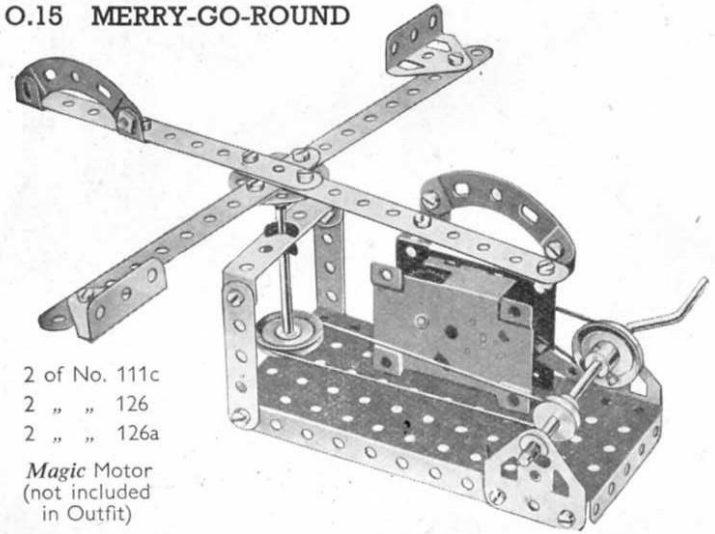


Fig. O.14a

The Bush Wheel 1 is locked on a ⅜" Bolt journalled in a Trunnion attached to the Flanged Plate by the Bolt 2. (See Fig. O.14a). The handlebar 3 is held by Spring Clips in two Angle Brackets bolted to the 2½" × ½" Double Angle Strip.

O.15 MERRY-GO-ROUND



Parts required

4 of No.	2	2 of No.	111c
2 „ „	5	2 „ „	126
4 „ „	12	2 „ „	126a
1 „ „	16		
1 „ „	19s		
2 „ „	22		
1 „ „	24		
4 „ „	35		
18 „ „	37		
2 „ „	37a		
2 „ „	38		
1 „ „	48a		
1 „ „	52		
2 „ „	90a		

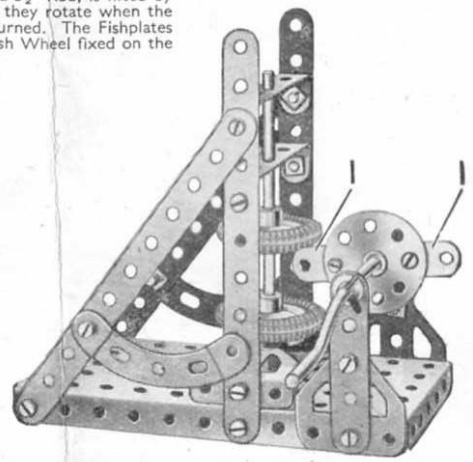
Magic Motor (not included in Outfit)

O.16 DROP HAMMER

The hammer, which is formed by the two 1" Pulleys on a 3½" Rod, is lifted by the Fishplates 1 as they rotate when the Crank Handle is turned. The Fishplates are bolted to a Bush Wheel fixed on the Crank Handle.

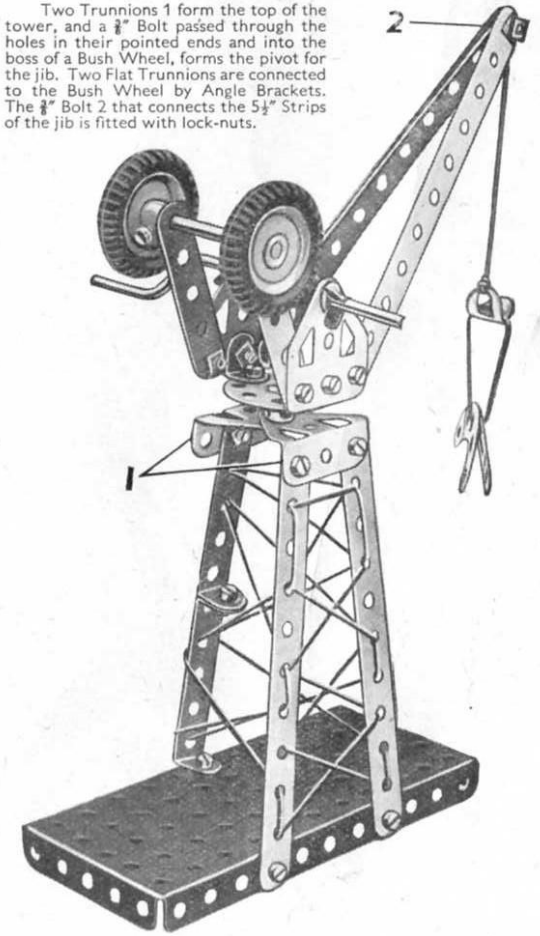
Parts required

4 of No.	2
2 „ „	5
4 „ „	10
1 „ „	16
1 „ „	19s
2 „ „	22
1 „ „	24
2 „ „	35
18 „ „	37
2 „ „	37a
2 „ „	38
2 „ „	48a
1 „ „	52
2 „ „	90a
2 „ „	111c
2 „ „	126
2 „ „	126a
2 „ „	142c



O.17 DOCKSIDE CRANE

Two Trunnions 1 form the top of the tower, and a ⅜" Bolt passed through the holes in their pointed ends and into the boss of a Bush Wheel, forms the pivot for the jib. Two Flat Trunnions are connected to the Bush Wheel by Angle Brackets. The ⅜" Bolt 2 that connects the 5½" Strips of the jib is fitted with lock-nuts.



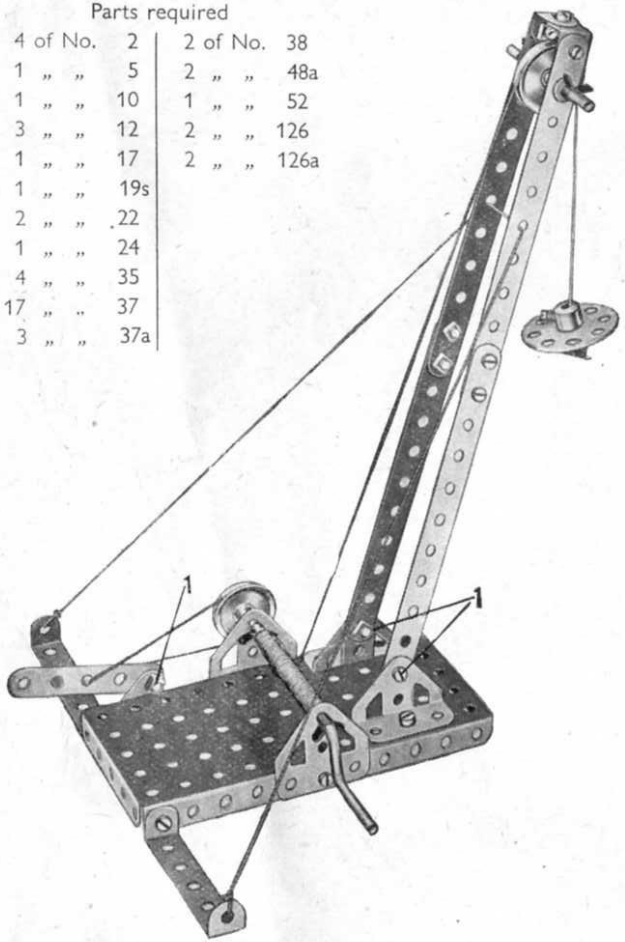
Parts required

4 of No.	2	1 of No.	24	1 of No.	52
2 „ „	5	2 „ „	35	2 „ „	90a
3 „ „	12	15 „ „	37	2 „ „	111c
1 „ „	17	2 „ „	37a	2 „ „	126
1 „ „	19s	2 „ „	38	2 „ „	126a
2 „ „	22	2 „ „	48a	2 „ „	142c

O.18 DERRICK CRANE

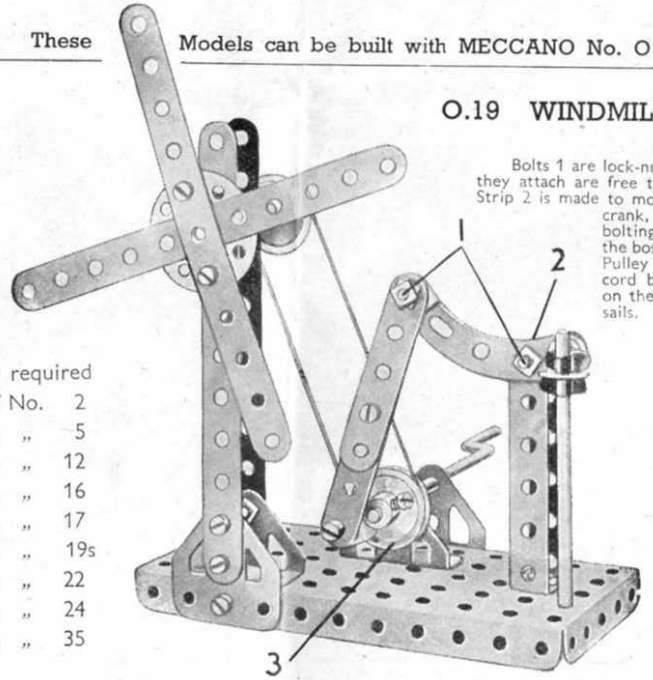
Parts required

4 of No.	2	2 of No.	38
1 „ „	5	2 „ „	48a
1 „ „	10	1 „ „	52
3 „ „	12	2 „ „	126
1 „ „	17	2 „ „	126a
1 „ „	19s		
2 „ „	22		
1 „ „	24		
4 „ „	35		
17 „ „	37		
3 „ „	37a		



The construction of the model is commenced by bolting the Trunnions and Flat Trunnions that support the jib and Crank Handle respectively to the 5½"×2½" Flanged Plate that forms the base of the model. The jib is then assembled and fastened to the Trunnions by means of the lock-nutted Bolts 1. The brake lever is a 2½" Strip and is fastened to a Fishplate bolted to the Flanged Plate. Bolts 1 are lock-nutted. A length of cord is fastened to the lever and then passed round the 1" Pulley on the Crank Handle.

O.19 WINDMILL PUMP



Bolts 1 are lock-nutted so that the parts they attach are free to pivot. The Curved Strip 2 is made to move up and down by a crank, which is formed by bolting an Angle Bracket to the boss of a 1" Pulley 3. This Pulley drives by means of a cord belt another 1" Pulley on the shaft of the windmill sails.

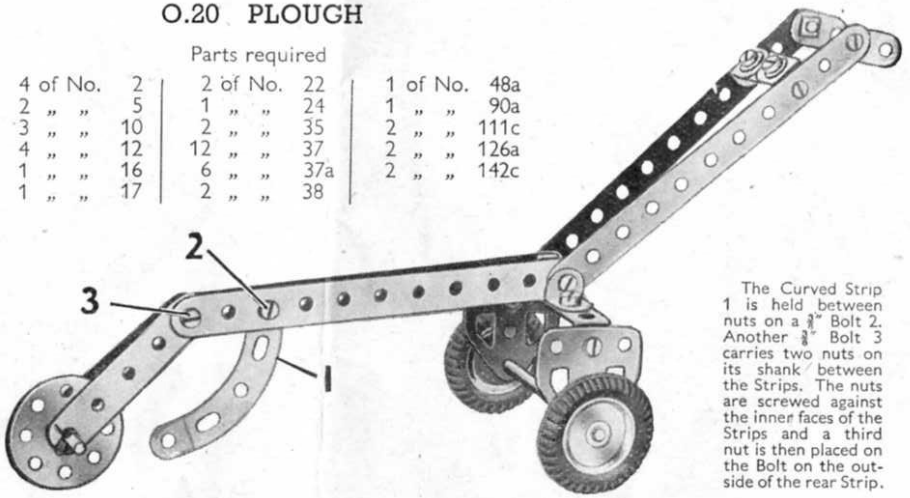
Parts required

4 of No.	2	16 of No.	37
2 „ „	5	6 „ „	37a
3 „ „	12	2 „ „	38
1 „ „	16	2 „ „	48a
1 „ „	17	1 „ „	52
1 „ „	19s	1 „ „	90a
2 „ „	22	2 „ „	111c
1 „ „	24	2 „ „	126
4 „ „	35	2 „ „	126a

O.20 PLOUGH

Parts required

4 of No.	2	2 of No.	22	1 of No.	48a
2 „ „	5	1 „ „	24	1 „ „	90a
3 „ „	10	2 „ „	35	2 „ „	111c
4 „ „	12	12 „ „	37	2 „ „	126a
1 „ „	16	6 „ „	37a	2 „ „	142c
1 „ „	17	2 „ „	38		

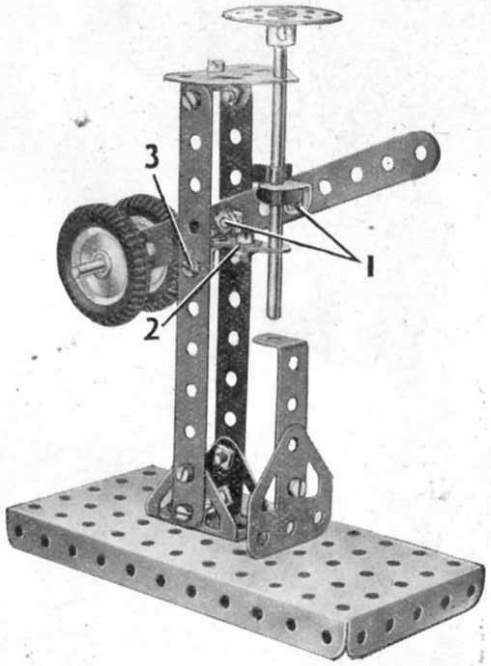


The Curved Strip 1 is held between nuts on a ¾" Bolt 2. Another ¾" Bolt 3 carries two nuts on its shank between the Strips. The nuts are screwed against the inner faces of the Strips and a third nut is then placed on the Bolt on the outside of the rear Strip.

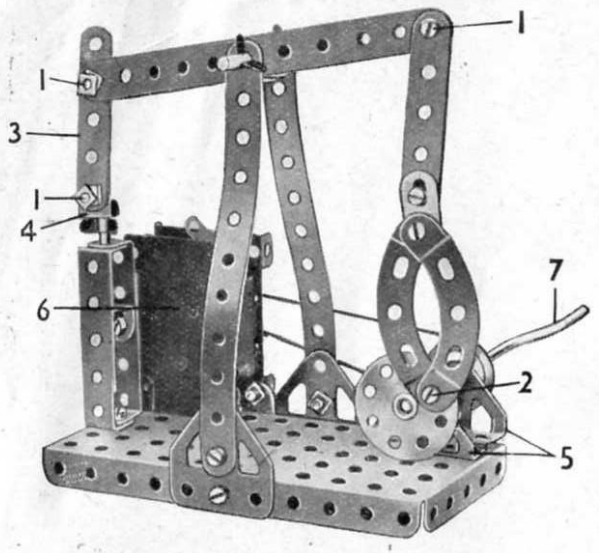
O.21 PUNCHING MACHINE

Parts required

3 of No.	2	2 of No.	22	1 of No.	52
2 „ „	10	1 „ „	24	2 „ „	126
4 „ „	12	16 „ „	37	2 „ „	126a
1 „ „	16	2 „ „	37a	2 „ „	142c
1 „ „	17	1 „ „	48a		



The Bolts 1 are lock-nutted. The lower bearing for the punch consists of two Fishplates 2, which are bolted together. One of them is then attached to an Angle Bracket that is fixed to one of the vertical 5½" Strips by the Bolt 3.



O.22 BEAM ENGINE

Parts required

4 of No.	2	1 of No.	19s	2 of No.	38
2 „ „	5	1 „ „	22	2 „ „	48a
3 „ „	10	1 „ „	24	1 „ „	52
4 „ „	12	4 „ „	35	2 „ „	90a
1 „ „	16	15 „ „	37	2 „ „	111c
1 „ „	17	6 „ „	37a	2 „ „	126

2 of No 126a.

Magic Motor (not included in Outfit)

The Bolts 1 are lock-nutted. The Curved Strips must be free to pivot on the Bolt 2. The Strip 3 also must be freely pivoted to the Angle Bracket 4.

The Trunnions 5 are each raised from the Flanged Plate by a Washer on each of the bolts that hold them in place.

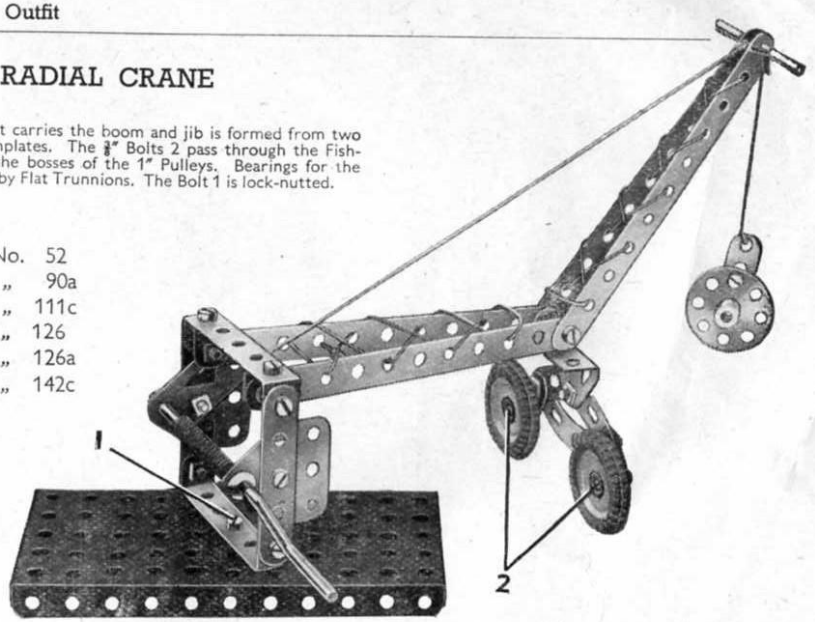
The *Magic* Motor 6 is attached to the Flanged Plate by two Fishplates, and the Pulley on its shaft is connected by cord to a 1" Pulley on the Crank Handle 7

O.23 RADIAL CRANE

The wheeled bogie that carries the boom and jib is formed from two Curved Strips and two Fishplates. The ⅜" Bolts 2 pass through the Fishplates and are gripped in the bosses of the 1" Pulleys. Bearings for the Crank Handle are provided by Flat Trunnions. The Bolt 1 is lock-nutted.

Parts required

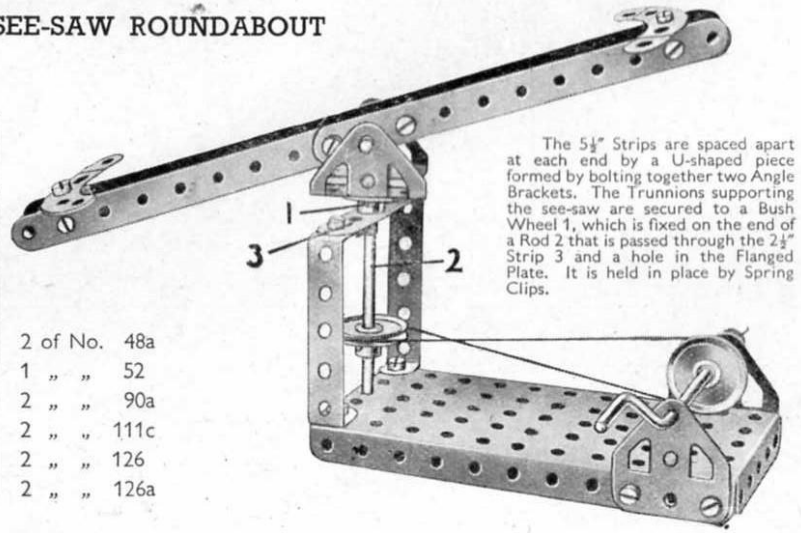
4 of No.	2	1 of No.	52
2 „ „	5	2 „ „	90a
3 „ „	10	2 „ „	111c
4 „ „	12	1 „ „	126
1 „ „	17	2 „ „	126a
1 „ „	19s	2 „ „	142c
2 „ „	22		
1 „ „	24		
4 „ „	35		
18 „ „	37		
1 „ „	37a		
2 „ „	38		
2 „ „	48a		



O.24 SEE-SAW ROUNDABOUT

Parts required

4 of No.	2	2 of No.	48a
1 „ „	5	1 „ „	52
4 „ „	12	2 „ „	90a
1 „ „	16	2 „ „	111c
1 „ „	17	2 „ „	126
1 „ „	19s	2 „ „	126a
2 „ „	22		
1 „ „	24		
4 „ „	35		
18 „ „	37		
2 „ „	37a		
2 „ „	38		



The 5½" Strips are spaced apart at each end by a U-shaped piece formed by bolting together two Angle Brackets. The Trunnions supporting the see-saw are secured to a Bush Wheel 1, which is fixed on the end of a Rod 2 that is passed through the 2½" Strip 3 and a hole in the Flanged Plate. It is held in place by Spring Clips.

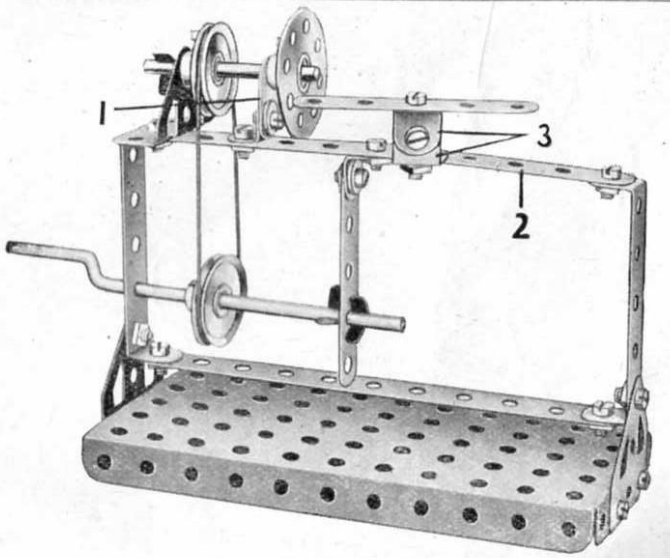
O.25 LATHE

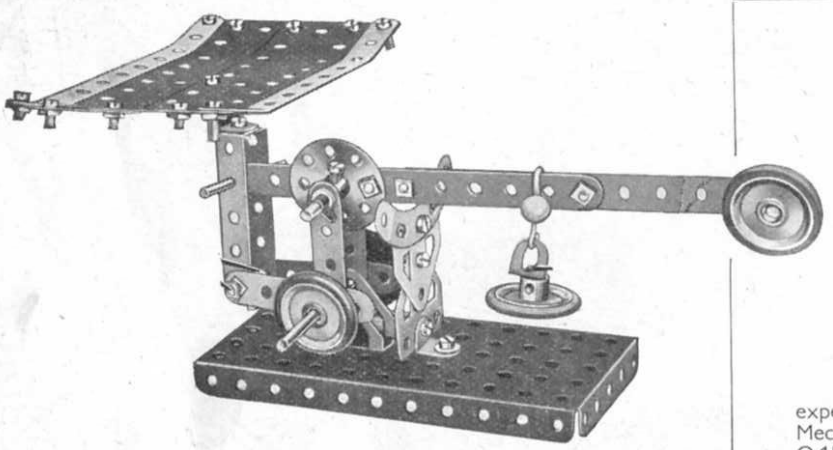
Parts required

2 of No.	2	1 of No.	24
2 „ „	5	3 „ „	35
2 „ „	10	18 „ „	37
4 „ „	12	2 „ „	38
1 „ „	17	2 „ „	48a
1 „ „	19s	1 „ „	52
2 „ „	22	1 „ „	126

2 of No. 126a

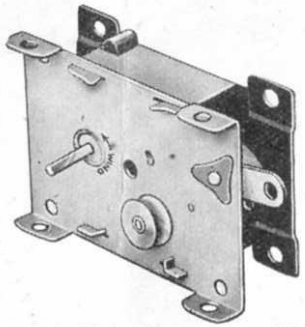
The inner support or the lathe spindle consists of a Fishplate 1 bolted to an Angle Bracket fixed to the 5½" Strip that forms the lathe bed. The tool rest is a 2½" Strip that is supported by two Angle Brackets 3 bolted together to form a U-shaped piece.





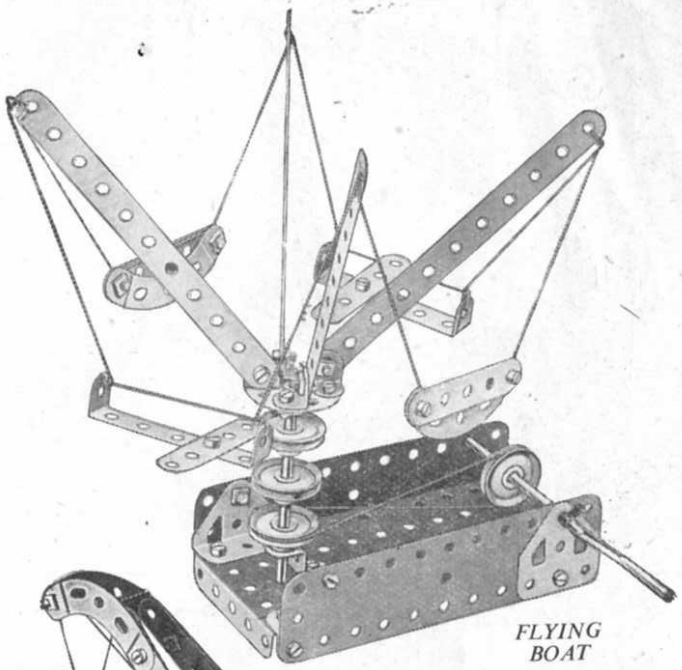
LETTER BALANCE

THE MECCANO *MAGIC* MOTOR

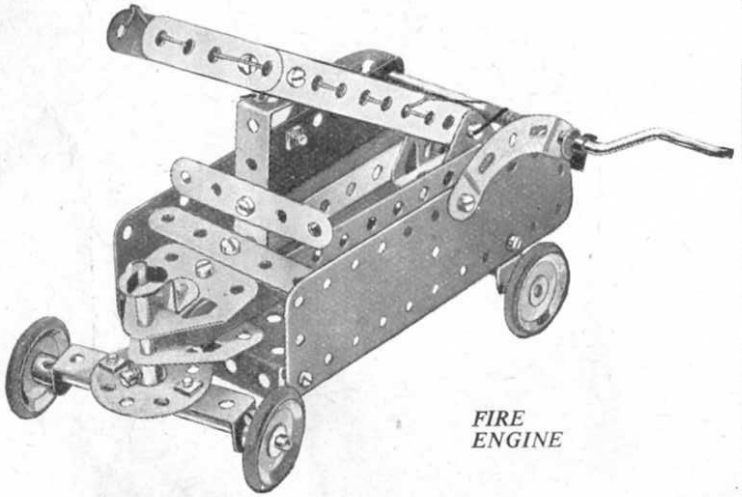


The greatest thrill in Meccano model-building is experienced when a model is set to work by means of a Meccano ***Magic*** Motor. The illustrations of Models O.13, O.15 and O.22 show how the ***Magic*** Motor can be fitted to No. O Outfit models. Fit the model you have just built with one of these wonderful Motors.

The ***Magic*** Motor is not included in the Outfit.



FLYING BOAT



FIRE ENGINE

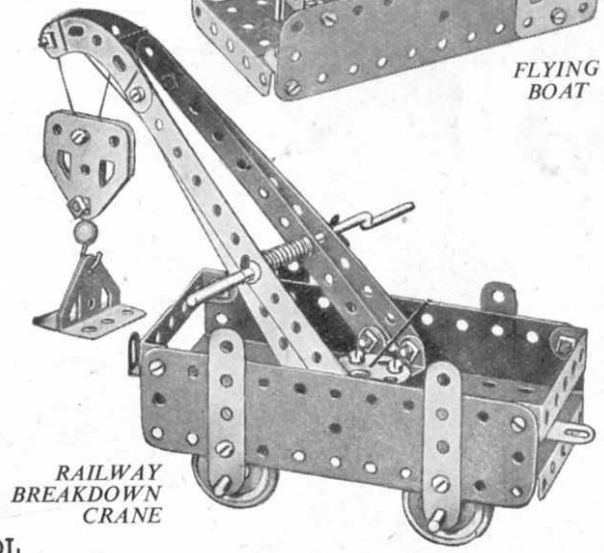
HOW TO CONTINUE

When you have built all the models shown in this Book, and others of your own invention, you should get from your Dealer a No. Oa Accessory Outfit. This will convert your No. O Outfit into a No. 1 Outfit.

With this larger Outfit you will be able to build a new set of bigger and more interesting models. Some of these models are illustrated on this page.

The model-building possibilities of Meccano are unlimited. For each complete Outfit there is an Accessory Outfit that converts it into the one next larger. By means of these Accessory Outfits you can gradually build up your Outfit to a No. 10, which will provide you with the full resources of the wonderful Meccano system.

Every Outfit has its own Book of Instructions.



RAILWAY BREAKDOWN CRANE

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