

MECCANO

Regd.
Trade
Mark

INSTRUCTIONS

Copyright by Meccano Ltd.

for No. O OUTFIT

Binns Road, Liverpool 13

No.
59.O



MECCANO

Registered Trade Mark

THE WORLD'S FINEST HOBBY FOR BOYS

HOW TO BEGIN

With the Meccano Parts contained in this Outfit you will be able to build many different kinds of models — Cranes — Trucks — Roundabouts — and lots of other subjects that interest boys.

Each part in the 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.

Make the simple models first. Choose the one you want to build and then lay out on the table all the parts mentioned in the 'Parts Required' list for that model. You will be able to identify the parts by looking at the pictures in the list below.

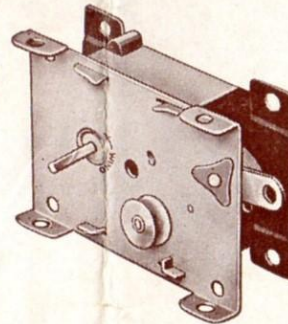
To help you to start building, we will describe how Model O.3, Garden Seat, is made. Begin by bolting to the Flanged Plate the 5½" Strips that form the back legs of the seat. Then attach the upper ends of these Strips to two further 5½" Strips to form the back. Two 2½" Strips are then bolted to the front 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*.

THE MECCANO MAGIC MOTOR

The greatest thrill in Meccano model-building comes when a model is set to work by means of a Motor. The Meccano *Magic* Clockwork Motor is specially designed to drive the kind of models you can build with this Outfit.



The illustrations of

Models O.15, O.23 and O.26 show how the *Magic* Motor can be fitted to No. O Outfit models. One of these wonderful little Motors will add greatly to the fun you obtain from your model-building.

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

A Rod is usually supported in a bearing, which is generally a hole in a Strip, Trunnion or Flat Trunnion, so that it is free to revolve. The Rod is then said to be *journalled* in the Strip, Trunnion or Flat Trunnion as the case may be.

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 making any small changes in construction that may occur to you; afterwards try building some simple models entirely to your own design. In doing this you will feel the thrill of the engineer and the inventor.

As you gain experience you will naturally wish to build bigger and better models. To do this you will 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.

If you ever meet with any small difficulty, or if you would like advice on any point connected with your model-building, write to *Information Service, Meccano Ltd, Binns Road, Liverpool 13*.

CONTENTS OF MECCANO No. O OUTFIT

No.	Description	Quantity
5	Perforated Strip, 5½"	4
10	Perforated Strip, 2½"	2
12	Fishplate	4
12	Angle Bracket, ½" × ½"	4
17	Axle Rod, 3½"	1
17	Axle Rod, 2"	1
19s	Crank Handle, 3½" shaft (without grip)	1



22

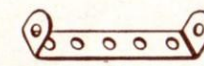


24

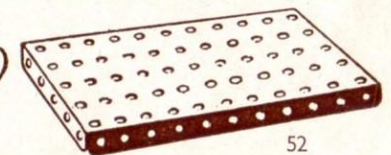


35

No.	Description	Quantity
22	Pulley, 1" diam. with boss and screw	2
24	Bush Wheel, 1 3/8" diam.	1
34	Spanner	1
35	Spring Clip	4
36	Screwdriver	1
37a	Nut	22
37b	Bolt, 3/32"	18
38	Washer	4



48a



52

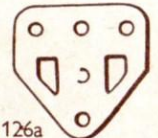
No.	Description	Quantity
48a	Double Angle Strip, 2½" × ½"	2
52	Flanged Plate, 5½" × 2½"	1



90a



126

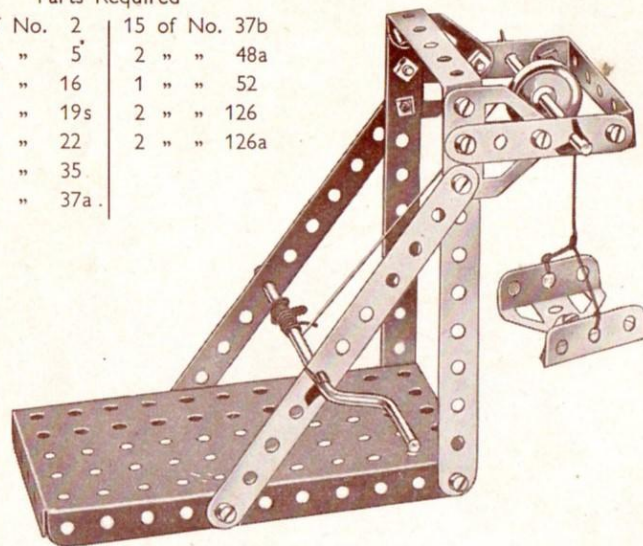


126a

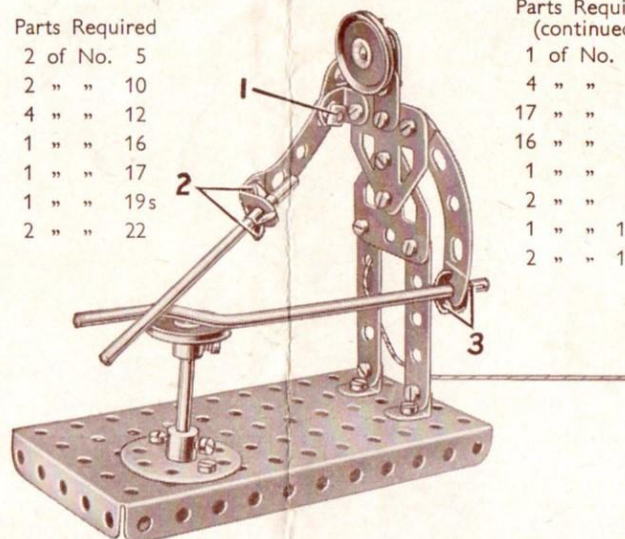
No.	Description	Quantity
90a	Curved Strip, stepped, 2½", 1 3/8" radius	2
111c	Bolt, 3/8"	2
126	Trunnion	2
126a	Flat Trunnion	2
142c	Motor Tyre to fit 1" Pulley	2

O.1 ELEVATOR**Parts Required**

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

**O.2 BLACKSMITH****Parts Required**

2 of No. 5
2 " " 10
4 " " 12
1 " " 16
1 " " 17
1 " " 19s
2 " " 22

**Parts Required (continued)**

1 of No. 24
4 " " 35
17 " " 37a
16 " " 37b
1 " " 52
2 " " 90a
1 " " 111c
2 " " 126a

The arm holding the hammer is a $2\frac{1}{2}$ " stepped Curved Strip, pivoted to an Angle Bracket by a lock-nutted bolt (1). The hammer is a $3\frac{1}{2}$ " Rod held in an Angle Bracket at the end of the arm by two Spring Clips (2). The Crank Handle is fixed in the other arm by the Spring Clips (3). The hammer arm is operated by a Cord attached to the end of the Curved Strip forming the arm.

O.3 GARDEN SEAT**Parts Required**

4 of No. 2
2 " " 5
10 " " 37a
10 " " 37b
2 " " 48a
1 " " 52

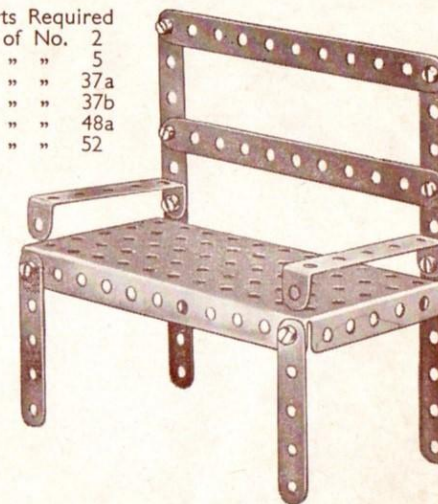
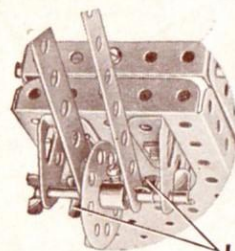
**O.4 STATION TRUCK**

Fig. O.4a

The $5\frac{1}{2}$ " Strips forming the handle are placed one on each side of a Bush Wheel on the front axle, and they are held in place by Spring Clips (1), as shown in Fig. O.4a.

Parts Required

4 of No. 2	2 of No. 22	2 of No. 48a
1 " " 5	1 " " 24	1 " " 52
2 " " 10	4 " " 35	2 " " 90a
2 " " 12	17 " " 37a	2 " " 126
1 " " 16	17 " " 37b	2 " " 126a
1 " " 17	1 " " 38	2 " " 142c

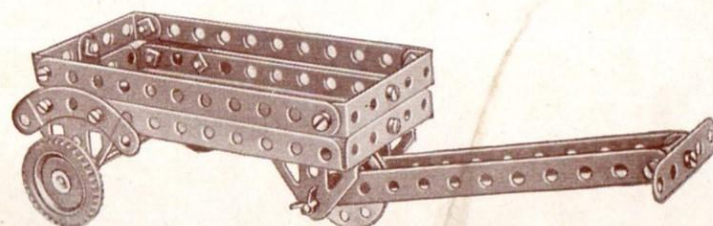
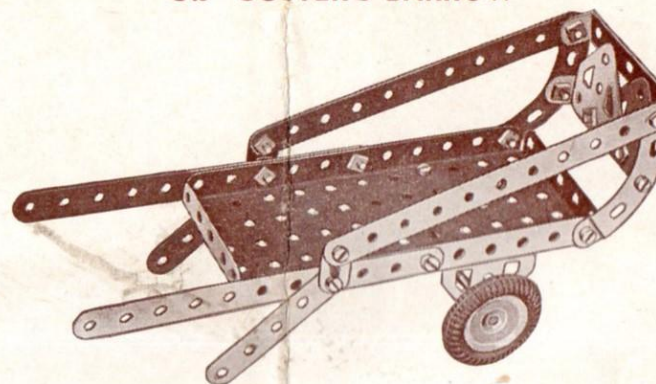


Fig. O.4

O.5 COSTER'S BARROW**Parts Required**

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

O.6 BUCKING BRONCHO

The Bolts (1) are fitted with lock-nuts, 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), Fig. O.6a, bolted to an Angle Bracket (4), and a Trunnion (5).

Parts Required

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

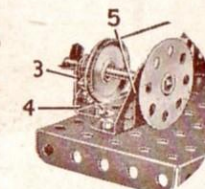


Fig. O.6a

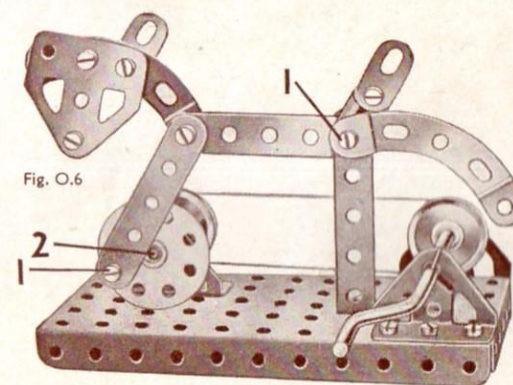
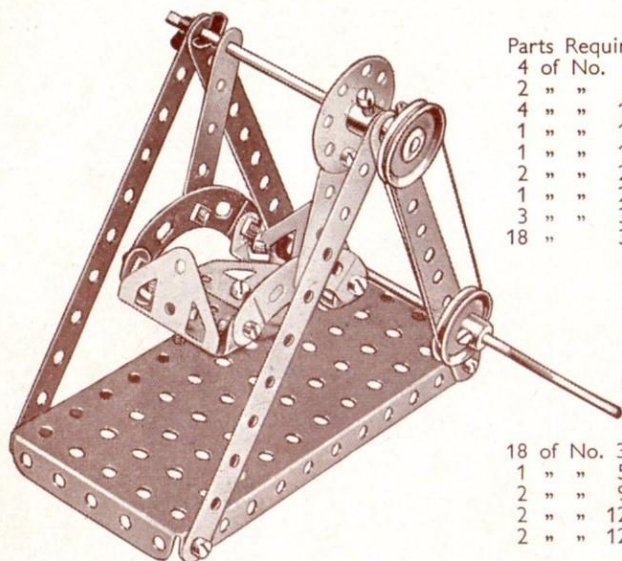


Fig. O.6

O.7 SWING BOAT

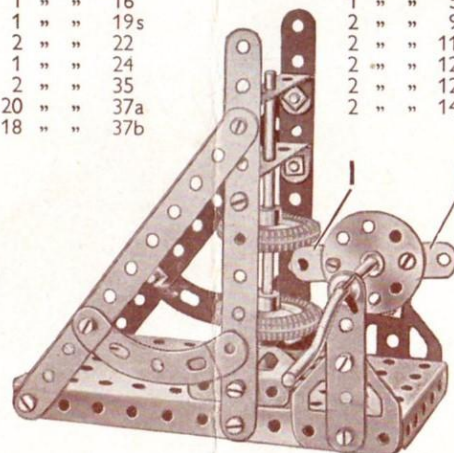


Parts Required	
4 of No. 2	
2 " " 5	
4 " " 12	
1 " " 16	
1 " " 19s	
2 " " 22	
1 " " 24	
3 " " 35	
18 " " 37a	

18 of No. 37b	
1 " " 52	
2 " " 90a	
2 " " 126	
2 " " 126a	

O.8 DROP HAMMER

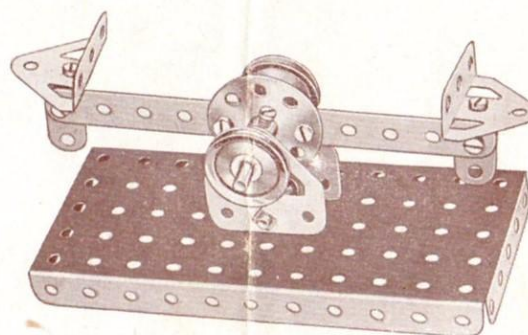
Parts Required	
4 of No. 2	
2 " " 5	
4 " " 10	
1 " " 16	
1 " " 19s	
2 " " 22	
1 " " 24	
2 " " 35	
20 " " 37a	
18 " " 37b	



Parts Required (continued)	
2 of No. 38	
2 " " 48a	
1 " " 52	
2 " " 90a	
2 " " 111c	
2 " " 126	
2 " " 126a	
2 " " 142c	

The hammer, which is formed by the two 1" Pulleys on a 3 1/4" 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.

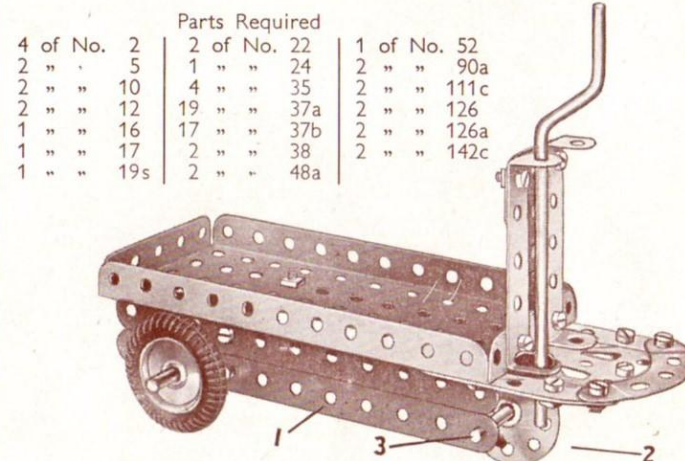
O.11 COUNTER SCALES



Parts Required		
1 of No. 2	2 of No. 22	2 of No. 38
2 " " 10	1 " " 24	1 " " 52
4 " " 12	9 " " 37a	2 " " 126
1 " " 17	9 " " 37b	2 " " 126a

O.9 ELECTRIC TRUCK

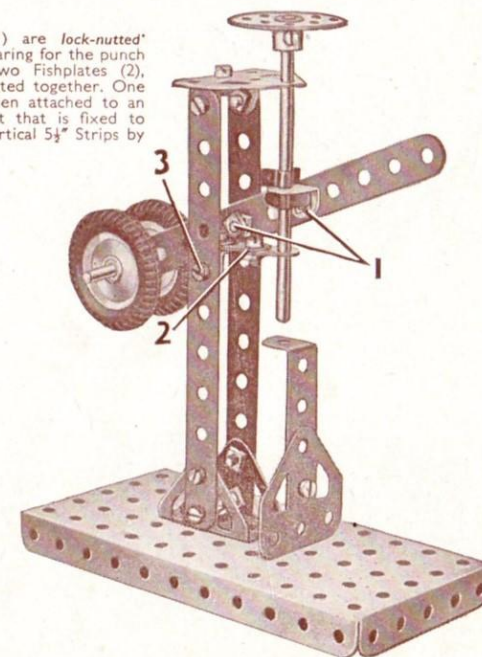
The two 5 1/4" Strips (1) on each side of the model are fastened to the Flanged Plate by two Trunnions secured to the Plate on the underneath side. A Bush Wheel (2) is fixed on the 2" Rod (3), which passes through the end holes of the 5 1/4" Strips that form the sides of the truck frame.



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

O.12 PUNCHING MACHINE

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 5 1/4" Strips by the Bolt (3).



Parts Required	
3 of No. 2	
2 " " 10	
4 " " 12	
1 " " 16	
1 " " 17	
2 " " 22	
1 " " 24	
18 " " 37a	
16 " " 37b	
1 " " 48a	
1 " " 52	
2 " " 126	
2 " " 126a	
2 " " 142c	

O.10 LAWN MOWER

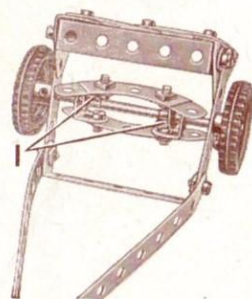


Fig. O.10a

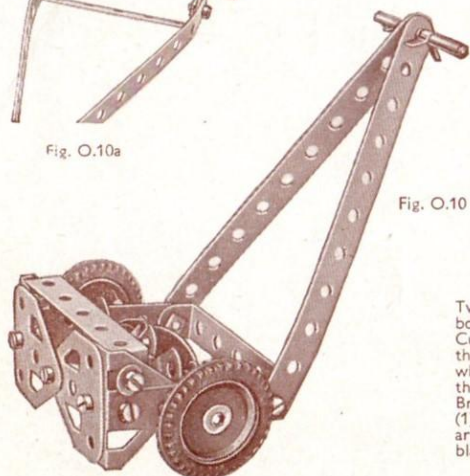
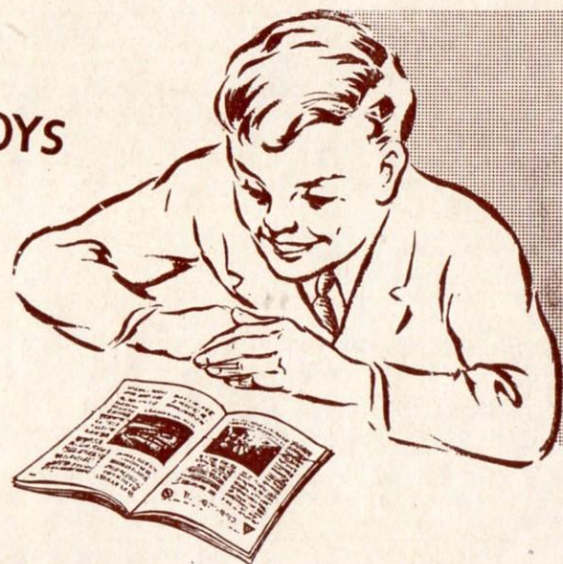


Fig. O.10

Parts Required	
2 of No. 2	1 of No. 17
2 " " 5	2 " " 22
4 " " 12	4 " " 35
1 " " 16	13 " " 37a
	13 " " 37b
	2 " " 38
	2 " " 48a
	2 " " 90a
	2 " " 126
	2 " " 126a
	2 " " 142c

Two Angle Brackets are bolted to each of the Curved Strips forming the cutting blades. The wheel axle is then pushed through the four Angle Brackets and Spring Clips (1) shown in Fig. O.10a are used to hold the blades in place.

FOR ALL KEEN BOYS



MECCANO

MAGAZINE



The happiest and most successful boys are those who take a keen interest in the world around them. The '**MECCANO MAGAZINE**' is the ideal paper for these boys. Month by month its pages are filled with attractively-written articles, splendidly illustrated from actual photographs.

The subjects include Engineering in all its branches, Railways, Road Transport, Aeroplanes and Shipping. Inventions and Scientific Discoveries are described in simple language. Everything is dealt with in an attractive and straightforward style, and with an accuracy that has won for the Magazine the enthusiastic approval of the engineering, technical and scientific world. Special sections are devoted to Model-building with Meccano, and to the operation of realistic Miniature Railways; and Stamp Collecting articles are another important feature. Model-building competitions of all kinds, and of a variety to suit every reader, are announced each month.

The 'MECCANO MAGAZINE' is on sale at all bookstalls, newsagents and Meccano dealers, price 1/3. It is best to place a regular order with your Meccano dealer or newsagent, to make sure that you do not miss any copies.

If you prefer to have each issue sent direct, all that is necessary is to fill in the order form below and to send this to the Editor at the address given, with a Postal Order to cover the cost, which is 18/- for a year, or 9/- for six months, inclusive of postage in each case.

ORDERING THE 'M.M.' OVERSEAS

Readers Overseas also may order the 'MECCANO MAGAZINE' from Meccano dealers and newsagents.

In **AUSTRALIA** the price per copy is 1/6.

In **CANADA** the price per copy is 15c.

In the **UNITED STATES** the price per copy is 18c.

Other Countries price per copy 1/-.

For other details and information Meccano enthusiasts living in Canada, Australia, New Zealand, South Africa or the United States should write to the Meccano agents in their countries. Their addresses are as follows:

CANADA: Meccano Ltd., 675 King Street West, Toronto.

WESTERN AUSTRALIA: P. Falk & Co. Ltd., 317-9 Murray Street, Perth.

SOUTH AUSTRALIA: Harris, Scarfe, Ltd., Grenfell Street, Adelaide.

VICTORIA AND TASMANIA: Ponsford Newman & Benson (Pty.) Ltd., 234 Flinders Lane, Melbourne.

QUEENSLAND AND NORTHERN TERRITORIES: Thomas Brown & Sons, Ltd., P.O. Box 144C (Eagle Street) Brisbane.

NEW SOUTH WALES AND A.C.T.: E. G. Page & Co. (Sales) Pty. Ltd., G.P.O. Box 1832, Sydney, N.S.W.

RHODESIA: Messrs. Woolley, Kinleyside & Co. (Pvt.) Ltd., St. George's Buildings, (Box No. 299) 10th Avenue Bulawayo, S. Rhodesia.

NEW ZEALAND: Models Ltd. (P.O. Box 129), 53 Fort Street, Auckland, C.I.

SOUTH AFRICA: Arthur E. Harris (P.O. Box 1199), 142 Market Street, Johannesburg.

UNITED STATES: H. Hudson Dobson, 200 Fifth Avenue, New York 10, New York.

MECCANO MAGAZINE

ORDER FORM

To the Editor,
Meccano Magazine,
Binns Road, Liverpool 13.

I enclose Postal Order for Please post the
'Meccano Magazine' for months, beginning with
the issue.

Name in block letters

Address



WHAT THE GUILD MEANS

The Meccano Guild is an organization for boys, started at the request of boys, and as far as possible conducted by boys. In joining the Guild, a Meccano boy becomes a member of a great brotherhood of world-wide extent. Wherever he happens to be, even in strange countries, he will know that he has met a friend whenever he sees the little triangular badge of membership. The Meccano Guild is bringing together Meccano boys all over the world, and helping them to get the best out of life. At its head — guiding and controlling and taking a personal interest in this great movement — is the President, Mr Roland G. Hornby, son of the inventor of Meccano.

HOW TO JOIN THE MECCANO GUILD

Any owner of a Meccano Outfit, no matter what its size, may become a member. All he has to do is to fill in the official application form on the back of this leaflet, have his signature witnessed, and send the form to Headquarters with a postal order (not stamps) for the necessary amount in payment for the official badge, which he will wear in his buttonhole.

The price of the badge for boys living in the British Isles is 1/-. For those living overseas it is 1/6 (30 cents in Canada). Applicants living in Canada, Australia, New Zealand or South Africa should write to the Meccano agents in their countries. Their addresses are as follows:

CANADA: Meccano Ltd., 675 King Street West, Toronto.

WESTERN AUSTRALIA: P. Falk & Co. Ltd., 317-9 Murray Street, Perth.

SOUTH AUSTRALIA: Harris, Scarfe, Ltd., Grenfell Street, Adelaide.

VICTORIA AND TASMANIA: Ponsford Newman & Benson (Pty.) Ltd., 234 Flinders Lane, Melbourne.

QUEENSLAND AND NORTHERN TERRITORIES: Thomas Brown & Sons, Ltd., P.O. Box 144C (Eagle Street) Brisbane.

NEW SOUTH WALES AND A.C.T.: E. G. Page & Co. (Sales) Pty. Ltd., G.P.O. Box 1832, Sydney, N.S.W.

RHODESIAS: Messrs. Woolley, Kinleyside & Co. (Pvt.) Ltd., St. George's Buildings, (Box No. 299) 10th Avenue, Bulawayo, S. Rhodesia.

NEW ZEALAND: Models Ltd. (P.O. Box 129), 53 Fort Street, Auckland, C.I.

SOUTH AFRICA: Arthur E. Harris (P.O. Box 1199), 142 Market Street, Johannesburg.

Their Badges and certificates are then forwarded without delay, while their application forms are sent to Headquarters at Liverpool.

Applicants living in any other country overseas should forward their forms, preferably with a British postal order or a money order (not stamps) for 1/6, direct to the Secretary, the Meccano Guild, Binns Road, Liverpool 13, England.

Guild members are eligible for the Correspondence Club, by which they are placed in touch with other members in various parts of the world. Full particulars and enrolment forms can be obtained from the Secretary.

The Secretary will send also, on request, full details of the Guild Recruiting Campaign, and of the Medallion awarded to members who are successful in obtaining recruits, together with particulars of the Meccano clubs founded and established by enthusiastic Meccano boys. A special booklet, 'How to run a Meccano Club' will be sent post free to any member on receipt of 2d. in stamps.

APPLICATION FOR MEMBERSHIP OF THE

MECCANO GUILD

Headquarters: BINNS ROAD, LIVERPOOL 13

BADGE OF
MEMBERSHIP

I possess a Meccano Outfit, and I hereby make application for membership of the Meccano Guild.

I approve of the objects of the Guild, and I promise on my honour

- (1) To conform to the rules and regulations of the Meccano Guild.
- (2) To promote its objects by my own example; to be helpful to others; to be clean in thought and habit; to be determined to learn and make progress.
- (3) To wear the Meccano Guild Badge on all possible occasions.
- (4) To recognize and acknowledge all other Members wearing the Guild Badge, and to render them help in case of need.

I enclose 1/- for the Guild Badge (Great Britain).

I enclose 1/6 for the Guild Badge (Overseas).

I enclose 30c. for the Guild Badge (Canada).

} Strike out line not applicable
(See other side).

Name of Applicant.....
(BLOCK CAPITALS PLEASE)

Address

.....

Date..... Age.....

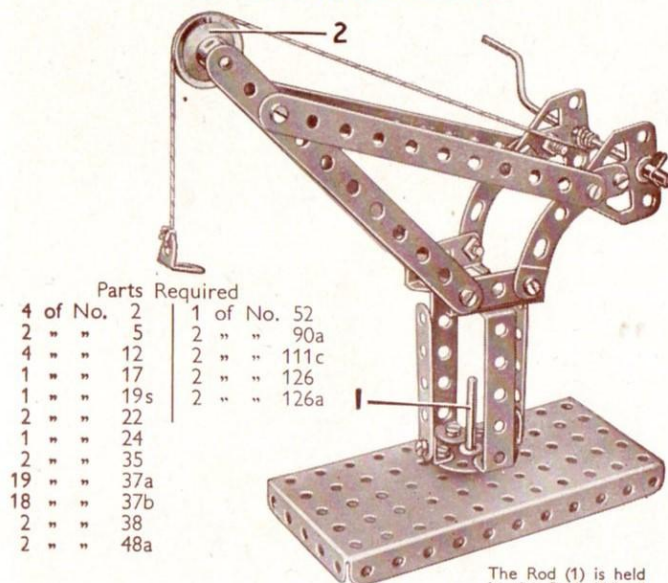
Witness

Address.....

.....
The witness should be the Parent, Guardian, Employer, Schoolmaster or Church Minister, and should state which when signing.

THE THREE GREAT OBJECTS OF THE GUILD

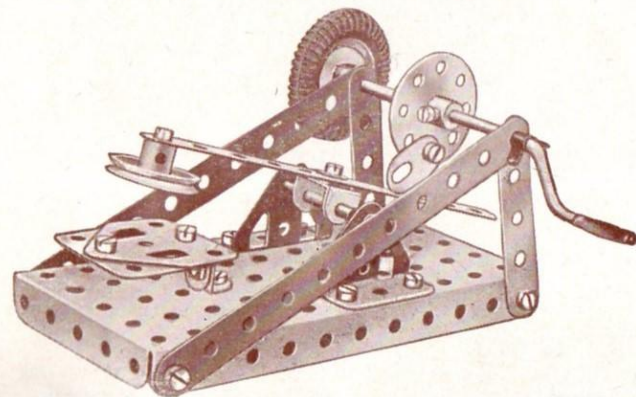
- To make every boy's life brighter and happier.
- To foster clean-mindedness, truthfulness, ambition and initiative in boys.
- To encourage boys in their hobbies, and especially in the development of their knowledge of mechanical and engineering principles.

O.13 DOCKSIDE CRANE

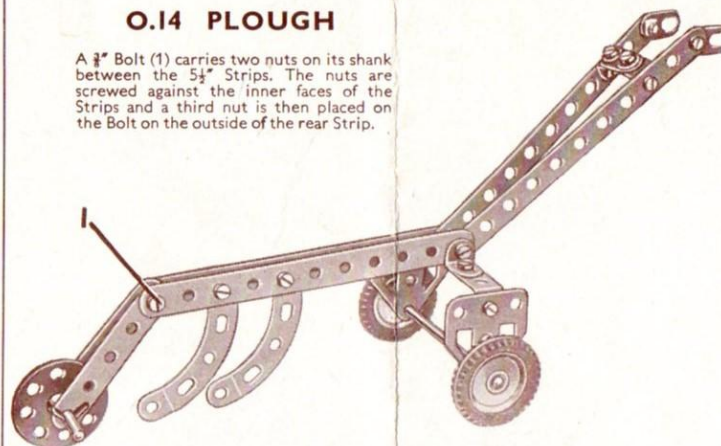
The Rod (1) is held in the Bush Wheel and is passed through one of the holes of the Flanged Plate. A 1" Pulley fixed on the Rod underneath the Flanged Plate holds the crane in position on its base. The Pulley (2) is mounted on a $\frac{3}{8}$ " Bolt. The Bolt is passed through the top hole of one of the $5\frac{1}{2}$ " Strips, and is gripped by the set-screw in the boss of the Pulley.

O.16 MECHANICAL HAMMER

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

**O.14 PLOUGH**

A $\frac{3}{8}$ " Bolt (1) carries two nuts on its shank between the $5\frac{1}{2}$ " 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.

**Parts Required**

4 of No. 2	1 of No. 17	14 of No. 37b	2 of No. 126a
2 " " 5	2 " " 22	2 " " 38	2 " " 142c
3 " " 10	1 " " 24	1 " " 48a	
4 " " 12	2 " " 35	2 " " 90a	
1 " " 16	17 " " 37a	1 " " 111c	

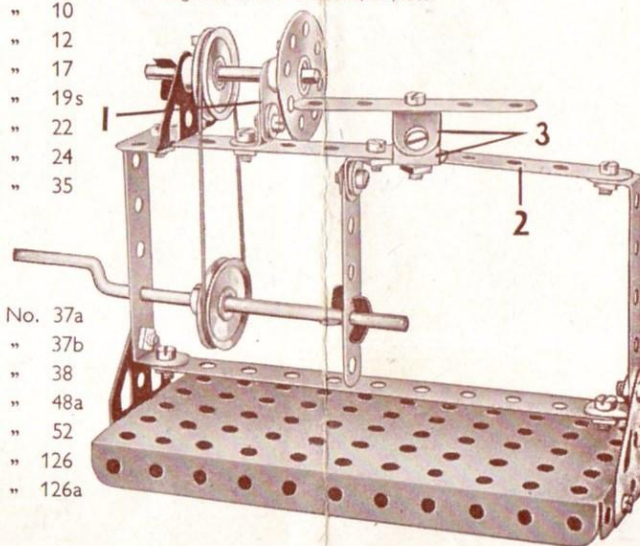
O.17 LATHE

The inner support for the lathe spindle consists of a Fishplate (1) bolted to an Angle Bracket fixed to the $5\frac{1}{2}$ " Strip (2) that forms the lathe bed. The tool rest is a $2\frac{1}{2}$ " Strip that is supported by two Angle Brackets (3) bolted together to form a 'U'-shaped piece.

Parts Required

2 of No. 2
2 " " 5
2 " " 10
4 " " 12
1 " " 17
1 " " 19s
2 " " 22
1 " " 24
3 " " 35

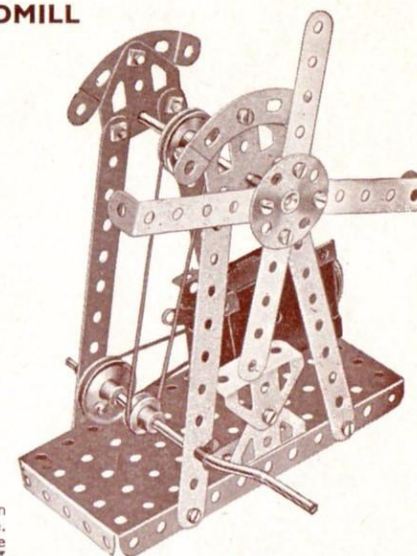
18 of No. 37a
18 " " 37b
2 " " 38
2 " " 48a
1 " " 52
1 " " 126
2 " " 126a

**O.15 WINDMILL****Parts Required**

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

Magic Motor
(not included in Outfit)

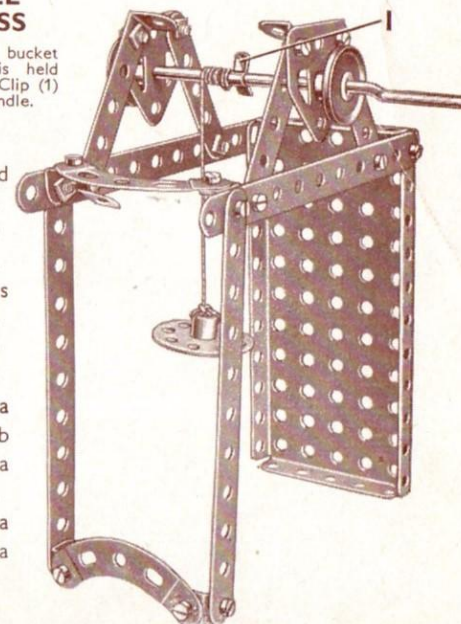
A Driving Band connects the pulley of the Magic Motor to a 1" Pulley fastened on the Crank Handle. The Crank Handle carries also a $\frac{1}{2}$ " Pulley, which is connected by a second Driving Band with a further 1" Pulley fixed to the $3\frac{1}{2}$ " Rod on which the sails are mounted. The $3\frac{1}{2}$ " 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 $\frac{1}{2}$ " Pulley (which is supplied with the Motor) is replaced by a 1" Pulley.

**O.18 WELL WINDLASS**

The end of the bucket hoisting cord is held under a Spring Clip (1) on the Crank Handle.

Parts Required

4 of No. 2
2 " " 5
4 " " 12
1 " " 19s
2 " " 22
1 " " 24
1 " " 35
18 " " 37a
18 " " 37b
2 " " 48a
1 " " 52
2 " " 90a
2 " " 126a

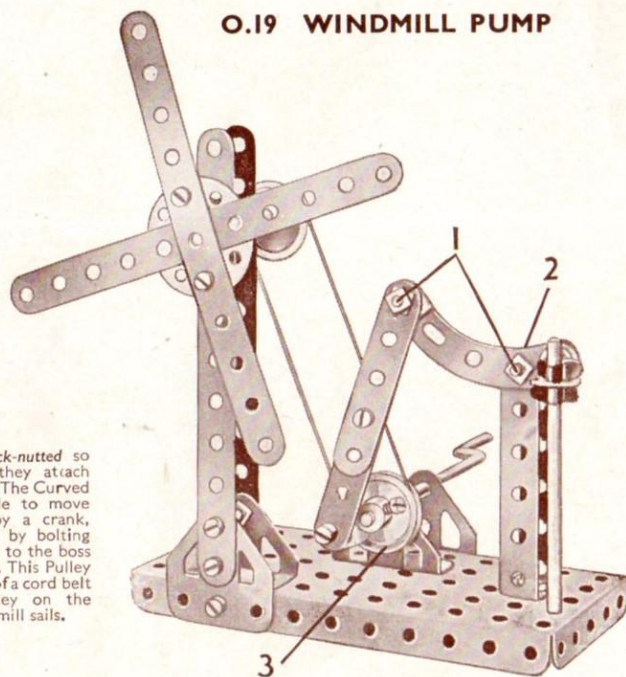


O.19 WINDMILL PUMP

Parts Required

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

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.



O.20 PECKING HEN

The 5 1/2" Strip (4) is held on a 3/8" Bolt between two Trunnions as shown in the inset, Fig. O.20a.

The Bolts (1) and (2) are lock-nutted and the 5 1/2" Strip (3) must be free to move to and fro. By pulling and pushing this Strip the hen will be made to peck at its food dish.

Parts Required

2 " " 2
2 " " 5
2 " " 10
3 " " 12
1 " " 22
20 " " 37a
14 " " 37b
2 " " 38
1 " " 48a
1 " " 52
1 " " 90a
2 " " 111c
2 " " 126
2 " " 126a
1 " " 142c

Fig. O.20a

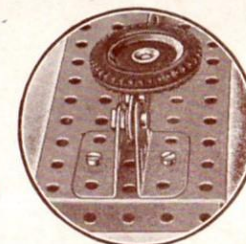
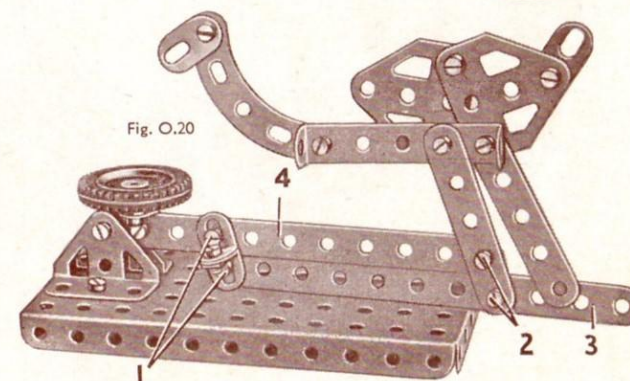


Fig. O.20

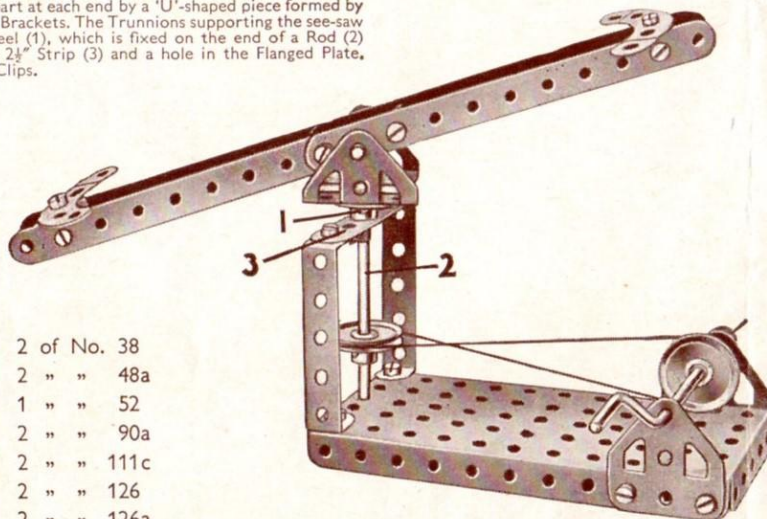


O.21 SEE-SAW ROUNDABOUT

The 5 1/2" 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 2 1/2" Strip (3) and a hole in the Flanged Plate. It is held in place by Spring Clips.

Parts Required

4 of No. 2	
1 " " 5	
4 " " 12	
1 " " 16	
1 " " 17	2 of No. 38
1 " " 19s	2 " " 48a
2 " " 22	1 " " 52
1 " " 24	2 " " 90a
4 " " 35	2 " " 111c
20 " " 37a	2 " " 126
18 " " 37b	2 " " 126a

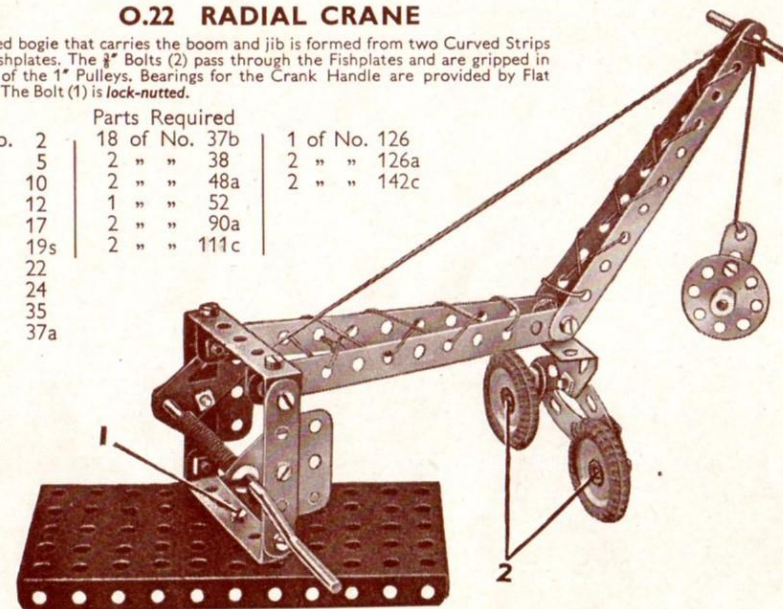


O.22 RADIAL CRANE

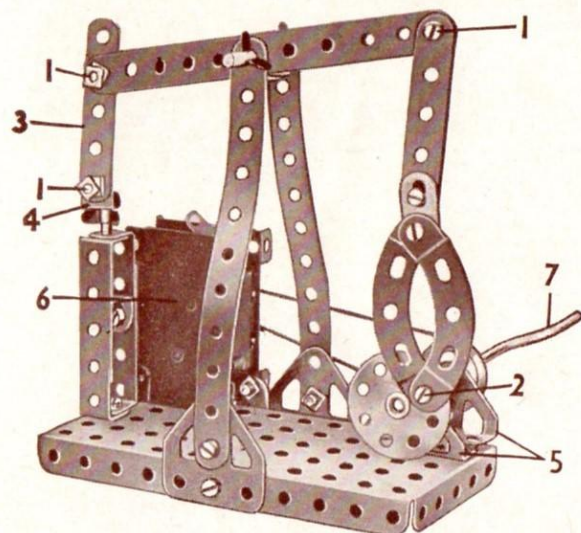
The wheeled bogie that carries the boom and jib is formed from two Curved Strips and two Fishplates. The 3/8" Bolts (2) pass through the Fishplates and are gripped in the bosses of the 1" Pulleys. Bearings for the Crank Handle are provided by Flat Trunnions. The Bolt (1) is lock-nutted.

Parts Required

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



O.23 BEAM ENGINE



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).

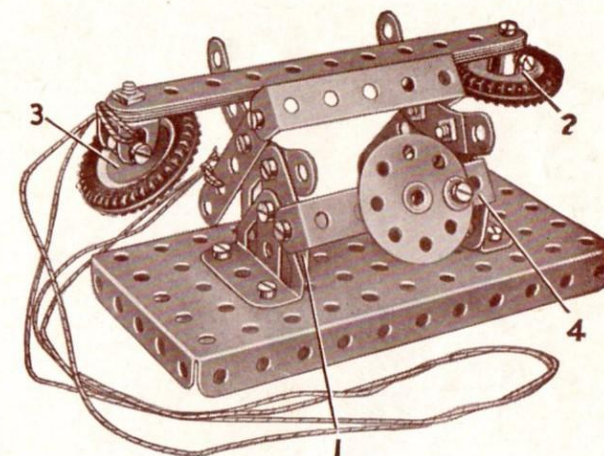
The Trunnions (5) are each raised from the Flanged Plate by a Washer on each of the Bolts that hold them in place.

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).

Parts Required

4 of No. 2	15 of No. 37b
2 " " 5	2 " " 38
3 " " 10	2 " " 48a
4 " " 12	1 " " 52
1 " " 16	2 " " 90a
1 " " 17	2 " " 111c
1 " " 19s	2 " " 126
1 " " 22	2 " " 126a
1 " " 24	
4 " " 35	<i>Magic Motor</i>
21 " " 37a	(not included in Outfit)

O.24 TELEPHONE



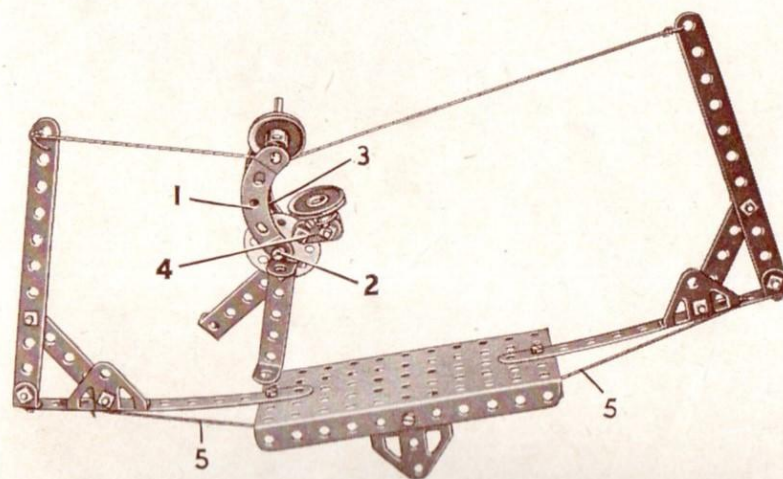
The telephone support is made from two Trunnions bolted to the Flanged Plate, and a Flat Trunnion (1) is fixed to each of them at the angle shown. The telephone arm consists of four 5½" Strips, and the earpiece (2) is gripped on a ½" Bolt by its set-screw. The mouthpiece (3) is attached to a 'U'-shaped bracket made from two Angle Brackets. A bolt passed through each Angle Bracket is screwed into the boss of the Pulley. The dial is a Bush Wheel held by its set-screw on a bolt passed through the Double Angle Strip (4).

Parts Required

4 of No. 2			
2 " " 5	17 of No. 37a		
2 " " 12	18 " " 37b		
2 " " 22	1 " " 38	1 of No. 52	2 of No. 111c
1 " " 24	2 " " 48a	2 " " 90a	2 " " 126
			2 " " 126a
			2 " " 142c

O.25 HIGH WIRE ACROBAT

The Curved Strip (1) is held tightly on a ¾" Bolt (2) by a nut. A second Curved Strip (3) is passed over a ¾" Bolt, and the Bolts are pushed from opposite sides through the boss of the Bush Wheel so that their ends are positioned under the set-screw. The set-screw is then tightened to hold both ¾" Bolts in position. The Acrobat's head is a 1" Pulley fixed by its set-screw on a bolt in an Angle Bracket. The Angle Bracket is bolted to a Fishplate (4). The cord (5) is stretched tightly between the 5½" Strips to act as a bracing wire.

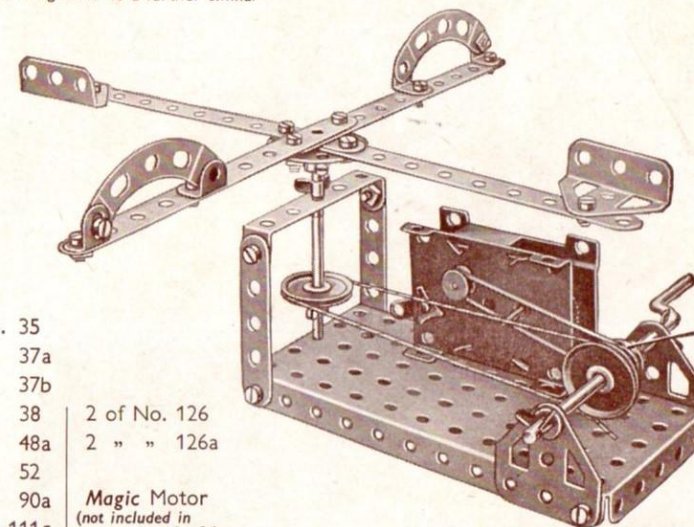


Parts Required

4 of No. 2
2 " " 5
1 " " 10
3 " " 12
1 " " 17
2 " " 22
1 " " 24
18 " " 37a
18 " " 37b
1 " " 38
2 " " 48a
1 " " 52
2 " " 90a
2 " " 111c
2 " " 126
2 " " 126a

O.26 MERRY-GO-ROUND

Two Fishplates are bolted to one of the side-plates of the *Magic Motor* and are fixed to the side flange of the Flanged Plate. The drive from the Motor is taken to a ½" Pulley with boss (1) (this Pulley is the one supplied with the Motor, fixed on the Crank Handle. A 1" Pulley with boss on the Crank Handle is then connected by a Driving Band to a further similar Pulley fixed on the vertical shaft of the merry-go-round.

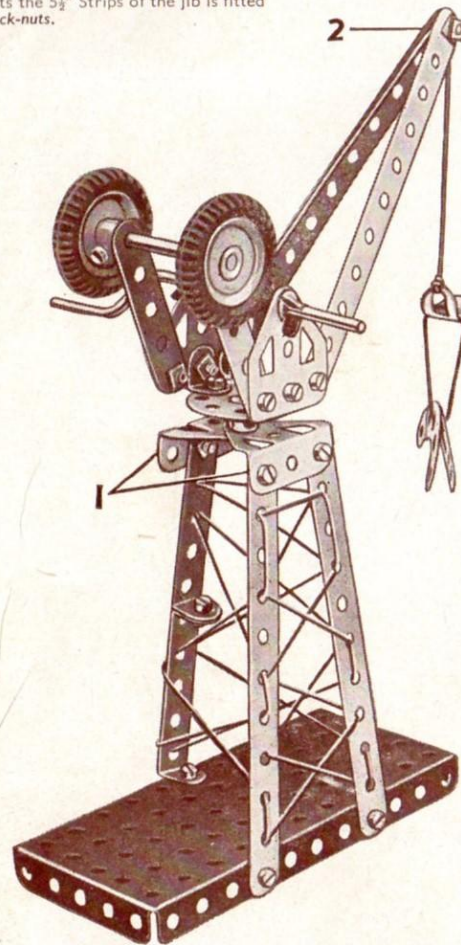


Parts Required

4 of No. 2	4 of No. 35		
2 " " 5	22 " " 37a		
2 " " 10	18 " " 37b		
4 " " 12	2 " " 38	2 of No. 126	
1 " " 16	1 " " 48a	2 " " 126a	
1 " " 19s	1 " " 52		
2 " " 22	2 " " 90a		
1 " " 24	2 " " 111c	<i>Magic Motor</i>	
		(not included in Outfit)	

O.27 SHIPBUILDING-CRANE

Two Trunnions (1) form the top of the tower, and a $\frac{3}{8}$ " 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 $\frac{3}{8}$ " Bolt (2) that connects the $5\frac{1}{2}$ " Strips of the jib is fitted with lock-nuts.

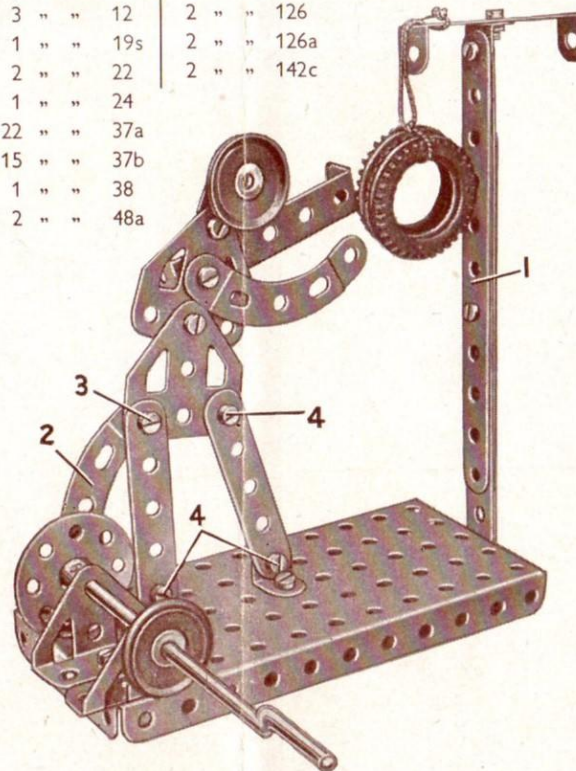


Parts Required		
4 of No. 2	1 of No. 24	1 of No. 52
2 " " 5	2 " " 35	2 " " 90a
3 " " 12	17 " " 37a	2 " " 111c
1 " " 17	15 " " 37b	2 " " 126
1 " " 19s	2 " " 38	2 " " 126a
2 " " 22	2 " " 48a	2 " " 142c

O.28 BOXER TRAINING

Parts Required

4 of No. 2	1 of No. 52
2 " " 5	2 " " 90a
1 " " 10	2 " " 111c
3 " " 12	2 " " 126
1 " " 19s	2 " " 126a
2 " " 22	2 " " 142c
1 " " 24	
22 " " 37a	
15 " " 37b	
1 " " 38	
2 " " 48a	

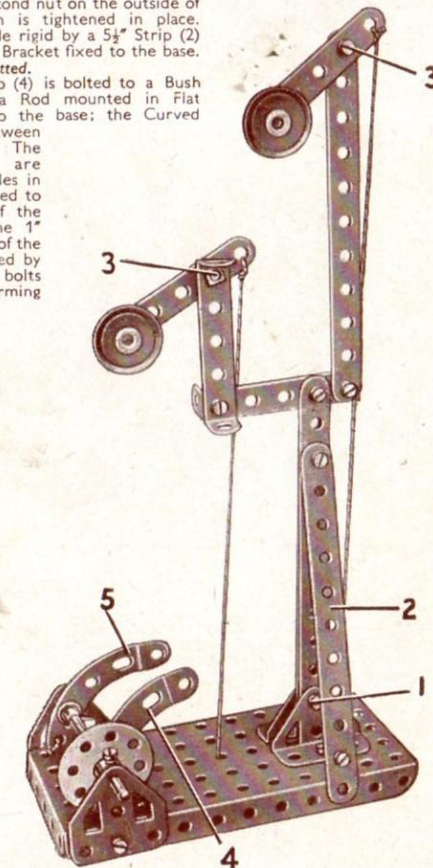


The column (1) is made from four $5\frac{1}{2}$ " Strips. These are placed together in pairs, and are then overlapped nine holes. The Curved Strip (2) is lock-nutted to the Bush Wheel, and is connected to the body of the boxer by a lock-nutted Bolt (3). Bolts (4) are also lock-nutted.

O.29 DOUBLE ARM SIGNAL

The signal column is made from two $5\frac{1}{2}$ " Strips held on a $\frac{3}{8}$ " Bolt (1). A nut is placed between the Strips and a second nut on the outside of the rear Trunnion is tightened in place. The column is made rigid by a $5\frac{1}{2}$ " Strip (2) bolted to an Angle Bracket fixed to the base. Bolts (3) are lock-nutted.

The Curved Strip (4) is bolted to a Bush Wheel fixed on a Rod mounted in Flat Trunnions fixed to the base; the Curved Strip (5) is held between two Spring Clips. The operating cords are passed through holes in the base and are tied to the lower ends of the Curved Strips. The 1" Pulleys at the ends of the signal arms are fixed by their set-screws on bolts in the $2\frac{1}{2}$ " Strips forming the arms.



Parts Required

4 of No. 2
2 " " 5
1 " " 12
1 " " 16
2 " " 22
1 " " 24
2 " " 35
19 " " 37a
14 " " 37b
2 " " 38
2 " " 48a
1 " " 52
2 " " 90a
2 " " 111c
2 " " 126
2 " " 126a

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 Meccano Dealer a No. Oa Accessory Outfit. This will convert your No. O Outfit into a complete No. 1 Outfit.

With this larger Outfit you will be able to build a large number of new, bigger and more interesting models.

The model-building possibilities of Meccano are unlimited. For each of the complete Outfits there is an

Accessory Outfit that converts it into the one next larger. No matter with which Outfit you begin the Meccano hobby, by means of these Accessory Outfits you can gradually build up your original Outfit until you have the equivalent of a complete Outfit No. 10, which will provide you with the full resources of the wonderful Meccano system.

Every Outfit has its own Book of Instructions.