

MECCANO

Regd.
Trade
Mark

INSTRUCTIONS

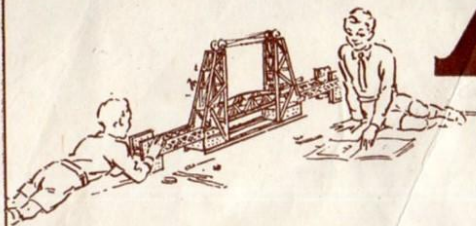
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for No. 0 OUTFIT

Binns Road, Liverpool 13

No.
54.0

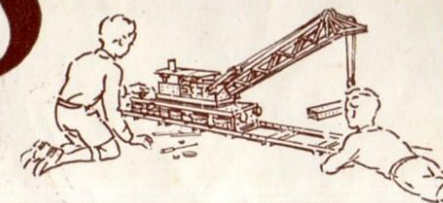




MECCANO

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.

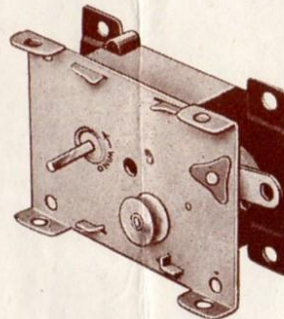
To help you to start building, we will describe how Model O.3, Garden Seat, is made. Begin by bolting to the Flanged Plate the 5½" Strips that form the back legs of the seat. Then attach the upper ends of these Strips to two further 5½" Strips to form the back. Two 2½" Strips are then bolted to the front 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.19, 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	1

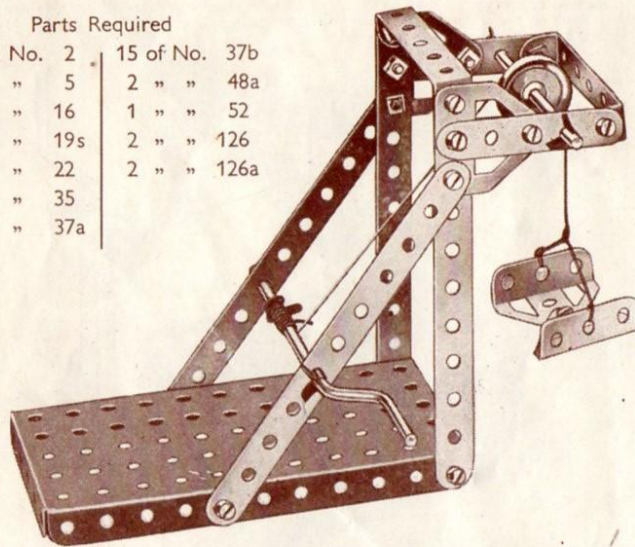
No.	Description	Quantity
22	Pulley, 1" diam. with boss and screw	2
24	Bush Wheel, 1⅜" diam.	1
34	Spanner	1
35	Spring Clip	4
36	Screwdriver	1
37a	Nut	22
37b	Bolt, ⅜"	18
38	Washer	4

No.	Description	Quantity
48a	Double Angle Strip, 2½" × ½"	2
52	Perforated Flanged Plate, 5½" × 2½"	1
90a	Curved Strip, stepped, 2½", 1⅜" radius	2
111c	Bolt, ⅜"	2
126	Trunnion	2
126a	Flat Trunnion	2
142c	Motor Tyre to fit 1" Pulley	2

O.1 ELEVATOR

Parts Required

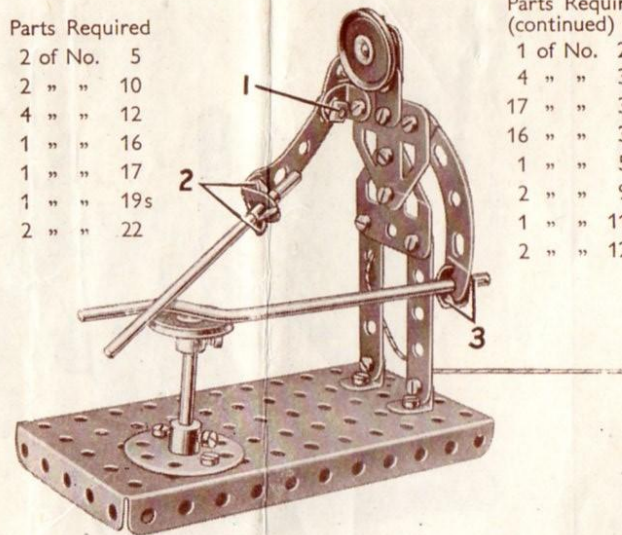
4 of No. 2	15 of No. 37b
2 " " 5	2 " " 48a
1 " " 16	1 " " 52
1 " " 19s	2 " " 126
1 " " 22	2 " " 126a
4 " " 35	
15 " " 37a	



O.2 BLACKSMITH

Parts Required

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



Parts Required (continued)

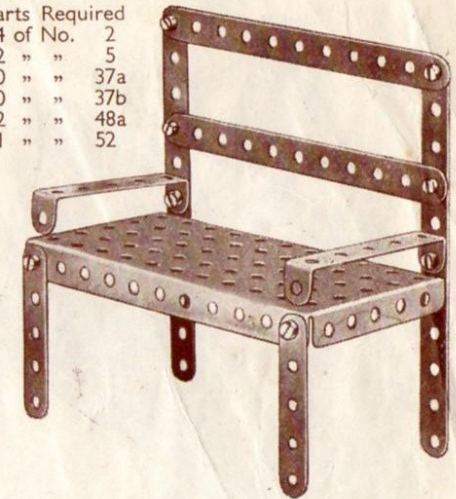
1 of No. 24
4 " " 35
17 " " 37a
16 " " 37b
1 " " 52
2 " " 90a
1 " " 111c
2 " " 126a

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).

O.3 GARDEN SEAT

Parts Required

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



O.4 STATION TRUCK

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.

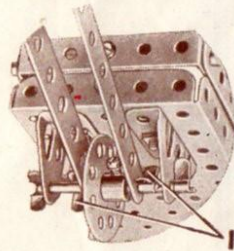


Fig. O.4a

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

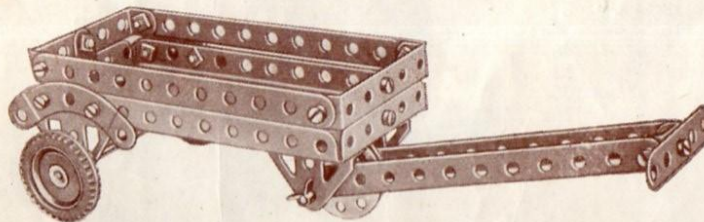
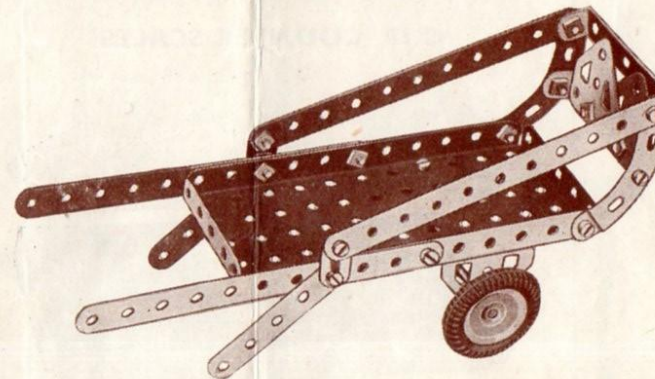


Fig. O.4

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 Trunion (5).

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



Fig. O.6a

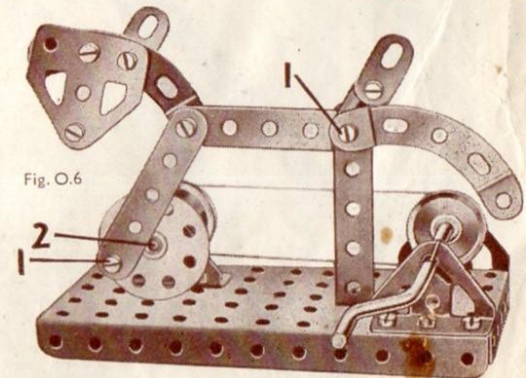
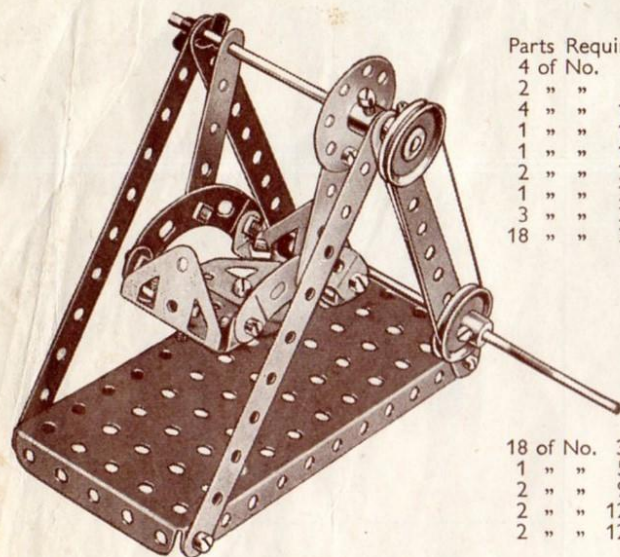


Fig. O.6

O.7 SWING BOAT

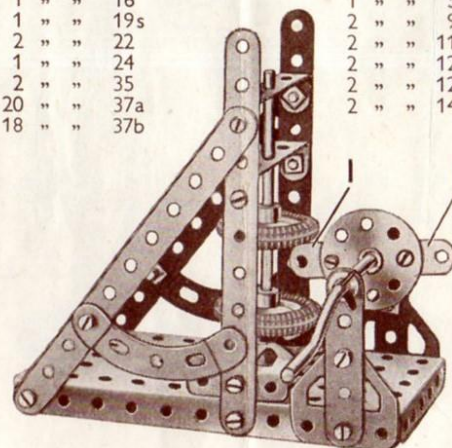


Parts Required	
4 of No.	2
2 " "	5
4 " "	12
1 " "	16
1 " "	19s
2 " "	22
1 " "	24
3 " "	35
18 " "	37a

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

O.8 DROP HAMMER

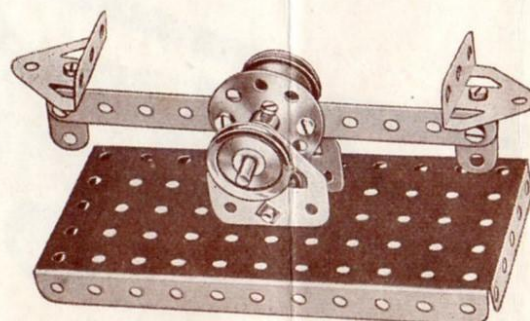
Parts Required	
4 of No.	2
2 " "	5
4 " "	10
1 " "	16
1 " "	19s
2 " "	22
1 " "	24
2 " "	35
20 " "	37a
18 " "	37b



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

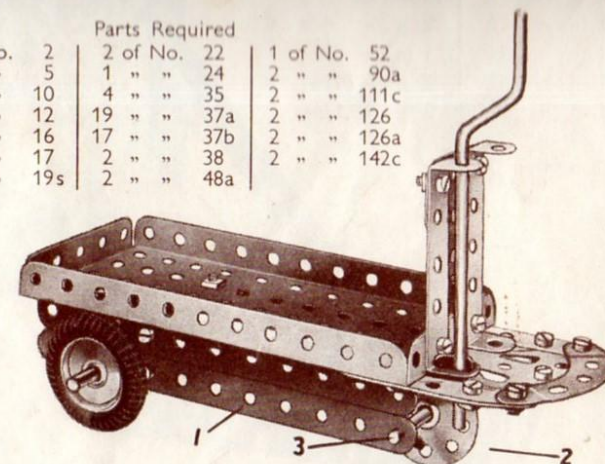


Parts Required		
1 of No.	2	2 of No.
2 " "	10	1 " "
4 " "	12	9 " "
1 " "	17	9 " "
		2 of No.
		38
		1 " "
		52
		2 " "
		126
		2 " "
		126a

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.

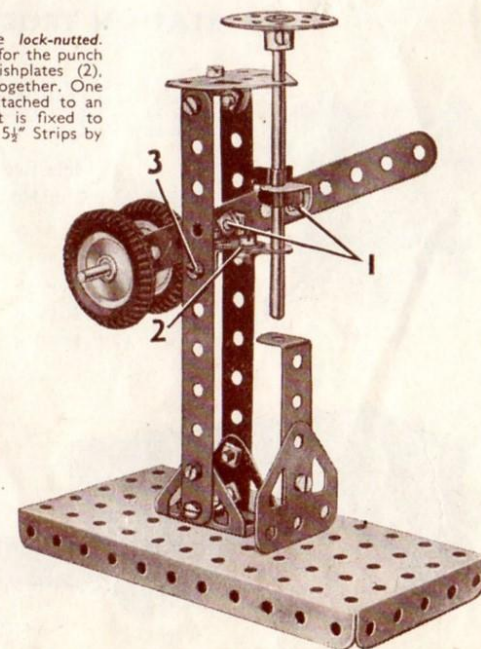
Parts Required	
4 of No.	2
2 " "	5
2 " "	10
2 " "	12
1 " "	16
1 " "	17
1 " "	19s
2 of No.	22
1 " "	24
4 " "	35
19 " "	37a
17 " "	37b
2 " "	38
2 " "	48a
1 of No.	52
2 " "	90a
2 " "	111c
2 " "	126
2 " "	126a
2 " "	142c



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

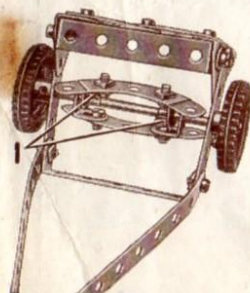


Fig. O.10a

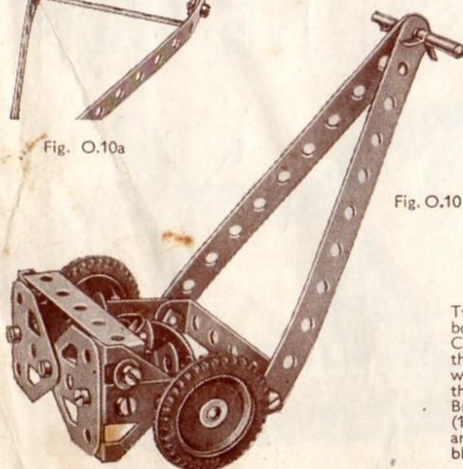
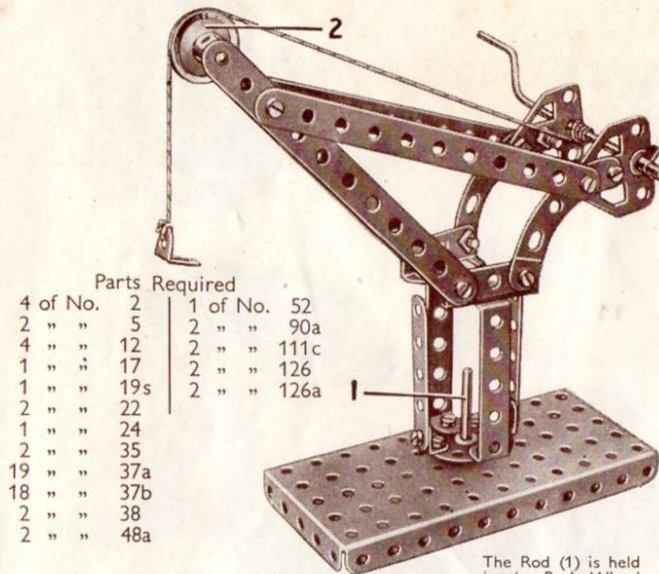


Fig. O.10

Parts Required	
2 of No.	2
2 " "	5
4 " "	12
1 " "	16
1 of No.	17
2 " "	22
4 " "	35
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.

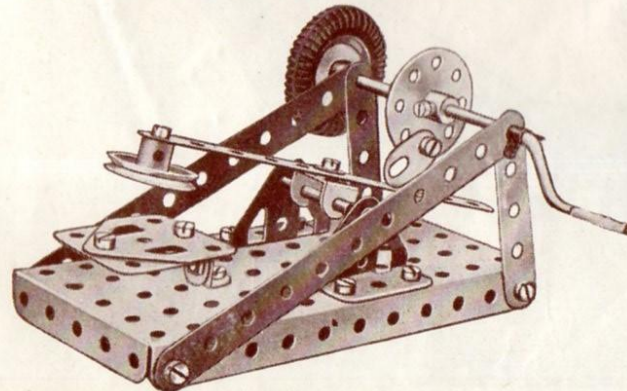
O.13 DOCKSIDE CRANE**Parts Required**

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

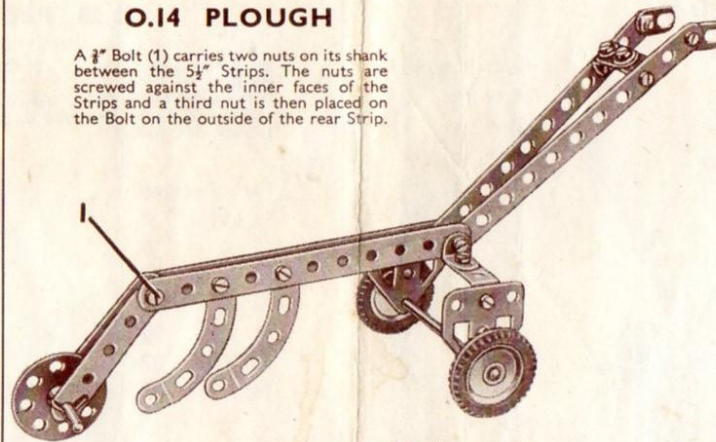
The Rod (1) is held in the Bush Wheel and is passed through one of the holes of the Flanged Plate. A 1" Pulley fixed on the Rod underneath the Flanged Plate holds the crane in position on its base. The Pulley (2) is mounted on a $\frac{3}{4}$ " Bolt. The Bolt is passed through the top hole of one of the $\frac{5}{8}$ " 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 $\frac{3}{4}$ " Bolt (1) carries two nuts on its shank between the $\frac{5}{8}$ " 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	

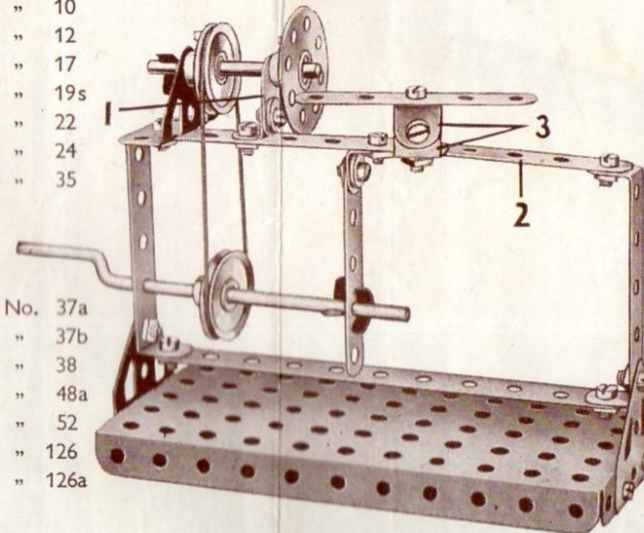
O.17 LATHE

The inner support for the lathe spindle consists of a Fishplate (1) bolted to an Angle Bracket fixed to the $\frac{5}{8}$ " Strip (2) that forms the lathe bed. The tool rest is a $\frac{2}{3}$ " 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

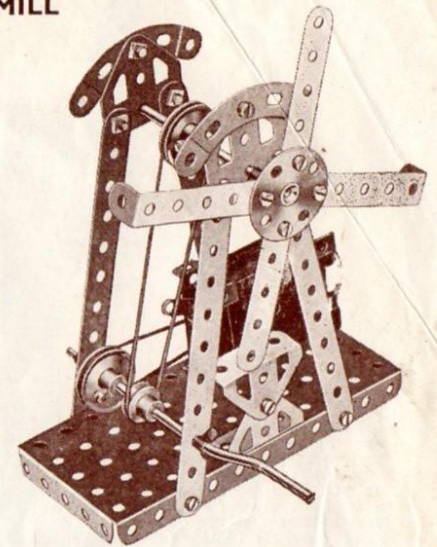
18 of No. 37a
18 " " 37b
2 " " 38
2 " " 48a
1 " " 52
1 " " 126
2 " " 126a

**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)

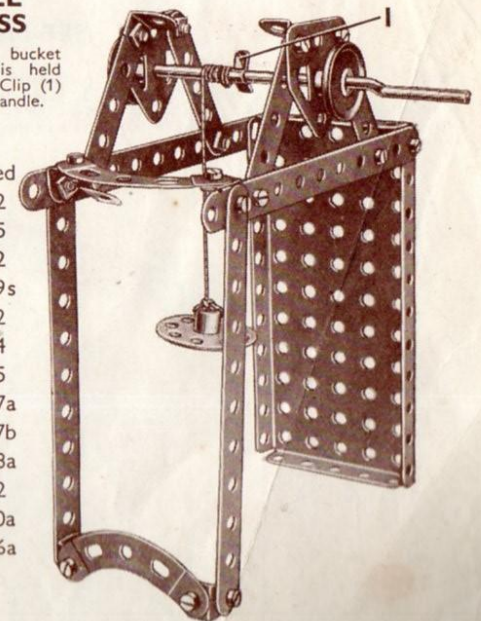
A Driving Band connects the pulley of the Magic Motor to a 1" Pulley fastened on the Crank Handle. The Crank Handle carries also a $\frac{1}{2}$ " Pulley, which is connected by a second Driving Band with a further 1" Pulley fixed to the $\frac{3}{4}$ " Rod on which the sails are mounted. The $\frac{3}{4}$ " 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**

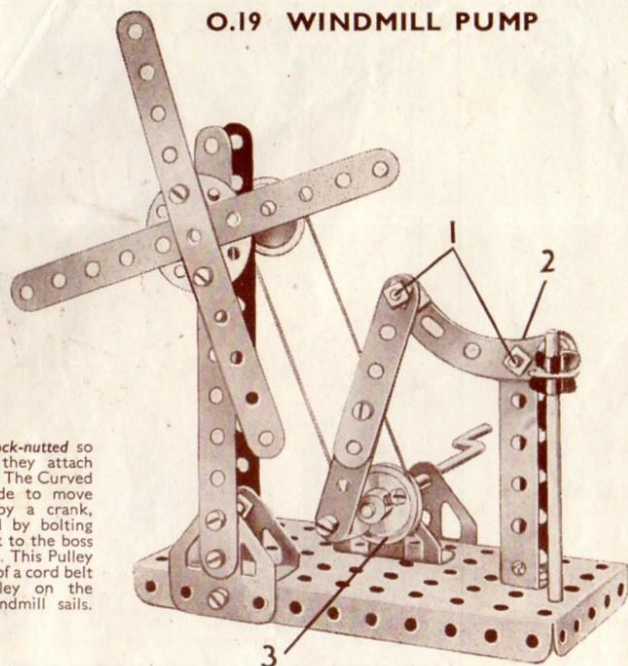
The end of the bucket hoisting cord is held under a Spring Clip (1) on the Crank Handle.

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



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
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

O.20 PECKING HEN

The 5½" Strip (4) is held on a ½" Bolt between two Trunnions as shown in the inset, Fig. O.20a.

The Bolts (1) and (2) are lock-nutted, and the 5½" 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.



Fig. O.20a

Parts Required

2 of No.	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

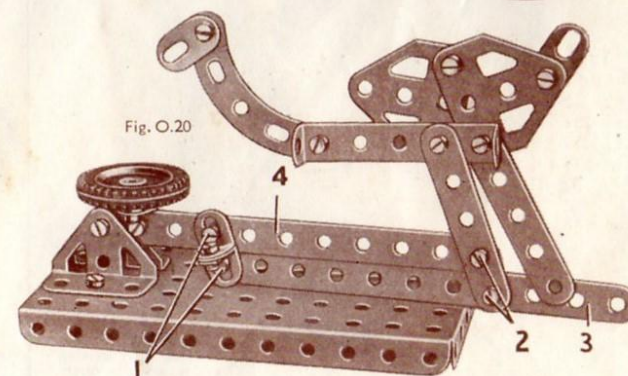
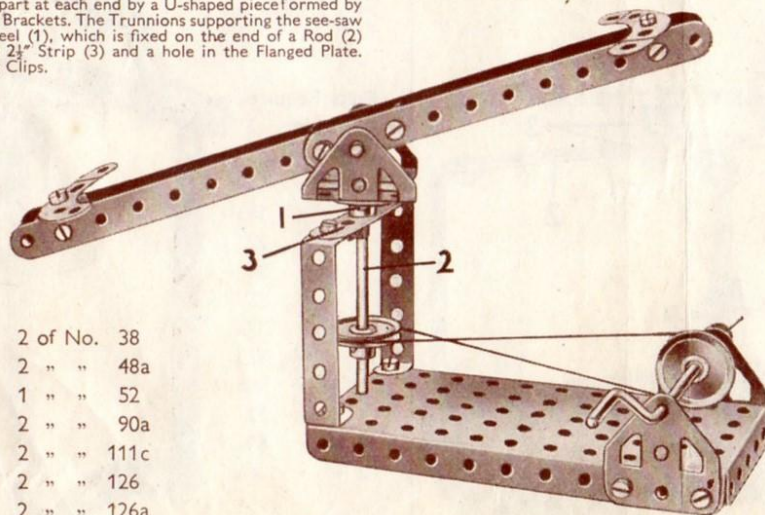


Fig. O.20

O.21 SEE-SAW ROUNDABOUT

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.



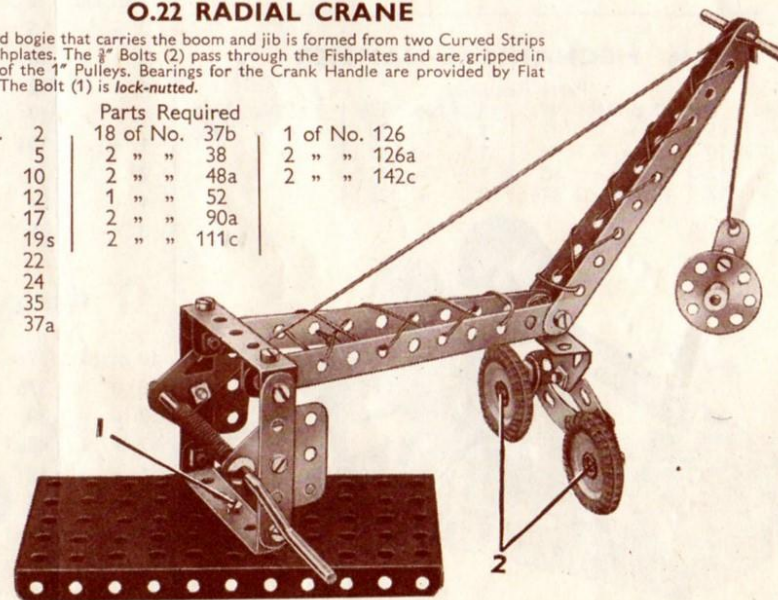
Parts Required

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

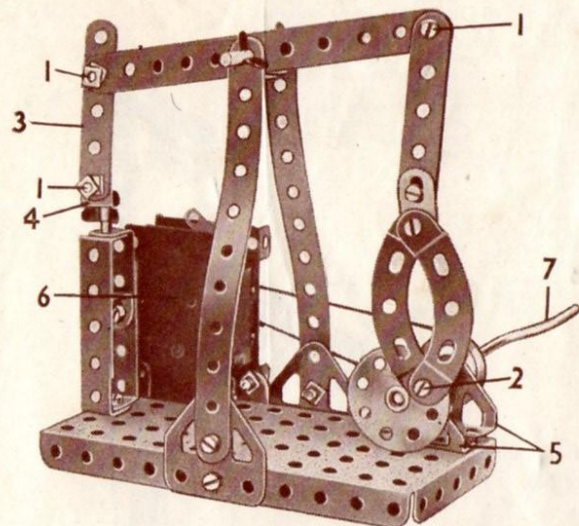
O.22 RADIAL CRANE

The wheeled bogie that carries the boom and jib is formed from two Curved Strips and two Fishplates. The ½" 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.

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).

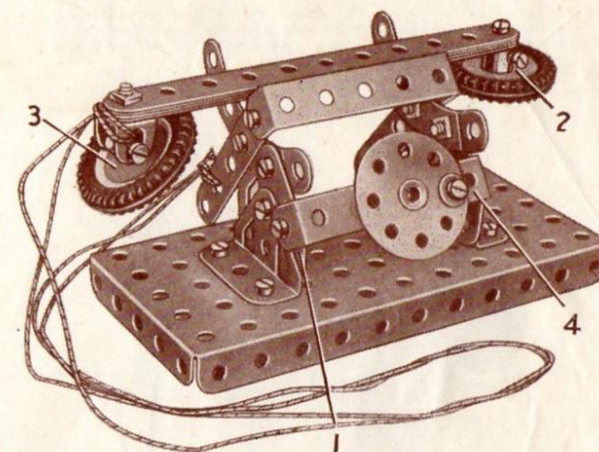
The Trunnions (5) are each raised from the Flanged Plate by a Washer on each of the bolts that hold them in place.

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



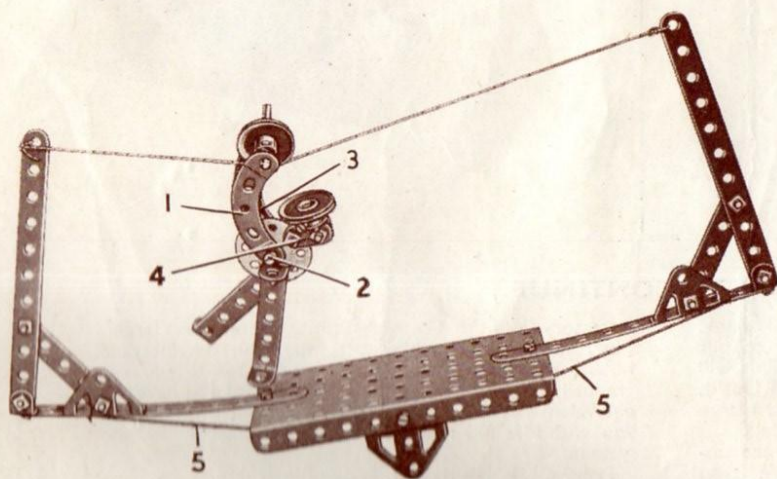
The telephone support is made from two Trunnions bolted to the Flanged Plate, and a Flat Trunnion (1) is fixed to each of them at the angle shown. The telephone arm consists of four 5 1/2" Strips, and the earpiece (2) is gripped on a 3/8" Bolt by its set screw. The mouthpiece (3) is attached to a U-shaped 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	17 of No. 37a		
2 " " 5	18 " " 37b		
2 " " 12	1 " " 38	1 of No. 52	2 of No. 111c
2 " " 22	2 " " 48a	2 " " 90a	2 " " 126
1 " " 24			2 " " 142c

O.25 HIGH WIRE ACROBAT

The Curved Strip (1) is held tightly on a 3/8" Bolt (2) by a nut. A second Curved Strip (3) is passed over a 3/8" 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 3/8" 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 5 1/2" Strips to act as a bracing wire.

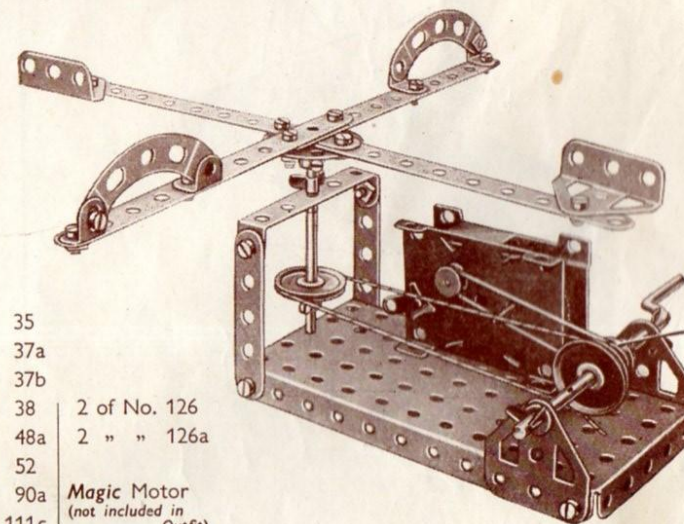


Parts Required

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 3/8" 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.

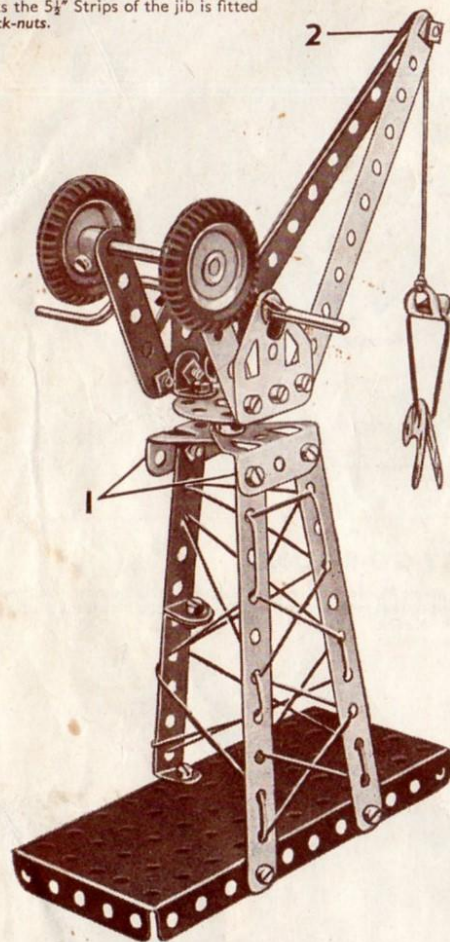


Parts Required

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	<i>Magic Motor</i>
1 " " 24	2 " " 111c	(not included in Outfit)

O.27 SHIPBUILDING CRANE

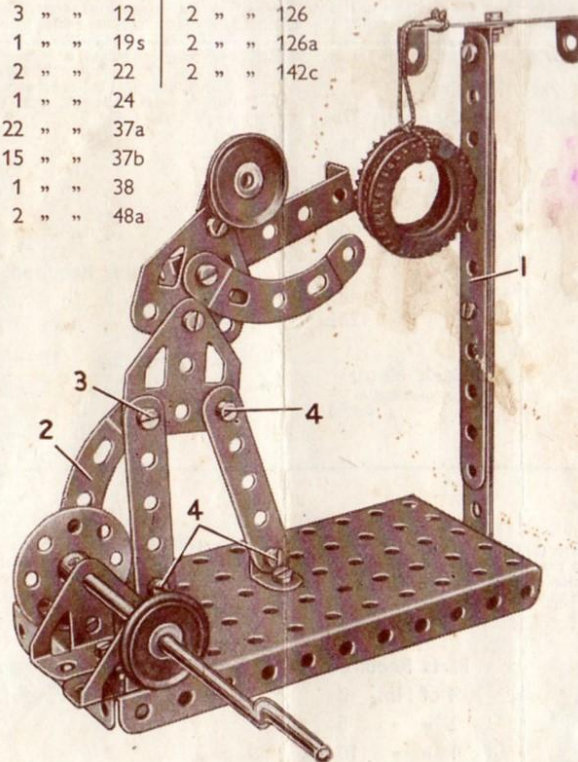
Two Trunnions (1) form the top of the tower, and a $\frac{3}{8}$ " Bolt passed through the holes in their pointed ends and into the boss of a Bush Wheel, forms the pivot for the jib. Two Flat Trunnions are connected to the Bush Wheel by Angle Brackets. The $\frac{3}{8}$ " Bolt (2) that connects the $5\frac{1}{2}$ " Strips of the jib is fitted with lock-nuts.



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	

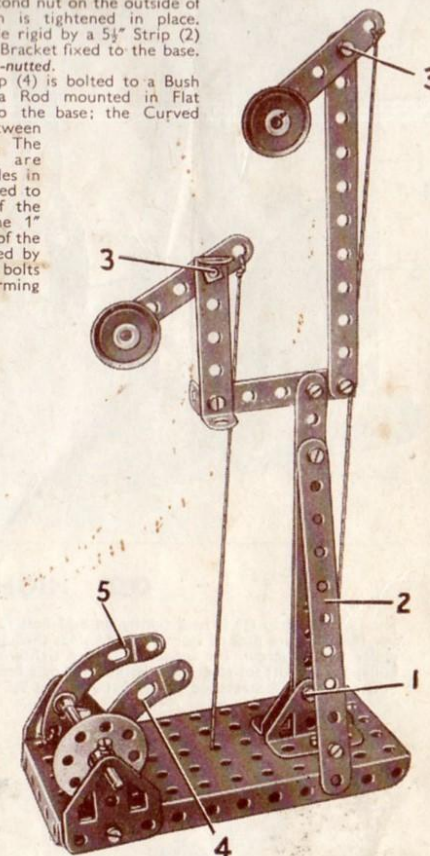


The column (1) is made from four $5\frac{1}{2}$ " Strips. These are placed together in pairs, and are then overlapped nine holes. The Curved Strip (2) is lock-nutted to the Bush Wheel, and is connected to the body of the boxer by a lock-nutted Bolt (3). Bolts (4) are also lock-nutted.

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
2 " " 5	5
1 " " 12	12
1 " " 16	16
2 " " 22	22
1 " " 24	24
2 " " 35	35
19 " " 37a	37a
14 " " 37b	37b
2 " " 38	38
2 " " 48a	48a
1 " " 52	52
2 " " 90a	90a
2 " " 111c	111c
2 " " 126	126
2 " " 126a	126a

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

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. 0a Accessory Outfit. This will convert your No. 0 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.