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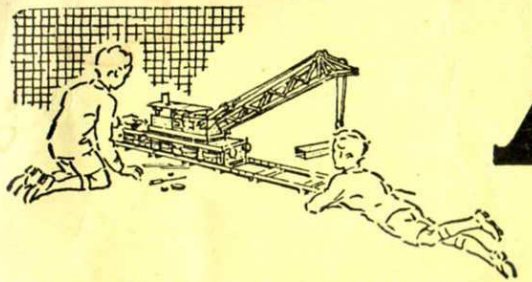
MECCANO

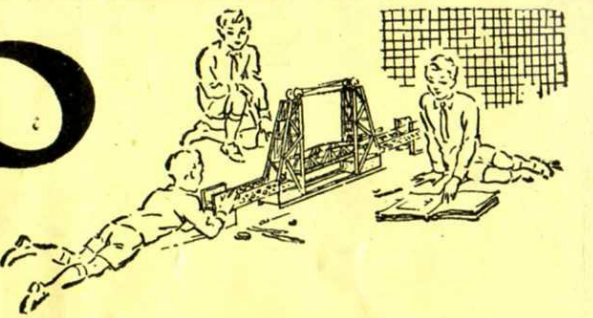
INSTRUCTIONS FOR
No. Oa ACCESSORY OUTFIT

No. 48.Oa



MECCANO

Real Engineering in Miniature



MODEL-BUILDING WITH MECCANO

There is no limit to the number of models that can be built with Meccano—Cranes, Clocks, Motor Cars, Aeroplanes, Machine Tools, Locomotives—in fact everything that interests boys. A screwdriver and a spanner, both of which are provided in each Outfit, are the only tools necessary.

When you have built all the models illustrated in the Books of Instructions the fun is not over, it is just beginning. Now comes the chance to make use of your own ideas. First of all, re-build some of the models with small changes in construction that may occur to you ; then try building models entirely of your own design. In doing this you will feel the real thrill of the engineer and the inventor.

HOW TO BUILD UP YOUR OUTFIT

Meccano is sold in 11 different Outfits, ranging from No. O to No. 10. Each Outfit can be converted into the next larger by the purchase of an Accessory Outfit. Thus Meccano No. O Outfit can be converted into No. 1 Outfit by adding to it a No. Oa Accessory Outfit. No. 1a Outfit would then convert it into a No. 2 and so on. In this way, no matter with which Outfit you begin, you can build it up by degrees until you have a No. 10 Outfit.

All Meccano parts are of the same high quality and finish, but the larger Outfits contain a greater quantity and variety, making possible the construction of more elaborate models.

THE "MECCANO MAGAZINE"

The "Meccano Magazine" is published specially for Meccano boys. Every month it describes and illustrates new Meccano models for Outfits of all sizes, and deals with suggestions from readers for new Meccano parts and for new methods of using the existing parts.

There are model-building competitions specially planned to give an equal chance to the owners of small and large Outfits. In addition, there are splendid articles on such subjects as Railways, Famous Engineers and Inventors, Electricity, Bridges, Cranes and Aeroplanes, and special sections dealing with the latest Engineering, Aviation, Motoring and Shipping News. Other pages deal with Stamp Collecting, and Books of interest to boys ; and a feature of outstanding popularity is the section devoted to short articles from readers.

If you are not already a reader write to the Editor for particulars. Supplies of the Magazine are very limited owing to the paper shortage.

THE MECCANO GUILD

Every owner of a Meccano Outfit should join the Meccano Guild. This is a world-wide organisation, started at the request of Meccano boys. Its primary object is to bring boys together and to make them feel that they are all members of a great brotherhood, each trying to help others to get the very best out of life. Its members are in constant touch with Headquarters, giving news of their activities and being guided in their hobbies and interests. Write for full particulars and an application form to the Secretary, Meccano Guild, Binns Road, Liverpool 13.

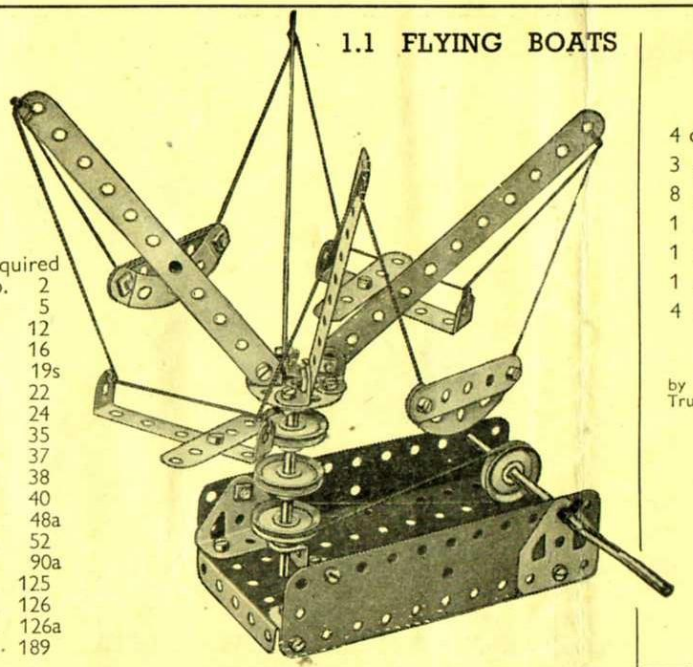
Clubs founded and established under the guidance of the Guild Secretary provide Meccano boys with opportunities of enjoying to the utmost the fun of model-building. Each has its Leader, Secretary, Treasurer and other officials. With the exception of the Leader, all the officials are boys, and as far as possible the proceedings of the clubs are conducted by boys.

MECCANO SERVICE

The service of Meccano does not end with selling an Outfit and a Book of Instructions. If ever you are in any difficulty with your models, or if you want advice on anything connected with this great hobby, write to us. We receive hundreds of interesting letters from boys in all parts of the world, and each of these is answered personally by one of our staff of experienced experts.

Whatever your problem may be, write to us about it. Do not hesitate. We shall be delighted to help you in any way possible.

1.1 FLYING BOATS



Parts required

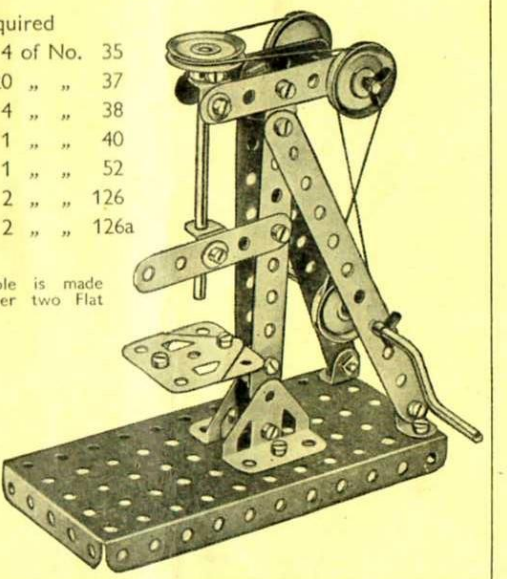
4 of No.	2
4 „ „	5
4 „ „	12
1 „ „	16
1 „ „	19s
4 „ „	22
1 „ „	24
3 „ „	35
24 „ „	37
1 „ „	38
1 „ „	40
2 „ „	48a
1 „ „	52
2 „ „	90a
1 „ „	125
2 „ „	126
2 „ „	126a
2 „ „	189

1.2 DRILL

Parts required

4 of No.	2	4 of No.	35
3 „ „	5	20 „ „	37
8 „ „	12	4 „ „	38
1 „ „	16	1 „ „	40
1 „ „	17	1 „ „	52
1 „ „	19s	2 „ „	126
4 „ „	22	2 „ „	126a

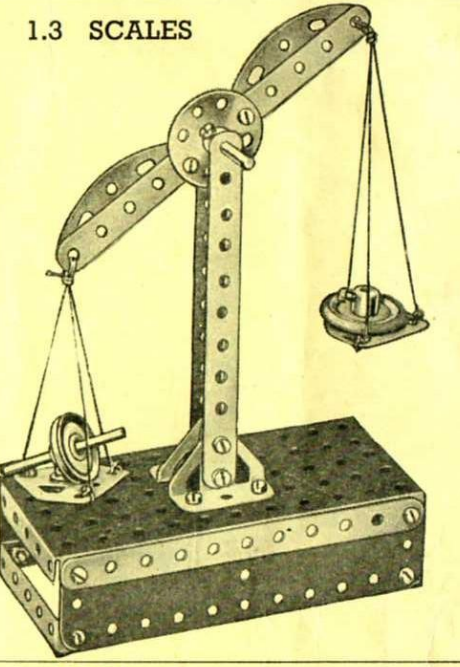
The drill table is made by bolting together two Flat Trunniors.



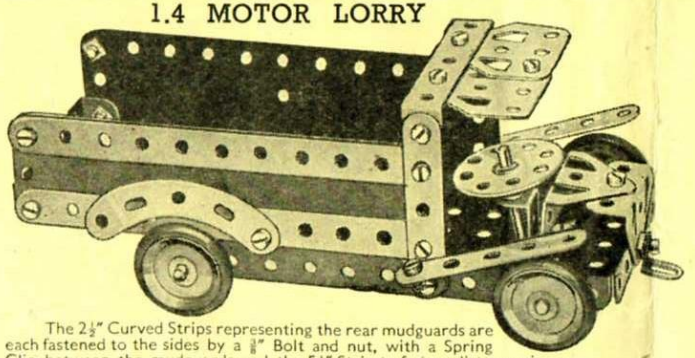
1.3 SCALES

Parts required

4 of No.	2
2 „ „	5
2 „ „	17
2 „ „	22
1 „ „	24
19 „ „	37
1 „ „	38
1 „ „	40
2 „ „	48a
1 „ „	52
2 „ „	90a
1 „ „	111c
2 „ „	126
2 „ „	126a
1 „ „	155
2 „ „	189



1.4 MOTOR LORRY



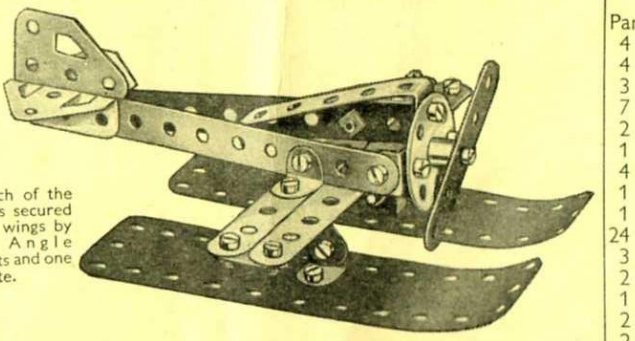
The 2½" Curved Strips representing the rear mudguards are each fastened to the sides by a ⅜" Bolt and nut, with a Spring Clip between the mudguards and the 5½" Strip to form a distance piece.

Parts required

4 of No.	2	1 of No.	17	19 of No.	37	2 of No.	90a
4 „ „	5	4 „ „	22	4 „ „	37a	3 „ „	111c
3 „ „	12	1 „ „	24	2 „ „	48a	1 „ „	125
2 „ „	16	2 „ „	35	1 „ „	52	2 „ „	126

2 of No.	126a
4 „ „	155
2 „ „	189

1.5 RACING SEAPLANE



Each of the floats is secured to the wings by two Angle Brackets and one Fishplate.

Parts required

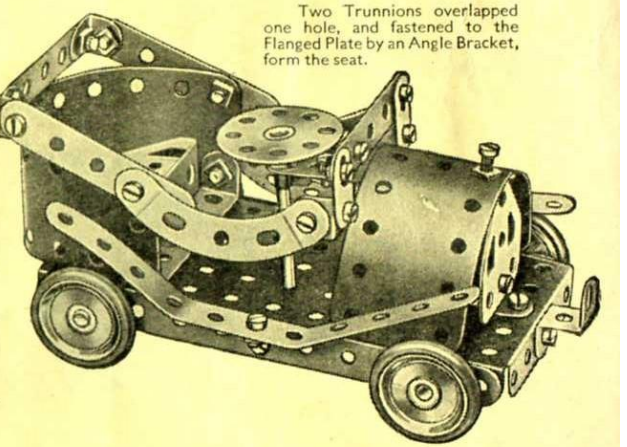
3 of No.	2	1 of No.	24	2 of No.	111c
3 „ „	5	19 „ „	37	2 „ „	126
4 „ „	10	1 „ „	37a	1 „ „	126a
8 „ „	12	1 „ „	48a	2 „ „	189

1.6 KIDDIE CAR

Parts required

4 of No.	2
4 „ „	5
3 „ „	10
7 „ „	12
2 „ „	16
1 „ „	17
4 „ „	22
1 „ „	24
1 „ „	35
24 „ „	37
3 „ „	37a
2 „ „	48a
1 „ „	52
2 „ „	90a
2 „ „	111c
1 „ „	125
2 „ „	126
1 „ „	126a
4 „ „	155
2 „ „	189

Two Trunnions overlapped one hole, and fastened to the Flanged Plate by an Angle Bracket, form the seat.

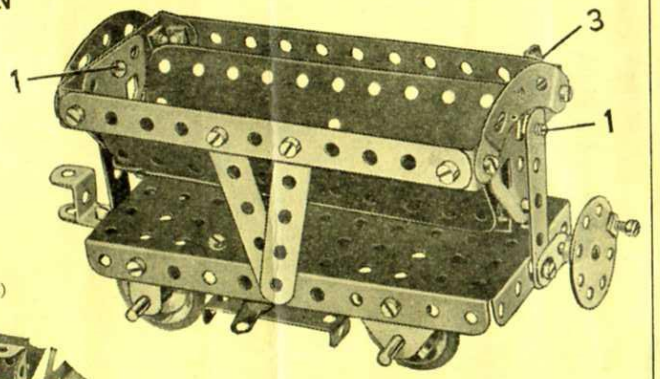


1.7 SIDE TIPPING WAGON

Parts required

3 of No.	2	3 of No.	38
4 „ „	5	2 „ „	48a
4 „ „	10	1 „ „	52
7 „ „	12	2 „ „	90a
2 „ „	16	4 „ „	111c
1 „ „	17	1 „ „	125
4 „ „	22	2 „ „	126
1 „ „	24	2 „ „	126a
24 „ „	37	4 „ „	155
4 „ „	37a	2 „ „	189
		1 *Magic* Motor	

(Not included in Outfit)



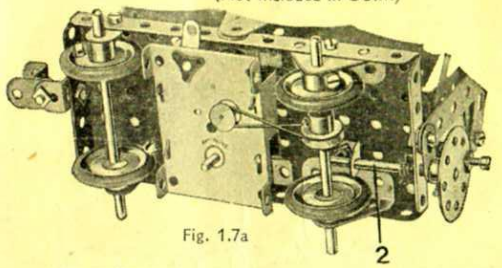


Fig. 1.7a

Each of the Bolts 1 is lock-nutted. A piece of Cord is fastened to the Rod 2 (Fig. 1.7a) wrapped round it two or three times, and then is taken through the hole in the Flanged Plate above the Rod and secured to the Angle Bracket 3.

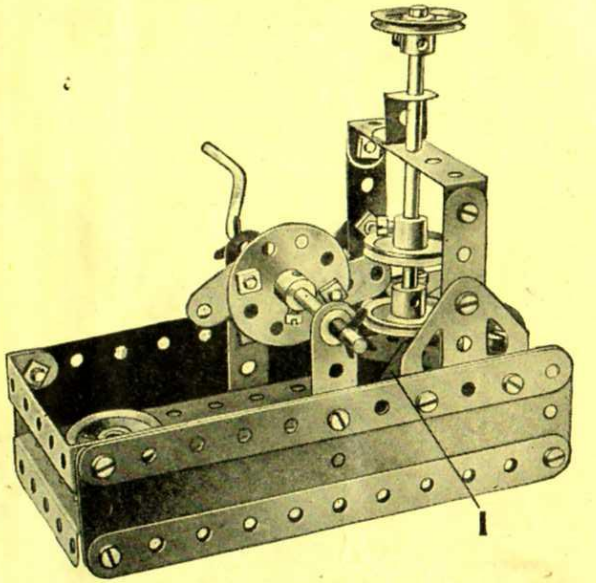
By turning the Bush Wheel the container is tipped sideways.

1.8 STAMPING MILL

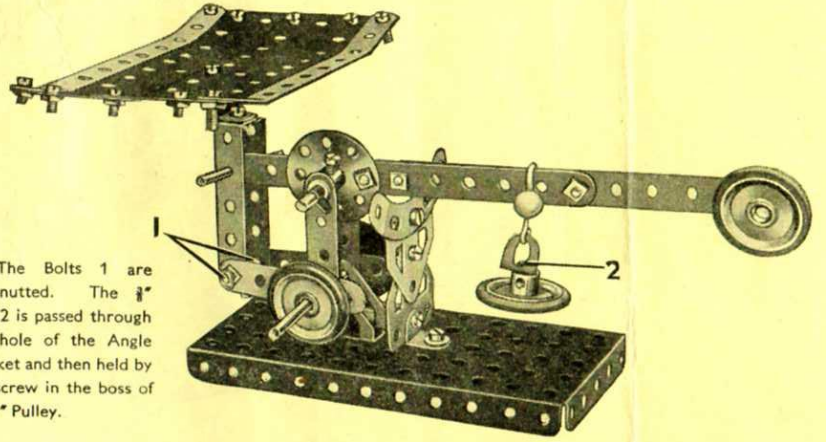
The anvil 1 is made up of two Trunnions bolted together. When the Crank Handle is rotated, the Fishplates bolted to the Bush Wheel strike the centre 1" Pulley on the hammer shaft and cause it to rise and fall.

Parts required

4 of No.	2	3 of No.	37a
4 „ „	5	2 „ „	38
4 „ „	10	2 „ „	48a
4 „ „	12	1 „ „	52
1 „ „	16	1 „ „	90a
1 „ „	19s	4 „ „	111c
4 „ „	22	1 „ „	125
1 „ „	24	2 „ „	126
2 „ „	35	2 „ „	126a
24 „ „	37	2 „ „	189



1.9 LETTER BALANCE

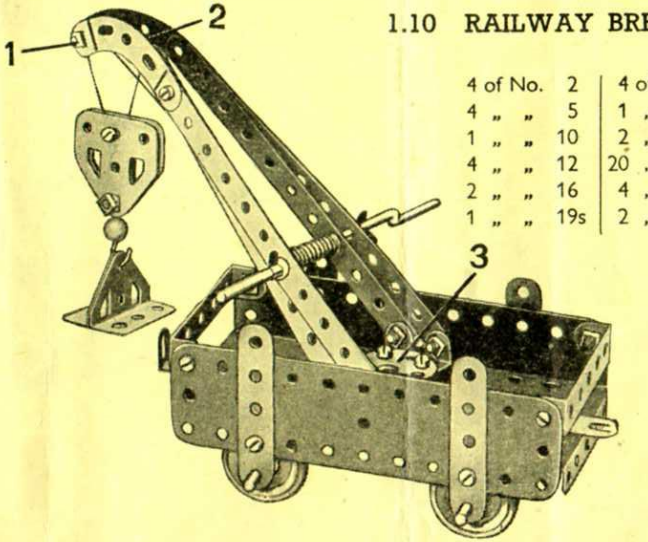


The Bolts 1 are lock-nutted. The ⅜" Bolt 2 is passed through the hole of the Angle Bracket and then held by the screw in the boss of the 1" Pulley.

Parts required

4 of No.	2
4 „ „	5
4 „ „	10
2 „ „	12
1 „ „	16
2 „ „	17
4 „ „	22
1 „ „	24
4 „ „	35
24 „ „	37
4 „ „	37a
4 „ „	38
2 „ „	48a
1 „ „	52
1 „ „	57c
1 „ „	90a
4 „ „	111c
1 „ „	125
2 „ „	126
2 „ „	126a
4 „ „	155
2 „ „	189

1.10 RAILWAY BREAKDOWN CRANE

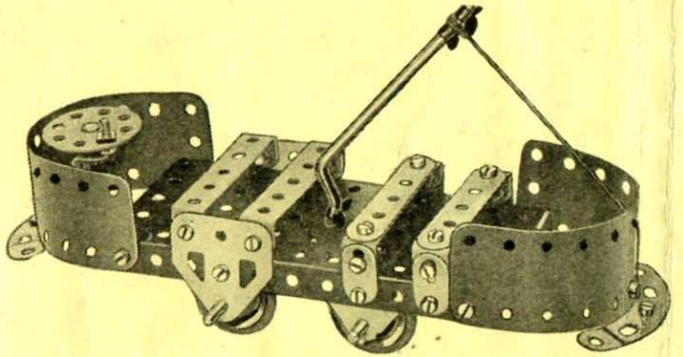


Parts Required

4 of No.	2	4 of No.	22	1 of No.	40	1 of No.	125
4 „ „	5	1 „ „	24	2 „ „	48a	2 „ „	126
1 „ „	10	2 „ „	35	1 „ „	52	2 „ „	126a
4 „ „	12	20 „ „	37	1 „ „	57c	4 „ „	155
2 „ „	16	4 „ „	37a	2 „ „	90a	2 „ „	189
1 „ „	19s	2 „ „	38	4 „ „	111c		

The hoisting cord is secured to the Crank Handle, and then led over the ⅜" Bolt 1. It is then passed through the pulley block and fastened to the jib at 2. The jib is attached to the Bush Wheel 3 by means of Angle Brackets and the complete unit is pivoted as follows. A ⅜" Bolt is passed through the 5½" × 2½" Flanged Plate from the underside, and is secured in the boss of the Bush Wheel by its set screw.

1.11 OPEN TRAMCAR



Parts required

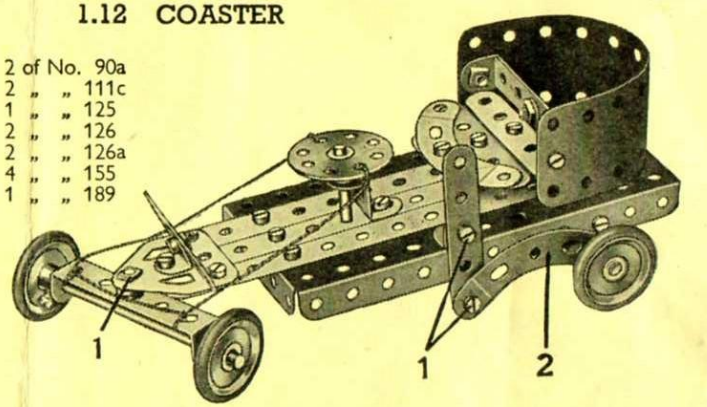
2 of No.	5	1 of No.	40
4 „ „	10	2 „ „	48a
7 „ „	12	1 „ „	52
2 „ „	16	2 „ „	90a
1 „ „	19s	4 „ „	111c
4 „ „	22	1 „ „	125
1 „ „	24	2 „ „	126
4 „ „	35	2 „ „	126a
24 „ „	37	4 „ „	155
3 „ „	37a	2 „ „	189

1.12 COASTER

Parts required

3 of No.	2	1 of No.	24	2 of No.	90a
4 „ „	5	1 „ „	35	2 „ „	111c
2 „ „	10	20 „ „	37	1 „ „	125
5 „ „	12	4 „ „	37a	2 „ „	126
2 „ „	16	4 „ „	38	2 „ „	126a
1 „ „	17	1 „ „	40	4 „ „	155
4 „ „	22	2 „ „	48a	1 „ „	189
		1 „ „	52		

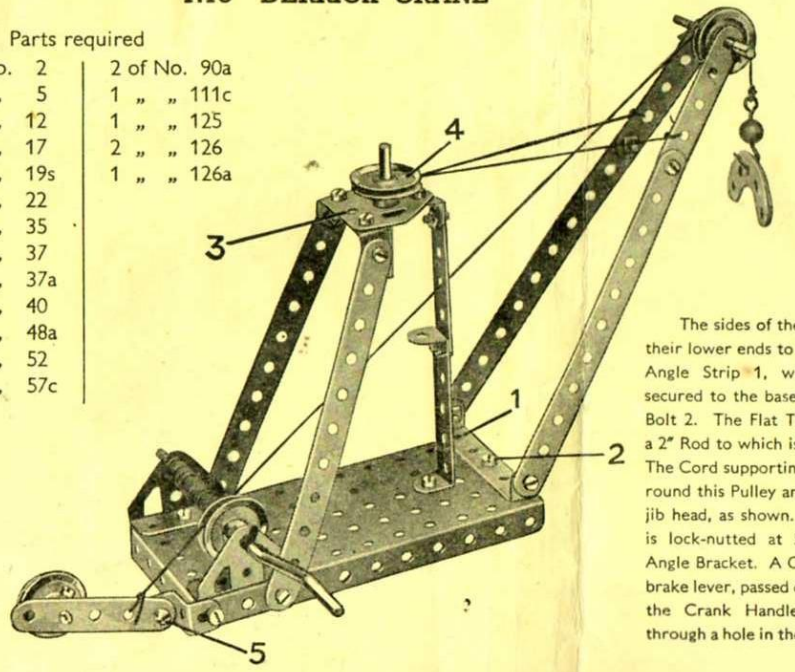
The Bolts 1 are lock-nutted. The rear axle Rod is pushed through the end hole of the Curved Strip 2 and through Fishplates bolted to the Flanged Plate.



1.13 DERRICK CRANE

Parts required

4 of No.	2	2 of No.	90a
4 „ „	5	1 „ „	111c
3 „ „	12	1 „ „	125
2 „ „	17	2 „ „	126
1 „ „	19s	1 „ „	126a
4 „ „	22		
4 „ „	35		
19 „ „	37		
4 „ „	37a		
1 „ „	40		
2 „ „	48a		
1 „ „	52		
1 „ „	57c		



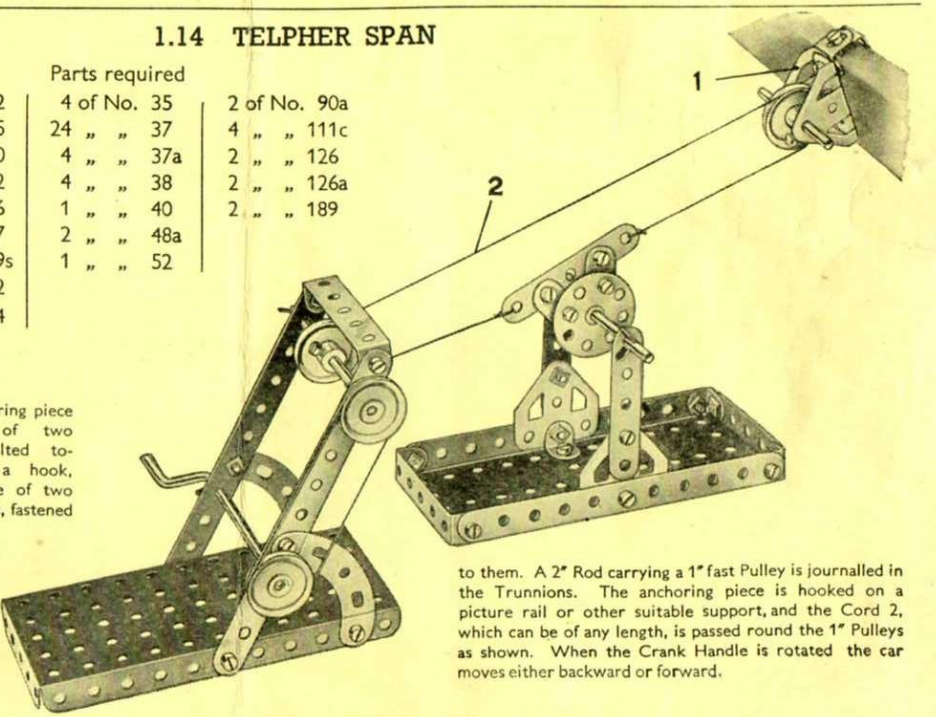
The sides of the jib are bolted at their lower ends to a 2½" × ½" Double Angle Strip 1, which is pivotally secured to the base by a lock-nutted Bolt 2. The Flat Trunnion 3 carries a 2" Rod to which is fitted a Pulley 4. The Cord supporting the jib is passed round this Pulley and attached to the jib head, as shown. The band brake is lock-nutted at 5 to a Reversed Angle Bracket. A Cord is tied to the brake lever, passed over the Pulley on the Crank Handle and then tied through a hole in the Flanged Plate.

1.14 TELPHER SPAN

Parts required

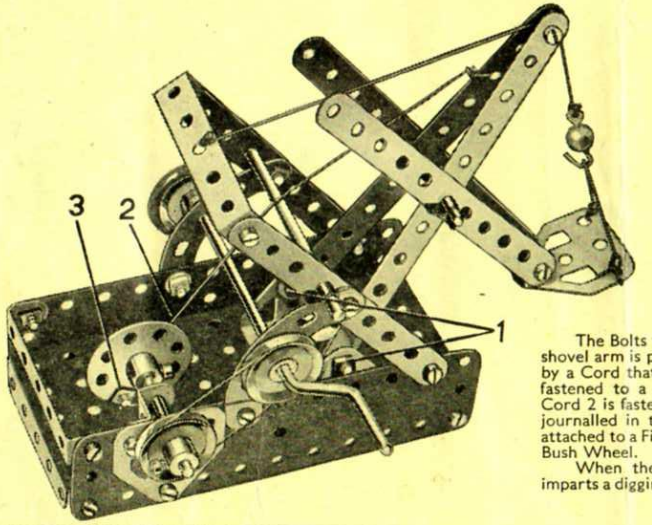
4 of No.	2	4 of No.	35	2 of No.	90a
4 „ „	5	24 „ „	37	4 „ „	111c
2 „ „	10	4 „ „	37a	2 „ „	126
6 „ „	12	4 „ „	38	2 „ „	126a
2 „ „	16	1 „ „	40	2 „ „	189
1 „ „	17	2 „ „	48a		
1 „ „	19s	1 „ „	52		
4 „ „	22				
1 „ „	24				

The anchoring piece 1 consists of two Trunnions bolted together, and a hook, which is made of two Angle Brackets, fastened



to them. A 2" Rod carrying a 1" fast Pulley is journalled in the Trunnions. The anchoring piece is hooked on a picture rail or other suitable support, and the Cord 2, which can be of any length, is passed round the 1" Pulleys as shown. When the Crank Handle is rotated the car moves either backward or forward.

1.15 MECHANICAL SHOVEL



Parts required

4 of No.	2	4 of No.	38
4 „ „	5	1 „ „	40
1 „ „	10	2 „ „	48a
2 „ „	12	1 „ „	52
1 „ „	16	1 „ „	57c
2 „ „	17	2 „ „	90a
1 „ „	19s	4 „ „	111c
3 „ „	22	1 „ „	125
1 „ „	24	2 „ „	126
4 „ „	35	2 „ „	126a
21 „ „	37	1 „ „	155
4 „ „	37a	2 „ „	189

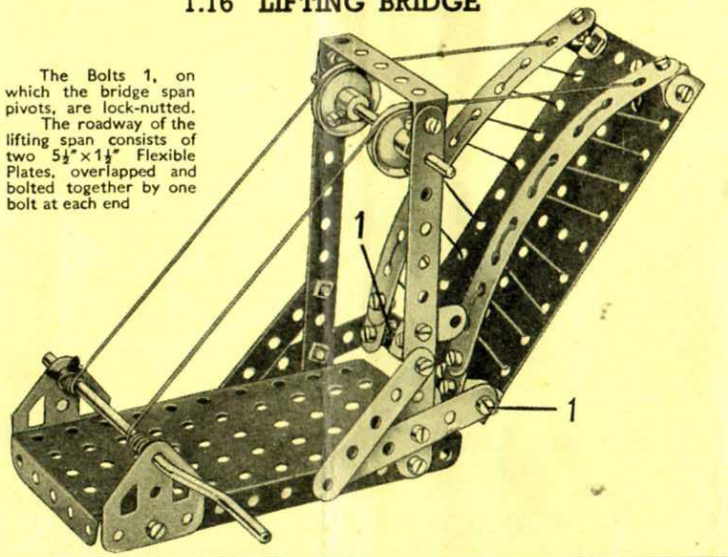
The Bolts 1, on which the jib pivots, are lock-nutted. The shovel arm is pivoted on a 2" Rod and the shovel is supported by a Cord that passes over the ½" Bolt at the jib head and is fastened to a 2½" × ½" Double Angle Strip as shown. The Cord 2 is fastened to the jib and then passes over a 3½" Rod journalled in the holes above the 2½" Curved Strips, and is attached to a Fishplate fastened by the lock-nutted Bolt 3 to the Bush Wheel.

When the Crank Handle is rotated, the Bush Wheel imparts a digging motion to the jib and shovel arm.

1.16 LIFTING BRIDGE

The Bolts 1, on which the bridge span pivots, are lock-nutted.

The roadway of the lifting span consists of two 5½" × 1½" Flexible Plates, overlapped and bolted together by one bolt at each end



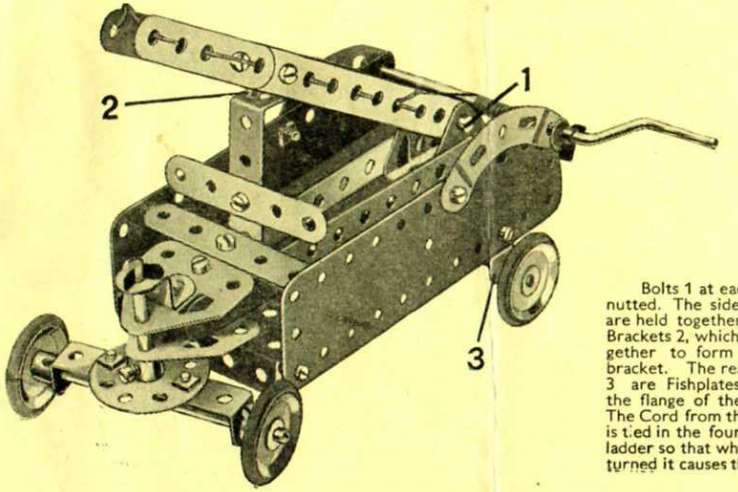
Parts required

4 of No.	2
4 „ „	5
3 „ „	10
8 „ „	12
1 „ „	16
1 „ „	19s
2 „ „	22
4 „ „	35
24 „ „	37
5 „ „	37a
4 „ „	38
1 „ „	40
1 „ „	48a
1 „ „	52
3 „ „	111c
2 „ „	126a
2 „ „	189

1.17 FIRE ENGINE

Parts required

4 of No.	2
4 „ „	5
3 „ „	10
5 „ „	12
2 „ „	16
1 „ „	17
1 „ „	19s
4 „ „	22
1 „ „	24
4 „ „	35
24 „ „	37
4 „ „	37a
2 „ „	38
1 „ „	40
2 „ „	48a
1 „ „	52
2 „ „	90a
2 „ „	111c
1 „ „	125
2 „ „	126
2 „ „	126a
4 „ „	155
2 „ „	189



Bolts 1 at each side are lock-nutted. The sides of the ladder are held together by two Angle Brackets 2, which are bolted together to form a "U" shaped bracket. The rear axle bearings 3 are Fishplates bolted inside the flange of the Flanged Plate. The Cord from the Crank Handle is tied in the fourth hole up the ladder so that when the Handle is turned it causes the ladder to lift.

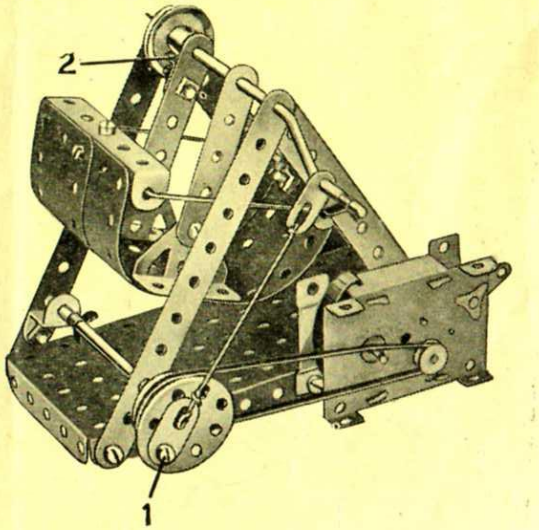
1.18 MECHANICAL SWING

The left-hand 2½" Strip that supports the swing is connected to the Crank Handle by passing the set screw of the 1" Pulley 2 through the hole in an Angle Bracket bolted to the Strip and then into the boss of the Pulley. Bolt 1 on the Bush Wheel is fitted with lock-nuts.

Parts required

4 of No.	2	4 of No.	38
2 „ „	5	1 „ „	40
2 „ „	10	2 „ „	48a
3 „ „	12	1 „ „	52
1 „ „	16	1 „ „	111c
1 „ „	19s	1 „ „	125
2 „ „	22	2 „ „	126
1 „ „	24	2 „ „	189
4 „ „	35		
15 „ „	37		
2 „ „	37a		

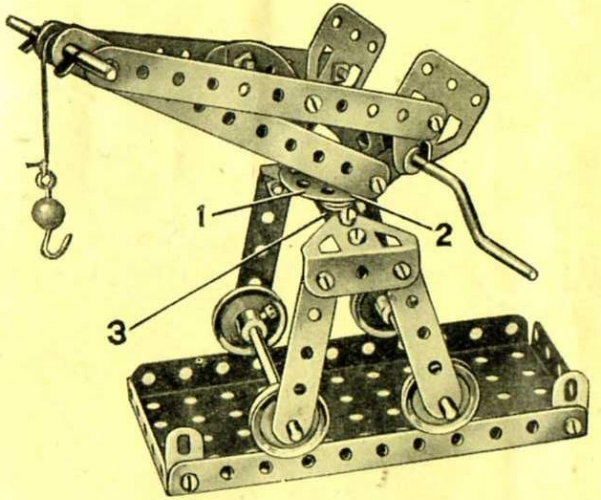
1 *Magic* Motor
(Not included in Outfit)



1.19 TRAVELLING CRANE

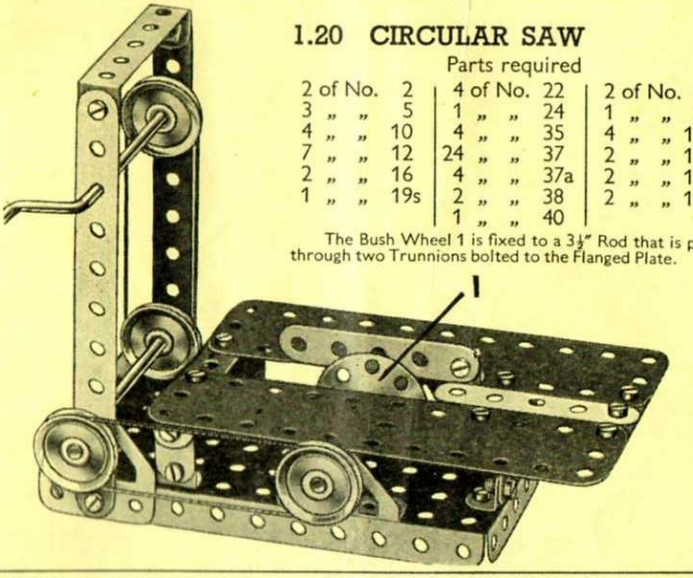
The sides of the jib are secured to the Bush Wheel 1 by two Angle Brackets 2, one on each side. A ⅜" Bolt is passed from the underneath side of Double Angle Strip 3 into the boss of the Bush Wheel 1 and the set screw is then tightened.

The Flat Trunnions at the lower end of the jib support the Crank Handle, which also passes through Fishplates bolted to the Angle Brackets 2 on the Bush Wheel 1. The Cord is fastened to the Crank Handle, and passes over the 2" Rod at the jib head.



Parts required

4 of No. 2	4 of No. 22	1 of No. 52
4 „ „ 5	1 „ „ 24	1 „ „ 57c
4 „ „ 10	4 „ „ 35	2 „ „ 90a
2 „ „ 12	20 „ „ 37	1 „ „ 111c
2 „ „ 16	4 „ „ 38	2 „ „ 126
1 „ „ 17	1 „ „ 40	2 „ „ 126a
1 „ „ 19s	1 „ „ 48a	



1.20 CIRCULAR SAW

Parts required

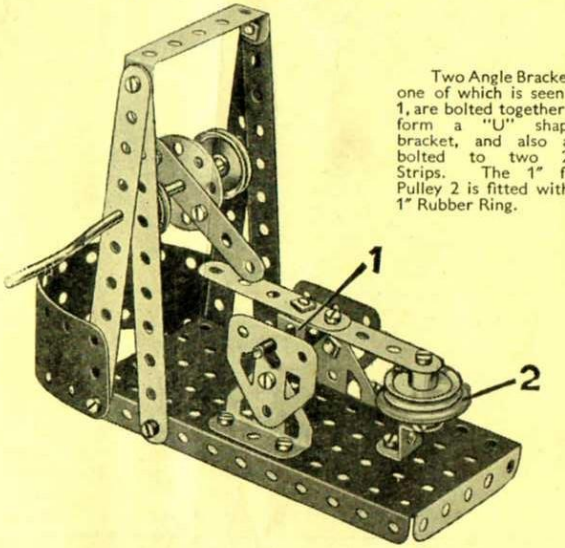
2 of No. 2	4 of No. 22	2 of No. 48a
3 „ „ 5	1 „ „ 24	1 „ „ 52
4 „ „ 10	4 „ „ 35	4 „ „ 111c
7 „ „ 12	24 „ „ 37	2 „ „ 126
2 „ „ 16	4 „ „ 37a	2 „ „ 126a
1 „ „ 19s	2 „ „ 38	2 „ „ 189
	1 „ „ 40	

The Bush Wheel 1 is fixed to a 3½" Rod that is passed through two Trunnions bolted to the Flanged Plate.

1.21 TRIP HAMMER

Parts required

4 of No. 2	1 „ „ 155
3 „ „ 5	1 „ „ 189
2 „ „ 12	
1 „ „ 17	
1 „ „ 19s	
4 „ „ 22	
1 „ „ 24	
4 „ „ 35	
17 „ „ 37	
1 „ „ 48a	
1 „ „ 52	
2 „ „ 111c	
1 „ „ 125	
2 „ „ 126	
2 „ „ 126a	

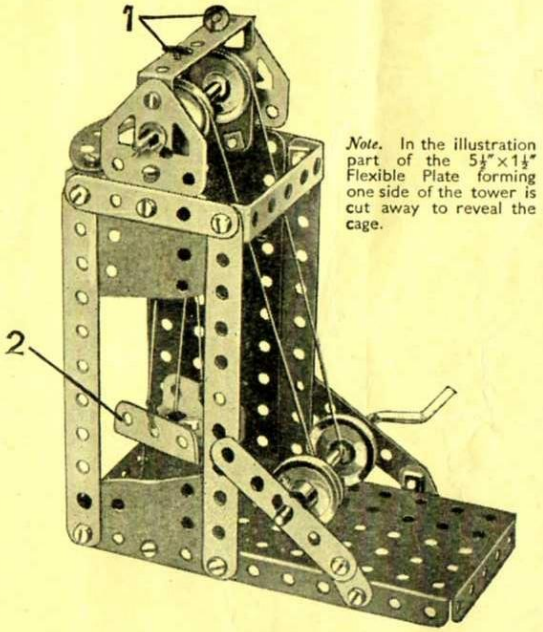


Two Angle Brackets, one of which is seen at 1, are bolted together to form a "U" shaped bracket, and also are bolted to two 2½" Strips. The 1" fast Pulley 2 is fitted with a 1" Rubber Ring.

1.22 PITHEAD GEAR

A Cord is taken from each side of the lift cage over the 1" Pulleys and secured to each end of the Crank Handle. The Cords must both be the same length, otherwise the lift will tilt.

The two guides for the lift consist of two pieces of Cord fastened to the Washers 1. The Cords are then passed through holes in the Double Angle Strip, through two corresponding holes in the lift cage 2, and then through the two corresponding holes in the Flanged Plate. Two more Washers are tied to the Cords beneath the Flanged Plate to keep the Cords tight. The lift cage 2 is made up of two Trunnions.



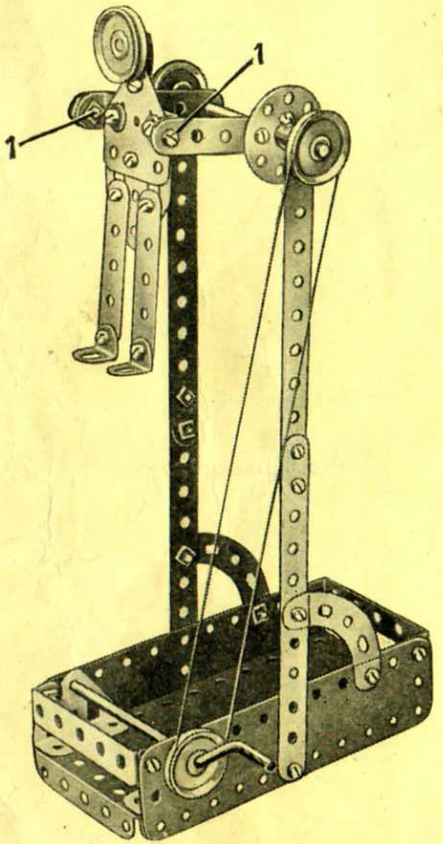
Note. In the illustration part of the 5½"×1½" Flexible Plate forming one side of the tower is cut away to reveal the cage.

Parts required

4 of No. 2	4 of No. 22	1 of No. 52
4 „ „ 5	4 „ „ 35	1 „ „ 90a
4 „ „ 10	20 „ „ 37	4 „ „ 111c
2 „ „ 12	4 „ „ 37a	2 „ „ 126
1 „ „ 16	4 „ „ 38	2 „ „ 126a
1 „ „ 19s	1 „ „ 40	2 „ „ 189
	2 „ „ 48a	

1.23 GYMNAST

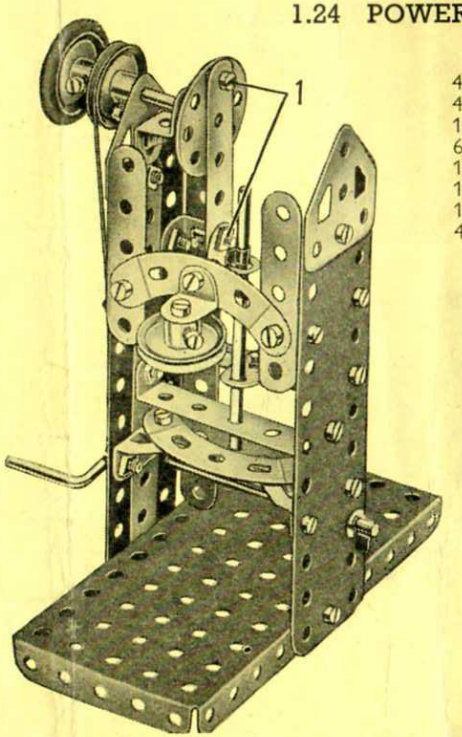
The Bolts 1 are lock-nutted. The bearings for the Crank Handle in the Flexible Plates are reinforced by Trunnions bolted to the Flanged Plate.



Parts required

4 of No. 2	1 of No. 24	1 of No. 52
4 „ „ 5	2 „ „ 35	2 „ „ 90a
1 „ „ 10	24 „ „ 37	4 „ „ 111c
4 „ „ 12	5 „ „ 37a	2 „ „ 126
1 „ „ 16	4 „ „ 38	2 „ „ 126a
1 „ „ 19s	1 „ „ 40	2 „ „ 189
4 „ „ 22	2 „ „ 48a	

1.24 POWER PRESS



The Bolts 1 are lock-nutted, and the Angle Bracket at the lower end of the 2½" Strip has a 3½" Rod in its elongated hole, where it is held by means of two Spring Clips.

The Rod forming the press ram moves up and down in the circular hole of a Fishplate bolted to a 2½"×½" Double Angle Strip and also through the centre hole of another 2½"×½" Double Angle Strip.

Parts required

4 of No. 2	1 of No. 24	2 of No. 90a
4 „ „ 5	3 „ „ 35	4 „ „ 111c
1 „ „ 10	24 „ „ 37	1 „ „ 125
6 „ „ 12	5 „ „ 37a	2 „ „ 126
1 „ „ 16	1 „ „ 38	2 „ „ 126a
1 „ „ 17	1 „ „ 40	1 „ „ 155
1 „ „ 19s	2 „ „ 48a	2 „ „ 189
4 „ „ 22	1 „ „ 52	

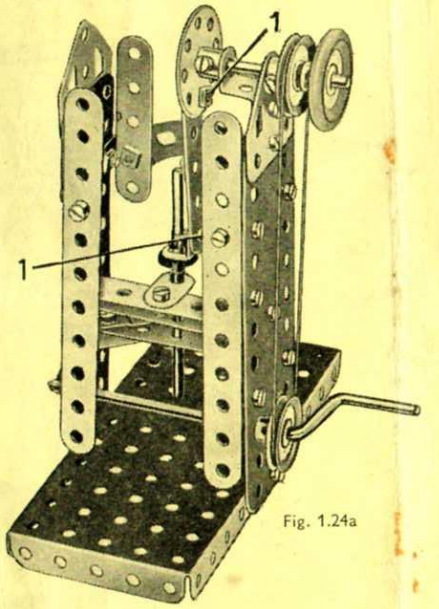


Fig. 1.24a

BUILD BIGGER AND BETTER MODELS

When you have built all the models shown in this Book of Instructions, you will be keen to build bigger and more elaborate models. Your next step is to purchase a Meccano No. 1a Accessory Outfit containing all the parts required to convert your No. 1 into a No. 2 Outfit. You will then be able to build the full range of No. 2 Outfit models.

If you prefer to do so, you can build up and develop your Outfit quite easily by adding various parts to it from time to time. The model-building possibilities of the Meccano System are unlimited, and the more Meccano parts you have the bigger and better the models you will be able to build.

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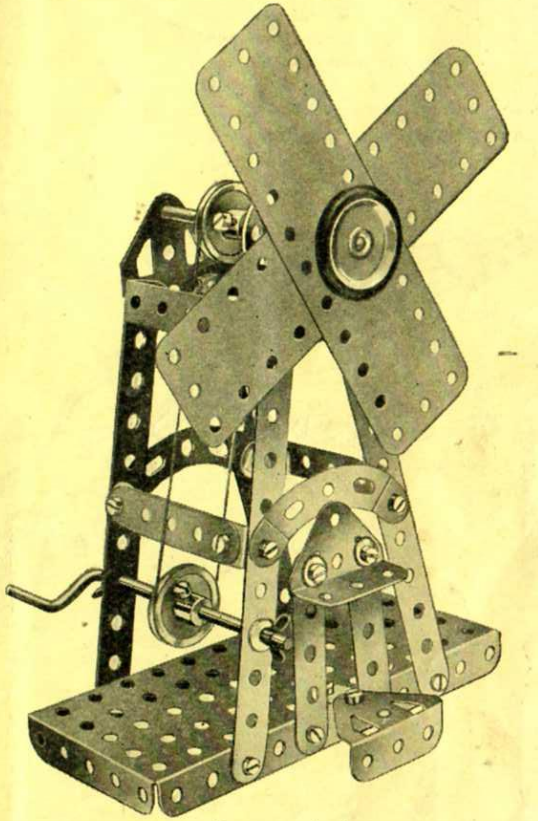
1.25 WINDMILL

The sails are gripped on the 3½" Rod by the 1" Pulley (with Rubber Ring) at the front and another 1" Pulley at the back of the sails. The Pulleys are pressed against the faces of the sails and locked on the Rod.



Parts required

4 of No. 2	1 of No. 24	2 of No. 90a
4 „ „ 5	3 „ „ 35	2 „ „ 126
1 „ „ 10	24 „ „ 37	2 „ „ 126a
4 „ „ 12	4 „ „ 38	1 „ „ 155
1 „ „ 16	1 „ „ 40	2 „ „ 189
1 „ „ 19s	2 „ „ 48a	
4 „ „ 22	1 „ „ 52	

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