

MECCANO

TRADE MARKS 296321, 501113, 76, 12633, 10274, 55/13476, 569/13, 884/25, 2913, 80, 124, 336, 4174, 91637, 83171, 157149, 32822, 200639, 209733, 214061, 214062, 12892, 29094, 33316, 1818, 16737, 383/13, 5848, 50204, 10/12258, 22826, 18982, 20063/925, 9048, 5549 2189 16900 72286, 2389, 41812, 5403, 7315, 18066, 139420, 494933-4-5-6, 29041, 26877, 6595, 404718, 410379

HORNBY'S ORIGINAL SYSTEM—FIRST PATENTED 1901



INSTRUCTIONS

FOR BUILDING No. 2 OUTFIT MODELS

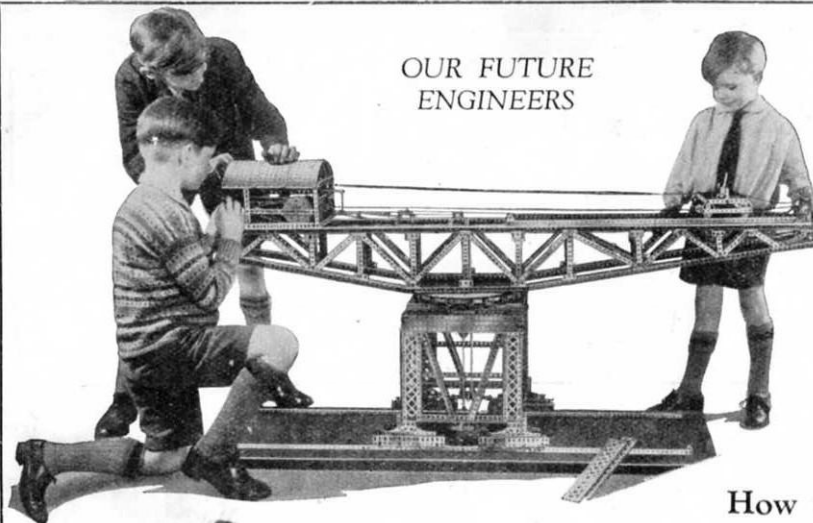
Copyright by MECCANO LTD., LIVERPOOL, ENGLAND, throughout the world

Canadian Branch: Meccano Ltd., 34, St. Patrick Street, Toronto

No. 31.1A

CANADA

OUR FUTURE
ENGINEERS



MECCANO

Real Engineering in Miniature

The Meccano No. 1A Accessory Outfit converts your No. 1 Outfit into a No. 2, and enables you to build the splendid models illustrated in this Manual. As a Meccano enthusiast, you will realise that our examples do not exhaust the possibilities of your Outfit. It is no exaggeration to say that the possibilities of Meccano are limitless—there is always something new that you can invent and build, and most models can be constructed in many alternative ways. In addition to the fascination and satisfaction obtained by building new models, you can enter them in the model-building competitions that are a regular feature of the "Meccano Magazine." These competitions are open to all Meccano boys, and valuable prizes are offered.

How to Progress

When you desire to build the bigger and better models that the No. 3 Outfit makes, it is only necessary for you to purchase a No. 2A Accessory Outfit. In turn, a No. 3A Accessory Outfit will convert your equipment into a No. 4, and so on. As you progress by these easy stages, you will obtain an increasing variety of perfectly-made engineering parts—Gear Wheels, Pulleys, Worms, Couplings, Cranks and many others—until ultimately you attain the ambition of every Meccano enthusiast and possess a No. 7 Outfit.

Every keen and inventive Meccano model-builder should possess copies of the special Manuals "How to use Meccano Parts" and "Meccano Standard Mechanisms." In the former the principal uses of Meccano parts are outlined, while the latter shows a large number of real engineering mechanisms, built of Meccano parts, that can be incorporated in various models. You can obtain copies of these Manuals from your dealer, or direct from Meccano Ltd., Liverpool.

A complete list showing the contents of each Meccano Outfit and Accessory Outfit will be supplied on application to Meccano Limited, Liverpool.

The "Meccano Magazine"

The "Meccano Magazine" is essential to the full enjoyment of the Meccano hobby. A section of it is devoted to the Editor's replies to his readers' enquiries; the progress of Meccano clubs throughout the world is reported; and full details are given of the latest model-building achievements. In addition, a wealth of informative articles on all subjects of interest to boys is included in every issue. The publishing date is the first of each month. If you are not already a reader of the "Meccano Magazine" write to the Editor for full particulars, or order a copy from your Meccano dealer or from any newsagent.

Meccano Service

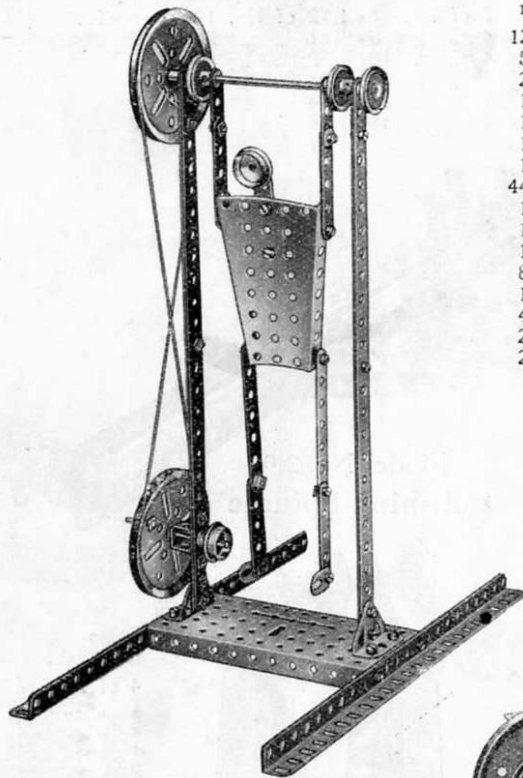
The service of Meccano does not end with selling an Outfit and an Instruction Manual. When you want to know something more about engineering than is now shown in our books, or when you strike a tough problem of any kind, write to us. We receive over 200 letters from boys every day all the year round. Some write to us because they are in difficulty, others because they want advice on their work or pleasures, or about the choice of a career. Others, again, write to us just because they like to do so and we are glad to know that they regard us as their friends.

Although all kinds of queries are put to us on all manner of subjects, the main interest is, of course, engineering. The wonderful knowledge of engineering matters possessed by our staff of experts is unique. This vast store of knowledge, gained only by many years of hard-earned experience, is at your service. *We want the Meccano boy of to-day to be the famous engineer of to-morrow.*

IMPORTANT:—Meccano Parts may be bought separately at any time in any quantity from your Meccano dealer.

These Models can be built with MECCANO Outfit No. 2 (or No. 1 and No. 1A)

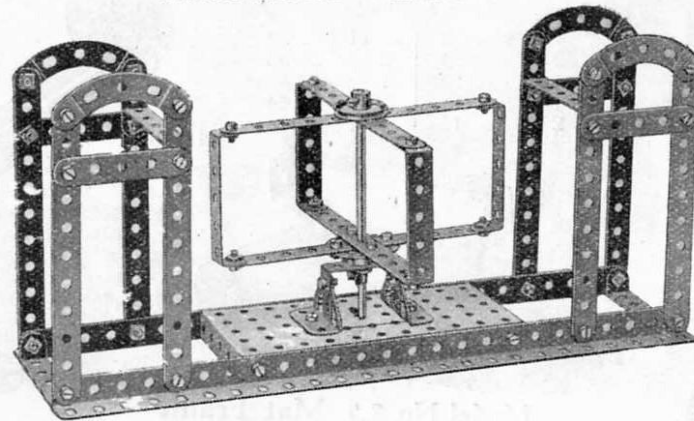
Model No. 2.1 Acrobat



Parts
required :

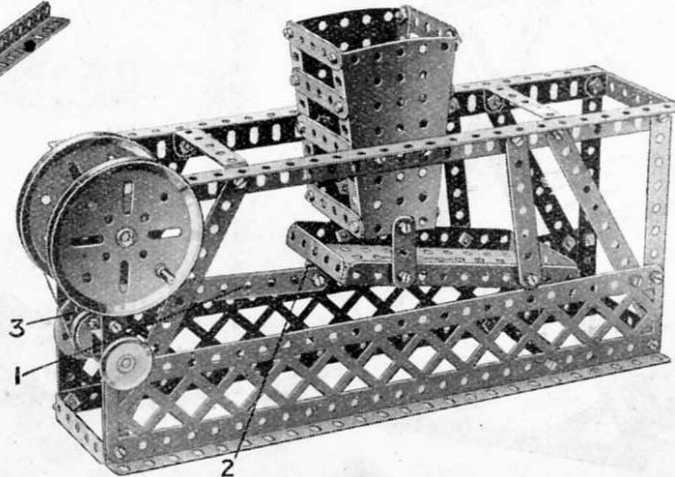
12	of No.	2
5	" "	5
2	" "	8
1	" "	15A
1	" "	22
1	" "	24
1	" "	35
44	" "	37
1	" "	38
1	" "	40
1	" "	48
8	" "	48A
1	" "	52
4	" "	90A
2	" "	99
2	" "	126

Model No. 2.2 Turnstile



Model No. 2.3 Coal Sifter

The $5\frac{1}{2}$ " Strip 1 is pivoted to the Angle Bracket 2 by a bolt and two Nuts. The Angle Bracket in turn is bolted to the Flanged Plate, which is suspended in such a way that it is free to swing to and fro. The other end of the $5\frac{1}{2}$ " Strip is pivoted to the Bush Wheel 3.



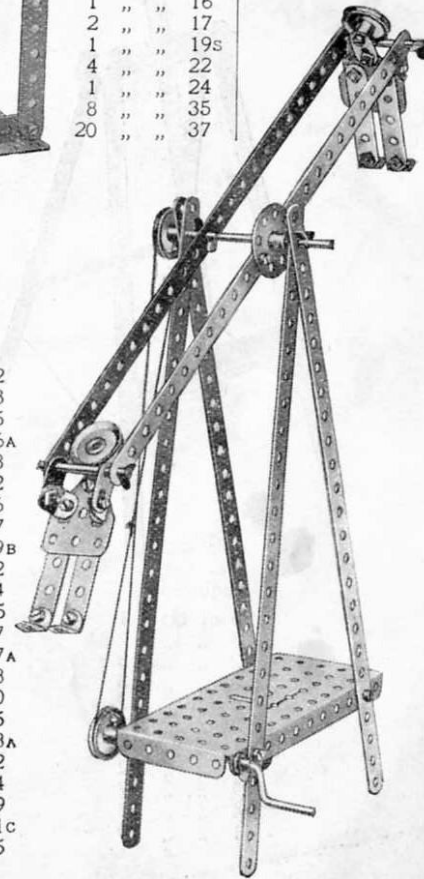
Parts required :

4	of No.	1	28	of No.	37
2	" "	3	6	" "	37A
5	" "	5	5	" "	38
2	" "	8	1	" "	40
2	" "	10	1	" "	45
1	" "	15	1	" "	52
2	" "	19B	1	" "	54
2	" "	20B	2	" "	62
3	" "	22	1	" "	115
2 of No. 126					

Model No. 2.4 Revolving Meccanicians

Parts required :

6	of No.	1	1	of No.	38
4	" "	5	1	" "	52
6	" "	10	2	" "	111c
8	" "	12	2	" "	126A
1	" "	16			
2	" "	17			
1	" "	19s			
4	" "	22			
1	" "	24			
8	" "	35			
20	" "	37			



Parts
required :

9	of No.	2
2	" "	3
8	" "	5
2	" "	6A
4	" "	8
1	" "	12
1	" "	16
1	" "	17
2	" "	19B
2	" "	22
1	" "	24
2	" "	35
54	" "	37
6	" "	37A
8	" "	38
1	" "	40
1	" "	45
6	" "	48A
1	" "	52
2	" "	54
2	" "	99
6	" "	111c
1	" "	115

These Models can be built with MECCANO Outfit No. 2 (or No. 1 and No. 1A)

Model No. 2.5
Easel



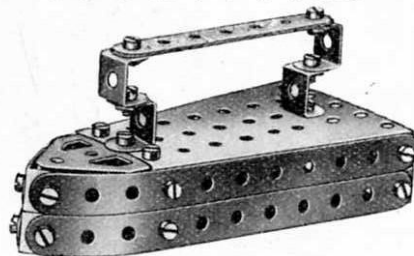
Parts
required :

5 of No.	1
3 " "	2
2 " "	3
3 " "	5
4 " "	12
2 " "	12A
1 " "	15A
2 " "	22
19 " "	37
4 " "	38
1 " "	40

Model No. 2.6 Smoothing Iron

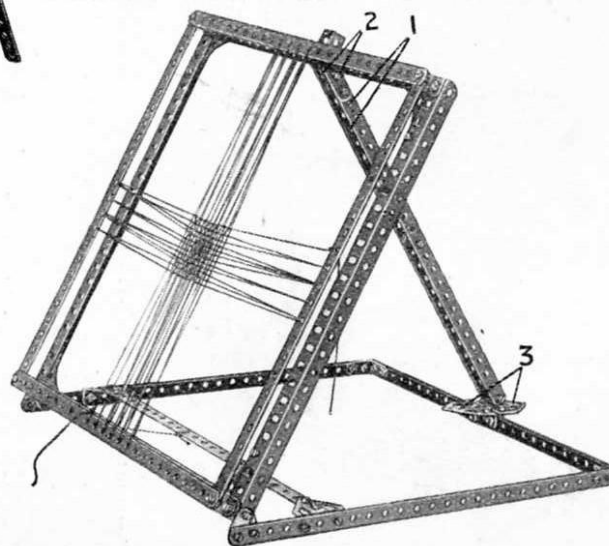
Parts required :

4 of No.	2	20 of No.	37
2 " "	3	2 " "	38
6 " "	10	1 " "	48A
4 " "	11	2 " "	54
2 " "	12	1 " "	126A



Model No. 2.7 Mat Frame

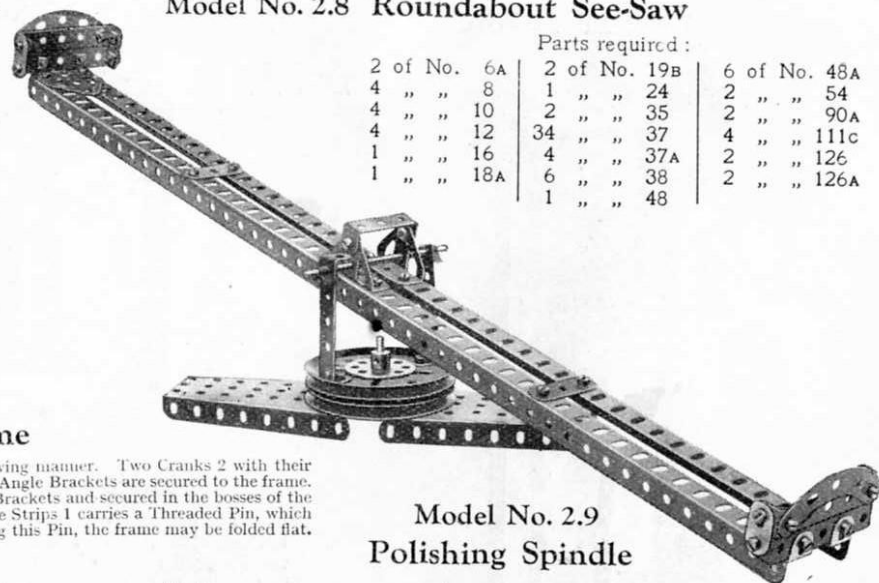
The Strips 1 are hinged to the frame in the following manner. Two Cranks 2 with their bosses facing inward are bolted to the Strips 1 and two Angle Brackets are secured to the frame. A Rod is then pushed through the holes in the Angle Brackets and secured in the bosses of the Cranks. A Double Bracket fastened to the ends of the Strips 1 carries a Threaded Pin, which fits in the holes in the Flat Trunnions 3. By removing this Pin, the frame may be folded flat.



Model No. 2.8 Roundabout See-Saw

Parts required :

2 of No.	6A	2 of No.	19B	6 of No.	48A
4 " "	8	1 " "	24	2 " "	54
4 " "	10	2 " "	35	2 " "	90A
4 " "	12	34 " "	37	4 " "	111c
1 " "	16	4 " "	37A	2 " "	126
1 " "	18A	6 " "	38	2 " "	126A
		1 " "	48		



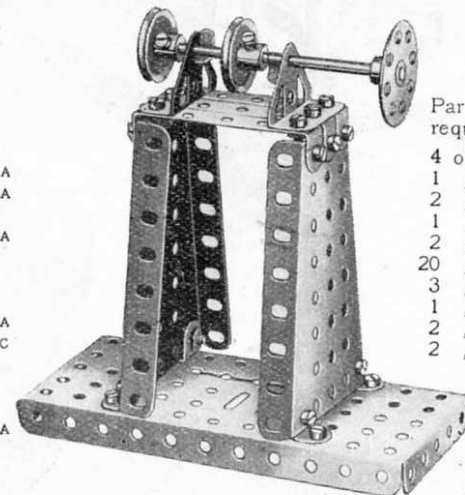
Model No. 2.9
Polishing Spindle

Parts
required :

10 of No.	1
4 " "	8
4 " "	10
3 " "	11
6 " "	12
2 " "	12A
1 " "	18A
54 " "	37
2 " "	37A
2 " "	38
1 " "	45
2 " "	62
4 " "	90A
2 " "	111c
1 " "	115
4 " "	125
2 " "	126
2 " "	126A

Parts
required :

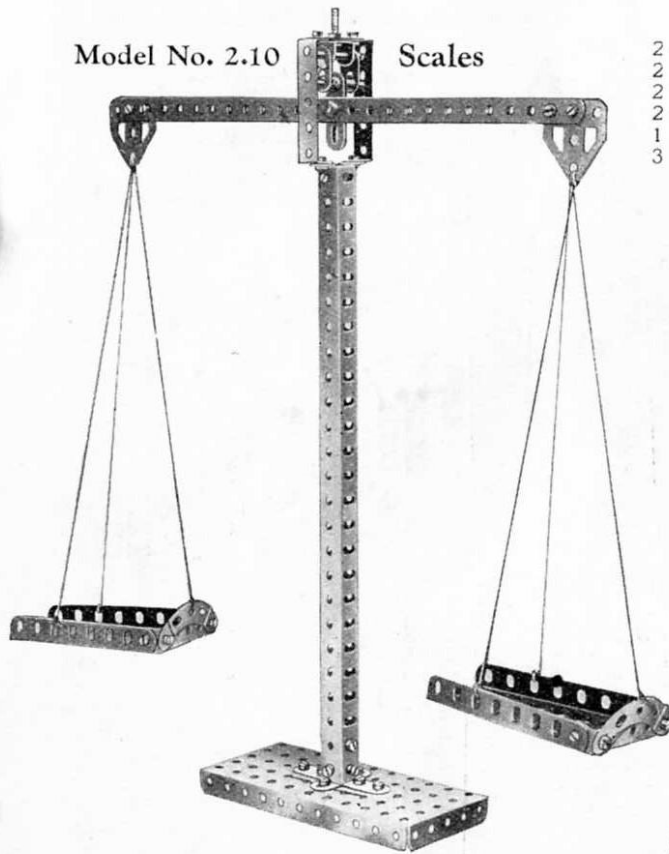
4 of No.	12
1 " "	16
2 " "	22
1 " "	24
2 " "	35
20 " "	37
3 " "	48A
1 " "	52
2 " "	54
2 " "	126



These Models can be built with MECCANO Outfit No. 2 (or No. 1 and No. 1A)

5

Model No. 2.10 Scales



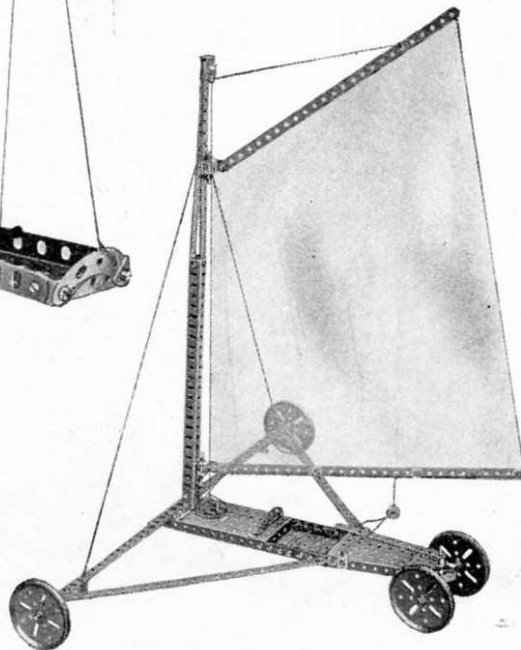
Parts required :		
2 of No. 1	2 of No. 18A	1 of No. 52
1 " " 6A	2 " " 35	2 " " 54
2 " " 8	31 " " 37	2 " " 62
2 " " 10	4 " " 38	2 " " 90A
1 " " 11	1 " " 40	1 " " 115
2 " " 12	1 " " 45	2 " " 126A
2 " " 12A	4 " " 48A	

Model No. 2.12 Motor Truck

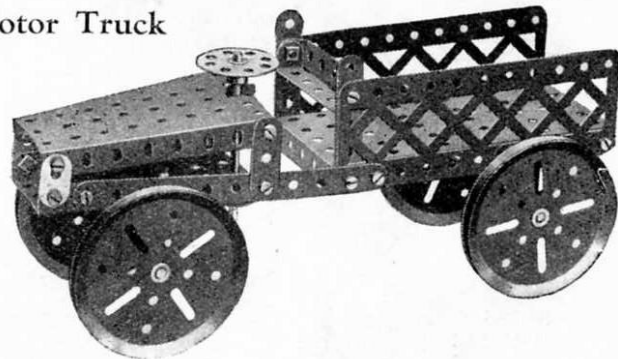
Parts required :		
2 of No. 2	4 of No. 19B	3 of No. 48A
2 " " 5	1 " " 22	1 " " 52
2 " " 6A	1 " " 24	2 " " 54
2 " " 10	1 " " 35	2 " " 100
1 " " 11	23 " " 37	1 " " 111c
3 " " 16	2 " " 37A	2 " " 126A
	1 " " 40	

A cord passed twice round a 1" fast Pulley Wheel on the lower end of the steering column is tied to the ends of a $2\frac{1}{2} \times \frac{1}{2}$ " Double Angle Strip, which is pivoted by means of a Bolt and Lock-Nuts to a Double Bracket bolted to the lower Sector Plate. The front axle is journalled in the end holes of the Double Angle Strip.

Model No. 2.11 Sand Yacht



Parts required :	
8 of No. 1	2
2 " " 2	5
1 " " 5	8
4 " " 8	10
4 " " 10	11
4 " " 11	12
12 " " 12	12A
2 " " 12A	16
3 " " 16	17
1 " " 17	18A
2 " " 18A	19B
4 " " 19B	23
1 " " 23	24
1 " " 24	35
12 " " 35	37
60 " " 37	38
9 " " 38	40
1 " " 40	48A
8 " " 48A	52
1 " " 52	54
1 " " 54	62
1 " " 62	90A
1 " " 90A	115
4 " " 115	125
1 " " 125	126
2 " " 126	126A



Model No. 2.13 Towel Horse

Parts required :	
4 of No. 12	22A
2 " " 22A	37
28 " " 37	37A
6 of No. 1	8
4 " " 2	38
2 " " 8	90A
4 " " 10	111c
2 " " 111c	



6

These Models can be built with MECCANO Outfit No. 2 (or No. 1 and No. 1A)

Model No. 2.14 Monoplane

The nose of the fuselage, which is formed by the two Sector Plates, is secured to the fuselage proper by means of two $2\frac{1}{2}$ " Strips bolted to the top rear corners of the

Sector Plates, and by two further $2\frac{1}{2}$ " Strips that are mounted on the axle of the running wheels and bolted to the ends of the lower Angle Girders of the fuselage.

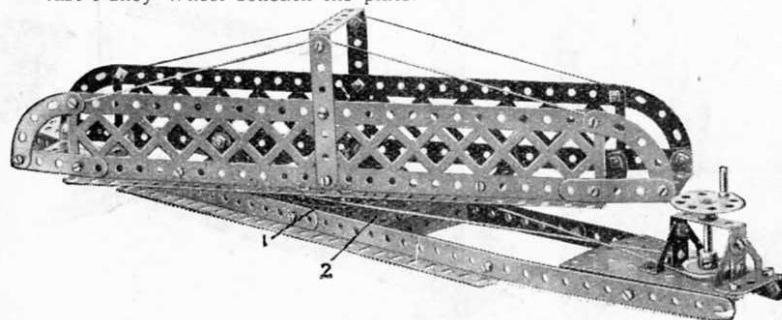
Parts required:

6	of No.	1
9	" "	2
1	" "	3
12	" "	5
2	" "	6A
4	" "	8
5	" "	12
1	" "	15A
1	" "	17
2	" "	20B
2	" "	22
1	" "	24
60	" "	37
4	" "	37A

1	of No.	45	2	of No.	99
1	" "	48	2	" "	100
2	" "	48A	4	" "	111c
2	" "	54	2	" "	126
2	" "	62	2	" "	126A

Model No. 2.15 Turntable

The two sides of the revolving portion are joined in the middle by two pairs of $2\frac{1}{2}$ " Strips, each pair being overlapped three holes and bolted to the $3\frac{1}{2}$ " Pulley Wheel 1. An Axle Rod secured in the latter is journaled in the bottom plate 2 and retained in position by a $1\frac{1}{2}$ " fast Pulley Wheel beneath the plate.



Parts required:

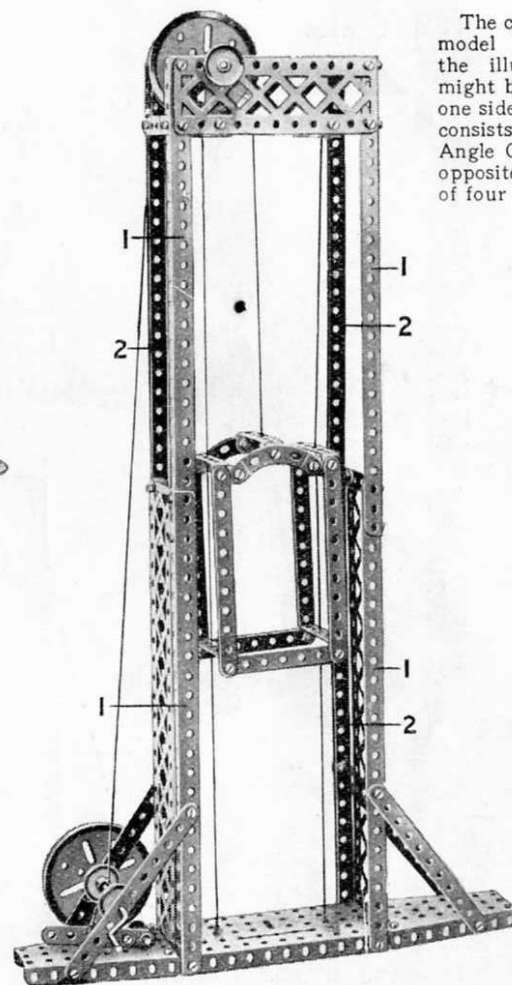
4	of No.	1
2	" "	3
8	" "	5
4	" "	8
1	" "	17
1	" "	18A
1	" "	19B
3	" "	22
1	" "	24
45	" "	37
4	" "	37A
4	" "	38
1	" "	48
7	" "	48A
1	" "	52
2	" "	54
4	" "	90A
2	" "	99
4	" "	111c

Model No. 2.16 Elevator

The construction of this model is fairly clear in the illustration, but it might be pointed out that one side of the framework consists of four $12\frac{1}{2}$ " Angle Girders 1 while the opposite side is composed of four $12\frac{1}{2}$ " Strips 2.

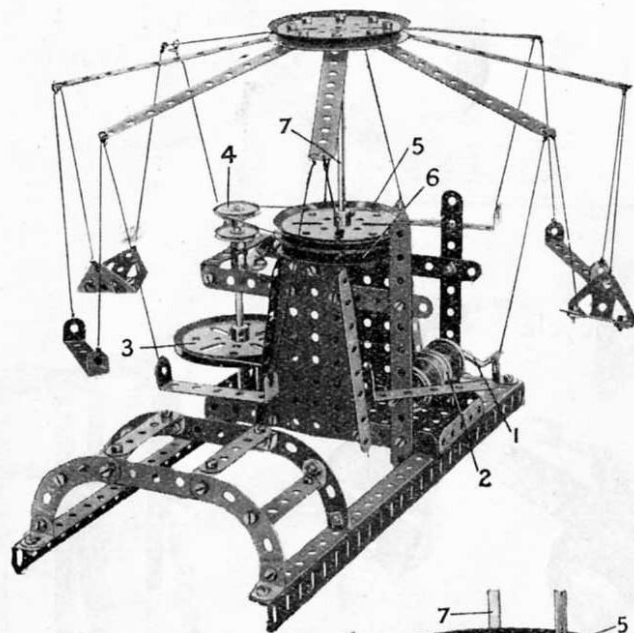
Parts required:

4	of No.	1
8	" "	2
2	" "	3
8	" "	5
4	" "	8
4	" "	10
1	" "	11
12	" "	12
1	" "	16
1	" "	18A
2	" "	19B
1	" "	19S
4	" "	22
1	" "	35
60	" "	37
6	" "	37A
2	" "	38
1	" "	40
7	" "	48A
1	" "	52
2	" "	54
1	" "	62
2	" "	90A
2	" "	99
2	" "	100
6	" "	111c



These Models can be built with MECCANO Outfit No. 2 (or No. 1 and No. 1A)

Model No. 2.17 Roundabout



When the Crank Handle is turned, the drum 2 (formed by butting together two $\frac{3}{4}$ " Flanged Wheels) turns the 3" Pulley Wheel 3 by means of an endless cord. The 1" fast Pulley Wheel 4 similarly turns a second 3" Pulley Wheel 5 resting on another 3" Pulley Wheel 6 (see Fig. 2.17A). The end of the Axle Rod 7 is quite free to revolve in the boss of the lower 3" Pulley Wheel 6.

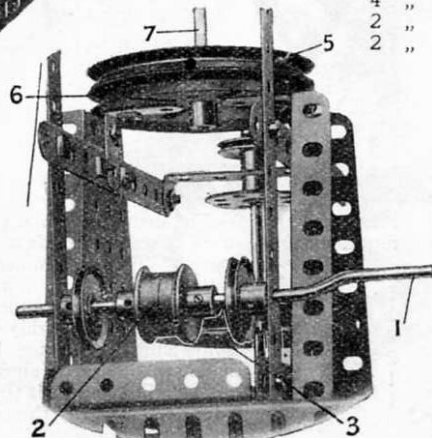


FIG. 2.17A

Parts required:

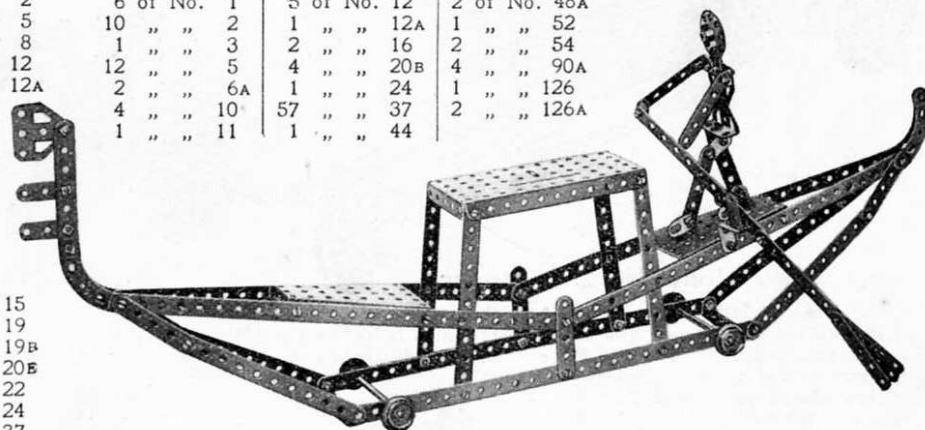
13 of No.	2
6 " "	5
2 " "	8
12 " "	12
2 " "	12A

2 of No.	15
1 " "	19
4 " "	19B
2 " "	20B
4 " "	22
1 " "	24
48 " "	37
2 " "	40
7 " "	48A
1 " "	52
2 " "	54
4 " "	90A
2 " "	126
2 " "	126A

Model No. 2.18 Gondola

Parts required:

6 of No.	1	5 of No.	12	2 of No.	48A
10 " "	2	1 " "	12A	1 " "	52
1 " "	3	2 " "	16	2 " "	54
12 " "	5	4 " "	20B	4 " "	90A
2 " "	6A	1 " "	24	1 " "	126
4 " "	10	57 " "	37	2 " "	126A
1 " "	11	1 " "	44		

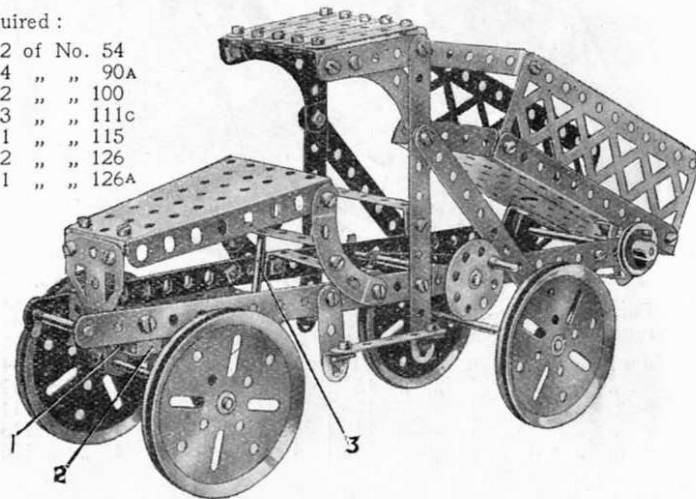


Model No. 2.19 Tipping Motor Wagon

The front Axle Rod is journalled in a $2\frac{1}{2}$ " \times 1" Double Angle Strip 1 which in turn is bolted to a Double Bent Strip 2. The Double Bent Strip is pivoted to the Sector Plate by a Bolt and two Nuts. Cord passing over a 1" Pulley Wheel attached to the Rod 3 is fastened to the ends of the Double Angle Strip 1, and by rotating another pulley, which represents the steering wheel, the road wheels are deflected.

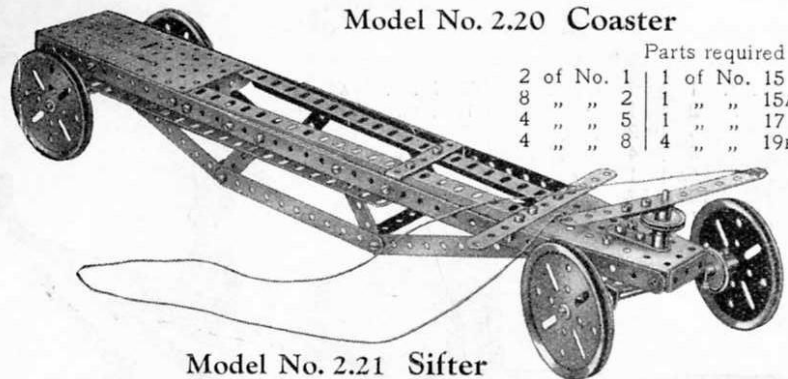
Parts required:

2 of No.	1	2 of No.	54
4 " "	2	4 " "	90A
11 " "	5	2 " "	100
2 " "	6A	3 " "	111c
6 " "	12	1 " "	115
4 " "	16	2 " "	126
1 " "	17	1 " "	126A
1 " "	18A		
4 " "	19B		
4 " "	22		
1 " "	24		
6 " "	35		
59 " "	37		
4 " "	37A		
1 " "	40		
1 " "	45		
1 " "	48		
7 " "	48A		
1 " "	52		



These Models can be built with MECCANO Outfit No. 2 (or No. 1 and No. 1A)

Model No. 2.20 Coaster

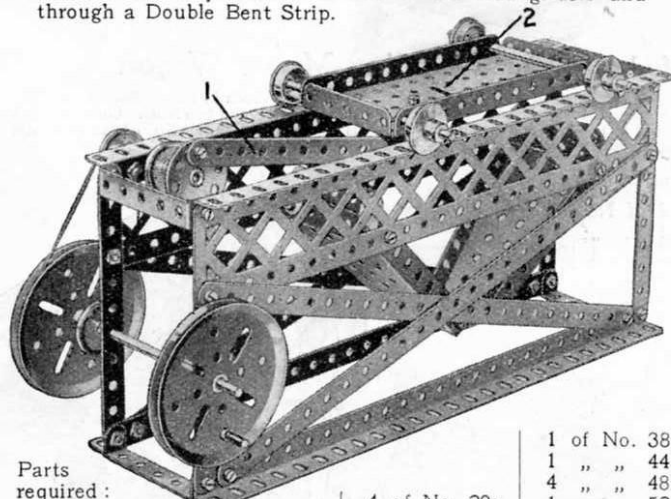


Parts required :

2 of No. 1	1 of No. 15	3 of No. 22
8 " " 2	1 " " 15A	1 " " 23
4 " " 5	1 " " 17	1 " " 24
4 " " 8	4 " " 19B	4 " " 37
		4 " " 38
		1 " " 48
		4 " " 48A
		1 " " 52
		1 " " 54
		2 " " 62
		2 " " 126

Model No. 2.21 Sifter

The $5\frac{1}{2}$ " Strip 1 is pivoted by a Bolt and two Nuts (S.M. 262) to the Bush Wheel and also to a Trunnion bolted to the under-surface of the Flanged Plate 2. The Rod carrying the Bush Wheel is journaled in one of the side girders and through a Double Bent Strip.



Parts required :

4 of No. 1	4 of No. 10	4 of No. 20B	1 of No. 38
5 " " 2	2 " " 15	3 " " 22	1 " " 44
4 " " 5	1 " " 15A	1 " " 24	4 " " 48A
2 " " 6A	1 " " 17	4 " " 35	1 " " 52
4 " " 8	2 " " 19B	36 " " 37	2 " " 54
		4 " " 37A	2 " " 99
			2 " " 111C
			1 " " 115
			1 " " 126

Model No. 2.24 Ladder on Wheels

Parts required :

6 of No. 1	1
7 " " 5	5
4 " " 12	12
2 " " 16	16
4 " " 20B	20B
4 " " 37	37
4 " " 38	38
8 " " 48A	48A
1 " " 52	52
2 " " 90A	90A

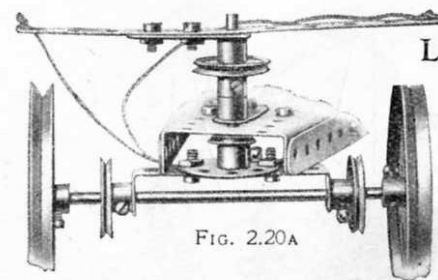
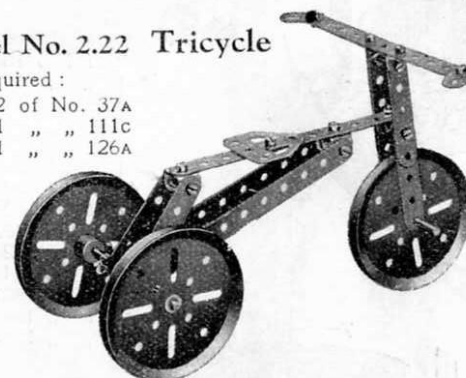


FIG. 2.20A

Model No. 2.22 Tricycle

Parts required :

4 of No. 2	2 of No. 37A
6 " " 5	1 " " 111C
2 " " 10	1 " " 126A
3 " " 11	
2 " " 12	
1 " " 16	
1 " " 18A	
3 " " 19B	
2 " " 35	
15 " " 37	

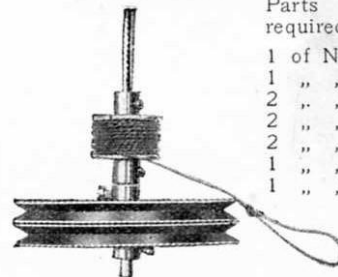


Model No. 2.23 Spinning Top

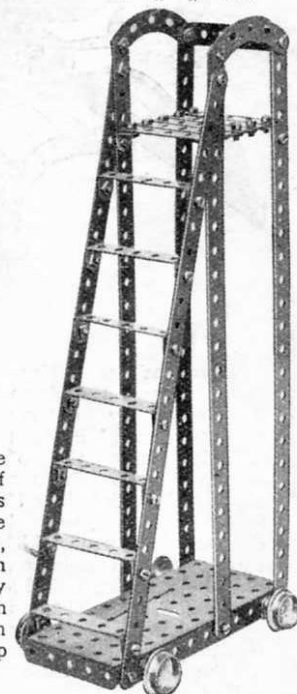


Parts required :

1 of No. 2	2
1 " " 16	16
2 " " 19B	19B
2 " " 20B	20B
2 " " 37	37
1 " " 40	40
1 " " 62	62



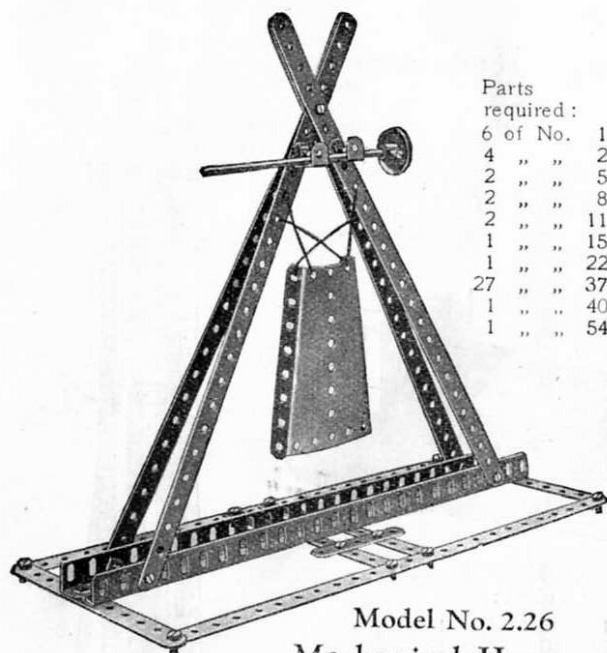
The drum on which the cord is wound consists of two $\frac{3}{4}$ " Flanged Wheels butted together. While the cord is being pulled, the top is held steadily on some smooth surface by means of the handle shown above. The handle is then lifted off, allowing the top to spin freely.



These Models can be built with MECCANO Outfit No. 2 (or No. 1 and No. 1A)

9

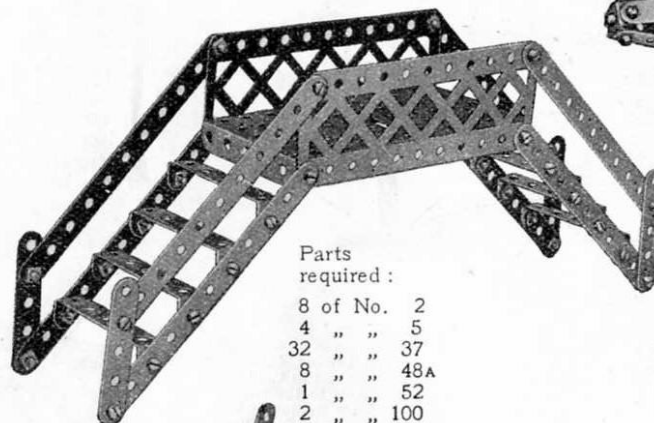
Model No. 2.25 Gong



Parts required:

6 of No.	1
4 " "	2
2 " "	5
2 " "	8
2 " "	11
1 " "	15
1 " "	22
27 " "	37
1 " "	40
1 " "	54

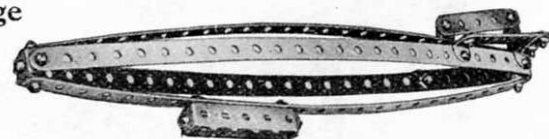
Model No. 2.27 High Level Bridge



Parts required:

8 of No.	2
4 " "	5
32 " "	37
8 " "	48A
1 " "	52
2 " "	100

Model No. 2.28 Airship

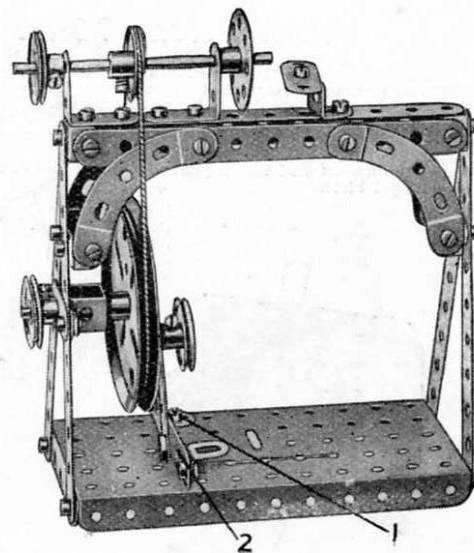


Parts required:

4 of No.	1	2 of No.	11
3 " "	5	10 " "	12
3 " "	10	25 " "	37
3 of No. 48A			

Model No. 2.29 Treadle Lathe

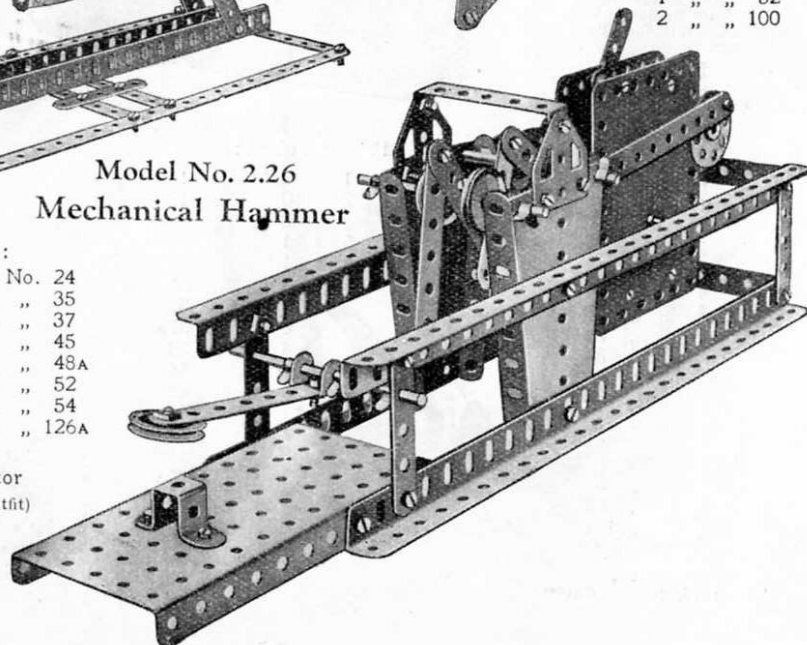
The $2\frac{1}{2}$ " Strip 2, forming the treadle, is attached pivotally by means of a Bolt and two Nuts to the Angle Bracket 1. One end of a further $2\frac{1}{2}$ " Strip is connected by the same means to the $2\frac{1}{2}$ " Strip 2, and the other end is mounted on a Threaded Pin secured to the 3" Pulley Wheel.



Parts required:

7 of No.	2
1 " "	3
1 " "	5
2 " "	6A
4 " "	11
6 " "	12
2 " "	12A
1 " "	16
1 " "	17
3 " "	19B
4 " "	22
1 " "	24
1 " "	35
34 " "	37
2 " "	37A
4 " "	38
1 " "	40
1 " "	45
1 " "	52
4 " "	90A
1 " "	115
1 " "	125

Model No. 2.26 Mechanical Hammer



Parts required:

2 of No.	2	1 of No.	24
1 " "	3	8 " "	35
6 " "	5	32 " "	37
4 " "	8	1 " "	45
1 " "	11	3 " "	48A
1 " "	12	1 " "	52
3 " "	16	2 " "	54
4 " "	22	2 " "	126A
1 " "	22A		

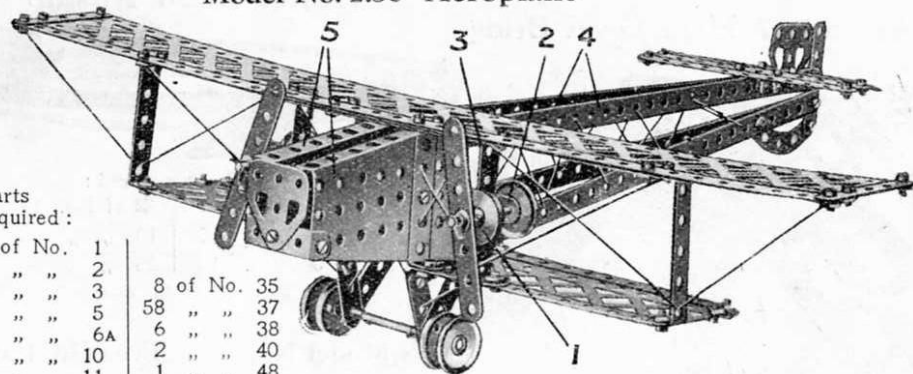
Clockwork Motor
(not included in Outfit)

These Models can be built with MECCANO Outfit No. 2 (or No. 1 and No. 1A)

Model No. 2.30 Aeroplane

Parts
required :

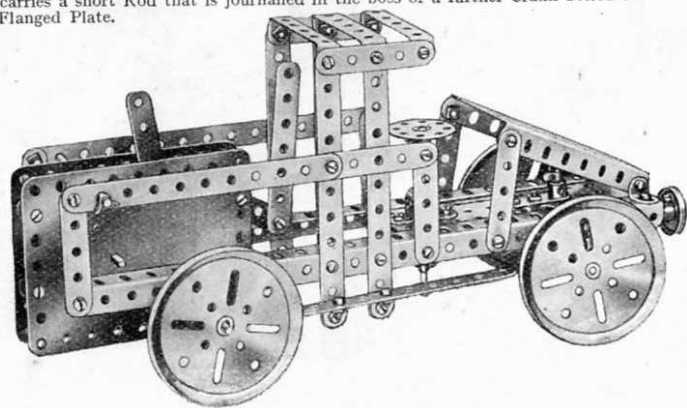
7 of No.	1	
2 " "	2	
2 " "	3	
7 " "	5	
2 " "	6A	
8 " "	10	
2 " "	11	
8 " "	12	
1 " "	16	
2 " "	17	
2 " "	20B	
4 " "	22	
2 " "	22A	
8 of No.	35	
58 " "	37	
6 " "	38	
2 " "	40	
1 " "	48	
6 " "	48A	
2 " "	54	
1 " "	90A	
2 " "	99	
2 " "	100	
2 " "	126A	



Each engine is represented by a $\frac{3}{4}$ " Flanged Wheel 1 and a $1\frac{1}{2}$ " fast Pulley Wheel secured to a $2\frac{1}{2}$ " Rod journalled in a Double Bracket 2, which is bolted to the $2\frac{1}{2} \times \frac{1}{2}$ " vertical Double Angle Strip 3. The $12\frac{1}{2}$ " Strips 4 of the fuselage proper are bolted to the two Sector Plates 5, and also by means of Angle Brackets to the wings. The tail plane consists of two $5\frac{1}{2}$ " Strips to which a similar Strip, representing the movable portion of the plane, is attached by means of Flat Brackets.

Model No. 2.31 Motor Lorry

The driving spindle of the Clockwork Motor is removed and in its place is inserted a $3\frac{1}{2}$ " Rod forming the rear axle, the special Pinion inside the Motor being secured to this Rod, of course, instead of to the driving spindle. The steering is operated by a Bush Wheel on a vertical $3\frac{1}{2}$ " Rod journalled in a Double Bent Strip. Cord is wound round the lower part of this Rod and its ends are secured one to each end of a Double Angle Strip carrying the front axle. A Crank is bolted to this Double Angle Strip and carries a short Rod that is journalled in the boss of a further Crank bolted to the Flanged Plate.



Parts
required :

8 of No.	2
1 " "	3
10 " "	5
6 " "	10
1 " "	15
1 " "	15A
2 " "	16
1 " "	18A
4 " "	19B
2 " "	22
1 " "	24
12 " "	35
49 " "	37
3 " "	38
1 " "	45
4 " "	48A
1 " "	52
1 " "	54
2 " "	62
2 " "	111c

Clockwork
Motor
not included in Outfit)

Model No. 2.32 Try-Your-Strength Machine

The Bush Wheel 1 is secured to a short Axle Rod 2, the lower end of which rests on a pair of Angle Brackets 3 bolted to the ends of four $5\frac{1}{2}$ " Strips 4. The Strips 4 are pivoted as shown (Fig. 2.32A) on a $1\frac{1}{2}$ " Rod 5, and on their opposite ends rests a $\frac{1}{2}$ " loose Pulley Wheel 6. When the Bush Wheel 1 is struck, the $5\frac{1}{2}$ " Strips fling the Pulley Wheel 6 upward, but the wheel is guided by the vertical $12\frac{1}{2}$ " Strips 7. The weight of the Strips 4 then causes the Bush Wheel to resume its original position.

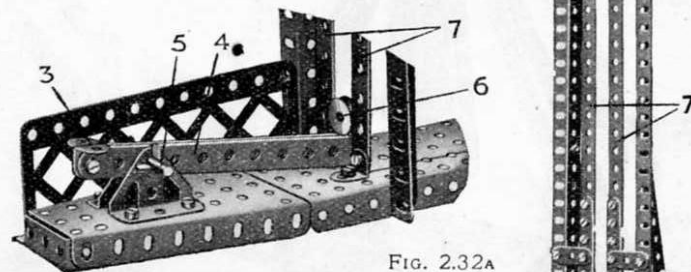


FIG. 2.32A

Parts required :

6 of No.	1	2 of No.	10
6 " "	2	10 " "	12
1 " "	3	2 " "	18A
2 " "	5	1 " "	23
2 " "	6A	1 " "	24
4 " "	8	3 " "	35
		60 " "	37
		6 " "	37A
		4 " "	38
		1 " "	45
		1 " "	48
		1 " "	48A
		1 " "	52
		2 " "	54
		3 " "	90A
		2 " "	100
		2 " "	126

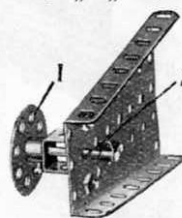
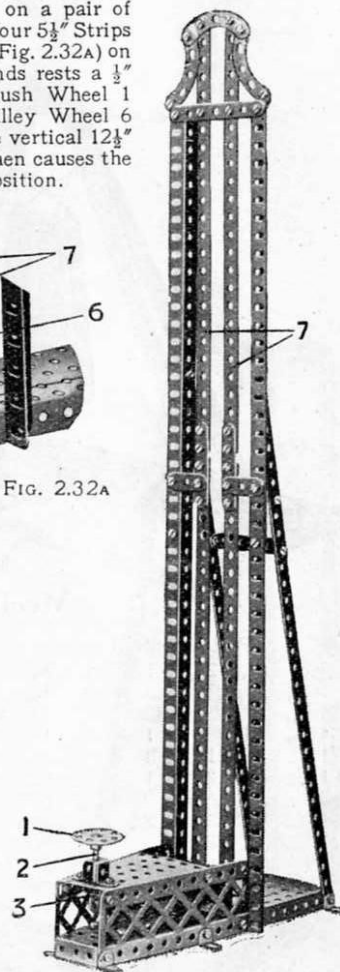


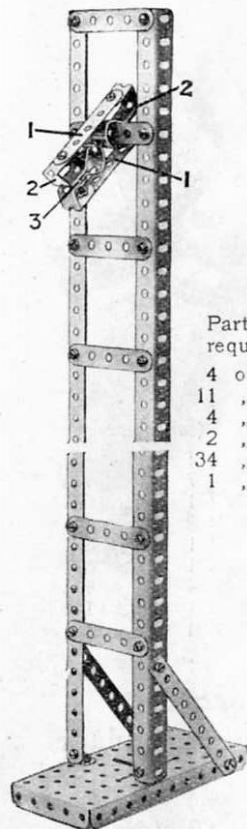
FIG. 2.32B



These Models can be built with MECCANO Outfit No. 2 (or No. 1 and No. 1A)

11

Model No. 2.33 Performing Meccanitian



Parts required :

4 of No.	2
11 " "	5
4 " "	8
2 " "	12
34 " "	37
1 " "	52

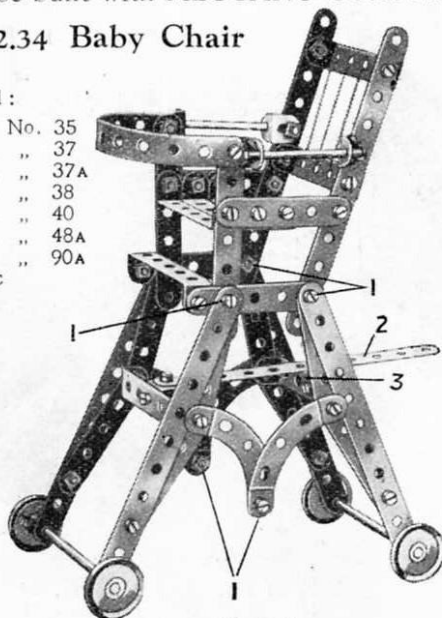
The Meccanitian consists of two 2½" Strips 1 to the ends of which two 5½" Strips 2, bent as shown, are bolted. The slot 3 should be passed over the top strip of the ladder, when the device will fall "head over heels" to the bottom.

Model No. 2.34 Baby Chair

Parts required :

8 of No.	2	4 of No.	35
2 " "	3	2 " "	37
12 " "	5	2 " "	37A
6 " "	12	4 " "	38
2 " "	16	1 " "	40
2 " "	17	8 " "	48A
4 " "	22	4 " "	90A
1 of No. 111c			

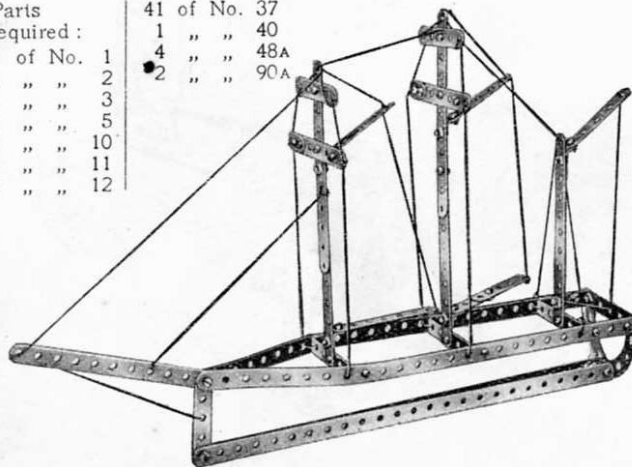
The Bolts 1 are all secured pivotally (see S.M. Nos. 262 and 263), and the height of the chair may be adjusted by fitting any hole in the Strip 2 over the shank of a Bolt that is secured in an Angle Bracket bolted to the Double Angle Strip 3.



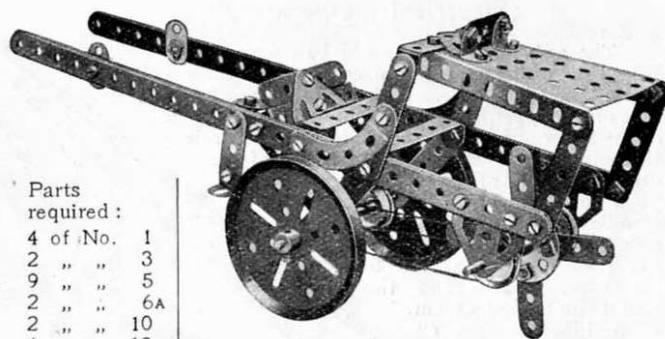
Model No. 2.35 Square-topsail Schooner

Parts required :

41 of No.	37
1 " "	40
4 " "	48A
2 " "	90A
4 of No.	1
6 " "	2
1 " "	3
10 " "	5
4 " "	10
1 " "	11
5 " "	12



Model No. 2.36 Hay Tedder



Parts required :

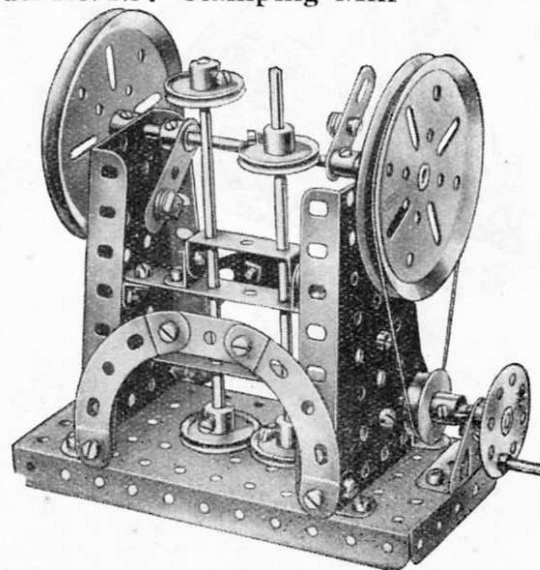
4 of No.	1
2 " "	3
9 " "	5
2 " "	6A
2 " "	10
6 " "	12
1 " "	15A
1 " "	16
2 " "	19
2 " "	20B
2 " "	22

1 of No.	24	4 of No.	38	3 of No.	90A
2 " "	35	1 " "	40	6 " "	111c
34 " "	37	4 " "	48A	2 " "	126
6 " "	37A	1 " "	54	2 " "	126A

Model No. 2.37 Stamping Mill

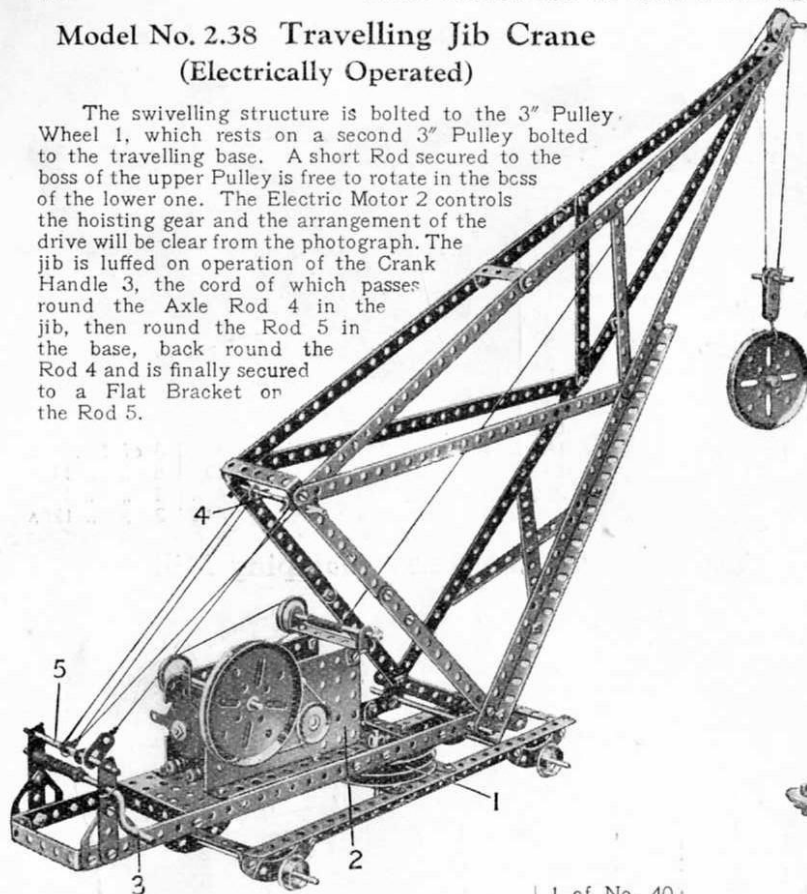
Parts required :

2 of No.	3
2 " "	6A
10 " "	12
2 " "	15
1 " "	15A
1 " "	17
2 " "	19B
1 " "	20B
4 " "	22
1 " "	24
1 " "	35
30 " "	37
2 " "	37A
11 " "	38
1 " "	48
1 " "	52
2 " "	54
2 " "	62
4 " "	90A
2 " "	111c
1 " "	115
1 " "	126



Model No. 2.38 Travelling Jib Crane (Electrically Operated)

The swivelling structure is bolted to the 3" Pulley Wheel 1, which rests on a second 3" Pulley bolted to the travelling base. A short Rod secured to the boss of the upper Pulley is free to rotate in the boss of the lower one. The Electric Motor 2 controls the hoisting gear and the arrangement of the drive will be clear from the photograph. The jib is luffed on operation of the Crank Handle 3, the cord of which passes round the Axle Rod 4 in the jib, then round the Rod 5 in the base, back round the Rod 4 and is finally secured to a Flat Bracket on the Rod 5.

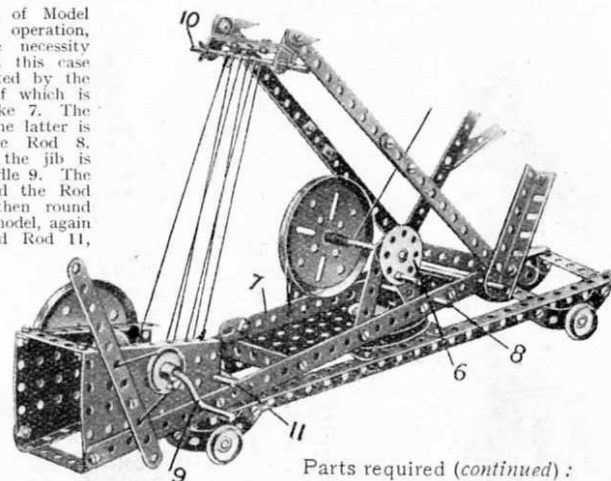


Parts required:		
10 of No. 1	2 of No. 12	4 of No. 20B
9 " " 2	2 " " 15	4 " " 22
2 " " 3	1 " " 15A	1 " " 23
2 " " 5	2 " " 16	1 " " 24
2 " " 6A	1 " " 17	14 " " 35
4 " " 8	2 " " 18A	60 " " 37
1 " " 10	1 " " 19	6 " " 37A
1 " " 11	4 " " 19B	14 " " 38

1 of No. 40
1 " " 48
7 " " 48A
1 " " 52
1 " " 57
4 " " 90A
5 " " 111c
2 " " 126A
Electric Motor
(not included)
in Outfit

Model No. 2.39 Travelling Jib Crane (Hand Operated)

This shows a section of Model No. 2.38 fitted for hand operation, thus dispensing with the necessity of the Electric Motor. In this case the hoisting cord is operated by the hand wheel 6, the Rod of which is controlled by a hand brake 7. The end hole of the lever of the latter is pivotally mounted on the Rod 8. The luffing movement of the jib is effected by the Crank Handle 9. The operating cord passes round the Rod 10 attached to the jib, then round Rod 11 in the base of the model, again round Rod 10, back round Rod 11, and once more round Rod 10. The end of the cord is then tied to a Flat Bracket on the Rod 11.



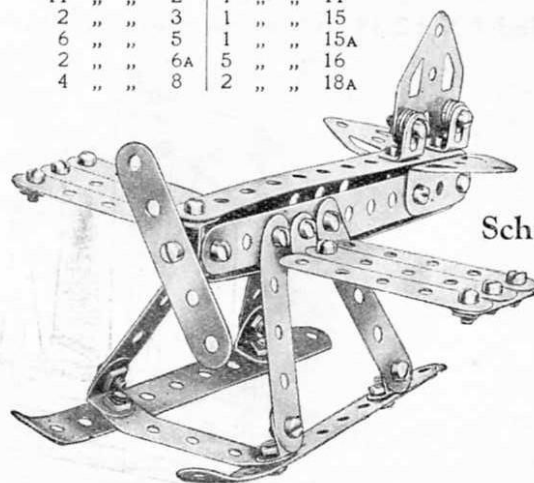
Parts required:

10 of No. 1	3 of No. 10
11 " " 2	1 " " 11
2 " " 3	1 " " 15
6 " " 5	1 " " 15A
2 " " 6A	5 " " 16
4 " " 8	2 " " 18A

Parts required (continued):

1 of No. 19	1 of No. 48
4 " " 19B	7 " " 48A
4 " " 20B	1 " " 52
4 " " 22	2 " " 54
1 " " 23	1 " " 57
1 " " 24	1 " " 62
12 " " 35	4 " " 90A
57 " " 37	1 " " 111c
1 " " 40	1 " " 115

Model No. 2.40 Schneider Trophy Seaplane



Parts required:

6 of No. 2	34 of No. 37
12 " " 5	3 " " 37A
2 " " 6A	6 " " 38
2 " " 11	2 " " 111c
12 " " 12	2 " " 126
1 of No. 126A	

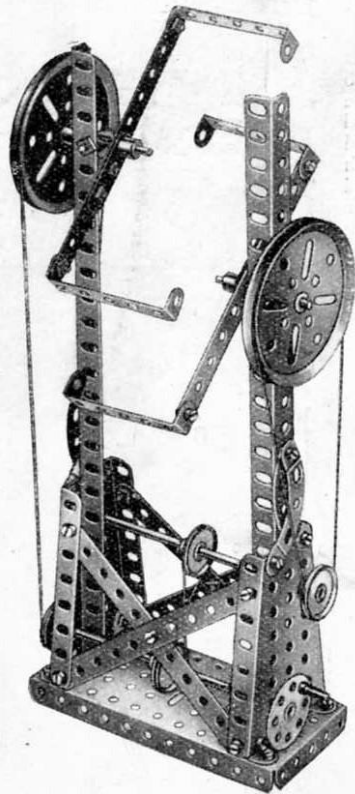
These Models can be built with MECCANO Outfit No. 2 (or No. 1 and No. 1A)

13

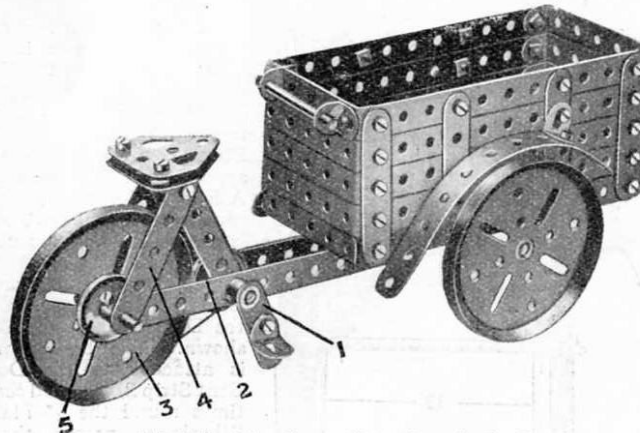
Model No. 2.41 Candy Puller

Parts required :

6 of No. 2	36 of No. 37
2 " " 8	4 " " 38
6 " " 12	1 " " 40
2 " " 15	4 " " 48A
2 " " 17	1 " " 52
2 " " 19B	2 " " 54
4 " " 22	2 " " 62
1 " " 24	4 " " 90A
3 " " 35	1 " " 115



Model No. 2.42 Carrier Tricycle



Each pedal of the tricycle consists of an Angle Bracket pivotally attached to a Crank 1 by means of a Bolt and two Nuts (see S.M. No. 262). The Cranks are secured to a $1\frac{1}{2}$ " Axle Rod carrying a 1" fast Pulley Wheel 2. A cord passes round this Pulley and around the 3" Pulley Wheel 3, which is spaced away from the 2 $\frac{1}{2}$ " Strips 4 by a 1" fast Pulley Wheel 5. The Double Bracket 6 (Fig. 2.42A) is attached pivotally to the lower framework by a Bolt and Lock-Nuts (S.M. 263).

Parts required :

12 of No. 2	2
12 " " 5	5
2 " " 11	11
6 " " 12	12
1 " " 16	16
1 " " 17	17
2 " " 18A	18A
3 " " 19B	19B
2 " " 22	22
45 " " 37	37
5 " " 37A	37A
1 " " 40	40
8 " " 48A	48A
1 " " 52	52
2 " " 62	62
3 " " 111c	111c
2 " " 126A	126A

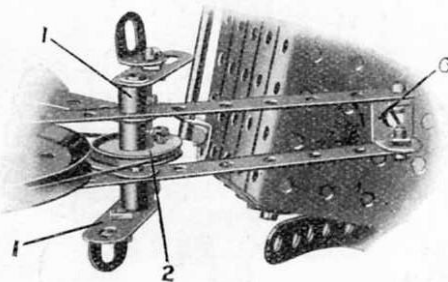


FIG. 2.42A

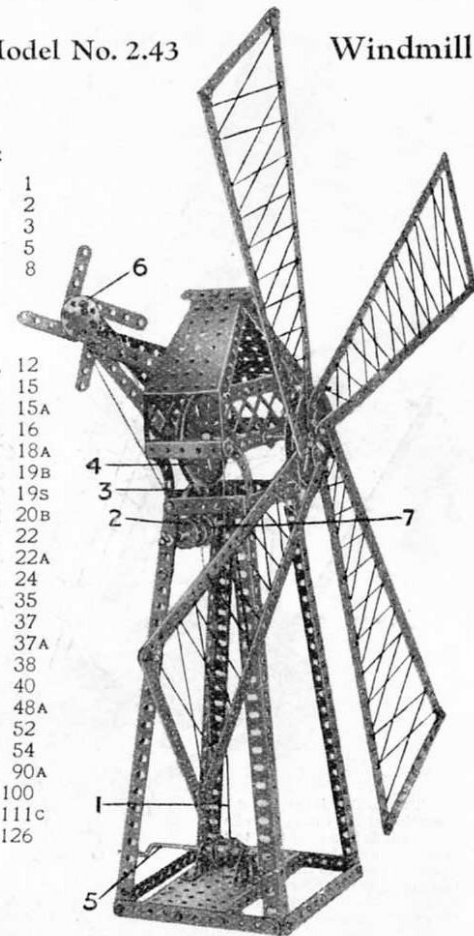
Model No. 2.43 Windmill

Windmill

Parts required :

8 of No. 1	1
13 " " 2	2
2 " " 3	3
10 " " 5	5
4 " " 8	8

4 of No. 12	12
1 " " 15	15
1 " " 15A	15A
1 " " 16	16
1 " " 18A	18A
2 " " 19B	19B
1 " " 19S	19S
4 " " 20B	20B
2 " " 22	22
1 " " 22A	22A
1 " " 24	24
6 " " 35	35
60 " " 37	37
4 " " 37A	37A
7 " " 38	38
2 " " 40	40
2 " " 48A	48A
1 " " 52	52
2 " " 54	54
4 " " 90A	90A
2 " " 100	100
4 " " 111c	111c
2 " " 126	126



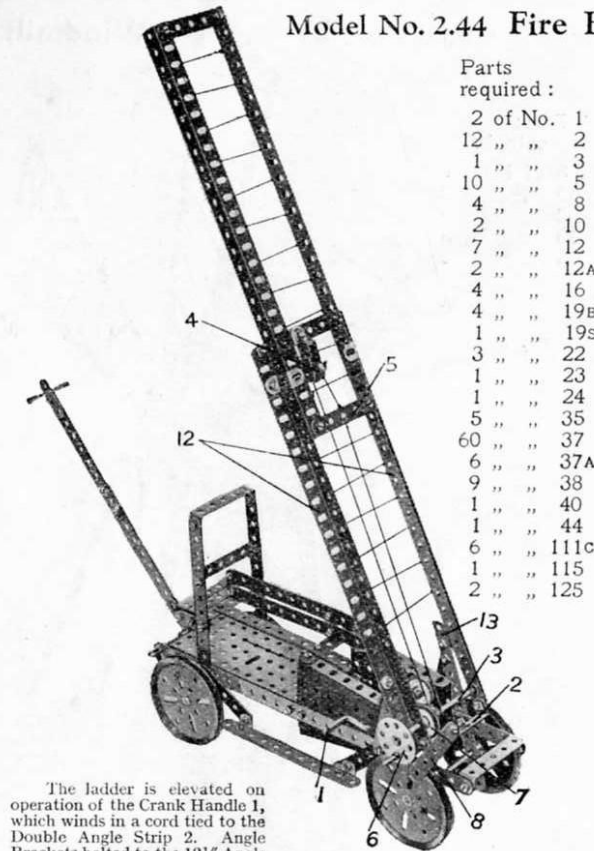
The operating cord 1 is given a complete turn round the pair of $\frac{3}{4}$ " Flanged Wheels 2. It is then led round the 1" Loose Pulley 3, over the 3" Pulley 4, then down and round the $\frac{3}{4}$ " Flanged Wheels secured to the Crank Handle 5. The vane 6 is rotated by a cord which passes round a 1" fixed Pulley 7 secured to the shaft of the Flanged Wheels 2.

These Models can be built with MECCANO Outfit No. 2 (or No. 1 and No. 1A)

Model No. 2.44 Fire Escape

Parts
required :

2 of No.	1
12 "	2
1 "	3
10 "	5
4 "	8
2 "	10
7 "	12
2 "	12A
4 "	16
4 "	19B
1 "	19S
3 "	22
1 "	23
1 "	24
5 "	35
60 "	37
6 "	37A
9 "	38
1 "	40
1 "	44
6 "	111c
1 "	115
2 "	125



The ladder is elevated on operation of the Crank Handle 1, which winds in a cord tied to the Double Angle Strip 2. Angle Brackets bolted to the 12½" Angle Girders 12 are attached pivotally to the 5½" Strips 13 by means of Bolts and Nuts (S.M. 262), and the action of winding in the cord thus causes the ladder to swing upward. It is prevented from falling by the friction of the 1" Pulley Wheels 10 (Fig. 2.44A), which press against the two Sector Plates. When the ladder is fully elevated, its lower ends act as brakes to prevent the road wheels from revolving.

A second cord is wound upon the Rod 3. One end is then carried over the ½" loose Pulley Wheel 4 and tied to the 2½" Strip 5, the opposite end being carried directly to the same Strip and secured to it. When the handle 6 is turned, the two ends of the cord are wound and unwound simultaneously, and the ladder is extended or shortened as required. A permanent brake is provided by a cord passing over the 1" Pulley Wheel 7 and having both its ends secured to the 2½" Strip 8. The Strip 8 is bolted firmly to the Angle Bracket 9 (Fig. 2.44A) and keeps the brake continuously in action.

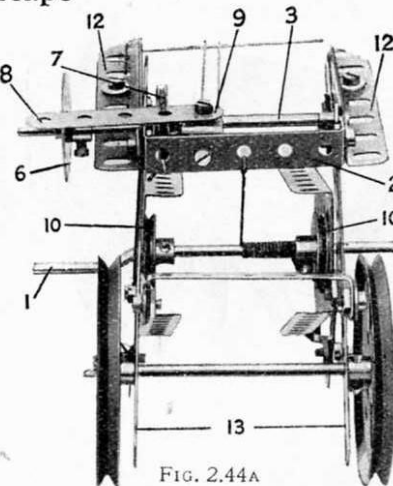
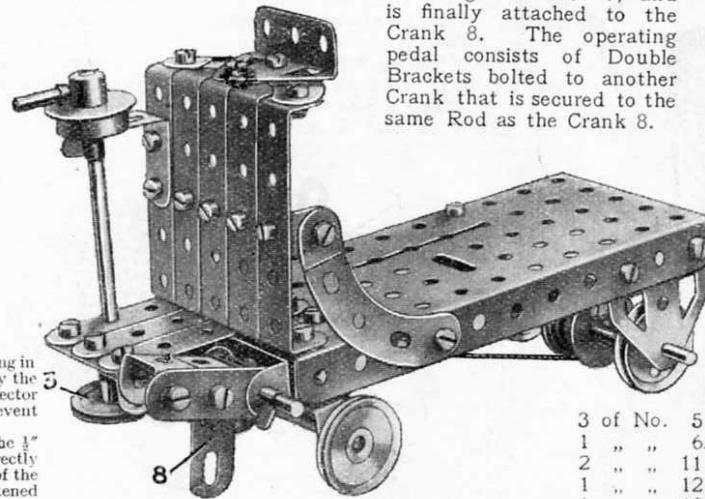


FIG. 2.44A



Model No. 2.45 Electric Truck

An underneath view of the truck is shown in Fig. 2.45A. The front axle is journalled in a 1½" x ½" Double Angle Strip 1 that is free to turn on a Double Bent Strip 2, from which it is spaced by a ½" loose Pulley. A length of cord is wrapped round the 1" Pulley 3, which is secured to the end of the steering column, and then passed through a Cranked Bent Strip 4 and secured to the Double Angle Strip 1 as shown. The brake cord 5 is attached to the Double Bent Strip 2, wrapped several times round the ½" Flanged Wheels 6, passed through the Angle Bracket 7, and is finally attached to the Crank 8. The operating pedal consists of Double Brackets bolted to another Crank that is secured to the same Rod as the Crank 8.

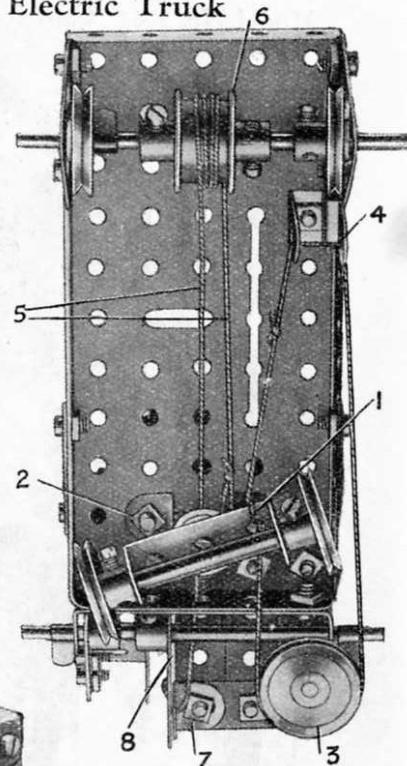


FIG. 2.45A

Parts required :

3 of No.	20B	1 of No.	45
4 "	22	1 "	48
1 "	22A	7 "	48A
1 "	23	1 "	52
4 "	35	2 "	62
35 "	37	3 "	90A
2 "	37A	1 "	111c
5 "	38	1 "	115
1 "	40	1 "	126
1 "	44	2 "	126A

These Models can be built with MECCANO Outfit No. 2 (or No. 1 and No. 1A)

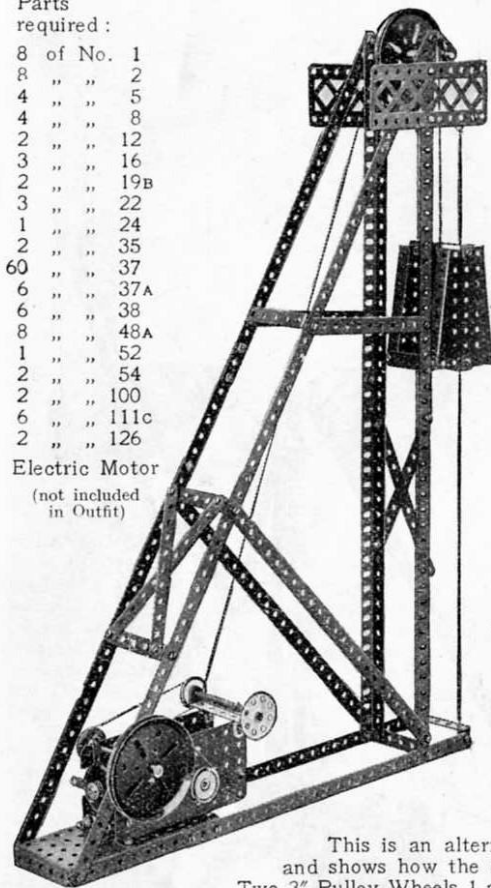
15

Model No. 2.46 Pit Head Gear (Electrically Operated)

Parts
required:

8	of No.	1
8	" "	2
4	" "	5
4	" "	8
2	" "	12
3	" "	16
2	" "	19B
3	" "	22
1	" "	24
2	" "	35
60	" "	37
6	" "	37A
6	" "	38
8	" "	48A
1	" "	52
2	" "	54
2	" "	100
6	" "	111c
2	" "	126

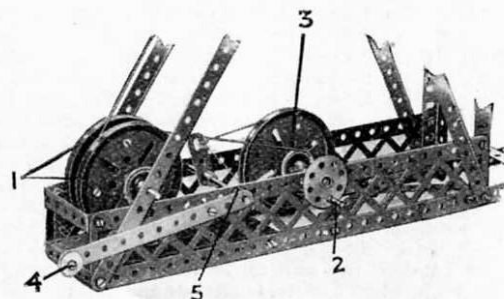
Electric Motor
(not included
in Outfit)



Parts required:		
2 of No.	3	4 of No. 20B
10 " "	5	3 " "
2 " "	10	1 " "
1 " "	11	1 " "
3 " "	12	5 " "
3 " "	16	60 " "
1 " "	17	5 " "
1 " "	18A	1 " "
2 " "	19B	8 " "
		1 of No. 52
		2 " "
		1 " "
		3 " "
		2 " "
		4 " "
		1 " "
		2 " "

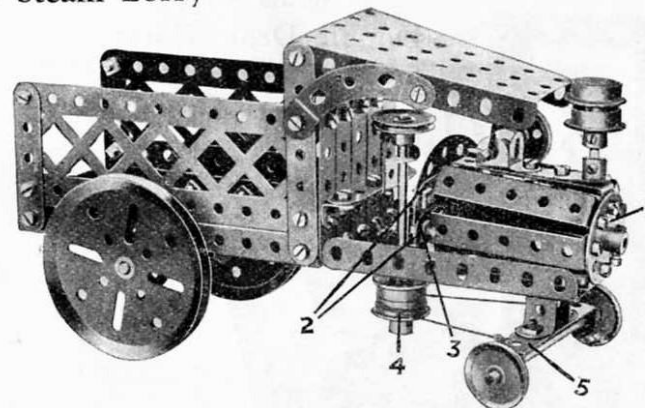
Model No. 2.47 Pit Head Gear (Hand Operated)

Parts required:		
6 of No.	1	4 of No. 22
7 " "	2	1 " "
3 " "	5	1 " "
4 " "	8	3 " "
4 " "	11	60 " "
6 " "	12	6 " "
4 " "	16	8 " "
4 " "	19B	1 " "
		2 of No. 54
		2 " "
		2 " "
		2 " "
		6 " "
		1 " "
		2 " "



This is an alternative construction of the base of Model No. 2.46, and shows how the Electric Motor may be dispensed with if necessary. Two 3" Pulley Wheels 1 are bolted together by four Double Brackets to form a drum on which the hoisting cord is wound. The cage is raised or lowered on operation of the handle 2, which is connected to the winding drum by an ordinary belt drive. The cage is prevented from overhauling by a hand brake that acts on the groove of a third 3" Pulley Wheel 3. The brake normally is applied by the weight of the $\frac{1}{2}$ " loose Pulley Wheel 4, which is secured to the end of a $5\frac{1}{2}$ " Strip that is bolted to the crank 5.

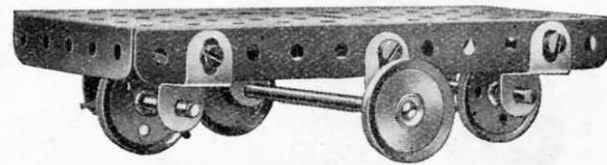
Model No. 2.48 Steam Lorry



The boiler of the engine is built up of $2\frac{1}{2}$ " \times $\frac{1}{2}$ " Double Angle Strips bolted to the Bush Wheel 1, and to two $2\frac{1}{2}$ " Strips 2, which are joined together by Flat Brackets 3. A $2\frac{1}{2}$ " Curved Strip (small radius) is bolted to the upper Strip 2. A cord is passed completely round two $\frac{3}{4}$ " Flanged Wheels 4 secured to the steering column, and its ends are tied to the $2\frac{1}{2}$ " \times $\frac{1}{2}$ " Double Angle Strip 5. The Double Bent Strip bolted to the Strip 5 is pivoted by a bolt and two nuts to the Sector Plate.

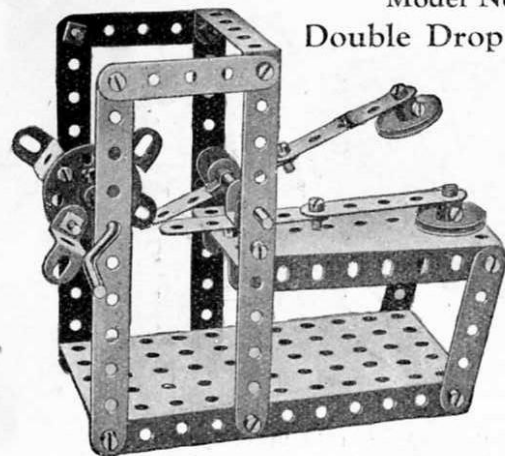
Model No. 2.49 Revolving Truck

Parts required:		
1 of No.	16	2 of No. 22A
2 " "	17	4 " "
2 " "	22	6 " "
		1 of No. 52
		4 " "



Model No. 2.50

Double Drop Hammer



Parts required:

8 of No.	2
4 " "	5
2 " "	11
1 " "	16
1 " "	19s
2 " "	22
1 " "	24
6 " "	35
23 " "	37
2 " "	48A
1 " "	52
1 " "	54
4 " "	125

Model No. 2.51 Motor Van

The Axle Rod 1 is journalled in a $2\frac{1}{2} \times \frac{1}{2}$ " Double Angle Strip 2. The latter is bolted to a Double Bent Strip that is pivoted to the Flanged Plate 3 by a Bolt and two Nuts. Steering is effected by a cord attached to the ends of the Double Angle Strip 2 and passed round a 1" Pulley Wheel fastened to the lower end of the steering Rod.

Parts required:

6 of No.	2	1 of No.	38	2 of No.	54
10 " "	5	1 " "	45	3 " "	111c
1 " "	10	1 " "	48	2 " "	125
2 " "	12	6 " "	48A	2 " "	126A
1 " "	15	1 " "	52		
1 " "	15A				
1 " "	16				
4 " "	19B				
3 " "	22				
1 " "	24				
5 " "	35				
35 " "	37				
2 " "	37A				

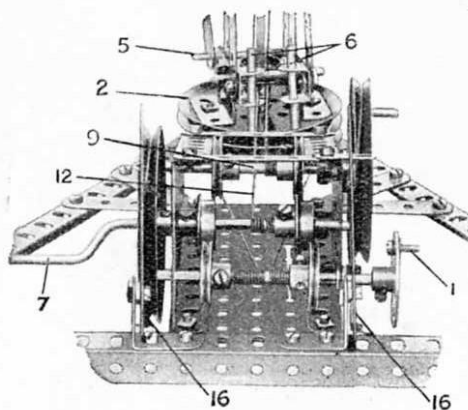
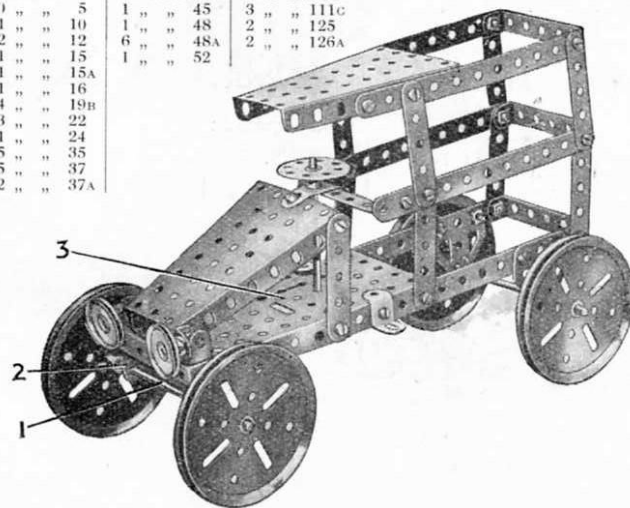


FIG. 2.52A

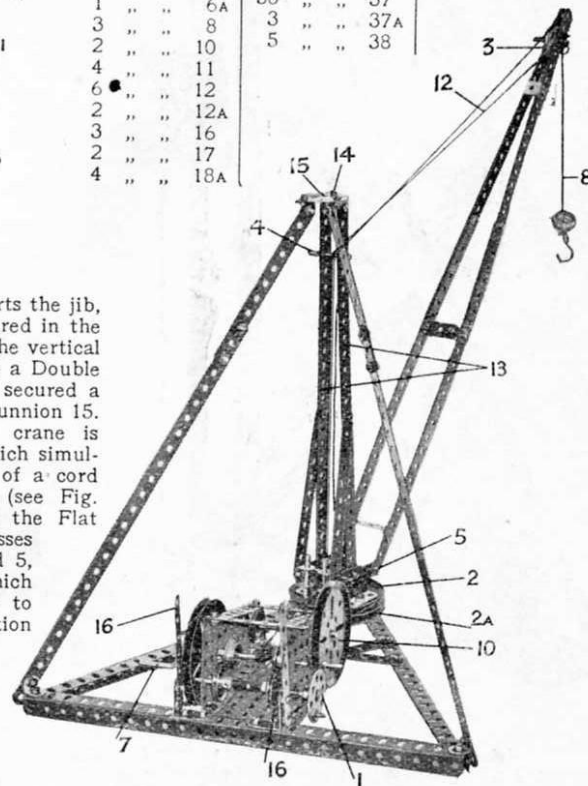
Model No. 2.52 Derrick

Parts required:

8 of No.	1	4 of No.	19B	1 of No.	52
4 " "	2	4 " "	20B	2 " "	54
2 " "	3	4 " "	22	1 " "	57
8 " "	5	1 " "	23	1 " "	111c
1 " "	6A	1 " "	24	1 " "	115
3 " "	8	11 " "	35	2 " "	126
2 " "	10	58 " "	37		
4 " "	11	3 " "	37A		
6 " "	12	5 " "	38		
2 " "	12A				
3 " "	16				
2 " "	17				
4 " "	18A				

The 3" Pulley Wheel 2, which supports the jib, is free to turn on a short Axle Rod secured in the boss of the lower 3" Pulley Wheel 2a. The vertical $12\frac{1}{2}$ " Strips 13 are bolted at their tops to a Double Bracket, to the centre hole of which is secured a Bolt 14 that is free to turn in the Flat Trunnion 15.

The swivelling movement of the crane is carried out by turning the handle 1, which simultaneously winds and unwinds the ends of a cord passing round the 3" Pulley Wheel 2 (see Fig. 2.52A). The cord 12, which is tied to the Flat Bracket 3 at the head of the jib passes over the 2" Rod 4, under a similar Rod 5, and between two vertical 2" Rods 6, which act as guides, and is finally wound on to the Crank Handle 7. Hence on operation of the latter the jib is raised or lowered. The cord 8 also passes round the Rods 4, 5 and 6, and is wound on to the Rod 9. Operation of the handle 10 raises and lowers the hook. The cords 8 and 12 are prevented from unwinding by band-and-pulley brakes 16.

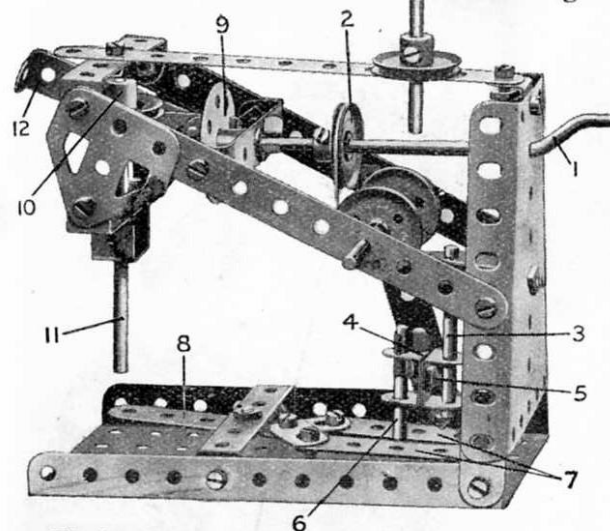


These Models can be built with MECCANO Outfit No. 2 (or No. 1 and No. 1A)

17

Model No. 2.53

Sewing Machine



Parts
required:

3 of No.	2
6 " "	5
3 " "	10
2 " "	11
3 " "	12
2 " "	16
2 " "	17
1 " "	18A
1 " "	19S
4 " "	22
2 " "	22A
1 " "	24
5 " "	35
24 " "	37
3 " "	38
1 " "	44
5 " "	48A
1 " "	52
1 " "	54
2 " "	125
2 " "	126A

The handle 1 carries a 1" Pulley 2, which drives by means of a cord a similar Pulley on a 2" Rod 3 journalled in a Cranked Bent Strip bolted to the Sector Plate. Two Double Brackets 4 are secured together by a Bolt 5, the shank of which presses very tightly on the Rod 3. This locks the Double Brackets in position, and they revolve with the Rod 3. The outer Double Bracket carries a 1½" Rod 6, the end of which lies between two Strips 7, arranged at a short distance apart from each other and bolted to two Flat Brackets. These are secured to a further Strip 8 bolted pivotally to a transverse Double Angle Strip. As the shaft 3 rotates, the Rod 6 slides between the Strips 7 and so rocks the Strip 8 from side to side to represent the shuttle.

The Bush Wheel 9 carries two Angle Brackets placed together in the form of a Double Bracket, with their elongated holes overlapping, and in such a position that an imaginary line drawn through their opposite round holes, would cross the centre of the Bush Wheel. A Flat Bracket is bolted to the inner Angle Bracket in a line with the Crank Handle and forms a lever which engages 1" Pulley 10 mounted on a vertical sliding Rod 11. This Rod is journalled in a Double Angle Strip bolted between the lower holes of the two Flat Trunnions and is further supported by two ½" Reversed Angle Brackets secured to the Angle Strip. As the Bush Wheel rotates, the Flat Bracket imparts to the Rod 11 a movement corresponding to the action of the needle.

The outer Angle Bracket on the Bush Wheel strikes once in every revolution the end of a Double Angle Strip 12. This is pivotally mounted by a Bolt passed through its second hole from the Bush Wheel end to the centre hole of the Flat Trunnion on that side of the model. The resulting movement of the Strip 12 represents the apparatus that pays out the cotton from the reel.

Model No. 2.54 Anti-Aircraft Gun

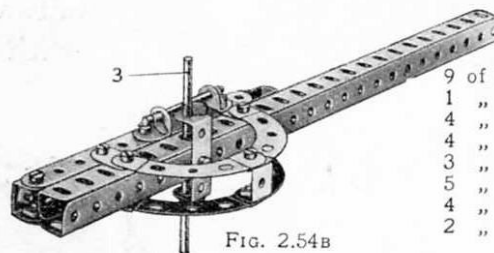


FIG. 2.54B

Parts required:

9 of No.	2	1 of No.	19B	4 of No.	48A
1 " "	6A	4 " "	20B	1 " "	52
4 " "	8	4 " "	22	2 " "	54
4 " "	10	1 " "	24	4 " "	90A
3 " "	11	8 " "	35	1 " "	115
5 " "	12	57 " "	37	2 " "	126
4 " "	16	6 " "	38	2 " "	126A
2 " "	17	1 " "	44		

The general construction of the model will be made clear by reference to Figures 2.54A and 2.54B. Rotation of the handle 1 causes the gun to revolve on the 3" Pulley Wheel 2. The barrel of the gun is so balanced on the Axle Rod 3 that it tends to fall by its own weight, but is prevented from doing so by a cord 4 tied to the gun close to the breech and wound on the 3½" Rod 5. By turning the Pulley Wheels 6 the muzzle is raised or allowed to fall.

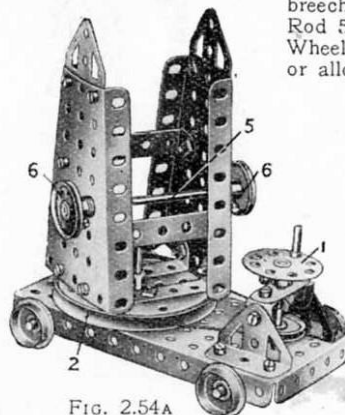
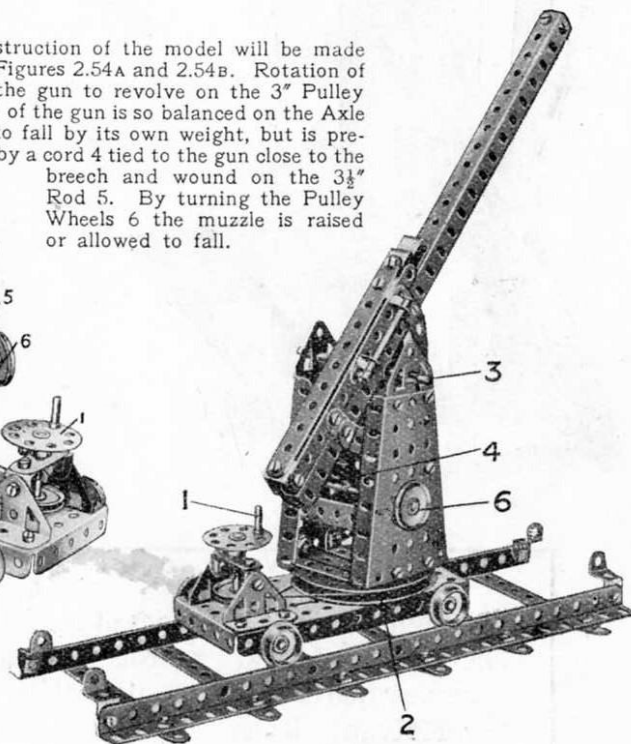
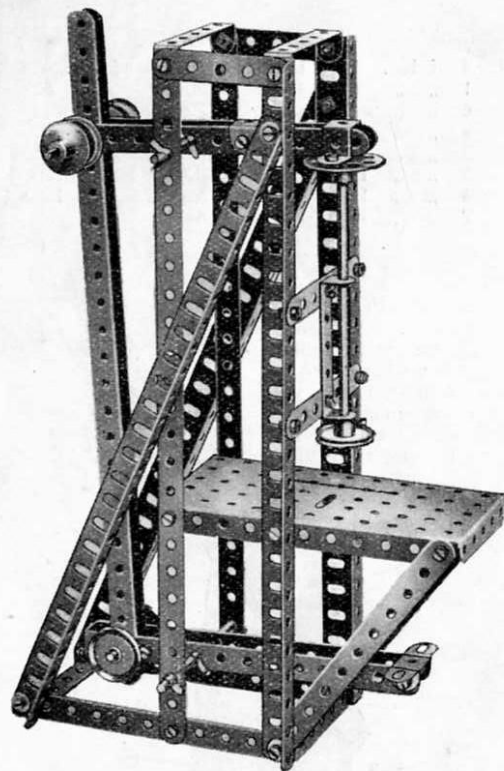


FIG. 2.54A



These Models can be built with MECCANO Outfit No. 2 (or No. 1 and No. 1A)

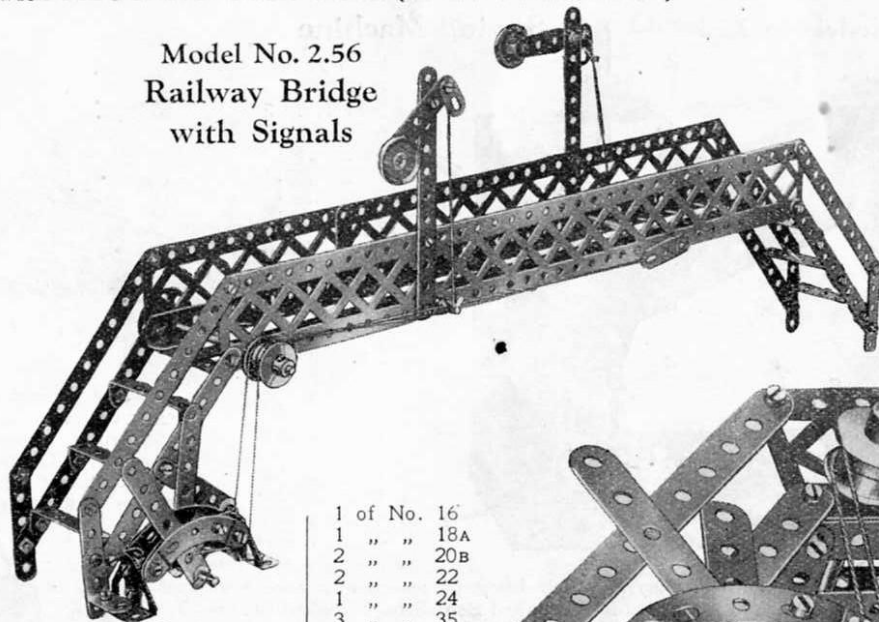
Model No. 2.55 Embossing Machine



Parts
required :

4 of No.	1
8 " "	2
2 " "	3
2 " "	5
4 " "	8
3 " "	11
2 " "	12
1 " "	15
3 " "	16
1 " "	18A
4 " "	20B
3 " "	22
1 " "	24
10 " "	35
34 " "	37
8 " "	38
1 " "	45
5 " "	48A
1 " "	52

Model No. 2.56 Railway Bridge with Signals



Parts
required :

2 of No.	1
10 " "	2
2 " "	3
10 " "	5
4 " "	8
2 " "	10
3 " "	11
2 " "	12A
1 " "	15A

1 of No.	16
1 " "	18A
2 " "	20B
2 " "	22
1 " "	24
3 " "	35
60 " "	37
3 " "	37A
6 " "	38
7 " "	48A
2 " "	62
4 " "	90A
2 " "	99
2 " "	100
3 " "	111c
1 " "	115
2 " "	126

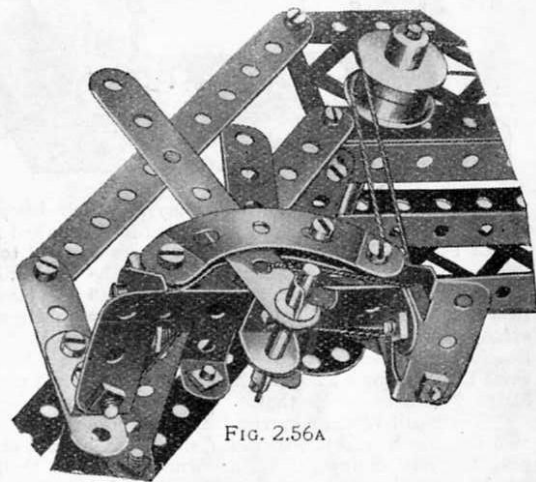


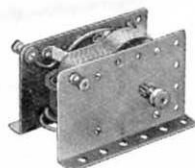
FIG. 2.56A

HOW TO CONTINUE

This completes our examples of models that may be made with MECCANO Outfit No. 2 (or No. 1 and No. 1A). The next models are a little more advanced, requiring a number of extra parts to construct them. The necessary parts are all contained in a No. 2A Accessory Outfit, the price of which may be obtained from any Meccano dealer.

MECCANO MOTORS

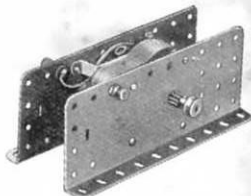
E1 Electric Motor (6 Volt)



This powerful and reliable Electric Motor (non-reversing) may be driven from the main through a Meccano Transformer (alternating current only) or from batteries. It is specially designed to build into Meccano models.

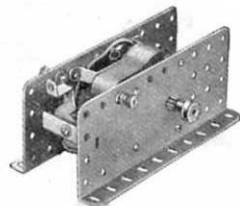
E2 Electric Motor (6 Volt)

Similar to the E1 Motor, but fitted with extended side plates. This Motor is very popular with model-builders.



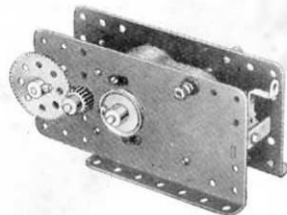
E3 Electric Motor (6 Volt)

This highly efficient Electric Motor is similar to the E2 Motor in design. An additional feature, however, is the control mechanism with which it is fitted, enabling the motor to be started stopped or reversed, as desired.



E4 Electric Motor (6 Volt)

This Motor is supplied with gearing assembled on each side. It may be driven from the main through a Meccano Transformer (alternating current only) or from batteries, and is fitted with a control mechanism enabling it to be started, stopped or reversed.



Meccano Resistance Controller

By employing this variable resistance the speed of the Meccano Electric Motors (6 volt) may be regulated as desired. The controller is connected in series with the motor and accumulator, or with the motor and transformer if a transformer is used as the source of power.



Meccano Transformers

Each Meccano 6-volt Electric Motor may be operated from the main current, safely and conveniently, by means of a Meccano Transformer. There are two types of Meccano Transformers available, one for 110 volt 60 cycles and the other for 110 volt 25 cycles.

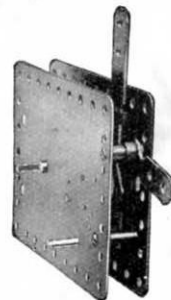
Meccano Clockwork Motor No. 1 (Non-Reversing)

A long-running and highly efficient Clockwork Motor (non-reversing), fitted with a brake lever by means of which the motor may be stopped and started, as required.

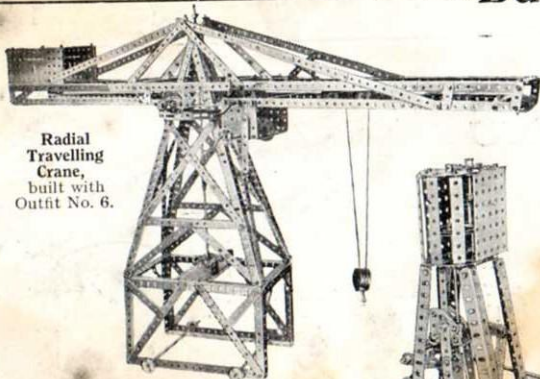


Meccano Clockwork Motor No. 2 (Reversing)

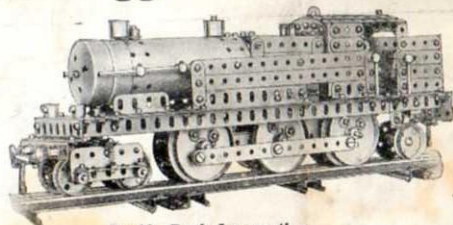
This strongly-built Clockwork Motor is a compact self-contained power unit. An efficient governor controls the powerful spring that is fitted on the motor, and ensures a long steady run at each winding. Brake and reverse levers enable the motor to be stopped, started and reversed, as required.



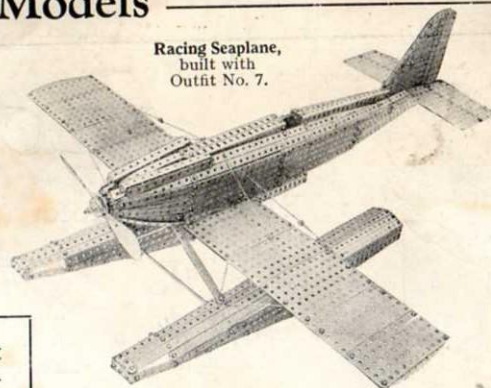
Build Bigger and Better Models



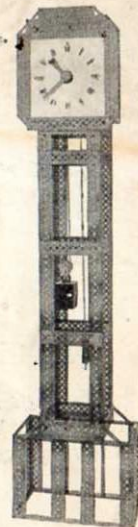
Radial
Travelling
Crane,
built with
Outfit No. 6.



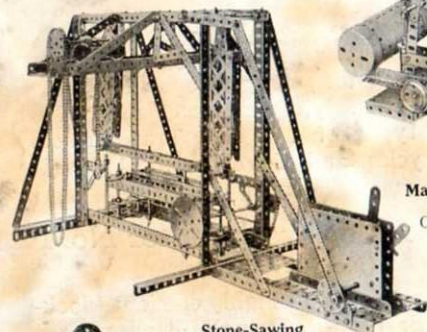
Pacific Tank Locomotive,
built with Outfit No. 7.



Racing Seaplane,
built with
Outfit No. 7.



Grandfather
Clock,
built with
Outfit No. 7.



Stone-Sawing
Machine,
built with
Outfit No. 6.



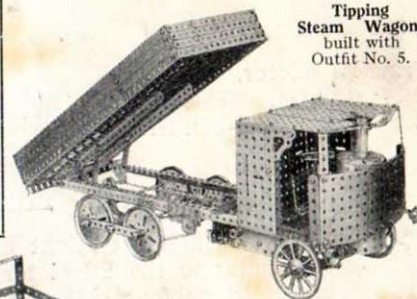
Vertical
Marine Engine,
built with
Outfit No. 5.

Keep Adding to your Outfit

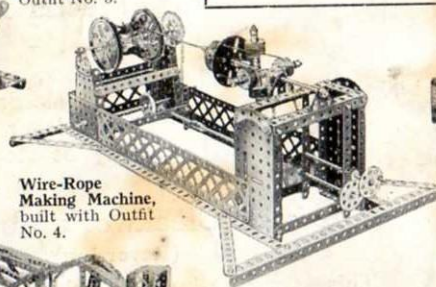
The more Meccano parts you have, the bigger and better the models you are able to build. Keen and enthusiastic model-builders keep adding to their Outfits, until they are able to build all the wonderful models shown in the Meccano Manuals.

The model-building possibilities of the Meccano System are limitless. All the fine models illustrated on this page are examples of the types you will be able to build as your Outfit develops.

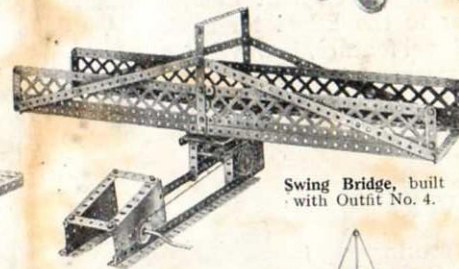
You can purchase separate Meccano parts as you require them, or, if you prefer, you can purchase Accessory Outfits that connect all the main Outfits.



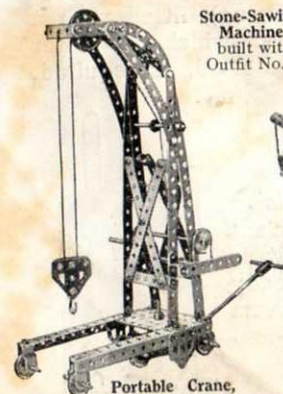
Tipping
Steam Wagon,
built with
Outfit No. 5.



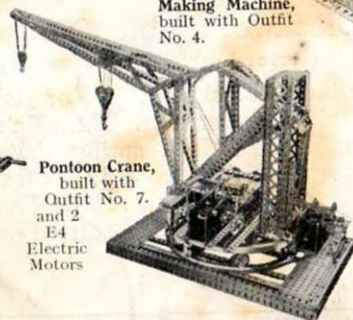
Wire-Rope
Making Machine,
built with Outfit
No. 4.



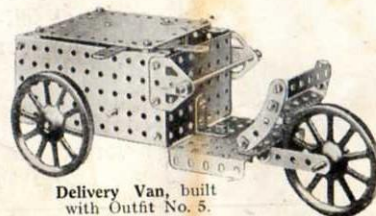
Swing Bridge, built
with Outfit No. 4.



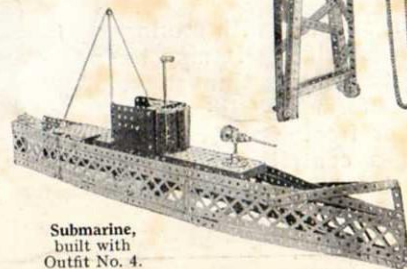
Portable Crane,
built with
Outfit No. 6.



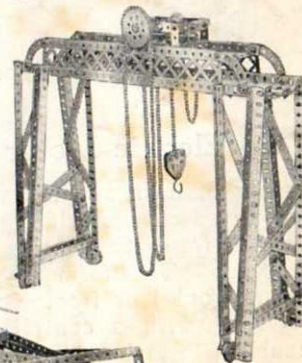
Pontoon Crane,
built with
Outfit No. 7,
and 2
E4
Electric
Motors



Delivery Van, built
with Outfit No. 5.



Submarine,
built with
Outfit No. 4.



Gantry Crane,
built with
Outfit No. 5.

Ask your dealer for complete illustrated price lists of Meccano Parts and Accessory Outfits and keep these by you for reference.