MECCANO

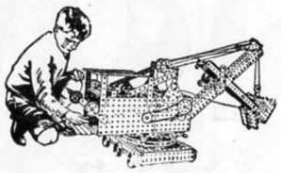
HORNBY'S ORIGINAL SYSTEM — FIRST PATENTED 1901

INSTRUCTIONS FOR OUTFIT Da

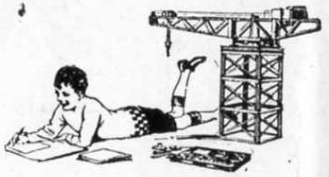
PRICE
$0.05

36Da

13/636/.3 (Can.)



MECCANO



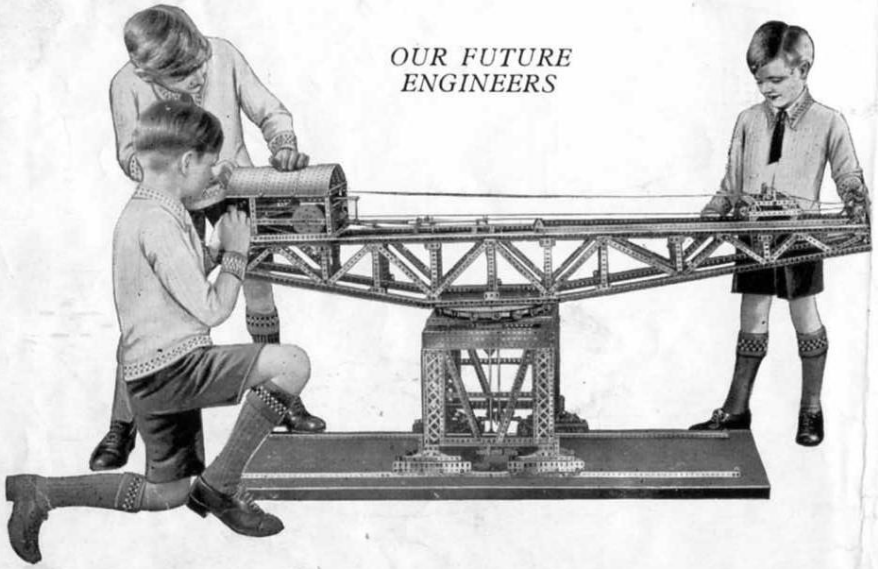
REAL ENGINEERING FOR BOYS

REAL ENGINEERING IN MINIATURE

The Meccano Accessory Outfit Da converts your Outfit D into an E, and enables you to build the additional models illustrated in this Manual. As a Meccano enthusiast you will realise that our examples do not exhaust the scope 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 in each class.

HOW TO PROGRESS

When you desire to make further progress and to build bigger and better models, it is only necessary for you to purchase an Accessory Outfit Ea which will convert your E into an F. In turn, an Accessory Outfit Fa will convert your F into a G, and so you go on, until finally your ambition is realised and you are the proud possessor of an L Outfit.



OUR FUTURE ENGINEERS

ELECTRIC LIGHTING OF MECCANO MODELS

It is great fun to illuminate your Meccano models by electric light, and a special Meccano Lighting Set can be obtained from your dealer for this purpose. This consists of two spot lights with plain and coloured imitation glass discs, one stand lamp, two special brackets, and two pea lamps, operated from a 4-volt flashlamp battery (not included in the set). The stand lamp is used for decorative purposes, and the spot lights can be used as car head-lamps, floodlights on cranes, and in countless other ways.

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 newsagent.

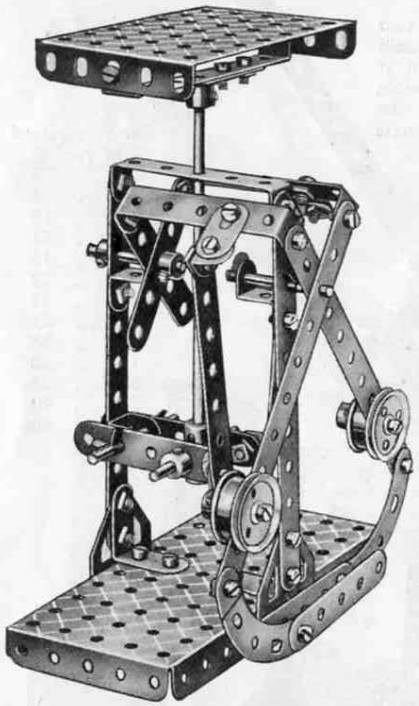
MECCANO SERVICE

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 can be bought separately at any time in any quantity from your Meccano dealer

E1. Letter Balance



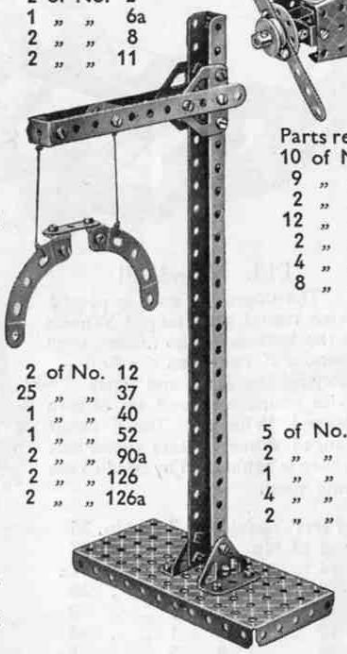
Parts required

4	of No.	2	2	of No.	18a	1	of No. 53
2	„ „	3	2	„ „	20b	4	„ „ 59
5	„ „	5	2	„ „	22a	1	„ „ 62
2	„ „	10	4	„ „	35	1	„ „ 63
1	„ „	11	37	„ „	37	2	„ „ 90a
4	„ „	12	6	„ „	37a	2	„ „ 111
2	„ „	12a	2	„ „	48a	4	„ „ 111c
1	„ „	15	1	„ „	48b	2	„ „ 125
2	„ „	17	1	„ „	52	2	„ „ 126

E2. Railway Gauge

Parts required

2	of No.	2
1	„ „	6a
2	„ „	8
2	„ „	11



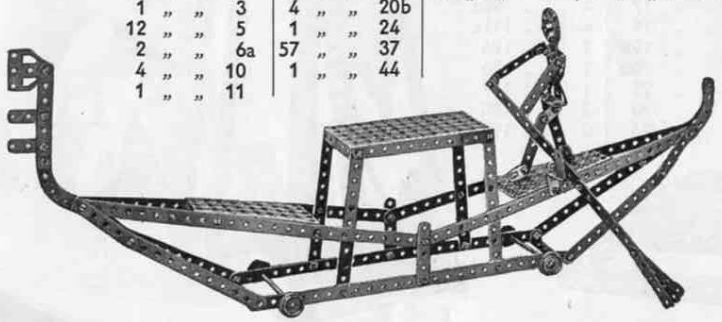
2	of No.	12
25	„ „	37
1	„ „	40
1	„ „	52
2	„ „	90a
2	„ „	126
2	„ „	126a

E3. Gondola

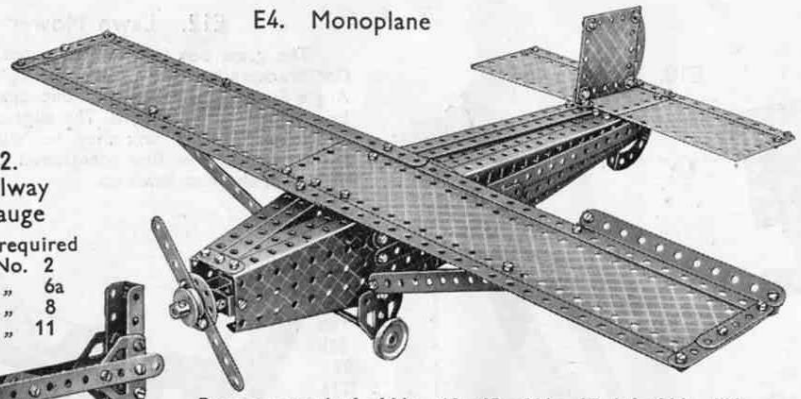
2	of No.	48a	4	of No.	90a
1	„ „	52	1	„ „	126
2	„ „	54a	2	„ „	126a

Parts required

6	of No.	1	5	of No.	12
10	„ „	2	1	„ „	12a
1	„ „	3	2	„ „	16
12	„ „	5	4	„ „	20b
2	„ „	6a	1	„ „	24
4	„ „	10	57	„ „	37
1	„ „	11	1	„ „	44



E4. Monoplane



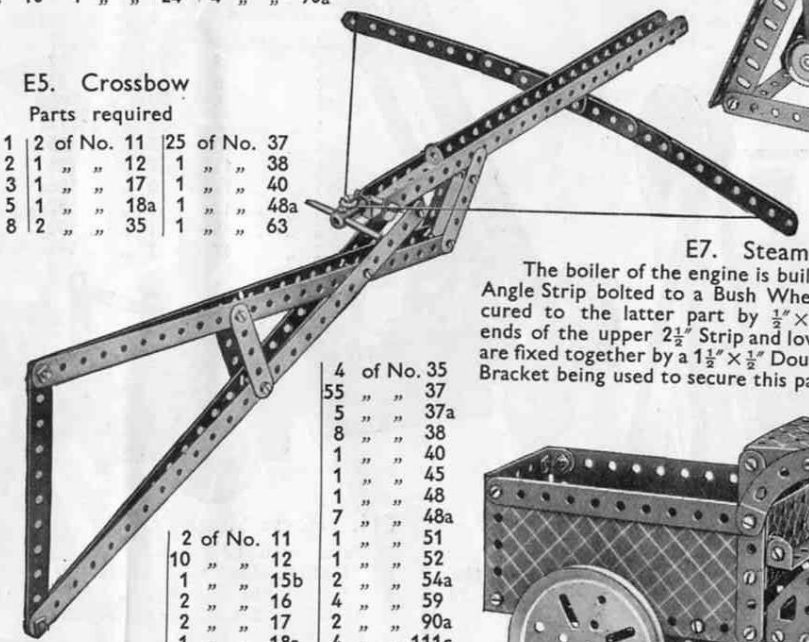
Parts required

10	of No.	1	6	of No.	12	65	of No.	37	6	of No.	111c
9	„ „	2	4	„ „	12c	8	„ „	37a	2	„ „	125
2	„ „	3	1	„ „	13	7	„ „	38	2	„ „	126a
12	„ „	5	1	„ „	16	1	„ „	45	1	„ „	186
2	„ „	6a	2	„ „	20b	1	„ „	48	1	„ „	190
4	„ „	8	2	„ „	22	1	„ „	48a	2	„ „	195
8	„ „	10	1	„ „	23	2	„ „	54a	2	„ „	197
			1	„ „	24	4	„ „	90a			

E5. Crossbow

Parts required

5	of No.	1	2	of No.	11	25	of No.	37
2	„ „		2	1 „	„ 12	1	„ „	38
1	„ „		3	1 „	„ 17	1	„ „	40
4	„ „		5	1 „	„ 18a	1	„ „	48a
2	„ „		8	2 „	„ 35	1	„ „	63



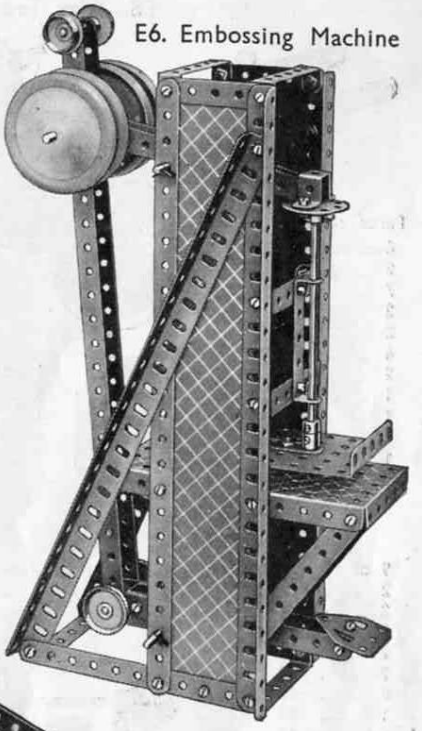
Parts required

2	of No.	2	2	of No.	11	4	of No.	35
2	„ „	3	10	„ „	12	55	„ „	37
11	„ „	5	1	„ „	15b	5	„ „	37a
2	„ „	6a	2	„ „	16	8	„ „	38
2	„ „	10	2	„ „	17	1	„ „	40
			1	„ „	18a	1	„ „	45
			2	„ „	19b	1	„ „	48
			4	„ „	20b	7	„ „	48a
			1	„ „	22	1	„ „	51
			1	„ „	22a	1	„ „	52
			1	„ „	23	2	„ „	54a
			1	„ „	24	4	„ „	59
						2	„ „	90a
						4	„ „	111c
						1	„ „	125
						2	„ „	126a
						1	„ „	186
						2	„ „	187
						1	„ „	190
						2	„ „	195

E6. Embossing Machine

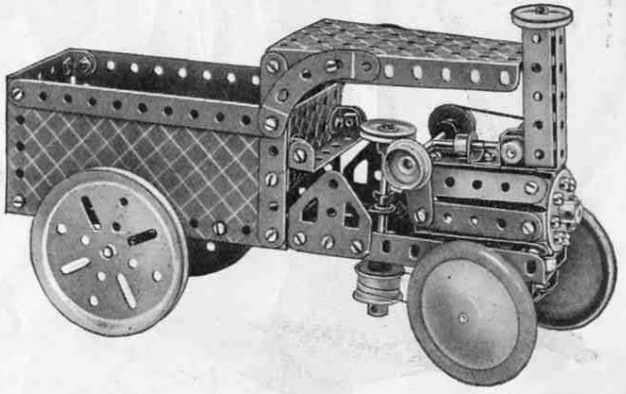
Parts required

4	of No.	1
8	„ „	2
2	„ „	5
4	„ „	8
3	„ „	11
1	„ „	15
3	„ „	16
2	„ „	18a
2	„ „	20b
2	„ „	22
1	„ „	24
8	„ „	35
37	„ „	37
6	„ „	38
1	„ „	45
7	„ „	48a
1	„ „	52
1	„ „	53
3	„ „	59
1	„ „	62
1	„ „	126a
4	„ „	187
2	„ „	197

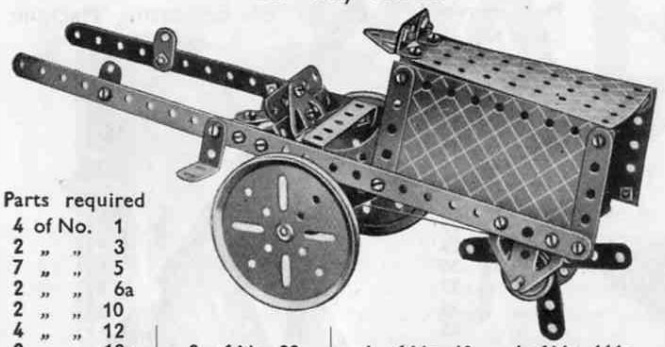


E7. Steam Lorry

The boiler of the engine is built up from one $2\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strip bolted to a Bush Wheel, and seven $2\frac{1}{2}''$ Strips are secured to the latter part by $\frac{1}{2}'' \times \frac{1}{2}''$ Angle Brackets. The inner ends of the upper $2\frac{1}{2}''$ Strip and lower $2\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strip are fixed together by a $1\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strip, a $\frac{1}{2}'' \times \frac{1}{2}''$ Angle Bracket being used to secure this part to the floor of the cab.



E8. Hay Tedder



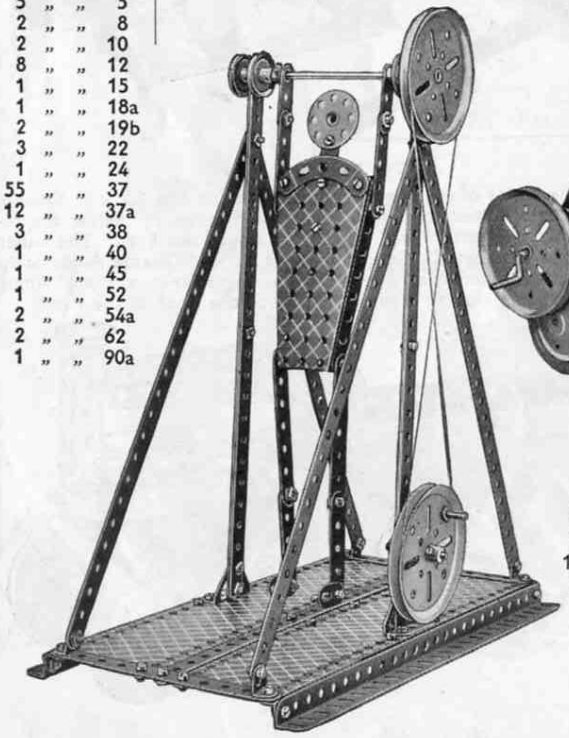
Parts required

4	of No. 1	3	of No. 22	1	of No. 40	6	of No. 111c
2	„ „ 3	1	„ „ 24	3	„ „ 48a	2	„ „ 126
7	„ „ 5	30	„ „ 37	1	„ „ 54a	2	„ „ 126a
2	„ „ 6a	6	„ „ 37a	4	„ „ 59	2	„ „ 191
2	„ „ 10	8	„ „ 38	3	„ „ 90a		
4	„ „ 12						
2	„ „ 12a						
1	„ „ 15d						
1	„ „ 16						
2	„ „ 19b						
1	„ „ 20b						

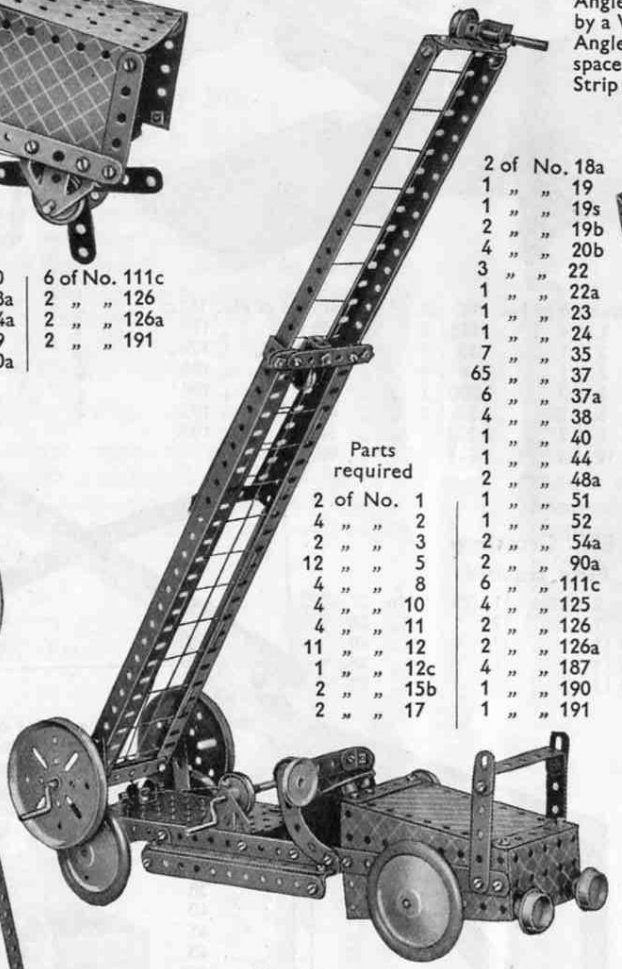
E9. Acrobat

Parts required

9	of No. 1	6	of No. 111c	1	of No. 176
2	„ „ 2	1	„ „ 115	2	„ „ 197
2	„ „ 3	2	„ „ 126		
5	„ „ 5				
2	„ „ 8				
2	„ „ 10				
8	„ „ 12				
1	„ „ 15				
1	„ „ 18a				
2	„ „ 19b				
3	„ „ 22				
1	„ „ 24				
55	„ „ 37				
12	„ „ 37a				
3	„ „ 38				
1	„ „ 40				
1	„ „ 45				
1	„ „ 52				
2	„ „ 54a				
2	„ „ 62				
1	„ „ 90a				



E10. Fire Engine



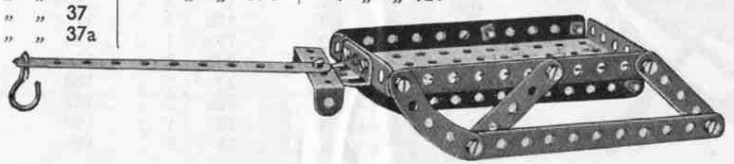
Parts required

2	of No. 1	2	of No. 18a	2	of No. 111c
4	„ „ 2	1	„ „ 19	1	„ „ 115
2	„ „ 3	1	„ „ 19s	2	„ „ 125
12	„ „ 5	2	„ „ 19b	2	„ „ 126
4	„ „ 8	4	„ „ 20b	2	„ „ 126a
4	„ „ 10	3	„ „ 22	4	„ „ 187
4	„ „ 11	1	„ „ 22a	1	„ „ 190
11	„ „ 12	1	„ „ 23	1	„ „ 191
1	„ „ 12c	1	„ „ 24		
2	„ „ 15b	7	„ „ 35		
2	„ „ 17	65	„ „ 37		
		6	„ „ 37a		
		4	„ „ 38		
		1	„ „ 40		
		1	„ „ 44		
		2	„ „ 48a		
		1	„ „ 51		
		1	„ „ 52		
		2	„ „ 54a		
		2	„ „ 90a		
		6	„ „ 111c		

E11. Horse Sleigh

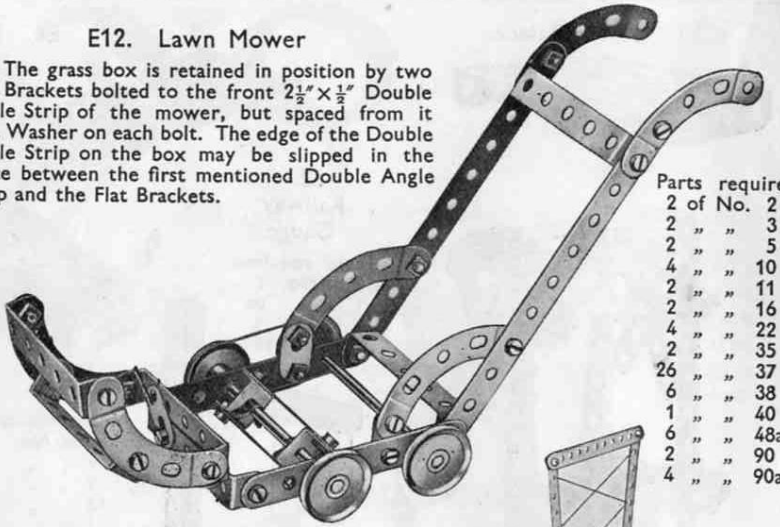
Parts required

3	of No. 2	1	of No. 48a	2	of No. 90
4	„ „ 5	1	„ „ 52	1	„ „ 111c
1	„ „ 23	1	„ „ 57c	1	„ „ 126
12	„ „ 37				
2	„ „ 37a				



E12. Lawn Mower

The grass box is retained in position by two Flat Brackets bolted to the front $2\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strip of the mower, but spaced from it by a Washer on each bolt. The edge of the Double Angle Strip on the box may be slipped in the space between the first mentioned Double Angle Strip and the Flat Brackets.



Parts required

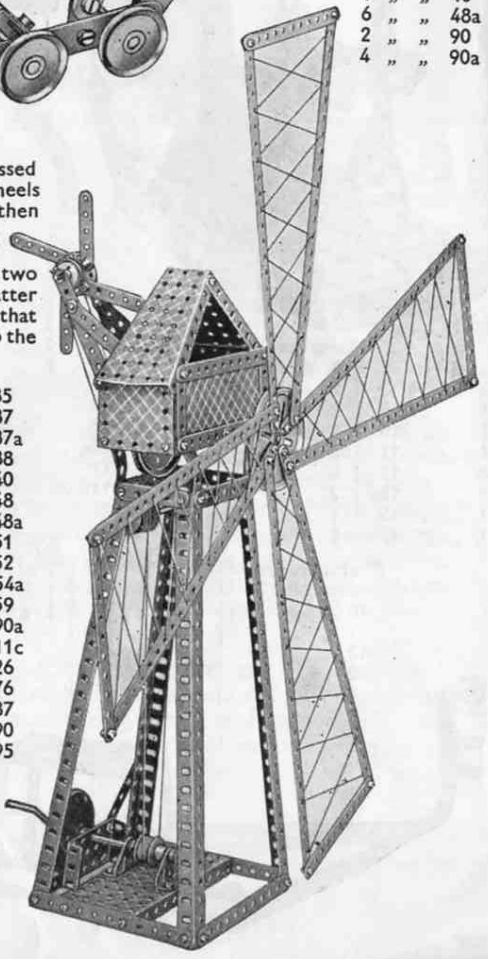
2	of No. 2	1	of No. 40	1	of No. 176
2	„ „ 3	1	„ „ 48a	2	„ „ 187
2	„ „ 5	1	„ „ 52	1	„ „ 188
4	„ „ 10	1	„ „ 54a	1	„ „ 189
2	„ „ 11	1	„ „ 57c	1	„ „ 190
2	„ „ 16	1	„ „ 59	1	„ „ 191
4	„ „ 22	1	„ „ 62	1	„ „ 192
2	„ „ 35	1	„ „ 63	1	„ „ 193
26	„ „ 37	1	„ „ 90a	1	„ „ 194
6	„ „ 38	1	„ „ 111c	1	„ „ 195
1	„ „ 40	1	„ „ 125		
6	„ „ 48a	1	„ „ 126		
2	„ „ 90	1	„ „ 126a		
4	„ „ 90a	1	„ „ 155		

E13. Windmill

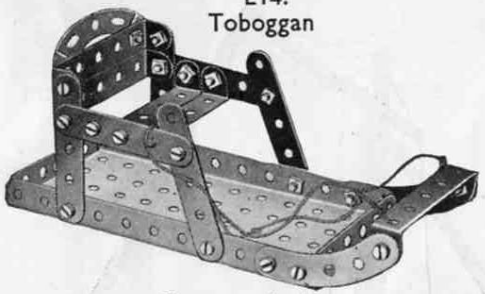
The operating cord is passed twice round the Flanged Wheels at the bottom of the model, then round a 3″ Pulley on the Rod carrying the sails, and lastly twice round a second set of two Flanged Wheels. These latter Flanged Wheels rotate a Rod that in turn is connected by cord to the wind vane.

Parts required

8	of No. 1	7	of No. 35	1	of No. 111c
14	„ „ 2	70	„ „ 37	2	„ „ 126
2	„ „ 3	4	„ „ 37a	1	„ „ 176
2	„ „ 4	9	„ „ 38	2	„ „ 187
12	„ „ 5	1	„ „ 40	1	„ „ 190
4	„ „ 8	1	„ „ 48	2	„ „ 195
2	„ „ 12	2	„ „ 48a		
1	„ „ 15	1	„ „ 51		
1	„ „ 15b	1	„ „ 52		
1	„ „ 16	2	„ „ 54a		
1	„ „ 17	4	„ „ 59		
1	„ „ 19	4	„ „ 90a		
2	„ „ 19b	4	„ „ 111c		
4	„ „ 20b	2	„ „ 126		
2	„ „ 22	1	„ „ 176		
1	„ „ 23	1	„ „ 187		
1	„ „ 24	2	„ „ 190		
		2	„ „ 195		



E14. Toboggan



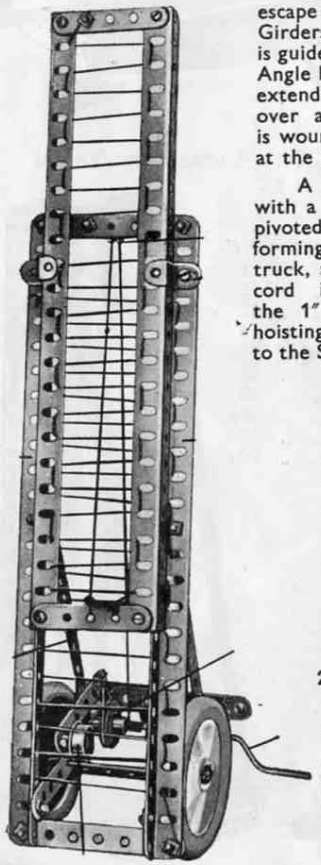
Parts required

6	of No. 5	5	of No. 48a	2	of No. 90
22	„ „ 37	1	„ „ 52	1	„ „ 90a
1	„ „ 40				

E15. Fire Escape

The moving portion of the escape slides on the 12½″ Angle Girders of the fixed ladder and is guided by two ½″ Reversed Angle Brackets. The cord for extending the ladder passes over a ½″ loose Pulley and is wound on the Crank Handle at the base of the model.

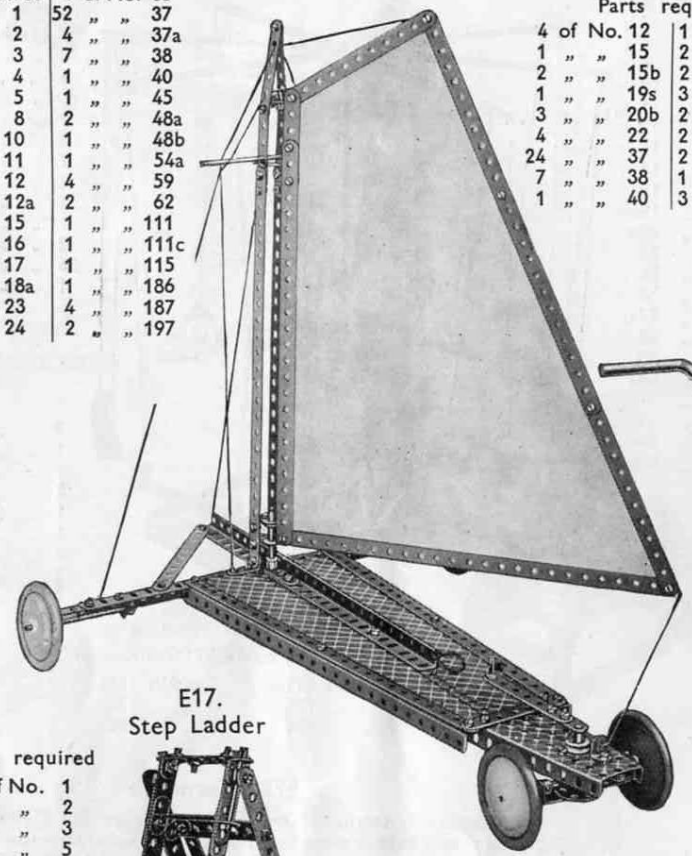
A [3″ Strip, weighted with a ¾″ Flanged Wheel, is pivoted to the 5½″ Strip forming one side of the escape truck, and a short length of cord is passed round the 1″ Pulley on the hoisting shaft, and tied to the Strip.



Parts required

4	of No. 2	1	„ „ 48a	1	„ „ 111c
3	„ „ 3	1	„ „ 59	2	„ „ 125
1	„ „ 4	1	„ „ 90	1	„ „ 126a
2	„ „ 5	1	„ „ 90a	2	„ „ 187
4	„ „ 8	1	„ „ 111		
3	„ „ 12	1	„ „ 111a		
1	„ „ 16	1	„ „ 115		
1	„ „ 19s	1	„ „ 125		
1	„ „ 20b	1	„ „ 126		
1	„ „ 22	1	„ „ 126a		
1	„ „ 23	1	„ „ 176		
26	„ „ 37	1	„ „ 186		
6	„ „ 37a	1	„ „ 187		
5	„ „ 38	1	„ „ 188		
2	„ „ 40	1	„ „ 189		
2	„ „ 48a	1	„ „ 190		
3	„ „ 59	1	„ „ 191		
5	„ „ 111c	1	„ „ 195		
2	„ „ 125	1	„ „ 197		
1	„ „ 126a				
2	„ „ 187				

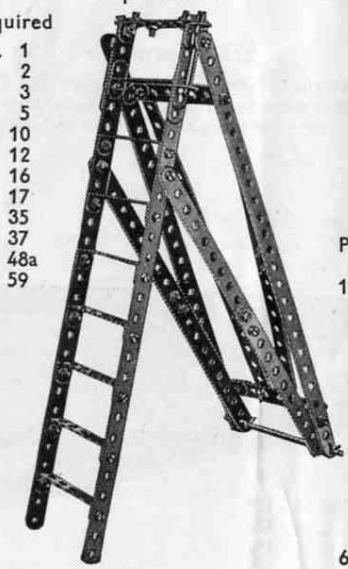
E16. Land Yacht



Parts required

8	of No. 1	4	of No. 35	1	of No. 126a
5	„ „ 2	52	„ „ 37	3	„ „ 187
2	„ „ 3	4	„ „ 37a		
1	„ „ 4	7	„ „ 38		
2	„ „ 5	1	„ „ 40		
4	„ „ 8	1	„ „ 45		
2	„ „ 10	2	„ „ 48a		
4	„ „ 11	1	„ „ 48b		
6	„ „ 12	1	„ „ 54a		
1	„ „ 12a	2	„ „ 59		
1	„ „ 15	1	„ „ 62		
2	„ „ 16	1	„ „ 111		
2	„ „ 17	1	„ „ 111c		
2	„ „ 18a	1	„ „ 115		
1	„ „ 23	1	„ „ 186		
1	„ „ 24	4	„ „ 187		
		2	„ „ 197		

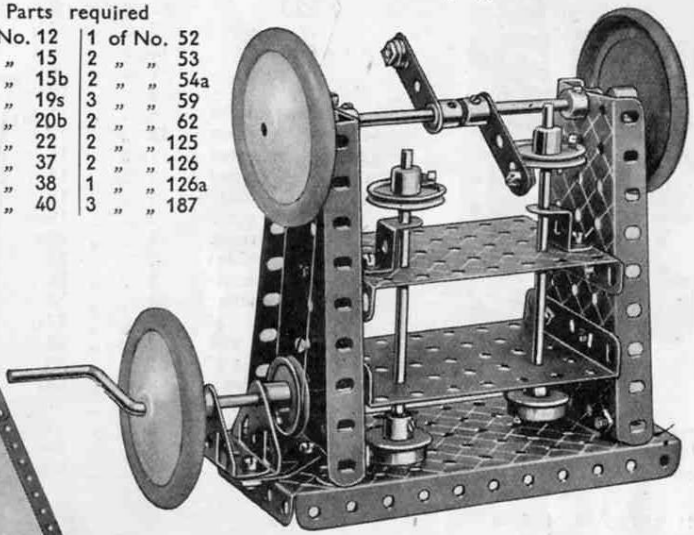
E17. Step Ladder



Parts required

4	of No. 1	1	of No. 15	6	of No. 37a
13	„ „ 2	1	„ „ 15a	12	„ „ 38
4	„ „ 5	1	„ „ 16	1	„ „ 45
4	„ „ 8	1	„ „ 19b	6	„ „ 48a
2	„ „ 10	4	„ „ 20b	1	„ „ 52
4	„ „ 11	4	„ „ 22	2	„ „ 54a
1	„ „ 12a	1	„ „ 24	4	„ „ 59
2	„ „ 15	64	„ „ 37	5	„ „ 111c

E18. Stamping Mill

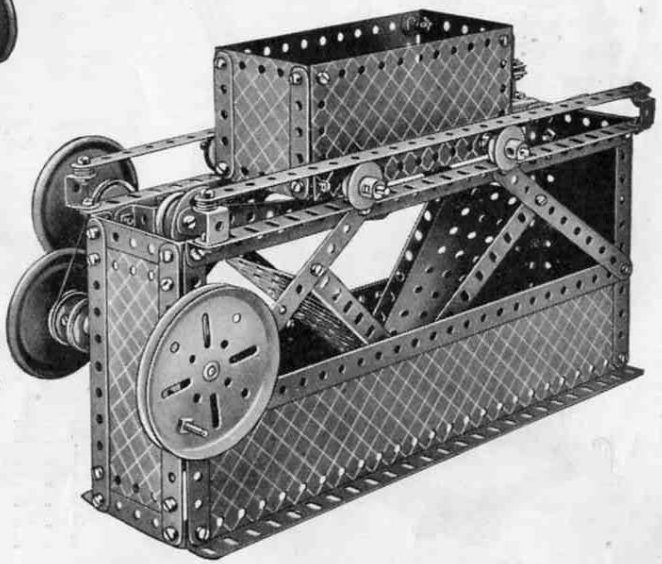


Parts required

4	of No. 12	1	of No. 52	1	of No. 126a
1	„ „ 15	2	„ „ 53	3	„ „ 187
2	„ „ 15b	2	„ „ 54a		
1	„ „ 19s	3	„ „ 59		
3	„ „ 20b	2	„ „ 62		
4	„ „ 22	2	„ „ 125		
24	„ „ 37	2	„ „ 126		
7	„ „ 38	1	„ „ 126a		
1	„ „ 40	3	„ „ 187		

E19. Sifter

The truck is vibrated by a 5½″ Strip attached to the under side of this section of the model by a 1″×1″ Angle Bracket and to a Bush Wheel by a lock-nutted bolt. This Bush Wheel is operated through a Driving Band from a 3″ Pulley carrying a Threaded Pin, shown in the illustration.



E20. Anti Aircraft Gun

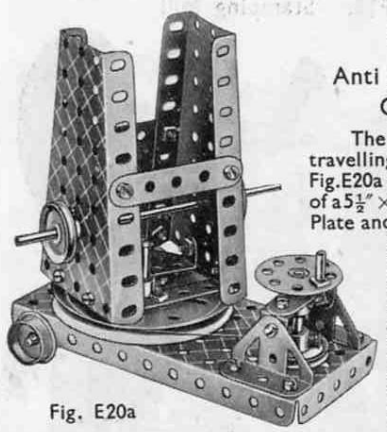
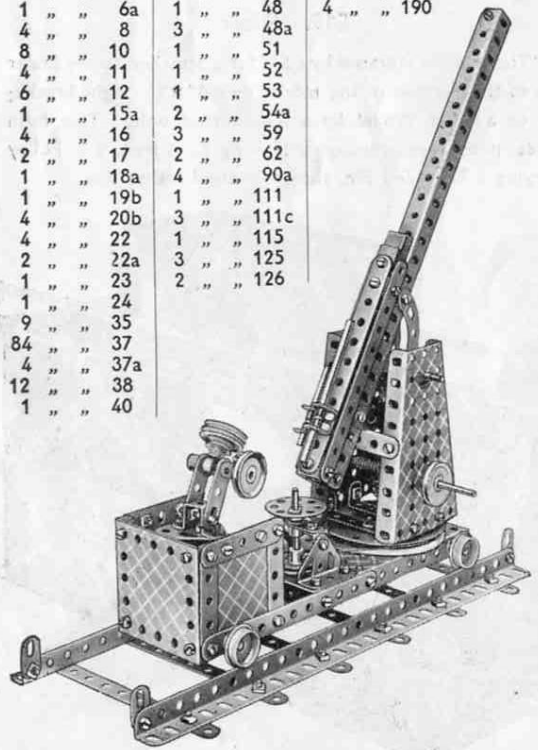


Fig. E20a

The base of the travelling portion Fig.E20a is composed of a $5\frac{1}{2}'' \times 2\frac{1}{2}''$ Flanged Plate and a $3\frac{1}{2}'' \times 2\frac{1}{2}''$ Flanged Plate, these two parts being secured together by two $5\frac{1}{2}''$ Strips and two $\frac{1}{2}'' \times \frac{1}{2}''$ Angle Brackets. The searchlight is pivoted to its platform by a $\frac{3}{8}''$ bolt, lock-nutted in place, and the gun is free to swivel on a 3″ Pulley.

Parts required

11 of No. 2	1 of No. 44	1 of No. 126a
9 „ „ 5	1 „ „ 45	1 „ „ 176
1 „ „ 6a	1 „ „ 48	4 „ „ 190
4 „ „ 8	3 „ „ 48a	
8 „ „ 10	1 „ „ 51	
4 „ „ 11	1 „ „ 52	
6 „ „ 12	1 „ „ 53	
1 „ „ 15a	2 „ „ 54a	
4 „ „ 16	3 „ „ 59	
2 „ „ 17	2 „ „ 62	
1 „ „ 18a	4 „ „ 90a	
1 „ „ 19b	1 „ „ 111	
4 „ „ 20b	3 „ „ 111c	
4 „ „ 22	1 „ „ 115	
2 „ „ 22a	3 „ „ 125	
1 „ „ 23	2 „ „ 126	
1 „ „ 24		
9 „ „ 35		
84 „ „ 37		
4 „ „ 37a		
12 „ „ 38		
1 „ „ 40		



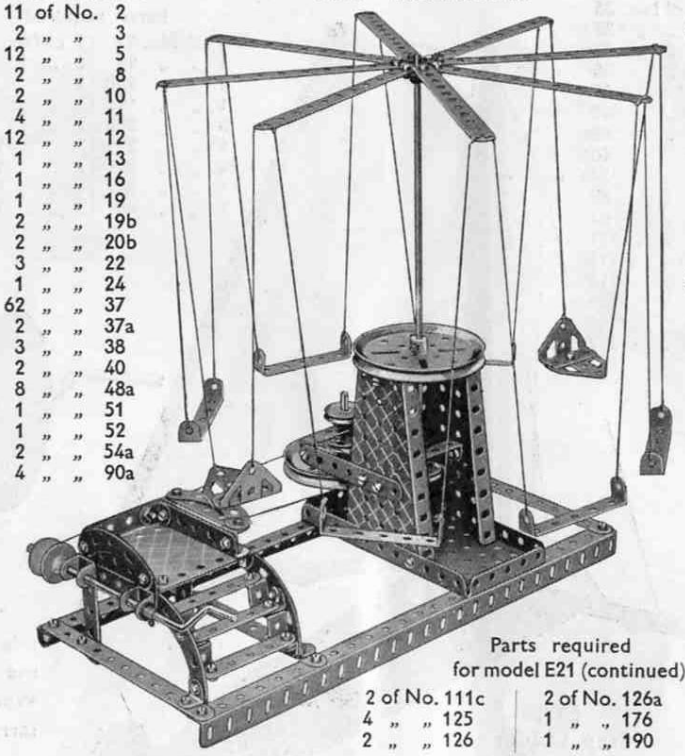
Parts required

6 of No. 1	4 of No. 90a
2 „ „ 2	2 „ „ 111c
2 „ „ 3	1 „ „ 115
8 „ „ 5	
4 „ „ 8	
4 „ „ 10	
1 „ „ 17	
1 „ „ 18a	
1 „ „ 19b	
1 „ „ 20b	
2 „ „ 22	
1 „ „ 24	
54 „ „ 37	
2 „ „ 37a	
8 „ „ 38	
1 „ „ 40	
1 „ „ 48	
5 „ „ 48a	
1 „ „ 52	
2 „ „ 54a	

Parts required

2 of No. 126	
1 „ „ 176	
2 „ „ 197	

E21. Roundabout



Parts required

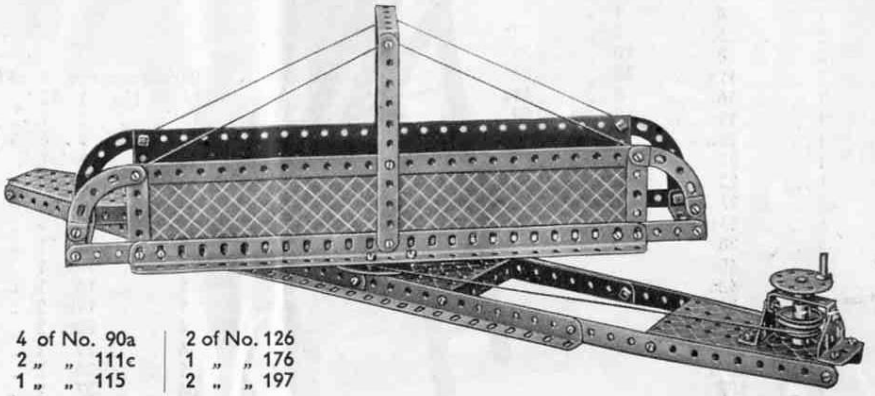
11 of No. 2	4 of No. 1
2 „ „ 3	5 „ „ 2
12 „ „ 5	5 „ „ 5
2 „ „ 8	4 „ „ 8
2 „ „ 10	1 „ „ 11
4 „ „ 11	3 „ „ 12
12 „ „ 12	2 „ „ 12a
1 „ „ 13	2 „ „ 17
1 „ „ 16	1 „ „ 18a
1 „ „ 19	1 „ „ 24
2 „ „ 19b	2 „ „ 35
2 „ „ 20b	54 „ „ 37
3 „ „ 22	1 „ „ 37a
1 „ „ 24	2 „ „ 38
62 „ „ 37	1 „ „ 40
2 „ „ 37a	1 „ „ 52
3 „ „ 38	2 „ „ 54a
2 „ „ 40	1 „ „ 59
8 „ „ 48a	1 „ „ 63
1 „ „ 51	2 „ „ 90
1 „ „ 52	1 „ „ 125
2 „ „ 54a	2 „ „ 126a
4 „ „ 90a	

Parts required for model E21 (continued)

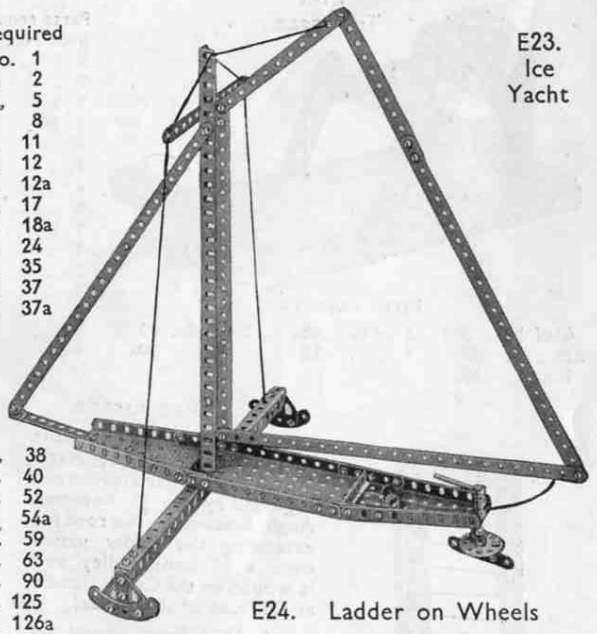
2 of No. 111c	2 of No. 126a
4 „ „ 125	1 „ „ 176
2 „ „ 126	1 „ „ 190

E22. Turntable

The turning section of the model is mounted on a 3″ Pulley carried on a 2″ Rod that is held in place by a 1″ fast Pulley secured below the base of the model. Turning is effected from a $\frac{3}{4}''$ Flanged Wheel and 1″ fast Pulley as shown.



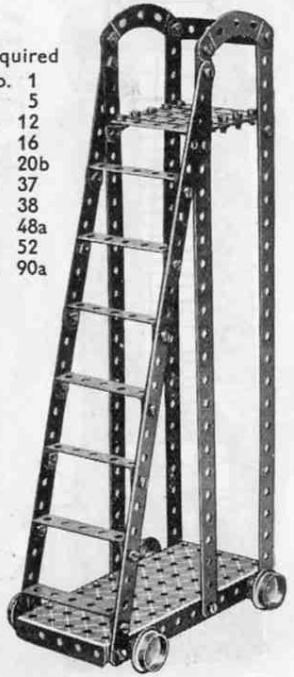
E23. Ice Yacht



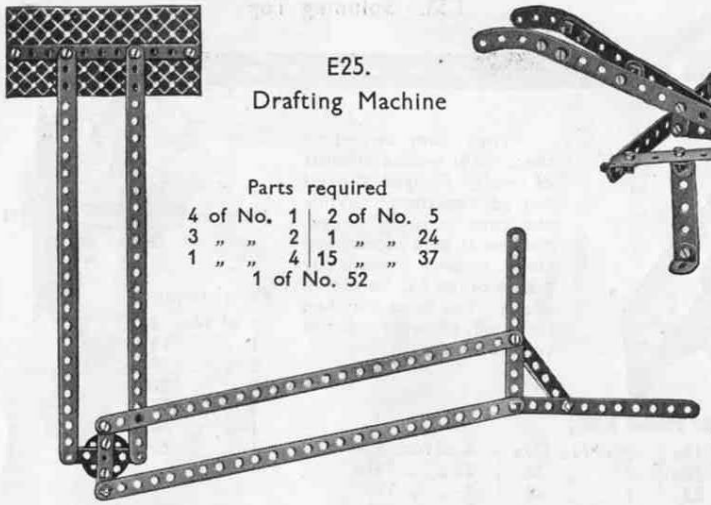
E24. Ladder on Wheels

Parts required

6 of No. 1
7 „ „ 5
4 „ „ 12
2 „ „ 16
4 „ „ 20b
40 „ „ 37
4 „ „ 38
8 „ „ 48a
1 „ „ 52
4 „ „ 90a



E25. Drafting Machine



Parts required

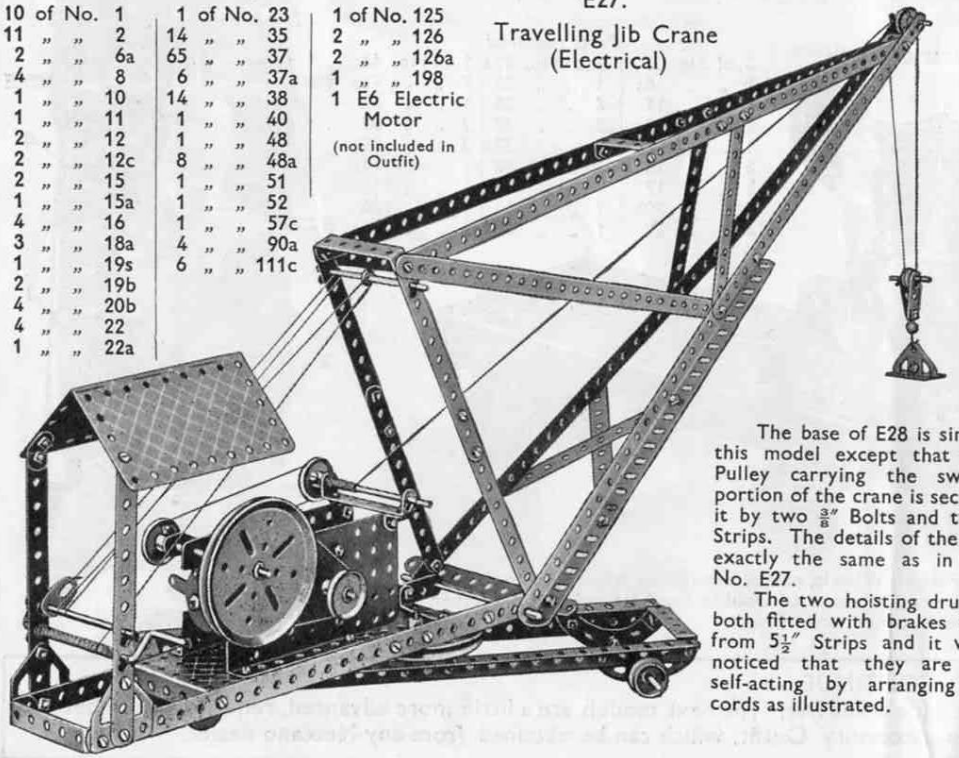
4 of No.	1	2 of No.	5
3 „ „	2	1 „ „	24
1 „ „	4	15 „ „	37
1 of No.	52		

E26. Scarifier

Parts required

7 of No.	2	1 of No.	18a
1 „ „	3	2 „ „	22
4 „ „	5	29 „ „	37
1 „ „	10	2 „ „	38
1 „ „	11	2 „ „	90
11 „ „	12	1 „ „	126a

E27. Travelling Jib Crane (Electrical)



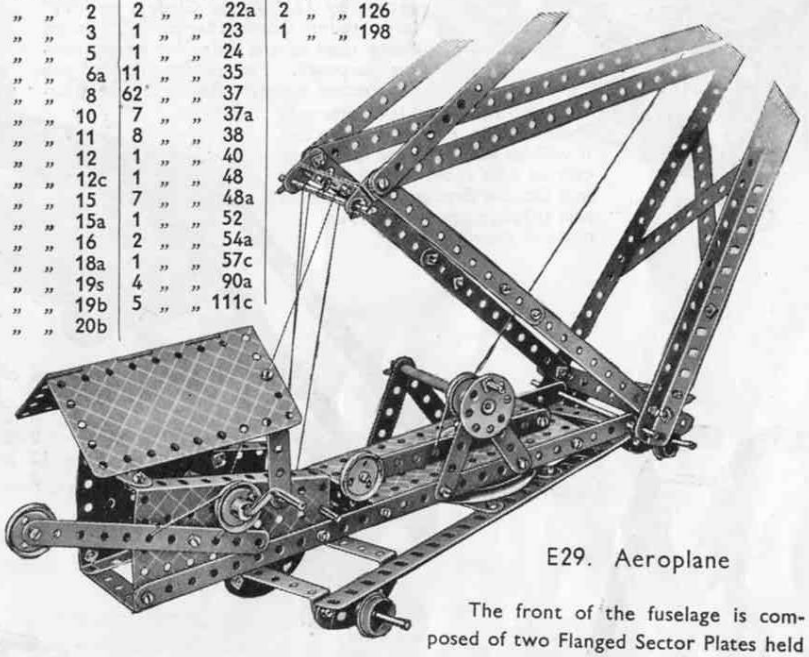
Parts required

10 of No.	1	1 of No.	23	1 of No.	125
11 „ „	2	14 „ „	35	2 „ „	126
2 „ „	6a	65 „ „	37	2 „ „	126a
4 „ „	8	6 „ „	37a	1 „ „	198
1 „ „	10	14 „ „	38	1 E6 Electric Motor (not included in Outfit)	
1 „ „	11	1 „ „	40		
2 „ „	12	1 „ „	48		
2 „ „	12c	8 „ „	48a		
2 „ „	15	1 „ „	51		
1 „ „	15a	1 „ „	52		
4 „ „	16	1 „ „	57c		
3 „ „	18a	4 „ „	90a		
1 „ „	19s	6 „ „	111c		
2 „ „	19b				
4 „ „	20b				
4 „ „	22				
1 „ „	22a				

The base of E28 is similar to this model except that the 3″ Pulley carrying the swivelling portion of the crane is secured to it by two $\frac{3}{8}$″ Bolts and two $3\frac{1}{2}$″ Strips. The details of the jib are exactly the same as in Model No. E27.

The two hoisting drums are both fitted with brakes formed from $5\frac{1}{2}$″ Strips and it will be noticed that they are made self-acting by arranging their cords as illustrated.

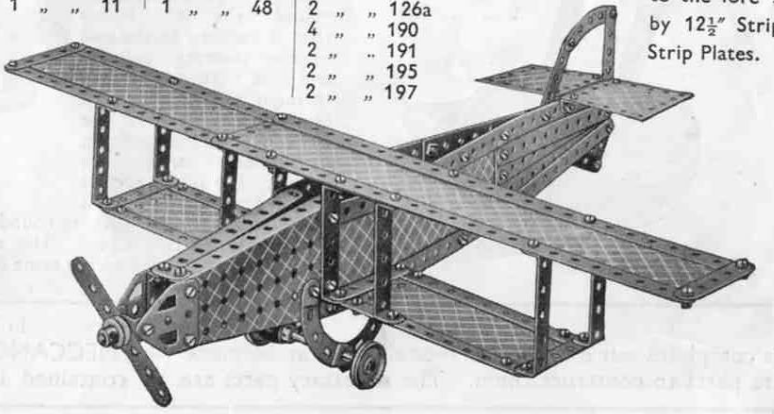
E28. Travelling Jib Crane (Hand)



Parts required

10 of No.	1	4 of No.	22	1 of No.	115
11 „ „	2	2 „ „	22a	2 „ „	126
2 „ „	3	1 „ „	23	1 „ „	198
7 „ „	5	1 „ „	24		
2 „ „	6a	11 „ „	35		
4 „ „	8	62 „ „	37		
1 „ „	10	7 „ „	37a		
1 „ „	11	8 „ „	38		
1 „ „	12	1 „ „	40		
2 „ „	12c	1 „ „	48		
2 „ „	15	7 „ „	48a		
1 „ „	15a	1 „ „	52		
3 „ „	16	2 „ „	54a		
3 „ „	18a	1 „ „	57c		
1 „ „	19s	4 „ „	90a		
2 „ „	19b	5 „ „	111c		
4 „ „	20b				

E29. Aeroplane



Parts required

6 of No.	1	6 of No.	12	8 of No.	48a
14 „ „	2	1 „ „	16	2 „ „	54a
2 „ „	3	2 „ „	22	3 „ „	59
2 „ „	4	1 „ „	23	2 „ „	90
12 „ „	5	2 „ „	35	4 „ „	90a
1 „ „	6a	76 „ „	37	1 „ „	111
3 „ „	10	8 „ „	37a	6 „ „	111c
1 „ „	11	1 „ „	48	2 „ „	126a
				4 „ „	190
				2 „ „	191
				2 „ „	195
				2 „ „	197

The front of the fuselage is composed of two Flanged Sector Plates held together at the fore part by two Flat Trunnions and a Double Bracket, the latter part forming a mounting for the propeller. The rear of the fuselage consists of eight $5\frac{1}{2}$″ Strips held together as shown, and when complete is attached to the fore section by $12\frac{1}{2}$″ Strips and Strip Plates.

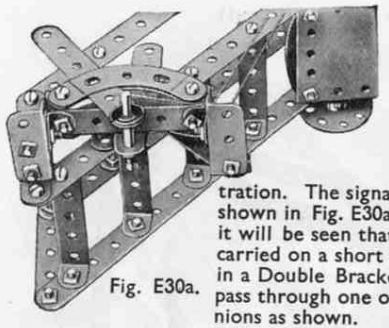
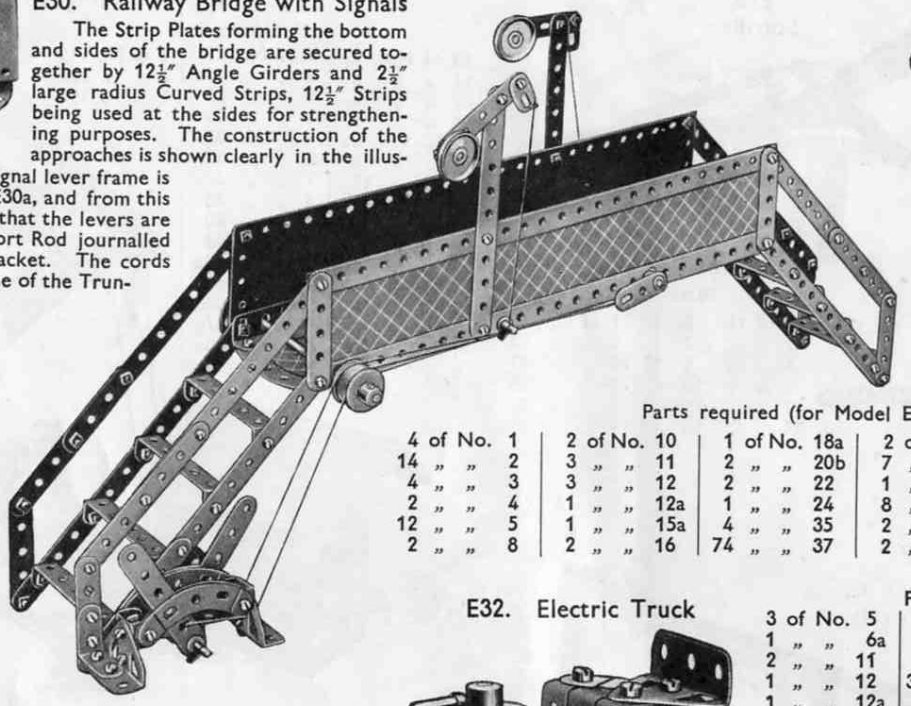


Fig. E30a.

E30. Railway Bridge with Signals

The Strip Plates forming the bottom and sides of the bridge are secured together by 12½" Angle Girders and 2½" large radius Curved Strips, 12½" Strips being used at the sides for strengthening purposes. The construction of the approaches is shown clearly in the illustration. The signal lever frame is shown in Fig. E30a, and from this it will be seen that the levers are carried on a short Rod journalled in a Double Bracket. The cords pass through one of the Trunnions as shown.

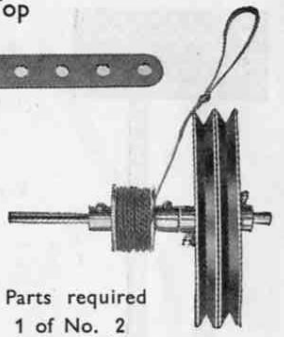


Parts required (for Model E30)

4 of No. 1	2 of No. 10	1 of No. 18a	2 of No. 37a	4 of No. 90a
14 „ „ 2	3 „ „ 11	2 „ „ 20b	7 „ „ 38	2 „ „ 111c
4 „ „ 3	3 „ „ 12	2 „ „ 22	1 „ „ 40	2 „ „ 126
2 „ „ 4	1 „ „ 12a	1 „ „ 24	8 „ „ 48a	1 „ „ 190
12 „ „ 5	1 „ „ 15a	4 „ „ 35	2 „ „ 62	2 „ „ 195
2 „ „ 8	2 „ „ 16	74 „ „ 37	2 „ „ 90	2 „ „ 197

E33. Spinning Top

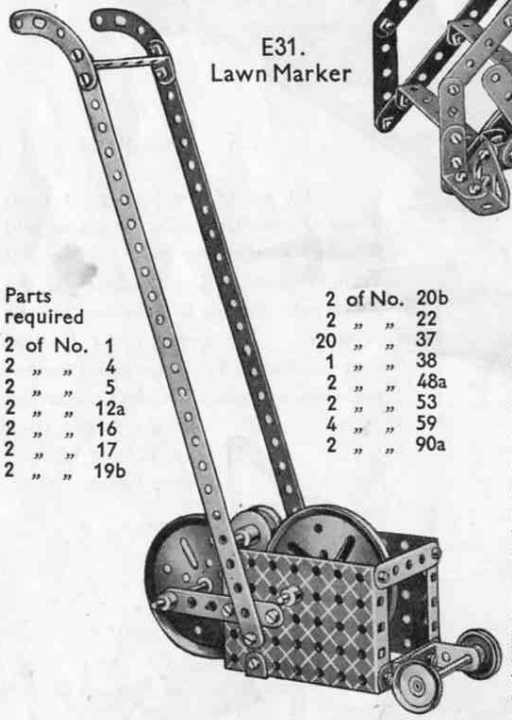
The drum on which the cord is wound consists of two ¾" Flanged Wheels butted together. While the cord is being pulled, the top is held steadily on some smooth surface by means of the handle shown above. The handle is then lifted off, allowing the top to spin freely.



Parts required

1 of No.	2
1 „ „	16
2 „ „	19b
2 „ „	20b
2 „ „	37
1 „ „	40
1 „ „	62

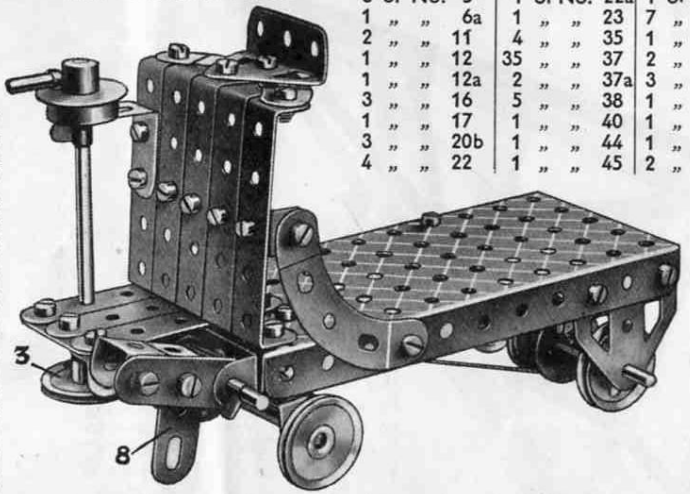
E31. Lawn Marker



Parts required

2 of No.	1
2 „ „	4
2 „ „	5
2 „ „	12a
2 „ „	16
2 „ „	17
2 „ „	19b
2 of No.	20b
2 „ „	22
20 „ „	37
1 „ „	38
2 „ „	48a
2 „ „	53
4 „ „	59
2 „ „	90a

E32. Electric Truck



Parts required

3 of No.	5	1 of No.	22a	1 of No.	48
1 „ „	6a	1 „ „	23	7 „ „	48a
2 „ „	11	4 „ „	35	1 „ „	52
1 „ „	12	35 „ „	37	2 „ „	62
1 „ „	12a	2 „ „	37a	3 „ „	90a
3 „ „	16	5 „ „	38	1 „ „	111c
1 „ „	17	1 „ „	40	1 „ „	115
3 „ „	20b	1 „ „	44	1 „ „	126
4 „ „	22	1 „ „	45	2 „ „	126a

An underneath view of the truck is shown in Fig. E32a. The front axle is journalled in a 1½" × ½" Double Angle Strip that is free to turn on a Double Bent Strip, from which it is spaced by a ½" loose Pulley. A length of cord is wrapped round the 1" Pulley that is secured to the end of the steering column, and is then passed through a Cranked Bent Strip and secured to the Double Angle Strip, mentioned earlier, as shown. The brake cord is attached to the Double Bent Strip, wrapped several times round two ¾" Flanged Wheels, passed through an Angle Bracket, and is finally attached to a Crank. The operating pedal consists of Double Brackets bolted to another Crank that is secured to the same Rod as the first mentioned Crank.

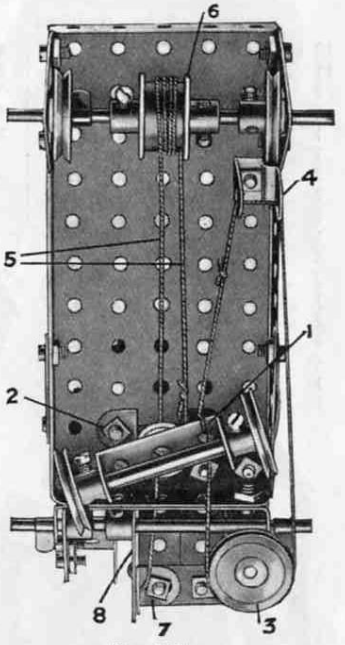
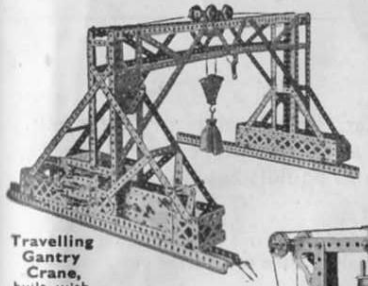


Fig. E32a.

HOW TO CONTINUE

This completes our examples of models that can be made with MECCANO Outfit E (or D and Da). The next models are a little more advanced, requiring a number of extra parts to construct them. The necessary parts are all contained in an Ea Accessory Outfit, which can be obtained from any Meccano dealer.

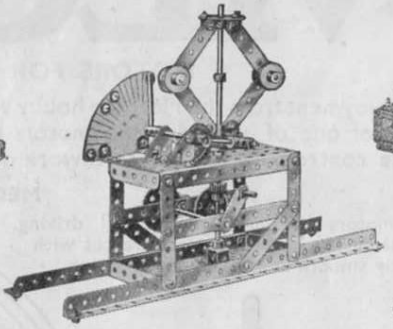
Build Bigger and Better Models



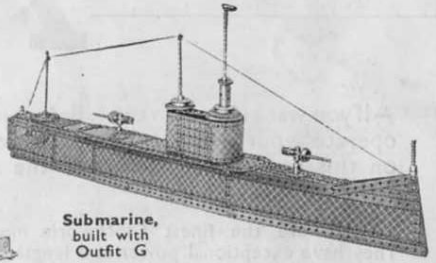
Travelling Gantry Crane, built with Outfit L

Girder Crane, built with Outfit G

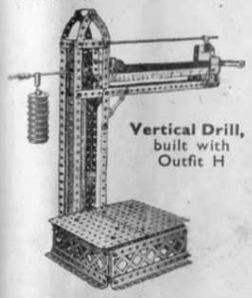
Hand Trolley, built with Outfit F



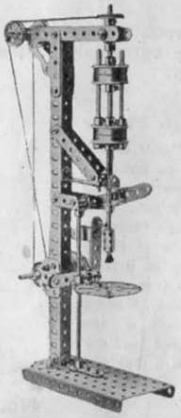
Speed Indicator, built with Outfit G



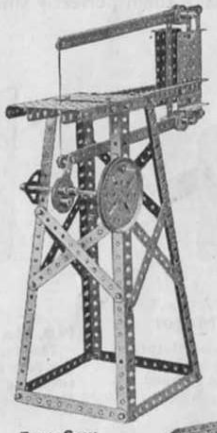
Submarine, built with Outfit G



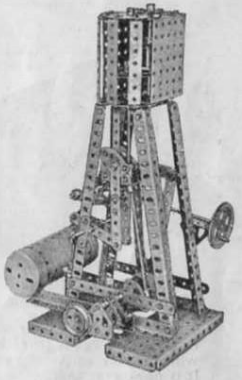
Vertical Drill, built with Outfit H



Platform Scales, built with Outfit K



Fret Saw, built with Outfit H



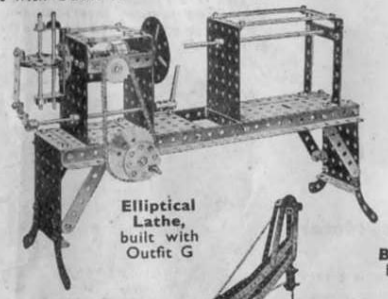
Vertical Marine Engine, built with Outfit H

Keep adding to your Outfit

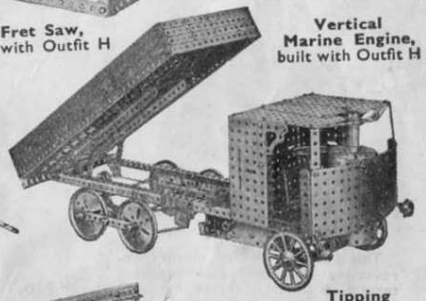
The more Meccano parts you have, the bigger and better the models you are able to build. Keen and enthusiastic model-builders keep adding to their Outfits, until they are able to build all the wonderful models shown in the Meccano Manuals.

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.

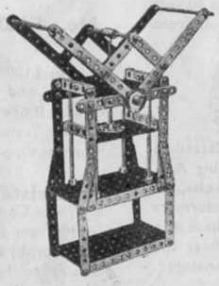
You can purchase separate Meccano parts as you require them, or, if you prefer, you can purchase Accessory Outfits that connect all the main Outfits.



Elliptical Lathe, built with Outfit G

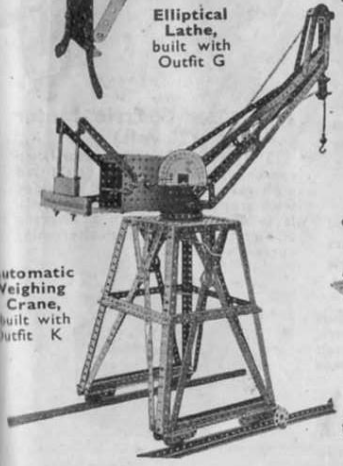


Tipping Steam Wagon, built with Outfit H

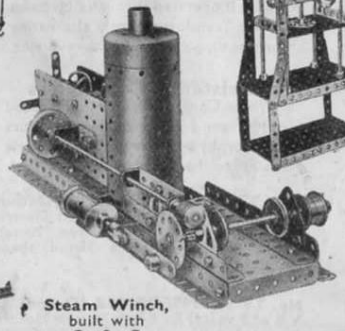


Bale Press, built with Outfit G

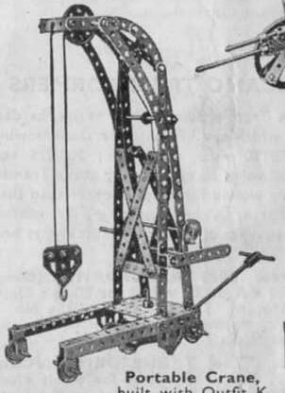
Field Gun and Carriage, built with Outfit H



Automatic Weighing Crane, built with Outfit K

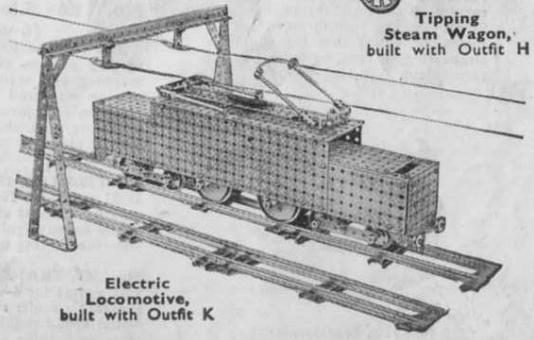


Steam Winch, built with Outfit G



Portable Crane, built with Outfit K

Kinetograph, built with Outfit F



Electric Locomotive, built with Outfit K

MECCANO

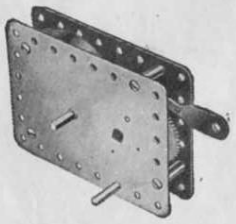
MOTORS FOR OPERATING MECCANO MODELS

If you want to obtain the fullest enjoyment from the Meccano hobby you should operate your models by means of one of the Meccano motors described on this page. You push over the control lever of the clockwork or electric motor and immediately your Crane, Motor Car, Ship Coaler or Windmill commences to work in exactly the same manner as its prototype in real life. Each motor is pierced with the standard Meccano equidistant holes.

MECCANO CLOCKWORK MOTORS

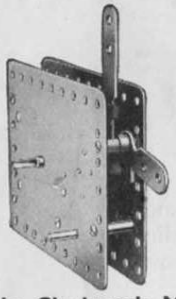
These are the finest Clockwork motors obtainable for model driving. They have exceptional power and length of run and their gears are cut with such precision as to make them perfectly smooth and steady in operation.

Meccano Clockwork Motors are especially suitable for small models built with a limited range of parts. They are extremely simple to operate and have the advantage of being self-contained.



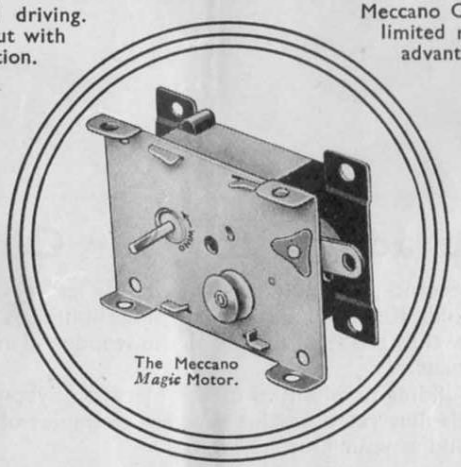
No. 1 Clockwork Motor

An efficient and long-running Motor fitted with a brake lever by means of which it may be started and stopped. It is non-reversing.



No. 1a Clockwork Motor

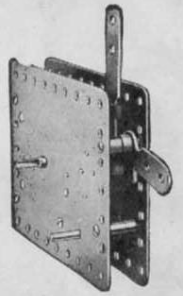
This Motor is more powerful than the No. 1 Motor and is fitted with reversing motion. It has brake and reverse levers.



The Meccano *Magic* Motor.

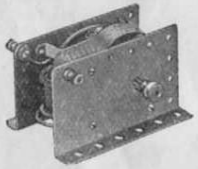
The Meccano *Magic* Motor

The Meccano *Magic* Motor is well designed and strongly constructed, and is fitted with a powerful spring giving a long and steady run. It is non-reversing. Each Magic Motor is supplied with a separate ½" Pulley Wheel and three pairs of driving bands of different lengths, it is capable of driving all the Meccano O, A and B Outfit models, and many o the lighter models illustrated in the Manuals o the C, D and E Outfits.



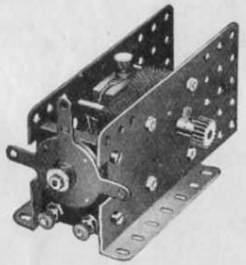
No. 2 Clockwork Motor

This is a Motor of super quality. Brake and reverse levers enable it to be started, stopped or reversed as required.



No. E1 Electric Motor (6 volt)

This is a highly efficient motor (non-reversing) that will give excellent service. It can be operated through a 9-volt Meccano Transformer from the mains, providing that the supply is alternating current, or from a 6-volt accumulator.

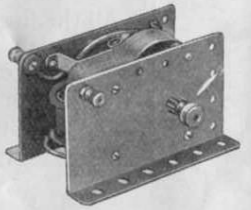


No. E6 Electric Motor (6 volt)

This fine motor is fitted with reversing motion and provided with stopping and starting controls. It can be operated through a 9-volt Meccano Transformer from the mains providing that the supply is alternating current, or from a 6-volt accumulator.

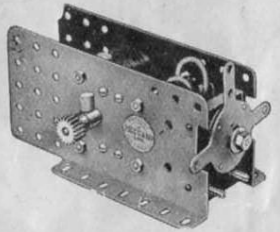
MECCANO ELECTRIC MOTORS

The four Meccano Electric Motors shown here have been designed specially to provide smooth-running power units for the operation of Meccano models. The 6-volt Motors may be operated through a Meccano Transformer direct from the mains, providing that the supply is alternating current, or from a 6-volt accumulator. The 20-volt Motors are operated through a 20-volt Transformer from alternating current supply mains.



No. E120 Electric Motor (20 volt)

The E120 Electric Motor is a very reliable and smooth-running power unit. It is operated through a Meccano 20-volt Transformer from alternating current supply mains. Non-reversing.



No. E20b Electric Motor (20 volt)

This 20-volt Electric Motor is an extremely efficient power unit, fitted with reversing motion and provided with stopping and starting controls. It is operated through a Meccano 20-volt Transformer from alternating current supply mains.

MECCANO TRANSFORMERS

There are six Transformers in the series, as described below, all of which are available for the following A.C. Supplies :—100/110 volts, 50 cycles ; 200/225 volts, 50 cycles ; 225/250 volts, 50 cycles. Any of the Transformers can be specially wound for supplies other than these at a small extra charge. When ordering a Transformer the voltage and frequency of the supply must always be stated.

No. T20a Transformer

No. T20A TRANSFORMER (Output 35 VA at 20/3½ volts) for 20-volt Electric Motors. Has two separate circuits at 20 volts, one controlled by a 5-stud speed regulator ; and a third circuit at 3½ volts for lighting up to 14 lamps.

No. T6A TRANSFORMER (Output 40 VA at 9/3½ volts) for 6-volt Electric Motors. Has two separate circuits at 9 volts, one controlled by a 5-stud speed regulator, and a third circuit at 3½ volts for lighting up to 18 lamps.

No. T20M TRANSFORMER (Output 20 VA at 20 volts) for 20-volt Electric Motors. This is similar to the No. T20 Transformer, but is not fitted with speed regulator.

No. T6M TRANSFORMER (Output 25 VA at 9 volts) for 6-volt Electric Motors. This is similar to the No. T6 Transformer, but is not fitted with speed regulator.

Resistance Controllers

These Controllers enable the speed of Meccano 6-volt and 20-volt Motors and Hornby 6-volt and 20-volt Electric Trains to be regulated as desired.

No. T20 TRANSFORMER (Output 20 VA at 20 volts) for 20-volt Electric Motors. Provided with one 20-volt circuit controlled by a 5-stud speed regulator.

No. T6 TRANSFORMER (Output 25 VA at 9 volts) for 6-volt Electric Motors. Provided with one 9-volt circuit controlled by a 5-stud speed regulator.

No. T20 Transformer

Ask your dealer for a complete price list.

LIST OF MECCANO PARTS

No.	Description.
1	Perforated Strips, 12½"
1a	" " 9½"
1b	" " 7½"
2	" " 5½"
2a	" " 4½"
3	" " 3½"
4	" " 3"
5	" " 2½"
6	" " 2"
6a	" " 1½"
7	Angle Girders, 24½"
7a	" " 18½"
8	" " 12½"
8a	" " 9½"
8b	" " 7½"
9	" " 5½"
9a	" " 4½"
9b	" " 3½"
9c	" " 3"
9d	" " 2½"
9e	" " 2"
9f	" " 1½"
10	Flat Brackets
11	Double Brackets
12	Angle Brackets, ½"×½"
12a	" " 1"×1"
12b	" " 1"×½"
12c	Obtuse Angle Brackets, ½"×½"
13	Axle Rods, 11½"
13a	" " 8"
14	" " 6½"
15	" " 5"
15a	" " 4½"
15b	" " 4"
16	" " 3½"
16a	" " 2½"
16b	" " 3"
17	" " 2"
18a	" " 1½"
18b	" " 1"
19	Crank Handles, large, 5"
19s	" " small, 3½"
19a	Wheels, 3" diam., with set-screws
20	Flanged Wheels, 1½" diam.
20b	" " ¾" "
	Pulley Wheels
19b	3" dia., with centre boss & set-screw
19c	6" " " " " "
20a	2" " " " " "
21	1½" " " " " "
22	1" " " " " "
23a	½" " " " & grub-screw
22a	1" " without " "
23	½" " " " "
24	Bush Wheels
25	Pinion Wheels, ½" diam., ¼" face
25a	" " ½" " ¼" "
25b	" " ½" " ⅛" "
26	" " ½" " ¼" "
26a	" " ½" " ⅛" "
26b	" " ¾" " ¼" "
	Gear Wheels
27	50 teeth to gear with ¾" pinion
27a	57 " " " ½" "
27b	133 " " " ½" "(3½" diam.)
27c	95 " " " ½" "(2½" diam.)
28	Contrate Wheels, 1½" diam.
29	" " ¾" "

No.	Description.
30	Bevel Gears, ⅞", 26 teeth
30a	" " ⅝", 16 " (Can only be used together)
30c	" " 1½", 48 "
31	Gear Wheels, 1", 38 teeth
32	Worms
34	Spanners
34b	Box Spanners
35	Spring Clips
36	Screwdrivers
36a	" Extra Long
36b	" Special
37	Nuts and Bolts, 7/32"
37a	Nuts
37b	Bolts, 7/32"
38	Washers
40	Hanks of Cord
41	Propeller Blades
43	Springs
44	Cranked Bent Strips
45	Double "
46	Double Angle Strips, 2½"×1"
47	" " " 2½"×1½"
47a	" " " 3"×1½"
48	" " " 1½"×½"
48a	" " " 2½"×½"
48b	" " " 3½"×½"
48c	" " " 4½"×½"
48d	" " " 5½"×½"
50a	Eye Pieces, with boss
51	Flanged Plates, 2½"×1½"
52	" " 5½"×2½"
52a	Flat Plates, 5½"×3½"
53	Perforated Flanged Plates, 3½"×2½"
53a	Flat Plates, 4½"×2½"
54a	Flanged Sector Plates, 4½" long
55	Perforated Strips, slotted, 5½" long
55a	" " " 2" "
57	Hooks
57a	" Scientific
57b	" Loaded, large
57c	" " small
58	Spring Cord
58a	Coupling Screws for Spring Cord
58b	Hooks for Spring Cord
59	Collars with Grub Screws
61	Windmill Sails
62	Cranks
62a	Threaded Cranks
62b	Double Arm Cranks
63	Couplings
63a	Octagonal Couplings
63b	Strip Couplings
63c	Threaded Couplings
64	" Bosses
65	Centre Forks
66	Weights, 50 grammes
67	" 25 "
68	Woodscrews, ½"
69	Set Screws
69a	Grub Screws, 5/32"
69b	" " 7/32"
70	Flat Plates, 5½"×2½"
72	" " 2½"×2½"
73	" " 3"×1½"
76	Triangular Plates, 2½"
77	" " 1"
78	Screwed Rods, 11½"

No.	Description.
79	Screwed Rods, 8"
79a	" " 6"
80	" " 5"
80a	" " 3½"
80b	" " 4½"
81	" " 2"
82	" " 1"
89	5½" Curved Strips, 10" radius
89a	3" " " cranked, 1½" radius, 4 to circle
89b	4" Curved Strips, cranked, 4½" radius, 8 to circle
90	2½" Curved Strips, 2⅜" radius
90a	2½" " " cranked, 1⅜" radius, 4 to circle
94	Sprocket Chain, 40" lengths
95	" Wheels, 36 teeth, 2" diam.
95a	" " 28 " 1½" "
95b	" " 56 " 3" "
96	" " 18 " 1" "
96a	" " 14 " ¾" "
97	Braced Girders, 3½" long
97a	" " 3" "
98	" " 2½" "
99	" " 12½" "
99a	" " 9½" "
99b	" " 7½" "
100	" " 5½" "
100a	" " 4½" "
101	Healds, for looms
102	Single Bent Strips
103	Flat Girders, 5½" long
103a	" " 9½" "
103b	" " 12½" "
103c	" " 4½" "
103d	" " 3½" "
103e	" " 3" "
103f	" " 2½" "
103g	" " 2" "
103h	" " 1½" "
103k	" " 7½" "
104	Shuttles, for looms
105	Reed Hooks, for looms
106	Wood Rollers
106a	Sand Rollers
107	Tables for designing machines
108	Architraves
109	Face Plates, 2½" diam.
110	Rack Strips, 3½"
110a	" " 6½"
111	Bolts, ⅜"
111a	" ½"
111c	" ⅝"
113	Girder Frames
114	Hinges
115	Threaded Pins
116	Fork Pieces, large
116a	" " small
117	Steel Balls, ⅜" diam.
118	Hub Discs, 5½" "
120	Buffers
120a	Spring Buffers
120b	Compression Springs
121	Train Couplings
122	Miniature Loaded Sacks
123	Cone Pulley

No.	Description.
124	Reversed Angle Brackets, 1"
125	" " " ½"
126	Trunnions
126a	Flat Trunnions
127	Simple Bell Cranks
128	Boss Bell Cranks
129	Rack Segments, 3" diam.
130	Eccentrics, Triple Throw
131	Dredger Buckets
132	Flywheels, 2¾" diam.
133	Corner Brackets, 1½"
133a	" " 1"
134	Crank Shanks, 1" stroke
135	Theodolite Protractors
136	Handrail Supports
136a	" Coup'ings
137	Wheel Flanges
138	Ships' Funnels
*138a-z	" " Raked
139	Flanged Brackets (right)
139a	" " (left)
140	Universal Couplings
141	Wire Lines (for suspending clock weights)
142	Rubber Rings, 3" rim
142a	Motor Tyres (to fit 2" diam. rims)
142b	" " " 3" " "
142c	" " " 1" " "
142d	" " " 1½" " "
143	Circular Girders, 5½" diam.
144	Dog Clutches
145	Circular Strips, 7½" diam overall
146	" Plates, 6" " "
146a	" " 4" " "
147	Pawls, with Pivot Bolt and nuts
147a	Pawls
147b	Pivot Bolts with 2 nuts
147c	Pawls without boss
148	Ratchet Wheels
149	Collecting Shoes for Electric Locos
150	Crane Grabs
151	Pulley Blocks, Single Sheave
152	" " Two "
153	" " Three "
154a	Corner Angle Brackets, ½" (right hand)
154b	Corner Angle Brackets, ½"(left hand)
155	Rubber Rings (for 1" Pulleys)
156	Pointers (with boss), 2½" overall
157	Fans, 2" diam.
158a	Signal Arms, Home
158b	" " Distant
160	Channel Bearings, 1½"×1"×½"
161	Girder Brackets, 2"×1"×½"
162	Boilers, complete with ends
162a	" ends
162b	" without ends
163	Sleeve Pieces
164	Chimney Adaptors
165	Swivel Bearings
166	End "
167	Geared Roller Bearings
167a	Roller Races, geared, 192 teeth
167b	Ring Frames for Rollers
167c	Pinions for Roller Bearings, 16 teeth
168	Ball Bearings, 4" diam.

No.	Description.
168a	Ball Races, flanged disc
168b	" " toothed "
168c	" Casing, complete with balls
169	Digger Buckets
170	Eccentrics, ¼" throw
171	Socket Couplings
172	Pendulum Connections
173	Rail Adaptors
174	Grease Cups
175	Flexible Coupling Units
176	Anchoring Springs for Cord
177	Shafting Standards, large
178	" " small
179	Rod Sockets
180	Toothed Gear Rings, 3½" diam. (133 external teeth ; 95 internal teeth)
181	Bobbins
182	Insulating Bushes, 6BA
182a	Insulating Washers, 6BA
183	Lamp Holders
184a	Lamps, 2½ volt
184b	" 3½ "
184c	" 6 "
184d	" 10 "
184e	" 20 "
185	Steering Wheels, 1¾" diam
186	Driving Bands
187	Road Wheels
188	Flexible Plates, 2½"×1½"
189	" " 5½"×1½"
190	" " 2½"×2½"
191	" " 4½"×2½"
192	" " 5½"×2½"
193	Strip Plates, 2½"×2½"
194	" " 3½"×2½"
195	" " 5½"×2½"
196	" " 9½"×2½"
197	" " 12½"×2½"
198	Hinged Flat Plates, 4½"×2½"
199	Curved Plates, U Section 9/33" radius
200	" " 1 11/16" radius
201	Lamps with Flex, 3½-volt
202	Angle Brackets (for Headlamps)
203	Headlamps
203a	Headlamp Rims
203b	Headlamp Bodies
204	Headlamp Nuts
205	" Glasses (Green, Plain or Red)
206	Lampshades
207	Lamp Bases
207a	Lamps with Standard and Flex
208	Battery Tags and Studs
208a	Washers for Battery Studs
210	Nuts " "
211a	Helical Gears ½" (Can only be used together)
211b	" " 1½"

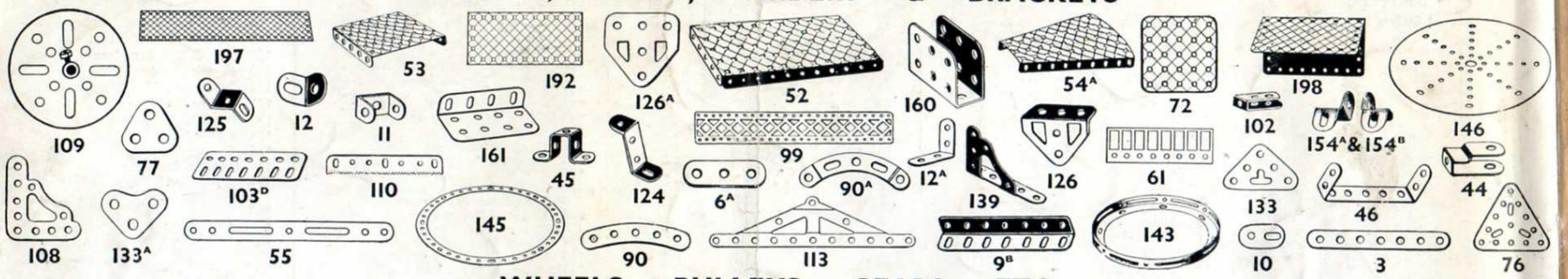
* * *

* The series includes 26 Funnels in the correct designs and colours of leading shipping companies.

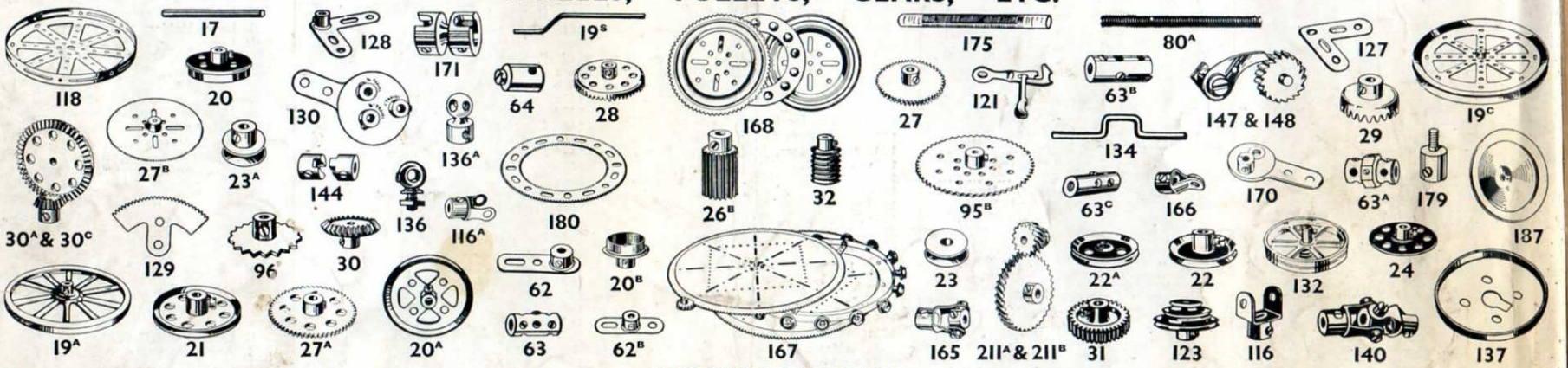
Your Dealer will be pleased to provide you with a complete Price List.

MECCANO PARTS & ACCESSORIES

PLATES, STRIPS, GIRDERS & BRACKETS



WHEELS, PULLEYS, GEARS, ETC.



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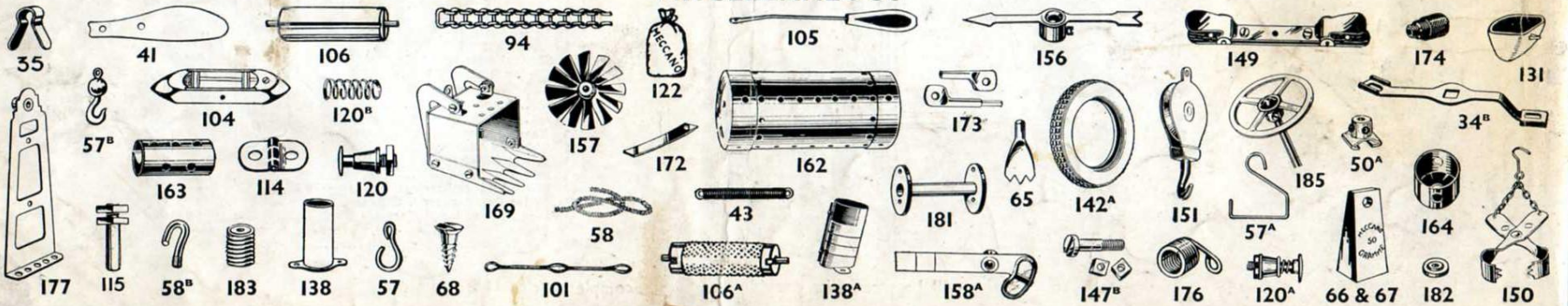

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