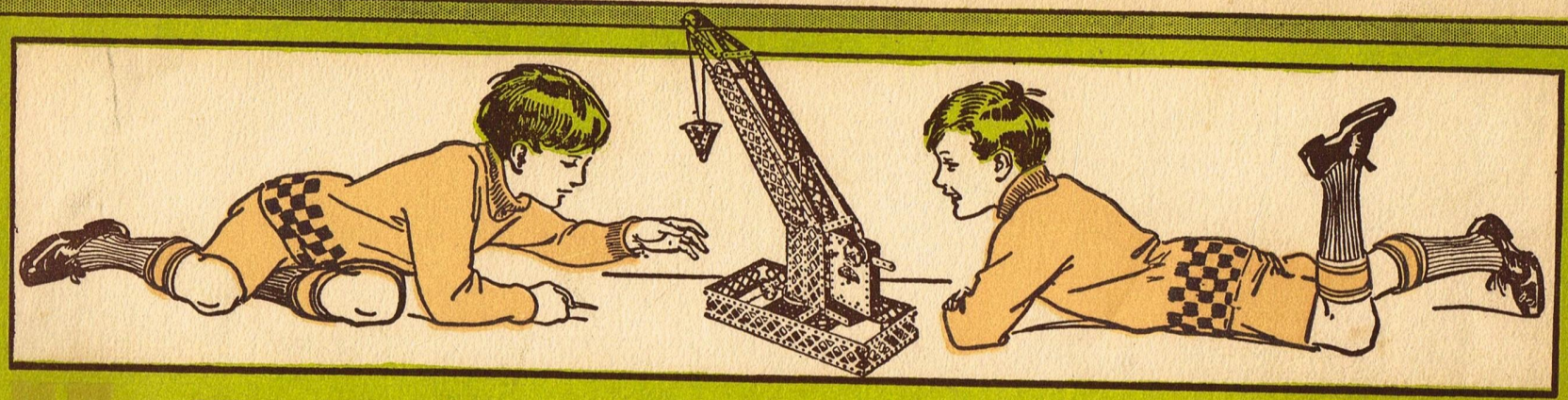


MECCANO

(TRADE MARK REG. U.S. PAT. OFF.)

INSTRUCTIONS

FOR OUTFITS Nos. 4 to 6

Price 45 Cents

MECCANO COMPANY
INCORPORATED
ELIZABETH, NEW JERSEY

No. 56B

AMERICAN EDITION

Bd—06245

MECCANO

Instructions for Outfits Nos. 4, 5 and 6

BEFORE commencing to build the models illustrated in this book, the Meccano user should first build some of those shown in the 0-3 Manual. He will then be familiar with Meccano parts and their uses and will be ready to start on the more advanced models that are shown in this book.

It should be borne in mind that the illustrations in the following pages merely form suggestions of the various models that can be built with the different Meccano Outfits and there is practically no limit to the number of models that are possible.

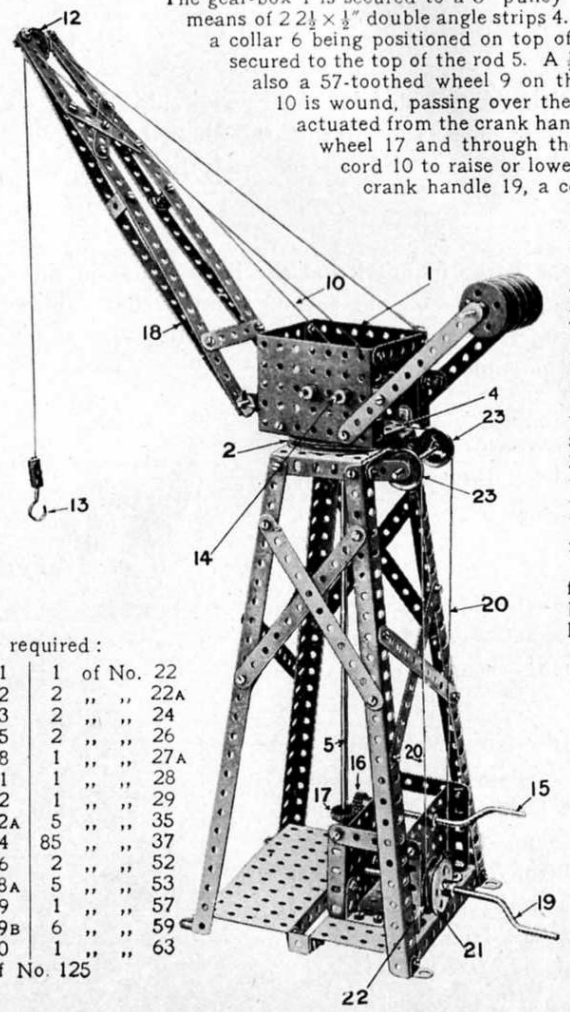
Meccano models always have been, and always will be, capable of improvement and in attempting to improve upon those shown in this book and in building new models of their own design, Meccano boys will find much enjoyment.

IMPORTANT NOTICE

In some of the illustrations throughout this book we have shown how to attach the Meccano Clockwork Motor, which is not included in the Outfits. The models may be operated either by the Electric or Clockwork Motors and these can be purchased separately. The prices will be found on page 94.

This Model can be made with MECCANO Outfit No. 4, or No. 3 and No. 3A.

Model No. 401 Elevated Jib Crane



The gear-box 1 is secured to a 3″ pulley wheel 2 (the boss 3 of which stands up), by means of 2 2½ × ½″ double angle strips 4. The 11½″ rod 5 passes up through the boss 3, a collar 6 being positioned on top of the boss within, the contrate wheel 7 being secured to the top of the rod 5. A ½″ pinion 8 engages the contrate wheel 7 and also a 57-toothed wheel 9 on the rod 14 on which latter the hoisting cord 10 is wound, passing over the 1″ pulley 12 to the hook 13. The rod 5 is actuated from the crank handle 15 by the pinion 16 engaging a ¾″ contrate wheel 17 and through the gear wheels 7, 8, and 9, and operates the cord 10 to raise or lower the load. The jib 18 is swivelled from the crank handle 19, a continuous cord 20 being wound twice round the flange wheel 21, against which is butted a bush wheel 22 to make it into a double flange pulley. A cord 20 passes round 1″ guide pulleys 23 round the 3″ pulley wheel 2. By turning the handle 19 the jib is swivelled.

Alternative Construction. In order to make the jib swivel more freely, a ball-race, Fig. 401B, may be fitted. This is made by bolting to the top of the frame a 3″ pulley wheel 24 by bolts 25 which also secure in the pulley wheel 24 a wheel flange 26. This provides a circular groove for the reception of the ball bearings 27. The pulley wheel 2 which is bolted to the gear-box 1 is then placed over the rod 5 and rests on the ball bearings 27 to form a race.

(N.B.—The wheel flange and the balls for the bearing are not provided in this Outfit but can be bought separately. See parts list page).

Parts required:

4	of	No.	1	1	of	No.	22
10	,,	,,	2	2	,,	,,	22A
1	,,	,,	3	2	,,	,,	24
7	,,	,,	5	2	,,	,,	26
4	,,	,,	8	1	,,	,,	27A
4	,,	,,	11	1	,,	,,	28
12	,,	,,	12	1	,,	,,	29
3	,,	,,	12A	5	,,	,,	35
2	,,	,,	14	85	,,	,,	37
5	,,	,,	16	2	,,	,,	52
1	,,	,,	18A	5	,,	,,	53
2	,,	,,	19	1	,,	,,	57
1	,,	,,	19B	6	,,	,,	59
6	,,	,,	20	1	,,	,,	63

4 of No. 125

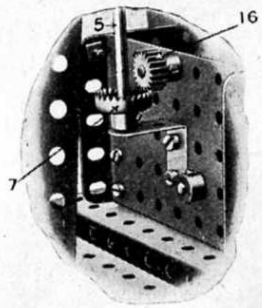


FIG. A.

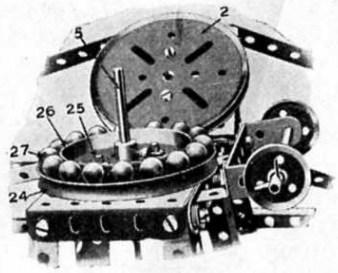


FIG. B.

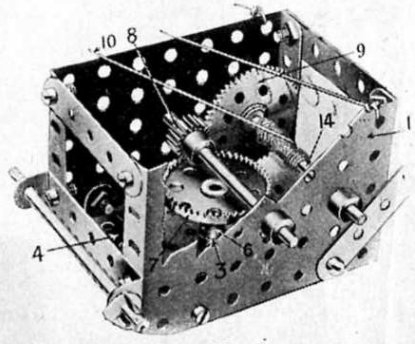


FIG. C.

These Models can be made with MECCANO Outfit No. 4, or No. 3 and No. 3A.

Model No. 402

Alternating Swing

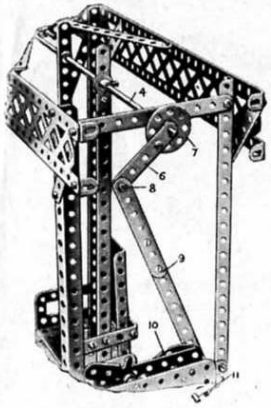
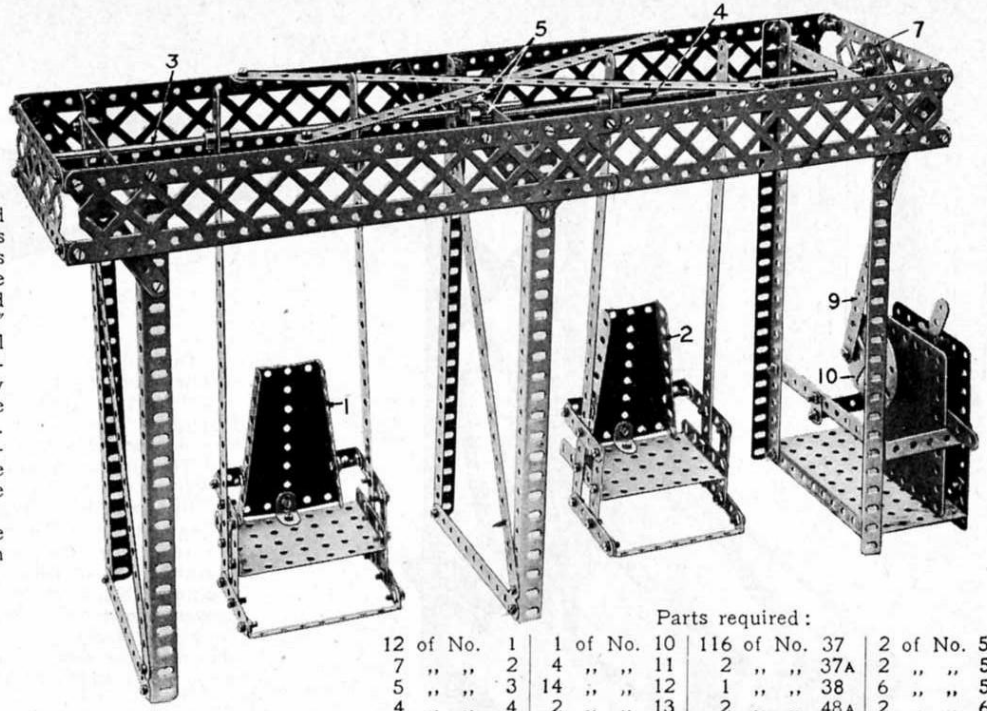


FIG. A

The chairs 1, 2, are pivoted on 11½" rods 3, 4, these rods being geared together by pinions 5, so that they turn in opposite directions. The rod 4 is turned to and fro by means of a 2½" strip connected to a bush wheel 7. The strip 6 is pivotally connected at 8 to a 7½" strip 9 loosely bolted to a face plate 10 on the driven spindle 11 of the motor. As the spindle 11 rotates continuously in one direction, the swings are rocked in opposite directions.

The motor shown in the illustration is not included in the Outfit.



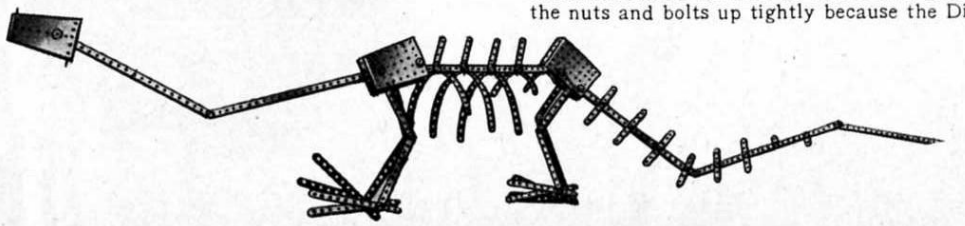
Parts required:

12	of No.	1	1	of No.	10	116	of No.	37	2	of No.	53
7	,, ,,	2	4	,, ,,	11	2	,, ,,	37A	2	,, ,,	54
5	,, ,,	3	14	,, ,,	12	1	,, ,,	38	6	,, ,,	59
4	,, ,,	4	2	,, ,,	13	2	,, ,,	48A	2	,, ,,	62
15	,, ,,	5	1	,, ,,	24	2	,, ,,	48B	4	,, ,,	99
6	,, ,,	8	2	,, ,,	26	1	,, ,,	52	2	,, ,,	100
						1	of No.	109			

Model No. 403

Diplodocus

This representation of a prehistoric animal is a most extraordinary effort sent in by a young French boy to compete in one of the big Meccano Model Building Competitions. We could scarcely class it as an engineering model, but any boy with a brain clever enough and an imagination lively enough to conceive and construct such an animal as this from Meccano parts deserved a good prize, so we awarded him one. Screw the nuts and bolts up tightly because the Diplodocus looks most dejected when he droops.



Parts required:

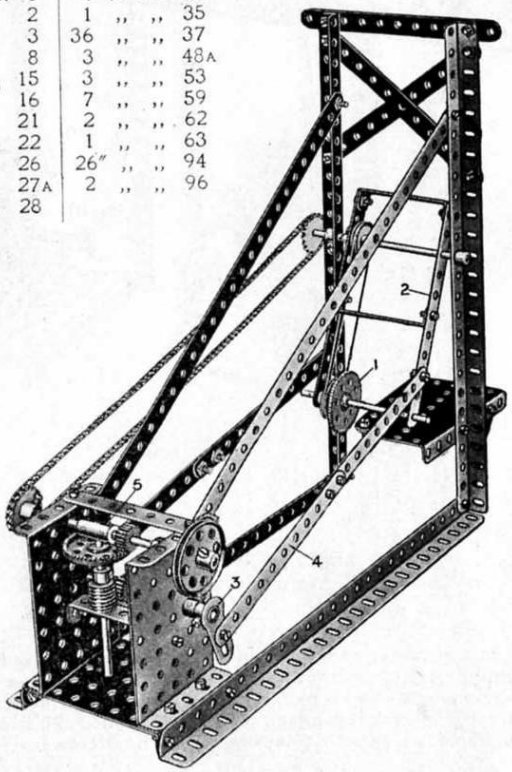
1	of No.	1	1	of No.	8	2	of No.	22			
7	,, ,,	2	4	,, ,,	10	40	,, ,,	37			
4	,, ,,	3	1	,, ,,	16	4	,, ,,	53			
8	,, ,,	5	4	,, ,,	17	2	,, ,,	54			
			8	,, ,,	59						

These Models can be made with MECCANO Outfit No. 4, or No. 3 and No. 3A.

Model No. 404 Swinging Hot Saw

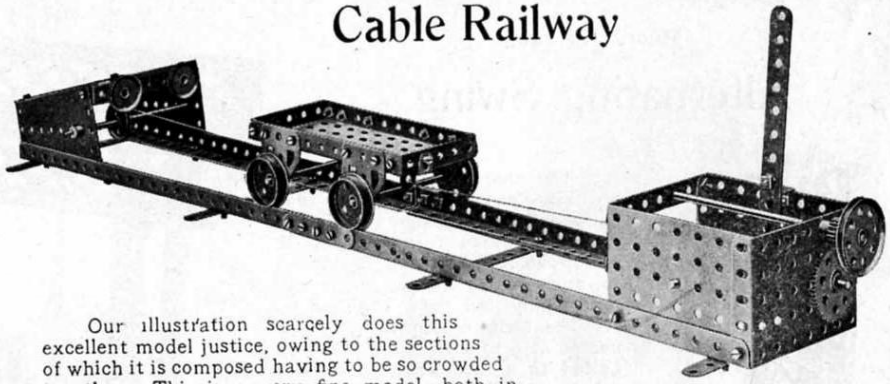
Parts required :

2	of	No.	1	1	of	No.	32
9	,,	,,	2	1	,,	,,	35
1	,,	,,	3	36	,,	,,	37
4	,,	,,	8	3	,,	,,	48A
2	,,	,,	15	3	,,	,,	53
3	,,	,,	16	7	,,	,,	59
1	,,	,,	21	2	,,	,,	62
2	,,	,,	22	1	,,	,,	63
2	,,	,,	26	26"	,,	,,	94
1	,,	,,	27A	2	,,	,,	96
1	,,	,,	28				



The swinging frame 2 carrying the circular saw 1 is rocked to and fro by a continuous rotary movement of the crank 3 through the connecting strips 4. The coupling 5 is loose on the sprocket wheel spindle and forms a bearing for the spindle of the worm.

Model No. 405 Cable Railway



Our illustration scarcely does this excellent model justice, owing to the sections of which it is composed having to be so crowded together. This is a very fine model, both instructive and highly interesting.

The driving power is received at the outer 1½" pulley, and is transmitted through the clutch mechanism and the pinion and gear wheels to the lower spindle on which the driving pulley is fixed, the driving rope passing round this pulley and the second pulley at the end of the rails, all as shown in the drawing.

In fixing the lever for operating the clutch mechanism, the nuts should be locked to prevent the screw working out. Only one section of rails is shown in the design but they may be extended as desired.

Parts required :

5	of	No.	2	1	of	No.	27A
3	,,	,,	3	2	,,	,,	29
2	,,	,,	5	2	,,	,,	35
4	,,	,,	8	51	,,	,,	37
1	,,	,,	15	3	,,	,,	38
2	,,	,,	15A	1	,,	,,	46
2	,,	,,	16	2	,,	,,	48A
1	,,	,,	17	2	,,	,,	48C
4	,,	,,	20	1	,,	,,	52
1	,,	,,	21	3	,,	,,	53
3	,,	,,	22	2	,,	,,	54
1	,,	,,	22A	6	,,	,,	59
2	,,	,,	26	3	,,	,,	125
				4	of	No.	126A

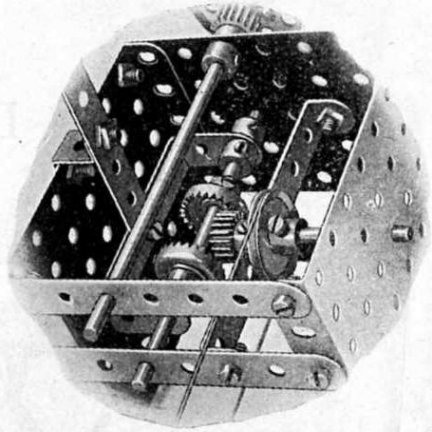


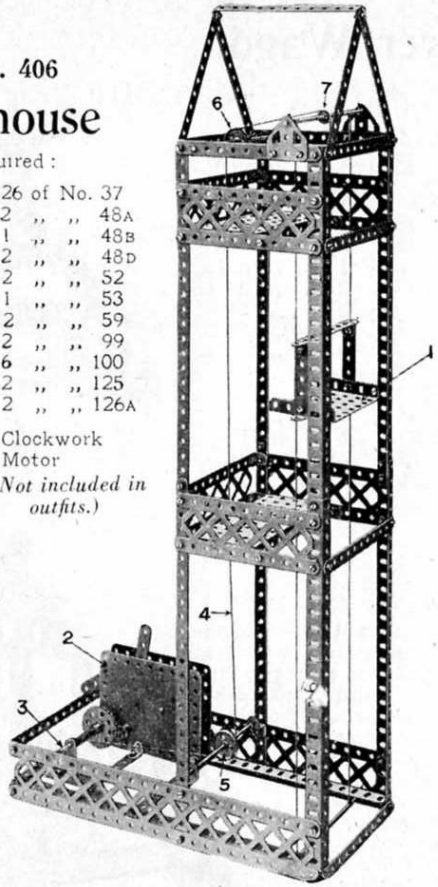
FIG. A

Model No. 406

Warehouse

Parts required:

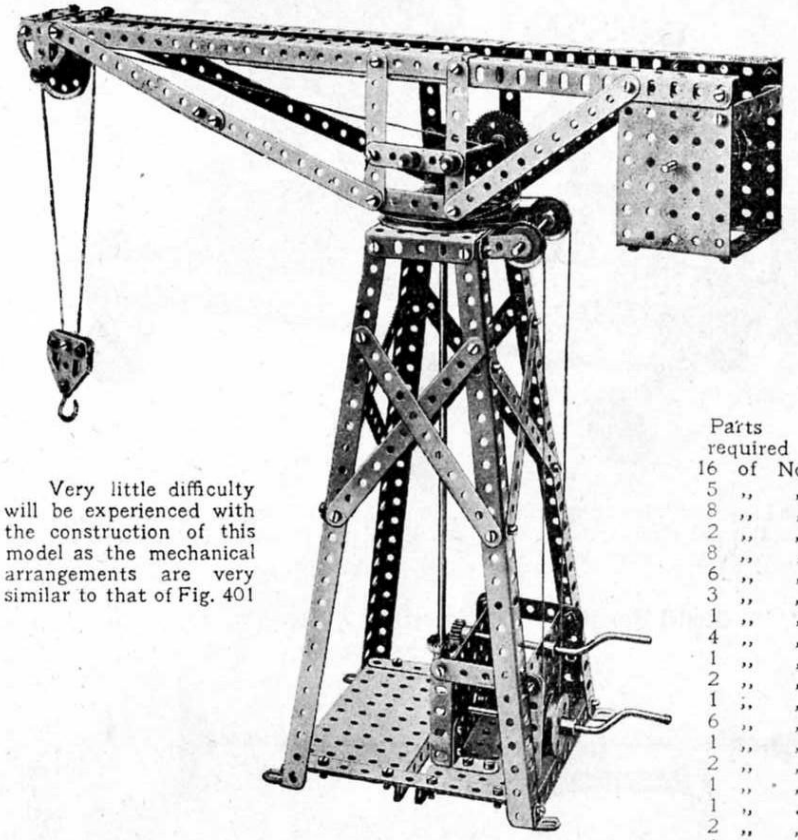
4	of No.	1	126	of No.	37
18	,, ,,	2	2	,, ,,	48A
2	,, ,,	4	1	,, ,,	48B
6	,, ,,	8	2	,, ,,	48D
4	,, ,,	11	2	,, ,,	52
14	,, ,,	12	1	,, ,,	53
1	,, ,,	12A	2	,, ,,	59
3	,, ,,	14	2	,, ,,	99
1	,, ,,	15	6	,, ,,	100
1	,, ,,	16	2	,, ,,	125
1	,, ,,	17	2	,, ,,	126A
2	,, ,,	22A			
1	,, ,,	23	Clockwork Motor		
1	,, ,,	26	*(Not included in outfits.)*		
1	,, ,,	27A			
10	,, ,,	35			



The cage 1 is raised or lowered to the several floors from the motor 2 driving a rod 3 from which passes the hoisting cord 4 round a 1" pulley 5 and another 6 at the top, and thence over a ½" pulley 7 to the cage 1. The construction of the floors and frame should be clear from the illustration.

Model No. 407

Girder Crane



Very little difficulty will be experienced with the construction of this model as the mechanical arrangements are very similar to that of Fig. 401

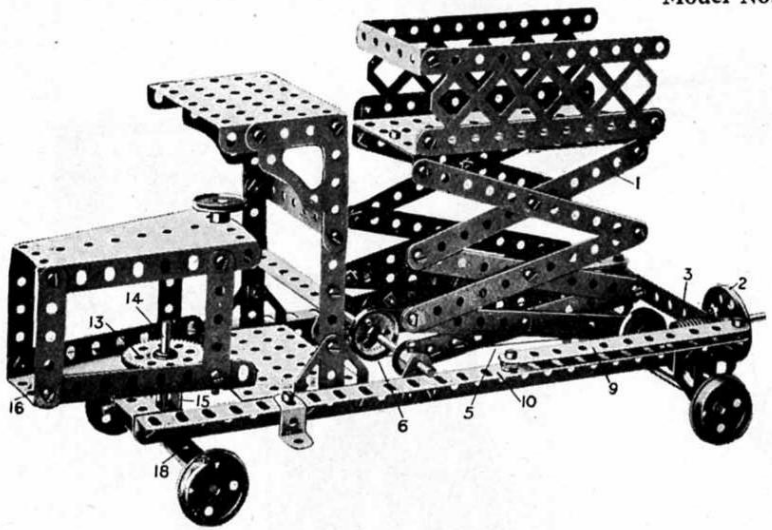
Parts required

16	of No.	2	
5	,, ,,	3	
8	,, ,,	5	
2	,, ,,	6A	
8	,, ,,	8	
6	,, ,,	12	
3	,, ,,	12A	
1	,, ,,	13	
4	,, ,,	16	
1	,, ,,	17	
2	,, ,,	19	
1	,, ,,	19B	
6	,, ,,	20	
1	,, ,,	21	
2	,, ,,	22	
1	,, ,,	23	
1	,, ,,	24	
2	,, ,,	26	
1	,, ,,	27	

1	of No.	28	10	of No.	38	2	of No.	52	9	of No.	59
1	,, ,,	29	1	,, ,,	46	5	,, ,,	53	1	,, ,,	115
92	,, ,,	37	3	,, ,,	48A	1	,, ,,	57	4	,, ,,	126A

These Models can be made with MECCANO Outfit No. 4, or No. 3 and No. 3A.

Model No. 408 Tower Wagon



Parts required:

16	of No.	2	78	of No.	37
2	,, ,,	4	22	,, ,,	37A
4	,, ,,	5	24	,, ,,	38
2	,, ,,	8	1	,, ,,	45
2	,, ,,	15	4	,, ,,	48A
5	,, ,,	15A	6	,, ,,	48B
1	,, ,,	16	1	,, ,,	52
2	,, ,,	17	2	,, ,,	53
4	,, ,,	20	2	,, ,,	54
1	,, ,,	21	3	,, ,,	59
3	,, ,,	22	2	,, ,,	62
1	,, ,,	22A	2	,, ,,	77
1	,, ,,	24	2	,, ,,	100
2	,, ,,	26	2	,, ,,	108
1	,, ,,	27A	1	,, ,,	115
1	,, ,,	32	2	,, ,,	125
2	,, ,,	35	4	,, ,,	126A

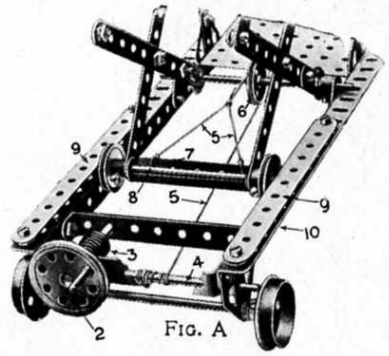


FIG. A

The Lazy Tongs 1 are extended by turning the hand wheel 2, a worm 3 on which engages a ½" pinion, not shown, on the rod 4. On this rod winds a cord 5 which passes round a pulley 6 and is secured to a 2½" × ½" double angle strip 7 on the rod 8, the ends of which slide in guides on either side formed by the strips 9 spaced by washers and the angle girders 10 of the carriage. The Lazy Tongs collapse by their own weight. The steering is effected from the rod 11, a pinion 12 on which engages a 57-toothed gear wheel 13, the 2" rod 14 of which passes through a double bent strip 15 bolted to the under-side of the sector plate 16. The rod 14 is secured to the bush wheel 17 which carries the double angle strip 3½" × ½" 18.

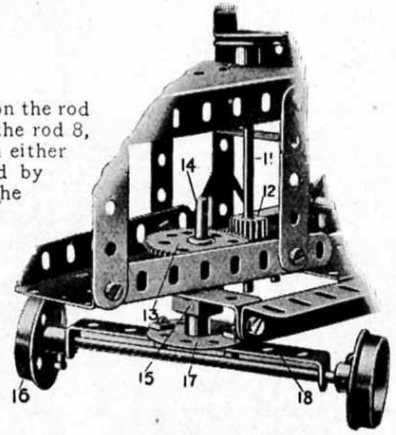
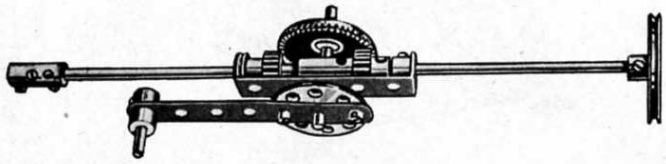


FIG. B

Model No. 409 Breast Drill



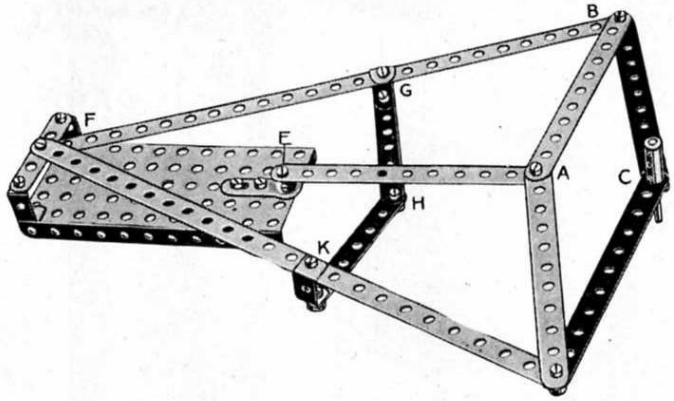
Parts required.

1	of No.	3	1	of No	21
2	,, ,,	15	1	,, ,,	23
2	,, ,,	17	1	,, ,,	24
1	,, ,,	18A	2	,, ,,	26
			2	,, ,,	63

1	of No.	28			
2	,, ,,	37			
1	,, ,,	48A			
3	,, ,,	59			

These Models can be made with MECCANO Outfit No. 4, or No. 3 and No. 3A.

Model No. 410 Geometrical Apparatus



Parts required

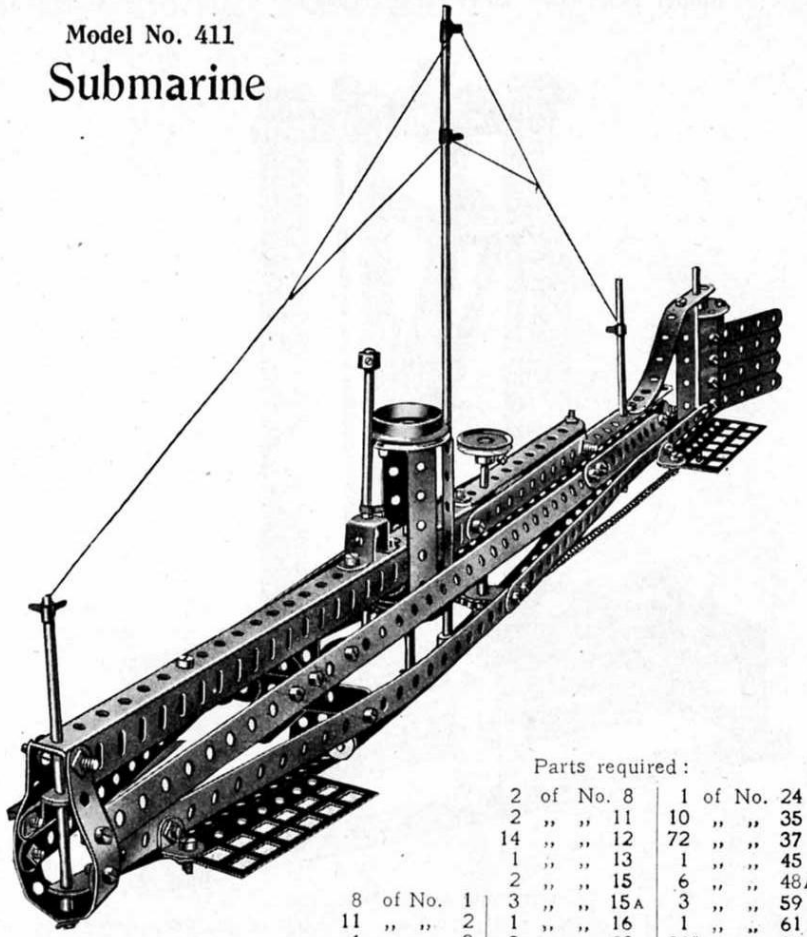
2	of	No	1
5	,,	,,	2
2	,,	,,	3
1	,,	,,	5
4	,,	,,	11
1	,,	,,	17
16	,,	,,	37
1	,,	,,	52
7	,,	,,	59
1	,,	,,	62
1	,,	,,	63

This most ingenious model for transforming a circular movement into a rectilinear movement was designed by M. Pierre-Th. Dufour, who used it in his Thesis (presented to the Faculty of Science in Paris) to obtain his degree of Doctor of the University of Paris. He required an instrument which would transform a circular movement into a movement rigorously rectilinear and he states in his published work that he was able to do this "with the aid of Meccano parts, which permit of making experiments so easily in mechanisms of the most varied types."

The point F is fixed, and is situated at a distance from the fixed point E, equal to AE, the two arms FB and FD being together equal to the four sides of the lozenge ABCD. The trajectory of the point C is then at right angles to EF. It will be found that whilst the point C is moving in a straight line at right angles to EF, the point A is describing a circle round the fixed point E.

Every Meccano boy should make up this very interesting model and experiment with it.

Model No. 411 Submarine

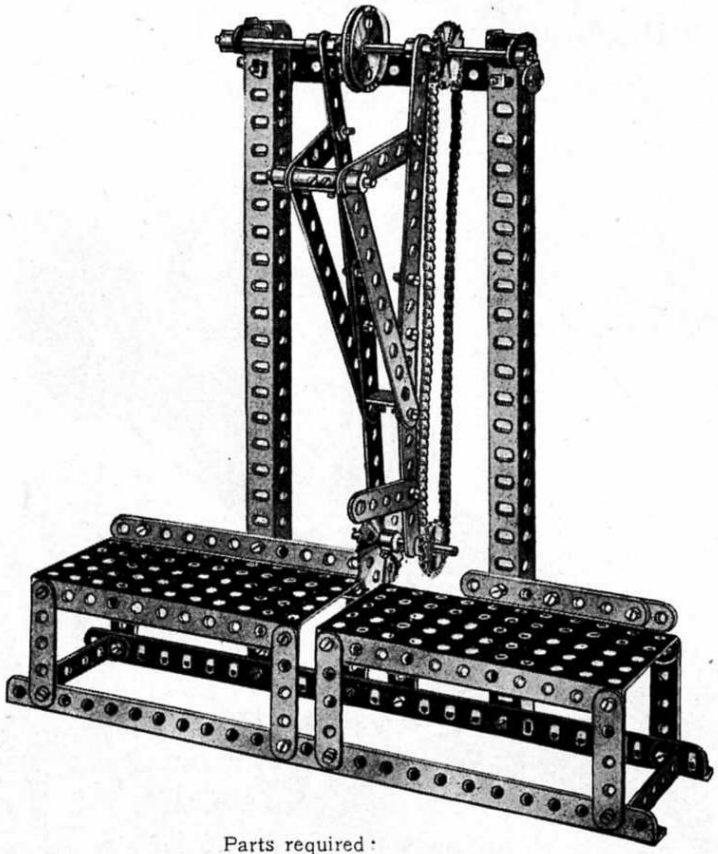


Parts required :

				2	of	No.	8	1	of	No.	24
				2	,,	,,	11	10	,,	,,	35
				14	,,	,,	12	72	,,	,,	37
				1	,,	,,	13	1	,,	,,	45
				2	,,	,,	15	6	,,	,,	48A
8	of	No.	1	3	,,	,,	15A	3	,,	,,	59
11	,,	,,	2	1	,,	,,	16	1	,,	,,	61
1	,,	,,	3	2	,,	,,	20	26	,,	,,	94
8	,,	,,	5	1	,,	,,	22	2	,,	,,	96

These Models can be made with MECCANO Outfit No. 4, or No. 3 and No. 3A.

Model No. 412 Swing Saw



Parts required :

8	of	No.	2	1	of	No.	11	45	of	No.	37
1	,,	,,	3	4	,,	,,	12	2	,,	,,	48A
12	,,	,,	5	1	,,	,,	14	2	,,	,,	52
6	,,	,,	8	2	,,	,,	17	8	,,	,,	59
1	,,	,,	10	1	,,	,,	21	1	,,	,,	63

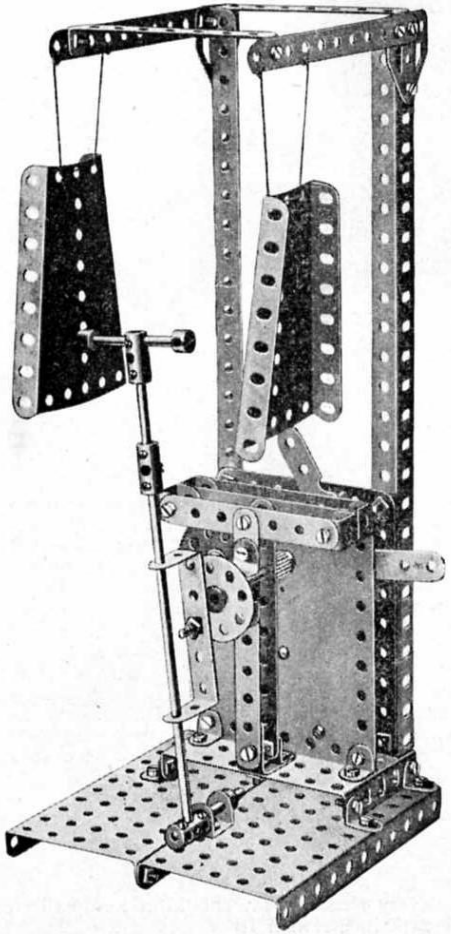
22"	of	No.	94
1	,,	,,	95
2	,,	,,	96

Model No. 413 Automatic Gong

Parts required :

2	of	No.	2
2	,,	,,	2A
2	,,	,,	3
2	,,	,,	8
5	,,	,,	11
9	,,	,,	12
1	,,	,,	12A
1	,,	,,	14
5	,,	,,	17
1	,,	,,	24
1	,,	,,	26
1	,,	,,	27A
43	,,	,,	37
2	,,	,,	37A
2	,,	,,	38
1	,,	,,	45
1	,,	,,	46
2	,,	,,	48B
2	,,	,,	52
1	,,	,,	53
2	,,	,,	54
3	,,	,,	59
3	,,	,,	63
1	,,	,,	111
2	,,	,,	126A

Clockwork Motor
(Not included in outfits.)



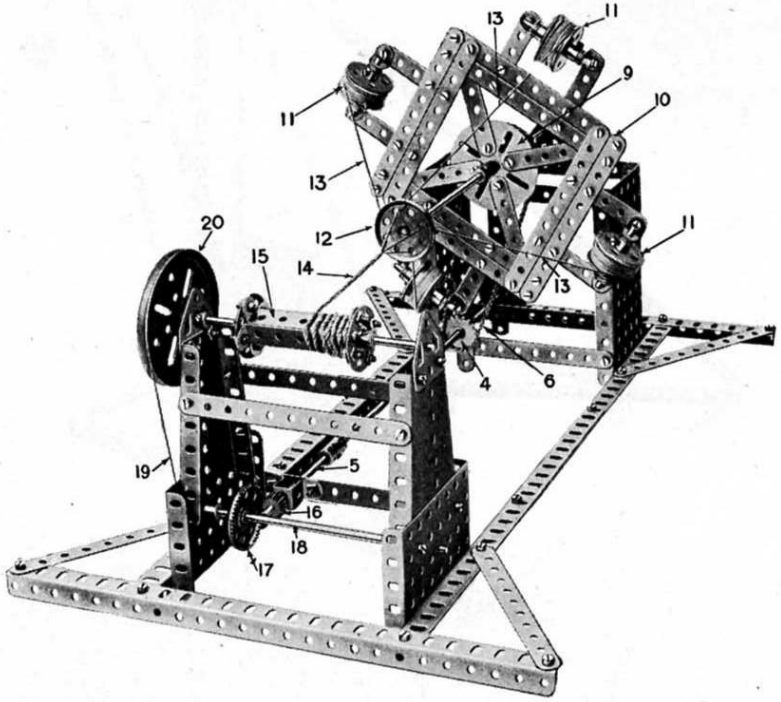
This Model can be made with MECCANO Outfit No. 4, or No. 3 and No. 3A.

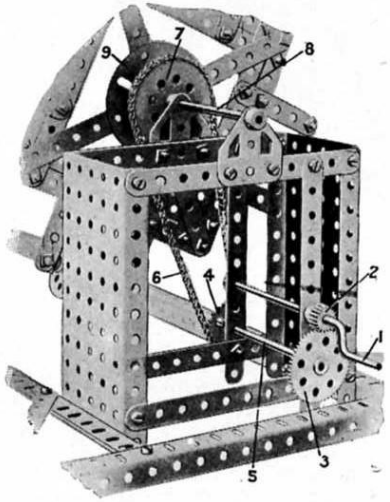
Model No. 414 Wire Rope-making Machine

Parts required :

21	of	No.	2	1	of	No.	13	4	of	No.	17	1	of	No.	22	104	of	No.	37
4	,,	,,	3	2	,,	,,	14	1	,,	,,	19	2	,,	,,	24	16	,,	,,	38
8	,,	,,	5	1	,,	,,	15	1	,,	,,	19B	2	,,	,,	26	1	,,	,,	45
6	,,	,,	8	1	,,	,,	15A	8	,,	,,	20	1	,,	,,	27A	4	,,	,,	48A
8	,,	,,	12	1	,,	,,	16	1	,,	,,	21	1	,,	,,	28	2	,,	,,	52

2	of	No.	53	1	of	No.	95
2	,,	,,	54	1	,,	,,	96
4	,,	,,	59	1	,,	,,	109
2	,,	,,	63	4	,,	,,	126A
16	,,	,,	94				





The machine is operated from the crank handle 1, a pinion 2 on which engages a 57-toothed wheel 3. A 1″ sprocket wheel 4 on the rod 5 of the toothed wheel 3 drives through a chain 6 a 2″ sprocket wheel 7, bolted on the rod 8. To this rod is bolted a face plate 9 which carries a framework 10 in which are mounted the wire spools 11 made from two flanged pulley wheels. At the front of the rod is bolted a 1½″ pulley wheel 12, through alternate holes in which the wires 13 from the spools 11 are threaded. By operating the handle 1 the frame 10 is rotated and the wires stranded to form a twisted rope 14 which is taken up on a drum formed of 4 2½″ double angle strips 15. This drum is rotated from the rod 5 by a pinion 16 engaging a contrate wheel 17 on the rod 18 of which a 1″ pulley wheel, not shown, drives through a cord 19 a 3″ pulley wheel, 20 on the drum spindle. The cord 19 may be wound twice round the smaller pulley wheel to get a better grip.

These Models can be made with MECCANO Outfit No. 4, or No. 3 and No. 3A.

Model No. 415

Swivelling and Luffing Jib Crane

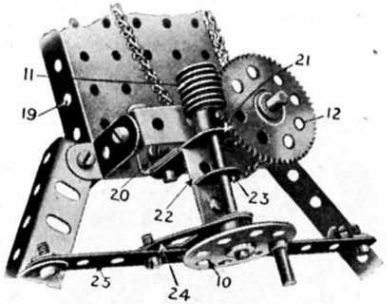


FIG. A

In this model three separate actions are provided, for raising the load, raising the jib, and swivelling the jib. The load is raised by means of a crank handle 1 on which the cord 2 is wound and passes over the 1″ pulley 3, thence round the ½″ pulley in the block 4 (spacing washers being used to give clearance to the ½″ pulley), the end of the cord 2 being made fast to the top of the jib. By turning the handle 1 the load is raised or lowered. The jib itself is raised or lowered by the operation of the crank handle 5 on the rod of which a cord is wound, and passes over one of two pulleys 7 to and round another 1″ pulley 8 in the jib, whence it returns to and passes round the other pulley 7, being finally made fast to the double bracket 9 bolted to the jib.

As the handle 5 is turned the cord 6 is wound round the pulleys and the angle of the jib varied. The jib is swivelled by the hand-wheel 10, a worm 11 on which engages a 57-toothed wheel 12 on the rod of which a 1″ sprocket wheel 13 is mounted. A sprocket chain 14 passes round this wheel 13 and round a 2″ sprocket wheel 15 secured to the standard 16 of the crane. The bearing for the rod of the worm 11 is made by bolting a 1″ angle bracket 20 to the rectangular plate 19, and to the angle bracket 20 is secured a 1½″ strip 21 and a 1″ bracket 22. To the bracket 22 is bolted a double bracket 23. A flat trunnion 24 is bolted to the 5½″ strip 25 which forms with the bracket 23 the front bearing for the rod. The standard is built up of 2 12½″ girders 16 which are connected at the base by a 1½″ double angle strip 17 which is bolted to the 2″ sprocket wheel 15. The 1″ rod 18 is secured in the bush of the sprocket wheel 15 and fitted with a collar below the rectangular plate 19, Fig. 415B.

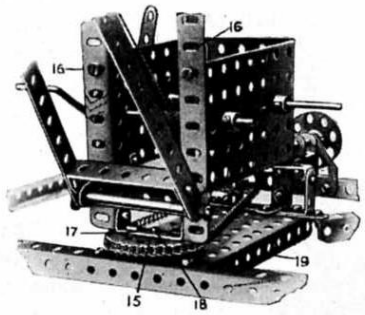


FIG. B

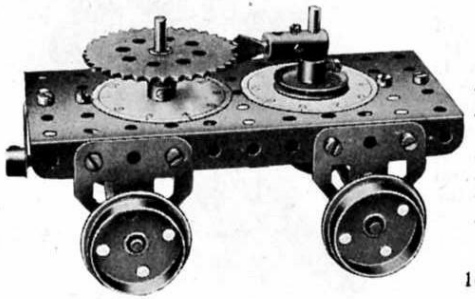
Parts required :

10	of	No.	1	2	of	No.	12A	1	of	No.	27A
3	,,	,,	2	1	,,	,,	16	1	,,	,,	32
3	,,	,,	3	3	,,	,,	17	2	,,	,,	35
2	,,	,,	5	4	,,	,,	18A	80	,,	,,	37
1	,,	,,	6A	2	,,	,,	19	2	,,	,,	37A
7	,,	,,	8	3	,,	,,	22	13	,,	,,	38
2	,,	,,	10	3	,,	,,	22A	3	,,	,,	45
2	,,	,,	11	1	,,	,,	23	1	,,	,,	46
10	,,	,,	12	1	,,	,,	24	2	,,	,,	48

3	of	No.	48A
2	,,	,,	52
2	,,	,,	53
1	,,	,,	57
8	,,	,,	59
1	,,	,,	95
1	,,	,,	96
1	,,	,,	115
4	,,	,,	126A

These Models can be made with MECCANO Outfit No. 4, or No. 3 and No. 3A.

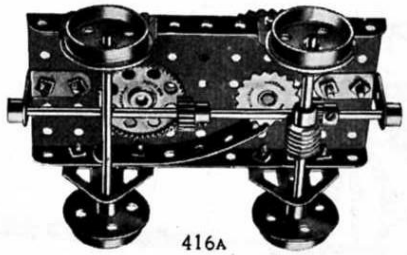
Model No. 416 Distance Indicator



Parts required:

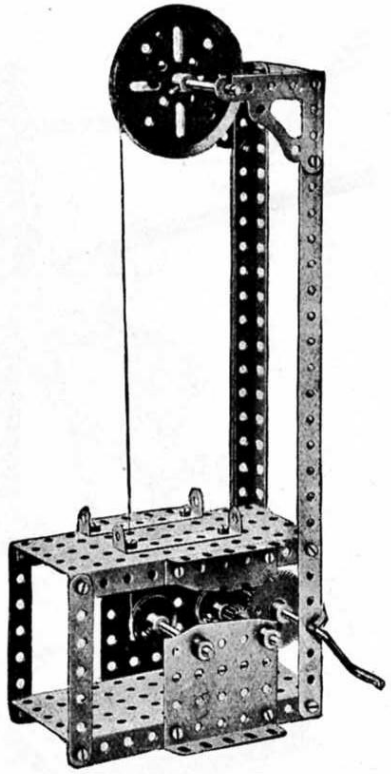
1	of	No.	4	1	of	No.	37A
4	,,	,,	10	3	,,	,,	38
2	,,	,,	12	1	,,	,,	52
1	,,	,,	15	3	,,	,,	59
2	,,	,,	16	2	,,	,,	62
2	,,	,,	17	1	,,	,,	63
4	,,	,,	19A	1	,,	,,	65
2	,,	,,	26	1	,,	,,	95
1	,,	,,	28	1	,,	,,	96
1	,,	,,	32	4	,,	,,	126A
16	,,	,,	37				

(N.B. Indicator scales not supplied; they may be cut out of cardboard.)



416A

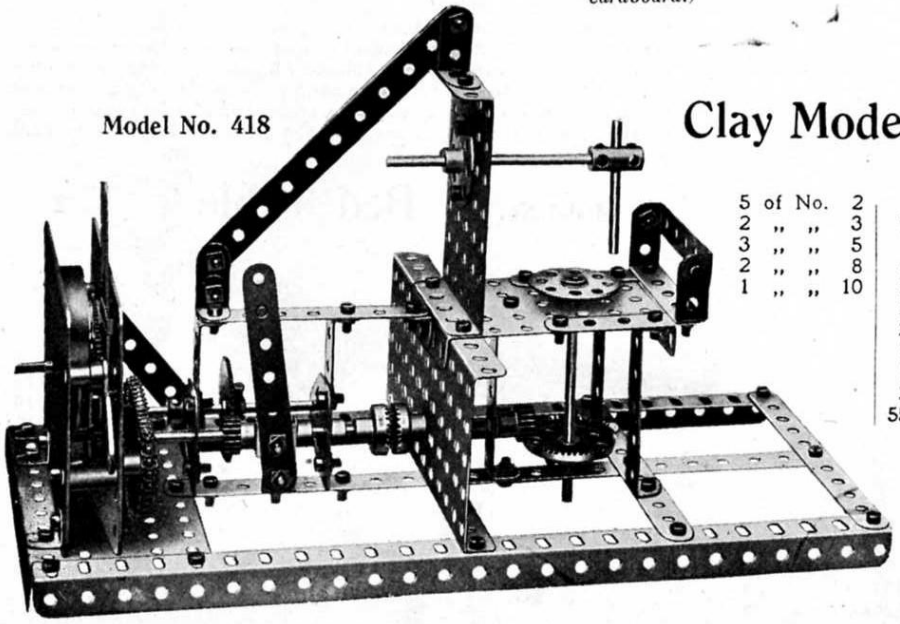
Model No. 417 Band Saw



Parts required:

2	of	No.	3	2	of	No.	22
1	,,	,,	5	1	,,	,,	26
2	,,	,,	8	1	,,	,,	27A
3	,,	,,	16	4	,,	,,	35
1	,,	,,	19	26	,,	,,	37
1	,,	,,	19B	2	,,	,,	48A
2	of	No.	52				
2	,,	,,	53				
4	,,	,,	59				
2	,,	,,	108				

Model No. 418 Clay Modelling Machine



Parts required:

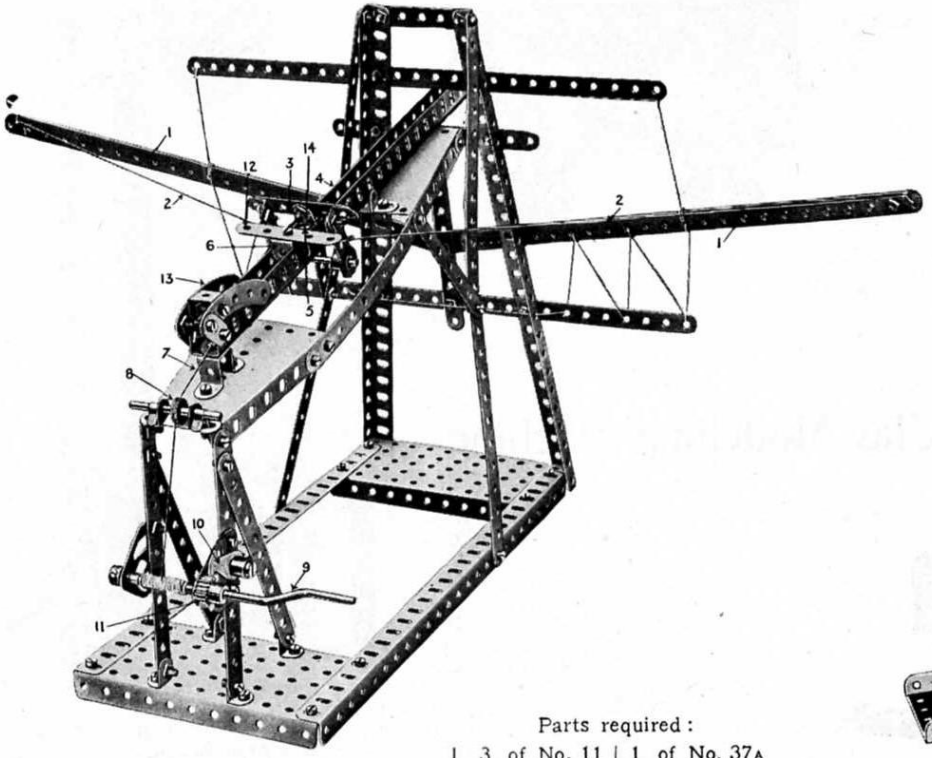
5	of	No.	2	1	of	No.	11
2	,,	,,	3	7	,,	,,	12
3	,,	,,	5	1	,,	,,	12A
2	,,	,,	8	4	,,	,,	16
1	,,	,,	10	2	,,	,,	17
				2	,,	,,	24
				2	,,	,,	26
				1	,,	,,	27A
				1	,,	,,	28
				2	,,	,,	29
				55	,,	,,	37
				2	of	No.	37A
				2	,,	,,	38
				1	,,	,,	46
				6	,,	,,	48A
				2	,,	,,	52
				2	,,	,,	53
				4	,,	,,	59
				1	,,	,,	63
				6"	,,	,,	94
				2	,,	,,	96
				2	,,	,,	126A

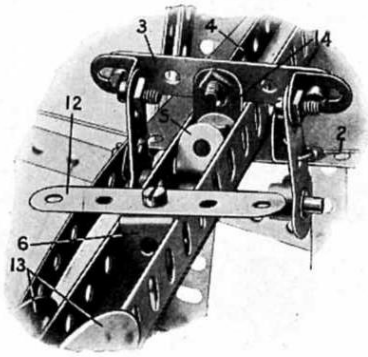
Clockwork Motor

(Not included in outfits.)

These Models can be made with MECCANO Outfit No. 4, or No. 3 and No. 3A.

Model No. 419 Mechanical Cross Bow





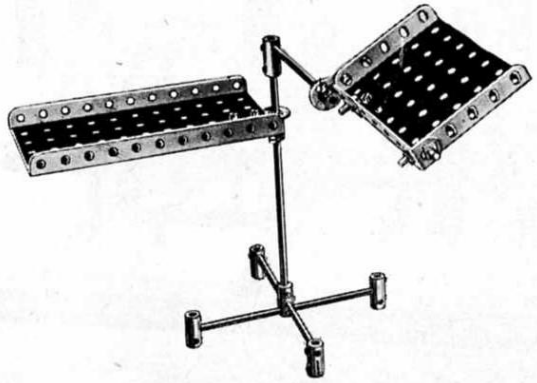
A

The only part of this model that requires description is the release of the bow. This is obtained by the following mechanism: the bow is made of three 12½" strips, 1, on each side, from the outer ends of which the cords 2 of the bow are connected to a frame 3, sliding on the angle girders 4. To this frame is bolted a double bracket 5 and a flat bracket 14, and this is engaged by another double bracket 6, forming the trigger. A cord 7 is connected to the double bracket 6 and passes over the pulley wheel 8 to the winding handle 9, controlled by a pawl 10 engaging a pinion 11. As the handle 9 is turned to bend the bow, the double bracket 6 is drawn back, and eventually the cross strip 12 engages and rides up the curved strips 13, disengaging the bracket 6 from the bracket 5 and releasing the bow.

Parts required:

10	of	No.	1	3	of	No.	11	1	of No. 37A
8	,,	,,	2	12	,,	,,	12	1	,, ,, 45
2	,,	,,	3	2	,,	,,	17	2	,, ,, 52
3	,,	,,	5	1	,,	,,	19	2	,, ,, 54
4	,,	,,	8	1	,,	,,	23	1	,, ,, 59
3	,,	,,	10	1	,,	,,	26	2	,, ,, 62
				1	,,	,,	33	2	,, ,, 90
				3	,,	,,	35	1	,, ,, 111
				73	,,	,,	37	2	,, ,, 126A

Model No. 420 Bed Table

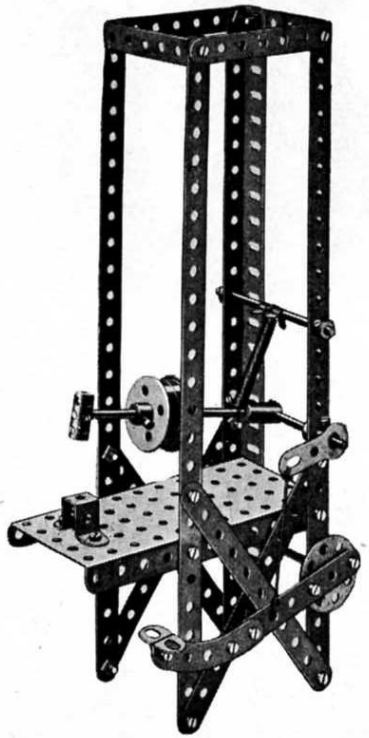


Parts required:

1	of	No.	3
1	,,	,,	12
1	,,	,,	14
2	,,	,,	15
1	,,	,,	16
8	,,	,,	37
1	,,	,,	52
1	,,	,,	53
2	,,	,,	62
6	,,	,,	63

Model No. 421

Treadle Hammer

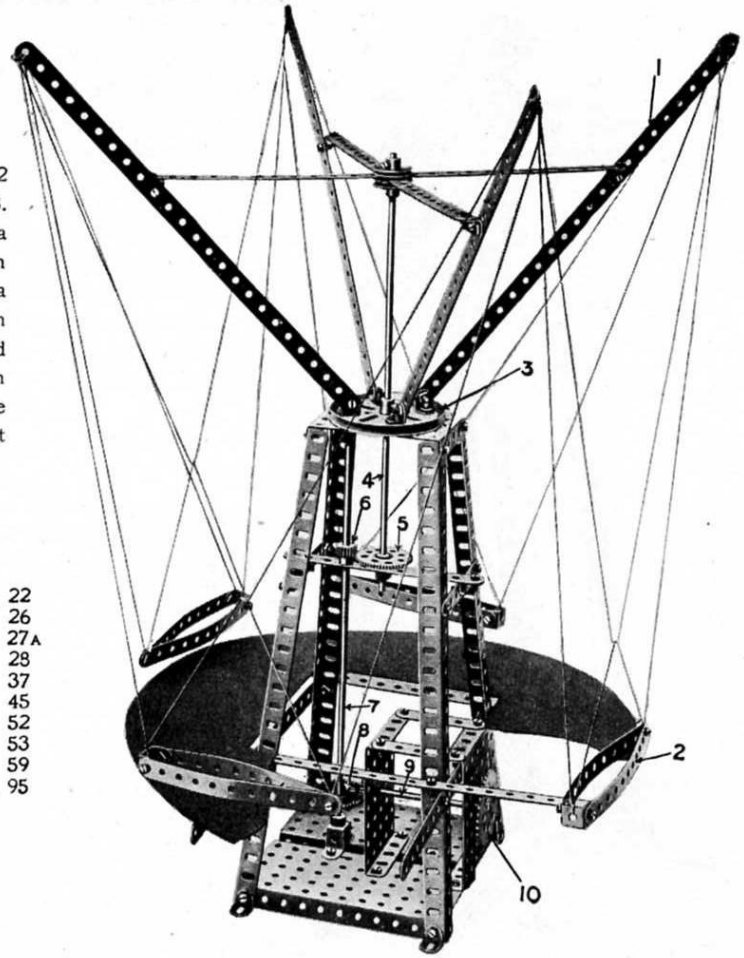


Parts required :

2	of	No.	1	3	of	No.	16	1	of	No.	45
4	,,	,,	2	2	,,	,,	20	1	,,	,,	48A
3	,,	,,	3	1	,,	,,	24	1	,,	,,	52
1	,,	,,	5	2	,,	,,	35	5	,,	,,	59
2	,,	,,	8	23	,,	,,	37	1	,,	,,	62
2	,,	,,	12	2	,,	,,	38	2	,,	,,	63
1	,,	,,	15A	1	,,	,,	43	1	,,	,,	90

Model No. 422

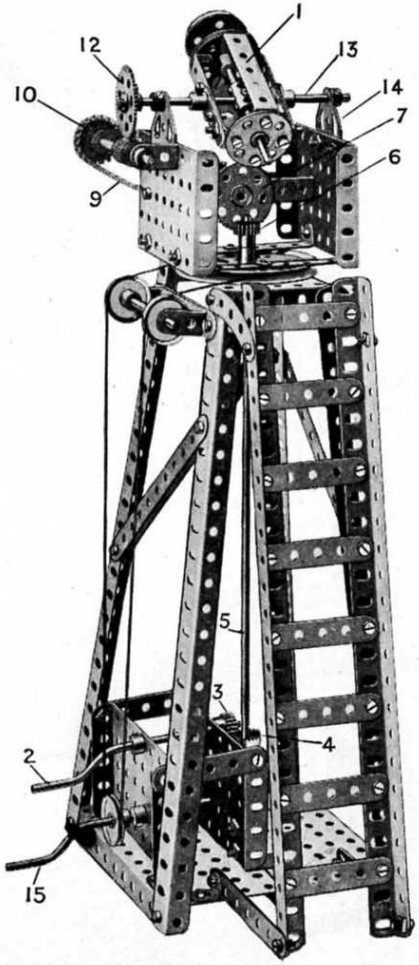
Flying Machine



The arms 1 carrying the boats 2 are driven from the 3" pulley 3. This is connected by the rod 4 to a gear wheel 5 driven by a pinion 6 on a rod 7. At the foot of this rod is a contrate wheel 8 driven by a pinion on the end of another rod 9. This rod carries the sprocket wheel 10 driven by a chain from the motor. As the arms 1 rotate the boats 2 fly out centrifugally.

Parts required :

10	of	No.	1	2	of	No.	22
9	,,	,,	2	2	,,	,,	26
2	,,	,,	3	1	,,	,,	27A
2	,,	,,	5	1	,,	,,	28
4	,,	,,	8	66	,,	,,	37
4	,,	,,	11	1	,,	,,	45
22	,,	,,	12	2	,,	,,	52
2	,,	,,	13	3	,,	,,	53
1	,,	,,	16	2	,,	,,	59
1	,,	,,	19B	1	,,	,,	95



Model No. 423 Search-light Tower

The elevation of the search-light 1 is obtained through the crank handle 2 a pinion 3 on which engages a ¾" contrate wheel 4 on an 11½" rod 5 at the top of which a ½" pinion 6 engages a 1½" contrate wheel 7. On the rod of this contrate wheel at the rear end a 1" sprocket wheel 8 drives through a chain 9 another sprocket wheel 10. A worm 11 on the rod of the latter sprocket engages and drives a 57-toothed gear wheel 12, bolted to a 5" rod 13 which forms the pivot of the search-light 1. The rod 13 is journalled in two flat brackets 14. The search-light is swivelled from a crank handle 15 in the same manner as Model No. 401.

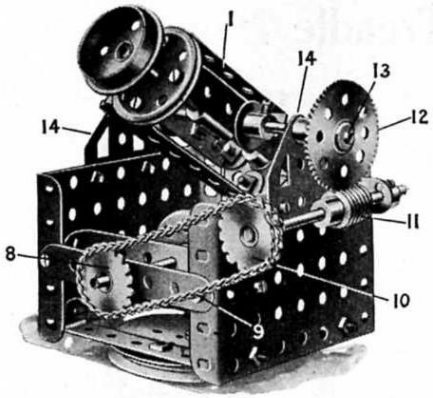
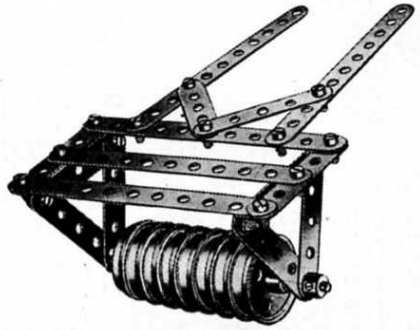


FIG. A

Parts required :

3	of	No.	2	2	of	No.	26
4	,,	,,	3	1	,,	,,	27A
10	,,	,,	5	1	,,	,,	28
6	,,	,,	8	1	,,	,,	29
4	,,	,,	12	1	,,	,,	32
3	,,	,,	12A	88	,,	,,	37
1	,,	,,	13	4	,,	,,	38
1	,,	,,	15	2	,,	,,	46
2	,,	,,	16	4	,,	,,	48A
3	,,	,,	17	3	,,	,,	48B
2	,,	,,	19	2	,,	,,	52
1	,,	,,	19B	5	,,	,,	53
1	,,	,,	20	6	,,	,,	59
1	,,	,,	21	2	,,	,,	62
3	,,	,,	22	1	,,	,,	63
1	,,	,,	22A	2	,,	,,	90
1	,,	,,	24	2	,,	,,	126A

Model No. 424 Field Roller

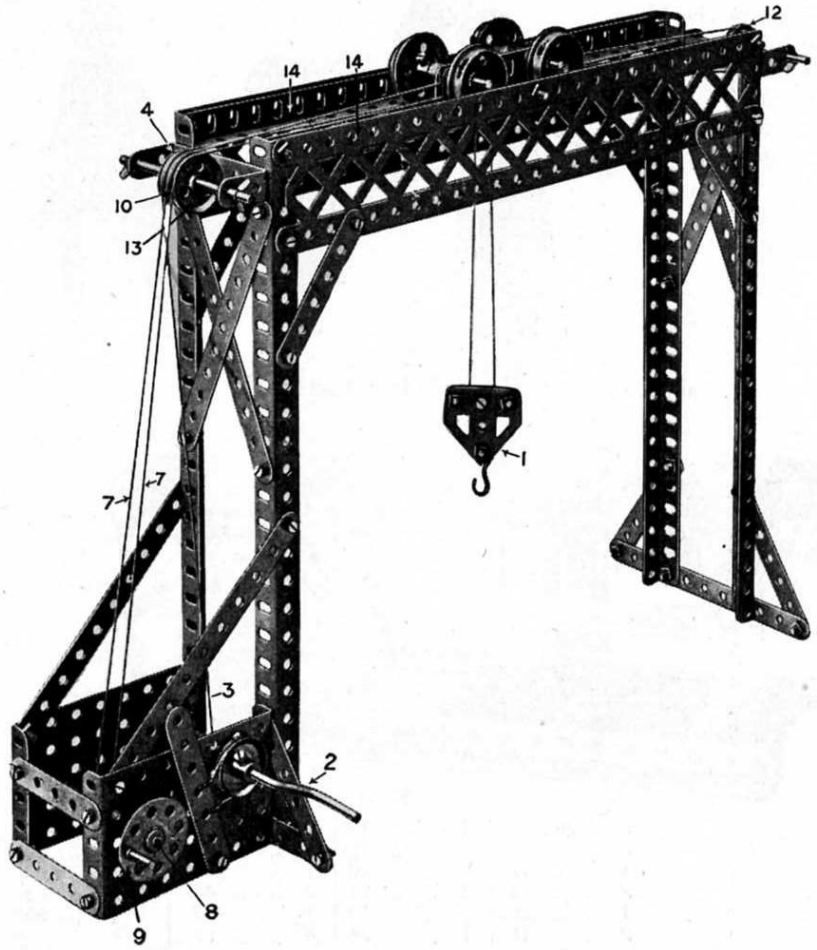


Parts required :

5	of	No.	2
10	,,	,,	5
4	,,	,,	12
1	,,	,,	15
8	,,	,,	20
15	,,	,,	37
4	,,	,,	59

This Model can be made with MECCANO Outfit No. 4, or No. 3 and No. 3A.

Model No. 425 Gantry



Parts required :

2	of	No.	1	1	of	No.	24
8	,,	,,	2	6	,,	,,	35
3	,,	,,	3	59	,,	,,	37
6	,,	,,	4	1	,,	,,	37A
2	,,	,,	5	12	,,	,,	38
6	,,	,,	8	2	,,	,,	46
3	,,	,,	16	2	,,	,,	53
2	,,	,,	17	1	,,	,,	57
1	,,	,,	19	4	,,	,,	59
4	,,	,,	20	2	,,	,,	103F
3	,,	,,	22	1	,,	,,	115
2	,,	,,	22A	2	,,	,,	126A
3	,,	,,	23				

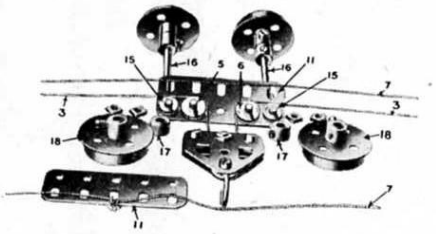


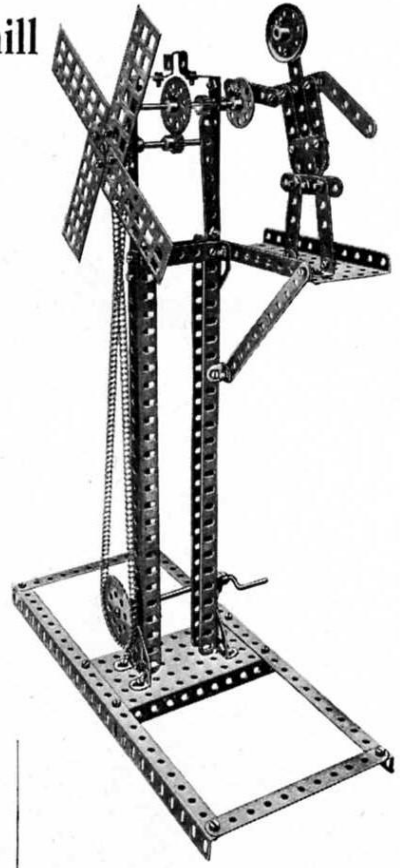
FIG. 425A

The pulley 1 is capable of being hoisted to raise the load, or traversed In order to raise the load the crank handle 2 is operated, which winds the cord 3 passing over the rear pulley wheel 4 round the ½" pulley 5 and a corresponding pulley in the block, thence round another ½" pulley 6 and is made fast at the end of the gantry. For traversing, a continuous cord 7 is wound several turns on the 3½" rod 8 to which is secured a hand wheel 9. The cord passes over the pulley wheel 10 and is secured to one of the side plates 11, and continues round the pulley 12 returning to and passing over the nearest pulley wheel 13 back to the rod 8. Consequently by turning the hand wheel 8 in one or other direction, the carriage is traversed to and fro along the top angle girders 14, which form the travelling rails. The construction of the travelling carriage is shown in Fig. 425A, three washers 15 being placed on each of the outer bolts, passed through the two plates 11 ; and ½" pulley wheels 5, 6, on the inner bolts. The outer plates being then bolted together, the rods 16 of the flange wheels are passed through both plates in the end elongated holes, and collars 17 secured on the exterior. After which the remaining flange wheels 18 are secured on the ends of the rods 16.

These Models can be made with MECCANO Outfit No. 4, or No. 3 and No. 3A.

Model No. 426

Windmill Scare



Parts required :

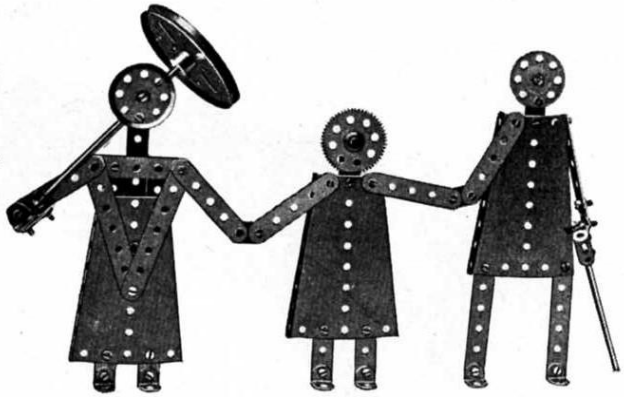
5	of	No.	2	2	of	No.	37A	1	of	No.	95
1	,,	,,	3	3	,,	,,	38	1	,,	,,	96
11	,,	,,	5	1	,,	,,	45	1	,,	,,	115
6	,,	,,	8	2	,,	,,	52	2	,,	,,	125
8	,,	,,	12	4	,,	,,	59	3	,,	,,	126A
2	,,	,,	12A	20"	,,	,,	94				
2	,,	,,	16								
1	,,	,,	19								
1	,,	,,	21								
2	,,	,,	24								
2	,,	,,	26								
1	,,	,,	27A								
61	,,	,,	37								

Model No. 427

The Meccano Family

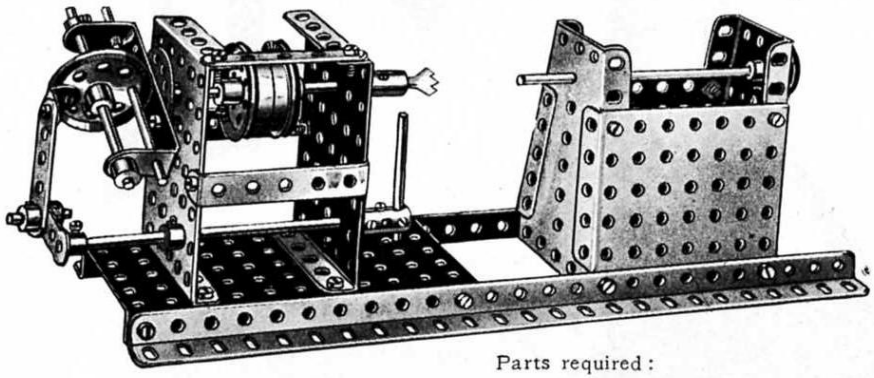
Parts required :

1	of	No.	2	1	of	No.	19B
2	,,	,,	3	1	,,	,,	21
2	,,	,,	4	1	,,	,,	24
12	,,	,,	5	1	,,	,,	27A
7	,,	,,	10	3	,,	,,	35
9	,,	,,	12	36	,,	,,	37
1	,,	,,	15	3	,,	,,	54
1	,,	,,	15A	1	,,	,,	63
1	,,	,,	18A				



Model No. 428

Elliptic Lathe

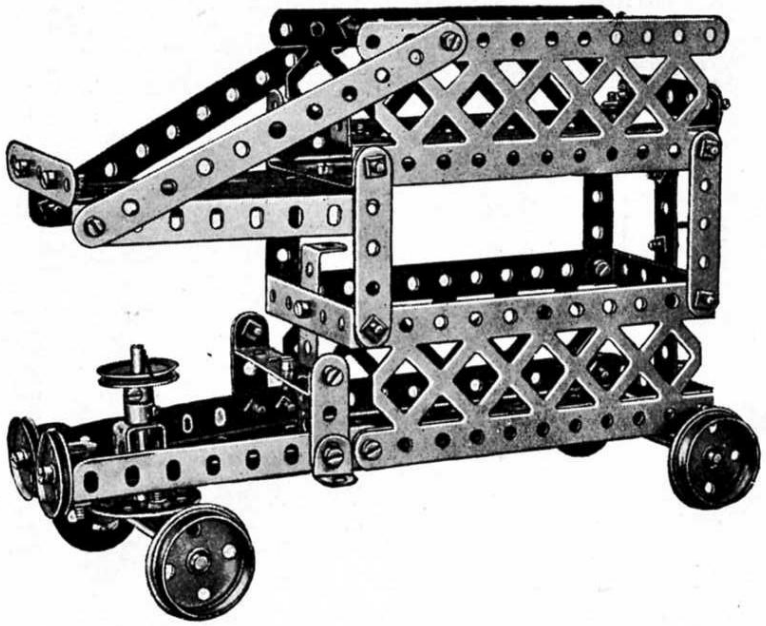


Parts required :

2	of	No.	5	1	of	No.	17	2	of	No.	35	2	of	No.	54
2	,,	,,	8	1	,,	,,	18A	26	,,	,,	37	8	,,	,,	59
1	,,	,,	12	2	,,	,,	20	1	,,	,,	46	1	,,	,,	62
2	,,	,,	15	1	,,	,,	21	2	,,	,,	48A	2	,,	,,	63
1	,,	,,	15A	1	,,	,,	22	1	,,	,,	52	1	,,	,,	65
2	,,	,,	16	1	,,	,,	24	4	,,	,,	53				

These Models can be made with MECCANO Outfit No. 4, or No. 3 and No. 3A.

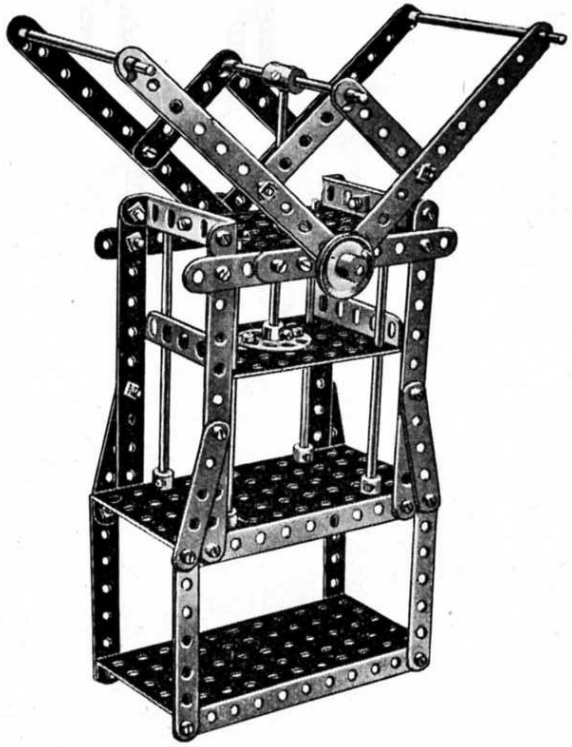
Model No. 429 Motor Bus



Parts required:

2	of No.	2	12	of No.	12	2	of No.	22A	2	of No.	52
1	,, ,,	3	2	,, ,,	16	1	,, ,,	24	1	,, ,,	54
6	,, ,,	5	1	,, ,,	17	48	,, ,,	37	1	,, ,,	59
2	,, ,,	6A	4	,, ,,	20	1	,, ,,	45	4	,, ,,	100
3	,, ,,	11	1	,, ,,	22	7	,, ,,	48A			

Model No. 430 Bale Press



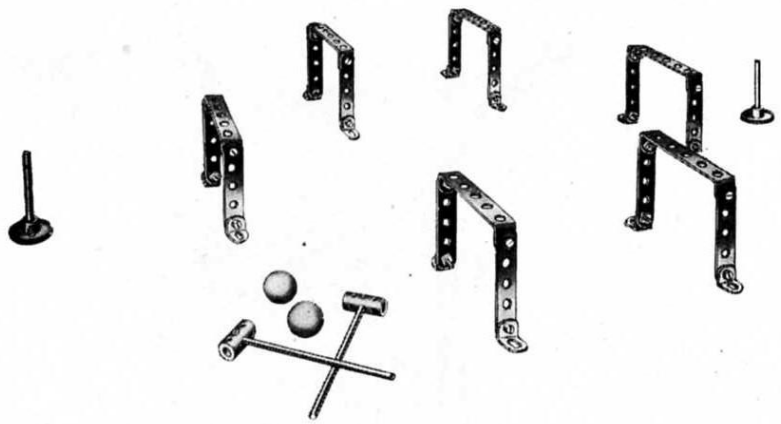
Parts required:

10	of No.	2	1	of No.	15A	44	of No.	37	2	of No.	52
4	,, ,,	3	2	,, ,,	17	14	,, ,,	37A	2	,, ,,	53
8	,, ,,	5	1	,, ,,	24	2	,, ,,	38	4	,, ,,	59
4	,, ,,	15	8	,, ,,	35	2	,, ,,	48A	1	,, ,,	63

2 of No. 111

These Models can be made with MECCANO Outfit No. 4, or No. 3 and No. 3A.

Model No. 431 Table Croquet



A most diverting game. Coloured marbles may be used for the balls. Full instructions for playing croquet may be obtained from any sports or games dealer.

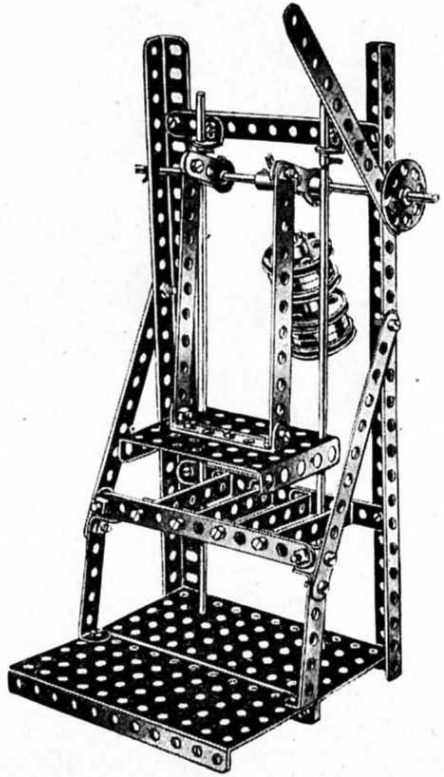
Parts required :

12	of	No.	5	2	of	No.	22
12	,,	,,	12	24	,,	,,	37
2	,,	,,	16	2	,,	,,	63
2	,,	,,	17				

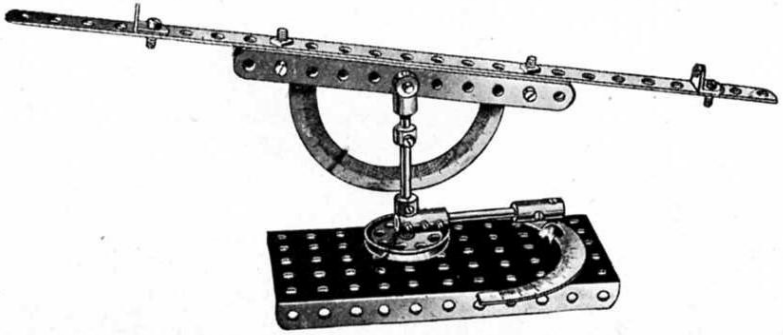
Model No. 432 Potato Chopper

Parts required :

8	of	No.	2	1	of	No.	24
2	,,	,,	8	5	,,	,,	35
4	,,	,,	12	38	,,	,,	37
2	,,	,,	13	6	,,	,,	48A
1	,,	,,	15A	2	,,	,,	52
2	,,	,,	16	1	,,	,,	53
4	,,	,,	20	1	,,	,,	63



Model No. 433 Sextant and Theodolite



Parts required :

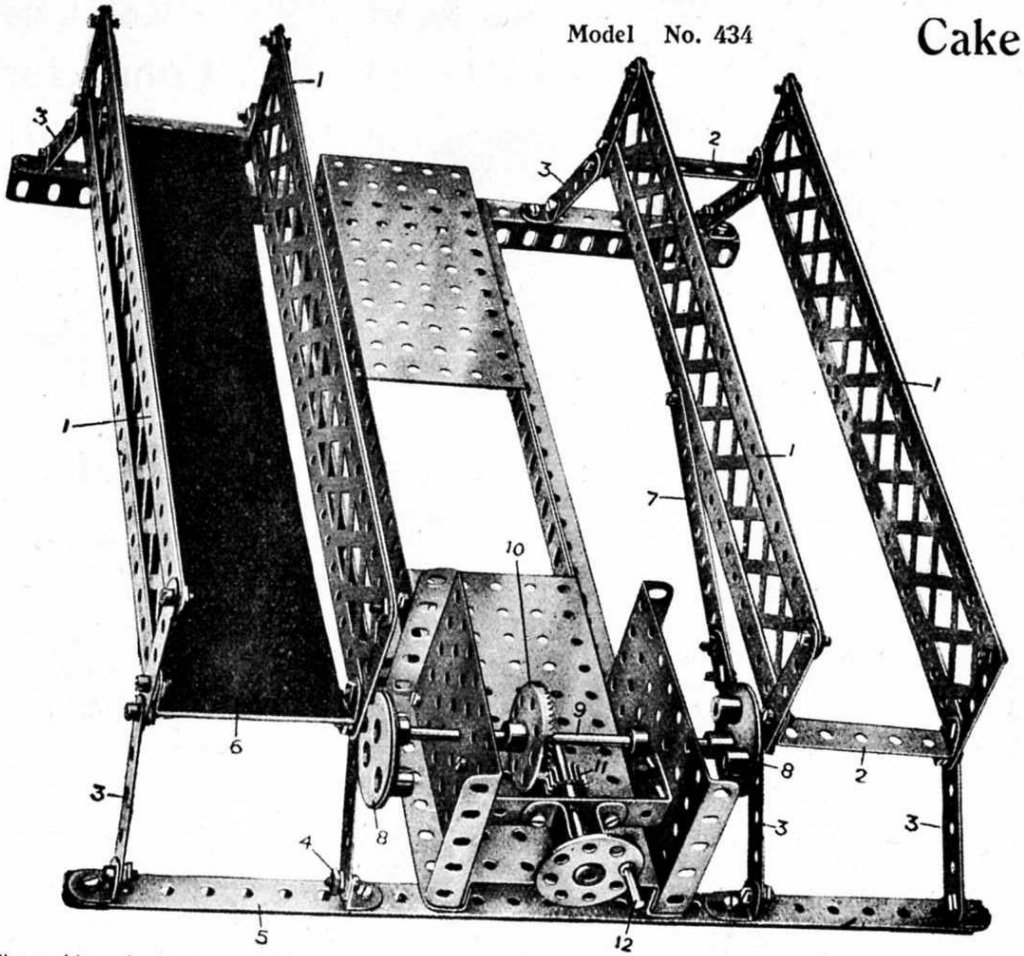
1	of	No.	1	1	of	No.	21
2	,,	,,	2	1	,,	,,	22
2	,,	,,	11	8	,,	,,	37
2	,,	,,	12	1	,,	,,	52
1	,,	,,	16	4	,,	,,	59
1	,,	,,	17	3	,,	,,	63
2	,,	,,	18A	1	,,	,,	65

N.B. Protractor not supplied; may be cut out of cardboard.

This Model can be made with MECCANO Outfit No. 4. or No. 3 and No. 3A.

Model No. 434

Cake Walk



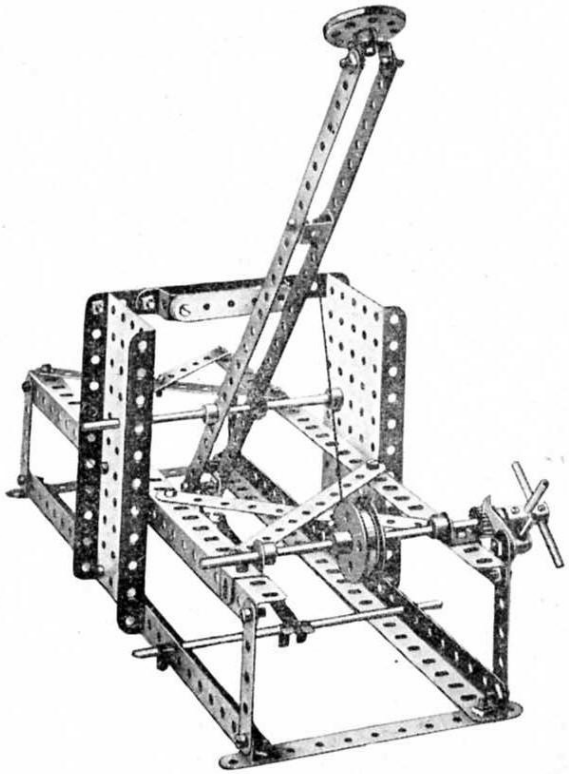
Parts required:

8	of	No.	1
2	„	„	2
16	„	„	5
6	„	„	8
1	„	„	10
8	„	„	12
1	„	„	15
1	„	„	24
1	„	„	26
1	„	„	28
66	„	„	37
1	„	„	38
1	„	„	45
1	„	„	46
4	„	„	48A
2	„	„	52
2	„	„	53
2	„	„	59
1	„	„	77
4	„	„	99
1	„	„	115
2	„	„	130

The rocking platforms are built up of braced girders 1 connected by the end strips 2 and pivotally bolted and lock-nutted to the strips 3 forming rocking links. These latter are bolted and lock-nutted at 4 to the angle girders 5. Strips 6 of cardboard are secured to the end strips 2. The platforms are rocked by means of strips 7 one of which is connected to each rocking platform and to eccentrics 8 fixed on the rod 9 on which is secured a contrate wheel 10 driven by a pinion 11 from the handle 12. As the handle 12 is turned the platforms are rocked to and fro on the strips 3. The eccentrics 8 should be so arranged that the platforms rock in opposite directions.

These Models can be made with MECCANO Outfit No. 4, or No. 3 and No. 3A.

Model No. 435 Catapult



Parts required :

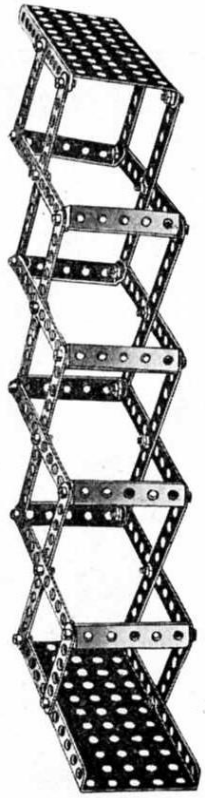
[illegible]	of	No.	1	3	of	No.	14	1	of	No.	33	1	of	No.	57
7	,,	,,	2	2	,,	,,	17	4	,,	,,	35	6	,,	,,	59
1	,,	,,	4	1	,,	,,	20	44	,,	,,	37	1	,,	,,	62
6	,,	,,	5	1	,,	,,	24	1	,,	,,	43	1	,,	,,	115
4	,,	,,	8	1	,,	,,	26	2	,,	,,	52	4	,,	,,	125
3	,,	,,	11	1	,,	,,	28								

Model No. 436 Croix de Guerre

Parts required :

2	of	No.	2
2	,,	,,	3
15	,,	,,	5
4	,,	,,	10
2	,,	,,	24
24	,,	,,	37

Model No. 437 Periscope

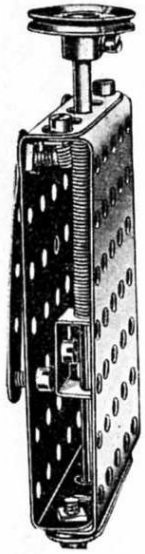


Parts required :

16	of	No.	2
4	,,	,,	4
32	,,	,,	37
8	,,	,,	48A
2	,,	,,	52

Small pieces of looking glass should be inserted in the top and bottom plates.

Model No. 438 Conductor's Punch



Parts required :

3	of	No.	5	9	of	No.	37
1	,,	,,	11	1	,,	,,	43
1	,,	,,	15A	2	,,	,,	53
1	,,	,,	22				

This is just the thing for your younger brother, and he only needs a strap to hang it over his shoulder with to make him into a real conductor. Note the 2½" strip at the bottom, spaced a little away from the body of the punch to allow the ticket to pass in to be punched.

These Models can be made with MECCANO Outfit No. 4, or No. 3 and No. 3A.

Model No. 439

Distance Indicator

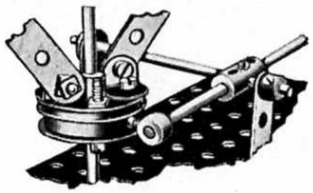


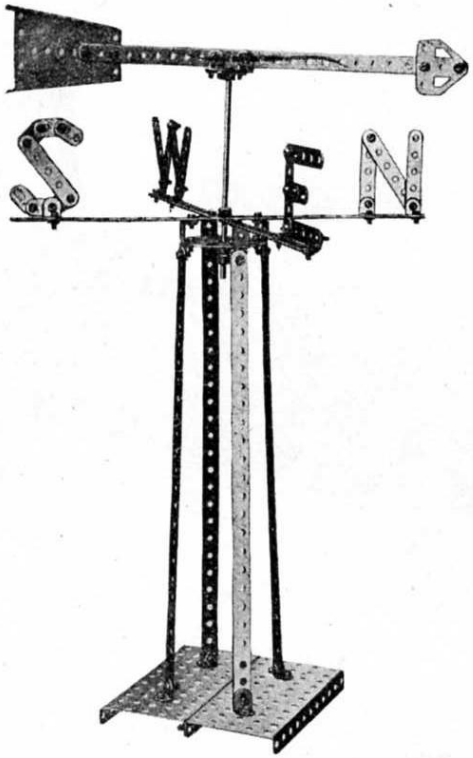
FIG. 439A

Parts required :

2	of	No.	3	32	of	No.	37	1	of	No.	52
2	,,	,,	4	2	,,	,,	38	2	,,	,,	53
4	,,	,,	5	1	,,	,,	45	5	,,	,,	59
2	,,	,,	8	3	,,	,,	48A	1	,,	,,	63
4	,,	,,	12								
1	,,	,,	13A								
3	,,	,,	16								
2	,,	,,	18A								
5	,,	,,	20								
1	,,	,,	21								
2	,,	,,	24								
1	,,	,,	26								
1	,,	,,	29								

N.B. Scale not supplied; may be cut out of cardboard.

Model No. 440 Weather Vane

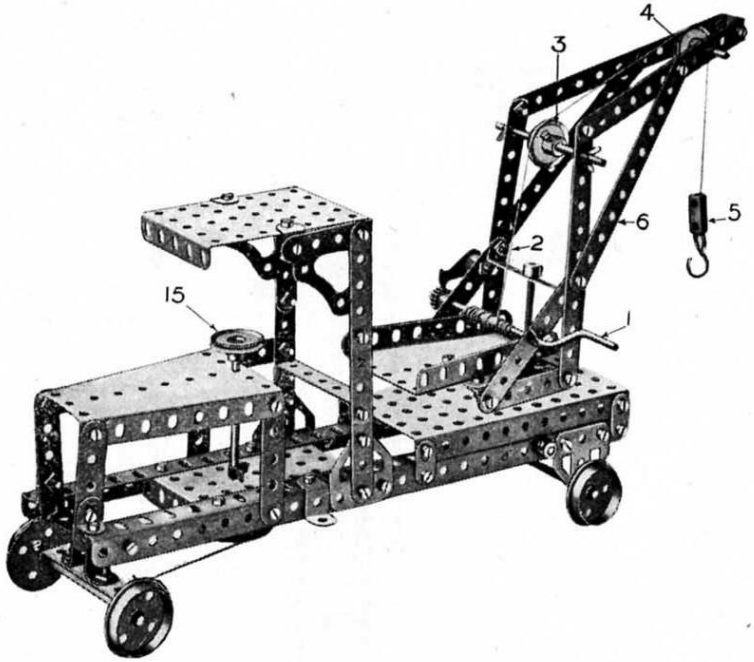


Parts required :

7	of	No.	1	1	of	No.	14	1	of	No.	54
11	,,	,,	5	1	,,	,,	24	2	,,	,,	59
8	,,	,,	10	54	,,	,,	37	1	,,	,,	109
4	,,	,,	11	2	,,	,,	38	1	,,	,,	126A
17	,,	,,	12	2	,,	,,	52				

These Models can be made with MECCANO Outfit No. 4, or No. 3 and No. 3A.

Model No. 441 Travelling Swivel Crane



Part required:

8	of No.	2	1	of No.	32
2	,, ,,	3	1	,, ,,	33
9	,, ,,	5	6	,, ,,	35
2	,, ,,	8	69	,, ,,	37
4	,, ,,	10	3	,, ,,	37A
1	,, ,,	11	1	,, ,,	45
8	,, ,,	12	5	,, ,,	48A
2	,, ,,	15A	1	,, ,,	52
4	,, ,,	16	2	,, ,,	53
1	,, ,,	17	2	,, ,,	54
1	,, ,,	19	1	,, ,,	57
4	,, ,,	20	3	,, ,,	59
1	,, ,,	21	1	,, ,,	63
4	,, ,,	22	2	,, ,,	108
1	,, ,,	24	1	,, ,,	115
2	,, ,,	26	1	,, ,,	125
1	,, ,,	27A	4	,, ,,	126A

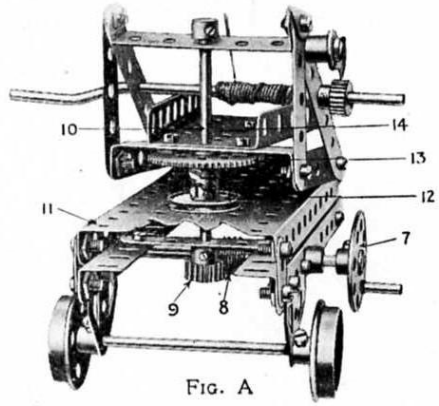
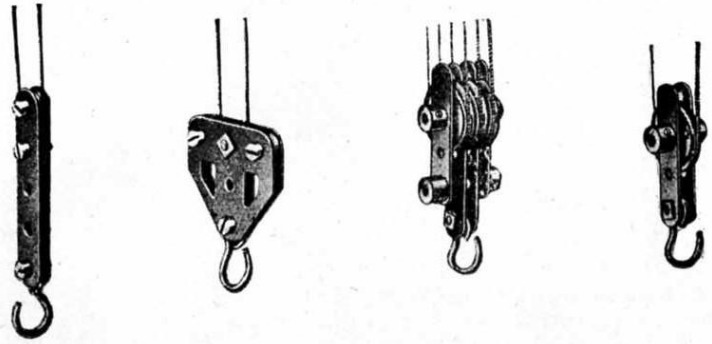


FIG. A

The load is raised from the crank handle 1, a cord 2 winding on which passes over the 1" pulleys 3 and 4 to the block 5. The jib 6 is swivelled from the hand-wheel 7 on the rod of which is a worm 8 engaging a pinion 9 bolted to a vertical rod 10, to which is secured beneath the platform 11 a 1" pulley wheel 12 and a 57-toothed wheel 13 which carries the swivel platform 14. The steering of the crane is effected from the 1" pulley wheel 15 in the same way as Model No. 230.

Model No. 442 Pulley Blocks



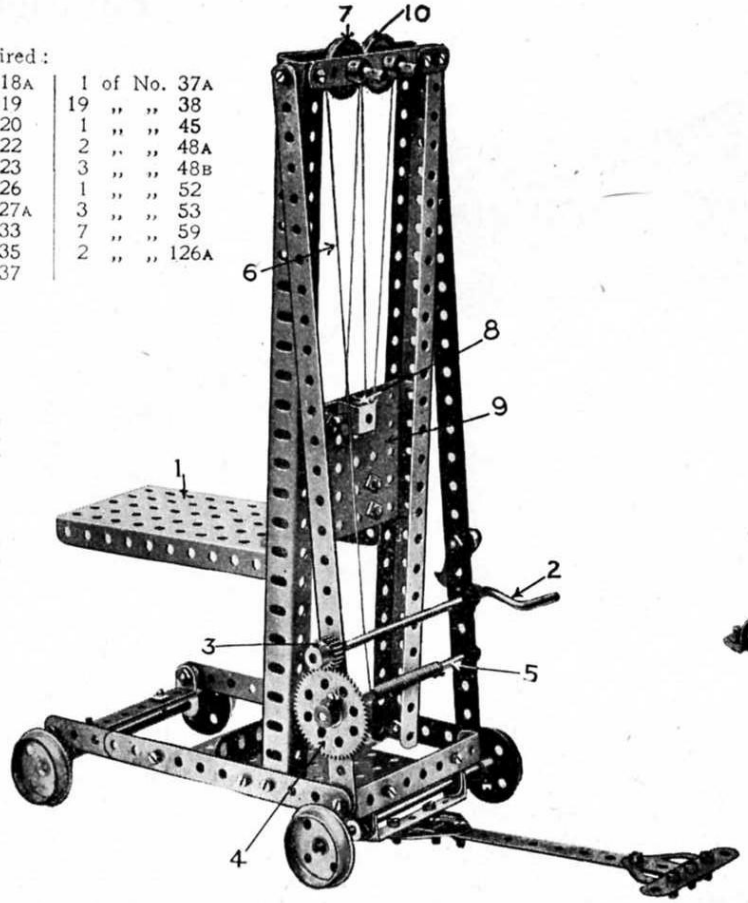
These Models can be made with MECCANO Outfit No. 4, or No. 3 and No. 3A.

Model No. 443 Bale-lifter

Parts required :

2	of	No.	1	1	of	No.	18A	1	of	No.	37A
5	,,	,,	2	1	,,	,,	19	19	,,	,,	38
2	,,	,,	3	4	,,	,,	20	1	,,	,,	45
1	,,	,,	5	2	,,	,,	22	2	,,	,,	48A
4	,,	,,	8	1	,,	,,	23	3	,,	,,	48B
3	,,	,,	10	2	,,	,,	26	1	,,	,,	52
2	,,	,,	12A	1	,,	,,	27A	3	,,	,,	53
1	,,	,,	15	1	,,	,,	33	7	,,	,,	59
2	,,	,,	15A	2	,,	,,	35	2	,,	,,	126A
2	,,	,,	17	46	,,	,,	37				

The bale platform 1, consisting of a large rectangular plate, is raised by operating a crank handle 2, a pinion 3 on which engages a 57-toothed wheel 4 on a rod 5, upon which is wound a cord 6, passing over a pulley 7, in the head of the framework, round a ½" pulley 8, pivoted in a double bent strip bolted to the plate 9, up over another pulley 10, and made fast to the plate 9. The rectangular plate 1 is connected to the plate 9 by 1" angle brackets and the plates 1 and 9 thus slide together in the vertical framework formed by 12½" angle girders doubled.



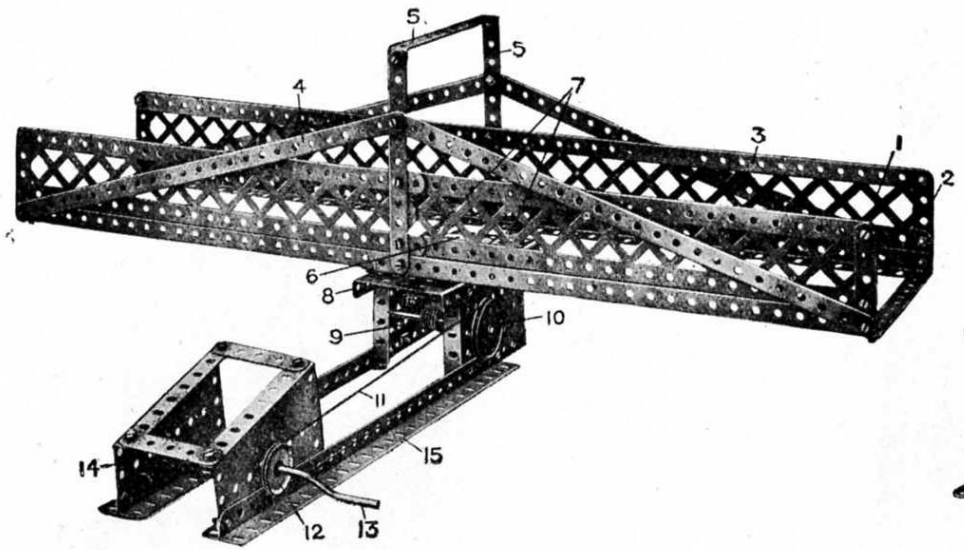
Model No. 444 Butter Churn

Parts required :

8	of	No.	2	1	of	No.	19	2	of	No.	62
2	,,	,,	3	2	,,	,,	24	16"	,,	,,	94
4	,,	,,	4	42	,,	,,	37	1	,,	,,	95
2	,,	,,	8	4	,,	,,	48A	1	,,	,,	96
4	,,	,,	12	2	,,	,,	54	2	,,	,,	126A
2	,,	,,	17	3	,,	,,	59				

These Models can be made with MECCANO Outfit No. 4, or No. 3 and No. 3A.

Model No. 445 Swing Bridge



Parts required:

8 of No.	1	1 of No.	17	1 of No.	27A	1 of No.	52
6 „ „	2	1 „ „	19	1 „ „	32	2 „ „	53
6 „ „	5	1 „ „	19B	50 „ „	37	2 „ „	54
6 „ „	8	1 „ „	21	1 „ „	48A	2 „ „	59
1 „ „	16	1 „ „	22	1 „ „	48D	4 „ „	99

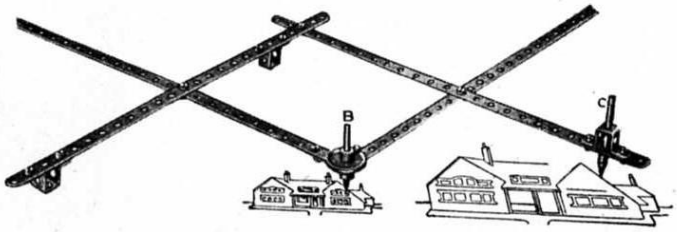
The sides of this model, as shown in the illustration, are made of the braced girders 1 secured to the upright strips 2 and reinforced by the inner strips 3. Other diagonal strips 4 brace the side girders to the top structure 5 forming a stay for the sides 1. The swing base of the bridge is composed of a 3" pulley wheel 6 which is bolted to two cross 5½" strips 7 which in turn are secured to the main base side girders. The bridge swings on the perforated plate 8 on a short rod, on the lower end of which is secured a gear wheel engaged and driven by a worm 9 on the spindle of which is the grooved pulley 10 driven by the cord 11 which is operated from the smaller grooved pulley 12 on the crank handle 13. The crank handle is journalled in two sector plates 14 secured to the base angle girder 15.

Model No. 446

Pantograph

Parts required:

4 of No.	1	10 of No.	37
2 „ „	17	3 „ „	45
1 „ „	22	2 „ „	62



Most boys have heard of the Pantograph but not many have had an opportunity of seeing its principles demonstrated. It is an instrument for copying plans, etc., on the same or on a reduced or enlarged scale.

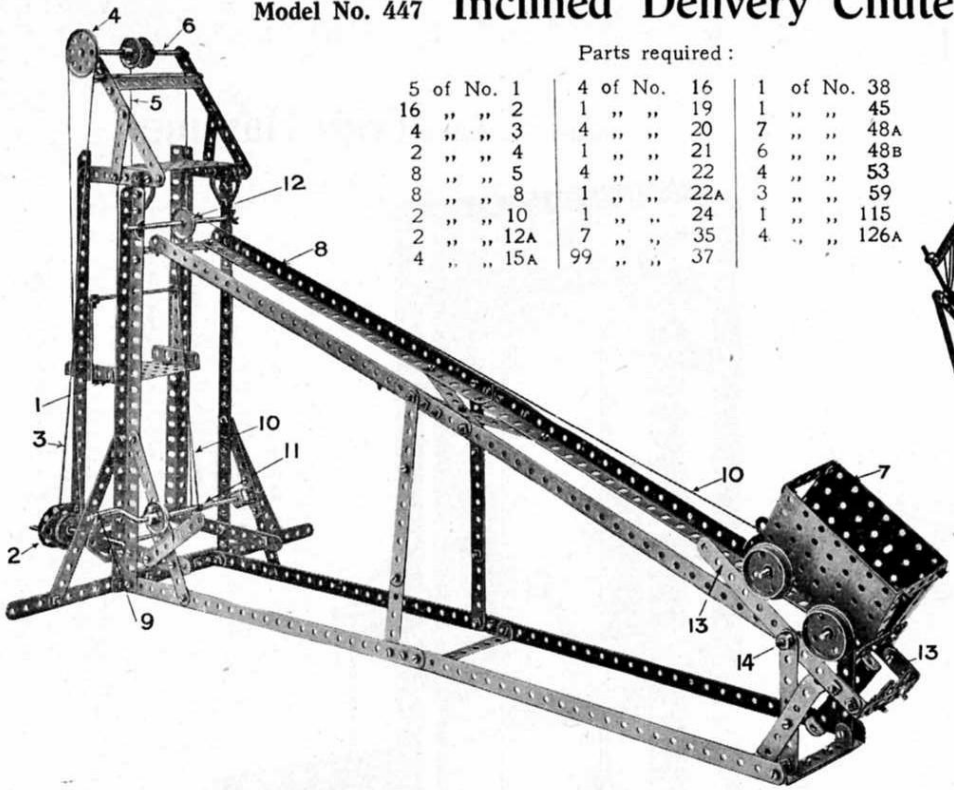
The apparatus is fixed at the point A. If an enlarged sketch is to be made, the point B is traced round the outlines, the writing point C reproducing the sketch on a larger scale. When a reduced drawing is to be made, the point C traces the outline, whilst the point B reproduces the sketch on a smaller scale. The degree of enlargement or reduction varies according to the position in which point C is fixed on the perforated arm.

These Models can be made with MECCANO Outfit No. 4, or No. 3 and No. 3A.

Model No. 447 Inclined Delivery Chute

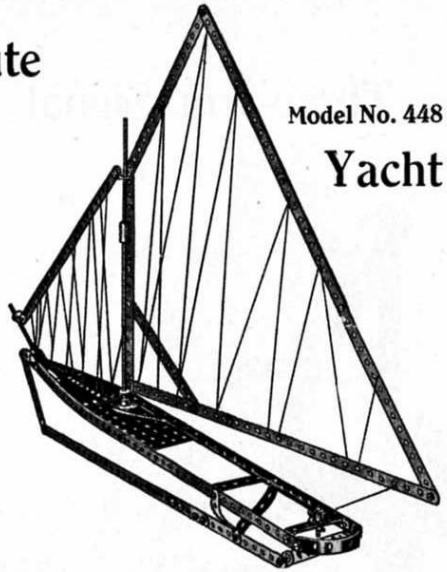
Parts required :

5	of	No. 1	4	of	No. 16	1	of	No. 38
16	,,	,, 2	1	,,	,, 19	1	,,	,, 45
4	,,	,, 3	4	,,	,, 20	7	,,	,, 48A
2	,,	,, 4	1	,,	,, 21	6	,,	,, 48B
8	,,	,, 5	4	,,	,, 22	4	,,	,, 53
8	,,	,, 8	1	,,	,, 22A	3	,,	,, 59
2	,,	,, 10	1	,,	,, 24	1	,,	,, 115
2	,,	,, 12A	7	,,	,, 35	4	,,	,, 126A
4	,,	,, 15A	99	,,	,, 37			



The cage 1 is raised from the hand-wheel 2 by means of an endless cord 3 which passes over the upper 1½" pulley 4. A cord 5 winding on rod 6 between two 1½" fast pulleys raises or lowers the cage. The truck 7 is raised or lowered along the inclined rails 8 by a crank handle 9, a cord 10 being wound on the rod 11, passing over a pulley 12, and connected to the truck 7. When the truck reaches the end of the inclined rails 10 it rests upon two 5½" strips 13 pivoted at 14, the weight of the truck depressing these pivoted strips and tipping the load.

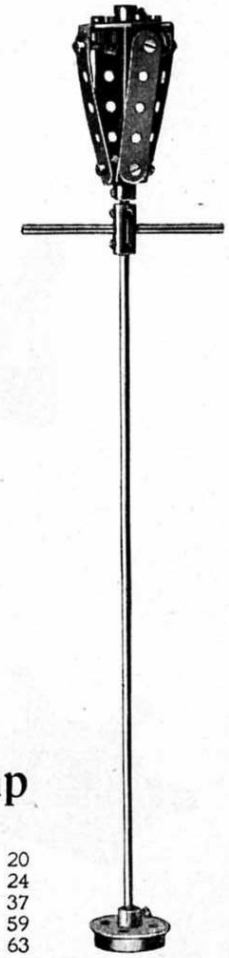
Model No. 448 Yacht



Parts required :

9	of	No. 1	2	of	No. 18A			
7	,,	,, 2	1	,,	,, 22			
4	,,	,, 3	51	,,	,, 37			
2	,,	,, 4	1	,,	,, 44			
2	,,	,, 5	2	,,	,, 48A			
1	,,	,, 10	1	,,	,, 52			
5	,,	,, 12	1	,,	,, 54			
1	,,	,, 13A	1	,,	,, 63			
2	,,	,, 15						

Model No. 449 Street Lamp

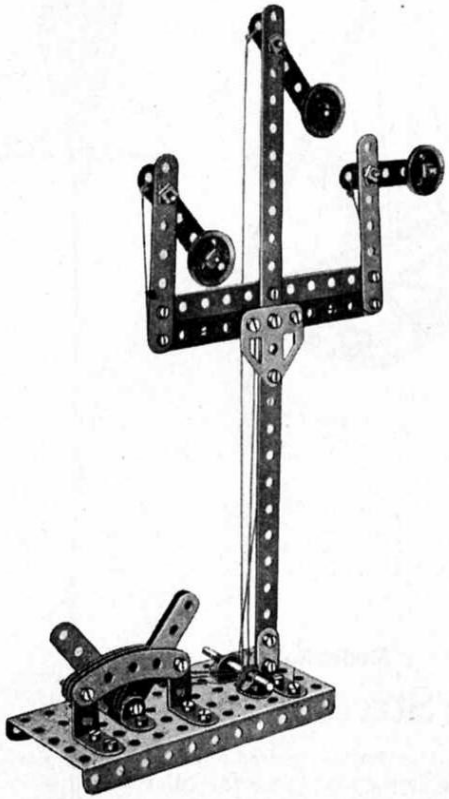


Parts required :

4	of	No. 5	1	of	No. 20
2	,,	,, 11	1	,,	,, 24
4	,,	,, 12	12	,,	,, 37
1	,,	,, 13	1	,,	,, 59
2	,,	,, 16	1	,,	,, 63

These Models can be made with MECCANO Outfit No. 4, or No. 3 and No. 3A.

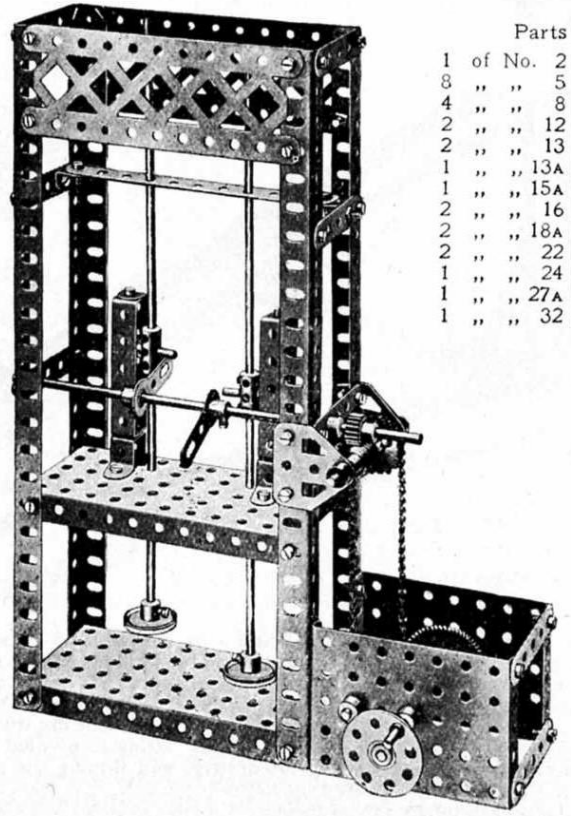
Model No. 450 Three-arm Signal



Parts required :

1	of	No.	1
3	,,	,,	2
2	,,	,,	3
6	,,	,,	5
4	,,	,,	12
3	,,	,,	12A
1	,,	,,	17
1	,,	,,	22
2	,,	,,	22A
2	,,	,,	35
27	,,	,,	37
6	,,	,,	37A
23	,,	,,	38
1	,,	,,	52
4	,,	,,	90
3	,,	,,	111
1	,,	,,	126A

Model No. 451 Trip Hammer



Parts required :

1	of	No.	2	52	of	No.	37
8	,,	,,	5	2	,,	,,	45
4	,,	,,	8	4	,,	,,	48A
2	,,	,,	12	2	,,	,,	52
2	,,	,,	13	2	,,	,,	53
1	,,	,,	13A	10	,,	,,	59
1	,,	,,	15A	2	,,	,,	62
2	,,	,,	16	2	,,	,,	63
2	,,	,,	18A	12	,,	,,	94
2	,,	,,	22	2	,,	,,	96
1	,,	,,	24	2	,,	,,	100
1	,,	,,	27A	1	,,	,,	115
1	,,	,,	32	2	,,	,,	126A

This Model can be made with MECCANO Outfit No. 4, or No. 3 and No. 3A.

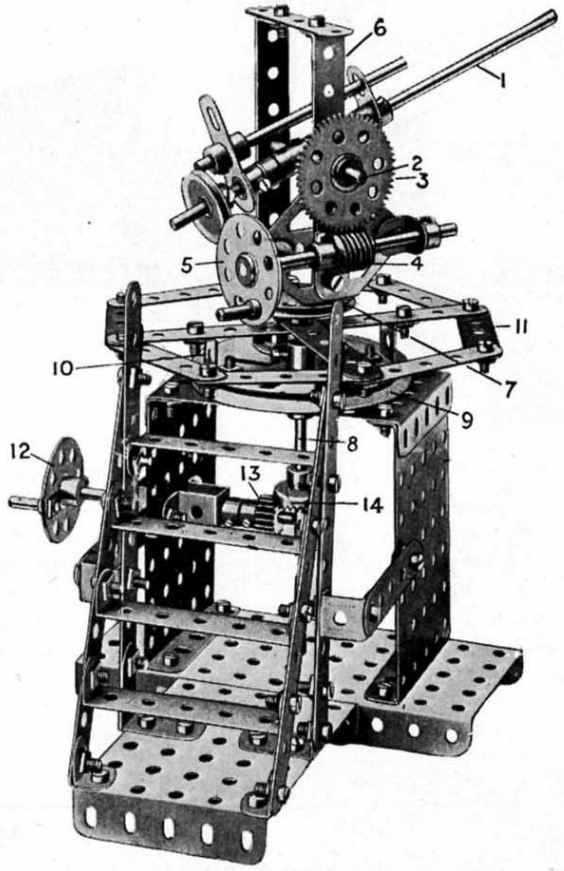
Model No. 452

Anti-Aircraft Gun

Parts required:

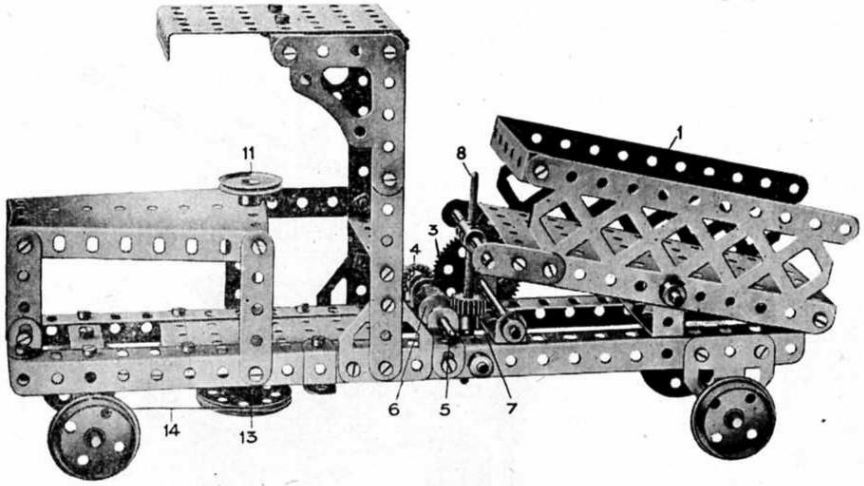
6 of No. 2	1 of No. 21	4 of No. 48A
11 „ „ 5	2 „ „ 22	2 „ „ 48B
1 „ „ 10	2 „ „ 24	1 „ „ 52
2 „ „ 11	1 „ „ 26	4 „ „ 53
4 „ „ 12	1 „ „ 27A	8 „ „ 59
2 „ „ 12A	1 „ „ 29	1 „ „ 62
1 „ „ 15	1 „ „ 32	2 „ „ 63
1 „ „ 15A	64 „ „ 37	2 „ „ 115
4 „ „ 16	12 „ „ 38	4 „ „ 125
1 „ „ 17	2 „ „ 45	2 „ „ 126A
1 „ „ 19B		

The gun represented by the rod 1 is pivoted upon a transverse rod 2 which passes through a coupling on the rod 1. A 57-toothed wheel 3 on the pivot rod 2 is engaged by a worm 4 operated from the hand-wheel 5. By turning this wheel 5 the gun is lifted or lowered. The two vertical strips forming the framework for the pivot rod 2 are bolted to a 1½" pulley 7 which is secured on a vertical rod 8. A 3" pulley wheel 9 is also bolted to a rod 8 and from the pulley wheel is carried by reversed angle brackets 10 a framework 11. The rod 8 with the framework is rotated from the hand-wheel 12 a pinion 13 on the spindle of which engages a ¾" contrate wheel 14 on the rod 8. By turning the wheel 12 the gun is swivelled round.



This Model can be made with MECCANO Outfit No. 4. or No. 3 and No. 3A.

Model No. 453 Coal Truck



The tipping of the truck 1 is effected by the handle 2 secured on a 57-toothed wheel 3 which engages a ½" pinion 4 mounted on the rod 5. On the same rod is secured a worm 6 which engages a ½" pinion 7 secured to the upright threaded rod 8. The threaded rod 8 revolves freely in the coupling 9, being retained in position by the collar 10. As the handle 2 is operated, the wagon 1 is tipped or restored to its original position. The steering is effected by a ½" pulley wheel 11 on a rod 12, at the lower end of which is secured a 1½" pulley wheel 13, a cord 14, wound twice round this pulley wheel, being connected to a double angle strip 15 in which the steering axle 16 is journalled.

Parts required :

2	of	No.	2
1	,,	,,	3
9	,,	,,	5
2	,,	,,	6A
2	,,	,,	8
10	,,	,,	12
5	,,	,,	16
1	,,	,,	19
4	,,	,,	20
1	,,	,,	21
1	,,	,,	22
1	,,	,,	24
1	,,	,,	26
1	,,	,,	27A
2	,,	,,	35
59	,,	,,	37
2	,,	,,	37A
1	,,	,,	38
4	,,	,,	48A
1	,,	,,	52
2	,,	,,	53
1	,,	,,	54
3	,,	,,	59
2	,,	,,	62
1	,,	,,	63
2	,,	,,	100
2	,,	,,	108
1	,,	,,	125
4	,,	,,	126A

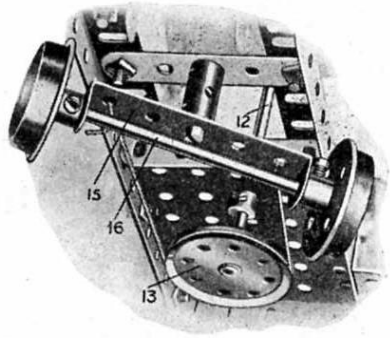


FIG. 453A

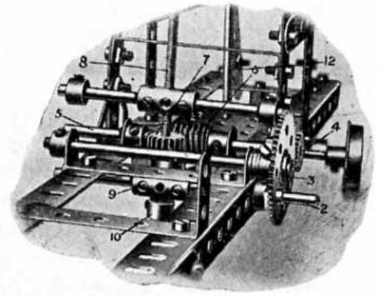


FIG 453B

HOW TO CONTINUE

This completes the Models which may be made with MECCANO Outfit No. 4. 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. 4A Accessory Outfit, the price of which will be found in the List at the end of the Manual.

This Model can be made with MECCANO Outfit No. 5, or No. 4 and No. 4A.

Model No. 501 Beam Scales

Parts required:

7	of No.	1	2	of No.	22
8	,, ,,	2	88	,, ,,	37
8	,, ,,	3	2	,, ,,	44
2	,, ,,	4	1	,, ,,	46
10	,, ,,	5	5	,, ,,	48A
8	,, ,,	8	1	,, ,,	50
2	,, ,,	10	2	,, ,,	52
9	,, ,,	12	2	,, ,,	53
2	,, ,,	15	2	,, ,,	54
4	,, ,,	15A	2	,, ,,	57
2	,, ,,	16	8	,, ,,	59
7	,, ,,	20			

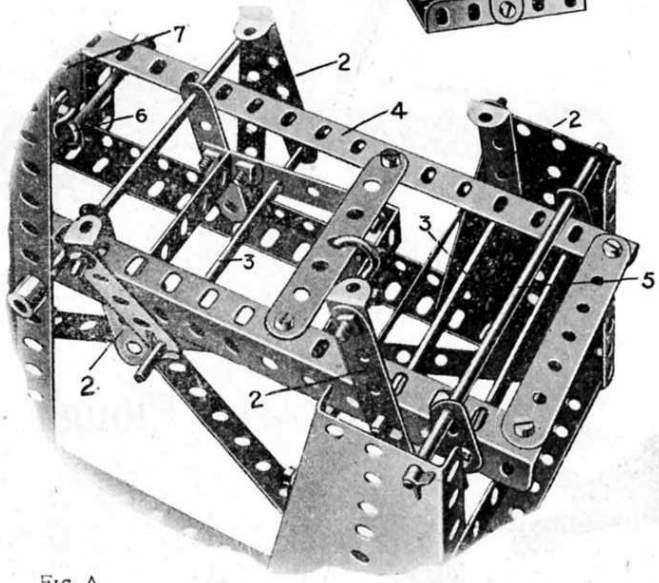
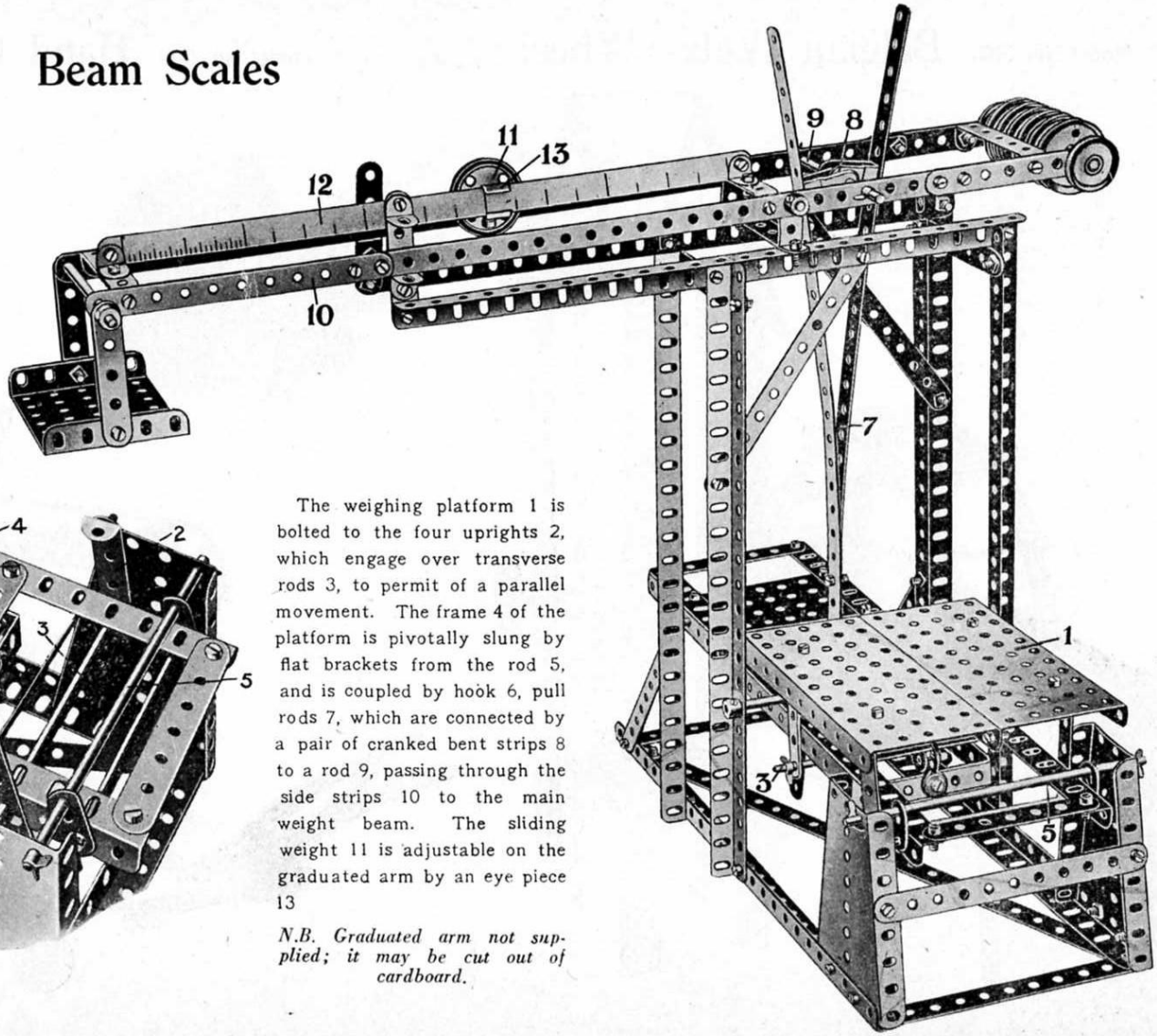


FIG. A



The weighing platform 1 is bolted to the four uprights 2, which engage over transverse rods 3, to permit of a parallel movement. The frame 4 of the platform is pivotally slung by flat brackets from the rod 5, and is coupled by hook 6, pull rods 7, which are connected by a pair of cranked bent strips 8 to a rod 9, passing through the side strips 10 to the main weight beam. The sliding weight 11 is adjustable on the graduated arm by an eye piece 13

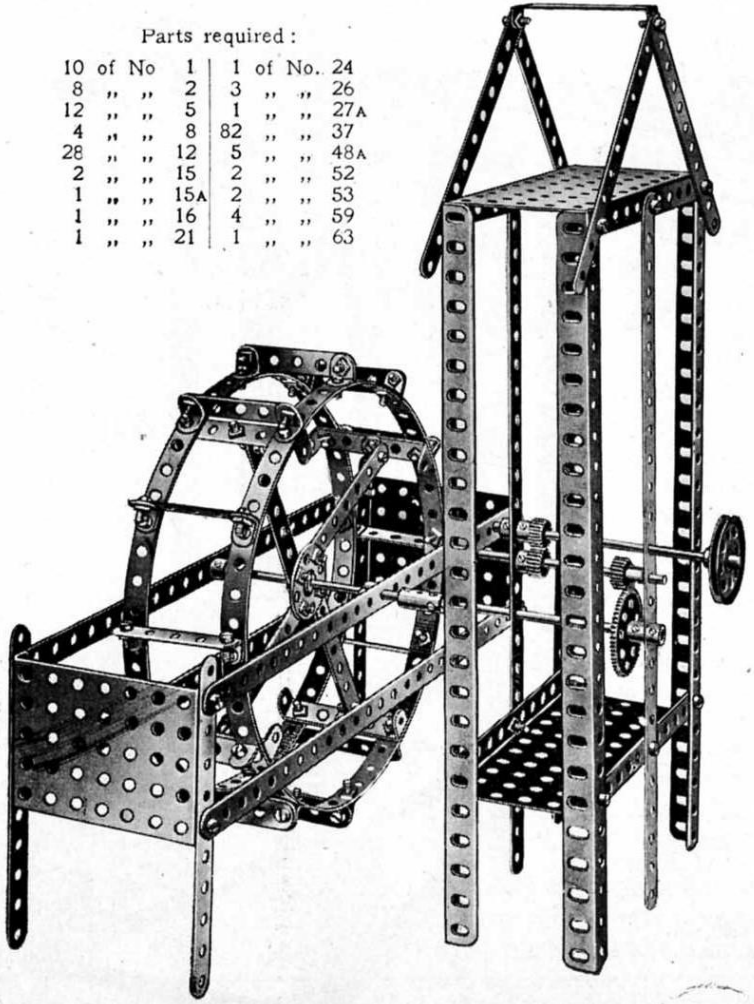
N.B. Graduated arm not supplied; it may be cut out of cardboard.

These Models can be made with MECCANO Outfit No. 5, or No. 4 and No. 4A.

Model No. 502. Belgian Water Wheel

Parts required :

10	of	No	1	1	of	No.	24
8	,,	,,	2	3	,,	,,	26
12	,,	,,	5	1	,,	,,	27A
4	,,	,,	8	82	,,	,,	37
28	,,	,,	12	5	,,	,,	48A
2	,,	,,	15	2	,,	,,	52
1	,,	,,	15A	2	,,	,,	53
1	,,	,,	16	4	,,	,,	59
1	,,	,,	21	1	,,	,,	63



Model No. 503 Hand Car

Parts required :

4	of	No.	2	1	of	No.	26
2	,,	,,	6A	1	,,	,,	27A
2	,,	,,	8	32	,,	,,	37
1	,,	,,	9D	4	,,	,,	37A
4	,,	,,	11	2	,,	,,	45
2	,,	,,	14	1	,,	,,	46
1	,,	,,	15A	7	,,	,,	59
1	,,	,,	16	2	,,	,,	63
1	,,	,,	17	1	,,	,,	70
4	,,	,,	19A	2	,,	,,	126A
2	,,	,,	24				

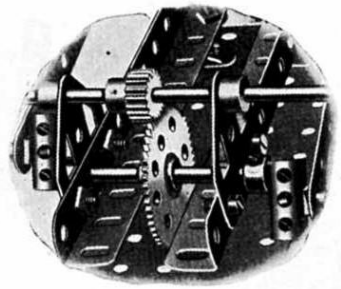
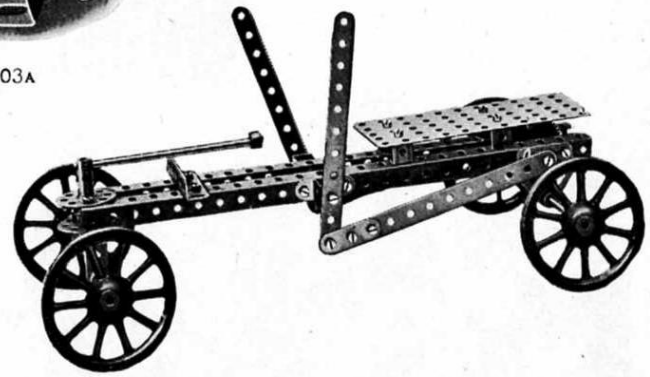
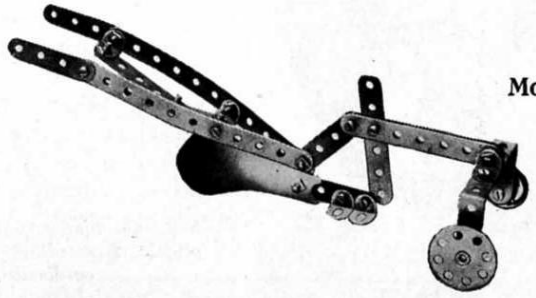


FIG. 503A



Model No. 504 Plough

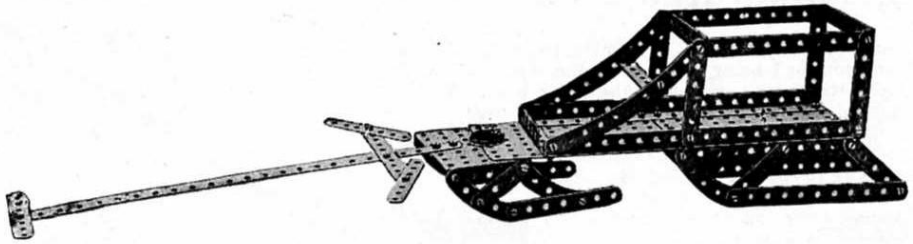


Parts required :

2	of	No.	2	1	of	No.	22
4	,,	,,	3	1	,,	,,	24
1	,,	,,	4	19	,,	,,	37
3	,,	,,	6	1	,,	,,	41
1	,,	,,	10	1	,,	,,	47
8	,,	,,	12				

These Models can be made with MECCANO Outfit No. 5, or No. 4 and No. 4A.

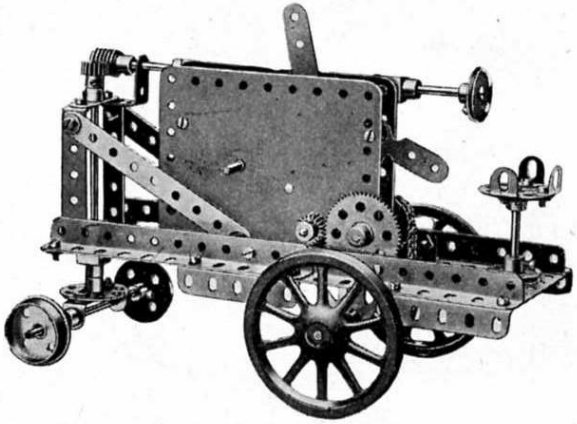
Model No. 505 Bob Sleigh



Parts required :

1	of	No.	1	2	of	No.	22
5	,,	,,	2	50	,,	,,	37
5	,,	,,	3	3	,,	,,	48B
4	,,	,,	4	1	,,	,,	52
4	,,	,,	5	2	,,	,,	52A
2	,,	,,	6	1	,,	,,	53
2	,,	,,	8A	2	,,	,,	89
1	,,	,,	9D	6	,,	,,	90
1	,,	,,	18A				

Model No. 506 Farm Tractor



Parts required :

2	of	No.	2A	1	of	No.	27A
1	,,	,,	3	1	,,	,,	32
1	,,	,,	6A	38	,,	,,	37
4	,,	,,	9	6	,,	,,	38
2	,,	,,	11	1	,,	,,	45
7	,,	,,	12	1	,,	,,	48
1	,,	,,	12A	2	,,	,,	48A
1	,,	,,	13A	2	,,	,,	53
1	,,	,,	15	9	,,	,,	59
1	,,	,,	15A	6"	,,	,,	94
2	,,	,,	17	2	,,	,,	96
2	,,	,,	19A	2	,,	,,	126A
2	,,	,,	20	Clockwork Motor			
2	,,	,,	22	*(Not included in outfits)*			
2	,,	,,	24				
2	,,	,,	26				

Model No. 507 Step Ladder

Parts required

4	of	No.	1
8	,,	,,	2
2	,,	,,	3
3	,,	,,	5
2	,,	,,	10
8	,,	,,	12
1	,,	,,	16
2	,,	,,	17
10	,,	,,	35
44	,,	,,	37
9	,,	,,	48A
2	,,	,,	59

This Model can be made with MECCANO Outfit No. 5, or No. 4 and No. 4A.

Model No. 508 Sighting Apparatus

This model is for determining the heights of buildings, towers, etc. The pointer 11½" rod 1 is pivoted on the 2" rod 2 and controlled by a spring 3, the pointer 1 being adjusted by the cord 4 which passes round a guide pulley 5 and on to the axle 6 upon which it is wound by the crank handle 7 which operates the gear wheel and pinion 8. A graduated scale of degrees 9 made of cardboard. or a protractor, is mounted in order to read off the angle of inclination of the pointer.

In finding the height of a building, measure out a number of feet or yards from the foot of the building, and set this out to some scale corresponding to the line *a b* (Fig. B). Then standing at the point *a* furthest from the building, and keeping the angle girders 10 horizontal, move the pointer 1 until it is directed towards the top of the building. Then read off the angle on the scale 9, and draw a line *a c*, making the angle *b a c* equal to the angle read off. Then draw a vertical line *b c* from the point *b*, and with the same scale used for setting off the distance *a b* measure the height *b c*, which will be the height of the building.

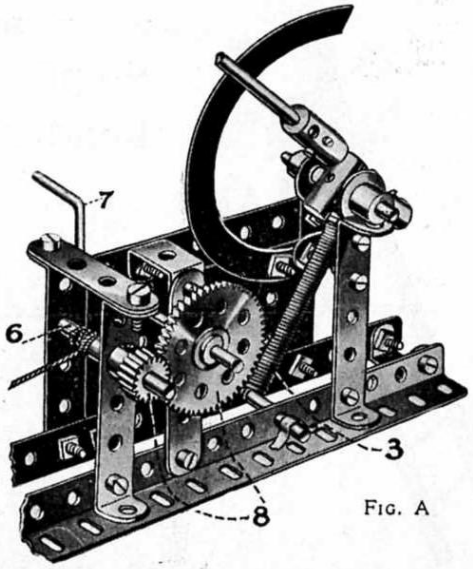


FIG. A

Parts required:

1	of	No.	5
2	,,	,,	6
2	,,	,,	8
4	,,	,,	11
1	,,	,,	13
4	,,	,,	17
1	,,	,,	19
1	,,	,,	22
2	,,	,,	26
1	,,	,,	27A
1	,,	,,	33
2	,,	,,	35
24	,,	,,	37
1	,,	,,	43
5	,,	,,	48A
1	,,	,,	53
3	,,	,,	59
2	,,	,,	62
2	,,	,,	63

N.B. Carboard piece not supplied

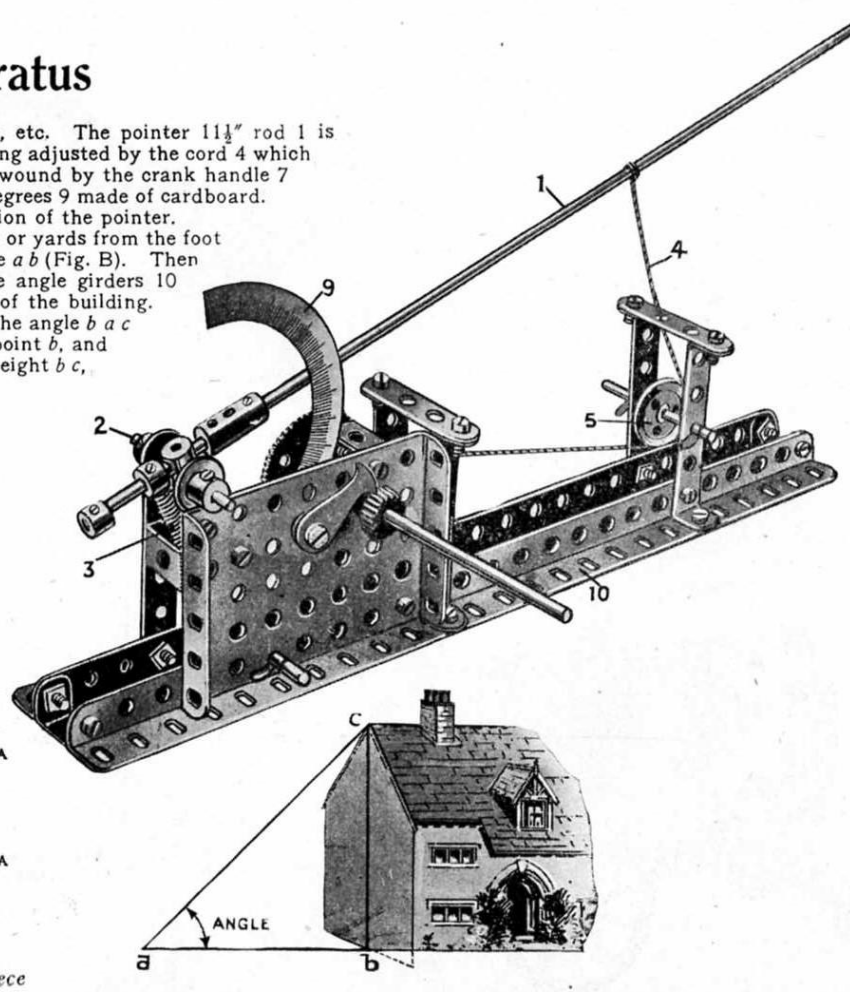
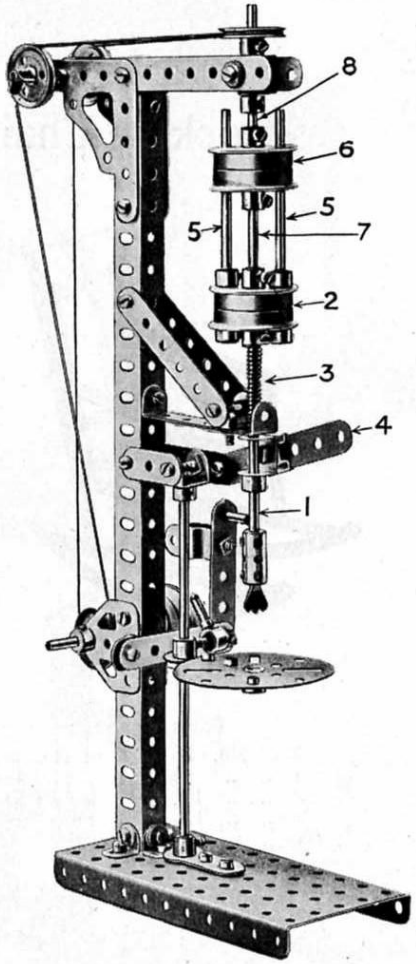


FIG. B

These Models can be made with MECCANO Outfit No. 5, or No. 4 and No. 4A.



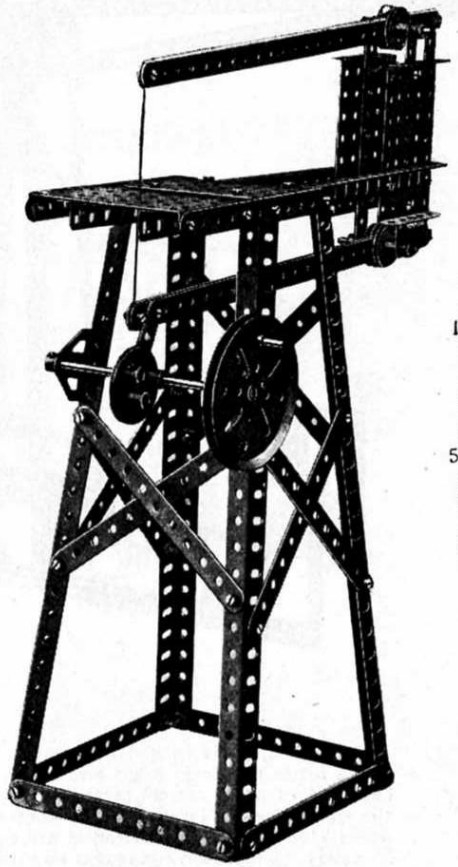
Model No. 509
Vertical Drill

Parts required

2	of	No	2	4	of	No.	16	1	of	No.	48A
3	,,	,,	4	1	,,	,,	17	1	,,	,,	50
2	,,	,,	5	6	,,	,,	20	10	,,	,,	59
1	,,	,,	6	2	,,	,,	21	2	,,	,,	62
1	,,	,,	6A	2	,,	,,	22A	1	,,	,,	65
2	,,	,,	8	4	,,	,,	35	2	,,	,,	108
5	,,	,,	11	39	,,	,,	37	1	,,	,,	109
6	,,	,,	12	6	,,	,,	38	1	,,	,,	111
1	,,	,,	14	1	,,	,,	43	2	,,	,,	115
1	,,	,,	15A	1	,,	,,	44	2	,,	,,	126A

The drill rod 1 is connected to the boss of the lower pair of flanged wheels 2 which are reversed, a spring 3 round the rod raising the drill after it has been depressed by the handle strip 4. Bolted in the wheels 2 are two outer rods 5 which slide in the upper flanged wheels 6. The central rod 7 is bolted in the upper wheels and slides in the centre bosses of the lower wheels 2. The upper wheels 6 are bolted to the driving spindle 8 and consequently the drill is driven by the rods 5 when the drill is depressed by the handle 4 against the spring.

Model No. 510 Fret Saw

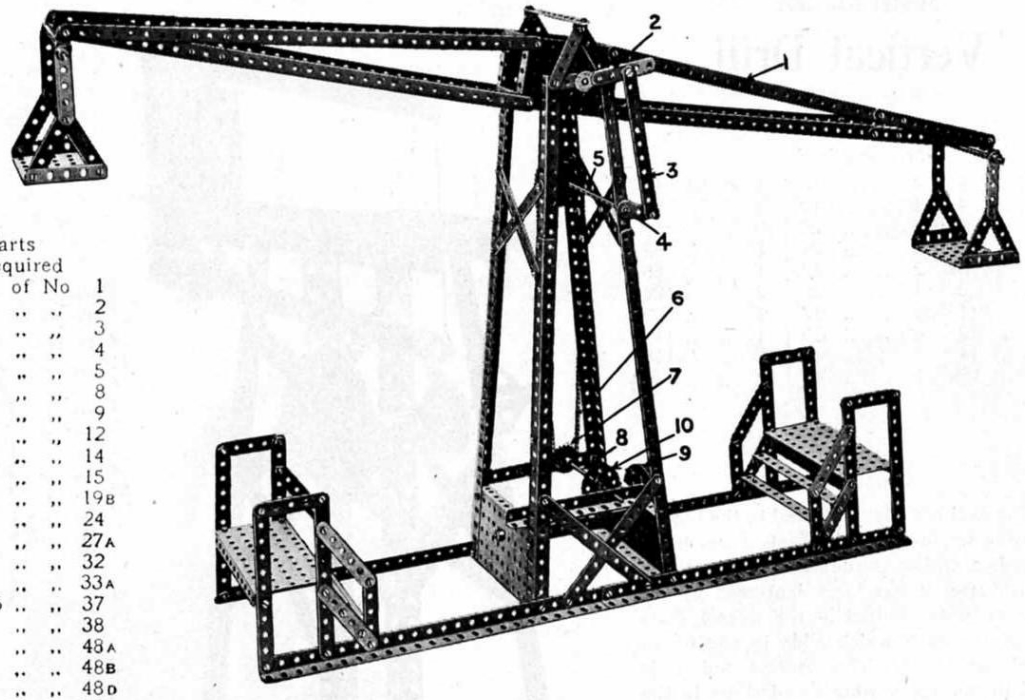


Parts required :

4	of	No.	1
17	,,	,,	2
6	,,	,,	8
1	,,	,,	15
2	,,	,,	17
1	,,	,,	19B
4	,,	,,	22
53	,,	,,	37
4	,,	,,	53
5	,,	,,	59
1	,,	,,	115
2	,,	,,	126A
1	,,	,,	130

These Models can be made with MECCANO Outfit No. 5, or No. 4 and No. 4A.

Model No. 511 Giant Auto Swing

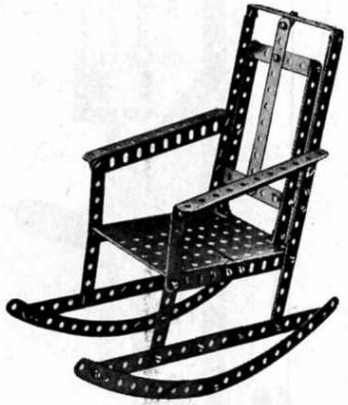


Parts required

8	of	No	1
26	,,	,,	2
2	,,	,,	3
8	,,	,,	4
31	,,	,,	5
12	,,	,,	8
1	,,	,,	9
18	,,	,,	12
2	,,	,,	14
4	,,	,,	15
1	,,	,,	19B
1	,,	,,	24
1	,,	,,	27A
1	,,	,,	32
1	,,	,,	33A
165	,,	,,	37
2	,,	,,	38
2	,,	,,	48A
2	,,	,,	48B
4	,,	,,	48D
4	,,	,,	52
4	,,	,,	53
9	,,	,,	59
2	,,	,,	62
28	,,	,,	94
1	,,	,,	95
1	,,	,,	96

The beam 1 is rocked by means of a crank 2 secured on the end of a rod which forms the beam pivot and which is bolted in a bush wheel secured to the beam. This crank 2 is connected by a strip 3 to another crank 4 on a rod 5. On the end of this is a large sprocket wheel driven by a chain 6 from a small sprocket wheel 7 on a rod 8. This rod is driven by means of a worm on the rod of the 3" pulley 9 which worm engages and drives the gear wheel 10 on the rod 8. As the crank 4 continuously rotates the link 3 causes the upper crank 2 to oscillate and also the beam 1.

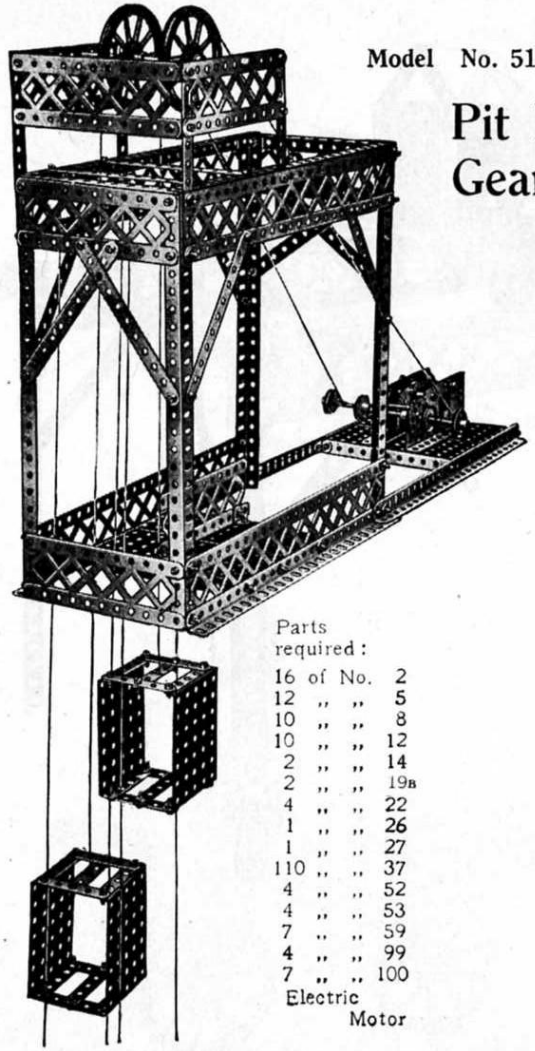
Model No. 512 Rocking Chair



Parts required :

9	of	No.	2	2	of	No.	48A
8	,,	,,	5	1	,,	,,	48B
2	,,	,,	10	2	,,	,,	53
3	,,	,,	12	4	,,	,,	89
44	,,	,,	37				

These Models can be made with MECCANO Outfit No. 5. or No. 4 and No. 4A.



Model No. 513

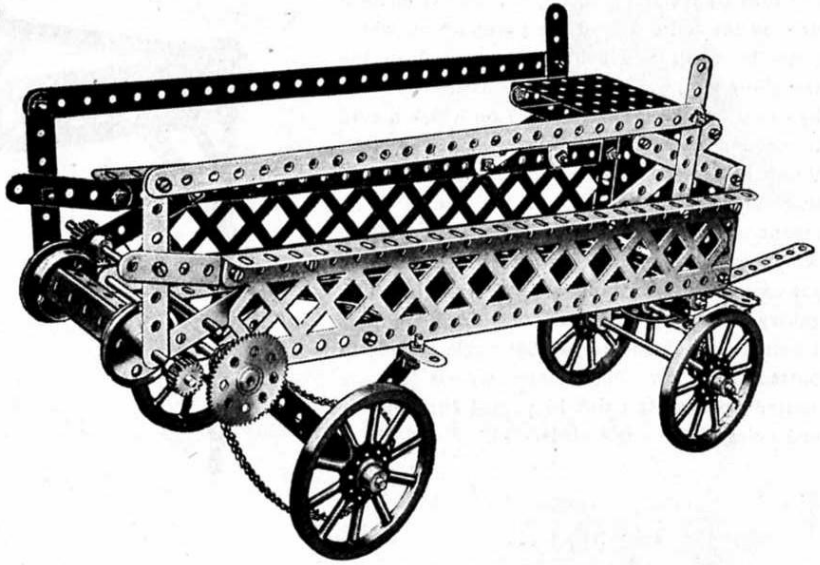
Pit Head Gear

Parts required :

16	of	No.	2
12	,,	,,	5
10	,,	,,	8
10	,,	,,	12
2	,,	,,	14
2	,,	,,	19B
4	,,	,,	22
1	,,	,,	26
1	,,	,,	27
110	,,	,,	37
4	,,	,,	52
4	,,	,,	53
7	,,	,,	59
4	,,	,,	99
7	,,	,,	100
Electric Motor			

Model No. 514

Manure Distributing Cart



Parts required :

2	of	No.	1	3	of	No.	15	3	of	No.	26	2	of	No. 53
3	,,	,,	2	2	,,	,,	15A	1	,,	,,	27A	8	,,	,, 59
10	,,	,,	3	2	,,	,,	17	4	,,	,,	35	1	,,	,, 94
9	,,	,,	5	4	,,	,,	19A	57	,,	,,	37	1	,,	,, 95
4	,,	,,	8	2	,,	,,	20	1	,,	,,	46	1	,,	,, 96
6	,,	,,	12	1	,,	,,	24	4	,,	,,	48A	2	,,	,, 99
1	,,	,,	14											

This Model can be made with MECCANO Outfit No. 5, or No. 4 and No. 4A.

Model No. 515 Travelling Gantry Crane

The travelling gantry 1 is traversed along the rails by a hand wheel 2, a sprocket chain 3 driving the rod 4 round the pulleys 5 on which pass the cords 6 which are connected to the travelling gantry. The load is raised or lowered by operating the crank handle 7 on which a cord 8 is wound, passing round a ½" pulley in the block 9 and being secured to a rod 10. The winch is traversed along the rails of the gantry 1 by means of the crank handle 11, a pinion 12 on which engages a 57-toothed gear wheel 13, on the axle of the travelling wheels. The travelling gantry is built up of the rails of the angle girders 1 bolted at each end to two 5½" angle girders 14 butted together. The flange wheels 15 are carried upon their axles 16 passed through the end holes of the angle girders 14.

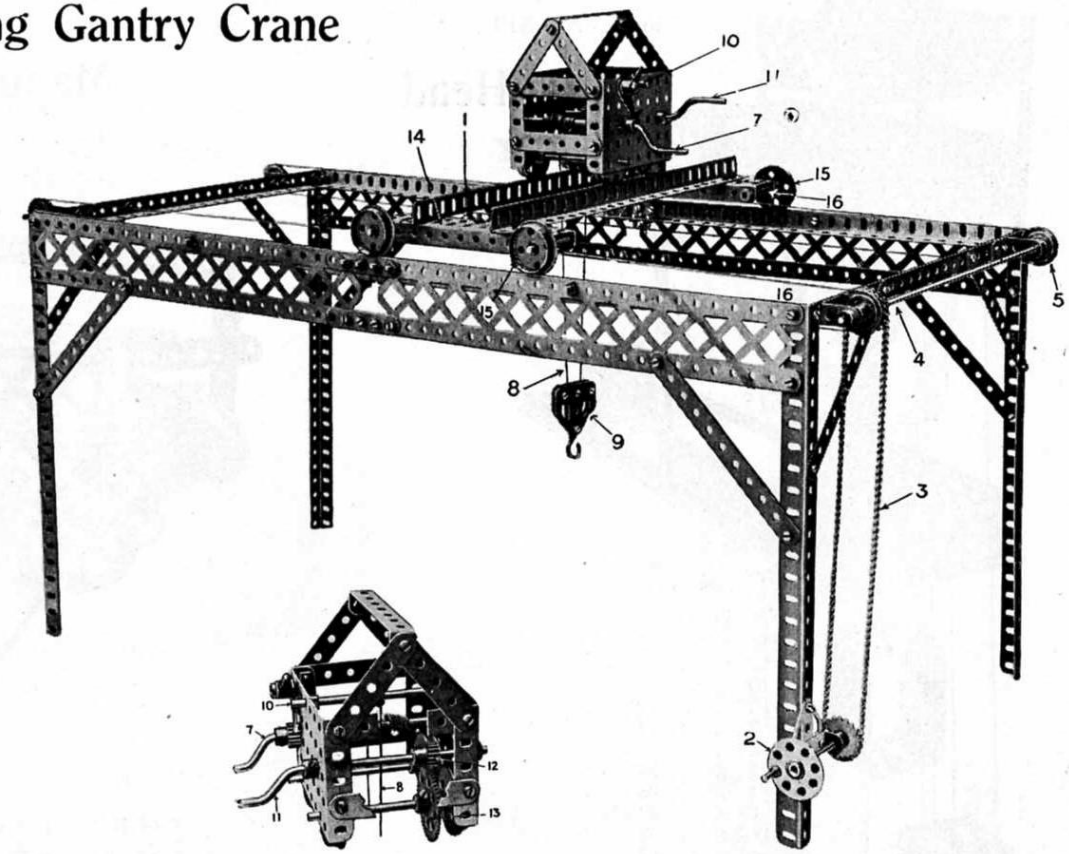


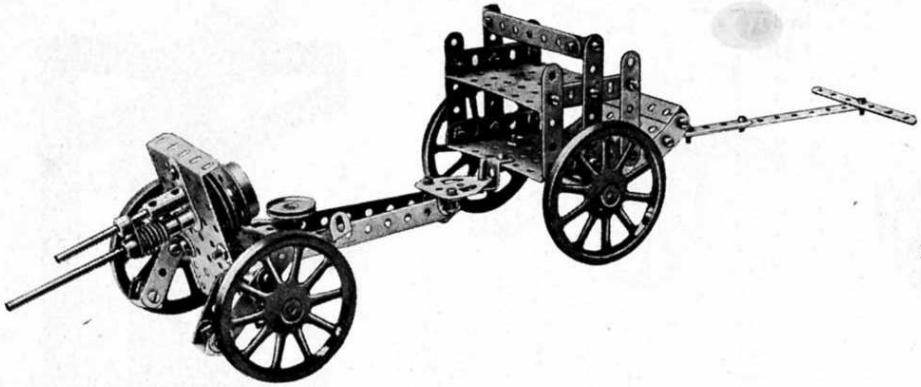
FIG. A

Parts required:

4	of	No.	1	2	of	No.	19	1	of	No.	48
8	,,	,,	2	8	,,	,,	20	1	,,	,,	48B
4	,,	,,	4	4	,,	,,	22	2	,,	,,	53
10	,,	,,	5	1	,,	,,	23	1	,,	,,	57
12	,,	,,	8	1	,,	,,	24	8	,,	,,	59
4	,,	,,	9	2	,,	,,	26	24"	,,	,,	94
2	,,	,,	11	1	,,	,,	27A	2	,,	,,	96
4	,,	,,	12A	1	,,	,,	33	4	,,	,,	99
2	,,	,,	13	2	,,	,,	35	4	,,	,,	100
3	,,	,,	16	26	,,	,,	37	2	,,	,,	115
5	,,	,,	17	6	,,	,,	38	3	,,	,,	126A

These Models can be made with MECCANO Outfit No. 5, or No. 4 and No. 4A.

Model No. 516 Field Gun and Carriage



Parts required:

4	of	No.	2	1	of	No.	22
2	,,	,,	3	1	,,	,,	24
2	,,	,,	4	1	,,	,,	32
5	,,	,,	5	62	,,	,,	37
2	,,	,,	6A	2	,,	,,	38
3	,,	,,	10	3	,,	,,	48A
3	,,	,,	11	2	,,	,,	48B
14	,,	,,	12	2	,,	,,	53
2	,,	,,	15	3	,,	,,	59
1	,,	,,	15A	1	,,	,,	62
1	,,	,,	16	1	,,	,,	63
1	,,	,,	18A	2	,,	,,	90
4	,,	,,	19A	1	,,	,,	115
1	,,	,,	20	2	,,	,,	125
1	,,	,,	21	2	,,	,,	126A

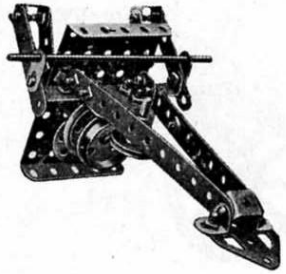
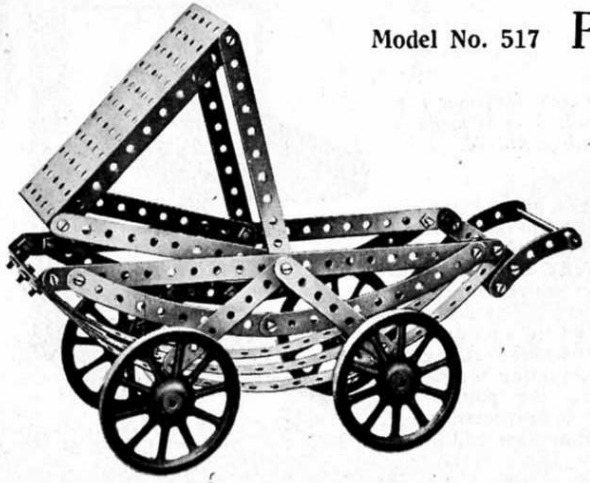


FIG 516A

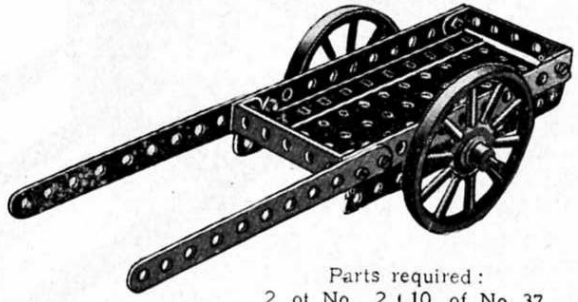
Model No. 517 Perambulator



Parts required:

3	of	No	1	37	of	No.	37
8	,,	,,	2	5	,,	,,	48A
4	,,	,,	3	1	,,	,,	52
6	,,	,,	12	2	,,	,,	59
3	,,	,,	16	4	,,	,,	89
4	,,	,,	19A	2	,,	,,	90

Model No. 518 Push Cart

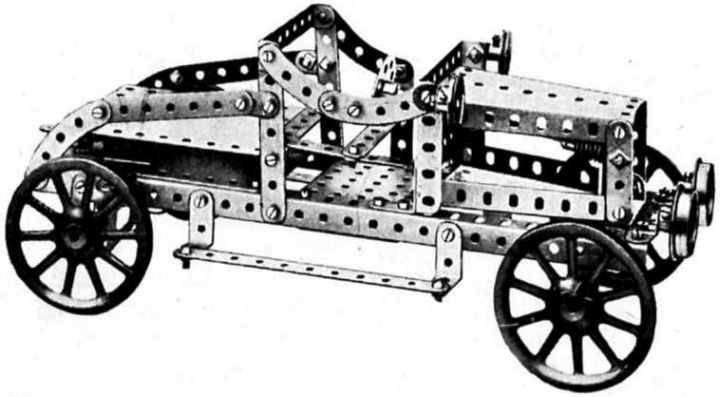


Parts required:

2	of	No.	2	10	of	No.	37
2	,,	,,	9	2	,,	,,	48A
1	,,	,,	15A	1	,,	,,	52
2	,,	,,	19A				

These Models can be made with MECCANO Outfit No. 5, or No. 4 and No. 4A.

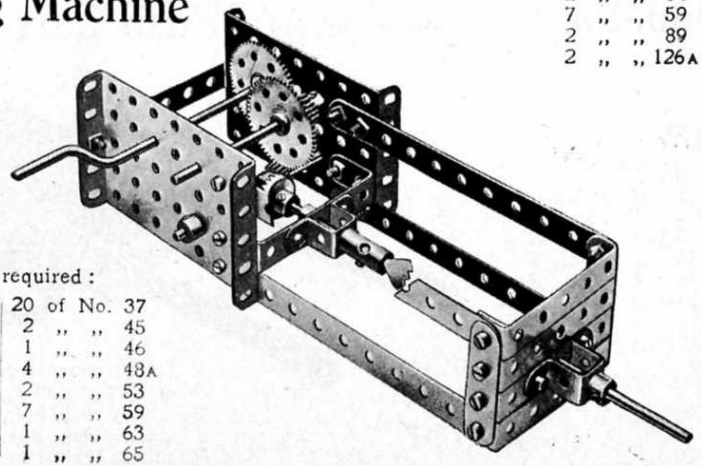
Model No. 519 Motor Car



Parts required :

2	of	No.	2
8	,,	,,	**3**
1	,,	,,	5
4	,,	,,	6
2	,,	,,	8
2	,,	,,	10
8	,,	,,	12
6	,,	,,	12A
1	,,	,,	14
2	,,	,,	15
1	,,	,,	16A
4	,,	,,	19A
2	,,	,,	20
2	,,	,,	22
2	,,	,,	24
2	,,	,,	26
1	,,	,,	28
1	,,	,,	32
75	,,	,,	37
4	,,	,,	38
3	,,	,,	48B
2	,,	,,	53
2	,,	,,	54
7	,,	,,	59
2	,,	,,	89
2	,,	,,	126A

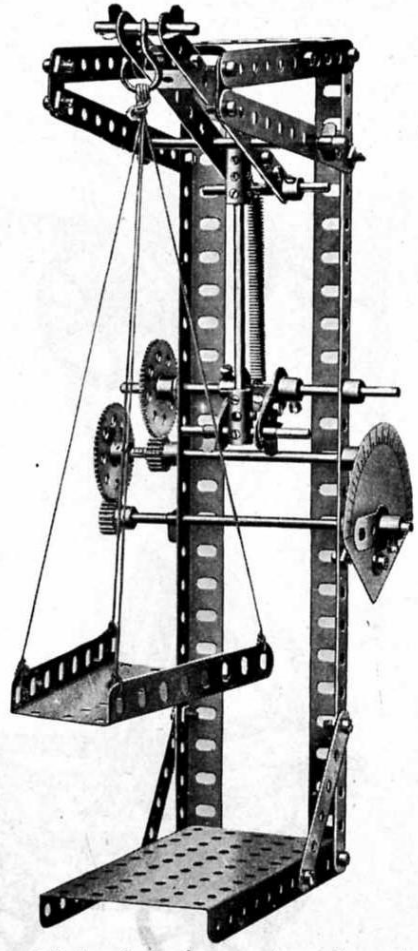
Model No. 520 Spooling Machine



Parts required :

4	of	No.	2	20	of	No.	37
1	,,	,,	3	2	,,	,,	45
3	,,	,,	16	1	,,	,,	46
1	,,	,,	17	4	,,	,,	48A
1	,,	,,	19	2	,,	,,	53
2	,,	,,	26	7	,,	,,	59
2	,,	,,	27A	1	,,	,,	63
1	,,	,,	29	1	,,	,,	65

Model No. 521 Spring Scales



Parts required :

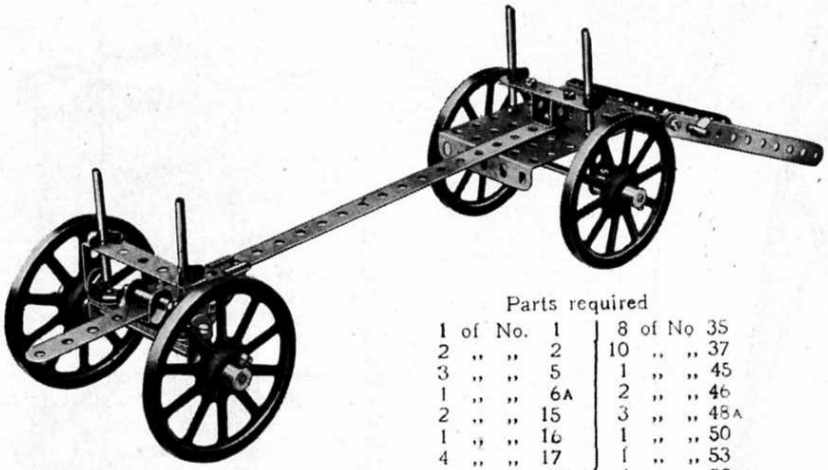
6	of	No.	2
2	,,	,,	4
2	,,	,,	8
2	,,	,,	10
3	,,	,,	11
2	,,	,,	15
1	,,	,,	15A
2	,,	,,	16
2	,,	,,	**17**
1	,,	,,	18A
2	,,	,,	26
2	,,	,,	27A
23	,,	,,	37
1	,,	,,	43
2	,,	,,	48A
1	,,	,,	52
1	,,	,,	54
1	,,	,,	57
2	,,	,,	59
2	,,	,,	62
2	,,	,,	63

N.B. Weight indicator not supplied. Can be made with cardboard.

The Scale beam 1 is made of two 5½" strips distanced by double bent strips. The vertical rod 2 is connected to the beam which is pivoted on the rod 3. The cranks 4 are gripped on an axle 5 on which is secured the gear wheel 6 actuating through a gear train the pointer 7. A spring 8 connected to a rod 5 and another rod in the end hole of the beam acts as the spring balance.

These Models can be made with MECCANO Outfit No. 5, or No. 4 and No. 4A.

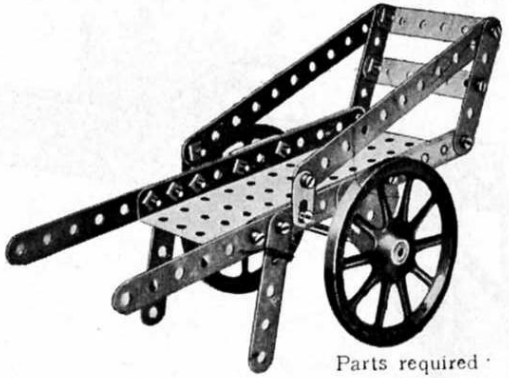
Model No. 522 Timber Carriage



Parts required

1	of	No.	1	8	of	No	35
2	,,	,,	2	10	,,	,,	37
3	,,	,,	5	1	,,	,,	45
1	,,	,,	6A	2	,,	,,	46
2	,,	,,	15	3	,,	,,	48A
1	,,	,,	16	1	,,	,,	50
4	,,	,,	17	1	,,	,,	53
1	,,	,,	18B	4	,,	,,	59
4	,,	,,	19A	1	,,	,,	111

Model No. 523 Coster's Barrow



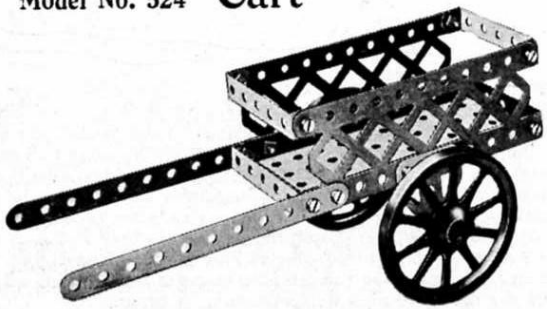
Parts required

4	of	No.	2	18	of	No	37
4	,,	,,	5	2	,,	,,	48A
2	,,	,,	10	1	,,	,,	52
1	,,	,,	16	2	,,	,,	126A
2	,,	,,	19A				

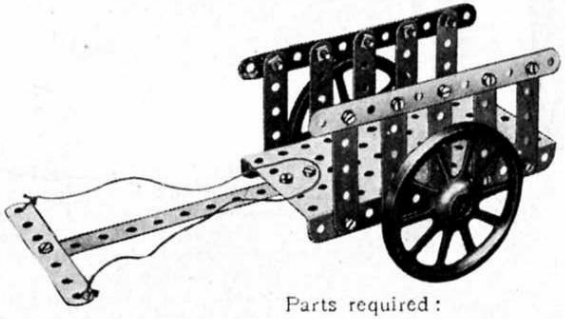
Model No. 524 Cart

Parts required :

2	of	No.	2
1	,,	,,	16
2	,,	,,	19A
14	,,	,,	37
4	,,	,,	48A
1	,,	,,	52
2	,,	,,	100
2	,,	,,	126A



Model No. 525 Bullock Cart

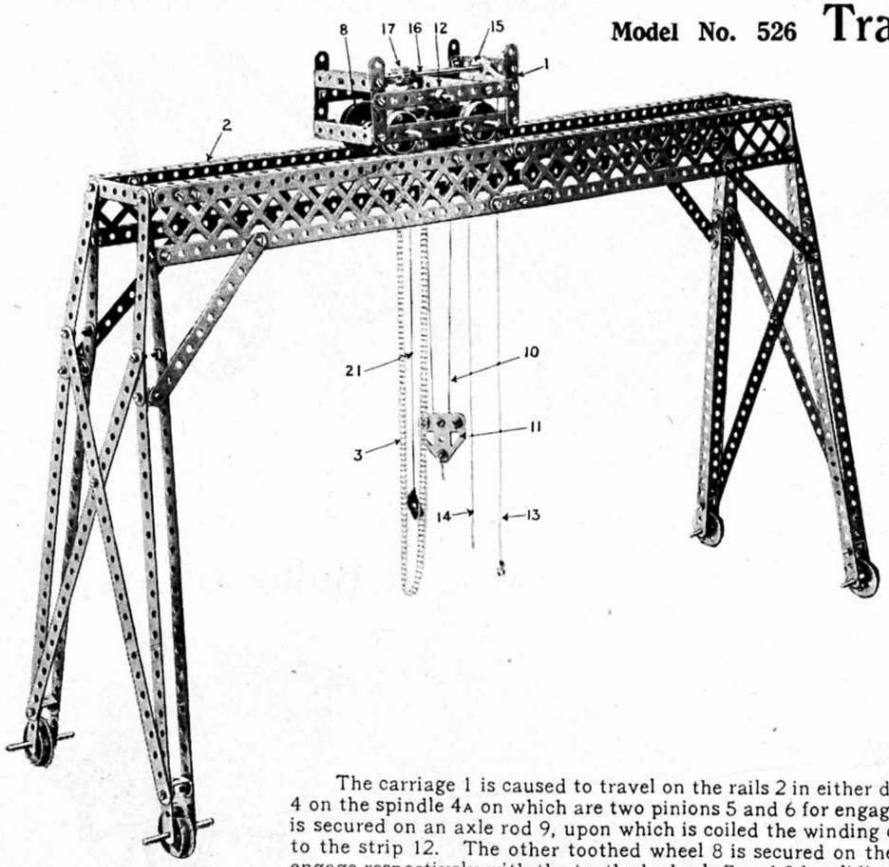


Parts required :

3	of	No.	2	2	of	No.	19A
1	,,	,,	3	21	,,	,,	37
10	,,	,,	5	1	,,	,,	52
1	,,	,,	16				

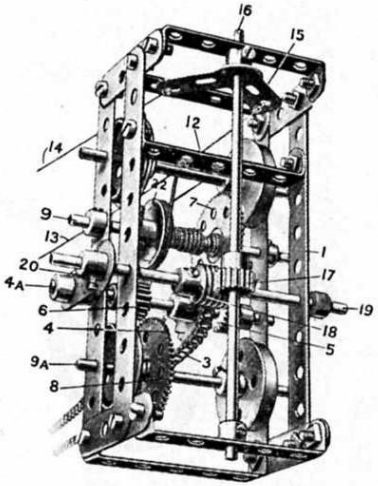
This Model can be made with MECCANO Outfit No. 5, or No. 4 and No. 4A.

Model No. 526 Travelling Crane



Parts required :

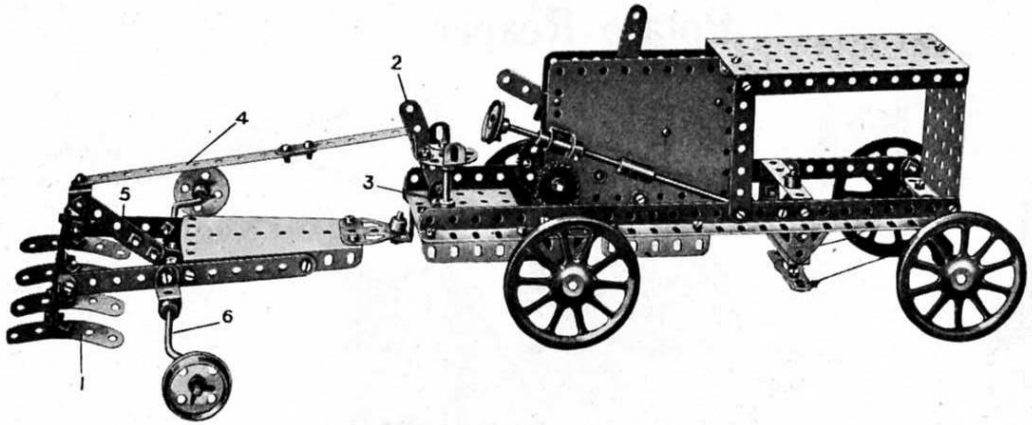
16	of	No.	1	2	of	No.	27A
16	,,	,,	2	1	,,	,,	32
6	,,	,,	5	86	,,	,,	37
4	,,	,,	8	8	,,	,,	38
2	,,	,,	9	5	,,	,,	48A
8	,,	,,	11	1	,,	,,	57
4	,,	,,	12	6	,,	,,	59
1	,,	,,	14	1	,,	,,	62
1	,,	,,	15A	1	,,	,,	63
4	,,	,,	16	30″	,,	,,	94
4	,,	,,	17	1	,,	,,	96
8	,,	,,	20	4	,,	,,	99
1	,,	,,	22	2	,,	,,	112A
1	,,	,,	23	2	,,	,,	126A
3	,,	,,	26	1	,,	,,	128



The carriage 1 is caused to travel on the rails 2 in either direction by the sprocket chain 3, which passes over a 1″ sprocket wheel 4 on the spindle 4A on which are two pinions 5 and 6 for engagement respectively with toothed wheels 7 and 8. The toothed wheel 7 is secured on an axle rod 9, upon which is coiled the winding cord 10 passing round a ½″ pulley in the block 11, and being made fast to the strip 12. The other toothed wheel 8 is secured on the axle of the travelling wheels 9A. The pinions 5 and 6 are caused to engage respectively with the toothed wheels 7 and 8 by sliding the pinion axle 4A in the carriage frame 1. This is effected by means of two cords 13 and 14 connected to a boss bell crank 15 on a rod 16, a pinion 17 which engages a worm 18 in the manner of a rack. This worm is secured to a rod 19, which is connected by a crank piece 20 to the pinion rod 4A. The latter revolving freely in the crank 20, being held in position by a collar on each side of the crank. Consequently, by pulling on one or other of the cords 13, 14, the bell crank is racked and the pinions caused to engage with one or other of the toothed wheels 7 or 8. When engaging the toothed wheel 7 the load may be raised or lowered by pulling the sprocket chain 3, but when the pinion 6 engages the toothed wheel 8, the carriage travels on the rails. The cord 21 passes round a pulley 22 on the winding axle and acts as a brake.

These Models can be made with MECCANO Outfit No. 5, or No. 4 and No. 4A.

Model No. 527 Motor Plough



Parts required :

5	of No.	2	2	of No.	26	1	of No.	54
3	,, ,,	3	1	,, ,,	27A	9	,, ,,	59
3	,, ,,	5	1	,, ,,	29	1	,, ,,	62
2	,, ,,	8	4	,, ,,	35	2	,, ,,	63
2	,, ,,	10	24	,, ,,	37	4	,, ,,	90
1	,, ,,	11	6	,, ,,	38	6″	,, ,,	94
19	,, ,,	12	1	,, ,,	45	2	,, ,,	96
3	,, ,,	15A	1	,, ,,	46	1	,, ,,	115
1	,, ,,	16	4	,, ,,	48A	3	,, ,,	125
3	,, ,,	17	1	,, ,,	52	5	,, ,,	126A
2	,, ,,	19	3	,, ,,	53			
4	,, ,,	19A						
2	,, ,,	20						
3	,, ,,	22						
1	,, ,,	24						

The ploughshares 1 are raised or lowered by the handle 2 pivoted to an angle bracket on the far side of the seat pillar, and connected by strips 4 to a crank 5 secured on the bent axle 6 of the wheels formed by crank handles.

N.B. Illustration shows clockwork motor which is not included in outfit; electric motor may be used instead.

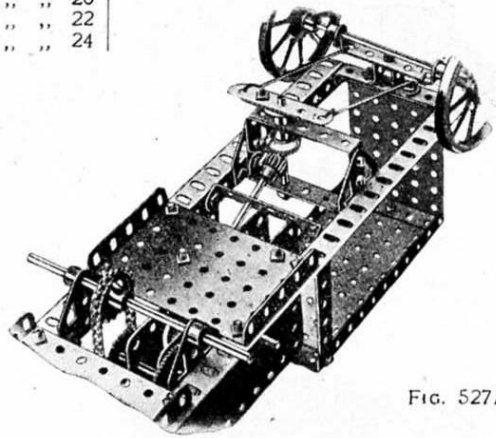
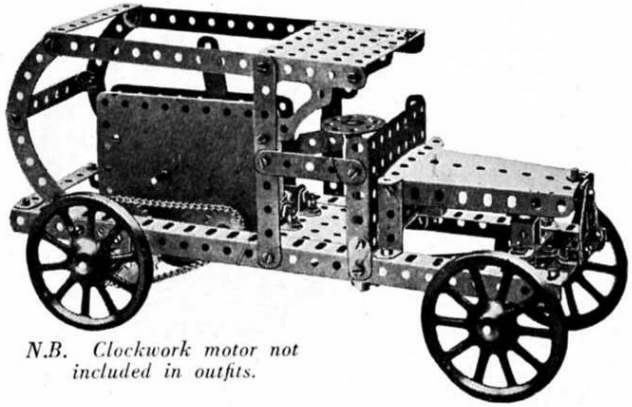


FIG. 527A

Model No. 528 Automobile



N.B. Clockwork motor not included in outfits.

Parts required

3	of No.	2	2	of No.	45			
4	,, ,,	3	2	,, ,,	48			
5	,, ,,	5	2	,, ,,	48B			
2	,, ,,	8	3	,, ,,	53			
2	,, ,,	10	1	,, ,,	54			
11	,, ,,	12	3	,, ,,	59			
2	,, ,,	15A	1	,, ,,	62			
1	,, ,,	16	4	,, ,,	90			
1	,, ,,	17	12″	,, ,,	94			
4	,, ,,	19A	1	,, ,,	95			
2	,, ,,	24	1	,, ,,	96			
63	,, ,,	37	2	,, ,,	108			
2	,, ,,	38	1	,, ,,	125			
			3	of No.	126A			

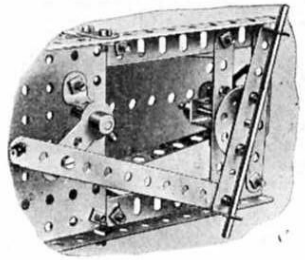
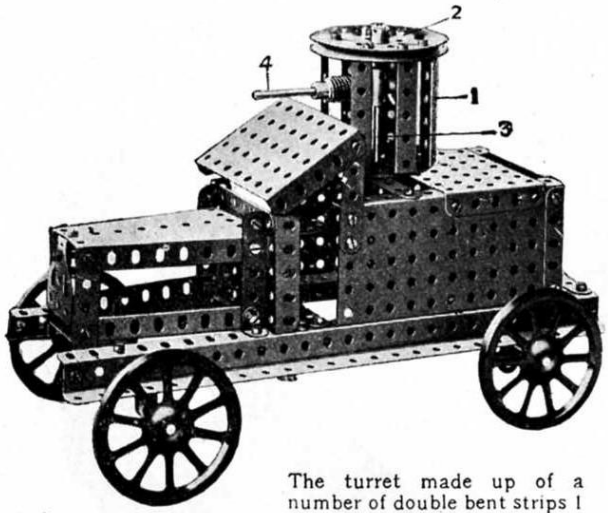


FIG. 528A

These Models can be made with MECCANO Outfit No. 5, or No. 4 and No. 4A.

Model No. 529 Armored Motor Car

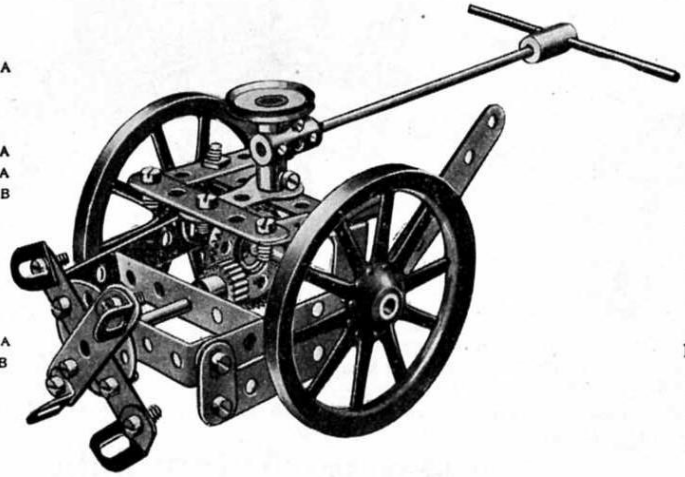


The turret made up of a number of double bent strips 1 bolted at the top to a 3" pulley 2 and below to a face plate is bolted on a rod 3 passing up the centre which forms the pivot of the turret so that it may freely turn. The gun 4 is bolted in a coupling on this pivot rod.

Parts required :

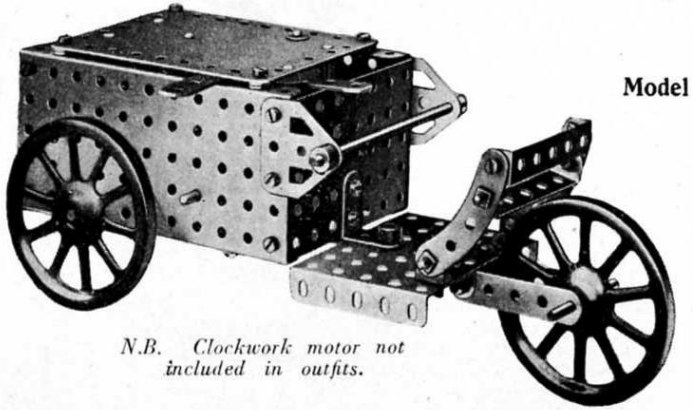
5	of	No.	3
6	,,	,,	5
4	,,	,,	8
5	,,	,,	12
1	,,	,,	12A
2	,,	,,	14
1	,,	,,	15
2	,,	,,	16
2	,,	,,	18A
4	,,	,,	19A
1	,,	,,	19B
2	,,	,,	22
2	,,	,,	24
1	,,	,,	32
77	,,	,,	37
2	,,	,,	38
2	,,	,,	45
7	,,	,,	48A
1	,,	,,	48B
2	,,	,,	52
4	,,	,,	53
2	,,	,,	54
8	,,	,,	59
1	,,	,,	63
1	,,	,,	109
3	,,	,,	126A

Model No. 530 Potato Reaper



Parts required :

1	of	No.	3
8	,,	,,	5
2	,,	,,	10
4	,,	,,	12
1	,,	,,	15
2	,,	,,	16
1	,,	,,	17
1	,,	,,	18A
2	,,	,,	19B
1	,,	,,	22
1	,,	,,	24
1	,,	,,	26
1	,,	,,	28
19	,,	,,	37
1	,,	,,	46
2	,,	,,	48A
1	,,	,,	59
1	,,	,,	62
2	,,	,,	63



N.B. Clockwork motor not included in outfits.

Model No. 531 Delivery Van

Parts required :

1	of	No.	3	1	of	No.	28
3	,,	,,	5	31	,,	,,	37
4	,,	,,	12	9	,,	,,	38
1	,,	,,	12A	2	,,	,,	48A
1	,,	,,	15	2	,,	,,	52
2	,,	,,	15A	3	,,	,,	53
1	,,	,,	17	7	,,	,,	59
1	,,	,,	18A	2	,,	,,	90
3	,,	,,	19A	9	,,	,,	94
1	,,	,,	26	2	,,	,,	95

2 of No. 126A

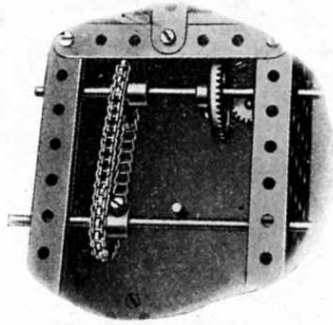


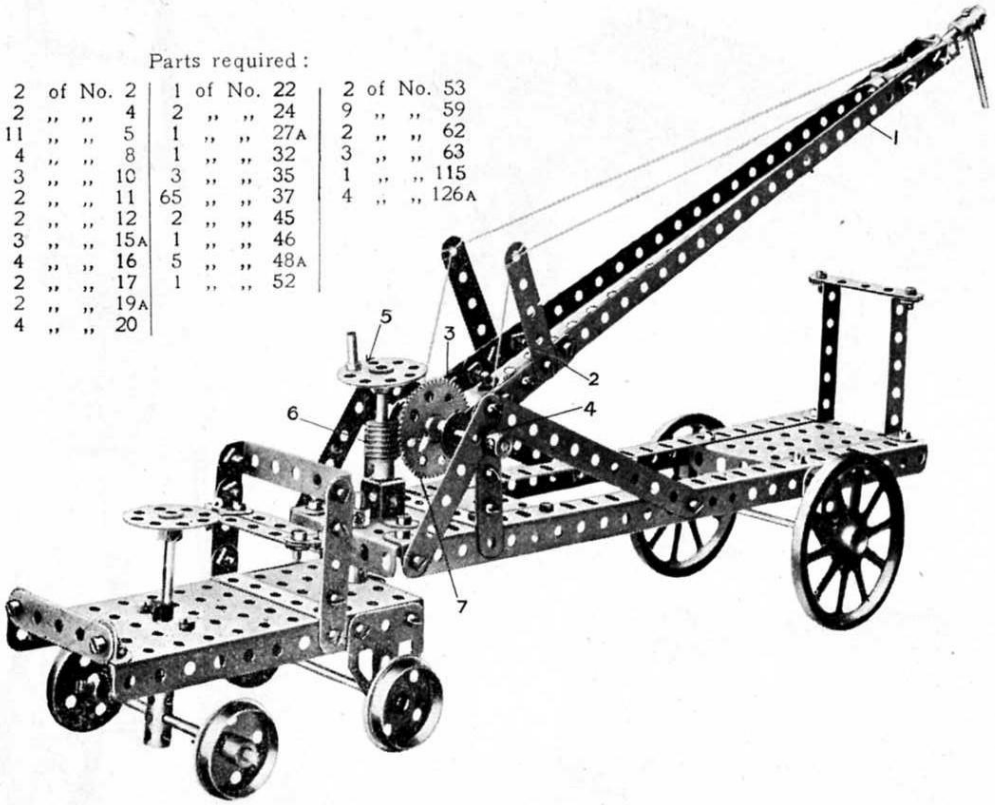
FIG. 531A

These Models can be made with MECCANO Outfit No. 5, or No. 4 and No. 4A.

Model No. 532 Fire Watertower

Parts required:

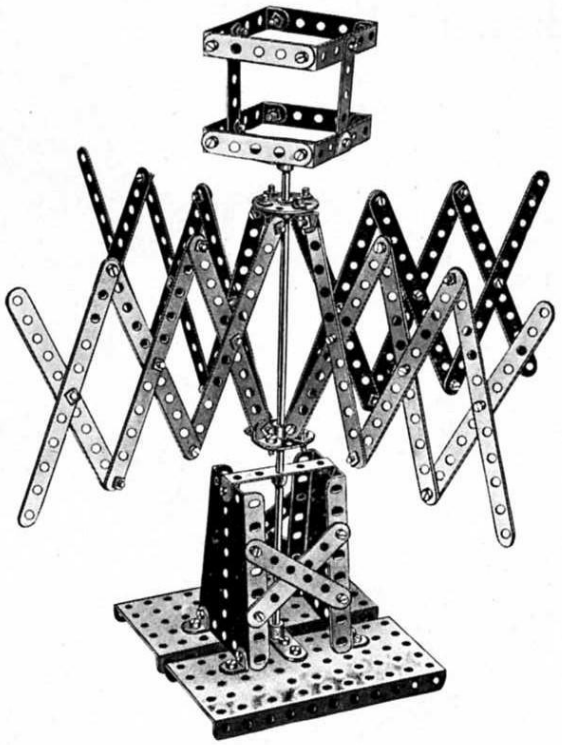
2	of	No.	2	1	of	No.	22	2	of No. 53
2	,,	,,	4	2	,,	,,	24	9	,, ,, 59
11	,,	,,	5	1	,,	,,	27A	2	,, ,, 62
4	,,	,,	8	1	,,	,,	32	3	,, ,, 63
3	,,	,,	10	3	,,	,,	35	1	,, ,, 115
2	,,	,,	11	65	,,	,,	37	4	,, ,, 126A
2	,,	,,	12	2	,,	,,	45		
3	,,	,,	15A	1	,,	,,	46		
4	,,	,,	16	5	,,	,,	48A		
2	,,	,,	17	1	,,	,,	52		
2	,,	,,	19A						
4	,,	,,	20						



This is an apparatus for raising a water-hose and directing the nozzle towards high buildings. The hose is led along the support 1, formed of two 12½" angle girders, secured by strips 2 and cranks 3 to the rod 4, forming a pivot for the support. The support is raised or lowered about the pivot by turning the hand-wheel 5, a worm 6 on the spindle of which engages a 57-toothed wheel 7 on the rod 4.

Model No. 533

Skein Winder



Parts required:

24	of	No.	2	2	of	No.	24		
4	,,	,,	4	86	,,	,,	37		
7	,,	,,	5	5	,,	,,	48A		
8	,,	,,	12	2	,,	,,	52		
1	,,	,,	13	2	,,	,,	54		
1	,,	,,	21	2	,,	,,	59		

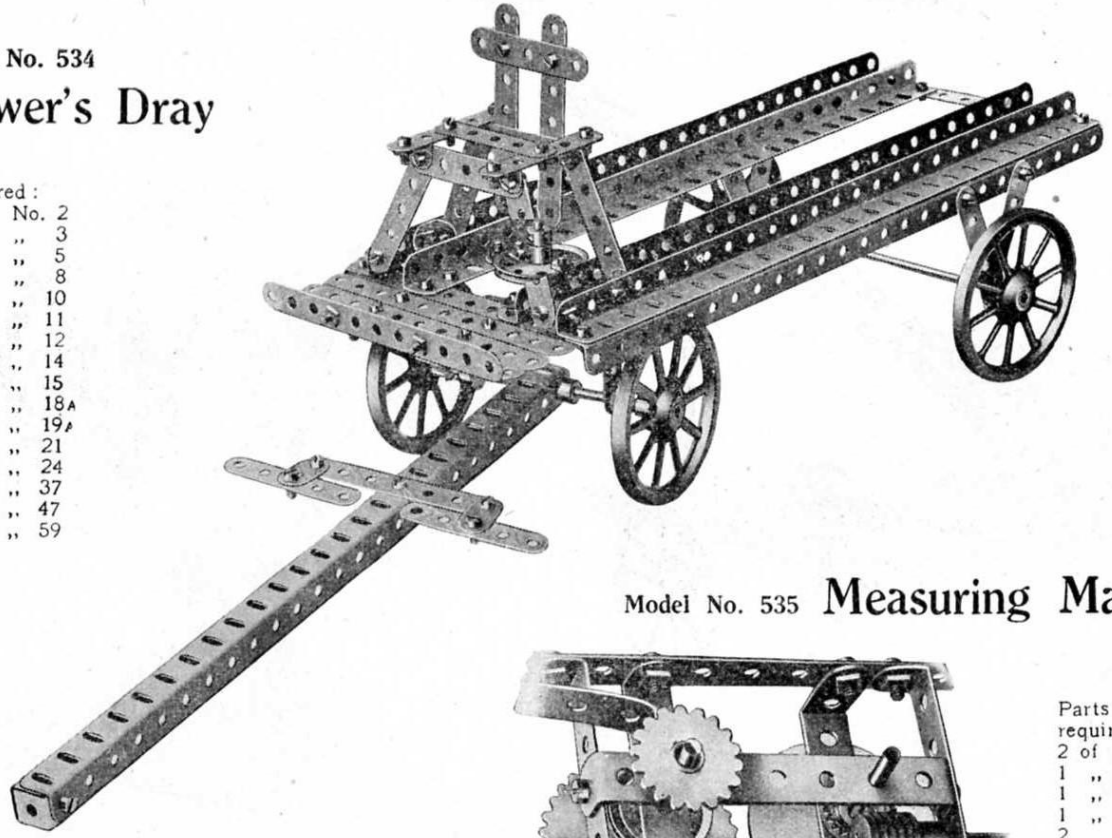
These Models can be made with MECCANO Outfit No. 5, or No. 4 and No. 4A.

Model No. 534

Brewer's Dray

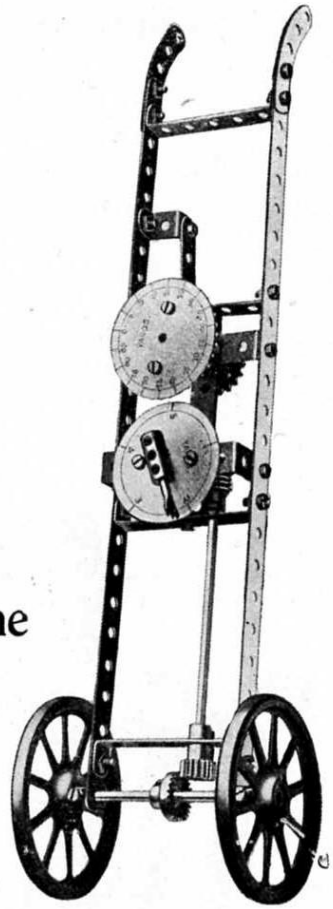
Parts required :

6	of	No.	2
3	,,	,,	3
19	,,	,,	5
8	,,	,,	8
2	,,	,,	10
1	,,	,,	11
10	,,	,,	12
1	,,	,,	14
1	,,	,,	15
1	,,	,,	18A
4	,,	,,	19A
1	,,	,,	21
1	,,	,,	24
62	,,	,,	37
1	,,	,,	47
6	,,	,,	59



Model No. 535 # Measuring Machine

FIG. 535A



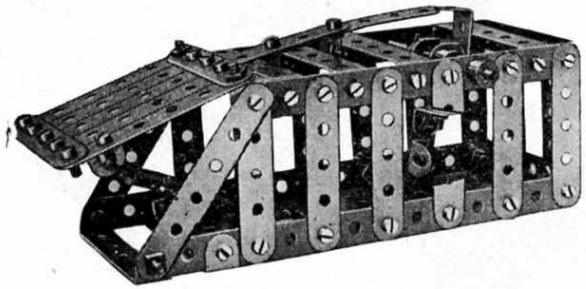
Parts required .

2	of	No.	1
1	,,	,,	5
1	,,	,,	15
1	,,	,,	16
2	,,	,,	17
2	,,	,,	19A
1	,,	,,	22
1	,,	,,	26
2	,,	,,	29
1	,,	,,	32
22	,,	,,	37
1	,,	,,	46
	,,	,,	48A
1	of	No.	48B
1	,,	,,	59
1	,,	,,	63
1	,,	,,	65
2	of	No.	90
1	,,	,,	95
1	,,	,,	96
1	,,	,,	125

N.B. Cardboard pieces not supplied.

These Models can be made with MECCANO Outfit No. 5, or No. 4 and No. 4A.

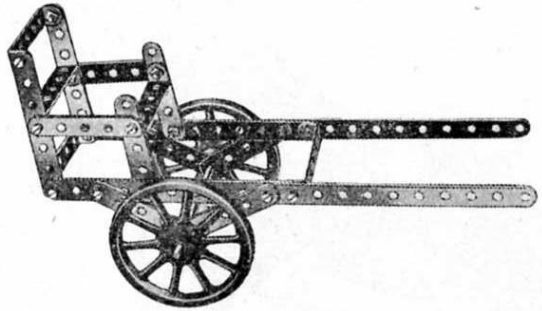
Model No. 536 Mouse Trap



Parts required :

3	of	No.	2
8	,,	,,	4
18	,,	,,	5
1	,,	,,	10
1	,,	,,	11
4	,,	,,	12
1	,,	,,	16
59	,,	,,	37
5	,,	,,	38
1	,,	,,	43
1	,,	,,	48
9	,,	,,	48A
1	,,	,,	52
4	,,	,,	59

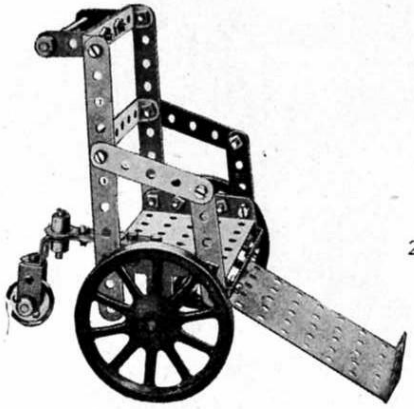
Model No. 537 Ducking Chair



Parts required :

4	of	No.	2
2	,,	,,	3
8	,,	,,	5
1	,,	,,	15A
2	,,	,,	19
4	,,	,,	35
16	,,	,,	37
5	,,	,,	48A

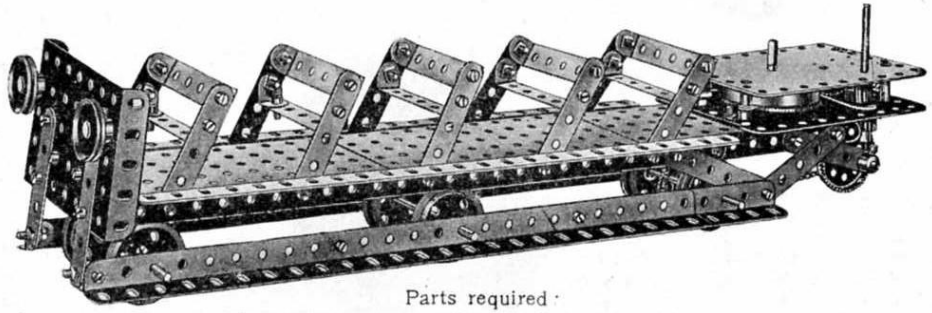
Model No. 538 Invalid Chair



Parts required :

2	of	No.	2
5	,,	,,	5
1	,,	,,	10
1	,,	,,	15A
1	,,	,,	16
2	,,	,,	18A
2	,,	,,	19A
1	,,	,,	22A
25	,,	,,	37
5	,,	,,	38
1	,,	,,	46
3	,,	,,	48B
2	,,	,,	53
5	,,	,,	59
1	,,	,,	62
1	,,	,,	102
1	,,	,,	125
2	,,	,,	126A

Model No. 539 Sight Seeing Car



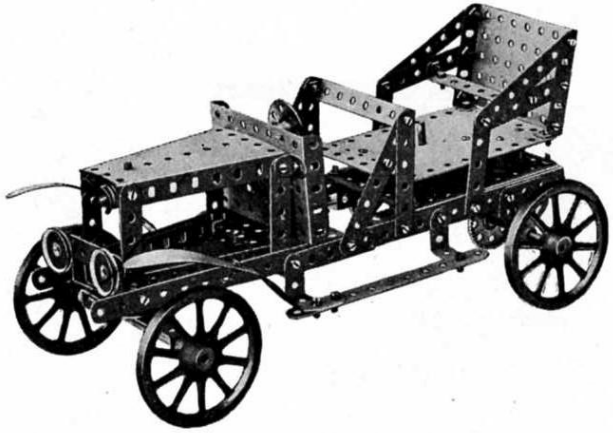
Parts required :

20	of	No.	5	6	of	No.	20	64	of	No.	37
6	,,	,,	8	2	,,	,,	22	8	,,	,,	48A
8	,,	,,	12	1	,,	,,	26	3	,,	,,	52
4	,,	,,	16	1	,,	,,	28	1	,,	,,	53
				2	,,	,,	59				

N.B. Clockwork motor not included in outfits.

These Models can be made with MECCANO Outfit No. 5, or No. 4 and No. 4A.

Model No. 540 Automobile



Parts required :

2	of	No.	1	2	of	No.	24
2	,,	,,	2	2	,,	,,	26
7	,,	,,	3	1	,,	,,	28
4	,,	,,	4	1	,,	,,	32
7	,,	,,	5	67	,,	,,	37
2	,,	,,	9	3	,,	,,	38
9	,,	,,	12	2	,,	,,	41
4	,,	,,	12A	1	,,	,,	48A
1	,,	,,	14	3	,,	,,	48B
2	,,	,,	15	3	,,	,,	53
1	,,	,,	16	2	,,	,,	54
4	,,	,,	19A	7	,,	,,	59
2	,,	,,	22	2	,,	,,	126A

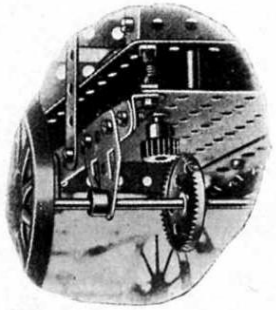
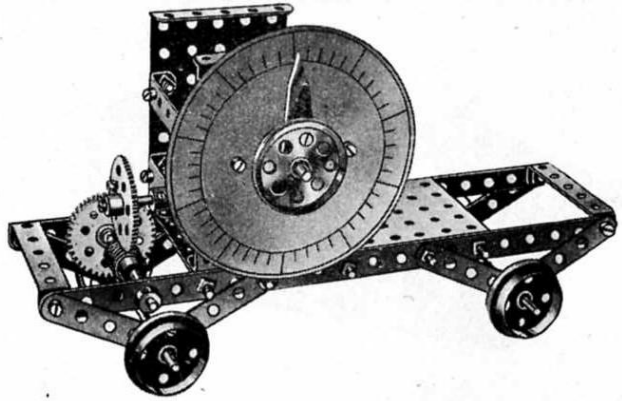


FIG. 540A.

Model No. 541 Distance Indicator



Parts required :

4	of	No.	2
4	,,	,,	3
8	,,	,,	5
10	,,	,,	12
2	,,	,,	15
2	,,	,,	15A
1	,,	,,	16
1	,,	,,	17
4	,,	,,	20
1	,,	,,	21
2	,,	,,	22
1	,,	,,	24
2	,,	,,	26
2	,,	,,	27A
1	,,	,,	28
1	,,	,,	32
38	,,	,,	37
2	,,	,,	48A
1	,,	,,	52
2	,,	,,	53
6	,,	,,	59

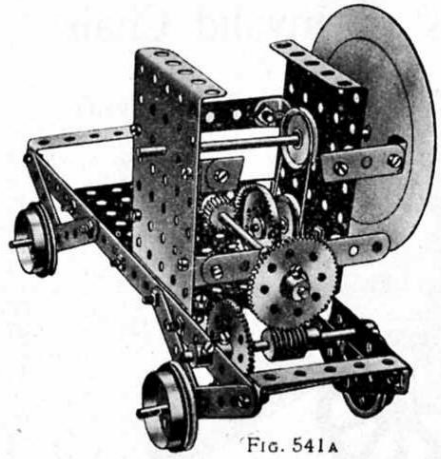


FIG. 541A

N.B. Cardboard piece not supplied.

These Models can be made with MECCANO Outfit No. 5, or No. 4 and No. 4A.

Model No. 542

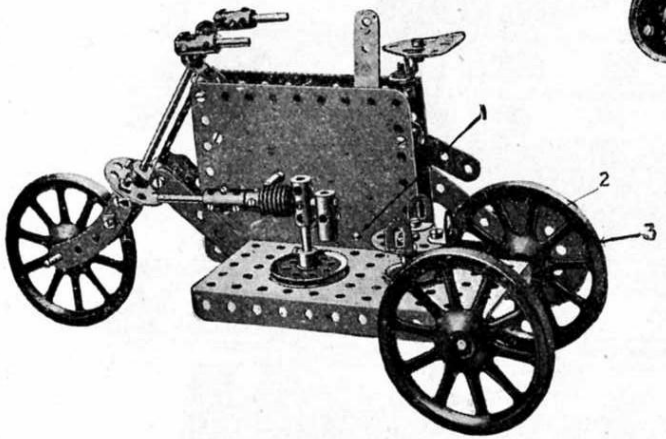
Armored Motor Tricycle

Parts required :

2 of No. 2	4 of No. 18A	1 of No. 52
2 „ „ 5	3 „ „ 19A	1 „ „ 59
1 „ „ 9D	1 „ „ 21	6 „ „ 63
2 „ „ 11	3 „ „ 22	2 „ „ 90
4 „ „ 12	2 „ „ 24	1 „ „ 95
2 „ „ 12B	1 „ „ 32	1 „ „ 96
1 „ „ 15A	22 „ „ 37	1 „ „ 125
2 „ „ 16	10 „ „ 38	1 „ „ 126A
2 „ „ 17	1 „ „ 48A	

1 Clockwork Motor

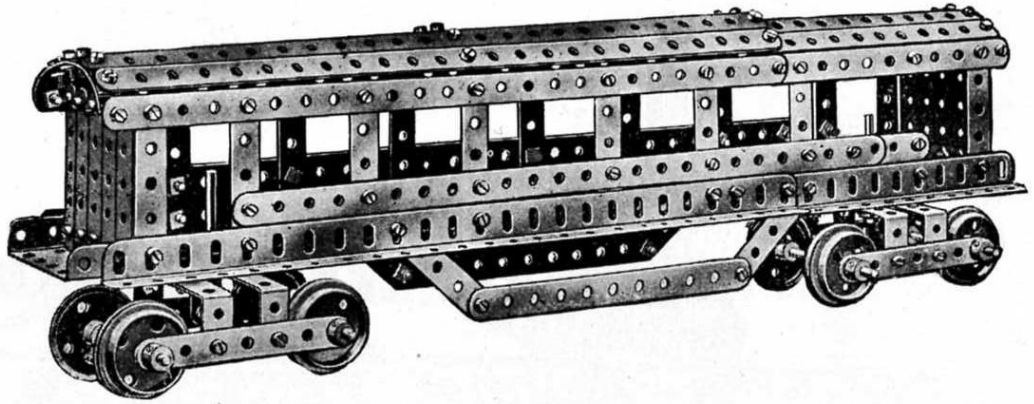
(Not included in outfits.)



This is driven from the motor spindle 1, a small sprocket wheel at the rear, not shown in the illustration, being geared by a chain to the larger sprocket wheel 2 bolted on the axle rod of the rear wheels 3.

Model No. 543

Pullman Car



Parts required :

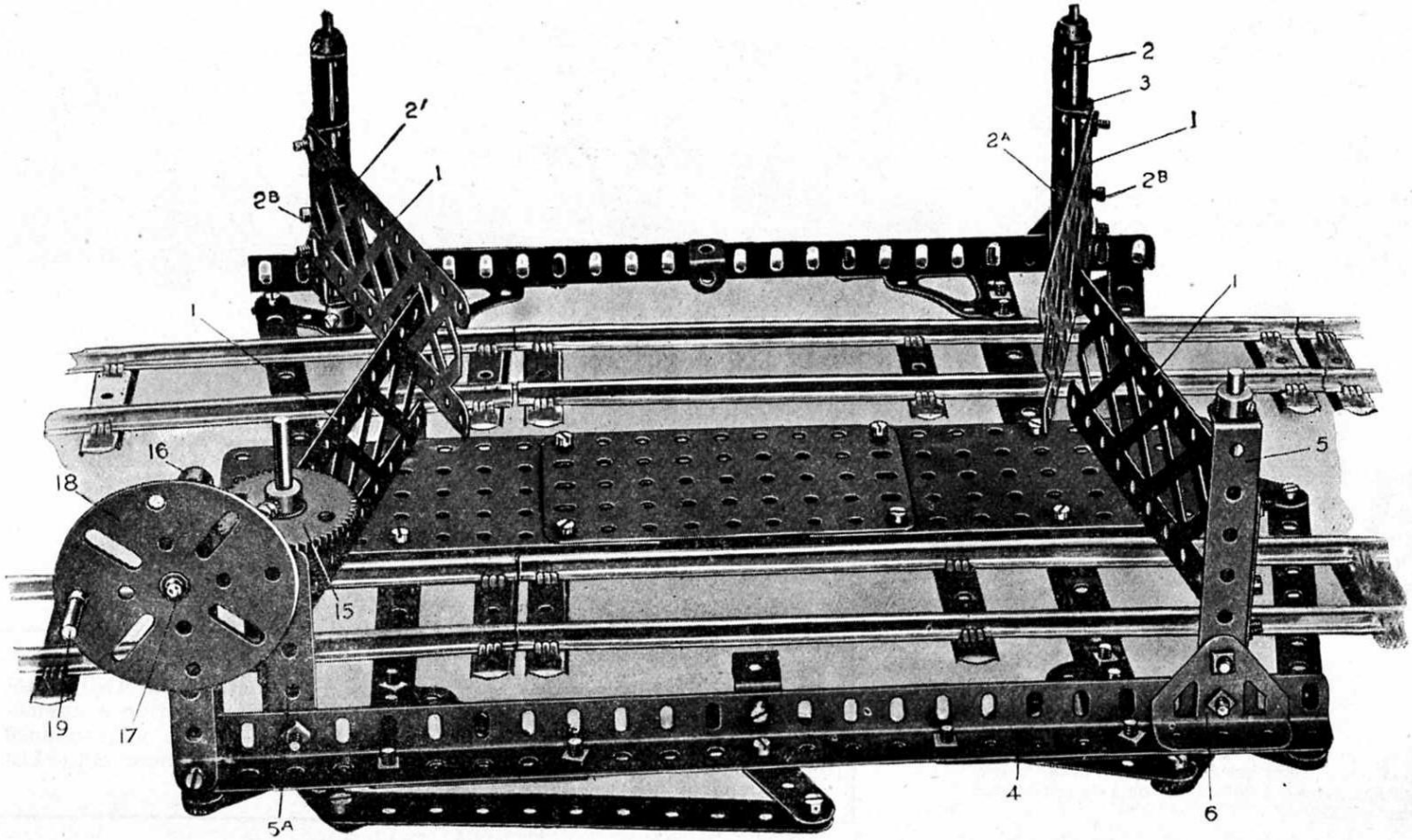
9 of No. 1	4 of No. 8	2 of No. 21
9 „ „ 2	4 „ „ 16	116 „ „ 37
8 „ „ 3	2 „ „ 17	4 „ „ 46
34 „ „ 5	8 „ „ 20	3 „ „ 52
	10 of No. 59	

HOW TO CONTINUE

This completes the Models which may be made with MECCANO Outfit No. 5. 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. 5A Accessory Outfit, the price of which will be found in the List at the end of the Manual.

This Model can be made with MECCANO Outfit No. 6, or No. 5 and No. 5A.

Model No. 601 Level Crossing Gates



This Model can be made with MECCANO Outfit No. 6, or No. 5 and No. 5A.

Model No. 601 Level Crossing Gates *(continued)*

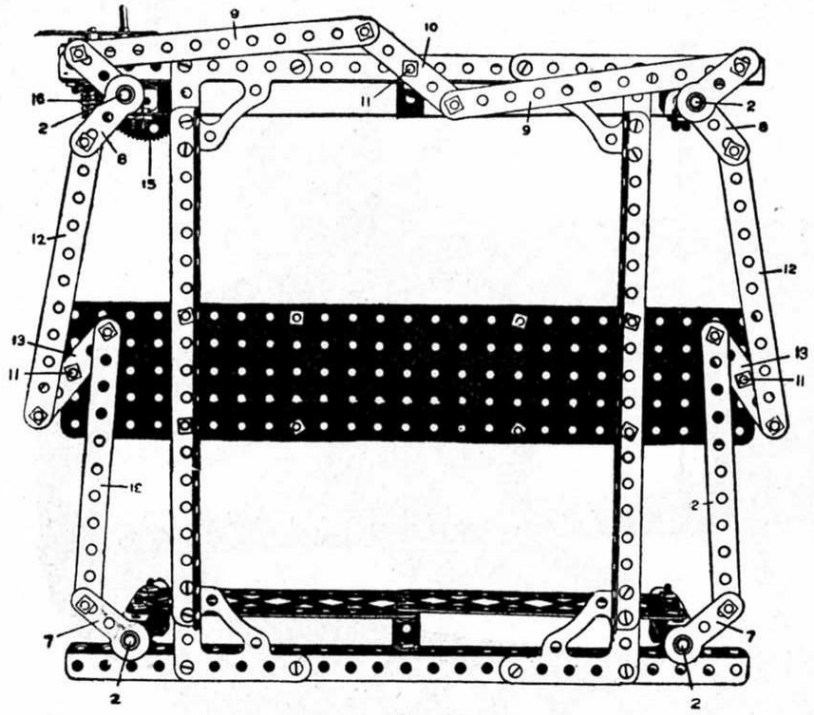


FIG. 601A

Parts required :

6	of	No.	2
2	,,	,,	4
3	,,	,,	5
1	,,	,,	6A
2	,,	,,	8
2	,,	,,	8A
4	,,	,,	11
4	,,	,,	15A
1	,,	,,	17
1	,,	,,	27A
1	,,	,,	32
53	,,	,,	37
16	,,	,,	37A
4	,,	,,	48A
3	,,	,,	48B
1	,,	,,	53A
7	,,	,,	59
2	,,	,,	62
3	,,	,,	70
4	,,	,,	100
4	,,	,,	108
1	,,	,,	109
1	,,	,,	115
3	,,	,,	126
2	,,	,,	128

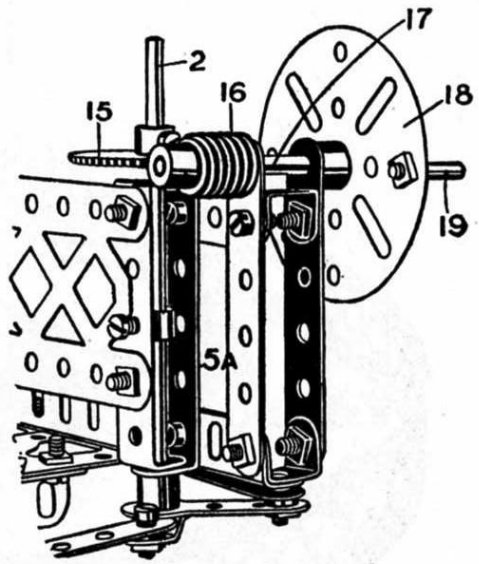


FIG. 601B

The gates consist of 5½″ braced girders 1 and are pivotally carried on the rods 2 being bolted to 2½″ by ½″ double angle strips 3. On each rod 2 is threaded a collar 2A, Fig. 601, and a bolt 2B is passed through the centre hole of the double angle strips 3 and screwed into the thread hole of the collar 2A, nipping the collar to the rod 2, thus ensuring that the braced girders 1 shall turn with the rods 2. Three of the rods 2 are carried from the lower angle girders 4 in 3½″ by ½″ double angle strips 5, and one in a 2½″ by ½″ double angle strip 5A, the feet of the strips 5 being reinforced to the angle girders 4 by the trunnions 6. The rods 2 are coupled together by cranks 7 on the rear rods, and bell cranks 8 on the other rods, the ends of the two bell cranks being connected by strips 9 to 2½″ strip 10 pivoted on the bolt 11, Fig. 601A, while the bell cranks 8 are connected to the cranks 7 by other strips 12, pivotally connected to 2½″ strips 13, pivoted on the bolts 14. Consequently, all the rods 2 are inter-connected. As will be seen from the Figs. 601 and 601B, a 56-toothed gear wheel 15 is secured on one of the rods 2, and is engaged by a worm 16 on a rod 17 to which is secured a face plate 18, fitted with a threaded pin 19, as an operating handle. **By turning the face plate 18 the spindles 2 are all rotated, and the gates caused to open or close.**

This Model can be made with MECCANO Outfit No. 6, or No. 5 and No. 5A.

Model No. 602

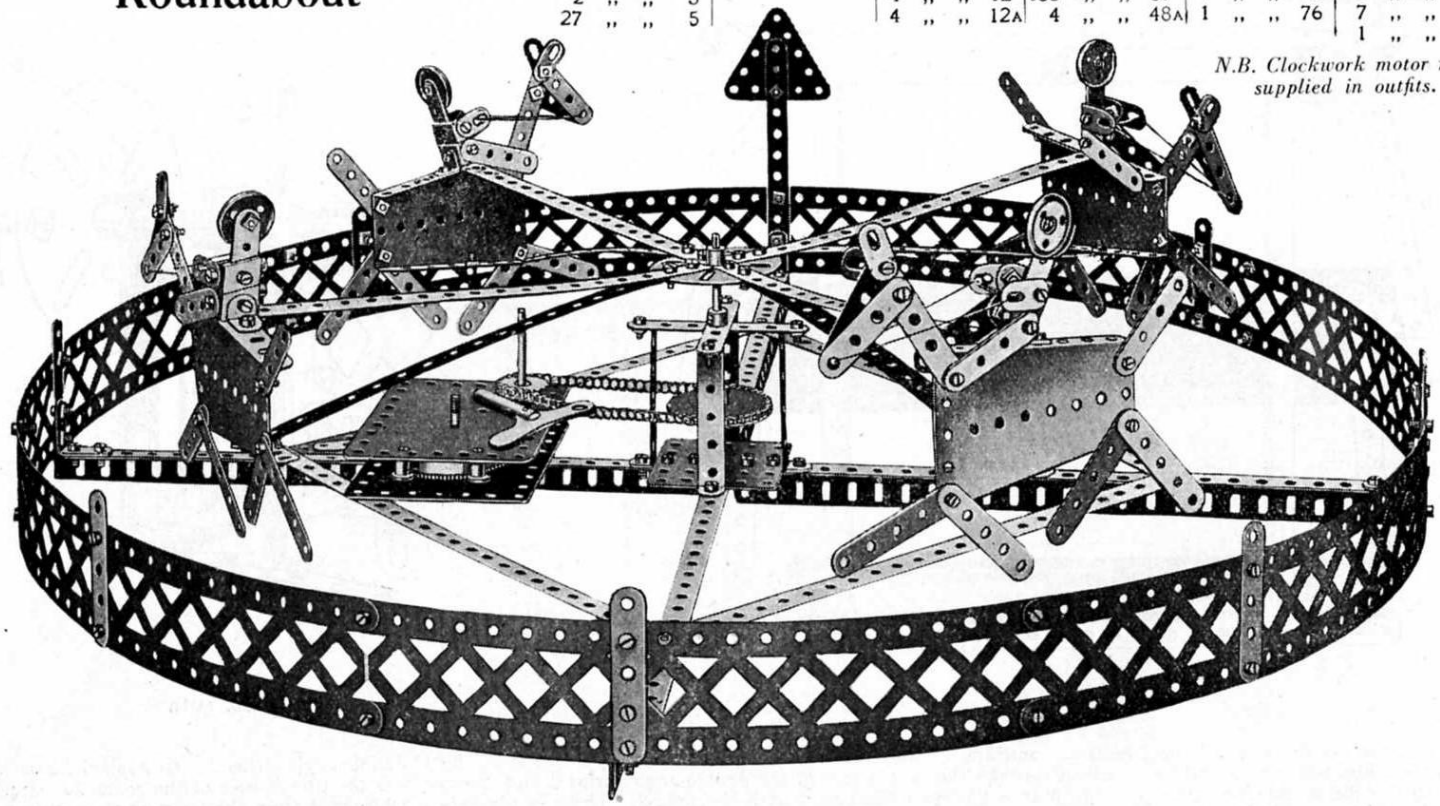
Roundabout

Parts required:

12	of	No.	1	24	of	No.	6	16	of	No.	10	1	of	No.	15	4	of	No.	54
1	,,	,,	2	4	,,	,,	8	8	,,	,,	11	4	,,	,,	22A	2	,,	,,	59
2	,,	,,	3					4	,,	,,	12	135	,,	,,	37	1	,,	,,	72
27	,,	,,	5					4	,,	,,	12A	4	,,	,,	48A	1	,,	,,	76

14"	of	No.	94
1	,,	,,	95
1	,,	,,	96
7	,,	,,	99
1	,,	,,	109

N.B. Clockwork motor not supplied in outfits.



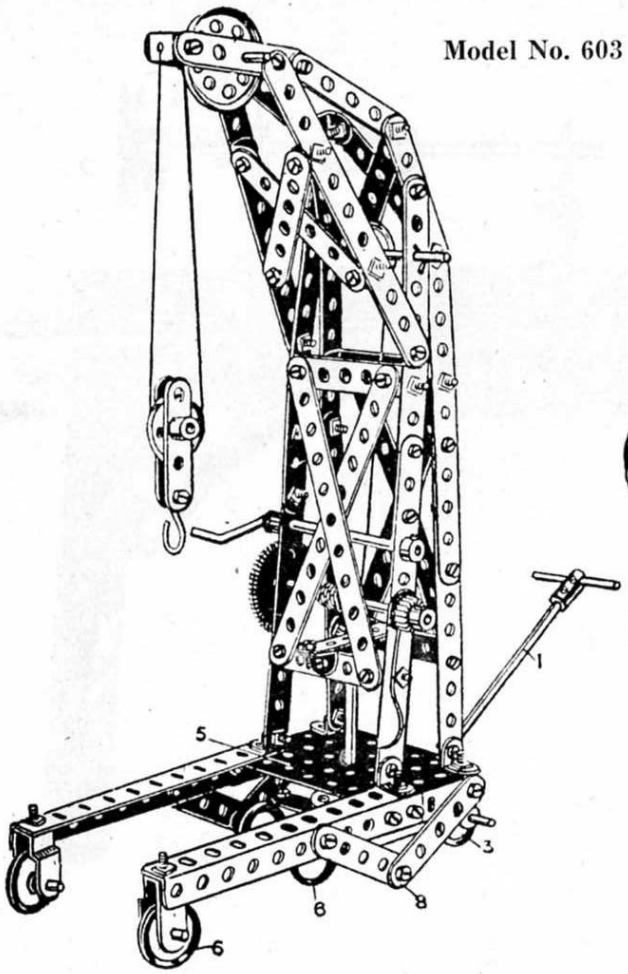
In this model the animals, built up from sector plates and short strips to represent the limbs, are carried from 9½" strips bolted to a face plate, which is rotated from the centre rod by means of a chain and a 1" sprocket wheel connected to the spring motor.

The centre rod, by means of which the rotating figures are driven, is supported below the face plate by a light framing to give rigidity.

The model is surrounded by braced girder strips bolted together, and strengthened by 12½" cross angle girders, connected in the centre by a 2½" by 2½" flat plate. The centre hole of this plate carries the lower end of the vertical rod upon which the animals are mounted.

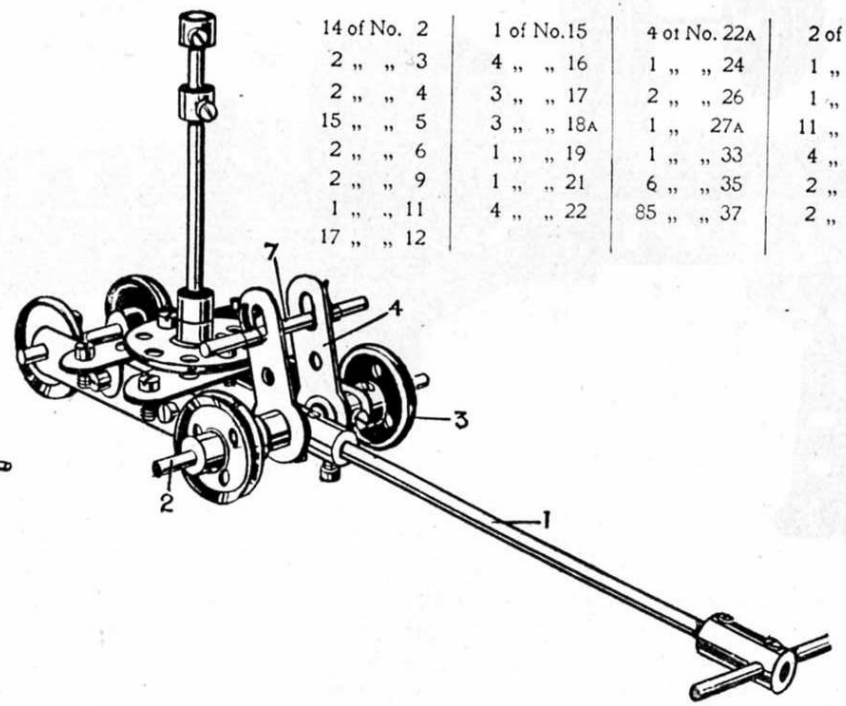
This Model can be made with MECCANO Outfit No. 6, or No. 5 and No. 5A.

Model No. 603 Portable Crane



Parts Required :

14 of No. 2	1 of No. 15	4 of No. 22A	2 of No. 38
2 „ „ 3	4 „ „ 16	1 „ „ 24	1 „ „ 53
2 „ „ 4	3 „ „ 17	2 „ „ 26	1 „ „ 57
15 „ „ 5	3 „ „ 18A	1 „ „ 27A	11 „ „ 59
2 „ „ 6	1 „ „ 19	1 „ „ 33	4 „ „ 48A
2 „ „ 9	1 „ „ 21	6 „ „ 35	2 „ „ 62
1 „ „ 11	4 „ „ 22	85 „ „ 37	2 „ „ 63
17 „ „ 12			

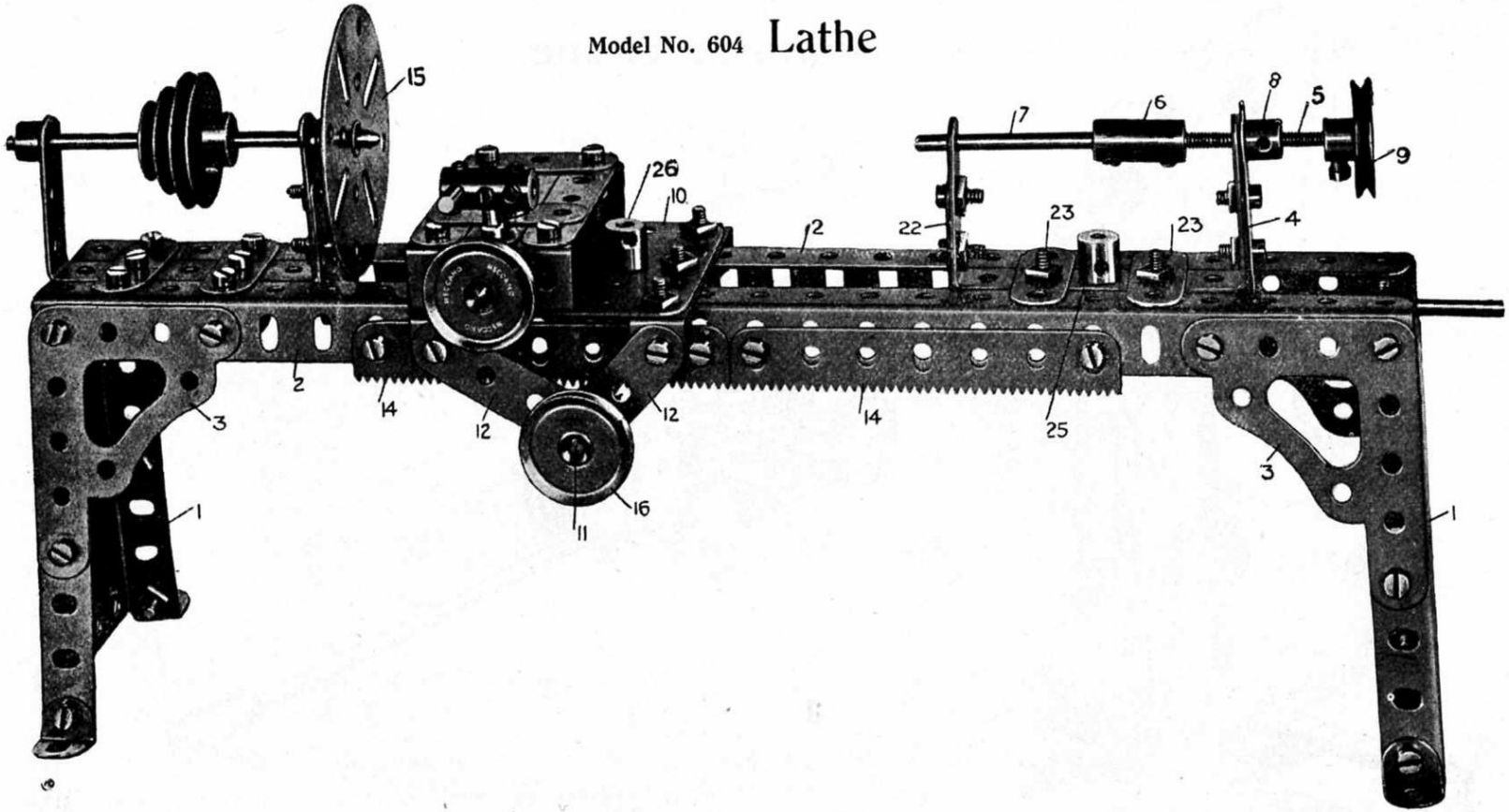


cranks 4 when the handle 1 is depressed engage an angle engagement with the plate 5. When the crane is brought to rest the strips together with the front wheels 6 then support the crane

The construction of the tower is quite clear from the illustration. The crane is moved about by depressing the handle 1 carrying an axle 2 for the 1″ loose pulley wheels 3, which are secured in position by collars and set screws. A pair of cranks 4 are secured to the axle 2 and are arranged when the handle is depressed to bear against the underface of the small rectangular plate 5 and lift the crane so that it then runs on the wheels 3 and 6. The tips of the bracket to stop the spindle 7 from coming completely away from its weight forces down the cranks 4 which raises the handle 1, and the tips 8 of

This Model can be made with MECCANO Outfit No. 6, or No. 5 and No. 5A.

Model No. 604 Lathe



Parts required :

3	of No. 5	2	of No. 8	1	of No. 13	3	of No. 22	3	of No. 38	2	of No. 54	2	of No. 63	1	of No. 80A	1	of No. 109
3	,, ,, 6	4	,, ,, 11	2	,, ,, 16	1	,, ,, 26	2	,, ,, 47	3	,, ,, 59	3	,, ,, 64	1	,, ,, 81	2	,, ,, 110
14	,, ,, 6A	4	,, ,, 12	1	,, ,, 17	53	,, ,, 37	4	,, ,, 48A	1	,, ,, 62A	1	,, ,, 72	4	,, ,, 108	1	,, ,, 115
								1	of No. 123								

This Model can be made with MECCANO Outfit No. 6, or No. 5 and No. 5A.

Model No. 604 Lathe *(continued)*

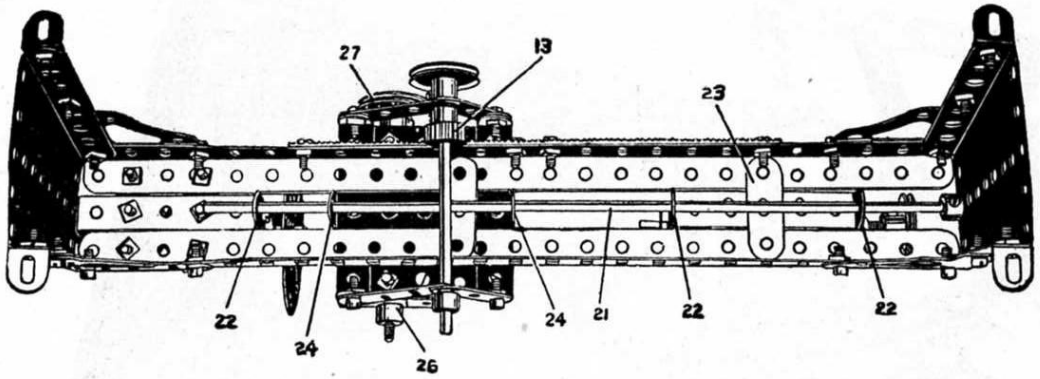


FIG. 604A

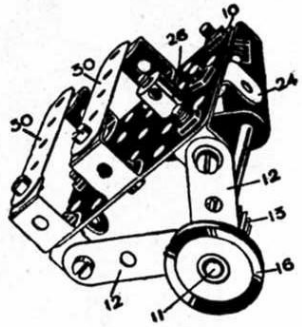


FIG. 604B

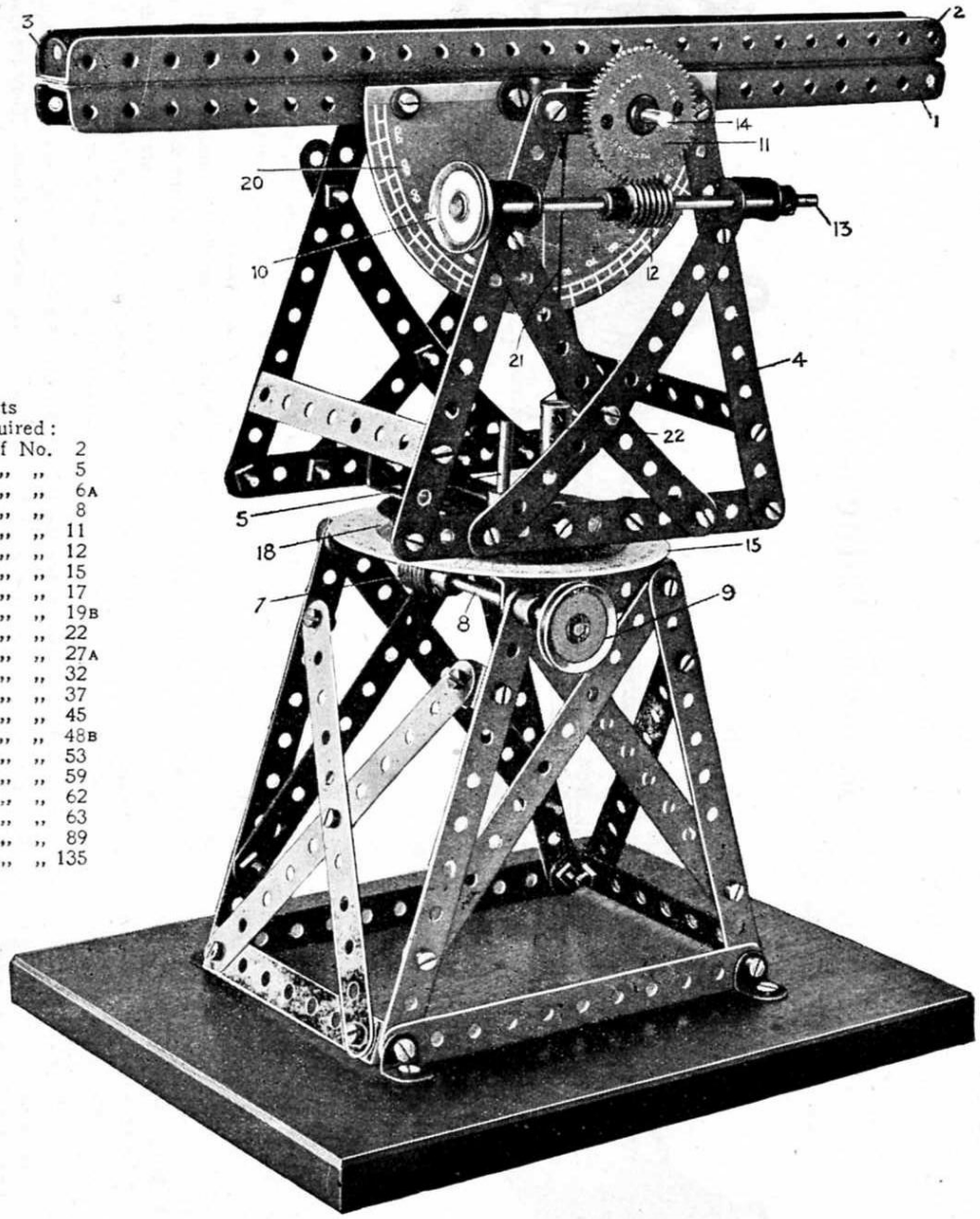
FIG. 604C

The lathe frame is built up from sector plates 1, at each end bolted to 12½" angle girders 2, forming the bed, by means of architraves 3. The tail stock 4, slides between the angle girders 1, and has a screw adjustment 5, the screw of which is connected by the threaded coupling 6 to the rod 7; the screw 5 is threaded into a threaded crank 8, and is operated by the 1 pulley wheel 9. The tail stock is locked by turning the threaded boss 25, which engages the bolt holding the underneath cross strip 23, thus gripping it beneath the lathe bed. The saddle 10, consisting of a 2½" by 2½" flat plate, carries the rod 11, journalled in the strips 12, and carries a pinion 13, Fig. 604B. which engages the racks 14, so that the saddle may be moved to or from the face plate 15, by turning the pulley wheel 16. The traversing movement is obtained by means of the screw 17, which engages a threaded boss 18, into the end of which is screwed a threaded pin 19, carrying the coupling 20, which forms the tool post. The saddle is locked by the threaded boss 26, similar to the tail stock. The screwed rod 17, is held against end movement in the 2½" by ½" bent strip 17A. by the pulley wheel 27 at one side and the collar 28 on the other.

The construction of the saddle is shown in Figs. 604B and 604C, where the 1½" strips 29, of Fig. 604C are shown removed from Fig. 604B; these strips 29 are bolted at the end of the guide strips 30, Fig. 604B, and form guides for the 2½" strip 31, carrying the tool post. They are spaced apart by the thickness of the strips 30, and the 1½" strips 32, bolted to the strip 31, slide on the strips 30. As will be seen from the underneath view, Fig. 604A, a guide rod 21, is fixed beneath the bed plates, and is engaged by the end holes of the 1½" strips 22, secured to the sides of the head and tail stocks; 1½" strips 23, being bolted above and below to retain the tail stock in position. The saddle engages the rod 21 by means of a 2½" by ½" double angle strip 24.

This Model can be made with MECCANO Outfit No. 6, or No. 5 and No. 5A.

Model No. 605 Theodolite



Parts required :

20	of	No.	2
2	,,	,,	5
6	,,	,,	6A
4	,,	,,	8
2	,,	,,	11
10	,,	,,	12
3	,,	,,	15
1	,,	,,	17
1	,,	,,	19B
2	,,	,,	22
2	,,	,,	27A
2	,,	,,	32
60	,,	,,	37
1	,,	,,	45
6	,,	,,	48B
1	,,	,,	53
6	,,	,,	59
1	,,	,,	62
1	,,	,,	63
4	,,	,,	89
1	,,	,,	135

N.B. Semicircular protractor not supplied; can be cut out of cardboard.

This Model can be made with MECCANO Outfit No. 6, or No. 5 and No. 5A.

Model No. 605 Theodolite *(continued)*

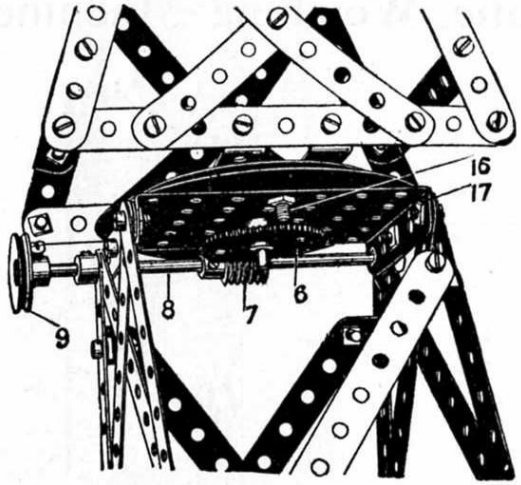


FIG. 605A

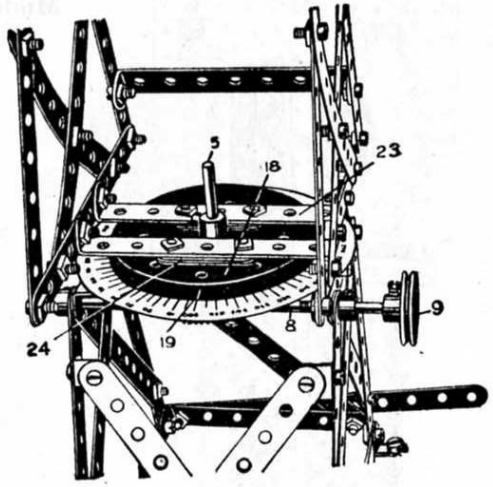


FIG. 605B

The Theodolite is represented by two reverse pairs of angle girders 1 and 2, which form a " sighting arm," an angle bracket 3 being bolted at one end to form an eye piece. A small piece of gummed paper is fastened over the aperture in the angle bracket, and a fine pin-hole made in the paper at the centre of the aperture. Two crossed threads are gummed across the aperture of the angle bracket bolted at the other end of the sighting arm.

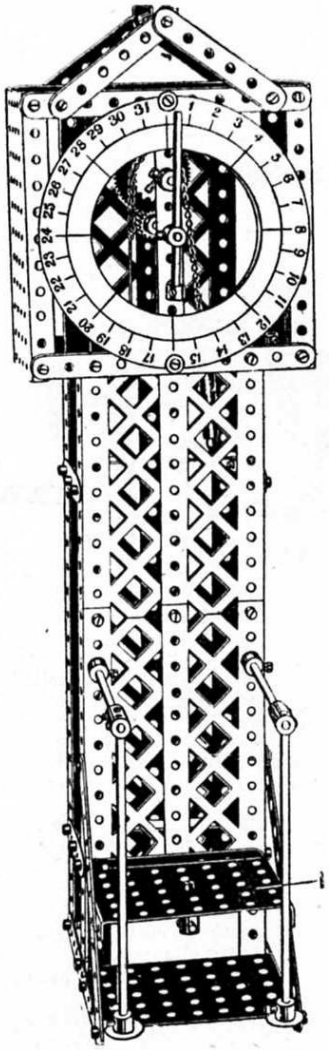
The upper framework 4 swivels horizontally with the vertical spindle 5 as a pivot. On the lower end of this rod is a gear wheel 6, Fig. 605A, engaged by a worm 7 on a rod 8, operated by the 1" pulley 9. This gives the horizontal traverse of the upper frame 4, in which the sighting arm is pivotally mounted upon a rod 14, on which is a gear wheel 11 engaged by a worm 12 on a rod 13 operated by a 1" pulley 10. This mechanism gives the vertical traverse or inclination of the sighting arm.

A protractor for the horizontal angular movement of the upper frame 4 consists of a graduated cardboard disc 15, which is bolted by a bolt 16 to a perforated flanged plate 3½" by 2½" 17, the head of the bolt 16 being above the cardboard disc, and beneath the 3" pulley wheel 18. The cardboard disc is thus held against movement by the bolt 16, its centre hole engaging round the pivot rod 5. An index mark or pointer 19 is made on the pulley wheel 18. The movement of this pointer round the graduated scale on the disc shows the horizontal angular traverse.

Similarly, the vertical traverse of the sighting arm is indicated by means of a semi-circular protractor 20, bolted to the lower angle girder 1 of the sighting arm, a cord 21 carrying a weight 22, being hung from the rod 14, the position of the thread 21 over the protractor 20 indicating the vertical angular adjustment of the sighting arm. The thread 21 has a loop by which it is hung on the rod 14, so that its direction always points truly radially to the rod 14, and this gives the correct angular reading. In order to bring the double angle strips 23 flush with the outer rim of the pulley wheel 18, three 1½" packing strips 24 are bolted beneath the double angle strips, as shown in Fig. 605B.

The sighting arm is secured to the rod 14 by a crank bolted to the arm on the opposite side to the protractor and nipped by the set screw to the rod 14.

This Model can be made with MECCANO Outfit No. 6, or No. 5 and No. 5A.



Model No. 606 Automatic Weighing Machine

Parts Required

9 of No	2	61 of No.	37
4 „ „	3	6″ „ „	42
4 „ „	4	1 „ „	43
4 „ „	5	2 „ „	52
4 „ „	8	2 „ „	53
4 „ „	12	6 „ „	59
1 „ „	13	1 „ „	48A
2 „ „	15A	2 „ „	62
4 „ „	16	3 „ „	63
1 „ „	24	1 „ „	96
1 „ „	26	2 „ „	99
1 „ „	27	6 „ „	100

N.B. Weight indicator not supplied; may be cut out of cardboard.

The platform 1 is connected by cross rod and coupling 2A to a rod 2 passing up the centre of the machine and guided in 3½″ strips 3 connected to side strips 4. At the upper end of this rod 2 is a bush wheel 5, to which is connected a cord 6 and chain 7 which passes round the sprocket wheel 8 on the spindle of which is a gear wheel 9 engaging a pinion 10 on the spindle 12 carrying the pointer 13. The other end of the chain is coupled by a spring 14 to the frame, and the pointer is thus always returned to zero.

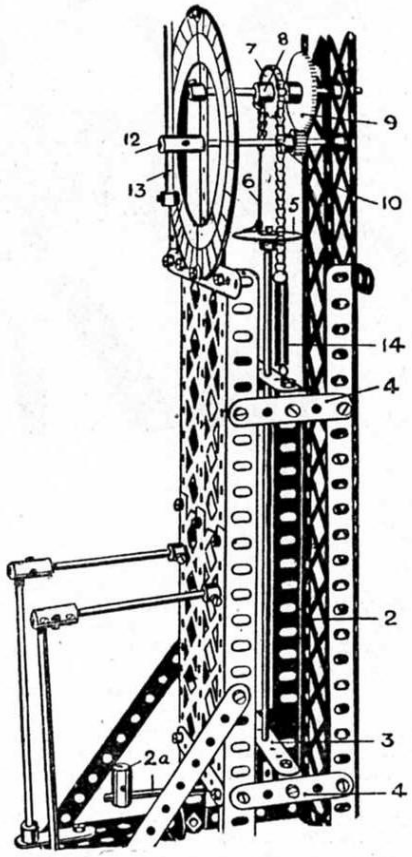
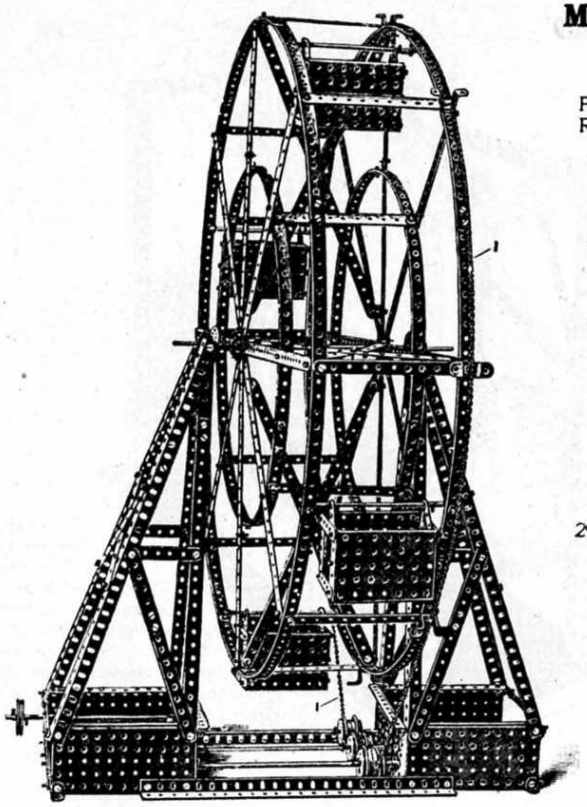


Fig. 606A

Model No. 607 Big Wheel



Parts Required

46	of No	1
24	" "	2
4	" "	3
4	" "	4
34	" "	5
10	" "	8
4	" "	9
8	" "	11
68	" "	12
5	" "	13
1	" "	14
4	" "	15
6	" "	20
1	" "	21
4	" "	24
2	" "	25
2	" "	27A
12	" "	35
292	" "	37
6	" "	52
8	" "	53
2	" "	54
4	" "	59
1	" "	94

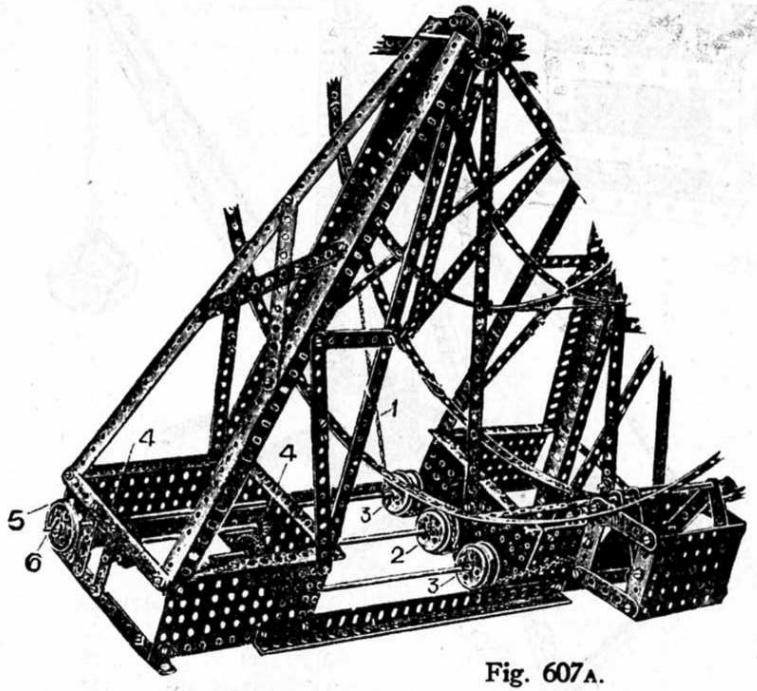


Fig. 607A.

In constructing this model flanged plates are used to form the sides and inner part of the base of the side pedestals and also to form the suspended cages on the wheel.

The driving chain is conveniently kept in position round the periphery of one of the side elements of the wheel by a series of double angle brackets bolted on the ends of the spokes.

In Fig. **607A** is shown how the driving chain 1, passing round the driving wheel 2, is held around the circumference thereof by the guide wheels 3. The driving wheel 2 is driven through the gear wheel 4 from a $1\frac{1}{2}$" pulley wheel 5 carried on the spindle 6.

Model No. 608 Steam Shovel

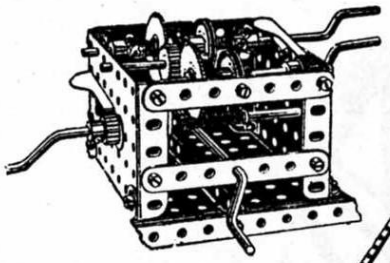
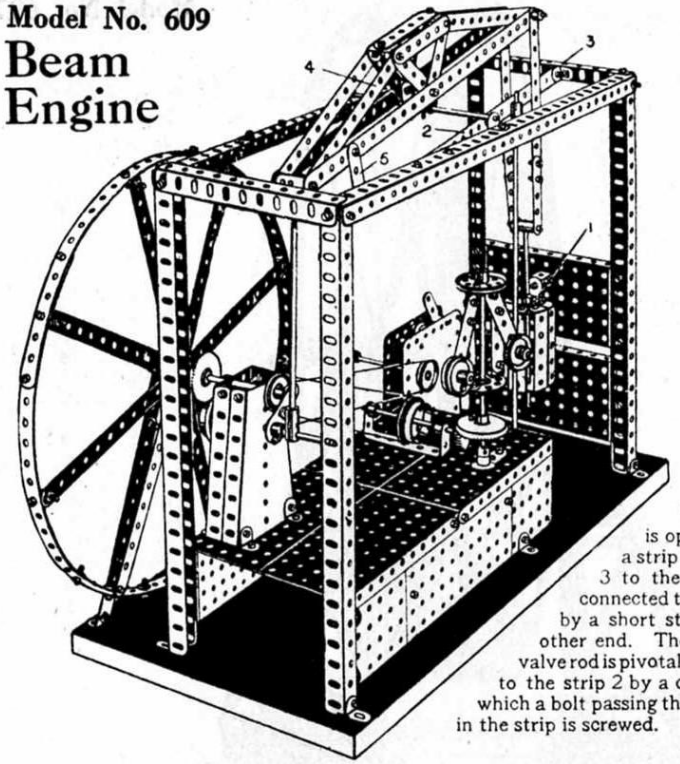


Fig. 608A.

Parts Required:

10 of No. 1	18 of No. 8	1 of No. 16	1 of No. 28
12 „ „ 3	2 „ „ 9	4 „ „ 17	2 „ „ 33
4 „ „ 4	3 „ „ 10	3 „ „ 19	2 „ „ 35
16 „ „ 5	2 „ „ 11	1 „ „ 19A	188 „ „ 37
4 „ „ 6	28 „ „ 12	8 „ „ 20	2 „ „ 45
	1 „ „ 13	1 „ „ 21	3 „ „ 46
		2 „ „ 22	4 „ „ 52
		3 „ „ 22A	4 „ „ 53
		2 „ „ 24	11 „ „ 59
		4 „ „ 26	6 „ „ 48A
		2 „ „ 27	1 „ „ 63

Model No. 609 Beam Engine



The valve 1 is operated from a strip 2 pivoted at 3 to the frame and connected to the beam 4 by a short strip 5 at the other end. The top of the valve rod is pivotally connected to the strip 2 by a coupling into which a bolt passing through a hole in the strip is screwed.

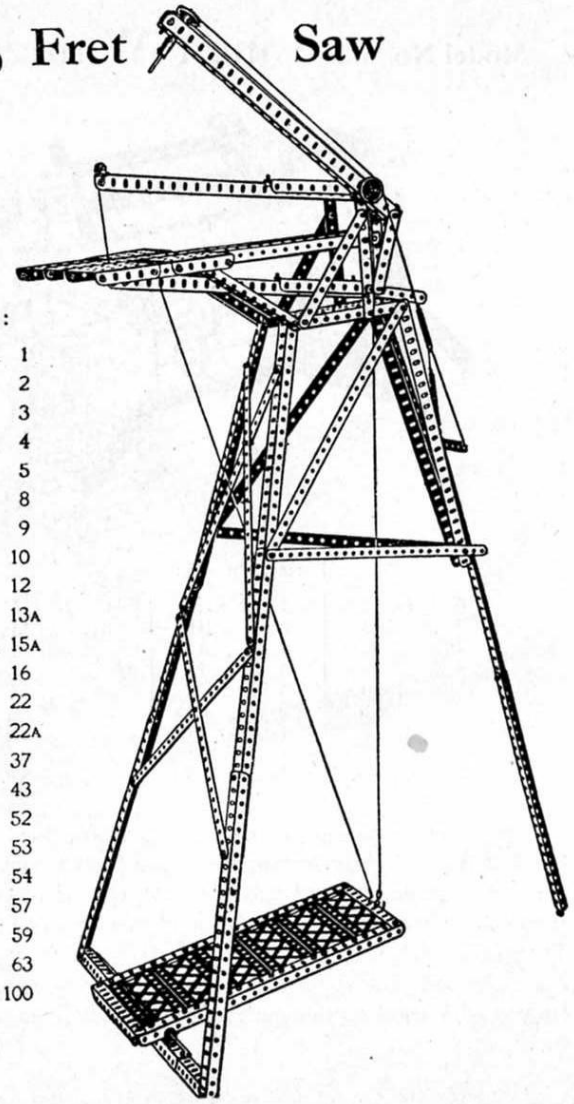
Parts Required:

7 of No. 1	27 of No. 12	2 of No. 21	1 of No. 50
18 „ „ 2	1 „ „ 13	5 „ „ 22	7 „ „ 52
3 „ „ 4	1 „ „ 13A	2 „ „ 23	4 „ „ 53
10 „ „ 5	1 „ „ 14	4 „ „ 24	2 „ „ 54
1 „ „ 6	3 „ „ 15	2 „ „ 26	7 „ „ 59
8 „ „ 8	1 „ „ 16	1 „ „ 27	6 „ „ 48A
4 „ „ 9	2 „ „ 17	1 „ „ 28	3 „ „ 62
6 „ „ 10	2 „ „ 18	149 „ „ 37	5 „ „ 63
4 „ „ 11	2 „ „ 20	1 „ „ 46	

N.B. Clockwork motor not included in outfits.

These Models Can be Made with MECCANO Outfit No. 6, or No. 5 and No. 5A

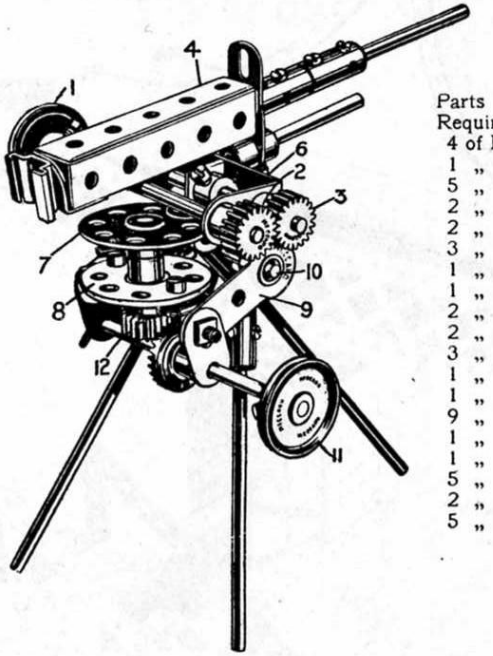
Model No. 610 Fret Saw



Parts Required:

8	of No.	1
6	„ „	2
3	„ „	3
1	„ „	4
1	„ „	5
20	„ „	8
4	„ „	9
2	„ „	10
3	„ „	12
1	„ „	13A
2	„ „	15A
1	„ „	16
1	„ „	22
2	„ „	22A
98	„ „	37
2	„ „	43
2	„ „	52
4	„ „	53
2	„ „	54
2	„ „	57
4	„ „	59
1	„ „	63
6	„ „	100

Model No. 611 Maxim Gun



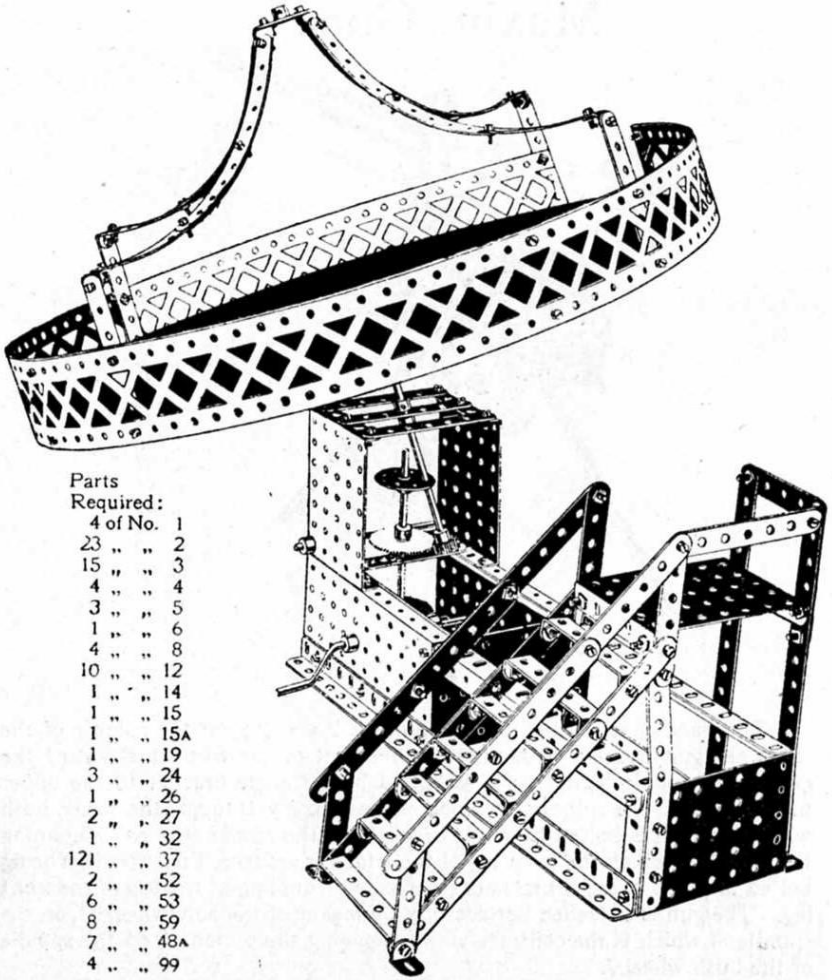
Parts Required:

4	of No.	10
1	„ „	11
5	„ „	12
2	„ „	15
2	„ „	15A
3	„ „	16
1	„ „	17
1	„ „	18
2	„ „	22
2	„ „	24
3	„ „	26
1	„ „	29
1	„ „	35
9	„ „	37
1	„ „	46
1	„ „	50
5	„ „	59
2	„ „	62
5	„ „	63

The handwheel 1 operates the pinions 2 and 3; on the spindle of the latter the gun frame 4 is mounted, movement of the wheel 1 elevating the gun. The double bent strip 6 is bolted by an angle bracket to the upper bush wheel 7, the spindle of which passes loosely through the lower bush wheel 8, which is bolted by angle brackets to the cranks 9, a rod 10 joining the cranks to which the front leg of the tripod is secured, the other legs being bolted to a pair of angle brackets secured to a coupling at the top of the front leg. The gun is swivelled horizontally by means of the handwheel 11, on the spindle of which is the contrate wheel engaging the pinion 12 on the spindle of the bush wheel 7.

These Models Can be Made with MECCANO Outfit No. 6, or No. 5 and No. 5A

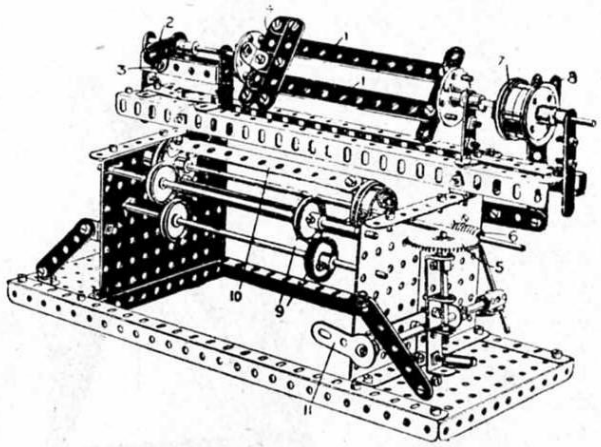
Model No. 612 Joy Wheel



Parts Required:

4	of No.	1
23	„ „	2
15	„ „	3
4	„ „	4
3	„ „	5
1	„ „	6
4	„ „	8
10	„ „	12
1	„ „	14
1	„ „	15
1	„ „	15A
1	„ „	19
3	„ „	24
1	„ „	26
2	„ „	27
1	„ „	32
121	„ „	37
2	„ „	52
6	„ „	53
8	„ „	59
7	„ „	48A
4	„ „	99

Model No. 613 Linen Winder



Parts Required:

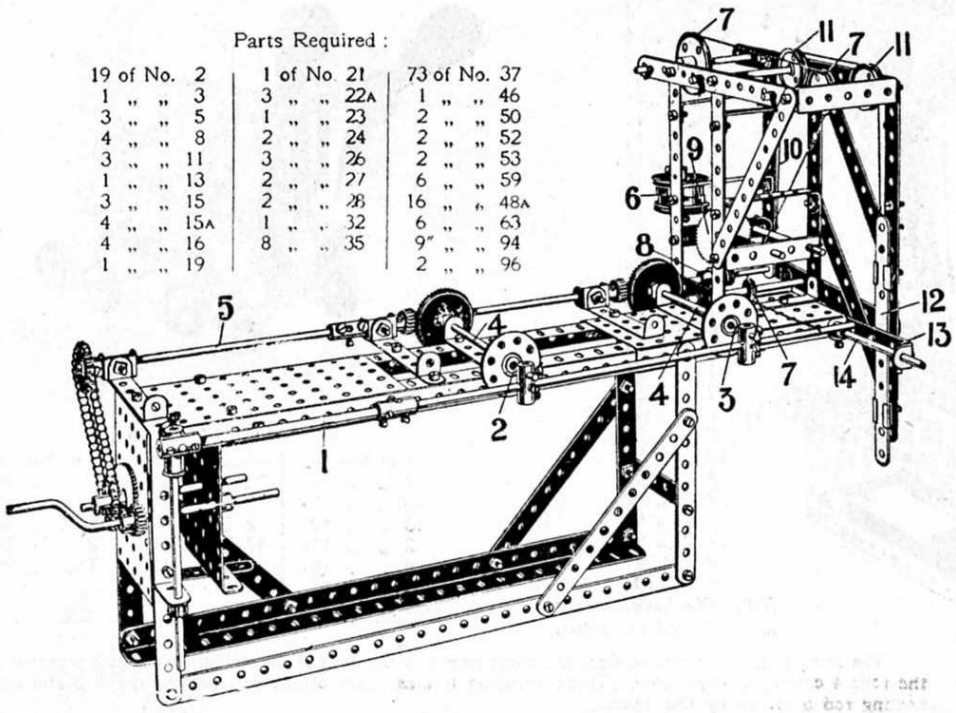
6	of No. 2	
2	„ „ 3	
12	„ „ 5	
4	„ „ 8	
11	„ „ 10	
2	„ „ 11	
16	„ „ 12	
1	„ „ 13	
2	„ „ 13A	
1	of No. 15	
3	„ „ 16	
1	„ „ 17	
4	„ „ 20	
4	„ „ 22	
2	„ „ 24	
1	„ „ 27	
1	„ „ 32	
5	„ „ 35	
94	of No. 37	
1	„ „ 43	
1	„ „ 44	
2	„ „ 46	
2	„ „ 52	
7	„ „ 59	
3	„ „ 4	
2	„ „ 62	
1	„ „ 63	

In order to disengage the winding frame bars 1 the crank 2 is lifted clear of the stop 3 and drawn back, this action disengaging the end cross strips 4 from the tips of the frame bars 1 and permitting the wound linen to be removed. The gear wheel 5 engaging the worm 6 forms a counter. 7 are the bell pulleys, and 8 the bell striker operated by crank 11 ; 9 are the guide pulleys for the main linen drums 10.

Model No. 614 Profiling Machine

Parts Required :

19 of No. 2	1 of No. 21	73 of No. 37
1 „ „ 3	3 „ „ 22A	1 „ „ 46
3 „ „ 5	1 „ „ 23	2 „ „ 50
4 „ „ 8	2 „ „ 24	2 „ „ 52
3 „ „ 11	3 „ „ 26	2 „ „ 53
1 „ „ 13	2 „ „ 27	6 „ „ 59
3 „ „ 15	2 „ „ 28	16 „ „ 48A
4 „ „ 15A	1 „ „ 32	6 „ „ 63
4 „ „ 16	8 „ „ 35	9" „ „ 94
1 „ „ 19		2 „ „ 96

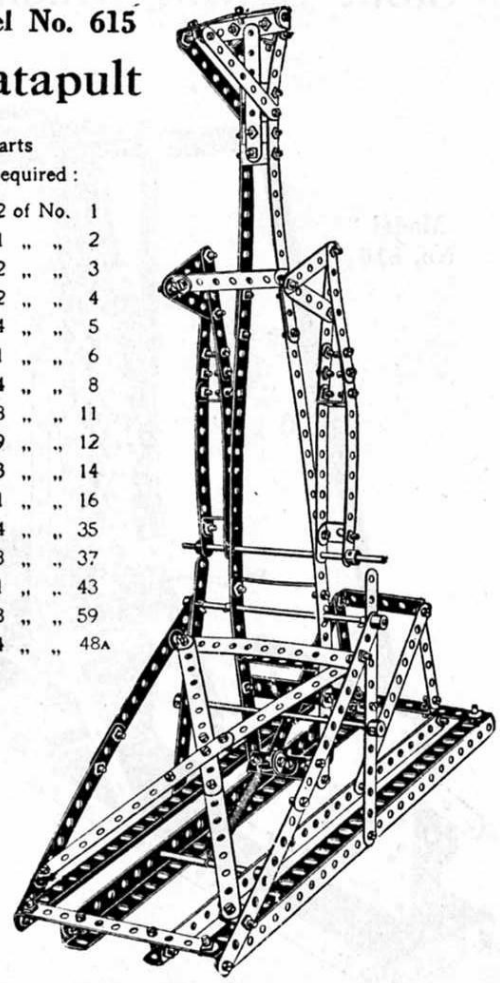


The side shaft 1 carries the follower tool 2 of the medal to be copied, and the cutting tool 3 for the work. The copy and work are rotated by the shafts 4 from the driving shaft 5, and resilient pressure is imparted to the cutting tool 3 by means of a weight 6, the cord of which passes over pulley 7 and is connected to shaft 1. The vertical traverse of the tool is effected by the worm 8 engaging the spur wheel 9, a cord winding on its spindle and passing over pulleys 11 and being connected to the girder strip 12 bolted to the double bent strip 13, which forms a bearing for a rod 14 on which the end of the shaft 1 rests.

Model No. 615 Catapult

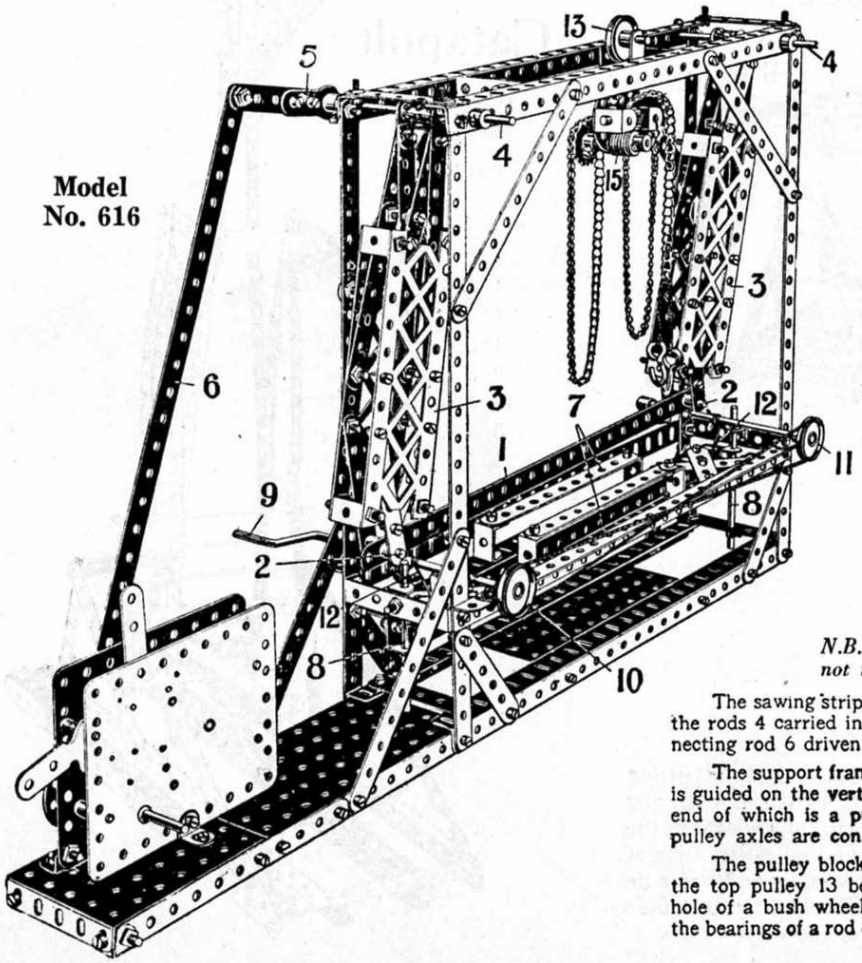
Parts Required :

2 of No. 1
21 „ „ 2
12 „ „ 3
2 „ „ 4
4 „ „ 5
1 „ „ 6
4 „ „ 8
8 „ „ 11
19 „ „ 12
3 „ „ 14
1 „ „ 16
4 „ „ 35
98 „ „ 37
1 „ „ 43
8 „ „ 59
4 „ „ 48A



Stone Sawing Machine

Model No. 616



Parts Required :

6	of No.	1
14	„ „	2
4	„ „	3
12	„ „	4
13	„ „	5
8	„ „	8
16	„ „	11
9	„ „	12
1	„ „	14
3	„ „	15A
2	„ „	16
2	„ „	17
1	„ „	19
3	„ „	22
2	„ „	24
1	„ „	26
1	„ „	32
6	„ „	35
126	„ „	37
1	„ „	44
2	„ „	52
1	„ „	53
2	„ „	57
10	„ „	59
4	„ „	48A
2	„ „	62
2	„ „	63
2	„ „	94
2	„ „	96
4	„ „	100

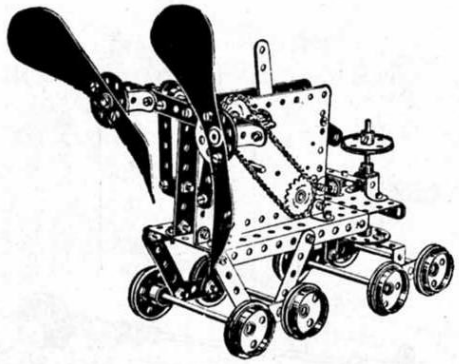
N.B. Clockwork motor not included in outfits.

The sawing strip 1 is carried from the short rods 2 in the ends of the swinging frames 3 pivoted on the rods 4 carried in the frame. These swinging frames 3 are oscillated from the crank 5 and connecting rod 6 driven by the motor.

The support frame 7 for the stone blocks to be sawn is raised and lowered as follows : The frame 7 is guided on the vertical rods 8 and raised and lowered by the operation of the crank handle 9 on the end of which is a pulley 10 connected by a cord to another pulley 11 End cords 12 wound on the pulley axles are connected to the support frame 7 and raise or lower it as required.

The pulley block runs upon a rod supported by two 2½" bent strips across the upper framework, the top pulley 13 being carried in a cranked bent strip bolted by an angle bracket to the upper hole of a bush wheel, which forms the framework of the pulley block, two double brackets forming the bearings of a rod on which is the pinion 14 engaged by the worm 15.

Model No. 617 Velocipede

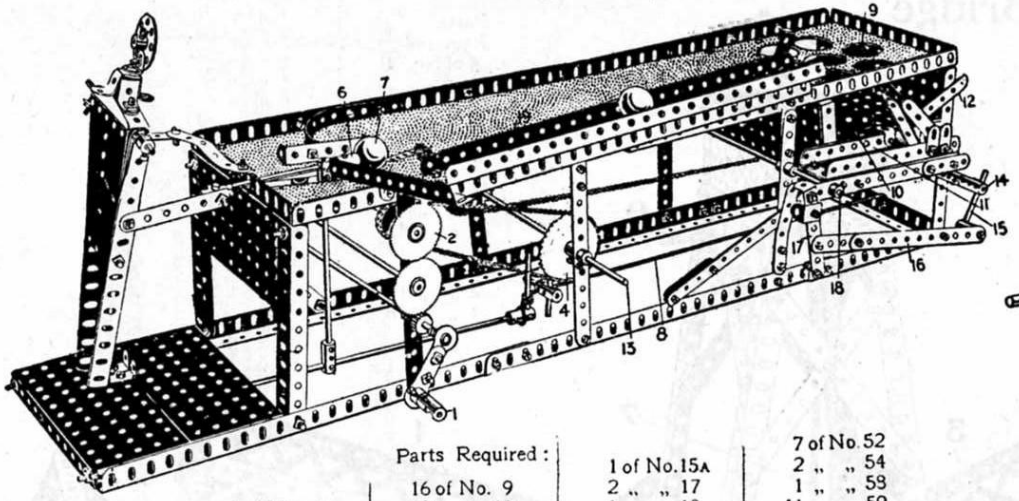


Parts Required :

1	of No.	2	8	of No.	20	3	of No.	45
1	„ „	4	3	„ „	24	1	„ „	46
10	„ „	5	2	„ „	26	1	„ „	52
10	„ „	12	2	„ „	29	1	„ „	53
2	„ „	15A	47	„ „	37	2	„ „	59
4	„ „	16	2	„ „	41	2	„ „	96
2	„ „	17						

These Models Can be Made with MECCANO Outfit No. 6, or No. 5 and No. 5A

Model No. 618 Bagatelle

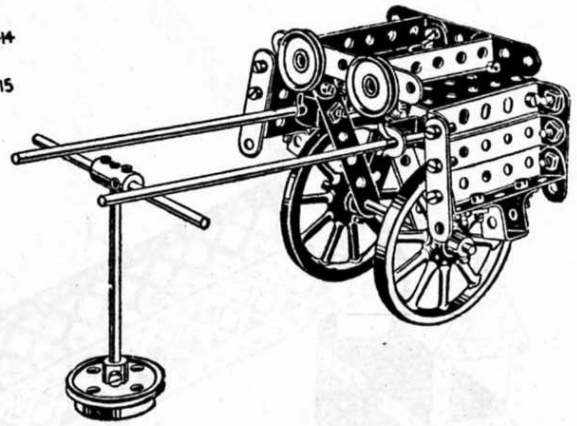


Parts Required :

1 of No. 1	16 of No. 9	1 of No. 15A	7 of No. 52
12 „ „ 2	9 „ „ 10	2 „ „ 17	2 „ „ 54
4 „ „ 4	3 „ „ 11	1 „ „ 18	1 „ „ 58
3 „ „ 5	12 „ „ 12	1 „ „ 24	11 „ „ 59
10 „ „ 6	1 „ „ 13	1 „ „ 26	4 „ „ 48A
12 „ „ 8	4 „ „ 13A	2 „ „ 27A	2 „ „ 62
	3 „ „ 14	137 „ „ 37	9 „ „ 63
		2 „ „ 45	3 „ „ 95
			1 „ „ 96

The operating handle 1 drives the gear wheel 2, a sprocket wheel on the spindle being coupled to a sprocket wheel 4. The spindle 5 of this carries a crank made by short rods and coupling, which crank engages at each revolution and pushes back a pusher-bar 6 by means of which the ball is driven forward. A spring cord 8 returns the pusher-rod. After the ball is driven forward, it drops down one of the holes 9 and is led by the guides into the lifting pocket. The ball is held back by a pivoted strip 12 which is caught and pulled down as the pocket 11 descends, permitting the ball to fall out. The pocket is raised by a chain passing over a 2" sprocket at the opposite end of rod 13, which is coupled to another 2" sprocket on spindle 14, which latter carries a rod 15 arranged as a crank coupled by strips 16 to an arm 17 on the pivot 18 of the lifting pocket 11. The ball is lifted by the pocket and deposited into the chute 19, by which it is returned to the pusher-arm 6.

Model No. 619 Jaunting Car



Parts Required :

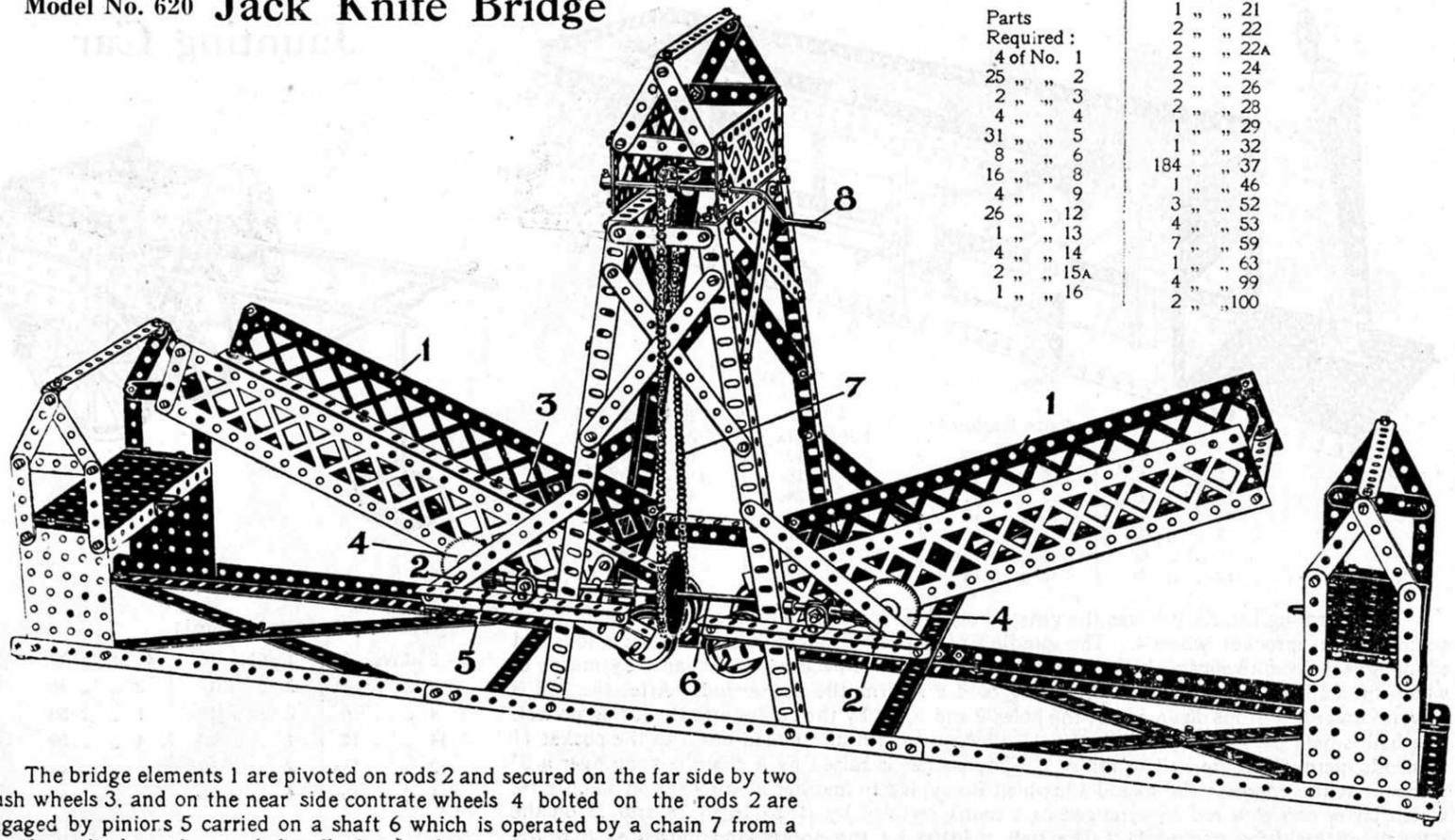
2 of No. 3	1 of No. 16	40 of No. 37
4 „ „ 4	2 „ „ 17	2 „ „ 45
4 „ „ 6	2 „ „ 19A	1 „ „ 53
14 „ „ 12	1 „ „ 20	4 „ „ 59
2 „ „ 13A	2 „ „ 22	8 „ „ 48A
1 „ „ 15	4 „ „ 35	1 „ „ 63

This Model Can be Made with MECCANO Outfit No. 6, or No. 5 and No. 5A

Model No. 620 Jack Knife Bridge

Parts Required :

4	of No.	1
25	„ „	2
2	„ „	3
4	„ „	4
31	„ „	5
8	„ „	6
16	„ „	8
4	„ „	9
26	„ „	12
1	„ „	13
4	„ „	14
2	„ „	15A
1	„ „	16
8	of No.	20
1	„ „	21
2	„ „	22
2	„ „	22A
2	„ „	24
2	„ „	26
2	„ „	28
1	„ „	29
1	„ „	32
184	„ „	37
1	„ „	46
3	„ „	52
4	„ „	53
7	„ „	59
1	„ „	63
4	„ „	99
2	„ „	100

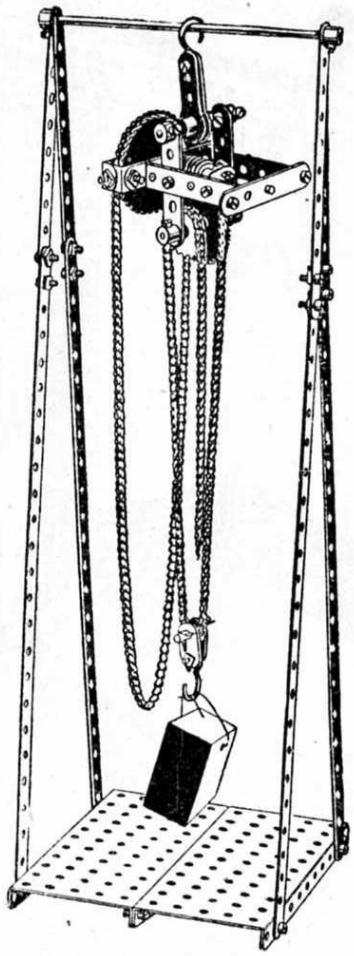


The bridge elements 1 are pivoted on rods 2 and secured on the far side by two bush wheels 3, and on the near side contrate wheels 4 bolted on the rods 2 are engaged by pinions 5 carried on a shaft 6 which is operated by a chain 7 from a sprocket wheel on the crank handle 8. In this way as the crank is rotated the shaft 6 swings the bridge elements 1 simultaneously.

These Models can be made with MECCANO Outfit No. 6, or No. 5 and 5A.

Model No. 621

Purchase Block

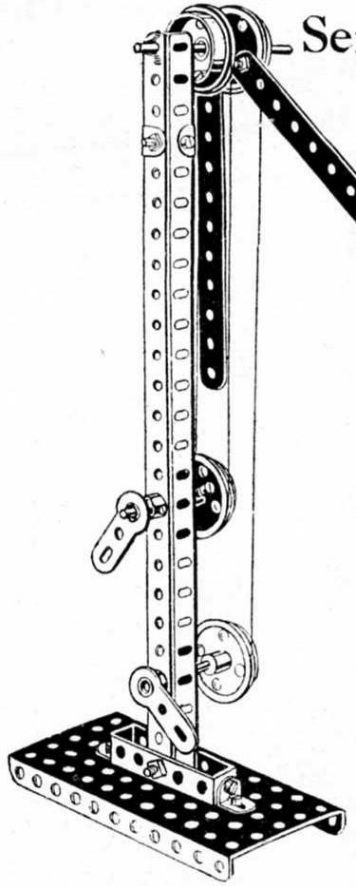


Parts Required :

4	of No.	1
4	„ „	2
3	„ „	5
2	„ „	10
1	„ „	12
1	„ „	15
1	„ „	16
2	„ „	17
1	„ „	18
1	„ „	27A
1	„ „	32
2	„ „	35
23	„ „	37
2	„ „	52
2	„ „	57
7	„ „	59
4	„ „	48A
2	„ „	62
4	„ „	94
1	„ „	95
1	„ „	96

Model No. 622

Semaphore



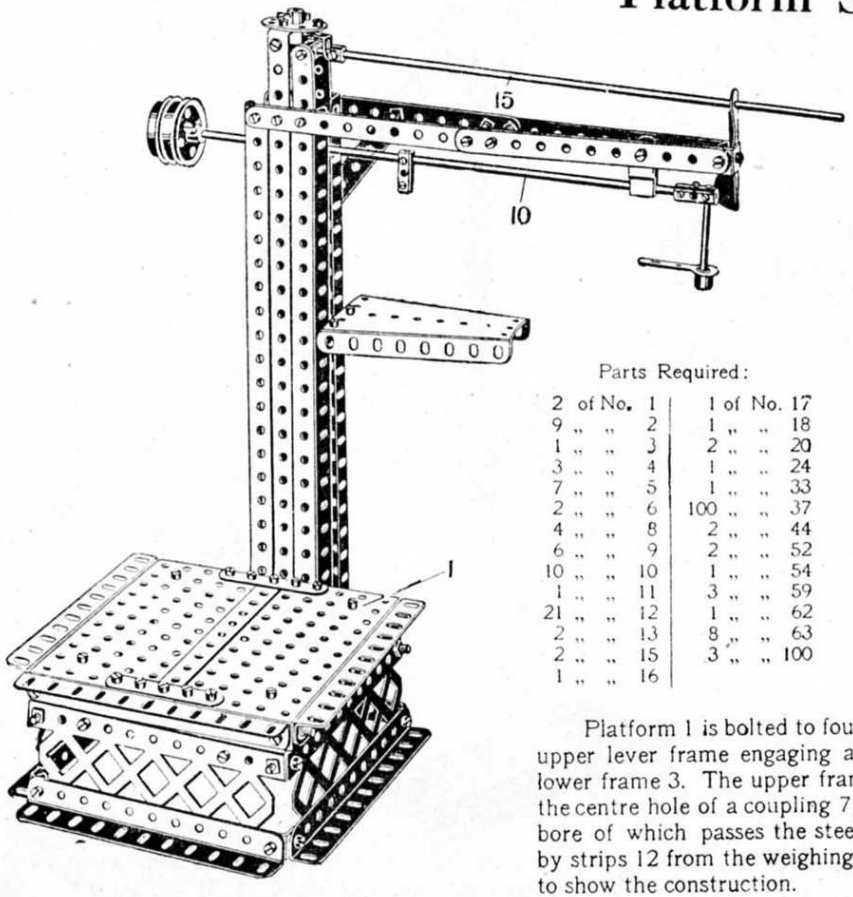
Parts Required :

2	of No.	2
2	„ „	8
4	„ „	12
1	„ „	16
2	„ „	17
4	„ „	20
8	„ „	37
1	„ „	52
1	„ „	59
2	„ „	48A
2	„ „	62

This Model Can be Made with MECCANO Outfit No. 6, or No. 5 and No. 5A

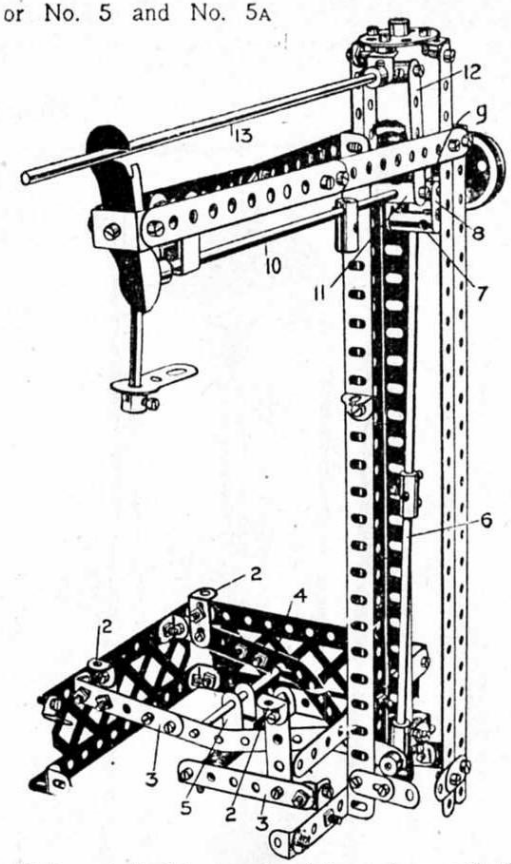
Model No. 623

Platform Scales



Parts Required:

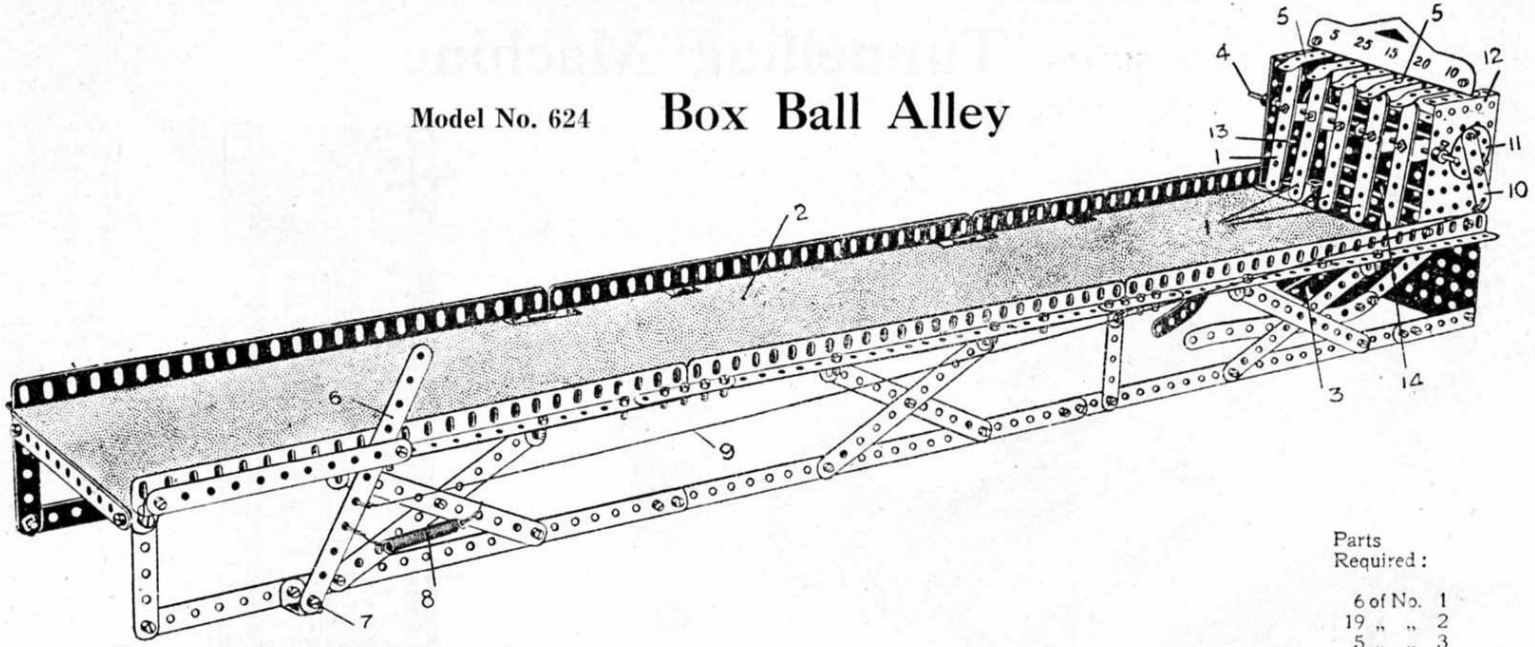
2	of No.	1	1	of No.	17
9	„ „	2	1	„ „	18
1	„ „	3	2	„ „	20
3	„ „	4	1	„ „	24
7	„ „	5	1	„ „	33
2	„ „	6	100	„ „	37
4	„ „	8	2	„ „	44
6	„ „	9	2	„ „	52
10	„ „	10	1	„ „	54
1	„ „	11	3	„ „	59
21	„ „	12	1	„ „	62
2	„ „	13	8	„ „	63
2	„ „	15	3	„ „	100
1	„ „	16			



Platform 1 is bolted to four angle brackets 2, which are bolted to a pair of lever frames 3, the upper lever frame engaging a rod 4, which is also connected by a cranked bent strip 5 to the lower frame 3. The upper frame 3 is connected to the foot of a pull rod 6, the top of which engages the centre hole of a coupling 7, linked by flat brackets 8 to another coupling 9, through the centre bore of which passes the steelyard rod 10, which is pivotally suspended from another coupling 11 by strips 12 from the weighing lever 13. Sectional view shows the model slightly dismantled, better to show the construction.

This Model Can be Made with MECCANO Outfit No. 6, or No. 5 and No. 5A

Model No. 624 Box Ball Alley



This model gives endless amusement.

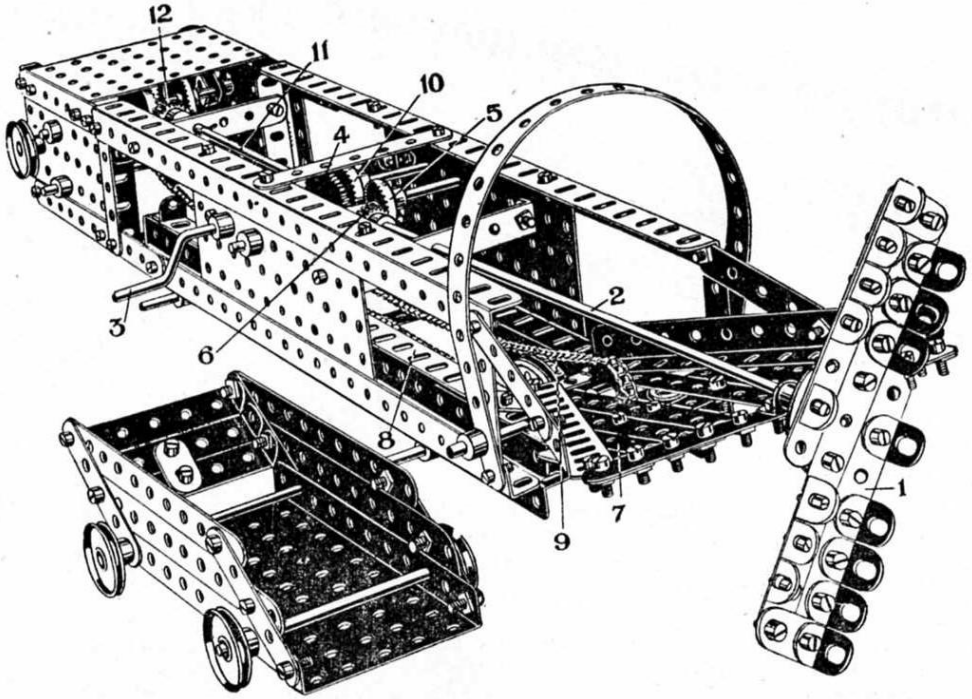
The object is to hit one of the strips 1, which have various number values, by means of a ball rolled along the platform 2, the ball after striking and tipping one of the strips being returned by the tray 3 to the player The strips 1 are pivoted by double bent strips on to a rod 4, so that each strip may swing independently. The upper end of each strip is engaged by strips 5, the ends of which are bent slightly down, as shown, so that while the strips 1 are normally held in the position shown, when one of the strips is struck by the ball it is deflected backward and its upper end snaps outward past the bent end of its strip 5, which thus acts as a spring, the deflected strip being then retained in that position until it is reset. To reset any or all of the strips 1 a handle is formed by a strip 6 pivoted at 7 and controlled by a tension spring 8. A cord 9 connects the strip 6 to a short strip 10 forming a crank and bolted to a bush wheel 11 on an axle journalled in the side plates 12. This axle on its interior carries two further bush wheels to which are secured two short strips 13 forming cranks, a long double bent strip 14 being in turn bolted to the strips 13. When therefore the handle 6 is pulled out against the spring 8 the cord 9 rotates the bush wheel 11 and forces out the long double bent strip 14 which pushes out the strips 1 and resets them in their normal positions. During this resetting operation the upper ends of the strips 1 snap back beneath the bent ends of the spring strips 5.

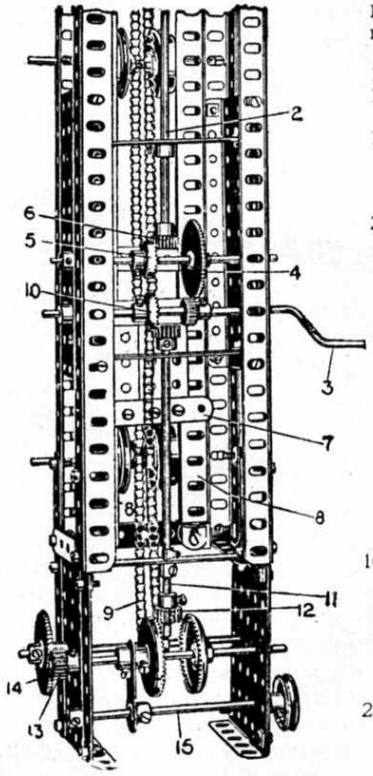
Parts Required:

6	of No.	1
19	„ „	2
5	„ „	3
2	„ „	4
15	„ „	5
6	„ „	8
5	„ „	11
27	„ „	12
1	„ „	14
1	„ „	15
2	„ „	16
1	„ „	24
8	„ „	35
132	„ „	37
1	„ „	43
2	„ „	52
2	„ „	53
2	„ „	54
2	„ „	59
2	„ „	62
1	„ „	63

This Model Can be Made with MECCANO Outfit No. 6, or No. 5 and No. 5A

Model No. 625 Tunnelling Machine





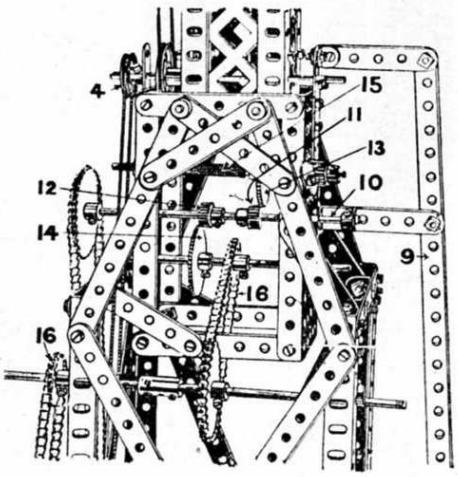
Parts required :

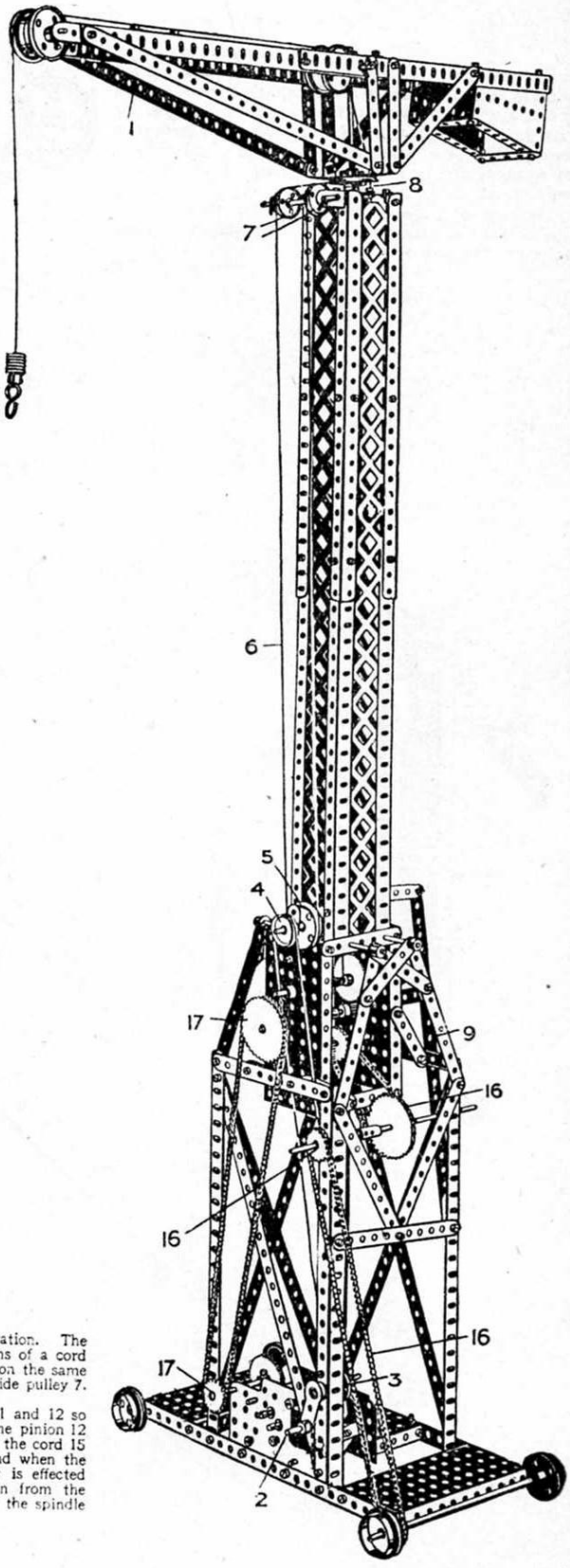
1	of	No.	1
12	,,	,,	2
10	,,	,,	3
2	,,	,,	4
17	,,	,,	5
8	,,	,,	8
2	,,	,,	9
5	,,	,,	10
23	,,	,,	12
1	,,	,,	13
1	,,	,,	14
4	,,	,,	15
3	,,	,,	15A
2	,,	,,	16
1	,,	,,	19
4	,,	,,	20
1	,,	,,	21
5	,,	,,	22
1	,,	,,	25
4	,,	,,	26
2	,,	,,	27A
2	,,	,,	28
2	,,	,,	29
4	,,	,,	35
103	,,	,,	37
1	,,	,,	46
3	,,	,,	48A
1	,,	,,	52
3	,,	,,	53
12	,,	,,	59
1	,,	,,	62
2′ 6″	,,	,,	94
2	,,	,,	96

The main boring head 1 is driven by the shaft 2 from the crank 3, on the spindle of which a pinion engages a gear wheel 4 which is fixed on the same spindle as the contrate wheel 5, which is geared with the pinion 6 on the shaft 2. The earth removed by the boring head falls down the slope 7 and is removed by a traversing carriage 7A running on the rails 8 and operated by the chain 9. As the carriage reaches the inner part of its travel it tips by meeting a stop. The carriage is traversed by a contrate wheel engaging a pinion on the shaft 11, another pinion 12 on this shaft engaging one or other of the contrate wheels which form a clutch for reversing the carriage, the contrate wheels spindle carrying a pinion which engages a gear wheel on the spindle of the rear sprocket wheel carrying the chain.

This Model Can be Made with MECCANO Outfit No. 6, or No. 5 and No. 5A

Model No. 626 Crane





Parts Required :

10 of No.	1	1 of No.	24
12 „ „	2	4 „ „	26
8 „ „	3	3 „ „	27A
4 „ „	4	1 „ „	33
17 „ „	5	4 „ „	35
16 „ „	8	139 „ „	37
1 „ „	11	6 „ „	94
9 „ „	12	1 „ „	45
2 „ „	13A	1 „ „	46
4 „ „	14	5 „ „	52
2 „ „	15	2 „ „	54
2 „ „	15A	1 „ „	57
3 „ „	16	14 „ „	59
2 „ „	17	2 „ „	89A
1 „ „	18	1 „ „	62
8 „ „	20	1 „ „	63
2 „ „	21	2 „ „	95
2 „ „	22	4 „ „	96
2 „ „	22A	8 „ „	99

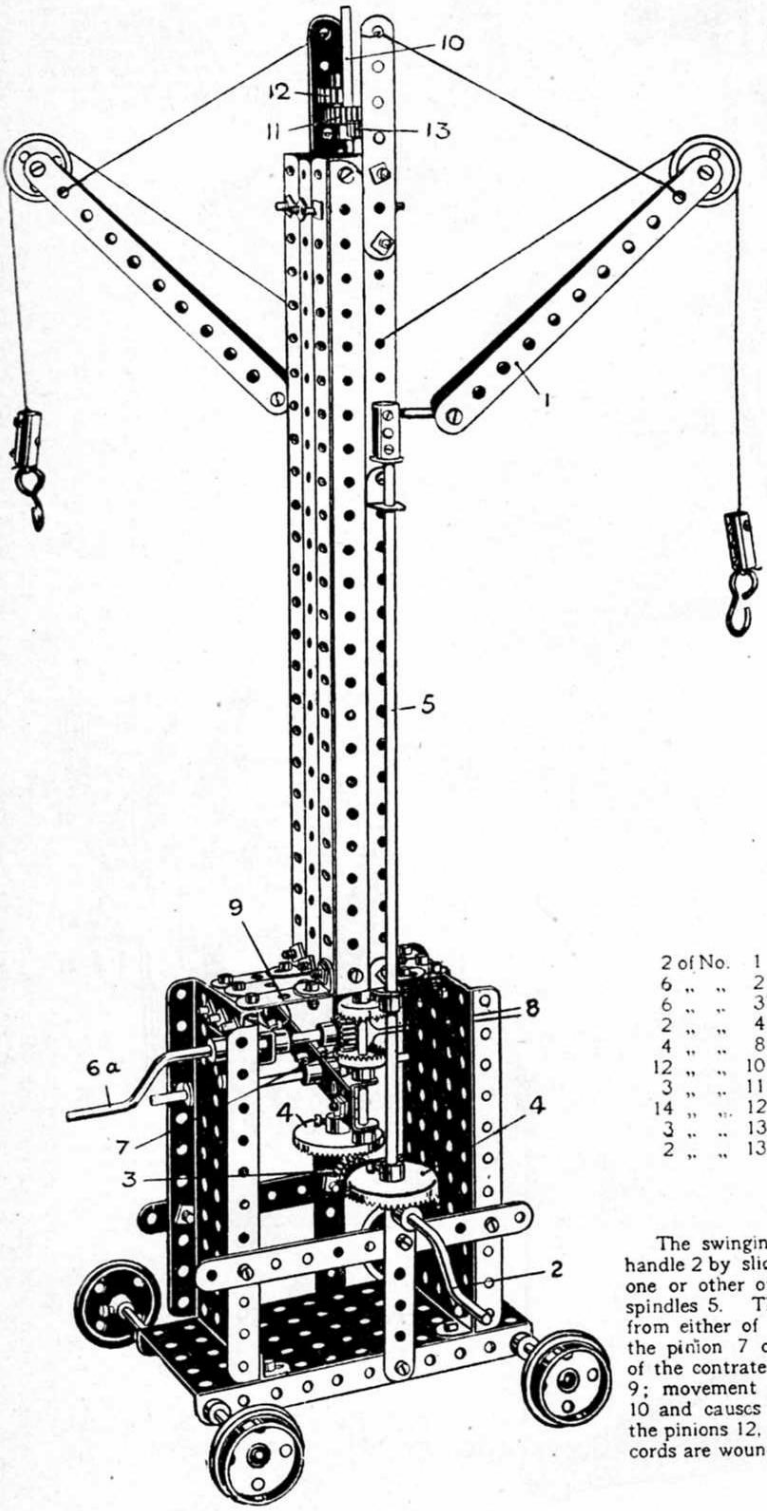
The frame of the model is well shown in the illustration. The swinging of the jib 1 is effected from the handle 2 by means of a cord coupling a pulley 3 to a pulley 4. Round a larger pulley 5 on the same shaft passes a continuous cord 6 which, after winding round guide pulley 7, passes round a pulley 8 fixed on the central spiadle jib.

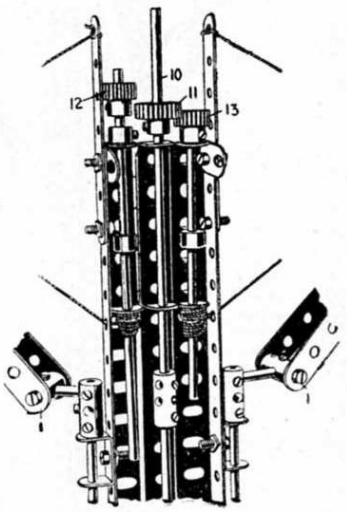
The handle 9 slides the spindle 10 carrying two pinions 11 and 12 so that either the pinion 11 may engage the gear wheel 13 or the pinion 12 the gear wheel 14. When the pinion engages the wheel 13 the cord 15 is wound on or off the spindle to raise or lower the load, and when the pinion 12 engages the wheel 14 the traversing movement is effected through the chain and sprocket 16. The power is taken from the motor by way of the 1" and 2" sprockets 17 the latter on the spindle carrying the pinions 11 and 12.

This Model Can be Made with MECCANO Outfit No. 6, or No. 5 and No. 5A

Model No. 627

Derrick





Parts Required:

2	of No.	1	2	of No.	14	3	of No.	35
6	„ „	2	2	„ „	15	63	„ „	37
6	„ „	3	2	„ „	18	1	„ „	45
2	„ „	4	2	„ „	19	3	„ „	52
4	„ „	8	4	„ „	20	2	„ „	57
12	„ „	10	2	„ „	22A	12	„ „	59
3	„ „	11	5	„ „	26	3	„ „	48A
14	„ „	12	2	„ „	28	7	„ „	63
3	„ „	13	2	„ „	29			
2	„ „	13A						

The swinging of the jibs 1 is effected from the handle 2 by sliding the pinion 3 until it engages with one or other of the contrate wheels 4 on the vertical spindles 5. The hoisting and lowering of the load from either of the jibs is effected from the handle 6a, the pinion 7 on which is engaged with one or other of the contrate wheels 8 by the clutch operating strip 9; movement of the strip 9 raises the centre spindle 10 and causes its pinion 11 to engage one or other of the pinions 12, 13, in the spindles of which the hoisting cords are wound.

Model No. 628

Electric Loco

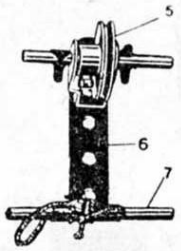


Fig. 628B

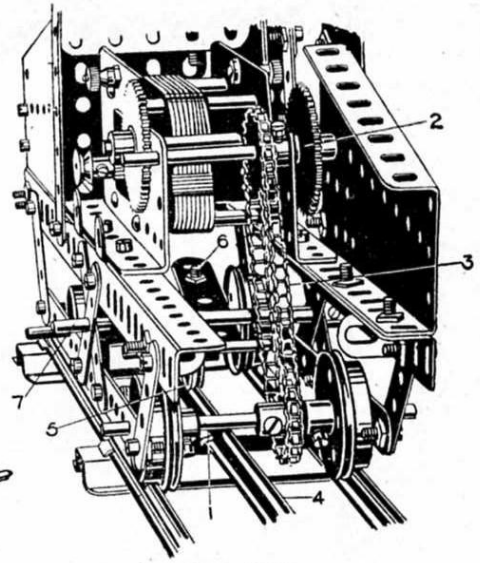


Fig. 628A.

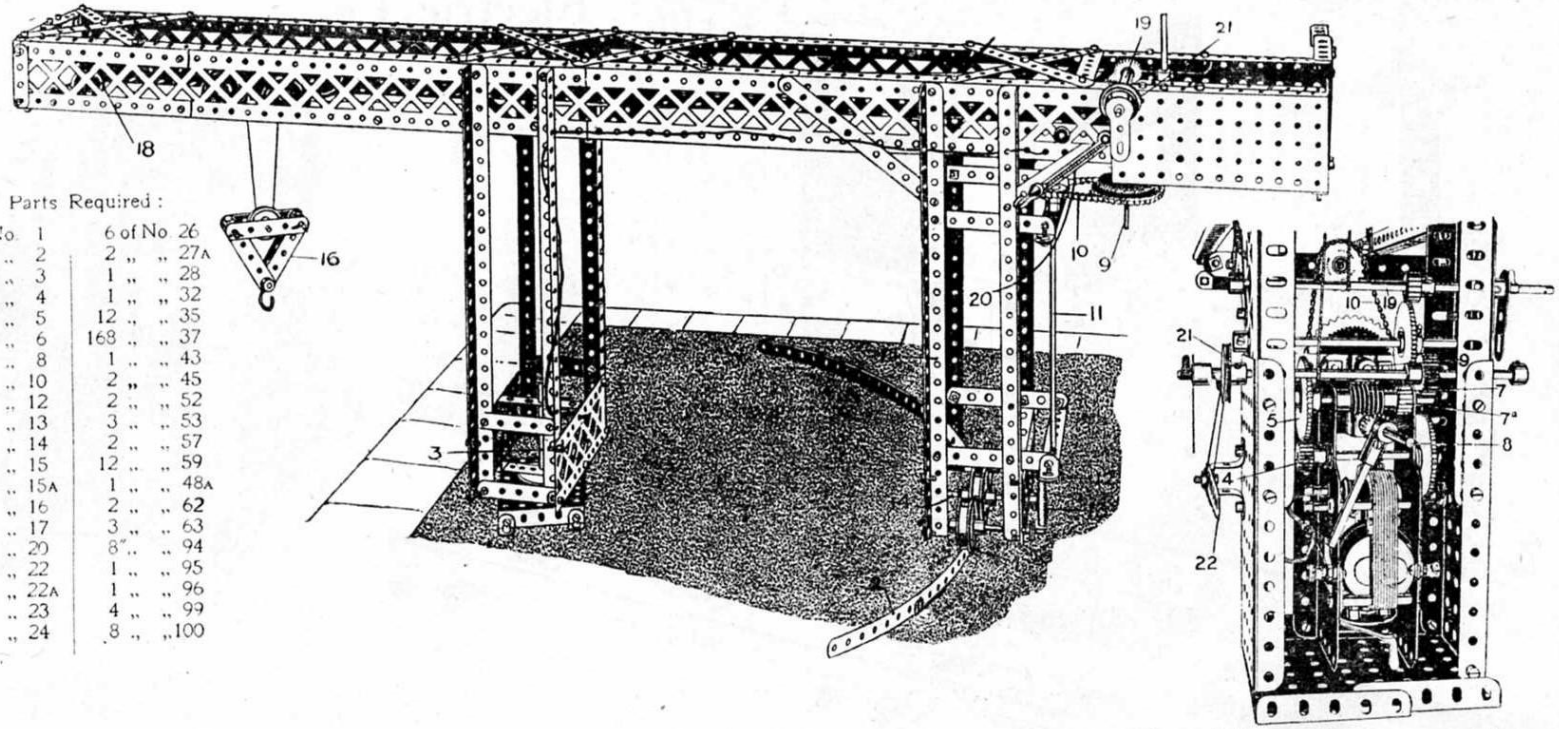
The forward spindle 1 is driven from the motor spindle 2 by chain and sprocket gear 3, and the shoe for collecting the current from the live rail 4 is a pulley wheel 5 pivoted on a short rod in a cranked bent strip bolted to a 2½" strip 6, which is fastened to a rod 7, from which the strip is insulated, as shown in the detail (Fig. 628B.) The positive electric wire is led from the strip 6 to the motor terminal, the running wheels forming the negative return of the circuit.

Parts Required :

12 of No. 2	3 of No. 17	1 of No 52
8 „ „ 3	1 „ „ 18	2 „ „ 53
11 „ „ 5	4 „ „ 20	4 „ „ 54
8 „ „ 6	1 „ „ 22	5 „ „ 59
2 „ „ 8	1 „ „ 29	10 „ „ 48A
12 „ „ 12	2 „ „ 35	1 „ „ 63
2 „ „ 15A	97 „ „ 37	9" „ „ 94
4 „ „ 16	1 „ „ 44	2 „ „ 96

This Model Can be Made with MECCANO Outfit No. 6, or No. 5 and No. 5A

Model No. 629 Radial Travelling Crane



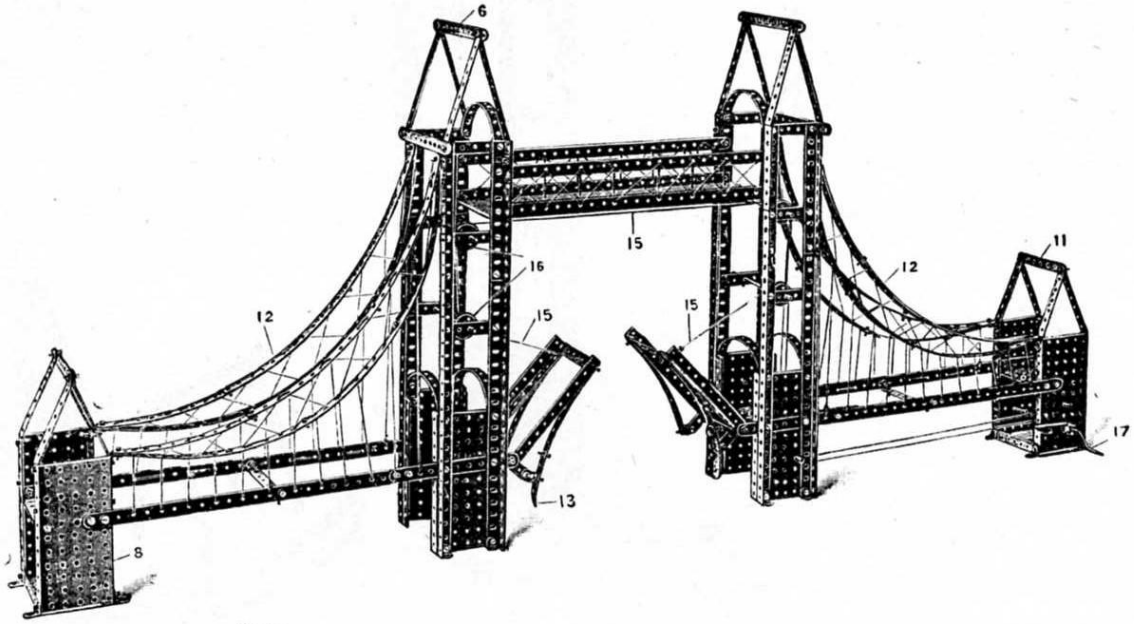
Parts Required :

2 of No.	1	6 of No.	26
14 „ „	2	2 „ „	27A
10 „ „	3	1 „ „	28
2 „ „	4	1 „ „	32
15 „ „	5	12 „ „	35
2 „ „	6	168 „ „	37
20 „ „	8	1 „ „	43
2 „ „	10	2 „ „	45
16 „ „	12	2 „ „	52
1 „ „	13	3 „ „	53
2 „ „	14	2 „ „	57
1 „ „	15	12 „ „	59
4 „ „	15A	1 „ „	48A
4 „ „	16	2 „ „	62
5 „ „	17	3 „ „	63
7 „ „	20	8 „ „	94
3 „ „	22	1 „ „	95
2 „ „	22A	1 „ „	96
3 „ „	23	4 „ „	99
3 „ „	24	8 „ „	100

The structure of the crane runs on the rear wheels 1 on the circular rail 2 about the central pivot 3. The radial travelling movement is effected from the motor spindle, the pinion 4 of which gears from the secondary wheels 5 with a gear wheel driving a worm 7 which engages a pinion on a vertical spindle 8, at the foot of which is a pinion engaging with a gear wheel on the spindle 9, geared by chain and sprocket wheels 10 to a spindle 11, a pinion 12 on which drives a contrate wheel 13 keyed to the rod 14, on which is the central rolling spindle of the crane leg 15. If a few turns of cord are wound round this central pulley a better bite is obtained on the rail edge 2. The bearings of spindles 8 and 9 are carried in double bent strips secured to transverse strips bolted to the side flanged plates. The traversing mechanism of the carriage which supports the pulley block 16 is effected from the worm shaft 7, a $\frac{1}{2}$" pinion 7a on which drives a $\frac{3}{4}$" pinion 17, on the spindle of which is a continuous cord which traverses the frame This cord passes round the pulley 18 at the extreme outer end of the crane jib. The hoisting rope is driven similarly from the pinion 7a, the hoisting cord winding on and off the rod 19. A brake for the spindle of the winding rod 19 is provided by a cord passing round a 1" pulley 21 and connected to a lever 22.

This Model Can be Made with MECCANO Outfit No. 6, or No 5 and No. 5A

Model No. 630 Tower Bridge



Parts Required :

22 of No. 1	12 of No. 9	2 of No. 26	2 of No. 43
34 „ „ 2	28 „ „ 12	1 „ „ 27	2 „ „ 46
12 „ „ 3	6 „ „ 15	1 „ „ 33	8 „ „ 52
12 „ „ 5	1 „ „ 19	9 „ „ 35	4 „ „ 53
10 „ „ 8	6 „ „ 22	183 „ „ 37	1 „ „ 59

Model No. 630 Tower Bridge (*continued*)

Begin by making the two main towers, the construction of one of which is shown in Fig. **630A**. The four uprights 1 are made of angle girders, connected at their lower extremities by large flanged plates 2 and transverse strips 3. The sides of the tower are connected together by a small flanged plate 4 across the top of which and at the top of the tower are bolted bent 5½" strips.

The top gable 6, constructed as shown, is then bolted at its lower edges 7 to the top of the uprights.

The short end towers, one of which is shown to the right of the figure, are built up from two large flanged plates 8 connected together by a small flanged plate 9 and two 3½" strips 10, the gable 11 being then bolted on top.

The catenary member 12 is built up from four curved 12½" strips overlapped, the lower member by 12 holes and the upper member by 15 holes, so as to produce a longer sweep in the lower member, and are bolted to the vertical angle girders of the higher towers, and by angle brackets to the shorter towers.

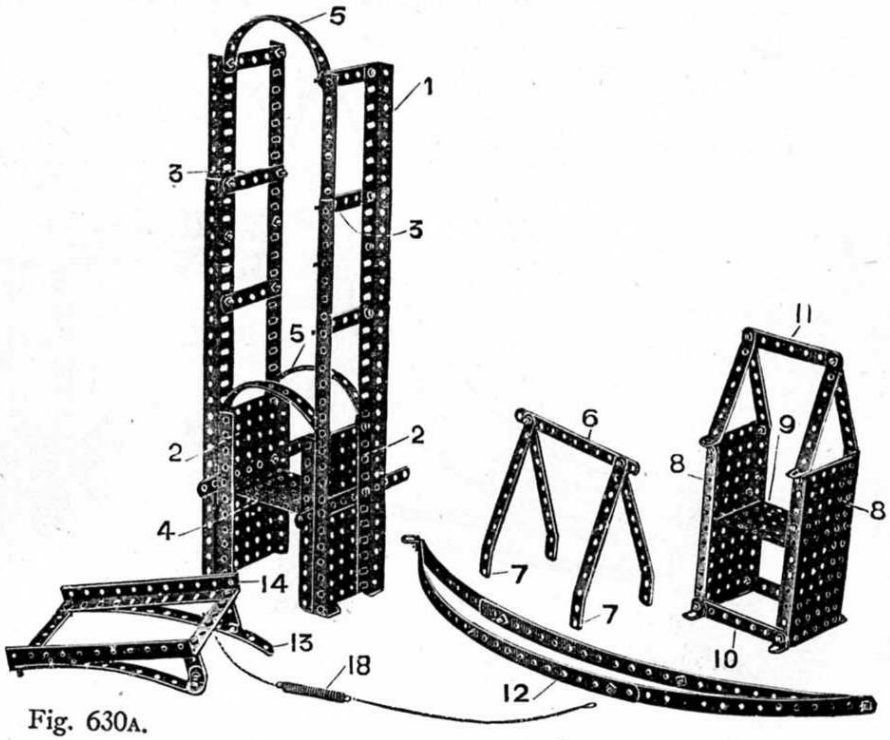


Fig. 630A.

The bascules as illustrated in the left-hand corner of the picture are built up of two 5½" angle girders braced with transverse 3½" strips, and reinforced with bent 5½" strips, one of which is provided with a projecting 2½" strip 13, which bears against the main tower and acts as a stop when the bascules are horizontal. The bascules are hinged by fixing bolts in the end holes 14, and are opened by the cords 15 passing over the guide pulleys 16, and are controlled by the extension spring 18, which normally acts to return them to their closed position. In the right smaller tower is the operating handle 17, on which is secured a ¾" pinion meshed with a gear wheel on the spindle, on which the operating cords 15 are wound.

This Model can be made with MECCANO Outfit No. 6, or No. 5 and No. 5A.

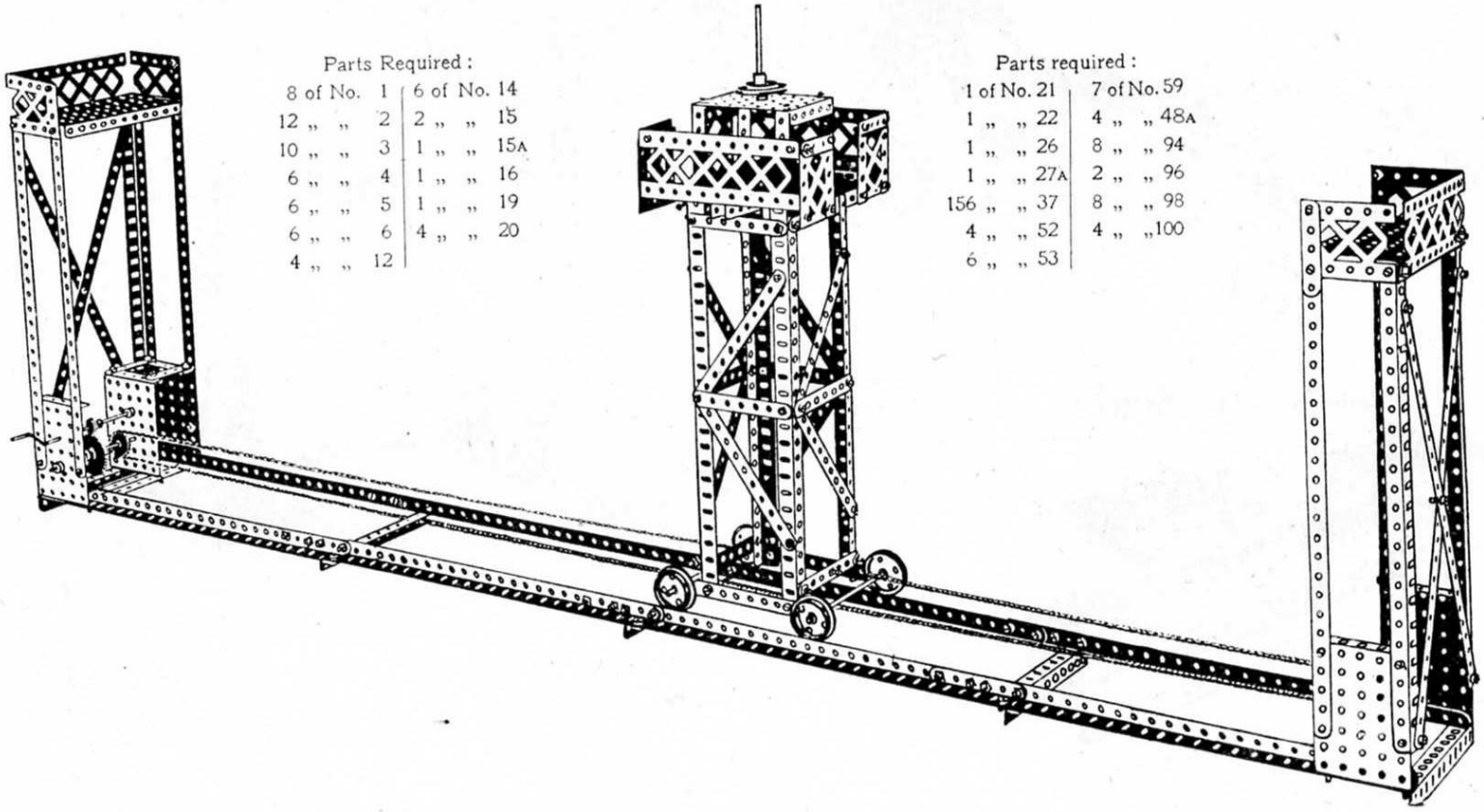
Model No. 631 St. Malo Transporter Bridge

Parts Required :

8 of No.	1	6 of No.	14
12 „ „	2	2 „ „	15
10 „ „	3	1 „ „	15A
6 „ „	4	1 „ „	16
6 „ „	5	1 „ „	19
6 „ „	6	4 „ „	20
4 „ „	12		

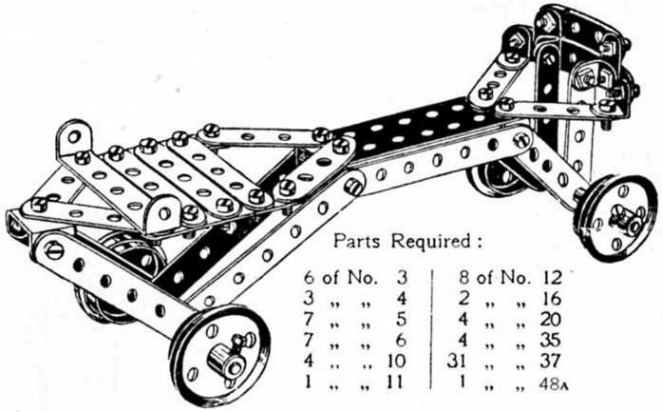
Parts required :

1 of No.	21	7 of No.	59
1 „ „	22	4 „ „	48A
1 „ „	26	8 „ „	94
1 „ „	27A	2 „ „	96
156 „ „	37	8 „ „	98
4 „ „	52	4 „ „	100
6 „ „	53		



These Models can be made with MECCANO Outfit No. 6, or No. 5 and 5A.

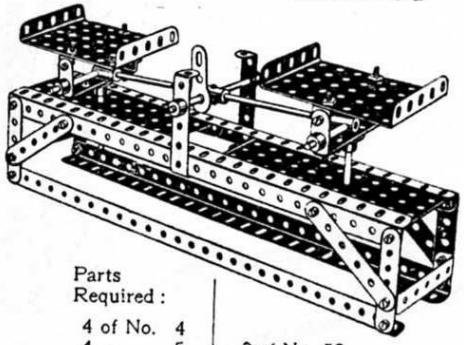
Model No. 632
Roller Skate



Parts Required :

6 of No.	3	8 of No.	12
3 „ „	4	2 „ „	16
7 „ „	5	4 „ „	20
7 „ „	6	4 „ „	35
4 „ „	10	31 „ „	37
1 „ „	11	1 „ „	48A

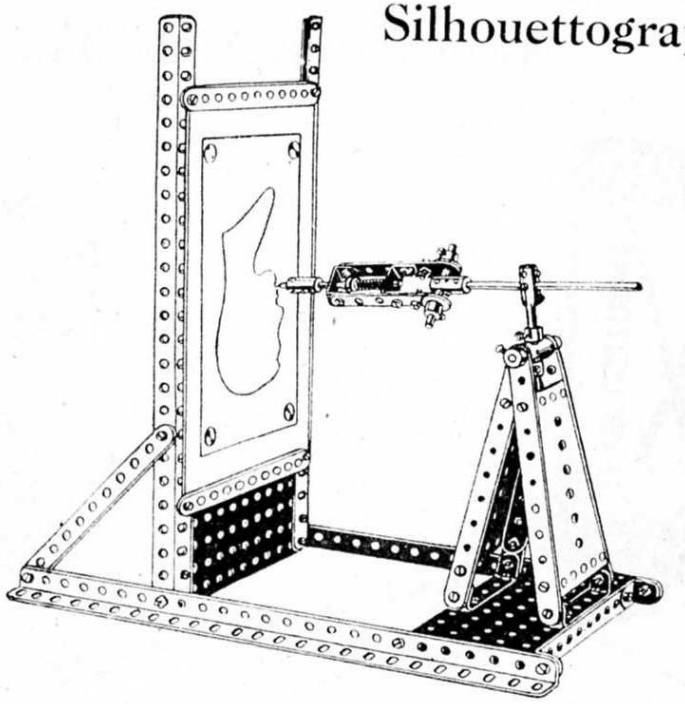
Model No. 634
Scales



Parts Required :

4 of No.	4	2 of No.	52
4 „ „	5	2 „ „	53
4 „ „	8	6 „ „	59
5 „ „	16	6 „ „	48A
2 „ „	17	3 „ „	62
30 „ „	37	3 „ „	63
2 „ „	46		

Model No. 633
Silhouettograph



Parts Required :

8 of No. 2	4 of No. 12	2 of No. 18A	2 of No. 54
2 „ „ 4	3 „ „ 13	42 „ „ 37	5 „ „ 59
4 „ „ 8	1 „ „ 16	1 „ „ 43	2 „ „ 62
2 „ „ 11	2 „ „ 17	2 „ „ 52	6 „ „ 63

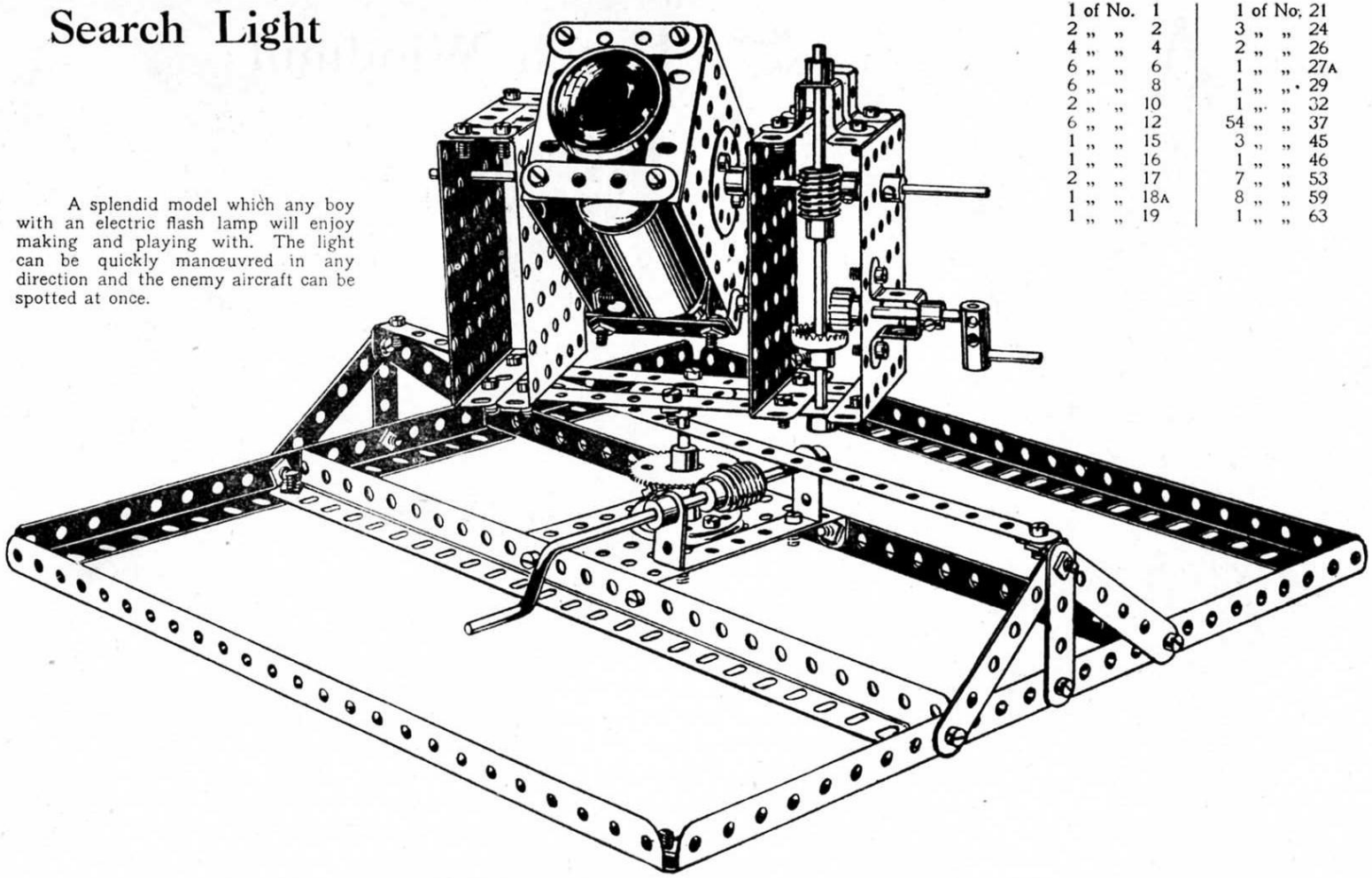
The writing arm should be about 3ft. long The person to be silhouetted should sit with his profile exactly opposite the centre of the writing board. upon which a sheet of plain paper has been fixed. The writing arm is then passed smoothly round the profile.

This Model can be made with MECCANO Outfit No. 6, or No. 5 and No. 5A.

Model No. 635

Search Light

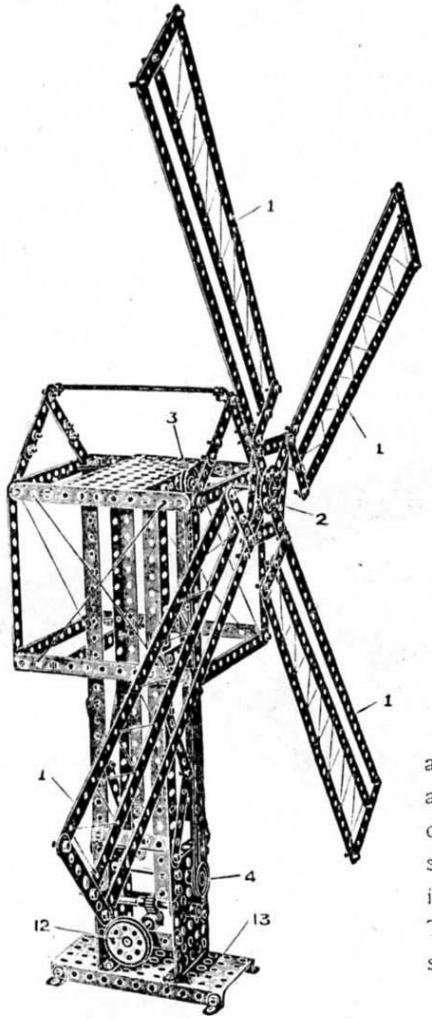
A splendid model which any boy with an electric flash lamp will enjoy making and playing with. The light can be quickly manœuvred in any direction and the enemy aircraft can be spotted at once.



Parts Required :

1 of No.	1	1 of No.	21
2 „ „	2	3 „ „	24
4 „ „	4	2 „ „	26
6 „ „	6	1 „ „	27A
6 „ „	8	1 „ „	29
2 „ „	10	1 „ „	32
6 „ „	12	54 „ „	37
1 „ „	15	3 „ „	45
1 „ „	16	1 „ „	46
2 „ „	17	7 „ „	53
1 „ „	18A	8 „ „	59
1 „ „	19	1 „ „	63

This model can be made with MECCANO Outfit No. 6, or No. 5 and No. 5A.



Model No. 636 Dutch Windmill

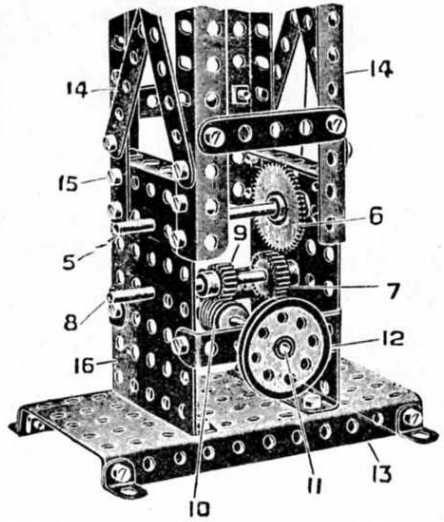


Fig. 636A

Parts Required

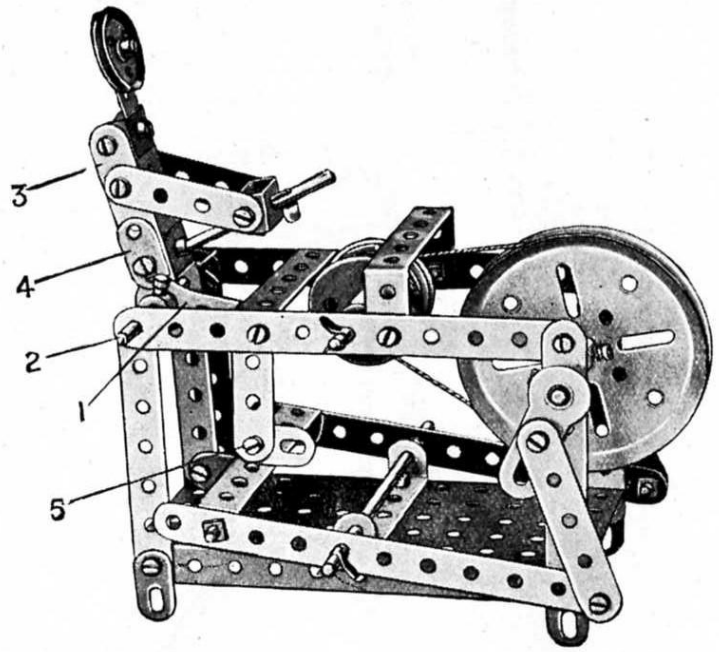
12	of No.	1
19	„ „	2
4	„ „	3
4	„ „	4
14	„ „	5
4	„ „	8
22	„ „	12
1	„ „	14
3	„ „	16
1	„ „	21
2	„ „	22
1	„ „	24
2	„ „	26
1	„ „	27A
1	„ „	32
120	„ „	37
2	„ „	52
2	„ „	53
3	„ „	59
2	„ „	48A

The construction of the sails 1 of the mill will be readily followed from the illustration. They are bolted to an inner strip frame 2 and to a bush wheel fixed on a spindle, on which is also mounted a pulley wheel 3, the driving cord passing round this pulley wheel to a lower pulley wheel 4, the driving of which will be followed from the detail. The pulley wheel 4 is on the outer end of the shaft 5, on which is fitted a gear wheel 6 driven by a pinion $\frac{3}{4}$" 7 on the axle 8, this axle also carrying a pinion $\frac{1}{2}$" 9 engaged by a worm 10 on the driving shaft 11, which carries the driving pulley 12. This driving gear is enclosed in two small side flanged plates 16 bolted to a base plate 13, the vertical stroke of the mill being made from corner angle girders 14 bolted at 15 to the side plates 16.

This Model can be made with MECCANO Outfit No. 6, or No. 5 and No. 5A.

Model No. 637

Knife Grinder



Parts required :

4	of	No	2
4	,,	,,	3
2	,,	,,	4
4	,,	,,	5
3	,,	,,	6
4	,,	,,	10
3	,,	,,	11
2	,,	,,	12
1	,,	,,	15
3	,,	,,	16
1	,,	,,	17
1	,,	,,	19A
2	,,	,,	20
1	,,	,,	22
1	,,	,,	22A
2	,,	,,	35
32	,,	,,	37
6	,,	,,	37A
1	,,	,,	46
2	,,	,,	48A
1	,,	,,	48B
1	,,	,,	52
3	,,	,,	62

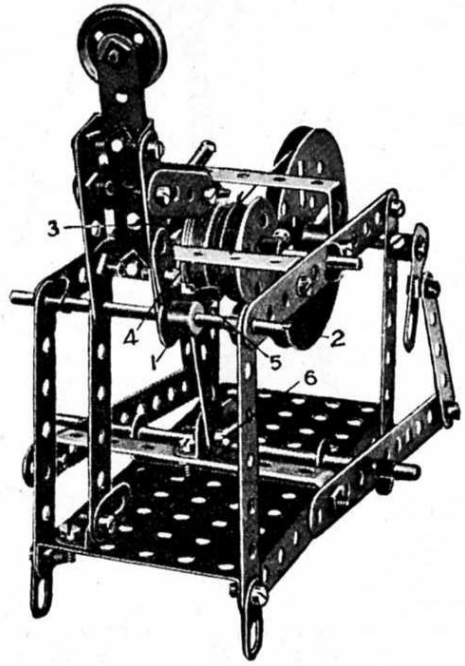
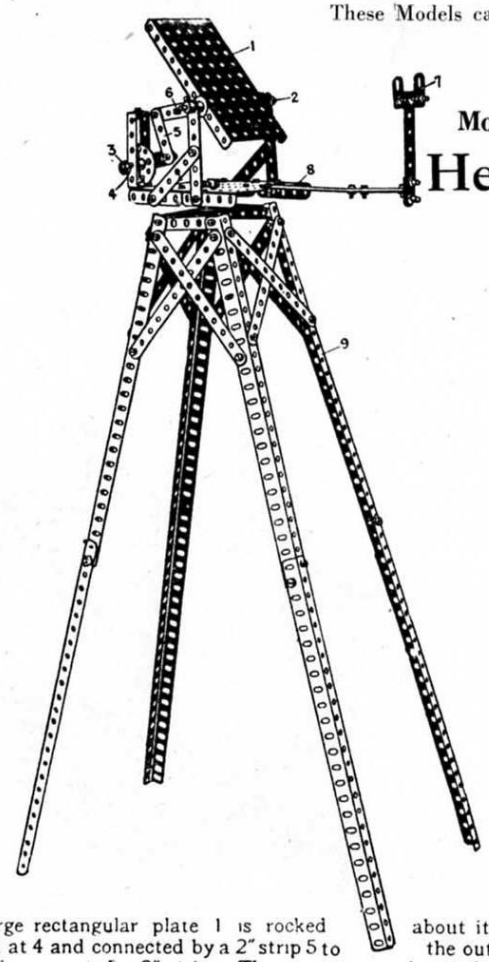


FIG. 637A.

The crank 1 is secured to the rod 2, and the 2½" side-strip 3 is clamped to the crank 1 by the flat bracket 4. The bolt at the end of the crank forming the knee and the bolt 5 are lock-nutted to allow free movement. When the treadle is operated the body works backwards and forwards.

These Models can be made with MECCANO Outfit No. 6, or No. 5 and 5A.



Model No. 638

Heliograph

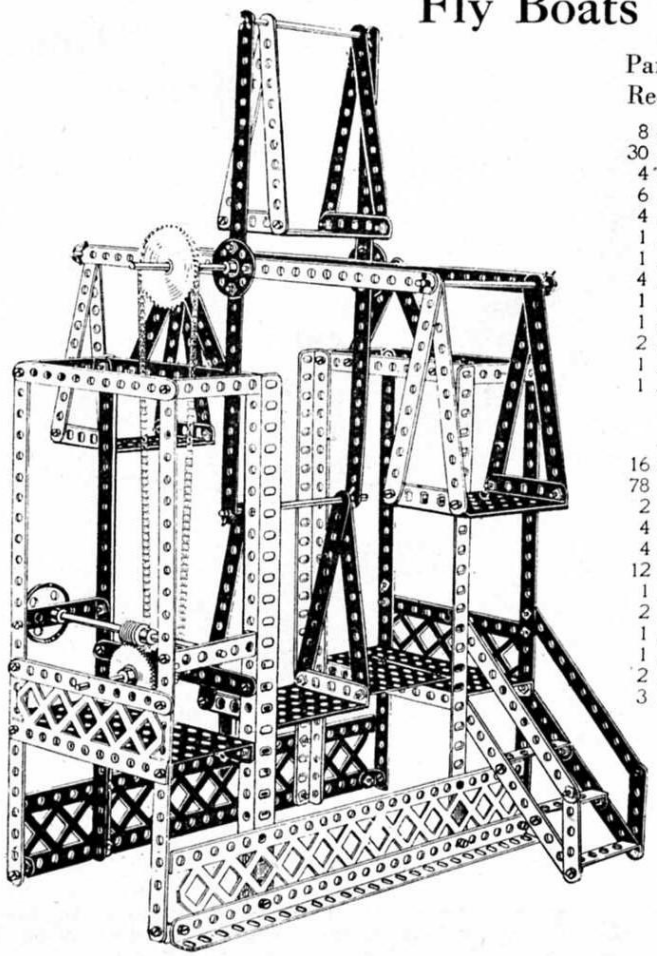
Parts Required:

9	of No.	2
3	„ „	3
5	„ „	4
1	„ „	5
2	„ „	6
8	„ „	8
4	„ „	10
3	„ „	12
1	„ „	15A
1	„ „	17
1	„ „	18A
1	„ „	21
1	„ „	24
64	„ „	37
1	„ „	52
3	„ „	53
3	„ „	59
2	„ „	48A
3	„ „	62

A large rectangular plate 1 is rocked about its pivots 2 by a lever 3, pivoted at 4 and connected by a 2" strip 5 to the outer end of a crank 6, to which is connected a 2" strip. The rectangular plate 1 should be fitted with a mirror, and a sighting aperture 7 is mounted in front, the operator bringing one of the perforations in the plate 1 in line with the aperture 7, while signalling, so that he can see the opposite instrument in the distance. The platform 8 is pivotally mounted on the standard 9 so that it may be swung round to any position, a bush wheel being bolted to the top of the standard in which the pivot works. The platform is made of two small rectangular plates butted together and connected on each side by strips.

Model No. 639

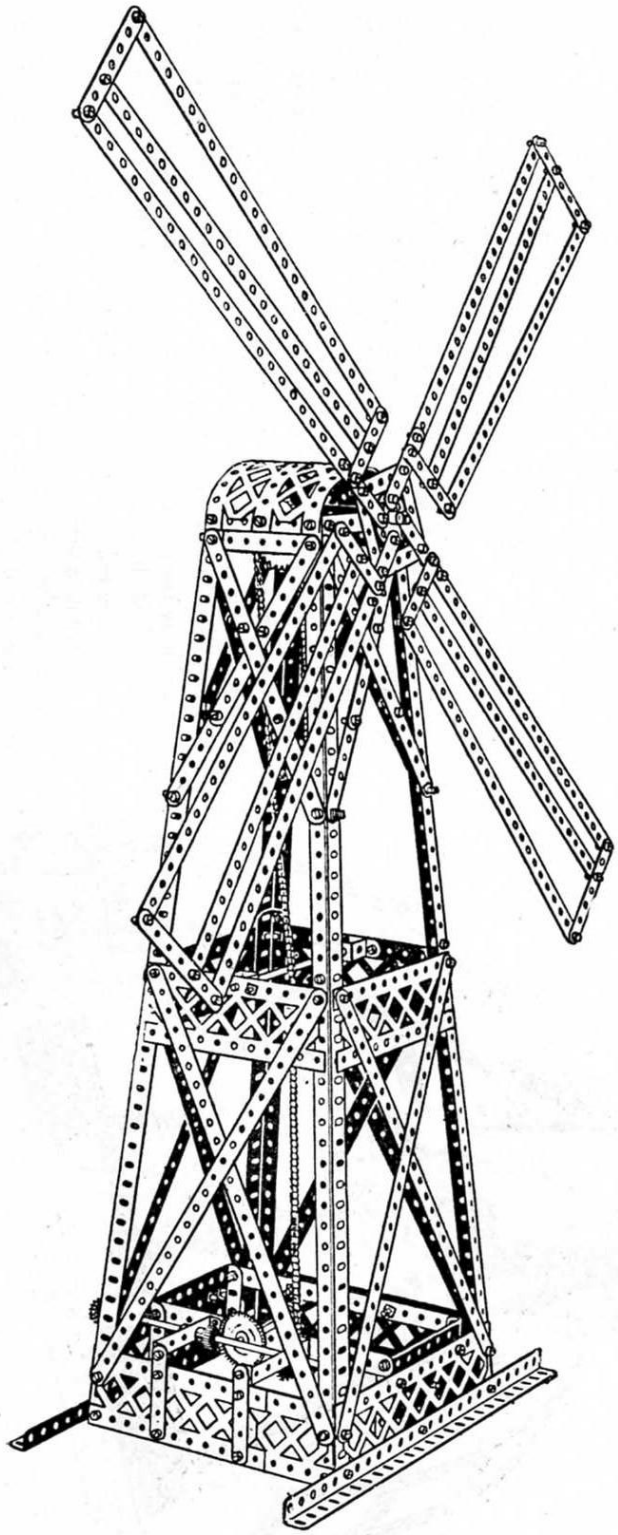
Fly Boats



Parts Required

8	of No.	1
30	„ „	2
4	„ „	3
6	„ „	8
4	„ „	11
1	„ „	13
1	„ „	14
4	„ „	16
1	„ „	15A
1	„ „	21
2	„ „	24
1	„ „	27A
1	„ „	32
16	of No.	35
78	„ „	37
2	„ „	52
4	„ „	53
4	„ „	59
12	„ „	48A
1	„ „	70
2	„ „	94
1	„ „	95
1	„ „	96
2	„ „	99
3	„ „	100

This Model can be made with MECCANO Outfit No. 6, or No. 5 and No. 5A.



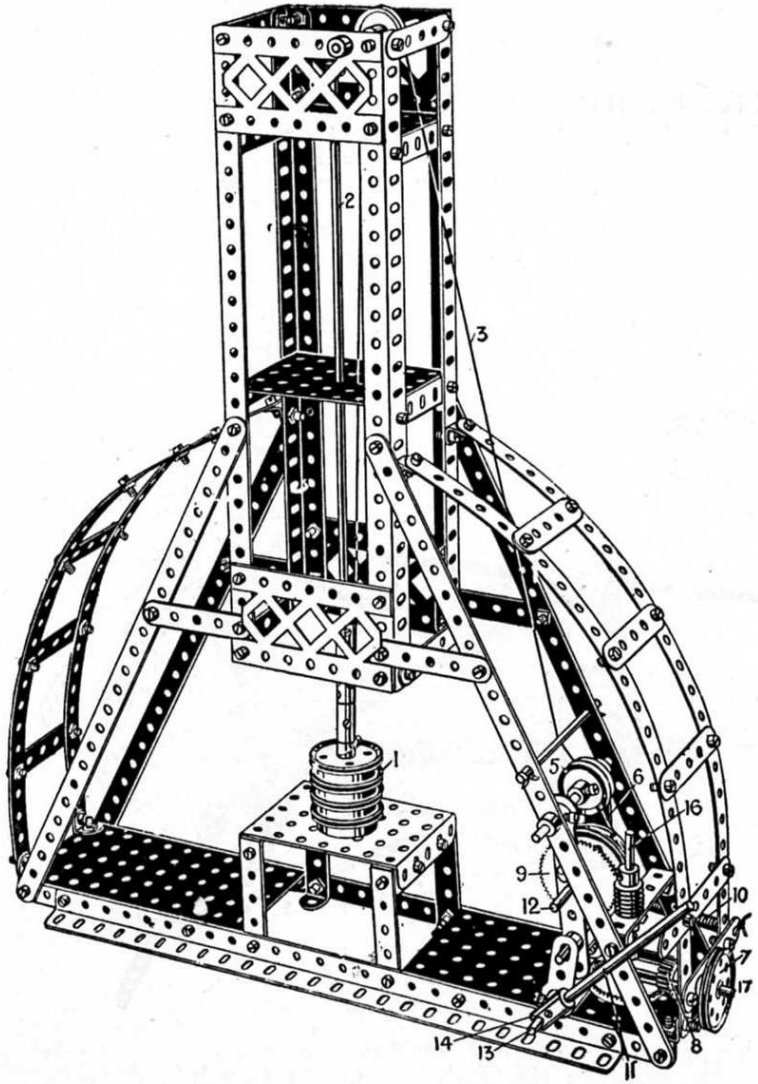
Model No. 640

Windmill

Parts Required:

20	of	No.	1
22	„	„	2
10	„	„	3
14	„	„	5
10	„	„	8
2	„	„	13A
2	„	„	14
1	„	„	15
1	„	„	24
1	„	„	26
1	„	„	27A
1	„	„	28
1	„	„	32
2	„	„	35
130	„	„	37
1	„	„	38
2	„	„	45
2	„	„	53
5	„	„	59
4	„	„	48A
1	„	„	62
4	„	„	94
1	„	„	95
1	„	„	96
14	„	„	100

This Model can be made with MECCANO Outfit No. 6 or No. 5 and No. 5A.



Model No. 641

Drop Hammer

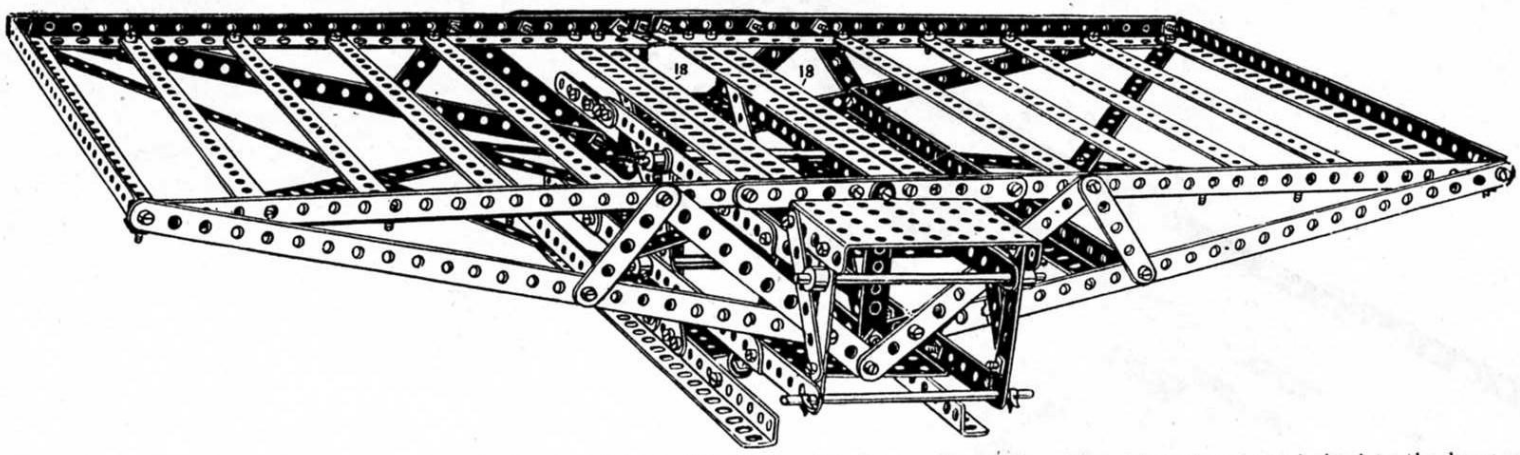
Parts Required :

8 of No. 1	3 of No. 16	3 of No. 35
3 „ „ 3	3 „ „ 17	112 „ „ 37
3 „ „ 4	5 „ „ 20	1 „ „ 43
13 „ „ 5	1 „ „ 21	2 „ „ 52
6 „ „ 8	3 „ „ 22	2 „ „ 53
2 „ „ 11	1 „ „ 24	5 „ „ 59
8 „ „ 12	1 „ „ 26	8 „ „ 48A
1 „ „ 13	1 „ „ 27A	3 „ „ 62
1 „ „ 15	1 „ „ 28	6 „ „ 63
2 „ „ 15A	1 „ „ 32	4 „ „ 97

The weighted hammer head 1 is fixed at the end of the slidable rod 2 and lifted by a cord 3 connected to the head and passing over a pulley and between guide pulleys 5 on to a winding drum of two flanged wheels 6. The driving pulley 7 is geared by a pinion 8 to a contrate wheel, on the spindle of which is a worm gearing with a 56-toothed gear wheel 9 by which the cord is operated. The coupling 15 is threaded on the upright spindle 16 and forms a bearing for the axle 17. The gear wheel 9 and flanged wheels 6 are held in engagement with the worm by the pull of a spring 10 when raising the hammer, but may be disengaged, in order to drop the hammer, by the handle-rod 11 secured to the rod 12 about which the geared wheel 9 pivots. To the rod 13 a crank is secured on each side of the winding-drum mechanism, to which also is secured the coupling 14 and a corresponding coupling at the other end of the rod to which the spring 10 is attached. This rod is pivotally attached to a $2\frac{1}{2}$" bent strip bolted to the base plate.

This Model can be made with MECCANO Outfit No. 6, or No. 5 and No. 5A. ..

Model No. 642 Weighbridge



Parts Required:

18	of No.	1
14	„ „	2
8	„ „	3
4	„ „	4
8	„ „	5
14	„ „	8
10	„ „	12
4	„ „	15
2	„ „	15A
2	„ „	35
130	„ „	37
6	„ „	53
10	„ „	59
1	„ „	48A

Begin the construction of this model by making the weigh beam, Fig. **642A**. The side strips 1 are bolted to the base angle girders 2, and in the strips 1 are journalled the rods 3 which form the fixed pivots of the weigh beam. The upper and lower rods 4 are journalled in the strips 5 and form the moving pivots of the beam. All the rods 3 and 4 pass through perforations in the upper and lower strips 6 of the beam. Next construct the platform, Fig **642B**, leaving the strips at one side unconnected, as shown. The platform is then passed between the upper and lower parts of the weigh beam, and the unconnected strips then bolted, as follows. The ends 7 are bolted to the lowest hole 8, and the ends 9 to the angle bracket 10, and the end of the angle girder 11 is overlapped five holes of the strip 12 and bolted in the hole 13. The outer holes 14 of the 12½" crossed strips, Fig. **642A**, are then bolted to the same holes 15 in the angle girders 16 as the strips 17. The double angle girders 18 are then bolted in position, and the outer holes 19, Fig. **642A**, are bolted to the angle girders 18 in the centre holes and the holes 20, Fig. **642A**, to the angle girders 18 at the fifth hole from the girder ends. The load to be weighed rests on the main platform, and the weights are placed on the small rectangular plate 21 at the end of the weigh beam.

This Model can be made with MECCANO Outfit No. 6 or No. 5 and No. 5A.

Model No. 642 Weighbridge (*Continued*)

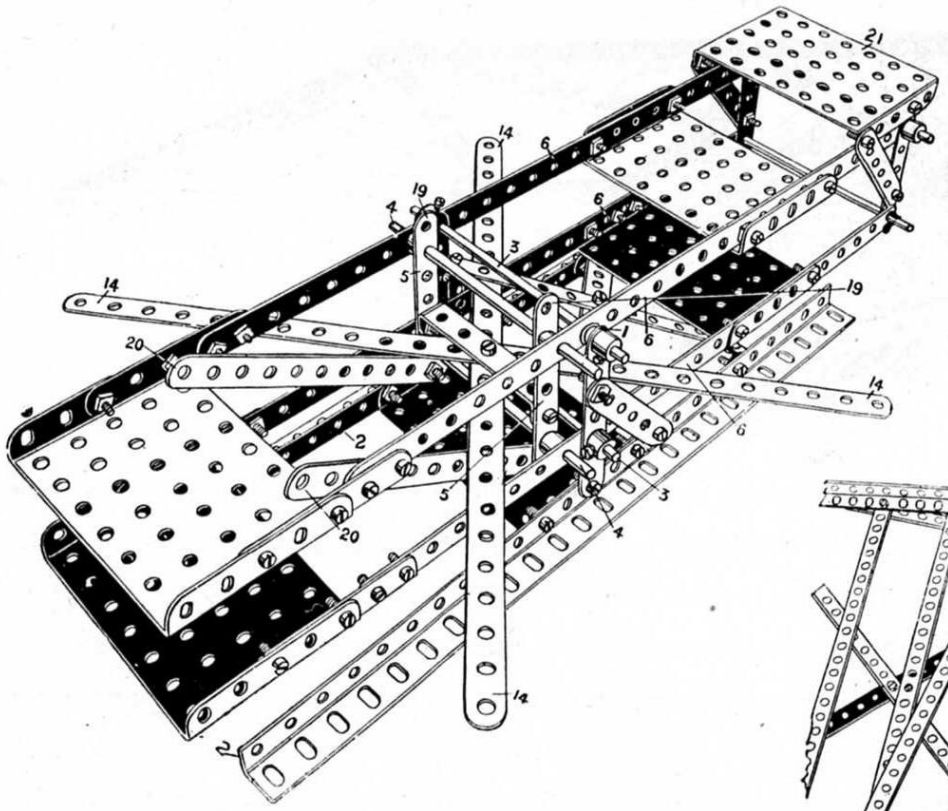


Fig. 642A

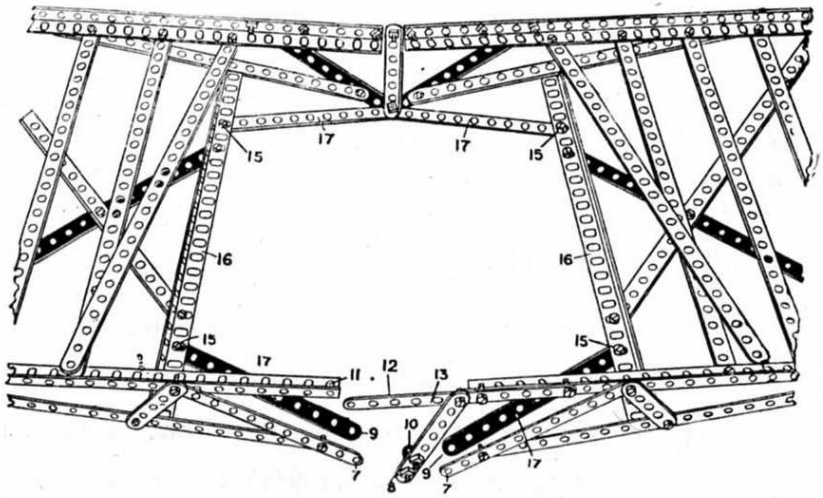
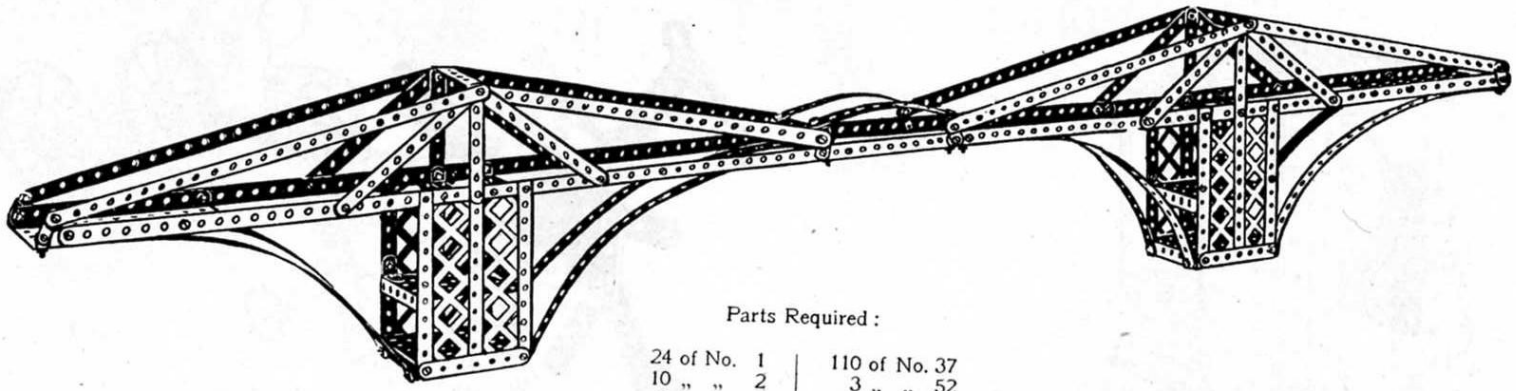


Fig. 642B

These Models can be made with MECCANO Outfit No. 6, or No. 5 and 5A.

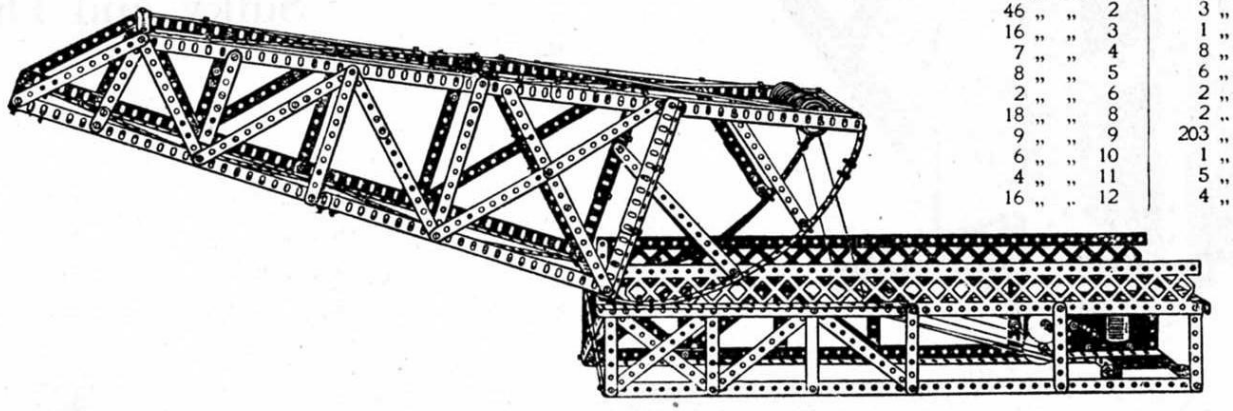
Model No. 643 Cantilever Bridge



Parts Required:

24 of No.	1	110 of No.	37
10 „ „	2	3 „ „	52
8 „ „	3	4 „ „	53
8 „ „	10	8 „ „	48A
22 „ „	12	8 „ „	100

Model No. 644 Rolling Lift Bridge

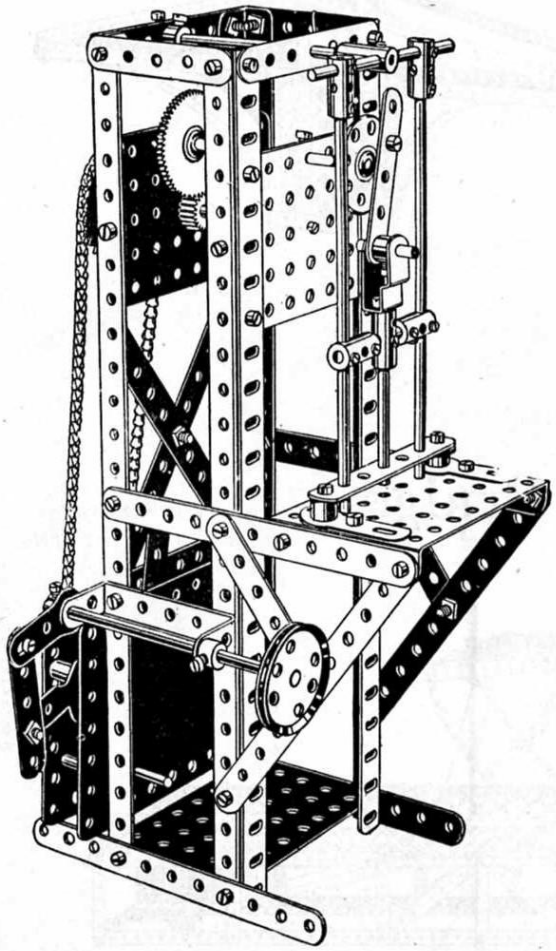


Parts Required:

10 of No.	1	2 of No.	13
46 „ „	2	3 „ „	14
16 „ „	3	1 „ „	17
7 „ „	4	8 „ „	20
8 „ „	5	6 „ „	23
2 „ „	6	2 „ „	26
18 „ „	8	2 „ „	27
9 „ „	9	203 „ „	37
6 „ „	10	1 „ „	52
4 „ „	11	5 „ „	59
16 „ „	12	4 „ „	99

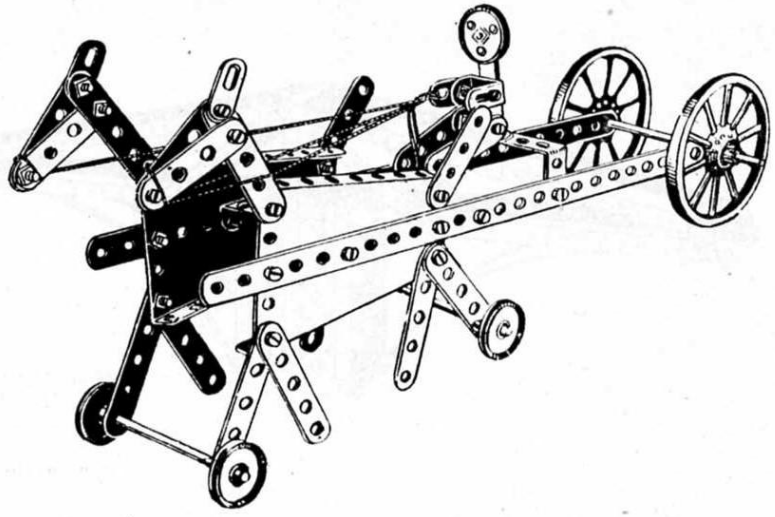
These Models can be made with MECCANO Outfit No. 6, or No. 5 and 5A.

Model No. 645 Punching Machine



Parts Required :

6 of No	2
2 „ „	3
2 „ „	4
4 „ „	5
4 „ „	8
2 „ „	14
3 „ „	15
1 „ „	15A
1 „ „	16
2 „ „	17
1 „ „	18
1 „ „	21
1 „ „	24
1 „ „	26
1 „ „	27A
50 „ „	37
2 „ „	38
1 „ „	44
1 „ „	46
4 „ „	53
6 „ „	59
3 „ „	62
6 „ „	63
2 „ „	94
1 „ „	95
1 „ „	96

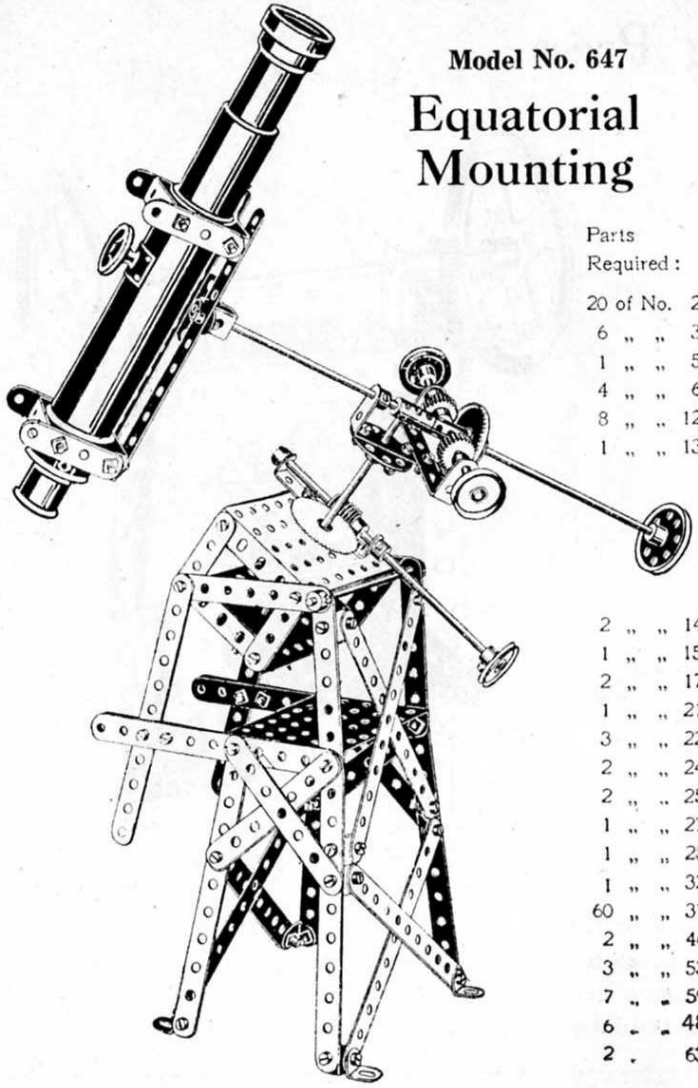


Model No. 646 Sulky and Driver

Parts Required :

2 of No. 1	1 of No. 12	32 of No. 37
13 „ „ 5	3 „ „ 15A	1 „ „ 46
6 „ „ 6	2 „ „ 19A	2 „ „ 54
4 „ „ 10	4 „ „ 22	2 „ „ 48A
2 „ „ 11	1 „ „ 22A	

These Models can be made with MECCANO Outfit No. 6, or No. 5 and No. 5A.



Model No. 647

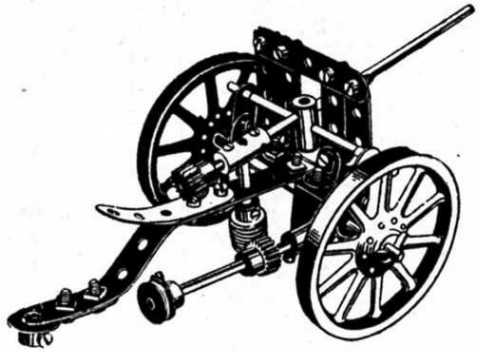
Equatorial Mounting

Parts Required :

20	of No.	2
6	„ „	3
1	„ „	5
4	„ „	6
8	„ „	12
1	„ „	13
2	„ „	14
1	„ „	15A
2	„ „	17
1	„ „	21
3	„ „	22
2	„ „	24
2	„ „	25
1	„ „	27
1	„ „	28
1	„ „	32
60	„ „	37
2	„ „	46
3	„ „	53
7	„ „	59
6	„ „	48A
2	„ „	63

Model No. 648

Field Gun

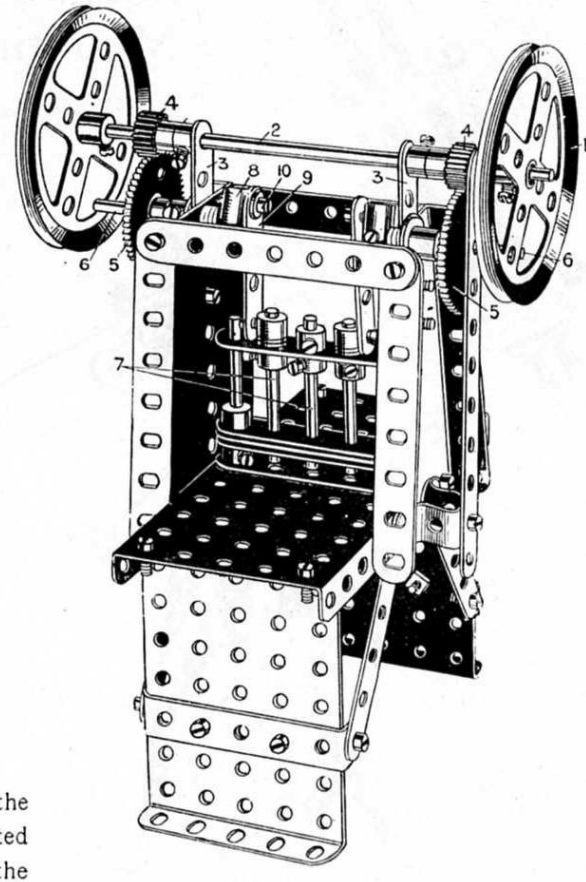


Parts Required :

1	of No.	2
7	„ „	5
2	„ „	10
6	„ „	12
1	„ „	14
1	„ „	15
2	of No.	16
1	„ „	17
2	„ „	19A
1	„ „	23A
2	„ „	26
1	„ „	32
6	„ „	35
17	of No.	37
1	„ „	44
2	„ „	59
1	„ „	48A
1	„ „	62
2	„ „	63

This Model can be made with MECCANO Outfit No. 6 or No. 5 and No. 5A.

Model No. 649 Punching Press



Parts Required :

1 of No. 2	29 of No. 37
2 „ „ 3	18 „ „ 38
4 „ „ 4	1 „ „ 45
6 „ „ 5	1 „ „ 52
2 „ „ 6	2 „ „ 53
1 „ „ 14	2 „ „ 54
2 „ „ 16	15 „ „ 59
5 „ „ 17	2 „ „ 48A
2 „ „ 19A	2 „ „ 62
2 „ „ 26	2 „ „ 63
2 „ „ 27A	

The rod 2 carrying the flywheels 1 is journalled in cranks 3, pinions 4 driving the large gear wheels 5 on short rods 6. The cranks by which the punch rods 7 are operated consist of couplings 8 secured at their middle holes to the ends of the short rods 6, the strips 9 operating the punch rods 7 being connected by screws 10 to one of the outer holes of the coupling.

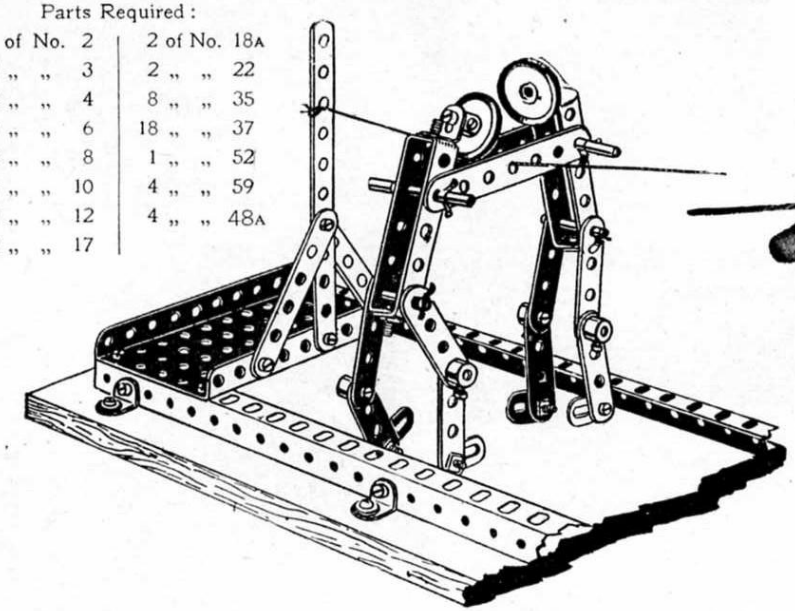
These Models can be made with MECCANO Outfit No. 6, or No. 5 and 5A.

Model No. 650

The Wrestlers

Parts Required :

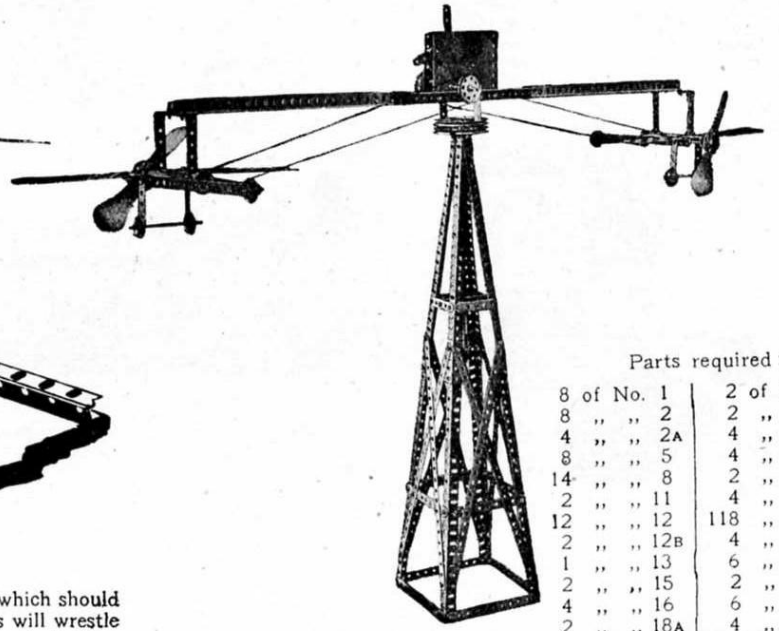
1 of	No. 2	2 of	No. 18A
2 „	„ 3	2 „	„ 22
2 „	„ 4	8 „	„ 35
8 „	„ 6	18 „	„ 37
2 „	„ 8	1 „	„ 52
4 „	„ 10	4 „	„ 59
8 „	„ 12	4 „	„ 48A
2 „	„ 17		



Boys will at once recognise this familiar toy. When the cord, which should be about 4ft. long, is held fairly tight, and manipulated, the figures will wrestle in a most realistic manner. The model should be mounted on a board, to keep it steady.

Model No. 651

Revolving Aeroplane



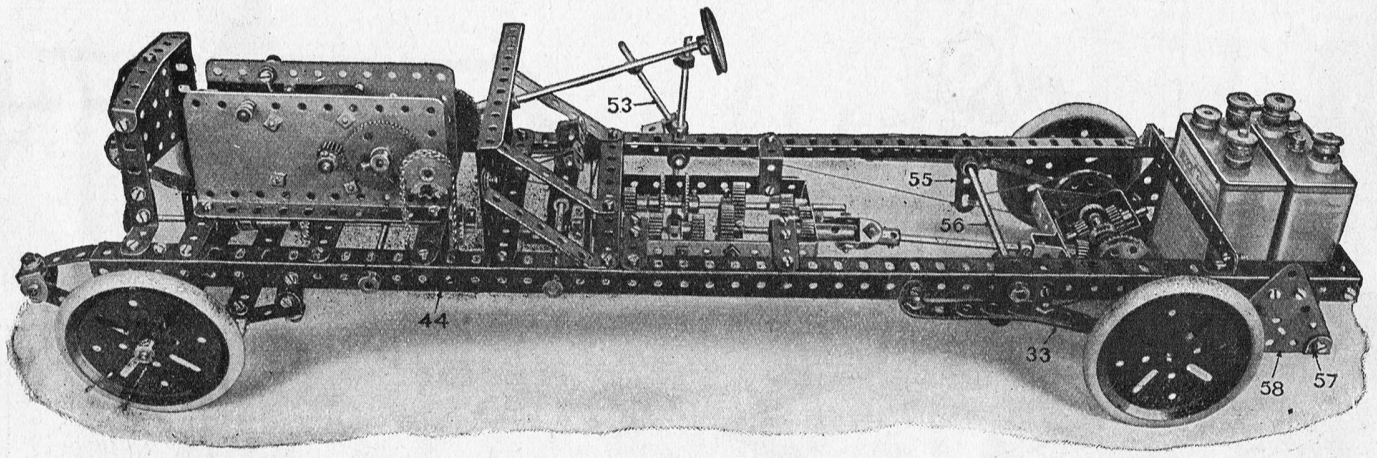
Parts required :

8 of	No. 1	2 of	No. 19B
8 „	„ 2	2 „	„ 21
4 „	„ 2A	4 „	„ 22
8 „	„ 5	4 „	„ 22A
14 „	„ 8	2 „	„ 24
2 „	„ 11	4 „	„ 35
12 „	„ 12	118 „	„ 37
2 „	„ 12B	4 „	„ 41
1 „	„ 13	6 „	„ 48A
2 „	„ 15	2 „	„ 54
4 „	„ 16	6 „	„ 59
2 „	„ 18A	4 „	„ 100
	1 of	No. 112	

This completes the models which may be made with Meccano Outfit No. 6. Instructions for building special models are published from time to time in leaflet form. Those now available are the Meccano Auto Chassis, illustrated on the next page; the Meccano Loom and the Meccano Grandfather's Clock. The cost of the special instructions for the Chassis is 15 cents; those for the Loom and Clock are 10 cents each, postpaid.

The Meccano Auto Chassis

Special Model No. 701

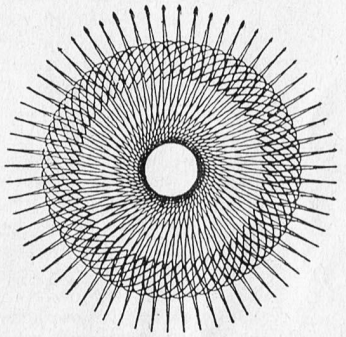


The Meccano Auto Chassis is a model of exceptional interest as it provides a complete demonstration of a real Auto Chassis. It is equipped with a perfect differential, worm steering mechanism and a transmission giving two speeds forward and reverse. It is underslung and provided with semi-elliptic front springs and cantilever rear springs. In order to make its construction quite clear a number of sectional photographs and drawings are necessary. These are all contained on a separate sheet, printed on art paper, which may be purchased from Meccano Company Inc., Elizabeth, N. J. price 10 cents postpaid.

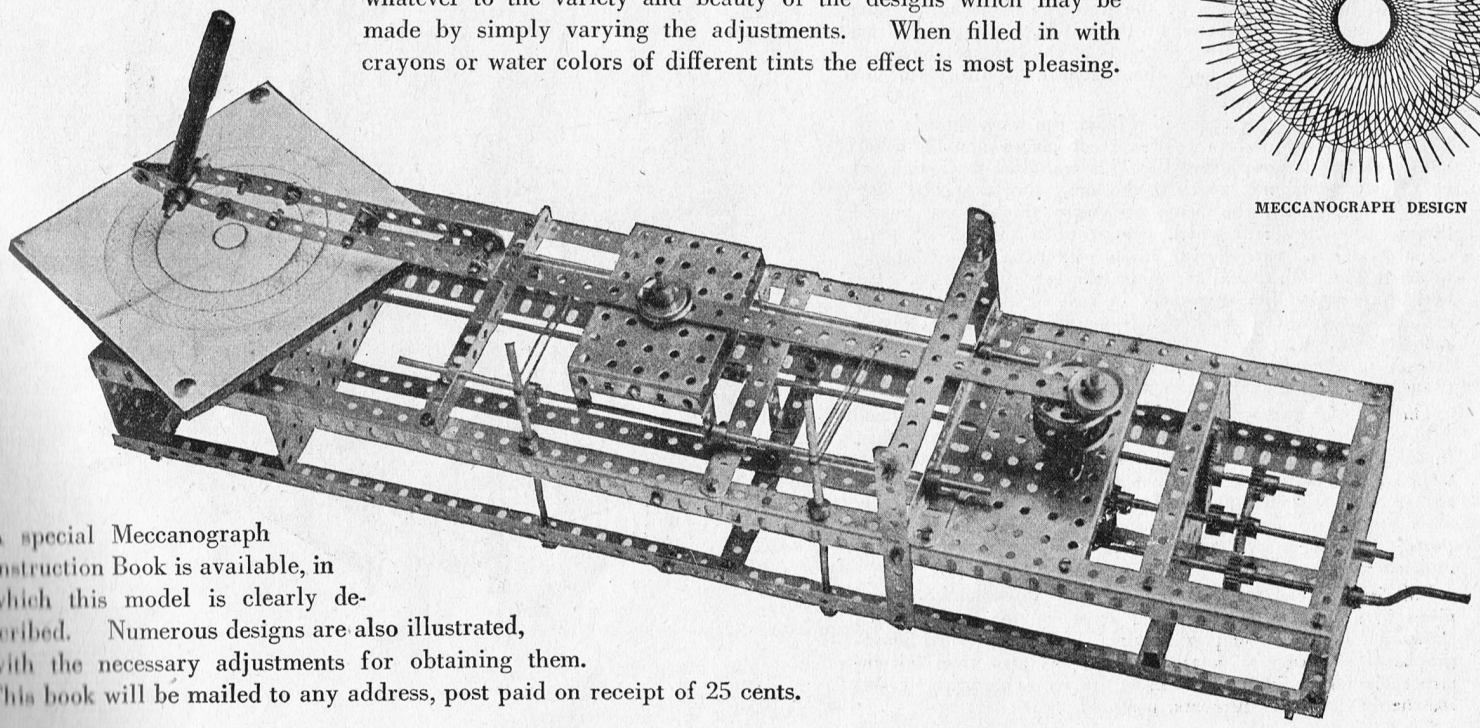
The "Meccanograph" Designing Machine

Special Model No. 708

This is a model of extraordinary interest, and we hope that all Meccano boys will build it. With it any boy can make an amazing variety of exquisite designs by fixing a sheet of paper and pencil in position and turning the handle. At the right we reproduce one design which has been made with this instrument and many others could be illustrated if we had the space. There is really no limit whatever to the variety and beauty of the designs which may be made by simply varying the adjustments. When filled in with crayons or water colors of different tints the effect is most pleasing.



MECCANOGRAPH DESIGN



A special Meccanograph Instruction Book is available, in which this model is clearly described. Numerous designs are also illustrated, with the necessary adjustments for obtaining them. This book will be mailed to any address, post paid on receipt of 25 cents.

The New Meccano Loom

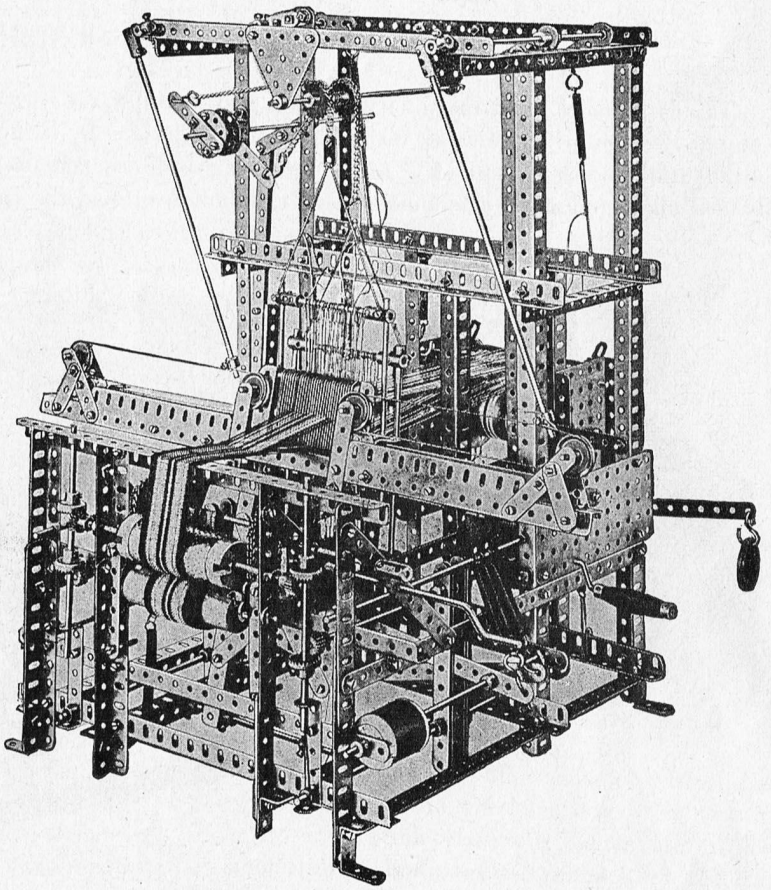
No model could better illustrate the wonderful genius of the Meccano system than this new model of the Meccano Loom. In this model every technical operation in the process of weaving is perfectly carried out in miniature, exactly as in every-day practice in actual manufacture. The loom is operated simply by turning a crank handle, which sets in motion all the necessary operations.

A woven fabric is composed of two elements, the "warp" or longitudinal threads, and the "weft," or cross threads. The inter-weaving of the warp by the weft is called the "picking motion," and this is effected by the passing of a thread from the shuttle which flies from one side of the loom to the other, and in doing so, passes each time between the threads of the warp.

Before cloth can be woven in a loom, the warp threads must be wound evenly and in their correct places upon a roller, known as the "weaver's beam." This operation is carried out by a Beaming Frame, which is the subject of a special Meccano model. From the beam the warp threads are passed through the "healds," which consist of a number of wires called "leaches," each having in its center an eye or "mail," which to a certain extent resembles the eye of a needle. The healds are assembled vertically in two or more frames, so arranged that when one heald frame is raised, the other is pulled down. The healds thus serve to lift and depress the threads of the warp, so that the shuttle may be passed between them and drag the welt along after it.

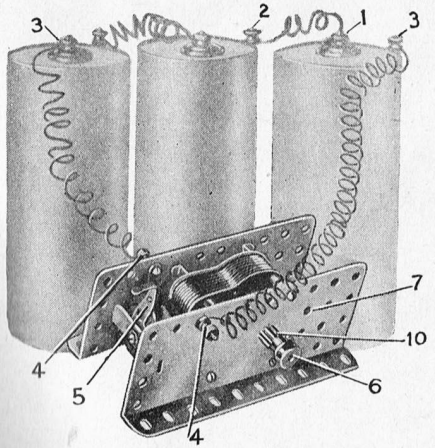
The shuttle moves along the "slay" which supports and guides it as it is jerked from one side of the loom to the other, by means of the "picking stick," suspended from above. Attached to the slay is the "reed," formed by a number of strips spaced with washers, and this moves forward with the slay after every crossing of the warp by the weft. This action presses the last strand of the weft firmly into place in the finished fabric.

Full instructions for building the new Meccano Loom are given in a beautifully illustrated sheet, on art paper, which shows not only the complete model, but also sectional photographs of all essential details. The leaflet also gives full instructions for building a beaming frame. The price of this instruction leaflet is 10 cents, postpaid.



How to Use the Meccano Electric Motor

The Meccano Electric Motor has been specially designed for running Meccano Models and may be operated efficiently by good dry cells or a storage battery giving approximately 4 volts. If two or three dry cells are used, they should be connected together as illustrated below, the central or positive terminal (1) of the first being connected to the outside or negative terminal (2) of the next, etc. The two remaining terminals (3) should be connected to the motor terminals (4). The connecting of the second motor terminal to the battery sets the



one-way motor in motion. Insulated copper bell wire is recommended for making the connections and can be obtained at any electrical supply store.

The reversing motor has a control lever (5). When this lever is in the central position, as illustrated, the current is off and the motor is "dead." To start the motor move the lever to the right or left according to the motion desired, either forward or reverse.

A little light oil should be applied occasionally to the bearings of the motor.

The Meccano Transformer

When alternating electric current of 110 volts, 60 cycles is available it can be used to operate the motor through a Meccano transformer. (See page 62.) This transformer is well made and is very efficient; it delivers just the right voltage for Meccano Motors.

Attaching the Motor to Meccano Models

The sides and flanged base of the motor are pierced with the Meccano standardized holes, so it is a simple matter to build the motor right into the model. The illustration shows the motor attached to Model No. 122—Drop Stamp. The motor is bolted to the flanged plate and a cord is run around the motor pulley (6) and the pulley wheel (8) on the crank handle.

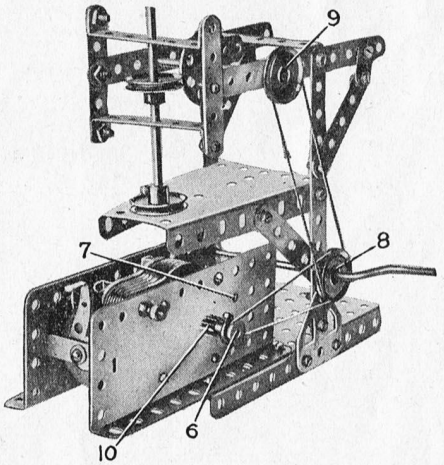
Thus the model can be operated either by hand or by motor, as desired. The crank handle and pulley (8) could also be removed and the motor fixed directly under the table. The cord could then be connected from the motor pulley (6) to the pulley (9) on the upper arm of the model. This would make a more compact and neater model.

When connecting the cord between two pulleys do not make it too tight nor too loose—a little experimenting will be necessary to get the proper tension. Meccano Spring Cord (part No. 58) is ideal for use with pulleys as it automatically adjusts itself to the proper tension. It can be purchased separately at any time.

Be sure that the model operates freely before attempting to drive it with the motor.

Gears for Meccano Motors

To the driving shaft of the motor is secured a pinion (10) which is used when a positive shaft drive is required instead of a belt drive. A 57-toothed gear wheel (Meccano part No. 27a), secured to a rod passed through hole 7, will mesh with the pinion on the driving shaft, and this gear wheel will rotate much slower than the pinion be-



cause it is a great deal larger. However, although the speed of the second shaft is only about 1/5th the speed of the first shaft, it has about five times the power.

This is known as gear reduction and the procedure may be repeated by using a Meccano pinion on the other end of the rod which goes through hole 7. This pinion can be made to mesh with a gear wheel in the model.

MECCANO PRICE LIST

MECCANO OUTFITS

No. 00 Meccano Outfit	$ 1.00
" 0 " "	2.00
" 1 " "	3.00
" 1x " " (with motor)	5.00
" 2 " "	6.00
" 2x " " (with motor)	8.50
" 3 " "	9.00
" 3x " " (with motor)	11.50
" 4 " " " "	15.00
" 5 " " with motor and transformer	25.00
" 6 " " " " " "	45.00

Commencing with No. 0, each Outfit can be converted into the next larger by the addition of the proper Accessory Outfit. See next column.

ACCESSORY OUTFITS

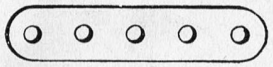
No. 0A Accessory Outfit	$ 1.25
Converts a No. 0 Outfit into a No. 1 Outfit	
No. 1A Accessory Outfit	3.00
Converts a No. 1 Outfit into a No. 2 Outfit	
No. 2A Accessory Outfit	3.00
Converts a No. 2 Outfit into a No. 3 Outfit	
No. 3A Accessory Outfit	6.00
Converts a No. 3 into a No. 4, except motor	
No. 4A Accessory Outfit	7.50
Converts a No. 4 into a No. 5, except transformer	
No. 5A Accessory Outfit	20.00
Converts a No. 5 Outfit into a No. 6 Outfit	

Accessory Outfits do not contain Motors or Transformers

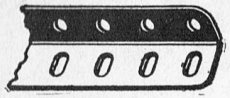
Meccano Motors and Transformer

E1 Meccano Electric Motor—(one-way)	$ 3.50
E2 " " " (reversing)	4.50
S1 Meccano Clockwork Motor (reversing)	$ 3.00
Type B Transformer—(for 110v. 60c. A.C. only)	2.50

Particulars and Prices of Meccano Parts



No.		Price
1	Perforated Strips, 12½" long.....½ doz.	.45
1A	" " 9½" " ..... "	.35
1B	" " 7½" " ..... "	.30
2	" " 5½" " ..... "	.25
2A	" " 4½" " ..... "	.20
3	" " 3½" " ..... "	.20
4	" " 3" " ..... "	.20
5	" " 2½" " ..... "	.15
6	" " 2" " ..... "	.15
6A	" " 1½" " ..... "	.15



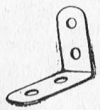
7	Angle Girders, 24½"long..... each	.25
7A	" " 18½" " ..... "	.20
8	" " 12½" " .....½ doz.	.60
8A	" " 9½" " ..... "	.55
8B	" " 7½" " ..... "	.50
9	" " 5½" " ..... "	.45
9A	" " 4½" " ..... "	.40
9B	" " 3½" " ..... "	.35
9C	" " 3" " ..... "	.35
9D	" " 2½" " ..... "	.30
9E	" " 2" " ..... "	.25
9F	" " 1½" " ..... "	.25


(10)


(11)

10	Flat Brackets.....½ doz.	.05
11	Double Brackets.....each	.03

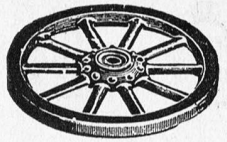

(12)

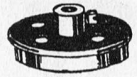

(12A)

12	Angle Brackets, ½"x½".....doz.	.12
12A	" " 1"x1".....each	.05
12B	" " 1"x½"..... "	.05

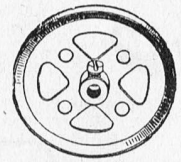
13	Axle Rods, 11½" long.....each	.10
13A	" " 8" " ..... "	.10
14	" " 6" " ..... "	.05
15	" " 5" " ..... "	.05
15A	" " 4½" " ..... "	.05
16	" " 3½" " ..... "	.05
16A	" " 2½" " ..... "	.03
16B	" " 3" " ..... "	.04
17	" " 2" " ..... "	.02
18A	" " 1½" " ..... "	.02
18B	" " 1" " ..... "	.02

19	Crank Handles.....each	.10


(19A)

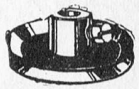

(20)

No.		Price
19A	Wheels, 3" diam., with set screw ...each	.45
20	Flanged Wheels..... "	.25



Pulley Wheels

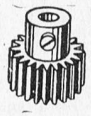
19B	" dia. with centre boss and set screw, each	.25
20A	2" " " " " " " " "	.20
21	1½" " " " " " " " "	.20


(21)


(22A)

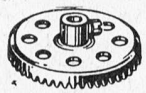
22	1" dia. with centre boss and set screw, each	.10
23A	½" " " " " " " " "	.10
22A	1" " without " " " " " " "	.05
23	½" " " " " " " " "	.05


(24)


(25)

24	Bush Wheels.....each	.15
25	Pinion Wheels, ¾" diam..... "	.25
26	" " ½" " ..... "	.15


(27)


(26)

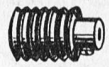
Gear Wheels

27	50 teeth to gear with ¾" pinion...each	.30
27A	57 " " " " ½" " ... "	.35
28	Contrate Wheels, 1½" diam..... "	.50
29	" " ¾" " ..... "	.30


(30)


(31)

No.		Price
30	Bevel Gears.....each	.55
31	Gear Wheels, 1", 38 teeth..... "	.65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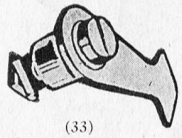
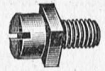
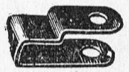

(33)

32	Worm Wheels.....each	.25
33	Pawls (complete)..... "	.15
33A	Pivot Bolts with Nuts..... "	.06
34	Spanners..... "	.10
34B	Box Spanners..... "	.20


(35)

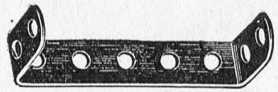

(37)

35	Spring Clips.....per box (doz.)	.15
36	Screw Drivers.....each	.10
36A	" " Extra Long..... "	.50
37	Nuts and Bolts.....per box (doz.)	.15
37A	Nuts..... " "	.05
37B	Bolts..... " "	.10
38	Washers..... "	.05
40	Hanks of Cord.....each	.05
41	Propeller Blades.....per pair	.15
43	Springs.....each	.05


(44)

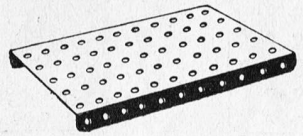

(45)

44	Cranked Bent Strips.....each	.05
45	Double Bent Strips..... "	.05

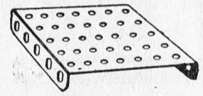

(46)


(50)

46	Double Angle Strips, 2½"x1".....each	.05
47	" " " 2½"x1½"..... "	.06
47A	" " " 3"x1½".....½ doz.	.36
48	" " " 1½"x½"..... "	.18
48A	" " " 2½"x½"..... "	.20
48B	" " " 3½"x½"..... "	.25
48C	" " " 4½"x½"..... "	.35
48D	" " " 5½"x½"..... "	.36
50	Eye Pieces.....each	.05



No.		Price
52	Perforated Flanged Plates, 5½"x2½",each	.2
52A	Flat Plates, 5½"x3½"..... "	.15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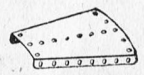
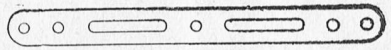
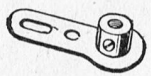

(54)

53	Perforated Flanged Plates, 3½"x2½",each	.20
53A	Flat Plates, 4½"x2½"..... "	.12
54	Perforated Flanged Sector Plates..... "	.20

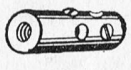


55	Perforated Strips, Slotted, 5½" long each	.05
55A	" " " 2" " "	.03
56A	Instruction Manuals, No. 0-3..... "	.35
56B	" " " 4-6..... "	.45
56C	" " " 0..... "	.25
57	Hooks..... "	.02
57A	" (scientific)..... "	.02
57B	" (loaded)..... "	.15
58	Spring Cord.....per length	.30
59	Collars with Set Screws.....each	.05
60	This Part Number has been changed to 48A	
60B	This Part Number has been changed to 48B	
61	Windmill Sails.....each	.10


(62)


(63)

62	Cranks.....each	.15
62A	Threaded Cranks..... "	.15
63	Couplings..... "	.15
63A	Octagonal Couplings..... "	.20
63B	Strip Couplings..... "	.20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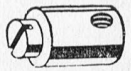
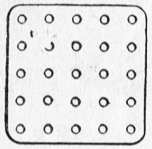
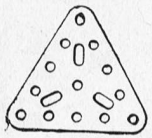

(64)

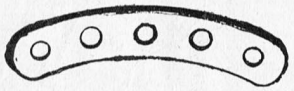
63c	Threaded Couplings.....each	.20
64	Threaded Bosses..... "	.06
65	Centre Forks..... "	.10
66	Weights, 50 gramme..... "	.20
67	" 25 " ..... "	.15
68	Woodscrews, ½".....doz.	.10
69	Set Screws..... "	.10
69A	Grub Screws, 5-32"..... "	.10
69B	" " 7-32"..... "	.10

Particulars and Prices of Meccano Parts (Continued)

No.		Price
70	Flat Plates, 5½"x2½".....each	.15
72	" " 2½"x2½"..... "	.10
76	Triangular Plates, 2½"..... "	.05
77	" " 1"..... "	.04

78	Screwed Rods, 11½".....each	.25
79	" " 8"..... "	.25
79A	" " 6"..... "	.20
80	" " 5"..... "	.15
80A	" " 3½"..... "	.12
80B	" " 4½"..... "	.12
81	" " 2"..... "	.10
82	" " 1"..... "	.05

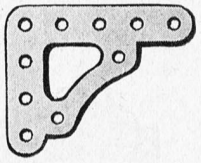


89	Curved Strips, 5½".....each	.05
90	" " 2½"..... ½ doz.	.25
94	Sprocket Chain.....per yard	.25

95	Sprocket Wheels, 2" diam.....each	.25
95A	" " 1½" " ..... "	.25
95B	" " 3" " ..... "	.40
96	" " 1" " ..... "	.20
96A	" " ¾" " ..... "	.15

97	Braced Girders, 3½"long.....½ doz.	.20
98	" " 2½" " ..... "	.15
99	" " 12½" " ..... "	.75
99A	" " 9½" " ..... "	.60
100	" " 5½" " ..... "	.50
101	Healds, for Looms.....doz.	.45
102	Single Bent Strips.....each	.05
103	Flat Girders, 5½"long..... "	.10
103A	" " 9½" " ..... "	.12
103B	" " 12½" " ..... "	.15
103C	" " 4½" " ..... "	.10
103D	" " 3½" " ..... "	.10
103E	" " 3" " ..... "	.08
103F	" " 2½" " ..... "	.08
103G	" " 2" " ..... "	.06
103H	" " 1½" " ..... "	.05

No.		Price
104	Shuttles, for Looms.....each	1.20
105	Reed Hooks, for Looms..... "	.10
106	Wooden Rollers..... "	.40
106A	Sand Rollers..... "	.45
107	Tables for Designing Machines..... "	.25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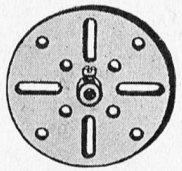
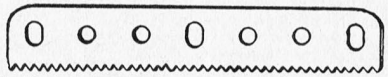
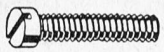

(109)

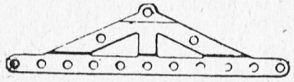
108	Architraves.....each	.09
109	Face Plates, 2½" diam..... "	.20



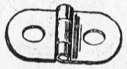
110	Rack Strips, 3½".....each	.10



111	Bolts, ¾".....each	.02
111A	" ½" ..... "	.01
111B	" 7-32".....doz.	.10

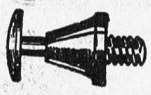


113	Girder Frames.....each	.10


(114)

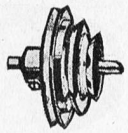

(115)

114	Hinges.....per pair	.20
115	Threaded Pins.....each	.05
116	Fork Pieces..... "	.10
117	Steel Balls, ⅜" diam..... "	.02
118	Large Wheel Hubs, 5½" diam..... "	.50
119	Large Wheel Segments (8 to circle, 11½" diam.)..... "	.15

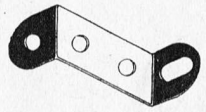
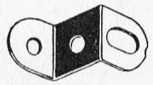

(120)

120	Buffers.....each	.05
120A	Spring Buffers.....per pair	.25

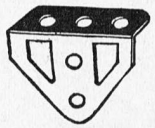




121	Train Couplings.....each	.15
122	Miniature Loaded Sacks.....½ doz.	.30
123	Cone Pulleys.....each	.50

124	Reversed Angle Brackets, 1".....½ doz.	.25
125	" " " ½"..... "	.20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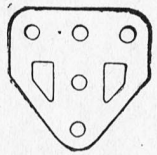
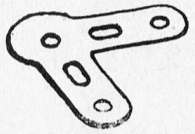

(126A)

126	Trunnions.....each	.10
126A	Flat Trunnions..... "	.06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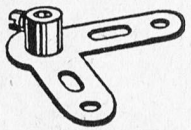
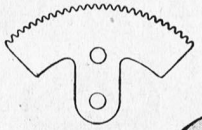

(128)

127	Simple Bell Cranks.....each	.10
128	Boss Bell Cranks..... "	.15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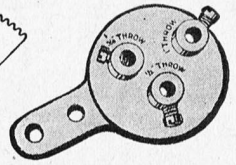
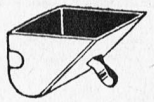
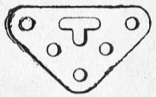


(130)

129	Rack Segments, 3" diam.....each	.20
130	Triple Throw Eccentrics..... "	.45



No.		Price
131	Dredger Buckets.....each	.15

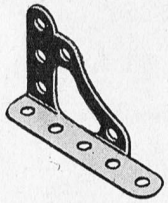



132	Flywheel, 2¾" diam.....each	.75
133	Corner Brackets..... "	.10

134	Crank Shafts, 1" Stroke.....each	.10
135	Theodolite Protractors..... "	.06



136	Handrail Supports.....each	.10
137	Wheel Flanges..... "	.15
138	Ship's Funnels..... "	.25


139 A

139	Flanged Brackets, (right).....each	.10
139A	" " (left)..... "	.10
140	Universal Couplings..... "	.30
	Brushes for Electric Motor..... "	.10
	Springs " " " ..... "	.10
	Caps " " " ..... "	.05

When ordering Brushes or Springs, please say whether they are required for motor on which the Brush-holders are outside of the sideplate, or inside.

MECCANO

Hornby's Original System, First Patented 1901

PATENTED IN THE UNITED STATES

Jan. 16, 1906	Jan. 4, 1916	Oct. 24, 1916	Oct. 19, 1920
Nov. 18, 1913	Feb. 15, 1916	Oct. 9, 1917	Dec. 14, 1920
Nov. 23, 1915	Aug. 1, 1916	Dec. 24, 1918	Apr. 11, 1922
Dec. 21, 1915	Aug. 29, 1916	Feb. 11, 1919	May 15, 1923

Design Patent July 4, 1916

PATENTED THROUGHOUT THE WORLD

Meccano is more than a Toy

IT is important to remember that when a boy is playing with MECCANO he is using engineering parts in miniature, and that these parts act in precisely the same way as do the corresponding engineering elements in actual practice. No other system of model construction can be correct, and other toys which attempt the same object by other methods must avail themselves of constructive elements which are not correct engineering elements. Consequently, though a boy may succeed in building playthings with them, they are merely toys and nothing else.