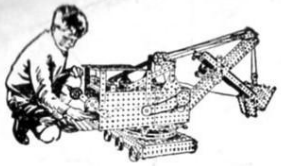
MECCANO

HORNBY'S ORIGINAL SYSTEM — FIRST PATENTED 1901

INSTRUCTIONS FOR OUTFIT A

PRICE 2d.

13/635/20 (U.K.)



MECCANO

HORNBY'S ORIGINAL SYSTEM — FIRST PATENTED 1901

MODEL-BUILDING WITH MECCANO

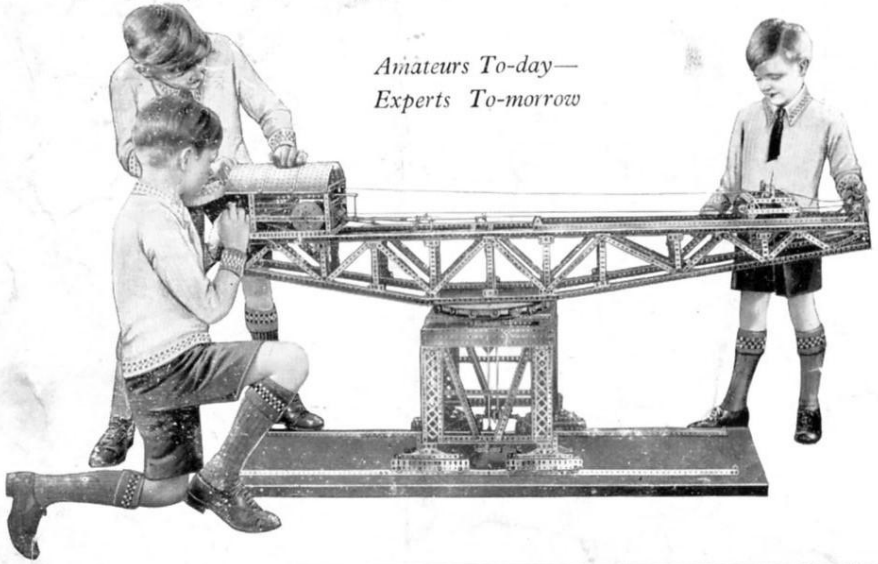
There is no limit to the number of models that can be built with Meccano—Cranes, Clocks, Motor Cars, Ship Coalers, Machine Tools, Locomotives—in fact everything that interests boys. A screwdriver and a spanner, both of which are provided in each Outfit, are the only tools necessary.

Make the simple models first—they will provide hours of fun—and then try to improve them. Every model can be made in a dozen different ways. It is important to screw up all the nuts and bolts tightly to ensure that your models will be strong and firm when they are completed.

Every keen and inventive Meccano model builder should obtain copies of the special Manuals "How to use Meccano Parts" and "Meccano Standard Mechanisms." These Manuals can be purchased from your dealer, or direct from Meccano Ltd., Binns Road, Liverpool 13.

HOW TO BUILD UP YOUR OUTFIT

Meccano is sold in ten different Outfits, lettered A to L. All Meccano parts are of the same high quality and finish, but the larger Outfits contain a greater quantity and variety of parts, making possible the construction of more elaborate models. Each Outfit from A upwards can be converted into the one next higher by the purchase of an Accessory Outfit. Thus, Meccano Outfit A can be converted into a B by adding to it an Aa Accessory Outfit. A Ba would then convert it into a C Outfit, and so on. In this way, no matter with which Outfit you commence, you can build it up by degrees until you possess an L Outfit. It is important to remember that Meccano Parts can be bought separately at any time in any quantity from your Meccano dealer.



Amateurs To-day—
Experts To-morrow

ELECTRIC LIGHTING OF MECCANO MODELS

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

THE "MECCANO MAGAZINE"

The *Meccano Magazine* is specially written for Meccano boys. It tells them of the latest Meccano models ; what Meccano Clubs are doing ; how to correspond with other Meccano boys ; the Competitions that are running, etc. It contains splendid articles on such subjects as Railways, Famous Engineers and Inventors, Electricity, Chemistry, Bridges, Cranes, Wonderful Machinery, Aeronautics, Latest Patents, Radio, Stamps, Photography, Books and other topics of interest to boys, including suggestions from Meccano boys for new Meccano parts and correspondence columns in which the Editor replies to his readers' enquiries. The publishing date is the first of each month. If you are not already a reader of the *Meccano Magazine* write to the Editor for full particulars, or order a copy from your Meccano dealer or from any newsagent.

THE MECCANO GUILD

Every owner of a Meccano Outfit should join the Meccano Guild. This is a world-wide organisation for boys, started at the request of boys, and as far as possible conducted by boys. Its primary object is to bring boys together and to make them feel that they are all members of a great brotherhood, each trying to help the others to get the very best out of life. Write for full particulars and an application form to the Meccano Guild Secretary, Binns Road, Liverpool 13.

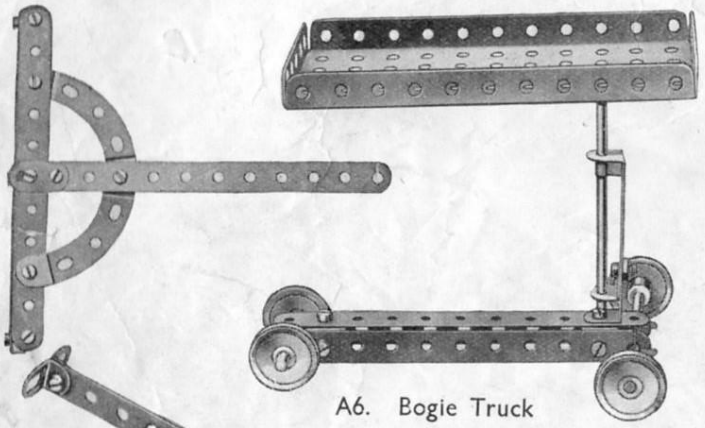
Meccano Clubs are founded and established under the guidance of the Guild Secretary at Headquarters, and at the present time there are active Clubs in nearly 250 towns and villages in the United Kingdom, and more than 100 in countries overseas. Each Club has its Leader, Secretary, Treasurer, and other officials, all of whom, with the exception of the Leader, are boys.

Special Merit Medallions are awarded to Club members for good work in connection with their Club, and Recruiting Medallions are awarded in connection with the Recruiting Campaign, full particulars of which will be sent on request.

MECCANO SERVICE

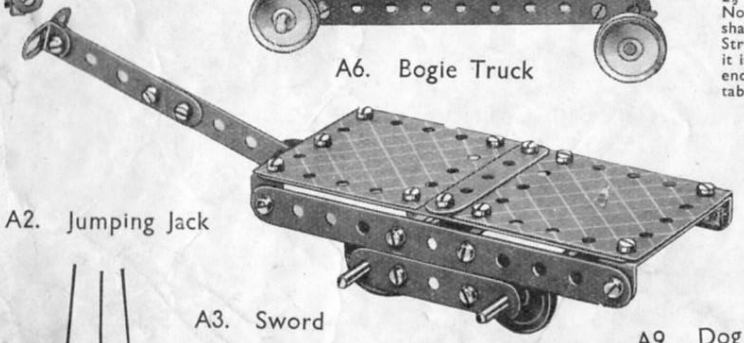
The service of Meccano does not end with selling an Outfit and an Instruction Manual. When you want to know something more about engineering than is now shown in our books, or when you strike a tough problem of any kind, write to us. We receive over 200 letters from boys every day all the year round. Although all kinds of queries are put to us on all manner of subjects, the main interest is, of course, engineering. No one has such a wonderful knowledge of engineering matters as that possessed by our staff of experts. This vast store of knowledge, gained only by many years of hard-earned experience, is at your service. *We want the Meccano boy of to-day to be the famous engineer of to-morrow.*

A1. Rake

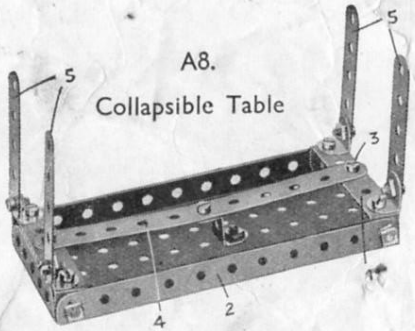


A5. Bed Table

A6. Bogie Truck



A8. Collapsible Table



The $2\frac{1}{2}" \times \frac{1}{2}"$ Double Angle Strips **1** are attached to the $5\frac{1}{2}" \times 2\frac{1}{2}"$ Flanged Plate **2** by lock-nutted Bolts as in Standard Mechanism No. 1A. The Bolts **3** are secured to the $5\frac{1}{2}"$ Strip **4** and their shanks engage with the centre holes in the $2\frac{1}{2}" \times \frac{1}{2}"$ Double Angle Strips **1**, thus maintaining the legs **5** in an upright position. When it is desired to fold up the legs **5**, it is only necessary to raise the ends of the Strip **4**, thus freeing the Double Angle Strips **1**. The table is shown in the folded position in Fig. A8a.

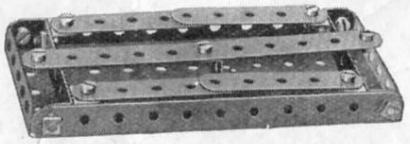
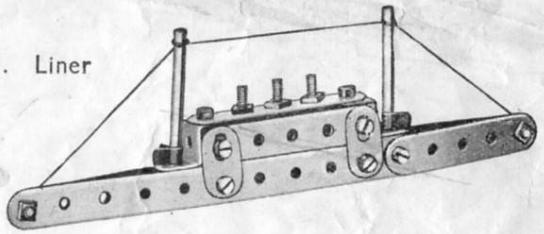
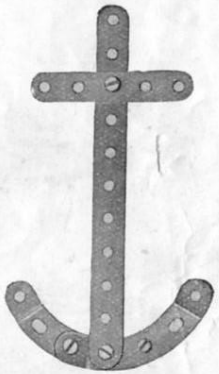


Fig. A8a

A11. Liner

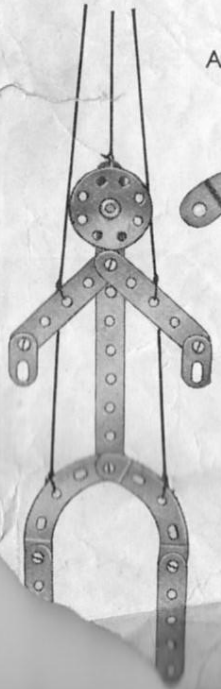


A12. Anchor

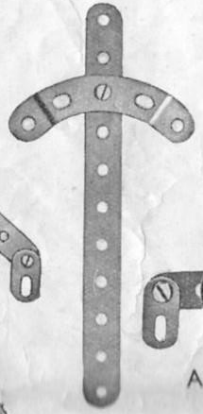


A16. Go-chair

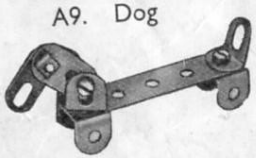
A2. Jumping Jack



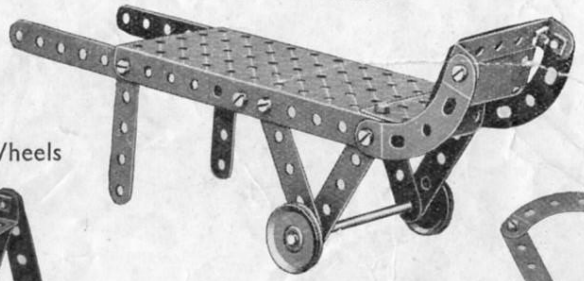
A3. Sword



A9. Dog

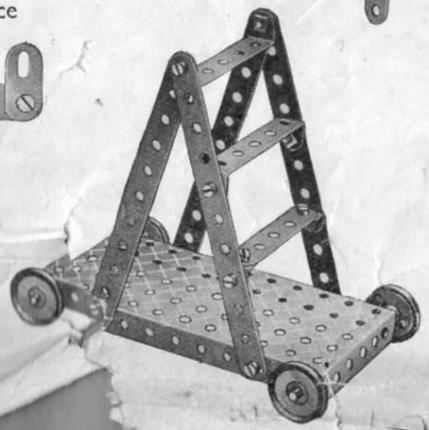


A13. Hand Truck

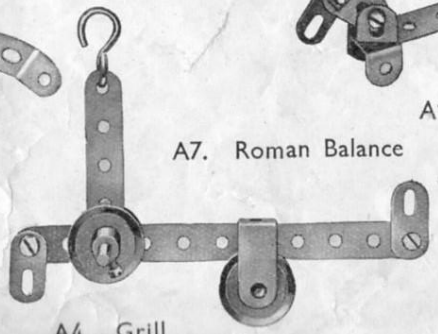


A17. Telegraph Pole

A10. Ladder on Wheels

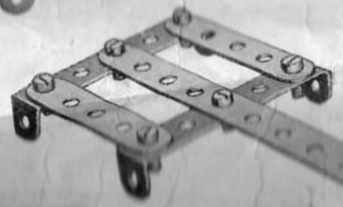


A7. Roman Balance

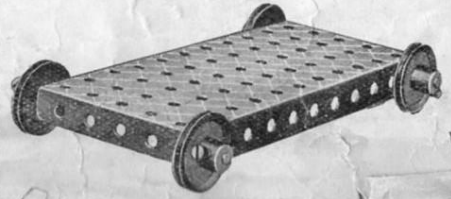


A14. Fire Axe

A4. Grill

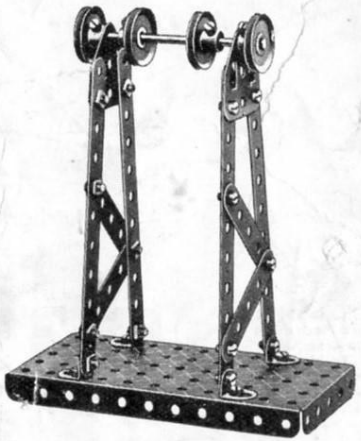


A15. Flat Truck

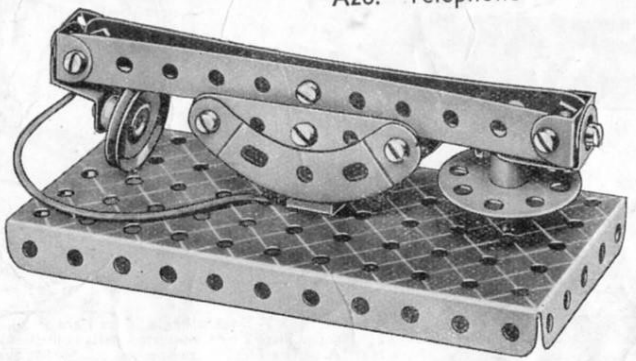


A18. Music Stool

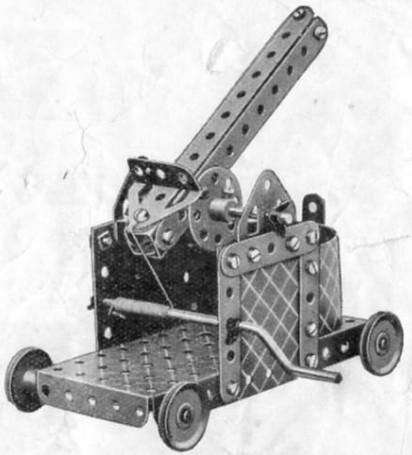
A21. Shafting Standard



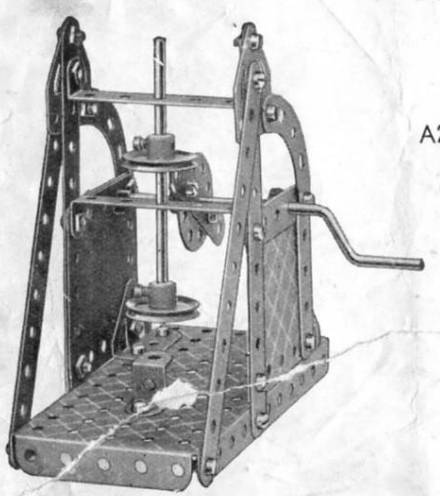
A23. Telephone



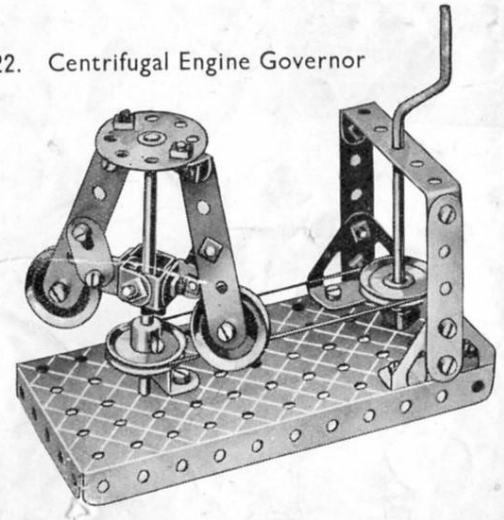
A26. Anti-aircraft Gun



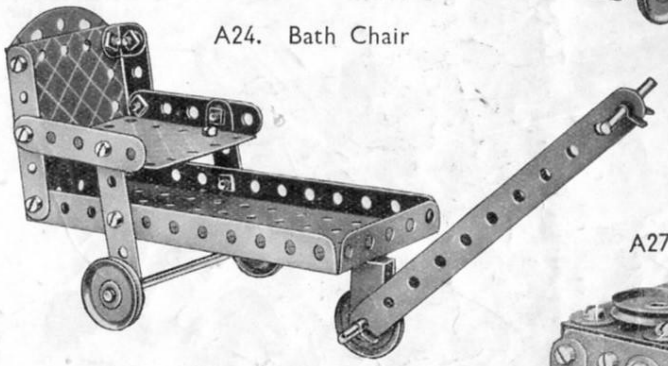
A19. Ore Crusher



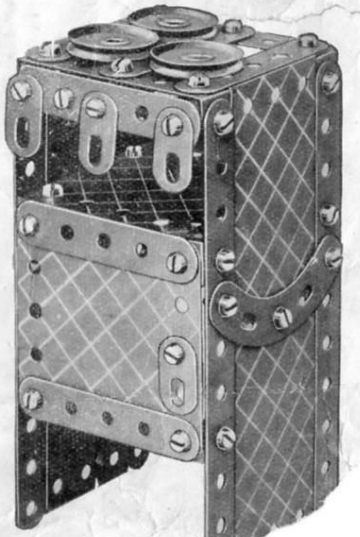
A22. Centrifugal Engine Governor



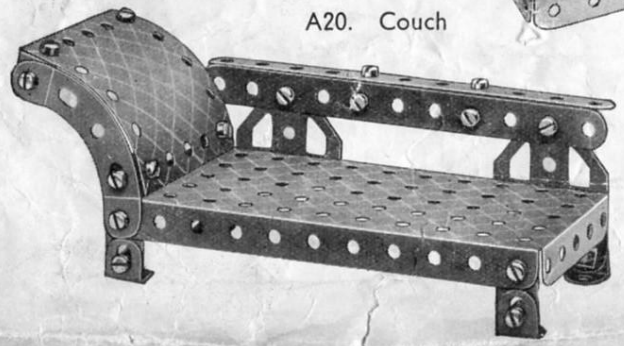
A24. Bath Chair



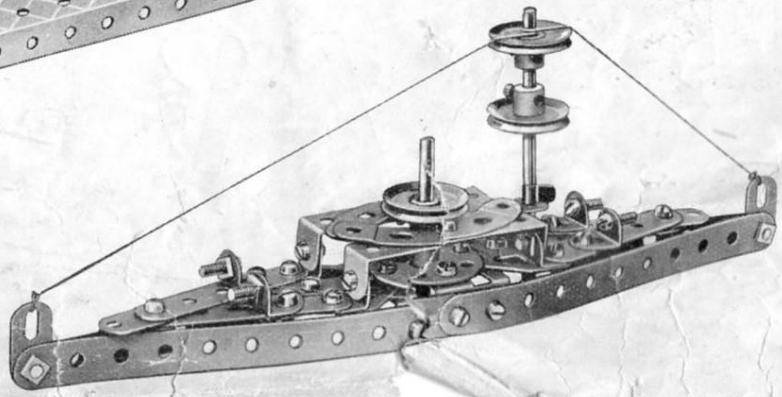
A27. Gas Stove



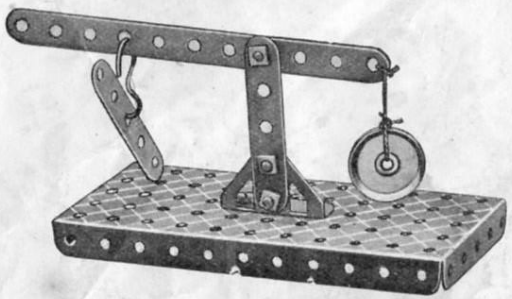
A20. Couch



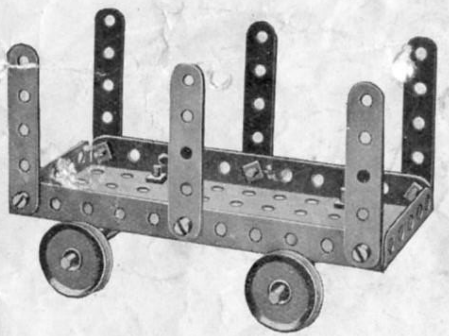
A25. Battleship



A28. Lever of the First Order

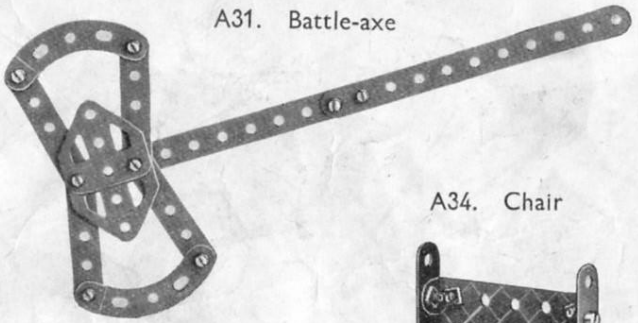


A29. Timber Truck

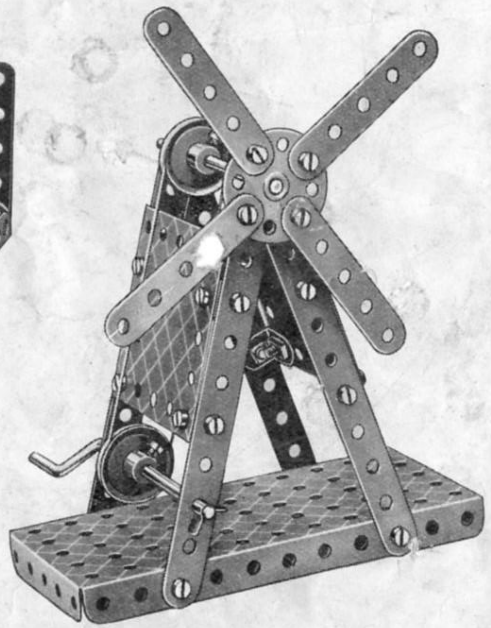


A30. Hanging Scales

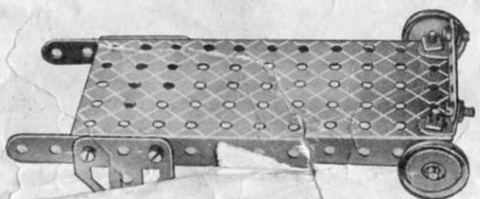
A31. Battle-axe



A32. Windmill

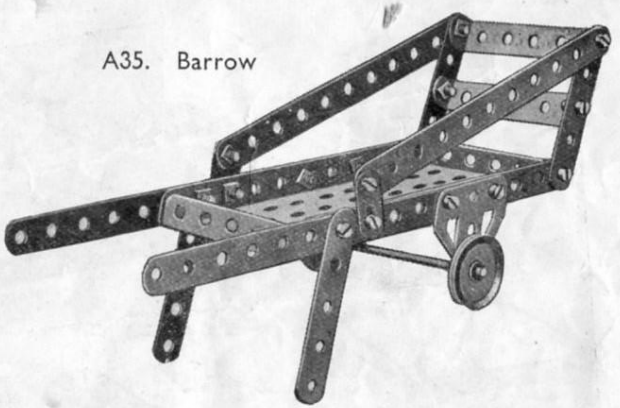


A33. Flat Truck

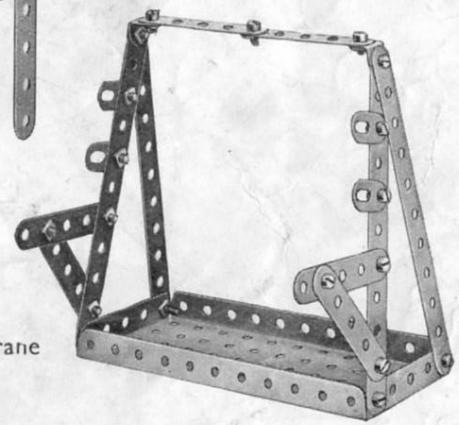


A34. Chair

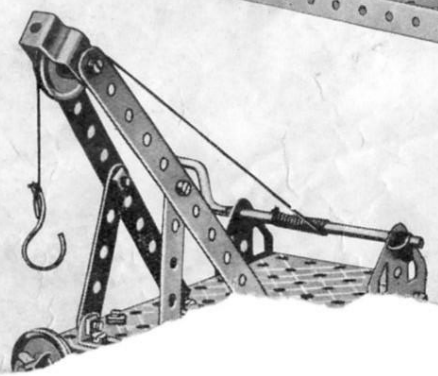
A35. Barrow



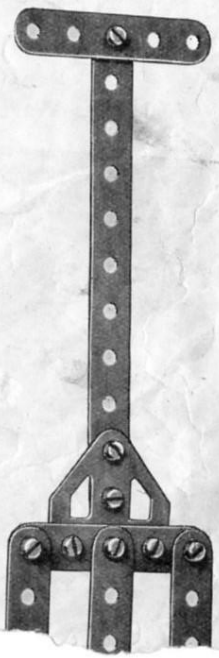
A36. Pen Rack



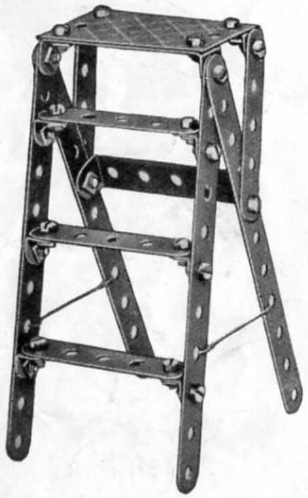
A37. Revolving Crane



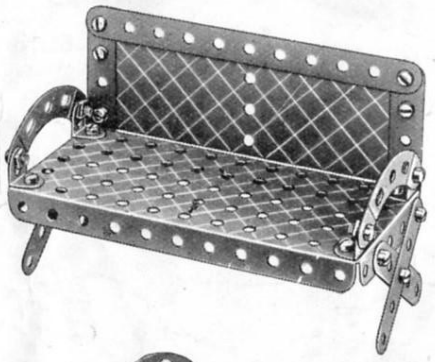
A38. Fork



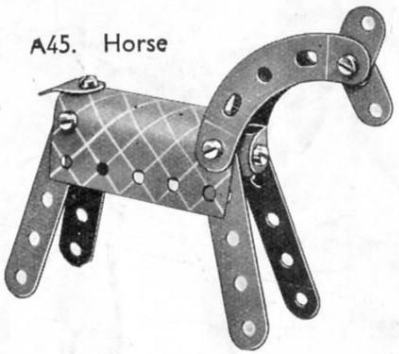
A39. Step Ladder



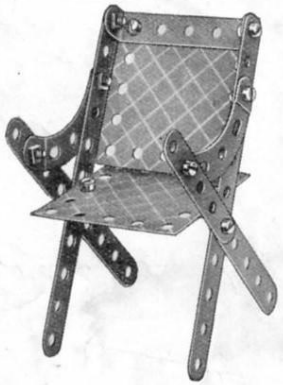
A42. Garden Seat



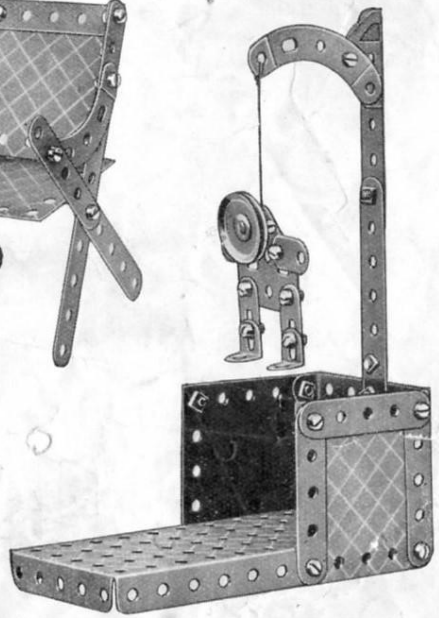
A45. Horse



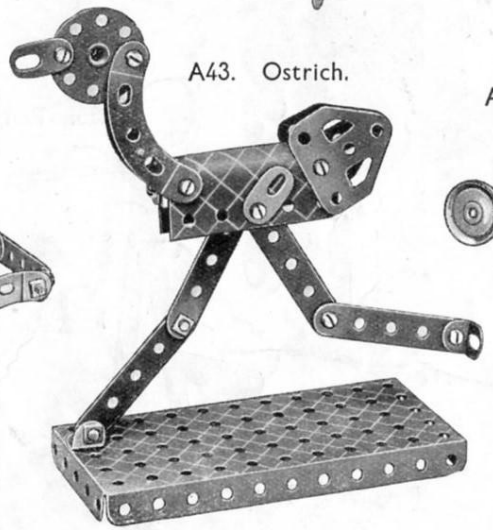
A48. Arm Chair



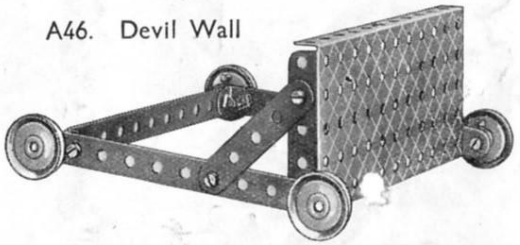
A49. Gallows



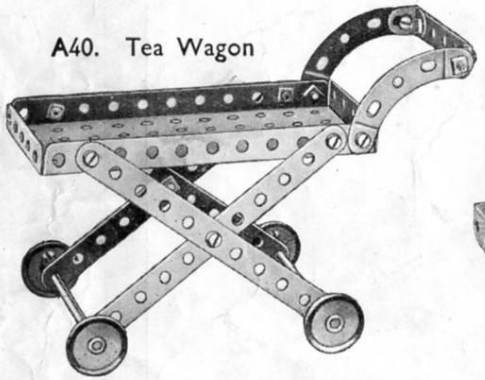
A43. Ostrich.



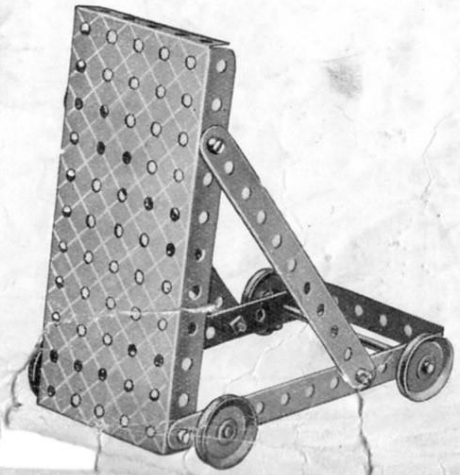
A46. Devil Wall



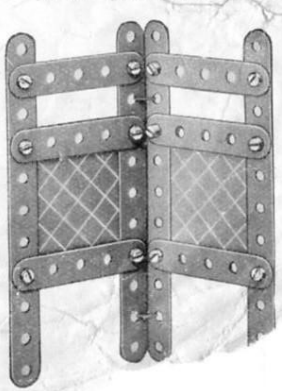
A40. Tea Wagon



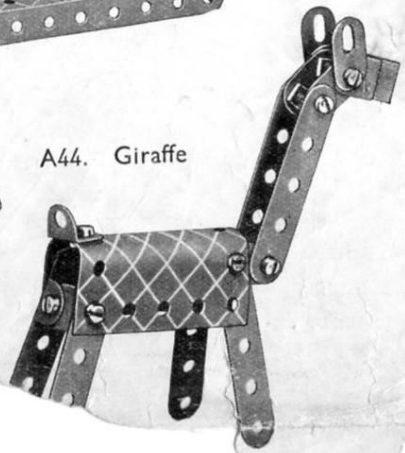
A47. Gravel Sifter



A50. Fire Screen

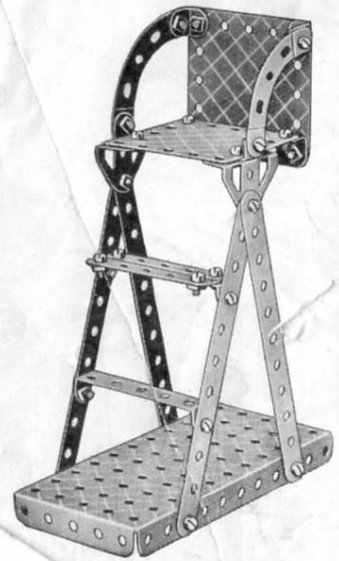


A44. Giraffe

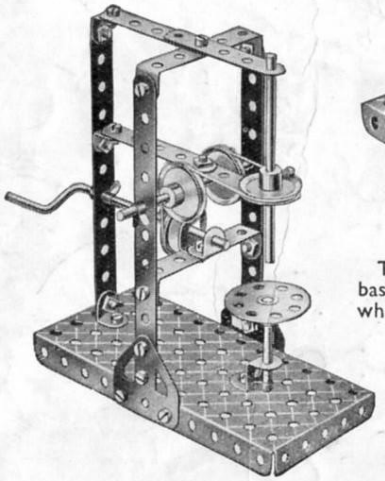


A41. Milk Truck

A51. Umpire's Seat

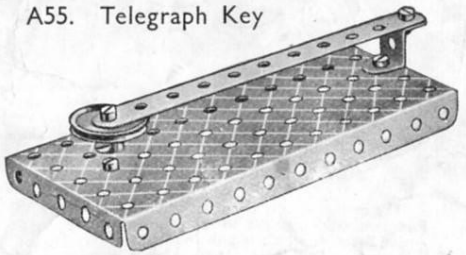


A52. Drilling Machine



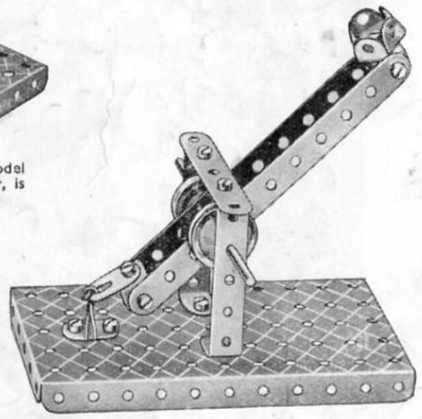
An alternative design of this model (A52M), fitted with the *Magic* Motor, is shown on page 9.

A55. Telegraph Key

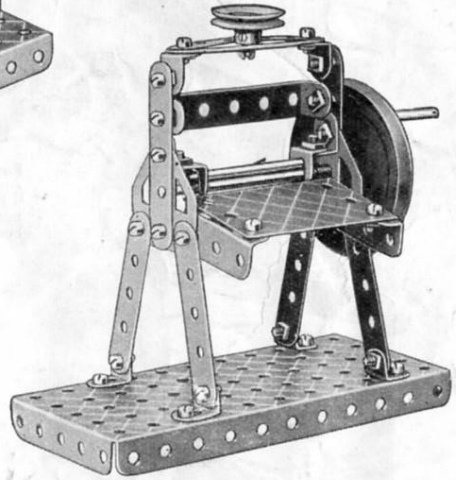


A56. Catapult

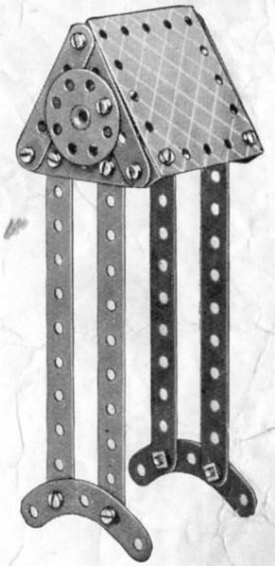
The pivoted arm is connected to the base by means of a short piece of elastic which is not provided in the Outfit.



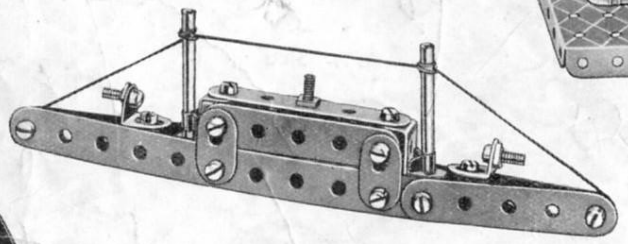
A58. Wringing Machine



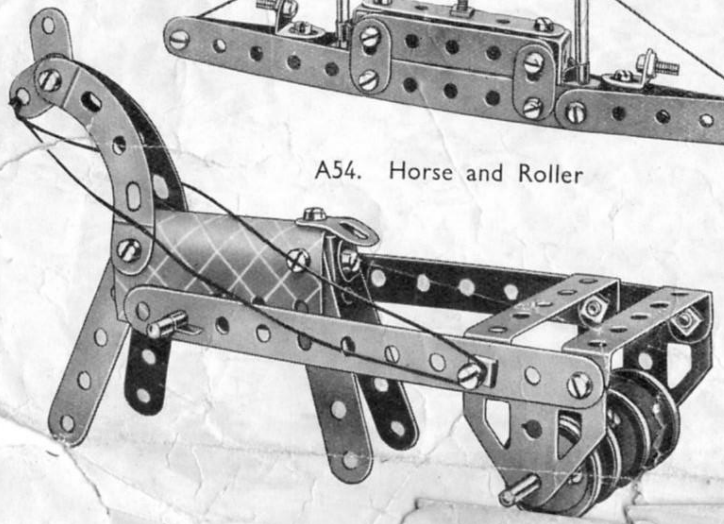
A60. Grandfather Clock



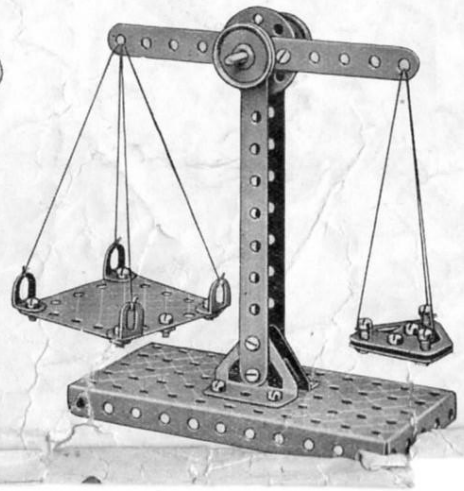
A53. Cruiser



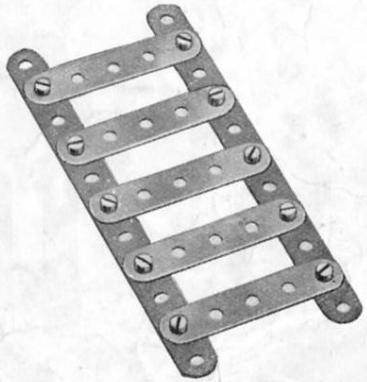
A54. Horse and Roller



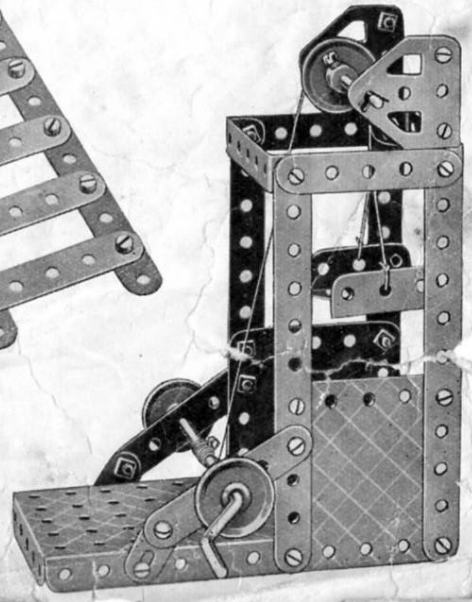
A57. Scales



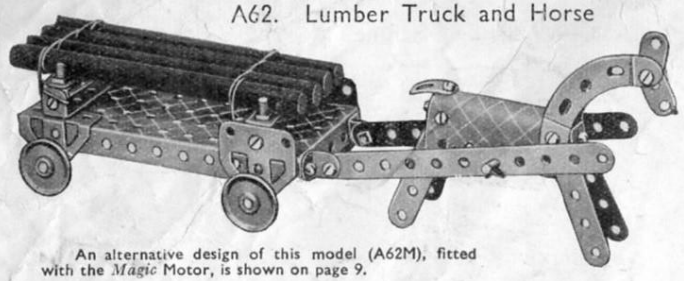
A59. Ladder



A61. Pit-head Gear

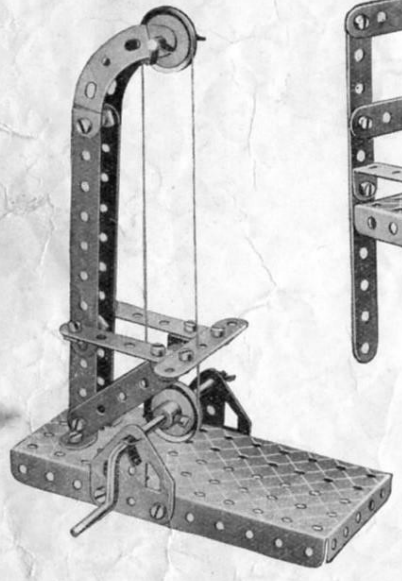


A62. Lumber Truck and Horse

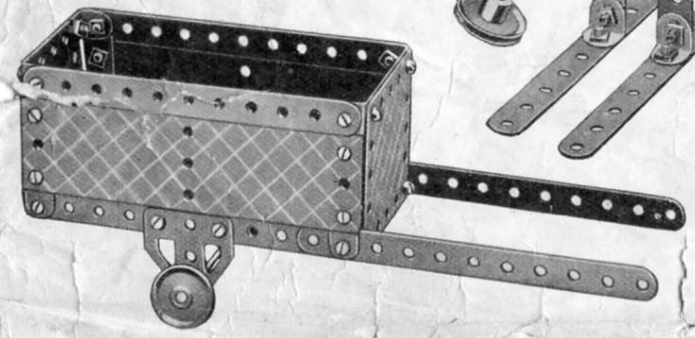


An alternative design of this model (A62M), fitted with the *Magic* Motor, is shown on page 9.

A63. Band Saw

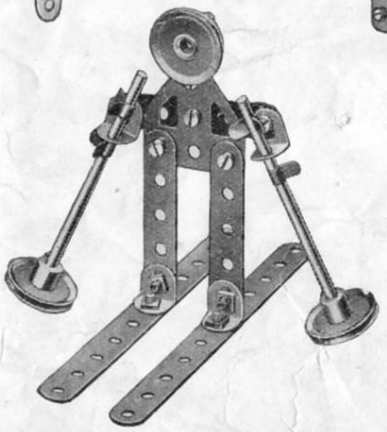


A64. Cart



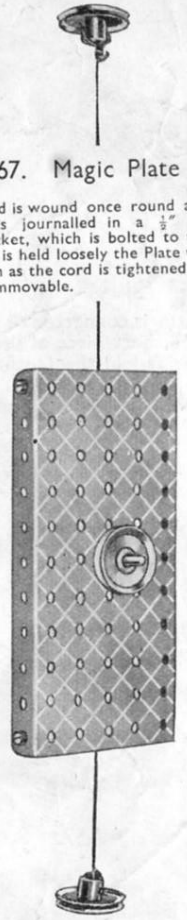
A65. Bench

A66. Skier

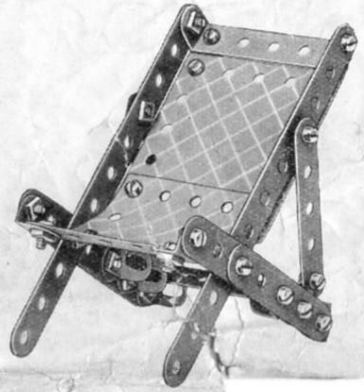


A67. Magic Plate

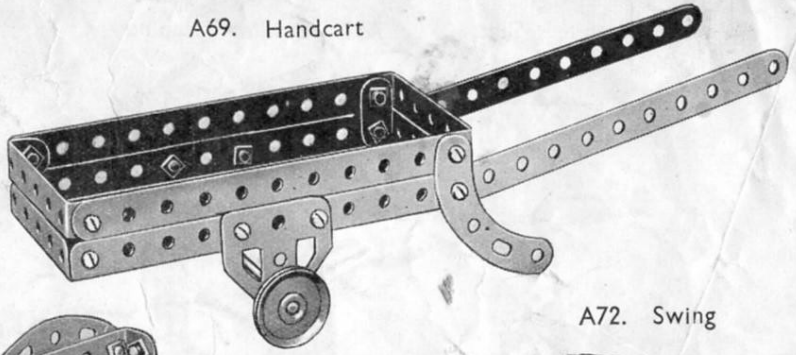
The cord is wound once round a 2" Axle Rod that is journalled in a ½" Reversed Angle Bracket, which is bolted to the Plate. If the cord is held loosely the Plate will drop, but as soon as the cord is tightened the Plate becomes immovable.



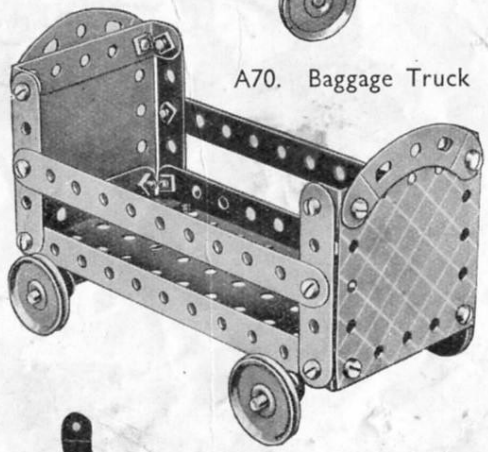
A68. Deck Chair



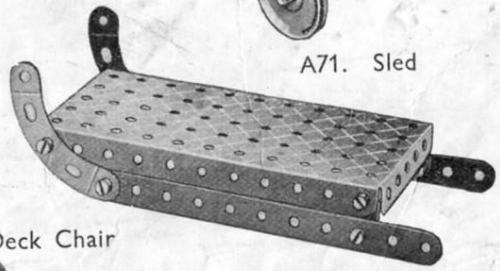
A69. Handcart



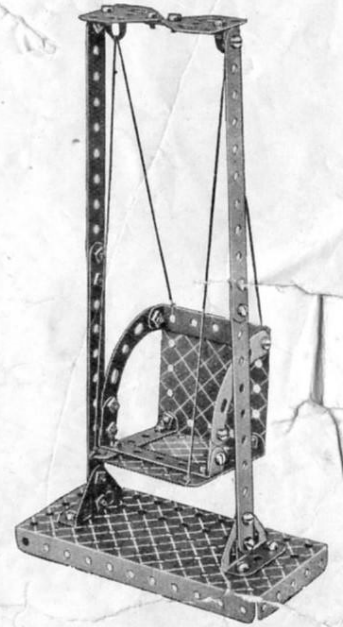
A70. Baggage Truck



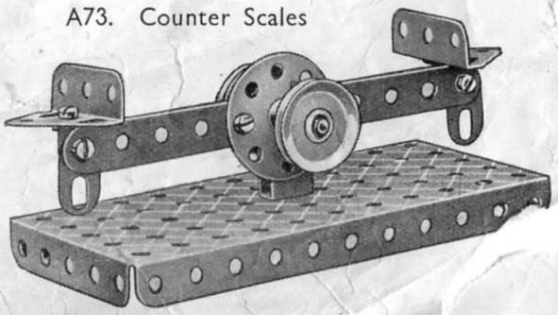
A71. Sled



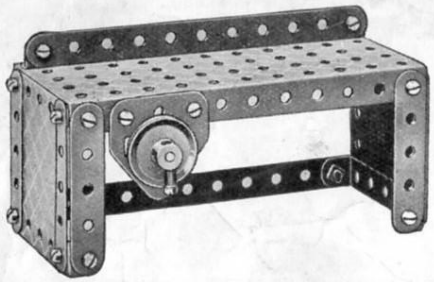
A72. Swing



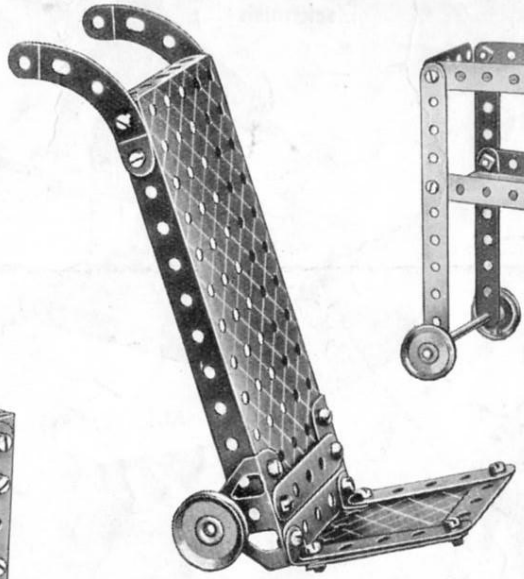
A73. Counter Scales



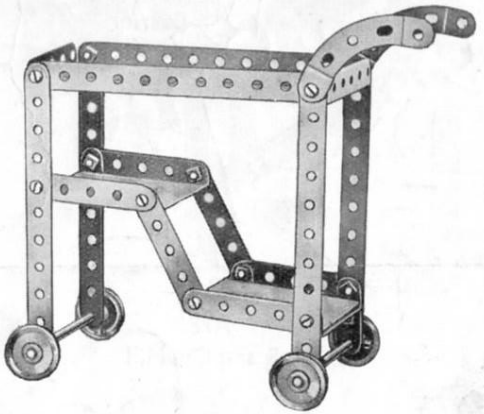
A86. Joiner's Bench



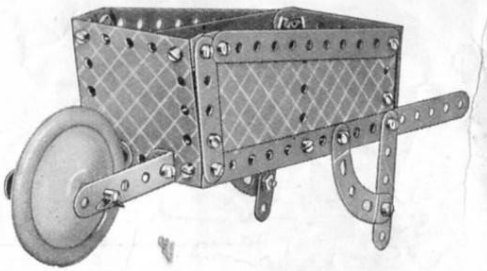
A89. Porter's Trolley



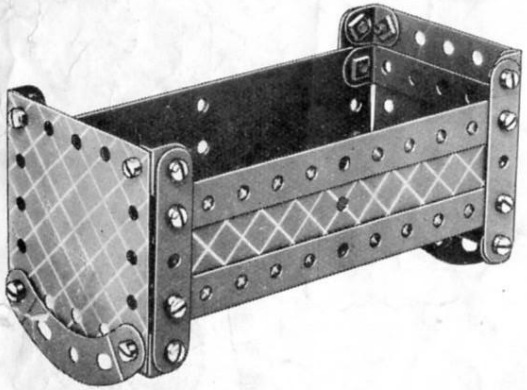
A91. Dinner Wagon



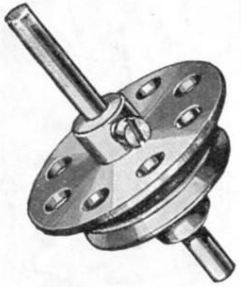
A93. Wheelbarrow



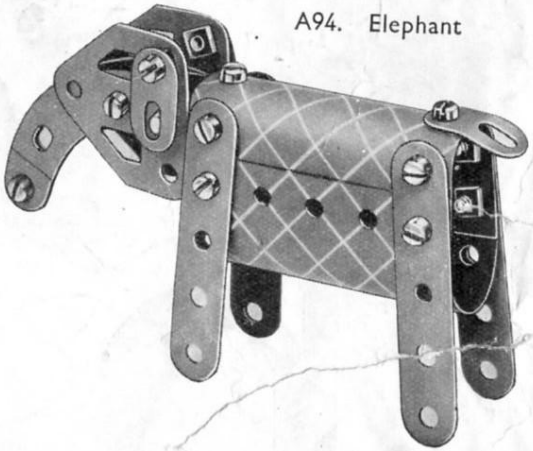
A87. Cot



A92. Top

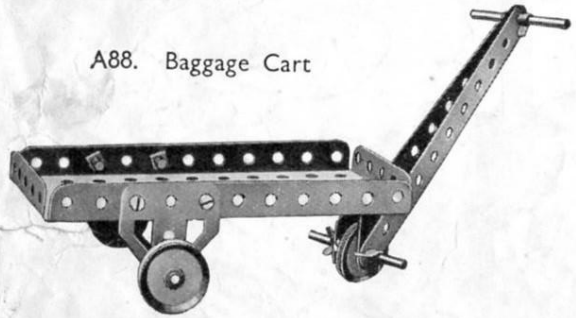


A94. Elephant

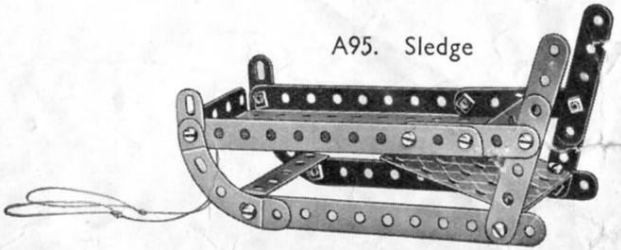


A90. Calf

A88. Baggage Cart



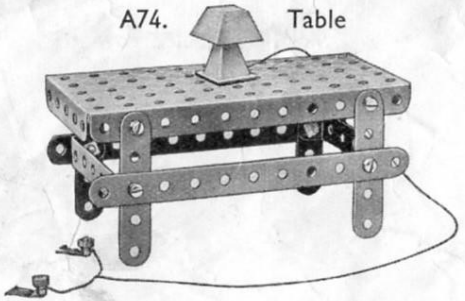
A95. Sledge



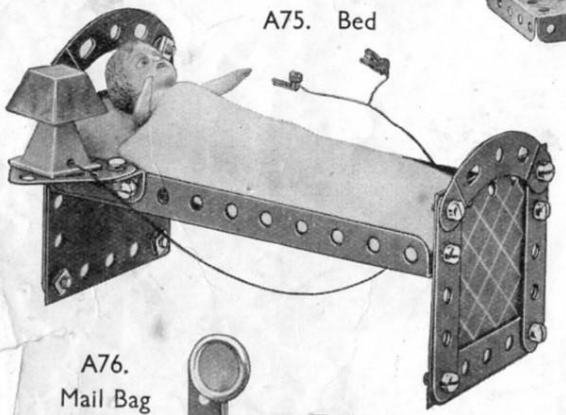
HOW TO CONTINUE

When you have built the A Outfit Models illustrated, and fitted a number of them with the Meccano Magic Motor (see opposite page), your next step is to purchase an Aa Accessory Outfit. This converts your A Outfit into a B and enables you to build bigger and better models.

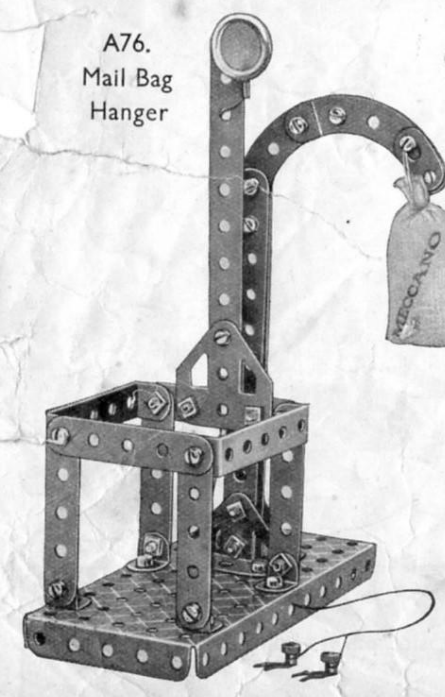
A74. Table



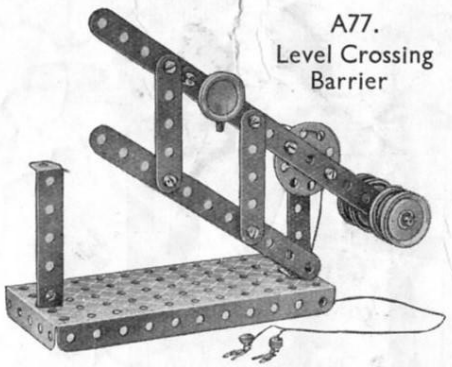
A75. Bed



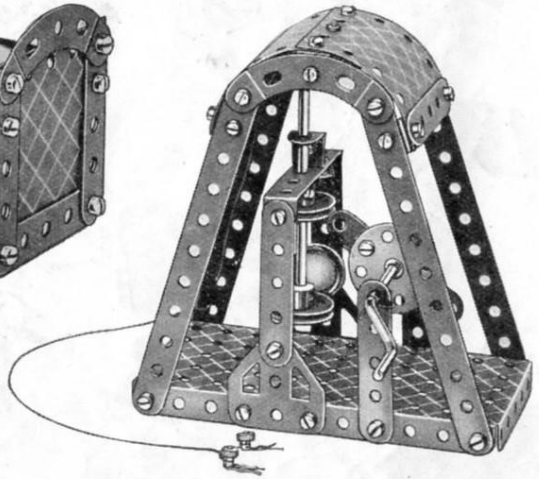
A76. Mail Bag Hanger



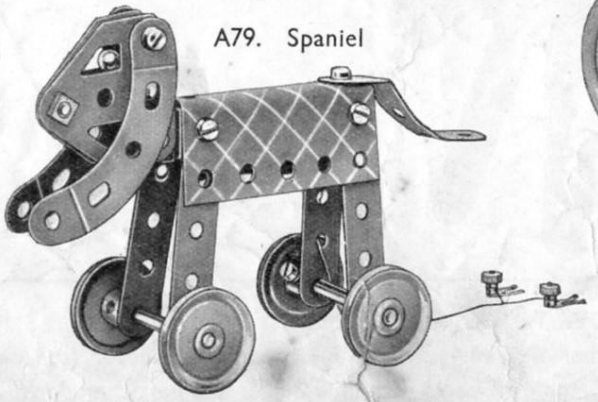
A77. Level Crossing Barrier



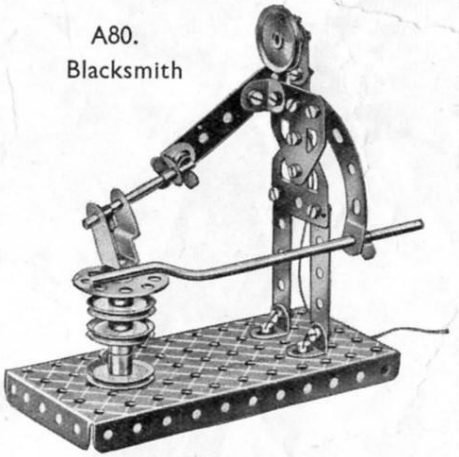
A78. Stamping Mill



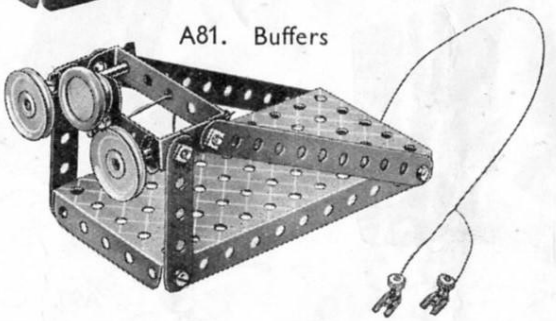
A79. Spaniel



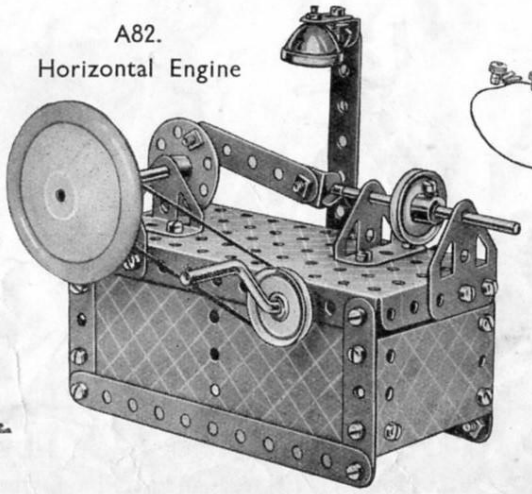
A80. Blacksmith



A81. Buffers

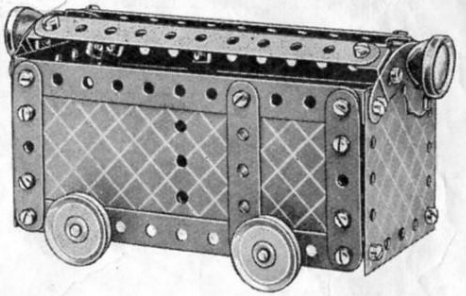


A82. Horizontal Engine

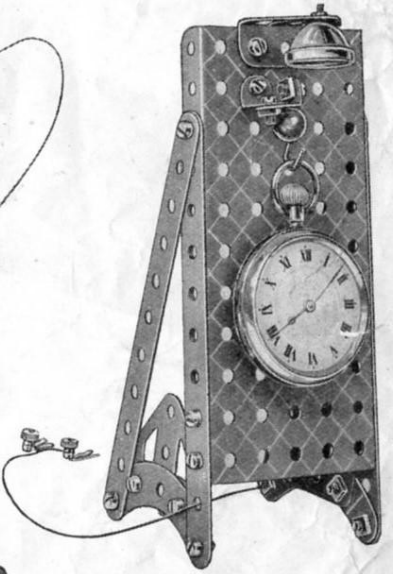


An alternative design of this model (A82M), fitted with the *Magic* Motor, is shown on page 9.

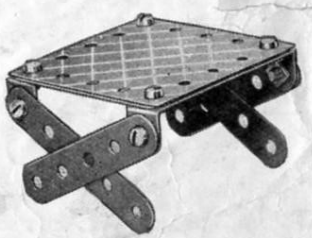
A83. Pullman Car



A84. Watch Stand



A85. Coffee Table



This page shows examples of the use of the Meccano Lighting Set, described on page 2 of cover

The greatest thrill in Meccano model-building is experienced when a model is set to work by means of a Meccano Motor. The illustrations below show how the new Meccano *Magic* Motor can be fitted without any difficulty to Outfit "A" Models of various types. Fit the model you have just built with one of these wonderful Motors, and enjoy the fun of watching it work just like the real thing. Models A52M, A62M and A82M are more elaborate variations of Manual models A52, A62 and A82. Try your hand at re-designing other models in a similar manner and become a real inventor.

A96. BREAKDOWN CRANE

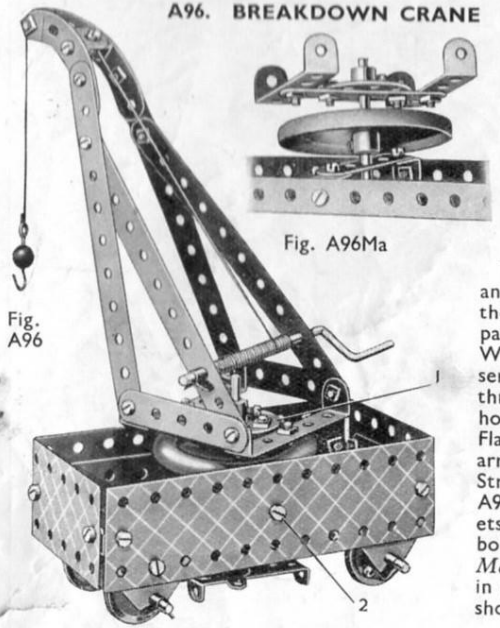


Fig. A96

Fig. A96Ma

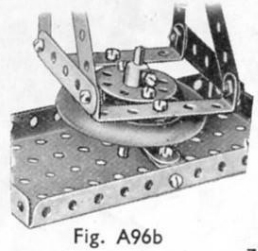


Fig. A96b

The crane swivels on an Axle Rod secured in the Bush Wheel 1 and passed through a Road Wheel before being inserted in a $2\frac{1}{2}$" Strip and through the centre hole of a $5\frac{1}{2}$" × $2\frac{1}{2}$" Flanged Plate. The arrangement of the $2\frac{1}{2}$" Strip can be seen in Fig. A96b, the Angle Brackets being fixed by the bolts 2 (Fig. A96). The *Magic* Motor is mounted in the same manner as shown in Fig. A62Ma.

A97. TRIP HAMMER

The hammer is pivoted at 1 on two Angle Brackets that are bolted through the slots to the centre hole of the $5\frac{1}{2}$" Strip. A 2" Axle Rod passes through the Angle Brackets and is supported in Trunnions bolted to the Plate.

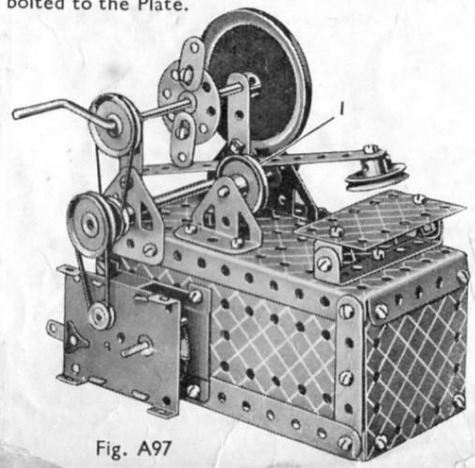
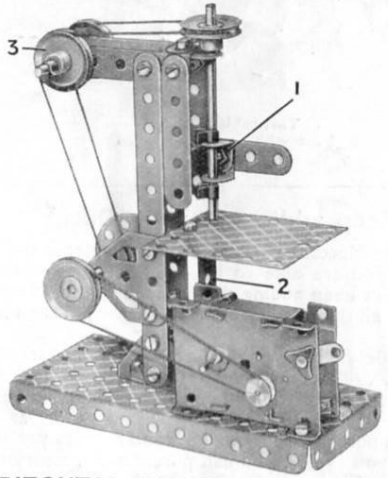


Fig. A97

A52M. DRILLING MACHINE

The drill Rod is journalled at the top in a Flat Bracket bolted to two Angle Brackets, and at its lower end in two Angle Brackets 1 that are bolted to a Strip attached to the vertical member of the drill. The drill table is supported by a $2\frac{1}{2}$" × $\frac{1}{2}$" Double Angle Strip 2. A Spring Clip retains the free Pulley 3 in place.



A62M. LUMBER TRUCK AND HORSE

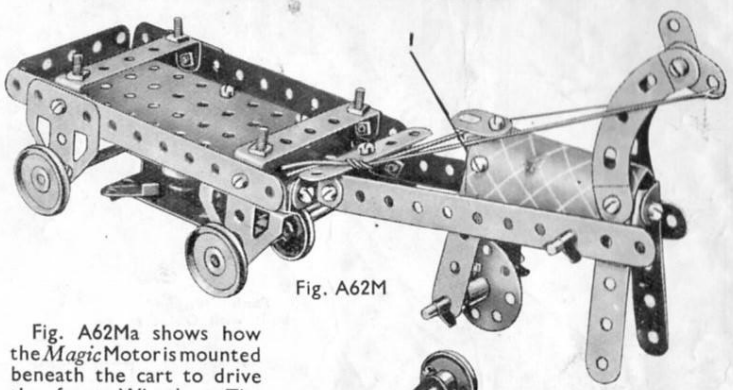


Fig. A62M

Fig. A62Ma shows how the *Magic* Motor is mounted beneath the cart to drive the front Wheels. The Pulley supplied with the Motor is mounted on the front Axle, and the rubber band should be fitted as shown. Two Angle Brackets secure the front legs of the horse, and this construction is duplicated at 1 for the hind legs.

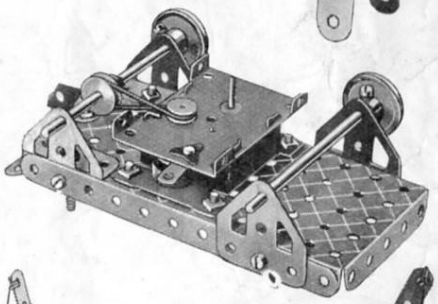


Fig. A62Ma

A82M. HORIZONTAL ENGINE

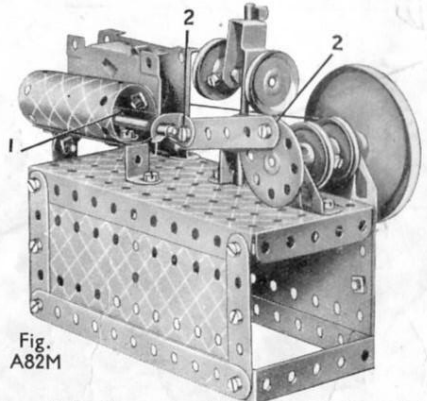


Fig. A82M

The cylinder is composed of a $2\frac{1}{2}$" × $2\frac{1}{2}$" Flexible Plate and a $2\frac{1}{2}$" × $1\frac{1}{2}$" Flexible Plate, and two Angle Brackets are bolted inside the cylinder to serve as guides for the piston rod. One of the Brackets is seen at 1. The bolts 2 are lock-nutted (see page 12), to form pivots.

A98. ROUNDABOUT

Fig. A98a shows how the bearing for the vertical Rod is formed. The Rod is driven from the *Magic* Motor by means of a rubber band passed round the 1" Pulley and round the Motor Pulley as can be seen in Fig. A98.

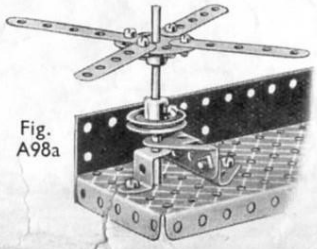


Fig. A98a

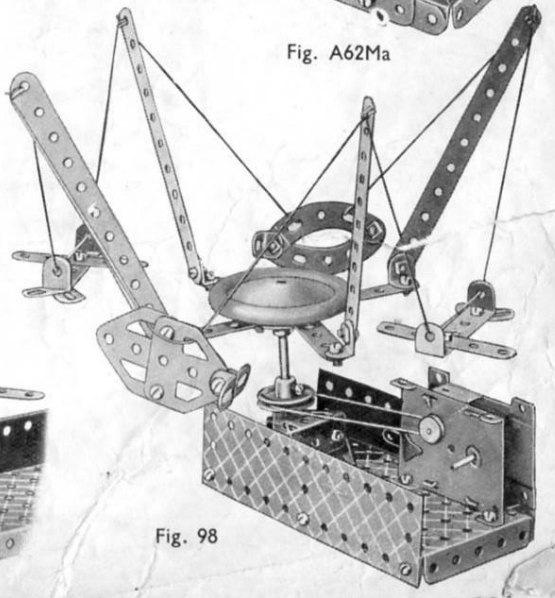
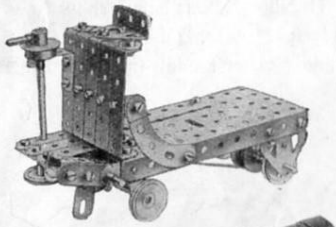


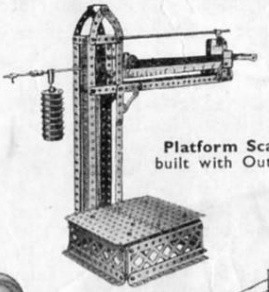
Fig. 98

Build Bigger and Better Models

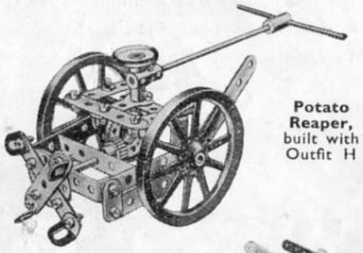
Gantry Crane, built with Outfit H



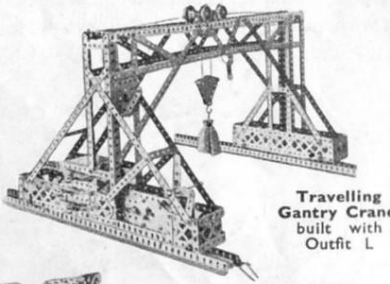
Electric Truck, built with Outfit E



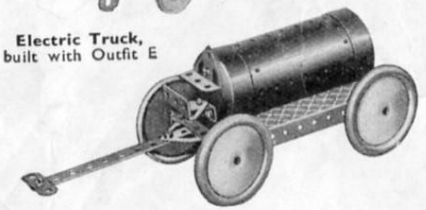
Platform Scales, built with Outfit K



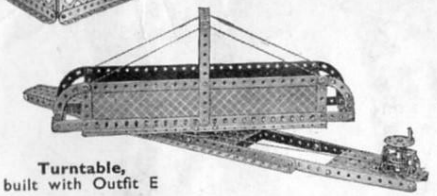
Potato Reaper, built with Outfit H



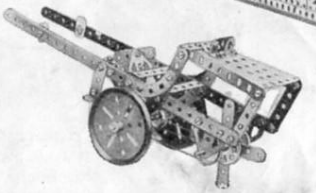
Travelling Gantry Crane, built with Outfit L



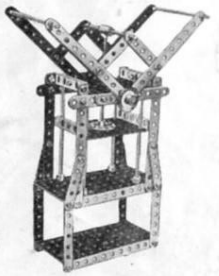
Tank Wagon, built with Outfit F



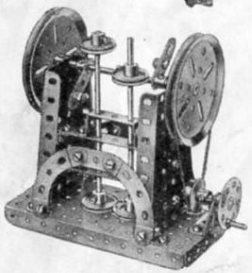
Turntable, built with Outfit E



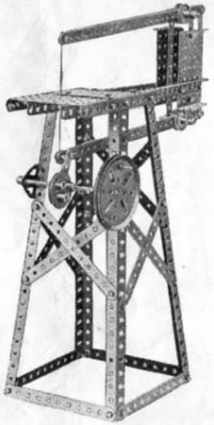
Hay Tedder, built with Outfit E



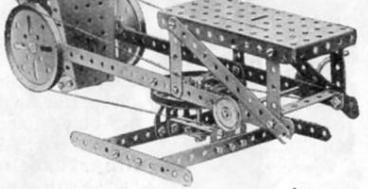
Bale Press, built with Outfit G



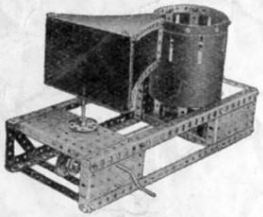
Stamping Mill, built with Outfit E



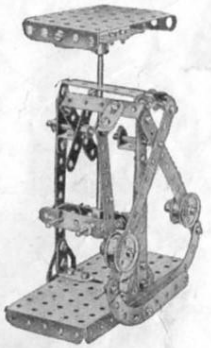
Mechanical Fret Saw, built with Outfit H



Giant Foundry Ladle, built with Outfit C



Kinetoscope, built with Outfit F



Letter Balance, built with Outfit E

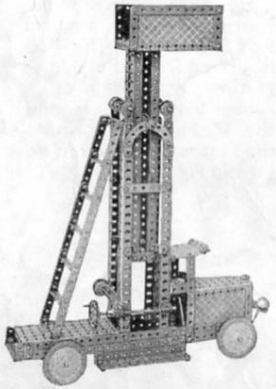
Keep adding to your Outfit

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

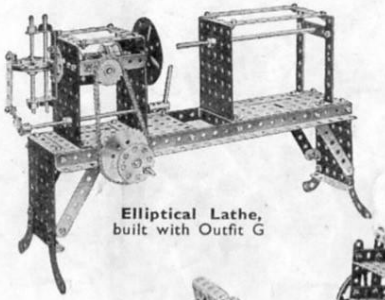
The model-building possibilities of the Meccano System are limitless. All the fine models illustrated on this page are examples of the types you will be able to build as your Outfit develops.

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

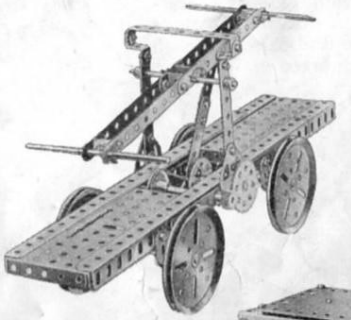
Racing Seaplane, built with Outfit L



Tower Wagon, built with Outfit F

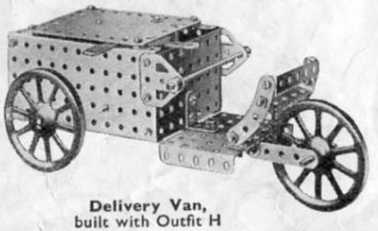


Elliptical Lathe, built with Outfit G



Hand Trolley, built with Outfit F

Field Gun and Carriage built with Outfit H



Delivery Van, built with Outfit H

MECCANO

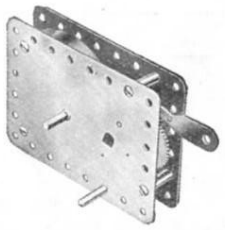
POWER UNITS FOR OPERATING MECCANO MODELS

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

MECCANO CLOCKWORK MOTORS

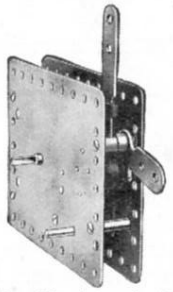
These are the finest Clockwork motors obtainable for model driving. They have exceptional power and length of run and their gears are cut with such precision as to make them perfectly smooth and steady in operation.

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



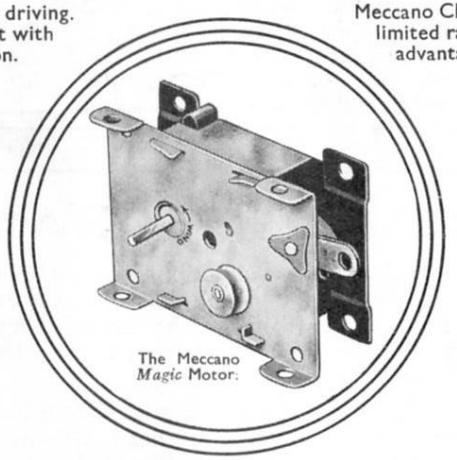
No. 1 Clockwork Motor

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



No. 1a Clockwork Motor

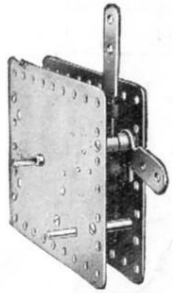
This Motor is more powerful than the No. 1 Motor and is fitted with reversing motion. It has brake and reverse levers.



The Meccano *Magic* Motor.

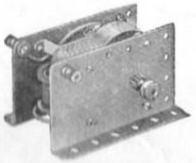
The Meccano *Magic* Motor

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



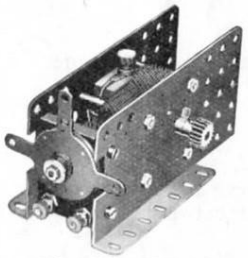
No. 2 Clockwork Motor

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



No. E1 Electric Motor (6-volt)

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

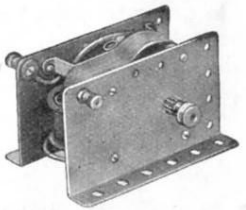


No. E6 Electric Motor (6-volt)

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

MECCANO ELECTRIC MOTORS

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

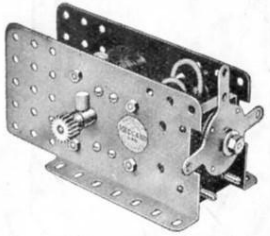


No. E120 Electric Motor (20-volt)

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

Resistance Controllers

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



No. E20b Electric Motor (20-volt)

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

MECCANO TRANSFORMERS

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

No. T20s Transformer

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

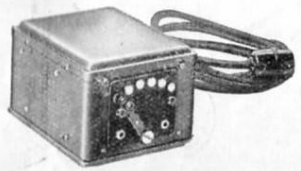
No. T6A TRANSFORMER (Output 40 VA at 9/3½ volts) for 6-volt Electric Motors. Has two separate circuits at 9 volts, one controlled by a 5-stud speed regulator; and a third circuit at 3½ volts for lighting up to 18 lamps.

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

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

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

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



No. T20 Transformer

Ask your dealer for a complete price list.

CONTENTS OF MECCANO OUTFIT A

No.	Description.	Quantity.
2	Perforated Strips, $5\frac{1}{2}''$	4
5	,, ,, $2\frac{1}{2}''$	6
10	Flat Brackets	4
12	Angle Brackets, $\frac{1}{2}'' \times \frac{1}{2}''$	8
16	Axle Rods, $3\frac{1}{2}''$	2
17	,, ,, $2''$	2
19s	Crank Handles ($3\frac{1}{2}''$ shaft)	1
22	Pulley Wheels, $1''$ (fast)	4
24	Bush Wheels	1
34	Spanners	1
35	Spring Clips	4
36	Screwdrivers	1
37	Nuts and Bolts, 7/32″	36
37a	Nuts	4
40	Hanks of Cord	1
44	Cranked Bent Strips	1
48a	Double Angle Strips, $2\frac{1}{2}'' \times \frac{1}{2}''$	2
52	Perforated Flanged Plates, $5\frac{1}{2}'' \times 2\frac{1}{2}''$	1
57c	Hooks, Loaded, small	1
90a	Curved Strips, $2\frac{1}{2}''$, $1\frac{3}{8}''$ radius	2
111c	Bolts, $\frac{3}{8}''$	4
125	Reversed Angle Brackets, $\frac{1}{2}''$	1
126	Trunnions	2
126a	Flat Trunnions	2
176	Anchoring springs for Meccano cord	1
186	Driving Bands	1
187	Road Wheels	1
188	Flexible Plates, $2\frac{1}{2}'' \times 1\frac{1}{2}''$	2
189	,, ,, $5\frac{1}{2}'' \times 1\frac{1}{2}''$	2
190	,, ,, $2\frac{1}{2}'' \times 2\frac{1}{2}''$	2

MECCANO MECHANISMS

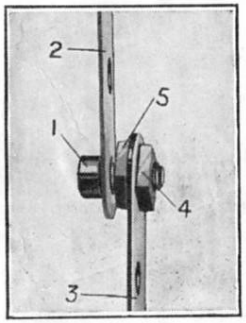


Fig. A

When a boy has built all the models illustrated in these Manuals he will wish, not only to increase the size of his Outfit so that he can build bigger models, but also to start constructing models of his own design. It is now that the real inventive spirit of the Meccano boy asserts itself, and if he builds thoughtfully there is no reason why he should not in time become familiar with almost every form of engineering structure and mechanical movement.

In order to assist youthful inventors, two splendidly illustrated Manuals have been prepared. The first of these, the "Standard Mechanisms Manual," deals with numerous mechanical movements; while the second publication, "How to Use Meccano Parts," describes fully the various Meccano parts and explains and illustrates their most important uses.

The following examples have been selected from these two Manuals because of their general utility.

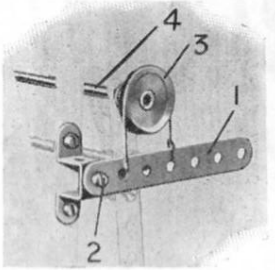


Fig. D

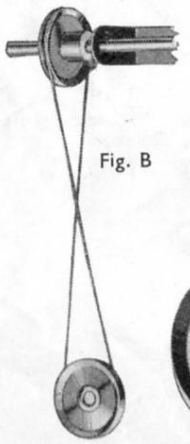


Fig. B

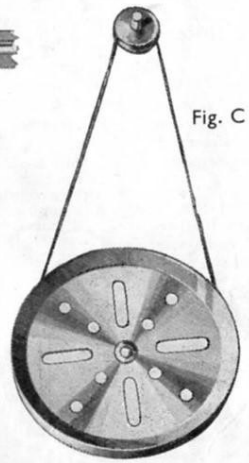


Fig. C

LOCKNUTS

One of the most useful of all Meccano connections is the locknutted joint, which prevents a pivot, formed from a nut and bolt, from working loose. As will be seen from Fig. A, the bolt 1 passes through the Strip 2 and is securely held to Strip 3 by means of two nuts 4 and 5, which are screwed tightly against opposite sides of the Strip. Sufficient space is left between the nut 5 and the bolt head to allow free movement of the Strip 2.

CORD TRANSMISSION

In small models where it is necessary to alter the speed or power of a drive, Pulleys of varying diameters connected together by cord may be used. Fig. C shows how a 6:1 ratio can be obtained by using a 3in. and $\frac{1}{2}$in. Pulley. In Fig. B a 1:1 ratio transmission drive is shown for driving between two shafts placed at right angles.

BAND BRAKE

A simple method of slowing down or stopping a shaft is shown in Fig. D. A Strip 1, which may be weighted if desired, is secured by a locknutted bolt (see Fig. A) to the frame of the model. A short length of cord attached to this Strip passes round a $1''$ fast Pully 3 secured on the shaft 4.

STEERING MECHANISM

Greater interest may be given to a small model car or lorry by arranging the front wheels to steer. One simple way of accomplishing this is shown in Fig. E. The Crank is secured to the lower end of the steering column and the $4\frac{1}{2}''$ Strip is secured by locknuts at each end. If necessary the Crank and Strip may be replaced by a length of cord, passed round the steering column and secured to the extremities of the Double Angle Strip.

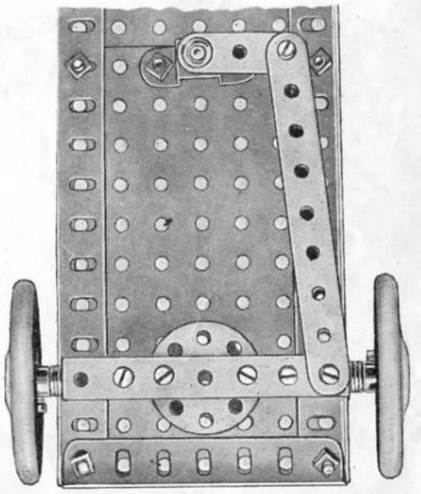


Fig. E

LIST OF MECCANO PARTS

No.	Description.
1	Perforated Strips, 12½"
1a	" " 9½"
1b	" " 7½"
2	" " 5½"
2a	" " 4½"
3	" " 3½"
4	" " 3"
5	" " 2½"
6	" " 2"
6a	" " 1½"
7	Angle Girders, 24½"
7a	" " 18½"
8	" " 12½"
8a	" " 9½"
8b	" " 7½"
9	" " 5½"
9a	" " 4½"
9b	" " 3½"
9c	" " 3"
9d	" " 2½"
9e	" " 2"
9f	" " 1½"
10	Flat Brackets
11	Double Brackets
12	Angle Brackets, ½"×½"
12a	" " 1"×1"
12b	" " 1"×½"
12c	Obtuse Angle Brackets, ½"×½"
13	Axle Rods, 11½"
13a	" " 8"
14	" " 6½"
15	" " 5"
15a	" " 4½"
15b	" " 4"
16	" " 3½"
16a	" " 2½"
16b	" " 3"
17	" " 2"
18a	" " 1½"
18b	" " 1"
19	Crank Handles, large, 5"
19s	" " small, 3½"
19a	Wheels, 3" diam., with set screws
20	Flanged Wheels, 1⅛" diam.
20b	" " ¾" "
	Pulley Wheels
19b	3" dia., with centre boss & set screw
19c	6" " " " " "
20a	2" " " " " "
21	1½" " " " " "
22	1" " " " " "
23a	½" " " " & grub screw
22a	1" " without " "
23	½" " " " "
24	Bush Wheels
25	Pinion Wheels, ¾" diam., ¼" face
25a	" " ½" " ¼" "
25b	" " ½" " ⅜" "
26	" " ¾" " ⅜" "
26a	" " ¾" " ½" "
26b	" " ¾" " ¾" "
	Gear Wheels
27	50 teeth to gear with ¾" pinion
27a	57 " " " ½" "
27b	133 " " " ½" " (3½" diam)
27c	95 " " " ⅝" " (2⅛" diam.)

No.	Description.
28	Contrate Wheels, 1½" diam.
29	" " ¾" "
30	Bevel Gears, ¾", 26 teeth
30a	" " ½", 16 " (Can only be used together)
30c.	" " 1½", 48 "
31	Gear Wheels, 1", 38 teeth
32	Worms
34	Spanners
34b	Box Spanners
35	Spring Clips
36	Screwdrivers
36a	" Extra Long
36b	" Special...
37	Nuts and Bolts, 7/32"...
37a	Nuts
37b	Bolts, 7/32"
38	Washers
40	Hanks of Cord
41	Propeller Blades
43	Springs
44	Cranked Bent Strips
45	Double " "
46	Double Angle Strips, 2½"×1"
47	" " " 2½"×1½"
47a	" " " 3"×1½"
48	" " " 1½"×½"
48a	" " " 2½"×½"
48b	" " " 3½"×½"
48c	" " " 4½"×½"
48d	" " " 5½"×½"
50a	Eye Pieces, with boss
51	Flanged Plates, 2½"×1½"
52	" " 5½"×2½"
52a	Flat Plates, 5½"×3½"
53	Perforated Flanged Plates, 3½"×2½"
53a	Flat Plates, 4½"×2½"
54a	Flanged Sector Plates, 4½" long
55	Perforated Strips, slotted, 5½" long
55a	" " " 2" "
57	Hooks
57a	" Scientific
57b	" Loaded, large
57c	" " small
58	Spring Cord...
58a	Coupling Screws for Spring Cord
58b	Hooks for Spring Cord
59	Collars with Grub Screws
61	Windmill Sails
62	Cranks
62a	Threaded Cranks
62b	Double Arm Cranks
63	Couplings
63a	Octagonal Couplings
63b	Strip Couplings
63c	Threaded Couplings
64	" Bosses
65	Centre Forks
66	Weights, 50 grammes
67	" 25 "
68	Woodscrews, ½"
69	Set Screws
69a	Grub Screws, 5/32"
69b	" " 7/32"
70	Flat Plates, 5½"×2½"
72	" " 2½"×2½"

No.	Description.
73	Flat Plates, 3"×1½"
76	Triangular Plates, 2½"
77	" " 1"
78	Screwed Rods, 11½"
79	" " 8"
79a	" " 6"
80	" " 5"
80a	" " 3½"
80b	" " 4½"
81	" " 2"
82	" " 1"
89	5½" Curved Strips, 10" radius
89a	3" " " cranked, 1¾" radius, 4 to circle
89b	4" Curved Strips, cranked, 4½" radius, 8 to circle
90	2½" Curved Strips, 2⅜" radius
90a	2½" " " cranked, 1¾" radius, 4 to circle
94	Sprocket Chain, 40" length
95	" Wheels, 36 teeth, 2" diam
95a	" " 28 " 1½" "
95b	" " 56 " 3" "
96	" " 18 " 1" "
96a	" " 14 " ¾" "
97	Braced Girders, 3½" long
97a	" " 3" "
98	" " 2½" "
99	" " 12½" "
99a	" " 9½" "
99b	" " 7½" "
100	" " 5½" "
100a	" " 4½" "
101	Healds, for looms
102	Single Bent Strips
103	Flat Girders, 5½" long
103a	" " 9½" "
103b	" " 12½" "
103c	" " 4½" "
103d	" " 3½" "
103e	" " 3" "
103f	" " 2½" "
103g	" " 2" "
103h	" " 1½" "
103k	" " 7½" "
104	Shuttles, for looms
105	Reed Hooks, for looms
106	Wood Rollers
106a	Sand Rollers
107	Tables for designing machines
108	Architraves
109	Face Plates, 2½" diam.
110	Rack Strips, 3½"
110a	" " 6½"
111	Bolts, ¾"
111a	" ½"
111c	" ⅜"
113	Girder Frames
114	Hinges
115	Threaded Pins
116	Fork Pieces, large
116a	" " small
117	Steel Balls, ¾" diam.
118	Hub Discs, 5½"

No.	Description.
120	Buffers
120a	Spring Buffers
120b	Compression Springs
121	Train Couplings
122	Miniature Loaded Sacks
123	Cone Pulley
124	Reversed Angle Brackets, 1"
125	" " " ½"
126	Trunnions
126a	Flat Trunnions
127	Simple Bell Cranks
128	Boss Bell Cranks
129	Rack Segments, 3" diam.
130	Eccentrics, Triple Throw
131	Dredger Buckets
132	Flywheels, 2⅜" diam.
133	Corner Brackets, 1½"
133a	" " 1"
134	Crank Shanks, 1" stroke
135	Theodolite Protractors
136	Handrail Supports
136a	" Couplings
137	Wheel Flanges
138	Ships' Funnels
*138a-z.	" " Raked
139	Flanged Brackets (right)
139a	" " (left)
140	Universal Couplings
141	Wire Lines (for suspending clock weights)
142	Rubber Rings, 3" rim
142a	Motor Tyres (to fit 2" diam. rims)
142b	" " " 3" " "
142c	" " " 1" " "
142d	" " " 1½" " "
143	Circular Girders, 5½" diam.
144	Dog Clutches
145	Circular Strips, 7½" diam. overall
146	" Plates, 6" " "
146a	" " 4" " "
147	Pawls, with Pivot Bolt and nuts
147a	Pawls
147b	Pivot Bolt with 2 nuts
147c	Pawl without boss
148	Ratchet Wheels
149	Collecting Shoes for Electric Locos
150	Crane Grabs
151	Pulley Blocks, Single Sheave
152	" " Two "
153	" " Three "
154a	Corner Angle Brackets, ½" (right hand)
154b*	Corner Angle Brackets, ½" (left hand)
155	Rubber Rings, ⅝" (for 1" Pulleys)
156	Pointers, (with boss) 2½" overall
157	Fans, 2" diam.
158a	Signal Arms, Home
158b	" " Distant
160	Channel Bearings, 1½"×1"×½"
161	Girder Brackets, 2"×1"×½"
162	Boiler, complete, with ends
162a	" ends
162b	" without ends
163	Sleeve Pieces

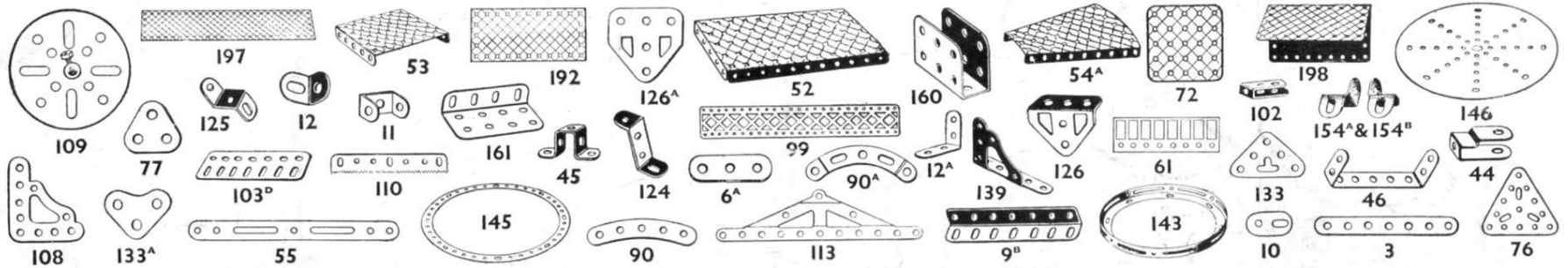
No.	Description.
164	Chimney Adaptors
165	Swivel Bearings
166	End "
167	Geared Roller Bearings
167a	Roller Races, geared, 192 teeth
167b	Ring Frames for Rollers
167c	Pinions for Roller Bearings, 16 teeth
168	Ball Bearing, 4" diam.
168a	" Races, flanged disc
168b	" " toothed "
168c	" Casing, complete with balls
169	Digger Buckets
170	Eccentrics, ¼" throw
171	Socket Couplings
172	Pendulum Connections
173	Rail Adaptors
174	Grease Cups
175	Flexible Coupling Units
176	Anchoring Springs for Cord
177	Shafting Standards, large
178	" " small
179	Rod Sockets
180	Toothed Gear Rings, 3½" diam. (133 external teeth ; 95 internal teeth)
181	Bobbins
182	Insulating Bushes, 6BA
183	Lamp Holders
184a	Lamps, 2½ volt
184b	" 3½ "
184c	" 6 "
184d	" 10 "
184e	" 20 "
185	Steering Wheels, 1⅞" diam.
186	Driving Bands
187	Road Wheels
188	Flexible Plates, 2½"×1½"
189	" " 5½"×1½"
190	" " 2½"×2½"
191	" " 4½"×2½"
192	" " 5½"×2½"
193	Strip Plates, 2½"×2½"
194	" " 3½"×2½"
195	" " 5½"×2½"
196	" " 9½"×2½"
197	" " 12½"×2½"
198	Hinged Flat Plates, 4½"×2½"
201	Lamps with Flex
202	Angle Brackets (for Headlamps)
203	Headlamps
204	Headlamp Nuts
205	" Glasses (Green, Plain or Red)
206	Lampshades
207	Lamp Bases
208	Battery Tags and Studs
208a	Washers for Battery Studs
210	Nuts " "
211a	Helical Gear, ½" (Can only be used together)
211b	" " 1½"

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

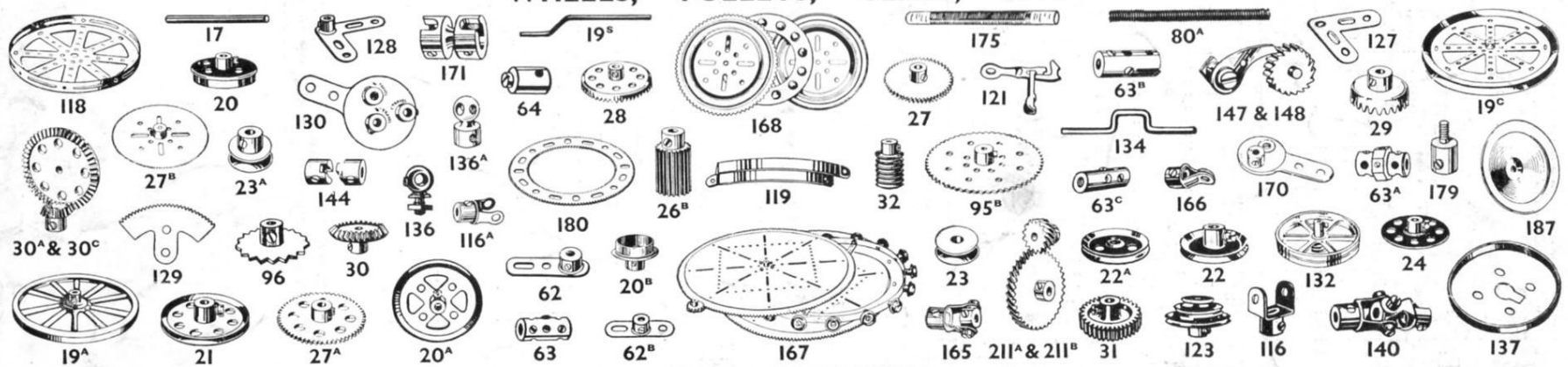
For illustrations of Meccano Parts, refer to back page

MECCANO PARTS & ACCESSORIES

PLATES, STRIPS, GIRDERS & BRACKETS



WHEELS, PULLEYS, GEARS, ETC.



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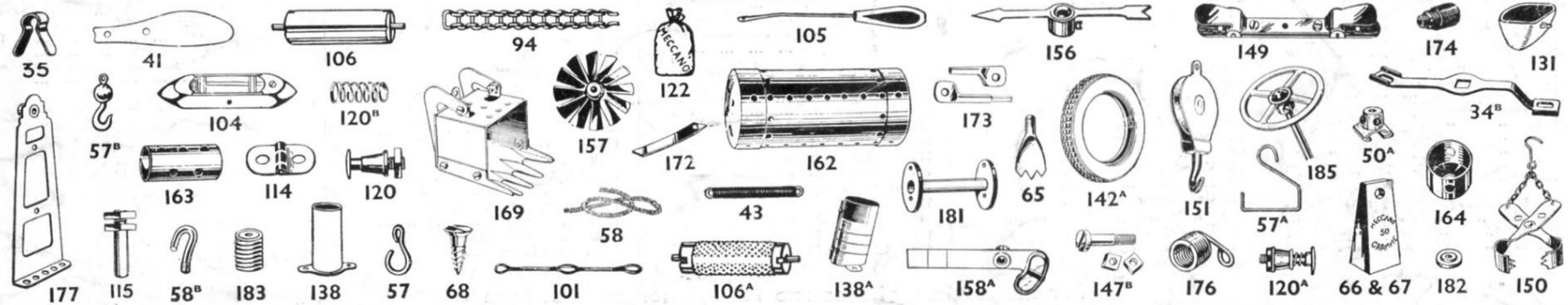

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