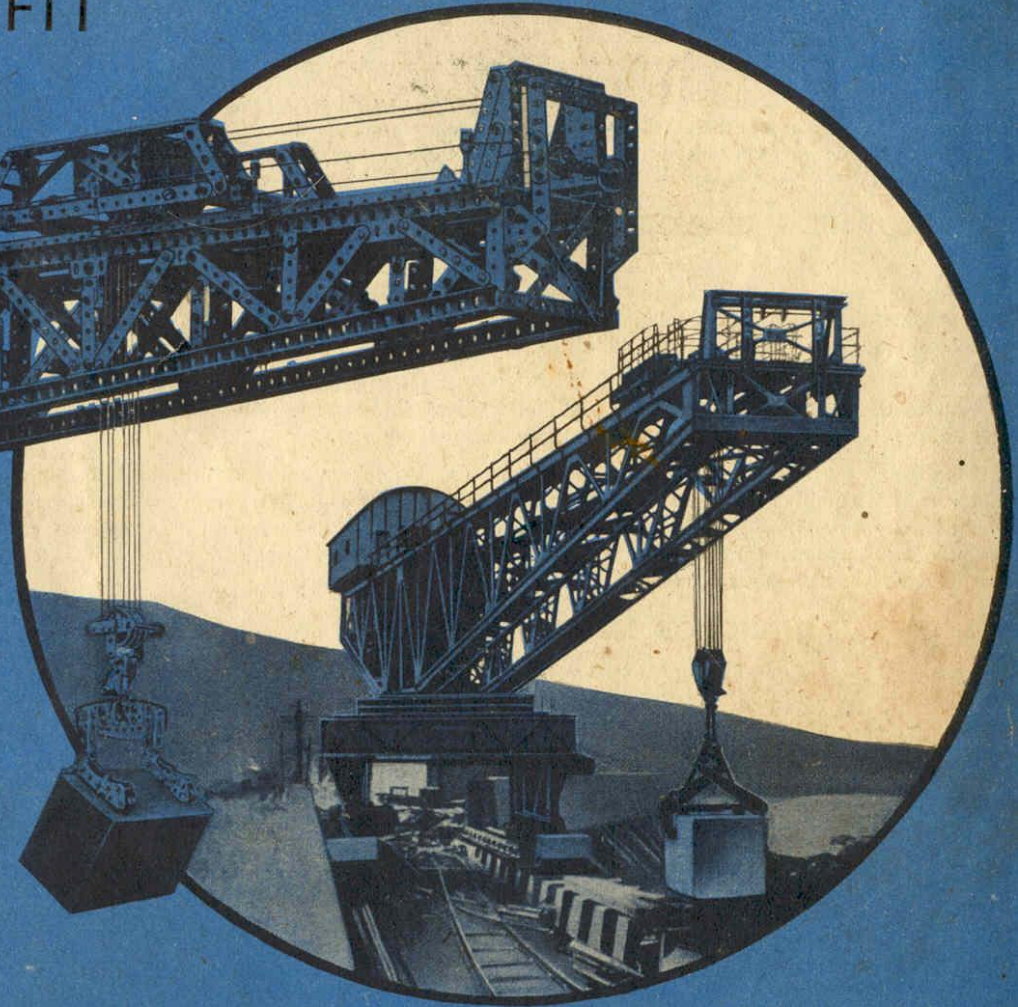
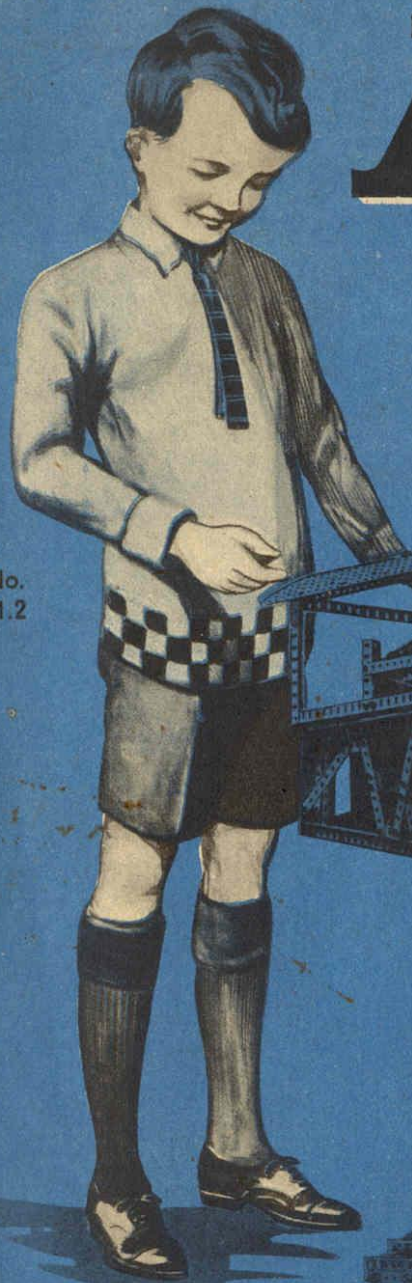
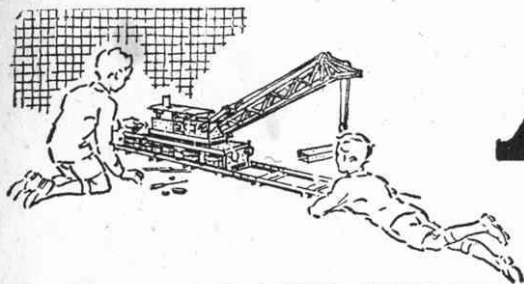


MECCANO

INSTRUCTIONS FOR
No. 2 OUTFIT

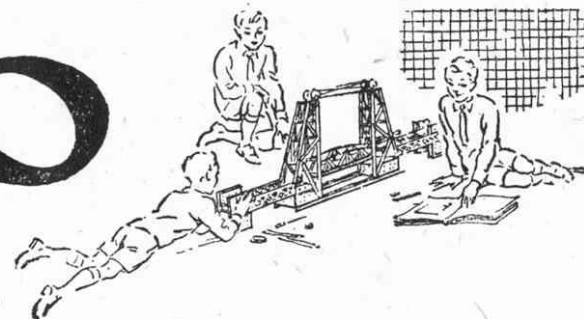
No.
41.2





MECCANO

Real Engineering in Miniature



MODEL-BUILDING WITH MECCANO

There is no limit to the number of models that can be built with Meccano—Cranes, Clocks, Motor Cars, 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.

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

HOW TO BUILD UP YOUR OUTFIT

Meccano is sold in eleven different Outfits, ranging from No. 0 to No. 10. Each Outfit from No. 1 upwards can be converted into the next one larger by the purchase of an Accessory Outfit. Thus, Meccano No. 1 Outfit can be converted into No. 2 Outfit by adding to it a No. 1a Accessory Outfit. No. 2a Outfit would then convert it into a No. 3 and so on. In this way, no matter with which Outfit you commence, you can build it up by degrees until you possess a No. 10 Outfit.

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

As shown in the illustrations, the realism of many models can be increased by the inclusion of the figures, motor vehicles and other items from the Dinky Toys Series; pilots and drivers from the Aeroplane and Motor Car Constructor Outfits; trees and hedges from the Hornby Railway Series; Meccano sacks, cable drums, etc. These items are not included in any of the Outfits. A Clockwork Motor is included in Outfits 7a, 8, 9 and 10 only, and an Electric Motor in Outfits 9a and 10 only.

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 flash-lamp battery (not included in the Set). The stand lamp is used for decorative purposes, and the spot lights can be used as headlamps, floodlights on cranes, and in countless other ways.

THE "MECCANO MAGAZINE"

The "Meccano Magazine" is published specially for Meccano boys. Every month it describes and illustrates new Meccano models for Outfits of all sizes, and deals with suggestions from readers for new Meccano parts and for new methods of using the existing parts. There are model-building competitions specially planned to give an equal chance to the owners of small and large Outfits. In addition, there are splendid articles on such subjects as Railways, Famous Engineers and Inventors, Electricity, Chemistry, Bridges, Cranes and Aeroplanes, and special sections dealing with the latest Engineering, Aviation, Shipping and Road and Track News. Other pages deal with Stamp Collecting, and Books of interest to boys; and a feature of outstanding interest is the section devoted to short articles from readers.

The "Meccano Magazine" is the finest of all papers for boys who are interested in the wonderful things going on in the world around them. It is published on the first of each month. If you are not already a reader write to the Editor for full particulars, or order a copy from your Meccano dealer, or from any news-agent.

THE MECCANO GUILD

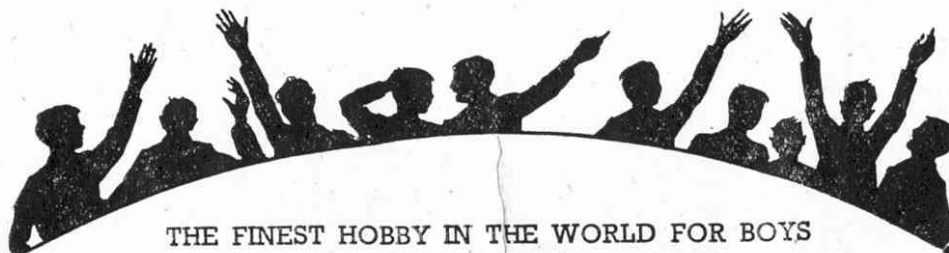
Every owner of a Meccano Outfit should join the Meccano Guild. This is a world-wide organisation, started at the request of Meccano boys. Its primary object is to bring boys together and to make them feel that they are all members of a great brotherhood, each trying to help others to get the very best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

Clubs founded and established under the guidance of the Guild Secretary provide Meccano boys with opportunities of enjoying to the utmost the fun of model-building. There are nearly 200 active clubs in Great Britain, and nearly 100 in countries overseas, each with its Leader, Secretary, Treasurer and other officials. With the exception of the Leader, all the officials are boys, and as far as possible the proceedings of the clubs are conducted by boys.

Recruiting Medallions are awarded to members who are successful in securing recruits for the Guild, and good work on behalf of Meccano clubs, or of the Guild generally, is recognised by the presentation of special Merit Medallions. Full particulars of both these awards will be sent post free on request.

MECCANO SERVICE

The service of Meccano does not end with selling an Outfit and an Instruction Manual. If ever you are in any difficulty with your models, or if you want advice on anything connected with this great hobby, write to us. We receive every day hundreds of letters from boys in all parts of the world, and each of these is answered personally by one of our staff of experts. Whatever your problem may be, write to us about it.



THE FINEST HOBBY IN THE WORLD FOR BOYS

HOW TO COMMENCE THE FUN

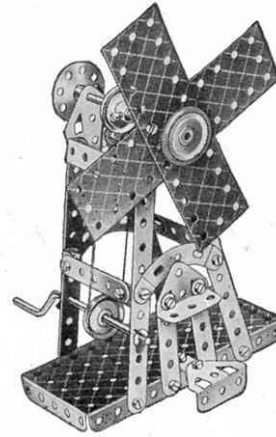
THE MOST FASCINATING OF ALL HOBBIES

Meccano model-building is the most fascinating of all hobbies, because it never becomes dull. There is always something new to be done. First of all there is the fun of building a new model, and watching it take shape as part after part is added. Then, when the model is complete, comes the thrill of setting it to work just like the real structure it represents, by means of a Meccano Motor. This wonderful process can be repeated indefinitely, for there is no end to the number of Meccano models that can be built. Another

bringing structures in opportunities for ds. So he acquires

ons can be started in different ways, the following hints commencing the ible fun.

Manual of Instructions is given a list it is a good plan to lay out on the ild, and put the remainder of the parts for your model a complete d all the principal parts are illus- st cases their measurements are o find out which is which, as the ho holes are spaced $\frac{1}{2}$ " apart, so rt can be found at once. For ou look in your Outfit for a Strip Plate, so you look for a Flexible he time a few models have been



Windmill

THE IMPORTANCE OF "LOCK-NUTTING"

In building models in which Rods revolve in the holes of other parts it is important to make sure that such holes are exactly in line with one another. This can be done very easily by pushing through the holes a long Rod before the Bolts holding the various parts are tightened up.

In some models it is necessary to join certain parts together, so that, although they cannot come apart, they are free to pivot or move in relation to one another. To do this the parts are bolted together as usual, but the Nut is not screwed up tightly, so that the parts are not gripped. Then, to prevent the Nut from unscrewing, a second Nut is screwed up tightly against it, the first, meanwhile, being held with a spanner. This method of using a second Nut is known as lock-nutting, and it is employed in a large number of Meccano models.

During the construction of a model it is best to screw up the Nuts with the fingers, followed by just a light turn with the screwdriver, leaving the final tightening with spanner and screwdriver until all the parts are connected up.

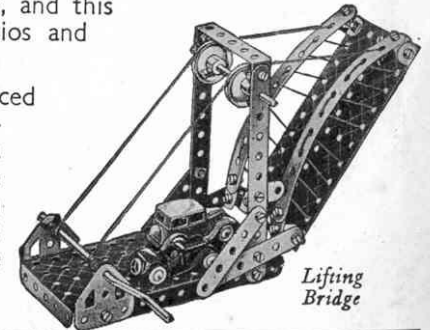
MOTORS AND GEARING

Models can be operated by means of either Meccano Clockwork or Electric Motors.

The Clockwork Motors have the advantage of being self-contained and extremely simple. If only a small amount of power is needed, the model may be driven direct from the driving spindle of the Motor or through a belt running over two pulleys of the same size, giving what is described as a 1:1 (one-to-one) ratio. Greater power can be obtained by a reduction in the speed of the drive, which can be produced in a simple manner by connecting a small pulley on the Motor to a larger pulley by means of a belt. Thus if a 1" Pulley is made to drive a 3" Pulley, a reduction ratio of approximately 1:3 is obtained. This means that the driven shaft will take about three times the load that the driving shaft would handle, but will rotate at only one-third of the speed. Rubber bands are better than Cord for driving belts for most purposes.

The Electric Motors have the advantage of giving long continuous runs. Their speed is much higher than that of the Clockwork Motors, and this makes it possible to employ higher reduction ratios and thus obtain greater power.

With the larger Outfits, belt drive can be replaced with advantage by gearing. To operate a slow-moving model demanding great power, such as a traction engine, gears that will provide a considerable reduction must be used. For example, a Worm meshed with a $\frac{1}{2}$ " Pinion will give a 1:19 reduction; while a Worm meshed with a 57-teeth Gear will give a 1:57 reduction.



Lifting Bridge

IMPORTANT

Wartime conditions and restrictions have made necessary certain alterations in the introductory page of this Manual. The most important are the following :—

The Meccano Lighting Set has been withdrawn, but the models shown with lighting arrangements can readily be built with only slight changes.

The Aeroplane and Motor Car Constructor Outfits also are withdrawn, and the miniature pilots and drivers shown in certain models are no longer available.

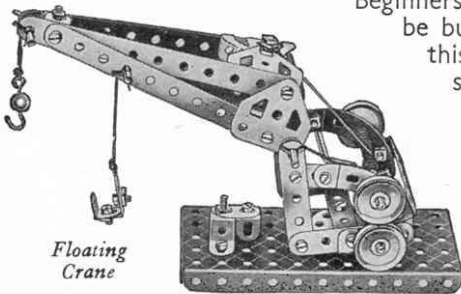
The Meccano Plates (Flanged, Flat, Curved, etc.,) are shown in the Manuals with diagonal lines. On the new Meccano Plates these lines are omitted.

The only Meccano Motor at present available is the "MAGIC" Clockwork Motor. It is not included in Outfits.

MECCANO LIMITED

built the names of the parts will have become familiar.

Beginners sometimes wonder which section of a model should be built first. There cannot be any definite rule for this, as it depends on the design of the model. In stationary models the base usually should be built first. In most of the smaller models a $5\frac{1}{2}$ " x $2\frac{1}{2}$ " Flanged Plate forms an important part of the structure, and often the best plan is to start building by bolting parts to this Plate. For other models a good general rule is that the sections that form supports for a number of other parts should be built first.



Floating Crane

HOW TO COMMENCE THE FUN

THE MOST FASCINATING OF ALL HOBBIES

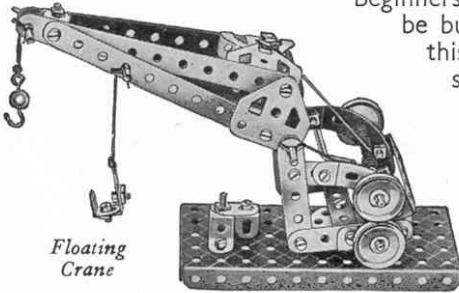
Meccano model-building is the most fascinating of all hobbies, because it never becomes dull. There is always something new to be done. First of all there is the fun of building a new model, and watching it take shape as part after part is added. Then, when the model is complete, comes the thrill of setting it to work just like the real structure it represents, by means of a Meccano Motor. This wonderful process can be repeated indefinitely, for there is no end to the number of Meccano models that can be built. Another point is that models built with Meccano are real engineering structures in miniature, and the keen model-builder has wonderful opportunities for learning the working of machines and mechanisms of all kinds. So he acquires practical engineering knowledge without special study.

It is so simple to build Meccano models that operations can be started as soon as the first Outfit is opened. Different boys build in different ways, but in the end they all reach the same splendid results. The following hints are given with the object of showing boys who are just commencing the wonderful Meccano hobby how to obtain the greatest possible fun.

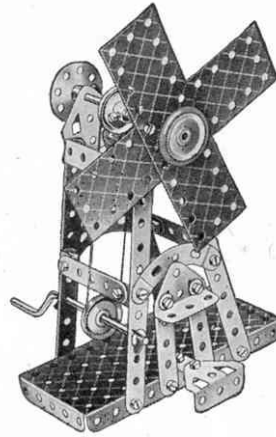
A FEW USEFUL HINTS

It will be noticed that with each model shown in this Manual of Instructions is given a list of the parts required to build it. For the first few models it is a good plan to lay out on the table all the parts required for the one it is proposed to build, and put the remainder of the Outfit on one side. To help you to pick out the correct parts for your model a complete list of Meccano parts is given at the back of this Manual, and all the principal parts are illustrated. In the list the parts are all numbered, and in most cases their measurements are given. There is no need, however, to measure the parts to find out which is which, as the size is easily found from the number of holes. All Meccano holes are spaced $\frac{1}{2}$ " apart, so that by counting two holes to the inch the size of a part can be found at once. For instance, Part No. 2 is listed as a $5\frac{1}{2}$ " Perforated Strip, so you look in your Outfit for a Strip with eleven holes. Similarly No. 192 is a $5\frac{1}{2}$ " \times $2\frac{1}{2}$ " Flexible Plate, so you look for a Flexible Plate eleven holes in length and five holes in width. By the time a few models have been built the names of the parts will have become familiar.

Beginners sometimes wonder which section of a model should be built first. There cannot be any definite rule for this, as it depends on the design of the model. In stationary models the base usually should be built first. In most of the smaller models a $5\frac{1}{2}$ " \times $2\frac{1}{2}$ " Flanged Plate forms an important part of the structure, and often the best plan is to start building by bolting parts to this Plate. For other models a good general rule is that the sections that form supports for a number of other parts should be built first.



Floating Crane



Windmill

THE IMPORTANCE OF "LOCK-NUTTING"

In building models in which Rods revolve in the holes of other parts it is important to make sure that such holes are exactly in line with one another. This can be done very easily by pushing through the holes a long Rod before the Bolts holding the various parts are tightened up.

In some models it is necessary to join certain parts together, so that, although they cannot come apart, they are free to pivot or move in relation to one another. To do this the parts are bolted together as usual, but the Nut is not screwed up tightly, so that the parts are not gripped. Then, to prevent the Nut from unscrewing, a second Nut is screwed up tightly against it, the first, meanwhile, being held with a spanner. This method of using a second Nut is known as lock-nutting, and it is employed in a large number of Meccano models.

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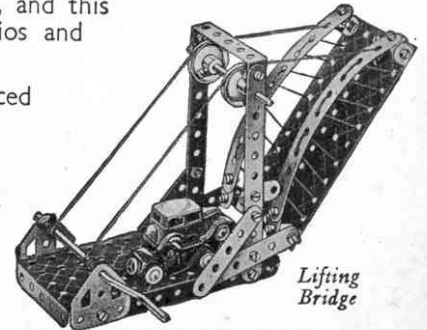
MOTORS AND GEARING

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The Clockwork Motors have the advantage of being self-contained and extremely simple. If only a small amount of power is needed, the model may be driven direct from the driving spindle of the Motor or through a belt running over two pulleys of the same size, giving what is described as a 1:1 (one-to-one) ratio. Greater power can be obtained by a reduction in the speed of the drive, which can be produced in a simple manner by connecting a small pulley on the Motor to a larger pulley by means of a belt. Thus if a 1" Pulley is made to drive a 3" Pulley, a reduction ratio of approximately 1:3 is obtained. This means that the driven shaft will take about three times the load that the driving shaft would handle, but will rotate at only one-third of the speed. Rubber bands are better than Cord for driving belts for most purposes.

The Electric Motors have the advantage of giving long continuous runs. Their speed is much higher than that of the Clockwork Motors, and this makes it possible to employ higher reduction ratios and thus obtain greater power.

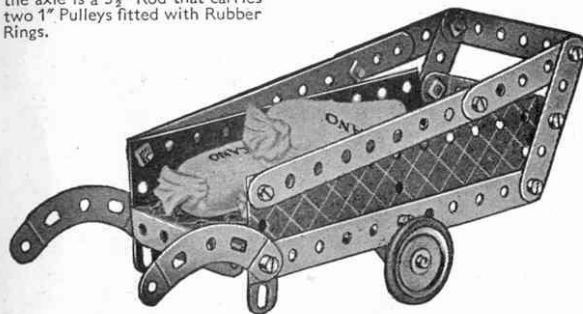
With the larger Outfits, belt drive can be replaced with advantage by gearing. To operate a slow-moving model demanding great power, such as a traction engine, gears that will provide a considerable reduction must be used. For example, a Worm meshed with a $\frac{1}{2}$ " Pinion will give a 1:19 reduction; while a Worm meshed with a 57-teeth Gear will give a 1:57 reduction.



Lifting Bridge

1.1 PORTER'S TRUCK

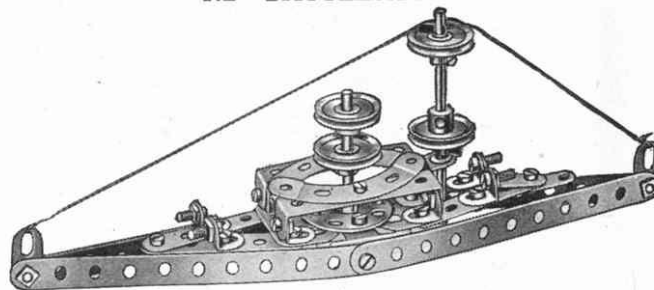
The bearings for the axle are Flat Trunnions fastened on the insides of the Flexible Plates, and the axle is a $3\frac{1}{2}$ " Rod that carries two 1" Pulleys fitted with Rubber Rings.



Parts required

4 of No.	2
4 " "	5
2 " "	10
1 " "	16
2 " "	22
14 " "	37
2 " "	38
2 " "	48a
1 " "	52
2 " "	90a
2 " "	126a
2 " "	155a
2 " "	189

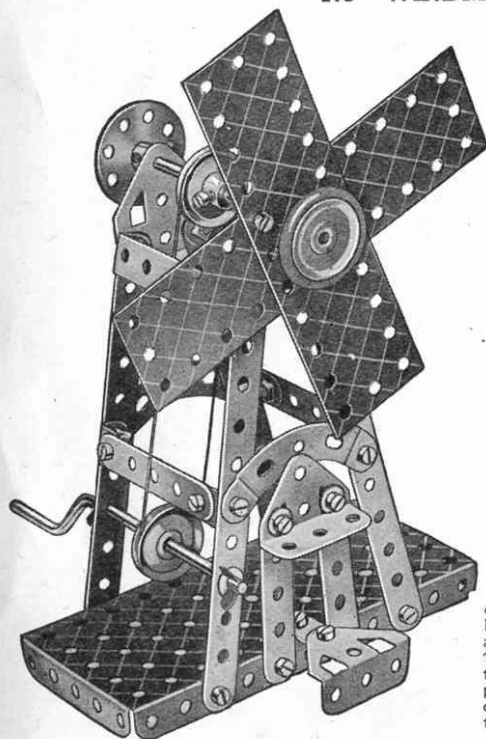
1.2 BATTLESHIP



Parts required

4 of No.	2	1 of No.	17	4 of No.	37a	4 of No.	111c
4 " "	5	4 " "	22	2 " "	38	1 " "	125
4 " "	10	1 " "	24	1 " "	40	2 " "	126
8 " "	12	3 " "	35	2 " "	48a	2 " "	126a
1 " "	16	24 " "	37	2 " "	90a		

1.3 WINDMILL

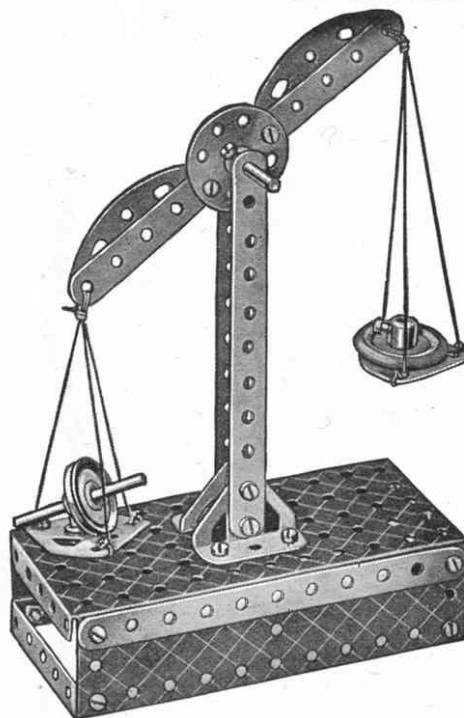


Parts required

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

The sails are gripped on the $3\frac{1}{2}$ " Rod by the 1" Pulley (with Rubber Ring) at the front and another 1" Pulley at the back of the sails. The Pulleys are pressed against the faces of the sails and locked on the Rod.

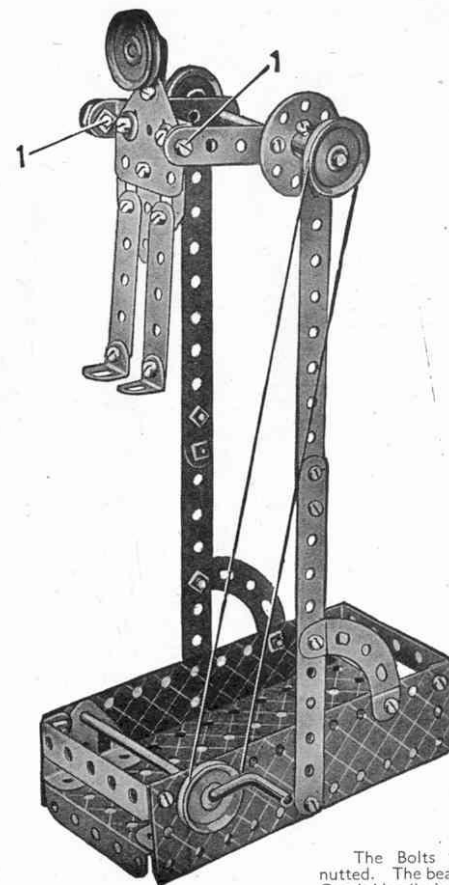
1.4 SCALES



Parts required

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

1.5 GYMNAST



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

Parts required

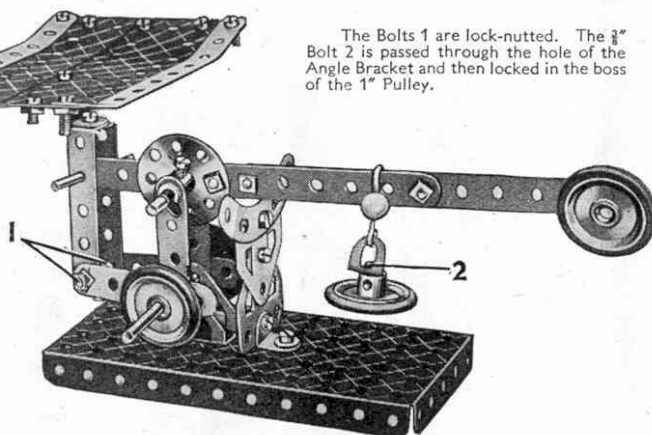
4 of No.	2	1 of No.	24	1 of No.	52
4 " "	5	2 " "	35	2 " "	90a
1 " "	10	24 " "	37	4 " "	111c
4 " "	12	5 " "	37a	2 " "	126
1 " "	16	4 " "	38	2 " "	126a
1 " "	19s	1 " "	40	2 " "	189
4 " "	22	2 " "	48a		

1.6 LETTER BALANCE

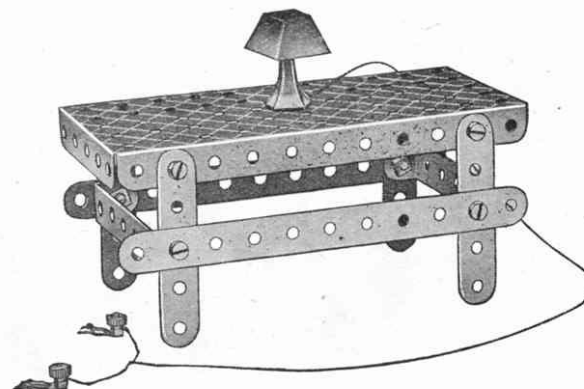
The Bolts 1 are lock-nutted. The $\frac{3}{4}$ " Bolt 2 is passed through the hole of the Angle Bracket and then locked in the boss of the 1" Pulley.

Parts required

4 of No.	2		
4 " "	5		
4 " "	10		
2 " "	12		
1 " "	16		
2 " "	17		
4 " "	22		
1 " "	24		
4 " "	35		
28 " "	37a		
24 " "	37b	1 of No.	52
4 " "	38	1 " "	57c
2 " "	48a	1 " "	90a
		4 of No.	111c
		1 " "	125
		2 " "	126
		2 of No.	126a
		4 " "	155a
		2 " "	189



1.7 TABLE

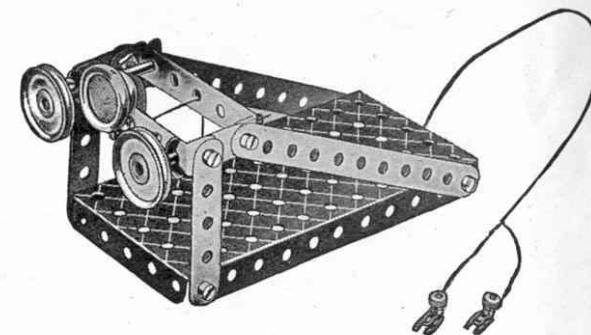


Parts required

2 of No.	2	8 of No.	37	1 of No.	52
4 " "	5	2 " "	48a		

The model is shown with a Stand Lamp from a Meccano Lighting Set.

1.8 BUFFER STOPS

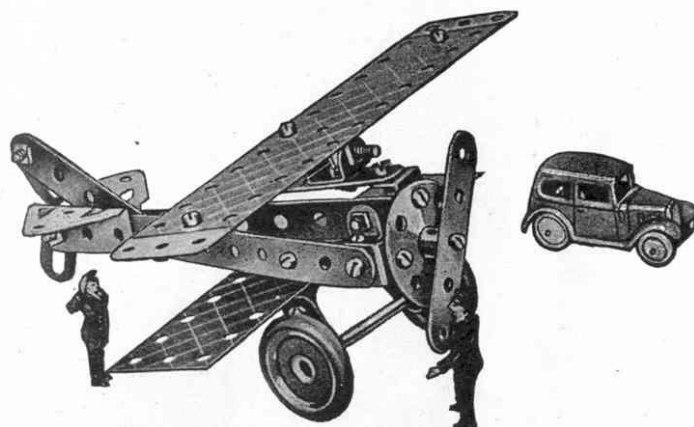


Parts required

2 of No.	2	2 of No.	17	9 of No.	37
2 " "	5	2 " "	22	2 " "	48a
3 " "	10	4 " "	35	1 " "	52

The model is fitted with a Spot light from a Meccano Lighting Set.

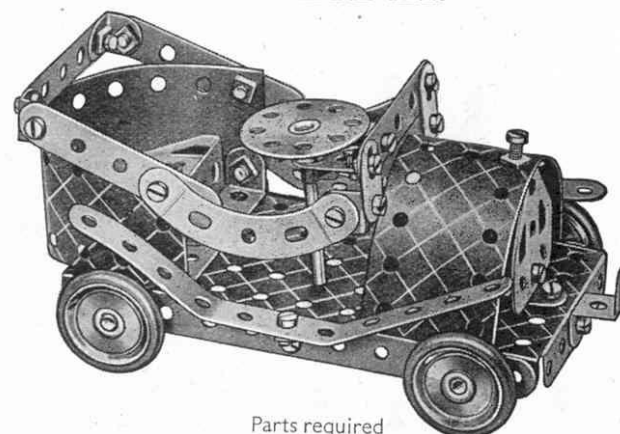
1.9 AEROPLANE



Parts required

2 of No.	2	1 of No.	17	2 of No.	37a	2 of No.	126
3 " "	5	2 " "	22	1 " "	38	2 " "	126a
4 " "	10	1 " "	24	3 " "	111c	2 " "	155a
8 " "	12	17 " "	37	1 " "	125	2 " "	189

1.10 "KIDDIE KAR"



Parts required

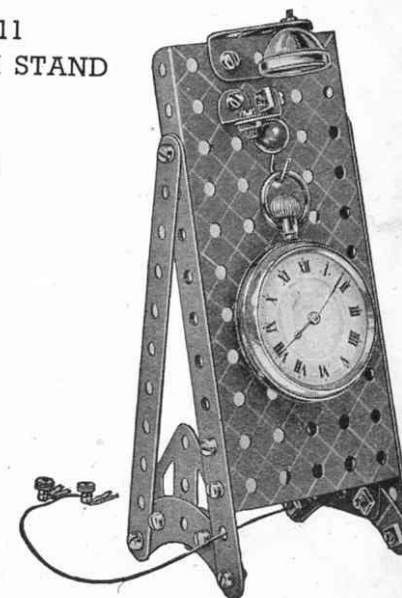
4 of No.	2	1 of No.	17	3 of No.	37a	1 of No.	125
4 " "	5	4 " "	22	2 " "	48a	2 " "	126
3 " "	10	1 " "	24	1 " "	52	1 " "	126a
7 " "	12	1 " "	35	2 " "	90a	4 " "	155a
2 " "	16	24 " "	37	2 " "	111c	2 " "	189

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

1.11
WATCH STAND

Parts required

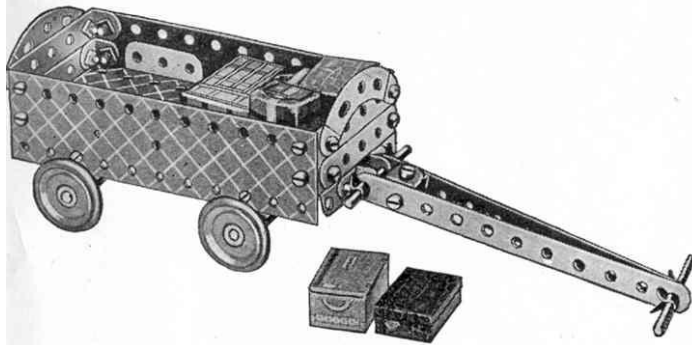
4 of No.	2
2 " "	12
19 " "	37
1 " "	38
1 " "	52
1 " "	57c
2 " "	90a
1 " "	126
2 " "	126a



A good example of the use of the Meccano Lighting Set.

These Models can be built with MECCANO No. 1 Outfit

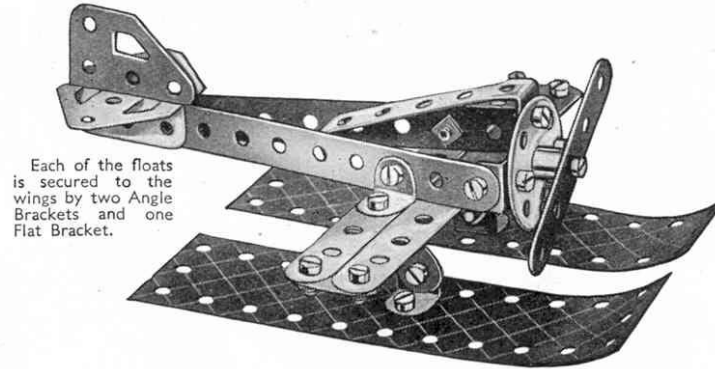
1.12 BAGGAGE TRUCK



Parts required

2 of No. 2	4 of No. 35	2 of No. 90a
2 " " 5	24 " " 37	1 " " 111c
8 " " 12	1 " " 37a	2 " " 126
2 " " 16	2 " " 38	2 " " 126a
2 " " 17	2 " " 48a	4 " " 155a
4 " " 22	1 " " 52	2 " " 189

1.13 RACING SEAPLANE



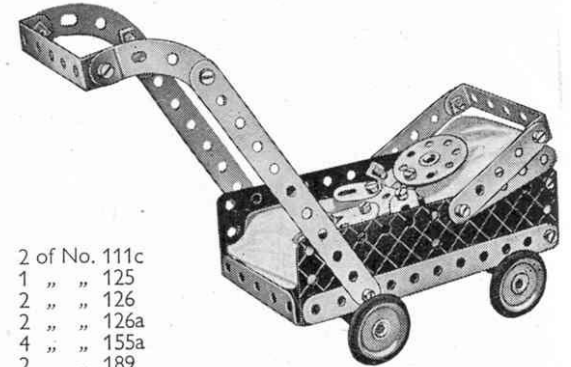
Each of the floats is secured to the wings by two Angle Brackets and one Flat Bracket.

Parts required

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

1.14 CHILD'S PRAM

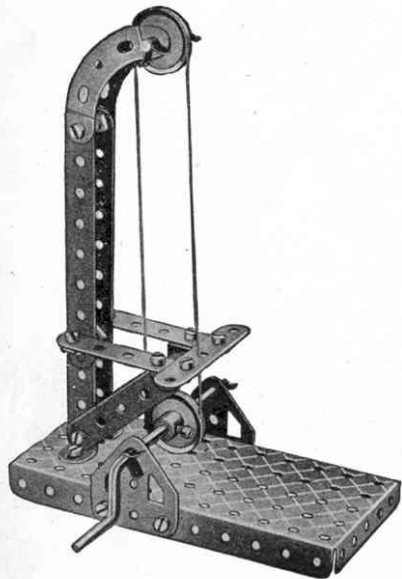
Flat Trunnions bolted between the Flexible Plates and the Flanged Plate provide bearings for the rear axle. Angle Brackets bolted under the Flanged Plate form the bearings for the front axle. The body of the "baby" consists of two Trunnions, and its arms and legs are Flat Brackets. Its head is fixed in place by a Reversed Angle Bracket.



Parts required

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

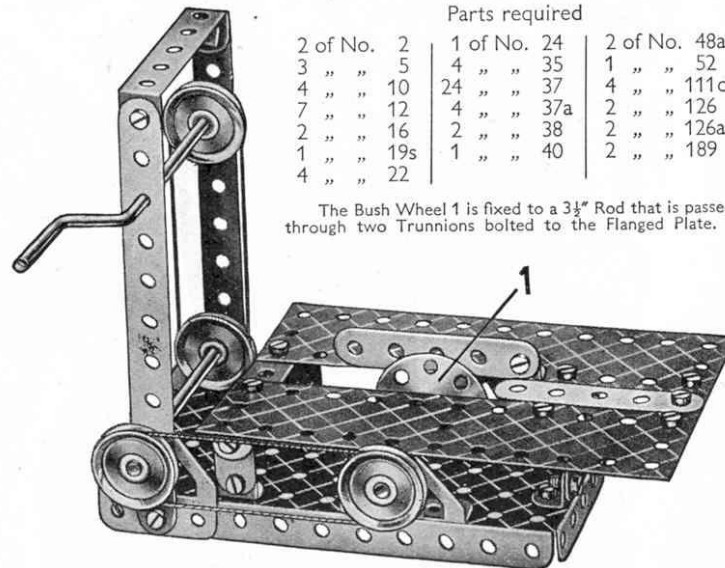
1.15 BAND SAW



Parts required

2 of No. 2
4 " " 5
6 " " 12
1 " " 17
1 " " 19s
2 " " 22
4 " " 35
19 " " 37
1 " " 40
1 " " 52
2 " " 90a
2 " " 126a

1.16 CIRCULAR SAW



Parts required

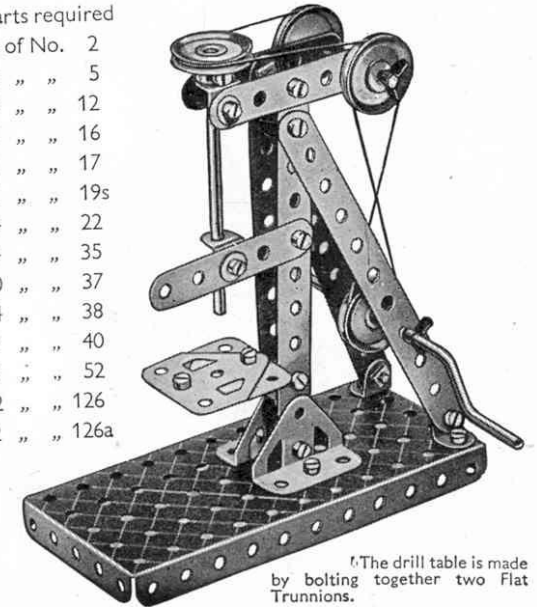
2 of No. 2	1 of No. 24	2 of No. 48a
3 " " 5	4 " " 35	1 " " 52
4 " " 10	24 " " 37	4 " " 111c
7 " " 12	4 " " 37a	2 " " 126
2 " " 16	2 " " 38	2 " " 126a
1 " " 19s	1 " " 40	2 " " 189
4 " " 22		

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

1.17 DRILL

Parts required

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

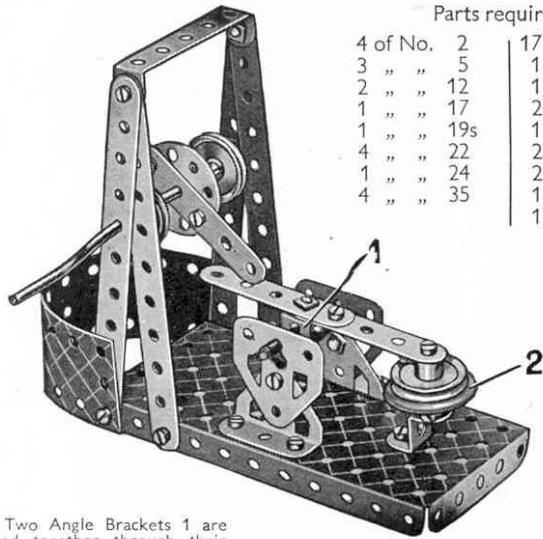


The drill table is made by bolting together two Flat Trunnions.

1.18 TRIP HAMMER

Parts required

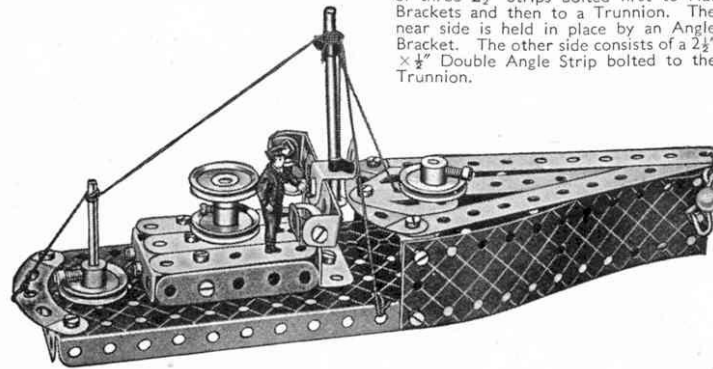
4 of No. 2	17 of No. 37
3 " " 5	1 " " 48a
2 " " 12	1 " " 52
1 " " 17	2 " " 111c
1 " " 19s	1 " " 125
4 " " 22	2 " " 126
1 " " 24	2 " " 126a
4 " " 35	1 " " 155a
	1 " " 189



Two Angle Brackets 1 are bolted together through their holes and also are bolted to two $2\frac{1}{2}$ " Strips to form a double bracket. The 1" fast Pulley 2 is fitted with a 1" Rubber Ring.

1.19 STEAM LAUNCH

The top of the deck-house consists of three $2\frac{1}{2}$ " Strips bolted first to Flat Brackets and then to a Trunnion. The rear side is held in place by an Angle Bracket. The other side consists of a $2\frac{1}{2}$ " \times $\frac{1}{2}$ " Double Angle Strip bolted to the Trunnion.

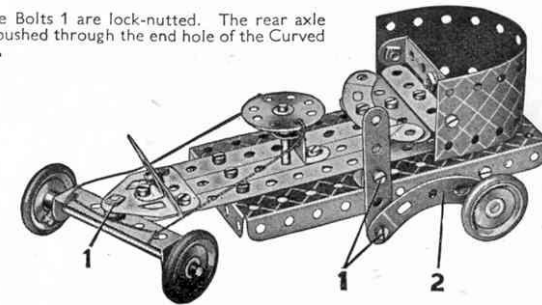


Parts required

3 of No. 2	4 of No. 22	1 of No. 52	2 of No. 126a
4 " " 5	4 " " 35	1 " " 57c	2 " " 189
3 " " 10	23 " " 37	2 " " 90a	
8 " " 12	4 " " 38	2 " " 111c	
1 " " 16	1 " " 40	1 " " 125	
2 " " 17	2 " " 48a	2 " " 126	

1.20 COASTER

The Bolts 1 are lock-nutted. The rear axle Rod is pushed through the end hole of the Curved Strip 2.

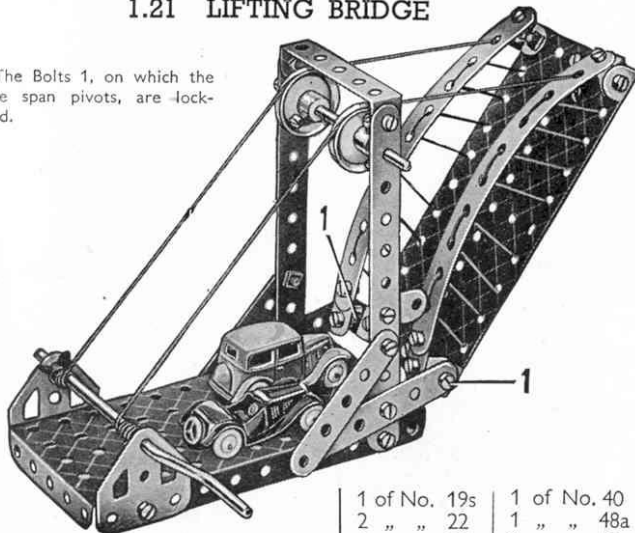


Parts required

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

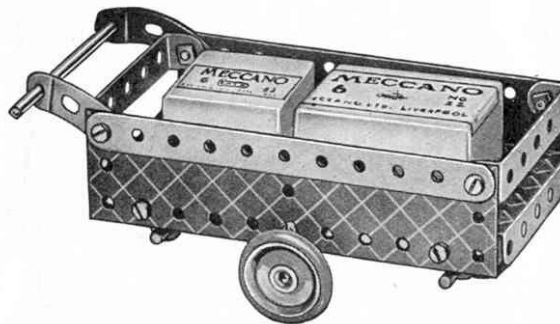
1.21 LIFTING BRIDGE

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



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

1.22 HAND TRUCK



Parts required

2 of No. 2
2 " " 10
8 " " 12
2 " " 16
2 " " 17
4 " " 22
3 " " 35
14 " " 37
2 " " 48a
1 " " 52
2 " " 90a
2 " " 155a
2 " " 189

The bearings for the $3\frac{1}{2}$ " Rod are Flat Brackets, and the front and rear axle bearings are reversed angle brackets built up from Angle Brackets. The right-hand 1" Pulley on the $3\frac{1}{2}$ " Rod is loose on the Rod, but is retained in place by a Spring Clip. The front and rear 1" Pulleys are fixed on their respective 2" Rods.

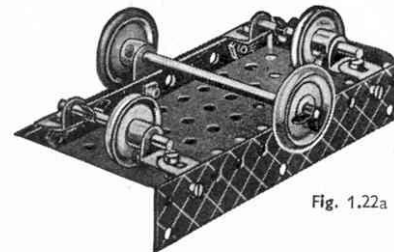
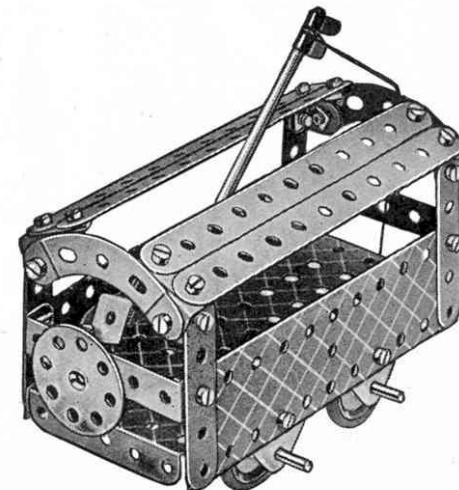


Fig. 1.22a

1.23 TROLLEY BUS

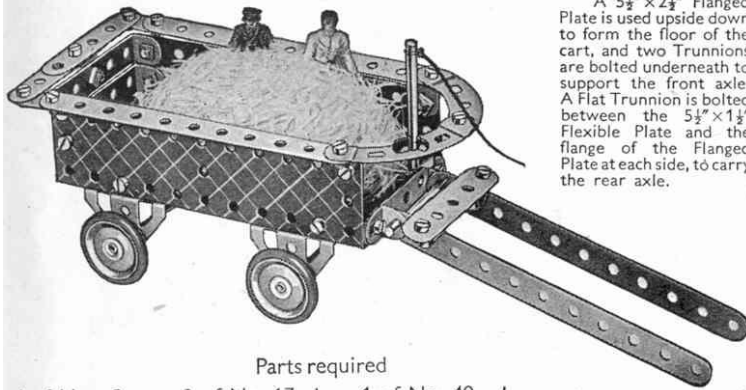


Parts required

4 of No. 2
4 " " 5
4 " " 10
8 " " 12
2 " " 16
1 " " 19s
4 " " 22
1 " " 24
4 " " 35
24 " " 37
1 " " 37a
4 " " 38
1 " " 40
2 " " 48a
1 " " 52
2 " " 90a
2 " " 111c
1 " " 125
2 " " 126
2 " " 126a
4 " " 155a
2 " " 189

The Reversed Angle Bracket that holds the trolley is fixed in position by a Bolt passed through the slot in the Bracket, then through two Washers, and into the boss of the Bush Wheel.

1.24 HAY CART



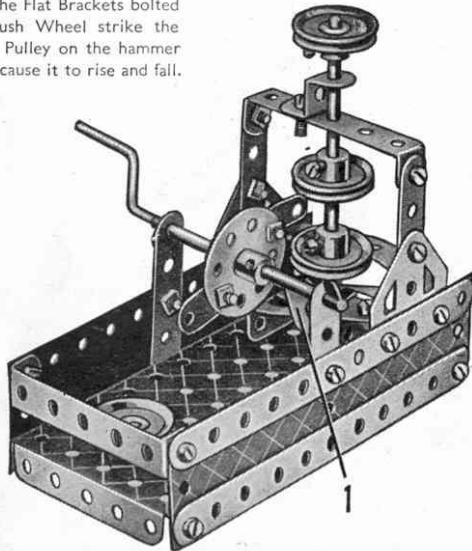
A $5\frac{1}{2}'' \times 2\frac{1}{2}''$ Flanged Plate is used upside down to form the floor of the cart, and two Trunnions are bolted underneath to support the front axle. A Flat Trunnion is bolted between the $5\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible Plate and the flange of the Flanged Plate at each side, to carry the rear axle.

Parts required

4 of No. 2	2 of No. 17	1 of No. 40	2 of No. 126
3 " " 5	4 " " 22	2 " " 48a	2 " " 126a
2 " " 10	4 " " 35	1 " " 52	4 " " 155a
7 " " 12	24 " " 37	2 " " 90a	2 " " 189
2 " " 16	1 " " 37a	1 " " 111c	

1.27 STAMPING MILL

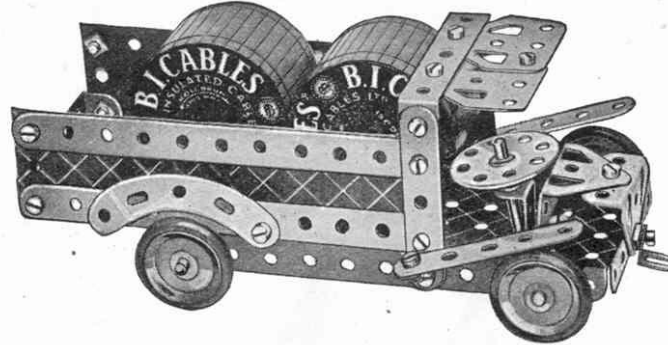
The anvil 1 is made up of two Trunnions bolted together. When the Crank Handle is rotated, the Flat Brackets bolted to the Bush Wheel strike the centre 1" Pulley on the hammer shaft and cause it to rise and fall.



Parts required

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

1.25 MOTOR LORRY

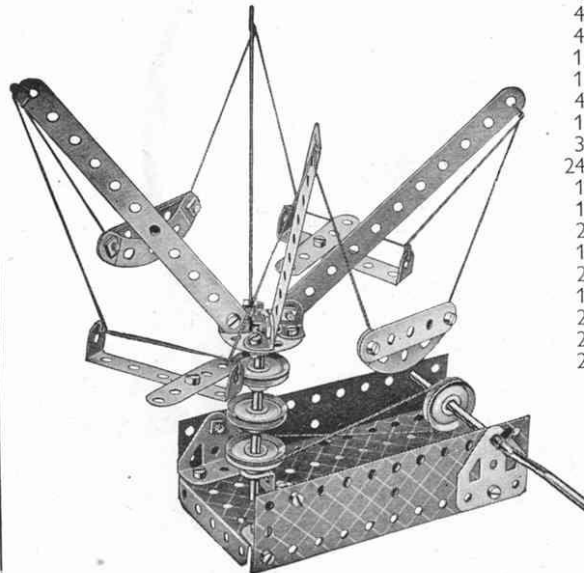


The $2\frac{1}{2}''$ Curved Strips representing the rear mudguards are each fastened to the sides by a $\frac{3}{8}''$ Bolt and Nut, with a Spring Clip between the mudguards and the $5\frac{1}{2}''$ Strip to form a distance piece.

Parts required

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

1.28 FLYING BOATS



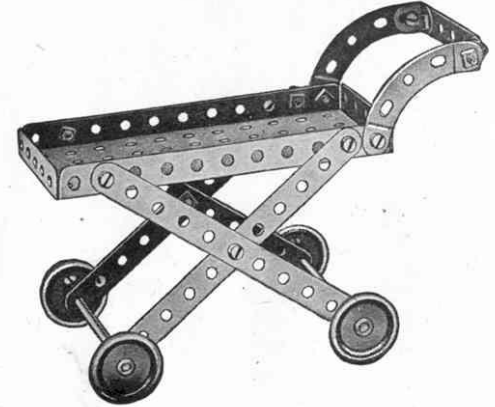
Parts required

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

1.26 HOSPITAL TROLLEY

Parts required

4 of No. 2
1 " " 5
2 " " 12
2 " " 16
4 " " 22
12 " " 37
1 " " 52
2 " " 90a
4 " " 155a

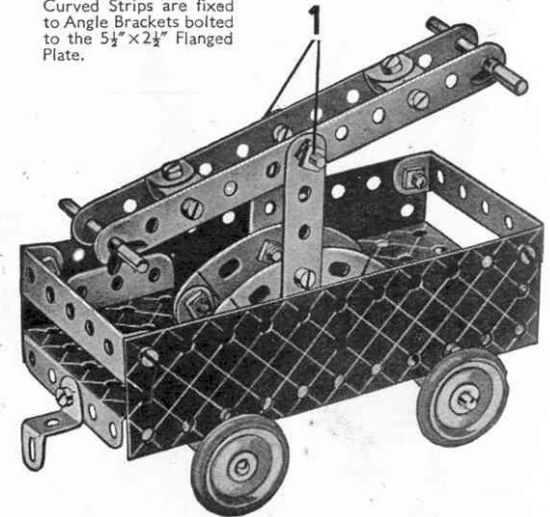


1.29 HAND CAR

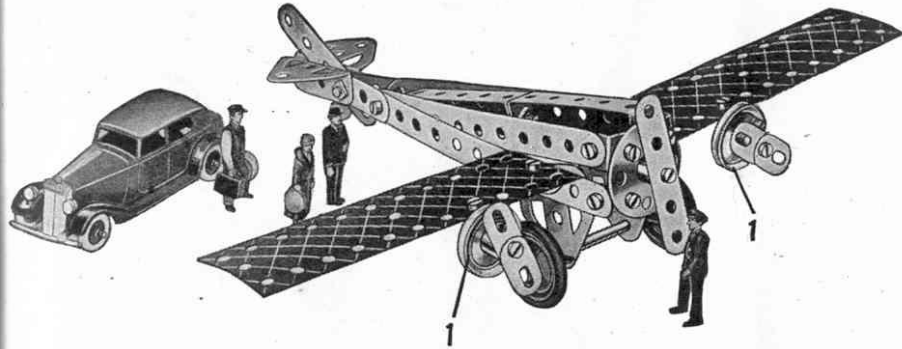
The Bolts 1 on which the $5\frac{1}{2}''$ Strips are pivoted, are lock-nutted. The $2\frac{1}{2}''$ small radius Curved Strips are fixed to Angle Brackets bolted to the $5\frac{1}{2}'' \times 2\frac{1}{2}''$ Flanged Plate.

Parts required

2 of No. 2
2 " " 5
8 " " 12
2 " " 16
2 " " 17
4 " " 22
4 " " 35
23 " " 37
4 " " 37a
4 " " 38
4 " " 48a
2 " " 52
1 " " 90a
2 " " 111c
1 " " 125
2 " " 126
2 " " 126a
4 " " 155a
2 " " 189



1.30 MONOPLANE



Parts required

4 of No. 2
4 " " 5
4 " " 10
8 " " 12
1 " " 16
4 " " 22
1 " " 24
2 " " 35
20 " " 37
3 " " 37a
2 " " 48a
1 " " 57c
4 " " 111c
2 " " 126
2 " " 126a
2 " " 155a
2 " " 189

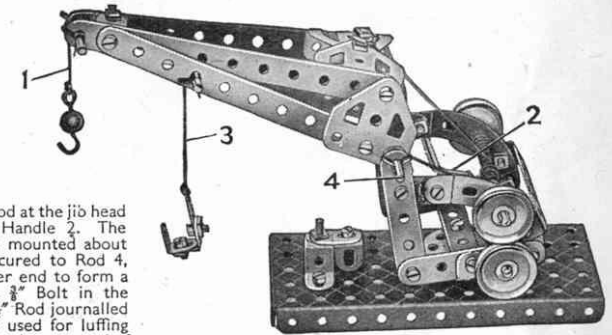
The fast Pulleys 1 are fixed to Angle Brackets fastened to the wing by $\frac{3}{8}$ " Bolts, which are passed through the Angle Brackets, and held in the bosses of the Pulleys. The set screws of the Pulleys hold also a second Bolt on which the propellers are mounted.

1.31 FLOATING CRANE

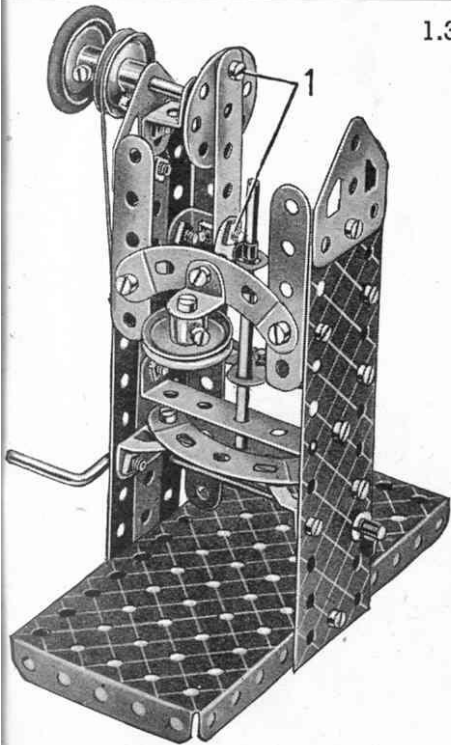
Parts required

4 of No. 2	2 of No. 90a
4 " " 5	3 " " 111c
4 " " 10	1 " " 125
7 " " 12	2 " " 126
2 " " 16	2 " " 126a
2 " " 17	
1 " " 19s	
4 " " 22	
1 " " 24	
4 " " 35	
24 " " 37	
4 " " 37a	
4 " " 38	
1 " " 40	
2 " " 48a	
1 " " 52	
1 " " 57c	

The Cord 1 passes over the Rod at the jib head and is fastened to the Crank Handle 2. The other Cord 3 passes over a Rod mounted about halfway along the jib, and is secured to Rod 4, which has a 1" Pulley at the other end to form a handle. The Cord tied to the $\frac{3}{8}$ " Bolt in the Trunnions is taken around the $3\frac{1}{2}$ " Rod journalled above the Crank Handle, and is used for luffing the jib by turning the 1" Pulley at the rear end of the Rod. Two Angle Brackets and a Flat Bracket form the hook on Cord 3.



1.32 POWER PRESS



Parts required

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

The Bolts 1 are lock-nutted, and the Angle Bracket at the lower end of the $2\frac{1}{2}$ " Strip has a $\frac{1}{4}$ " Rod in its elongated hole, where it is held by means of two Spring Clips

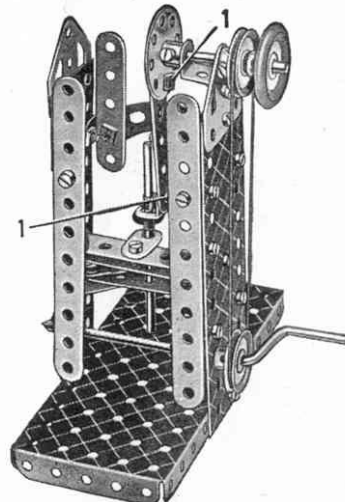
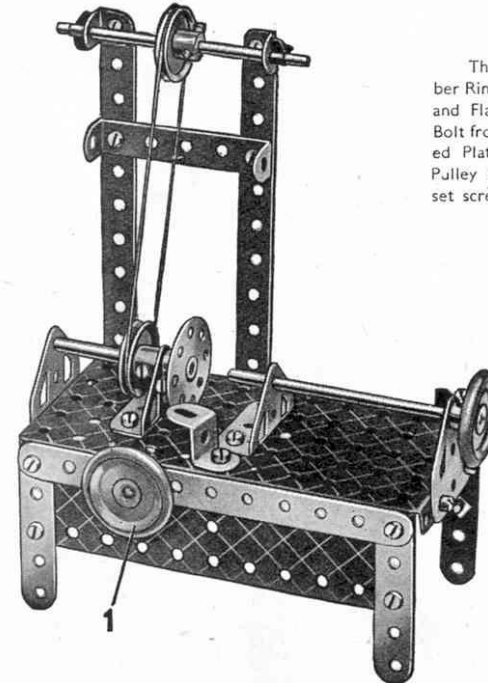


Fig. 1.32a

1.33 LATHE

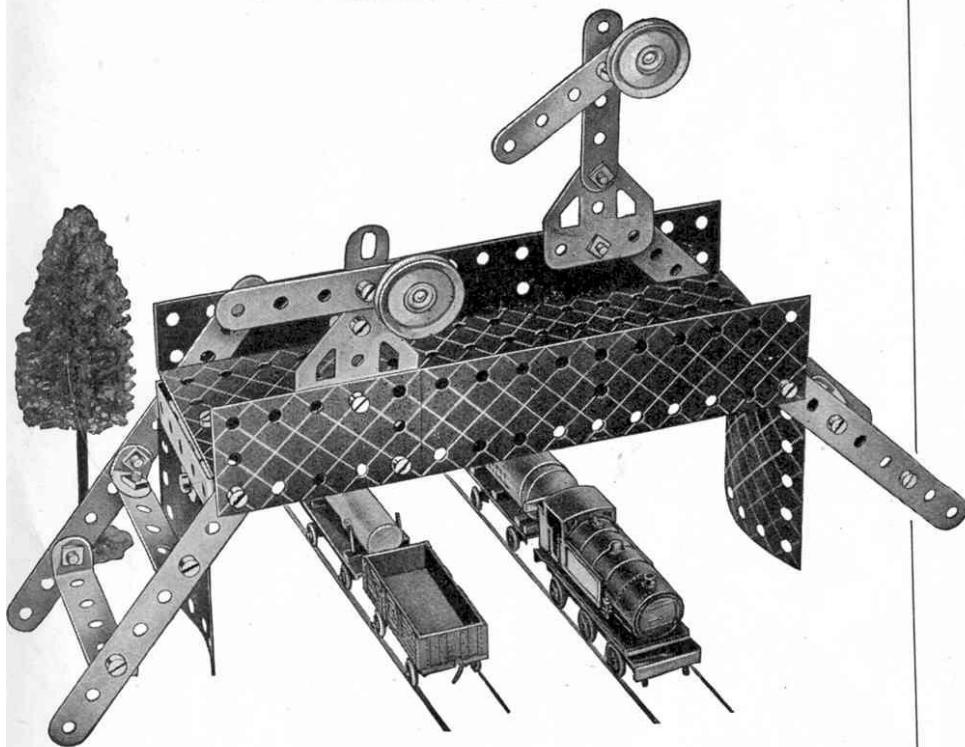


The 1" fast Pulley with Rubber Ring 1 is secured to the Strip and Flanged Plate by passing a Bolt from the inside of the Flanged Plate into the boss of the Pulley and then tightening the set screw.

Parts required

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

2.1 RAILWAY FOOTBRIDGE



Parts required

4 of No. 2	2 of No. 22	1 of No. 52	2 of No. 188
6 " " 5	32 " " 37	2 " " 111c	2 " " 189
2 " " 10	2 " " 37a	2 " " 126	1 " " 190
6 " " 12	2 " " 48a	2 " " 126a	2 " " 200

The span of the bridge is a $5\frac{1}{2}" \times 2\frac{1}{2}"$ Flanged Plate, extended by a $2\frac{1}{2}" \times 2\frac{1}{2}"$ Flexible Plate. Trunnions are bolted to each end of the span, and have $1\frac{1}{8}"$ radius Curved Plates fastened to them. The sides of the approach stairways are $5\frac{1}{2}"$ Strips. They are joined across by $2\frac{1}{2}" \times \frac{1}{2}"$ Double Angle Strips and $2\frac{1}{2}"$ Strips fitted with Angle Brackets at each end.

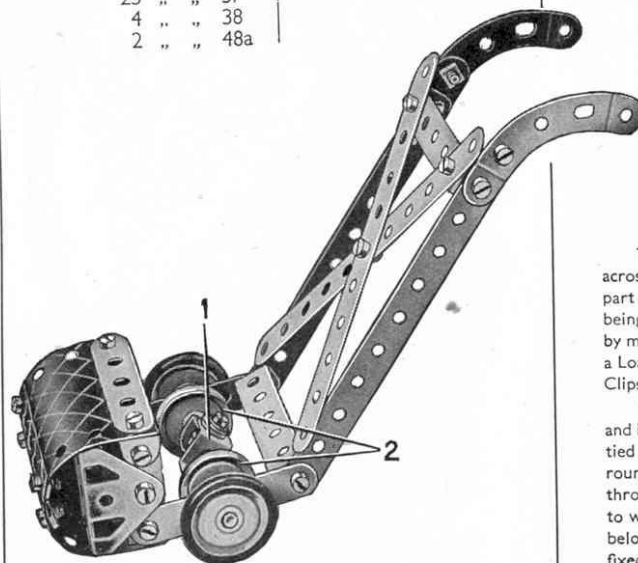
The signals are supported on Flat Trunnions bolted to the sides of the bridge. The smaller of the two signal posts is formed by two Flat Brackets, and the larger one is a $2\frac{1}{2}"$ Strip. The signal arms are $2\frac{1}{2}"$ Strips bolted to the posts in the second holes from one end. They are fitted at their shorter ends with $1"$ Pulleys, representing the spectacles, which are held in place by $\frac{3}{8}"$ Bolts passed through the Strips and inserted in their bosses.

2.2 LAWN MOWER

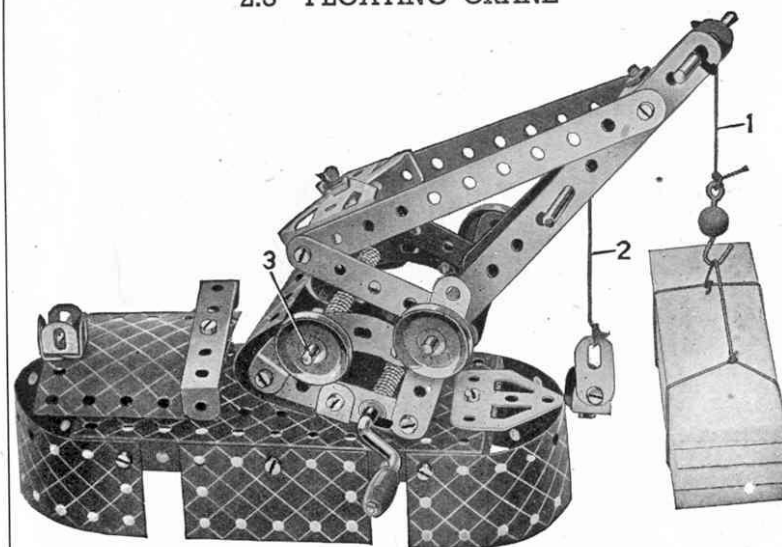
The "cutter" is made by bolting an Angle Bracket at each end of a Reversed Angle Bracket 1 and then sliding an Axle Rod through the free holes of the Brackets. The two Pulleys 2 are fixed to the Rod and pushed tightly against the "cutter" to make it rotate with the Rod as the wheels revolve. The wheels are $1"$ Pulleys fitted with Rubber Rings.

Parts required

4 of No. 2	2 of No. 90a
4 " " 5	1 " " 125
4 " " 10	2 " " 126
6 " " 12	2 " " 155a
1 " " 16	2 " " 200
4 " " 22	
25 " " 37	
4 " " 38	
2 " " 48a	



2.3 FLOATING CRANE



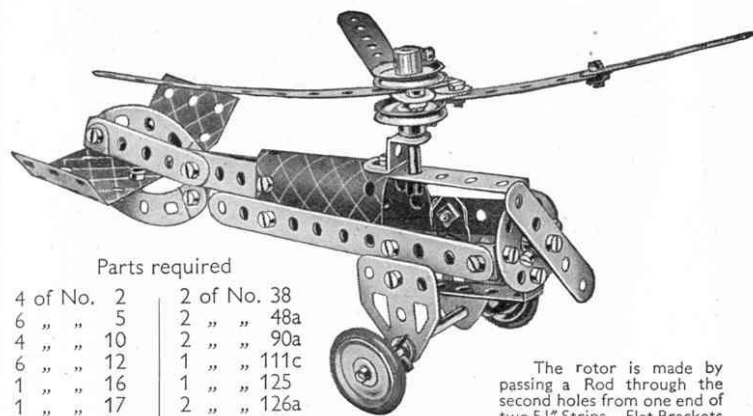
Parts required

4 of No. 2	4 of No. 22	2 of No. 48a	1 of No. 126a
6 " " 5	1 " " 24	1 " " 52	1 " " 176
3 " " 10	4 " " 35	1 " " 57c	2 " " 188
8 " " 12	29 " " 37	2 " " 90a	2 " " 189
2 " " 16	3 " " 37a	4 " " 111c	1 " " 199
2 " " 17	4 " " 38	1 " " 125	1 " " 200
1 " " 19g	1 " " 40	2 " " 126	

The jib consists of $5\frac{1}{2}"$ Strips and $2\frac{1}{2}"$ Strips. At its upper end these are joined across by Angle Brackets, and at its lower end by Trunnions. Each side of the lower part of the crane consists of $2\frac{1}{2}"$ Strips and small radius Curved Strips, the two sides being connected by $2\frac{1}{2}" \times \frac{1}{2}"$ Double Angle Strips. The jib is pivoted to this structure by means of a $3\frac{1}{2}"$ Rod, which carries at each end a $1"$ Pulley. The Cord 1 fitted with a Loaded Hook, is passed over a $2"$ Rod held in place in the jib by means of Spring Clips and is then wound around the Crank Handle.

The Cord 2 passes over a Rod held in place in the jib by an Anchoring Spring, and is then wound around the Rod that forms the pivot for the jib. A third Cord is tied to a Bolt fastened in the two Trunnions at the base of the jib, and is wound round Rod 3. This Cord controls the luffing motion of the crane. A $\frac{3}{8}"$ Bolt passes through the Flanged Plate and is held by a set screw in the boss of the Bush Wheel to which the jib is fastened. The Bush Wheel is bolted to the Double Angle Strip below the Rod 3. The roof of the cabin is bolted to a $\frac{1}{2}"$ Reversed Angle Bracket fixed to the Flanged Plate.

2.4 AUTOGIRO



Parts required

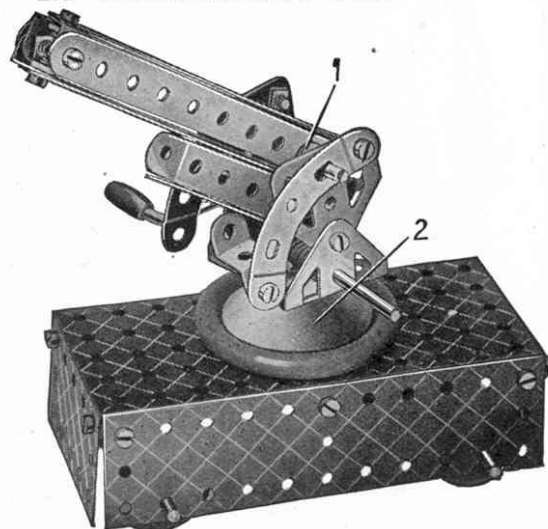
4 of No. 2	2 of No. 38
6 " " 5	2 " " 48a
4 " " 10	2 " " 90a
6 " " 12	1 " " 111c
1 " " 16	1 " " 125
1 " " 17	2 " " 126a
4 " " 22	2 " " 155a
1 " " 24	2 " " 188
3 " " 35	1 " " 199
25 " " 37	

The rotor is made by passing a Rod through the second holes from one end of two 5 1/2" Strips. Flat Brackets are bolted to the short ends of the Strips and the third blade of the rotor is fixed to them as shown.

2.5 ANTI-AIRCRAFT GUN

Parts required

4 of No. 2
1 " " 5
6 " " 12
2 " " 16
2 " " 17
1 " " 19g
4 " " 22
1 " " 24
3 " " 35
26 " " 37
4 " " 38
2 " " 48a
1 " " 52
2 " " 90a
1 " " 125
2 " " 126
2 " " 126a
4 " " 155a
1 " " 176
1 " " 187
2 " " 188
2 " " 189

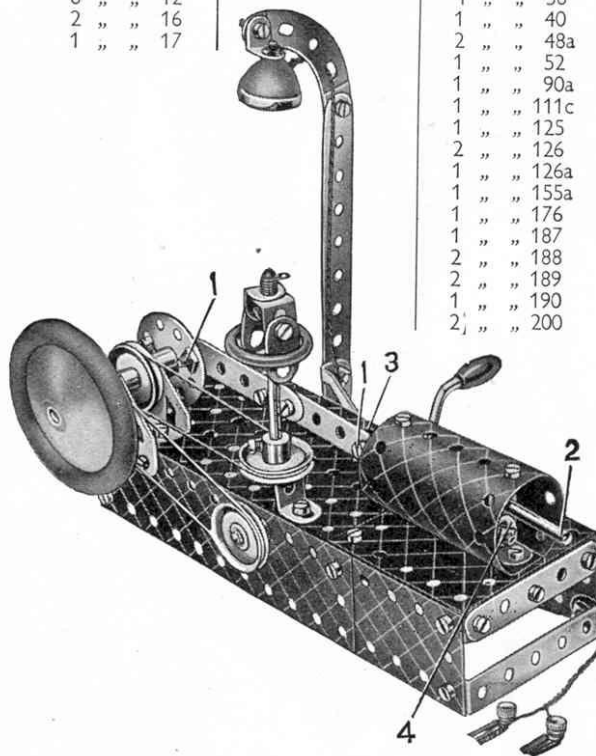


One end of a piece of Cord is fastened to the Crank Handle. It is wound round the Handle a few times and its other end is then fastened to the end of the gun. The two Trunnions are bolted to a Bush Wheel fixed on a 2" Rod that passes through the Rod Wheel 2 and the Flanged Plate and is held in place by an Anchoring Spring. The Spring Clips at 1 space the gun barrel from the Flat Trunnions.

2.6 GAS ENGINE

Parts required

1 of No. 2	1 of No. 19g	4 of No. 35
3 " " 5	4 " " 22	39 " " 37
4 " " 10	1 " " 24	3 " " 37a
8 " " 12		4 " " 38
2 " " 16		1 " " 40
1 " " 17		2 " " 48a
		1 " " 52
		1 " " 90a
		1 " " 111c
		1 " " 125
		2 " " 126
		1 " " 126a
		1 " " 155a
		1 " " 176
		1 " " 187
		2 " " 188
		2 " " 189
		1 " " 190
		2 " " 200



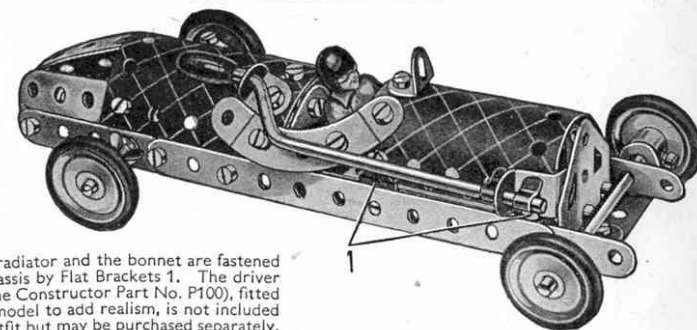
The bearings for the Rod representing the crankshaft are a Flat Trunnion and a Trunnion. The crankshaft carries a Rod Wheel and a 1" Pulley at one end, a second 1" Pulley between the bearings, and a Bush Wheel at its other end.

The connecting rod is fastened to the Bush Wheel and to an Angle Bracket 3 by lock-nutted Bolts 1. The Rod 2 is held in the Angle Bracket 3 by means of Spring Clips, one on each side. An Angle Bracket 4, carrying a Flat Bracket, is bolted inside the cylinder, and a similar arrangement is fitted at the other end. These form bearings for the Rod 2.

The model is operated by the Crank Handle, which carries also a 1" Pulley connected to one of the 1" Pulleys on the crankshaft by a belt of Cord. A second Cord drives the governor, which is mounted on a 3 1/2" Rod journalled in the 5 1/2" x 2 1/2" Flanged Plate and a Reversed Angle Bracket.

The model is fitted with a Spotlight from the Meccano Lighting Set, current being supplied by a 4.5-volt pocket-lamp battery housed in the base of the model.

2.7 RACING CAR

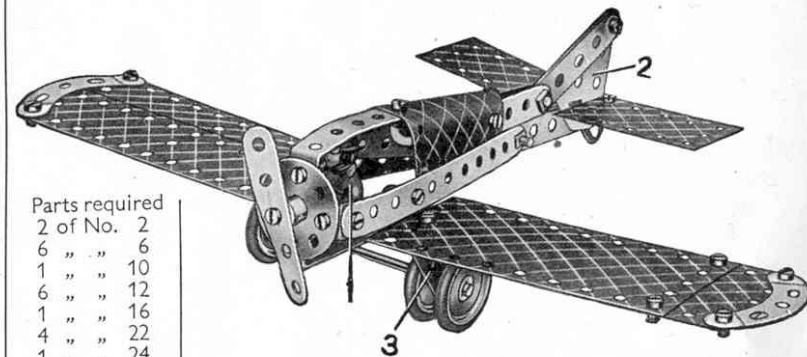


The radiator and the bonnet are fastened to the chassis by Flat Brackets 1. The driver (Aeroplane Constructor Part No. P100), fitted into the model to add realism, is not included in the Outfit but may be purchased separately.

Parts required

4 of No. 2	1 of No. 19g	2 of No. 38	1 of No. 126a
5 " " 5	4 " " 22	1 " " 48a	4 " " 155a
4 " " 10	4 " " 35	2 " " 90a	1 " " 199
8 " " 12	30 " " 37	1 " " 125	1 " " 200
2 " " 16	1 " " 37a	1 " " 126	

2.8 LOW WING MONOPLANE

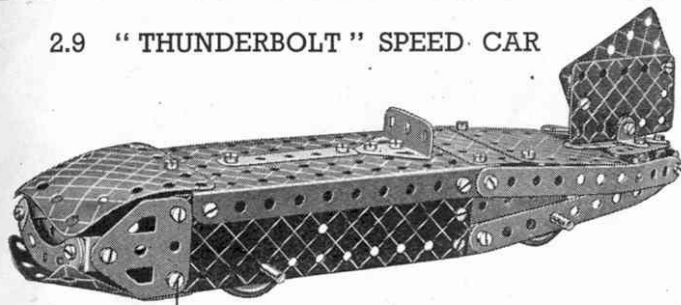


Parts required

2 of No. 2		
6 " " 6		
1 " " 10		
6 " " 12		
1 " " 16		
4 " " 22		
1 " " 24		
23 " " 37		
2 " " 37a	2 of No. 126	2 of No. 189
2 " " 38	1 " " 126a	1 " " 190
2 " " 48a	4 " " 155a	1 " " 191
2 " " 90a	2 " " 188	1 " " 199
3 " " 111c		

The pilot 1 (Aeroplane Constructor Part No. P100) is not included in the Outfit, but may be bought separately. The fin 2 is a Flat Trunnion, and it is clamped between the two 2 1/2" Strips. The bearings 3 for the axle of the landing wheels are Trunnions, bolted to the wings. The wings are attached to the fuselage by Angle Brackets.

2.9 "THUNDERBOLT" SPEED CAR

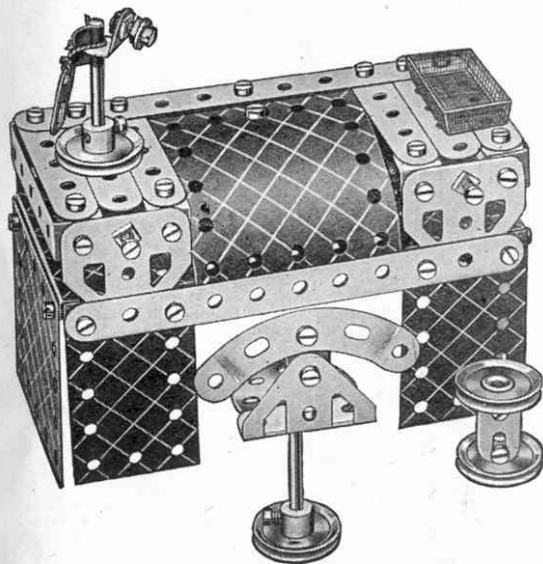


Parts required

4 of No. 2	1 of No. 52
6 " " 5	2 " " 90a
2 " " 10	1 " " 126
4 " " 12	2 " " 126a
2 " " 16	4 " " 155a
4 " " 22	2 " " 188
39 " " 37a	2 " " 189
38 " " 37b	2 " " 190
4 " " 38	2 " " 200
2 " " 48a	

A $5\frac{1}{2} \times 2\frac{1}{2}$ " Flanged Plate, extended at the front by a $1\frac{1}{4}$ " radius Curved Plate and at the rear by two $2\frac{1}{2} \times 2\frac{1}{2}$ " Flexible Plates, forms the top of the car. The rear part of each side is formed by two $5\frac{1}{2}$ " Strips and a $2\frac{1}{2}$ " Strip, the former being connected together at the tail by Angle Brackets. Bolts 1 hold a $2\frac{1}{2} \times \frac{1}{2}$ " Double Angle Strip that carries the $1\frac{1}{4}$ " radius Curved Plate forming the underside of the front cowl.

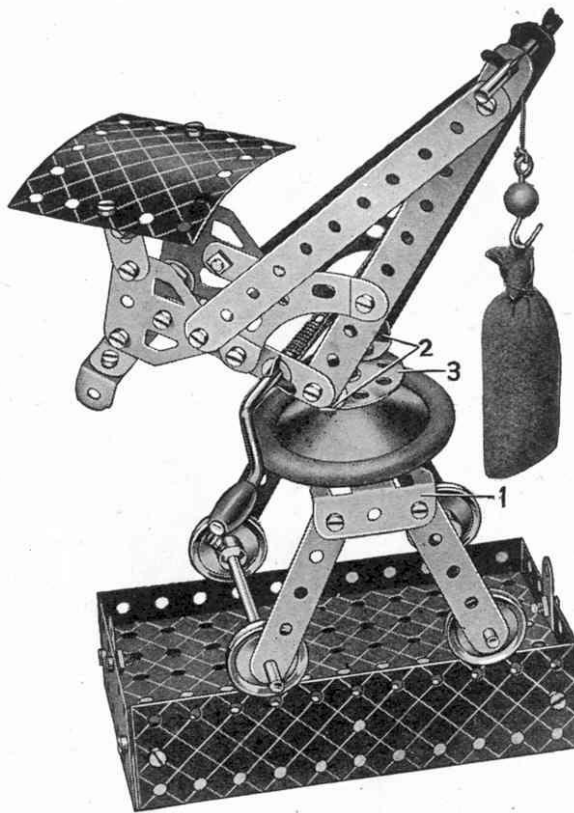
2.10 ROLL TOP DESK



Parts required

2 of No. 2
6 " " 5
4 " " 10
7 " " 12
2 " " 17
4 " " 22
1 " " 24
3 " " 35
38 " " 37
5 " " 37a
1 " " 38
2 " " 48a
1 " " 52
1 " " 90a
3 " " 111c
1 " " 126
2 " " 126a
2 " " 188
1 " " 189
2 " " 190
1 " " 200

2.11 TRAVELLING CRANE

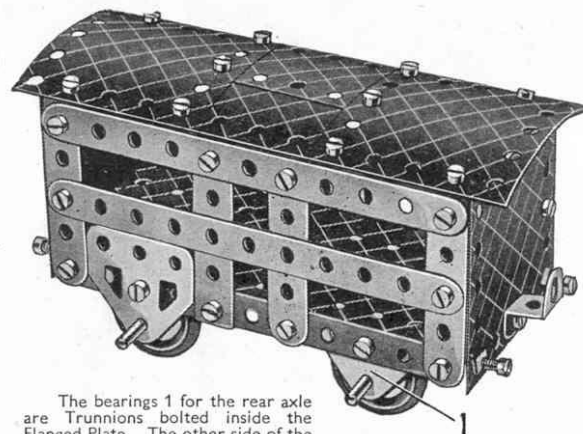


Parts required

4 of No. 2	1 of No. 19g	3 of No. 38	2 of No. 111c
6 " " 5	4 " " 22	1 " " 40	2 " " 126
4 " " 10	1 " " 24	2 " " 48a	2 " " 126a
6 " " 12	4 " " 35	1 " " 52	1 " " 176
2 " " 16	38 " " 37	1 " " 57c	1 " " 187
2 " " 17	2 " " 37a	2 " " 90a	2 " " 188
2 of No. 189		1 of No. 200	

A 2" Rod is secured in the boss of the Bush Wheel 3. It then passes through the Road Wheel and through the centre of a $2\frac{1}{2} \times \frac{1}{2}$ " Double Angle Strip bolted between the two Trunnions 1. A Washer and a Cord Anchoring Spring are pushed on to the Rod to hold it in position. The crane jib is attached to the Bush Wheel by the Angle Brackets 2.

2.12 CATTLE TRUCK



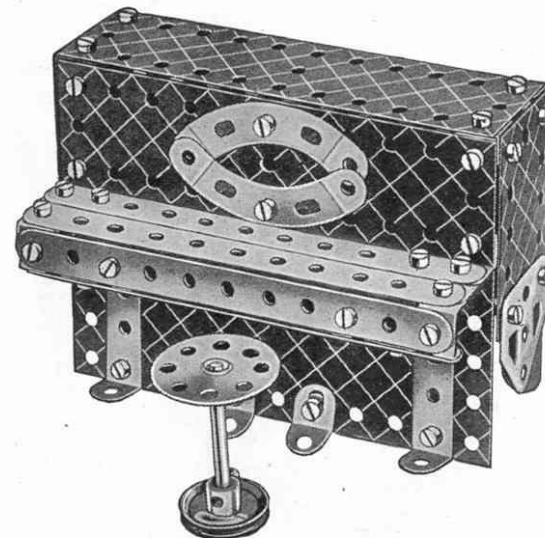
Parts required

4 of No. 2
6 " " 5
4 " " 10
5 " " 12
2 " " 16
4 " " 22
38 " " 37
8 " " 37a
4 " " 38
2 " " 48a
1 " " 52
4 " " 111c
1 " " 125
2 " " 126
2 " " 126a
4 " " 155a
2 " " 188
2 " " 190
2 " " 200

The bearings 1 for the rear axle are Trunnions bolted inside the Flanged Plate. The other side of the truck is constructed in a similar manner to the side shown in the illustration.

2.13 PIANO

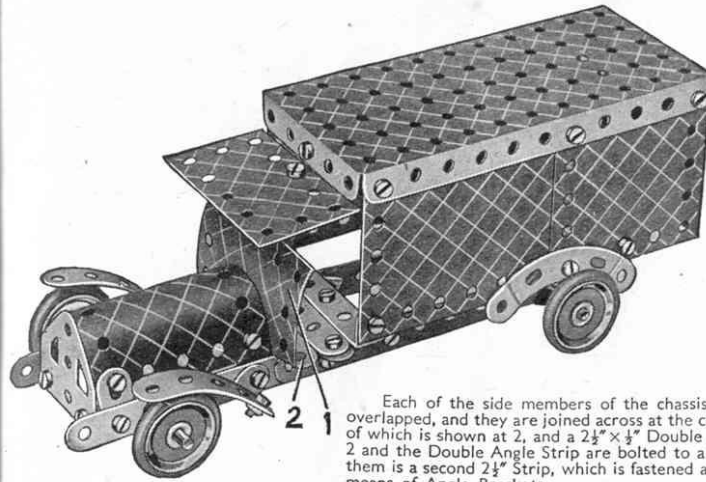
A $5\frac{1}{2} \times 2\frac{1}{2}$ " Flanged Plate is used for the upper part of the back and to each end of this a $2\frac{1}{2}$ " Strip is bolted to form the rear legs.



Parts required

4 of No. 2
4 " " 5
4 " " 10
8 " " 12
1 " " 17
1 " " 22
1 " " 24
38 " " 37
4 " " 38
2 " " 48a
1 " " 52
2 " " 90a
2 " " 126
2 " " 126a
2 " " 188
2 " " 189
1 " " 190
1 " " 191

2.14 MOTOR VAN



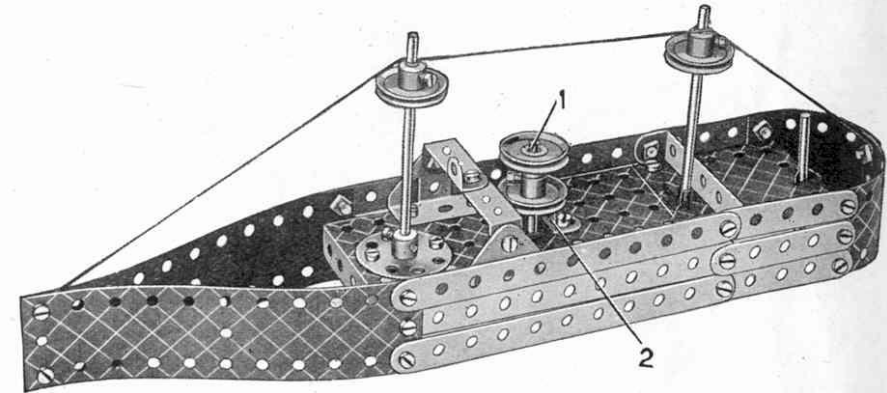
Each of the side members of the chassis consists of two $5\frac{1}{2}$ " Strips overlapped, and they are joined across at the centre by two $2\frac{1}{2}$ " Strips, one of which is shown at 2, and a $2\frac{1}{2}$ " \times $\frac{1}{2}$ " Double Angle Strip. The $2\frac{1}{2}$ " Strip 2 and the Double Angle Strip are bolted to a Flat Trunnion and between them is a second $2\frac{1}{2}$ " Strip, which is fastened at each end to the chassis by means of Angle Brackets.

The Plate 1 is fastened to an Angle Bracket that is bolted to Strip 2. The body is fixed to the chassis by a Double Angle Strip and an Angle Bracket.

Parts required

4 of No. 2
4 " " 5
4 " " 10
8 " " 12
2 " " 16
4 " " 22
4 " " 35
40 " " 37
4 " " 38
2 " " 48a
1 " " 52
2 " " 90a
1 " " 126
2 " " 126a
4 " " 155a
2 " " 188
2 " " 189
2 " " 190
1 " " 191
1 " " 199

2.16 STEAMSHIP



The deck of the model is a $5\frac{1}{2}$ " \times $2\frac{1}{2}$ " Flanged Plate extended by a $2\frac{1}{2}$ " \times $2\frac{1}{2}$ " Flexible Plate. A $2\frac{1}{2}$ " \times $\frac{1}{2}$ " Double Angle Strip fitted with an Angle Bracket represents the bridge, and it is supported by two Trunnions bolted to the deck. The funnel consists of a Rod 1 fitted with two 1" fast Pulleys. The Rod passes through the hole in a Reversed Angle Bracket 2 and then through the Flanged Plate.

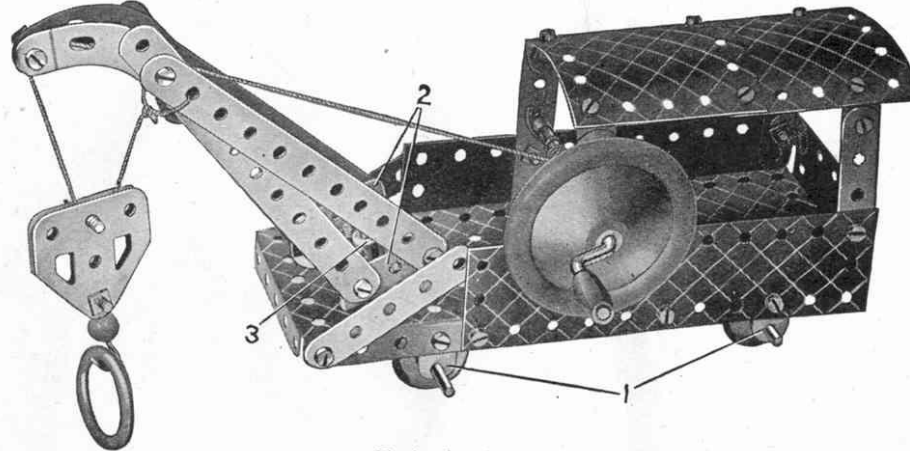
Parts required

4 of No. 2
6 " " 5
1 " " 12
2 " " 16
2 " " 17
4 " " 22
1 " " 24
4 " " 35
34 " " 37
1 " " 40
2 " " 48a
1 " " 52
1 " " 125
2 " " 126
2 " " 188
2 " " 189
1 " " 190

2.15 RAILWAY BREAKDOWN CRANE

Parts required

4 of No. 2
6 " " 5
4 " " 10
3 " " 12
2 " " 16
1 " " 17
1 " " 19g
4 " " 22
1 " " 24
2 " " 35
39 " " 37
3 " " 37a
3 " " 38
1 " " 40
2 " " 48a
1 " " 52
1 " " 57c
2 " " 90a
3 " " 111c
2 " " 126
2 " " 126a
1 " " 155a
1 " " 176
1 " " 187



The bearings 1 are Flat Brackets bolted to the Flanged Plate and the Flexible Plates respectively. The jib is fastened to two Trunnions 2, which are bolted to the Bush Wheel 3. A 2" Rod is secured in the boss of the Bush Wheel 3. It then passes through a hole in the Flanged Plate, and is held in position by a Spring Clip underneath the Plate.

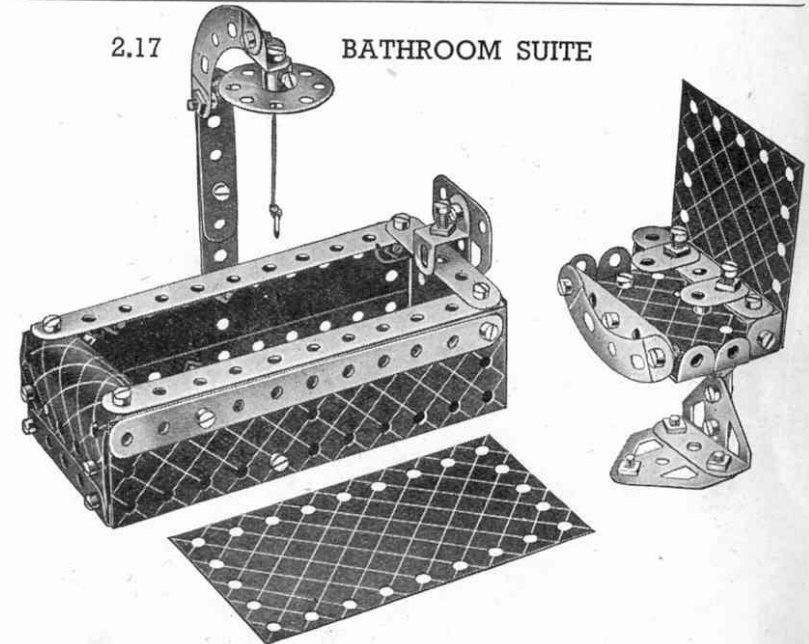
1 of No. 188
2 " " 189
1 " " 190
2 " " 200

2.17

BATHROOM SUITE

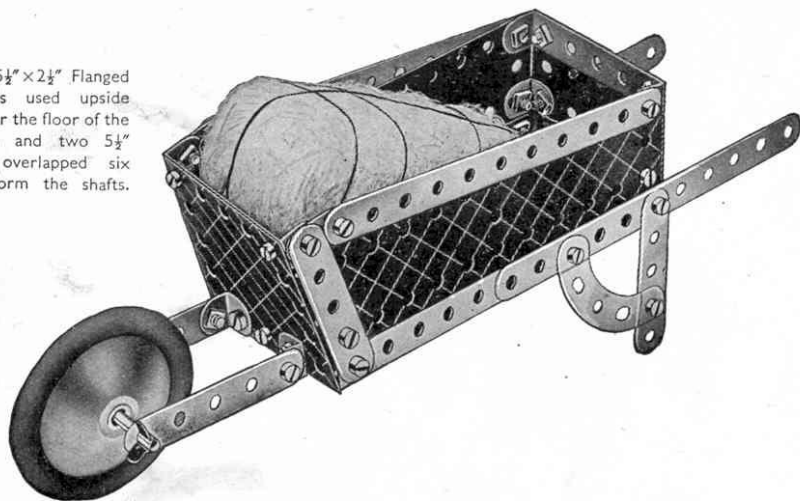
Parts required

4 of No. 2
6 " " 5
4 " " 10
8 " " 12
1 " " 24
40 " " 37
6 " " 37a
2 " " 38
2 " " 48a
1 " " 52
2 " " 90a
4 " " 111c
1 " " 125
2 " " 126
2 " " 126a
2 " " 188
2 " " 189
1 " " 190
1 " " 191
1 " " 199
1 " " 200



2.18 WHEELBARROW

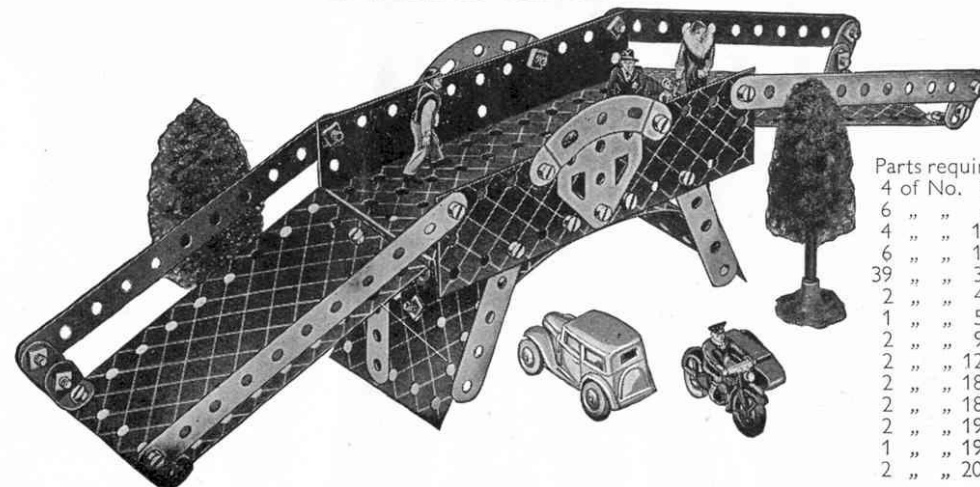
A $5\frac{1}{2}" \times 2\frac{1}{2}"$ Flanged Plate is used upside down for the floor of the barrow, and two $5\frac{1}{2}"$ Strips overlapped six holes form the shafts.



Parts required

4 of No. 2
6 " " 5
2 " " 10
4 " " 12
1 " " 17
2 " " 35
29 " " 37
2 " " 48a
1 " " 52
2 " " 90a
1 " " 187
1 " " 188
2 " " 189
1 " " 190

2.20 ROAD BRIDGE



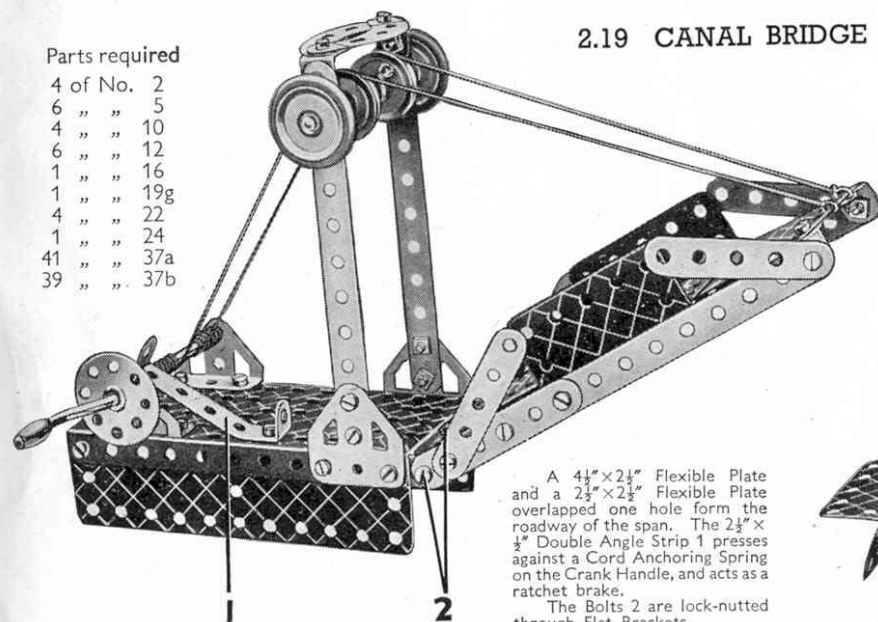
Parts required

4 of No. 2
6 " " 5
4 " " 10
6 " " 12
39 " " 37
2 " " 48a
1 " " 52
2 " " 90a
2 " " 126a
2 " " 188
2 " " 189
2 " " 190
1 " " 191
2 " " 200

2.19 CANAL BRIDGE

Parts required

4 of No. 2
6 " " 5
4 " " 10
6 " " 12
1 " " 16
1 " " 19g
4 " " 22
1 " " 24
41 " " 37a
39 " " 37b

Parts required
(continued)

2 of No. 38.
2 " " 48a
1 " " 52
2 " " 90a
2 " " 126
2 " " 126a
2 " " 155a
1 " " 176
2 " " 188
2 " " 189
2 " " 190
1 " " 191
1 " " 199
1 " " 200

A $4\frac{1}{2}" \times 2\frac{1}{2}"$ Flexible Plate and a $2\frac{1}{2}" \times 2\frac{1}{2}"$ Flexible Plate overlapped one hole form the roadway of the span. The $2\frac{1}{2}" \times \frac{1}{2}"$ Double Angle Strip 1 presses against a Cord Anchoring Spring on the Crank Handle, and acts as a ratchet brake.

The Bolts 2 are lock-nutted through Flat Brackets.



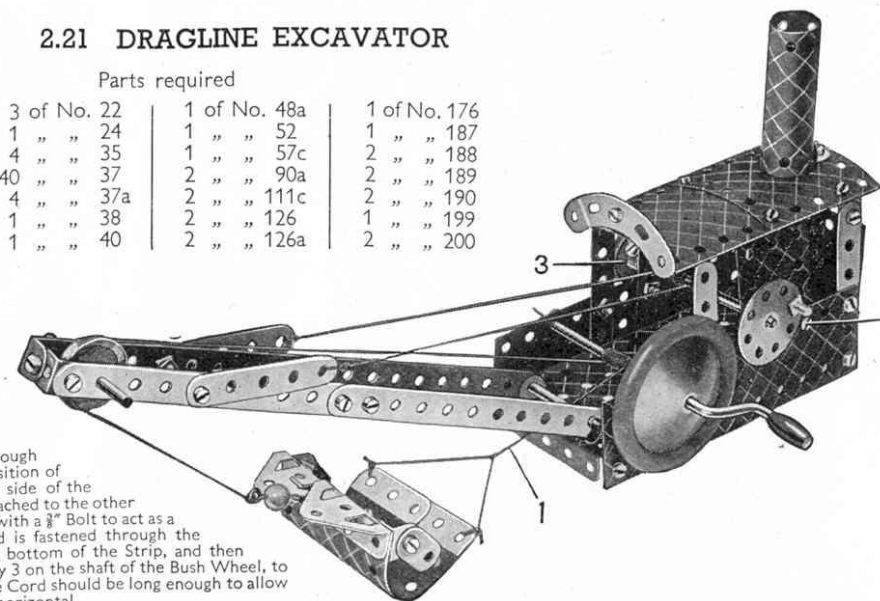
2.21 DRAGLINE EXCAVATOR

Parts required

4 of No. 2	3 of No. 22	1 of No. 48a	1 of No. 176
6 " " 5	1 " " 24	1 " " 52	1 " " 187
2 " " 10	4 " " 35	1 " " 57c	2 " " 188
8 " " 12	40 " " 37	2 " " 90a	2 " " 189
1 " " 16	4 " " 37a	2 " " 111c	2 " " 190
2 " " 17	1 " " 38	2 " " 126	1 " " 199
1 " " 19g	1 " " 40	2 " " 126a	2 " " 200

The Cord 1 is wound round the Crank Handle about 12 times then one end of it is fastened to a small Loaded Hook and the other end to the Cord on the bucket.

A Curved Strip is pivoted by a $\frac{1}{2}"$ Bolt through one of its ends in the position of Bolt 2 but on the rear side of the model. A 1" Pulley is attached to the other end of the Curved Strip, with a $\frac{1}{2}"$ Bolt to act as a weight. A loop of Cord is fastened through the slotted hole next to the bottom of the Strip, and then passes round the 1" Pulley 3 on the shaft of the Bush Wheel, to act as a brake band. The Cord should be long enough to allow the Strip to lie nearly horizontal.

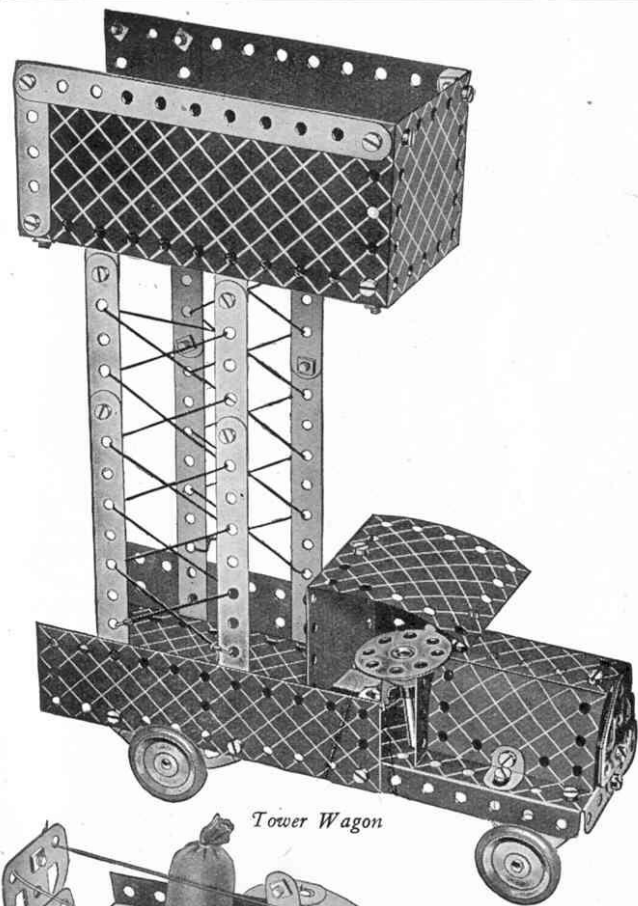


BUILD BIGGER AND BETTER MODELS

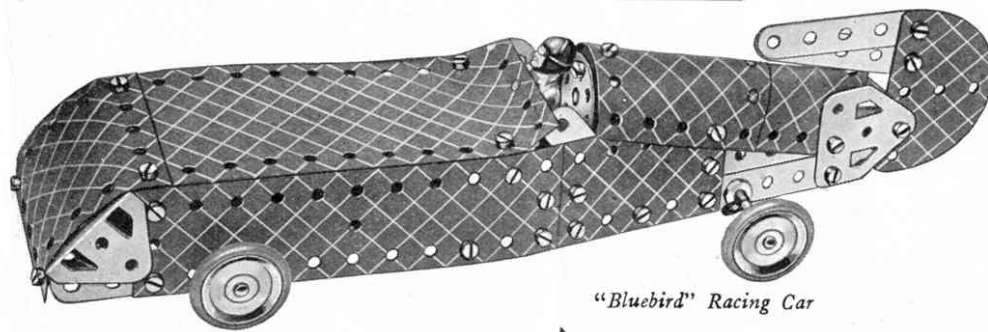
When you have built all the models shown in this Manual you will be keen to build bigger and more elaborate models. Your next step is to purchase a Meccano No. 2a Accessory Outfit containing all the parts required to convert your No. 2 into a No. 3 Outfit. You will then be able to build the full range of No. 3 Outfit models, a selection of which is illustrated on this and the following page.

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

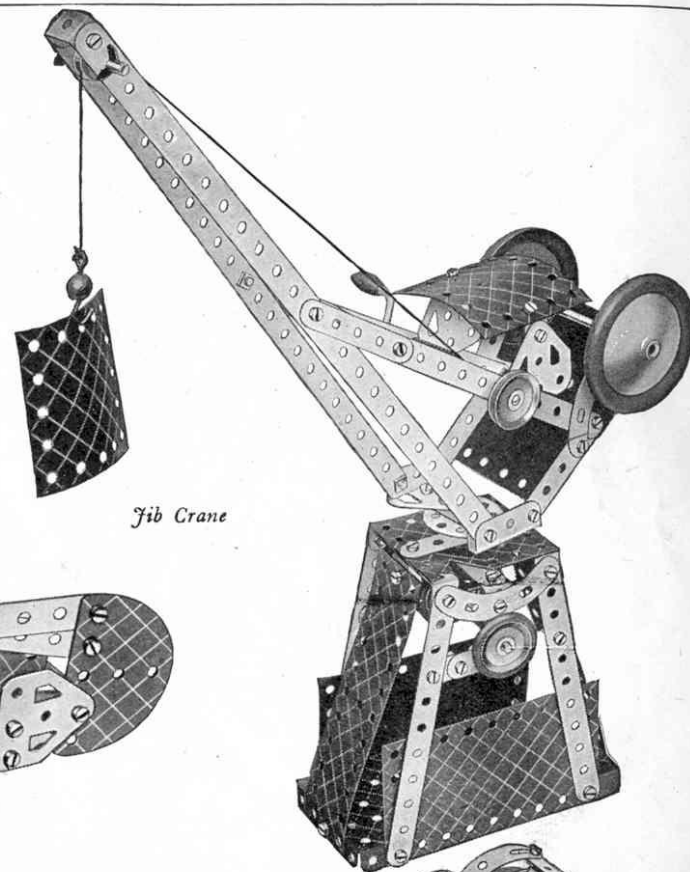
Ask your dealer to post to you regularly the latest Meccano parts lists and other Meccano literature.



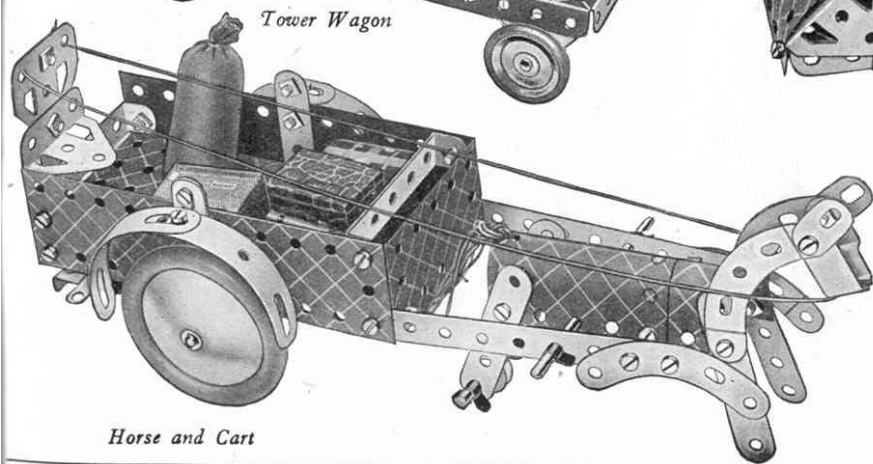
Tower Wagon



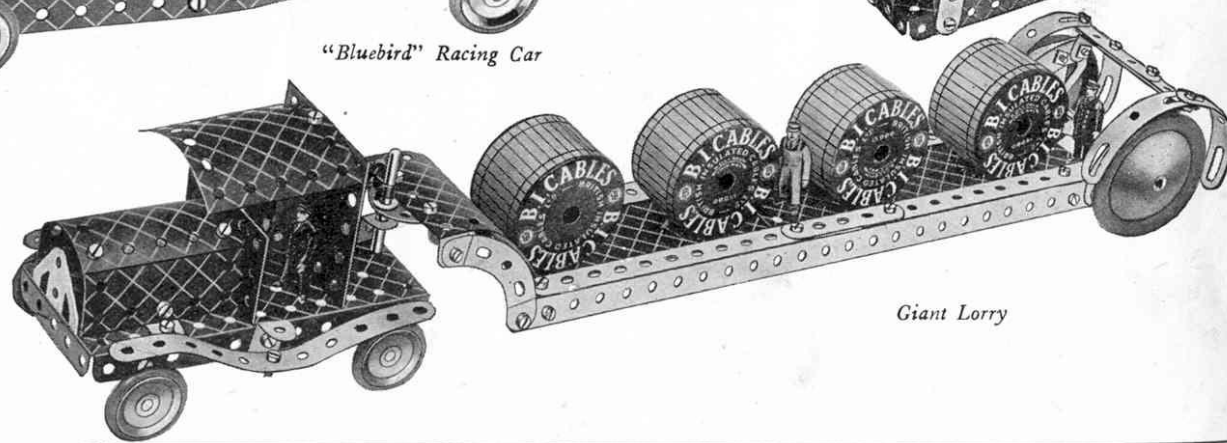
"Bluebird" Racing Car



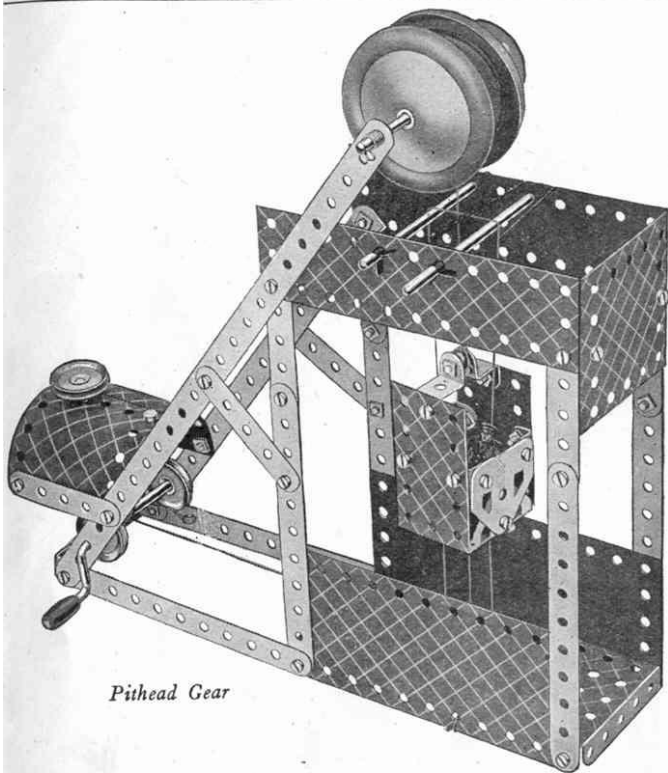
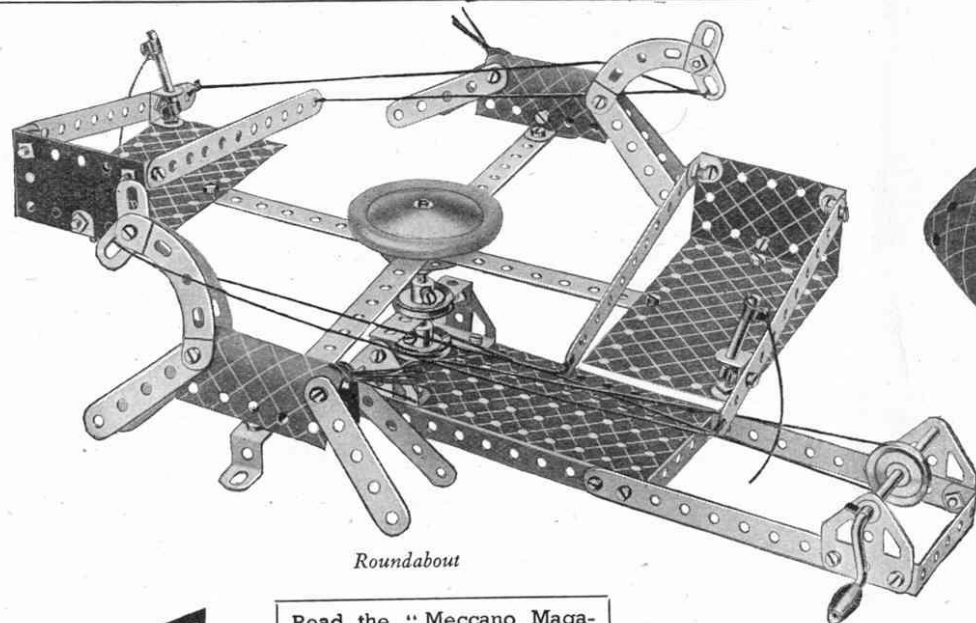
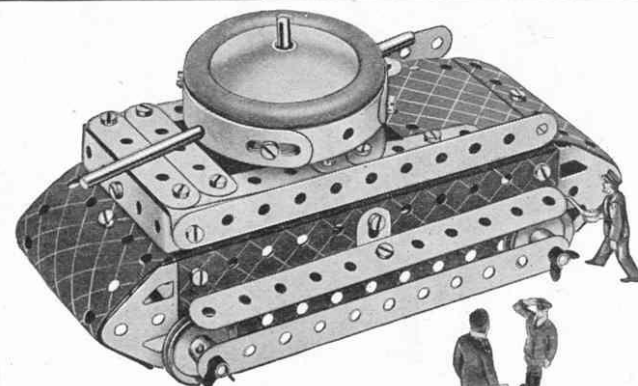
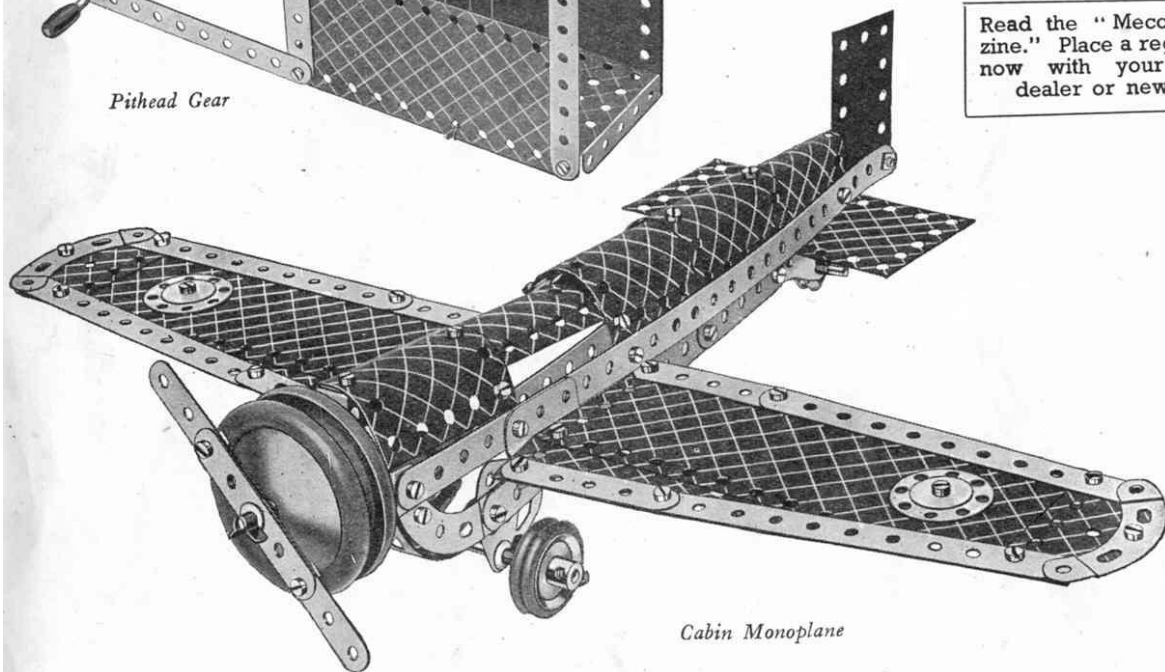
Jib Crane



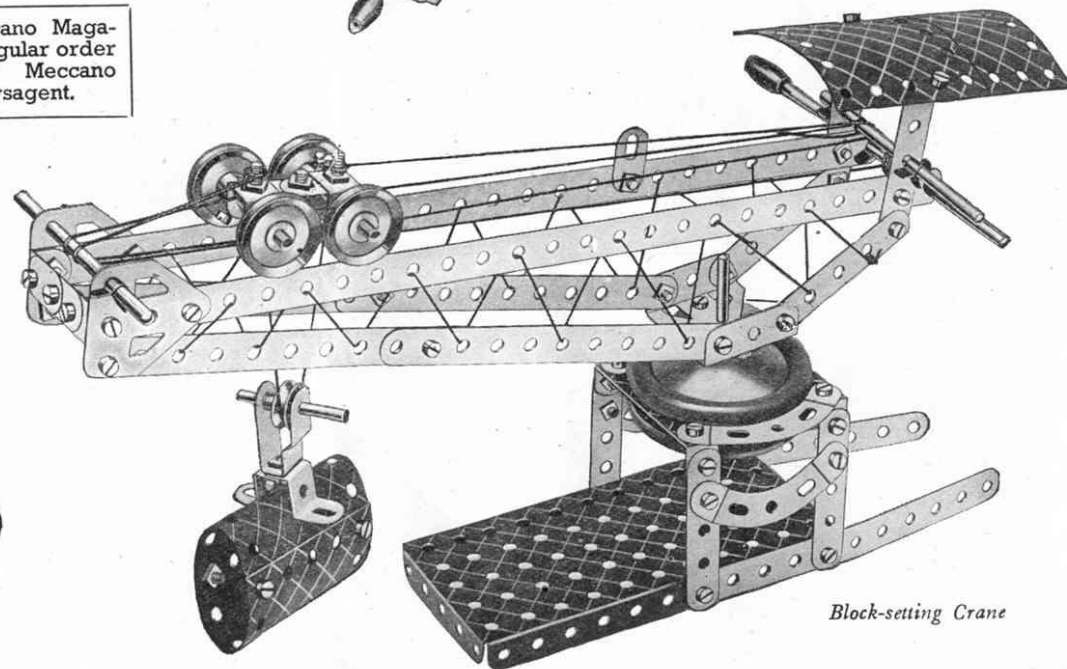
Horse and Cart



Giant Lorry

*Pithead Gear**Roundabout**Tank**Cabin Monoplane*

Read the "Meccano Magazine." Place a regular order now with your Meccano dealer or newsagent.

*Block-setting Crane*

[illegible]

No.	Description	0	1	1a	2	2a	3	3a	4	4a	5	5a	6	6a	7	7a	8	8a	9	9a	10
95	Sprocket Wheels, 2"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
95a	" " 1"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
95b	" " 3"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
96	" " 1"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
96a	" " 3"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
100	Braced Girders, 5 1/2"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
102	Single Bent Strips ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
103	Flat Girders, 5 1/2"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
103a	" " 12 1/2"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
103b	" " 4 1/2"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
103c	" " 3 1/2"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
103d	" " 3 1/2"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
103e	" " 2 1/2"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
103f	" " 2 1/2"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
103g	" " 1 1/2"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
103h	" " 1 1/2"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
103k	" " 7 1/2"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
108	Architraves, 2 1/2" diam.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
109	Face Plates, 3 1/2"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
110	Rack Strips, 3 1/2"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
111	Bolts, 1/2"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
111a	" " 1/2"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
111c	" " 1/2"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
114	Hinges	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
115	Threaded Pins	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
116	Fork Pieces, Large	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
116a	" " Small	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
117	Steel Balls, 3/8" diam.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
118	Hub Discs, 5 1/2" diam.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
120b	Compression Springs, 1"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
121	Reversed Angle Brackets, 1"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
125	Trunnions	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
126	Flat Trunnions	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
128a	Boss Bell Cranks	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
128	Rack Segments, 3" diam.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
129	Triple Throw Eccentrics	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
130	Flywheels, 2 1/2" diam.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
132	Corner Brackets, 1 1/2" diam.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
133	" " 1 1/2" diam.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
133a	" " 1 1/2" diam.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
134	Crank Shafts, 1" stroke	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
136	Handrail Supports	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
136a	Universal Couplings	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
137	Wheel Flanges	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
140	Motor Tyres, 2"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
142a	Circular Girders, 5 1/2" diam.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
142b	Dog Clutches	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
143	Circular Strips, 7 1/2" diam.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
144	Circular Plates, 6" diam.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
145	" " 4" diam.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
146	Pawls	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
147a	Pivot Bolt with 2 Nuts	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
147b	Pawls without Boss	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
147c	Corner Angle Brackets, 1/2" R.H.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
154a	Rubber Rings, for 1" pulley	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
154b	Fans, 2" diam.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
155a	Channel Bearings, 1 1/2" x 1 1/2" x 1/2"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
157	Girder Bearings, 2" x 1" x 1/2"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
160	Boiler with Ends, complete	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
161	Boiler Ends	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
162	Boilers without Ends	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
162a	Sleeve Pieces	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
162b	Chimney Adaptors	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
163	Swivel Bearings	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
164	End Bearings	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
165	Ring Frames for Rollers	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
166	Ball Bearings, 4" diam.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
167b	Digger Buckets	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
168	Eccentrics, 1/2" Throw	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
169	Socket Couplings	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
170	Flexible Couplings Units	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
171	Anchoring Springs for Cord	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
175	Rod Socket	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
176	Steering Wheel, 1 1/2" diam.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
179	Driving Bands, 2 1/2" Light	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
185	" " 10" Heavy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
186	" " 15"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
186a	" " 20"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
186b	Road Wheels, 2 1/2" x 1 1/2"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
186c	Flexible Plates, 5 1/2" x 1 1/2"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
186d	" " 3 1/2" x 1 1/2"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
186e	" " 4 1/2" x 1 1/2"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
187	Strip Plates, 12 1/2" x 2 1/2"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
188	Hinged Flat Plates, 4 1/2" x 2 1/2"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
189	Curved Plates, U Section, 2 1/2" x 2 1/2" radius	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
190	Curved Plates, 2 1/2" x 2 1/2" x 1 1/2" radius	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
190a	Rod and Strips Connectors	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
191	Rod Connectors	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
192	Semi-Circular Plates, 2 1/2"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
193	Formed Slotted Strips, 3"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
196	Cylinders, 1 1/2" diam.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
196a	Discs, 1 1/2"	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
197	Wheel Discs	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
198	Drifts	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
199	Aeroplane Collars	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
200	Clockwork Motor No. 1																				

- 3**
Perforated Strips
- | No. | 12 1/2" | 3 1/2" |
|-----|---------|--------|
| 1. | 12 1/2" | 3 1/2" |
| 1a. | 9 1/2" | 3" |
| 1b. | 7 1/2" | 2 1/2" |
| 2. | 5 1/2" | 2" |
| 2a. | 4 1/2" | 1 1/2" |

- 9a**
Angle Girders
- | No. | 24 1/2" | 4 1/2" |
|-----|---------|--------|
| 7. | 24 1/2" | 4 1/2" |
| 7a. | 18 1/2" | 3 1/2" |
| 8. | 12 1/2" | 3" |
| 8a. | 9 1/2" | 2 1/2" |
| 8b. | 7 1/2" | 2" |
| 9. | 5 1/2" | 1 1/2" |
- 10** Flat Brackets
11 Double Brackets
12 Angle Brackets, 1/2" x 1/2"
12a. " " 1" x 1"
12b. " " 1 1/2" x 1 1/2"
12c. Obtuse Angle Brackets, 1/2" x 1/2"

- 13** 11 1/2" Axle Rods
13a. 8 1/2" 16a. 2 1/2"
14. 6 1/2" 16b. 3"
15. 5 1/2" 17. 2"
15a. 4 1/2" 18a. 1 1/2"
15b. 4 1/2" 18b. 1"
- 19h**
19g. Crank Handles, 3 1/2" with Erinoid grip
19h. " " 5"
19s. " " 3 1/2" without "

- 20** 19a. Wheels, 3" diam., with set-screws
20a. Flanged Wheels, 1 1/2" diam.
20b. " " 1 1/2" "

- 19c** 23a. Pulley Wheels
22a 20a. 3" diam. with centre boss & set-screw
19c. 6" " " " "
20a. 2" " " " "
21. 1 1/2" " " " "
22. 1" " " " "
23a. 1 1/2" " " " and grub-screw
22a. 1" " without " " "
23. 1/2" " " " "

- 24.** Bush Wheels

- 26a** Pinion Wheels, 3" diam., 1" face
25a. " " " " "
25b. " " " " "
26. " " " " "
26a. " " " " "
26b. " " " " "
- 27** Gear Wheels
27a. 50 teeth, to gear with 1" pinion
27b. 57 " " " (3 1/2" diam.)
27c. 95 " " " (2 1/2" diam.)

- 28** Contrate Wheels, 1 1/2" diam.
29. " " 1 1/2" "
- 30a & 30b** Bevel Gears, 7, 26 teeth
30a. " " 1 1/2", 16 " Can only be used together
30c. " " 1 1/2", 48 " "

- 31** Gear Wheels, 1", 38 teeth
32. Worms
- 34** Spanners
34b. Box Spanners

- 35** Spring Clips ... box of 20
35s. " " " " box of 60
36. Screwdrivers
36a. " Extra Long
36b. " Special
37. Nuts and Bolts, 3/8" box of 12
37af. Nuts " " box of 50
37bf. Bolts, 3/8" " box of 50
37f. Nuts and Bolts, 7/16" box of 50
37g. " " 1/2" box of 144
38. Washers " " pkt. of 20
38s. " " " box of 60
40. Hanks of Cord

- 41.** Propeller Blades

- 43.** Springs
44 Cranked Bent Strips
45. Double Double Angle Strips, 2 1/2" x 1 1/2"
47. " " " 2 1/2" x 1 1/2"
47a. " " " 2 1/2" x 1 1/2"
48. " " " 2 1/2" x 1 1/2"
48a. " " " 2 1/2" x 1 1/2"
48b. " " " 2 1/2" x 1 1/2"
48c. " " " 2 1/2" x 1 1/2"
48d. " " " 2 1/2" x 1 1/2"

- 50a.** Eye Pieces, with boss
51. Flanged Plates, 2 1/2" x 1 1/2"
52. " " 5 1/2" x 2 1/2"
52a. Flat Plates, 5 1/2" x 3 1/2"
53. Flanged Plates, 3 1/2" x 2 1/2"
53a. Flat Plates, 4 1/2" x 2 1/2"

- 54a.** Flanged Sector Plates, 4 1/2" long
55. Perforated Strips, slotted, 5 1/2" long
55a. " " " 2 1/2" long

- 57** Hooks
57a. " Scientific
57b. " Loaded, Large
57c. " Loaded, Small

- 58.** Spring Cord, 40" length
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** Threaded Bosses
65. Centre Forks
66 & 67 Weights, 50 grammes
67. " 25 " "
68. Woodscrews, 1/2" "
69. Set Screws
69a. Grub Screws, 1/8" "
69b. " " 5/16" "
69c. " " 3/8" "

- 70.** Flat Plates, 5 1/2" x 2 1/2"
72. " " 2 1/2" x 2 1/2"
73. " " 3" x 1 1/2"
76. Triangular Plates, 2 1/2"
77. " " 1"

- 80a** Screwed Rods
78. 11 1/2" 80b. 4 1/2"
79. 8" 80c. 3"
79a. 6" 81. 2"
80. 5 1/2" 82. 1"
80a. 3 1/2" "

- 89.** 5 1/2" Curved Strips, 10" radius
89a. 3" " cranked, 1 1/2" radius
89b. 4" Curved Strips, cranked, 4 1/2" radius, 8 to circle
90. 2 1/2" Curved Strips, 2 1/2" radius
90a. 2 1/2" " cranked: 1 1/2" radius, 4 to circle

- 94.** Sprocket Chain, per 40" length
95. " Wheels, 36 teeth, 2" diam.
95a. " " 28 " 1 1/2" "
95b. " " 56 " 3" "
96. " " 18 " 1" "
96a. " " 14 " 3/4" "

- 99** Braced Girders
97. 3 1/2" long 99a. 9 1/2" long
97a. 3" " 99b. 7 1/2" "
98. 2 1/2" " 100. 5 1/2" "
99. 1 1/2" " 100a. 4 1/2" "

- 101** Healds, for looms
102. Single Bent Strips
103 Flat Girders
103. 5 1/2" long 103e. 3" long
103a. 9 1/2" " 103f. 2 1/2" "
103b. 12 1/2" " 103g. 2" "
103c. 4 1/2" " 103h. 1 1/2" "
103d. 3 1/2" " 103k. 7 1/2" "

- 104** Shuttlers, for looms
105. Reed Hooks, for looms
106 Wood Rollers
106a. Sand Rollers
107. Tables for designing machines

- 108.** Architraves
109. Face Plates, 2 1/2" diam.

- 110** Rack Strips, 3 1/2" long
110a. " Bolts, 3/8" 111c. Bolts, 3/8"
111. " " 111d. " 1 1/2"
111a. " " " "

- 113** Girder Frames
114 Hinges
115. Threaded Pins
116. Fork Pieces, Large
116a. " Small
117. Steel Balls, 3/8" diam.

- 118.** Hub Discs, 5 1/2" diam.

- No. 120. Buffers
120a. Spring Buffers
120b. Compression Springs
121. Train Couplings
122. Miniature Loaded Sacks
123. Cone Pulleys
124. Reversed Angle Brackets, 1" $\frac{1}{2}$ "
125. " " " "
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, 2 $\frac{3}{4}$ " diam.
133. Corner Brackets, 1 $\frac{1}{2}$ "
133a. " " " "
134. Crank Shafts, 1" stroke
135. Theodolite Protractors
136. Handrail Supports
136a. Handrail Couplings
137. Wheel Flanges

138. Ships' Funnels
138a-z. " " Raked
139. Flanged Brackets (right)
139a. " (left)
140. Universal Couplings
141. Wire Lines (for clock weights)
142. Rubber Rings (to fit 3" diam. rims)
142a. Motor Tyres (to fit 2" diam. rims)
142b. " " " 3" "
142c. " " " 1" "
142d. " " " 1 $\frac{1}{2}$ " "
143. Circular Girders, 5 $\frac{1}{2}$ " diam.
144. Dog Clutches
145. Circular Strips, 7 $\frac{1}{2}$ " diam. overall
146. " Plates, 6" "
146a. " " 4" "
147. Pawls, with Pivot Bolt and Nuts
147a. Pawls
147b. Pivot Bolts with 2 Nuts
147c. Pawls without boss
148. Ratchet Wheels
149. Collecting Shoes for Electric Locos
150. Crane Grabs

- No. 151. Pulley Blocks, Single Sheave
152. " " Two " "
153. " " Three " "
- 154a. Corner Angle Brackets, $\frac{1}{2}$ " (right-hand)
154b. Corner Angle Brackets, $\frac{1}{2}$ " (left-hand)
155. Rubber Rings (for 1" Pulleys) Black
155a. " " " White
156. Pointers (with boss) 2 $\frac{1}{2}$ " overall
157. Fans, 2" diam.
158a. Signal Arms, Home
158b. " " Distant
160. Channel Bearings, 1 $\frac{1}{2}$ " x 1" x $\frac{1}{2}$ "
161. Girder Brackets, 2" x 1" x $\frac{1}{2}$ "
162. Boilers, complete, with ends
162a. " " Ends
162b. " " without ends
163. Sleeve Pieces
164. Chimney Adaptors
165. Swivel Bearings
166. End " "
167. Geared Roller Bearings
167a. Roller Races, geared, 192 teeth
167b. Ring Frames for Rollers
167c. Pinions for Roller Bearings (16 teeth)

- No. 168. Ball Bearings, 4" diam.
168a. " Races, flanged discs
168b. " " toothed
168c. " Casings, complete with balls
169. Digger Buckets
170. Eccentrics, 1" 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, 3 $\frac{1}{2}$ " diam.
181. Bobbins
182. Insulating Bushes
182a. Insulating Washers
183. Lamp Holders
184a. 2 $\frac{1}{2}$ -volt Lamps
184b. 3 $\frac{1}{2}$ " " "
184c. 6-volt Lamps
184d. 10 " "
184e. 20 " "

- No. 185. Steering Wheels, 1 $\frac{1}{2}$ " diam.
186. Driving Bands, 2 $\frac{1}{2}$ " (Light)
186a. " " 6" "
186b. " " 10" "
186c. " " 10" (Heavy)
186d. " " 15" "
186e. " " 20" "
187. Road Wheels
192. Flexible Plates, 4 $\frac{1}{2}$ " x 2 $\frac{1}{2}$ "
191. 4 $\frac{1}{2}$ " x 2 $\frac{1}{2}$ "
192. 5 $\frac{1}{2}$ " x 2 $\frac{1}{2}$ "
193. Strip Plates, 9 $\frac{1}{2}$ " x 2 $\frac{1}{2}$ "
196. 9 $\frac{1}{2}$ " x 2 $\frac{1}{2}$ "
197. 12 $\frac{1}{2}$ " x 2 $\frac{1}{2}$ "
198. Hinged Flat Plates, 4 $\frac{1}{2}$ " x 2 $\frac{1}{2}$ "
199. Curved Plates, U-Section 2 $\frac{1}{2}$ " x 2 $\frac{1}{2}$ " x $\frac{1}{8}$ "
200. " " 2 $\frac{1}{2}$ " x 2 $\frac{1}{2}$ ", 1 $\frac{1}{8}$ " radius
201. Lamps with Flex (3 $\frac{1}{2}$ volts)
202. Angle Brackets (for Headlamps)
203. Headlamps
203a. Headlamp Rims
203b. " Bodies
204. " Nuts
205. " Glasses
206. Lampshades
207. Lamp Bases
207a. Lamp with Standard and Flex
208. Battery Tags and Studs
208a. Washers for Battery Studs
210. Nuts for Battery Studs
- 211a. Helical Gear $\frac{1}{2}$ " $\frac{1}{2}$ " { Can only be used together
211b. " " 1 $\frac{1}{2}$ " "
212. Rod and Strip Connectors
213. Rod Connectors
214. Semi-Circular Plates 2 $\frac{1}{2}$ "
215. Formed Slotted Strips 3"
216. Cylinders, 2 $\frac{1}{2}$ "
- 217a. Discs, 1 $\frac{1}{2}$ "
217b. Discs $\frac{3}{4}$ "