

PRIMUS ENGINEERING

BRITISH MADE

THE BRITISH TOY FOR THE BRITISH BOY.

P RIMUS ENGINEERING OUTFITS form the most practical means of demonstrating the principles on which hundreds of everyday things are made—further, they teach the young and supple minds the art of contriving—how to make things do.

With PRIMUS ENGINEERING boys soon learn how to adapt one part to serve many purposes, and at the same time the fundamental principles of mechanics are indelibly impressed on the youthful mind in an entertaining manner.

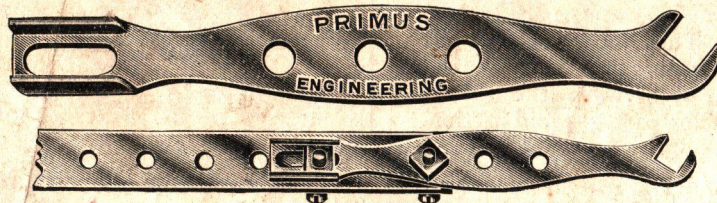
“Learn while you play” aptly explains the object of PRIMUS.

With PRIMUS, boys can build models of things that move—carriages for their steam or clockwork locomotives to pull along—or drilling machines, hammers, etc., to be worked by a vertical engine or small motor.

The PRIMUS Outfits are more up-to-date and more scientific than any others—they are the only outfits with parts of WOOD and METAL. There is a greater variety of parts and consequently wider possibilities for model building.

Everything is standardised and extra parts can be obtained so that a special model or series of models may be made—exact miniatures of the real thing.

THE PRIMUS SPANNER.



This new spanner, which is now included in all outfits, will be found a most useful addition. One end has a plain nut grip, the other is turned up to form a channel, in which a nut can be placed and securely held while the screw is turned home; this will be found of great service in reaching positions difficult of access. In case of need it can be lengthened by bolting on one of the strips by means of the centre holes.

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PRELIMINARY NOTE.

IN making up the models in this book many ideas will suggest themselves, even useful little things that you have around you may be brought into co-operation. In some cases cardboard may be usefully employed to add a finish to models, such as the covers for vans, carts, etc.; it must also be remembered that the metal plates and strips can be bent to various shapes, and can even be cut to make new parts. After some of the models shown have been mastered the inventive mind will feel an inclination to vary them, and this will suggest original models.

GENERAL INSTRUCTIONS.

ALWAYS COLLECT TOGETHER ALL THE PARTS REQUIRED FOR MAKING UP THE MODEL DECIDED UPON BEFORE BEGINNING.

BRACKETS.

It is important to understand why one side has a round hole and the other side a slot. This is to allow for the thickness of the wood or metal parts that are joined on, as in some cases more than one piece is joined together and the slot permits of the necessary play.



No. 66.

WASHERS.

These play a very important part in mechanics. They are put on the axles between the wheels and trunnions, or between the collars and any facing part, to avoid friction.



No. 84.

They are also used in many models to adjust

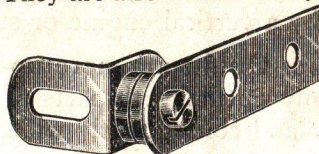


Fig. A

the length of the screws; for example, when it is desired to fix a bracket exactly at right angles one of the screws must be shortened by means of washers, so that it will not jam on the other (Fig. A). They are likewise used to adjust the bracket to the width of some of the other fittings (Fig. B).

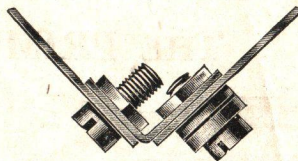


Fig. B.

WOOD BASES.

Some of the models are shown screwed down to wooden base boards. These are not included in the outfits, as they are most likely readily available and the size varies to suit the situation.

REMEMBER :—We pay for Original Ideas and New Models.

**So that besides being a Splendid Hobby PRIMUS
:: ENGINEERING can be made Remunerative. ::**

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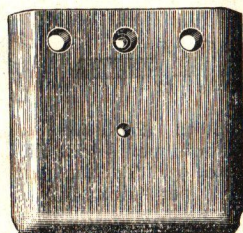
ILLUSTRATED PRICE LIST OF PARTS



No. 1. Grooved side rail for carriage and truck, each, 3d.



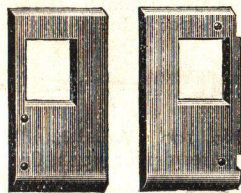
No. 2. Grooved side rail with footboard, each 4d.



No. 3. Carriage ends, each, 4d.

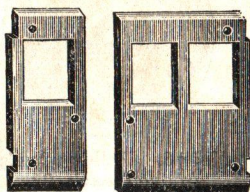


No. 4. Buffer Blocks, each, 2d.



No. 6. Left-hand carriage window, each, 3d.

No. 5. Right-hand carriage window, each, 3d.

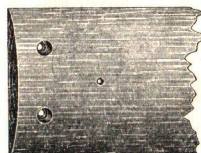


No. 7. Carriage doors, each, 3d.

No. 8. Centre windows, each, 8d.



No. 9. Floor for carriage, each, 3d.



No. 10. Carriage roof, each, 6d.

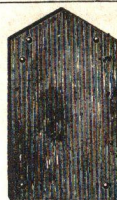


No. 11. Posts for railings, per doz., 1s.



No. 12. End rail of house, each, 2d.

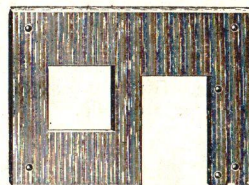
No. 13. Side rail of house, each, 2d.



No. 14. Sides of house, each, 4d.

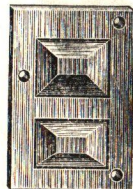


No. 15A. Window sills, per doz., 6d.



No. 15B. Front and Back of house, each, 6d.

No. 15D. Window sash, per doz., 6d.



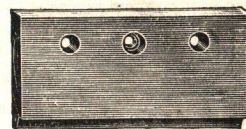
No. 16. Door of house, each, 4d.



No. 16A. Door lintels, per doz., 6d.



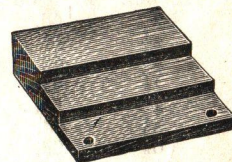
No. 17. Truck sides, each, 3d.



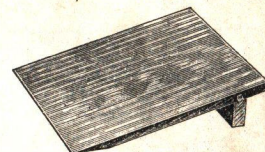
No. 18. Truck Ends, each, 4d.



No. 19. House baseboard, each, 9d.



No. 21. Steps, each, 2d.



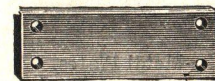
No. 22. Station Slope, each, 3d.



No. 23. Platform centre, each, 3d.



No. 24. Platform sides, each, 4d.



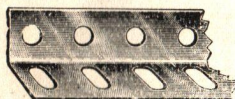
No. 25. Wood slips, 3 by 1 in., per doz., 1s.3d.

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Nos. 50 and 51. Screws and nuts, per doz., 6d.



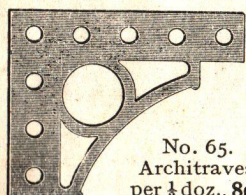
Angle Bars.

No.	Inches.	Per ½ doz.
52	6	9d.
53	6½	9d.
54	8	1s.
55	12	1s. 6d.



Metal Strips.

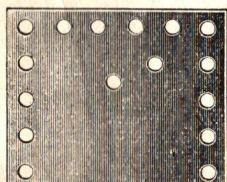
No.	Inches.	Per ½ doz.
56	2	4d.
57	2½	4d.
58	3	4d.
59	3½	4d.
60	4	5d.
61	5½	6d.
62	6½	6d.
63	8	9d.
64	12½	1s.



No. 65. Architraves, per ½ doz., 8d.

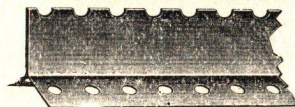


No. 66. Brackets, per doz., 6d.



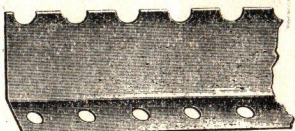
Metal Plates.

No.	Size.	Per ½ doz.
67	8 × 3 in.	2s.
68	3 × 3 in.	1s.



Ridge Tiles.

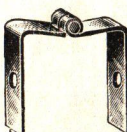
No.	Inches.	Per ½ doz.
69	6½	2s.
70	8	2s. 6d.



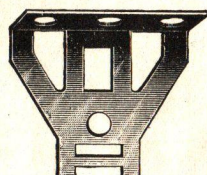
No. 71. Eaves, 8 in., per ½ doz., 2s. 6d.



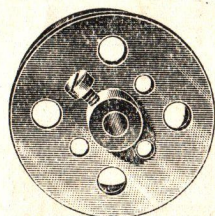
No. 72. Straight hinges, per doz., 6d.



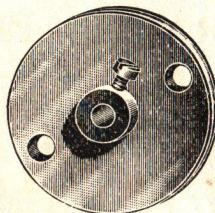
No. 73. Bent hinges, per ½ doz., 8d.



No. 74. Trunnions, each, 3d.



No. 75. Flanged wheels, each, 9d.



No. 76. Pulley wheels, grooved, each, 9d.

No.	Per ½ doz.
77. Axles, 3½ in.	1s.
78. „ 2½ in.	9d.
79. „ 1½ in.	6d.



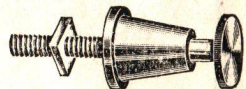
No. 82. Collars and screws, each, 3d.



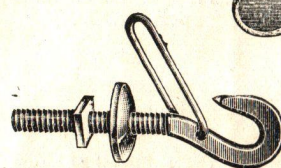
No. 83. Handle Axles, each, 3d.



No. 84. Washers, per doz., 2d.



No. 85. Buffers, each, 8d.



No. 86. Coupling Hook, each, 8d.



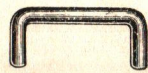
No. 87. Carriage lamps, each, 6d.



No. 88. Carriage door handles, each, 4d.



No. 89. Turnbuttons, per ½ doz., 3d.



No. 90. Carriage Rails, per ½ doz., 3d.



No. 91. Carriage door screws, per doz., 1s.



No. 92. Knobscrew and nuts, per ½ doz., 2s.



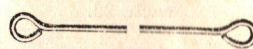
No. 93. Turnbuttons, per ½ doz., 3d.



No. 95. Catches, per ½ doz., 3d.



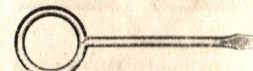
No. 97. Wood Screws, per doz., 2d.



No. 96. Signal Post rods, per ½ doz., 6d.



No. 100. Wood handle screwdriver, each, 6d.



No. 101. All metal screwdriver, each, 3d.

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CONTENTS OF OUTFITS

PART NO.	DESCRIPTION OF PART	OUTFIT NO.							
		1	1s	2	2s	3	3s	4	5
1	Side Rails	—	4	4	—	4	—	4	6
2	Side Rails with Foot-board	—	—	—	—	—	2	2	2
3	Carriage Ends	—	—	—	—	—	2	2	2
4	Buffer Blocks	—	2	2	—	2	—	2	4
5	Carriage Window	—	—	—	—	—	2	2	2
6	Carriage Window	—	—	—	—	—	2	2	2
7	Carriage Doors	—	—	—	—	—	4	4	4
8	Central Window	—	—	—	—	—	2	2	2
9	Carriage Floor	—	I	I	—	I	—	I	2
10	Carriage Roof	—	—	—	—	—	I	I	I
11	Posts for Railings	—	2	2	15	17	—	17	17
12	End Rail.. .. .	—	—	—	—	—	—	—	2
13	Side Rail.. .. .	—	—	—	—	—	—	—	2
14	House Sides	—	—	—	—	—	—	—	2
15A	Window Sills	—	—	—	—	—	—	—	4
15D	Window Sash	—	—	—	—	—	—	—	2
15B	House Fronts	—	—	—	—	—	—	—	2
16	Doors of House	—	—	—	—	—	—	—	2
16A	Lintels for House	—	—	—	—	—	—	—	2
17	Sides of Goods Truck	—	2	2	—	2	—	2	2
18	Ends of Goods Truck	—	2	2	—	2	—	2	2
19	Baseboard	—	—	—	—	—	—	—	I
21	Steps	—	—	—	I	I	—	I	I
22	Platform Approach	—	—	—	I	I	—	I	I
23	Platform Plank	—	—	—	2	2	—	2	2
24	Platform Plank	—	—	—	2	2	—	2	2
25	Wood Slips	8	8	16	9	25	—	25	25
26	Glass for Windows	—	—	—	—	—	—	—	4
50 & 51	Screws and Nuts	36	30	66	54	120	24	144	312
52	Angle Bars, 6 in.	—	—	—	—	—	—	—	4
53	Angle Bars, 6½ in.	—	2	2	—	2	—	2	8
54	Angle Bars, 8 in.	2	—	2	2	4	—	4	8
55	Angle Bars, 12 in.	—	—	—	—	—	2	2	2
56	Metal Strips, 2 in.	4	4	8	—	8	2	10	16
57	Metal Strips, 2½ in.	6	—	6	2	8	—	8	16
58	Metal Strips, 3 in.	—	—	—	4	4	4	8	8
59	Metal Strips, 3½ in.	2	6	8	—	8	6	14	14
60	Metal Strips, 4 in.	2	—	2	I	3	—	3	3
61	Metal Strips, 5½ in.	—	—	—	4	4	—	4	4
62	Metal Strips, 6½ in.	—	2	2	2	4	—	4	4
63	Metal Strips, 8 in.	2	—	2	4	6	—	6	12
64	Metal Strips, 12½ in.	—	—	—	3	3	—	3	3
65	Architraves	—	4	4	—	4	—	4	8
66	Brackets	12	4	16	22	38	2	40	78
67	Metal Plates, 8×3	—	—	—	4	4	—	4	10
68	Metal Plates, 3×3	3	—	3	—	3	11	14	14
69	Ridge Tiles, 6½ in.	—	—	—	I	I	—	I	I
70	Ridge Tiles, 8 in.	—	—	—	I	I	—	I	2
71	Eaves Tiles, 8 in.	—	—	—	4	4	—	4	10
72	Straight Hinges	—	4	4	—	4	—	4	6

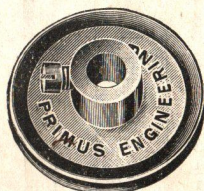
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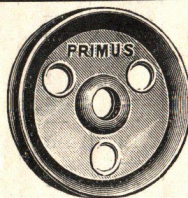
PART NO.	DESCRIPTION OF PART	OUTFIT NO.							
		1	1s	2	2s	3	3s	4	5
73	Bent Hinges	—	—	—	—	—	8	8	8
74	Trunnions for Wheels	4	—	4	—	4	4	8	8
75	Flanged Wheels	4	—	4	—	4	4	8	8
76	Grooved Wheels	—	—	—	4	4	—	4	4
77	Axle Rods, 3½ in.	2	—	2	—	2	2	4	4
78	Axle Rods, 2¾ in.	—	2	2	—	2	4	6	6
79	Axle Rods, 1½ in.	—	—	—	1	1	—	1	1
82	Collars, and Set Screws	4	—	4	4	8	5	13	13
83	Handle Axles	—	—	—	1	1	—	1	1
84	Washers	12	—	12	—	12	24	36	48
85	Buffers	—	4	4	—	4	—	4	8
86	Coupling Hooks	—	2	2	1	3	—	3	4
87	Lamps	—	—	—	2	2	2	4	6
88	Carriage Door Handles	—	—	—	—	—	4	4	4
89	Turn-buttons	—	—	—	—	—	4	4	4
90	Side Rails	—	—	—	—	—	4	4	4
91	Door Screws	—	—	—	—	—	16	16	16
92	Knob Screws	—	—	—	1	1	3	4	4
93	Turn-buttons	—	—	—	—	—	2	2	2
95	Catches	—	4	4	—	4	—	4	4
96	Connecting Rods	—	2	2	—	2	—	2	4
97	Wood Screws	—	6	6	—	6	—	6	12
100	Screw-driver	—	—	1	—	1	—	1	1
101	Screw-driver	1	—	—	—	—	—	—	—

EXTRA PARTS NOT INCLUDED IN OUTFITS

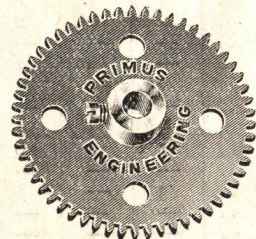
No.	Length	Per ½ doz.
154	Wire Stays 1½ inches	3d.
155	" " 2½ "	3d.
156	" " 3½ "	4d.



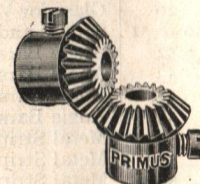
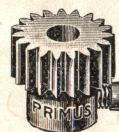
No. 158 Pulley Wheels with set screw, each 4d.



No. 159 Pulley Wheels plain, each 2d.



No. 160 Cog Gear Wheels, 1½-in., 56 teeth, each 1/0



No. 161 Pinion Wheels, No. 162 Bevel Gears, ½-in., each 8d. per pair 1/6



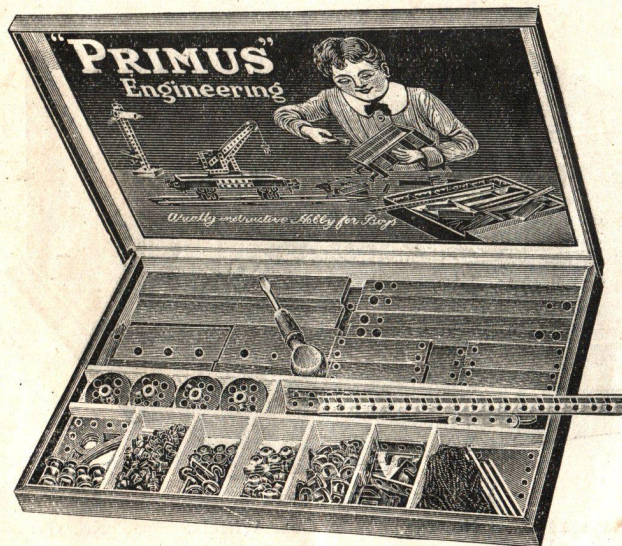
No.	Per ½ doz.
167 Tapped Rod, 3½ in. ..	1/6
167A " " 2½ " ..	1/6



No. 168 Double Tapped Collar, each 4d.

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PRICES OF OUTFITS

Primus outfits are complete and ready for use. They contain wood and metal parts necessary for building an unlimited number of most instructive models. As a guide for the youthful model builder, a complete instruction book is included with each outfit, which, although very complete, does not by any means exhaust the possibilities of Primus.

- No. 1 Containing 140 wood and metal parts.. .. 8/6
- No. 2 Containing 267 wood and metal parts.. .. 13/6

These outfits contain a wider selection of parts than the preceding numbers, and consequently the models they make are larger and more imposing, and their possibilities greater. The boxes are handy and strong, with the metal parts in a loose tray.

- No. 3 Containing 473 wood and metal parts £1 5 0
- No. 4 Containing 649 wood and metal parts 1 17 6
- No. 5 Containing 1,131 wood and metal parts 2 10 0



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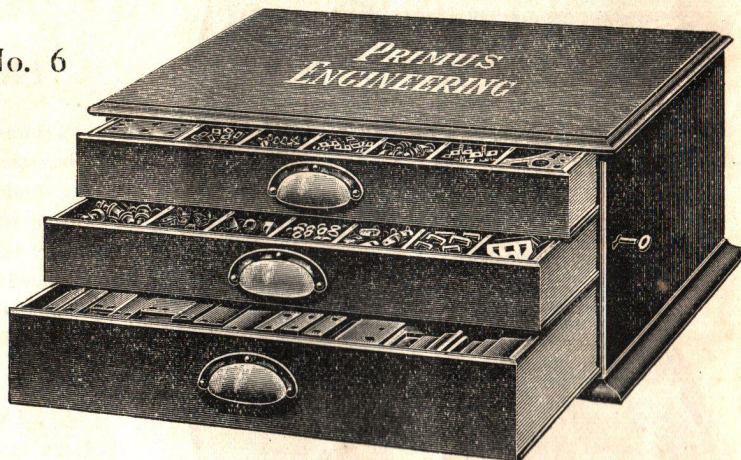
THE PRIMUS CABINET OUTFIT No. 6

The most practical method of storing and handling Primus Parts.

An outfit de Luxe, suitable for presentation, etc., containing the same number of parts as the No. 5 outfit, with the addition of a useful set of gear wheels, pinions, etc.

The whole is contained in a handsome and very substantial cabinet, being made of polished oak, with three drawers, partitioned off to provide compartments for the various parts, with lock and key to secure the drawers when not in use.

No. 6—Containing 1,189 £ s. d.
wood and metal parts
in strong oak 3-
drawer cabinet .. 5 5 0
Cabinet supplied separately .. 2 10 0



LIST OF EXTRA PARTS.

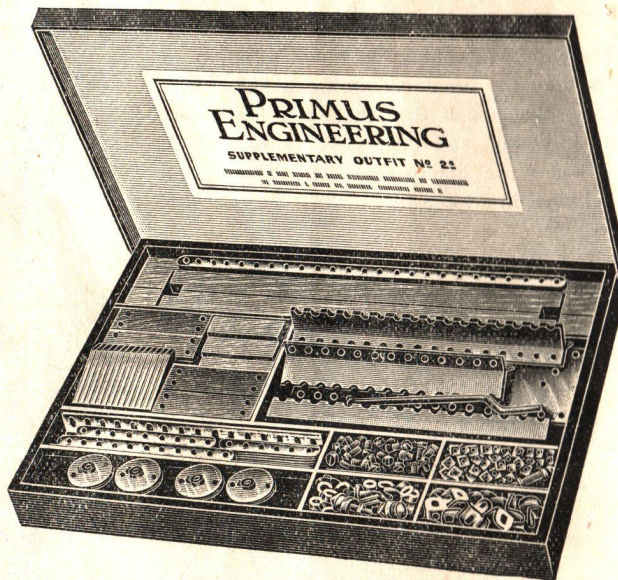
12 Wire Stays, 1 1/2 in...	No. 154	2 Gear Wheels ..	No. 160
12 " " 2 1/2 " ..	" 155	2 Pinion Wheels ..	" 161
6 " " 3 1/4 " ..	" 156	2 Bevel Gears ..	" 162
4 Pulley Wheels ..	" 158	6 Tapped Rods ..	" 167
6 " " " ..	" 159	4 " Collars ..	" 168

SUPPLEMENTARY OUTFITS

These outfits are supplementary to the standard sets, and should only be purchased as such.

The contents are not selected with the view to building complete models, but to supplement the parts of one of the standard sets, so that it becomes equal in its number of parts to that of the next higher price.

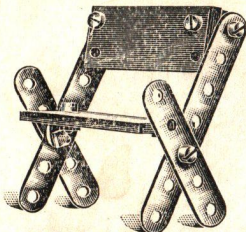
No. 1S—Converts the No. 1 Outfit into the No. 2	Price 6/6
No. 2S—Converts the No. 2 Outfit into the No. 3	15/0
No. 3S—Converts the No. 3 Outfit into the No. 4	15/0



These models are made with PRIMUS ENGINEERING

Nº1 OUTFIT

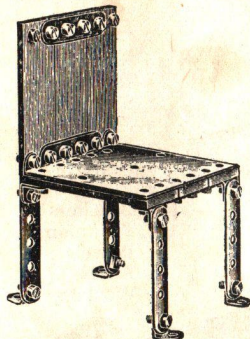
PRICE 8/6



SEAT No. 1

2	Wood slips	..	No. 25
8	Screws	..	" 50
2	Strips, 2½ in.	..	" 57
2	" 3½ "	..	" 59
4	Brackets	..	" 66

Brackets fixed with slot on wood.



CHAIR No. 4

6	Slips	..	No. 25
32	Screws	..	" 50
4	Strips, 2 in.	..	" 56
4	" 2½ "	..	" 57
10	Brackets	..	" 66
1	Plate	..	" 68

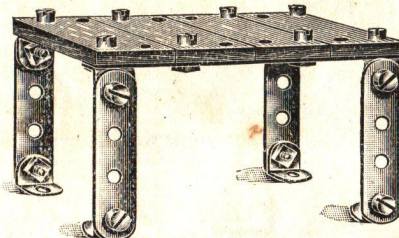
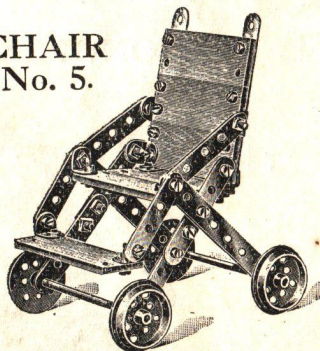


TABLE No. 2

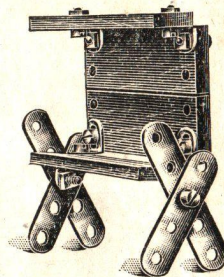
4	Slips	..	..	No. 25
16	Screws	..	..	" 50
2	Strips, 2 in.	..	..	" 56
2	" 4 "	..	..	" 60
8	Brackets	..	..	" 66

4-in. strips screwed below table to hold top.

CHAIR No. 5.



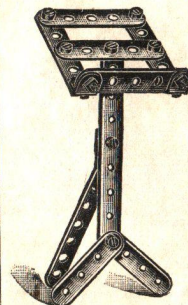
6	Slips	..	No. 25
30	Screws	..	" 50
3	Strips, 2 in.	..	" 56
6	" 2½ "	..	" 57
2	" 3½ "	..	" 59
2	Strips, 4 in.	No. 60	
10	Brackets	" 66	
4	Wheels	" 75	
2	Axles	" 77	



SEAT No. 3

4	Slips	..	No. 25
10	Screws	..	" 50
4	Strips, 2 in.	..	" 56
2	" 2½ "	..	" 57
6	Brackets	..	" 66

2-in. strips screwed behind the wood back.

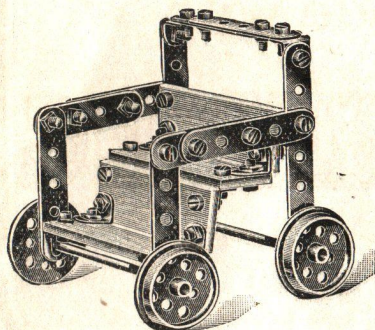


MUSIC STAND No. 8

12	Screws	..	No. 50
2	Strips, 2 in.	..	" 56
6	" 2½ "	..	" 57
2	" 4 "	..	" 60
3	Brackets	..	" 66

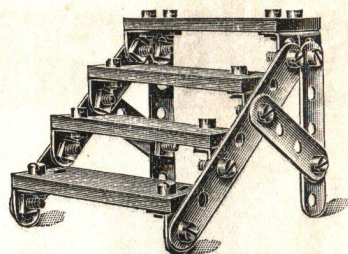
PRIMUS ENGINEERING

BRITISH MADE



CHAIR No. 6

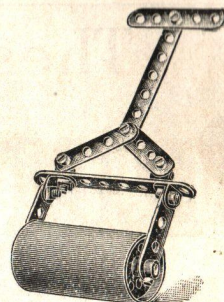
4	Slips	No. 25
30	Screws	" 50
2	Strips, 2 in. ..	" 56
6	" 2½ " ..	" 57
2	" 3½ " ..	" 59
12	Brackets	" 66
4	Wheels	" 75
2	Axles, 3½ in. ..	" 77



LADDER No. 7

4	Slips	No. 25
22	Screws	" 50
2	Strips, 2 in. ..	" 56
2	" 2½ " ..	" 57
2	" 3½ " ..	" 59
10	Brackets	" 66

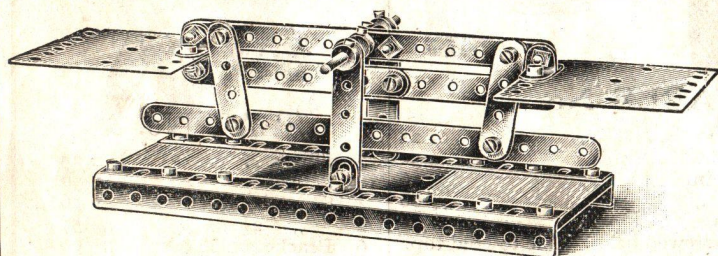
Fix brackets to steps with slots at side.



ROLLER No. 9

8	Screws ..	No. 50
4	Strips, 2 in. ..	" 56
1	" 2½ " ..	" 57
1	" 3½ " ..	" 59
1	" 4 " ..	" 60
4	Brackets ..	" 66
2	Wheels ..	" 75
1	Axle, 3½ in. ..	" 77
2	Collars ..	" 82

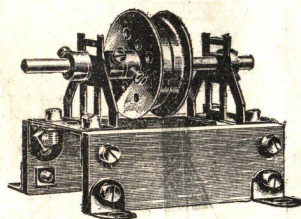
Cover wheels with card for roller.



FRENCH BALANCE No. 10

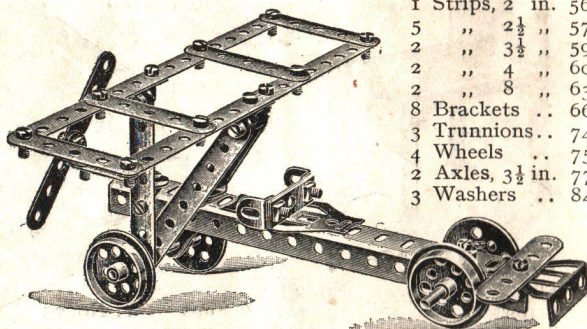
6	Slips ..	No. 25	2	Strips, 4 in.	No. 60
30	Screws ..	" 50	1	" 8 " ..	" 63
2	Bars, 8 in. ..	" 54	10	Brackets ..	" 66
2	Strips, 2 in. ..	" 56	3	Plates, 3 x 3 in. ..	" 68
2	" 2½ " ..	" 57	1	Axle, 3½ in. ...	" 77
2	" 3½ " ..	" 59	4	Collars ...	" 82

COUNTER SHAFT No. 23



	No.		No.
2	Slips .. 25	2	Wheels .. 75
12	Screws .. 50	1	Axle, 3½ in. 77
8	Brackets .. 66	3	Collars .. 82
2	Trunnions.. 74	3	Washers .. 84

MONOPLANE No. 13



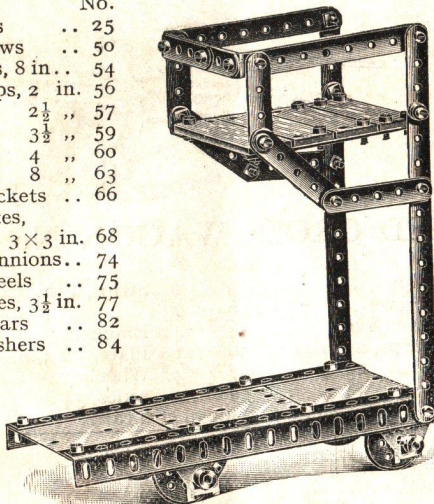
	No.
26	Screws .. 50
1	Bar, 8 in. .. 54
1	Strips, 2 in. 56
5	" 2½ " .. 57
2	" 3½ " .. 59
2	" 4 " .. 60
2	" 8 " .. 63
8	Brackets .. 66
3	Trunnions.. 74
4	Wheels .. 75
2	Axles, 3½ in. 77
3	Washers .. 84

PRIMUS ENGINEERING

BRITISH MADE

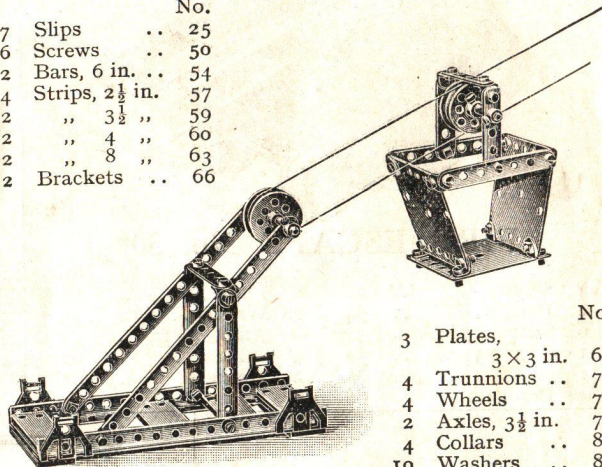
TOWER WAGON No. 44

	No.
5 Slips ..	25
35 Screws ..	50
2 Bars, 8 in. ..	54
4 Strips, 2 in. ..	56
4 " 2½ " ..	57
2 " 3½ " ..	59
2 " 4 " ..	60
2 " 8 " ..	63
6 Brackets ..	66
3 Plates, 3×3 in. ..	68
4 Trunnions ..	74
4 Wheels ..	75
2 Axles, 3½ in. ..	77
4 Collars ..	82
5 Washers ..	84



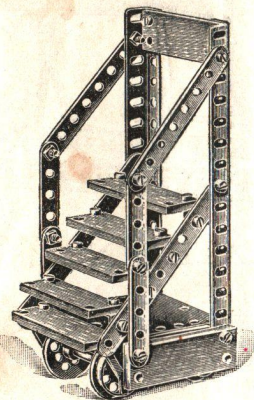
GOODS HOIST No. 45

	No.
7 Slips ..	25
36 Screws ..	50
2 Bars, 6 in. ..	54
4 Strips, 2½ in. ..	57
2 " 3½ " ..	59
2 " 4 " ..	60
2 " 8 " ..	63
12 Brackets ..	66



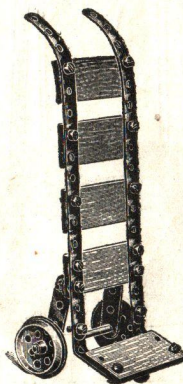
	No.
3 Plates, 3×3 in. ..	68
4 Trunnions ..	74
4 Wheels ..	75
2 Axles, 3½ in. ..	77
4 Collars ..	82
10 Washers ..	84

LIBRARY LADDER No. 42



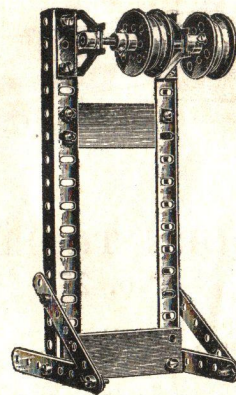
	No.		No.
8 Slips ..	25	1 Plate, 3×3 in. ..	68
36 Screws ..	50	2 Trunnions ..	74
2 Bars, 8 in. ..	54	4 Wheels ..	75
2 Strips, 2 in. ..	56	2 Axles, 3½ in. ..	77
4 " 2½ " ..	57	2 Collars ..	82
2 " 3½ " ..	59	2 Washers ..	84
2 " 4 " ..	60		
10 Brackets ..	66		

TRUCK No. 33



	No.
5 Slips ..	25
16 Screws ..	50
4 Strips, 2 in. ..	56
2 " 8 " ..	63
2 Brackets ..	66
2 Wheels ..	75
1 Axle, 3½ in. ..	77

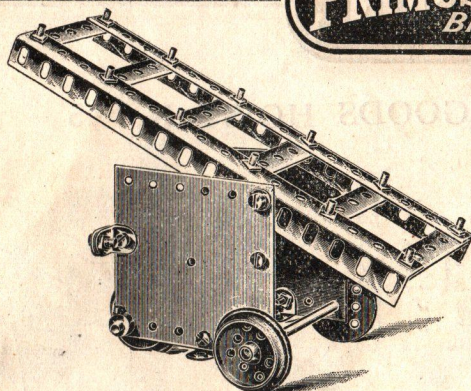
SHAFTING No. 35



	No.		No.
2 Slips ..	25	2 Trunnions ..	74
16 Screws ..	50	4 Wheels ..	75
2 Bars, 8 in. ..	54	1 Axle, 3½ in. ..	77
2 Strips, 3½ in. ..	59	3 Collars ..	82
2 " 4 " ..	60	3 Washers ..	84

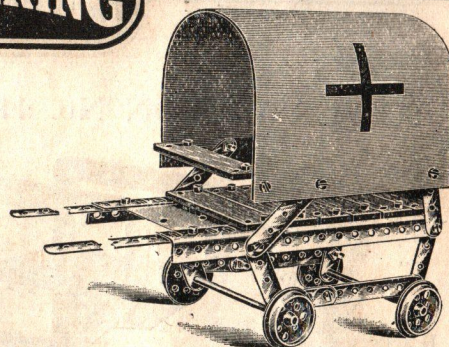
PRIMUS ENGINEERING

BRITISH MADE



FIRE ESCAPE No. 30

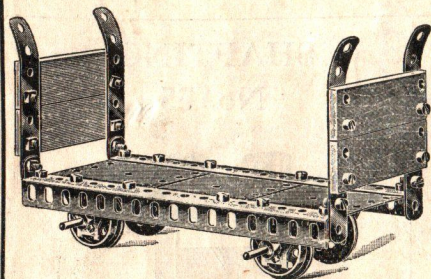
	No.		No.
24 Screws ..	50	2 Plates, 3×3 in.	68
2 Bars, 8 in.	54	4 Wheels ..	75
6 Strips, 2½ in.	57	2 Axles, 3½ in.	77
1 " 3½ "	59	2 Collars ..	82
1 " 4 "	60	2 Washers	84
4 Brackets	66		



RED CROSS WAGON No. 24

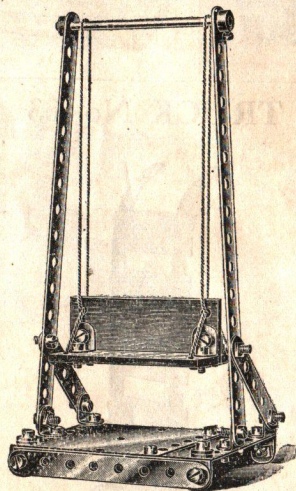
	No.		No.
8 Slips ..	25	2 Strips, 4 in.	60
34 Screws ..	50	2 " 8 "	63
2 Bars, 8 in.	54	4 Brackets	66
4 Strips, 2 in.	56	1 Plate, 3×3 in.	68
6 " 2½ "	57	4 Wheels	75
2 " 3½ "	59	2 Axles, 3½ in.	77

Hood is made of stiff card.



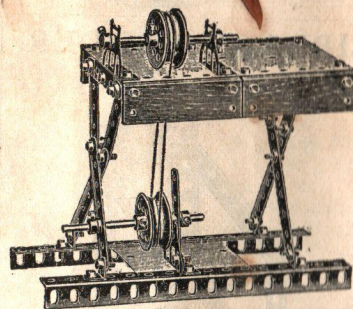
CHURN TROLLEY No. 27

	No. 25
4 Slips ..	25
24 Screws ..	50
2 Bars, 8 in.	54
2 Strips, 3½ in.	59
2 " 4 "	60
4 Brackets	66
3 Plates, 3×3 in.	68
4 Trunnions	74
4 Wheels	75
2 Axles, 3½ in.	77
4 Collars	82



SWING No. 34

	No. 25
3 Slips ..	25
24 Screws ..	50
2 Strips, 2½ in.	57
2 " 4 "	60
2 " 8 "	63
12 Brackets	66
2 Plates, 3×3 in.	68
1 Axle, 3½ in.	77
2 Collars	82
4 Washers	84

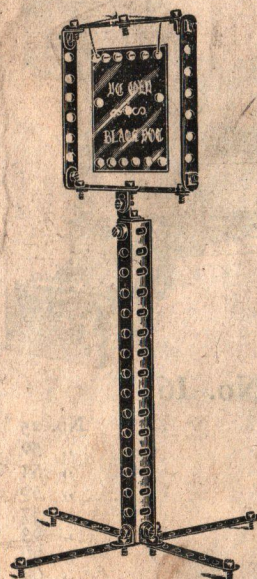


LATHE No. 43

	No. 25
4 Slips ..	25
36 Screws ..	50
2 Bars, 8 in.	54
4 Strips, 2 in.	56
5 " 2½ "	57
5 " 3½ "	59
2 " 4 "	60
12 Brackets	66
3 Plates, 3×3 in.	68
4 Trunnions	74
4 Wheels	75
2 Axles, 3½ in.	77
4 Collars ..	82
9 Washers	84

PRIMUS ENGINEERING

BRITISH MADE



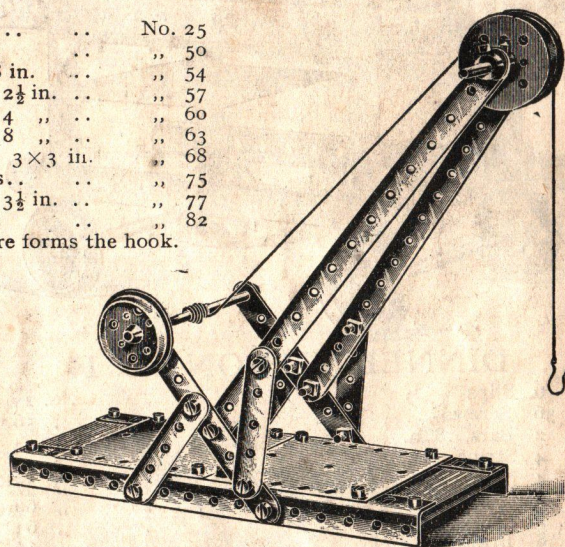
**TAVERN
SIGN
No. 11**

	No.
26 Screws ..	50
2 Bars ..	54
4 Strips, 2½ in.	57
2 " 4 " "	60
2 " 8 " "	63
12 Brackets ..	66
1 Plate,	
3 × 3 in.	68
7 Washers ..	84

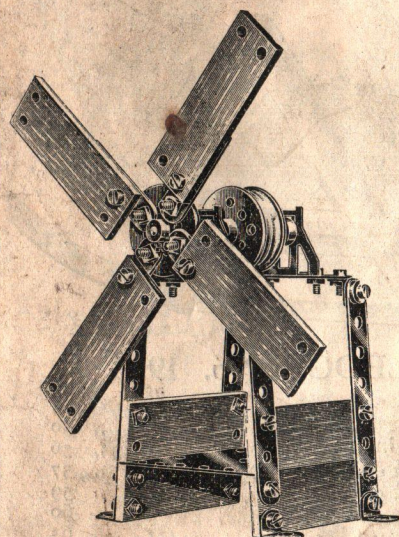
CRANE No. 21

2 Slips ..	No. 25
24 Screws ..	50
2 Bars, 8 in.	54
4 Strips, 2½ in.	57
2 " 4 " "	60
2 " 8 " "	63
2 Plates, 3 × 3 in.	68
3 Wheels..	75
2 Axles, 3½ in.	77
3 Collars ..	82

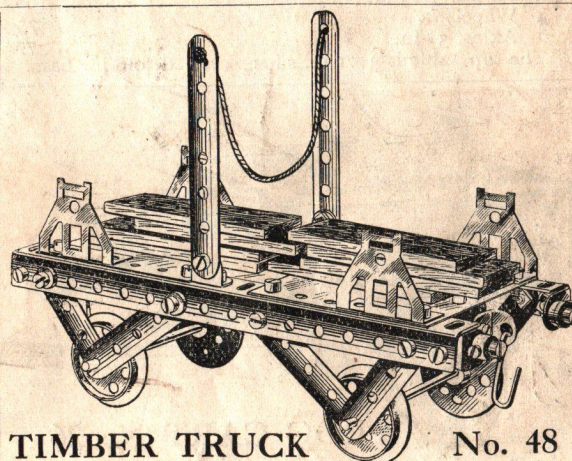
Bent wire forms the hook.



WINDMILL No. 20



	No.
8 Slips ..	25
32 Screws ..	50
4 Strips, 2 in.	56
2 " 2½ " "	57
2 " 3½ " "	59
2 " 4 " "	60
8 Brackets ..	66
1 Plate,	
3 × 3 in.	68
2 Trunnions..	74
3 Wheels ..	75
1 Axle, 3½ in.	77
2 Collars ..	82
10 Washers ..	84



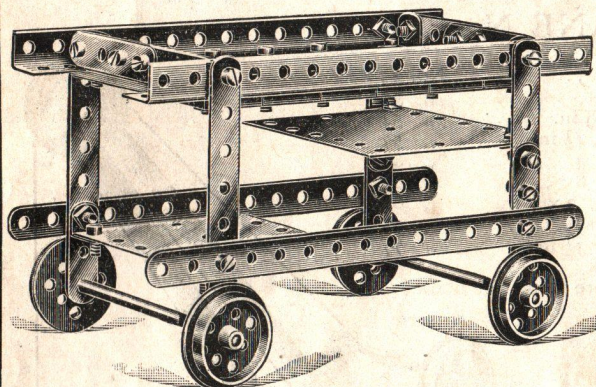
TIMBER TRUCK No. 48

8 Slips ..	No. 25	2 Plates, 3 × 3 in.	No. 68
33 Screws ..	50	4 Trunnions ..	74
2 Bars ..	54	4 Wheels..	75
4 Strips, 2 in.	56	2 Axles, 3½ in.	77
4 " 2½ " "	57	4 Collars ..	82
2 " 3½ " "	59	12 Washers ..	84
10 Brackets ..	66		

Wood slips are laid on to represent timber.
Hooks are made from two pieces of bent wire.

PRIMUS ENGINEERING

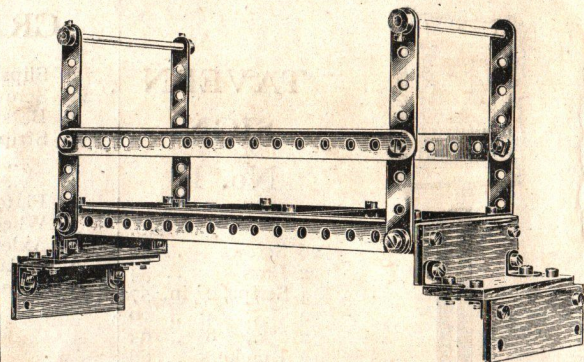
BRITISH MADE



DINNER WAGON No. 14

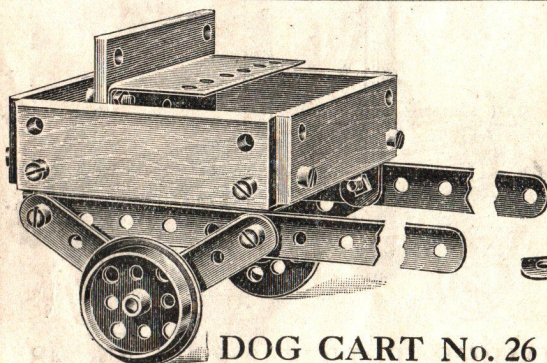
6	Slips	..	..	..	No. 25
36	Screws	..	..	..	" 50
2	Bars, 8 in.	..	..	..	" 54
4	Strips, 2 "	..	..	..	" 56
4	" 2½ "	..	..	..	" 57
2	" 4 "	..	..	..	" 60
2	" 8 "	..	..	..	" 63
8	Brackets..	..	..	..	" 66
2	Plates, 3×3 in.	..	..	..	" 68
4	Wheels	..	..	..	" 75
2	Axles, 3½ in.	..	..	..	" 77

The top table is 3×1 in. slips, screwed to 8 in. bars.



BRIDGE No. 16

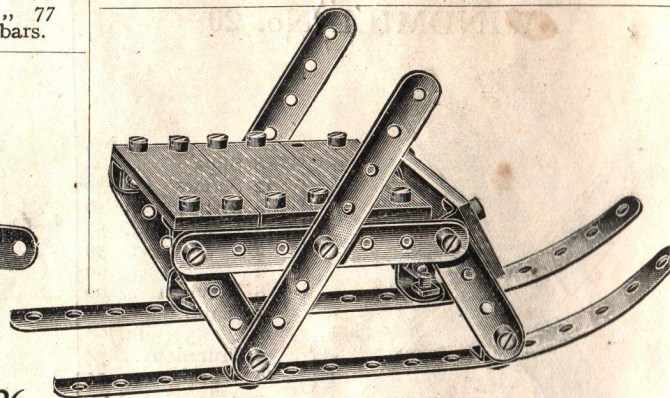
6	Slips	..	..	..	No. 25
36	Screws	..	..	..	" 50
2	Bars, 8 in.	..	..	..	" 54
4	Strips, 2 "	..	..	..	" 56
4	" 2½ "	..	..	..	" 57
2	" 8 "	..	..	..	" 63
12	Brackets ..	..	..	..	" 66
3	Plates, 3×3 in.	..	..	..	" 68
2	Axles, 3½ in.	..	..	..	" 77
4	Collars	..	..	..	" 82
8	Washers	..	..	..	" 84



DOG CART No. 26

5	Slips	..	..	..	No. 25
20	Screws	..	..	..	" 50
4	Strips, 2 in.	..	..	..	" 56
2	" 8 "	..	..	..	" 63
12	Brackets ..	..	..	..	" 66
2	Plates, 3×3 in.	..	..	..	" 68
2	Wheels	..	..	..	" 75
1	Axle, 3½ in.	..	..	..	" 77

The 8 in. strips form the shafts.

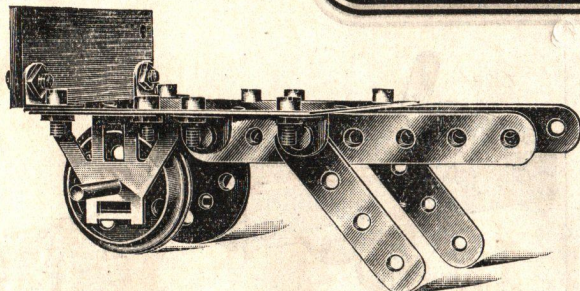


SLEDGE No. 19

4	Slips	..	..	..	No. 25
26	Screws	..	..	..	" 50
4	Strips, 2 in.	..	..	..	" 56
2	" 2½ "	..	..	..	" 57
2	" 3½ "	..	..	..	" 59
2	" 4 "	..	..	..	" 60
2	" 8 "	..	..	..	" 63
10	Brackets	..	..	..	" 66

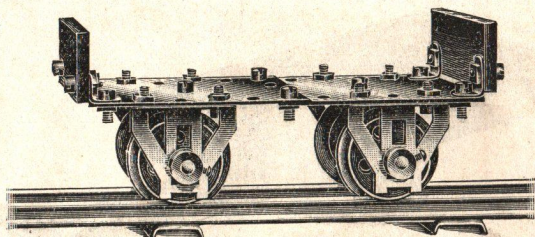
PRIMUS ENGINEERING

BRITISH MADE



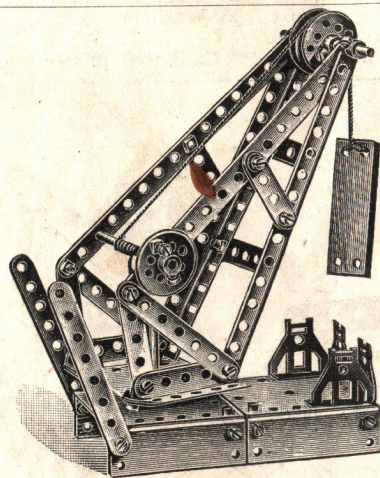
LUGGAGE BARROW No. 15

1 Slip	No. 25	1 Plate, 3×3 in.	No. 68
10 Screws	" 50	2 Trunnions	" 74
2 Strips, 2 in. ..	" 56	2 Wheels	" 75
2 " 3½ "	" 59	1 Axle, 3½ in. ...	" 77
6 Brackets	" 66		



TROLLEY TRUCK No. 28

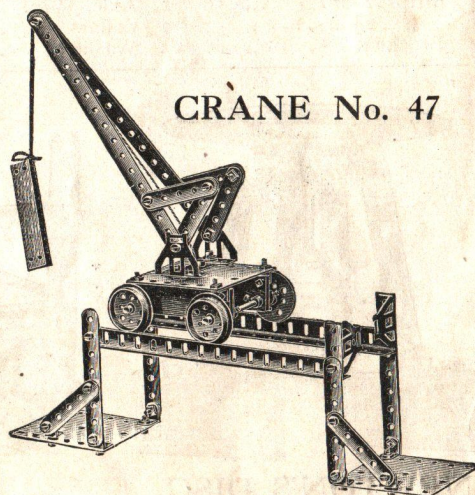
2 Slips	No. 25	4 Trunnions ..	No. 74
20 Screws	" 50	4 Wheels	" 75
4 Brackets	" 66	4 Collars	" 82
2 Plates, 3×3 ..	" 68	12 Washers	" 84



CRANE No. 46

5 Slips, 3×1 in.	No. 25
36 Screws	" 50
2 Bars, 8 in. ..	" 54
4 Strips, 2 " ..	" 56
6 " 2½ "	" 57
2 " 3½ "	" 59
2 " 4 "	" 60
2 " 8 "	" 63
12 Brackets	" 66
3 Plates, 3×3 in.	" 68
4 Trunnions	" 74
4 Wheels	" 75
2 Axles, 3½ ins.	" 77
4 Collars	" 82
6 Washers	" 84

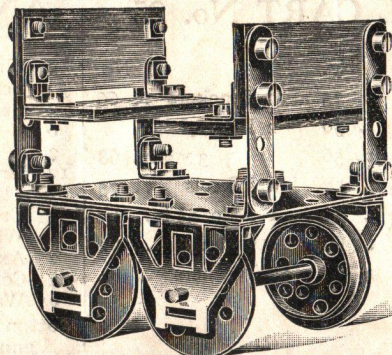
A long nail is used
for centre pin.



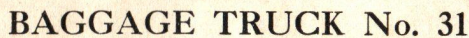
CRANE No. 47

TRAILER No. 37

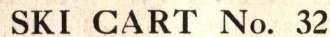
4 Slips	No. 25
24 Screws	" 50
4 Strips, 2 in. ..	" 56
8 Brackets	" 66
1 Plate, 3×3 in. ..	" 68
4 Trunnions	" 74
4 Wheels	" 75
2 Axles, 3½ in. ..	" 77
12 Washers	" 84



3 Slips .. ..	..	..	..	No. 25
36 Screws .. ..	..	..	..	" 50
2 Bars, 8 in. ..	..	..	..	" 54
1 Strip, 2 " ..	..	..	..	" 56
6 Strips, 2½ " ..	..	..	..	" 57
2 " 3½ " .. ..	..	..	..	" 59
2 " 4 " .. ..	..	..	..	" 60
2 " 8 " .. ..	..	..	..	" 63
10 Brackets .. ..	..	..	..	" 66
3 Plates, 3×3 in.	..	..	..	" 68
4 Trunnions .. ..	..	..	..	" 74
4 Wheels .. ..	..	..	..	" 75
2 Axles, 3½ in. ..	..	..	..	" 77
4 Collars .. ..	..	..	..	" 82
12 Washers .. ..	..	..	..	" 84

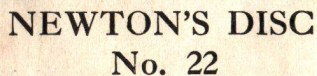


6	Slips	No. 25	2	Plates, 3 × 3 in.	No. 68
33	Screws	" 50	2	Trunnions	" 74
2	Bars, 8 in. ..	" 54	2	Wheels	" 75
4	Strips, 2 in. ..	" 56	1	Axle, 3½ in. ..	" 77
1	" 2½	" 57	2	Collars	" 82
12	Brackets	" 66	5	Washers	" 84



7	Slips, ..	No. 25	4	Trunnions ..	No. 74
36	Screws ..	50	4	Wheels ..	75
2	Strips, 2 in.	56	2	Axles, 3½ in.	77
3	„ 2½ „	57	2	Collars ..	82
1	„ 8 „	63	3	Washers ..	84
12	Brackets ..	66			
2	Plates, 3 × 3 in.	68			

Cord used for steering.



2	Slips	..	..	No. 25
22	Screws	..	..	„ 50
5	Strips, 2½ in.	..	..	„ 57
12	Brackets	..	..	„ 66
1	Plate, 3×3 in.	..	..	„ 68
3	Wheels	..	..	„ 75
1	Axle, 3½ in.	..	..	„ 77
1	Collar	..	..	„ 82
5	Washers	..	..	„ 84



	No.		No.
4 Slips ..	25	12 Brackets ..	66
35 Screws ..	50	2 Plates,	
4 Strips, 2 in.	56	3 × 3 in.	68
6 „ 2½ „	57	2 Wheels ..	75
2 „ 3½ „	59	1 Axle, 3½ in.	77
2 „ 4 „	60	2 Collars ..	82
2 „ 8 „	63	12 Washers ..	84

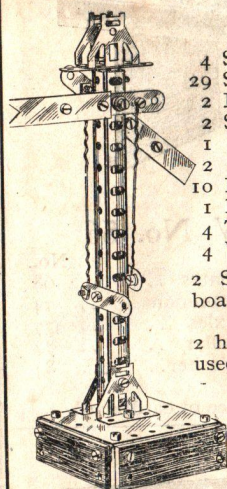


2	Slips	..	..	No. 25
33	Screws	..	..	" 50
4	Strips, 2 in.	..	..	" 56
6	" 2½ "	..	..	" 57
2	" 4 "	..	..	" 60
12	Brackets	..	..	" 66
3	Plates	..	..	" 68
4	Trunnions	..	..	" 74
4	Wheels	..	..	" 75
2	Axles, 3½ in.	..	..	" 77
4	Collars	..	..	" 82
6	Washers	..	..	" 84

Cotton reel used for mounting
gun and nails for axles.

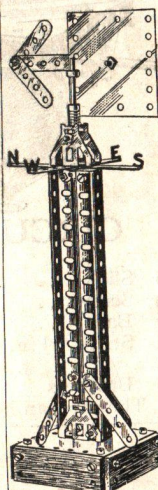
PRIMUS ENGINEERING *BRITISH MADE*

SIGNAL No. 50



	No.
4 Slips ..	25
29 Screws ..	50
2 Bars, 8 in. ..	54
2 Strips, 2 in. ..	56
1 " 2½ " ..	57
2 " 3½ " ..	59
10 Brackets ..	66
1 Plate ..	68
4 Trunnions ..	74
4 Washers ..	84
2 Strips of card-board cut for signal arms.	
2 hairpins are also used for signal rods.	

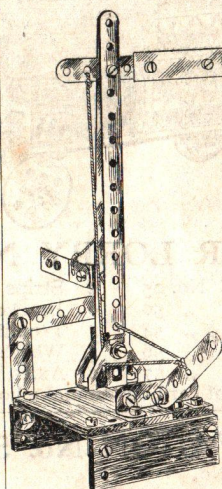
VANE No. 51



	No.
4 Slips ..	25
26 Screws ..	50
2 Bars ..	54
4 Strips, 2 in. ..	56
6 " 2½ " ..	57
1 " 4 " ..	60
11 Brackets ..	66
2 Plates ..	68
2 Trunnions ..	74
1 Axle, 3½ in. ..	77
3 Collars ..	82
6 Washers ..	84

The letters N.S.E.
W. can be cut out of a book and fixed on to strips.

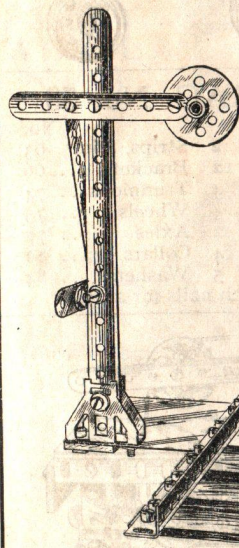
SIGNAL No. 52



	No.
5 Slips ..	25
21 Screws ..	50
2 Strips, 2 in. ..	56
5 " 2½ " ..	57
1 " 4 " ..	60
2 " 8 " ..	63
7 Brackets ..	66
2 Trunnions ..	74
1 Collar ..	82

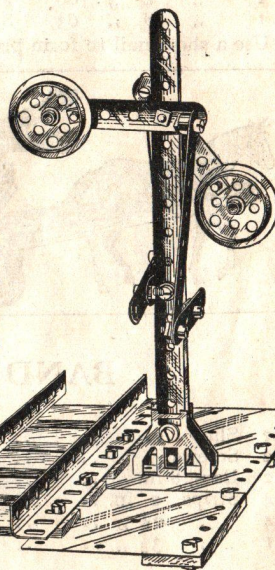
A piece of card is used for shape of signal.

SIGNAL No. 53



	No.
6 Slips ..	25
26 Screws ..	50
2 Bars ..	54
1 Strips, 2 in. ..	56
1 " 3½ " ..	59
1 " 4 " ..	60
2 " 8 " ..	63
1 Bracket ..	66
1 Plate, 3 x 3 in. ..	68
2 Trunnions ..	74
1 Wheel ..	75
1 Collar ..	82
4 Washers ..	84

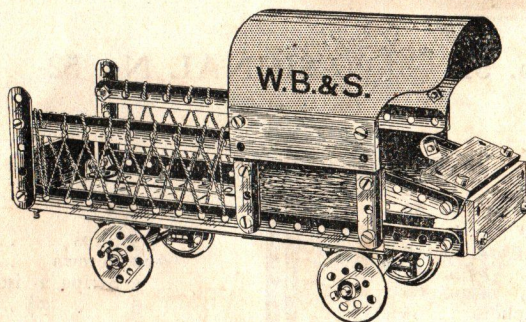
SIGNAL No. 54



	No.
7 Slips ..	25
28 Screws ..	50
2 Bars ..	54
2 Strips, 2 in. ..	56
2 " 2½ " ..	57
1 " 3½ " ..	59
1 " 4 " ..	60
2 " 8 " ..	63
2 Brackets ..	66
3 Plates, 3 x 3 in. ..	68
2 Trunnions ..	74
2 Wheels ..	75
2 Collars ..	82
4 Washers ..	84

PRIMUS ENGINEERING

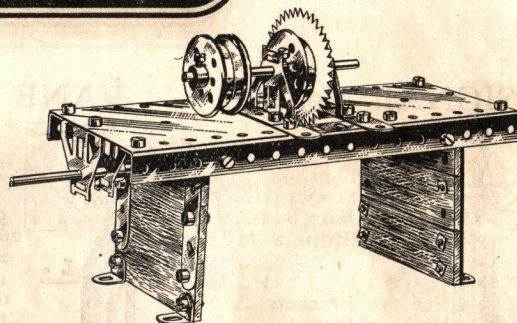
BRITISH MADE



MOTOR LORRY No. 55

7	Slips ..	No. 25	2	Strips, 8 in. ..	No. 63
30	Screws ..	50	6	Brackets ..	66
2	Bars, 8 in. ..	54	4	Trunnions ..	74
4	Strips, 2 in. ..	56	4	Wheels ..	75
6	" 2½ " ..	57	2	Axles, 3½ in. ..	77

Piece of card cut to make hood.



CIRCULAR SAW No. 56

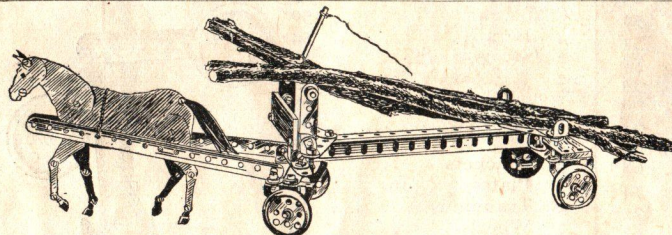
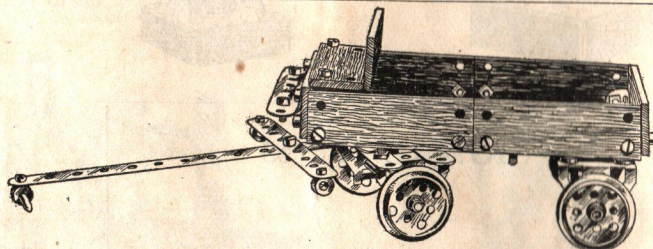
6	Slips ..	No. 25	2	Plates ..	No. 68
35	Screws ..	50	4	Trunnions ..	74
2	Bars ..	54	2	Axles ..	77
4	Strips, 2½ in. ..	57	1	Collar ..	82
2	" 4 " ..	60	1	Washer ..	84
8	Brackets ..	66			

The saw can be cut out of a piece of cardboard.

A.S.C. WAGON No. 57

8	Slips ..	No. 25	12	Brackets ..	No. 66
34	Screws ..	50	2	Plates ..	68
4	Strips, 2 in. ..	56	4	Trunnions ..	74
4	" 2½ " ..	57	4	Wheels ..	75
1	" 3½ " ..	59	2	Axles ..	77
1	" 4 " ..	60	4	Collars ..	82
1	" 8 " ..	63	8	Washers ..	84

Use a short nail to form pivot of front wheels.



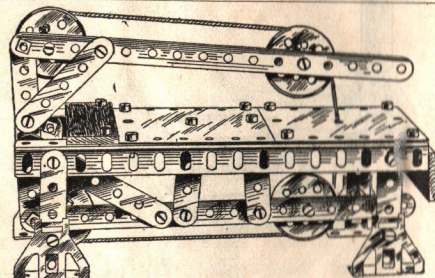
TIMBER DRAG No. 58

2	Slips ..	No. 25	2	Strips, 8 in. ..	No. 63
29	Screws ..	50	12	Brackets ..	66
2	Bars ..	54	4	Trunnions ..	74
4	Strips, 2 in. ..	56	4	Wheels ..	75
5	" 2½ " ..	57	2	Axles ..	77
2	" 3½ " ..	59	4	Collars ..	82
2	" 4 " ..	60	5	Washers ..	84

Use five short French nails for axles.

BAND SAW No. 59

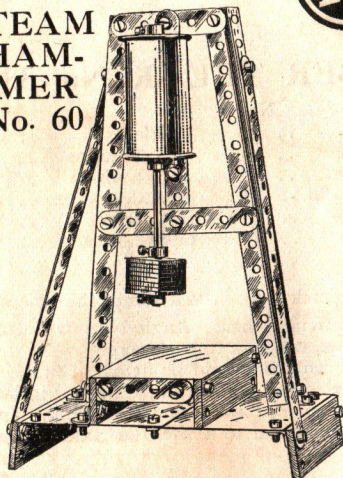
2	Slips ..	No. 25	1	Strip, 4 in. ..	No. 60
32	Screws ..	50	2	" 8 " ..	63
2	Bars, 8 in. ..	54	2	Brackets ..	66
4	Strips, 2 in. ..	56	2	Plates, 3 x 3 in. ..	68
4	" 2½ " ..	57	4	Trunnions ..	74
1	" 3½ " ..	59	4	Wheels ..	75



PRIMUS ENGINEERING

BRITISH MADE

STEAM HAMMER No. 60

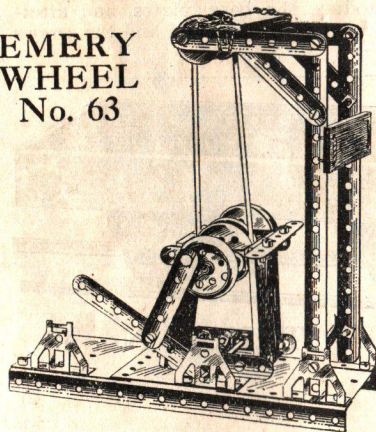


4 Slips	No. 25	2 Strips, 8 in.	No. 63
33 Screws	" 50	12 Brackets	" 66
2 Bars	" 54	2 Plates	" 68
1 Strip, 2 in.	" 56	2 Wheels	" 75
2 " 2½ "	" 57	1 Axle	" 77
1 " 3½ "	" 59	2 Collars	" 82

Small squares of cardboard fixed on to axle for hammer.

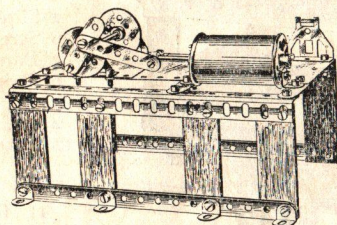
Flat piece of cardboard for bed and an inverted mantle-case is used for cylinder.

EMERY WHEEL No. 63



6 Slips	No. 25	8 Brackets	No. 66
30 Screws	" 50	3 Plates	" 68
2 Bars, 8 in.	" 54	4 Trunnions	" 74
2 Strips, 2 in.	" 56	3 Wheels	" 75
5 " 2½ "	" 57	2 Axles, 3½ in.	" 77
2 " 3½ "	" 59	2 Collars	" 82
2 " 4 "	" 60	4 Washers	" 84
2 " 8 "	" 63		

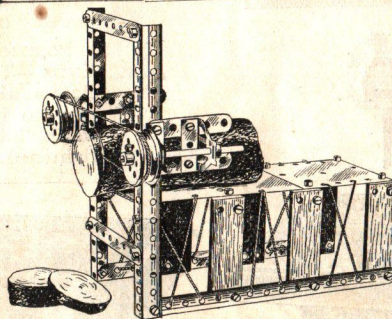
A French nail and cotton reel are used in this model; also a pill-box lid for emery wheel.



MILL ENGINE No. 61

6 Slips	No. 25	8 Brackets	No. 66
34 Screws	" 50	3 Plates	" 68
2 Bars	" 54	4 Trunnions	" 74
1 Strip, 2 in.	" 56	4 Wheels	" 75
4 " 2½ "	" 57	2 Axles	" 77
2 " 8 "	" 63	2 Collars	" 82

Use inverted mantle-case for cylinder.
Worked with hand or power.



BEAM ENGINE No. 62

35 Screws	No. 50	2 Strips, 8 in.	No. 63
2 Bars	" 54	8 Brackets	" 66
4 Strips, 2 in.	" 56	4 Trunnions	" 74
6 " 2½ "	" 57	4 Wheels	" 75
2 " 3½ "	" 59	2 Axles	" 77
2 " 4 "	" 60	3 Collars	" 82

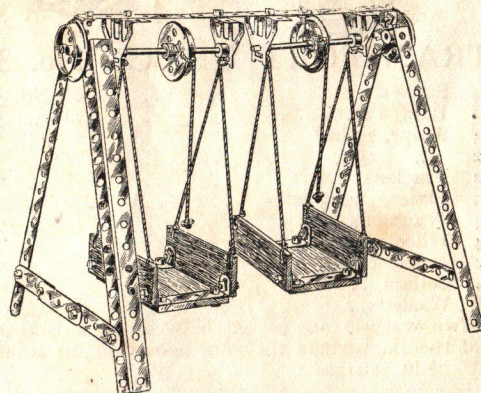
An inverted mantle-case is used for cylinder.

BAND SAW No. 64

6 Slips	..	No. 25
36 Screws	..	" 50
2 Bars, 8 in.	..	" 54
4 Strips, 2½ in.	..	" 57
2 " 4 "	..	" 60
2 " 8 "	..	" 63
8 Brackets	..	" 66
3 Plates	..	" 68
4 Trunnions	..	" 74
4 Wheels	..	" 75
2 Axles, 3½ in.	..	" 77
2 Collars	..	" 82
10 Washers	..	" 84

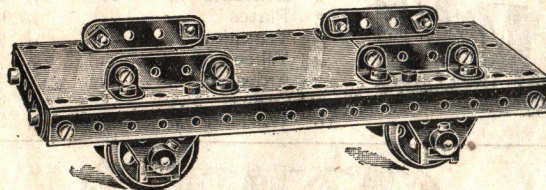
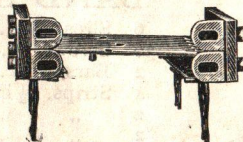
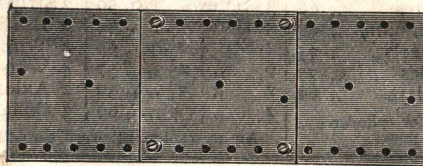
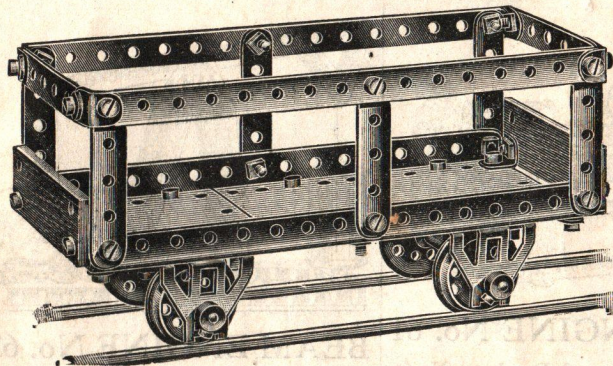
SWING No. 65

8 Slips	No. 25
36 Screws	" 50
2 Angle Bars,	
8 in.	" 54
4 Strips, 2	" 56
4 " 2½ "	" 57
2 " 3½ "	" 59
2 " 4 "	" 60
2 " 8 "	" 63
12 Brackets	" 66
4 Wheels	" 75
2 Axles	" 77
4 Collars	" 82
2 Washers	" 84



PRIMUS ENGINEERING

BRITISH MADE



TRANSPORT TRUCK No. 39

24	Screws	No. 50
2	Bars, 8 in.	" 54
4	Strips, 2 in.	" 56
2	" 2½ in.	" 57
12	Brackets	" 66
3	Plates, 3 × 3 in. ..	" 68
4	Trunnions	" 74
4	Wheels	" 75
2	Axles, 3½ in.	" 77
4	Collars	" 82
12	Washers	" 84

Two washers are placed between each Bracket and the Bars where they are bolted on, to adjust the 2½-in. strips.

TIMBER TRUCK No. 38

	No.		No.
2	Slips	3	Plates
36	Screws	4	Trunnions
2	Bars, 8 in.	4	Wheels
6	Strips, 2½ in. ..	2	Axles, 3½ in. ..
2	" 3½ in.	4	Collars
2	" 8 in.	12	Washers
12	Brackets		

Make this truck before you attempt the others.

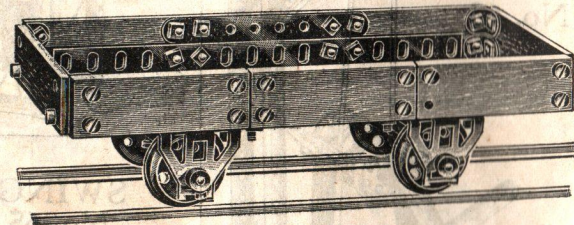
(1) Fit Brackets inside Angle bars to slotted sides, with two washers to each screw.

(2) The trunnions should be fitted on first.

(3) The axles and wheels must be put in last and a washer placed between EACH collar and the face of trunnion to allow the axles to run easily.

The base is composed of three No. 68 plates, which can be laid in loose, and caught between the sides when they are pressed in and the end screws tightened up, or they can be bolted together as shown in diagram. **NOTE.**—In trucks with a short base reduce the length by bolting in other holes.

POSITION OF BRACKETS TO SECURE THE ENDS.—The Brackets are fitted on with the slots at the ENDS as shown; this allows a little play to introduce the base plates, and afterwards the sides can be pressed in and the screws tightened.

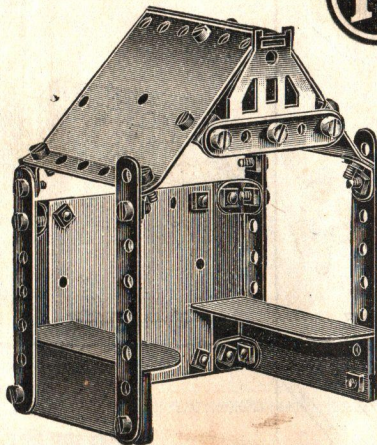


BALLAST TRUCK No. 40

8	Slips	No. 25
36	Screws	" 50
2	Bars, 8 in.	" 54
4	Strips, 2 in.	" 56
2	" 4 in.	" 60
8	Brackets	" 66
3	Plates, 3 × 3 in. ..	" 68
4	Trunnions	" 74
4	Wheels	" 75
2	Axles, 3½ in.	" 77
4	Collars	" 82
8	Washers	" 84

PRIMUS ENGINEERING

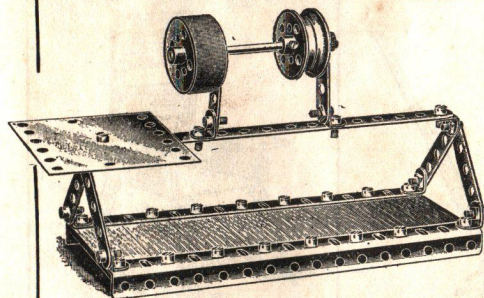
BRITISH MADE



SUMMER HOUSE No. 12

4	Slips	..	..	No. 25
30	Screws	..	..	50
1	Strip, 2½ in.	..	..	57
2	Strips, 3½ "	..	..	59
2	" 4 "	..	..	60
12	Brackets	..	..	66
3	Plates, 3×3 in.	..	..	68
1	Trunnion	..	..	74

The seats are formed of cardboard.



POLISHING LATHE No. 18

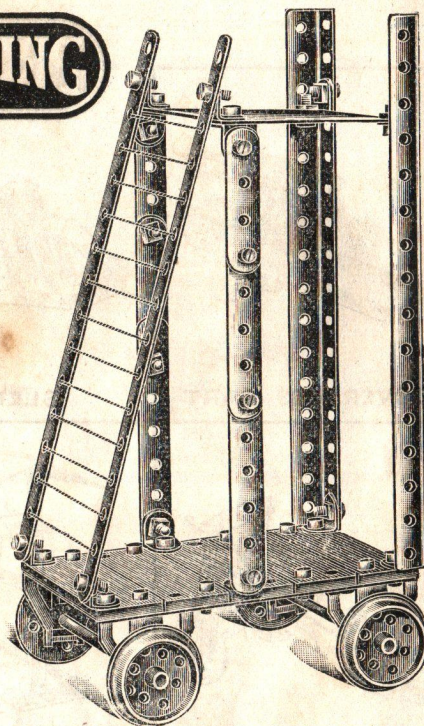
8	Slips	..	..	No. 25
28	Screws	..	..	50
2	Angle bars, 8 in.	..	..	54
2	Strips, 2 in.	..	..	56
4	" 2½ "	..	..	57
1	Strip, 8 "	..	..	63
8	Brackets	..	..	66
1	Plate, 3×3 in.	..	..	68
4	Wheels	..	..	75
1	Axle, 3½ in.	..	..	77
1	Collar	..	..	82

The Polisher is made by covering two flanged wheels with chamois leather.

WHEELED LADDER No. 29

5	Slips, 3×1 in.	No. 25
34	Screws	.. 50
2	Angle bars, 8 in.	.. 54
2	Strips, 2 in.	.. 56
2	" 2½ "	.. 57
2	" 3½ "	.. 59
2	" 4 "	.. 60
2	" 8 "	.. 63
12	Brackets	.. 66
1	Plate, 3×3 in.	.. 68
4	Trunnions	.. 74
4	Wheels	.. 75
2	Axles, 3½ in.	.. 77

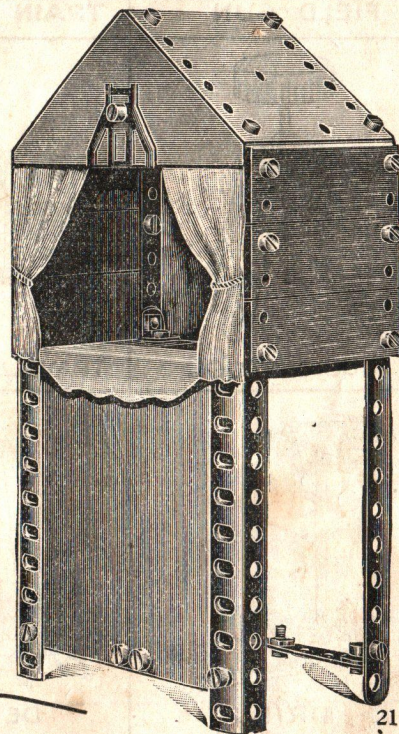
The rungs in the ladder are made by lacing cord through the 8-in. metal strips.



PUNCH AND JUDY SHOW No. 36

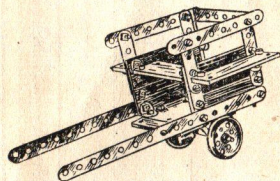
6	Slips, 3×1 in.	No. 25
36	Screws	.. 50
2	Angle bars, 8 in.	.. 54
1	Strip, 2 in.	.. 56
1	" 2½ "	.. 57
2	Strips, 3½ "	.. 59
2	" 8 "	.. 63
12	Brackets	.. 66
2	Plates, 3×3 in.	.. 68
1	Trunnion	.. 74

Add cardboard for front and paper for curtains.

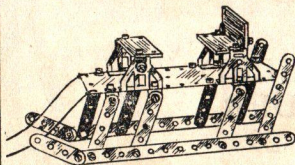


PRIMUS ENGINEERING

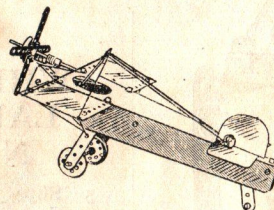
BRITISH MADE



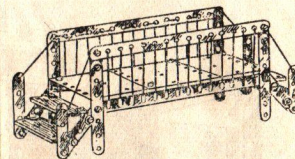
GOVERNESS CART



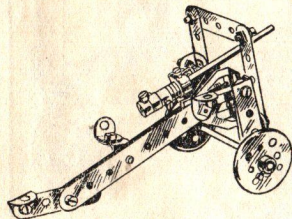
SLEIGH



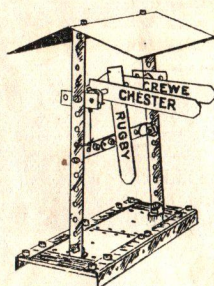
MONOPLANE



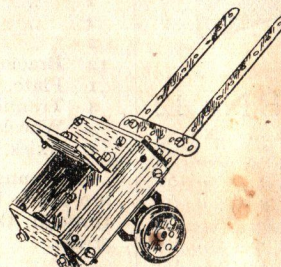
BRIDGE



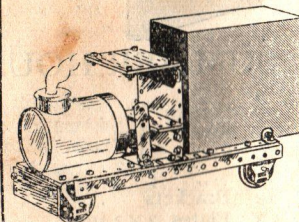
FIELD GUN



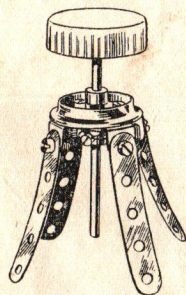
TRAIN INDICATOR



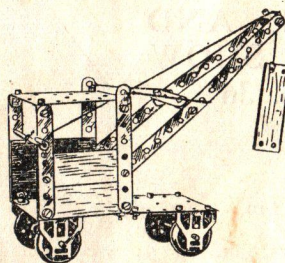
MARKET CART



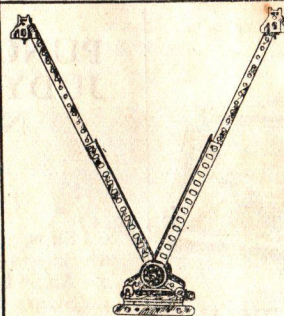
STEAM LORRY



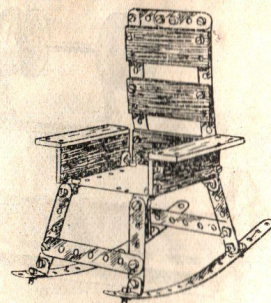
MUSIC STOOL



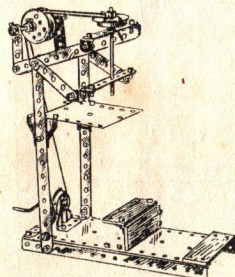
TRAVELLING CRANE



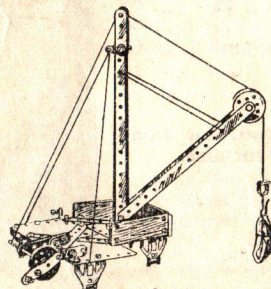
FLIP-FLAP



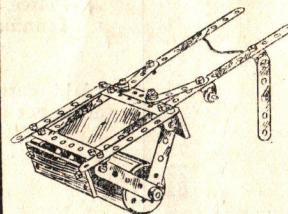
ROCKING CHAIR



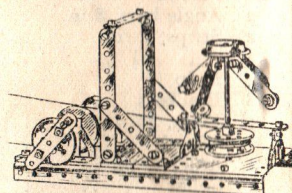
DRILL



DERRICK



ROLLER



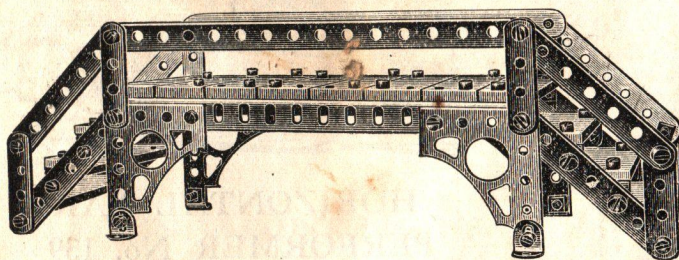
GOVERNORS

These models are made with

PRIMUS ENGINEERING

Nº 2 OUTFIT

PRICE 13/6



FOOT BRIDGE No. 107

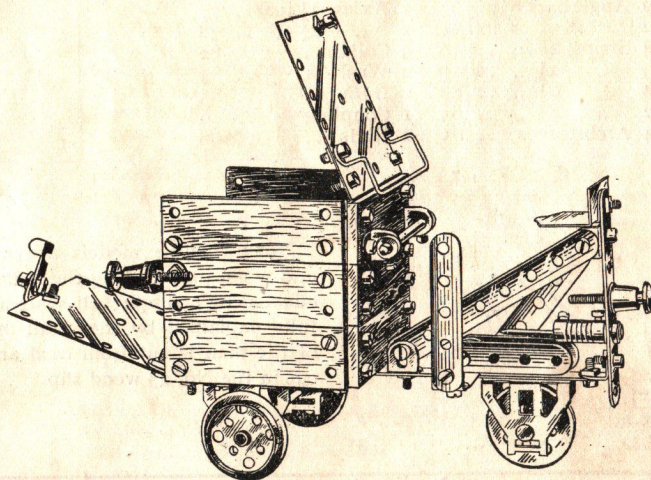
14	Slips	..	..	..	..	No. 25
60	Screws	..	..	..	..	50
2	Bars, 8 in.	..	..	..	..	54
8	Strips, 2 "	..	..	..	..	56
8	" 3½ "	..	..	..	..	59
2	" 8 "	..	..	..	..	63
16	Brackets	..	..	..	..	66
4	Architraves	..	..	..	..	85

CARRIER TRICYCLE

No. 131

	No.		No.
9	Slips	..	25
60	Screws	..	50
8	Strips, 2 in.	56	
3	" 2½ "	57	
1	" 3½ "	59	
1	" 4 "	60	
1	" 6½ "	62	
13	Brackets	..	66
3	Plates, 3×3 in.	68	
4	Hinges	..	72
4	Trunnions	..	74
3	Wheels	..	75
1	Axle, 3½ in.	77	
1	" 2½ "	78	
4	Collars	..	82
6	Washers	..	84
3	Buffers	..	85
1	Catch	..	95
1	Rod..	..	96

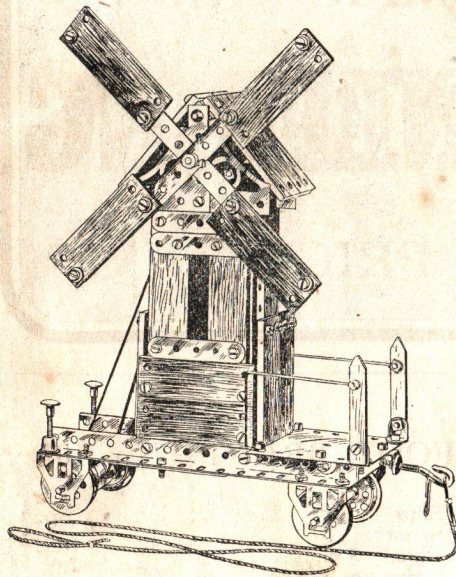
Driver's seat made of cardboard.



PRIMUS ENGINEERING

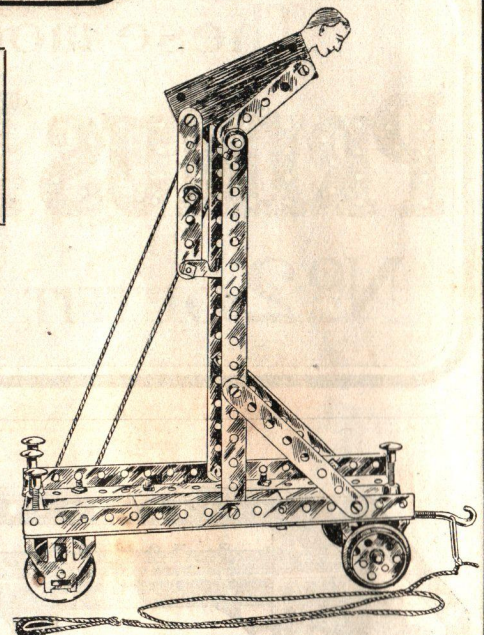
BRITISH MADE

WORKING MODELS



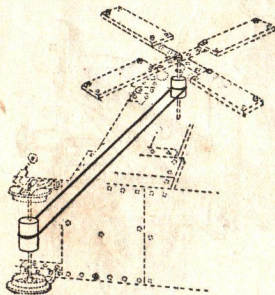
WORKING WINDMILL
No. 138

	No.		No.
1 Floor ..	9	9 Brackets	66
2 Posts ..	11	3 Plates, 3 × 3	68
16 Slips ..	25	4 Trunnions	74
55 Screws..	50	4 Wheels	75
2 Angle Bars, 6½ in.	53	2 Axles, 3½ in.	77
2 " 8 in.	54	2 " 2½ "	78
4 Strips, 2 in.	56	3 Collars..	82
3 " 2½ "	57	2 Washers	84
2 " 6½ "	62	2 Buffers	85
2 " 8 "	63	1 Coupling	86
4 Architraves	65	2 Rods ..	96

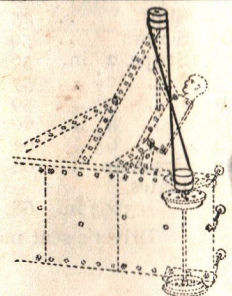


**HORIZONTAL BAR
PERFORMER** No. 139

	No.		No.
1 Slip ..	25	4 Trunnions	74
19 Screws..	50	4 Wheels	75
2 Angle Bars, 8 in.	54	2 Axles, 3½ in.	77
4 Strips, 2 in.	56	1 Axle, 2½ "	78
2 " 2½ "	57	2 Collars..	82
2 " 4 "	60	4 Buffers	85
2 " 8 "	63	1 Coupling	86
1 Bracket	66	2 Catches	95
3 Plates, 3 × 3	68		



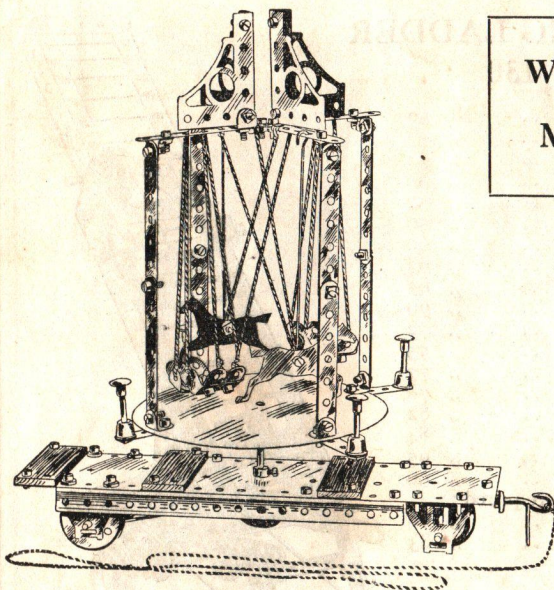
NOTE.—These models are mounted on trolleys and when pulled along the figures perform. This is effected by a simple belt system, using cotton reels, fully explained by the small drawings. The head of the man is cut from card and inserted in a slit cut in the No. 25 wood slip.



PRIMUS ENGINEERING

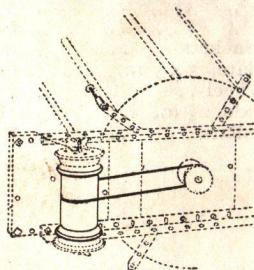
BRITISH MADE

WORKING MODELS



ROUNABOUT No. 135

No.	No.
3 Slips 25	3 Plates, 3 × 3 in. 68
64 Screws.. .. 50	4 Trunnions .. 74
2 Angle Bars, 8 in. 54	4 Wheels .. 75
8 Strips, 2 in. .. 56	2 Axles, 3½ in. .. 77
8 " 3½ " .. 59	1 Axle, 2½ " .. 78
2 " 6½ " .. 62	1 Collar .. 82
2 " 8 " .. 63	4 Washers .. 84
4 Architraves .. 65	4 Buffers .. 85
16 Brackets .. 66	1 Coupling .. 86



When drawn along this model works. Illustration shows the simple means used—two cotton reels and a band of cord. A disc should be cut from cardboard to form the base of the roundabout and the horses can be sketched and cut from card.

DANCING NIGGER No. 141

No.	No.
4 Slips 25	
36 Screws.. .. 50	
2 Angle Bars .. 53	
6 Strips, 2 in. .. 56	
4 " 2½ " .. 57	
5 " 3½ " .. 59	
2 " 4 " .. 60	
1 Strip 6½ " .. 62	
4 Architraves .. 65	
5 Brackets .. 66	
2 Plates, 3 × 3 in. 68	
2 Hinges .. 72	
4 Trunnions .. 74	
4 Wheels .. 75	
2 Axles, 3½ in. .. 77	
1 Axle, 2½ " .. 78	
12 Washers .. 84	
4 Buffers .. 85	
2 Wood Screws .. 97	

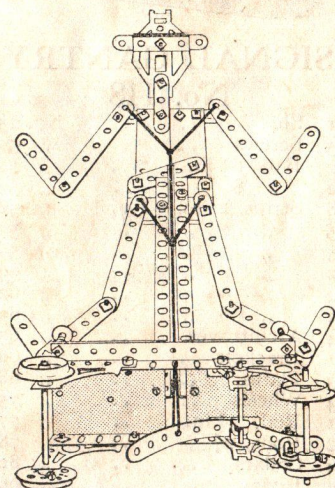
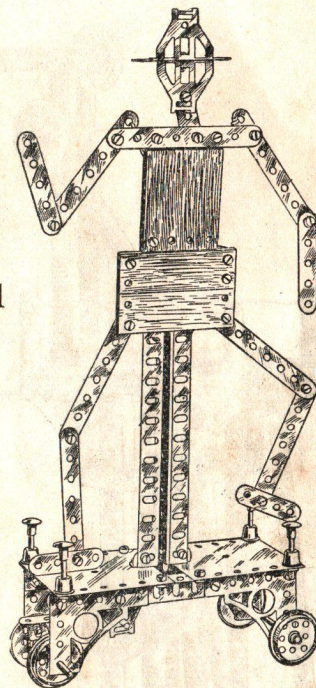
CONSTRUCTION of WORKING PARTS

1. A 6½-in. strip is curved and bent at one end. Two brackets are attached to form a bearing for the axle, which is supported in the frame by two trunnions.

2. A bracket is attached to one of the back wheels, which as it revolves strikes the curved strip, giving an intermittent movement.

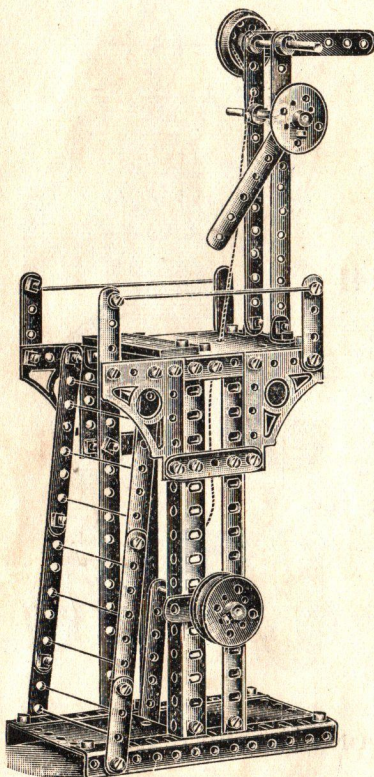
3. Cord is attached to the curved strip, also the legs and arms of the dancer, as shown.

4. As the bracket strikes the curved strip so the cord jerks the arms and legs of the figure.



PRIMUS ENGINEERING

BRITISH MADE



SIGNAL GANTRY
No. 118

1	Slip	..	No. 25
55	Screws	..	.. 50
2	Bars, 6½ in.	..	.. 53
2	" 8 "	..	.. 54
8	Strips, 2 in.	..	.. 56
5	" 2½ "	..	.. 57
5	" 3½ "	..	.. 59
2	" 4 "	..	.. 60
2	" 6½ "	..	.. 62
2	" 8 "	..	.. 63
4	Architraves	..	.. 65
11	Brackets	..	.. 66
3	Plates	..	.. 68
4	Wheels	..	.. 75
1	Rod, 3½ in.	..	.. 77
2	Rods, 2½ "	..	.. 78
4	Collars	..	.. 82
2	Rods	..	.. 96

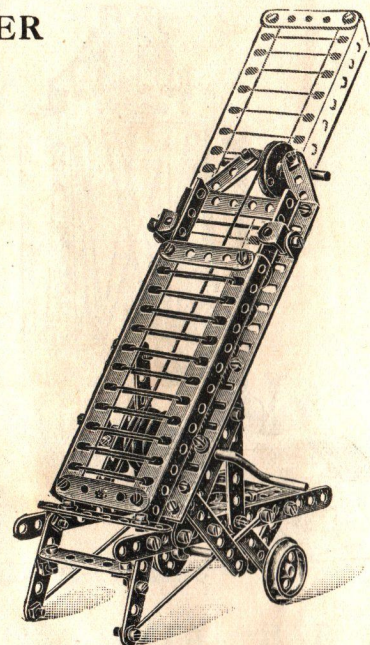
Use cord for ladder rungs.

EXTENDING LADDER
No. 130

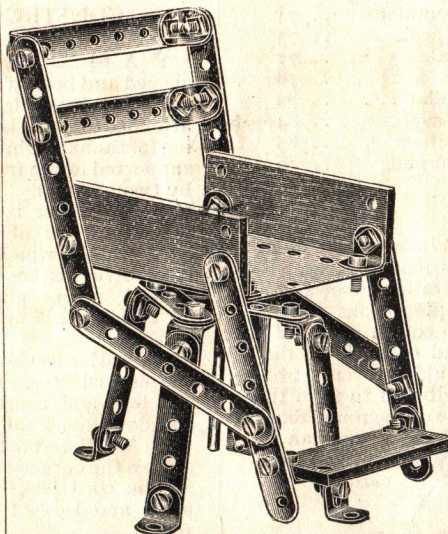
53	Screws	..	No. 50
2	Bars, 6½ in.	..	.. 53
2	" 8 "	..	.. 54
4	Strips, 2 in.	..	.. 56
6	" 2½ "	..	.. 57
5	" 3½ "	..	.. 59
2	" 4 "	..	.. 60
2	" 8 "	..	.. 63
2	Architraves	..	.. 65
16	Brackets	..	.. 66
1	Hinge	..	.. 72
4	Wheels	..	.. 75
1	Axle, 3½ in.	..	.. 77
1	" 2½ "	..	.. 78
3	Collars	..	.. 82
12	Washers	..	.. 84
1	Catch	..	.. 95
2	Rods	..	.. 96

Extra parts required:

1	Wheel	..	.. 76
1	Handle	..	.. 83



REVOLVING CHAIR No. 126

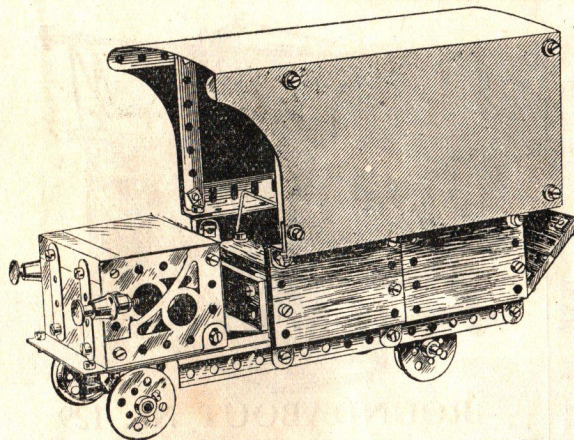


3	Wood slips	..	No. 25
36	Screws	..	.. 50
1	Strips, 2 in.	..	.. 56
6	" 2½ "	..	.. 57
6	" 3½ "	..	.. 59
3	" 4 "	..	.. 60
16	Brackets	..	.. 66
1	Plate, 3 × 3 in.	..	.. 68
1	Wheel	..	.. 75
1	Axle, 2½ in.	..	.. 78
2	Collars	..	.. 82

MOTOR VAN No. 132

PRIMUS ENGINEERING

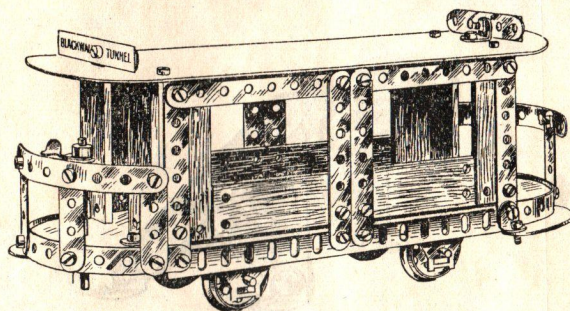
BRITISH MADE



13	Slips ..	No. 25	3	Plates, 3 × 3 in.	No. 68
58	Screws ..	50	2	Hinges ..	72
2	Angle Bars, 6½ in.	53	4	Trunnions ..	74
2	" " 8 "	54	4	Wheels ..	75
6	Strips, 2 in.	56	2	Axles, 3½ in.	77
6	" 2½ "	57	2	" 2½ "	78
4	" 3½ "	59	3	Collars ..	82
8	" 8 "	63	8	Washers ..	84
4	Architraves ..	65	3	Buffers ..	85
10	Brackets ..	66	1	Rod ..	96

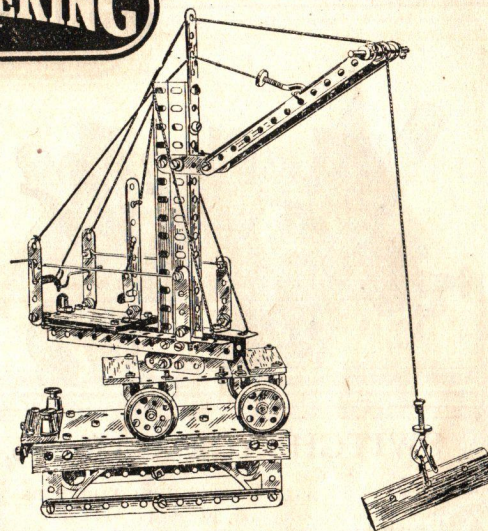
Cardboard is used for cover of wagon and engine bonnet.

TRAMCAR No. 133



12	Slips ..	No. 25	14	Brackets	No. 66
66	Screws ..	50	3	Plates, 3 × 3 in.	68
2	Angle Bars, 8 in.	54	4	Trunnions ..	74
6	Strips, 2 in.	56	4	Wheels ..	75
2	" 2½ "	57	2	Axles, 3½ in.	77
8	" 3½ "	59	2	" 2½ "	78
2	" 4 "	60	4	Collars ..	82
2	" 6½ "	62	8	Washers ..	84
2	" 8 "	63			

Cardboard is used for roof, platforms, and steps.

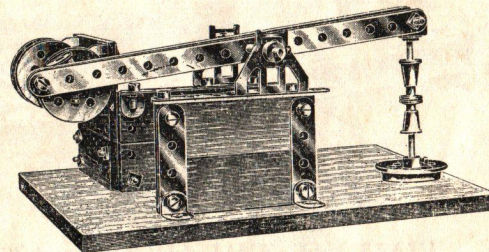


TRAVELLING CRANE No. 134

2	Rails ..	No. 1	4	Strips,	No. 2½ in.	57	4	Wheels	No. 75
1	Buffer ..	4	2	" 3½ "	59	1	" 2½ "	78	
6	Slips ..	25	6	" 4 "	60	3	Collars ..	82	
65	Screws ..	50	2	" 6½ "	62	1	Washer	84	
2	Angle Bars,	6½ in.	4	Architraves	65	4	Buffers ..	85	
2	" 8 "	54	16	Brackets	66	2	Couplings	86	
4	Strips,	2 in.	3	Plates,	3 × 3 in.	68	1	Catch ..	95
							1	Rod ..	96

A piece of wire bent for crank handle.

MECHANICAL HAMMER No. 108

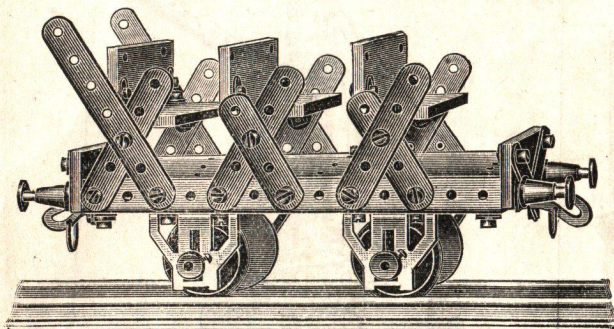


7	Slips, 3 × 1 in.	No. 25	4	Trunnions	No. 74
26	Screws ..	50	4	Wheels ..	75
4	Strips, 2 in.	56	2	Axles, 3½ in.	77
4	" 2½ "	57	4	Collars ..	82
2	" 3½ "	59	8	Washers ..	84
2	" 8 "	63	2	Buffers ..	85
12	Brackets ..	66	6	Screws ..	97

This model can be worked by a motor.

PRIMUS ENGINEERING

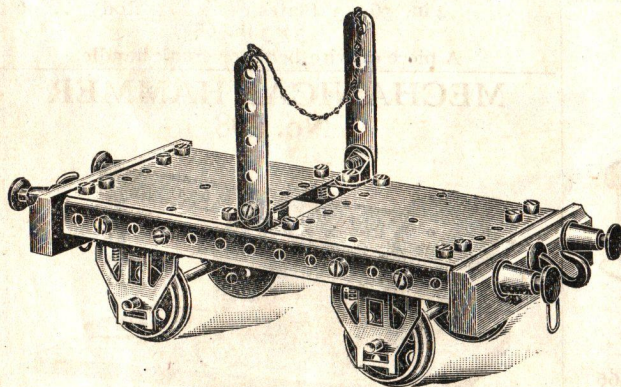
BRITISH MADE



SWITCHBACK CAR No. 115

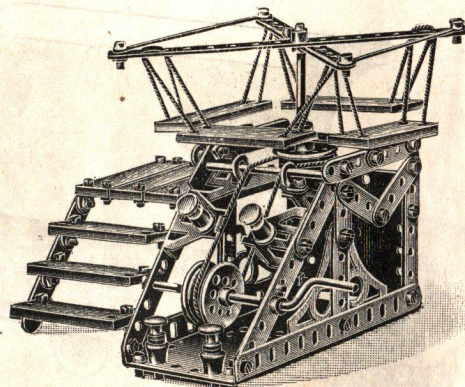
8 Slips	No. 25	4 Trunnions ..	No. 74
50 Screws	50	4 Wheels	75
2 Bars, 6½ in. ..	53	2 Axles, 3½ in. ..	77
8 Strips, 2 in. ..	56	4 Collars	82
6 " 2½ "	57	12 Washers	84
2 " 3½ "	59	4 Buffers	85
16 Brackets	66	2 Couplings	86
3 Plates, 3 × 3 in. ..	68		

NOTE.—2 Washers placed over screw that secures brackets to bars.



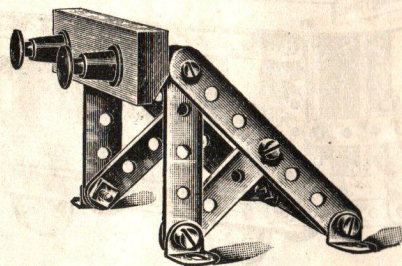
TIMBER TRUCK No. 123

2 Blocks	No. 4	2 Plates, 3 × 3 in. ..	No. 68
32 Screws	50	4 Trunnions	74
2 Bars, 6½ in. ..	53	4 Wheels	75
2 Strips, 2 in. ..	56	2 Axles, 3½ in. ..	77
2 " 2½ "	57	4 Buffers	85
12 Brackets	66	2 Couplings	86



ROUNABOUT No. 129

	No.		No.
11 Slips	25	16 Brackets	66
61 Screws	50	3 Plates, 3 × 3 in. ..	68
2 Bars, 6½ in. ..	53	4 Trunnions	74
5 Strips, 2 in. ..	56	4 Wheels	75
5 " 2½ "	57	2 Axles, 3½ in. ..	77
8 " 3½ "	59	4 Collars	82
2 " 4 "	60	10 Washers	84
2 " 8 "	63	4 Buffers	85
4 Architraves ..	65	2 Rods	96

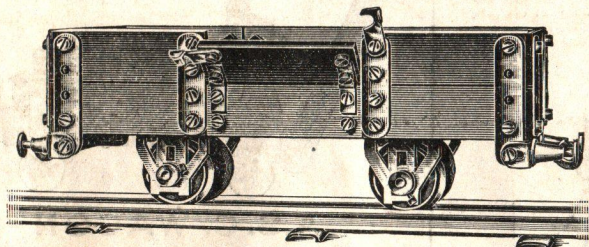


BUFFER END No. 100

	No.
1 Block	4
10 Screws	50
2 Strips, 2 in. ..	56
3 " 2½ "	57
2 " 3½ "	59
8 Brackets	66
2 Buffers	85

PRIMUS ENGINEERING

BRITISH MADE



COAL TRUCK No. 113

16	Slips	..	..	No. 25
64	Screws	..	..	50
2	Bars, 8 in...	..	..	54
8	Strips, 2 in.	..	..	56
4	" 2½ "	..	..	57
2	" 3½ "	..	..	59
2	" 4 "	..	..	60
12	Brackets	..	..	66
3	Plates	..	..	68
4	Hinges	..	..	72
4	Trunnions	..	..	74
4	Wheels	..	..	75
2	Axles, 3½ in.	..	..	77
4	Collars	..	..	82
4	Washers	..	..	84
4	Buffers	..	..	85
2	Couplings	..	..	86
4	Catches	..	..	95

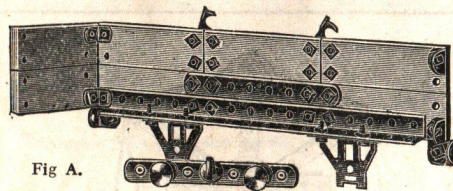


Fig A.

DIAGRAMS TO SHOW.

- (a) How the sides are fitted up.
(b) How the end is formed.

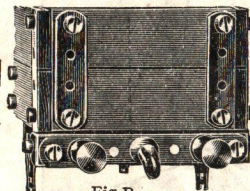


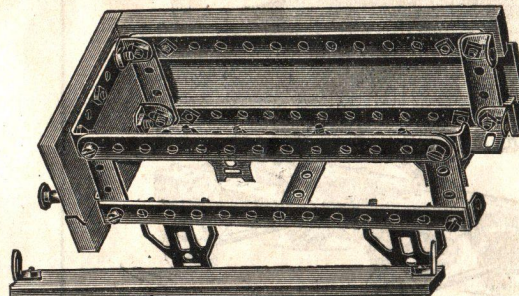
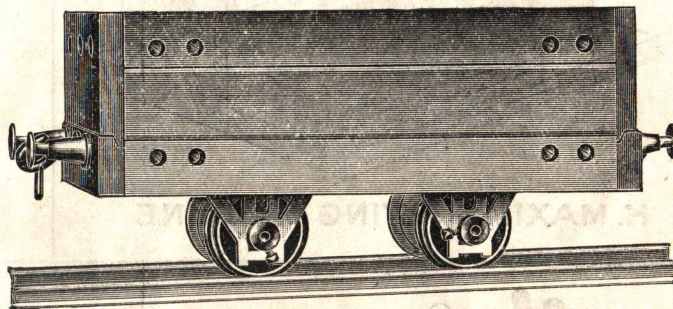
Fig B.

HEAVY GOODS TRUCK No. 116

ALL WOOD SIDES, ENDS AND BUFFER BLOCKS.

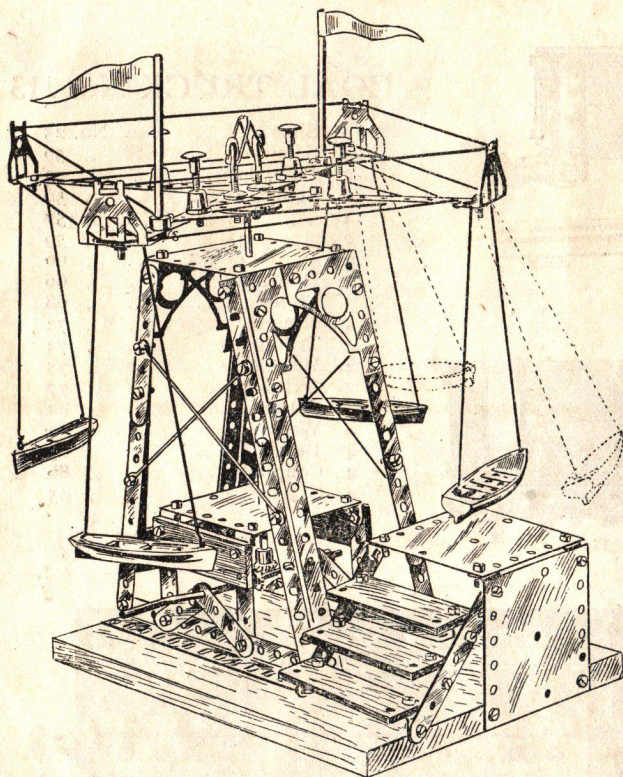
4	Rails	..	..	No. 1
2	Blocks	..	..	4
1	Floor	..	..	9
2	Sides	..	..	17
2	Ends	..	..	18
36	Screws	..	..	50
2	Bars, 6½ in.	..	..	53
4	Strips, 2 in.	..	..	56
3	" 2½ "	..	..	57
2	" 6½ "	..	..	62
10	Brackets	..	..	66
4	Trunnions	..	..	74
4	Wheels	..	..	75
2	Axles, 2½ in.	..	..	78
4	Collars	..	..	82
4	Washers	..	..	84
4	Buffers	..	..	85
2	Couplings	..	..	86

Diagram showing how the frame is made up. The floor has two brackets as shown, and is then placed inside brackets down, and secured by means of the coupling hooks.

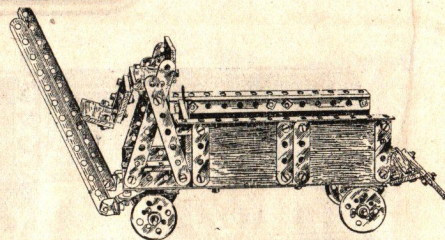


PRIMUS ENGINEERING

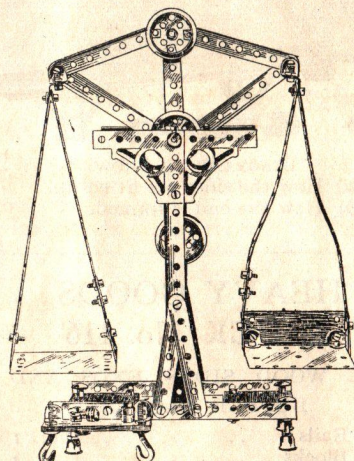
BRITISH MADE



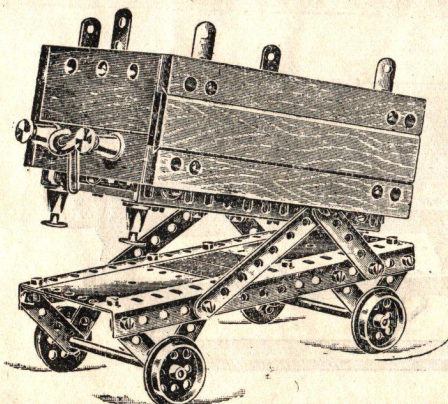
H. MAXIM'S FLYING MACHINE



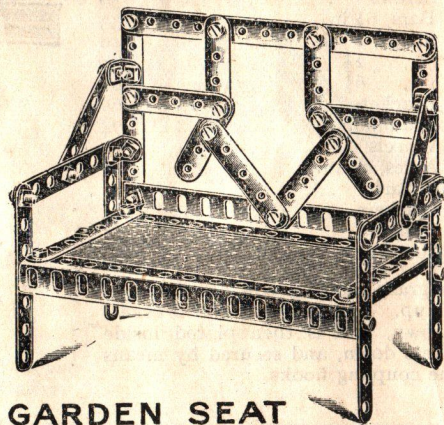
A.S.C. WAGON



JOCKEY SCALES



TIPPING TRUCK



GARDEN SEAT

These models are made with

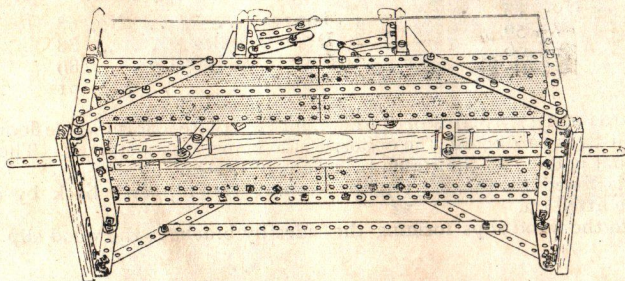
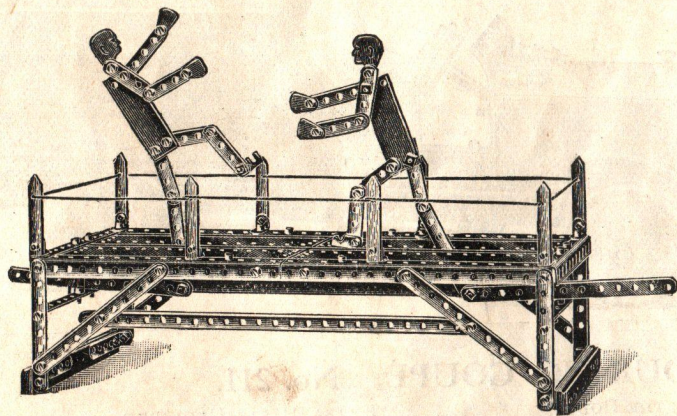
PRIMUS ENGINEERING

Nº 3 OUTFIT

PRICE 25/-

BOXERS IN RING No. 204

A clever working model of two pugilists who actually box



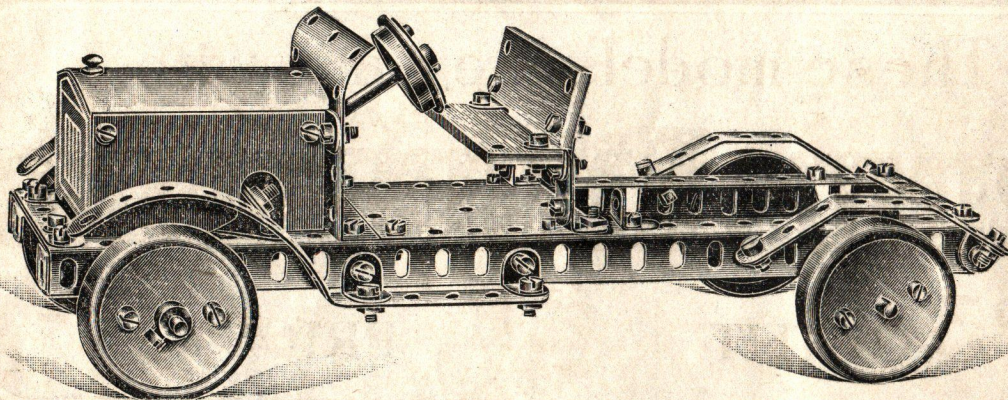
2	Grooved side rails	..	No. 1
8	Posts for railings	..	.. 11
1	Plain platform	..	.. 23
85	Screws .. ..	..	.. 50
2	Angle bars, 6½ in.	..	.. 53
4	.. 8 ..	..	.. 54
10	Strips, 2 in.	..	.. 56
6	.. 2½ ..	..	.. 57
4	.. 3½ ..	..	.. 59
4	.. 4 ..	..	.. 60
4	.. 5½ ..	..	.. 61
4	.. 6½ ..	..	.. 62
2	.. 12½ ..	..	.. 64
16	Brackets	..	.. 66
4	Plates, 8×3	..	.. 67
2	Trunnions	..	.. 74
6	Washers ..	..	.. 84
4	Catches ..	..	.. 95
2	Wood screws	..	.. 97

Heads and boxing gloves can be cut out of cardboard.

The system of operating the boxers is clearly shown in the diagram. Note that it is advisable to use small nails to act as stops to prevent the figures assuming unnatural positions.

PRIMUS ENGINEERING

BRITISH MADE

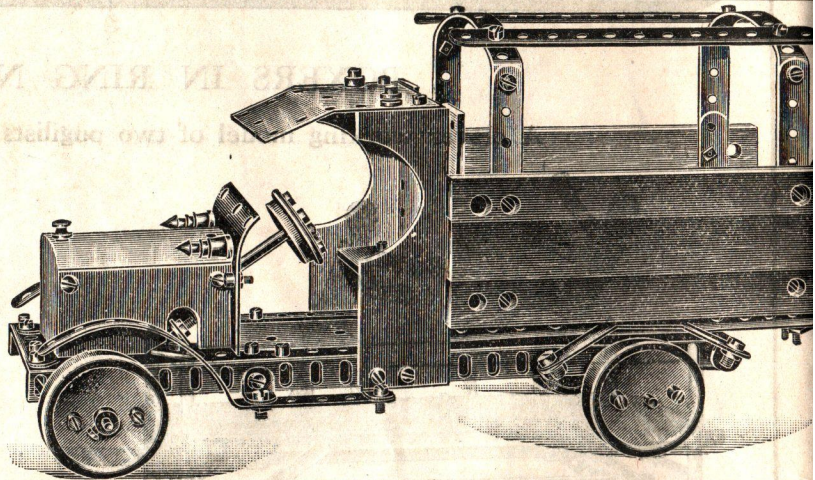


2 Slips
71 Screws
2 Strips
4 "
1 Strip,
2 Strips,
2 "
2 "
22 Brackets
3 Plates,
The w
box lids (p
No. 68 3 x
is also mad

MOTOR-CAR BUILDING with PRIMUS.

A motor-car is perhaps the most interesting and instructive Model that can be built, and this can easily be done by anyone who has become acquainted with the possibilities of Primus Engineering.

The models illustrated were constructed by a lad of thirteen years, following the method adopted in building real cars—first, the chassis (to which any body can be attached); then, as standard types, the W. D. Lorry and a smart coupé. These will give any young engineer the idea; and, having constructed the chassis, he will find it quite a simple matter to erect thereon bodies of any description.



TOURING COUPÉ. No. 211.

PARTS TO MAKE THE BODY.

8	Wood Slips	..	No. 25
34	Screws	..	50
12	Brackets	..	66
2	Plates, 8 x 3	..	67
4	Hinges	..	72

EXTRA PARTS REQUIRED.

4	Hinges	..	No. 88
2	Door Handles	..	88
2	Turnbuttons	..	89
8	Screws	..	91

Remove from chassis back mudguards and 3 x 3 plates in the floor, fix 8 x 3 plate to form whole floor, replace se
The sides and doors of coupé are cut from cardboard, the opposite side being without doors. The top and ba
is formed out of one 8 x 3 plate; the boot is fixed to the frame by means of brackets.

The back seat in the closed body is fitted to the 8 x 3 plate forming the top and back by two bracke
This should be done before the sides are fitted on.

The back seat in the boot is fitted to the wood slips forming the sides by brackets, the wood slip at back be
secured to the base.

PRIMUS ENGINEERING

BRITISH MADE

MOTOR-CAR CHASSIS. No. 209.

PARTS FROM NO. 3 OUTFIT.

No.	No.
.. 25	2 Trunnions .. 74
.. 50	1 Wheel .. 75
in. .. 56	4 Wheels .. 76
.. 57	1 Axle Rod, $3\frac{1}{2}$ in. 77
.. 58	1 " $1\frac{1}{2}$ " 79
.. 60	8 Collars .. 82
.. 62	12 Washers .. 84
.. 63	4 Buffers .. 85
.. 66	2 Lamps .. 87
3x3 .. 68	1 Knob Screw .. 92

EXTRA PARTS REQUIRED.

No.	No.
2 Angle Bars, 12 in. 55	
1 Collar .. 82	
1 $1\frac{1}{2}$ -in. Cog .. 160	
1 Wheel Cog .. 162	
1 Axle, 6 in. .. 165	
2 Axles, $2\frac{3}{8}$ in. .. 167	
1 Collar .. 168	

Wheels are constructed with No. 76 pulleys, to which are bolted small tin powder boxes about 2 in. diameter). The bonnet is made by bending a plate for the top and using cardboard for the front and sides. The dash is made by bending a No. 68 3x3 plate.

W. D. WAGON. No. 210.

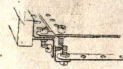
PARTS FROM NO. 3 OUTFIT TO MAKE THE BODY.

No.	No.	No.
4 Grooved Rails.. 1	2 Strips, $5\frac{1}{2}$ in. .. 61	
2 Truck Sides .. 17	2 " $6\frac{1}{2}$ " .. 62	
6 Wood Slips .. 25	2 " 8 " .. 63	
49 Screws .. 50	4 Brackets .. 66	
2 Angle Bars, $6\frac{1}{2}$ in. 53	1 Plate, 8x3 .. 67	
4 Strips, 2 in. .. 57	2 Hinges .. 72	
2 " $2\frac{1}{2}$ " .. 58		
4 " $3\frac{1}{2}$ " .. 59		
1 Strip, 4 " .. 60		

EXTRA PARTS REQUIRED.

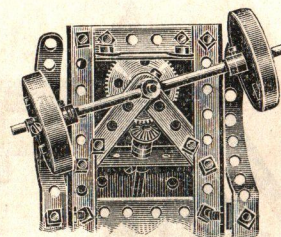
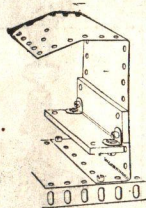
No.	No.
2 Angle Bars, $6\frac{1}{2}$ in. 53	
1 Strip, 2 in. .. 57	

The driver's seat is made by bending an 8x3 plate thus:



Cut the sides out of cardboard.

The body overlaps the wheels and is fitted as sketch, using 2 $6\frac{1}{2}$ in. angle bars on each side.



THE STEERING GEAR.

This must be built on to the frame before the bonnet is fitted.

1. Lay two $2\frac{1}{2}$ in. metal strips at angles as shown, and secure.

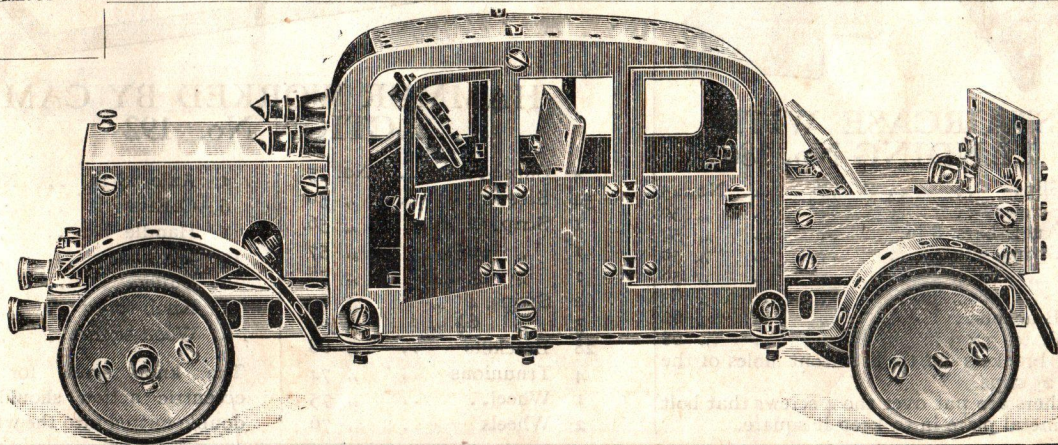
2. Place a $2\frac{1}{2}$ in. metal strip across the base of the triangle, and secure to brackets.

3. Fix No. 160 gear wheel to $1\frac{1}{2}$ in. axle, and pass through the ends of the $2\frac{1}{2}$ in. strips. Place washers on and secure with a double-tapped collar.

4. A $3\frac{1}{2}$ in. axle is then used for the steering pillar, which is passed through the centre hole of the dash plate and the $2\frac{1}{2}$ in. metal strip.

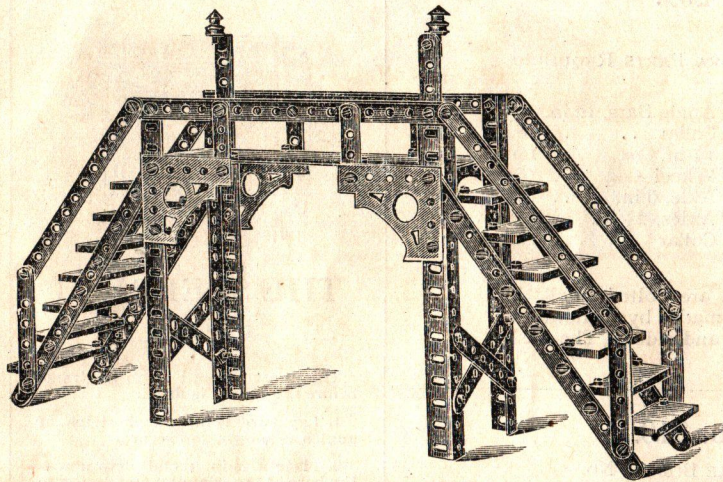
5. Secure with a collar, and use washers to adjust the bevel gear so that it engages in the large cog.

6. Fix the wheels to $2\frac{1}{2}$ in. tapped axles and screw into the double-tapped collar.



PRIMUS ENGINEERING

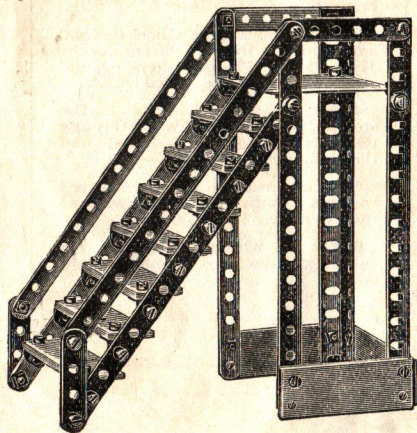
BRITISH MADE



HIGH LEVEL BRIDGE No. 185

14	Slips	..	..	..	No. 25
98	Screws	..	..	..	50
4	Angle bars, 8 in.	..	..	..	54
6	Strips, 2 in.	..	..	..	56
4	" 3 "	..	..	..	58
4	" 3½ "	..	..	..	59
4	" 5½ "	..	..	..	61
4	" 6½ "	..	..	..	62
4	" 8 "	..	..	..	63
4	Architraves	..	..	..	65
38	Brackets	..	..	..	66
1	Plate, 8 × 3 in.	..	..	..	67
2	Lamps	..	..	..	87

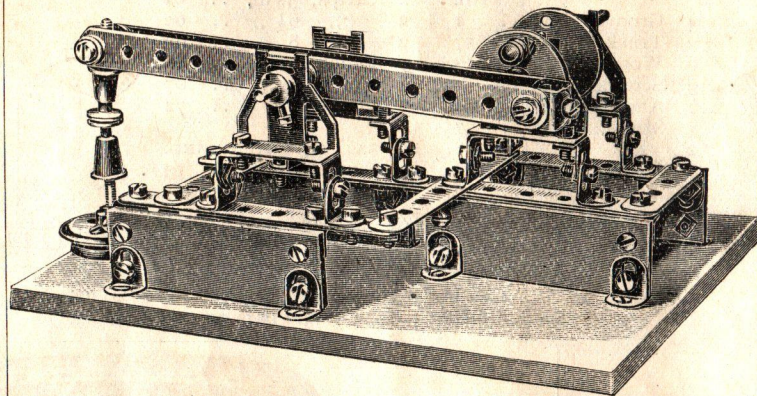
The side rails of bridge are composed of two 5½-in. strips, bolted together.



STAIRCASE WITH LANDING No. 186

11	Slips	..	..	..	No. 25
50	Screws	..	..	..	50
2	Angle bars, 8 in.	..	..	..	54
2	Strips, 2 in.	..	..	..	56
2	" 3 "	..	..	..	58
6	" 8 "	..	..	..	63
18	Brackets..	..	..	..	66
1	Plate, 3 × 3 in.	..	..	..	68

The brackets fit to the front holes of the No. 25 slips.
Washers are put over the 4 screws that bolt the metal plate in to keep it square.



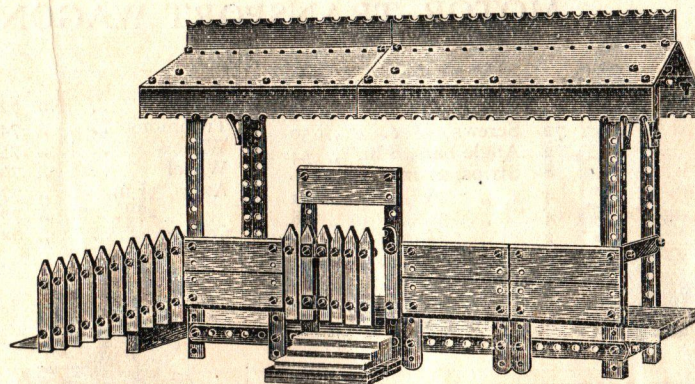
HAMMER WORKED BY CAM ACTION No. 192

4	Slips	..	..	No. 25	1	Axle, 2½ in.	..	No. 78
54	Screws	..	..	50	6	Collars	..	82
1	Strip, 2 in.	..	..	56	1	Handle	..	83
1	" 2½ "	..	..	57	10	Washers	..	84
1	" 3 "	..	..	58	2	Buffers	..	85
2	Strips, 4 "	..	..	60	1	Knob screw	..	92
3	" 6½ "	..	..	62	6	Wood screws..	..	97
28	Brackets	..	..	66	The knob screw for the eccentric action should be double nutted into the wheel.			
4	Trunnions	..	..	74				
1	Wheel..	..	..	75				
2	Wheels	..	..	76				

PRIMUS ENGINEERING

BRITISH MADE

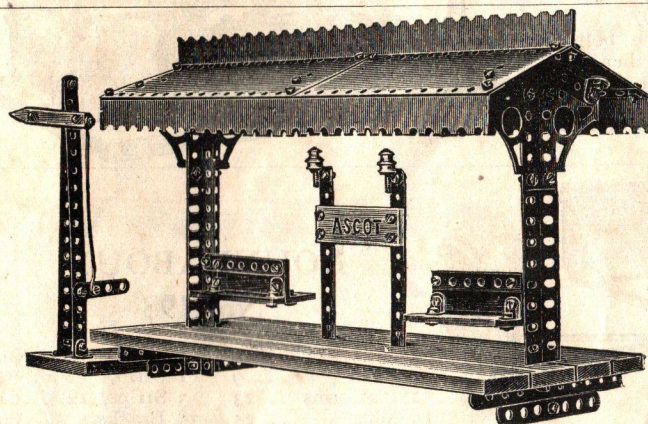
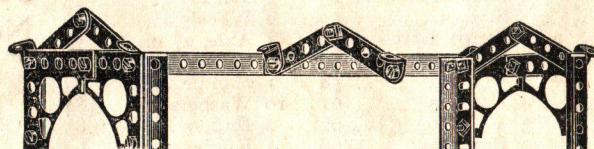
SIDE STATION No. 180



16	Posts ..	..	..	No. 11
1	Step ..	..	..	" 21
1	Slope ..	..	..	" 22
3	Platforms ..	..	..	" 23
7	Slips ..	..	..	" 25
88	Screws ..	..	..	" 50
4	Angle bars, 8 in.	..	..	" 54
4	Strips, 2 in.	..	..	" 56
6	" 2½ "	..	..	" 57
4	" 3½ "	..	..	" 59
3	" 4 "	..	..	" 60
4	" 5½ "	..	..	" 61
3	" 12½ "	..	..	" 64
7	Brackets ..	..	..	" 66
4	Plates, 8 × 3 in.	..	..	" 67
1	Tile, 6½ in.	..	..	" 69
1	" 8 "	..	..	" 70
4	Eaves, 8 in.	..	..	" 71
2	Hinges ..	..	..	" 72
1	Catch ..	..	..	" 95

COMPOSITION OF ROOF FRAME

1. Study this diagram carefully and note how the brackets are put on—this is important.
2. The whole roof, with ridge tiles and eaves, should be bolted up before it is fitted on the framework.

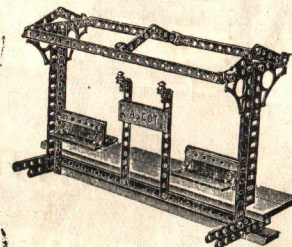


ISLAND STATION No. 183

4	Platforms ..	..	..	No. 23
7	Slips ..	..	..	" 25
72	Screws ..	..	..	" 50
4	Angle bars, 8 in.	..	..	" 54
6	Strips, 2½ in.	..	..	" 57
4	" 4 "	..	..	" 60
4	" 5½ "	..	..	" 61
3	" 12½ "	..	..	" 64
4	Architraves ..	..	..	" 65
22	Brackets ..	..	..	" 66
4	Plates, 8 × 3 in.	..	..	" 67
1	Tile, 6½ in.	..	..	" 69
1	" 8 "	..	..	" 70
4	Eaves, 8 in.	..	..	" 71
2	Lamps ..	..	..	" 87

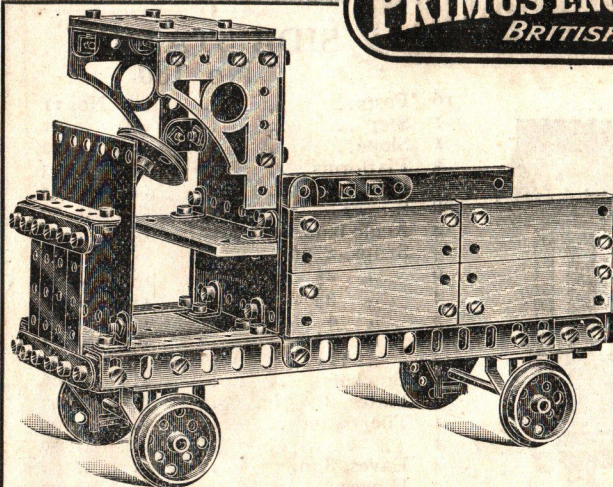
HOW TO FIT ON THE ROOF

The 12½ inch strip below the platform must be fitted between the angle bars. Note position of brackets for securing roof to frame. The name of station can be painted on a wood slip to suit locality.



PRIMUS ENGINEERING

BRITISH MADE



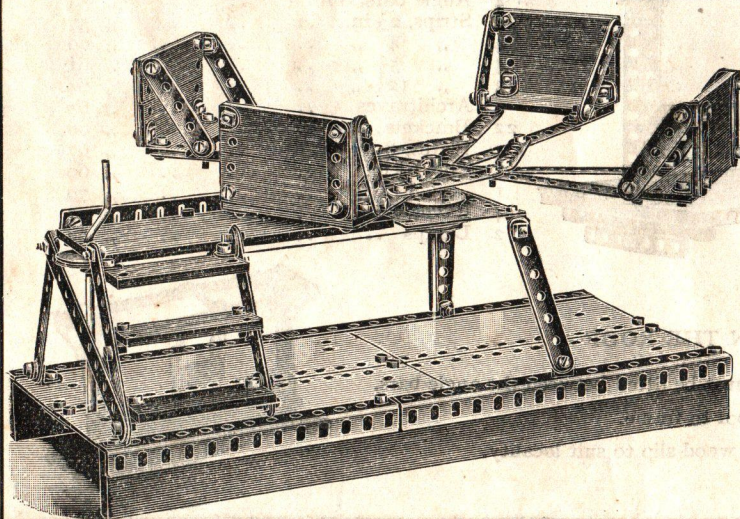
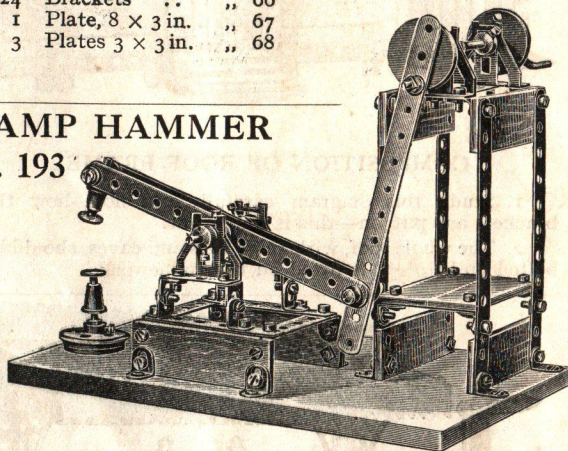
MOTOR TRANSPORT WAGON No. 202

14 Slips ..	No. 25	2 Hinges ..	No. 72
72 Screws ..	50	4 Trunnions ..	74
2 Angle bars, 8 in.	54	4 Wheels ..	75
8 Strips, 2 in.	56	1 Wheel ..	76
4 " 2½ "	57	2 Axles, 3½ in.	77
4 " 3 "	58	1 " 2½ "	78
2 " 3½ "	59	2 Collars ..	82
2 Architraves ..	65		
24 Brackets ..	66		
1 Plate, 8 × 3 in.	67		
3 Plates 3 × 3 in.	68		

		No.			No.
8	Slips ..	25	1	Wheel ..	75
54	Screws ..	50	2	Wheels ..	76
2	Strips, 2 in. ..	56	1	Axle, 2½ in. ..	78
2	" 2½ " ..	57	6	Collars ..	82
2	" 3 " ..	58	1	Handle ..	83
4	" 5½ " ..	61	10	Washers ..	84
3	" 6½ " ..	62	2	Buffers ..	85
30	Brackets ..	66	2	Knob screws ..	92
4	Trunnions ..	74	8	Wood screws ..	97

FITTING CRANK ARM.—A knob screw should be bolted through the pulley wheel, then a washer put on, then the crank arm and another washer, and lastly double nutted. It should be fitted to the beam in a similar manner. The table below shafting is supported on 2-in. strips, which cannot be seen in the illustration.

STAMP HAMMER No. 193



ROUNDAABOUT No. 198

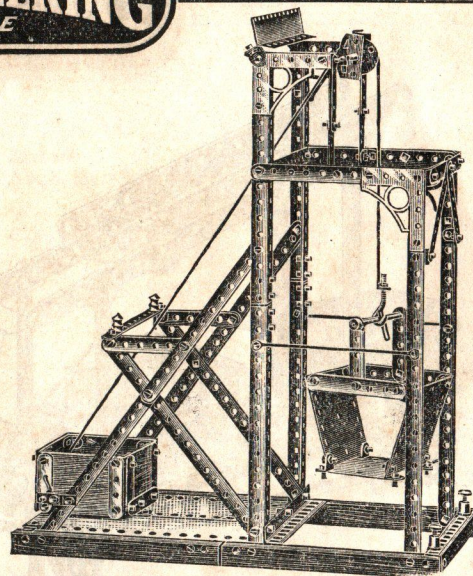
	No.		No.
1 Floor ..	9	1 Strip, 8 in.	63
2 Platforms ..	23	3 Strips, 12 "	64
15 Slips ..	25	38 Brackets ..	66
95 Screws ..	50	4 Plates, 8 × 3 in.	67
2 Angle bars,		1 Plate, 3 × 3 in.	68
6½ in.	53	1 Wheel ..	75
3 " 8 "	54	3 Wheels ..	76
8 Strips, 2 in.	56	1 Axle, 3½ in.	77
8 " 2½ "	57	1 Collar ..	82
4 " 3 "	58	2 Washers ..	84
4 " 3½ "	59	1 Handle ..	83
2 " 4 "	60	6 Wood screws	97
3 " 5½ "	61		

PRIMUS ENGINEERING

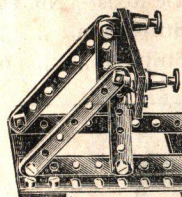
BRITISH MADE

PIT HEADGEAR No. 203

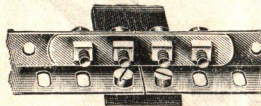
4	Side rails ..	No. 1	2	Plates, 8×3 in.	No. 67
6	Slips ..	" 25	3	" 3×3 in.	" 68
114	Screws ..	" 50	1	Tile, 6½ in.	" 69
2	Angle bars, 6½ in.	" 53	1	Hinge ..	" 72
4	" 8 "	" 54	2	Trunnions ..	" 74
8	Strips, 2 in.	" 56	1	Wheel ..	" 76
8	" 2½ "	" 57	2	Axles, 3½ in.	" 77
3	" 3 "	" 58	4	Collars ..	" 82
5	" 3½ "	" 59	1	Handle ..	" 83
2	" 4 "	" 60	10	Washers ..	" 84
4	" 5½ "	" 61	2	Buffers ..	" 85
4	" 6½ "	" 62	1	Coupling ..	" 86
5	" 8 "	" 63	2	Lamps ..	" 87
3	" 12½ "	" 64	1	Catch ..	" 95
4	Architraves ..	" 65	2	Rods ..	" 96
32	Brackets ..	" 66	2	Wood screws ..	" 97



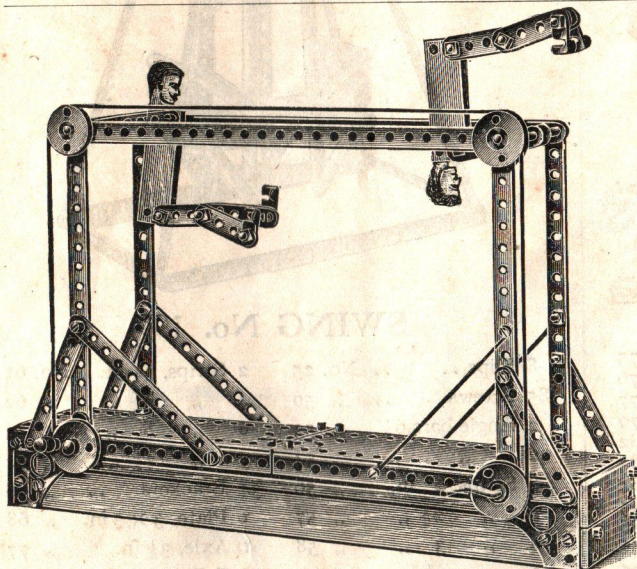
REALISTIC RAILWAY TRACK No. 205



This illustration shows how to build railway track. Use angle bars for the rails and bolt to No. 25 slips. Use metal strips to form the curves, bolting to the 25 slips by brackets.



Shows how the rails are joined together.



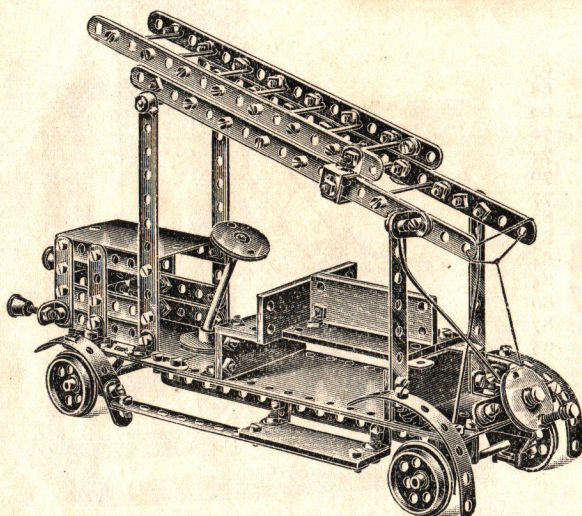
DOUBLE BAR PERFORMERS No. 206

	No.		No.
2 Platforms ..	23	12 Brackets ..	66
6 Slips ..	25	2 Plates, 8 × 3 in.	67
53 Screws ..	50	4 Wheels ..	76
4 Angle bars, 8 in.	54	2 Axles, 3½ in.	77
8 Strips, 2 in.	56	5 Collars ..	82
8 " 2½ "	57	1 Handle ..	83
2 " 3½ "	59	8 Washers ..	84
2 " 4 "	60	1 Lamp ..	87
2 " 5½ "	61	1 Knob ..	92
4 " 8 "	63	4 Catches ..	95
2 " 12½ "	64	2 Posts ..	96
4 Architraves	65	4 Wood screws	97

Heads of men cut from cardboard. A slit in wood should be made to wedge heads in.

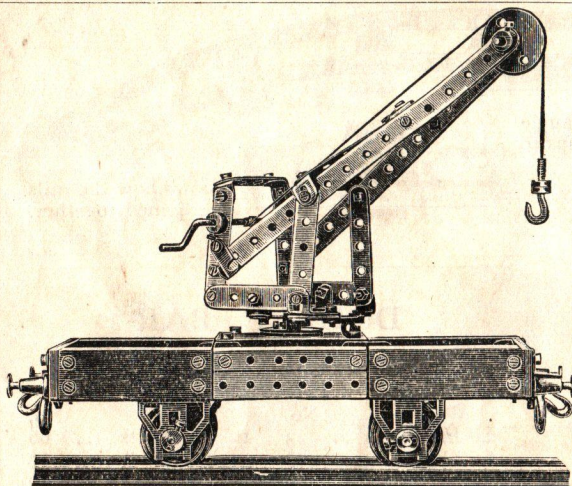
PRIMUS ENGINEERING

BRITISH MADE



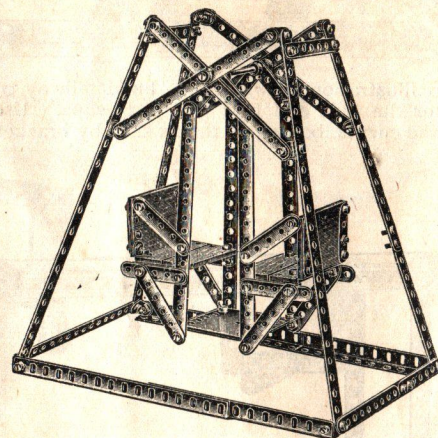
FIRE ESCAPE No. 207

8	Slips	..	No. 25	2	Plates 3×3 in.	No. 68
118	Screws	..	„ 50	4	Trunnions	„ 74
	2 Angle Bars,	8 in.	„ 54	4	Wheels	.. „ 75
10	Strips,	2	„ „ 56	3	„	.. „ 76
3	„	2½	„ „ 57	2	Axle Rods 3½ in.	„ 77
6	„	3	„ „ 58	5	Collars	.. „ 82
2	„	3½	„ „ 59	8	Washers	.. „ 84
4	„	4	„ „ 60	4	Buffers	.. „ 85
2	„	5½	„ „ 61	2	Rods	.. „ 96
2	„	6½	„ „ 62	Additional Parts		
4	„	8	„ „ 63	14	Tie Rods	No. 155
35	Brackets		„ 66	2	Strips, 3 in.	„ 58
1	Plate, 8×3 in.		67	1	Strip, 4	„ 60



CRANE TRUCK No. 189

6 Slips .. No. 25	4 Wheels .. No. 75
63 Screws .. " 50	2 " .. 76
2 Angle bars, 8 in. .. 54	2 Axles, $3\frac{1}{2}$ in. .. 77
5 Strips, 2 in. .. 56	1 " $1\frac{1}{2}$ " .. 79
8 " $2\frac{1}{2}$ " .. 57	8 Collars .. 82
2 " 4 " .. 60	1 Handle .. 83
2 " 8 " .. 63	12 Washers .. 84
19 Brackets .. 66	4 Buffers .. 85
3 Plates, 3×3 in. .. 68	2 Couplings .. 86
4 Trunnions .. 74	1 Knob screw .. 92
	1 Catch .. 95

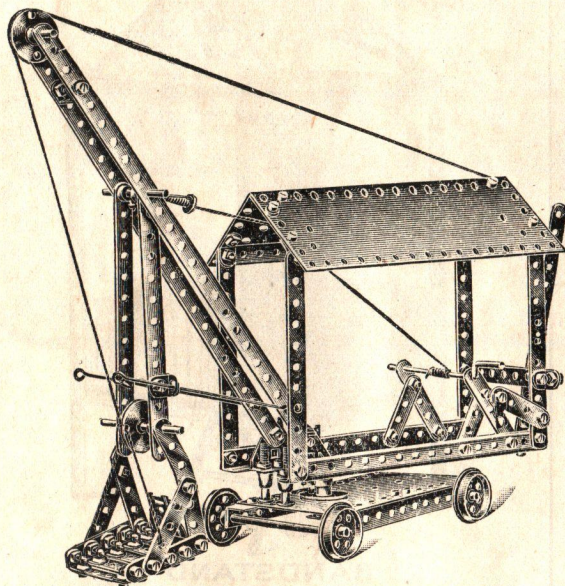


SWING No. 199

8 Slips .. No. 25	2 Strips, $5\frac{1}{2}$ in. No. 61
85 Screws .. " 50	4 " $6\frac{1}{2}$ " .. 62
2 Angle bars, $6\frac{1}{2}$ " .. 53	6 " 8 " .. 63
2 " " .. 54	3 " $12\frac{1}{2}$ " .. 64
8 Strips, 2 in. .. 56	34 Brackets .. 66
6 " $2\frac{1}{2}$ " .. 57	1 Plate, 3×3 in. .. 68
4 " 3 " .. 58	1 Axle, $3\frac{1}{2}$ in. .. 77
3 " $3\frac{1}{2}$ " .. 59	6 Collars .. 82

PRIMUS ENGINEERING

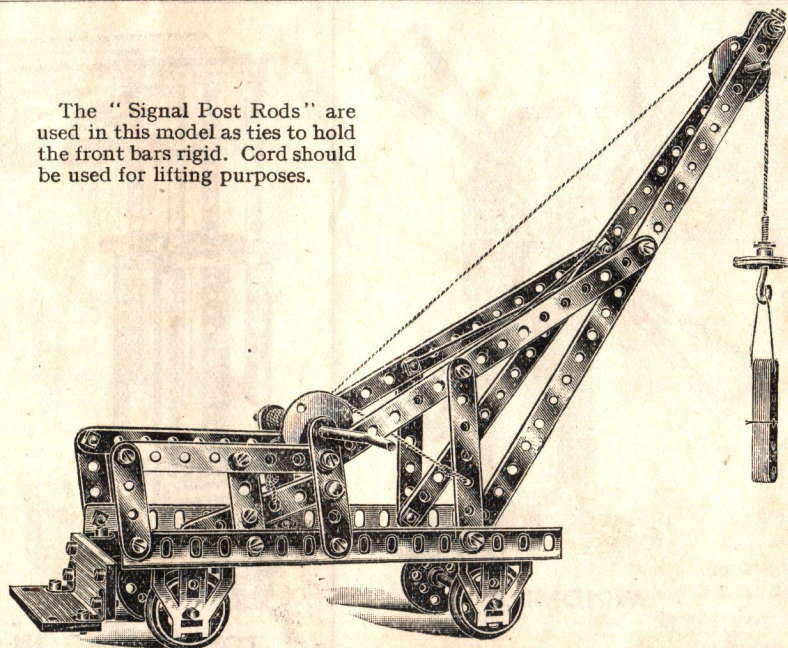
BRITISH MADE



STEAM NAVVY No. 208

78	Screws ..	..	..	..	No. 50
2	Angle Bars, 6½ in.	..	..	..	53
2	" 8 "	..	..	..	54
2	" 12 "	..	..	..	55
3	Strips, 2 in.	..	..	..	56
9	" 2½ "	..	..	..	57
2	" 3½ "	..	..	..	59
1	" 4 "	..	..	..	60
4	" 5½ "	..	..	..	61
3	" 6½ "	..	..	..	62
2	" 12½ "	..	..	..	64
18	Brackets ..	..	..	..	66
3	Plates, 8×3 in.	..	..	..	67
2	" 3×3 "	..	..	..	68
4	Trunnions ..	..	..	..	74
4	Wheels ..	..	..	..	75
4	" ..	..	..	..	76
2	Axles, 3½ in.	..	..	..	77
1	" 2½ "	..	..	..	78
1	" 1½ "	..	..	..	79
5	Collars ..	..	..	..	82
1	Handle ..	..	..	..	83
9	Washers ..	..	..	..	84
3	Buffers ..	..	..	..	85
1	Coupling ..	..	..	..	86
1	Catch ..	..	..	..	95
2	Rods ..	..	..	..	96

The "Signal Post Rods" are used in this model as ties to hold the front bars rigid. Cord should be used for lifting purposes.

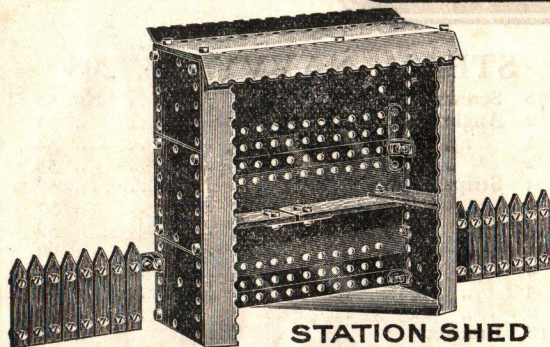


CRANE ON WHEELS No. 190

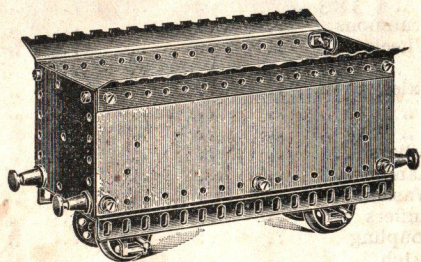
2	Slips, 3×1 in.	No. 25
36	Screws ..	50
2	Angle bars, 8 in.	54
3	Strips, 2 in.	56
2	" 2½ "	57
1	" 3 "	58
2	" 3½ "	59
2	" 4 "	60
2	" 8 "	63
2	" 12½ "	64
7	Brackets ..	66
1	Plate ..	67
4	Trunnions ..	74
4	Wheels ..	75
3	" ..	76
2	Axles, 3½ in.	77
1	" 1½ "	78
1	Collar ..	82
1	Handle ..	83
11	Washers ..	84
1	Coupling ..	85
1	Knob screw ..	92
2	Rods ..	96

PRIMUS ENGINEERING

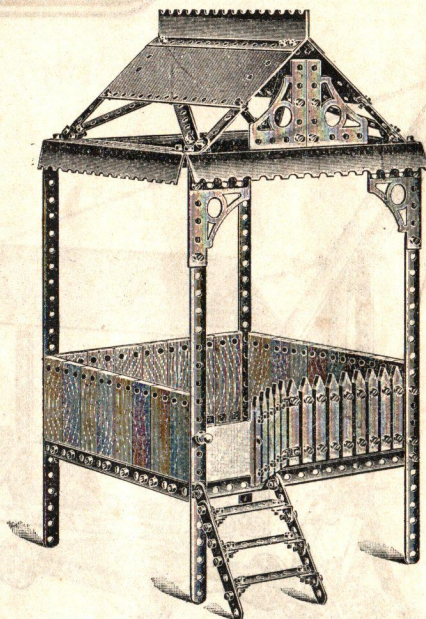
BRITISH MADE



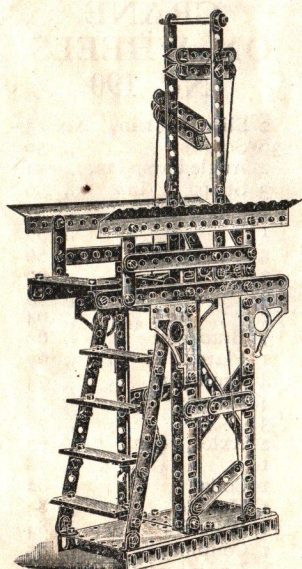
STATION SHED



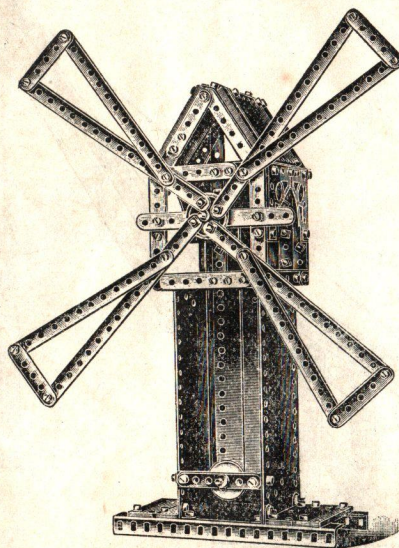
COAL TRUCK



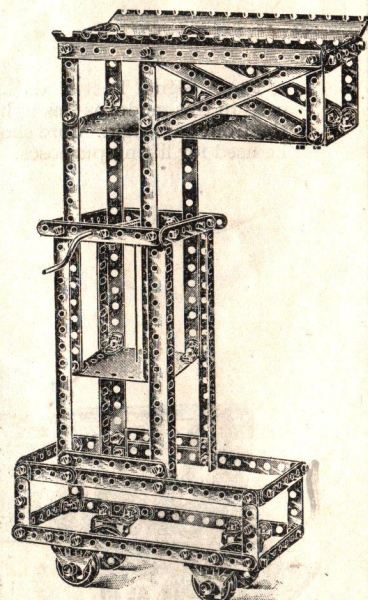
BANDSTAND



SIGNAL GANTRY



WINDMILL



TOWER WAGON

These models are made with

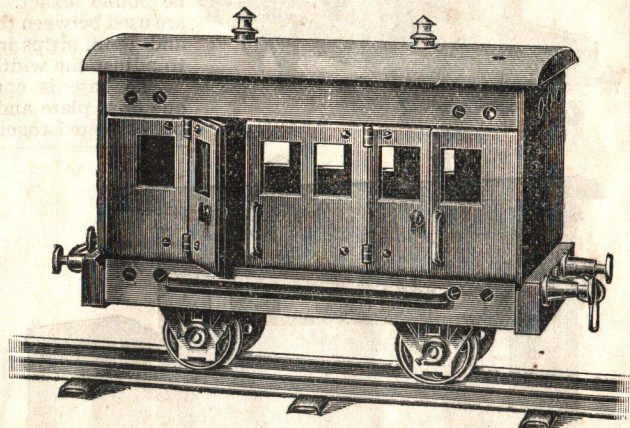
PRIMUS ENGINEERING

Nº 4 OUTFIT

PRICE 37/6

PASSENGER COACH No. 254

2	Side rails	..	..	..	..	No. 1
2	"	..	..	..	..	" 2
2	Carriage ends	..	..	..	..	" 3
2	Blocks	..	..	..	..	" 4
2	Windows	..	..	..	..	" 5
2	"	..	..	..	..	" 6
4	Doors	..	..	..	..	" 7
2	"	..	..	..	..	" 8
1	Floor	..	..	..	..	" 9
1	Roof	..	..	..	..	" 10
4	Doors	..	..	..	..	" 16
40	Screws	..	..	..	..	" 50
2	Angle bars, 6½ in.	..	..	..	..	" 53
3	Strips, 2½ in.	..	..	..	..	" 57
4	" 3½ "	..	..	..	..	" 59
2	" 6½ "	..	..	..	..	" 62
14	Brackets	..	..	..	..	" 66
8	Hinges	..	..	..	..	" 73
4	Trunnions	..	..	..	..	" 74
4	Wheels	..	..	..	..	" 75
2	Axles, 2¾ in.	..	..	..	..	" 78
4	Collars	..	..	..	..	" 82
4	Washers	..	..	..	..	" 84
4	Buffers	..	..	..	..	" 85
2	Couplings	..	..	..	..	" 86
2	Lamps	..	..	..	..	" 87
4	Handles	..	..	..	..	" 88
4	Turnbuttons	..	..	..	..	" 89
4	Side rails	..	..	..	..	" 90
16	Screws and nuts	..	..	..	..	" 91



(1) Make up the whole metal frame and be careful in fixing brackets.

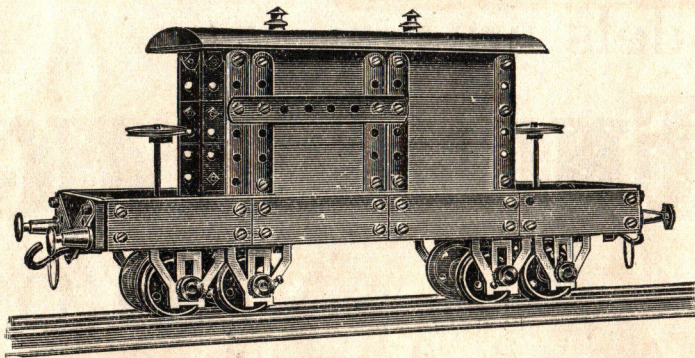
(2) Fit on side rails, one buffer block and one end.

(3) Slide windows and doors in the grooves—put in floor.

(4) Fix on second buffer block and then the second end. The screw for fastening this should be put in, and the nut carefully adjusted inside by opening the two doors and sliding the windows along to give space. The floor is fitted in same as in Heavy Goods Truck, page 29.

PRIMUS ENGINEERING

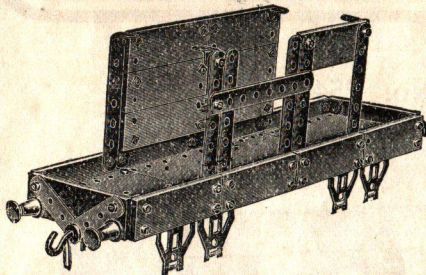
BRITISH MADE



DOUBLE BRAKE

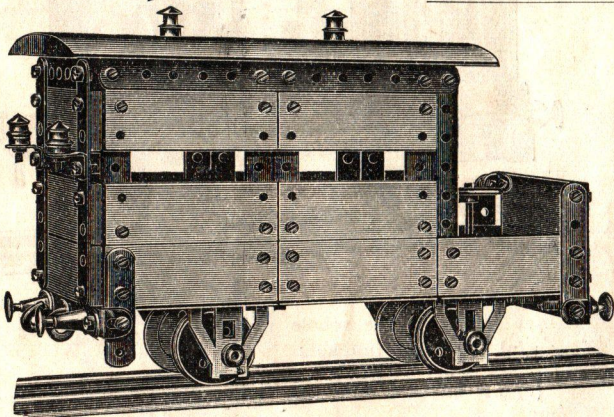
VAN No. 256

1	Roof	No. 10
22	Wood slips, 3 × 1 in. ..	25
84	Screws	50
2	Angle bars, 12 in. ..	55
4	Strips, 2 in. ..	56
10	" 3½ " ..	59
2	" 4 " ..	60
12	Brackets	66
1	Metal plate, 8 × 3 in. ..	67
2	" plates, 3 × 3 " ..	68
8	Trunnions	74
8	Flanged wheels	75
2	Grooved wheels	76
4	Axle rods, 3½ in. ..	77
2	" 2½ " ..	78
12	Collars	82
12	Washers	84
4	Buffers	85
2	Coupling hooks	86
2	Lamps	87



Fit the No. 25 slips inside the frame; this is important, as the roof screw-holes are 2 in. centres, and by fixing the brackets inside the wood body at back this width will be found exact. Washers are used between the brackets and 3½-in. strips in the front to adjust the width.

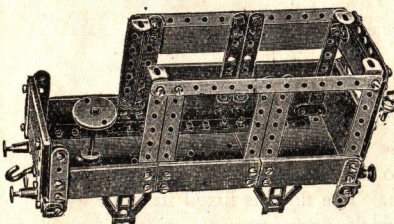
The base is composed of one 8-in. plate and two 3-in. plates bolted together.



SINGLE BRAKE VAN

No. 257

1	Roof	No. 10
19	Wood slips, 3 × 1 in. ..	25
72	Screws	50
2	Angle bars, 8 in. ..	54
4	Strips, 2 in. ..	56
2	" 2½ " ..	57
2	" 3 " ..	58
12	" 3½ " ..	59
3	" 4 " ..	60
2	" 6½ " ..	62
16	Brackets	66
3	Metal plates, 3 × 3 in. ..	68
4	Trunnions	74
4	Flanged wheels	75
1	Grooved wheel	76
2	Axles, 3½ in. ..	77
1	Axle, 2½ " ..	78
6	Collars	82
18	Washers	84
4	Buffers	85
2	Coupling hooks	86
4	Lamps	87

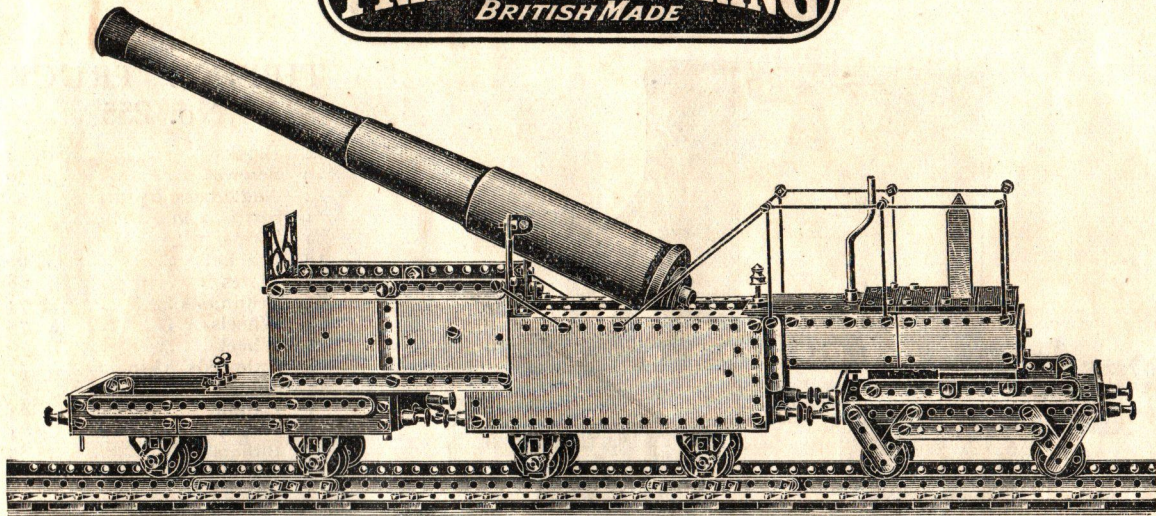


Build the chassis like Truck No. 113 on page 29. The No. 25 slips are fitted OUTSIDE the frame, and washers are used to adjust the brackets to fit roof.

The base plates are bolted on to the angle bars BELOW, and secured by the screws that fix the trunnions.

PRIMUS ENGINEERING

BRITISH MADE



LONG RANGE NAVAL GUN ON RAILWAY TRUCKS No. 270

19	Wood slips, 3 x 1 in.	..	..	..	No. 25	13	Collars	..	..	..	..	No. 82
139	Screws	..	..	..	50	1	Handle	..	..	..	..	83
2	Angle bars, 6 in.	..	..	..	53	14	Washers	..	..	..	..	84
4	" 8 "	..	..	..	54	4	Buffers	..	..	..	..	85
2	" 12 "	..	..	..	55	3	Couplings	..	..	..	..	86
10	Metal strips, 2 in.	..	..	..	56	4	Lamps	..	..	..	..	87
4	" 2½ "	..	..	..	57	3	Knob screws	..	..	..	..	92
8	" 3 "	..	..	..	58	2	Signal rods	..	..	..	..	96
2	" 3½ "	..	..	..	59	2	Wood screws	..	..	..	..	97
2	" 5½ "	..	..	..	61	EXTRA PARTS REQUIRED.						
4	" 6½ "	..	..	..	62	2	Axles, 3½ in.	..	..	..	..	77
2	" 8 "	..	..	..	63	3	Collars	..	..	..	..	82
40	Brackets	..	..	..	66	8	Buffers	..	..	..	..	85
4	Metal plates, 8 x 3 in.	..	..	..	67	SPECIAL PARTS REQUIRED.						
11	" 3 x 3 "	..	..	..	68	14	Wire stays	..	..	..	..	155
8	Trunnions	..	..	..	74	1	Pulley wheel	..	..	..	..	158
8	Flanged wheels	..	..	..	75							
4	Pulley wheels	..	..	..	76							
4	Axles, 3½ in.	..	..	..	77							

(1) Make each truck separately and then couple up.

(2) The firing platform is made by bending the No. 68 plates.

(3) The Gun can be made of paper or a piece of wood can be turned to shape ; fix with wood screws.

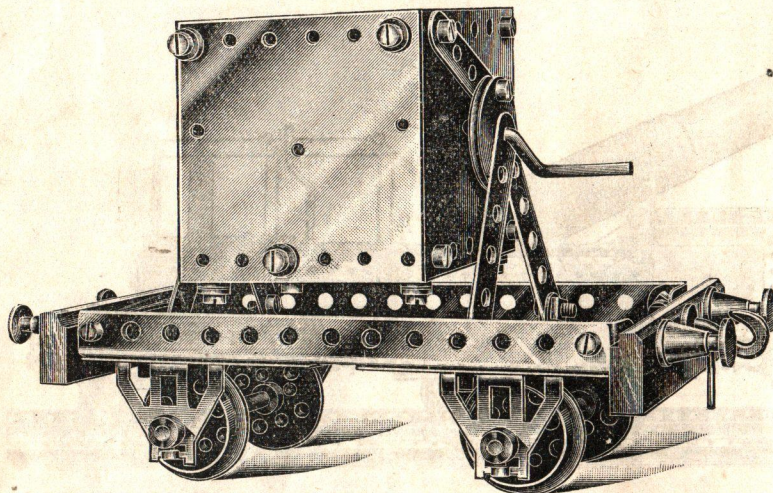
(4) By means of a cord attached to the gun, passing through a bracket in the base of large truck, and thence to the winding handle the gun can be elevated to any desired angle.

PARTS FOR BUILDING RAILWAY TRACK

17	Wood slips, 3 x 1 in.	..	..	..	No. 25	4	Angle bars, 12 in.	..	..	..	No. 55
84	Screws	..	..	..	50	4	Metal strips, 4 in.	..	..	..	60
2	Angle bars, 8 in.	..	..	..	54						

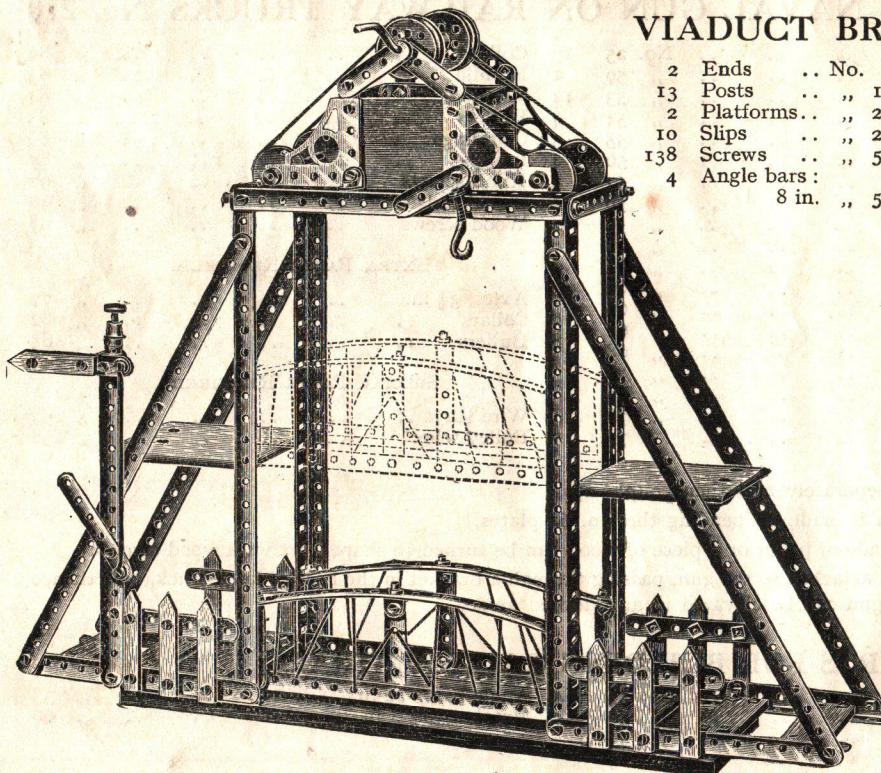
PRIMUS ENGINEERING

BRITISH MADE



TIPPING TRUCK No. 255

2	Blocks	..	..	No. 4
39	Screws	..	..	50
2	Angle bars, 6½ in.	..	..	53
1	Strip, 2 in.	..	..	56
4	Strips, 3 "	..	..	58
18	Brackets	..	..	66
7	Plates	..	..	68
4	Trunnions	..	..	74
4	Wheels	..	..	75
1	Wheel	..	..	76
2	Axle rods, 3½ in.	..	..	77
5	Collars	..	..	82
1	Handle	..	..	83
28	Washers	..	..	84
4	Buffers	..	..	85
2	Couplings	..	..	86



VIADUCT BRIDGE No. 268

2	Ends	..	No. 3	2	Angle bars:		
13	Posts	..	11		12 in.	No. 55	
2	Platforms..	..	23	9	Strips, 2 in.	..	56
10	Slips	..	25	8	" 2½ "	..	57
138	Screws	..	50	7	" 3 "	..	58
4	Angle bars:			13	" 3½ "	..	59
	8 in.	..	54	3	" 4 "	..	60
				4	" 5½ "	..	61
				4	" 6½ "	..	62
				5	" 8 "	..	63
				3	" 12½ "	..	64
				4	Architraves	..	65
				27	Brackets	..	66
				1	Plate	..	67
				4	Wheels	..	75
				4	"	..	76
				2	Axles, 3½ in.	..	77
				6	Collars	..	82
				1	Handle	..	83
				34	Washers	..	84
				1	Buffer	..	85
				1	Coupling	..	86
				1	Rod	..	96
				4	Wood screws	..	97

The cord is gripped between the two sets of flanged wheels at the top.

The handle axle must always be turned to the right to raise the bridge.

PRIMUS ENGINEERING

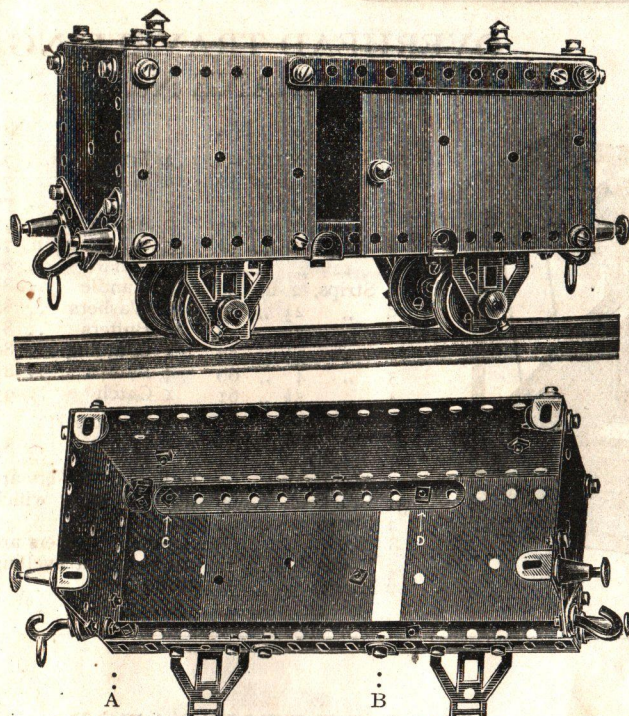
BRITISH MADE

ARMOURED TRUCK No. 261

WITH SLIDING DOOR.

38 Screws ..	No. 50	2 Axles, 3½ in.	No. 77
2 Angle bars, 8 in.	54	4 Collars ..	82
4 Strips, 2 in.	56	34 Washers ..	84
4 " 5½ "	61	4 Buffers ..	85
16 Brackets ..	66	2 Couplings ..	86
2 Plates ..	67	2 Lamps ..	87
8 " ..	68	2 Knobscrews ..	92
4 Wheels ..	75		

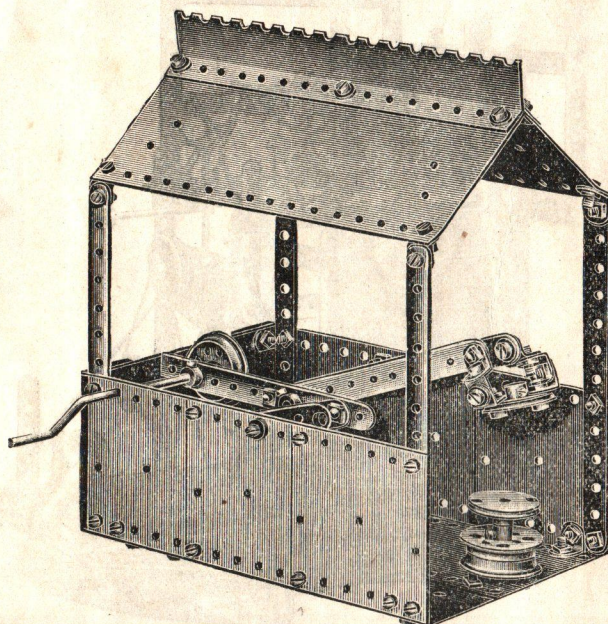
- (1) Fix Trunnions on angle bars.
- (2) Fix up the two ends, fix buffers and a washer beneath each; see that the brackets are right way; put two washers beneath each screw in the corners; then fit 2 in. strips and coupling hooks.
- (3) Fit on the plates for one side, and note when fixing the 5½ in. strips one goes inside and one out, and washers must be put between the inside strip, at C and D, and the 3×3 in. plates, so as to allow for the door to slide in, also washers must be put between plates and angle bars at A and B.
- (4) Fix on roof with lamps, and lay floor loose inside.
- (5) Fit on second angle bar and remainder of 2-in. side. The second door can then be slipped in the groove and secured by the two angle brackets. Knob screws for handles can be fixed last, and the floor will rest on the screws of buffers. Wheels are fitted as in other models.



AUTOMATIC HAMMER IN SHED No. 265

2 Slips..	..	..	No. 25
70 Screws	..	..	50
5 Strips, 2 in.	..	..	56
3 " 2½ "	..	..	57
1 Strip, 3 "	..	..	58
1 " 3½ "	..	..	59
2 Strips, 5½ "	..	..	61
4 " 6½ "	..	..	62
24 Brackets	..	..	66
4 Plates, 8×3 in.	..	..	67
7 " 3×3 "	..	..	68
1 Ridge, 8 in.	..	..	70
3 Wheels	..	..	75
2 " ..	..	..	76
1 Axle, 3½ in.	..	..	77
1 " 2 "	..	..	79
7 Collars	..	..	82
1 Axle	..	..	83
19 Washers	..	..	84

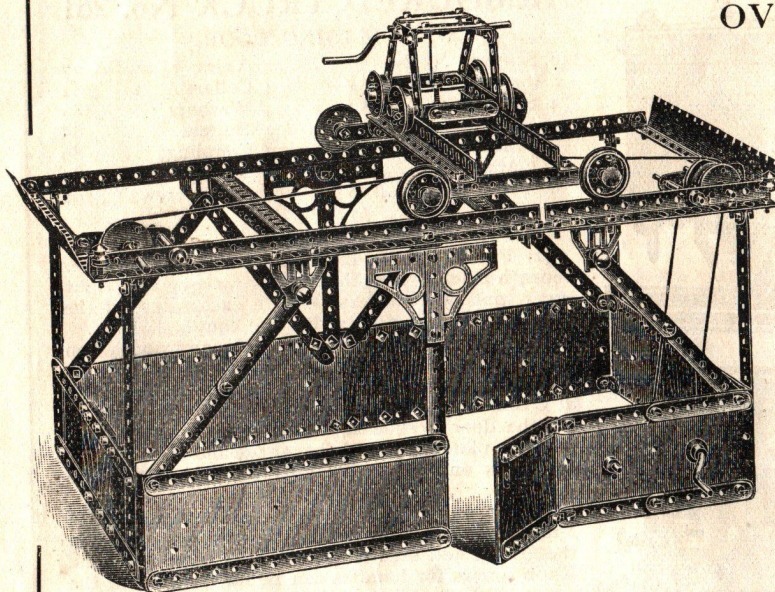
The hammer works on a similar principle to that illustrated on page 27.



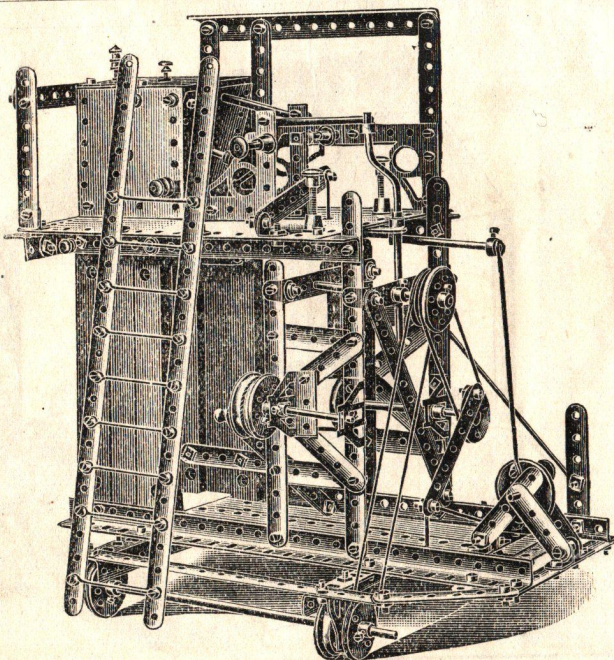
PRIMUS ENGINEERING

BRITISH MADE

OVERHEAD TRAVELLING CRANE No. 267



No.		No.	
12	Slips, 3 × 1 in.	25	4 Trunnions .. 74
44	Screws ..	50	8 Wheels .. 75
2	Angle bars :	4	" .. 76
	6½ in. ..	53	2 Axles, 3½ in. .. 77
4	" 8 " ..	54	5 " 2½ in. .. 78
2	" 12 " ..	55	11 Collars .. 82
10	Strips, 2 in.	56	1 Handle .. 83
8	" 2½ " ..	57	36 Washers .. 84
8	" 3 " ..	58	4 Buffers .. 85
14	" 3½ " ..	59	1 Coupling .. 86
3	" 4 " ..	60	4 Lamps .. 87
4	" 5½ " ..	61	1 Catch .. 95
4	" 6½ " ..	62	Extra part :
6	" 8 " ..	63	1 Handle .. 83
3	" 12½ " ..	64	
4	Architraves	65	Collars of buffers are used on lower winch gear.
31	Brackets ..	66	Screws of buffers are used on travelling trolley.
2	Plates ..	67	
8	" ..	68	
2	Eaves, 8 in.	71	
2	Hinges ..	72	



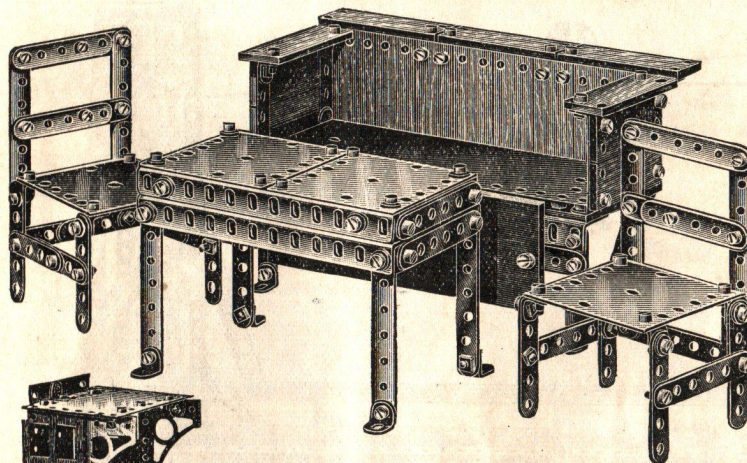
GAS REGENERATOR

No. 269

No.		No.	
4	Side rails ..	1	4 Plates 3 × 3 .. 68
2	Truck sides ..	17	8 Trunnions .. 74
144	Screws ..	50	8 Wheels .. 75
2	Angle bars, 6½ in.	53	4 " .. 76
4	" 8 " ..	54	4 Axles, 3½ in. .. 77
2	" 12 " ..	55	3 " 2½ in. .. 78
9	Strips, 2 in.	56	1 " 1½ " .. 79
6	" 2½ " ..	57	16 Collars .. 82
6	" 3 " ..	58	1 Handle .. 83
7	" 3½ " ..	59	13 Washers .. 84
3	" 4 " ..	60	4 Buffers .. 85
4	" 5½ " ..	61	3 Lamps .. 87
3	" 6½ " ..	62	3 Knob screws .. 92
3	" 8 " ..	63	2 Rods .. 96
2	" 12½ " ..	64	6 Wood screws .. 97
4	Architraves	65	Extra parts :
31	Brackets ..	66	4 Collars .. 82
4	Plates, 8 × 3 ..	67	2 Axles, 8 in. .. 166

PRIMUS ENGINEERING

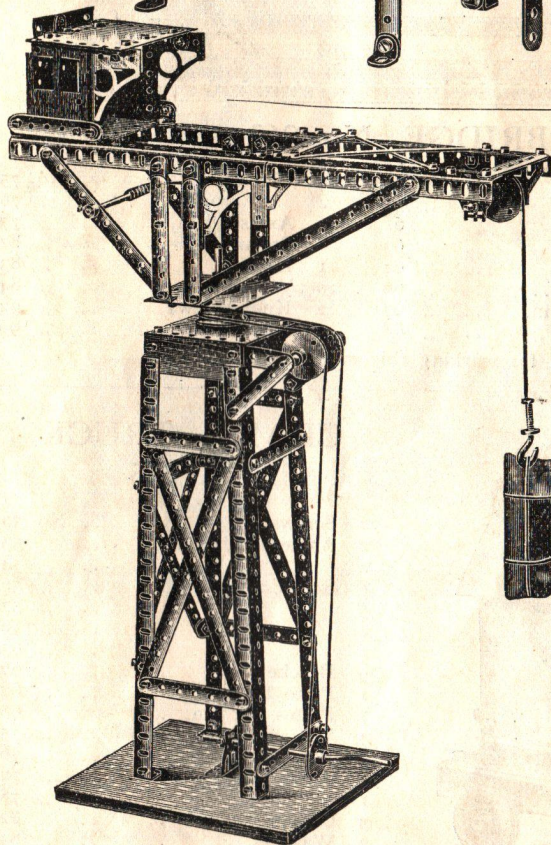
BRITISH MADE



SMOKING LOUNGE No. 309

LOUNGE, TABLE AND TWO CHAIRS.

1	Floor ..	No. 9
25	Slips, 3 x 1 in. ..	25
124	Screws ..	50
4	Angle bars ..	52
2	" " ..	54
16	Strips, 2 in. ..	56
15	" 2½ " ..	57
8	" 3 " ..	58
5	" 3½ " ..	59
3	" 4 " ..	60
48	Brackets ..	66
1	Plate ..	67
6	Plates ..	68
24	Washers ..	84



GIRDER CRANE No. 266

2	Windows ..	No. 8
2	Slips ..	25
86	Screws ..	50
2	Angle bars, 6½ in. ..	53
2	" 8 " ..	54
2	" 12 " ..	55
6	Strips, 2 in. ..	56
2	" 2½ " ..	57
4	" 3 " ..	58
8	" 3½ " ..	59
3	" 4 " ..	60
2	" 5½ " ..	61
2	" 6½ " ..	62
6	" 8 " ..	63
2	" 12½ " ..	64
4	Architraves ..	65
26	Brackets ..	66
7	Plates ..	68
3	Trunnions ..	74
4	Wheels ..	75
3	" ..	76
3	Axles, 3½ in. ..	77
11	Collars ..	82
1	Handle ..	83
20	Washers ..	84
1	Coupling ..	86
4	Screws and nuts ..	91
2	Rods ..	96
6	Wood screws ..	97

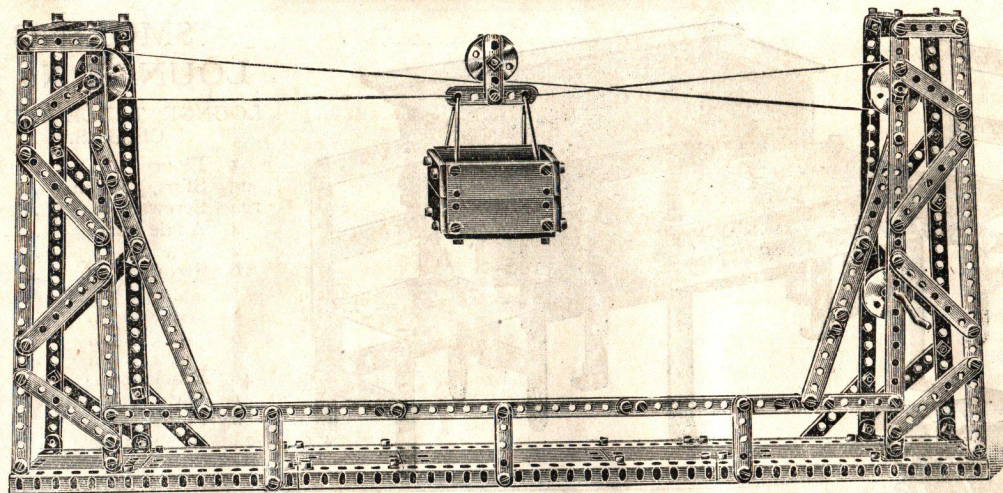
EXTRA PART REQUIRED.

1	Handle ..	83
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This model should be fixed to a wood base by means of the No. 97 wood screws as shown in sketch.

PRIMUS ENGINEERING

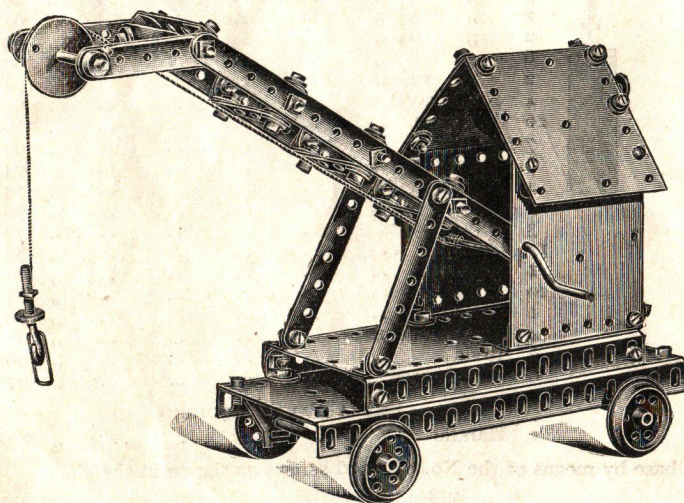
BRITISH MADE



TRANSPORTER BRIDGE No. 262

11	Slips, 3 × 1 in.	..	No. 25	3	Strips, 4 in.	..	No. 60	4	Wheels	..	No. 75
144	Screws	..	" 50	3	" 5½ "	..	" 61	2	"	..	" 76
4	Angle bars, 8 in.	..	" 54	3	" 6½ "	..	" 62	2	Axles, 3½ in.	..	" 77
2	" " 12 in.	..	" 55	6	" 8 "	..	" 63	8	Collars	..	" 82
12	Strips, 2 in.	..	" 56	3	" 12 "	..	" 64	1	Handle	..	" 83
8	" 2½ "	..	" 57	28	Brackets	..	" 66	20	Washers	..	" 84
7	" 3 "	..	" 58	3	Plates, 8 × 3 in.	..	" 67	2	Knob screws	..	" 92
14	" 3½ "	..	" 59	2	" 3 × 3 "	..	" 68	2	Signal rods	..	" 96

Use cord as illustration for working this model.



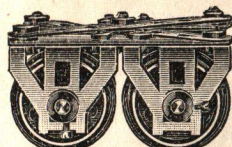
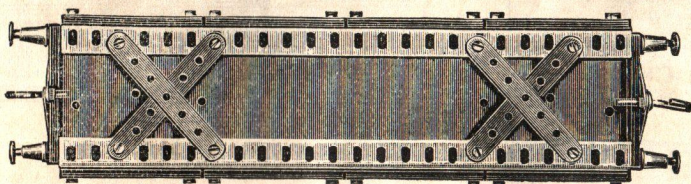
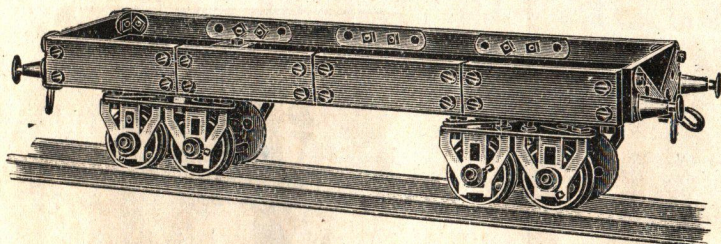
CRANE TRUCK No. 315

72	Screws	..	..	No. 50
2	Angle bars, 6½ in.	..	..	53
2	" " 8 "	..	..	54
8	Strips, 2 in.	..	..	56
5	" 2½ "	..	..	57
2	" 3½ "	..	..	59
2	" 8 "	..	..	63
39	Brackets	..	..	66
1	Plate, 8 × 3 in.	..	..	67
7	Plates, 3 × 3 in.	..	..	68
4	Wheels	..	..	75
1	Wheel	..	..	76
2	Axles, 3½ in.	..	..	77
1	" 2½ "	..	..	78
3	Collars	..	..	82
32	Washers	..	..	84
1	Coupling	..	..	86

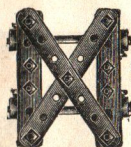
Use cord as illustration.

PRIMUS ENGINEERING

BRITISH MADE



ELEVATION OF BOGIE.



BOGIE FRAME.

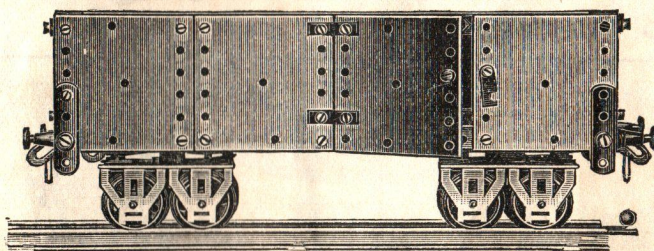
EXPRESS TRUCK ON BOGIES. No. 258

10	Slips, 3 x 1 in.	..	No. 25
64	Screws..	..	" 50
2	Angle bars, 12 in.	..	" 55
10	Strips, 2 in.	..	" 56
4	" 3 "	..	" 58
8	" 3 1/2 "	..	" 59
8	Brackets	..	" 66
1	Plate ..	..	" 67
2	Plates..	..	" 68
8	Trunnions	..	" 74
8	Wheels	..	" 75
4	Axles, 2 3/4 in.	..	" 78
8	Collars..	..	" 82
22	Washers	..	" 84
4	Buffers	..	" 85
2	Couplings	..	" 86
2	Knobs	..	" 92

The Bogie frame is made up with two 3 in. strips for sides and two 3 1/2 in. strips for cross-pieces; washers are set on the screws at opposite corners to level up the cross-strips.

It is secured to the truck through the central holes of end base plates by means of knob screws double nutted, and washers are used on the screws to provide clearance for the truck to swing on the bogies.

EXPRESS COAL TRUCK ON BOGIES. No. 259



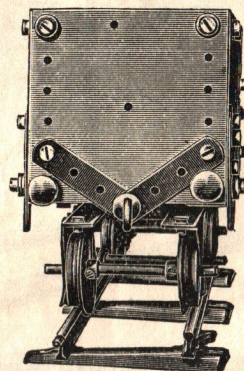
The ends should be fitted to the angle bars first and the sides fitted on afterwards.

The base and frames are made up as on the Express bogie truck.

Washers are again important, and two each are used on the corner screws at ends and lower screws at sides, beneath the buffers and on the knob screws and bogie frames.

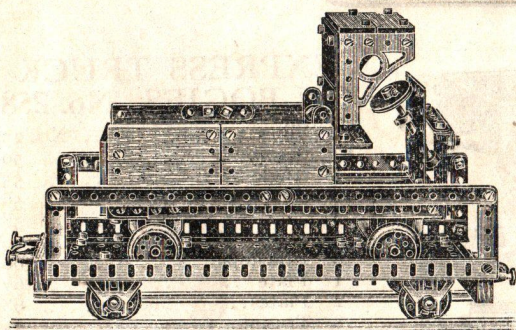
ALL METAL.

66	Screws ..	..	No. 50	8	Flanged wheels	..	No. 75
2	Angle bars, 12 in.	..	" 55	4	Axles, 2 3/4 in.	..	" 78
10	Metal strips, 2 in.	..	" 56	8	Collars	..	" 82
4	" " 3 "	..	" 58	28	Washers	..	" 84
8	" " 3 1/2 "	..	" 59	4	Buffers	..	" 85
8	Brackets ..	..	" 66	2	Coupling hooks	..	" 86
14	Metal plates, 3 x 3 in.	..	" 68	2	Knob screws	..	" 92
4	Straight hinges ..	..	" 72	2	Catches	..	" 95
8	Trunnions..	..	" 74				

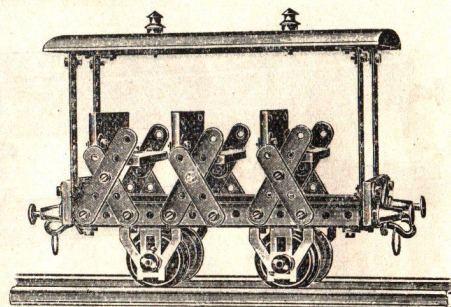


PRIMUS ENGINEERING

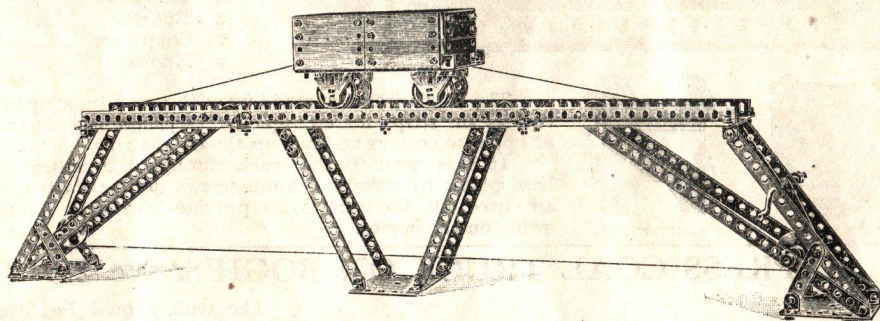
BRITISH MADE



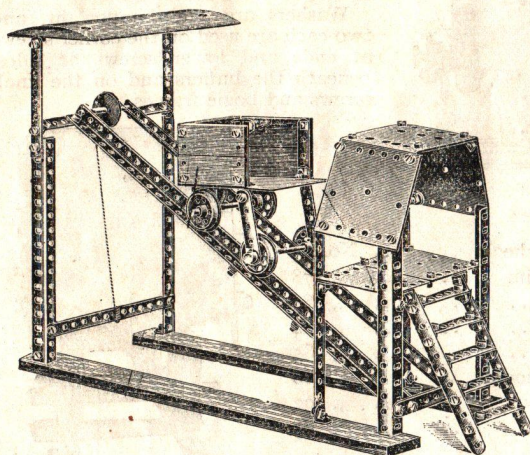
MOTOR TRANSPORT TRUCK



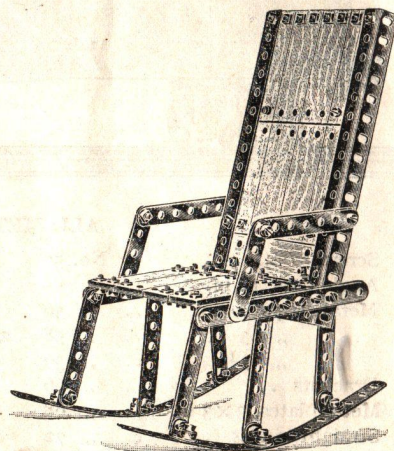
TOURIST CAR



OVERHEAD TRAVELLING TRUCK



MOUNTAIN RAILWAY

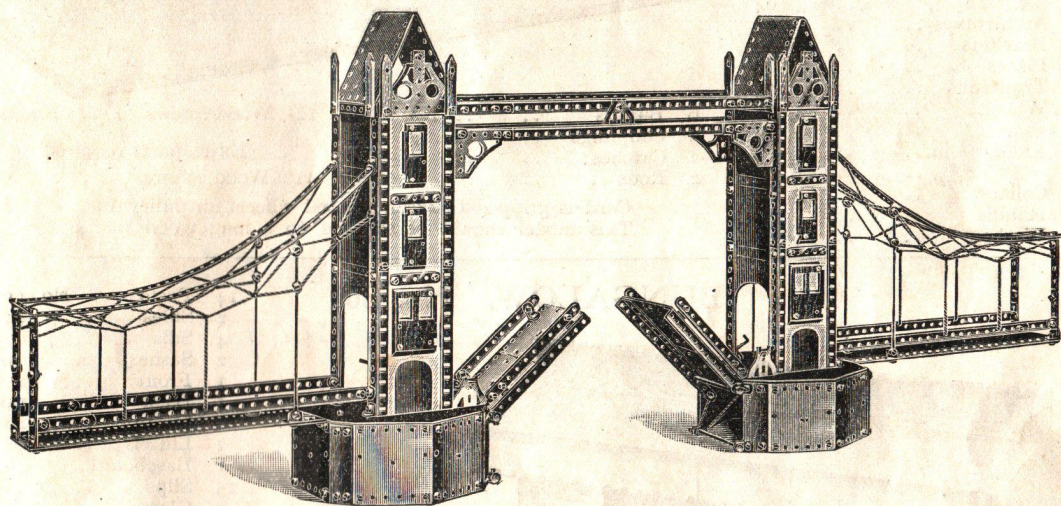


ROCKING CHAIR

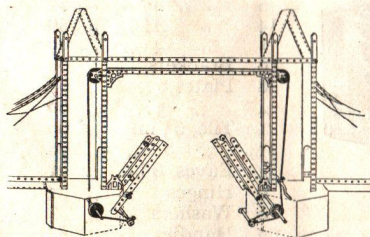
These models are made with
PRIMUS ENGINEERING

Nº 5 OUTFIT

PRICE 50/-



TOWER BRIDGE No. 365.



No.		No.		No.	
4	Carriage doors	7	4	Strips, 5½ in. ..	61
2	Central windows	8	4	„ 6½ „ ..	62
16	Railings ..	11	10	„ 8 „ ..	63
8	Wood slips ..	25	3	„ 12½ „ ..	64
310	Screws ..	50	8	Architraves ..	65
4	Angle bars, 6 in.	52	76	Brackets ..	66
8	„ „ 8 „	54	7	Plates, 8×3 in.	67
2	„ „ 12 „	55	14	„ 3×3 „	68
12	Strips, 2½ in. ..	57	8	Trunnions ..	74
6	„ 3 „ ..	58	4	Grooved wheels	76
14	„ 3½ „ ..	59	4	Axles, 3½ in. ..	77
			12	Collars ..	82
			1	Handle ..	83
			24	Washers ..	84
			12	Door screws ..	91
			4	Rods ..	96
			4	Wood screws ..	97
				<i>Additional Parts.</i>	
			2	Trunnions ..	74
			4	Wire stays ..	154
			2	Tapped axles, 8 in.	166

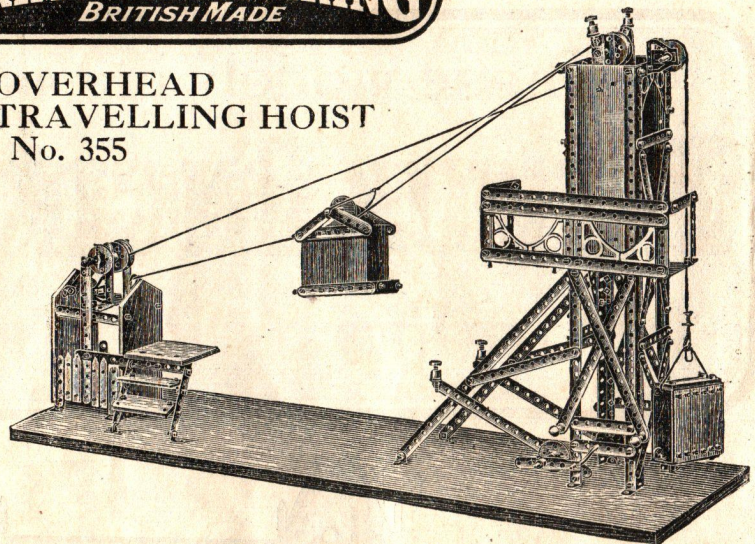
Buttresses should be built first; pulley wheels for raising should be fitted in towers before cardboard fronts are fixed. The windows on the side of the towers are screwed on to the card sides. Card can be cut for top of buttresses.

PRIMUS ENGINEERING

BRITISH MADE

1	End	No. 3
4	Posts	11
2	Sides	14
21	Slips	25
234	Screws	50
2	Angle bars, 6 in.	52
2	" " 6½ "	53
5	" " 8 "	54
2	" " 12 "	55
16	Strips, 2 in.	56
16	" 2½ "	57
8	" 3 "	58
14	" 3½ "	59
2	" 4 "	60
4	" 5½ "	61
3	" 6½ "	62
12	" 8 "	63
2	" 12½ "	64
8	Architraves ..	65
61	Brackets	66
3	Plates	67
7	Trunnions	74
8	Wheels	75
2	"	76
2	Axles, 3½ in.	77
3	" 2½ "	78
11	Collars	82
1	Handle	83
29	Washers	84

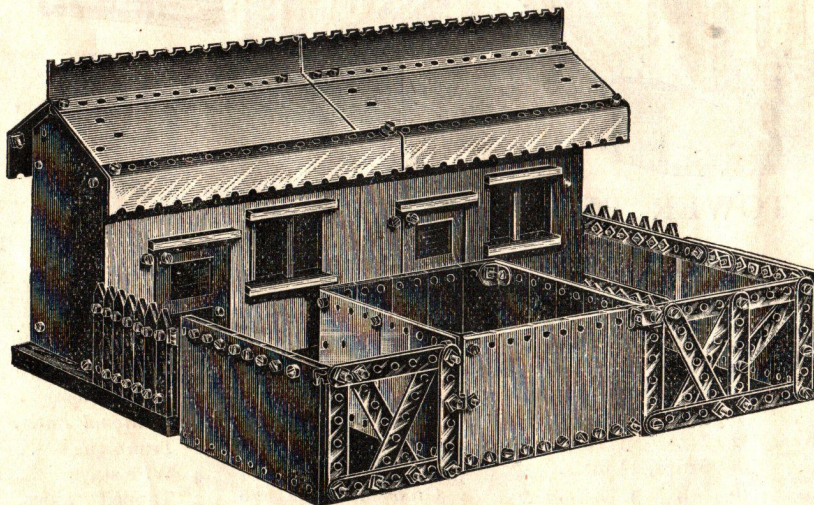
OVERHEAD TRAVELLING HOIST No. 355



6	Buffers	No. 85	12	Wood screws ..	No. 97
3	Couplings	86	Extra parts required :		
2	Catches	95	11	Wood screws ..	97
2	Rods	96			

Cord is gripped between flanged wheels for pulley ropes.
This model should be screwed to a long wood plank.

BUNGALOW. No. 300

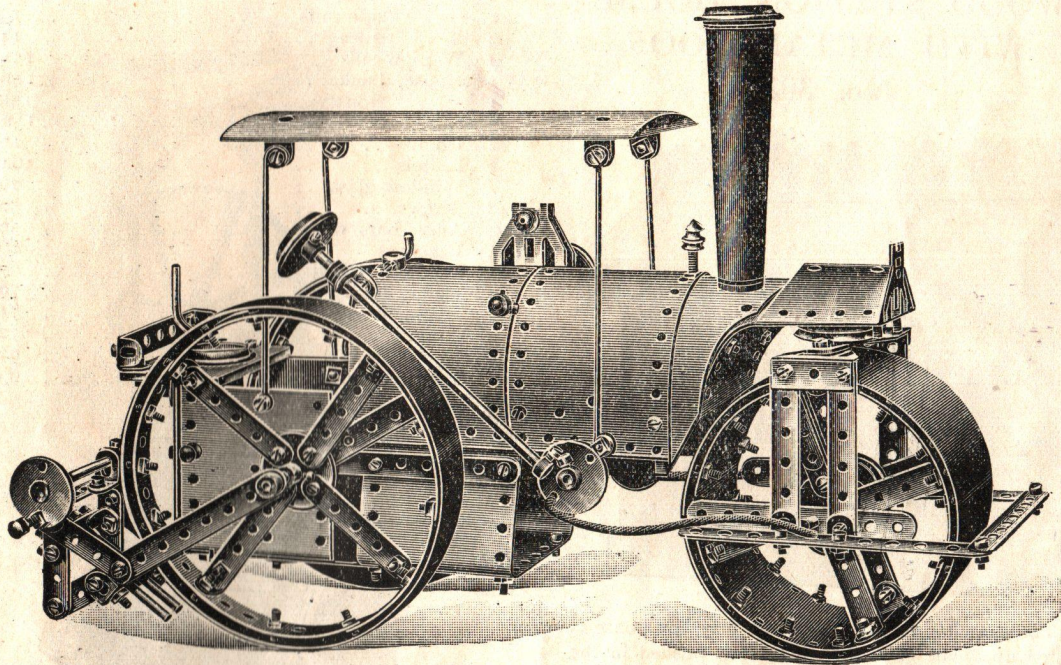


The back of the bungalow is made of metal plates bolted together ;
the roof is built and laid on last.

14	Posts	No. 11
2	Sides	14
4	Sills	15A
2	Sashes	15D
1	Front	15F
1	Back	15B
2	Doors	16
2	Lintels	16A
1	Baseboard ..	19
25	Slips	25
2	Glass	26
150	Screws	50
7	Strips, 2 in.	56
3	" 2½ "	57
5	" 3 "	58
14	" 3½ "	59
1	" 4 "	60
16	Brackets	66
8	Plates, 8×3 "	67
4	" 3×3 "	68
1	Tile, 6½ in.	69
1	" 8 "	70
4	Eaves, 8 in.	71
6	Hinges	72
6	Washers	84
2	Handles	88
4	Knobs	92
2	Catches	95

PRIMUS ENGINEERING

BRITISH MADE



RUSTON STEAM ROLLER, WITH SCARIFIER. No. 360

1	Carriage roof	..	..	..	No. 10	8	Flanged wheels	..	..	No. 75
2	Wood slips	..	..	..	25	3	Grooved wheels	..	..	76
150	Screws	..	..	..	50	1	Axle rods, $3\frac{1}{2}$ in.	..	..	77
2	Angle bars, 6 in.	..	..	..	52	3	" $2\frac{3}{4}$ "	..	..	78
16	Metal strips, 2 in.	..	..	..	56	13	Collars	..	..	82
9	" $2\frac{1}{2}$ "	..	..	..	57	1	Handle axles	..	..	83
5	" 3 "	..	..	..	58	18	Washers	..	..	84
3	" $3\frac{1}{2}$ "	..	..	..	59	1	Buffers	..	..	85
2	" 4 "	..	..	..	60	2	Lamps	..	..	87
3	" $5\frac{1}{2}$ "	..	..	..	61	1	Carriage side rails	..	..	90
4	" $6\frac{1}{2}$ "	..	..	..	62	3	Knob screws and nuts	..	..	92
5	" 8 "	..	..	..	63	4	Signal post rods	..	..	96
59	Brackets	..	..	..	66	3	Wood screws	..	..	97
7	Plates, 8×3 in.	..	..	..	67					
6	" 3×3 "	..	..	..	68					
8	Trunnions	..	..	..	74					

EXTRA PART.

1 Axle, 6 in.

Fit up front roller first; for this two 8×3 plates are used. Roll them round a large bottle or jar to make them form circle, lapping two holes each end. Screw on outside fittings to boiler before fixing back plate; screw piece of wood on to bracket at front of boiler to slip funnel on.

Roller and wheels are covered with cardboard.

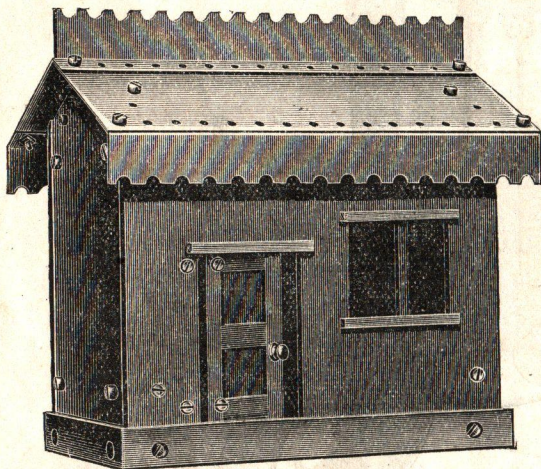
To make funnel in shape screw a piece of round wood underneath wheel at top.

The model is $11\frac{1}{2}$ in. high, $17\frac{1}{2}$ in. long, 8 in. wide.

PRIMUS ENGINEERING

BRITISH MADE

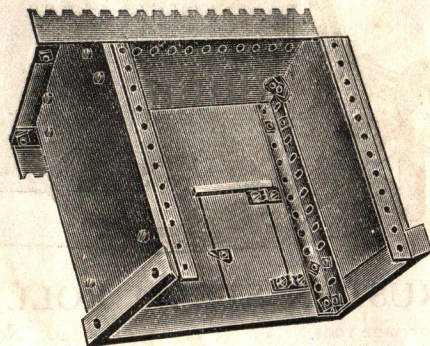
WOOD STATION HOUSE WITH METAL ROOF No. 302



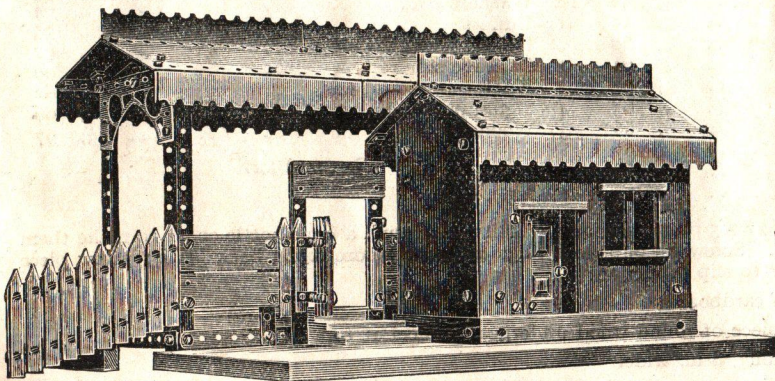
The drawing clearly shows the way the house is fitted up. The glass for windows is pushed in the grooves before the front and back are screwed to the angle bars.

Fit up the base frame and ends first.

2	House, front rails	..	..	..	No. 12
2	„ side rails	..	..	..	„ 13
2	„ sides	..	..	..	„ 14
4	Window sills	..	..	..	„ 15A
1	House, back	..	..	..	„ 15B
1	„ front	..	..	..	„ 15F
2	Sash bars	..	..	..	„ 15D
2	Doors	..	..	..	„ 16
2	Lintels	..	..	..	„ 16A
2	Window glass	..	..	..	„ 26
48	Screws	..	..	..	„ 50
4	Angle bars, 6 in.	..	..	..	„ 52
4	Brackets	..	..	..	„ 66
2	Plates, 8 x 3 in.	..	..	..	„ 67
1	Ridge, 8 in.	..	..	..	„ 70
2	Eaves, 8 in.	..	..	..	„ 71
4	Hinges	..	..	..	„ 72
2	Knob screws	..	..	..	„ 92
2	Turn buttons	..	..	..	„ 93



STATION AND STATION HOUSE No. 306



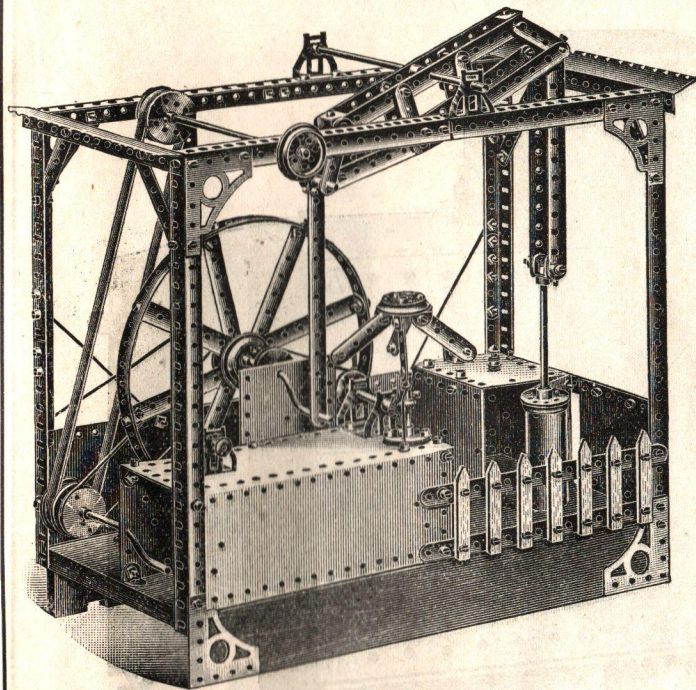
The parts for this handsome model are given on page 35, and only large wood base board is added to the model to make it a complete station.

Signal Posts, Lamps and High Level Bridge can be added as desired.

With the No. 5 Outfit, the Carriage, Goods Truck, Side Station, Station House, and High Level Bridge with Covered Gallery can be made up complete at the same time, as well as many other smaller models.

PRIMUS ENGINEERING

BRITISH MADE



DREDGER WATERWHEEL AND PILE DRIVER No. 358

No.	No.
16 Posts .. 11	61 Brackets .. 66
1 Baseboard .. 19	5 Plates, 8 x 3 in. 67
2 Plain platforms 23	6 " 3 x 3 " 68
2 Fitted .. 24	2 Trunnions .. 74
5 Slips .. 25	6 Wheels .. 75
170 Screws .. 50	4 " .. 76
4 Angle bars, 6 in. 52	2 Axles, 3 1/2 in. 77
3 " 6 1/2 " 53	1 " 1 1/2 " 79
2 " 12 " 55	7 Collars .. 82
14 Strips, 2 in. 56	1 Handle Axle .. 83
8 " 2 1/2 " 57	13 Washers .. 84
4 " 3 " 58	2 Buffers .. 85
9 " 3 1/2 " 59	2 Screws and nuts 91
3 " 4 " 60	2 Knobs .. 92
4 " 5 1/2 " 61	4 Signal Post rods 96
4 " 6 1/2 " 62	15 Wood screws .. 97
4 " 8 " 63	Extra parts :
2 " 12 1/2 " 64	3 Wood screws .. 97
4 Architraves .. 65	

Base should be built first, and then wheels for bottom of band should be fitted in. Four 3 1/2 in. strips, three 8 in. strips and one 2 in. strip are used to construct wheel.

Pieces of card can be made into shape for buckets.

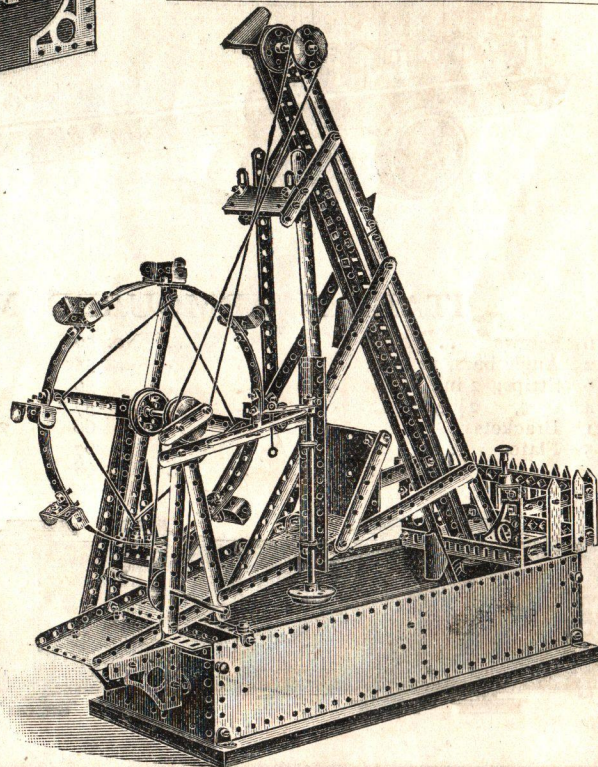
This model can be run by power by adding extra pulley wheel to big wheel axle.

BEAM ENGINE

No. 357

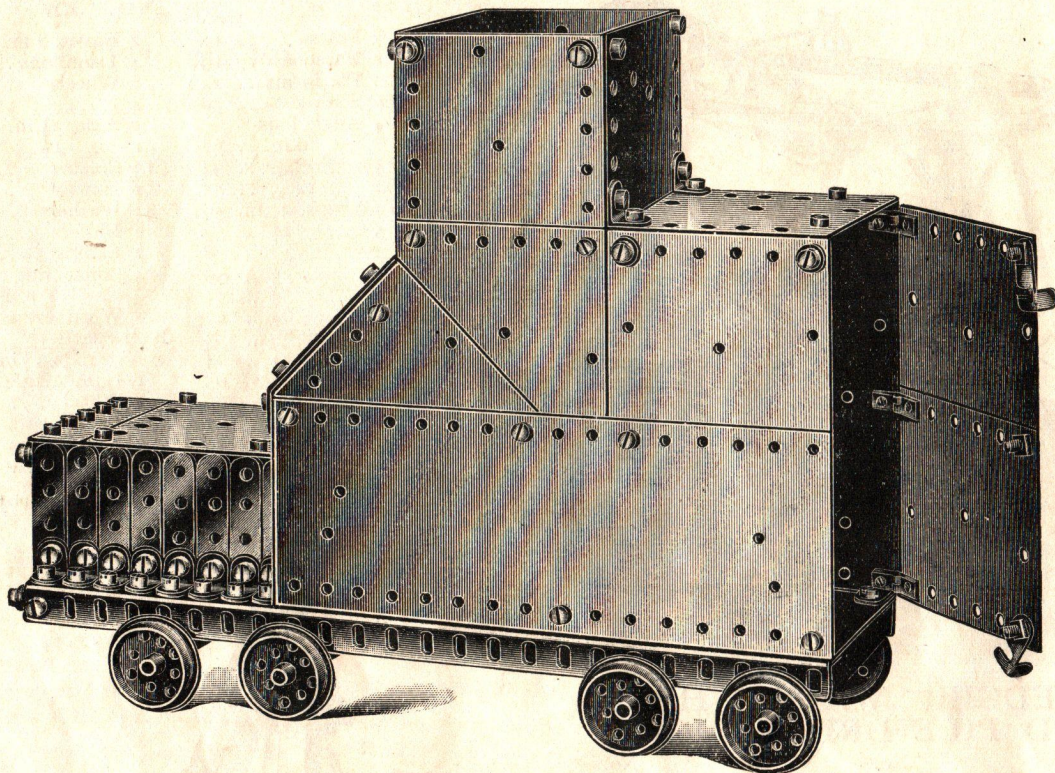
No.	No.
7 Posts .. 11	2 Eaves, 8 in. 71
1 Baseboard .. 19	4 Trunnions .. 74
2 Platforms .. 24	8 Wheels .. 75
166 Screws .. 50	4 " .. 76
4 Angle bars :	1 Axle, 3 1/2 in. 77
6 in. .. 52	1 " 1 1/2 " 79
4 " 8 " .. 54	13 Collars .. 82
2 " 12 " .. 55	1 Handle .. 83
14 Strips, 2 in. 56	44 Washers .. 84
5 " 2 1/2 " 57	2 Buffers .. 85
3 " 3 " 58	2 Lamps .. 87
11 " 3 1/2 " 59	4 Connecting
3 " 5 1/2 " 61	rods 96
3 " 6 1/2 " 62	8 Wood screws 97
2 " 8 " 63	Extra parts—
3 " 12 1/2 " 64	2 Axle rods, 1 1/2 in. 79
6 Architraves 65	1 Handle axle 83
30 Brackets .. 66	1 Wheel .. 158
5 Plates, 8 x 3" 67	2 Bevel gears 162
9 " 3 x 3" 68	2 8 in. Axles 166

To make wheel join two 12 1/2 in. strips and leave five holes between each spoke.
Fit governors, etc., to 8 x 3 in. plate before fixing plate on.



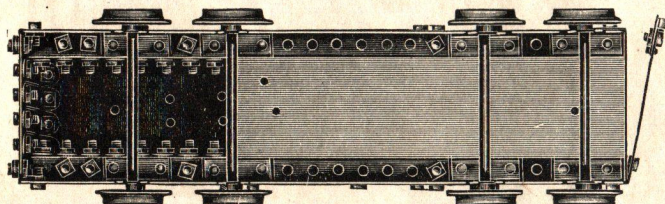
PRIMUS ENGINEERING

BRITISH MADE



ITALIAN ARMOURD MOTOR CAR No. 318

116	Screws	No. 50	3	Hinges	No. 72
2	Angle bars, 12 in.	55	8	Trunnions	74
16	Strips, 2 in.	56	8	Wheels	75
4	" 2½ "	57	4	Axles, 3½ in.	77
41	Brackets	66	23	Washers	84
5	Plates	67	2	Catches	95
14	"	68			



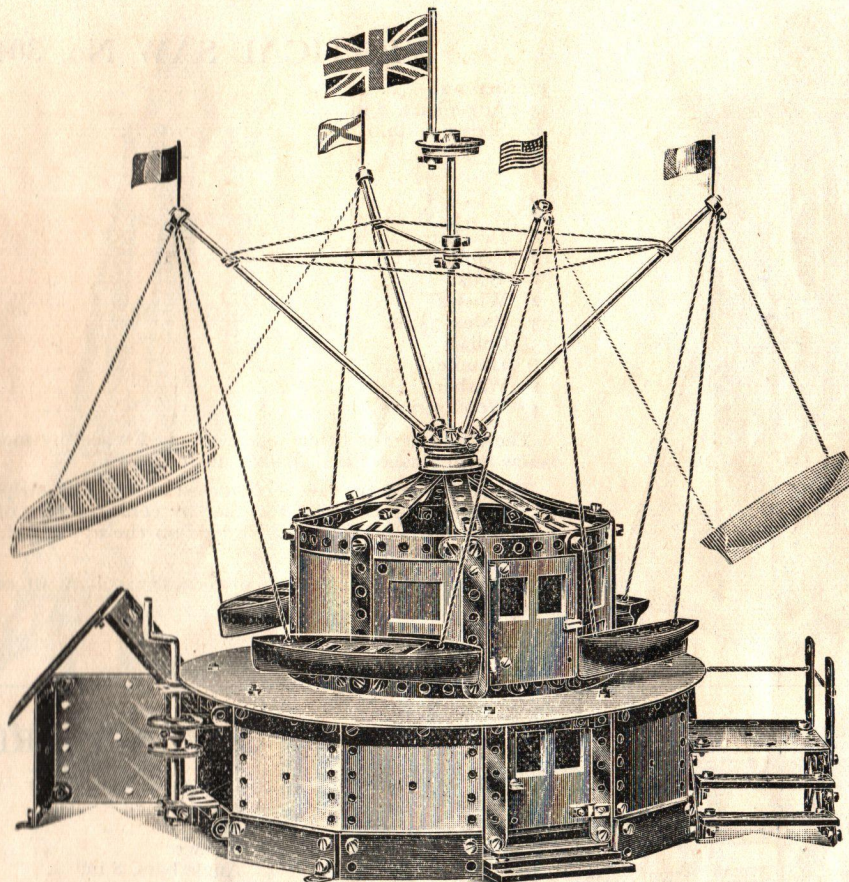
The body is made entirely of 3×3-in. and 8×3-in. plates, held together by means of brackets, one 3×3-in. plate on either side being placed diagonally to fit in the space. A glance at the large and small illustrations will show the method of fixing.

The floor of the car is built with one 8×3-in. metal plate, with its end at the rear of the model.

The wheels are fixed by using trunnions.

PRIMUS ENGINEERING

BRITISH MADE



HIRAM MAXIM FLYING BOATS No. 363

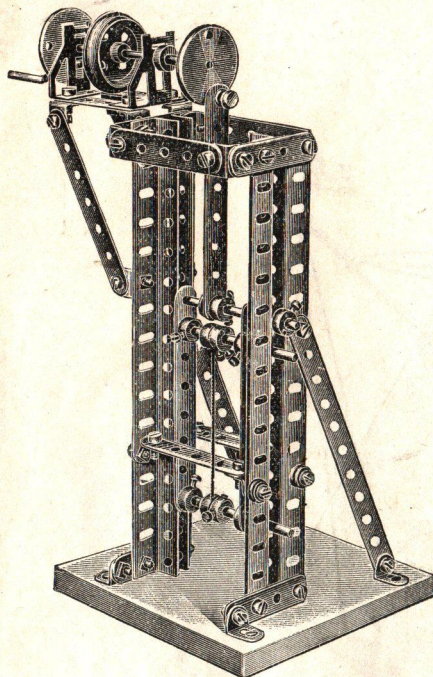
2	Central windows..	..	..	No.	8	14	Plates, 3 in. X 3 in.	..	..	No. 68
2	Doors of house ..	..	..	..	16	2	Straight hinges ..	..	..	72
1	Lintel for house	..	..	..	16A	2	Bent hinges ..	..	..	73
14	Wood slips ..	..	..	..	25	6	Trunnions ..	..	..	74
100	Screws ..	..	..	..	50	4	Flanged wheels ..	..	..	75
7	Strips, 2 in.	..	..	..	56	4	Grooved wheels ..	..	..	76
9	" 2½ "	..	..	..	57	1	Axle, 3½ in.	..	..	77
3	" 3 "	..	..	..	58	13	Collars ..	..	..	82
14	" 3½ "	..	..	..	59	1	Handle ..	..	..	83
3	" 4 "	..	..	..	60	16	Washers ..	..	..	84
2	" 5½ "	..	..	..	61	2	Door handles ..	..	..	88
5	" 8 "	..	..	..	63	2	" screws ..	..	..	91
3	" 12½ "	..	..	..	64	4	Rods ..	..	..	96
2	Architraves ..	..	..	..	65	Additional Parts.				
48	Brackets ..	..	..	..	66	6	Axles, 8 in.	..	..	166

Build base first; card disc for top of base; use four wood boats to make swings.

MODEL MADE WITH NO. 5 OUTFIT

PRIMUS ENGINEERING

BRITISH MADE



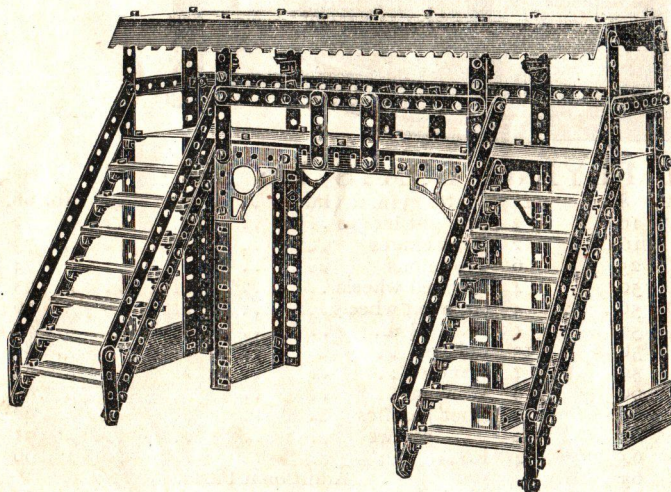
VERTICAL SAW No. 304

37	Screws ..	..	..	..	..	..	No. 50
4	Angle bars, 8 in.	..	..	..	..	..	54
6	Strips, 2 in.	..	..	..	..	..	56
4	" 2½ "	..	..	..	..	..	57
2	" 3½ "	..	..	..	..	..	59
3	" 4 "	..	..	..	..	..	60
2	" 5½ "	..	..	..	..	..	61
18	Brackets ..	..	..	..	..	..	66
2	Trunnions ..	..	..	..	..	..	74
1	Wheel ..	..	..	..	..	..	75
2	Wheels ..	..	..	..	..	..	76
3	Axles, 3½ in.	..	..	..	..	..	77
13	Collars ..	..	..	..	..	..	82
1	Handle ..	..	..	..	..	..	83
1	Washer ..	..	..	..	..	..	84
4	Wood screws ..	..	..	..	..	..	97

The crank arm is fitted to the grooved wheel by means of knob screw with washers and double nutted.

The frame to carry saw is composed of two 4-in. strips with three 3½ in. axle rods and held together by collars. Two of the collars are placed OUTSIDE the angle bars on the upper rod, to make it slide easily in the grooves.

A fretsaw can be placed between the collars to complete the model.



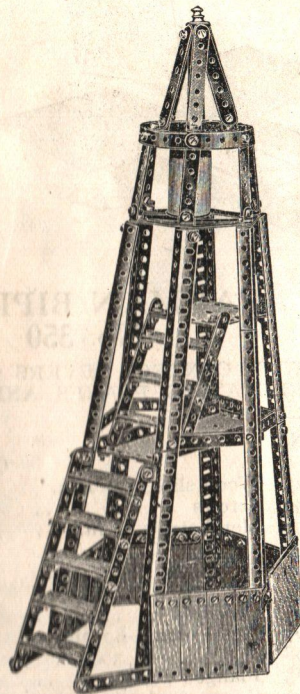
COVERED BRIDGE No. 305

18	Slips ..	..	..	..	No. 25
144	Screws ..	..	..	..	50
4	Angle bars, 8 in.	..	..	..	54
8	Strips, 2 in.	..	..	..	56
4	" 3½ "	..	..	..	58
4	" 3½ "	..	..	..	59
4	Angle bars, 6½ in.	..	..	..	62
11	Strips, 8 in.	..	..	..	63
4	Architraves ..	..	..	..	65
46	Brackets ..	..	..	..	66
4	Plates, 8 x 3 in.	..	..	..	67
4	Eaves, 8 in.	..	..	..	71
6	Washers ..	..	..	..	84
4	Lamps ..	..	..	..	87

This model can be raised on piers to suit height of platforms, and can be made wider for double rails by the use of 12-in. angle bars and other parts to correspond.

PRIMUS ENGINEERING

BRITISH MADE

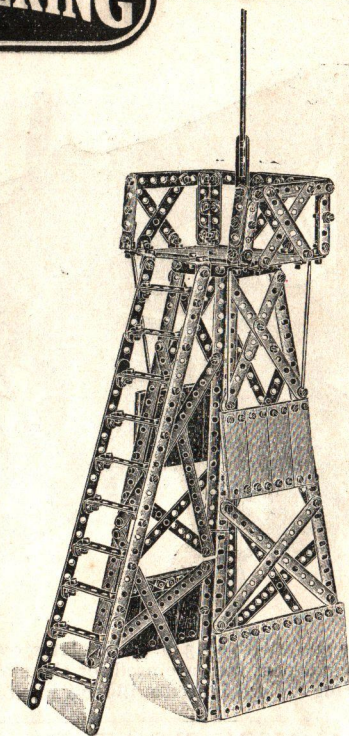


LIGHTHOUSE No. 312

1	End	..	No. 3	1	Strip, 4 in.	No. 60
25	Slips, 3 x 1 in.	..	25	3	Strips, 5 1/2	.. 61
150	Screws	..	50	2	" 8	.. 63
4	Bars 6 in.	..	52	45	Brackets	.. 66
8	" 8	..	54	3	Plates, 3 x 3	.. 68
2	" 12	..	55	2	Wheels	.. 75
2	Strips, 2 in.	..	56	1	Wheel	.. 76
14	" 2 1/2	..	57	1	Axle, 3 1/2 in.	.. 77
7	" 3	..	58	16	Washers	.. 84
13	" 3 1/2	..	59	1	Lamp	.. 87

The skeleton is made on angle bars, screwed together and secured by metal strips, which are slightly bent. The platforms are made of 3x3-in. plates.

To form the lantern, slightly curve six 2 1/2-in. strips. The beacon light is made by rolling pink paper round two flanged wheels, one being placed at the top and the other near the bottom of a 2 1/2-in. axle, which passes through a 4-in. metal strip placed across the base of the lantern as shown, and is secured in position by a pulley wheel.



PYLON No. 313

20	Slips, 3 x 1 in.	No. 25	4	Strips, 4 in.	No. 60
190	Screws	.. 50	2	" 5 1/2	.. 61
2	Bars, 6 1/2 in.	.. 53	4	" 6 1/2	.. 62
4	" 8	.. 54	8	" 8	.. 63
2	" 12	.. 55	2	" 12	.. 64
16	Strips, 2 in.	.. 56	44	Brackets	.. 66
16	" 2 1/2	.. 57	4	Plates	.. 68
5	" 3	.. 58	6	Washers	.. 84
12	" 3 1/2	.. 59	4	Signal rods	.. 96

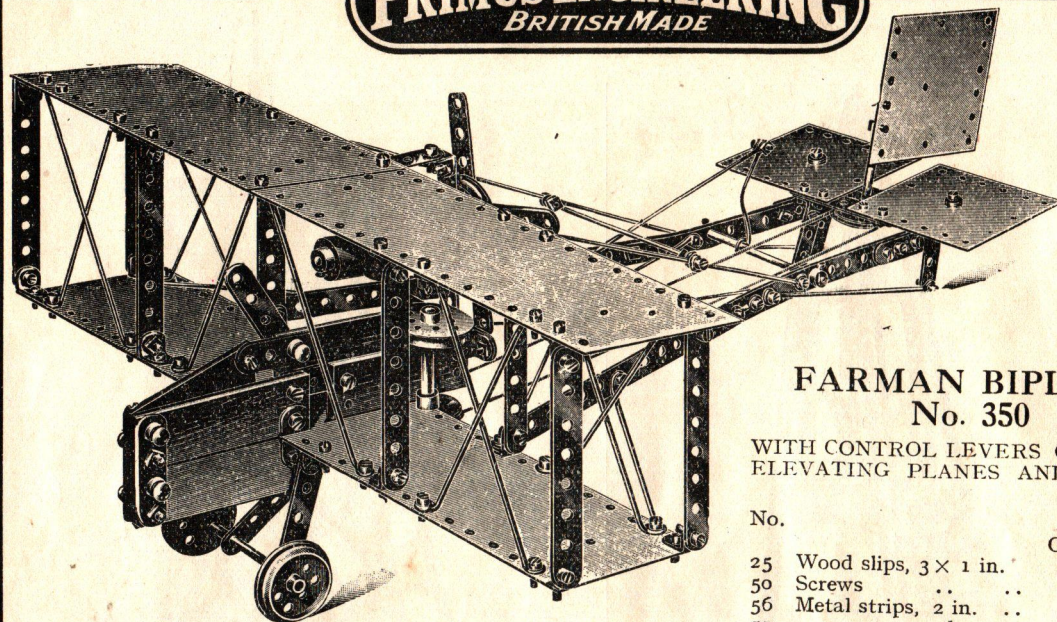
The four sides are built up with angle bars joined together. The sides are metal strips on which are screwed the No. 25 wood slips.

The floor of the observation platform consists of four 3x3-in. metal plates. The signal is an axle rod fixed to a 3 1/2-in. metal slip by means of wire.

The ladder is made of metal slips fitted by means of brackets.

PRIMUS ENGINEERING

BRITISH MADE



FARMAN BIPLANE No. 350

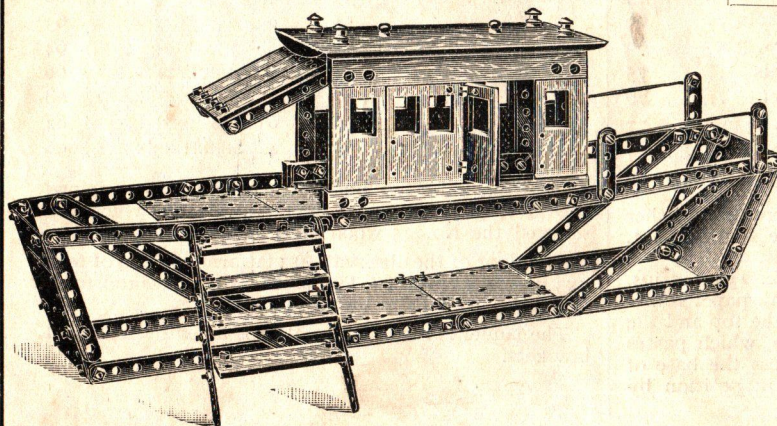
WITH CONTROL LEVERS OPERATING
ELEVATING PLANES AND RUDDER.

The planes are made with 8×3 in. metal plates, overlapping and screwed together. Signal post rods are used for the stays and as connecting rods for steering. Cord is used as illustration for operating the rudder.

No.		With No. 5 Outfit.	Addi- tional Parts.
25	Wood slips, 3×1 in.	6	—
50	Screws	112	—
56	Metal strips, 2 in. ..	16	1
57	" $2\frac{1}{2}$ " ..	4	—
60	" 4 " ..	3	7
64	" $12\frac{1}{2}$ " ..	2	—
66	Brackets	34	—
67	Metal plates, 8×3 in.	4	—
68	" 3×3 " ..	3	—
75	Flanged wheels ..	4	—
76	Grooved wheels ..	3	—
77	Axle rods, $3\frac{1}{2}$ in. ..	4	—
78	" $2\frac{1}{2}$ " ..	2	—
82	Collars	13	—
84	Washers	20	—
92	Knob screws ..	4	1
96	Signal post rods ..	12	18

HOUSE BOAT No. 308

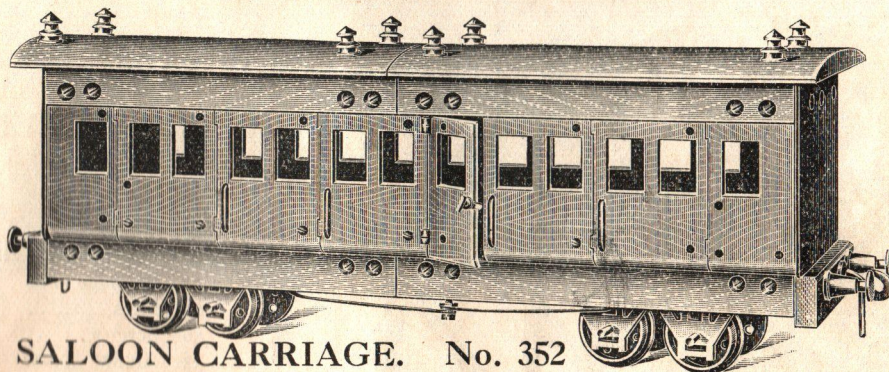
4 Rails No. 1	7 Slips No. 25
2 Windows 5	111 Screws 50
2 " 6	2 Angle bars, $6\frac{1}{2}$ in. .. 53
2 Doors 7	9 Strips, 2 in. .. 56
2 Windows 8	3 " $2\frac{1}{2}$ " .. 57
1 Roof 10	1 " 3 " .. 58



10 Strips, $3\frac{1}{2}$ in. ..	No. 59
2 " 4 " ..	60
5 " $5\frac{1}{2}$ " ..	61
4 " $6\frac{1}{2}$ " ..	62
5 " 8 " ..	63
3 " $12\frac{1}{2}$ " ..	64
36 Brackets	66
2 Plates	67
8 "	68
4 Hinges	73
4 Lamps	87
4 Screws	92
2 Rods	96

PRIMUS ENGINEERING

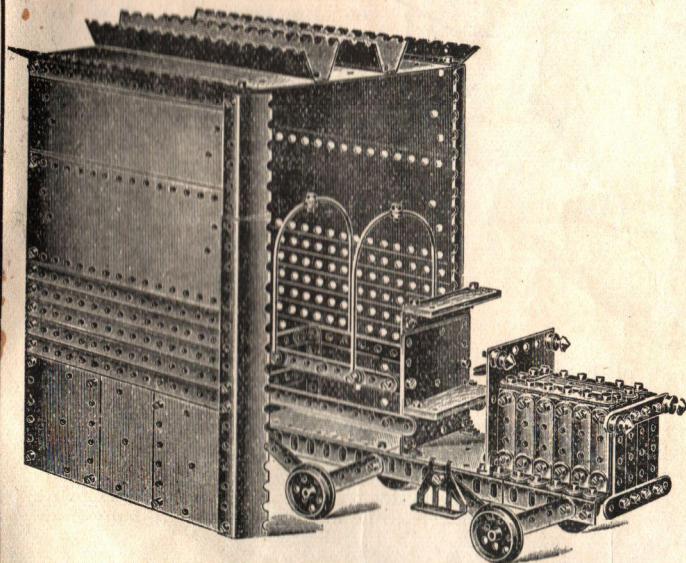
BRITISH MADE



SALOON CARRIAGE. No. 352

No.	Parts in No. 5 Outfit.	Additional Parts.	No.	Parts in No. 5 Outfit.	Additional Parts.	No.	Parts in No. 5 Outfit.	Additional Parts.
1	Side rails .. 6	2	56	Strips, 2 in. 3	—	78	Axles, 2 3/4 in. 4	—
3	C. ends .. 2	—	57	" 2 1/2 " 8	—	85	Buffers .. 4	—
4	Buffer block 2	—	58	" 3 " 1	—	86	Couplings .. 2	—
5	R.H. windows 2	—	59	" 3 1/2 " 10	—	87	Lamps .. 6	2
6	L.H. " 2	—	63	" 8 " 2	—	88	Handles .. 2	—
7	Carriage doors 2	—	66	Brackets .. 12	—	90	Rails .. 4	4
8	" windows 2	8	73	Hinges .. 4	—	91	Screws .. 16	—
10	Roof .. 2	—	74	Trunnions .. 8	—	92	Screws .. 2	—
50	Screws .. 57	—	75	Wheels .. 8	—	96	Rods .. 4	—
53	Angle bars, 6 1/2 in. 4	—	76	Wheels .. 2	—			

The metal framework of saloon should be made first : join two 8-in. angle bars with a 2 1/2-in. metal strip, leaving only the central hole between them. This applies to both sides. The top is supported with three 4-in. slips each side, and the top sides are made by joining one 8 1/2-in. and one 6 1/2-in. metal slips. Then fix wood as illustration. Bogie wheels, see page 49.



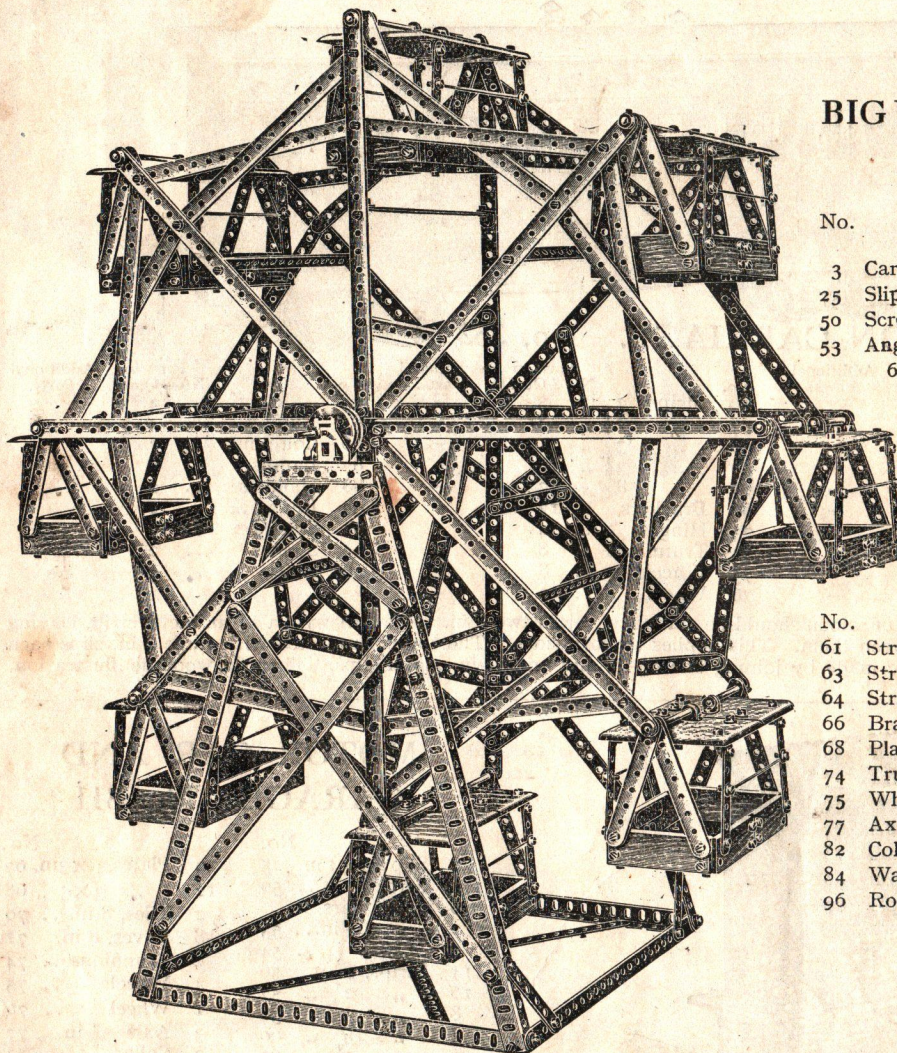
MOTOR CAR AND GARAGE. No. 311

	No.		No.
2	Slips, 3 × 1 in. 25	10	Plates, 3 × 3 in. 67
174	Screws .. 50	12	" 3 × 3 " 68
6	Angle bars, 6½ in... 53	2	Tiles, 8 in. .. 70
2	" " 8 " .. 54	8	Eaves, 8 in. 71
14	Strips, 2 in. 56	2	Trunnions .. 74
16	" 2½ " 57	4	Wheels .. 75
8	" 3 " 58	1	Wheel .. 76
2	" 4 " 60	3	Axle, 3½ in. 77
2	" 5½ " 61	2	Collars .. 82
3	" 6½ " 62	10	Washers .. 84
12	" 8 " 63	4	Lamps .. 87
50	Brackets .. 66	4	Rods .. 96

The lower portion of the garage is made on 6 1/2-in. angle bars, which hold the plates and metal strips. Higher, brackets are sufficient where the 8 x 3-in. plates are used.

PRIMUS ENGINEERING

BRITISH MADE



BIG WHEEL No. 353

No.		Parts from No. 5 Outfit.	Additional Parts.
3	Carriage ends	2	14
25	Slips ..	25	23
50	Screws ..	312	195
53	Angle bars, 6½ in. ..	4	—
No.			
55	Angle bars, 12 in. 2		4
56	Strips, 2 in. 16		32
58	Strips, 3 in. 8		36
60	Strips, 4 in. 3		29
61	Strips, 5½ in. 4		—
63	Strips, 8 .. 12		32
64	Strips, 12½ .. 3		19
66	Brackets .. 78		66
68	Plates .. 10		6
74	Trunnions .. 2		—
75	Wheels .. 2		—
77	Axles, 3½ in. 4		12
82	Collars .. 13		23
84	Washers .. 48		22
96	Rods .. 4		12

SPECIAL. 1 Special 12-in. Axle rod, price 1s. 1 8-in. Angle bar cut in half, price 3d.

MEASUREMENTS.

Height	28½ in.	Diameter of wheel	23 in.
Width	25 ..	Depth of wheel	8½ ..

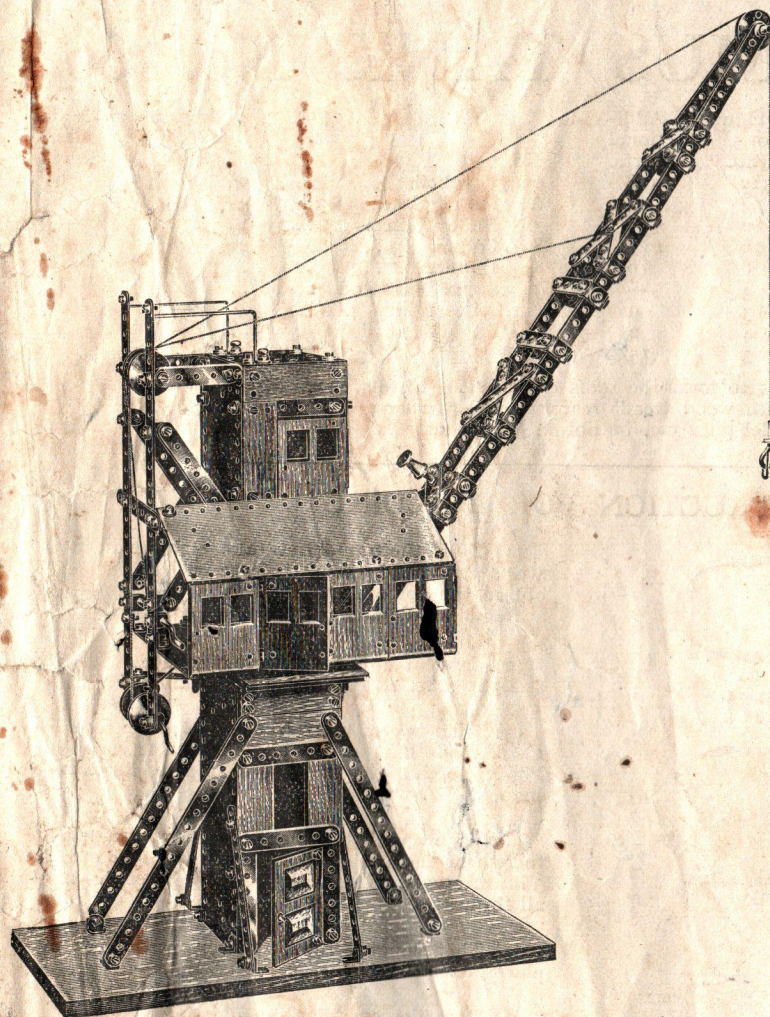
The stand should be built and then the framework of the wheel.

The roofs of the carriages are made with two carriage ends, placed lengthways, and are joined together with 2-in. metal strips. Two extra holes require to be made in each, for brackets to be fixed to for sides to hang from. The model otherwise is straightforward.

PRIMUS ENGINEERING

BRITISH MADE

LUFFING CRANE No. 354



No.		Parts from No. 5 Outfit	Additional Parts.
8	Windows ..	2	4
16	Door ..	1	—
18	Carriage ends	1	—
19	Baseboard ..	1	—
25	Slips..	8	—
50	Screws ..	202	—
56	Strips, 2 in.	14	—
57	„ 2½ „	4	—
58	„ 3 „	8	3
59	„ 3½ „	6	—
60	„ 4 „	3	—
61	„ 5½ „	4	4
63	„ 8 „	4	—
64	„ 12½ „	3	3
66	Brackets ..	78	37
67	Plates ..	8	—
68	„ ..	4	—
72	Hinges ..	2	—
73	Bent hinges	2	—
75	Wheel ..	1	—
76	Wheels ..	4	3
77	Axle, 3½ in..	2	—
79	„ 1½ „ ..	1	—
82	Collars ..	8	—
83	Handle ..	1	1
84	Washers ..	48	90
85	Buffers ..	1	—
86	Coupling ..	1	—
88	Door handle	1	—
91	„ screws	16	1
92	Screws ..	4	3
96	Rods ..	3	—
97	Wood screws	8	—

The base of this model is composed of three 8×3-in. metal plates standing on end, and the front part with 3-in. and 3½-in. metal strips and 3×1-in. wood slips, and is supported by means of four 8½-in. metal slips at each corner, joined to brackets, screwed to the baseboard. The roof of base is a 3×3-in. plate. The floor of engine house is two 8×3-in. plates screwed together, and is joined to the lower part by means of a 3½-in. axle rod, using pulley and flanged wheels, as in earlier models. The balance is kept by using four knob screws inserted in 3×3-in. plate at a similar height to one flanged and one pulley wheel. The front and back of engine house are made with 8×3-in. plates, the lower parts of sides with 3×3-in. plates, and the upper part with carriage windows and 3×1-in. wood slips; the remainder is easily gleaned from illustration.

PRIMUS ENGINEERING

BRITISH MADE

THE PRIMUS TANK No. 362

No.		Parts in No. 5 Outfit.	Additional Parts.	No.		Parts in No. 5 Outfit.	Additional Parts.
50	Screws	312	108	66	Brackets	8	26
54	Angle bars, 8 in. ..	4	—	68	Metal plates, 3×3 in. ..	14	54
55	" " 12 " ..	2	2	76	Pulley Wheels	2	—
56	Strips, 2 in. ..	16	28	82	Collars	6	—
58	" 3 " ..	8	10	85	Buffers	4	—
59	" 3½ " ..	4	—	96	Signal Post Rods	10	—
60	" 4 " ..	3	9		Axles, 8 in. ..	—	2
61	" 5½ " ..	4	2		Angle bars, 4½ in. ..	—	4
64	" 12½ " ..	3	15				

2 Cut plates to form the roofs of side gun turrets, each 6d.
Web bands with wood treads ready fixed—4 ft. long, each 3s. 6d.
The model guns can be obtained from any toy shop.

INSTRUCTION FOR BUILDING



Fig. 1. Side frame before shaping.

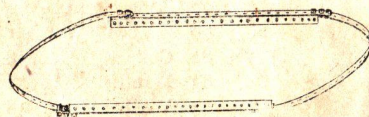


Fig. 2. Side frame after fixing Angle Bars.

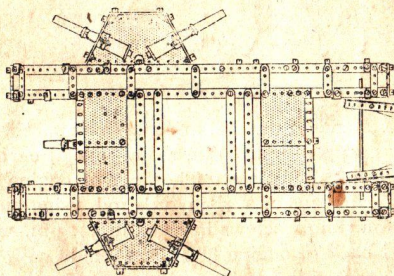


Fig. 3. Underside of Tank. Note how 3×3 in. plates are fixed.

(1) Build the frame first, take eight 12 in. metal strips and bend them U-shape in the centre to obtain the correct angle. This is best done over a broom handle or similar rounded article.

(2) Connect up two of these bent ends with two straight 12 in. strips, so that it resembles Fig. 1.

(3) Take two of these frames, and then force in 12 in. angle bars at top and bottom as shown in Fig. 2, so that the framework assumes its correct shape.

(4) Take one of the shaped frames and connect to one of the unshaped U-shape in the centre by 2 in. strips placed at 3 in. intervals. This will give the correct shape to all frames.

(5) Then connect the framework with 3×3 in. plates, as shown in Fig. 3.

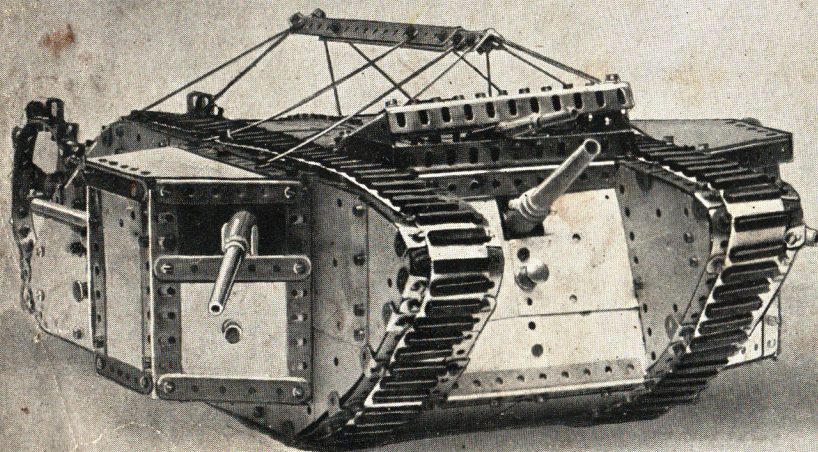
(6) The sides can then be filled in with 3×3 in. plates as photograph, or a sheet of cardboard cut to shape. If 3×3 in. plates are used, it will be found necessary to cut some to shape for the curved ends of the frame.

(7) Build gun turrets and then affix to sides.

(8) Now take the web band and sew it so that it fits tight on the side frame. The Tank is now complete.

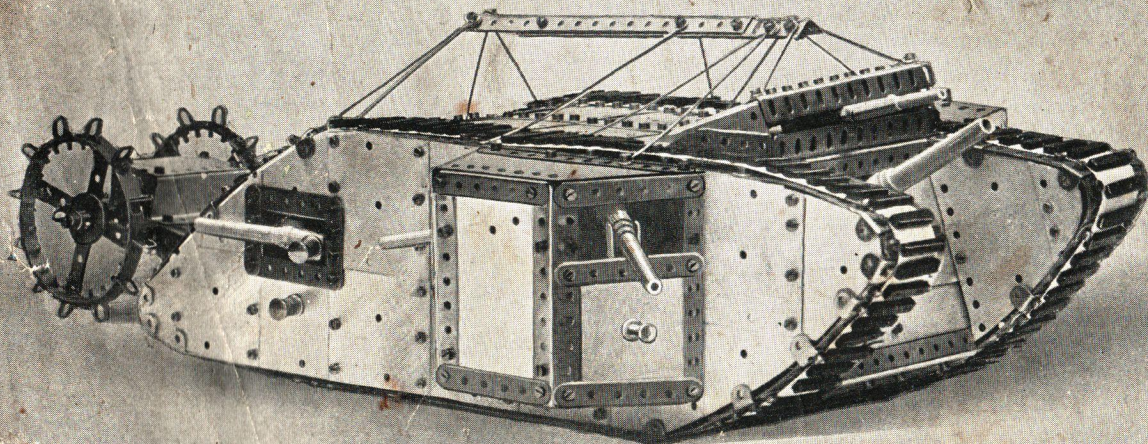
"The PRIMUS" TANK

CONSTRUCTED WITH
PRIMUS ENGINEERING



CAN BE MADE
WITH
No. 5 OUTFIT
AND
EXTRA PARTS

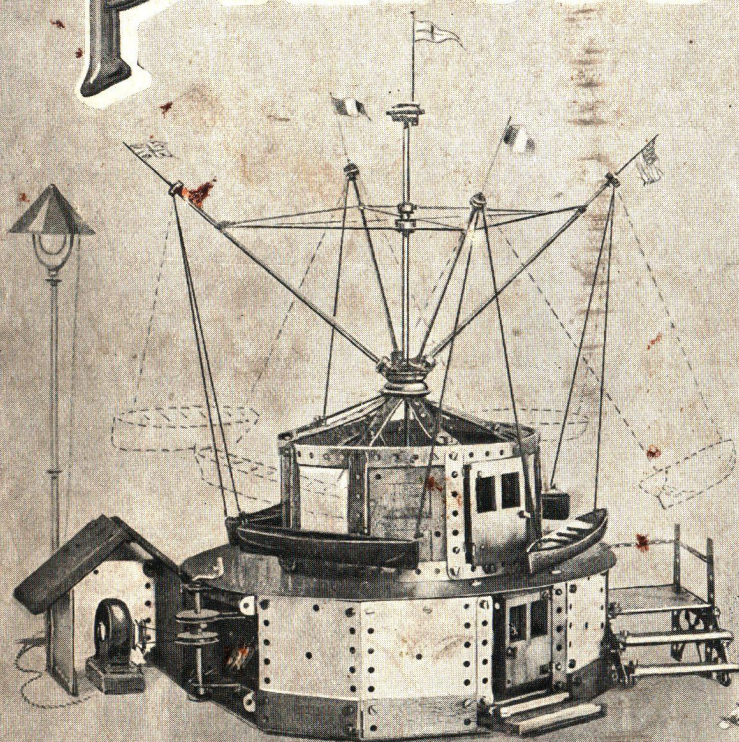
PRIMUS TANK. FRONT VIEW.



PRIMUS TANK. SIDE VIEW.

“PRIMUS” WORKING MODELS

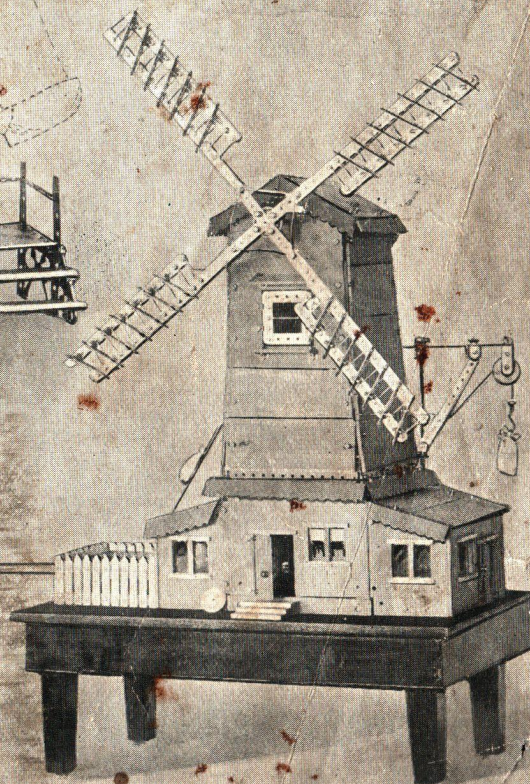
MADE WITH
No. 5 OUTFIT
AND
ADDITIONAL PARTS



HIRAM MAXIM FLYING BOATS



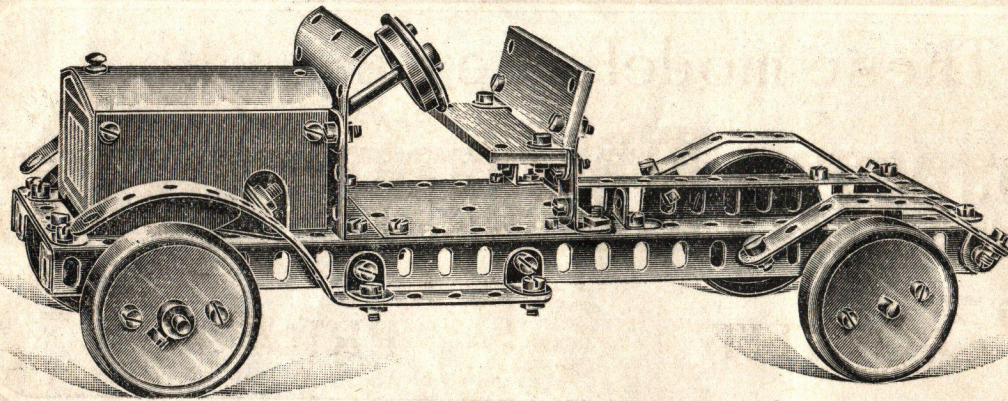
WINDMILL



WITH REVOLVING SAILS & GRAIN ELEVATOR

PRIMUS ENGINEERING

BRITISH MADE



MOTOR-CAR CHASSIS. No. 209.

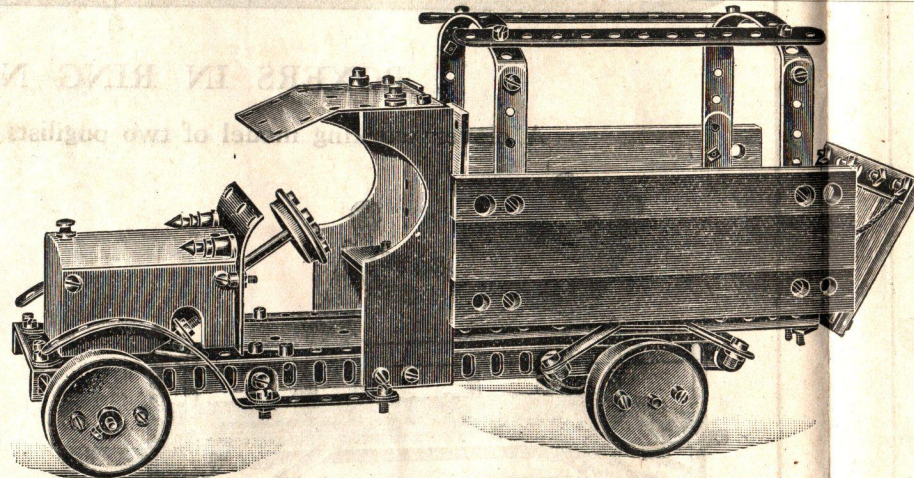
PARTS FROM NO. 3 OUTFIT.			EXTRA PARTS REQUIRED.		
No.		No.	No.		No.
2	Slips ..	25	2	Trunnions ..	74
71	Screws ..	50	1	Wheel ..	75
2	Strips, 1 in. ..	56	4	Wheels ..	76
4	" " " ..	57	1	Axle Rod, 3 1/2 in. ..	77
1	Strip, " " " ..	58	1	" " " " " ..	79
2	Strips, " " " ..	60	8	Collars ..	82
2	" " " " " ..	62	12	Washers ..	84
2	" " " " " ..	63	4	Buffers ..	85
22	Brackets ..	66	2	Lamps ..	87
3	Plates, 3 x 3 ..	68	1	Knob Screw ..	92

The wheels are constructed with No. 76 pulleys, to which are bolted small tin box lids (powder boxes about 2 in. diameter). The bonnet is made by bending a No. 68 3 x 3 plate for the top and using cardboard for the front and sides. The dash is also made by bending a No. 68 3 x 3 plate.

MOTOR-CAR BUILDING with PRIMUS.

A motor-car is perhaps the most interesting and instructive Model that can be built, and this can easily be done by anyone who has become acquainted with the possibilities of Primus Engineering.

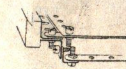
The models illustrated were constructed by a lad of thirteen years, following the method adopted in building real cars—first, the chassis (to which any body can be attached); then, as standard types, the W. D. Lorry and a smart coupé. These will give any young engineer the idea; and, having constructed the chassis, he will find it quite a simple matter to erect thereon bodies of any description.



W. D. WAGON. No. 210.

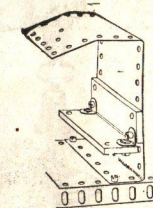
PARTS FROM NO. 3 OUTFIT TO MAKE THE BODY.			EXTRA PARTS REQUIRED.		
No.		No.	No.		No.
4	Grooved Rails ..	1	2	Strips, 5 1/2 in. ..	61
2	Truck Sides ..	17	2	" " 6 1/2 " ..	62
6	Wood Slips ..	25	2	" " 8 " ..	63
49	Screws ..	50	4	Brackets ..	66
2	Angle Bars, 6 1/2 in. ..	53	1	Plate, 8 x 3 ..	67
4	Strips, 2 in. ..	57	2	Hinges ..	72
2	" " 2 1/2 " ..	58			
4	" " 3 1/2 " ..	59	2	Angle Bars, 6 1/2 in. ..	53
1	Strip, 4 " ..	60	1	Strip, 2 in. ..	57

The driver's seat is made by bending an 8 x 3 plate thus:



Cut the sides out of cardboard.

The body overlaps the wheels and is fitted as sketch, using 2 6 1/2 in. angle bars on each side.



TOURING COUPÉ. No. 211.

PARTS TO MAKE THE BODY.

8	Wood Slips ..	No. 25
34	Screws ..	" 50
12	Brackets ..	" 66
2	Plates, 8 x 3 ..	" 67
4	Hinges ..	" 72

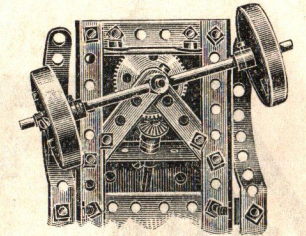
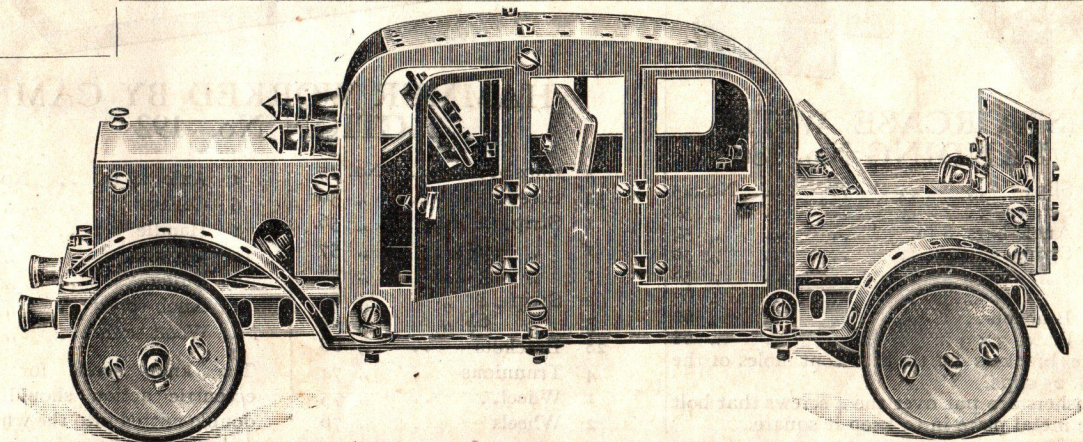
EXTRA PARTS REQUIRED.

4	Hinges ..	No. 68
2	Door Handles ..	" 88
2	Turnbuttons ..	" 89
8	Screws ..	" 91

Remove from chassis back mudguards and 3 x 3 plates in the floor, fix 8 x 3 plate to form whole floor, replace seat. The sides and doors of coupé are cut from cardboard, the opposite side being without doors. The top and back is formed out of one 8 x 3 plate; the boot is fixed to the frame by means of brackets.

The back seat in the closed body is fitted to the 8 x 3 plate forming the top and back by two brackets. This should be done before the sides are fitted on.

The back seat in the boot is fitted to the wood slips forming the sides by brackets, the wood slip at back being secured to the base.



THE STEERING GEAR.

This must be built on to the frame before the bonnet is fitted.

1. Lay two 2 1/2 in. metal strips at angles as shown, and secure.

2. Place a 2 1/2 in. metal strip across the base of the triangle, and secure to brackets.

3. Fix No. 160 gear wheel to 1 1/2 in. axle, and pass through the ends of the 2 1/2 in. strips. Place washers on and secure with a double-tapped collar.

4. A 3 1/2 in. axle is then used for the steering pillar, which is passed through the centre hole of the dash plate and the 2 1/2 in. metal strip.

5. Secure with a collar, and use washers to adjust the bevel gear so that it engages in the large cog.

6. Fix the wheels to 2 1/2 in. tapped axles and screw into the double-tapped collar.