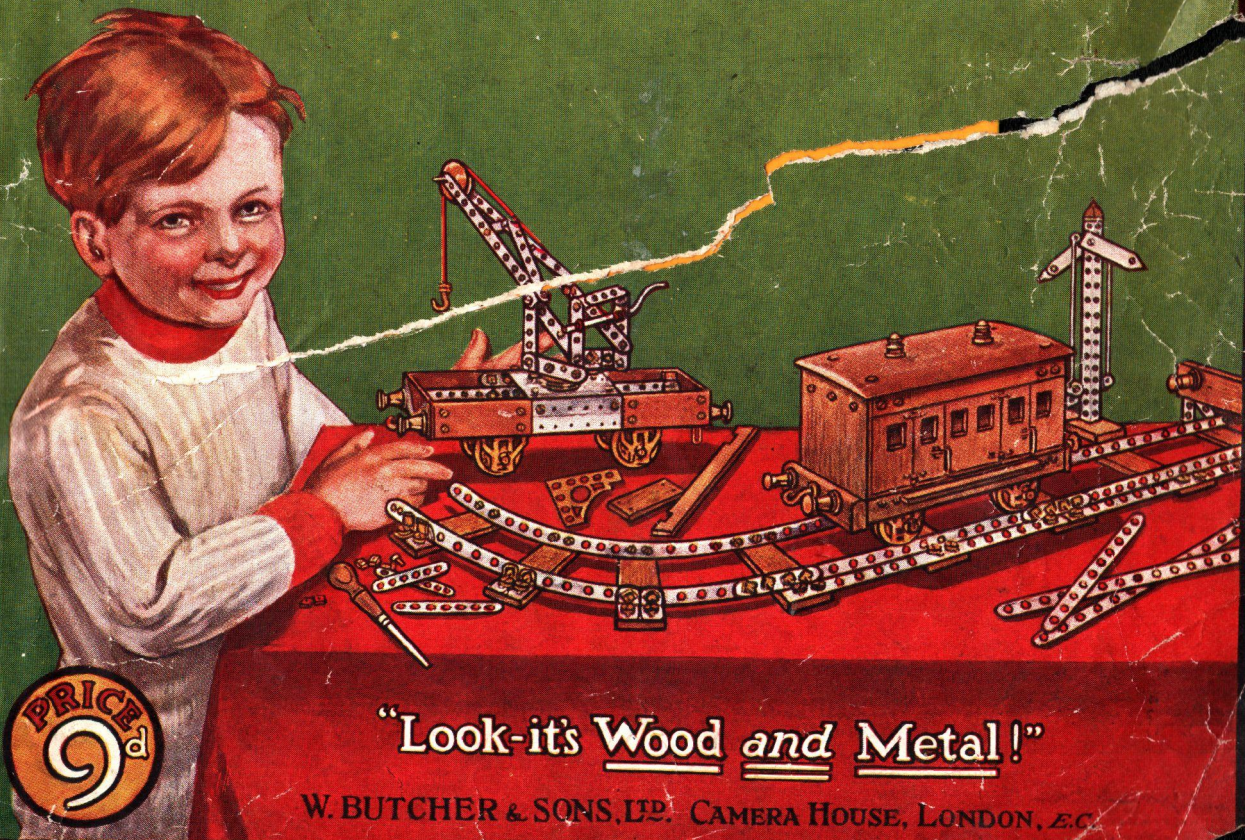


PRIMUS ENGINEERING



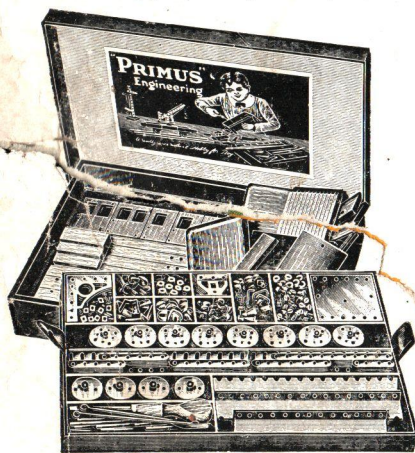
PRICE
9^d

"Look-it's Wood and Metal!"

W. BUTCHER & SONS, LTD. CAMERA HOUSE, LONDON, E.C.



Outfits Nos. 1 & 2 in plain boxes, also the Supplementary Sets



Outfits Nos. 3, 4 & 5 are packed in extra strong boxes, with a loose tray for the metal parts.



Outfit No. 6 is in a beautiful polished oak cabinet, with lock and key.

PRIMUS ENGINEERING OUTFITS

Look—it's Wood and Metal!

Each outfit is complete and ready for use, and contains sufficient wood and metal parts to build a wide variety of models.

Standard Outfits

- No. 0** Contains 92 parts of wood and metal. Suitable for young boys and girls.
- No. 1** Contains 140 parts in strong partitioned box. Builds some very clever models.
- No. 2** Contains 267 parts in strong box. Makes a most acceptable present.
- No. 3** Contains 473 parts in tray box. A useful outfit with a good assortment of parts.
- No. 4** Contains 649 parts in tray box. An outfit with great possibilities.
- No. 5** Contains 1,131 parts in tray box. Builds large and interesting working models.
- No. 6** The Primus Cabinet. 1,189 parts in polished oak 3-drawer cabinet, with lock and key.

Supplementary Outfits

- No. 1^S** Containing parts to convert the No. 1 outfit into the No. 1^S.
- No. 2^S** Containing parts to convert the No. 2 outfit into the No. 3.
- No. 3^S** Containing parts to convert the No. 3 outfit into the No. 4.

PRIMUS ENGINEERING

BRITISH MADE

THE BRITISH TOY FOR THE BRITISH BOY.

P PRIMUS 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.

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.

PRIMUS ENGINEERING

BRITISH MADE

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 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).

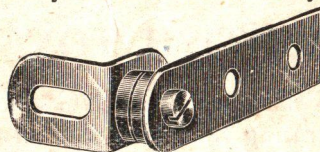


Fig. A

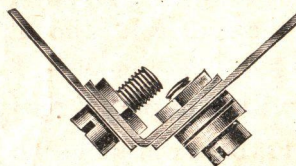
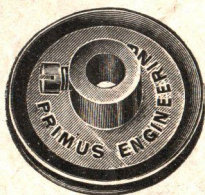


Fig. B.

EXTRA PARTS NOT INCLUDED IN OUTFITS

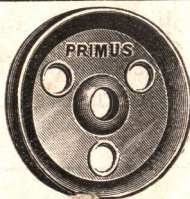
No.	Length	Per 1/2 doz.
154	Wire Stays 1 1/8 inches	3d.
155	" " 2 1/2 "	3d.
156	" " 3 1/4 "	4d.



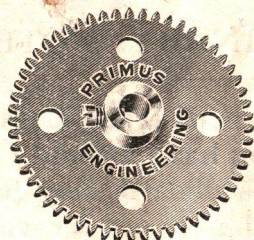
No. 158 Pulley Wheels with set screw, each 4d.



No. 168 Double Tapped Collars, each 4d.



No. 159 Pulley Wheels plain, each 2d.



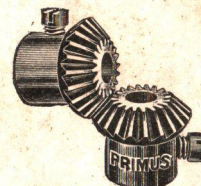
No. 160 Cog Gear Wheels, 1 1/2 in., 56 teeth, each 1/0



No. 167 Double Tapped Rods, 3 1/4 in., each, 3d.
No. 167A do. 2 3/8 " " 3d.



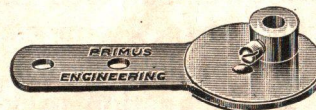
No. 161 Pinion Wheels, 1/2 in., each 8d.



No. 162 Bevel Gears, per pair 2/-



No. 164 Crank Arm each 8d.

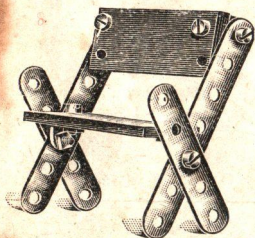


No. 163 Eccentric each 1/-

These models are made with

PRIMUS ENGINEERING

Nº 1 OUTFIT



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.			

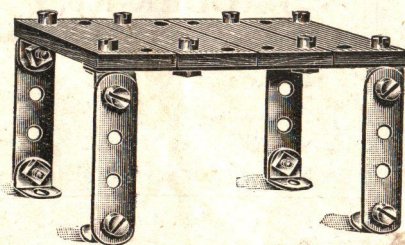
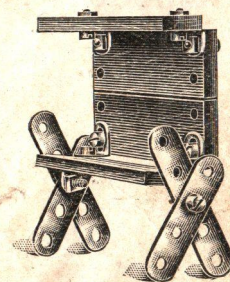


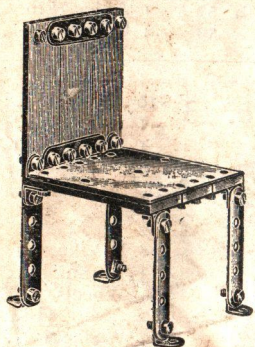
TABLE No. 2

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.				



SEAT No. 3

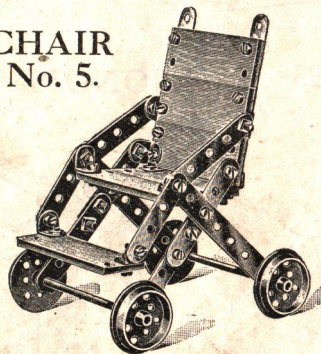
4	Slips	..	..	No. 25
10	Screws	..	..	50
4	Strips, 2 in.	..	..	56
2	„ 2½ „	..	..	57
6	Brackets	..	..	66
2-in. strips screwed behind the wood back.				



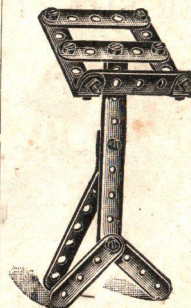
CHAIR No. 4

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

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

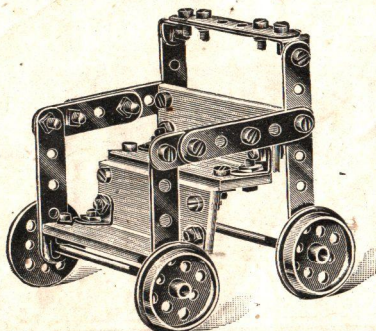


MUSIC STAND No. 8

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

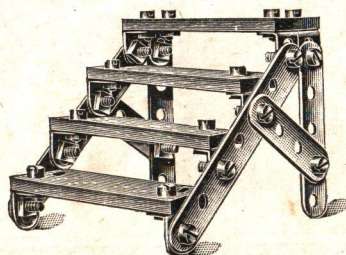
PRIMUS ENGINEERING

BRITISH MADE



CHAIR No. 6

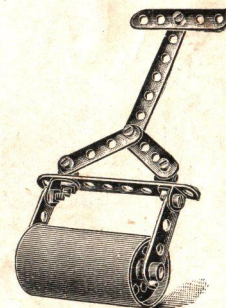
4	Slips	No. 25
30	Screws	50
2	Strips, 2 in. ..	56
6	" 2½ " ..	57
2	" 3½ " ..	59
12	Brackets	66
4	Wheels	75
2	Axles, 3½ in. ..	77



LADDER No. 7

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

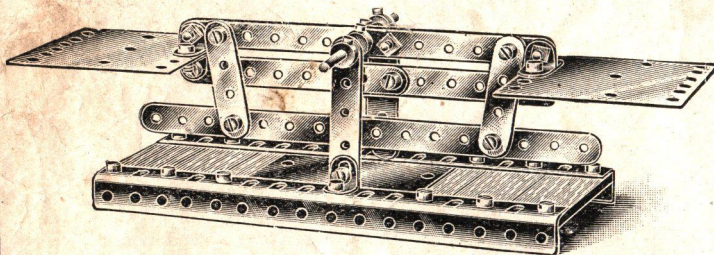
Fix brackets to steps with slots at side.



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

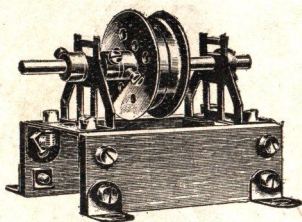
Cover wheels with card for roller.



FRENCH BALANCE No. 10

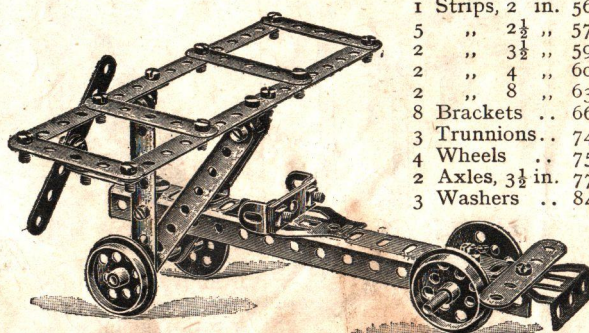
6	Slips ..	No. 25	2	Strips, 4 in.	No. 60
30	Screws ..	50	1	" 8 " ..	63
2	Bars, 8 in. ..	54	10	Brackets ..	66
2	Strips, 2 " ..	56	3	Plates, 3 x 3 in.	68
2	" 2½ " ..	57	1	Axle, 3½ in. ..	77
2	" 3½ " ..	59	4	Collars ..	82

COUNTER SHAFT No. 23



	No.		No.
2	Slips ..	2	Wheels ..
12	Screws ..	1	Axle, 3½ in. ..
8	Brackets ..	3	Collars ..
2	Trunnions ..	3	Washers ..
	74		84

MONOPLANE No. 13



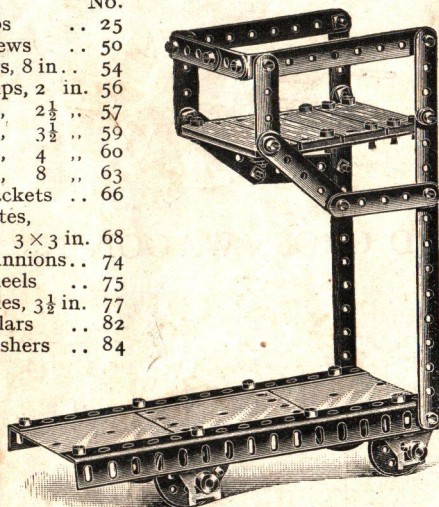
	No.
26	Screws ..
1	Bar, 8 in. ..
1	Strips, 2 in. ..
5	" 2½ " ..
2	" 3½ " ..
2	" 4 " ..
2	" 8 " ..
8	Brackets ..
3	Trunnions ..
4	Wheels ..
2	Axles, 3½ in. ..
3	Washers ..
	84

PRIMUS ENGINEERING

BRITISH MADE

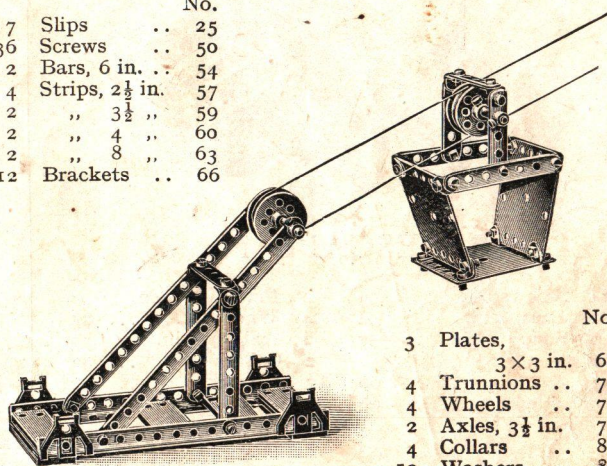
TOWER WAGON No. 44

	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



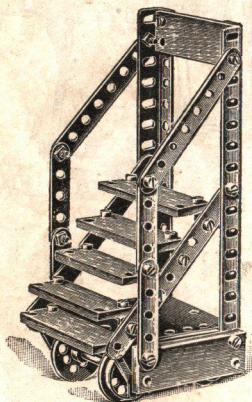
GOODS HOIST No. 45

	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



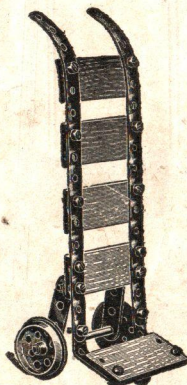
	No.
3 Plates, 3×3 in.	68
4 Trunnions	74
4 Wheels	75
2 Axles, 3½ in.	77
4 Collars	82
10 Washers	84

LIBRARY LADDER No. 42



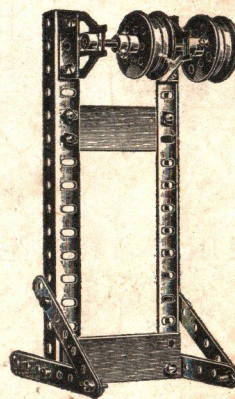
	No.		No.
8 Slips	25	1 Plate, 3×3 in.	68
36 Screws	50	2 Trunnions	74
2 Bars, 8 in.	54	4 Wheels	75
2 Strips, 2 in.	56	4 Axles, 3½ in.	77
4 " 2½	57	2 Collars	82
2 " 3½	59	2 Washers	84
2 " 4	60		
10 Brackets	66		

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

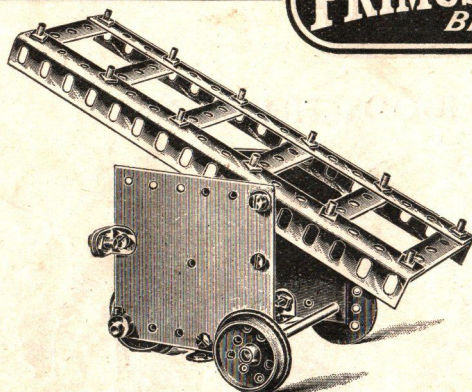
SHAFTING No. 35



	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

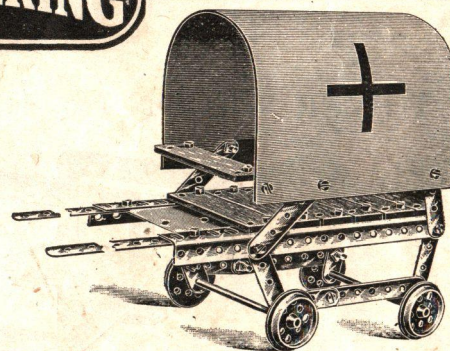
PRIMUS ENGINEERING

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FIRE ESCAPE No. 30

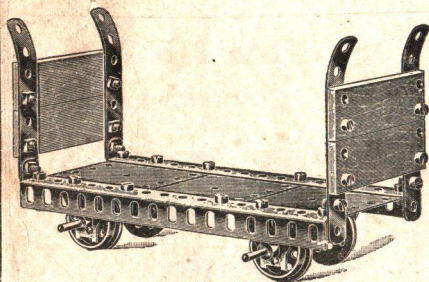
	No.		No.
24 Screws ..	50	2 Plates, 3 × 3 in.	68
2 Bars, 8 in.	54	4 Wheels ..	75
6 Strips, 2½ in.	57	2 Axles, 3½ in.	77
1 " 3½ "	59	2 Collars ..	82
1 " 4 "	60	2 Washers ..	84
4 Brackets ..	66		



RED CROSS WAGON No. 24

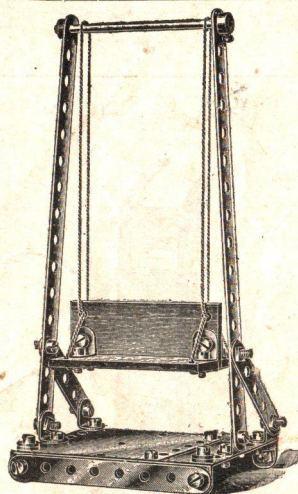
	No.		No.
8 Slips ..	25	2 Strips, 4 in.	60
34 Screws ..	50	2 " 8 "	63
2 Bars, 8 in.	54	4 Brackets ..	66
4 Strips, 2 in.	56	1 Plate, 3 × 3 in.	68
6 " 2½ "	57	4 Wheels ..	75
2 " 3½ "	59	2 Axles, 3½ in.	77

Hood is made of stiff card.



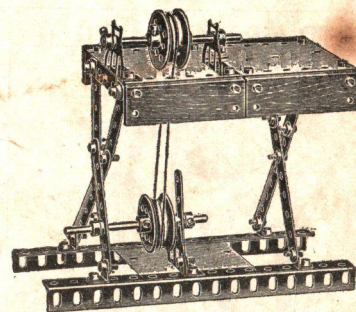
CHURN TROLLEY No. 27

	No.		No.
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.		No.
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		

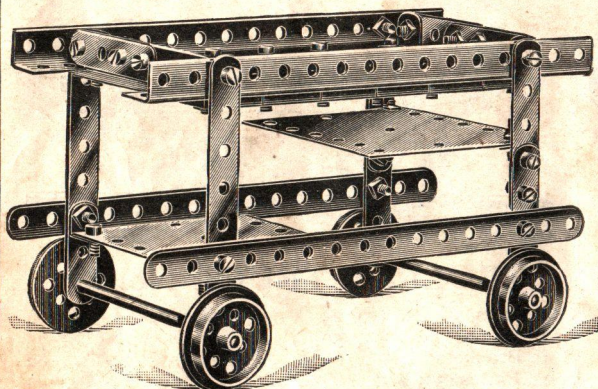


LATHE No. 43

	No.		No.
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		
2 Collars ..	82		
9 Washers ..	84		

PRIMUS ENGINEERING

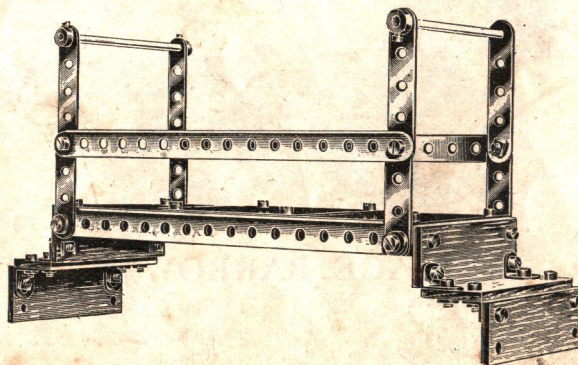
BRITISH MADE



DINNER WAGON No. 14

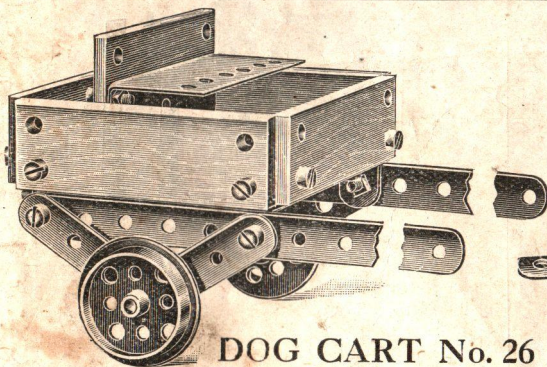
6	Slips	..	..	..	No. 25
36	Screws	..	..	..	50
2	Bars, 8 in.	..	..	..	54
4	Strips, 2 "	..	..	..	56
4	" 2 1/2 "	..	..	..	57
2	" 4 "	..	..	..	60
2	" 8 "	..	..	..	63
8	Brackets	..	..	..	66
2	Plates, 3 x 3 in.	..	..	..	68
4	Wheels	..	..	..	75
2	Axles, 3 1/2 in.	..	..	..	77

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



BRIDGE No. 16

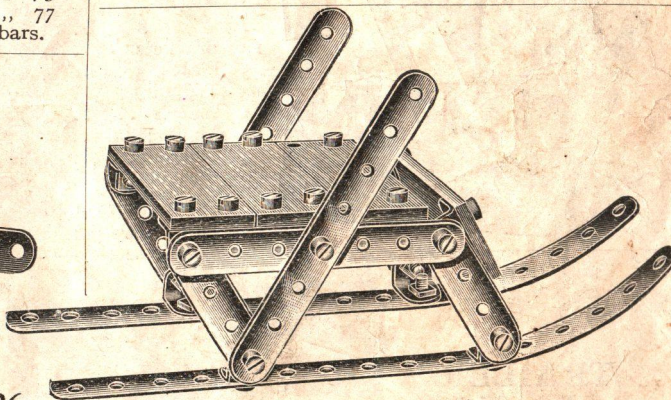
6	Slips	..	..	..	No. 25
36	Screws	..	..	..	50
2	Bars, 8 in.	..	..	..	54
4	Strips, 2 "	..	..	..	56
4	" 2 1/2 "	..	..	..	57
2	" 8 "	..	..	..	63
12	Brackets	..	..	..	66
3	Plates, 3 x 3 in.	..	..	..	68
2	Axles, 3 1/2 in.	..	..	..	77
4	Collars	..	..	..	82
8	Washers	..	..	..	84



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 x 3 in.	..	..	..	68
2	Wheels	..	..	..	75
1	Axle, 3 1/2 in.	..	..	..	77

The 8 in. strips form the shafts.

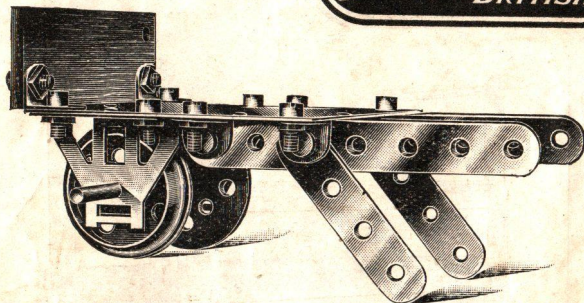


SLEDGE No. 19

4	Slips	..	..	..	No. 25
26	Screws	..	..	..	50
4	Strips, 2 in.	..	..	..	56
2	" 2 1/2 "	..	..	..	57
2	" 3 1/2 "	..	..	..	59
2	" 4 "	..	..	..	60
2	" 8 "	..	..	..	63
10	Brackets	..	..	..	66

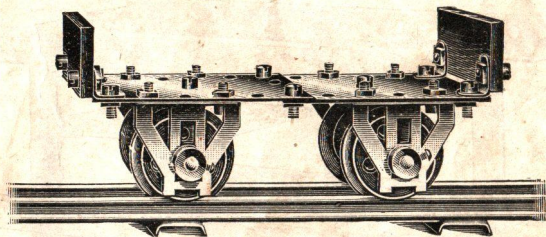
PRIMUS ENGINEERING

BRITISH MADE



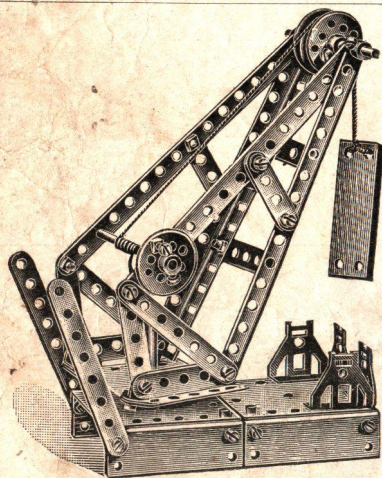
LUGGAGE BARROW No. 15

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

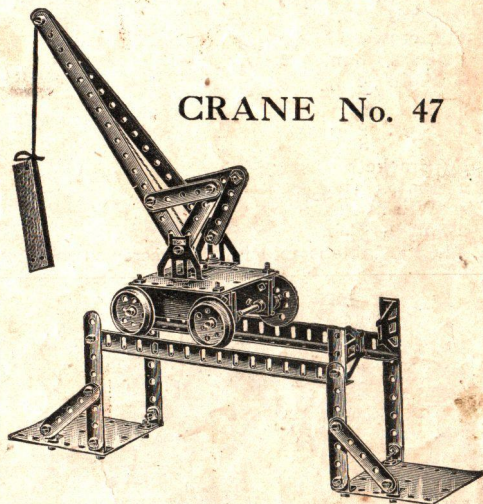
2 Slips	No. 25	4 Trunnions ..	No. 74
20 Screws	" 50	4 Wheels	" 75
4 Brackets	" 66	4 Collars	" 82
2 Plates, 3×3 ..	" 68	12 Washers	" 84



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 in. .	" 77
4 Collars	" 82
6 Washers	" 84

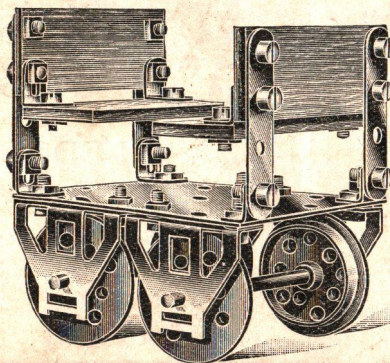
A long nail is used
for centre pin.



CRANE No. 47

TRAILER No. 37

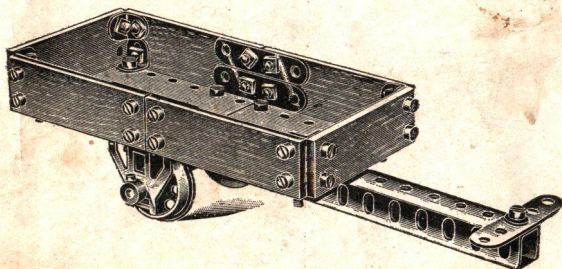
4 Slips	No. 25
24 Screws	" 50
4 Strips, 2 in. . .	" 56
8 Brackets	" 66
1 Plate, 3×3 in. .	" 68
4 Trunnions	" 74
4 Wheels	" 75
2 Axles, 3½ in. .	" 77
12 Washers	" 84



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

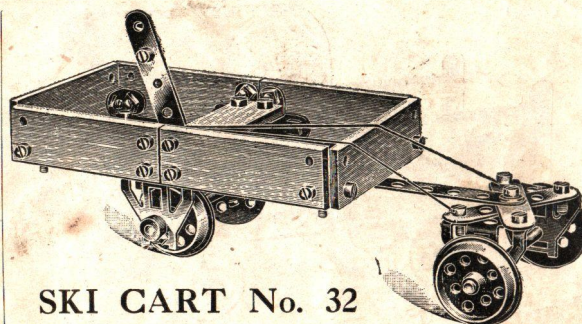
PRIMUS ENGINEERING

BRITISH MADE



BAGGAGE TRUCK No. 31

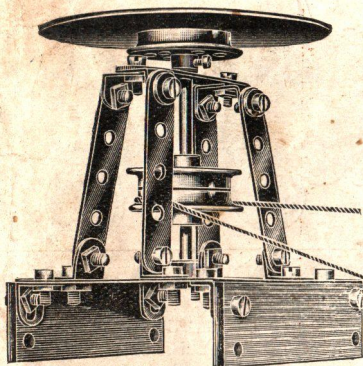
6 Slips	No. 25	2 Plates, 3 × 3 in.	No. 68
33 Screws	50	2 Trunnions	74
2 Bars, 8 in. ..	54	2 Wheels	75
4 Strips, 2 in. ..	56	1 Axle, 3½ in. ..	77
1 " 2½ "	57	2 Collars	82
12 Brackets	66	5 Washers	84



SKI CART No. 32

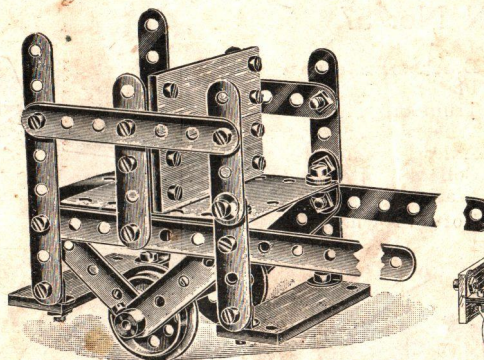
7 Slips	No. 25	4 Trunnions ..	No. 74
36 Screws	50	4 Wheels	75
2 Strips, 2 in. ..	56	2 Axles, 3½ in. ..	77
3 " 2½ "	57	2 Collars	82
1 " 8 "	63	3 Washers	84
12 Brackets	66		
Plates, 3 × 3 in. ..	68		

Cord used for steering.



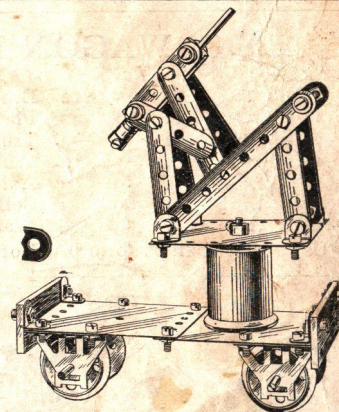
NEWTON'S DISC No. 22

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



MAIL CART No. 25

4 Slips	No. 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



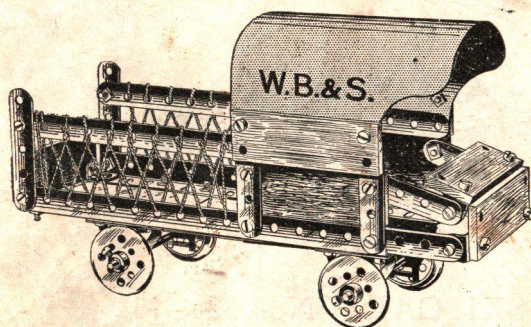
ANTI-AIRCRAFT GUN No. 49

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.

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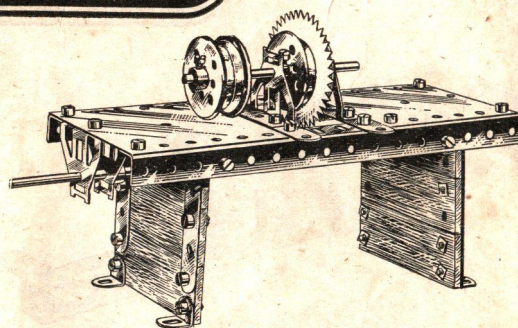
BRITISH MADE



MOTOR LORRY No. 55

7	Slips..	No. 25	2	Strips, 8 in..	No. 63
36	Screws	.. 50	6	Brackets	.. 66
2	Bars, 8 in.	.. 54	4	Trunnions	.. 74
4	Strips, 2 in.	.. 56	4	Wheels	.. 75
6	" 2 1/2 "	.. 57	2	Axles, 3 1/2 in.	.. 77

Piece of card cut to make hood.



CIRCULAR SAW No. 56

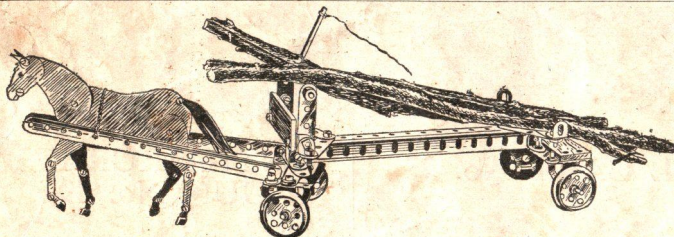
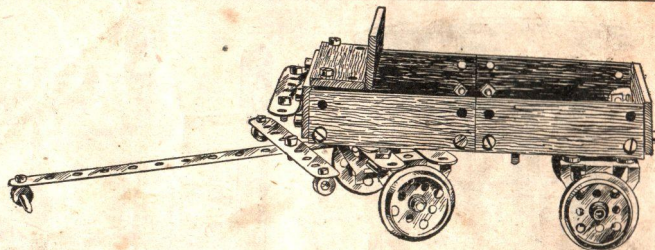
		No.			No.
6	Slips	25	2	Plates	68
35	Screws	50	4	Trunnions	74
2	Bars	54	2	Axles	77
4	Strips, 2½ in.	57	1	Collar	82
2	" 4 "	60	1	Washer.. ..	84
8	Brackets	66			

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

A.S.C. WAGON No. 57

No.			No.		
8	Slips	.. 25	12	Brackets	.. 66
34	Screws	.. 50	2	Plates	.. 68
4	Strips, 2 in.	56	4	Trunnions	.. 74
4	" 2 1/2 "	57	4	Wheels	.. 75
1	" 3 1/2 "	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.



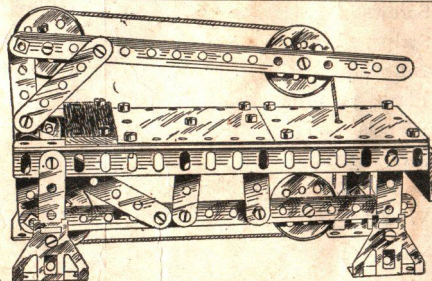
TIMBER DRAG No. 58

	No.		No.		
2	Slips	.. 25	2	Strips, 8 in.	.. 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

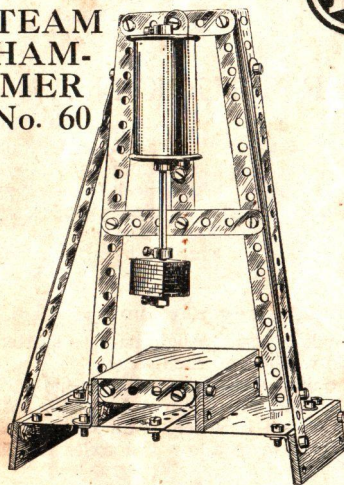
				No.					No.
2	Slips	..	..	25	1	Strip, 4 in.	..	60
32	Screws	..	..	50	2	" 8 "	..	63
2	Bars, 8 in.	..	..	54	2	Brackets	..	66
4	Strips, 2 in.	..	..	56	2	Plates, 3 × 3 in.	..	68
4	" 2½ "	..	..	57	4	Trunnions	..	74
1	" 3½ "	..	..	59	4	Wheels	..	75



PRIMUS ENGINEERING

BRITISH MADE

STEAM HAMMER No. 60

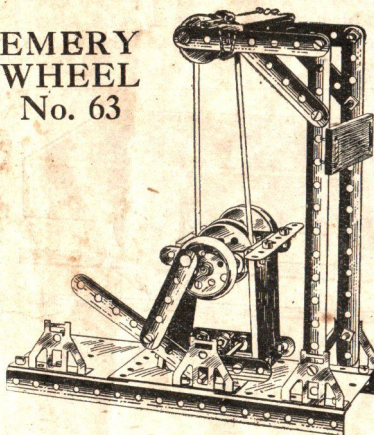


4 Slips	No. 25	2 Strips, 8 in.	No. 63
33 Screws	„ 50	12 Brackets	„ 66
2 Bars	„ 54	2 Plates	„ 68
1 Strip, 2 in.	„ 56	2 Wheels	„ 75
2 „ 2½ „	„ 57	1 Axle	„ 77
1 „ 3½ „	„ 59	2 Collars	„ 82

Small squares of cardboard fixed on to axle for hammer.

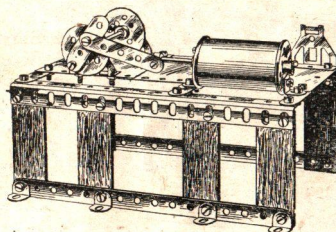
Flat piece of cardboard for bed and an inverted mantle-case is used for cylinder.

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		

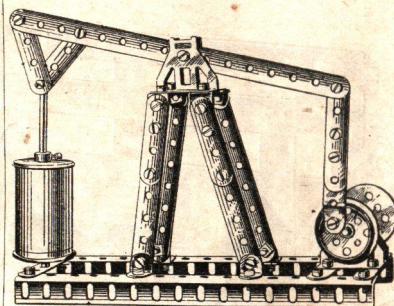
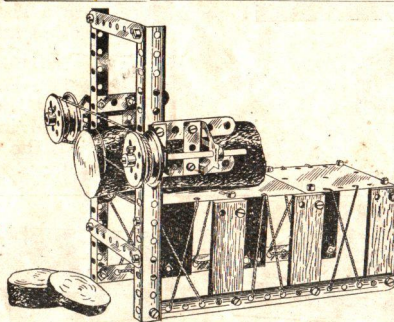
A French nail and cotton reel are used in this model; also a pill-box lid for emery wheel.



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

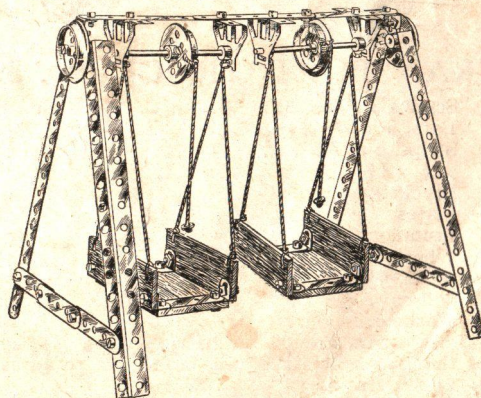
An inverted mantle-case is used for cylinder.

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

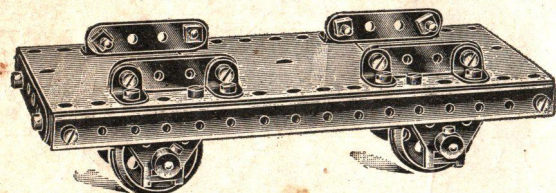
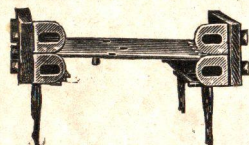
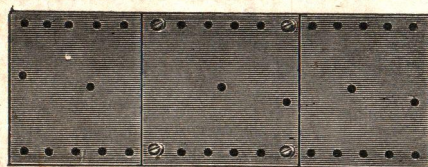
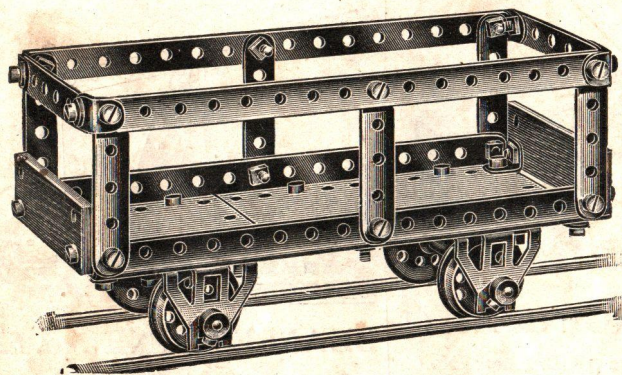
SWING No. 65

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	" 2 1/2 "	..	..	..	57
12	Brackets	..	..	..	66
3	Plates, 3 x 3 in.	..	..	..	68
4	Trunnions	..	..	..	74
4	Wheels ..	..	..	..	75
2	Axles, 3 1/2 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 2 1/2-in. strips.

TIMBER TRUCK No. 38

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

Make this truck before you attempt the others.

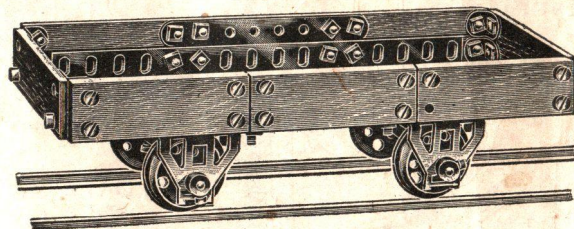
(1) Fit Brackets inside Angle bars to slotted sides, with two washers to each screw.

(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.



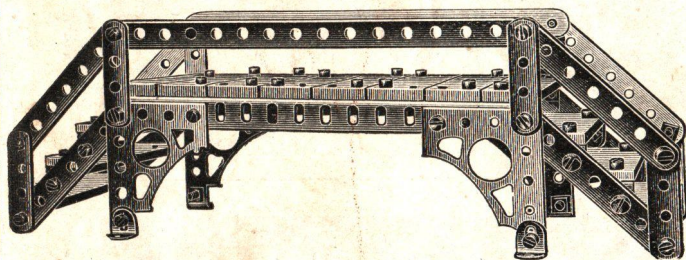
BALLAST TRUCK No. 40

8	Slips ..	..	..	..	No. 25
36	Screws ..	..	..	..	50
2	Bars, 8 in.	..	..	..	54
4	Strips, 2 in.	..	..	..	56
2	" 4 " ..	..	..	..	60
8	Brackets	..	..	..	66
3	Plates, 3 x 3 in.	..	..	..	68
4	Trunnions	..	..	..	74
4	Wheels ..	..	..	..	75
2	Axles, 3 1/2 in.	..	..	..	77
4	Collars ..	..	..	..	82
8	Washers..	..	..	..	84

These models are made with

PRIMUS ENGINEERING

Nº 2 OUTFIT

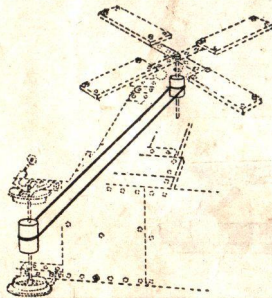


FOOT BRIDGE No. 107

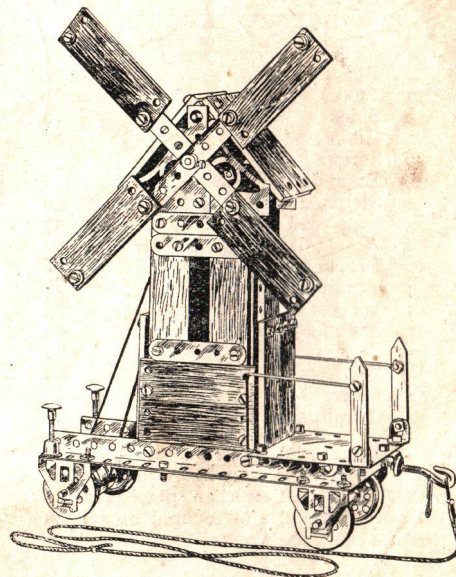
14	Slips	..	..	..	..	No. 25
60	Screws	..	..	..	..	50
2	Bars, 8 in.	..	..	..	..	54
8	Strips 2 "	..	..	..	..	56
8	" 3 1/2 "	..	..	..	..	59
2	" 8 "	..	..	..	..	63
16	Brackets	..	..	..	..	66
4	Architraves	..	..	..	..	85

WORKING WINDMILL, No. 138

	No.		No.
1 Floor ..	9	9 Brackets ..	66
2 Posts ..	11	3 Plates, 3 x 3 ..	68
16 Slips ..	25	4 Trunnions ..	74
55 Screws ..	50	4 Wheels ..	75
2 Angle Bars, 6 1/2 in.	53	2 Axles, 3 1/2 in.	77
2 " 8 in.	54	2 " 2 1/4 "	78
4 Strips, 2 in.	56	3 Collars ..	82
3 " 2 1/2 "	57	2 Washers ..	84
2 " 6 1/2 "	62	2 Buffers ..	85
2 " 8 "	63	1 Coupling ..	86
4 Architraves ..	65	2 Rods ..	96

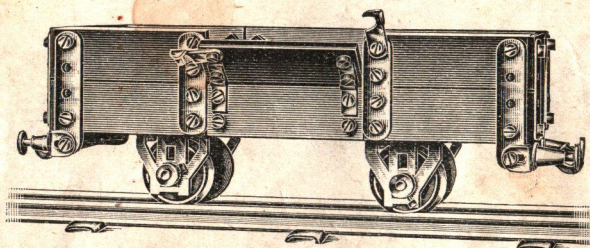


NOTE.—This model is mounted on a trolley and when pulled along the sails revolve. This is effected by a simple belt system, using cotton reels, fully explained by the small drawing.



PRIMUS ENGINEERING

BRITISH MADE



COAL TRUCK No. 113

16	Slips	..	..	No. 25
61	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

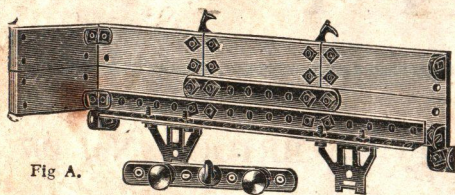


Fig A.

DIAGRAMS TO SHOW.

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

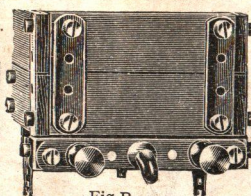


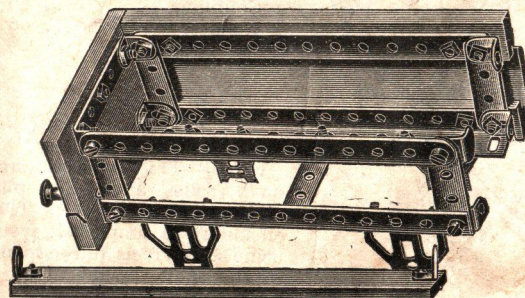
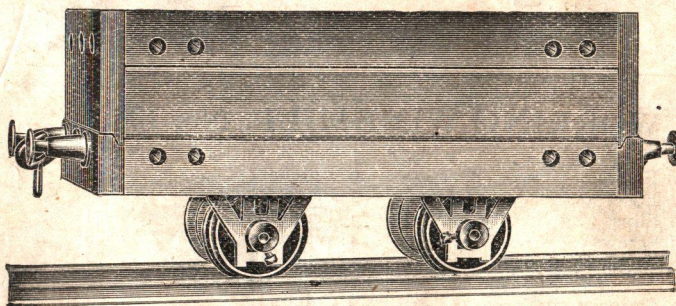
Fig B.

HEAVY GOODS TRUCK No. 116

ALL WOOD SIDES, ENDS AND BUFFER BLOCKS.

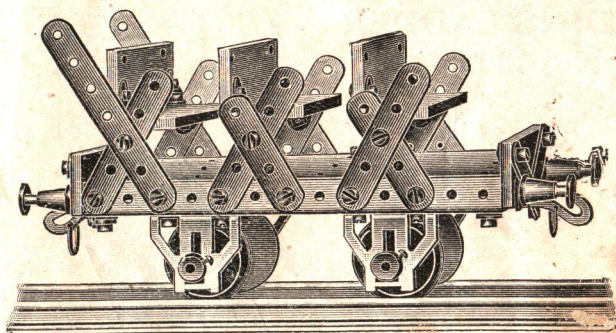
4	Rails	..	..	No. 1
2	Blocks	..	..	4
1	Floor	..	..	9
2	Sides	..	..	17
2	Ends	..	..	18
36	Screws	..	..	50
2	Bars, 6½ in.	..	..	53
4	Strips, 2 in.	..	..	56
3	" 2½ "	..	..	57
2	" 6½ "	..	..	62
10	Brackets	..	..	66
4	Trunnions	..	..	74
4	Wheels	..	..	75
2	Axles, 2½ in.	..	..	78
4	Collars	..	..	82
4	Washers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



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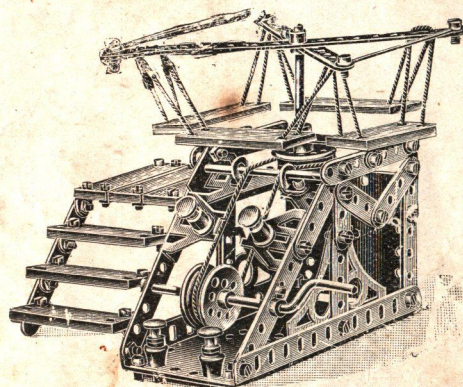
BRITISH MADE



SWITCHBACK CAR No. 115

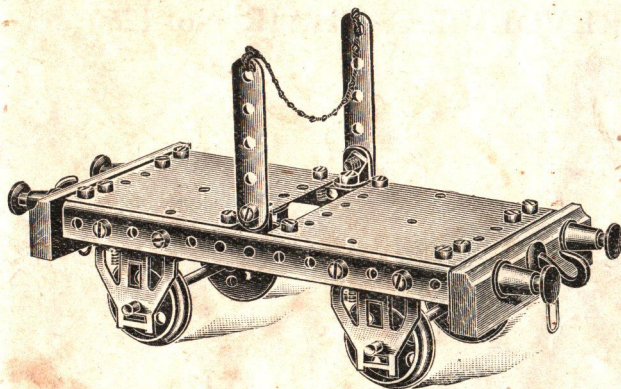
8 Slips ..	No. 25	4 Trunnions ..	No. 74
50 Screws ..	50	4 Wheels ..	75
2 Bars, 6½ in. ..	53	2 Axles, 3½ in. ..	77
8 Strips, 2 in. ..	56	4 Collars ..	82
6 " 2½ " ..	57	12 Washers ..	84
2 " 3½ " ..	59	4 Buffers ..	85
16 Brackets ..	66	2 Couplings ..	86
3 Plates, 3×3 in. ..	68		

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



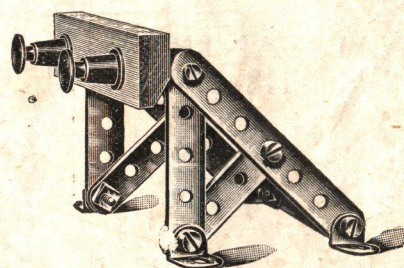
ROUNDBOUT No. 129

	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



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

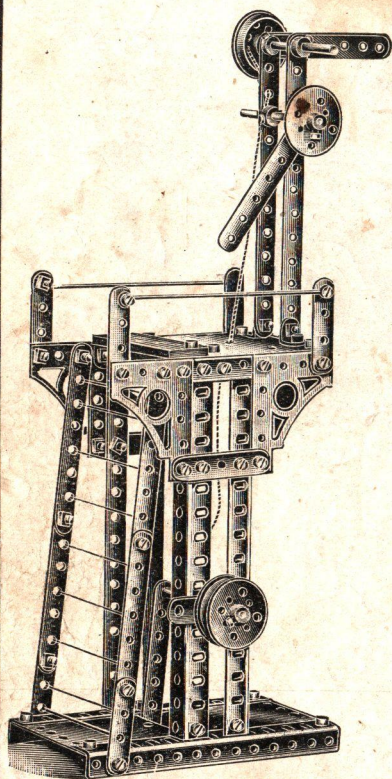


BUFFER END No. 100

1 Block ..	..	..	..	No. 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

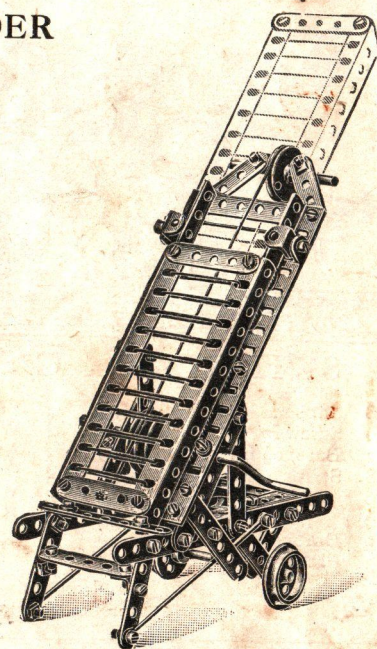


SIGNAL GANTRY
No. 118

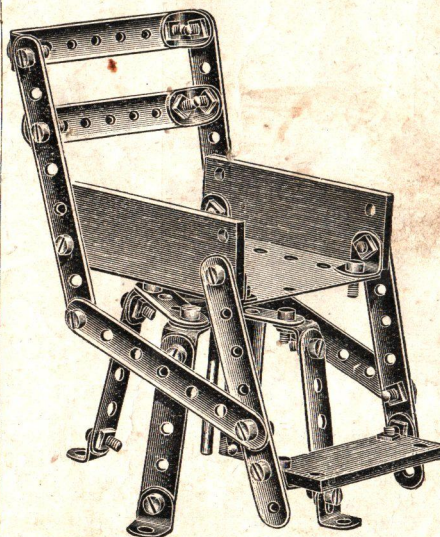
1	Slip	..	No. 25
55	Screws	..	50
2	Bars, $6\frac{1}{4}$ in.	..	53
2	" 8 "	..	54
8	Strips, 2 in.	..	56
5	" $2\frac{1}{2}$ "	..	57
5	" $3\frac{1}{2}$ "	..	59
2	" 4 "	..	60
2	" $6\frac{1}{2}$ "	..	62
2	" 8 "	..	63
4	Architraves	..	65
11	Brackets	..	66
3	Plates	..	68
4	Wheels	..	75
1	Rod, $3\frac{1}{2}$ in.	..	77
2	Rods, $2\frac{3}{4}$ "	..	78
4	Collars	..	82
2	Rods	..	96
Use cord for ladder rungs.			

EXTENDING LADDER
No. 130

53	Screws	..	No. 50
2	Bars, $6\frac{1}{4}$ in.	..	53
2	" 8 "	..	54
4	Strips, 2 in.	..	56
6	" $2\frac{1}{2}$ "	..	57
5	" $3\frac{1}{2}$ "	..	59
2	" 4 "	..	60
2	" 8 "	..	63
2	Architraves	..	65
16	Brackets	..	66
1	Hinge	..	72
4	Wheels	..	75
1	Axle, $3\frac{1}{2}$ in.	..	77
1	" $2\frac{3}{4}$ "	..	78
3	Collars	..	82
12	Washers	..	84
1	Catch	..	95
2	Rods	..	96
Extra parts required :			
1	Wheel	..	76
1	Handle	..	83



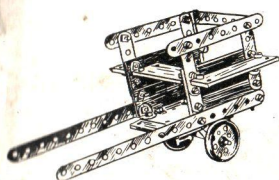
REVOLVING CHAIR No. 126



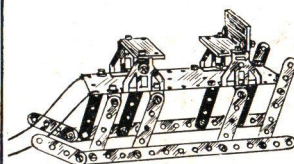
3	Wood slips	..	No. 25
36	Screws	..	50
1	Strips, 2 in.	..	56
6	" $2\frac{1}{2}$ "	..	57
6	" $3\frac{1}{2}$ "	..	59
3	" 4 "	..	60
16	Brackets	..	66
1	Plate, 3×3 in.	..	68
1	Wheel	..	75
1	Axle, $2\frac{3}{4}$ in.	..	78
2	Collars	..	82

PRIMUS ENGINEERING

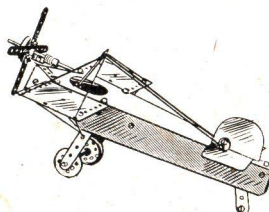
BRITISH MADE



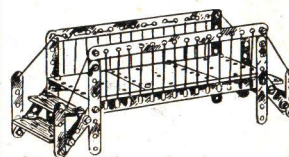
GOVERNESS CART



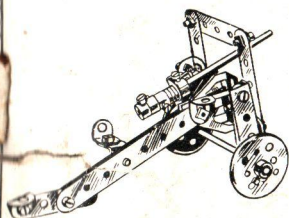
SLEIGH



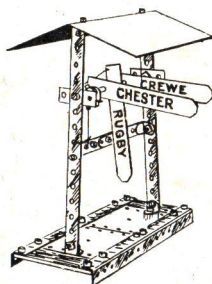
MONOPLANE



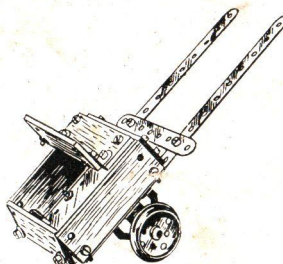
BRIDGE



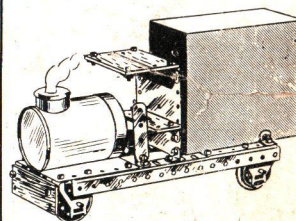
FIELD GUN



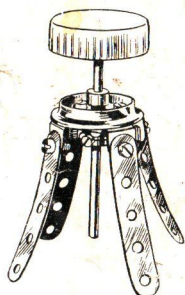
TRAIN INDICATOR



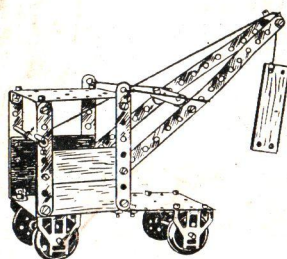
MARKET CART



STEAM LORRY



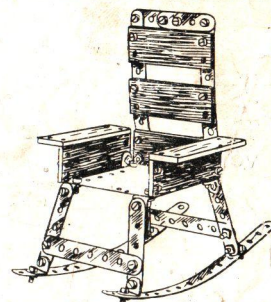
MUSIC STOOL



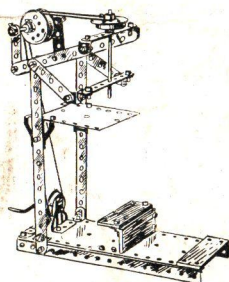
TRAVELLING CRANE



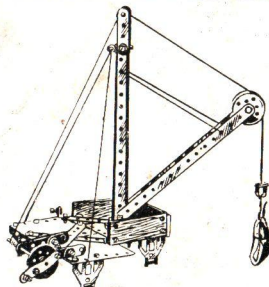
FLIP-FLAP



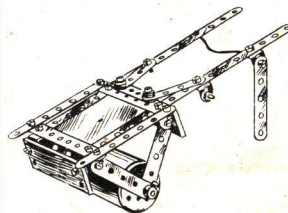
ROCKING CHAIR



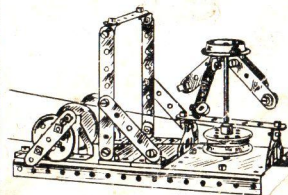
DRILL



DERRICK



ROLLER

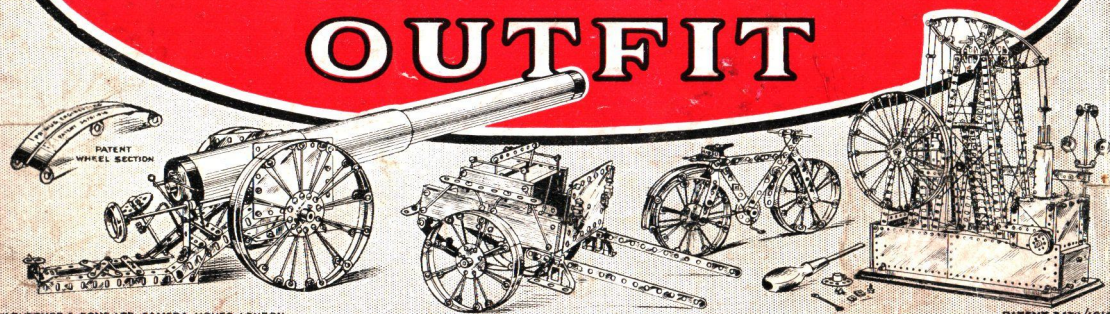


GOVERNORS

MODELS MADE WITH NO. 1 OUTFIT

PRIMUS ENGINEERING
BRITISH MADE

PRIMUS BIG-WHEEL OUTFIT



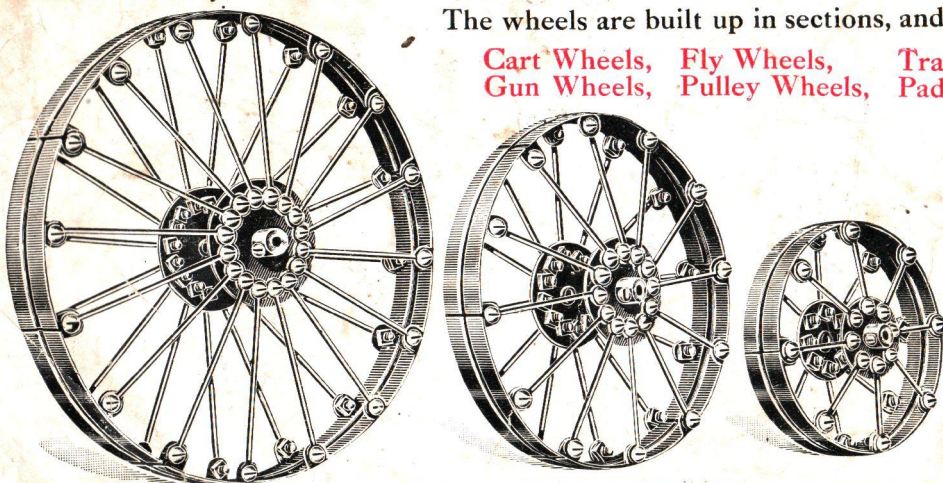
W. BUTCHER & SONS, LTD., CAMERA HOUSE, LONDON.

PATENT 3,479/1916

A Series of new and ingenious parts with which Primus Engineers can build up wheels of 4, 6 and 8 in. diameter to be used in connection with many of the models in the Primus Manual. These parts are for use with the Regular Primus parts and make the Primus outfits more versatile than any others that have ever been devised.

The wheels are built up in sections, and can be used for

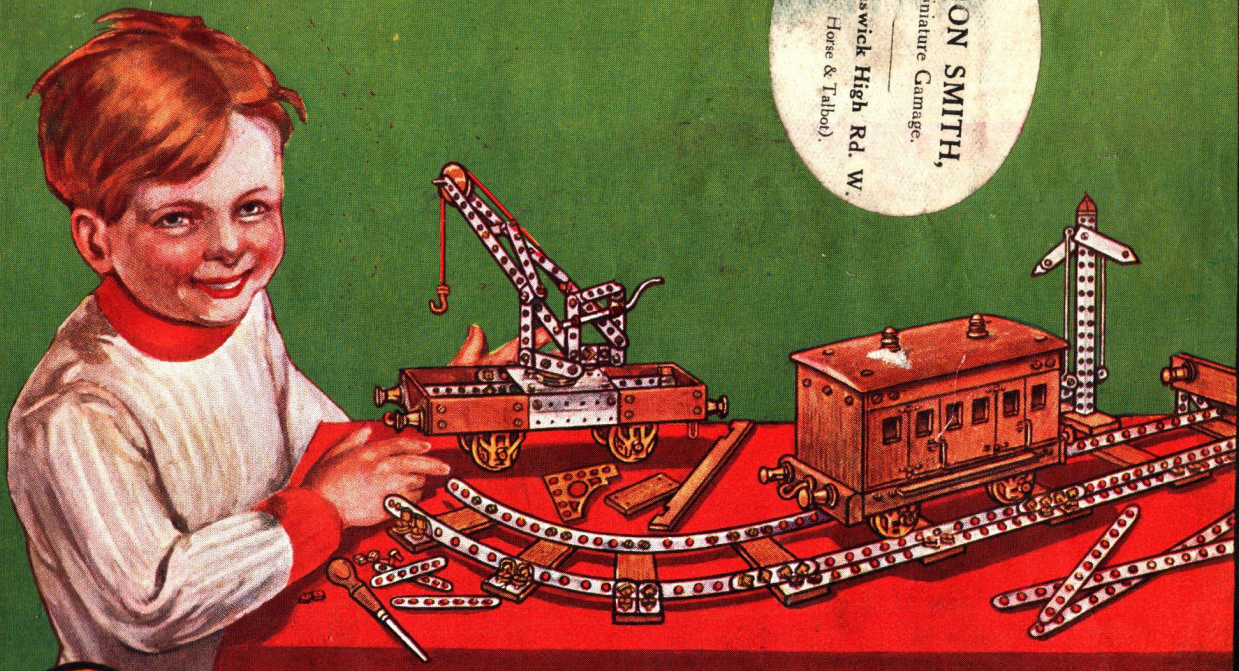
**Cart Wheels, Fly Wheels, Tractor Wheels,
Gun Wheels, Pulley Wheels, Paddle Wheels, etc.**



Complete
Outfit to build
4, 6 and 8 in.
diameter
wheels
in box with
Instruction
Manual.

PRIMUS ENGINEERING

VON SMITH,
miniature Gamage,
is with High Rd. W.
Horse & Talbot).



PRICE
9d

"Look-it's Wood and Metal!"

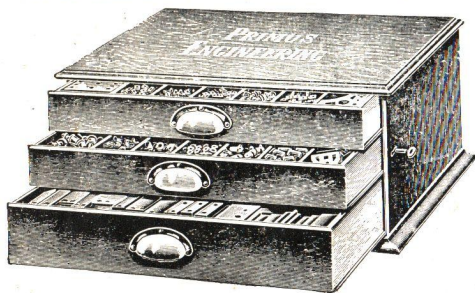
W. BUTCHER & SONS, LTD. CAMERA HOUSE, LONDON, E.C.



Outfits Nos. 1 & 2 in plain boxes, also the Supplementary Sets



Outfits Nos. 3, 4 & 5 are packed in extra strong boxes, with a loose tray for the metal parts.



Outfit No. 6 is in a beautiful polished oak cabinet, with lock and key.

PRIMUS ENGINEERING OUTFITS

Look—it's Wood and Metal!

Each outfit is complete and ready for use, and contains sufficient wood and metal parts to build a wide variety of models.

Standard Outfits

- No. 0** Contains 92 parts of wood and metal. Suitable for young boys and girls.
- No. 1** Contains 140 parts in strong partitioned box. Builds some very clever models.
- No. 2** Contains 267 parts in strong box. Makes a most acceptable present.
- No. 3** Contains 473 parts in tray box. A useful outfit with a good assortment of parts.
- No. 4** Contains 649 parts in tray box. An outfit with great possibilities.
- No. 5** Contains 1,131 parts in tray box. Builds large and interesting working models.
- No. 6** The Primus Cabinet. 1,189 parts in polished oak 3-drawer cabinet, with lock and key.

Supplementary Outfits

- No. 1^S** Containing parts to convert the No. 1 outfit into the No. 1^S.
- No. 2^S** Containing parts to convert the No. 2 outfit into the No. 3.
- No. 3^S** Containing parts to convert the No. 3 outfit into the No. 4.

PRIMUS ENGINEERING

BRITISH MADE

THE BRITISH TOY FOR THE BRITISH BOY.

PRIMUS 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.

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.

PRIMUS ENGINEERING

BRITISH MADE

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 the length of the screws; for example, when it is desired to fix a bracket exactly at right

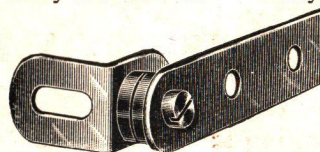


Fig. A

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).

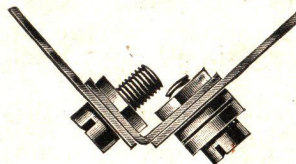
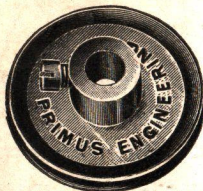


Fig. B.

EXTRA PARTS NOT INCLUDED IN OUTFITS



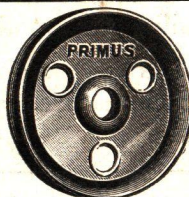
No.	Length	Per doz.
154	Wire Stays 1 1/2 inches	3d.
155	" " 2 1/2 "	3d.
156	" " 3 1/4 "	4d.



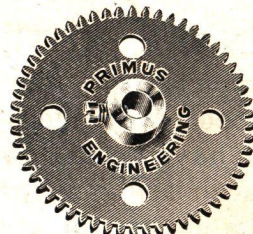
No. 158 Pulley Wheels with set screw, each 4d.



No. 168 Double Tapped Collars, each 4d.



No. 159 Pulley Wheels plain, each 2d.



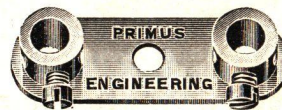
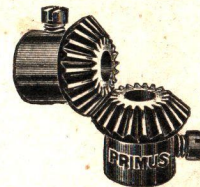
No. 160 Cog Gear Wheels, 1 1/2-in., 56 teeth, each 1/0



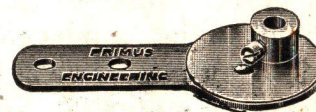
No. 167 Double Tapped Rods, 3 1/2 in., each, 3d.
No. 167A do. 2 1/2 " " 3d.



No. 161 Pinion Wheels, No. 162 Bevel Gears, 1/2-in., each 8d.



No. 164 Crank Arm each 8d.

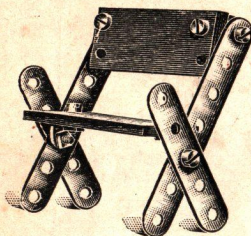


No. 163 Eccentric each 1/-

These models are made with

PRIMUS ENGINEERING

Nº1 OUTFIT



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.			

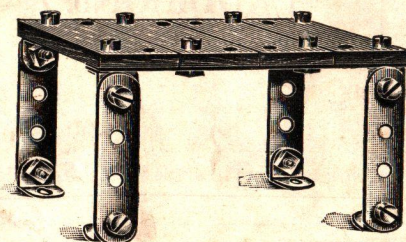
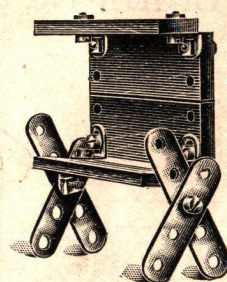


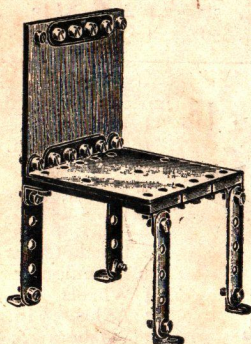
TABLE No. 2

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.				



SEAT No. 3

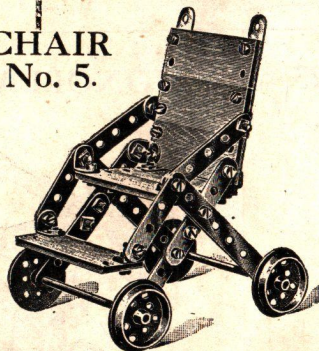
4	Slips	..	..	No. 25
10	Screws	..	..	50
4	Strips, 2 in.	..	..	56
2	" 2½ "	..	..	57
6	Brackets	..	..	66
2-in. strips screwed behind the wood back.				



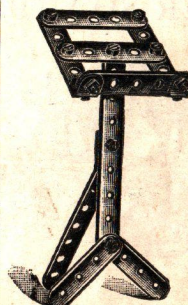
CHAIR No. 4

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

CHAIR No. 5.



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

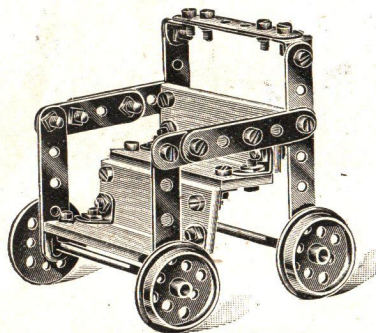


MUSIC STAND No. 8

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

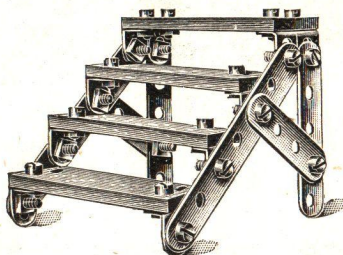
PRIMUS ENGINEERING

BRITISH MADE



CHAIR No. 6

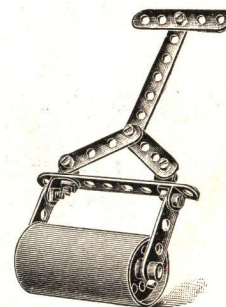
4	Slips ..	..	No. 25
30	Screws ..	..	50
2	Strips, 2 in.	..	56
6	" 2½ "	..	57
2	" 3½ "	..	59
12	Brackets ..	..	66
4	Wheels ..	..	75
2	Axles, 3½ in.	..	77



LADDER No. 7

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

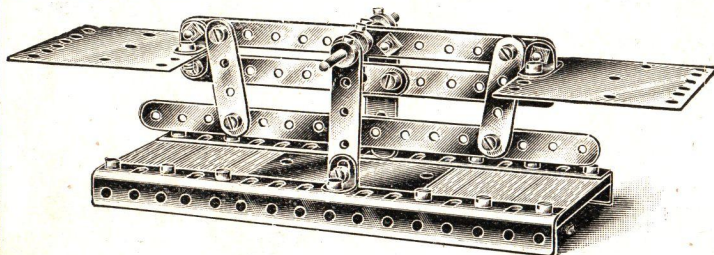
Fix brackets to steps with slots at side.



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

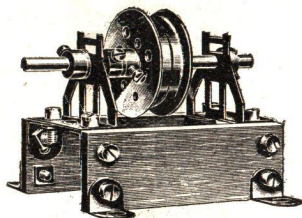
Cover wheels with card for roller.



FRENCH BALANCE No. 10

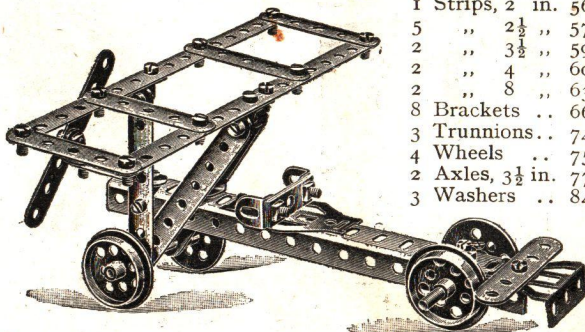
6	Slips ..	No. 25
30	Screws ..	50
2	Bars, 8 in.	54
2	Strips, 2 "	56
2	" 2½ "	57
2	" 3½ "	59
2	Strips, 4 in.	No. 60
1	" 8 "	63
10	Brackets ..	66
3	Plates, 3 × 3 in.	68
1	Axle, 3½ in.	77
4	Collars ..	82

COUNTER SHAFT No. 23



	No.		No.
2	Slips ..	2	Wheels ..
12	Screws ..	1	Axle, 3½ in.
8	Brackets ..	3	Collars ..
2	Trunnions..	3	Washers ..
	74		84

MONOPLANE No. 13



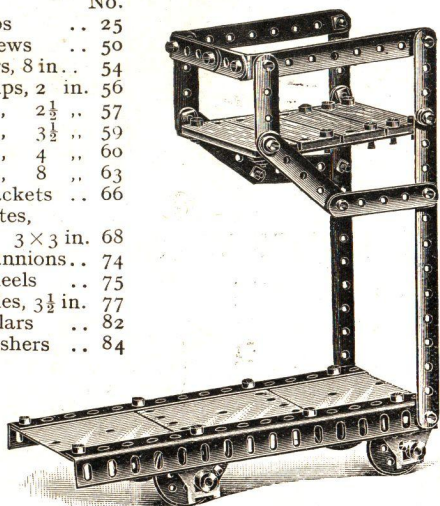
26	Screws ..	No. 50
1	Bar, 8 in.	54
1	Strips, 2 in.	56
5	" 2½ "	57
2	" 3½ "	59
2	" 4 "	60
2	" 8 "	63
8	Brackets ..	66
3	Trunnions..	74
4	Wheels ..	75
2	Axles, 3½ in.	77
3	Washers ..	84

PRIMUS ENGINEERING

BRITISH MADE

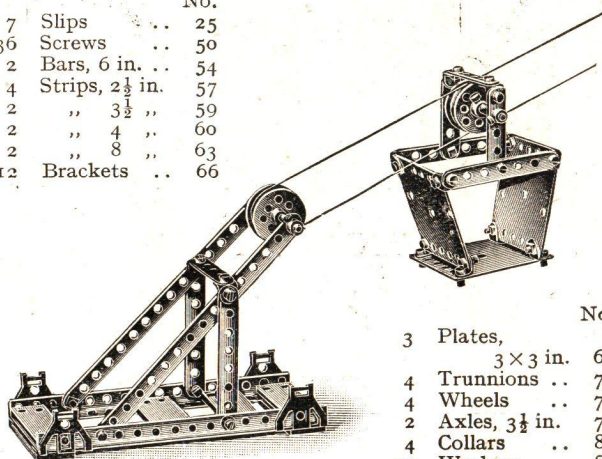
TOWER WAGON No. 44

	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



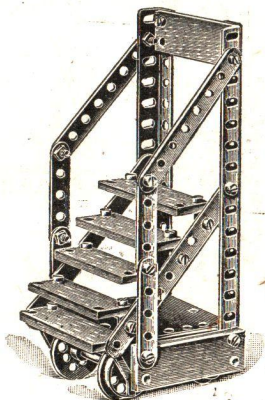
GOODS HOIST No. 45

	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



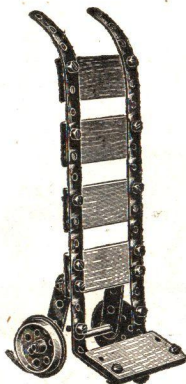
	No.
3 Plates, 3×3 in. ..	68
4 Trunnions ..	74
4 Wheels ..	75
2 Axles, 3½ in. ..	77
4 Collars ..	82
10 Washers ..	84

LIBRARY LADDER No. 42



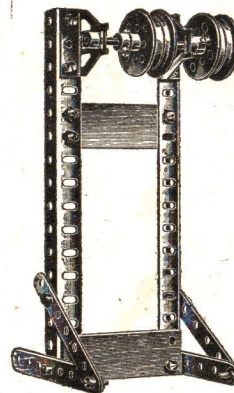
	No.		No.
8 Slips ..	25	1 Plate, 3×3 in. ..	68
36 Screws ..	50	2 Trunnions ..	74
2 Bars, 8 in. ..	54	4 Wheels ..	75
2 Strips, 2 in. ..	56	2 Axles, 3½ in. ..	77
4 " 2½ " ..	57	2 Collars ..	82
2 " 3½ " ..	59	2 Washers ..	84
2 " 4 " ..	60		
10 Brackets ..	66		

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

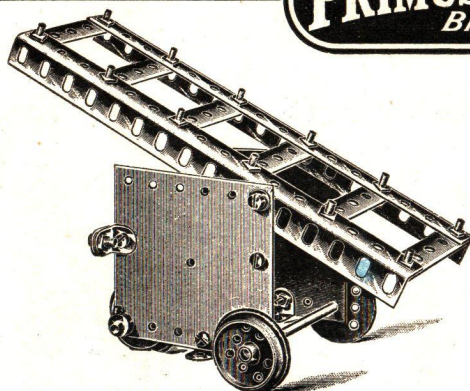
SHAFTING No. 35



	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

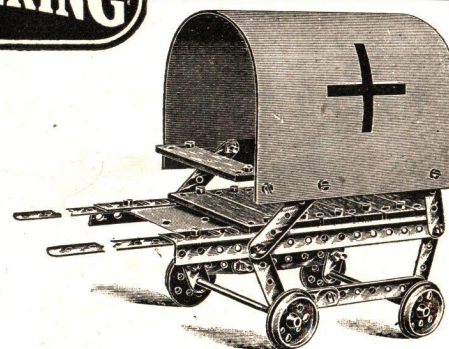
PRIMUS ENGINEERING

BRITISH MADE



FIRE ESCAPE No. 30

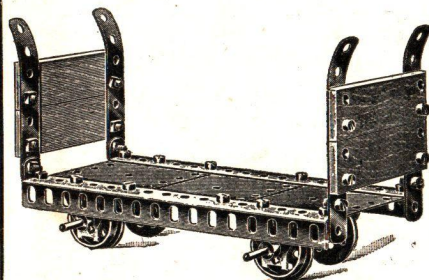
	No.		No.
24 Screws ..	50	2 Plates, 3 × 3 in.	68
2 Bars, 8 in.	54	4 Wheels ..	75
6 Strips, 2½ in.	57	2 Axles, 3½ in.	77
1 " 3½ "	59	2 Collars ..	82
1 " 4 "	60	2 Washers ..	84
4 Brackets	66		



RED CROSS WAGON No. 24

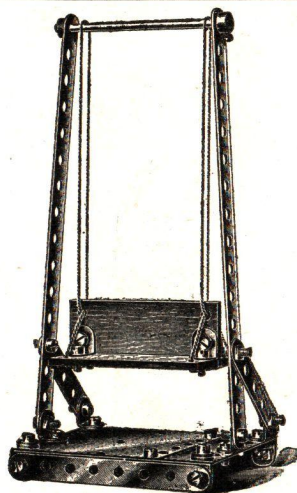
	No.		No.
8 Slips ..	25	2 Strips, 4 in.	60
34 Screws ..	50	2 " 8 "	63
2 Bars, 8 in.	54	4 Brackets	66
4 Strips, 2 in.	56	1 Plate, 3 × 3 in.	68
6 " 2½ "	57	4 Wheels	75
2 " 3½ "	59	2 Axles, 3½ in.	77

Hood is made of stiff card.



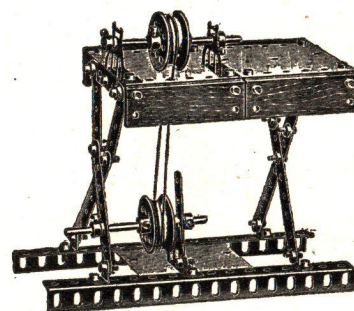
CHURN TROLLEY No. 27

	No.		No.
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.		No.
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		

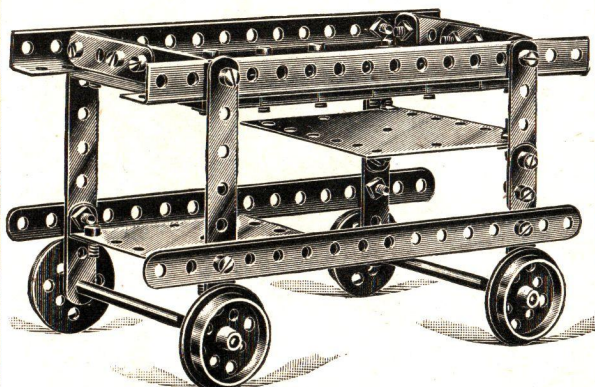


LATHE No. 43

	No.		No.
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

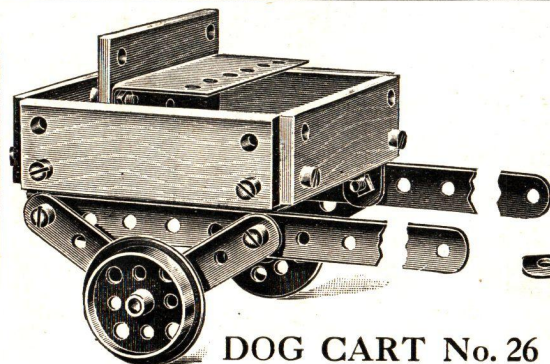
BRITISH MADE



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

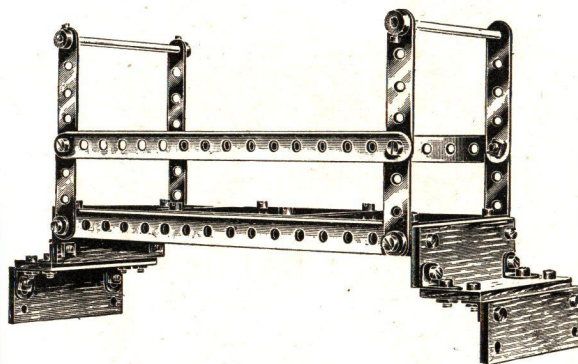
The top table is 3×1 in. slips, screwed to 8 in. bars.



DOG CART No. 26

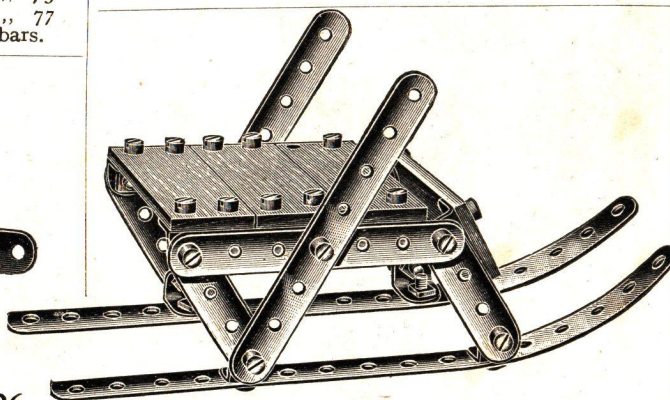
5	Slips	..	..	..	No. 25
20	Screws	..	..	..	50
4	Strips, 2 in.	..	..	..	56
2	" 8 "	..	..	..	63
12	Brackets	..	..	..	66
2	Plates, 3×3 in.	..	..	..	68
2	Wheels	..	..	..	75
1	Axle, 3½ in.	..	..	..	77

The 8 in. strips form the shafts.



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

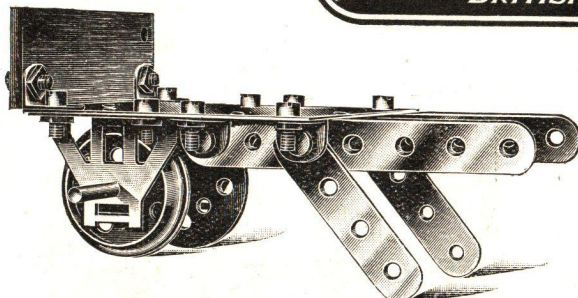


SLEDGE No. 19

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

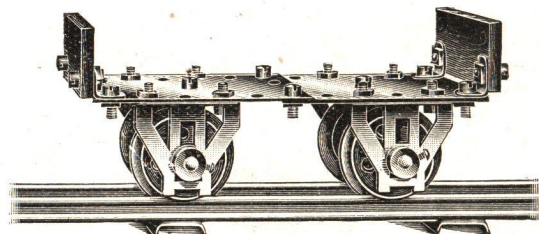
PRIMUS ENGINEERING

BRITISH MADE



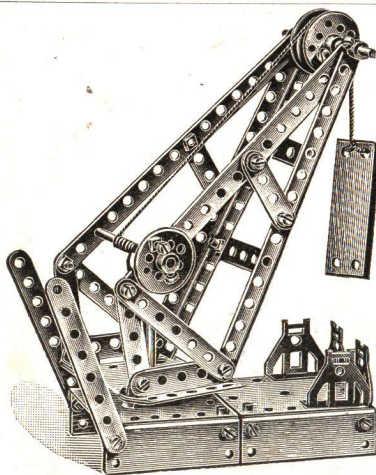
LUGGAGE BARROW No. 15

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

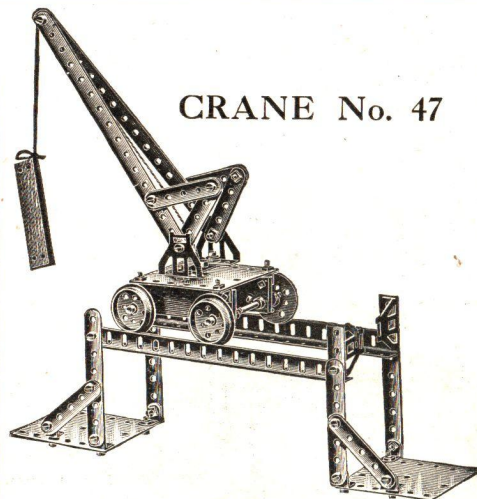
2 Slips	No. 25	4 Trunnions ..	No. 74
20 Screws ..	" 50	4 Wheels ..	" 75
4 Brackets ..	" 66	4 Collars ..	" 82
2 Plates, 3×3	" 68	12 Washers ..	" 84



CRANE No. 46

5 Slips, 3×1 in.	No. 25
30 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 in.	" 77
4 Collars ..	" 82
6 Washers ..	" 84

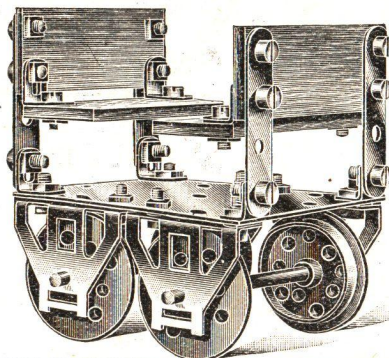
A long nail is used
for centre pin.



CRANE No. 47

TRAILER No. 37

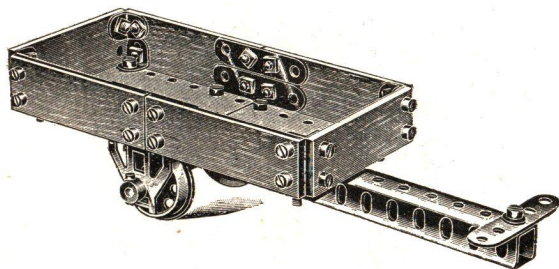
4 Slips	No. 25
24 Screws ..	" 50
4 Strips, 2 in.	" 56
8 Brackets ..	" 66
1 Plate, 3×3 in.	" 68
4 Trunnions ..	" 74
4 Wheels ..	" 75
2 Axles, 3½ in.	" 77
12 Washers ..	" 84



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

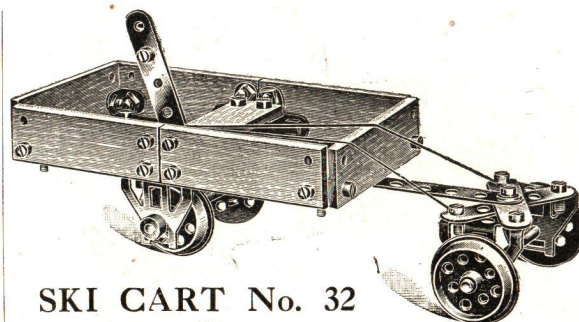
PRIMUS ENGINEERING

BRITISH MADE



BAGGAGE TRUCK No. 31

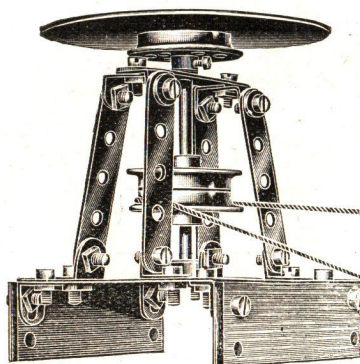
6	Slips ..	No. 25	2	Plates, 3 × 3 in.	No. 68
33	Screws ..	50	2	Trunnions ..	74
2	Bars, 8 in.	54	2	Wheels ..	75
4	Strips, 2 in.	56	1	Axle, 3½ in.	77
1	" 2½ "	57	2	Collars ..	82
12	Brackets ..	66	5	Washers ..	84



SKI CART No. 32

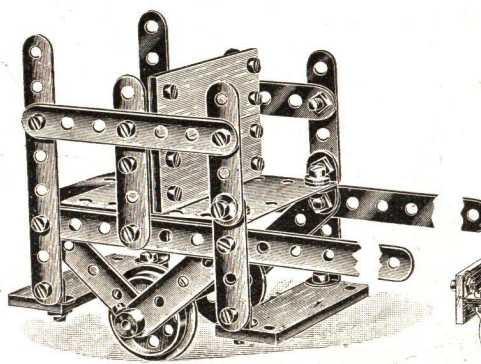
7	Slips..	No. 25	4	Trunnions ..	No. 74
36	Screws ..	50	4	Wheels ..	75
2	Strips, 2 in.	56	2	Axles, 3½ in.	77
3	" 2½ "	57	2	Collars ..	82
1	" 8 "	63	3	Washers ..	84
12	Brackets ..	66			
2	Plates, 3 × 3 in.	68			

Cord used for steering.



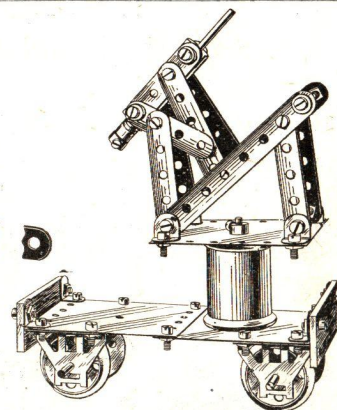
NEWTON'S DISC No. 22

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



MAIL CART No. 25

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



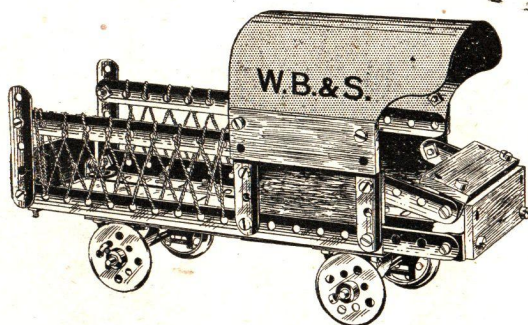
ANTI-AIRCRAFT GUN No. 49

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

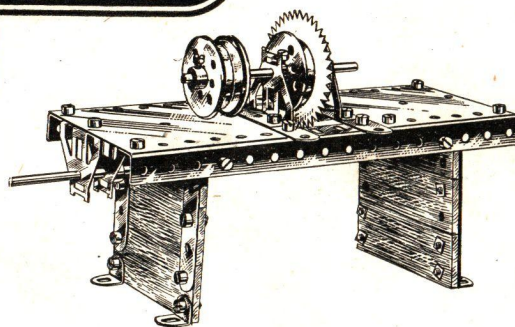
BRITISH MADE



MOTOR LORRY No. 55

7	Slips..	No. 25	2	Strips, 8 in..	No. 63
36	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

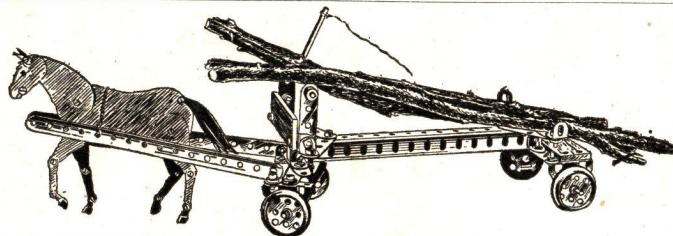
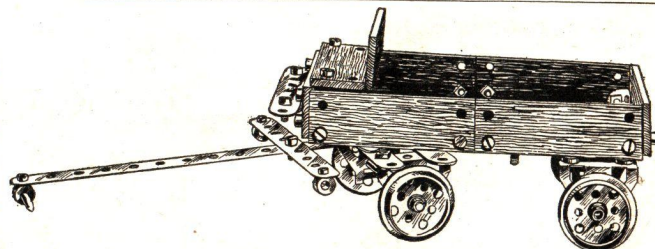
		No.			No.
6	Slips ..	25	2	Plates ..	68
35	Screws ..	50	4	Trunnions ..	74
2	Bars ..	54	2	Axles ..	77
4	Strips, 2½ in. ..	57	1	Collar ..	82
2	" 4 " ..	60	1	Washer..	84
8	Brackets ..	66			

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

A.S.C. WAGON No. 57

No.				No.			
8	Slips	..	25	12	Brackets	..	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.



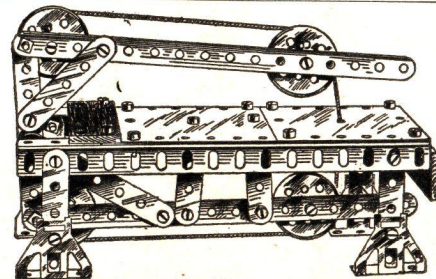
TIMBER DRAG No. 58

		No.			No.
2	Slips	25	2	Strips, 8 in.	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

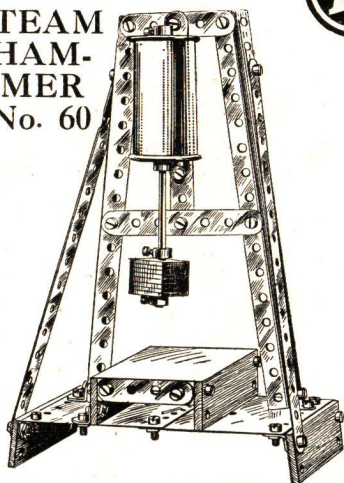
				No.					No.
2	Slips	..	..	25	1	Strip, 4 in.	..	60
32	Screws	..	..	50	2	" 8 "	..	63
2	Bars, 8 in.	..	..	54	2	Brackets	..	66
4	Strips, 2 in.	..	..	56	2	Plates, 3 × 3 in.	..	68
4	" 2½ "	..	..	57	4	Trunnions	..	74
1	" 3½ "	..	..	59	4	Wheels	..	75



PRIMUS ENGINEERING

BRITISH MADE

STEAM HAMMER No. 60

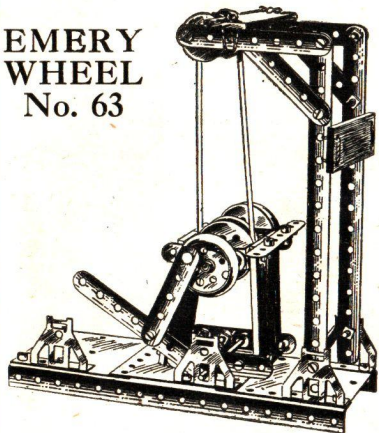


4 Slips	No. 25	2 Strips, 8 in.	No. 63
33 Screws	" 50	12 Brackets	" 66
2 Bars	" 54	2 Plates	" 68
1 Strip, 2 in.	" 56	2 Wheels	" 75
2 " 2½ "	" 57	1 Axle	" 77
1 " 3½ "	" 59	2 Collars	" 82

Small squares of cardboard fixed on to axle for hammer.

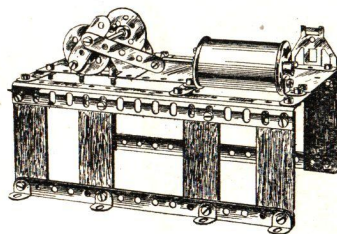
Flat piece of cardboard for bed and an inverted mantle-case is used for cylinder.

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		

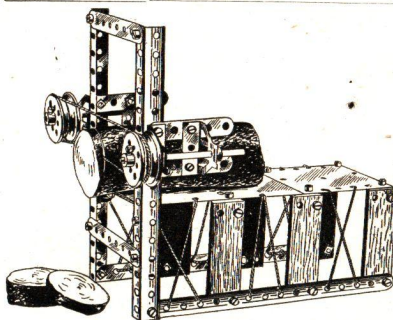
A French nail and cotton reel are used in this model; also a pill-box lid for emery wheel.



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

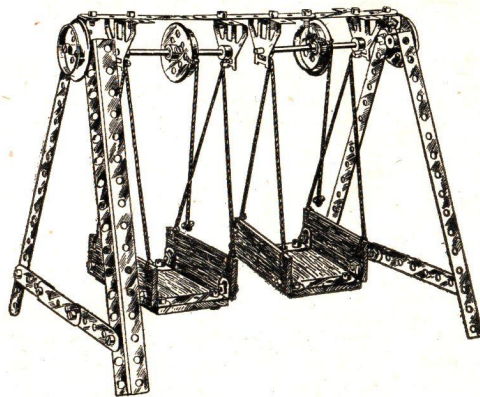
An inverted mantle-case is used for cylinder.

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

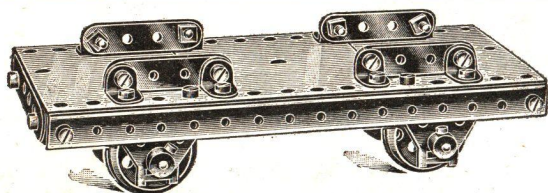
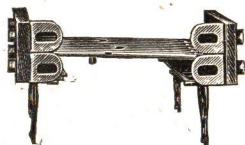
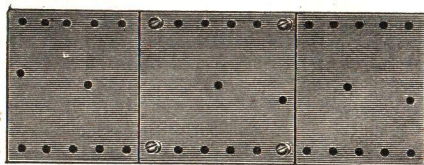
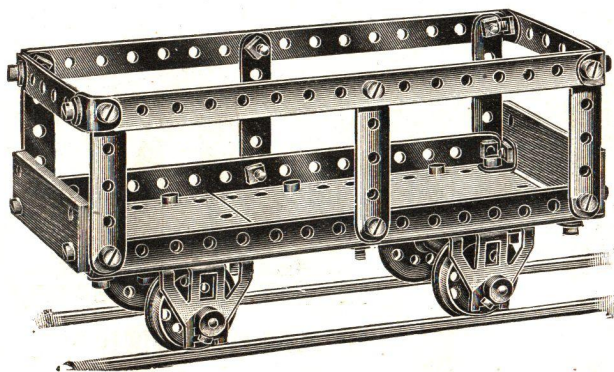
SWING No. 65

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

Make this truck before you attempt the others.

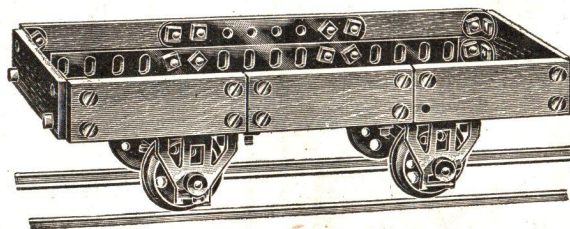
(1) Fit Brackets inside Angle bars to slotted sides, with two washers to each screw.

(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.



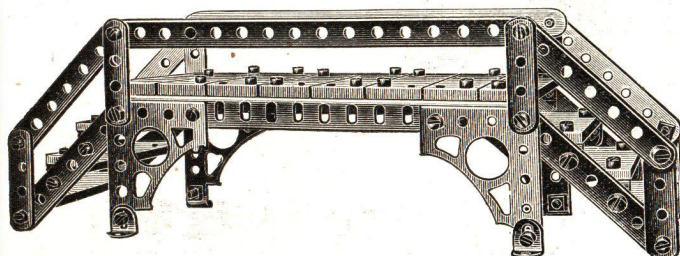
BALLAST TRUCK No. 40

8	Slips ..	..	..	..	No. 25
36	Screws ..	..	..	..	50
2	Bars, 8 in.	..	..	..	54
4	Strips, 2 in.	..	..	..	56
2	" 4 "	..	..	..	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

These models are made with

PRIMUS ENGINEERING

Nº 2 OUTFIT

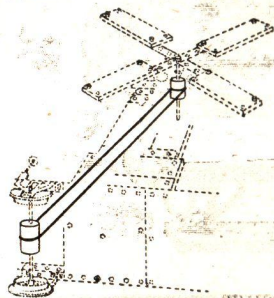


FOOT BRIDGE No. 107

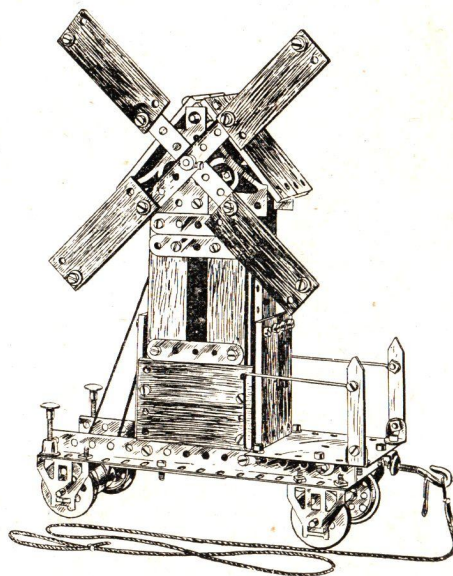
14	Slips	..	..	..	..	No. 25
60	Screws	..	..	..	..	" 50
2	Bars, 8 in.	..	..	..	..	" 54
8	Strips, 2 "	..	..	..	..	" 56
8	" 3½ "	..	..	..	..	" 59
2	" 8 "	..	..	..	..	" 63
16	Brackets	..	..	..	..	" 66
4	Architraves	..	..	..	..	" 85

WORKING WINDMILL, No. 138

	No.		No.
1 Floor	9	9 Brackets	66
2 Posts	11	3 Plates, 3 x 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



NOTE.—This model is mounted on a trolley and when pulled along the sails revolve. This is effected by a simple belt system, using cotton reels, fully explained by the small drawing.



PRIMUS ENGINEERING

BRITISH MADE

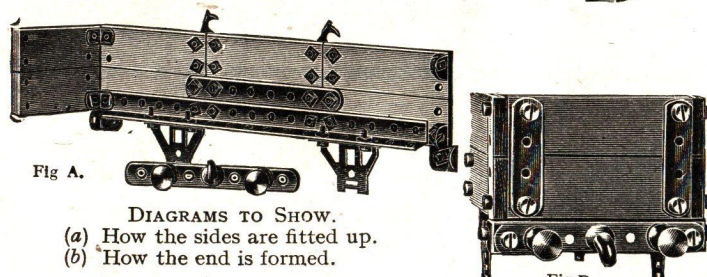
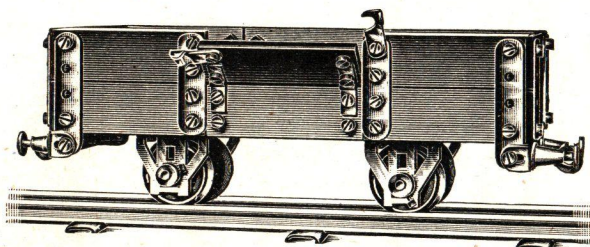


Fig A.

DIAGRAMS TO SHOW.
(a) How the sides are fitted up.
(b) How the end is formed.

Fig B.

COAL TRUCK No. 113

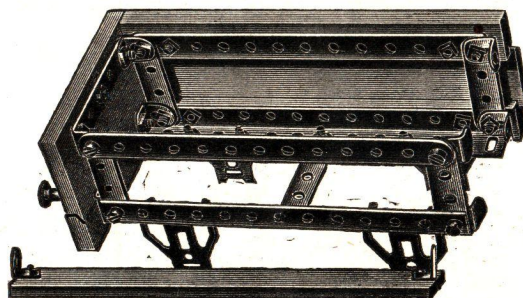
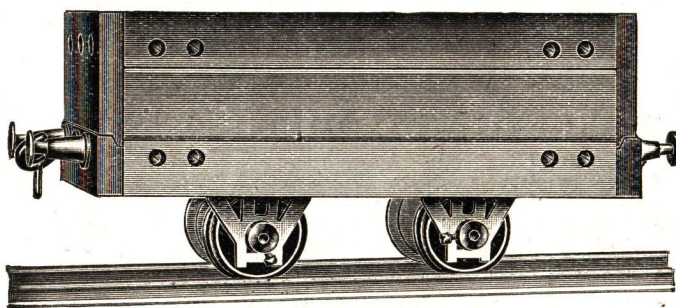
16	Slips	..	..	No. 25
64	Screws	..	..	50
2	Bars, 8 in.	..	..	54
8	Strips, 2 in.	..	..	56
4	" 2½ "	..	..	57
2	" 3½ "	..	..	59
2	" 4 "	..	..	60
12	Brackets	..	..	66
3	Plates	..	..	68
4	Hinges	..	..	72
4	Trunnions	..	..	74
4	Wheels	..	..	75
2	Axles, 3½ in.	..	..	77
4	Collars	..	..	82
4	Washers	..	..	84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

HEAVY GOODS TRUCK No. 116

ALL WOOD SIDES, ENDS AND
BUFFER BLOCKS.

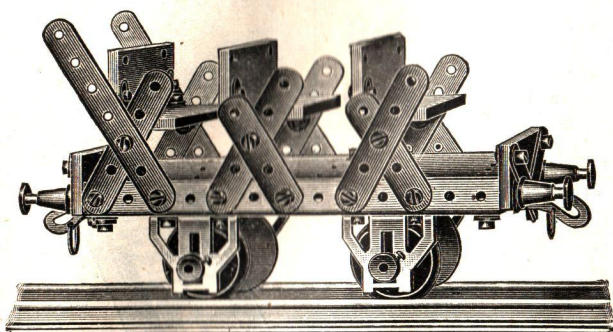
4	Rails	..	..	No. 1
2	Blocks	..	..	4
1	Floor	..	..	9
2	Sides	..	..	17
2	Ends	..	..	18
36	Screws	..	..	50
2	Bars, 6½ in.	..	..	53
4	Strips, 2 in.	..	..	56
3	" 2½ "	..	..	57
2	" 6½ "	..	..	62
10	Brackets	..	..	66
4	Trunnions	..	..	74
4	Wheels	..	..	75
2	Axles, 2½ in.	..	..	78
4	Collars	..	..	82
4	Washers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

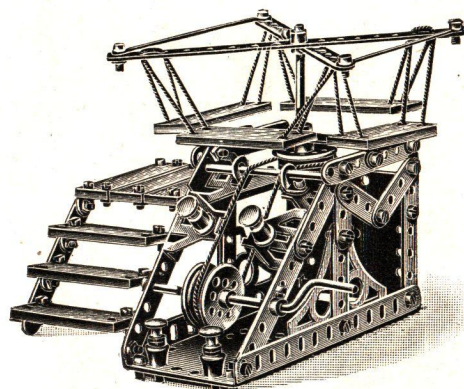
BRITISH MADE



SWITCHBACK CAR No. 115

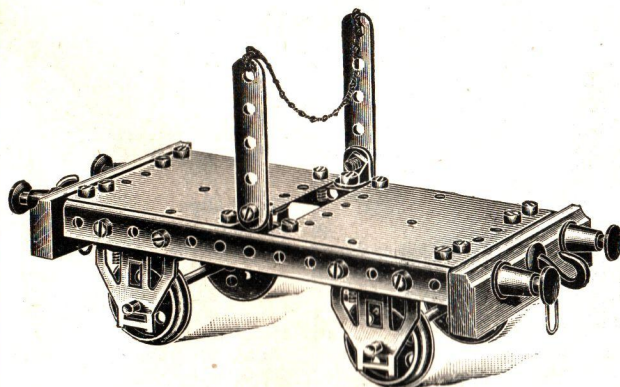
8 Slips ..	No. 25	4 Trunnions ..	No. 74
50 Screws ..	50	4 Wheels ..	75
2 Bars, 6½ in. ..	53	2 Axles, 3½ in. ..	77
8 Strips, 2 in. ..	56	4 Collars ..	82
6 " 2½ " ..	57	12 Washers ..	84
2 " 3½ " ..	59	4 Buffers ..	85
16 Brackets ..	66	2 Couplings ..	86
3 Plates, 3 × 3 in. ..	68		

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



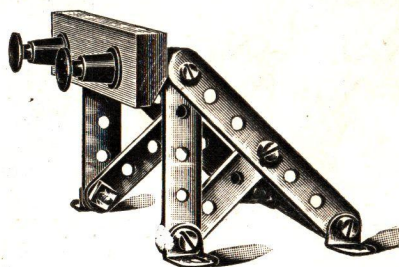
ROUNDABOUT No. 129

	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



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

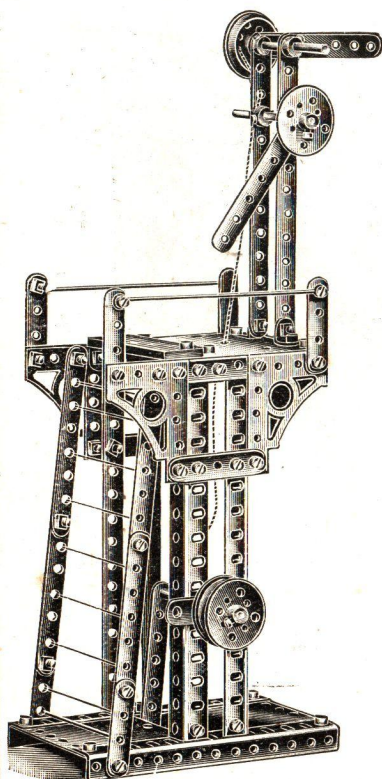


BUFFER END No. 100

1 Block ..	..	..	..	No. 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



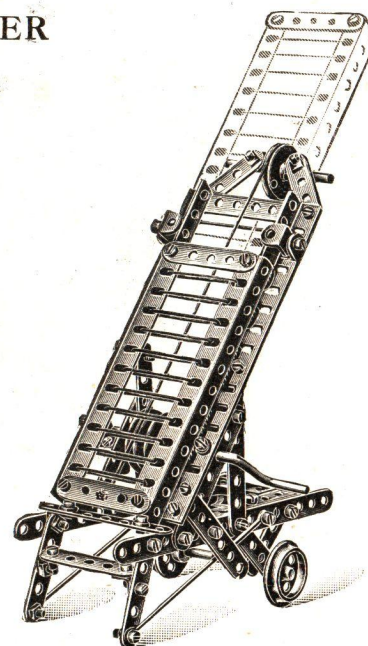
SIGNAL GANTRY
No. 118

1	Shp	..	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.			

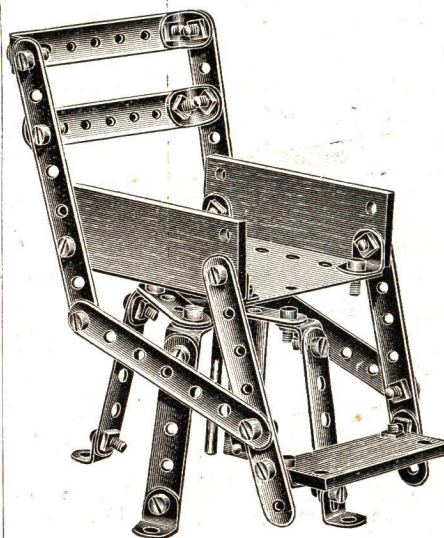
EXTENDING LADDER

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



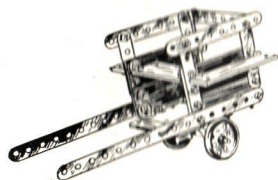
REVOLVING CHAIR No. 126



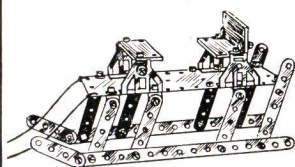
3	Wood slips	..	No. 25
36	Screws	..	.. 50
1	Strips, 2 in.	..	.. 56
6	„ 2½ „	..	.. 57
6	„ 3½ „	..	.. 59
3	„ 4 „	..	.. 60
16	Brackets	..	.. 66
1	Plate, 3×3 in.	..	.. 68
1	Wheel	..	.. 75
1	Axle, 2½ in.	..	.. 78
2	Collars	..	.. 82

PRIMUS ENGINEERING

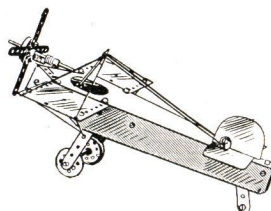
BRITISH MADE



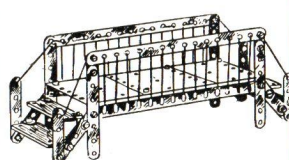
GOVERNESS CART



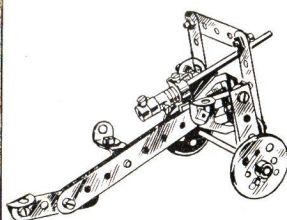
SLEIGH



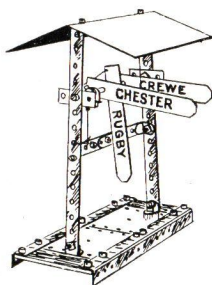
MONOPLANE



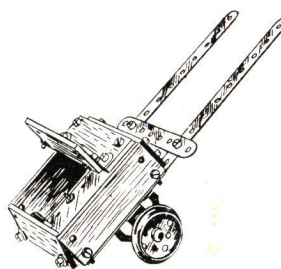
BRIDGE



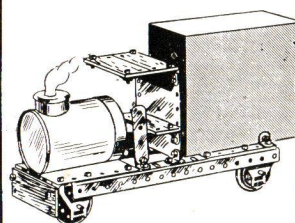
FIELD GUN



TRAIN INDICATOR



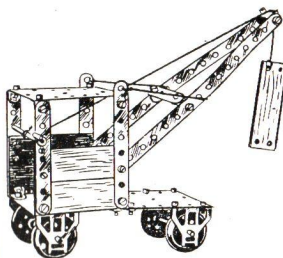
MARKET CART



STEAM LORRY



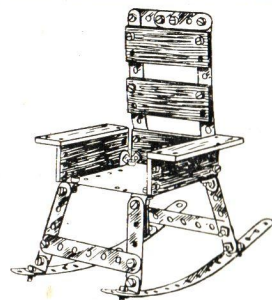
MUSIC STOOL



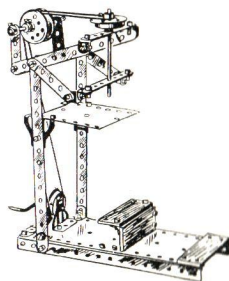
TRAVELLING CRANE



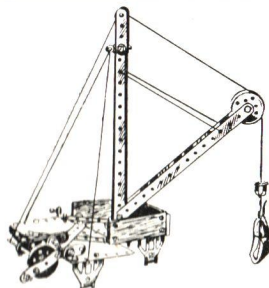
FLIP-FLAP



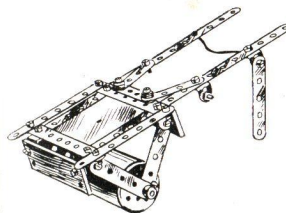
ROCKING CHAIR



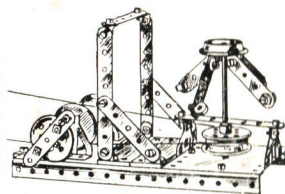
DRILL



DERRICK



ROLLER

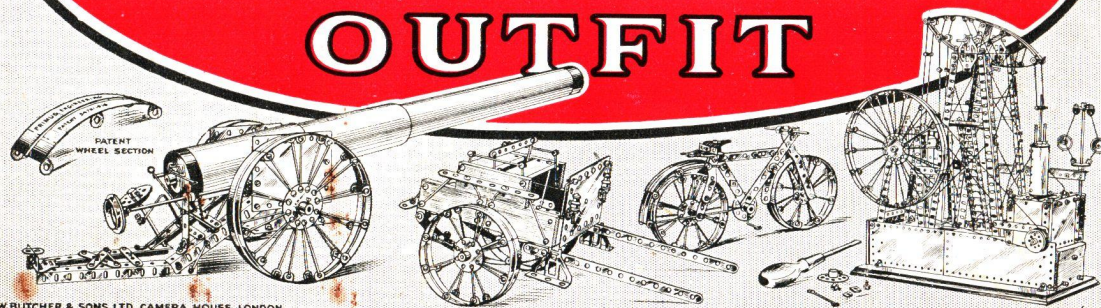


GOVERNORS

MODELS MADE WITH NO. 1 OUTFIT

PRIMUS ENGINEERING
BRITISH MADE

PRIMUS BIG-WHEEL OUTFIT



A Series of new and ingenious parts with which Primus Engineers can build up wheels of 4, 6 and 8 in. diameter to be used in connection with many of the models in the Primus Manual.

These parts are for use with the Regular Primus parts and make the Primus outfits more versatile than any others that have ever been devised.

The wheels are built up in sections, and can be used for

**Cart Wheels, Fly Wheels, Tractor Wheels,
Gun Wheels, Pulley Wheels, Paddle Wheels, etc.**



Complete
Outfit to build
4, 6 and 8 in.
diameter
wheels
in box with
Instruction
Manual.