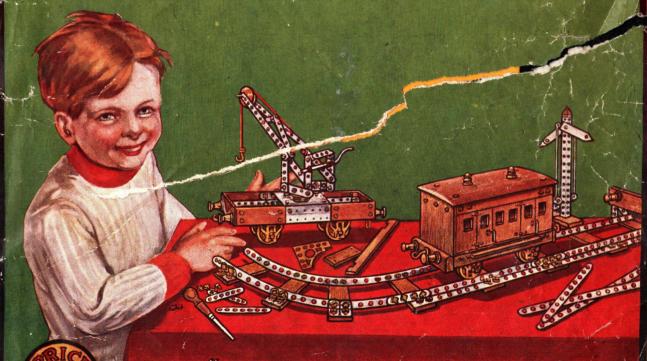
# DICINIER ING





"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.
- 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. 1s.
- 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.



#### INSTRUCTIONS. GENERAL

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

No. 65. permits of the necessary play.



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



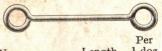
Fig. B.

on the other (Fig. A). They are likewise used to adjust the bracket to the width of some of the other fittings (Fig. B).

#### WASHERS.

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

#### EXTRA PARTS NOT INCLUDED IN OUTFITS



doz. Length No. Wire Stays 15 inches 3d. 154 ,, 21 3d. 155 4d. 31 156



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



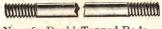
No. 168 Double Tapped Collars, each 4d.



No. 159 Pulley Wheels plain. each 2d.



No. 160 Cog Gear Wheels, 15-in., 56 teeth, each 1/0



No. 167 Double Tapped Rods, 3½ in., each, 3d. No. 167A do. 23 ,,



No. 161 Pinion Wheels, No. 162 Bevel Gears, ½-in., each 8d. per pair 2/-



each 8d. No. 164 Crank Arm ..



No. 163 Eccentric

each 1/-

# These models are made with

# PRIMUS ENGINEERING Nº 1 OUTFIT



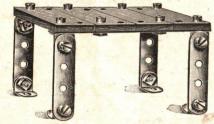
#### SEAT No. 1

2	Wood slips	No.	25
8	Screws	,,	50
2	Strips, 2½ in	,,	57
2		.,,	A STATE OF
4	Brackets	,,	66
Bra	ckets fixed with slot of	n woo	bo



#### CHAIR No. 4

	CHILITIE	TIO	The state of	
	Slips		No.	25
			,,	50
	Strips, 2 in.		支,,	56
		**	"	57
IO	Brackets		,,	66
I	Plate		192	68



#### TABLE No. 2

	Slips		-		No.	25
16	Screws				,,	50
2	Strips, 2 in.					56
2					,,	60
8	Brackets		1			66
4-	in. strips screv	wed i	below tal	ole to he	old to	D.



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	,, 21/2	" " 57	2 Axles ,, 77
2	21	FO	



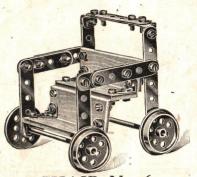
#### SEAT No. 3

	DELLE	1 10				
4	Slips		No.	25		
10	Screws		.,	50		
4	Strips, 2 in.		,	56		
2	", $2\frac{1}{2}$ ",		,,	57		
6	Brackets		.,	66		
2-ir	. strips screw	ved bel	hind	the		
wood back.						



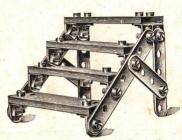
#### MUSIC STAND No. 8

V - V - 3						
	Screws				No.	50
2	Strips,	2	in.		,,	56
6	,,	2	,,		,,	57.
2	,					60
3	Bracke	ts		100		66



#### CHAIR No. 6

4	Slips	 	No. 25
30	Screws	 	., 50
2	Strips, 2 in.		,, 56
6	,, 21,,,		., 57
2	", $3\frac{1}{2}$ "		,, 59
12	Brackets	 	,, 66
4	Wheels		,, 75
2	Axles, 3½ in.		,, 77



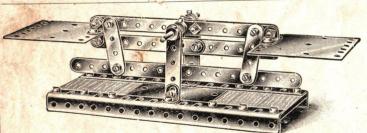
#### LADDER No. 7

4	Slips		27.	No. 2	25
22	Screws	200		,,	50
2	Strips, 2 in	1		,,	56
2	$,, 2\frac{1}{2},$	,		,, .	57
2	", $3\frac{1}{2}$ ",	,		,,	
10	Brackets			,,	66
Fiv	brackets to	steps	with slot	s at sid	le.



#### ROLLER No. 9

8	Screws	No.	50
4	Strips, 2 in.	,,	56
I	" $2\frac{1}{2}$ "	4,,	52.
I	,, 3½ ,,	,,	59
I	,, - 4 ,.	,,	60
4	Brackets	,,	66
2	Wheels	.,	75
I	Axle, 3½ in.	,,	77
2	Collars	,,	82
Cox	er wheels with	card	for
	roller.		

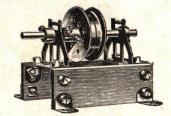


### FRENCH BALANCE

				- , -		
6	Slips	]	No.	25	2	Strips, 4 in. No. 60
30	Screws		,,	50		,, 8 ,, ,, 63
2	Bars, 8	in.	,,	54	10	Brackets ,, 66
	Strips, 2					Plates, 3 × 3in. 68
	,, 2					Axle, $3\frac{1}{2}$ in 77
	,, 3				4	Collars 82

,, 57 59

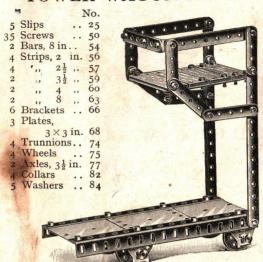
#### COUNTER SHAFT No. 23



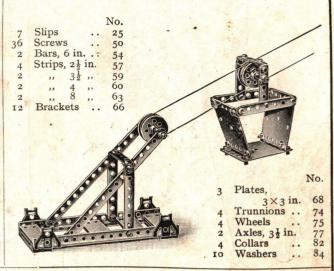
		]	No.			1	No.
2	Slips		25	2	Wheels		75
12	Screws		50	I	Axle, 31	in.	77
8	Brackets		66	3 (	Collars		82
2	Trunnions		74	3	Washers		84

#### 26 Screws 6 Screws .. 50 1 Bar, 8 in. .. 54 MONOPLANE No. 13 1 Strips, 2 in. 56 8 Brackets .. 66 Trunnions.. 74 4 Wheels .. 75 2 Axles, 3½ in. 77

#### TOWER WAGON No. 44



#### GOODS HOIST No. 45

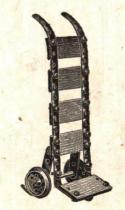


#### LIBRARY LADDER No. 42



		No.		No.
8	Slips	25	I	Plate,
36	Screws	50		3×3 in. 68
	Bars, 8 in			Trunnions 74
	Strips, 2 in.			Wheels 75
4	$,, 2\frac{1}{2},$	57		Axles, $3\frac{1}{2}$ in. 77
2	" $3\frac{1}{2}$ "	59		Collars 82
2			2	Washers 84
IO	Brackets	66		

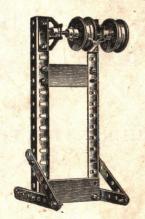
#### TRUCK No. 33



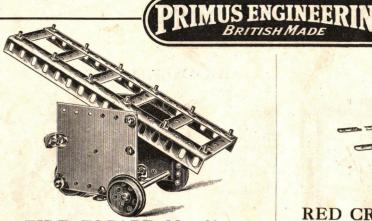
5	Slips	 	No. 25
16	Screws	 	,, 50
4	Strips, 2 in.	 	,, 56
	,, 8 ,,	••	,, 63
2	Brackets	 •	,, 66
2	Wheels	 	,, 7,5
r	Axle, $3\frac{1}{2}$ in.	 	77

#### SHAFTING

No. 35



1	There I	No.			No.
2				Trunnions	
16	Screws	50	4	Wheels	75
	Bars, 8 in				
2	Strips, 3½ in.	59	3	Collars	82
2	,, 4 ,,	60	3	Washers	84



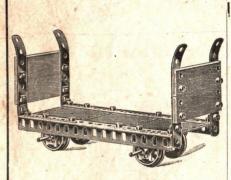
#### FIRE ESCAPE No. 30

		No.			No.
24	Screws	 50	2	Plates, $3 \times 3$ in.	68
	Bars, 8 in.	 54		Wheels	
6	Strips, 2½ in.	 57		Axles, $3\frac{1}{2}$ in	77
I	" 3½"	 59			82
I	,, 4 ,,	 60	2	Washers	84
4	Brackets	 66			



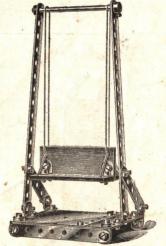
#### RED CROSS WAGON No. 24

	•		No.				No.
8	Slips .	13 4	25	2	Strips, 4 in.	133	60
	Screws .		50		,, 8 ,,		63
	Bars, 8 in		•54		Brackets		
	Strips, 2	in	56	I	Plate, 3×3 in.		68
6	,, 21	,,	57				7.5
2	$,, 3\frac{1}{2}$	,,	59	2	Axles, 3½ in.		77
18	40	Hood i	s mad	e of st	iff card.	5	



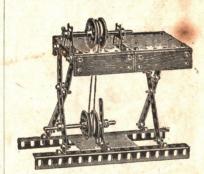
#### CHURN TROLLEY No. 27

4	Slips		No. 25
24	Screws		,, 50
2	Bars, 8 in		,, 54
2	Strips, $3\frac{1}{2}$ in		,, 59
2	,, 4 ,,		,, 60
4	Brackets		,, 66
3	Plates, 3×3 in.		,, 68
4	Trunnions		,, 74
4	Wheels		,, 75
2	Axles, $3\frac{1}{2}$ in	100	,, 77
4	Collars		,, 82



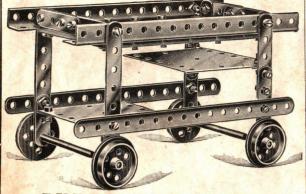
#### SWING No. 34

3	Slips	No.	25
24	Screws	.,	50
2	Strips, 21 in	,,	57
2	,, 4 ,,	,,	60
2	,, 8 ,,	,,,	63
12	Brackets	,,	66
2	Plates, 3×3 in.	,,	68
I	Axle, $3\frac{1}{2}$ in	,,	77
2	Collars	,,	82
4	Washers	,,	84



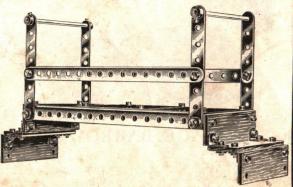
#### LATHE No. 43

	Cli			3.7	
4	Slips			No.	25
36	Screws			,,	50
2	Bars, 8 in.			,,	54
4	Strips, 2 in.			,,	56
5	", $2\frac{1}{2}$ ",			,,	57
5	" 3½ "			,,	59
2	,, 4 ,,			,,	60
12	Brackets			,,	66
3	Plates, 3×3	in.		,,	68
4	Trunnions			,,	74
4	Wheels		200	,,	75.
2	Axles, $3\frac{1}{2}$ in.			,,	77
4	Collars			"	82
9	Washers			,,,	84



#### DINNER WAGON No. 14

6	Slips	Nc.	25
36	Screws		50
2	Bars, 8 in		54
4	Strips, 2 ,,		56
4	$\frac{2}{2}$ ,		57
	n 4 n	100	60
2	,, 8 ,		63
- 8	Brackets		
2	Plates, 3×3 in.	,,	
4	Wheels	,,	75
2	Axles, 3½ in		77
T	ne top table is 3 × 1 in. slips, screwed to 8 in.	bar	S.



#### BRIDGE No. 16

6	Slips				No.	25
	Screws					50
2	Bars, 8 in.		x		٠,	54
4	Strips, 2 ,,	1.	·		.,,	56
4	,, 21,				,,	57
2	,, 8 ,,				٠,,	.63
12	Brackets			.,	9.0	66
3	Plates, 3×3 in.				,,,	68
2	Axles, 3½ in.				,,	77
4	Collars			(	,,,	82
8	Washers .				.,	84

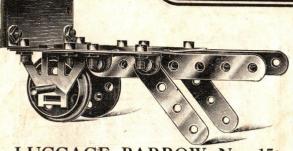


#### DOG CART No. 26

	Clina				3.7	
	Slips				No.	25
20	Screws				,,	50
	Strips, 2 in.					56
2	,, 8 ,,				,,	63
12	Brackets				,,	66
2	Plates, 3×3 in.				,,	68
2	Wheels				"	75
I	Axle, $3\frac{1}{2}$ in.				,,	77
	The 8 in.	strips	form the	shafts.		
	The om.	seribs	TOTHE CHE	onaits.	1	

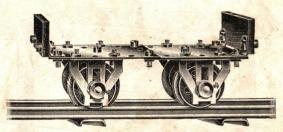
#### SLEDGE No. 19

	Slips	No. 25
26	Screws	,, 50
	Strips, 2 in	,, 56
2	$\frac{21}{2}$ ,	,, 57
2		., 59
-2	,, 4 ,,	,, 60
2	, 8 ,,	., 63
10	Brackets	,, 66



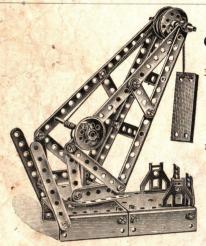
#### LUGGAGE BARROW No. 15

	Slip		I	Plate, 3×3 in.	No. 68
2	Screws Strips, 2 in.	,, 50 ,, 56		Trunnions	., 74
W 2	" 3½"	,, 59		Wheels	., 75
6	Brackets	,, 66	I	Axle, $3\frac{1}{2}$ in	,,,77



#### TROLLEY TRUCK No. 28

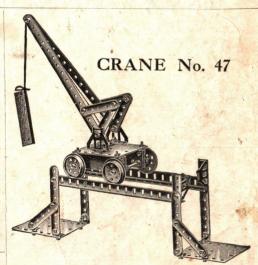
2	Slips No. 2	5 4	Trunnions	No. 74
	Screws ,, 5		Wheels	,, 75
4	Brackets 60		Collars	,, 82
2	Plates, 3×3 ,, 6	8 12	Washers	,, 84



#### CRANE No. 46

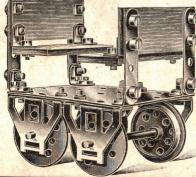
5	Slips, 3×1 in. No.	25
36	Screws ,,	50
2	Bars, 8 in	54
4		56
6		57
2		
	" $3\frac{1}{2}$ " "	59
2	., 4 ,, ,,	60
2	,, 8 ,, ,,	63
12	Brackets	66
3	Plates, 3×3 in. ,,	68
4	Trunniona	
	TT77 1	74
	Wheels ,,	7.5
	Axles, $3\frac{1}{2}$ in ,,	77
	Collars	82
6	Washers "	-
		15 191
	A long nail is used	

for centre pin.

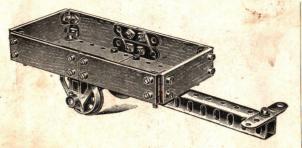


#### TRAILER No. 37

	San Parkers and the Control of the C	
4	Slips No	0. 25
24		, 50
4	Strips, 2 in ,	, 56
8	Brackets,	, 66
I		, 68
4	Trunnions ,	, 74
4		, 75
2	Axles, $3\frac{1}{2}$ in ,	, 77
12		, 84

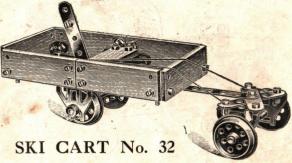


*				
3	Slips			No. 25
36	Screws			,, 50
2	Bars, 8 in			., 54
I	Strip, 2 ,,			,, 56
6	Strips, 2½ ,,			., 57
2	$3\frac{1}{2}$			,, 59
2	,, 4 ,,			, 60
2	,, 8 ,,			,, 63
10	Brackets			,, 66
3.	Plates, 3×3 in.	(		,, 68
4	Trunnions	A		74
4	Wheels			., 75
2	Axles, $3\frac{1}{2}$ in			77
4	Collars			,, 82
12	Washers			,, 84
-			Bill A Fort	



#### 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		Wheels ,, 75
4	Strips, 2 in.	,, 56 I	Axle, $3\frac{1}{2}$ in , . 77
I	,, 2½ ,,	,, 57 2	Collars ,, 82
12	Brackets	,, 66 5	Washers, 84

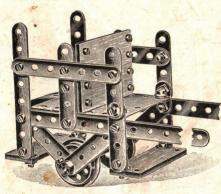


7	Slips	No.	25	4	Trunnions	No. 74
	Screws	,,	50	4	Wheels	,, 75
2	Strips, 2 in.	•,,	56	2	Axles, $3\frac{1}{2}$ in.	,, 77
3	$^{,,}$ $2\frac{1}{2}$ $^{,,}$	,,	57	2	Collars	,, 82
I	,, 8 ,,	,,	63	3	Washers	,, 84
12	Brackets	,,	66			
	Plates, $3 \times 3$ in.	,,	68		Cord used for st	teering.



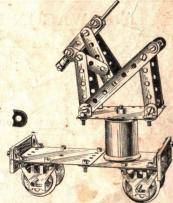
#### NEWTON'S DISC No. 22

The state of the s		
2	Slips	 No. 25
22	Screws	 ,, 50
5	Strips, 2½ in.	,, 57
12	Brackets	 ,, 66
I	Plate, $3 \times 3$ in.	 ,, 68
3	Wheels	 ,, 75
I	Axle, $3\frac{1}{2}$ in.	 ,, 77
I	Collar	,, 82
5	Washers	 ,, 84



#### MAIL CART No. 25

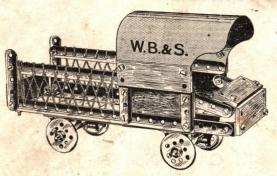
			]	No.		No.
4	Slips			25	12	Brackets 66
35	Screws			50	2	Plates,
4	Strips,	2	in.	56		3×3 in. 68
6	,,	21/2	,,	57	2	Wheels 75
2	,,	31/2	,,	59	1	Axle, $3\frac{1}{2}$ in. 77
2	,,	4	,,	60	2	Collars 82
2	,,,	8	,,	63	12	Washers 84



#### ANTI-AIRCRAFT GUN No. 49

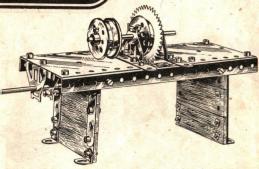
	GUN 10. 49								
2	Slips		No.	25					
33	Screws		,,	50					
4	Strips, 2 in.	K	,,	56					
6	$\frac{1}{2}$ , $\frac{1}{2}$ ,		,,	57					
2	,, 4 ,,	\	,,,	60					
12	Brackets		,,	66					
3	Plates		,,	68					
4	Trunnions		.,,	74					
4	Wheels	2.00	,,	75					
2	Axles, $3\frac{1}{2}$ in.		,,	77					
-4	Collars		,,	82					
6	Washers		,,	84					
Cot	ton reel used	for n	ount	ing					
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		Brackets					
	Bars, 8 in	,, 54	4	Trunnions	,, 74				
4	Strips, 2 in.	,, 56	.4	Wheels	,, 75				
6	", $2\frac{1}{2}$ ",			Axles, $3\frac{1}{2}$ 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
	Bars		54	2	Axles		77
4	Strips, 2½ in.		57	I	Collar		82
2	,, 4 ,,		60	I	Washer		84
8	Brackets		66				
	The car can be	011	t out	ofar	pione of pardl	becom	

#### A.S.C. WAGON No. 57

	4 75 F. C		No.		A. N.		No.	
8	Slips		25	12	Brackets		66	
34	Screws		50	2	Plates		68	
4	Strips,	2 in.	56	4	Trunnions		74	
4	72	$2\frac{1}{2}$ ,,	57	4	Wheels		75	
I	39	31/2 "	59	2	Axles		77	Ĭ,
I	,,	4 ,,	60	4	Collars		82	8
I	* ,,	8 ,,	.63	8	Washers		84	1
Use a short nail to form pivot of front wheels.								



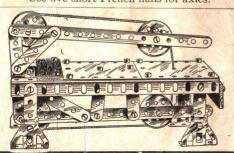
#### TIMBER DRAG No. 58

	TIME DIGITO TO OU									
		1	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	,,	$2\frac{1}{2}$ ,,	57	2	Axles .	. 77				
2	,,	31 ,,	59	4		. 82				
2		4 ,,				. 84				
	Use fir	ve shor	t Fre	ench n	ails for axles					



#### BAND SAW No. 59

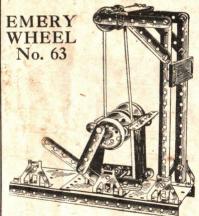
			No.			No.
2	Slips	6.1.	25	I	Strip, 4 in	 60
	Screws		50	2	,, 8 ,,	63
2	Bars, 8 in.		54	2	Brackets	 66
4	Strips, 2 in	1000	56	2	Plates, 3×3 in.	 68
4	,, 2½ ,,		57	4	Trunnions	
I	$3\frac{1}{2}$		59	4	Wheels	75
V. 100						



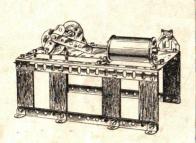


4	Slips	No 2	5   2	Strips,8in	No	.63
33	Screws	,, 5	0 12	Brackets	,,	66
2	Bars	,, 5	4 2	Plates	,,	68
I	Strip, 2 in	1. ,, 5	6 2	Wheels	,,	75
2	$\frac{1}{2}$	,, ,, 5	7 I	Axle	,,	77
				Collars	,,	82
Sma	all squares o	of card	lboard i	Collars fixed on to a	xle	for
		h	ammer			

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



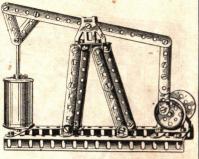
6 Slips No. 25	8 Brackets No.66
30 Screws ,, 50	3 Plates ,, 68
2 Bars, 8 in. ,, 54	4 Trunnions ,, 74
2 Strips, 2 in. ,, 56	3 Wheels ,, 75
$5$ , $2\frac{1}{2}$ , , 57	2 Axles, 3½in.,, 77
$2$ ,, $3\frac{1}{2}$ ,, ., 59	2 Collars ,, 82
2 ,, 4 ,, ,, 60	4 Washers ,, 84
2 ,, 8 ,, ,, 63	
A French nail and cott	on reel are used in this
model; also a pill-box	k lid for emery wheel.



#### MILL ENGINE No. 61

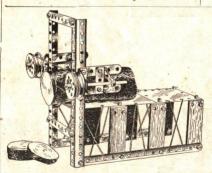
6	Slips		No.	25	8	Brackets	No	.66
34	Screw	S				Plates		
2	Bars		,,	54	4	Trunnions	,,	74
	Strip,		l. ,,	56	4	Wheels		75
4	,,	21,	, ,,	57	2	Axles	,,	77
2	, ,,	8,	, ,,	63	2	Collars	,,	82
	**	1						

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



#### BEAM ENGINE No. 62

35 Screws No. 50	2 Strips, 8in. No. 63
2 Bars ,, 54	8 Brackets " 66
4 Strips, 2 in. ,, 56	4 Trunnions ,, 74
$6  ,,  2\frac{1}{2} ,,  ,,  57$	4 Wheels ,, 75
2 ,, 3½ ,, ,, 59	2 Axles ,, 77
2 ,, 4 ,, ,, 60	3 Collars ,, 82

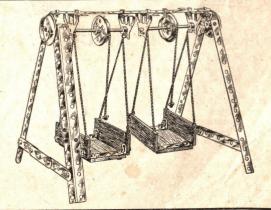


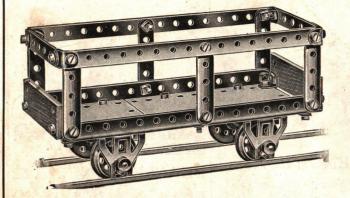
#### BAND SAW No. 64

6	Slips			No	. 25
36	Screws			,,	150
2	Bars, 8 in.			,,	54
4	Strips, 2½ i	in.		,,	57
2	,, 4	,,		,,	60
2	,, 8	,,	٠.	,,	63
8	Brackets			2.1	66
3	Plates			,,	68
4	Trunnions			,,	74
4	Wheels			,,	75
2	Axles, 31 i	in.		,,	77
2	Collars			,,	82
IO	Washers			,,	84

#### SWING No. 65

8	Slips		N	To.	25
36	Screws			,,	50
2	Angle I	3ar	s,		
		8	in.	,,	54
4	Strips,	2	,,	,,	56
4	,,	21/2	,,	,,	57
2	,,	31	,,	,,	59
2	,,	4	,,	,,	60
2	,,	8	,,	,,	63
12	Bracke	ts		,,	66
4	Wheels			,,	75
2	Axles			,,	77
4	Collars			,,	82
2	Washer	S		,,	84









#### TIMBER TRUCK No. 38

		]	No.		1	No.	
2	Slips		25	3 Plates		68	
	Screws			4 Trunnions		74	
2	Bars, 8 in.		54	4 Wheels		75	
6	Strips, 2½ in.	٠.	57	2 Axles, 3½ in.		77	
2	" $3\frac{1}{2}$ "		59	4 Collars		82	
	,, 8 ,,			12 Washers		84	
12	Brackets		66				

Make this truck before you attempt the others.

- (I) 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.

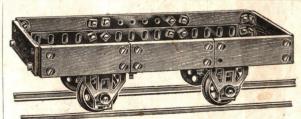
Position of Brackets to Secure the Ends.—The Brackets are fitted on with the slots at the ends as shown; this allows a little play to introduce the base plates, and afterwards the sides can be pressed in and the screws tightened.



#### TRANSPORT TRUCK No. 39

24	Screws					No.	50
2	Bars, 8 in.					4,	54
4	Strips, 2 in.					,,	56
2	,, 21/2 ,,	1.1				. ,,	57
12	Brackets	10.0		1		,,	66
3	Plates, 3×3	in.				77	68
4	Trunnions			THE RE		,,	74
	The second secon				The	,,,	75
2	Axles, $3\frac{1}{2}$ in.					,,	77
4	Collars					,,	82
12	Washers					,,	84
Т	wo washers a	re plac	ed bet	ween	each		

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

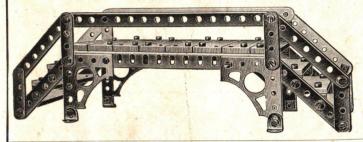


#### BALLAST TRUCK No. 40

100		-			- 10		
8	Slips			,.		No.	25.
36	Screws					,,	50
2	Bars, 8 in.					,,	54
4	Strips, 2 in.					_,,,	56
2	,, 4,,					,,	60
8	Brackets		- 10 M			,,	66
3	Plates, 3 × 3 in	1.					68
4	Trunnions					,,	74
4	Wheels					,,	75
2	Axles, 3½ in.					,,	77
4	Collars					,,	82
8	Washers					1	84
							- 1

### These models are made with

# PRIMUS ENGINEERING Nº 2 OUTFIT

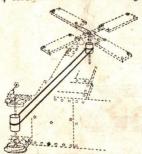


#### FOOT BRIDGE No. 107

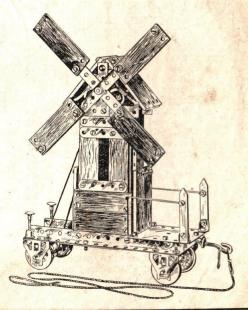
14	Slips	 		No. 25
60	Screws	 	4.	,, 50
2	Bars, 8 in.	 		., 54
	Strips 2 ,,	 		,, 56
	" $3\frac{1}{2}$ "	 		., 59
2	,, 8 ,,	 		,, 63
	Brackets	 		,, 66
4	Architraves	 	• • •	,, 85

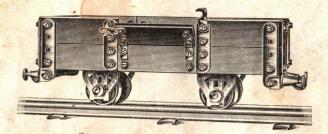
#### WORKING WINDMILL, No. 138

		No.		Nc.
I	Floor	9	Brackets	66
2	Posts	11 3	Plates, 3×3	68
16	Slips		Trunnions	74
55	Screws		Wheels	75
	Angle Bars, 6½ in.	53	Axles, $3\frac{1}{2}$ in	77
2	,, 8 in.		2 ,, 2 ,,	78
4	Strips, 2 in		Collars	82
3	" $2\frac{1}{2}$ "		Washers	84
2	$,, 6\frac{1}{2},,$		Buffers	85
2			Coupling	86
4	Architraves	65	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.







DIAGRAMS TO SHOW.

(a) How the sides are fitted up.

(b) How the end is formed.



#### COAL TRUCK No. 113

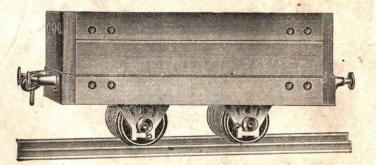
16	Slips	No. 25
64	Screws	 ,, 50
2	Bars, 8 in	,, 54
8	Strips, 2 in.	,, 56
. 4	, 21 ,	 ,, 57
2	$3\frac{1}{2}$	 , 59
2	,, 4 ,,	, 60
12	Brackets	,, 66
3	Plates	,, 68
4	Hinges	, 72
4	Trunnions	, 74
4	Wheels	,, 75
2	Axles, 3½ in.	77
4	Collars	82
4	Washers	0.
4	Buffers	0-
2	Couplings	96
4	Catches	
7		,, 95

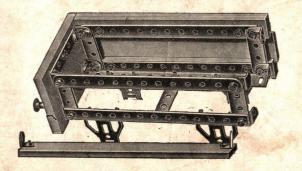
#### HEAVY GOODS TRUCK No. 116

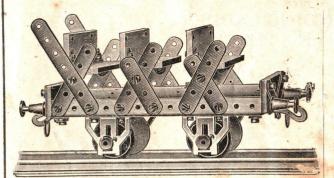
ALL WOOD SIDES, ENDS AND BUFFER BLOCKS.

	DUTTER	DLUCIAS.		
4	Rails	14. P.L.	No.	I
2	Blocks		,,	4
I	Floor		,,	9
2	Sides		,,	17
2	Ends		,,	18
36	Screws			50
2	Bars, 61 in.	** . ** **	,,	53
. 4	Strips, 2 in.		"	56
			3 ,,	CONTRACTOR OF THE PARTY OF THE
3	$\frac{2^{\frac{1}{2}}}{2}$ ,		,,	57
2	$,, 6\frac{1}{2},$		,,	62
IO	Brackets		,,	66
4	Trunnions		,,	74
4	Wheels		,,	75
2	Axles, 2% 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.

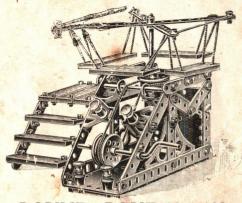






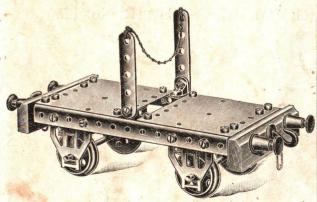
#### SWITCHBACK CAR No. 115

8	Slips		No.	25	4	Trunnions		No.	74
50	Screws		,,	50	4	Wheels		,,	75
2	Bars, 6½ in.		,,,	53		Axles, $3\frac{1}{2}$ in.			
8	Strips, 2 in.		,,	56	4	Collars -		,,,	
6	$,, 2\frac{1}{2},,$		,,,	57		Washers			84
2	", $3\frac{1}{2}$ ",		,,	59	4	Buffers			85
	Brackets		,,,	66	2	Couplings		,,	86
3	Plates, $3 \times 3$	in.	,,	68.					
NO.	TE.—2 Wash	hers	pla	iced	ove	r screw th	at	secu	res
			brac	kets	to b	ars.			



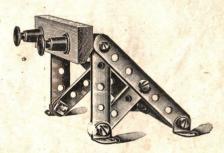
#### ROUNDABOUT No. 129

		No.			No.
II	Slips	 25	16	Brackets	66
61	Screws	 50	3	Plates, 3×3 in.	68
2	Bars, $6\frac{1}{2}$ in.	 53	4	Trunnions	74
5	Strips, 2 in.	 56		Wheels	75
5	", $2\frac{1}{2}$ ",	 57	2	Axles, $3\frac{1}{2}$ in	77
8	$3\frac{1}{2}$ ,	 59		Collars	82
2	,, 4 ,,	 60		Washers	84
2	,, 8.,	 63	4	Buffers	85
4	Architraves	 65	2	Rods	96



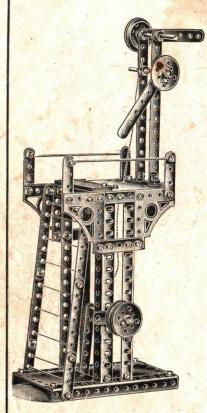
#### TIMBER TRUCK No. 123

2	Blocks	No. 4	2	Plates, 3×3 in.	No. 68
32	Screws	,, 50		Trunnions	,, 74
2	Bars, $6\frac{1}{2}$ in	,, 53		Wheels	,, 75
2	Strips, 2 in	,, 56		Axles, $3\frac{1}{2}$ in	., 77
	$,, 2\frac{1}{2},, \ldots$	,, 57		Buffers	,, 85
12	Brackets	,, 66	2	Couplings	,, 86



#### BUFFER END No. 100

				Br. Chile	
I	Block				No. 4
IO	Screws			10.00	,, 50
2	Strips, 2 in.		 		,, 56
3	", $2\frac{1}{2}$ ",		 		., 57
2	" $3\frac{1}{2}$ "		 		., 59
8	Brackets	-7.	 	2	,, 66
2	Buffers		 		,, 85



### SIGNAL GANTRY

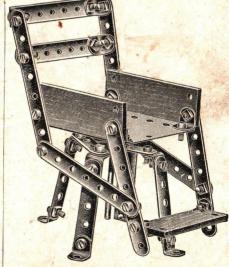
	No.	118	7.0	
I	Slip		No.	25
55	Screws		,,	50
2	Bars, $6\frac{1}{2}$ in.		,,	53
2	,, 8 ,,	1000	,,	54
8	Strips, 2 in.	***	,,	56
5 5	$^{,,}$ $2\frac{1}{2}$ $^{,,}$		,,	57
5	" $3\frac{1}{2}$ "		,,	59
2	,, 4 ,,		.,	60
2	$,, 6.\frac{1}{2},$		,,	62
2	,, 8 ,,		,,	63
4	Architraves	. 100	,,	65
II	Brackets		,,	66
3	Plates		"	68
4	Wheels		,,	75
I	Rod, $3\frac{1}{2}$ in.		,,	77
2	Rods, 23 ,,		.,	78
4	Collars		,,,	82
2	Rods	( · ·	,,	96
	Use cord for la	adder rur	igs.	

#### EXTENDING LADDER No. 130

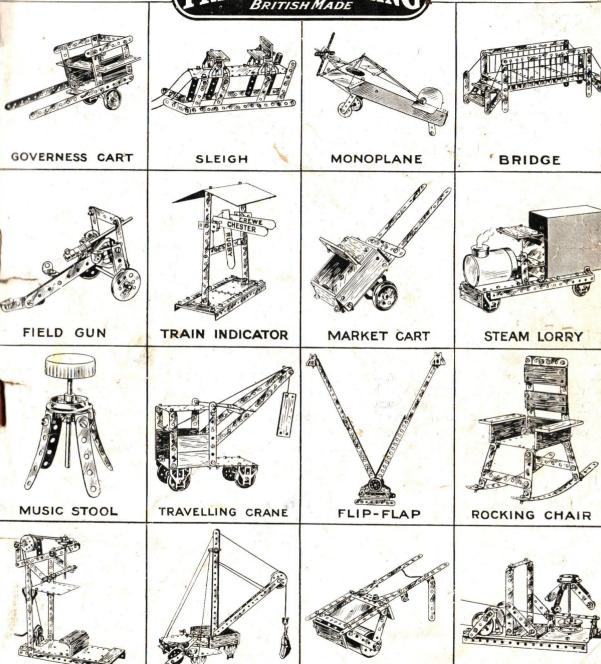
53	Screws	No.	50
2	Bars, $6\frac{1}{2}$ in	,,	53
2	,, 8 ,,	,,	54
4	Strips, 2 in.	,,	56
6	$_{,,}$ $2\frac{1}{2}$ $_{,,}$ $_{,}$ $_{,}$	,,	57
5	$3\frac{1}{2}$	,,	59
2	,, 4 ,,	,,	60
2	,, 8 ,,	,,,	63
2	Architraves	,,	65
16	Brackets	,,	66
I	Hinge	,;	72
4	Wheels	.,,	75
1	Axle, $3\frac{1}{2}$ in	,,	77
Ι	$^{,,}$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



#### REVOLVING CHAIR No. 126



3	Wood slips	No. 25
36	Screws	,, 50
I	Strips, 2 in	., 56
6	$\frac{21}{2}$	,, 57
6	$3\frac{1}{2}$	,, 59
3	,, 4 ,,	., 60
6	Brackets	66
I	Plate, 3×3 in.	,, 68
I	Wheel	And the second second
I	Axle, 23 in	,, 75 ,, 78
2	Collars	Ó.
-	Condia.	,, 82



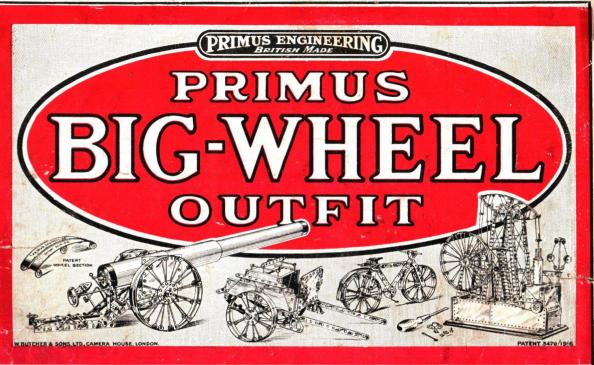
MODELS MADE WITH NO. 1 OUTFIL

ROLLER

GOVERNERS

DERRICK

DRILL



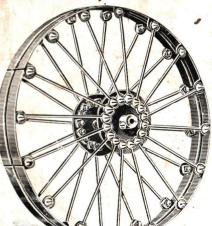
A Series of new and ingenious parts with which Primus Engineers can build up wheels of 4, 6 and 8 in. diameter to be used in connection with many of the models in the Primus Manual.

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.

Cart Wheels, Fly Wheels,

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

Gun Wheels, Pulley Wheels, Paddle Wheels, etc.





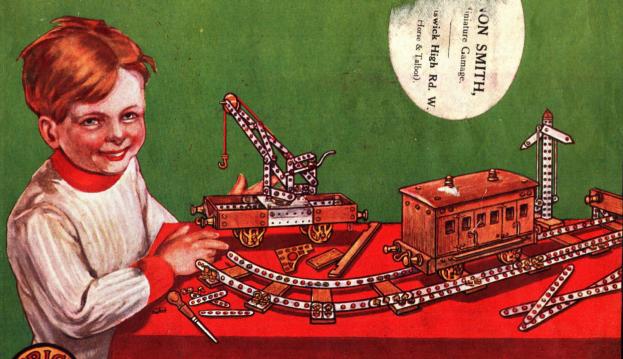


Complete
Outfit to build
4, 6 and 8 in.
diameter
wheels
in box with
Instruction
Manual.

Tractor Wheels.

, meccanomoex.co.uk

# DINIERING ENGINEERING





"Look-it's Wood and Metal!"

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



Outfits Nos. 1 & z 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.

 $N_0.\ 2^{\,\mathrm{S}}$  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 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 <u>BEFORE BEGINNING.</u>

#### 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

No. 66. is joined together and the slot permits of the necessary play.



Fig. A

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



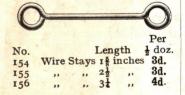
Fig. B.

on the other (Fig. A). They are likewise used to adjust the bracket to the width of some of the other fittings (Fig. B).

#### WASHERS.

These play a very important part in mechanics. They are put on the axles between the wheels and trunnions, or between the collars No. 84. and any facing part, to avoid friction.

#### EXTRA PARTS NOT INCLUDED IN OUTFITS





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\frac{1}{2}-in., 56 teeth, each 1/0



No. 167 Double Tapped Rods, 3½ in., each, 3d. No. 167A do. 2½, , , , 3d.



No. 161 Pinion Wheels, No. 162 Bevel Gears, ½-in., each 8d. per pair 2/-



No. 164 Crank Arm .. each 8d.



No. 163 Eccentric ..

each 1/-

### These models are made with

# PRIMUS ENGINEERING Nº 1 OUTFIT



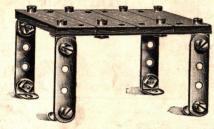
#### SEAT No. 1

2	Wood slips		No.	25
	Screws	1	,,	50
2	Strips, 2½ in.		,,	57
2	" 22 "		,,	59
4	Brackets		,,	66
Bra	ckets fixed with	hslot	on woo	bo.



#### CHAIR No. 4

	CHAIN	TAC	J. T
	Slips		No. 25
	Screws		,, 50
	Strips, 2 in.	· ·	,, 56
	" 21 "		,, 57
IO	Brackets		,, 66
τ	Plate		., 68



#### TABLE No. 2

	Slips		10 - 10		No.	25
6	Screws					1
2	Strips, 2 in.				4 ,,	-
2 .	_ ", 4 ",				,,	60
	Brackets				,,	66
4-1	in. strips screy	ved l	below table	e to	hold to	p.



6	Slips	No. 25	2 Strips, 4 in. No. 60
	Screws	,, 50	10 Brackets ,, 66
		in. ,, 56	4 Wheels ,, 75
6	1,, 2	,, ,, 57	2 Axles ,, 77
2	3.	50	



#### SEAT No. 3

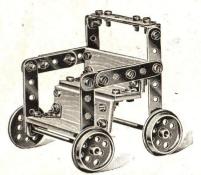
4	Slips				N	To.	25
10	Screws					,,	50
4	Strips,	2	in.			,,	56
2	,,	21/2	,,			,,	57
6	Bracke	ets				,,	66
2-in	. strips	SC	rew	ed	behind	d t	he
	v	VOC	d b	ack			



#### MUSIC STAND

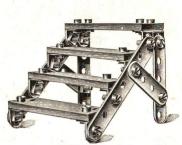
No. 8

2	Screws		No.	50
2	Strips, 2 in.		,,	56
6	", $2\frac{1}{2}$ ",			57
2	4 ,, .		,,	60
3	Brackets .	a Carrier Capter		66



#### CHAIR No. 6

	and the second second	
4	Slips	 No. 25
30	Screws	 ., 50
2	Strips, 2 in.	 ,, 56
6	$\frac{1}{1}$ , $2\frac{1}{2}$ ,	 ,, 57
2	$3\frac{1}{2}$ ,	 ,, 59
12	Brackets	 ,, 66
4	Wheels	,, 75
2	Axles, $3\frac{1}{2}$ in	 ,, 77
	4	 



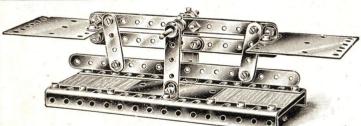
#### LADDER No. 7

4	Slips							No.	25
22	Screws	٠.						"	50
2	Strips,	2	in.					21	56
2	,,	$2\frac{1}{2}$	9.7					,,	57
2	,,	$3\frac{1}{2}$	,,					,,	59
IO	Bracke	ets						,,	66
Fix	bracket	st	o ste	et	os wi	th	slots	at si	de



#### ROLLER No. 9

8	Screws		No.	50
4	Strips, 2	in.	,,	56
1	,, 2	1 .,	,,	57
I	,, 31	,,	,,	59
I	,, 4		***	60
4	Brackets		, ,	66
2	Wheels		11	75
1	Axle, $3\frac{1}{2}$	in.	,,	77
2	Collars		.,,	82
Cov	ver wheels		card	for
	ro	ller.		



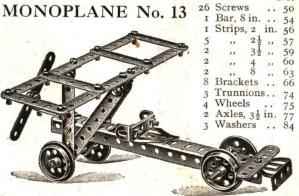
#### FRENCH BALANCE No. 10

						,
	Slips				2	Strips, 4 in. No. 60
30	Screws		,,	50	I	,, 8 ,, ,, 63
2	Bars,	8 in.	,,	54	10	Brackets ,, 66
2	Strips,	2 ,,	,,	56	3	Plates, $3 \times 3$ in. 68
	,,				I	Axle, $3\frac{1}{2}$ in 77
2	,,	31 ,,	,,	59	4	Collars 82

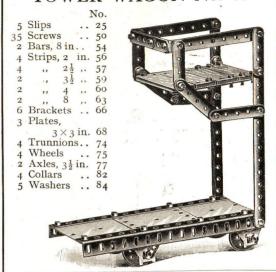
#### COUNTER SHAFT No. 23



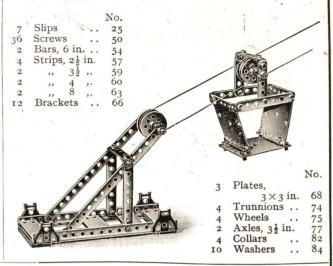
		N	No.			No.
2	Slips		25	2 Wheels		
12	Screws		50	I Axle, 3½ is	n.	77
8	Brackets		66	0 11		0
2	Trunnions	la constant	71	2 Washers		8.



#### TOWER WAGON No. 44



#### GOODS HOIST No. 45



#### LIBRARY LADDER No. 42



		1	No.		8 1	No.
8	Slips		25	I	Plate,	
	Screws				$3 \times 3$ in.	
2	Bars, 8	in	54		Trunnions	
2	Strips,	2 in.	56		Wheels	
4	,, :	$2\frac{1}{2}$ ,,	57		Axles, $3\frac{1}{2}$ in.	
2	,,	$3\frac{1}{2}$ ,,	59	2	Collars	82
2		4 ,,		2	Washers	84
IO	Bracket	S	66			

#### TRUCK No. 33



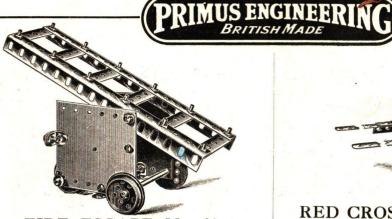
5	Slips	 	No. 25
16	Screws	 	. ,, 50
4	Strips, 2 in.	 	,,: 56
2	,, 8 ,,	 	,, 63
2	Brackets	 	,, 66
2	Wheels	 	., 75
I	Axle, $3\frac{1}{2}$ in.		77

#### SHAFTING

No. 35

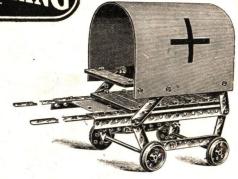


		]	No.		No.	
2	Slips		25	2	Trunnions 74	-
	Screws		50		Wheels 75	
					Axle, $3\frac{1}{2}$ in. $77$	7
2					Collars 82	
2	,, 4	,,	60	3	Washers 84	+



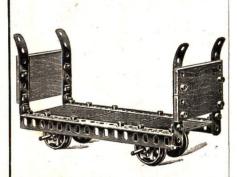
#### FIRE ESCAPE No. 30

		No.			No.
24	Screws	 50	2	Plates, $3 \times 3$ in.	68
2	Bars, 8 in.	 54		Wheels	75
6	Strips, 2½ in.	 57	2	Axles, $3\frac{1}{2}$ in	77
I	" 31 "	 59	2	Collars	82
I	,, 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			54	4	Brackets	 66
4	Strips,	2 in.		56	1	Plate, $3 \times 3$ in	68
6	,,	$2\frac{1}{2}$ ,,		57	4	Wheels	 75
2	,,	$3\frac{1}{2}$ ,,		59	2	Axles, $3\frac{1}{2}$ in.	 77
		Hoc	d is	mad	e of s	tiff card.	



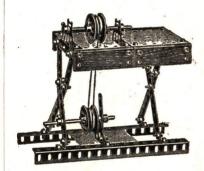
#### CHURN TROLLEY No. 27

4	Slips		 No.	25
24	Screws		 ,,	50
2	Bars, 8 in.	٠.	"	54
2	Strips, 3½ in.		 ,,	59
2	,, 4 ,,		 ,,	60
4	Brackets		 ,,	66
3	Plates, $3 \times 3$	in.	 ,,	68
4	Trunnions		 ,,	74
4	Wheels		 ,,	75
2	Axles, $3\frac{1}{2}$ in.		 ,,	77
4	Collars		 ,,	82



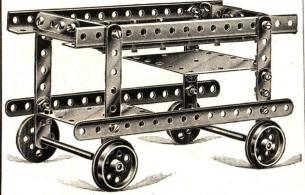
#### SWING No. 34

3	Slips		No. 25
24	Screws		,, 50
2	Strips, $2\frac{1}{2}$ in.		,, 57
2	,, 4 ,,		,, 60
2	,, 8 ,,		,, 63
12	Brackets		,, 66
2	Plates, $3 \times 3$ i	n.	,, 68
I	Axle, $3\frac{1}{2}$ in.	)	,. 77
2	Collars		,, 82
4	Washers		,, 84



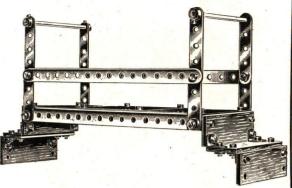
#### LATHE No. 43

4	Slips		 No. 25	
36	Screws		 ,, 50	
2	Bars, 8 in.		 ,, 54	
. 4	Strips, 2 in.		 ,, 56	
	$_{1}$ , $2\frac{1}{2}$ ,		 ,, 57	
5 5 2	" $3\frac{1}{2}$ "		 ., 59	
2	,, 4 ,,		 ,, 60	
12	Brackets		 ,, 66	
3	Plates, 3×3	in.	 ,, 68	
3 4 4 2	Trunnions		 ,, 74	
4	Wheels		 ,, 75	
2	Axles, 31 in.		 ,, 77	
4	Collars		 ,, 82	
9	Washers		 ,, 84	



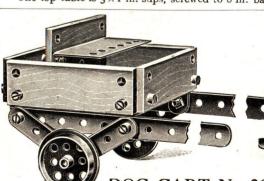
#### DINNER WAGON No. 14

6	Slips				Nc.	25
36	Screws				.,	50
2	Bars, 8 in.					54
4	Strips, 2 ,,	• •				56
4	$_{,,}$ $2\frac{1}{2}$ $_{,,}$				,	57
2	,, 4 ,,				**	60
2	_ ,, 8 ,,					63
8	Brackets.				,	66
2	Plates, 3×3 n.				,	68
	Wheels				.,	75
2	Axles, 3½ in.				,,	77
T	he top table is $3 \times$	I in. slip	s, scre	wed to 8 i	n. bar	s.



#### BRIDGE No. 16

6	Slips		 	No. 25
36	Screws	2.	 	,, 50
2	Bars, 8 in.		 	., 54
4	Strips, 2 ,,		 	,, 56
4	$\frac{2}{2}$ ,.		 	,, 57
2	,, 8,		 	,, 63
12	Brackets		 	,, 66
3	Plates, $3 \times 3$ in.		 	,, 68
2	Axles, 31 in.		 	,, 77
4	Collars			,, 82
8	Washers .		 	., 84

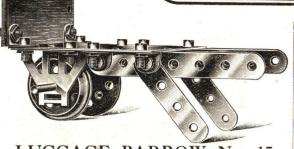




5	Slips	• * •			No. 25	
20	Screws				,, 50	
4	Strips, 2 in.				,, 56	
2	,, 8 ,,				,, 63	
12	Brackets				,, 66	
2	Plates, 3×3 in.				,, 68	
2	Wheels				,, 75	
I	Axle, $3\frac{1}{2}$ in.				,, 77	
	The 8 in.	strips f	orm the	shafts.		

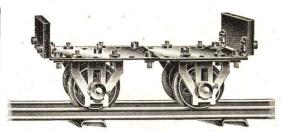
### SLEDGE No. 19

	_		,	
4	Slips		• •	 No. 25
26	Screws			 ,, 50
4	Strips,	2 in.		 ,, 56
2	"	$2\frac{1}{2}$ ,,		 ,, 57
2	,,	31 ,,		 ,, 59
2	,,	4 ,,		 ,, 60
2	,,,	8 ,,		 ., 63
10	Bracke	ets		 ,, 66



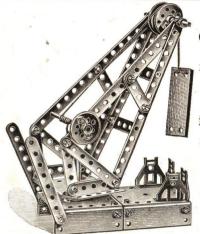
#### LUGGAGE BARROW No. 15

I	Slip No. 25	1 Plate, 3×3 in. N	o. 68
	Screws ,, 50 Strips, 2 in. ,, 56	2 Trunnions	,, 74
2	,, 3½,, ,, 59	2 Wheels	,, 75
6	Brackets ,, 66	I Axle, $3\frac{1}{2}$ in	,, 77



#### TROLLEY TRUCK No. 28

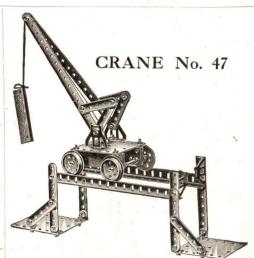
3	Slips	No. 25	4 Trunnions	 No. 74
20	C	,, 50	XX71 - 1-	 ,, 75
4	Brackets	,, 66	C-11-	 ,, 82
2	Plates, $3 \times 3$	,, 68	12 Washers	 ,, 84



#### CRANE No. 46

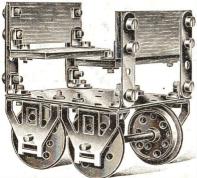
			-	•	- 0
5	Slips, 3×1	iı	1. N	o.	25
36	Screws				50
2	Bars, 8 in	1.			54
4	Strips, 2	,,		,,	56
6	", $2\frac{1}{2}$ "	,,		,,	57
2	" $3\frac{1}{2}$	,,		"	59
2	,, 4	, ,		,,	60.
2	,, 8	,,		23	63
12	Brackets			,,	66
3	Plates, 3×	3	in.	,,	68
4	Trunnions				74
4	Wheels				75
2	Axles, 35 in				77
4	Collars				82
6	Washers			,,	84
	A long nail				
	for contro		21.12		



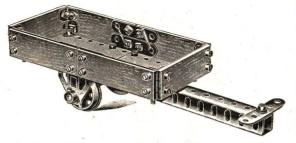


#### TRAILER No. 37

4		1	Vo.	25
24			,,	50
4	Strips, 2 in.		,,	56
	Brackets		,,	66
I	Plate, 3×3 i	n.	,,	68
	Trunnions		,,	74
	Wheels		,,	75
2	Axles, $3\frac{1}{2}$ in.			77
12	Washers		,,	84

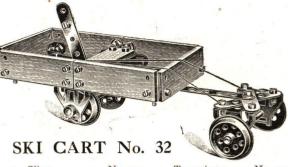


3	Slips			No	0. 25
36	Screws		, 38th	,,	50
2	Bars, 8 in.			,,	54
I	Strip, 2 ,,			, ,,	-6
6	Strips, 2½ ,,				57
2	" $3\frac{1}{2}$ "	* *		,,	59
2	,, 4 ,,			,	60
2	,, 8 ,,				63
IO	Brackets			,,	66
3	Plates, $3 \times 3$	in.			68
4	Trunnions				74
4	Wheels			,	75
2	Axles, $3\frac{1}{2}$ in.			,	
4	Collars			,	
12	Washers			,,	84
-		NAME OF TAXABLE PARTY.	THE RESIDENCE OF THE PERSON NAMED IN	-	-



#### BAGGAGE TRUCK No. 31

6	Slips	No. 25		Plates, $3 \times 3$		
33	Screws	,, 50	2	Trunnions	 ,, 7	74
	Bars, 8 in	,, 54	2	Wheels	 ,, 7	75
4	Strips, 2 in.	,, 56	I	Axle, $3\frac{1}{2}$ in.	 ,, 7	77
	$,, 2\frac{1}{2},, \ldots$	,, 57	2	Collars	 ,, 8	32
12	Brackets	,, 66	5	Washers	 ,, 8	34

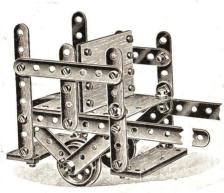


7	Slips	No.	25	4	Trunnions		No.	74
36	Screws	,,	50	4	Wheels		,,	75
2	Strips, 2 in.	,,	56	2	Axles, $3\frac{1}{2}$ i	n.	,,	77
3	$\frac{1}{2}$ ,,	,,	57	2	Collars		4 11	82
I	,, 8 ,,	,,	63	3	Washers		,,	84
12	Brackets	,,	66					
2	Plates, $3 \times 3$ in.		68		Cord used f	or ste	ering	ζ.



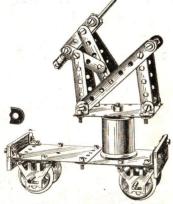
#### NEWTON'S DISC No. 22

2	Slips			No.	25
22	Screws .			,,	50
5	Strips, 2½ i	n.	• •	,,	57
12	Brackets .			"	66
ı	Plate, $3 \times 3$	in.		,,	68
3	Wheels		* *	,,	75
I	Axle, $3\frac{1}{2}$ in			,,	77
1	Collar			,,	82
5	Washers .			,,	84



#### MAIL CART No. 25

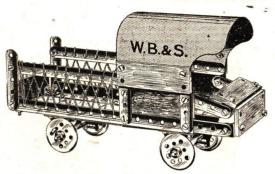
			1	No.			1	No.
4	Slips			25	12	Brackets		66
35	Screws	-		50	2	Plates,		
4	Strips,	2	in.	56		3×3	in.	68
6	,,	$2\frac{1}{2}$	,,	57	2	Wheels		75
2	,,	$3\frac{1}{2}$	,,	59	1	Axle, 3½ i	n.	77
2	,,	4	,,	60	2	Collars	. ,	82
2	,,,	8	,,	63	12	Washers	٠.	84



#### ANTI-AIRCRAFT GUN No. 49

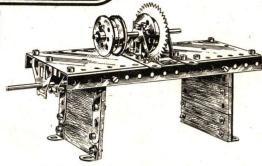
	UUL	ATA	10.		
2	Slips			No.	25
33	Screws			,,	50
4	Strips, 2	in.		,,	56
6	$_{,,}$ $2\frac{1}{2}$	,,		,,	57
2	,, 4	,,		,,	60
12	Brackets			,,	66
3	Plates			,,	68
4	Trunnion	S		,,	74
4	Wheels	* 1		,,	75
2	Axles, $3\frac{1}{2}$	in.		,,	77
4	Collars			,,,	82
6	Washers			19	84
Cott	on reel	used	for	mount	ing

gun and nails for axles.



#### MOTOR LORRY No. 55

7	Slips	No. 25	2	Strips, 8 in	No. 6	3
36	Screws	,, 50	6	Brackets	*	6
2	Bars, 8 in	,, 54	4	Trunnions	,, 7	
4	Strips, 2 in.	,, 56		Wheels	,, 7	•
6	$^{1}$ , $2\frac{1}{2}$ ,	,, 57	2	Axles, 31 in.	,, 7	_
	Piece o	f card cut		nake hood	",	1



#### CIRCULAR SAW No. 56

			No.			1	No.
6	Slips		25	2	Plates		68
35	Screws		50	4	Trunnions		74
2	Bars		54	2	Axles		77
4	Strips, 2½ in.		57	I	Collar		82
2	,, 4 ,,		60	I	Washer		84
8	Brackets		66				
	The saw can be	e cut	out	of a i	piece of cardl	noard	

#### A.S.C. WAGON No. 57

			- 1	No.				No.	
8	Slips			25	12	Brackets		66	
34	Screws			50	2	Plates		68	
4	Strips,	2	in.	56	4	Trunnions		74	
4	"	$2\frac{1}{2}$	,,	57	4	Wheels		75	
1	,,,	$3\frac{1}{2}$	,,	59	2	Axles		77	
1	,,	4	,,	60	4	Collars		82	
I	,,	8	,,	63	8	Washers		84	
Us	e a short	t na	ail to	forn	n pive	ot of front	whee	ols.	

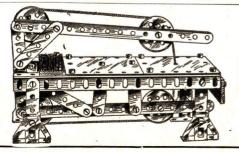


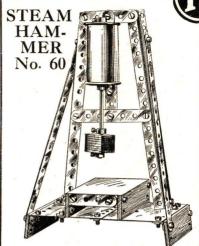
#### TIMBER DRAG No. 58

			No.		G INO.		No.
2	Slips		25	2	Strips, 8 in		63
29	Screws		50	12			
2	Bars		54	4	Trunnions		74
4	Strips,	2 in.	56	4	Wheels		75
5	**	$2\frac{1}{2}$ ,,	57	2	Axles		
2	, ,	31 ,,	59	4			82
2	. 11	4 ,,	60	5	Washers		84
	Use fix	re shor	t Fr	ench n	ails for axle	es.	•

#### BAND SAW No. 59

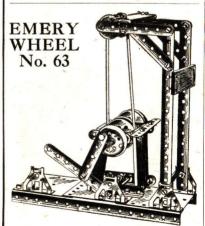
						No.				No.
2	Slips			•-		25	1	Strip, 4 in.		 60
32	Screws					50	2			 63
	Bars, 8					54		Brackets		 66
4	Strips,	2	in.			56	2	Plates, 3×3	in.	 68
4	"	21/2	,,			57	4	Trunnions		 74
I	"	31/2	,,			59	4	Wheels		 7.5



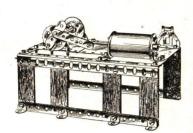


	Slips	No 25	2 Strips,8in]	
33	Screws	,, 50	12 Brackets	,, 66
	Bars	,, 54		,, 68
1	Strip, 2	in.,, 56	2 Wheels	,, 75
		1 57	I Axle	,, 77
I	,, 3	1 ,, ,, 59	2 Collars	,, 82
Sma	all squares	s of cardboa	ard fixed on to a	xle for
		паш	ner.	

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

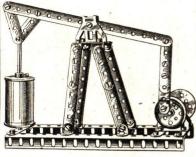


6 Slips No. 25	8 Brackets No.66
30 Screws ,, 50	3 Plates . ,, 68
2 Bars, 8 in. ,, 54	4 Trunnions ,, 74
2 Strips, 2 in.,, 56	3 Wheels ,, 75
$5  \dots  2\frac{1}{2} \dots  57$	2 Axles, 3½in.,, 77
2 ,, $3\frac{1}{2}$ ,, ,, 59	2 Collars ,, 82
2 ,, 4 ,, ,, 60	4 Washers ,, 84
2 ,, 8 ,, ,, 63	
A French nail and cott model; also a pill-box	on reel are used in this k lid for emery wheel.



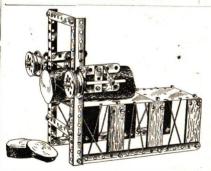
#### MILL ENGINE No. 61

	Slips	N	0.25	8	Brackets No.66
	Screw	/S	,, 50		Plates ,, 68
	Bars		,, 54	4	Trunnions ,, 74
I					Wheels ,, 75
4	,,	$2\frac{1}{2},,$	,, 57	2	Axles ,, 77
2	,,	8 ,,	,, 63	2	Collars ,, 82
	Use	inverte Worke	d man	tle- ha	case for cylinder.



#### BEAM ENGINE No. 62

35	Screv	ws N	lo. 50	12	Strips,8in. 1	Vo.	63
2 ]	Bars		,, 54	8	Brackets	,,	66
4 5	Strips	s, 2 in.	.,, 56	4	Trunnions	,,	74
6		$2\frac{1}{2}$ ,,			Wheels	,,	75
2	,,	31,,	,, 59	2	Axles	,,	77
2	,,	4 ,,	,, 60	3	Collars	,,	82

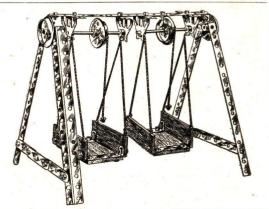


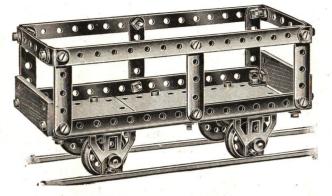
#### BAND SAW No. 64

6	Slips		 No.	25
36	Screws		 ,,	50
2	Bars, 8 in.		 ,,	54
4	Strips, 21 in	n.	 ,,	57
2	,, 4	,	 ,,	60
2	,, 8	,	 ,,	63
8	Brackets .		 ,,	66
3	Plates .		 ,,	68
• 4	Trunnions.		 ,,	74
4	Wheels		 ,,	75
2	Axles, 3½ in	n.	 ,,	77
2	Collars .		 ,,,	82
10	Washers .		 ,,	84

#### SWING No. 65

		,. ,	UU			
	Slips		N	lo.	25	
	Screws			,,	50	
2	Angle 1					
		8	in.	,,	54	
4	Strips,	2	,,	,,	56	
4	. ,,	21/2	,,	,,	57	
2	, ,,	31	,,	,,	59	
2	,,	4	,,	,,	60	
2	,,	8	,,	,,	63	
12	Bracke	ts		,,	66	
4	Wheels			,,	75	
2	Axles			,,	77	
4	Collars			,,	82	
2	Washer	-0			84	









#### TIMBER TRUCK No. 38

		]	No.			]	No.
2	Slips		25	3	Plates		68
36	Screws	٠.	50	4	Trunnions		74
2	Bars, 8 in.		54	4	Wheels		75
6	Strips, 2½ in.		57	2	Axles, 31 in.		
2	$3\frac{1}{2}$ ,,		59				82
	. " 8 "			12	Washers		84
12	Brackets		66		2. 0		

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.

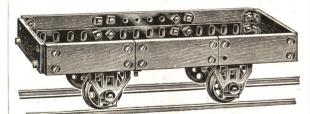
The base is composed of three No. 68 plates, which can be laid in loose, and caught between the sides when they are pressed in and the end screws tightened up, or they can be bolted together as shown in diagram. Note.—In trucks with a short base reduce the length by bolting in other holes.

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.



#### TRANSPORT TRUCK No. 39

24 Sc1	rews	• •					. No	. 50	
	rs, 8 in.						. ,,	54	
4 Sti	ips, 2 in.		4				. ,,	56	
	$\frac{2}{2}$ ,						. ,,	57	
And the second s	ackets			1.			. ,,	66	
	ates, $3 \times 3$	in.					. ,,	68	
	unnions	• •					. ,,	74	
	heels						• ,,	75	
2 Ax	les, $3\frac{1}{2}$ in.						. ,,,	77	
	llars						. ,,	82	
	ashers						. ,,	84	
	washers a								
and the	e Bars whe	ere th	ey	are b	olted	on,	to ad	just	



#### 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	n.		 	9)	68
4	Trunnions			 	11	74
4 2	Wheels			 	) )	75
2	Axles, $3\frac{1}{2}$ in.			 * *	,,	77
4	Collars				, ,,	82
8	Washers			 		84

the 21-in. strips.

### These models are made with

# PRIMUS ENGINEERING Nº 2 OUTFIT

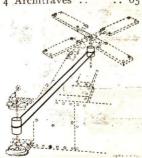


#### FOOT BRIDGE No. 107

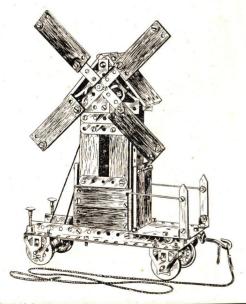
14	Slips		 	 No. 25
60	Screws		 	 ,, 50
2	Bars,	8 in.	 	 ., 54
8	Strips	2 ,,	 	 ,, 56
8	,,	$3\frac{1}{2}$ ,,	 	 ,, 59
2	,,	8 ,,	 	 ,, 63
16	Bracke		 	 ,, 66
4	Architr	aves	 	 ,, 85

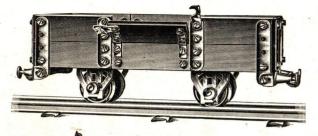
#### WORKING WINDMILL, No. 138

	11 OTETET 10			
		No.		Nc.
I	Floor	9	9 Brackets	66
2	Posts	II	3 Plates, 3×3	68
16	Slips	25	4 Trunnions	74
	Screws	50	4 Wheels	75
	Angle Bars, 6½ in.	53	2 Axles, 3½ in	77
2	" 8 in.	54	$2, 2\frac{3}{4}, \dots$	78
	Strips, 2 in	56	3 Collars	82
3	$\frac{2\frac{1}{2}}{2}$ ,	57	2 Washers	84
2		62	2 Buffers	85
	,, 8 ,,	63	r Coupling	86
4	Architraves	65	2 Rods	96

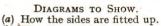


Note.—This model is mounted on a trolley and when pulled along the sails revolve. This is effected by a simple belt system, using cotton reels, fully explained by the small drawing.









(b) How the end is formed.



#### COAL TRUCK No. 113

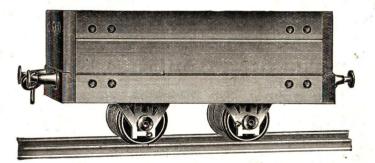
16	Slips	 No.	25
64	Screws	 . ,,	50
2	Bars, 8 in	 ,,	54
8	Strips, 2 in.	 ,,	56
4	$11   2\frac{1}{2}$	 ,,	57
2	" $3\frac{1}{2}$ "	 ,,	59
2	,, 4 ,,	 .,	60
12	Brackets	 ,,	66
3	Plates	 , .	68
4	Hinges	 ,,	72
4	Trunnions	 ,,	74
4	Wheels	 ,,	75
2	Axles, $3\frac{1}{2}$ in.	 ,,	77
4	Collars	 ,,	82
4.	Washers	 ,,	84
4	Buffers	 ,,	85
2	Couplings	 ,,	86
4	Catches	 ,,	95
			0.00

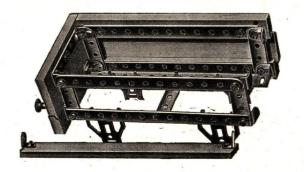
#### HEAVY GOODS TRUCK No. 116

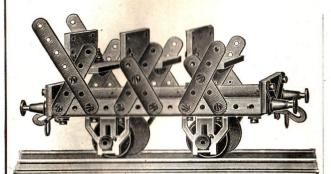
ALL WOOD SIDES, ENDS AND BUFFER BLOCKS.

4	Rails			No.	I
2	Blocks				4
I	Floor				9
2	Sides			,,	17
2	Ends			,,	18
36	Screws				50
2	Bars, $6\frac{1}{2}$ in.			,,	53
4	Strips, 2 in.				56
3	$\frac{1}{2}$ ,,	-		,,	57
2	$,, 6\frac{1}{2},$		٠.	. ,, (	52
10	Brackets			,, (	56
4	Trunnions		٠.		74
4	Wheels			,, 7	75
2	Axles, 23 in.				78
4	Collars				32
4	Washers				34
4	Buffers			,, 8	35
2	Couplings	24.	• •	,, 8	36

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.



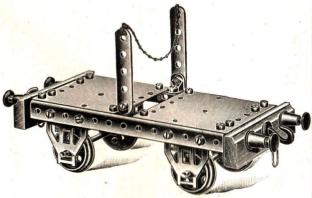




#### SWITCHBACK CAR No. 115

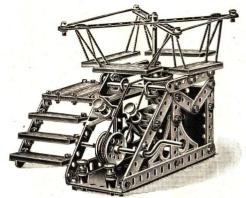
8	Slips	No. 25	4	Trunnions		No. 74
50	Screws	,, 50	4	Wheels		,, 75
2	Bars, 61 in	,, 53	2	Axles, 3½ in		
8	Strips, 2 in	,, 56	4	Collars		,, 82
6	$\frac{1}{1}$ $\frac{2\frac{1}{2}}{2}$ $\frac{1}{1}$ $\frac{1}{1}$	57	12	Washers		,, 84
2	" $3\frac{1}{2}$ "	,, 59	4	Buffers		,, 85
16	Brackets	,, 66	2	Couplings		,, 86
3	Plates, $3 \times 3$ in.	,, 68				
NO	TE.—2 Washers	placed	ove	r screw tl	nat	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, 31 in.		,,	77
2	$\frac{1}{1}$ , $2\frac{1}{2}$ ,	 ,,	57	4	Buffers		,,	85
12	Brackets	 ,,	66	2	Couplings		,,	86



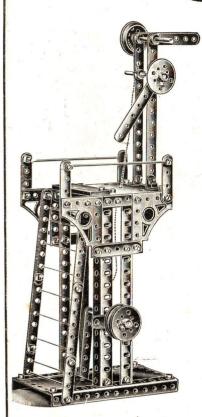
#### ROUNDABOUT No. 129

		No.			No.
II	Slips	 25	16	Brackets .	. 66
61	Screws	 50	3	Plates, $3 \times 3$ in.	68
2	Bars, 6½ in.	 53	4	Trunnions .	. 74
5	Strips, 2 in.	 56	4	Wheels .	. 75
5	", $2\frac{1}{2}$ ",	 57	2	Axles, $3\frac{1}{2}$ in	. 77
8	$3\frac{1}{2}$ ,	 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

I	Block	 		No. 4
IO	Screws	 	 	,, 50
2	Strips, 2 in.	 	 	,, 56
3	", $2\frac{1}{2}$ ",	 	 	,, 57
2	" $3\frac{1}{2}$ "	 	 	,, 59
8	Brackets	 	 	,, 66
2	Buffers	 	 	,, 85



### SIGNAL GANTRY

	140.	110		
I	Slip		No	. 25
55	Screws		,,	50
2	Bars, 6½ 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	$,, 6\frac{1}{2},$		. 1)	62
2	,, 8 ,,		,,	63
4	Architraves		,,	65
II	Brackets	4.5	,,,	66
- 3	Plates		. ,,	68
4	Wheels		,,	75
I	Rod, $3\frac{1}{2}$ in.			77
2	Rods, $2\frac{3}{4}$ ,,		23	78
- 4	Collars		,,	82
2	Rods		,,	96
	Use cord for	ladder r	ungs.	

#### EXTENDING LADDER

No. 130

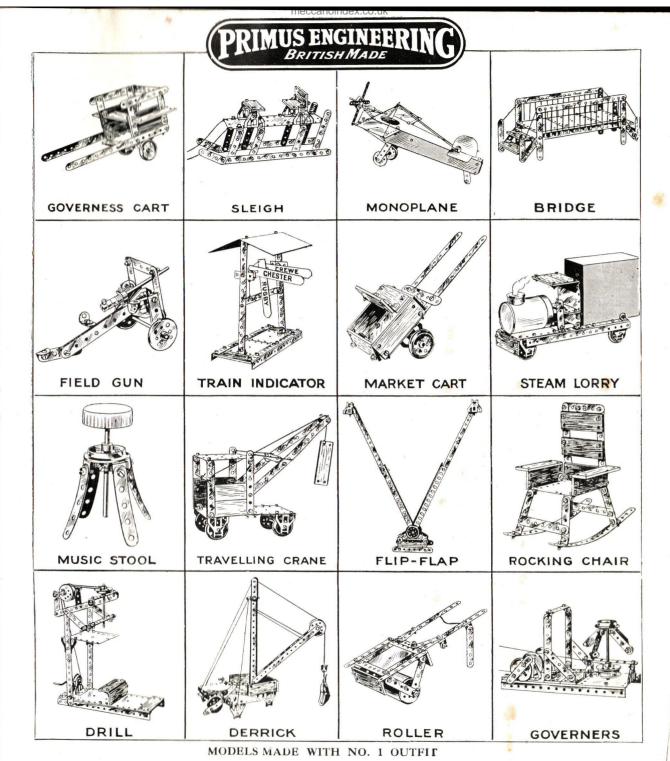
53	Screws			No.	50
2	Bars, 61	n.		,,	53
2	,, 8	,,		,,	54
4	Strips, 2	in.		"	56
6	$_{,,}$ $2\frac{1}{2}$			٠,,,	57
5	" $3\frac{1}{2}$	,,		,,	59
2	,, 4	,,		,,	60
2	,, 8	,,		,,	63
2	Architrav	res		,,	65
16	Brackets			,,	66
I	Hinge			,,	72
4	Wheels			,,	75
1	Axle, $3\frac{1}{2}$	in.		,,	77
I	$,, 2\frac{3}{4}$	,,		,,	78
3	Collars			,,	82
12	Washers			,,	84
I	Catch			,,	95
2	Rods			",,	96
	Extr	a part	s requi	red:	
I	Wheel			,,	76
I	Handle			,,	83

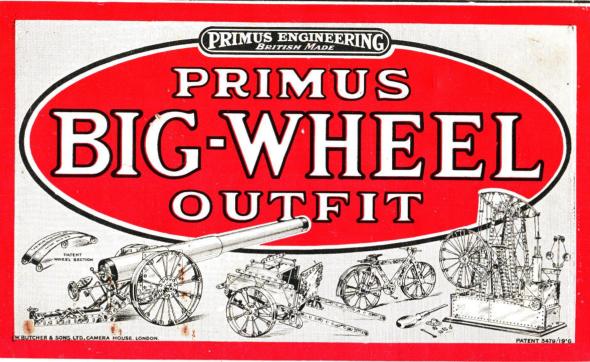


#### REVOLVING CHAIR No. 126



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





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,







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

Tractor Wheels.