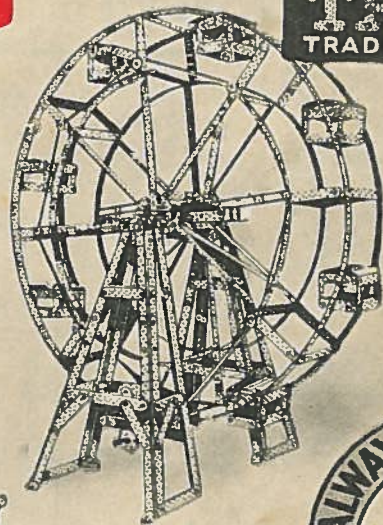


*Book 1*

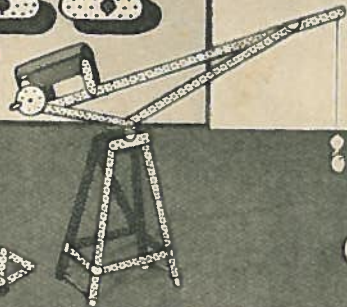
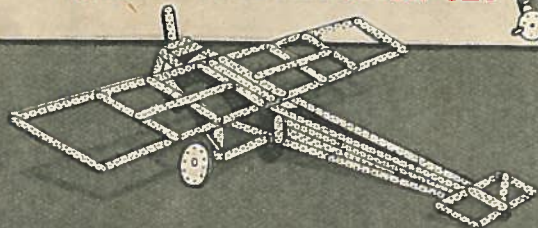
**TRIX**  
TRADE MARK

BRITISH PATENT  
N<sup>o</sup>363547.  
AND VARIOUS  
FOREIGN PATENTS



**TRIX**

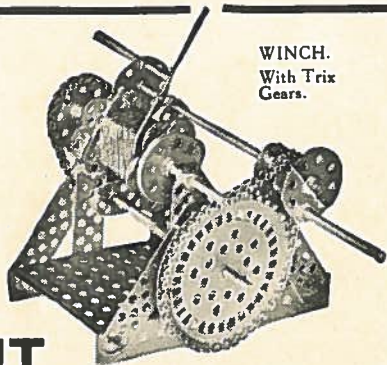
METAL CONSTRUCTION SET



THE CONSTRUCTION SET  
FOR THE MILLION

**THE BOOK OF TRIX MODELS**

# TWO GRAND WAYS TO BUILD BETTER MODELS



WINCH.  
With Trix  
Gears.

## PUT MODELS IN GEAR

The TRIX Universal Gear Set contains gear wheels and necessary parts for giving models "drive" — worm-drive, sprocket-chain-drive, direct-gear-drive and many others. Almost endless gear ratios are possible.

## TRIX GEARS -

TRIX Book No. 3 shows many grand models fitted with TRIX Gears. Be sure to get it.

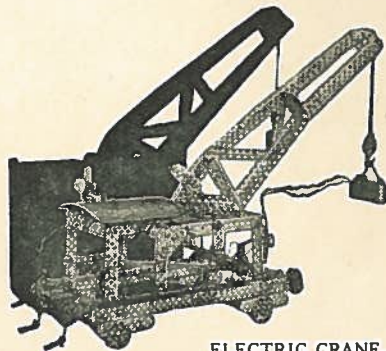
*Make Models Hum with Electricity. Get*

# TRICY-TRIX

## *The Electric Trix*

Don't be content with just building models, make them go with electricity. TRICY-TRIX, The Electric Trix, makes the motor hum, the crane

lift heavy loads, the windmill fly round. Light Units in this Set illuminate models in grand style! TRICY-TRIX introduces you to coils, commutators, bobbins, cores and other thrilling things of the electricity world. Besides building models you will be able to conduct experiments in electro-magnetism and mystify your friends. Instruction Book makes it all plain sailing.



ELECTRIC CRANE.  
Driven by Trix-Trix.

● BUILD WITH TRIX ● DRIVE & LIGHT WITH TRICY-TRIX ● FIT TRIX GEARS

TRIX

METAL CONSTRUCTIONAL SET.

THE BOOK OF TRIX MODELS.

BOOK 1

SEVENTH EDITION REVISED.

195,001 to 225,000.

PRINTED IN ENGLAND (COPYRIGHT.)

## JUST A MOMENT, BOYS!

**W**ITH this book in your hands and "Trix" on the table, you are fully equipped to pursue the most fascinating hobby in the world—making models with "Trix"!

To present everything crystal clear, we begin by showing you how to make simple constructions—the *vital part* of your models. Continue to follow the instructions carefully, and you will soon find yourself building a monoplane, suspension ferry, roundabout, or one of the many other magnificent models shown in the book.

Remember that each and every one of the numerous models illustrated can be made with one or more boxes of "Trix"—Trix No. 1 and No. 1a.

Models in greater variety can be made by adding the *new Trix*—Trix No. 2a—consisting of 44 parts, many of which are patented. Models containing these new parts will be found in the Trix Book of Models No. 2.

# ALL TRIX COMPONENT PARTS. ACTUAL SIZES.



A 1  
Angle Piece



N 1  
Nut

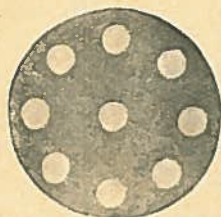


B 1  
Bolt

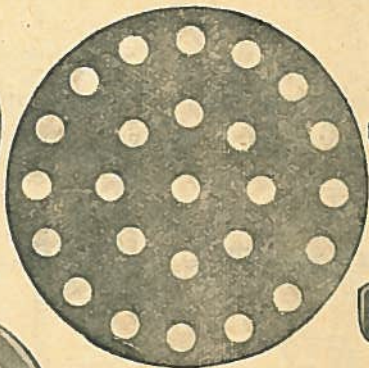
C 1  
Crane  
Hook



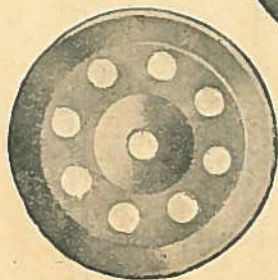
ER 1  
Eccentric  
Washer



P 29  
Pierced Disc, 29 mm.



P 49  
Pierced Disc, 49 mm.



V 35  
Half of grooved (V) Pulley



W 10  
Washer  
10 mm.



W 16  
Washer  
16 mm.



SU 1  
Small  
U piece



SU 2  
U piece



U 1  
U piece



U 2  
U piece



U 3 Long U piece



S 87 Plain shaft with screwed ends, 87 mm. long



FLAT  
STRIPS

F 5 →

F 9 ↓



S 25

Screwed Spindle, 25 mm. long

S 55



Screwed Spindle, 55 mm. long

FLAT STRIPS

No. denotes  
number of  
middle holes

F 17 →

F 13 ↓



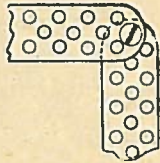
FOR MODELS USING PARTS ER 1, P 49 S 87, SU 1, SU 2, U 3 and V 35, SEE TRIX BOOK No 2.

Contained in TRIX SET No. 2A.

# TRIX

## ELEMENTARY CONSTRUCTIONS.

These elementary constructions recur in all models. You are therefore recommended to study them thoroughly before attempting the models themselves.



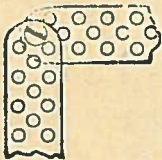
### SIMPLE BOLTED JOINT.

Put bolt through parts you wish to join together. Tighten nut with spanner provided. Any strip can be used as a screwdriver.

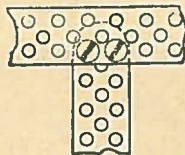


### LOCK NUTS.

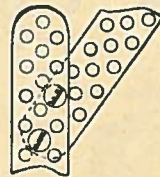
Tighten a second nut against the first one. This prevents the joints loosening.



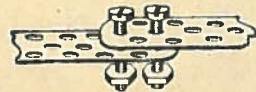
**EC 1.** Simple Bolted Joint.



**EC 2.** Double Bolted Joint. Securing against side turning.



**EC 3.** Angle Bolted Joint.



**EC 4.** Lap Bolted Joint.

ELEMENTARY CONSTRUCTIONS.

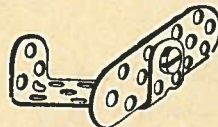
TRIX



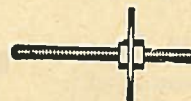
EC 5. Butt Joint.



EC 6. Double Butt Joint.



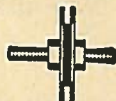
EC 7. Strip joined in U piece.  
Securing against side turning.



EC 8. Fixed Wheel.  
Consisting of:—  
1 × S 25 or S 55  
2 × N 1  
1 × P 29 or W 10 or W 16



EC 9. Loose Wheel.  
Consisting of:—  
1 × S 25 or S 55  
4 × N 1  
1 × P 29 or W 10 or W 16



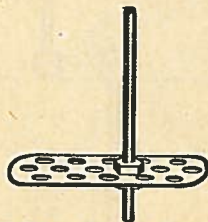
EC 10. Pulley (large).  
Consisting of:—  
1 × S 25 or S 55  
2 × N 1  
2 × P 29  
1 × W 16



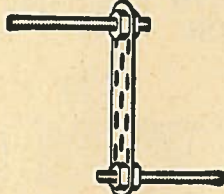
EC 11. Pulley (small).  
Consisting of:—  
1 × S 25 or S 55  
2 × N 1  
2 × W 16  
1 × W 10



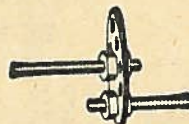
EC 12. Shaft coupling.  
Consisting of:—  
2 × S 25 or S 55  
4 × N 1  
1 × U 1 or U 2



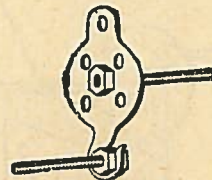
EC 13. Fixed Screw in strip.  
Consisting of:—  
1 × F 5, etc.  
1 × S 25 or S 55  
2 × N 1



EC 14. Crank.  
Consisting of:—  
1 × F 5, etc.  
4 × B 1  
2 × S 25 or S 55



EC 15. Crank Wheel  
Consisting of:—  
1 × P 29  
4 × N 1  
1 × S 55  
1 × S 25



EC 16. Crank.  
Consisting of:—  
1 × C 1  
4 × N 1  
1 × S 25  
1 × S 55

# TRIX

## ELEMENTARY CONSTRUCTIONS.

### EC 17. Loose Joint.

Consisting of:—  
 2 × F 5, etc.  
 2 × N 1  
 1 × B 1



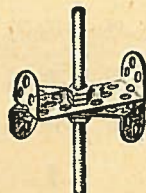
### EC 18. Loose Joint.

Consisting of:—  
 2 × F 5, etc.  
 2 × N 1  
 1 × B 1



### EC 19. Lock Nuts.

Consisting of:—  
 1 × S 25 or S 55  
 4 × N 1



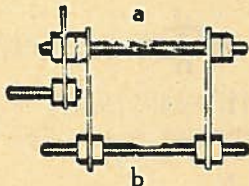
### EC 20. Revolving Base.

Consisting of:—  
 2 × U 1 or U 2  
 4 × N 1  
 1 × S 25 or S 55

### EC 21. BRAKE.

Instead of ratchet wheels,  
 etc. Consisting of:—

2 × F 5, etc.  
 2 × S 55  
 1 × S 25  
 1 × P 29  
 11 × N 1



Screw the upper spindle together until Distance a is a trifle shorter than Distance b. The flexible strips will then act as brakes.

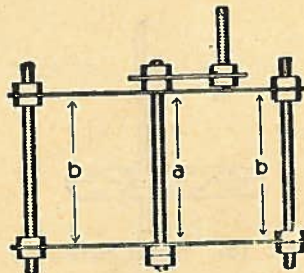
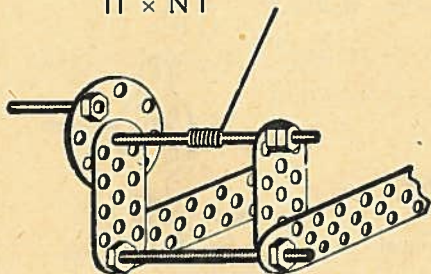
## OTHER FORMS WITH THE SAME ACTION.

### EC 22.

Consisting of:—  
 1 × P 29    2 × F 5  
 1 × S 25    2 × F 9  
 2 × S 55    10 × N 1

### EC 23.

Consisting of:—  
 1 × S 25    2 × F 9  
 3 × S 55    14 × N 1  
 1 × F 5



The models are arranged in order, beginning with the simple ones and gradually working up to those which are more difficult. We recommend you to build them in the given sequence.

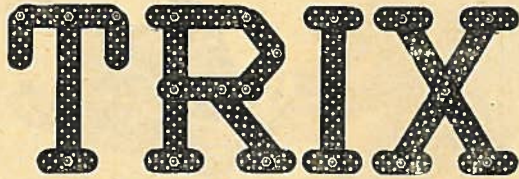
All nuts should be fixed loosely on to bolts and screws until the whole model is constructed. Afterwards they may be tightened.

PRIZES AWARDED FOR GOOD ORIGINAL MODELS.

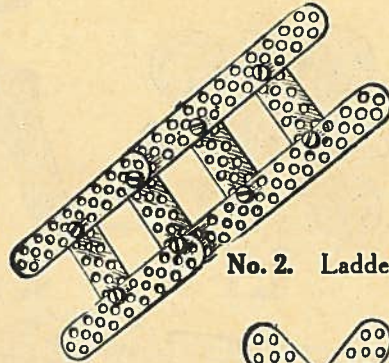


TRIX—ALWAYS COMPLETE AND NEVER FINISHED.

TRIX



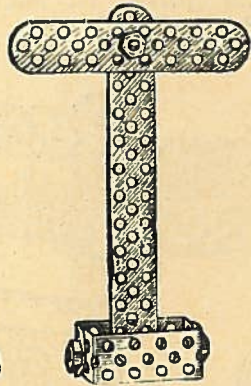
No. 1a. 1b. 1c. 1d.



No. 2. Ladder.



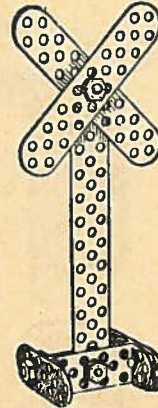
No. 3.  
Lazy Tongs  
(Joints as in EC 17).



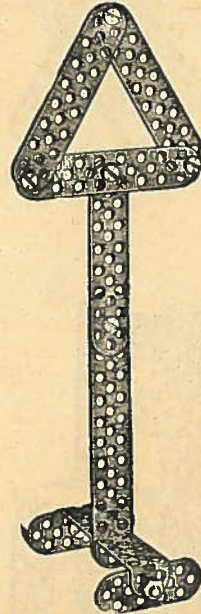
No. 4.  
Sign Post.



No. 5.  
Spinning Top.



No. 6.  
Stop Signal.



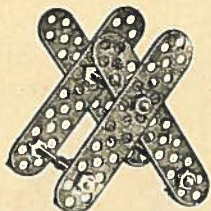
No. 7.  
Traffic Sign.

Models built with Box No. 1.

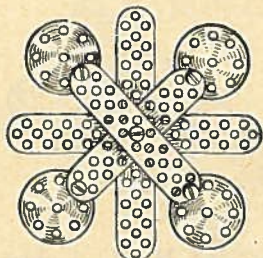
TRIX HAS ENORMOUS STRENGTH.

TRIX IS BRITISH MADE.

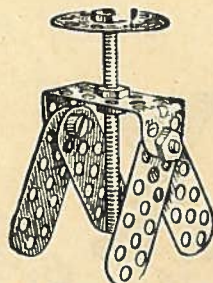
# TRIX



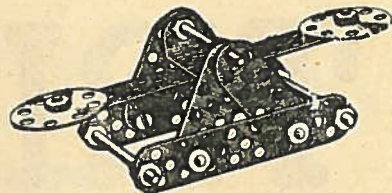
No. 8. Saw Bench.



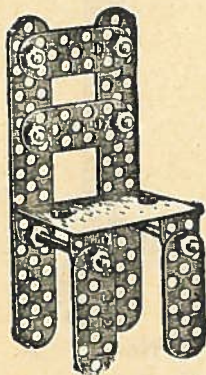
No. 9. Star.



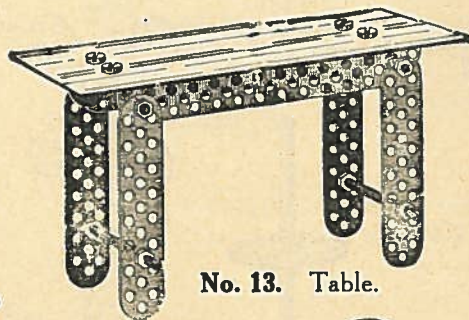
No. 10. Turntable.



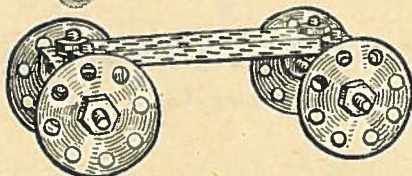
No. 11. Scale.



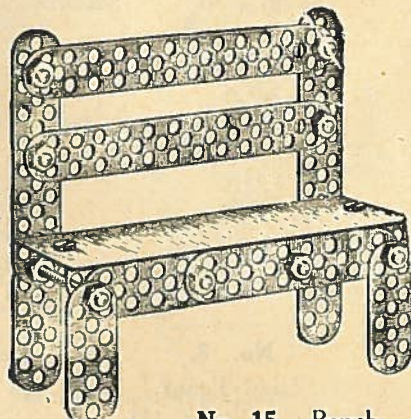
No. 12. Chair.



No. 13. Table.



No. 14. Cart.



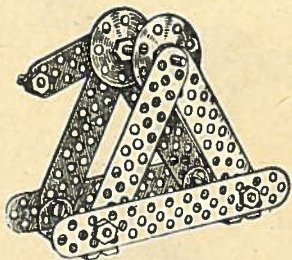
No. 15. Bench.

Models built with Box No. 1.

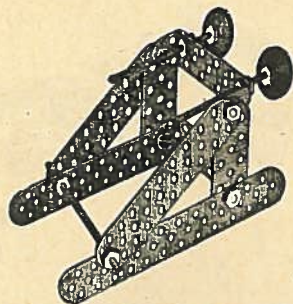
Designs 12 and 15, page 71; design 13, page 72.

MAKE THINGS FOR THE HOUSE WITH TRIX.

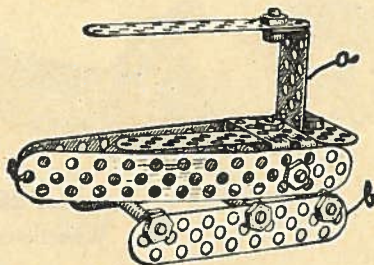
TRIX



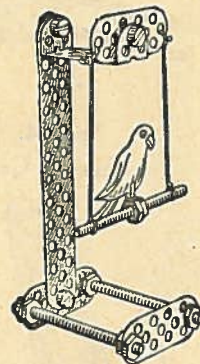
No. 16. Windlass.



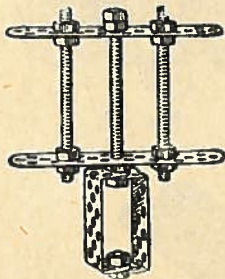
No. 17. Station Buffer.



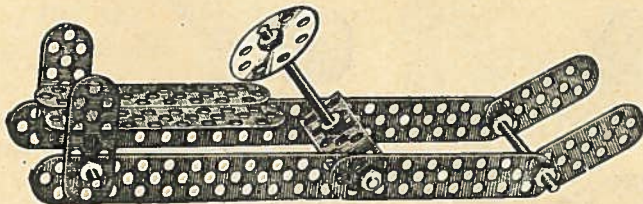
No. 18a. Iron.  
No. 18b. Iron Stand.



No. 19.  
Parrot Stand.  
Design, page 71.



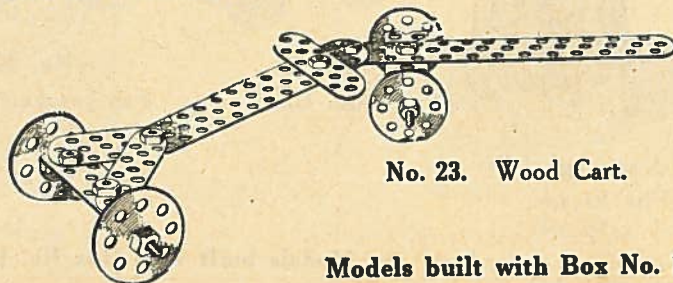
No. 21. Hasp.



No. 20. Bobsleigh.



No. 22. Cannon.

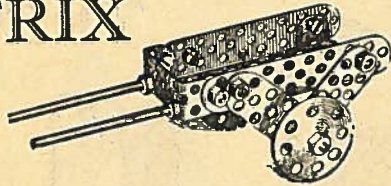


No. 23. Wood Cart.

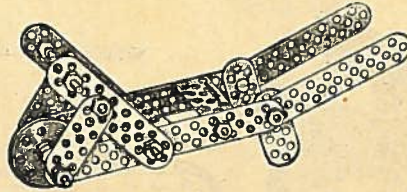
Models built with Box No. 1.

HAVE YOU SEEN TRIX MOTOR?

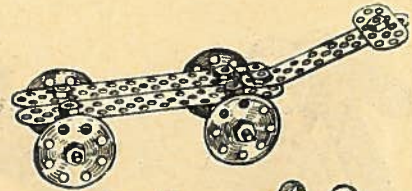
# TRIX



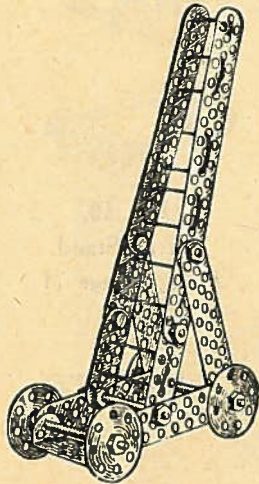
No. 24.  
Luggage Cart.



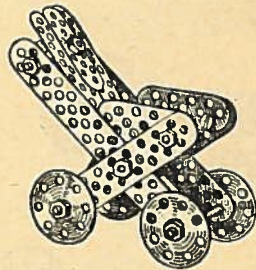
No. 25.  
Wheelbarrow.



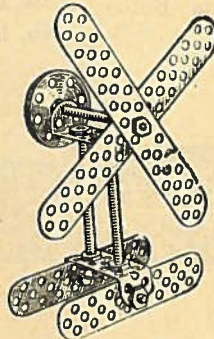
No. 26.  
Cart.



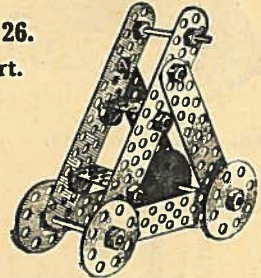
No. 28.  
Fire Escape.



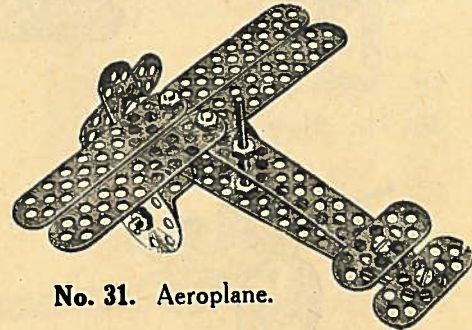
No. 29.  
Push Chair.



No. 30.  
Fan (working model).



No. 27.  
Step Ladder on wheels.



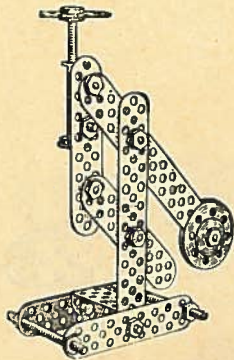
No. 31. Aeroplane.

Models built with Box No. 1.

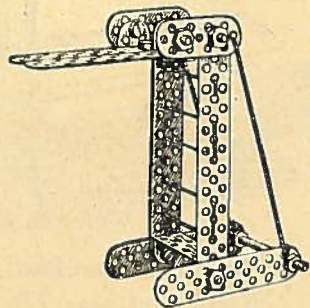
TRICY TRIX IS ELECTRIC TRIX.

PRIZES AWARDED FOR GOOD ORIGINAL MODELS.

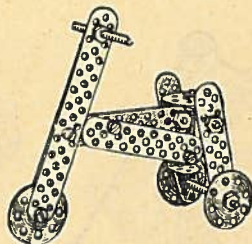
TRIX



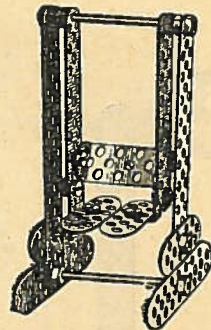
No. 32.  
Letter Scale.



No. 33.  
Diving Board.

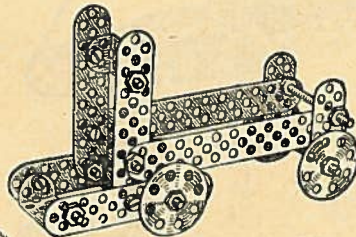


No. 34. Tricycle.

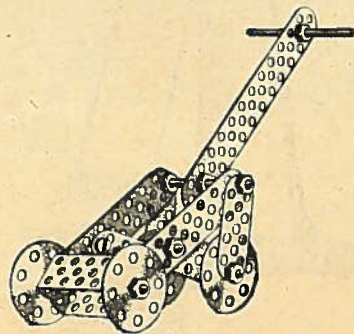


No. 35.  
Swing.

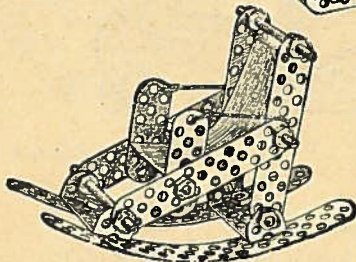
Models built with  
Box No. 1.



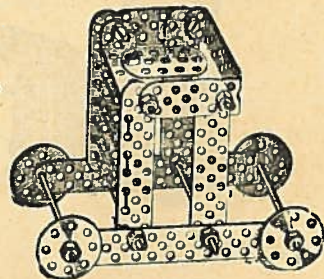
No. 36.  
Station Trolley.



No. 37. Lawn Mower.



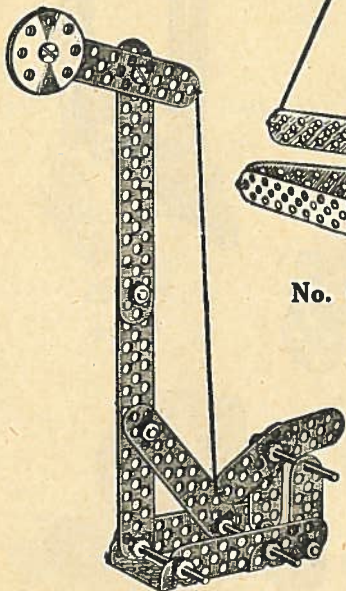
No. 38. Rocking Chair.  
See page 72 (design).



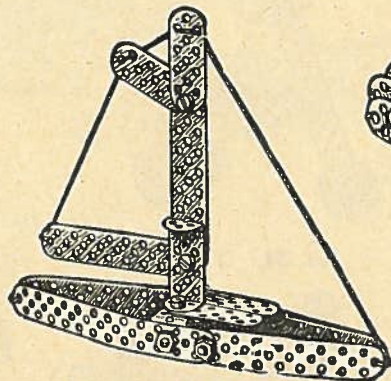
No. 39.  
Inspection Trolley.

MAKE DAD A TRIX PIPE RACK—MAKE MOTHER A TRIX IRON STAND.

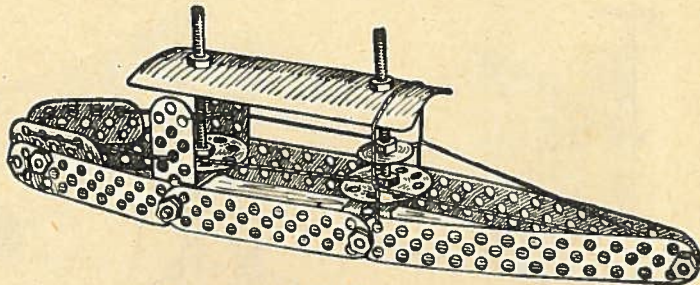
# TRIX



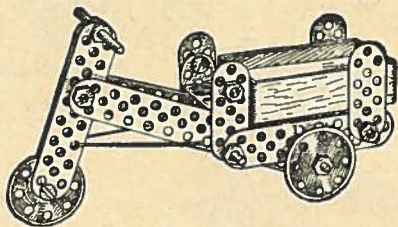
No. 42. Signal.



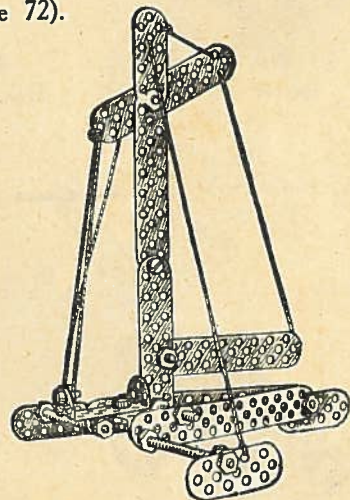
No. 40. Sailing Boat.



No. 41. Motor Boat.  
(Design on page 72).



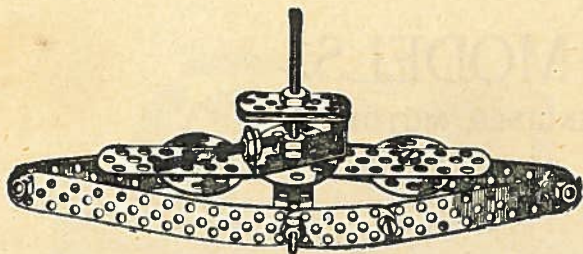
No. 43. Delivery Tricycle.  
(A match box is used for the body).



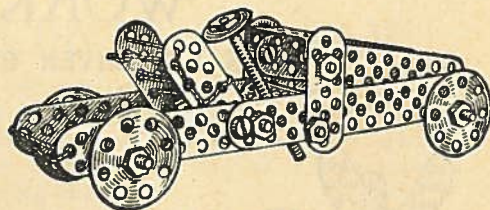
No. 44. Sailing Glider.

Models built with Box No. 1.

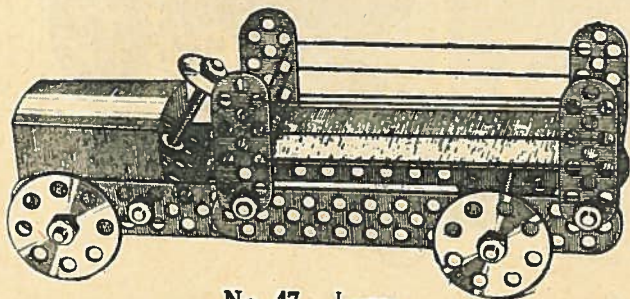
TRIX



No. 45. Submarine.

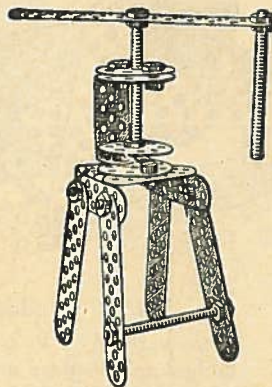


No. 46. Racing Car.



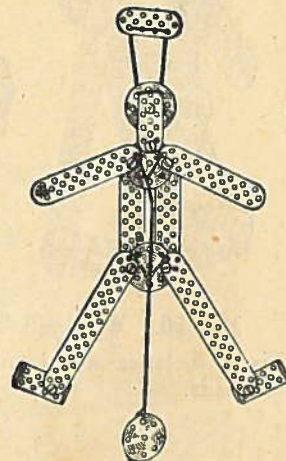
No. 47. Lorry.

Body and bonnet made of cardboard.  
See design, page 71.



No. 48.

Hand Press.



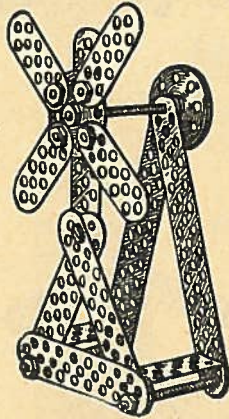
No. 49. Jumping Jack.

Models built with box No. 1.

# TRIX

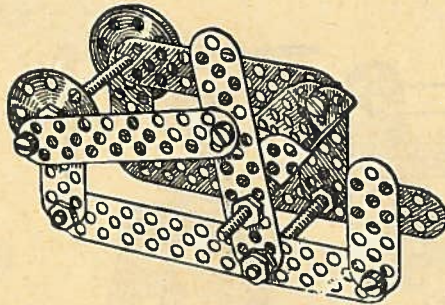
## WORKING MODELS.

CAN BE DRIVEN BY STEAM ENGINES, MOTORS, ETC.



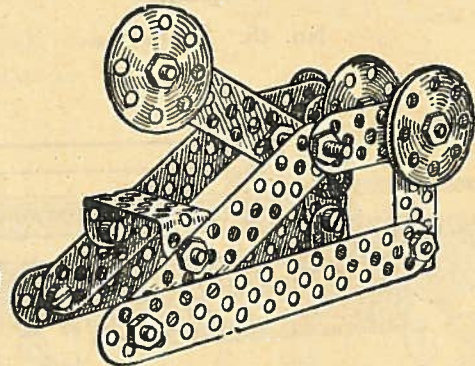
**No. 50.** Windmill.

Fix a distance nut behind the sails.



**No. 51.** Fodder Cutter.

The vertical F 9 is loosely attached to the base and connected with the crank wheel (according to EC 18) by means of a horizontal F 9.



**No. 52.** Power Hammer.

One N 1 fixed in P 29 is pushing down the hammer-shaft with each revolution. The hammer is secured with two nuts on one S 55 which can move in its bearings.

**Models built with Box No. 1.**



TRIX PERMAG MOTOR HAS MARVELLOUS STRENGTH.

# TRIX

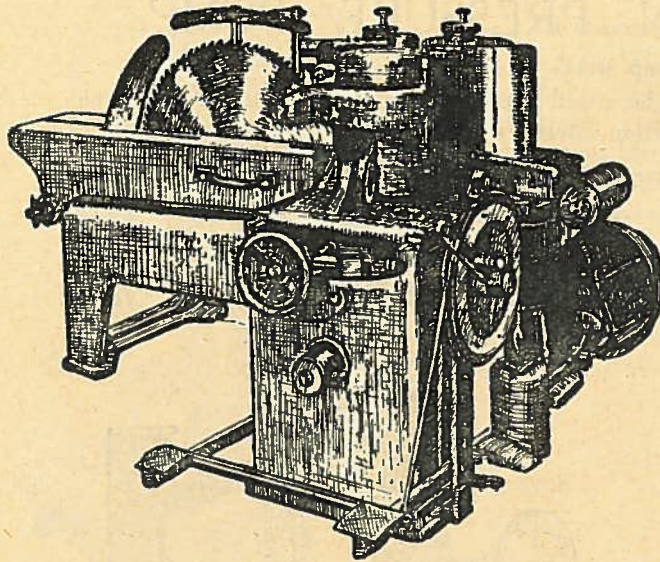
## CIRCULAR SAW.

On all sawing machines saw blades are moved by power. There are gate saws, horizontal saws, band saws and circular saws. The latter have as a saw blade a rotating disc.

The kind of circular saw shown in the picture is used mainly for making cases, planks, etc.

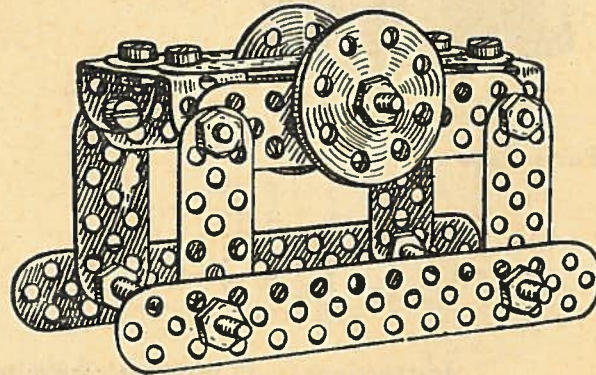
### Model No. 53. CIRCULAR SAW.

Built with box No. 1.



#### Parts Required :

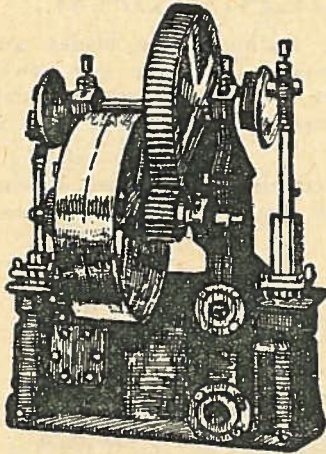
8 of B 1	3 of P 29
4 „ F 5	3 „ S 55
4 „ F 9	2 „ U 2
2 „ F 13	2 „ W 16
20 „ N 1	



TRIX STARTS AN ENGINEERING CAREER FOR THE YOUNG.

# TRIX

## TWIN PRESSURE PUMP.



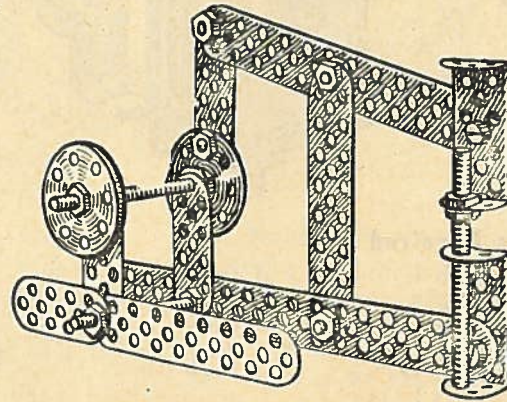
A pressure pump works as follows:—

In a fixed cylinder a well fitted piston is moved. At the same time delivery and suction valves are opened and closed.

These pumps are mainly used for draining coal mines and similar places.

### Model No. 54. PRESSURE PUMP.

Built with box No. 1.



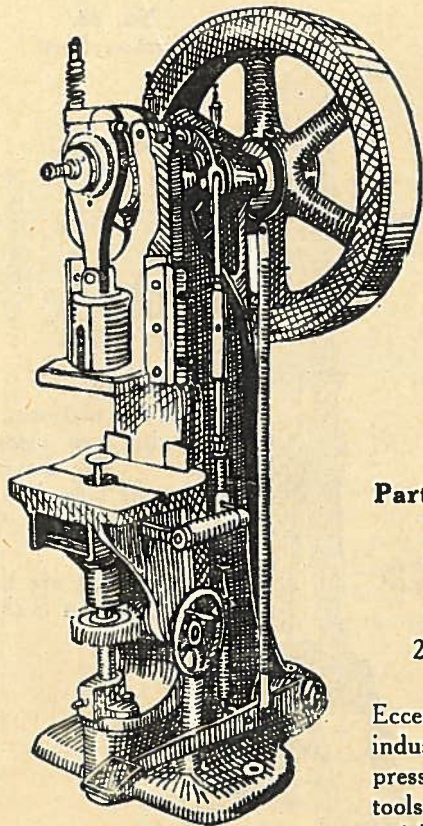
#### Parts Required :

6 of B 1	3 of P 29
4 „ F 5	3 „ S 55
3 „ F 9	2 „ U 2
2 „ F 13	2 „ W 16
20 „ N 1	

**Instructions :** All joints are constructed as EC 18, the pulley as EC 10.

BUILD WITH TRIX—LIGHT WITH TRICY TRIX—DRIVE WITH A PERMAG MOTOR.

# TRIX



### Instructions :

Fix two F 9's on the front F 13. These act as the guide held sideways against the screws. They are fastened underneath the press table by the U 2. At their upper ends they are fixed into the F 13 by a bolt. Two distance nuts are placed behind the eccentric disc.

Model No. 55

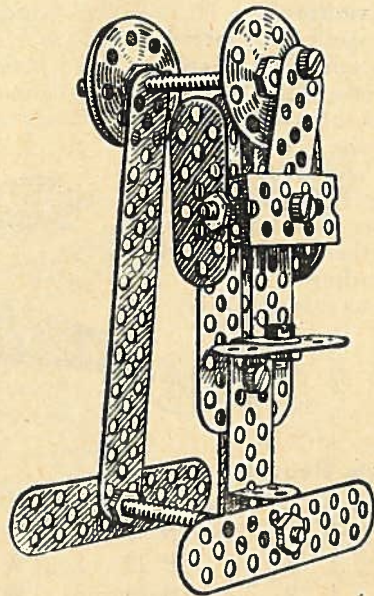
## ECCENTRIC PRESS

Built with Box No. 1.

### Parts Required :

7 of B	1	3 of P	29
4 „ F	5	2 „ S	55
4 „ F	9	2 „ U	2
2 „ F	13	1 „ W	10
20 „ N	1	2 „ W	16

Eccentric presses are used in the metal industries for cutting, piercing, drawing, pressing, and bending, etc. Special tools are fixed in the press to suit each article.



YOU CAN BUILD AND RE-BUILD WITH TRIX.

# TRIX

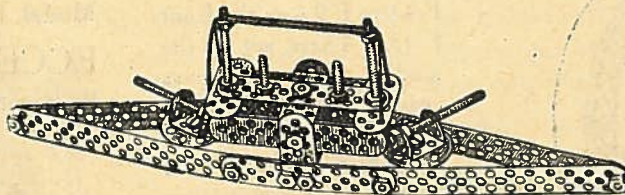
Models built with one box No. 1 and one box No. 1a.

## Parts Required :

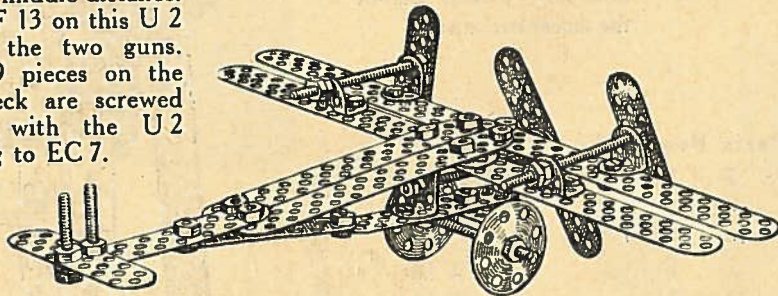
16 of B	1	2 of P	29
4 "	F 5	2 "	S 25
4 "	F 9	4 "	S 55
2 "	F 13	2 "	U 1
4 "	F 17	2 "	U 2
30 "	N 1		

## Instructions :

The hull is reinforced on one side by F 9 and on the other by F 13. A U 2 gives the middle distance. Fix one F 13 on this U 2 to hold the two guns. The F 9 pieces on the upper deck are screwed together with the U 2 according to EC 7.



No. 56. Man-of-War.



No. 57. Aeroplane.

## Parts Required :

4 of A	1	4 of F	17	2 of U	1
16 "	B 1	36 "	N 1	1 "	U 2
4 "	F 5	2 "	P 29	1 "	W 10
4 "	F 9	2 "	S 25	2 "	W 16
2 "	F 13	4 "	S 55		

## Instructions :

The bottom of the body consists of two F9's. It carries on its front end one U1, screwed together with the wings and serving as a bearing for the propeller shaft. The wheels are carried by one U2 fixed to the body. Two F5's take the place of the elevators.

## No. 58. Wireless Mast.

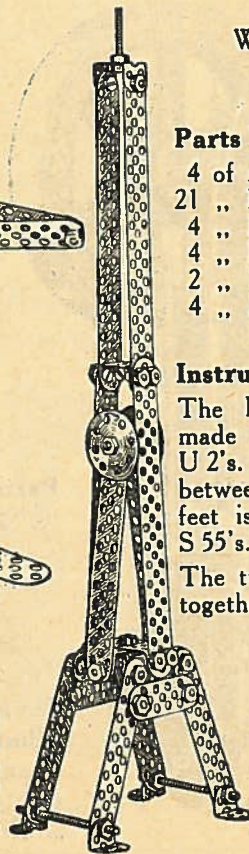
## Parts Required :

4 of A	1	33 of N	1
21 "	B 1	2 "	P 29
4 "	F 5	2 "	S 25
4 "	F 9	2 "	S 55
2 "	F 13	2 "	U 1
4 "	F 17	2 "	U 2

## Instructions :

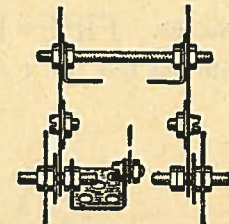
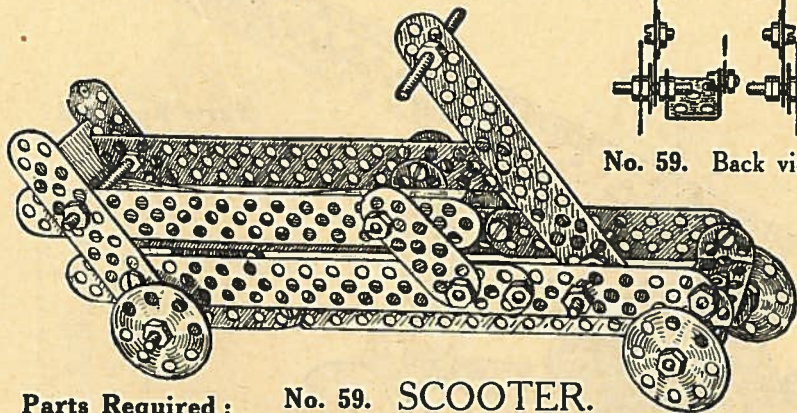
The lower platform is made with two crossed U 2's. The distance between the two pairs of feet is widened by two S 55's.

The two P 29's are held together with an S 25.



Models built with one box No. 1 and one box No. 1a.

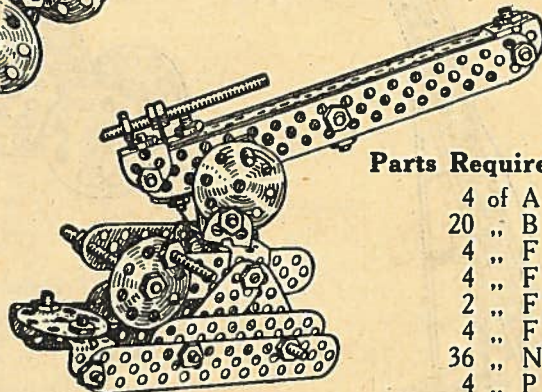
# TRIX



No. 59. Back view.

## No. 60. HEAVY GUN.

The gun can be raised and lowered by a crank (EC 22). The barrel is formed by four F 17's. The lower F 17 is fixed to one side of the gun barrel by one A 1. A string runs from the gun over the front S 55 to the crank axle.



### Parts Required :

- 4 of A 1
- 20 .. B 1
- 4 .. F 5
- 4 .. F 9
- 2 .. F 13
- 4 .. F 17
- 36 .. N 1
- 4 .. P 29
- 1 .. S 25
- 4 .. S 55
- 2 .. U 1
- 2 .. U 2

### Parts Required :

- 2 of A 1
- 14 .. B 1
- 3 .. F 5
- 4 .. F 9
- 2 .. F 13
- 4 .. F 17
- 36 .. N 1
- 4 .. P 29
- 2 .. S 25
- 4 .. S 55
- 2 .. U 1
- 2 .. U 2
- 1 .. W 10
- 2 .. W 16

## No. 59. SCOOTER.

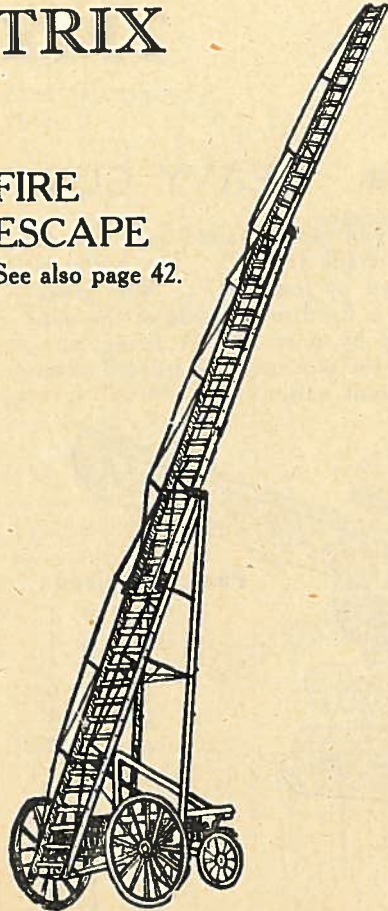
### Instructions :

The front wheels are fixed into one U 1, screwed into the U 2 above. Each back wheel is screwed on an S 25. Fix each wheel on the body after inserting a W 16, and secure with locknuts. Fix one U 1 to the left S 25 to act as crank, moving the draw bar. This draw bar consists of an F 5 and an F 13 screwed together. Seats can be made of cardboard. (See page 72).

# TRIX

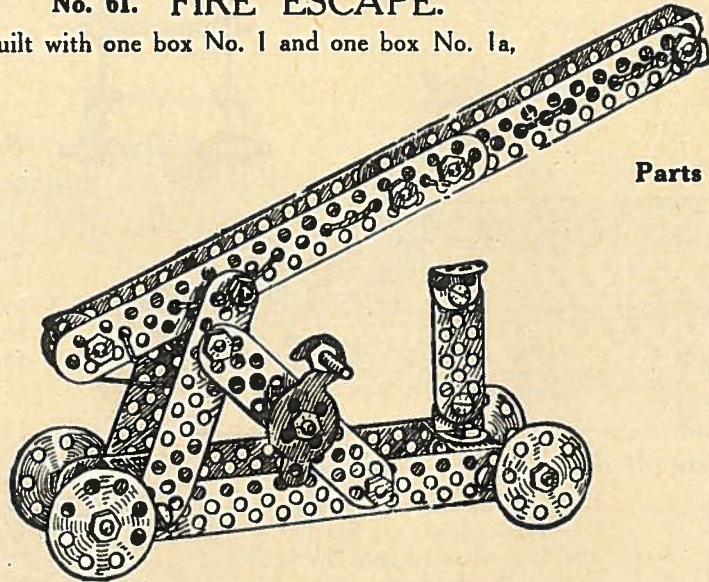
## FIRE ESCAPE

See also page 42.



### No. 61. FIRE ESCAPE.

Built with one box No. 1 and one box No. 1a,



#### Parts Required:

3	of	A	1
19	..	B	1
1	..	C	1
1	..	F	5
4	..	F	9
2	..	F	13
4	..	F	17
36	..	N	1
4	..	P	29
1	..	S	25
4	..	S	55
2	..	U	1
2	..	U	2
1	..	W	10

#### Instructions:

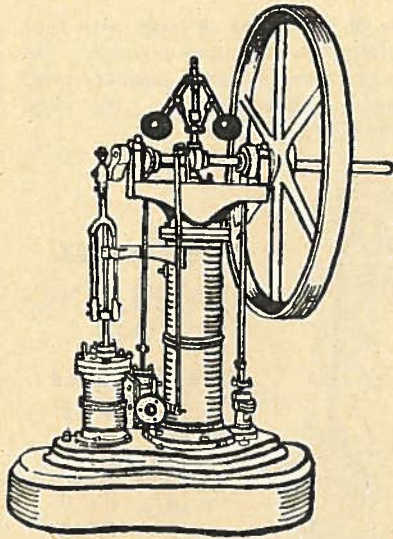
The longitudinal bars are held together with two U 2's. The ladder is raised by means of a crank handle (EC 23). One A 1 fixed inside the frame prevents the ladder from tilting over.

The fire escape shown is of the extending type. It is raised and lowered by a special device fixed under the base, which acts both as a support and a means of transport.

## TRIX HAS ENORMOUS STRENGTH.

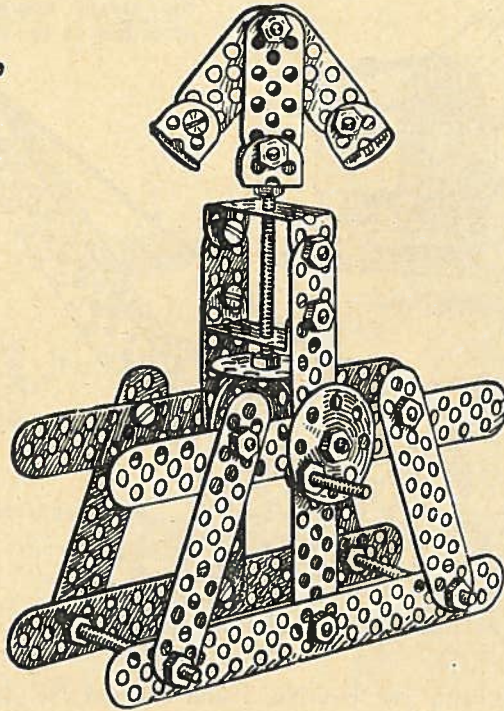
Built with one box No. 1 and one box No. 1a,

# TRIX



### Parts Required :

4 of A	1	36 of N	1
14 "	B	3 "	P 29
4 "	F	2 "	S 25
4 "	F	4 "	S 55
2 "	F	1 "	U 1
4 "	F	2 "	U 2



## GOVERNOR.

The tractive force felt in your hand when a stone is rotated on a string is called centrifugal force. The force used by the hand to overcome this is called centripetal force.

Governors regulating the revolutions of steam engines are built on this principle.

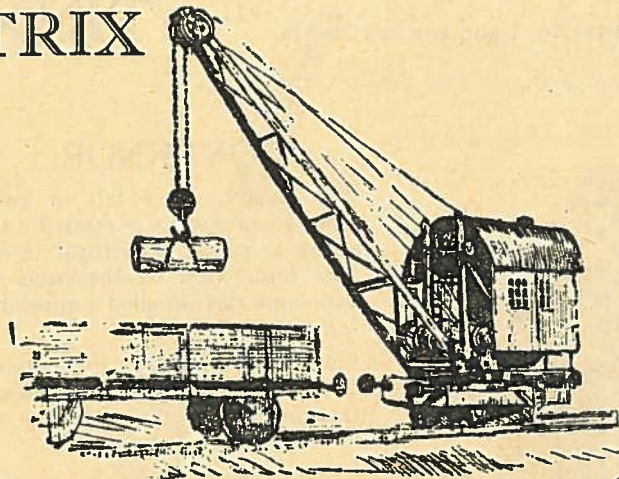
Model No. 62.

## REGULATOR.

### Instructions :

One vertical S 55 carries on its lower end a P 29 (EC 8) acting as a friction wheel. This is turned by means of another EC 8 fixed on the crank axle. The weights are arranged (so that they can be moved) on one S 25 between the two vertical F 5's.

TRIX



## TRAVELLING STEAM CRANE.

The crane consists of the under carriage with four steel wheels, and the revolving upper carriage. On the latter the winding gear is fitted together with the steam engine. Hooks or grabs are used according to the kind of goods lifted.

### Model No. 63. TRAVELLING CRANE.

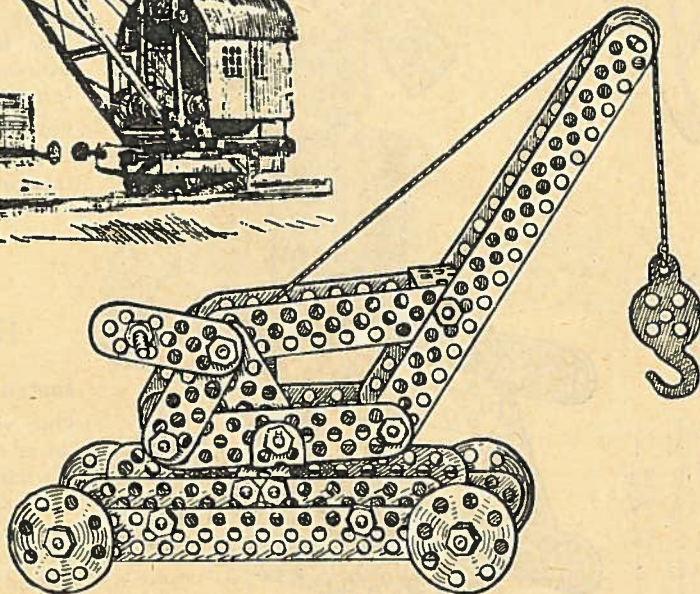
#### Parts Required :

16 of B	1
1 .. C	1
4 .. F	5
4 .. F	9
2 .. F	13
4 .. F	17
36 .. N	1
4 .. P	29
2 .. S	25
4 .. S	55
1 .. U	1
2 .. U	2
1 .. W	10
2 .. W	16

#### Instructions :

The crane is held together in the middle by means of a U 2. The upper carriage is also fixed into a U 2 and joined to the under carriage according to EC 20. Crank—EC 22.

Fix a distance nut between crank and upper carriage to prevent the handle from striking against it.



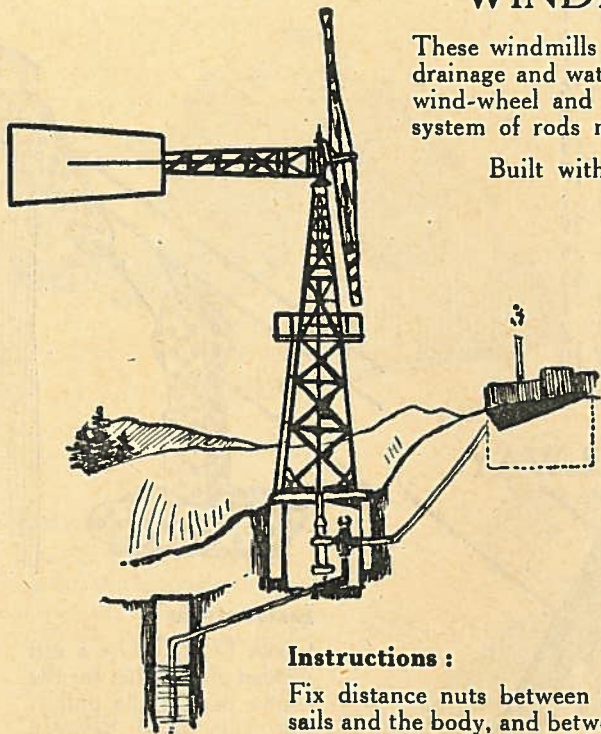
Built with one box No. 1 and one box No. 1a.



# WINDMILL AND PUMP. TRIX

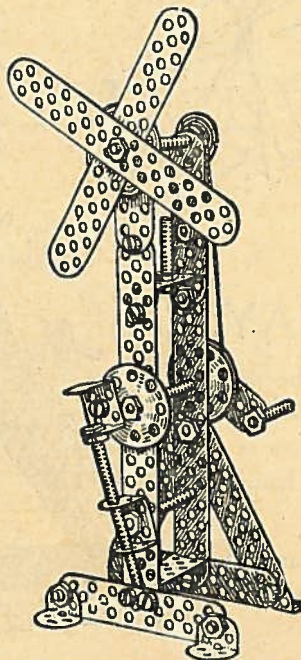
These windmills are mainly used for driving pumps, and for drainage and watering of plants, etc. The chief parts are the wind-wheel and the tower. The power is transmitted by a system of rods moved up and down inside the tower.

Built with one box No. 1 and one box No. 1a.



### Instructions :

Fix distance nuts between the sails and the body, and between the crank and the driving wheels. All pulleys (EC 10 and EC 11) have nuts as middle pieces. Fix U 1 on crank as in EC 18.

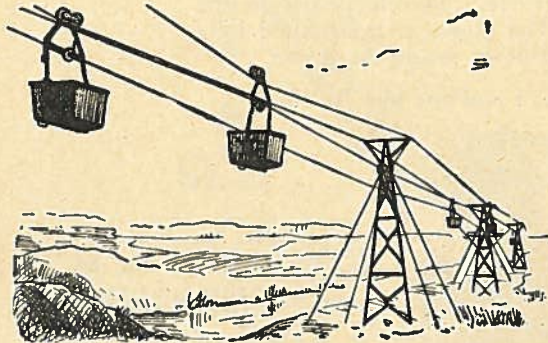


### Model No. 64. WINDMILL AND PUMP.

#### Parts Required :

4	of	A	1
13	"	B	1
3	"	F	5
4	"	F	9
2	"	F	13
2	"	F	17
36	"	N	1
4	"	P	29
2	"	S	25
4	"	S	55
2	"	U	1
2	"	U	2
1	"	W	10
2	"	W	16

# TRIX



Parts Required : Built with one box No. 1 and one box No. 1a.

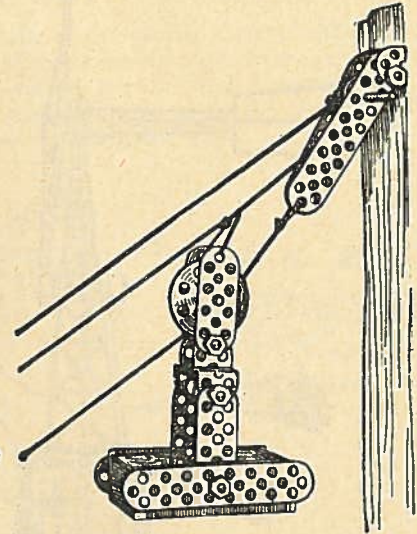
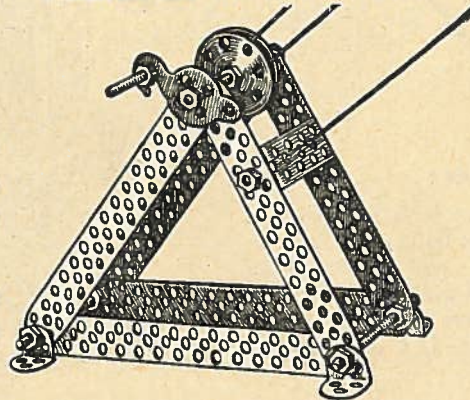
4	of	A	1
16	"	B	1
1	"	C	1
4	"	F	5
4	"	F	9
2	"	F	13
4	"	F	17
36	"	N	1
4	"	P	29
2	"	S	25
4	"	S	55
2	"	U	1
2	"	U	2
1	"	W	10
2	"	W	16

## AERIAL RAILWAY.

The conveyors travel on the wire rope with one pulley or a trolley containing several pulleys. There is a carrying rope and an endless hauling rope to move the conveyors.

These aerial railways are used to cross difficult country, rivers, buildings, etc.

### No. 65. AERIAL RAILWAY.



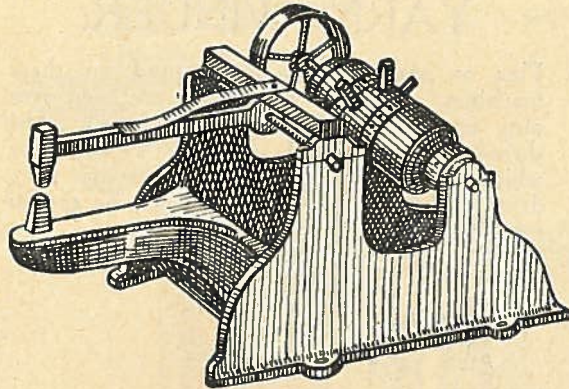
#### Instructions :

Crank EC 22. Use a nut instead of a washer for the centre part of the pulley. Put one W 10 between crank handle and frame. A matchbox is used as conveyor.

# TRIX

## TILT HAMMER.

Tilt Hammers were formerly used in the metal plate making industry.

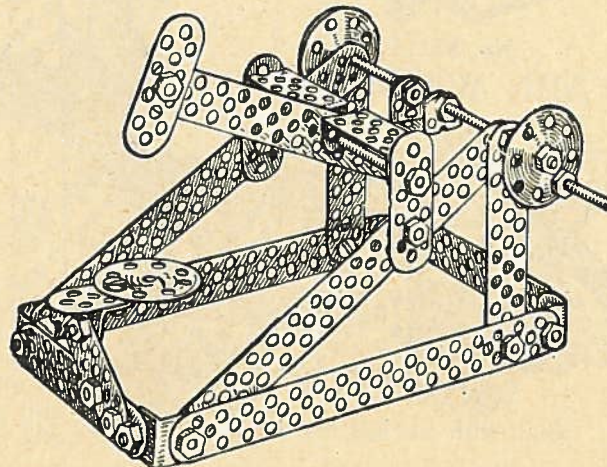


### No. 66. TILT HAMMER.

Built with one box No. 1 and one box No. 1a.

#### Instructions :

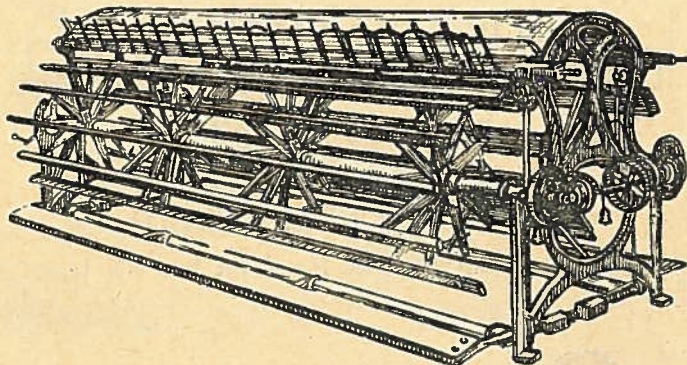
Two U 2's form the bearing for the hammer, which moves on one S 55. This S 55 is firmly screwed with both U 2's. For crank, see EC 12. Fix anvil with one U 2 on the F 5. This F 5 is screwed to the frame by an angle. The crane hook is screwed under the anvil plate to strengthen it.



#### Parts Required :

4 of	A	1
19 "	B	1
1 "	C	1
4 "	F	5
4 "	F	9
1 "	F	13
4 "	F	17
33 "	N	1
4 "	P	29
1 "	S	25
3 "	S	55
2 "	U	1
2 "	U	2
2 "	W	16

# TRIX



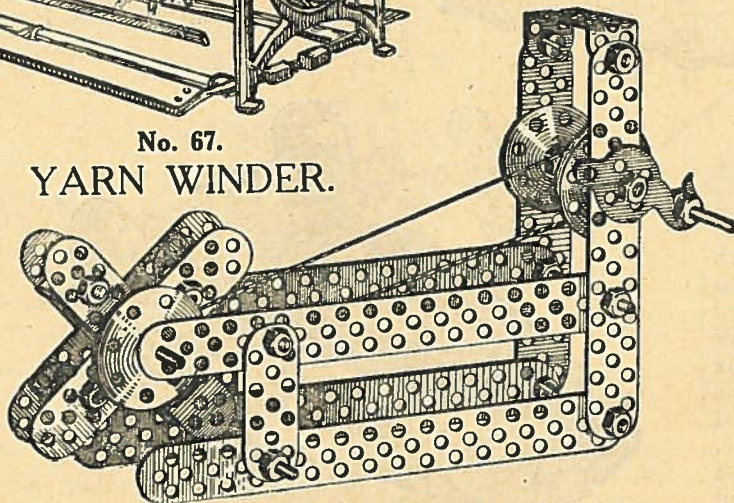
No. 67.

## YARN WINDER.

### Instructions :

The wheel is constructed with four F 9's, four A 1's and two U 1's. The pulley at the side of this wheel consists of W 10, W 16, and P 29.

Another P 29 and W 16 are fixed on the crank axle (pulley side) for belt drive.



Built with one box No. 1 and one box No. 1a.

# YARN WINDER.

Flax or oakum yarns are wound on these machines. The fine yarn spools are fixed over pins arranged in a row on a board. The threads are connected with the winder over which they are wound. After having been dried they are reeled for general use on special machines.

### Parts Required :

4 of A	1
16 " B	1
1 " C	1
4 " F	5
4 " F	9
2 " F	13
4 " F	17
36 " N	1
4 " P	29
1 " S	25
4 " S	55
2 " U	1
2 " U	2
1 " W	10
2 " W	16

No. 68. GOODS LIFT.

Built with one box No. 1 and one box No. 1a.

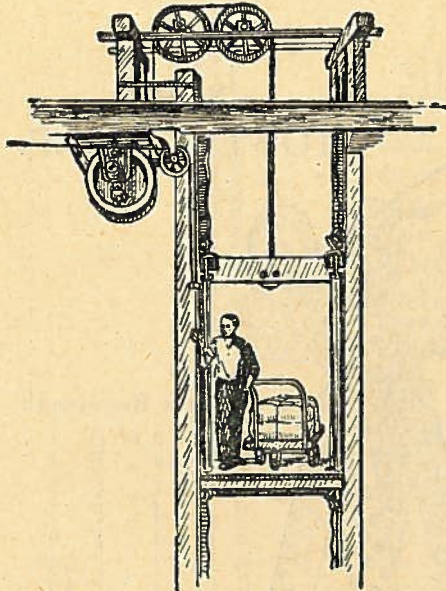
TRIX

Parts Required :

4 of	A	1
13 "	B	1
1 "	C	1
4 "	F	5
4 "	F	9
2 "	F	13
4 "	F	17
33 "	N	1
2 "	P	29
1 "	S	25
4 "	S	55
2 "	U	1
2 "	U	2
1 "	W	10
2 "	W	16

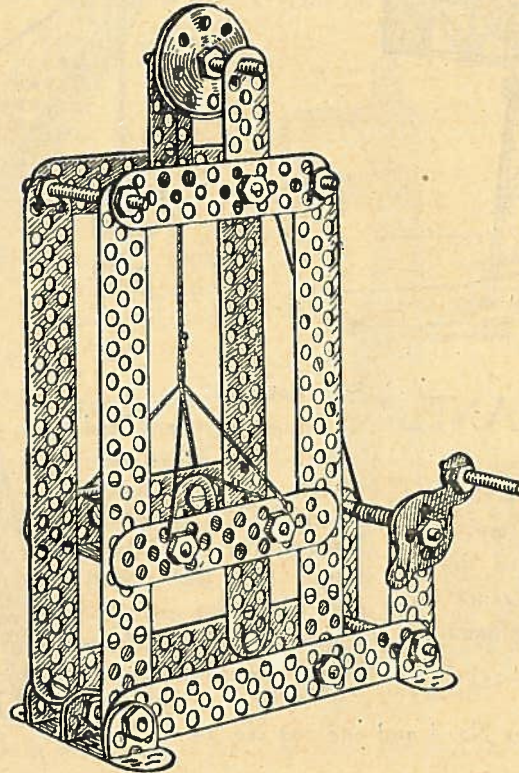
Instructions :

Two F 9's and two U 2's form the lift. The winch is built as EC 22. Put one W 10 between crank and bearing. Take care that the lift can be moved easily in the frame. Use pulleys as in EC 10. Secure the axle of the pulley against the bearing by means of lock nuts.

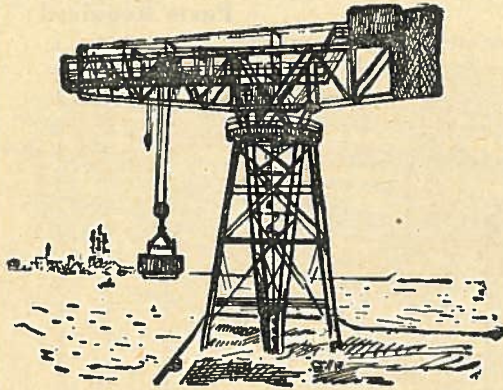


POWER TRANSMISSION LIFT.

Such lifts are used in factories where power transmission is in constant use. They are controlled by means of a lever, used for engaging and disengaging the transmission. Other kinds of lifts are hand lifts, motor lifts, steam lifts, hydraulic, pneumatic and electric lifts.



# TRIX



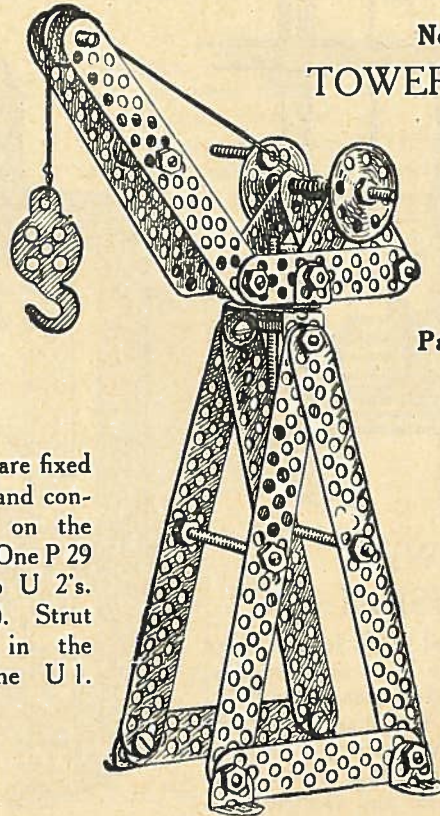
## TOWER CRANE.

These cranes are either fixed or floating. On a high strong turret a revolving jib and monkey are fixed. The load is compensated by a counter weight. These cranes are mostly used on docks for handling very heavy loads.

### Instructions :

The upper parts are fixed in a U 2 (EC 7) and connected movably on the turret (EC 20). One P 29 between the two U 2's. Crank (EC 22). Strut the jib arms in the middle with one U 1. Pulley EC 11.

Built with one box No. 1 and one box No. 1a.



No. 69.

## TOWER CRANE.

### Parts Required :

4 of	A	1
14 ..	B	1
1 ..	C	1
4 ..	F	5
4 ..	F	9
2 ..	F	13
4 ..	F	17
35 ..	N	1
3 ..	P	29
2 ..	S	25
4 ..	S	55
1 ..	U	1
2 ..	U	2
1 ..	W	10
2 ..	W	16

# TRIX

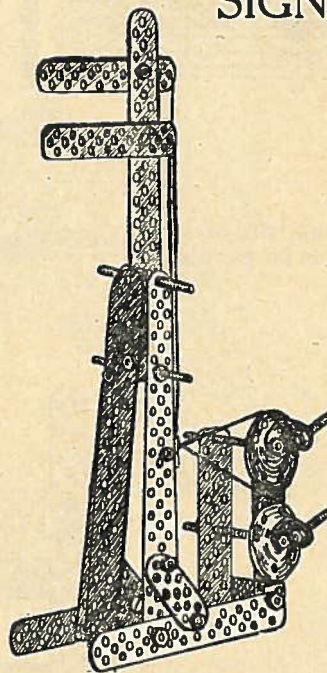
## SIGNALS.

Each line of railway is divided into "blocks" separated from each other by short lengths of line controlled by fixed signals. The typical British signal is the semaphore. There are two types, the "home" and "distant" signals, the latter having a fish tail end and the former a square one.

The British semaphore signal consists of a long thin board, pivoted at one end to a post of suitable height. The horizontal danger signal is maintained by the glass spectacle at the pivoted end. The "on" signal is shown by the board dropping to an angle of about 45 degrees with the post.

Built with one box No. 1 and one box No. 1a.

## No. 70. DOUBLE ARM SIGNAL.



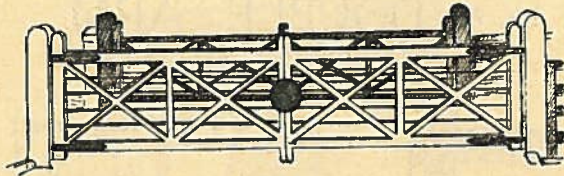
### Parts Required :

3 of	A	1
16 "	B	1
2 "	F	5
4 "	F	9
2 "	F	13
4 "	F	17
36 "	N	1
2 "	P	29
2 "	S	25
4 "	S	55
1 "	U	1
2 "	U	2

### Instructions :

Two U 2's hold the base together. Secure joining bolts on arms with lock nuts. Cranks EC 22. One U 1 is used as rope guide.

# TRIX



## LEVEL CROSSING GATES.

English level crossing gates are worked mostly by hand.

### Instructions :

To keep the gate upright fix a U 1 on one side of the gate post and a U 2 on the other.

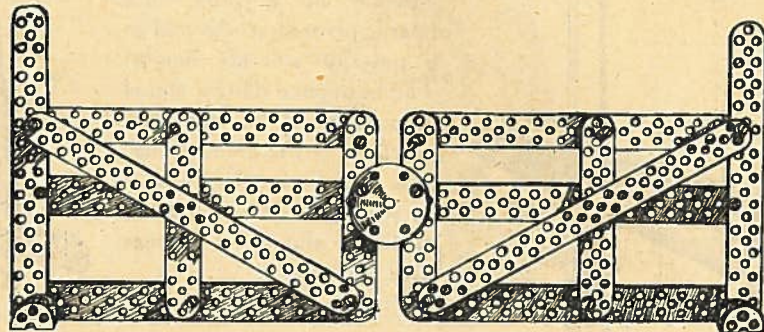
## No. 71. LEVEL CROSSING GATES.

Built with two boxes No. 1 and two boxes No. 1a.

### Parts Required :

16 of B	1
4 " F	9
2 " F	13
8 " F	17
16 " N	1
1 " P	29
2 " U	1
2 " U	2

(to make one pair of gates).



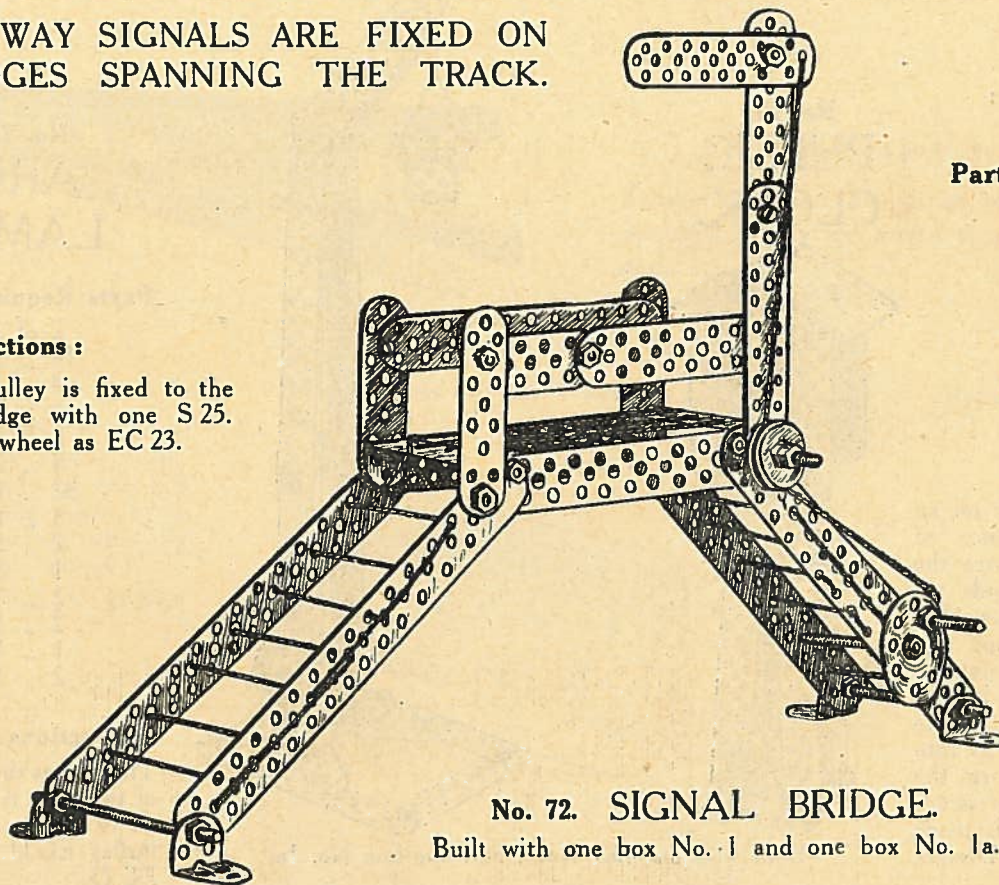


RAILWAY SIGNALS ARE FIXED ON  
BRIDGES SPANNING THE TRACK.

TRIX

**Instructions :**

The pulley is fixed to the  
footbridge with one S 25.  
Crank wheel as EC 23.



**Parts Required :**

4 of A	1
16 .. B	1
4 .. F	5
4 .. F	9
3 .. F	13
4 .. F	17
36 .. N	1
1 .. P	29
2 .. S	25
3 .. S	55
2 .. U	2
1 .. W	10
2 .. W	16

**No. 72. SIGNAL BRIDGE.**

Built with one box No. 1 and one box No. 1a.

# TRIX

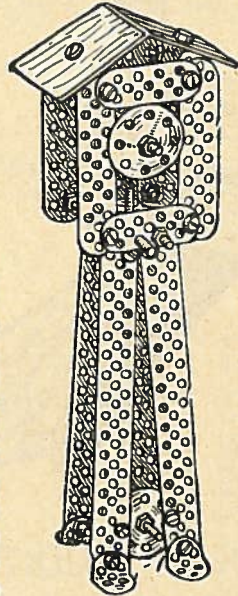
## Parts Required :

4 of	A	1
22 "	B	1
4 "	F	5
4 "	F	9
4 "	F	17
36 "	N	1
4 "	P	29
1 "	S	25
4 "	S	55
2 "	U	1
2 "	U	2
2 "	W	16

## Instructions :

Screw two P 29's on an S 55 at a distance of 26 mm. to reinforce the legs. A U 1 holds together the four legs. Put two S 55's through another U 1 (with upward legs). Put two W 16's on top of this and screw the whole with one S 25 into the first U 1 to form the base for the upper structure. The roof is made of cardboard. Design, page 71.

## No. 73. PUBLIC CLOCK.



Built with one box No. 1 and one box No. 1a.

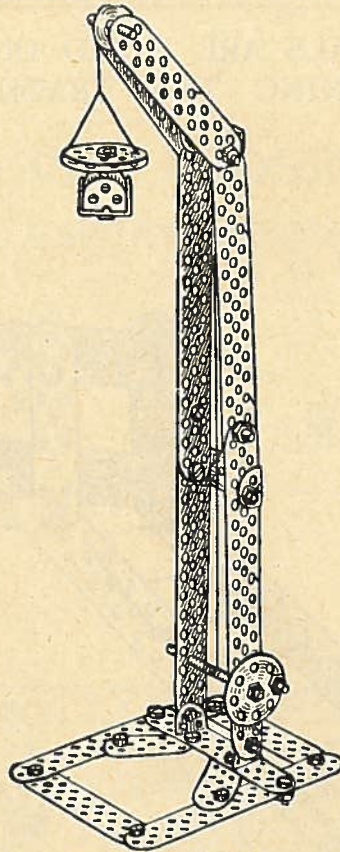
## No. 74. ARC LAMP.

## Parts Required :

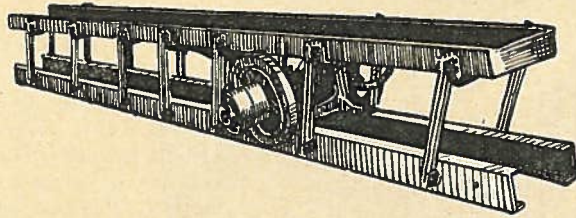
2 of	A	1
18 "	B	1
4 "	F	5
4 "	F	9
2 "	F	13
4 "	F	17
32 "	N	1
3 "	P	29
2 "	S	25
1 "	S	55
2 "	U	1
2 "	U	2
1 "	W	10
2 "	W	16

## Instructions :

The U 2 at the bottom of the mast is screwed on two pairs of F 5's. Pulley EC 11. Crank EC 23.



# TRIX



## SCREEN.

Screens are used for sifting sandy or similar materials. They are moved to and fro by crank gears.

### No. 75. SCREEN.

Built with one box No. 1 and one box No. 1a.

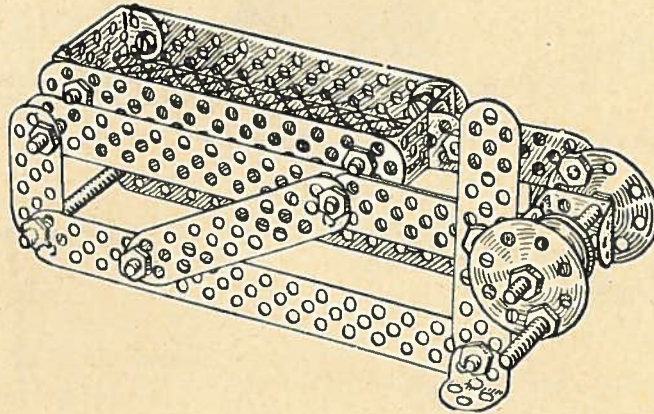
#### Instructions :

The crank axle is borne on one side by one F9 and on the other by a U1 connected with the frame with one A1.

Joints as EC 18. Pulleys as EC 11.

#### Parts Required :

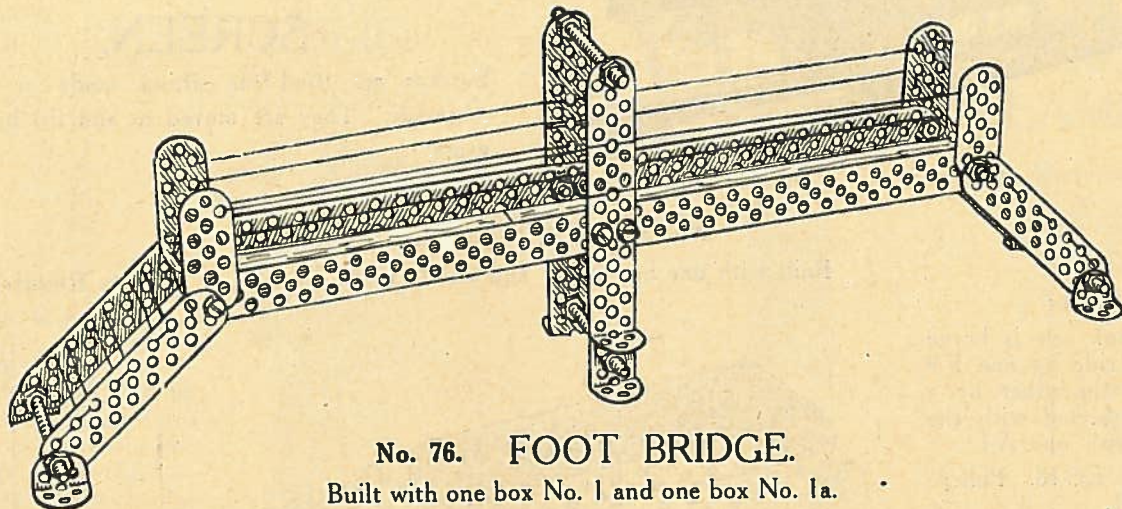
4 of	A	1
14 ..	B	1
4 ..	F	5
4 ..	F	9
2 ..	F	13
4 ..	F	17
36 ..	N	1
2 ..	P	29
1 ..	S	25
4 ..	S	55
1 ..	U	1
2 ..	U	2
1 ..	W	10
2 ..	W	16



HAVE YOU SEEN THE TRIX MOTOR?

TRIX

FOOT BRIDGE.



No. 76. FOOT BRIDGE.

Built with one box No. 1 and one box No. 1a.

**Instructions :**

The bottom is made of cardboard and fixed on both ends with bolts and nuts.

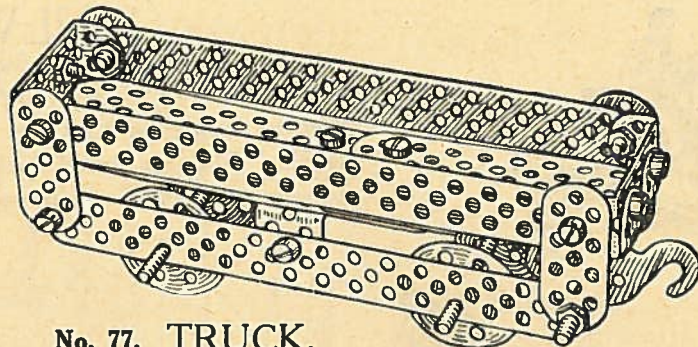
**Parts Required :**

4 of A	1	2 of F	17
12 .. B	1	28 .. N	1
4 .. F	5	4 .. S	55
4 .. F	9	1 .. U	1
2 .. F	13	2 .. U	2

# TRIX

**Instructions :**

Two F 9's and two F 13's form the bottom, which is connected with the two U 2's by four A 1's, and held together in the middle by two U 2's.

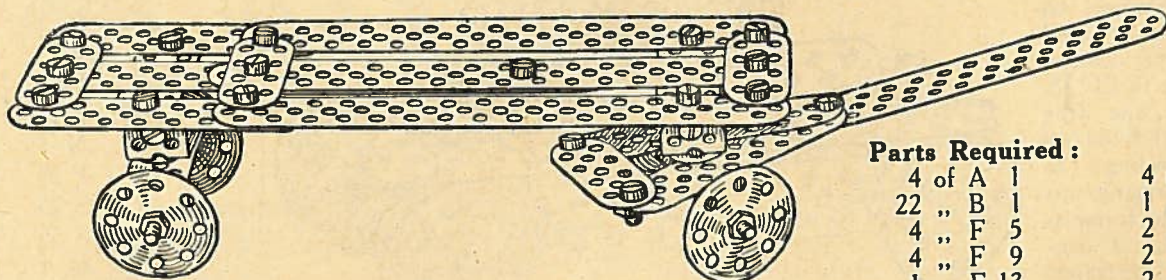


**No. 77. TRUCK.**

Built with one box No. 1 and one box No. 1a.

**Parts Required :**

4 of A	1
17 .. B	1
1 .. C	1
4 .. F	5
2 .. F	9
2 .. F	13
4 .. F	17
31 .. N	1
4 .. P	29
3 .. S	55
2 .. U	1
2 .. U	2



**No. 78. CART.**

**Parts Required :**

4 of A	1	4 of P	29
22 .. B	1	1 .. S	25
4 .. F	5	2 .. S	55
4 .. F	9	2 .. U	1
1 .. F	13	2 .. U	2
4 .. F	17	2 .. W	16
34 .. N	1		

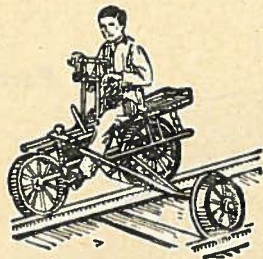
**Instructions :**

The back wheels are carried by U 2's screwed to the upper part by one U 1 and two A 1's.

Built with one box No. 1 and one box No. 1a.

USE THE PERMAG MOTOR TO DRIVE TRIX MODELS.

# TRIX

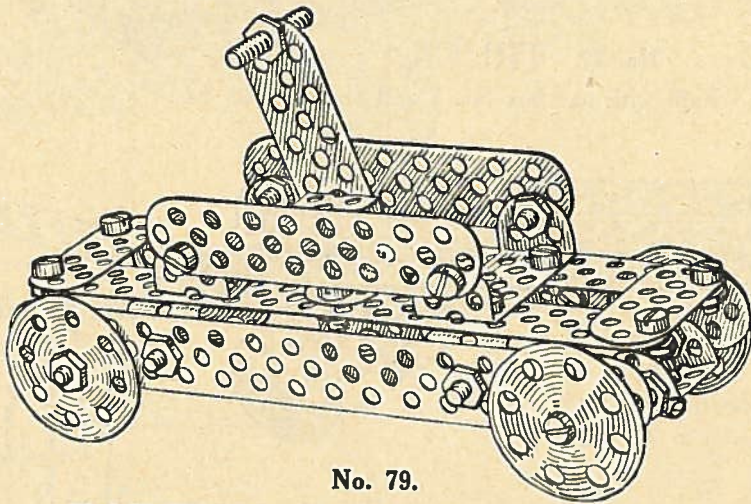


## RAILWAY INSPECTION CAR.

Railway Inspection Cars are a special kind of railroad vehicle. They are built for one or more persons and used by railroad employees for inspection of the permanent way.

### Instructions :

The bottom of the carriage is fixed on the side F 17 with four A 1's. One wheel on the drive side is fitted with bolt and counter nuts, similar to EC 18. The other one (the drive wheel) fixed on S 25 according to EC 8, is carrying one U 1 inside the frame as crank. This is connected with the hand-lever by one F 9. The hand lever is fixed movably on one U 1 (EC 18). All joinings EC 18.



No. 79.

## RAILWAY INSPECTION CAR.

Built with one box No. 1 and one box No. 1a.

### Parts Required :

4	of	A	1
20	..	B	1
2	..	F	5
4	..	F	9
4	..	F	17
36	..	N	1
4	..	P	29
2	..	S	25
1	..	S	55
2	..	U	1
2	..	U	2

## No. 98. ROUNDABOUT.

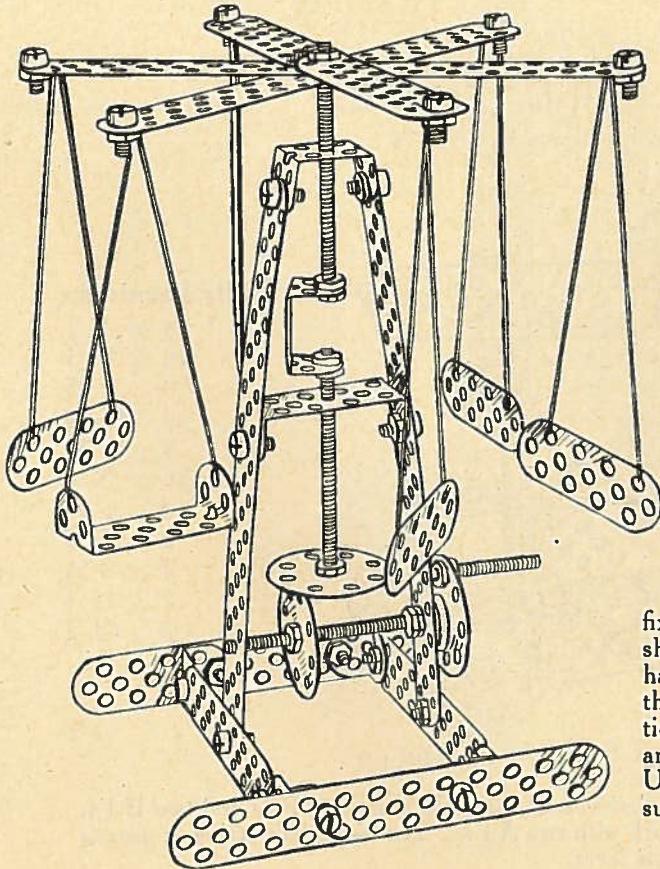
Built with one box No. 1 and one box No. 1a.

### Parts Required :

4 of A	1	36 of N	1
20 .. B	1	3 .. P	29
1 .. C	1	1 .. S	25
4 .. F	5	3 .. S	55
4 .. F	9	2 .. U	1
2 .. F	13	2 .. U	2
4 .. F	17	2 .. W	16

### Instructions.

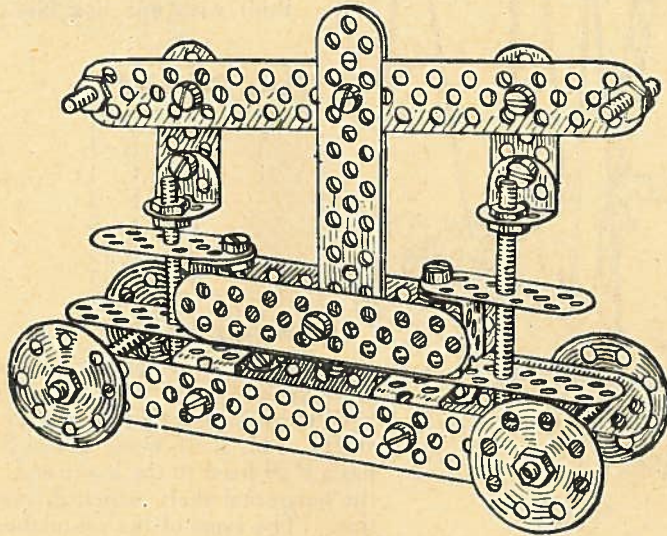
The base of the roundabout is built of two F 13's joined by two F 9's and four A 1's. A U 1 and U 2 fixed to the two upright F 17's act as bearings for the vertical shaft. This shaft, made of two S 55's coupled as in EC 12, has a P 29 fixed to the lower end. A P 29 is also fastened to the horizontal shaft, which drives the vertical shaft by friction. The arms of the roundabout are made of two F 17's and two F 9's fixed to the top of the vertical shaft. One U 2, four F 5's and one C 1 make the seats, which are suspended from the arms by fine string.



# TRIX

## No. 82. MANUAL FIRE ENGINE.

Built with one box No. 1 and one box No. 1a.



### Parts Required :

4 of A	1
16 .. B	1
4 .. F	5
4 .. F	9
4 .. F	17
36 .. N	1
4 .. P	29
2 .. S	25
4 .. S	55
2 .. U	1
2 .. U	2

### Instructions :

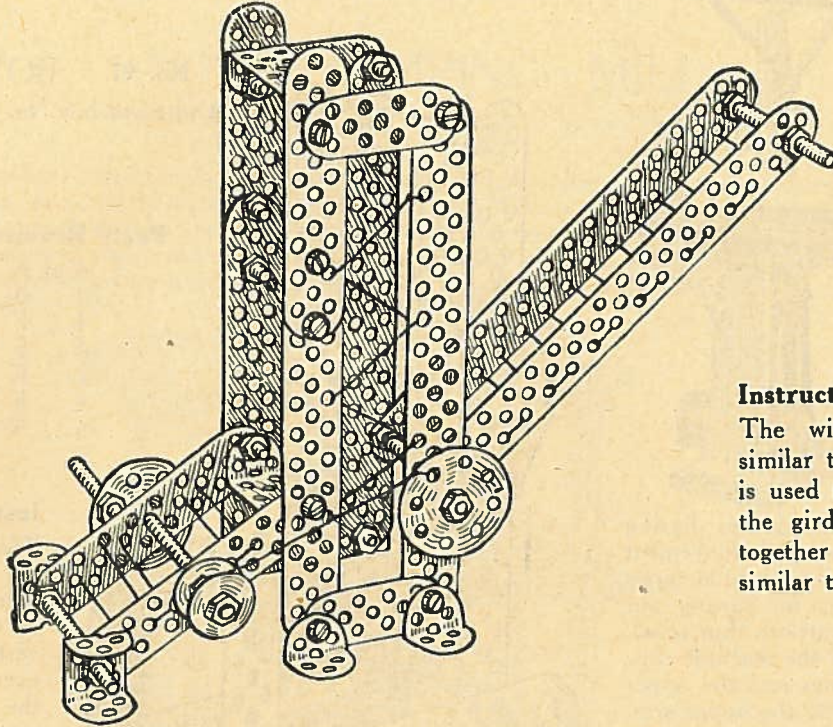
Two U 2's connect the two F 17's in the framework. Fix on these U 2's another F 17 and two U 1's. The two vertical F 9's are screwed on the framework with two A 1's. The two S 55's acting as pistons are joined to two A 1's connected with the movable lever.



TRIX

**Parts Required :**

4 of	A	1
14 "	B	1
4 "	F	5
4 "	F	9
2 "	F	13
4 "	F	17
36 "	N	1
2 "	P	29
1 "	S	25
4 "	S	55
2 "	U	1
2 "	U	2
1 "	W	10
2 "	W	16



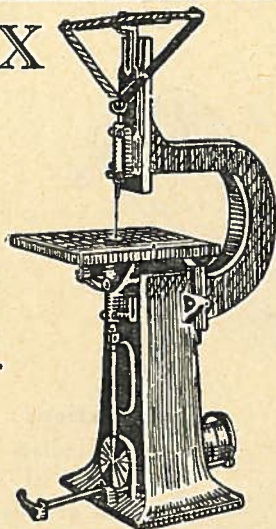
**Instructions :**

The windlass is made similar to EC 23. W 10 is used as a washer and the girders are screwed together with two S 55's, similar to EC 13.

**No. 84. CANTILEVER BRIDGE.**

Built with one box No. 1 and one box No. 1a.

TRIX

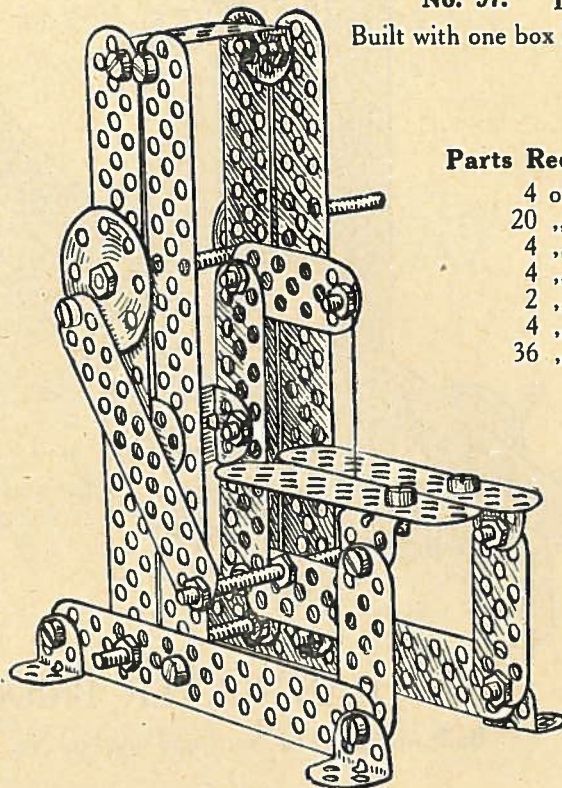


BOW  
SAW.

Bow saws with saw-blades having upward and downward movement are mostly used in furniture factories and joiners' shops for sawing out curved lines or figures in thin wood. The upper part of the machine consists of plate springs and the upper guide bar is fixed to the upper arm. The downward movement of the saw-blade is effected by a crank-shaft in the foot of the machine, the blade rising again by the force of the spring. The guide bar and the height of the table may be varied.

No. 97. BOW SAW.

Built with one box No. 1 and one box No. 1a.



Parts Required :

4 of A	1	4 of P	29
20 "	B	1 "	S 25
4 "	F	3 "	S 55
4 "	F	2 "	U 1
2 "	F	2 "	U 2
4 "	F	1 "	W 10
36 "	N	2 "	W 16

Instructions :

Two U 1's are screwed to the F 9 of the saw-blade holder; they are guided in the slot between the vertical F 17. The connecting-rod is fixed to the crank as EC 18. The rope-pulley (as in EC 10) and handle (as in EC 15) are fixed to the other end of the crank-shaft. The blade of a fret-saw may be used as saw blade.

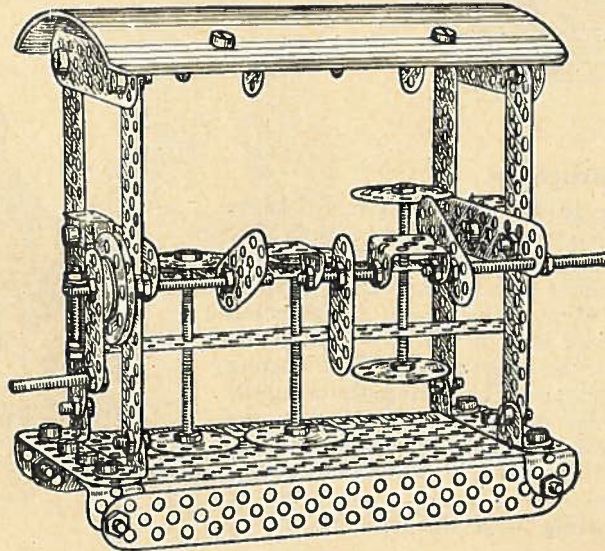
## No. 85. STAMPING MILL.

Built with two boxes No. 1 and two boxes No. 1a.

Stamping mills are used for the breaking up of different substances ; they are now mostly used for crushing ore, or in the preparation of metallic colours. There are two kinds of stamping mills, those worked with pistons and those worked with hammers. The model illustrated is a piston mill, the pistons of which rise and fall in their guide bars. The piston-lift is the height to which the piston is lifted before it descends. The harder the material to be broken up the higher the lift required.

### Parts Required :

8	of	A	1
30	"	B	1
4	"	F	5
8	"	F	9
4	"	F	13
8	"	F	17
72	"	N	1
8	"	P	29
4	"	S	25
5	"	S	55
4	"	U	1
4	"	U	2
2	"	W	10
4	"	W	16



### Instructions :

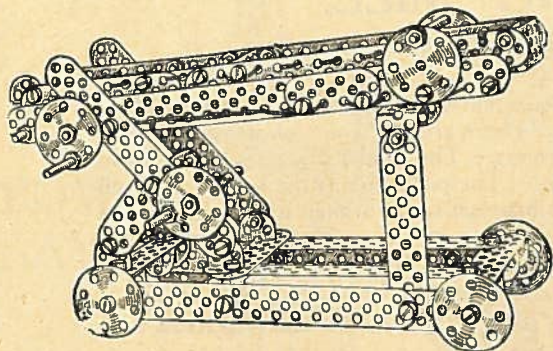
The guide bar of the three pistons is made of two F 17's held together by two S 25's. It is fixed to the F 9 of the frame by two U 1's. The roof is made of cardboard as the pattern, page 71 ; it is put on a U 2 connected in the middle with an F 9 in order to reinforce the frame.

# TRIX

## No. 87. FIRE ESCAPE.

(c.f. page 20).

Built with two boxes No. 1 and 2 boxes No. 1a.

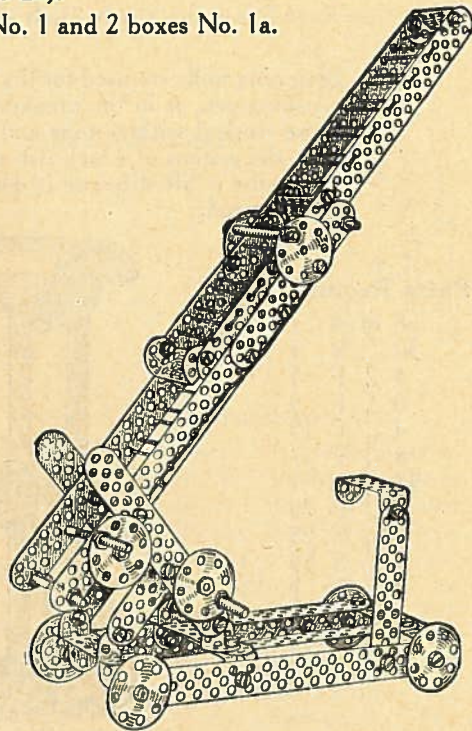


### Parts Required :

6 of	A	1
39 ..	B	1
6 ..	F	5
8 ..	F	9
4 ..	F	13
8 ..	F	17
72 ..	N	1
8 ..	P	29
2 ..	S	25
5 ..	S	55
4 ..	U	1
4 ..	U	2
2 ..	W	10
4 ..	W	16

### Instructions.

The ladder attached as in EC 18, is connected at both ends with S 55's. The movable top ladder is held together with U 2's, and slides down on their screw heads. The crank handle is as in EC 23. Behind the windlass wheel are four W 16's acting as washers. The string stretching the ladder comes from the U 2 at the lower end and is wound round S 55 to the windlass. The lower end of the swinging ladder is connected by a string with the second windlass.



# TRIX

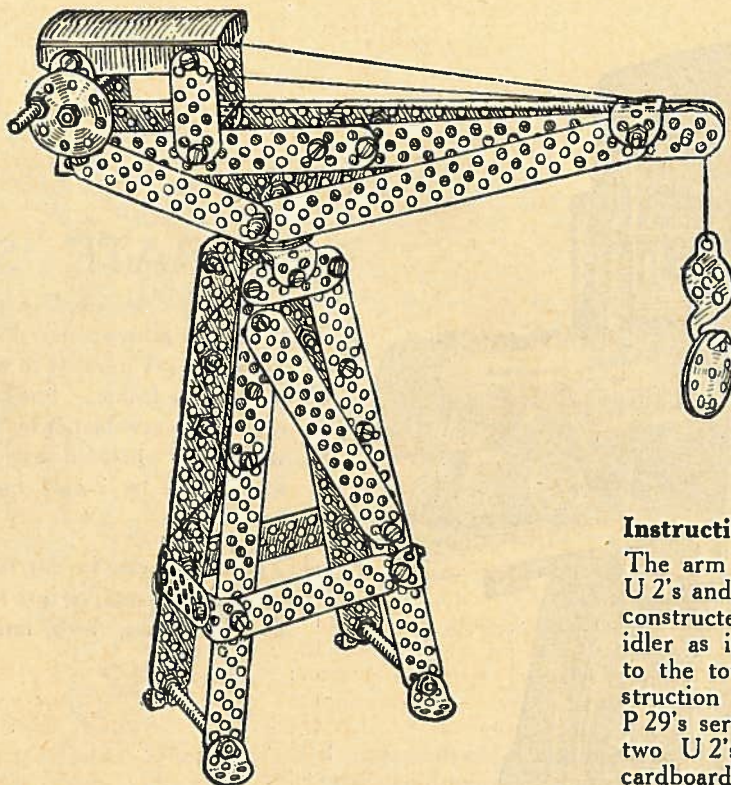
No. 88.

## ROTARY CRANE

(c.f. illustration and  
explanation on pages  
22 and 28).

### Parts Required :

8 of	A	1
40 "	B	1
1 "	C	1
6 "	F	5
8 "	F	9
4 "	F	13
8 "	F	17
64 "	N	1
3 "	P	29
3 "	S	25
4 "	S	55
1 "	U	1
4 "	U	2
2 "	W	10
2 "	W	16

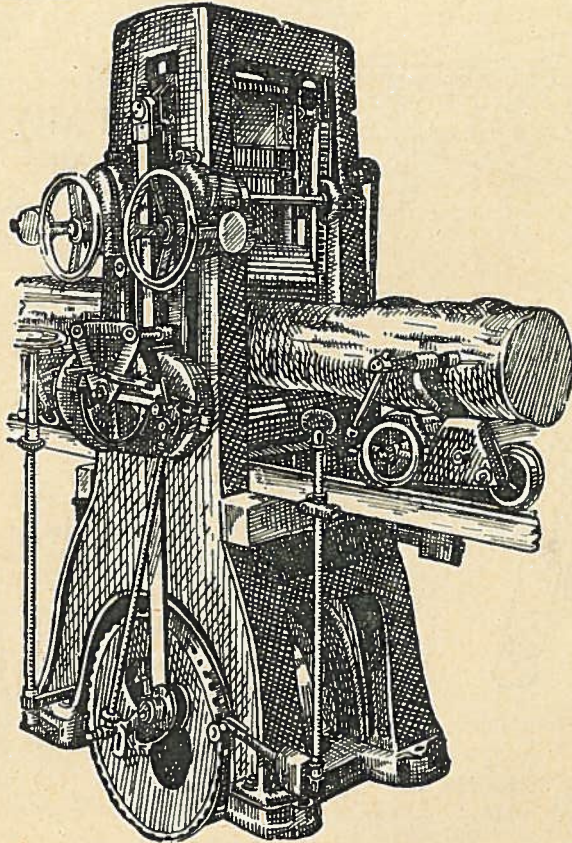


### Instructions :

The arm is joined together by two U 2's and one U 1. The windlass is constructed as in EC 22, and the idler as in EC 11. The arm fixed to the tower is controlled by construction EC 20 with S 25. Two P 29's serve as washers between the two U 2's. The roof is made of cardboard, for pattern see page 72.

Built with two boxes No. 1 and two boxes No. 1a.

# TRIX



## GRATE SAW.

Grate saws are used to saw up entire trunks lengthwise into boards of fixed thickness. A number of saw blades are held in the frame. The trunk is forced against the saw-blades by teathed drums which are operated by chains; their speed may be varied by means of a handwheel.

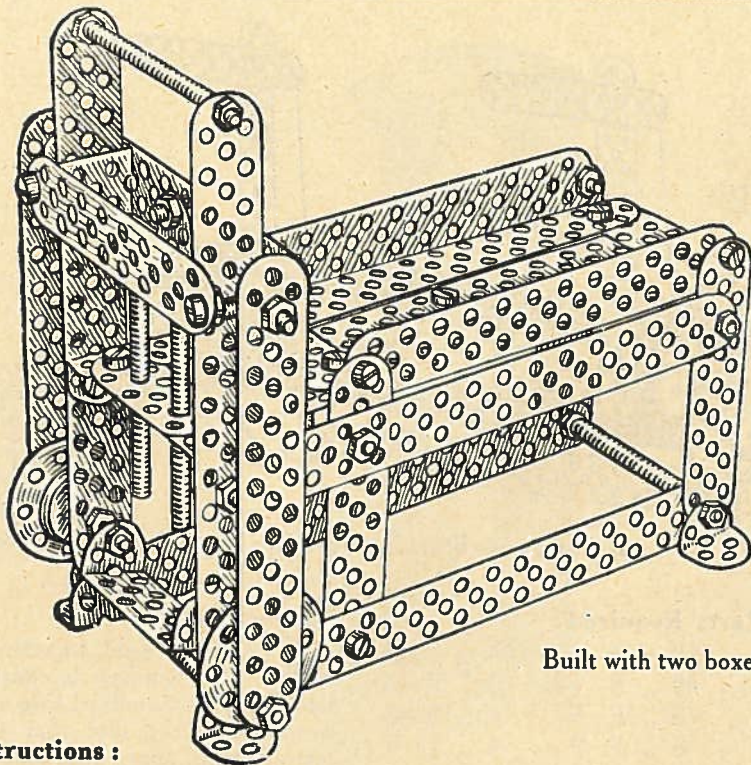
The trunks can be cut lengthwise into two or four parts, or into thinner pieces, boards, planks, deals, laths, or veneers.

## TRIX

No. 89.  
GRATE SAW.

## Parts Required :

8 of A	1
24 .. B	1
3 .. F	5
8 .. F	9
4 .. F	13
8 .. F	17
68 .. N	1
2 .. P	29
3 .. S	25
7 .. S	55
4 .. U	1
3 .. U	2
2 .. W	10
4 .. W	16



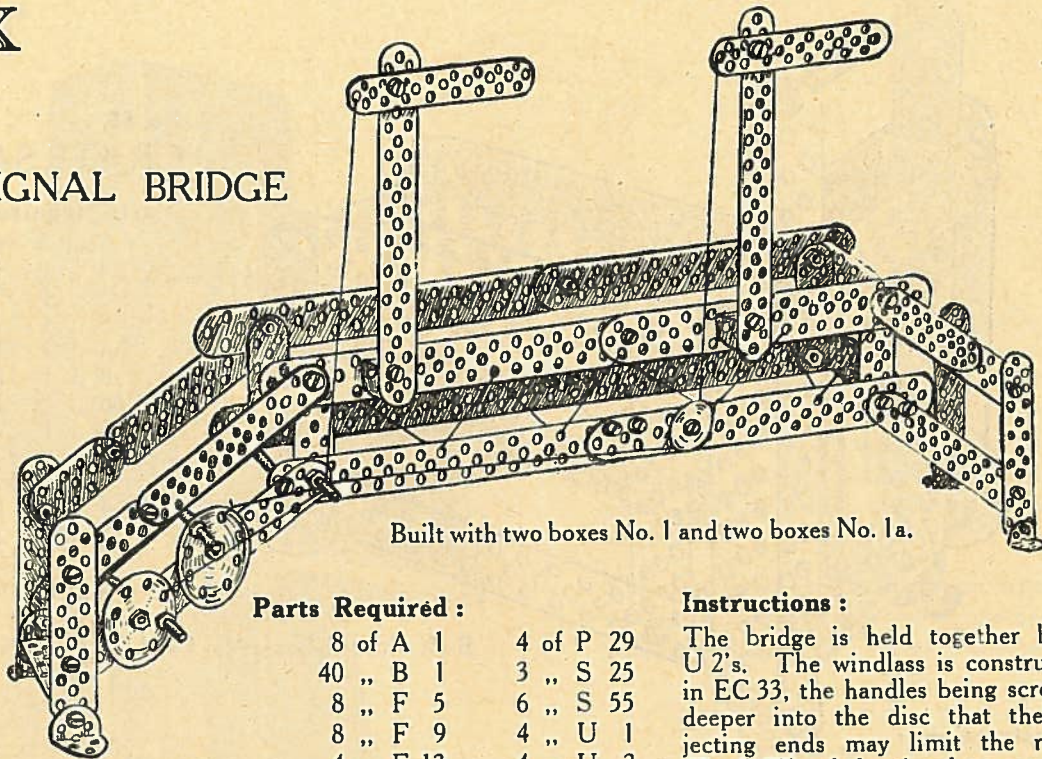
Built with two boxes No. 1 and two boxes No. 1a.

**Instructions :**

The table consists of two F 17's and two F 9's. It is fixed on two U 2's, held together by two S 55's which connect the frame. The vertical S 55's are held together by two U 1's. The right hand crank is connected with the rod as in EC 18; the other crank has an S 25 as handle. The axles are constructed with S 25 as in EC 8 and coupled as in EC 12. A rope pulley (constructed as in EC 11) is fixed by the side of the left hand crank and regulates the saw drive.

# TRIX

## No. 86. SIGNAL BRIDGE



Built with two boxes No. 1 and two boxes No. 1a.

### Parts Required :

8 of A	1	4 of P	29
40 "	B	3 "	S 25
8 "	F	6 "	S 55
8 "	F	4 "	U 1
4 "	F	4 "	U 2
8 "	F	1 "	W 10
72 "	N	2 "	W 16

### Instructions :

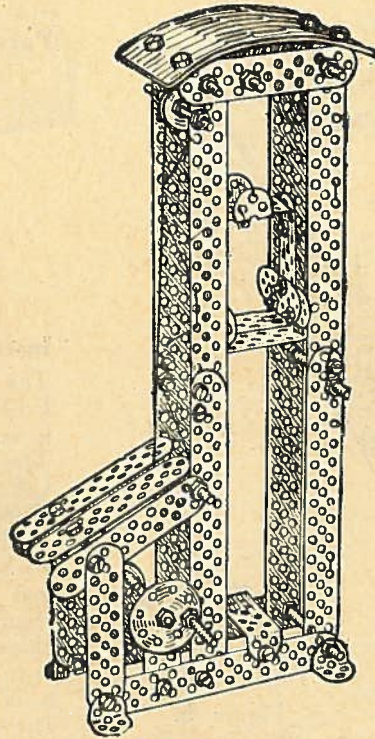
The bridge is held together by four U 2's. The windlass is constructed as in EC 33, the handles being screwed in deeper into the disc that their projecting ends may limit the rotation. The P 29's of the signal arms are fixed with A 1's on the S 55's. Coloured string serves as a frame work. A cardboard floor can be put on the upper U 2's—for pattern see page 71.



TRIX

**Parts Required :**

8 of A	1
32 .. B	1
8 .. F	5
8 .. F	9
2 .. F	13
8 .. F	17
70 .. N	1
1 .. P	29
1 .. S	25
8 .. S	55
3 .. U	1
4 .. U	2
2 .. W	10
4 .. W	16



**Instructions :**

The roof is secured by four A 1's. The cradle consists of three U 2's, one U 1 and six F 5's. The windlass is made as EC 22 and the rope-pulleys as EC 11. The upper end of the tower is reinforced by two S 55's. The oblique lower roof is constructed on two U 1's, screwed beside each other. A string stretched in the smaller sides of the tower serves as bracing. For pattern of roof see page 72.

**No. 90. HOIST.**

Built with two boxes No. 1 and two boxes No. 1a.

# TRIX

## No. 91. DOCKYARD CRANE.

Built with three boxes No. 1 and three boxes No. 1a.

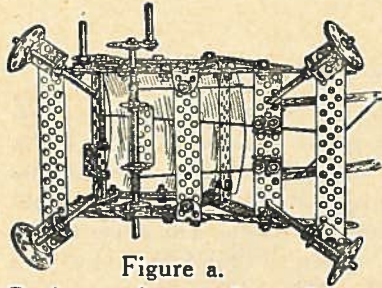


Figure a.  
Bogie seen from underneath.

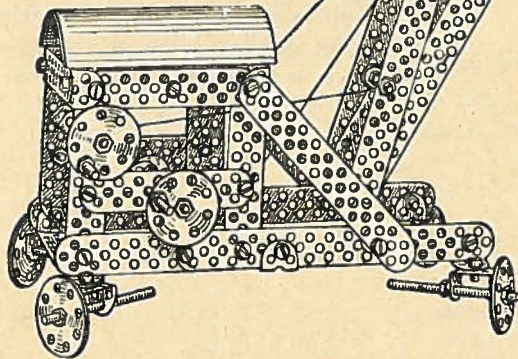


Figure b.  
Pivot-bearing of the bogie.

### Parts Required :

12 of A	1	11 of P	29
45 "	B	6 "	S 25
3 "	C	10 "	S 55
2 "	F 5	6 "	U 1
11 "	F 9	6 "	U 2
6 "	F 13	2 "	W 10
12 "	F 17	6 "	W 16
108 "	N	1	

### Instructions :

The frame of the chassis consists of F 17's and F 13's lapped together and is screwed through F 13 with A 1. The arm is braced in the middle by a U 2 and an S 55, and a U 1 is fixed, as connection to the upper portion. In the rope pulleys nuts are used as washers. The arm is fixed on bearings with an S 55 in a U 2, and secured by two U 2's screwed to the chassis. The windlass is constructed as in EC 23. The pivot journal, fig. b, is fixed to the table by means of screws, and the crane is fixed to it by the middle hole of the bogie. The roof is made of cardboard as in pattern, page 71.

# TRIX

## No. 92. ERECTION CAR.

Built with three boxes No. 1 and three boxes No. 1a.

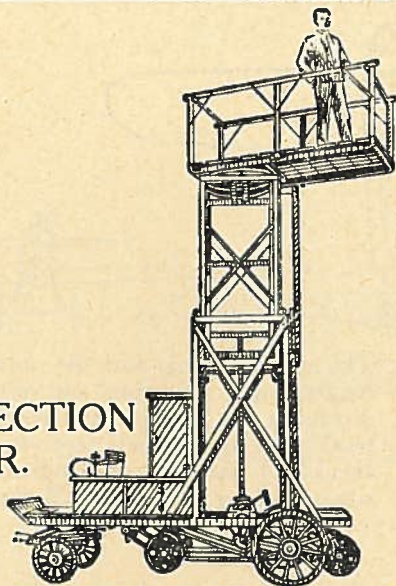
### Instructions :

Fix S 25's into the four corners of the chassis; they are connected on the inside with U 2's as in EC 12. The wheels are placed on bearings as in EC 9. At the lower end of the top tower are fixed two F 5's and four U 1's, the latter serving as guides. The corresponding guides at the upper end of the tower are four A 1's. The windlass is constructed as in EC 23, and the rope pulleys as in EC 11. The floor of the platform is made of cardboard, for pattern see page 71.

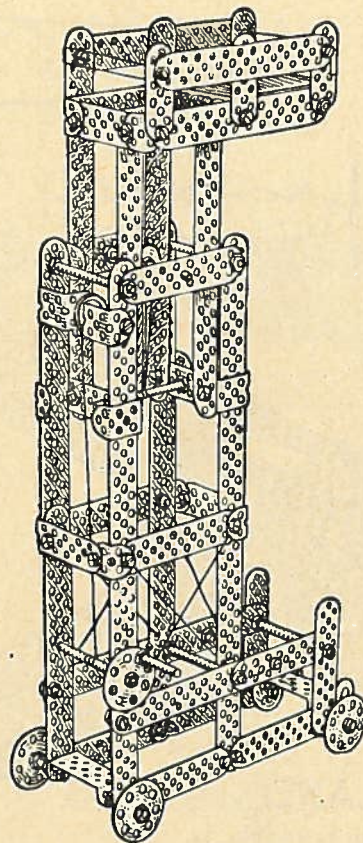
### Parts Required :

12 of A 1	5 of P 29
30 " B 1	6 " S 25
2 " C 1	10 " S 55
12 " F 5	6 " U 1
12 " F 9	2 " U 2
6 " F 13	6 " W 10
12 " F 17	4 " W 16
108 " N 1	

## ERECTION CAR.



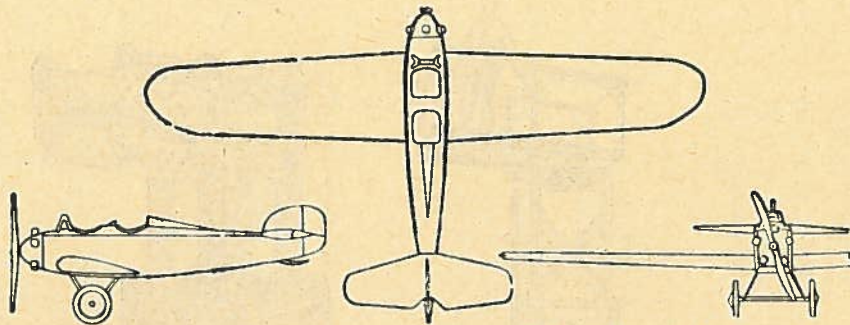
The erection car is used for keeping the overhead lines of trams in order. The vehicle consists of two parts; the upper one being raised by means of a screw turned by a crank handle. The platform has a railing, which can be removed, and can be moved round on a turntable. The illustration shows a four-wheeled car which drives it in the street, and four other smaller cast steel wheels for running on rails. A hand wheel puts either set of wheels in operation. In large towns these erection cars are often built on motor cars.



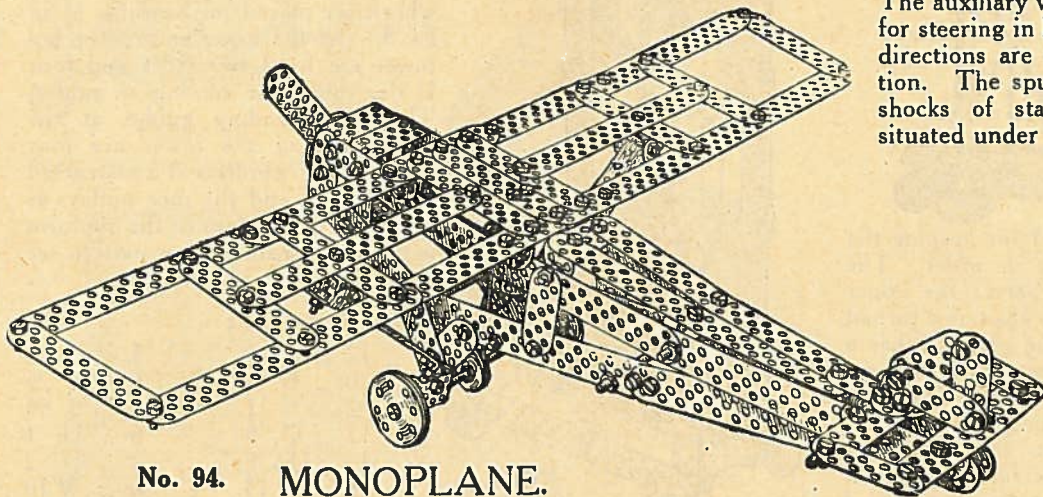
# TRIX

## MONOPLANE.

The hull-shaped body fixed at the front to the chassis contains the motor, the steering apparatus, the gasoline and the pilot's seat. On the front is the propeller and on the top the wings are fixed.



The auxiliary wings with the rudders for steering in horizontal and vertical directions are fixed to the back portion. The spur which receives the shocks of starting or landing, is situated under the tail.

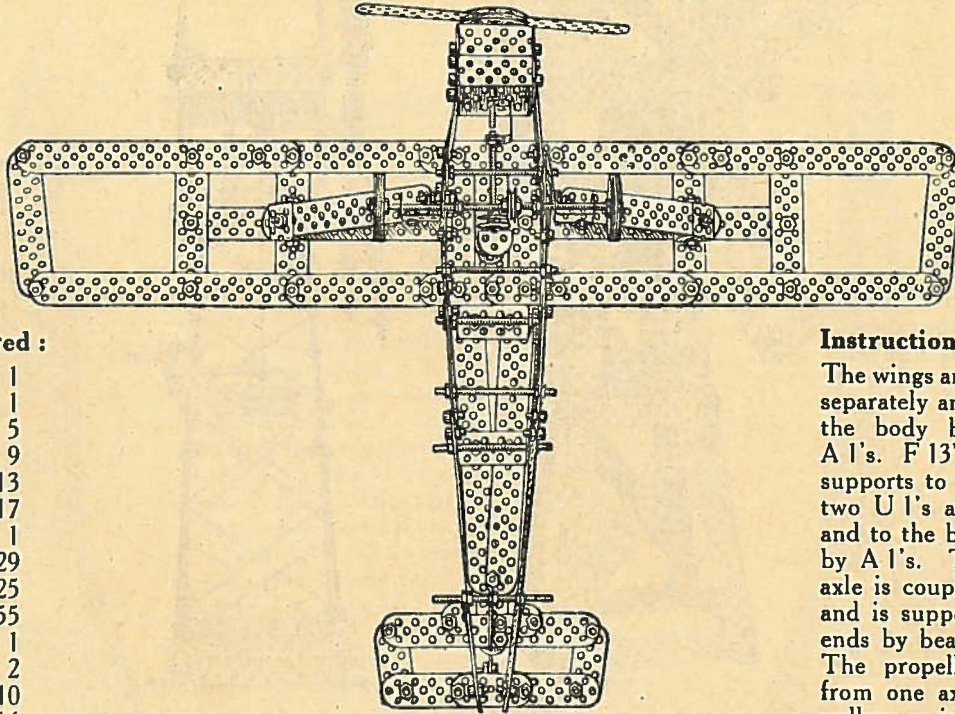


No. 94. MONOPLANE.

Built with four boxes No. 1 and four boxes No. 1a.

No. 94. MONOPLANE.

Seen from underneath.



Parts Required :

12	of	A	1
87	..	B	1
16	..	F	5
16	..	F	9
8	..	F	13
16	..	F	17
140	..	N	1
14	..	P	29
2	..	S	25
10	..	S	55
7	..	U	1
7	..	U	2
4	..	W	10
4	..	W	16

Instructions :

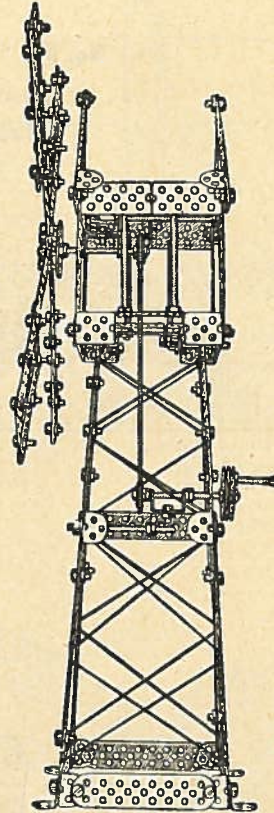
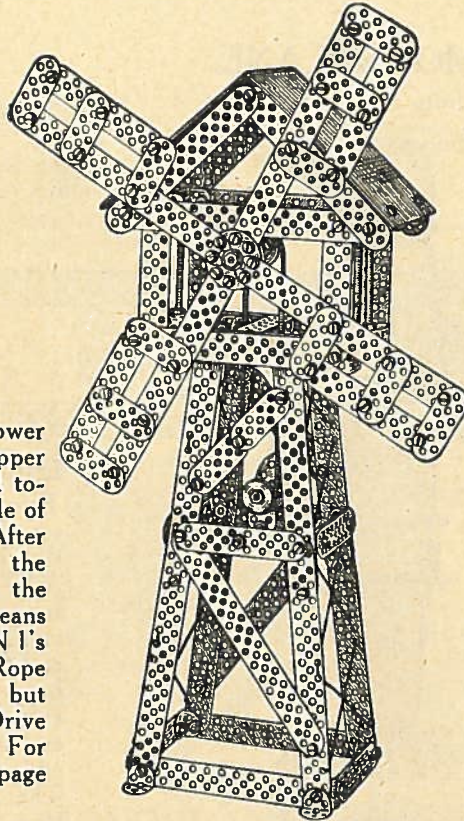
The wings are constructed separately and screwed to the body by means of A 1's. F 13's are fixed as supports to the wings by two U 1's and one S 25, and to the bearings U 1's by A 1's. The propeller axle is coupled as EC 12 and is supported at both ends by bearings (U 2's). The propeller is driven from one axle with rope pulleys as in EC 11.

# TRIX

## No. 93. WINDMILL.

### Instructions :

Begin with the tower frame work, the upper part of which is held together by a cross made of U 1's and U 2's. After the completion of the gable it is fixed to the tower by means of F 9 of the tower by means of four S 25's with N 1's passed through. Rope pulleys as in EC 11, but with two W 10's. Drive wheel as in EC 10. For pattern of roof see page 72.



### Parts Required :

16 of A	1
96 .. B	1
16 .. F 5	
16 .. F 9	
8 .. F 13	
16 .. F 17	
144 .. N	1
6 .. P	29
5 .. S	25
8 .. S	55
8 .. U	1
8 .. U	2
4 .. W	10
6 .. W	16

Built with four boxes No. 1 and four boxes No. 1a.

TRIX

No. 95. AERIAL MASTS.

Built with four boxes No. 1 and four boxes No. 1a.

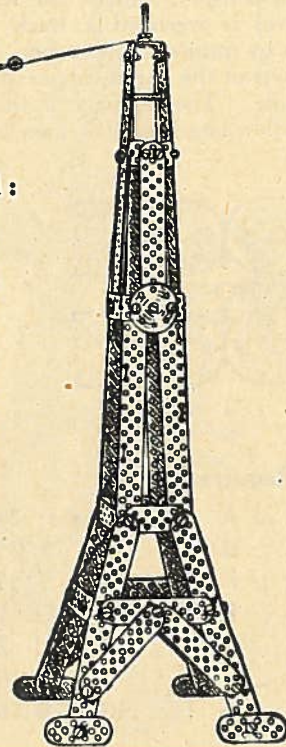


**Instructions :**

At the connection of the sloping base with the cylindrical part, two U 2's are attached to reinforce the opposite sides, a W 16 being used as washer between them. Each tower is held together half way up by two U 2's and two P 29's. The upper part of the tower is made of four A 1's. The aerial is attached to the carriers which are made of S 55's as in EC 19. A diagonally stretched string represents the frame work.

**Parts Required :**

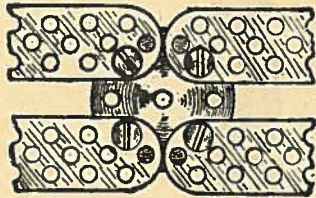
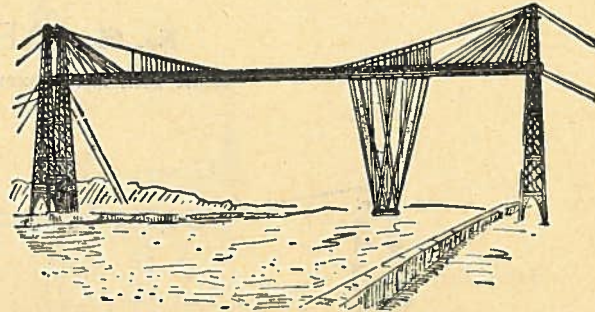
16 of	A	1
80 "	B	1
16 "	F	5
16 "	F	9
8 "	F	13
16 "	F	17
100 "	N	1
4 "	P	29
4 "	S	25
2 "	S	55
2 "	U	1
8 "	U	2
8 "	W	16



# TRIX

## SUSPENSION FERRY AT BILBAO.

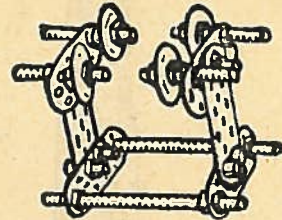
On a suspension bridge 530 ft. long, 130 ft. above the water level is arranged a track for a trolley carrying a platform by means of wire ropes. The platform suspended to the level of the banks carries passengers and carts from side to side. The top part of this structure is sufficiently high to allow large ships to pass under.



A

## No. 96. SUSPENSION FERRY.

Details a and b.



B

### Parts Required :

24 of A	L	12 of P	29
106 ..	B	6 ..	S 25
24 ..	F	15 ..	S 55
24 ..	F	4 ..	U 1
12 ..	F	8 ..	U 2
24 ..	F	3 ..	W 10
212 ..	N	10 ..	W 16

### Instructions :

The completed towers are connected with the track on both ends by means of S 55 as in EC 13. The track consists of four F 9's and four F 17's, connected to form a double rail as in Fig. a. The track is reinforced by rails made of four F 9's and two F 13's, and attached with two U 1's and four A 1's. A further bracing is procured by laps with F 5. The trolley has wheels as in EC 9. The rope is attached to one end of the trolley, drawn around a rope-pulley in the left-hand tower to a pulley in the other tower and then to a windlass. Another rope comes from the trolley around a second pulley and ends at another windlass. The frame of the ferry is screwed with two S 55's and has a floor of cardboard. For pattern see page 72.

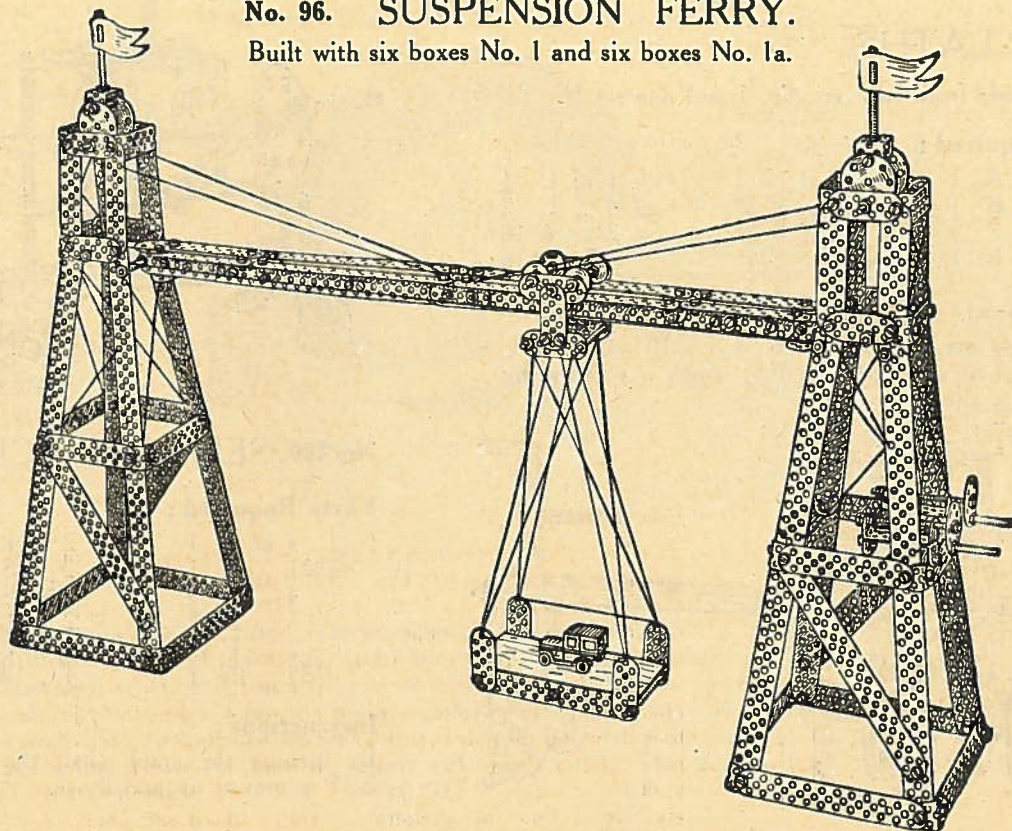


TRIX HAS ENORMOUS STRENGTH.

TRIX

No. 96. SUSPENSION FERRY.

Built with six boxes No. 1 and six boxes No. 1a.



EVERY TRIX PART IS STANDARDISED.

# TRIX

## No. 99. LATHE.

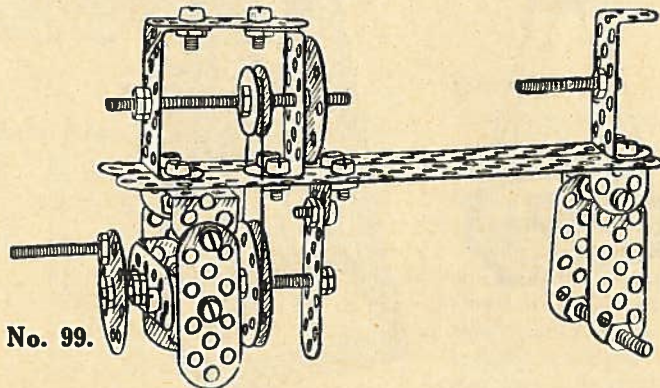
Models made from two sets No. 1 and one set No. 1a.

### Parts Required :

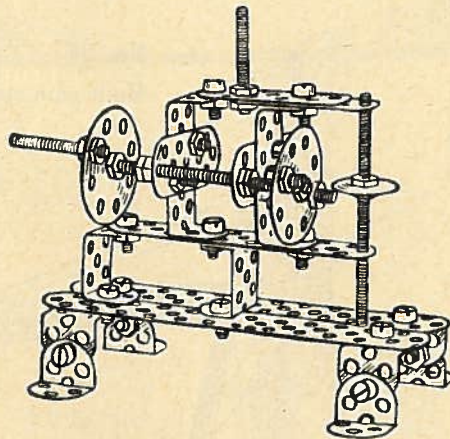
3 of A	1	41 of N	1	1 of U	1
19 "	B 1	4 "	P 29	4 "	U 2
7 "	F 5	2 "	S 25	2 "	W 10
2 "	F 17	3 "	S 55	4 "	W 16

### Instructions :

The pulleys are constructed as in EC 10 and EC 11. The crankshaft is fixed in an F 5, which is screwed by two A 1's to the base.



No. 99.



## No. 100. SEWING MACHINE.

### Parts Required :

4 of A	1	2 of P	29
21 "	B 1	2 "	S 25
4 "	F 5	2 "	S 55
1 "	F 9	2 "	U 1
2 "	F 13	4 "	U 2
35 "	N 1	1 "	W 16

### Instructions :

By turning the crank shaft the vertical S 55 is moved up and down.

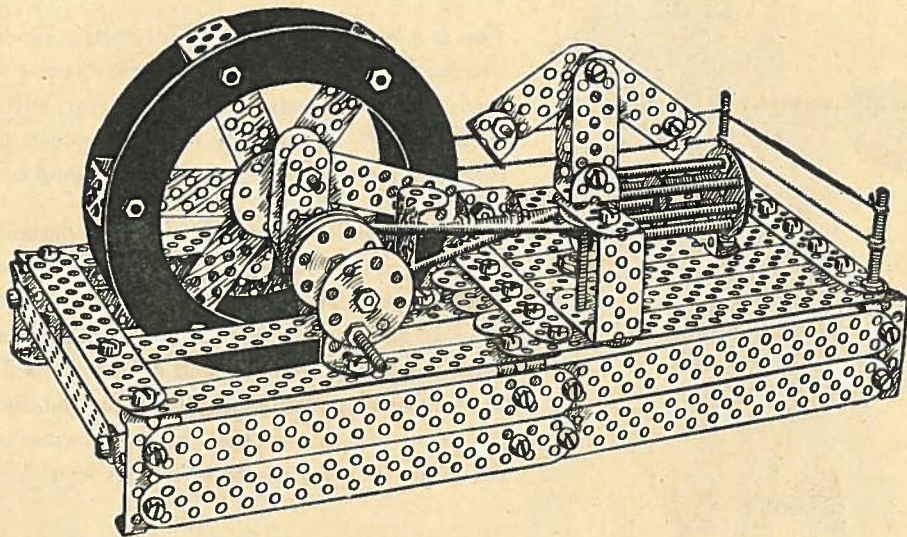
# No. 109. STEAM ENGINE.

# TRIX

Built with four boxes No. 1 and four boxes No. 1A.

### Parts Required :

10	of	A	1
54	..	B	1
10	..	F	5
5	..	F	9
8	..	F	13
16	..	F	17
144	..	N	1
8	..	P	29
8	..	S	25
16	..	S	55
8	..	U	1
8	..	U	2
3	..	W	10
8	..	W	16



### Instructions :

The base should be built first. The crank-shaft is made of two S 55's, two F 5's and one S 25. On this S 25 build an F 9 as connecting rod between two pairs of double nuts.

The flywheel is made of three F 13's, six U 1's and six S 25's. These, screwed up tightly in the end holes of the spokes make the junction between the wheel rim and the cardboard.

The crank-shaft is supported by two F 5's, which are screwed to the base by A 1's. The joint of the U 1 of the connecting rod, and the piston rod is as EC 17. The governor is driven by means of a cord or a coiled wire.

TRIX

No. 106B.

WINDMILL PUMP.

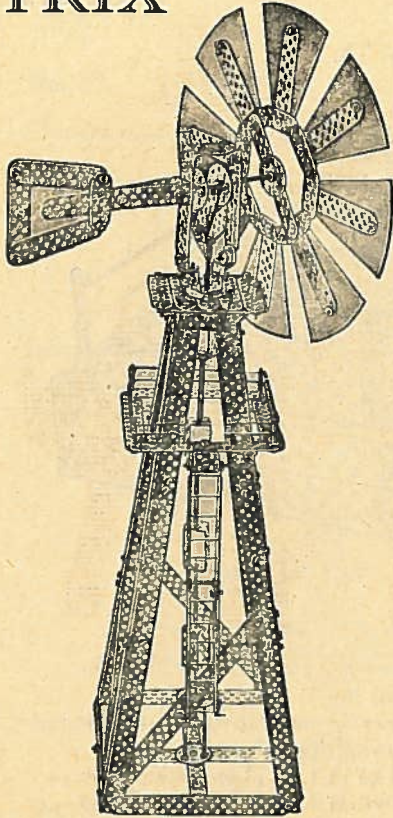


Fig. 1.

This is a very interesting and instructive model of a piece of machinery frequently seen in country districts. It is a Windmill Pump, which is used for raising supplies of water for horticultural work and other purposes. It is generally made in constructional steel-work in the form of a tower, which has a rotating wind head.

Nowadays these pumping mills are designed to require very little attention in the way of lubrication, and the most modern models have an automatic device which controls the speed of the sails. When the wind is dangerously strong and the speed of the sails becomes very great this device operates and swings the tail slightly, thus moving the head away from the wind, and consequently slowing up the speed of the sails. By this means, therefore, whatever the force of the wind, the pump is kept running at a fairly even speed.

Made with seven sets No. 1, seven sets No. 1a and one packet of nuts and bolts.

Parts Required :

28 of A	1	14 of F	13	9 of S	25
176 "	B	28 "	F	10 "	S
20 "	F	247 "	N	8 "	U
28 "	F	7 "	P	8 "	U
				5 "	W

No. 106B. WINDMILL PUMP—*continued.*

TRIX

**Instructions :**

The tower framework is first constructed and consists of eight strips, each 47 holes long and composed of three F 17's. These are connected at the base in the form of a square by two F 17's and four F 9's with A 1's at the corners. This tower is connected by A 1's near the top and half way up, while four struts, each consisting of two F 13's (22 middle holes long), strengthen the framework.

The tower head is square, composed of five F 9's connected at each end by two F 9's. The swivelling bearing (see Figs. 2 and 3) is composed of a P 29 and U 1 soldered or stuck together. A 1's are attached to each side of the U 1 and a further pair of A 1's are bolted to these.

The P 29 runs under four bolts with locknuts on the under side.

This arrangement allows the head of the Windmill to swivel round to any position, and does not affect in any way the working of the centre vertical pump shaft. This shaft consists of S 55's coupled together by four pairs of U 2's. The piston, made of an S 55 and W 16's, is inserted in the pump cylinder and fixed to the pump shaft.

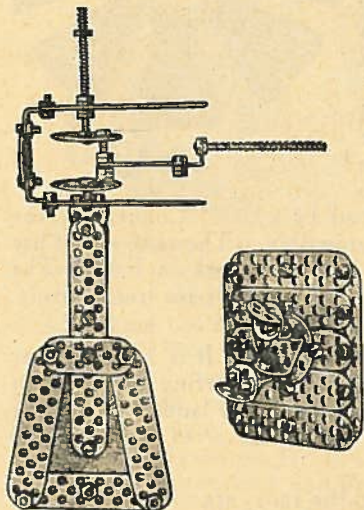


Fig. 3.

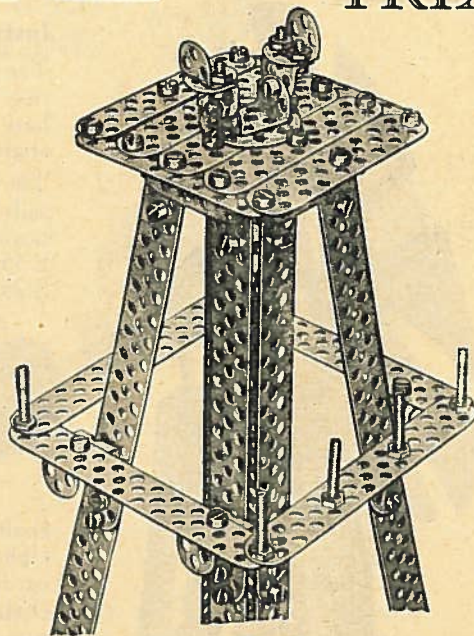


Fig. 2.

## TRIX

No. 106B. WINDMILL PUMP—*continued.***Instructions :—***continued.*

The pump cylinder, of four S 55's and two P 29's, is held in position at the base of the tower by two F 17's and angles.

The wind head, tail (see Fig. 3) and sails (see Fig. 4) are next made up. The horizontal sails shaft, of an S 25 and S 55, is coupled by two P 29's and an S 25. Note the connecting rod, F 5,

works freely at both ends. The tail is composed of three F 9's, one F 5 and cardboard. The centre strips of the tail are F 13's, which are joined to the head by a U 1.

Connect up the shaft and head and adjust them to run smoothly. The sails wheel has eight vanes attached to an eight-sided framework of F 5's. The cardboard pattern is cut off from radii 1-in. and  $4\frac{1}{4}$ -ins. respectively. (Fig. 4).

Now the platform, composed of F 13's, is added. It is held together at the corners by S 25's, which are wound with string to represent railings, and is bolted to the tower by U 1's. The ladder, 25 middle holes long, is strung with cord in the same manner to represent the rungs.

If the model is carefully constructed and the vanes are suitably set at an angle to the face of the sails wheel, the Windmill Pump works perfectly out of doors in the wind and looks very realistic.

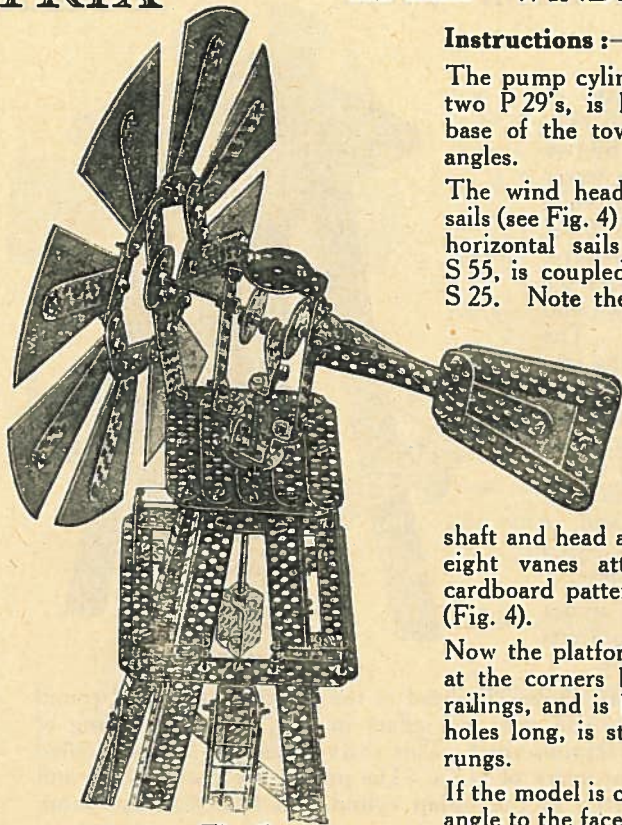


Fig. 5.

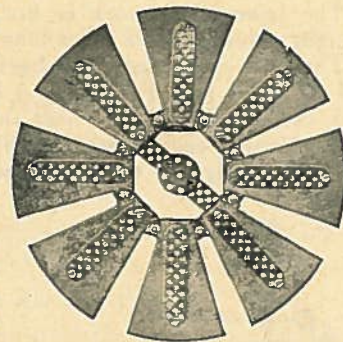
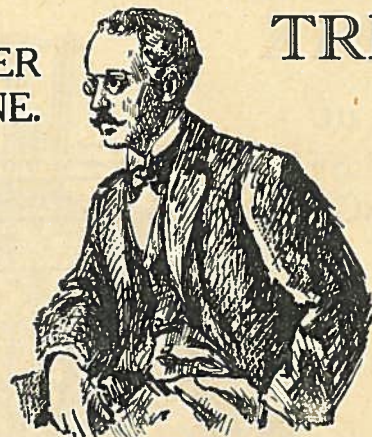
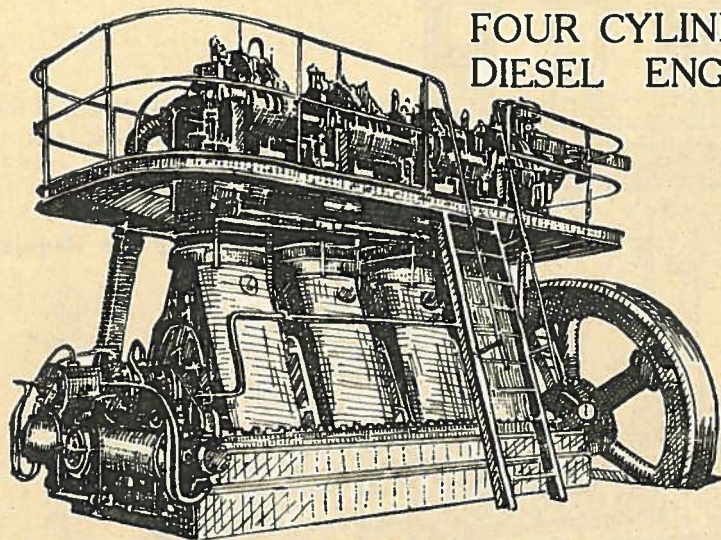


Fig. 4.

FOUR CYLINDER  
DIESEL ENGINE.



TRIX

Rudolf Diesel.

This is a Diesel engine, named after its inventor, the German engineer, Rudolf Diesel, who took out the first patent on his engine in 1893.

The principle of this engine is the injection of the fuel (crude oil or oil tar) direct into the working cylinder, which through the high compression effected is brought to combustion point at the top of the compression stroke.

On account of its general efficiency and the low cost of its fuel this engine, at the present time, stands out as the most economical form of power of all heat power engines. Its applications are many, marine engines, locomotives, traction engines, factory plant engines, electric power station engines, and now it is even adapted for motor cars and flying machines.

There are many forms of Diesel engines, including the four-stroke, two-stroke and semi-Diesel types, each has advantages for its particular usage. The true Diesels work at a compression of 500-lbs. or more per square inch and need to be very accurately and strongly constructed, while the semi-Diesels work at half this compression and need to be fired by other means than compression alone.

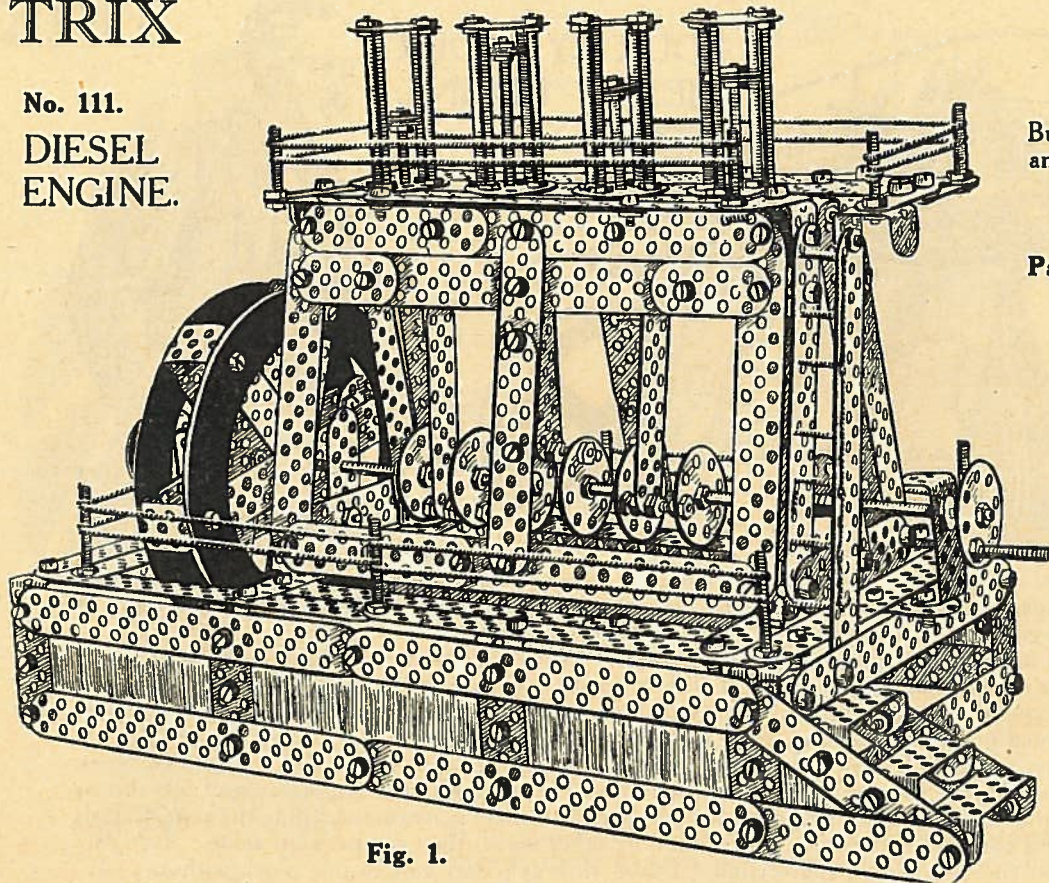
Our illustration shows a Krupp four-cylinder Diesel with cylinders cast in one block with an "A" shaped frame.

YOU CAN BUILD AND RE-BUILD WITH TRIX.

# TRIX

No. 111.

DIESEL  
ENGINE.



Built with 7 sets No. 1  
and 8 sets No. 1a.

### Parts Required :

32 of A	1
140 .. B	1
28 .. F	5
28 .. F	9
14 .. F	13
32 .. F	17
290 .. N	1
19 .. P	29
13 .. S	25
29 .. S	55
11 .. U	1
5 .. U	2
2 .. W	10
14 .. W	16

Fig. 1.



## No. 111. DIESEL ENGINE—*continued.*

### Instructions :

The base should be constructed first (see Fig. 1) and the cylinder case, composed of F 17's, is fixed to it with four A 1's. The upper platform is joined to the case with four more A 1's and, in the black marked holes (see Fig. 2) the cylinders are fixed with S 55's.

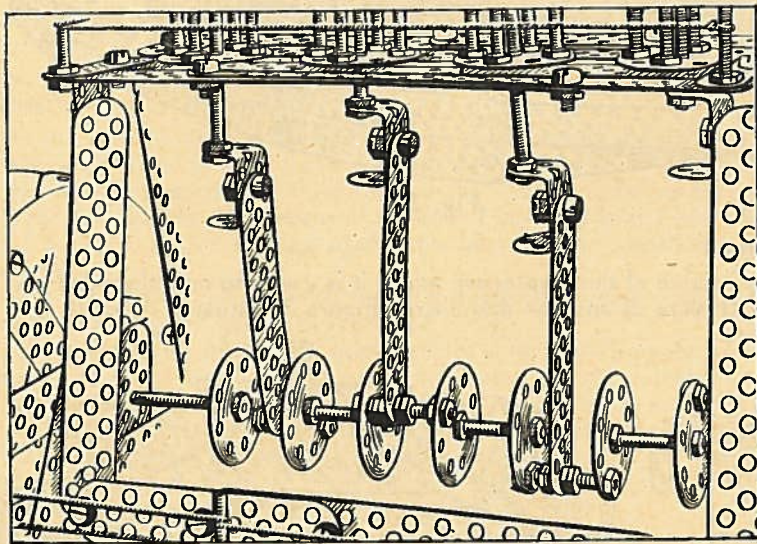


Fig. 2.

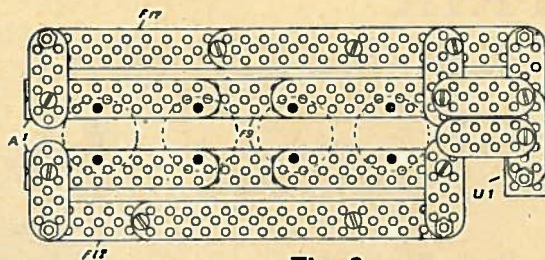


Fig. 3.

The pistons are now fitted to the cylinders and coupled up to the connecting rods. All joints must be left loose.

The two F 9's bolted to each side of the crankcase in the middle should have an A 1 bolted on the third hole from the bottom. An F 9 is attached to these A 1's and forms the centre bearing for the crank shaft.

THIS CENTRE BEARING IS NOT SHOWN IN OUR ILLUSTRATIONS, BUT SHOULD BE FITTED TO SUPPORT THE CRANK SHAFT. The crank shaft overhangs both ends of the case and runs in F 5's. The outer bearings are U 2's, and the flywheel is fixed at one end and the hand crank the other.

The flywheel is made of six F 13's and six U 1's, with cardboard discs for the sides, and the platforms are finished off with string to represent the hand rails.

# TRIX

## No. 112. MOTOR BOAT.

Length  $23\frac{1}{2}$ -ins.

Built with 10 sets No. 1  
and 8 sets No. 1a.

### Parts Required :

32	of	A	1
205	"	B	1
33	"	F	5
40	"	F	9
17	"	F	13
32	"	F	17
255	"	N	1
9	"	P	29
4	"	S	25
5	"	S	55
14	"	U	1
5	"	U	2
4	"	W	10
16	"	W	16

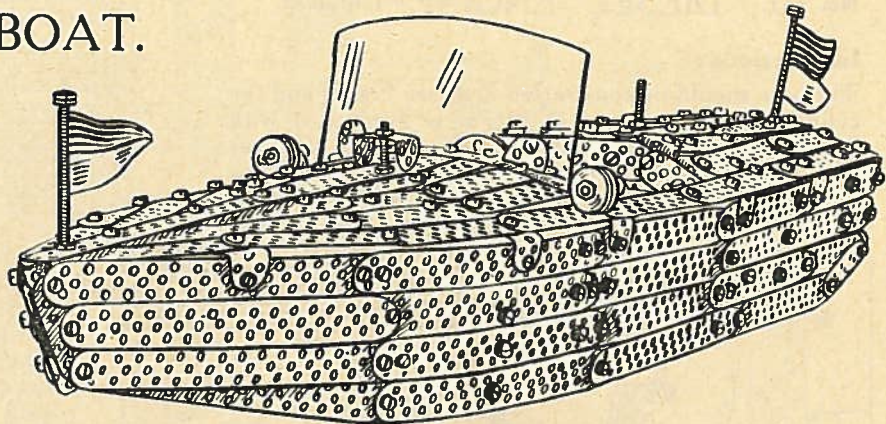


Fig. 1.

### Instructions :

In the construction of this impressive model it is useful to note that the back of the seat (Figure 2) and the dashboard (Figure 3), situated opposite, are fitted up first.

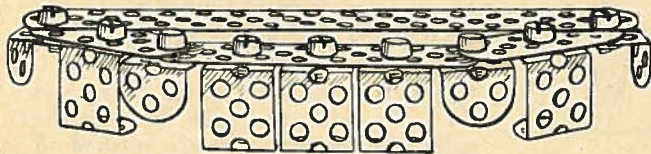


Fig. 2.

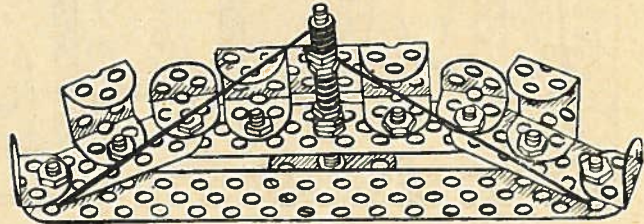


Fig. 3.

## No. 112. MOTOR BOAT.

TRIX

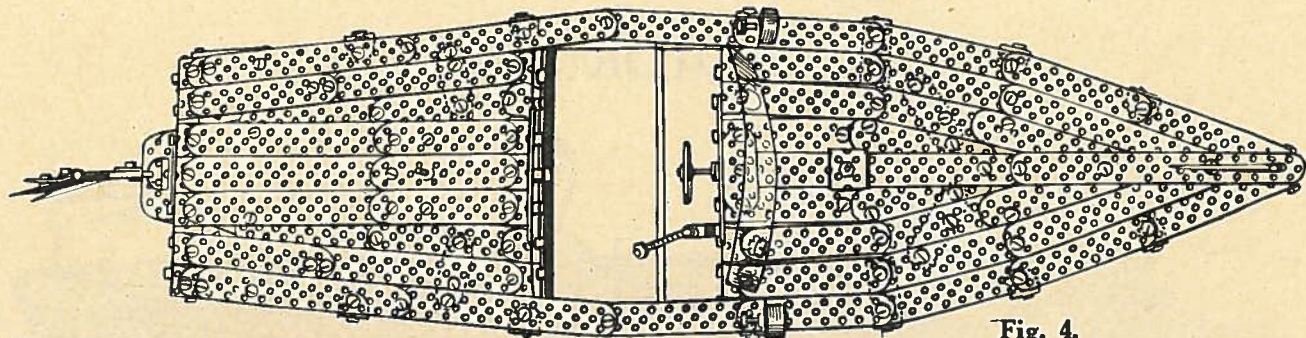


Fig. 4.

**Instructions**—*continued.*

On to these the middle row of flat strips are fastened, and on either side to right and left the three adjoining rows as shown in Figure 4. On each side four rows, running through the whole join the two halves of the deck together, by means of the dotted lines shown in Figure 4, F 5's, U 2's or A 1's being used according to their suitability as joinings.

Next the back side of the stern shown in Figure 5 is constructed and fixed to the upper deck with A 1's and U 1's.

After this the two sides of the boat are built (Figure 6 shows the right side) and joined together by pieces of A 1 (two in number), which are bent previously to an angle of  $45^\circ$ , to form the bow of the vessel. It is well to note that the dotted lines on Figure 6 show the places where P 29's or F 5's are screwed as struts on the inner side.

The screwing of the ship's sides to the deck by means of A 1's, starting from the bow, presents no difficulties.

Figure 5 shows the construction and fixing of the rudder. The steering wheel belonging to it is shown in Figure 3.

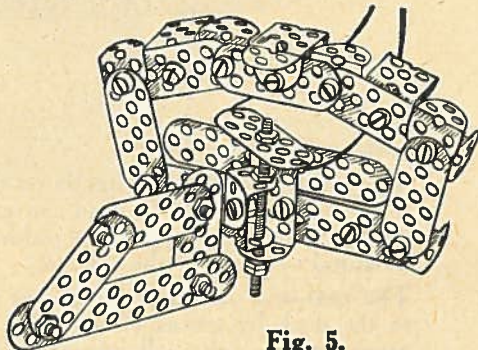


Fig. 5.

# TRIX

## No. 112. MOTOR BOAT.

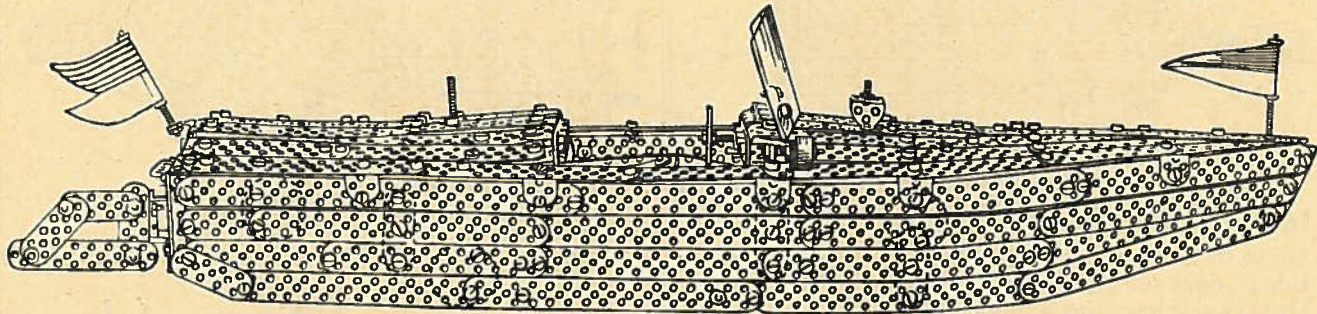


Fig. 6.

### **Instructions—continued.**

Two strings are fastened tightly on the S 55, twisted four or five times, one to the right and the other to the left on the spindle, and conveyed through holes in the dashboard and seat to the rear and tied tightly to the cross beam of the rudder. These make it possible by turning the steering wheel, to make a natural swinging of the rudder.

The port and starboard lamps are made from a number of W 16's fixed on to an S 25 and screwed to the deck by means of an A 1. (See diagram). A piece of red paper on the left and a piece of green on the right will improve this further and make it more realistic.

## No. 112. MOTOR BOAT.

**Instructions**—*continued.*

A piece of stiff cardboard serves as the seat in which a hole must be made for the gear lever. The cardboard is first fixed by means of a screw on the back of the seat. In the same way on the front screw a U 2 fixed to the deck by means of an S 25. This at the same time serves to fasten a U 1 above the deck.

The making of the gear lever is shown in Figure 7. Put it through the hole in the floor of the seat without the two lock nuts acting as the hand knob on, and screw them on afterwards. Fix the horizontal S 55 firmly on the side of the wall. The U 2 is fixed between the lock nuts so that it can be moved.

A little piece of celluloid, which can be obtained at a stationer's shop, is fixed with two A 1's to form a wind screen, and also flags at the bow and stern finish the model and give the boat a smart appearance.

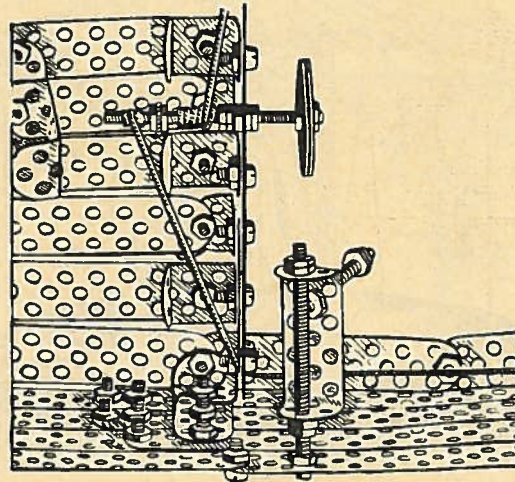


Fig. 7.

# TRIX

## No. 113. ROUNABOUT.

Built with 11 sets No. 1 and 10 sets No. 1a.

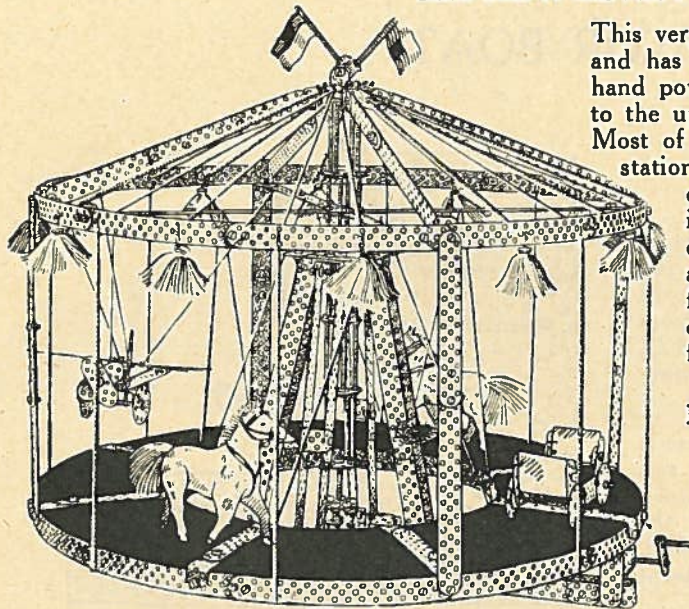


Fig. 1.

This very familiar form of amusement has many varieties and has passed through processes of evolution from the hand power, horse pulled and steam engine driven types to the up-to-date electric power outfits.

Most of the big fairs now have central miniature power stations, which generate electricity from steam traction engines with generators attached. This electricity is transmitted by cables to motors with gearing to draw the Roundabout and Music Organs and also supplies the powerful electric lamps for floodlighting purposes. These steam traction engines are also used to convey the fair wagons from place to place.

### Parts Required :

28 of A	1	380 of N	1
220 .. B	1	17 .. P	29
14 .. F	5	7 .. S	25
43 .. F	9	31 .. S	55
22 .. F	13	18 .. U	1
40 .. F	17	20 .. U	2

### Instructions :

In order to construct this revolving toy, we begin as in the original, with the mast. We need for this twenty-one S 55's and one S 25, besides nine P 29's and a number of N 1's and B 1's, all of which we screw together as shown in Figure 2. In making this it is necessary to see that all nuts are tight, so that the whole construction is firm, and, after it has been completed the mast acts as a rigid cylindrical body. We must not forget when building to insert at the parts marked "a" four N 1's and one P 29 on each side of a cross formation of four F 13's. These last should be fixed on through their last hole on each S 55.

No. 113. ROUNDABOUT.

**Instructions**—*continued.*

The single base P 29 is studded with B 1's and N 1's and serves as a toothed wheel to drive the mast. This rests on a foundation which is built of four columns on a cross at the base, as is shown in Figure 3.

Four A 1's screwed on the top part with their feet uppermost, act as a bearing for the mast, while two lock nuts on the under side bear a supporting U 1. The horizontal driving shaft is constructed from six U 1's coupled together and connected by S 55's (see Figure 3), and bears on its innermost end on an S 25, a P 29 also studded with bolts and nuts, which acts as a toothed driving wheel.

The following explains the construction of the roof. On the under side of a P 29 we fasten four A 1's in the form of a cross with the legs of the angles pointing downwards. To the latter we fix another four A 1's at an angle of 180° (see Figure 2), and the four roof struts are built on these—two struts from two F 9's and an F 13 and two from one F 17 and one F 9. The length of the completed struts of both kinds is twenty-four middle holes.

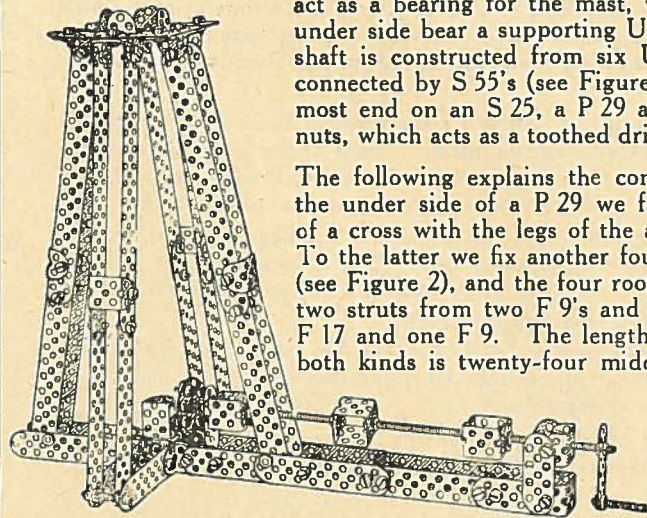


Fig. 3

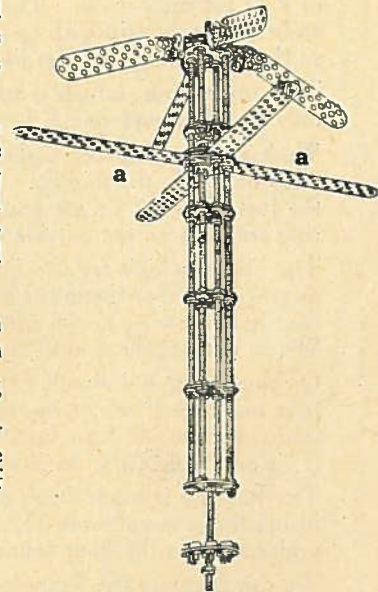


Fig. 2.

## TRIX

## No. 113. ROUNDABOUT.

**Instructions**—*continued.*

We have finished by this time the upper and lower outer rings and have used for this purpose eleven pieces of F 17 for each circle. These are first joined along their length one after another as straight pieces by bolts and nuts, each strip with two holes overlapped. Then the finished strips are bent to a circle and overlapped so that three middle holes lie over each other and the circle is joined together with two B 1's and two N 1's. The inner circle, which is made from eleven F 9's, each with one hole overlapping, is joined together with only one N 1 and one B 1.

We have also prepared eight pieces for floor supports 95 mm. long, made from two U 2's (one at each end) and one F 9 in the middle. These should be screwed at equal distances, between the two base rings, so that the feet of the U 2's are pointed downwards. In this way they are screwed flat on the outside of the small ring and also on the outside of the large ring.

The circle, which we use for the roof, is supported chiefly by four A 1's screwed on the outside at equal distances, so that the lower horizontal feet of the angles project on the inside. Then at the same places with the same screw we fasten another A 1 on the inside of the ring, so that the narrow edges of the A 1 are vertical. We do not use the middle but the lower hole of the angle and therefore it projects above the top of the ring.

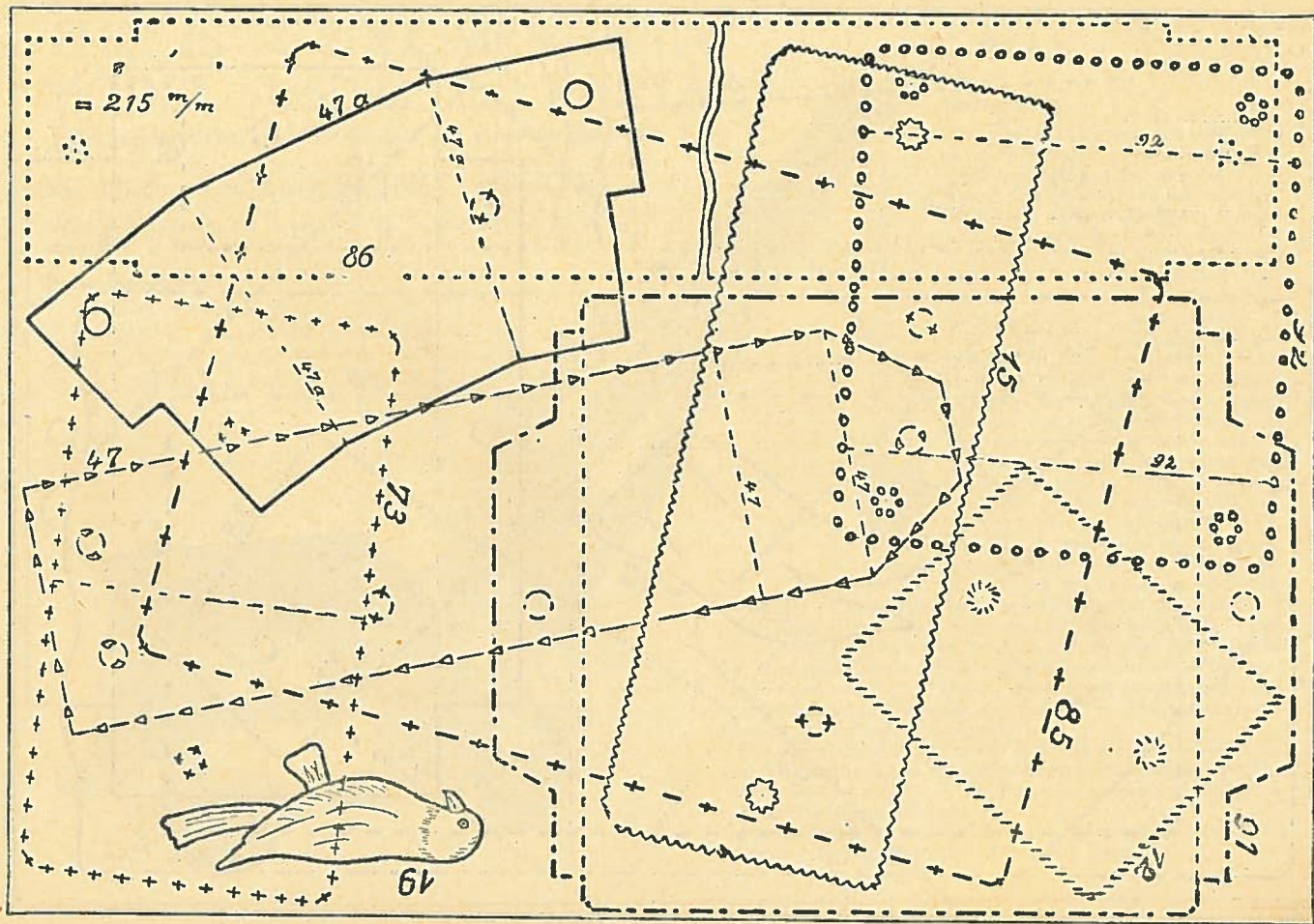
On these four A 1's we fix the roof struts, while we fasten the cross (mentioned at the beginning) on to the four horizontal feet of the first-named A 1's, after we have lengthened the F 13 with another F 13. Four struts, each made from an F 17 and an F 13 overlapped to a length of 27 middle holes and joined with two B 1's and two N 1's, serve as suspensions of the outer base ring and roof ring.

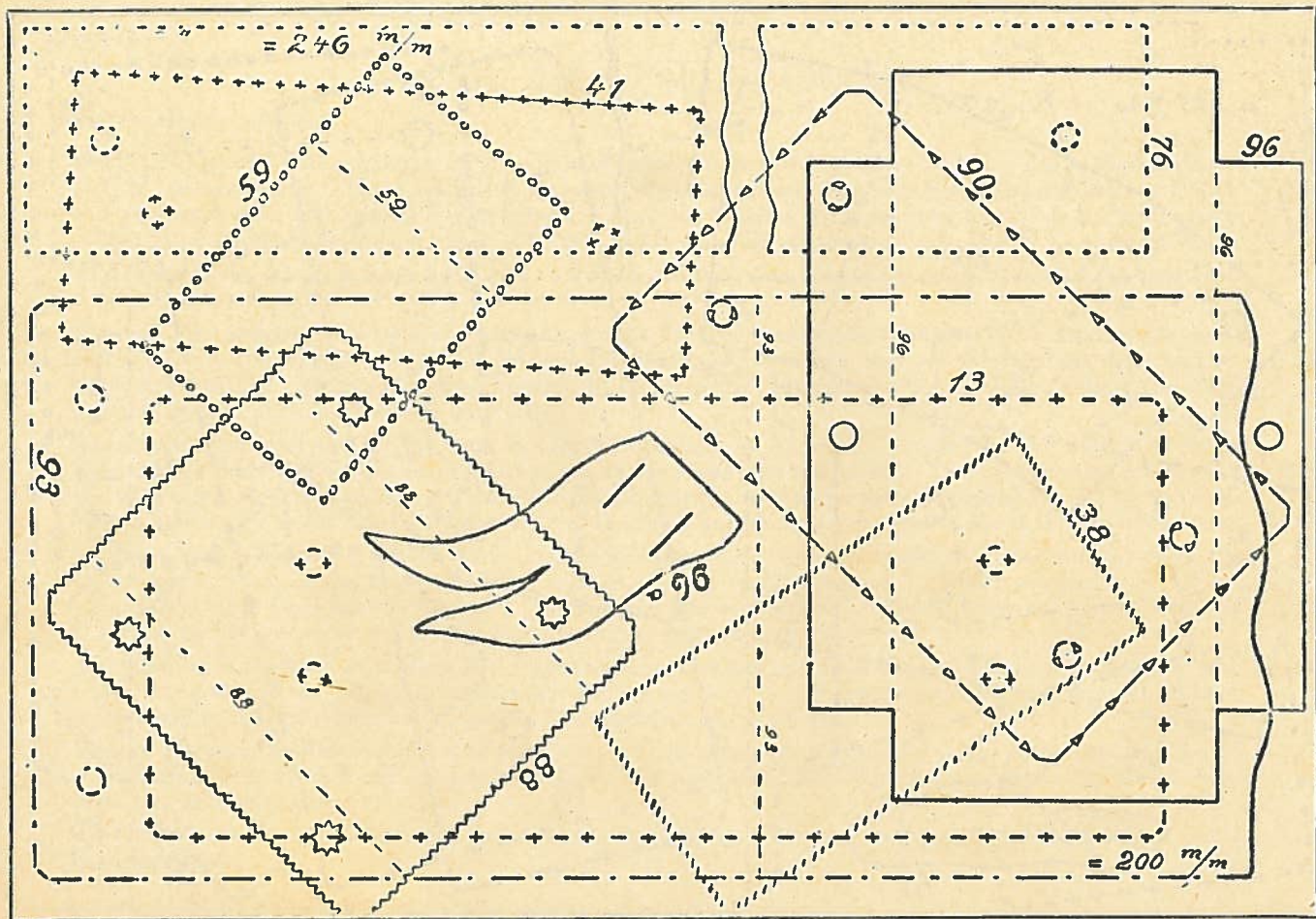
The flooring is made from cardboard. By means of a compass we draw a circle 400 mm. in diameter and inside this a second one 225 mm. in diameter, and we cut out the so formed round disc and screw it on from underneath to the floor foundation, having first made the correct holes.

We can decorate the Roundabout with coloured cords or bands, etc., according to our own taste, and can fill it with dolls, animals and cut-out figures. If we still have some TRIX parts left over we can build seats, little cars and aeroplanes, etc.

To finish the roof we use two S 55's (as shown in the diagram), which serve as masts for the flags cut out of coloured paper.







# THIS IS A SPECIMEN OF A MODEL USING 2a PARTS.

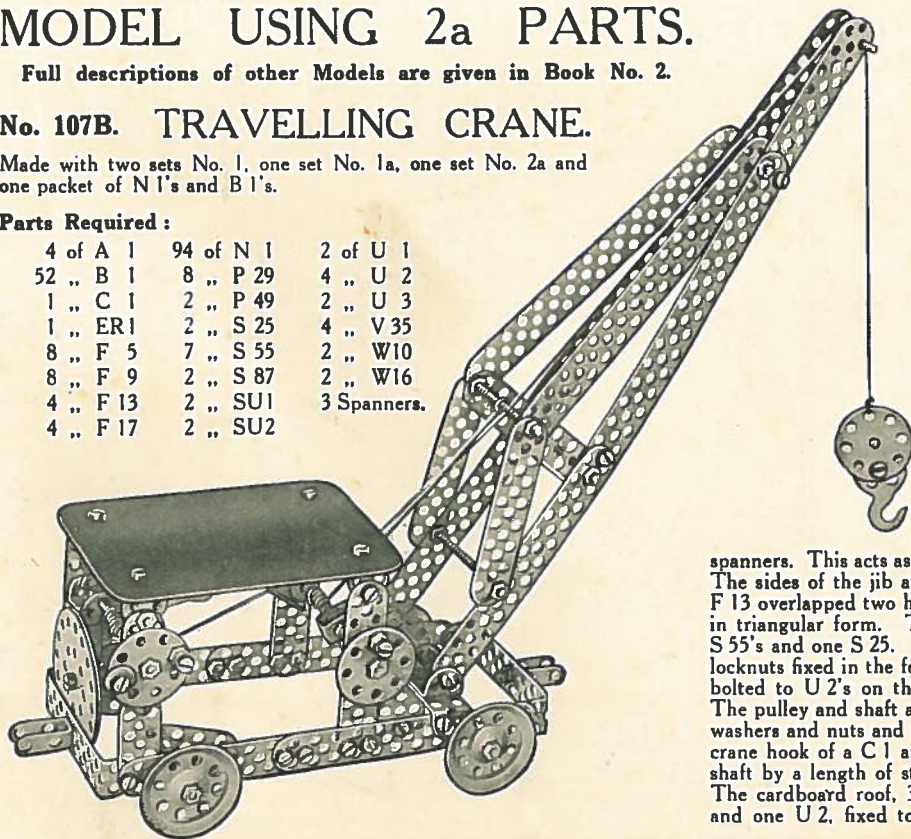
Full descriptions of other Models are given in Book No. 2.

## No. 107B. TRAVELLING CRANE.

Made with two sets No. 1, one set No. 1a, one set No. 2a and one packet of N1's and B1's.

### Parts Required :

4 of A 1	94 of N 1	2 of U 1
52 .. B 1	8 .. P 29	4 .. U 2
1 .. C 1	2 .. P 49	2 .. U 3
1 .. ER 1	2 .. S 25	4 .. V 35
8 .. F 5	7 .. S 55	2 .. W 10
8 .. F 9	2 .. S 87	2 .. W 16
4 .. F 13	2 .. SU 1	3 Spanners.
4 .. F 17	2 .. SU 2	



# TRIX

### Instructions

The sides of the chassis are each made of an F 9 and F 13 overlapped two holes and joined at the ends by U 3's. Two P 49's are bolted to the back, and SU 2's are fixed as couplings to each U 3. The wheels are each made of a V 35 and P 29, and are fixed to the ends of the wheel axles, S 87's. The back of the cab is made of two F 5's fixed vertically at each corner. A U 1 fixed to one side acts as end bearing for the winch shaft, S 55. A P 29, B 1 and N 1's are fastened to this as crank handle, and a second bolt and nut in the P 29 prevents the shaft unwinding when not in use.

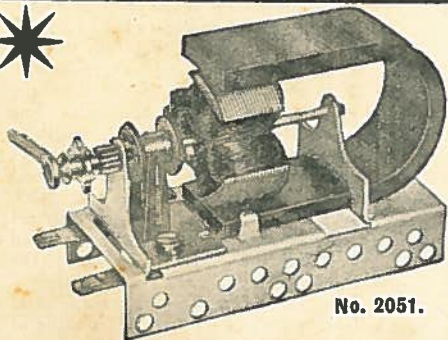
The second shaft, for raising and lowering the jib by string, is made of two S 55's coupled together with two SU 1's, and runs in vertical F 9's. An ER 1 is secured on the shaft and presses against a spanner, fixed by an A 1 to the transverse strut of two

spanners. This acts as a brake and holds the jib in any position. The sides of the jib are each constructed of an F 9, F 17 and F 13 overlapped two holes, with an F 5, F 9 and F 17 fastened in triangular form. These sides are joined together by three S 55's and one S 25. The jib moves freely between bolts and locknuts fixed in the feet of a U 1 and U 2. This jib bearing is bolted to U 2's on the chassis.

The pulley and shaft at the top of the jib are made of an S 25, washers and nuts and run in the lower holes of the F 9's. The crane hook of a C 1 and two P 29's is connected to the winch shaft by a length of string.

The cardboard roof, 3-ins. by 4-ins., is bolted to three A 1's and one U 2, fixed to the vertical cab struts.

# 3 STAR TURNS!



No. 2051.

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