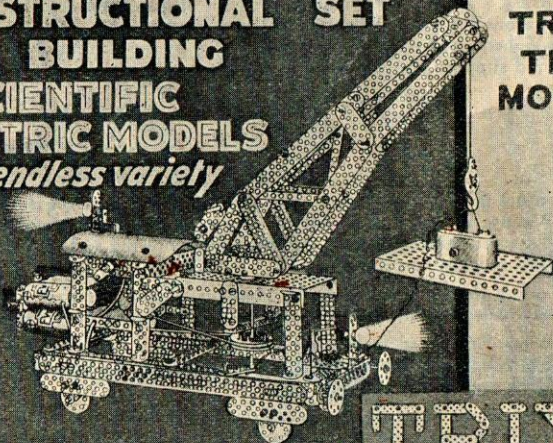


THIS SET IS  
**14**  
SELF-CONTAINED



# TRICLY TRIX

**CONSTRUCTIONAL SET  
FOR BUILDING  
SCIENTIFIC  
ELECTRIC MODELS**  
*of endless variety*



**BRITISH MADE**

**TRIX**  
THE MASTER MODEL MAKER

**CONTAINS  
82 PARTS  
INCLUDING  
LIGHTING UNITS**

MANUFACTURED UNDER  
BRITISH PATENT  
NºS 363547  
383087  
383240

**THE  
BOOK  
OF  
TRICLY  
TRIX  
MODELS**

# TRICY TRIX

From a study of the component parts on page two and the elementary constructions of this booklet you will see that the principle of the working of these models is electro-magnetism, or in other words, the passing of an electric current round a coil of wire wound on a bobbin, E 3, which magnetises a soft iron core, E 4, pushed into the bobbin.

This discovery marked the era of the great development of electro-magnetism and its many applications. The electro-magnet has been in existence only just over one hundred years, but already it has produced such far-reaching results as the telephone and wireless.

It is to William Sturgeon of Whittingham, Lancashire, that we owe this discovery. In 1825 he produced the fruit of his experiments, a bent iron core, around which several turns of wire were wound. His electro-magnet weighed seven ounces, but when excited by the current of a single cell it would support a weight of nine pounds.

## IMPORTANT.

When not using a model always disconnect one of the wires from the battery, because if the latter is left in the circuit, and the commutator brush, E 7, is still making contact, current will be flowing and the battery will be very quickly run down.

For oiling the bearings, glycerine, not oil, should be used, as this sets up very little resistance to the current flowing through the bearings.

The iron cores fixed in the bobbins should be brought as near as possible to the moving parts. If they are not close enough the model will not work well.

In places where wires may come in contact with metal parts they are best covered with insulating sleeving, in order to prevent a short circuit. Insulating sleeving can be obtained from Electrical and Radio stores. Cycle valve tubing makes an effective sleeving.

Joseph Henry of U.S.A. improved upon this. He insulated the wire by a covering of silk and wound a great number of turns round the core. One of the magnets constructed by him would lift over 2,000 pounds.

Besides wireless and the telephone, electro-magnetism is used in motors, dynamos and for lifting steel ingots, tubes, girders and scrap iron, and for handling metal at a high temperature.

All the TRICY TRIX models can be run from an ordinary dry battery or pocket lamp battery, or they can also be run off a two-, four- or six-volt accumulator, which can be recharged when necessary.

The wire which is wound around the bobbins, E 3, and also the connecting coil, E 10, is specially insulated with an enamel covering. To make a connection, the end of the wire must be carefully scraped with a knife to make a clean metal contact.

The commutator brush must always be clean. An oxide deposit appears on the place of contact of the brush after a long run through the passing of an electric spark. This prevents a good contact and must be scraped.

Owing to lack of standardisation in the manufacture of Miniature Electric Bulbs, there may be difficulty the first time in screwing the lamp into the holder, in which case it is advisable to clean off the inside of the holder with a pen-knife or fine file.

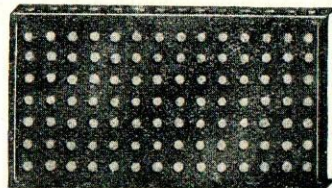
Once the lamp has been in the holder, no further trouble will be experienced.

When screwing the lamp into a holder, care should be taken that they are at right angles to each other.

TRIX, TRICY TRIX, MOTO TRIX, SUPER TRIX.

# TRICY TRIX

# COMPONENT PARTS.



E 1. Base.



E 2. Bell.



E 3.  
Bobbin with  
Coil.



E 4.  
Soft Iron  
Core.



E 5.  
Brass  
Strip.



E 6.  
Brass  
Contact  
Spring.



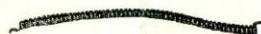
E 7.  
Commu-  
tator  
Brush.



E 8.  
Fibre  
Insulator.



E 9. Crank Axle.



E 10. Connecting Coil.



E 11.  
Commu-  
tator.



Spanner



A 1.  
Angle.



B 1.  
Bolt.



F 9.  
Flat Strips with 9 and 13 middle  
holes respectively.



F 13.



N 1.  
Nut.



P 29.  
Pierced Disc.  
29 mm.



S 55.  
Screwed  
Spindle,  
55 mm.



U 2.  
U piece.



W 10 and W 16.  
Washers, 10 mm.  
and 16 mm. in dia.  
respectively.



E 12.

Lamp Holder.

(This part is used in the non-illuminated models in place of an F 5 where mentioned).

**LIGHTING  
UNITS.**

E 13.  
Lamp.



ALL TRIX PARTS ARE STANDARDISED.

BUILD with **TRIX** and **DRIVE** with **TRICY** **TRIX**.

# TRICY TRIX

## ADDITIONAL PARTS.



**C 1.**  
Crane Hook.



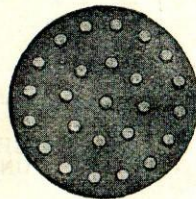
**ER 1.**  
Eccentric Ring.



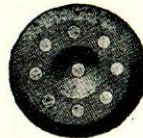
**F 17.**  
Flat strip. 17 middle holes.



**F 5.**  
Flat Strip with  
5 middle holes  
(See E 12).



**P 49.**  
Pierced Disc 49 mm. dia.



**V 35.**  
Half of Grooved (V)  
Pulley.



**S 87.**  
Plain Shaft with threaded ends.  
87 mm. long.



**SU 1.**  
Small  
U-piece.



**SU 2.**  
Small  
U-piece.



**U 1.**  
U-piece.



**U 3.**  
U-piece.

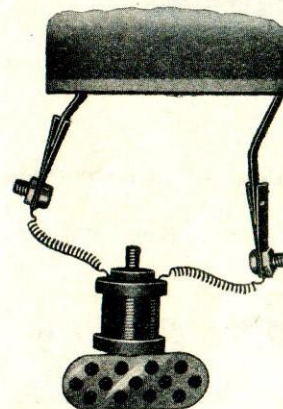


**S 25.**  
Screwed Spindle, 25 mm.

## ELEMENTARY CONSTRUCTIONS.

Before commencing the models of this book, the following illustrations should be experimented with and studied very carefully, as all these models are operated by electro-magnetic force, and to ensure perfect movement it is necessary for the vital parts to be **ABSOLUTELY CORRECTLY CONSTRUCTED**.

Carefully scrape enamel from ends of wire before making connections, otherwise the flow of current will be impeded by the enamel insulation.



**ET 1.**

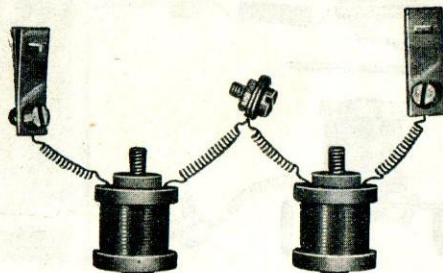
This shows the coil in circuit with a dry cell battery. The soft iron core, E 4, has been pushed into the bobbin, E 3, and the brass contact springs, E 6, have been fixed to connect to the battery, after the ends of the coil have been carefully scraped to make contact. The current passing around the coil makes a powerful magnet of the core, which attracts any **TRIX** or steel parts. Upon pulling one of the connections away from the battery the core is no longer a magnet.

**DO THESE ELEMENTARY CONSTRUCTIONS FIRST.**

THESE ELEMENTARY CONSTRUCTIONS SHOULD BE CAREFULLY STUDIED.

## TRICY TRIX

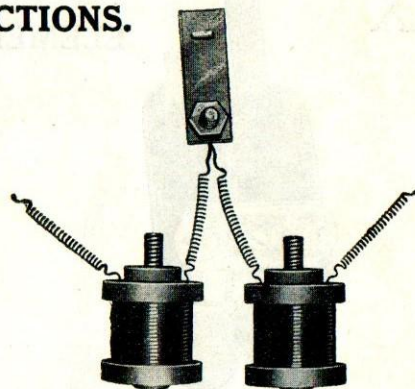
## ELEMENTARY CONSTRUCTIONS.



ET 2. CONNECTION IN SERIES.

This shows two bobbin coils, E 3, connected together by a bolt and nuts and washers. When the brass contact springs, E 6, are connected to the terminals of the battery the current passes through one coil and then through the other, and the coils are said to be connected "in series." This arrangement occurs in models needing only small power to drive.

It will be noticed that where two bobbins are connected in parallel, the current has only to pass through one bobbin to get from terminal to terminal of the battery, and as there are two bobbins, double the amount of current will be used, and twice the amount of magnetic power will be obtained. In the case of a series connection, the current flowing from terminal to terminal of the



ET 3. CONNECTION IN PARALLEL.

The illustration shows the coils connected in the centre by brass contact springs, E 6. Now suppose the E 6's are connected to one side of the battery. The wire from the bobbin coils, E 3, can then be joined up to the framework of a model, or joined together direct to the other side of the battery. These coils are said to be connected "in parallel." This method of connecting coils uses more current from the battery than when "in series," but gives more power necessary to drive our larger models.

battery cannot pass through one bobbin only, but must go through the two. This means the current has twice the distance to travel which offers additional resistance and less current consequently passes through the two bobbins. In this way, they are both magnetised in a lesser degree than when connected in parallel.

# TRICY TRIX

## ELEMENTARY CONSTRUCTIONS.

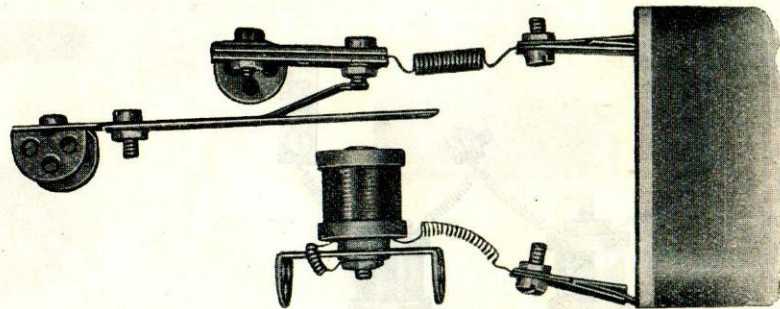


ET 4.

This shows two pocket lamp batteries connected together with two F 5's and a bolt and nut. Note that the long and short ends, positive and negative, are connected. This arrangement gives double the voltage of one battery and increases the driving power for models.

When using 3.5 volt pocket lamp bulbs the above method of connecting the batteries must **not** be used, as the voltage is too great and would burn out the lamps. In this case the batteries must be connected in parallel. If the batteries are connected in parallel, i.e. minus terminal to minus and plus terminal to plus, a double quantity of current or amperage is available to work the model and light the lamps, but the voltage remains the same.

Remember voltage is the electric pressure in the battery something like steam pressure in a boiler. Amperage is the amount or flow of current available from the battery like the amount or quantity of steam in a boiler.



ET 5.

Here we show the working of an electric bell or buzzer. For clearness all the framework of the model is left out, and the U 2, U 1 and A 1 are built on to the base.

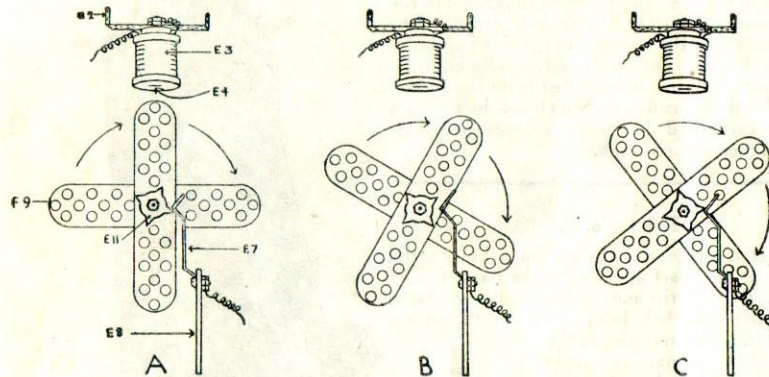
The electric current passes from one side of the battery through the spare coil to the bolt and nut in the fibre insulators E 8, and along the brass strip E 5 (which has been slightly bent, as shown, and bolted to an F 9) to the U 1, which is bolted on to the base. Continuing the circuit, the current flows through the base to the U 2, then along the bobbin coil, E 3, to the other side of the battery.

The soft iron core of the bobbin is now a magnet and attracts the F 9 towards it. But as the F 9 swings forward the connection is severed between the E 5 and the bolt in the fibre insulating strip, E 8. The circuit is broken and the soft iron core loses its magnetism, and consequently no longer attracts the F 9, which returns to its former position. This to and fro movement is the striking action of the bell.

## TRICY TRIX—THE ELECTRIC TRIX.

## TRICY TRIX

## ELEMENTARY CONSTRUCTIONS.

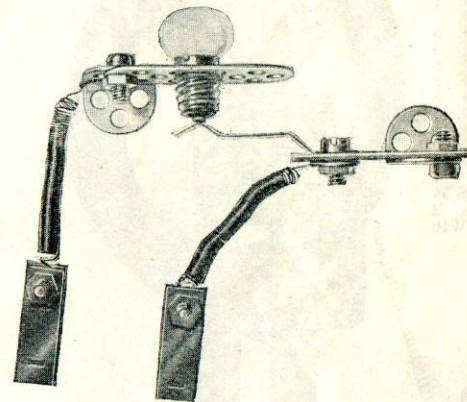


ET 6.

This shows how to set a commutator, E 11, to make proper contact with a commutator brush, E 7, to build and run a motor.

The cross of F 9's revolves in a clockwise direction. The fibre insulator, E 8, and the U 2 holding the bobbin core, E 4, are connected to the framework of the model and complete the circuit. When the cross is EXACTLY in position "A" the commutator is adjusted to just break contact, and is releasing all magnetic influence from the iron core. The momentum of the cross, acting as a flywheel, then carries on, passing through position "B," until position "C" is reached and contact is made thus completing the circuit again. The bobbin core is now an electro-magnet and draws the next arm of the cross towards it. When it reaches position "A" the contact is again broken. This making and breaking of contact magnetises and demagnetises the core and, with the aid of the momentum of the flywheel, the commutator continues to revolve until the next arm comes into position "C" and so on.

This construction clearly and simply demonstrates the elementary principle underlying all forms of electro-magnetic motors, and is ESSENTIAL.



ET 7.

This shows the lamp circuit. For clearness the framework is left out as in ET 5, and the two A 1's are built to the base.

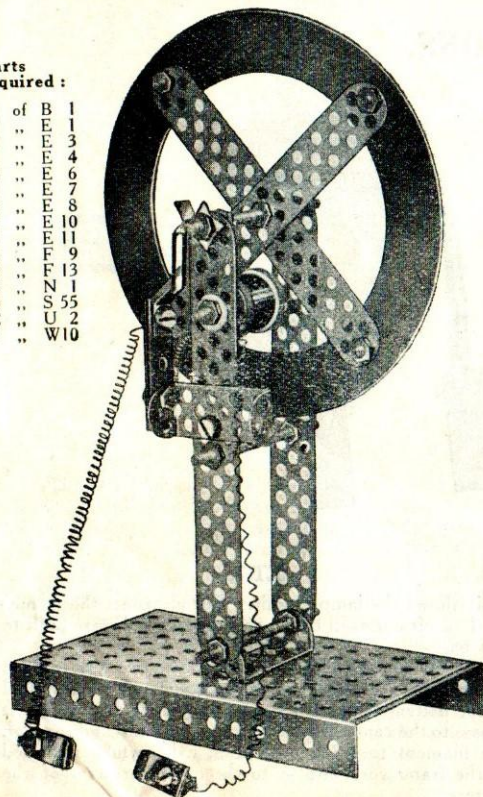
The E 6's connect the two wires to the two terminals of the battery. Thus the current passes from one terminal of the battery to the E 7 on the insulator. From here it passes to the centre contact of the lamp bulb and through the filament to the lamp-holder, E 12, which is bolted to the framework, and so to the other terminal of the battery.

DEMONSTRATES THE SCIENCE OF ELECTRO-MAGNETISM.

# TRICY TRIX

## Parts required :

11	of	B	1
1	"	E	3
1	"	E	4
1	"	E	6
4	"	E	7
1	"	E	8
2	"	E	10
1	"	E	11
1	"	F	9
4	"	F	13
2	"	N	1
26	"	S	55
3	"	U	2
2	"	W	10
1	"		



## Model No. 1. MOTOR.

Made with 1 Box Tricy Trix.

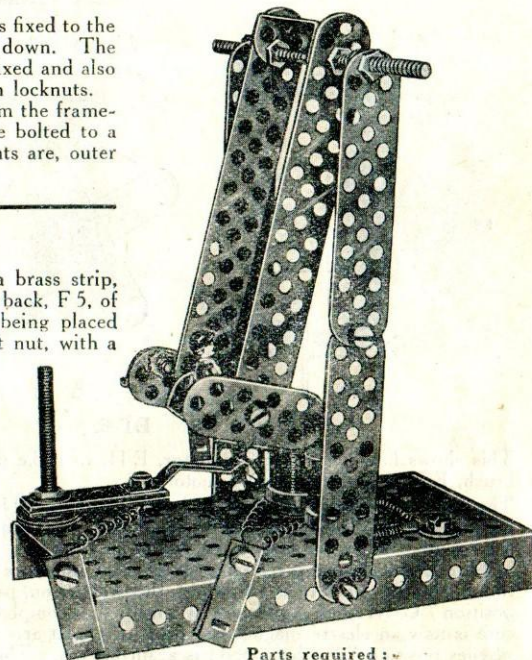
The circuit is as ET 6, and the bobbin is fixed to the vertical framework in the fourth hole down. The top S 55, to which the commutator is fixed and also the crossed F 13's, runs freely between locknuts. The commutator brush is insulated from the framework by the fibre insulators, which are bolted to a U 2. The cardboard disc measurements are, outer circle 4 $\frac{3}{8}$ ", inner circle 3" diameter.

## Model No. 2.

The contact is made and broken on a brass strip, E 6, acting as a contact attached to the back, F 5, of the swing. This strip moves freely, being placed loosely between the bolt head and first nut, with a second nut in addition to secure the flat strips of the swing. An angle is also fixed at the end of this F 5, which regulates the swing. The swing shaft moves freely between locknuts on each side.

Note that one of the coil ends is connected to the framework, while the other goes to the terminal. A small figure placed in the swing will improve the model.

## Model No. 2. SWING. Made with 1 Box Tricy Trix.

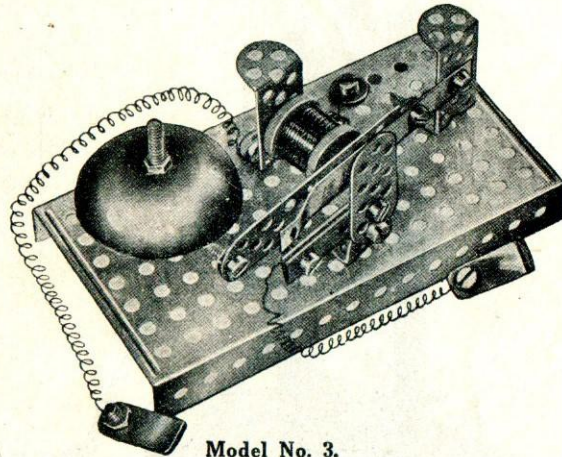


## Parts required :-

1	of	A	1	1	of	E	5	1	of	E	10	3	of	S	55
11	"	B	1	4	"	E	6	4	"	F	9	2	"	U	2
1	"	E	1	1	"	E	7	2	"	F	13	2	"	W	10
2	"	E	3	2	"	E	8	24	"	N	1	2	"	W	16
2	"	E	4												

## TRIX—THE MASTER MODEL MAKER.

## TRICY TRIX



Model No. 3.  
**BELL.**

Made with 1 Box Tricy Trix.

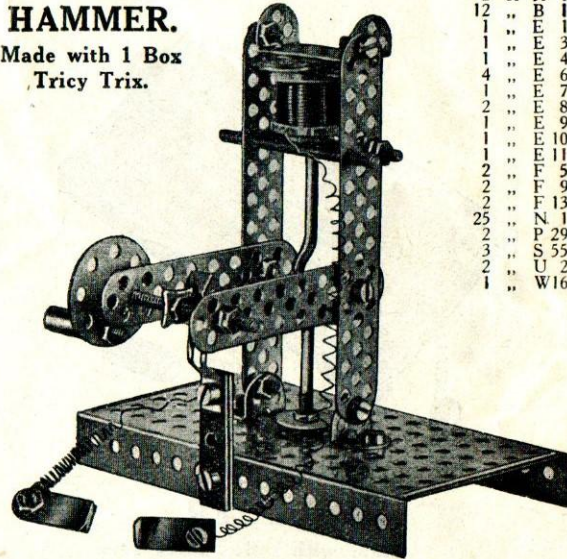
Circuit as in ET 5. The long brass strip, E 5, is slightly bent to touch the bolt in the insulating strip. Note that one end of the bobbin coil runs to the framework on the base, E 1, held between a washer and a nut. The connecting coil, E 10, is fixed to the bolt in the insulating strip.

This simple but very interesting model demonstrates the principle upon which all Electric Bells are operated.

**Parts required :**

1 of A 1	1 of E 3	2 of E 8	17 of N 1
12 " B 1	1 " E 4	1 " E 10	1 " S 55
1 " E 1	1 " E 5	1 " F 5	2 " U 2
1 " E 2	4 " E 6	1 " F 9	1 " W 10

Model No. 4.  
**HAMMER.**  
Made with 1 Box  
Tricy Trix.



**Parts required :**

2 of A	1
12 " B	1
1 " E	1
1 " E	3
1 " E	4
4 " E	6
1 " E	7
2 " E	8
1 " E	9
1 " E	10
2 " E	11
2 " F	5
2 " F	9
25 " F	13
2 " N	1
2 " P	29
3 " S	55
2 " U	2
1 " W	16

Circuit as in ET 6. When the commutator is in contact with the commutator brush, the crank axle is magnetised by the coil of the bobbin and is drawn upwards. It falls when contact is broken.

A stop insulator in the form of a piece of celluloid is placed above the bobbin, and a P 29 and two F 5's are tightly inserted between also.

Two spindles hold the bobbin in place, one of which bears no nuts.

This model is turned by a hand crank.

SEE TRIX PRICES ON BACK COVER.

# TRICY TRIX



**Model No. 5.  
BUZZER.**

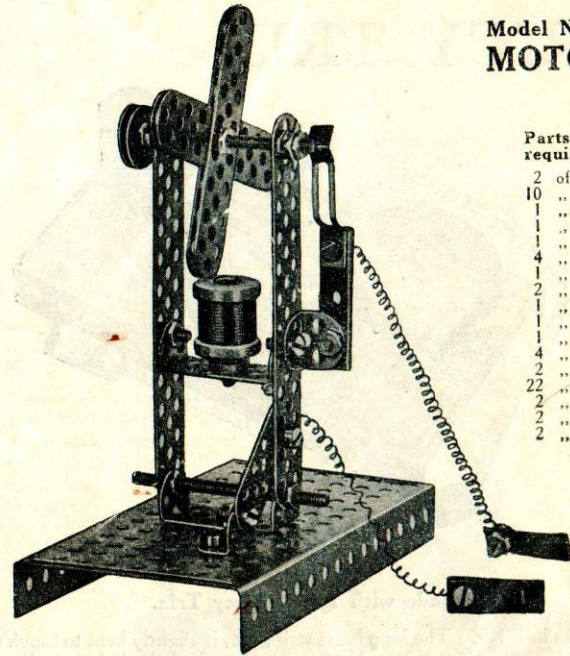
Made with 1 Box Tricy Trix.

Circuit as in ET 5. The long brass strip, E 5, is slightly bent towards the bolt in the insulating strip. The soft iron core is screwed into the U 2 and one end of the bobbin coil is connected to the framework between two nuts on the core. A W10 should be placed above these two nuts.

**Parts required:**

1 of A 1	4 of E 5	1 of F 9
10 " B 1	2 " E 6	11 " N 1
1 " E 1	2 " E 8	2 " U 2
1 " E 3	1 " E 10	1 " W 10
1 " E 4	1 " F 5	

## Model No. 6. MOTOR.



**Parts required:**

2 of A 1	1 of F 9
10 " B 1	11 " N 1
1 " E 1	2 " U 2
1 " E 3	1 " W 10
4 " E 4	
1 " E 6	
4 " E 7	
1 " E 8	
2 " E 10	
1 " E 11	
1 " E 12	
1 " E 13	
4 " E 14	
2 " E 15	
22 " F 1	
2 " N 1	
2 " U 2	
2 " W 10	

Made with 1 Box Tricy Trix.

Circuit as in ET 6. The bobbin and core are held in position by W10's. Note that the cross is built double with F 9's. This serves the double purpose of utilising more magnetic force from the magnetised iron core, and of storing more momentum energy in the flywheel. One wire of the bobbin is connected to the framework and the other to the terminal. The connecting coil, E 10, joins up the commutator brush, E 7, to the battery.

TRIX IS BRITISH MADE.

# TRICY TRIX MODELS OPERATED BY ORDINARY POCKET LAMP BATTERY.

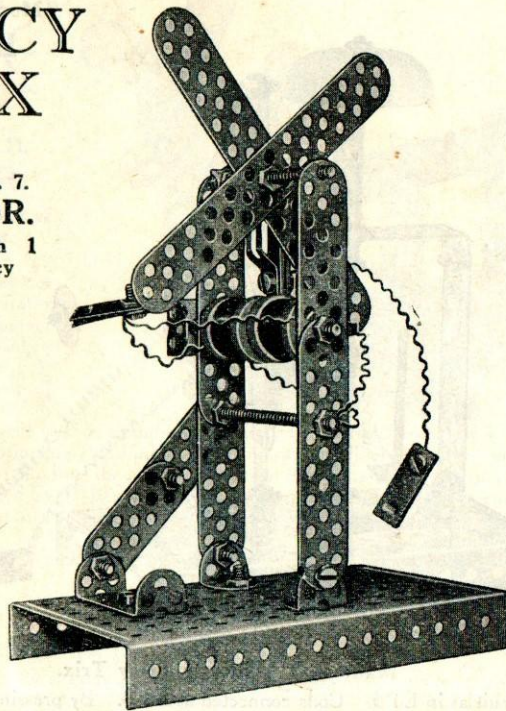
## TRICY TRIX

### Model No. 7. MOTOR.

Made with 1  
Box Tricy  
Trix.

#### Parts required :

2	of	A	1
11	"	B	1
1	"	E	1
2	"	E	3
2	"	E	4
4	"	E	6
1	"	E	7
2	"	E	8
1	"	E	10
1	"	E	11
2	"	F	5
4	"	F	9
2	"	F	13
23	"	N	1
2	"	S	55
2	"	U	2



This is a two-coil model with circuit as in ET 6. The coils are "in parallel." The commutator brush is fixed to the foot of a U 2 and is insulated by the fibre insulating strips.

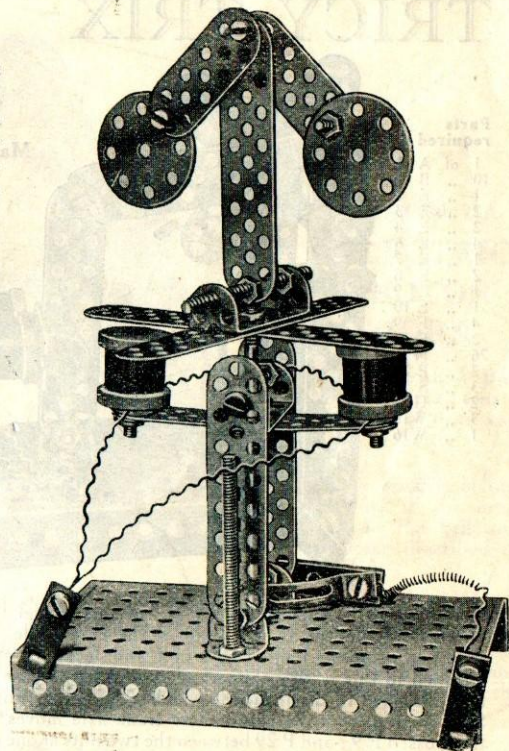
By this arrangement it will be noticed that the two magnets are pulling together thus giving double driving power to the spindle of the fly-wheel.

### Model No. 8.

Circuit as in ET 6. A connecting coil, E 10, leads from the commutator brush, E 7, to one battery terminal. The two bobbins, E 3, are connected in parallel as in ET 3, and a wire from each bobbin is connected to the framework. The F 9, to which the bobbins are fixed, is bolted to the framework by a U 2. The crank axle, E 9, to which the commutator E 11 is fixed, runs freely through the middle hole; lock-nuts under the base secure the crank axle in position. The cross of F 9's, U 2, and governors are fixed tightly to the top of the E 9.

#### Parts required :

2	of	A	1	1	of	E	11
10	"	B	1	2	"	F	5
1	"	E	1	4	"	F	9
2	"	E	3	2	"	F	13
2	"	E	4	27	"	N	1
4	"	E	6	2	"	P	29
1	"	E	7	3	"	S	55
2	"	E	8	2	"	U	2
1	"	E	9	2	"	W	10
1	"	E	10				



### Model No. 8. GOVERNOR.

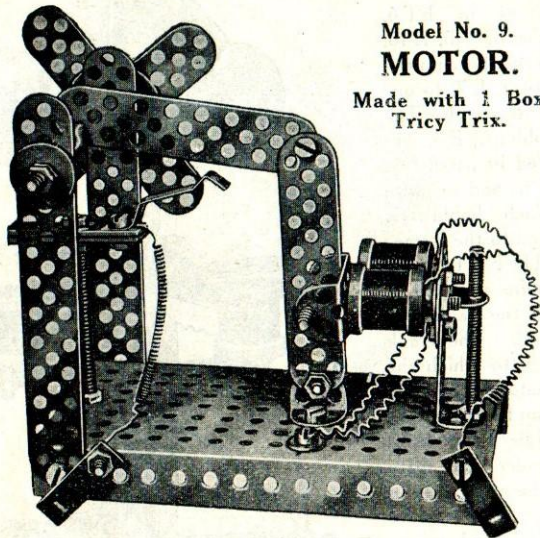
Made with 1 Box of Tricy Trix.

BUILD WITH TRIX—DRIVE WITH TRICY TRIX.

## TRICY TRIX

Parts  
required:

1	of	A	1
10	"	B	1
1	"	E	1
2	"	E	3
2	"	E	4
4	"	E	6
1	"	E	7
2	"	E	8
1	"	E	9
1	"	E	10
4	"	E	13
26	"	F	1
2	"	N	29
2	"	P	55
2	"	S	2
3	"	U	10
1	"	W	16

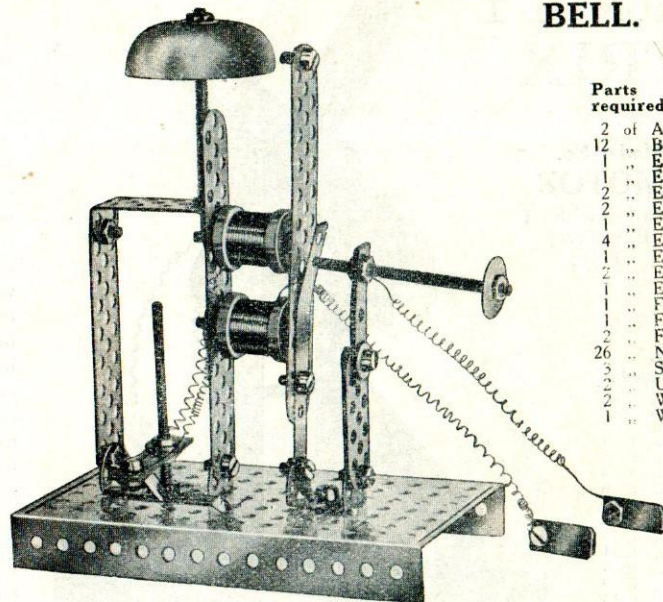
Model No. 9.  
**MOTOR.**Made with 1 Box  
Tricy Trix.

The coils are connected as ET 3. In this model the contact is made on the F 9 running in the bend of the crank axle. The other end of this strip is loosely jointed by a bolt and locknuts, and the vertical F 9 attached to this is also connected loosely at the base. The commutator brush is fixed to the insulator which is bolted by nuts and W 10's to the S 55 coming from the base. The crank axle moves quite freely bearing the crossed F 9's and P 29 between the two nuts at one end, and two W 16's and locknuts at the other.

The bobbins and cores are fitted by the latter to the framework consisting of a U 2, S 55 and P 29. One end of each coil is connected to the base framework and the other two are joined together to the terminal.

Model No. 10.  
**BELL.**Parts  
required:

2	of	A	1
12	"	B	1
1	"	E	2
1	"	E	3
2	"	E	4
2	"	E	5
1	"	E	6
4	"	E	7
1	"	E	8
2	"	E	9
1	"	E	10
1	"	E	13
1	"	F	1
2	"	F	29
26	"	N	55
2	"	P	2
2	"	S	10
1	"	U	16
1	"	W	16



Made with 1 Box of Tricy Trix.

Circuit as in ET 5. Coils connected as ET 3. By pressing the commutator brush, E 7, the circuit is completed and the cores attracting the F 13, cause the bolt at the top to strike the bell. But immediately the brass contact strip ceases to touch the S 55, the circuit is again broken and the striker returns to its original position.

The frequent making and breaking contact causes fast vibrations of the striking hammer.

PRIZES AWARDED FOR CLEVER AND ORIGINAL MODELS.

HAVE YOU JOINED THE TRIX CLUB?

# TRICY TRIX

## Model No. 11. MOTOR.

Made with 1 Box of  
Tricy Trix.

This model does not use the commutator E 11, but the contact is made and broken by means of an F 5, placed in the bend of the crank axle E 9.

The other end of the F 5 is connected loosely by locknuts to the F 9. The vertical F 5 supporting this long strip is loosely attached to it, two nuts on the screwed part holding the strips together and leaving the head free. The bobbin is elevated by W 10's on the soft iron core. One end of the coil goes to the terminal and the other is connected to the framework by two nuts on the core.

### Parts required :

1 of A 1	4 of E 6	2 of F 5	1 of S 55
12 of B 1	1 of E 7	4 of F 9	2 of U 2
1 of E 1	2 of E 8	2 of F 13	3 of W 10
1 of E 3	1 of E 9	23 of N 1	2 of W 16
1 of E 4	1 of E 10	2 of P 29	

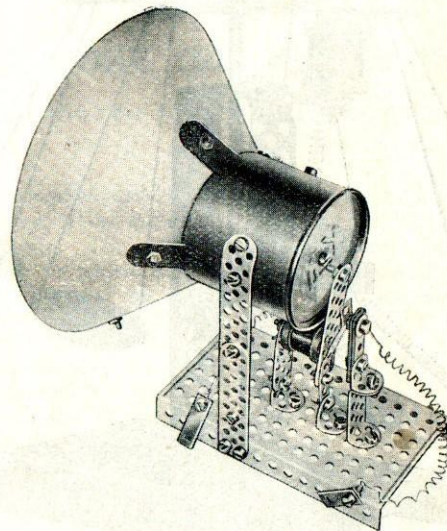
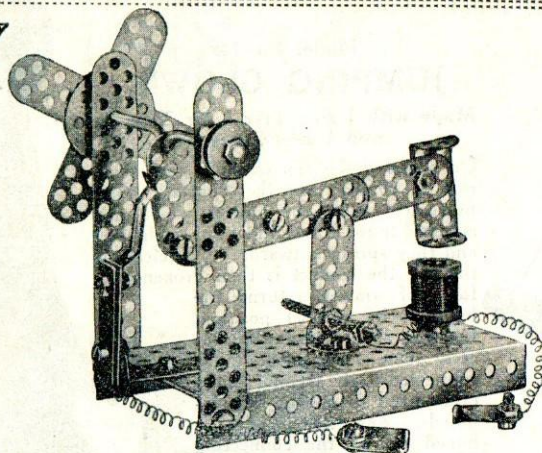
## Model No. 12. MOTOR. (Two Coils).

This Motor is very similar in construction to the single coil motor No. 11, especially in the commutator action, but having two coils, has double the power of the single coil model.

The coils are connected in parallel as in ET 3.

### Parts required :

1 of A 1	4 of E 6	2 of F 5	2 of S 55
12 of B 1	1 of E 7	4 of F 9	2 of U 2
1 of E 1	2 of E 8	2 of F 13	5 of W 10
2 of E 3	1 of E 9	26 of N 1	2 of W 16
2 of E 4	1 of E 10	2 of P 29	



## Model No. 12A.

## ELECTRIC MOTOR HORN.

Made with 1 Box  
Tricy Trix, and 1  
packet of nuts and  
bolts.

The working of this  
model is the same  
as in the bell and  
buzzer described in  
ET 5.

For the sound box of the horn use an empty cocoa tin or condensed milk tin. Pierce the bottom of the tin and insert a TRIX bolt, to take the vibrations of the striking hammer. A cardboard cone is then fixed to the open end of the tin by means of bolts and nuts as illustrated. The trembler and hammer should be carefully adjusted to strike the bolt at the end of the sound box. Circuit as in ET 5.

### Parts required :

3 of A 1	1 of E 5	3 of F 9
31 of B 1	4 of E 6	2 of F 13
1 of E 1	2 of E 8	32 of N 1
1 of E 3	1 of E 10	1 of U 2
1 of E 4	1 of F 5	2 of W 10

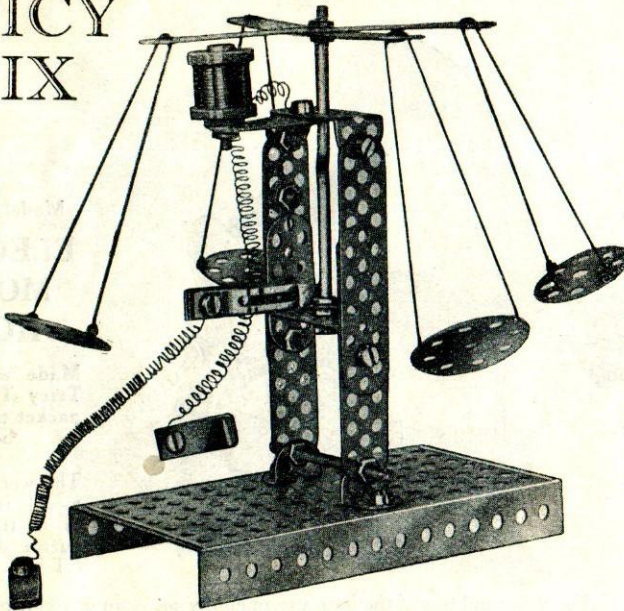
SEE TRIX PRICES ON BACK COVER.

ALL TRIX PARTS ARE STANDARDISED.

# TRICY TRIX

## Parts required:

2	of	A	1
12	"	B	1
1	"	E	1
1	"	E	3
4	"	E	4
1	"	E	6
2	"	E	7
1	"	E	8
1	"	E	9
1	"	E	11
1	"	E	13
1	"	E	15
4	"	F	9
2	"	F	13
23	"	F	15
4	"	N	1
1	"	P	29
2	"	S	55
1	"	U	2
1	"	W	10



Model No. 13. **ROUNDABOUT.**

Made with 1 Box Trix 1 (or Trix 2) and 1 Box Tricy Trix.

Circuit as in ET 6. The framework consists of two sets of flat strips overlapped to 12 holes and held together by two U 2's (which bear the crank axle E 9), one in the top hole and the other in the fifth hole up. The commutator is secured on the crank axle, above the lower U 2, between nuts, and the commutator brush is fixed on a bolt in the insulating strip. Locknuts should be placed at the end of the crank axle, thus allowing the shaft to move freely.

Model No. 14.

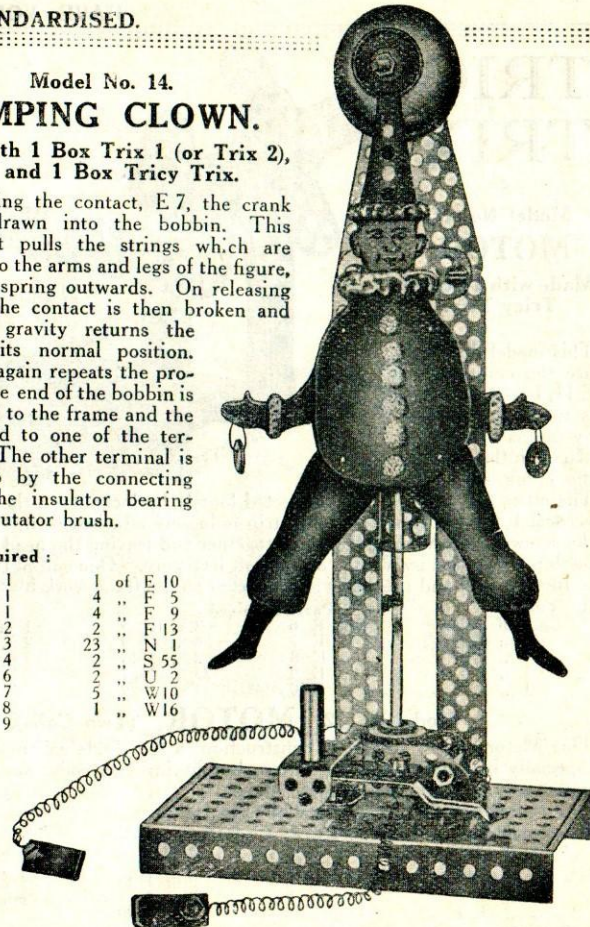
## JUMPING CLOWN.

Made with 1 Box Trix 1 (or Trix 2), and 1 Box Tricy Trix.

On pressing the contact, E 7, the crank axle is drawn into the bobbin. This movement pulls the strings which are attached to the arms and legs of the figure, and they spring outwards. On releasing the E 7 the contact is then broken and force of gravity returns the figure to its normal position. Pressing again repeats the process. One end of the bobbin is connected to the frame and the other fixed to one of the terminals. The other terminal is joined up by the connecting coil to the insulator bearing the commutator brush.

## Parts required:

2	of	A	1	1	of	E	10
10	"	B	1	4	"	F	5
1	"	E	1	4	"	F	9
1	"	E	2	2	"	F	13
1	"	E	3	23	"	N	1
1	"	E	4	2	"	S	55
4	"	E	6	2	"	U	2
1	"	E	7	5	"	W	10
2	"	E	8	1	"	W	16
1	"	E	9				

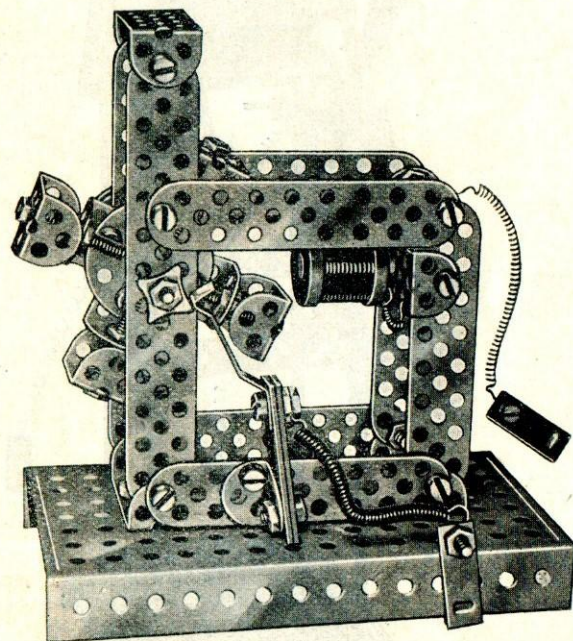


# TRICY TRIX

Model No. 15.

## ONE TRIX POWER MOTOR.

Made with 1 Set Trix 1, 2 Sets Trix 1a (or 2 Sets Trix 2) and 1 Set Tricy Trix.



This more advanced type of motor gives a great deal of power for its size. Though it uses the same circuit, ET 6, it differs slightly in general construction. The cleverly designed armature is worthy of note. Being heavy in construction, the flywheel consequently stores great energy. The power of this model can be further increased by the addition of another coil.

The revolving armature is made up of a P 29 and four A 1's, through which four S 25's with U 1's at their ends, are connected. These should be adjusted to pass very closely to the end of the soft iron core, E 4. This gives splendid power to the motor. A driving pulley made up of two P 29's and three W 16's is fixed on the long spindle, on the end opposite the commutator. To obtain Two TRIX power on this motor another bobbin is fixed to the U 2 at the top of the model. These bobbins can be connected "in series" ET 2, or "in parallel" ET 3.

### Parts required :

5 of A 1	4 of E 6	6 of F 9	1 of S 55
23 " B 1	1 " E 7	2 " F 13	4 " U 1
1 " E 1	2 " E 8	45 " N 1	4 " U 2
1 " E 3	1 " E 10	3 " P 29	1 " W 10
1 " E 4	1 " E 11	4 " S 25	4 " W 16

## TRIX AND TRICY TRIX—THE MODEL TWINS.

## TRICY TRIX

Model No. 16.  
WINDMILL.

Made with 2 Sets Trix 2 and 2 of Tricy Trix.

The body framework consists of eight F 17's in pairs, each 29 middle holes high, and connected at the front and back by F 13's and at the sides by F 9's. The gable is formed of four F 13's, bolted to the F 17's.

The upper bobbin, E 3, is fixed by the soft iron core, E 4, to a vertical U 2, which is held at the top by an F 9 and a U 1 above, which forms the ridge of the roof.

The lower bobbin, E 3, is supported by a cross strut of two F 5's and an F 9 fixed at one end by an S 25 and at the other by an S 55. A U 2, fixed at one end to this S 55, and at the other in the fourth middle hole down of the vertical framework, bears two E 8's and the commutator brush, E 7.

The sail shaft is the crank axle, E 9, running through the centre of the front, F 13, and a U 1 bolted to the F 13 at the back.

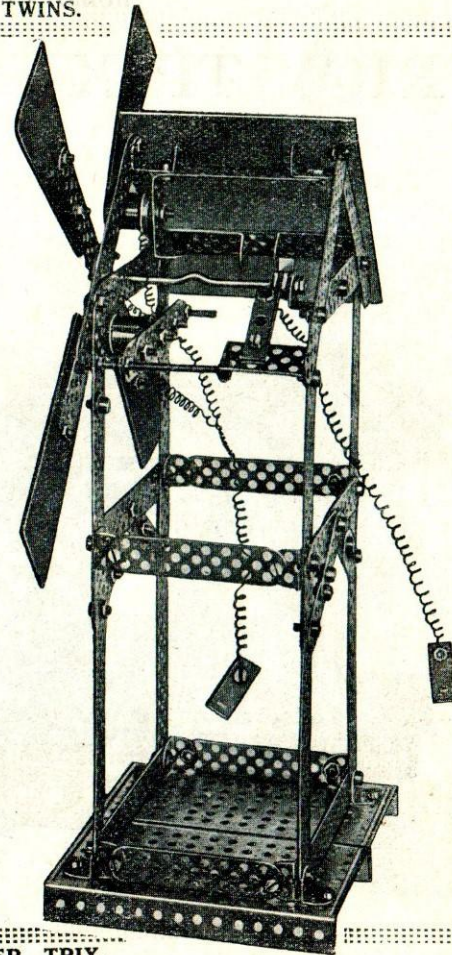
The bobbins are connected "in parallel," ET 3, and the circuit is as ET 6.

The cardboard roof, 9" x 3½", is bolted on each side to an F 9 supported by two U 2's. Cardboard sails, four inches in length, are attached to four F 9's in the fourth and end holes.

Our illustration has one-half of the cardboard roof cut away in order to show the inside construction.

## Parts required :

12 of A 1	1 of E 7	16 of F 9	1 of S 55
67 " B 1	2 " E 8	8 " F 13	3 " U 1
2 " E 1	1 " E 9	8 " F 17	5 " U 2
2 " E 3	1 " E 10	84 " N 1	1 " W 10
2 " E 4	1 " E 11	1 " P 29	
4 " E 6	10 " F 5	1 " S 25	



TRIX, TRICY TRIX, MOTO TRIX, SUPER TRIX.

# TRICY TRIX

## Model No. 17. COLOUR WHEEL.

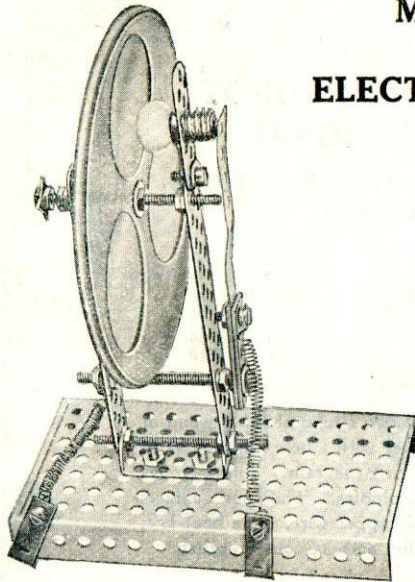
Made with  
1 Box Tricy Trix.

### Parts required :

6	of	B	1
1	"	E	1
1	"	E	5
4	"	E	6
2	"	E	8
1	"	E	10
1	"	E	11
1	"	E	12
1	"	E	13
2	"	F	13
27	"	N	1
3	"	S	55
1	"	U	2
5	"	W	10

Circuit as in ET 7. A brass strip, E 5, bolted to the fibre insulator, E 8, makes contact with the centre of the lamp, E 13.

The Colour Wheel is a circle of 3-ply wood or thick cardboard  $4\frac{1}{4}$ -ins. diameter, with a small hole in the centre for an S 55. Three circles  $1\frac{1}{2}$ " diameter are cut in the disc, one inch from the centre. Stick red, blue and yellow tissue paper or gelatine over the three holes, so that on turning the wheel the lamp shines through each colour in turn. Now turn the wheel at a high speed and the colours will gradually dissolve into white light. An interesting colour mixing experiment.

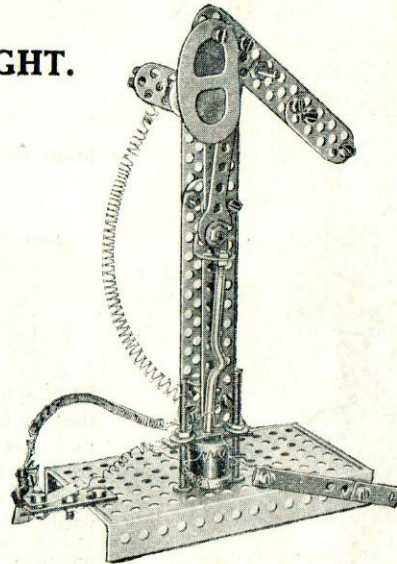


## MODELS WITH ELECTRIC LIGHT.

## Model No. 18. RAILWAY SIGNAL.

TO LIGHT UP.

Made with 1 Box  
Tricy Trix, and 1  
packet of nuts and  
bolts.



### Parts required :

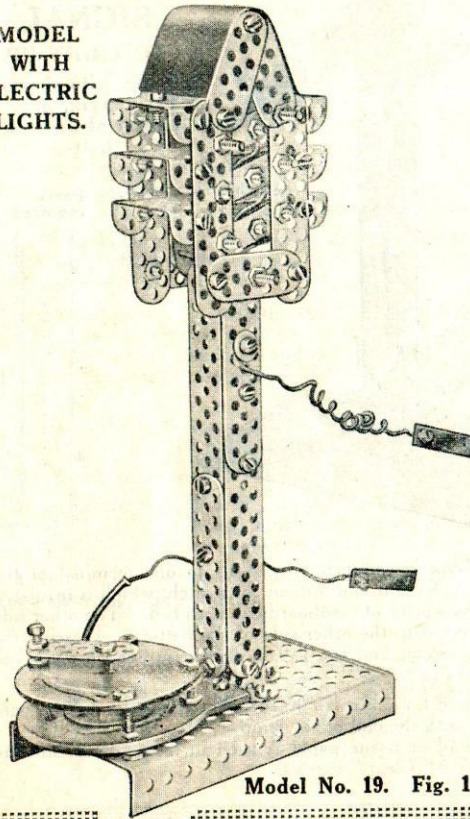
1	of	A	1
26	"	B	1
1	"	E	1
1	"	E	3
4	"	E	5
1	"	E	6
2	"	E	7
1	"	E	8
1	"	E	9
2	"	E	10
2	"	E	12
1	"	E	13
3	"	F	9
2	"	F	13
46	"	N	1
3	"	S	55
2	"	U	2
4	"	W	10
1	"	Spanner.	

One wire of the bobbin is connected by E 6's to one terminal of the battery and the other is fixed to one side of the switch, which is insulated from the framework by a piece of cardboard cut as an E 8. The other side of the switch is connected to the other side of the battery. Pressing the switch completes the circuit and the E 9 is drawn into the bobbin and operates the signal.

The lamp circuit is as ET 7. An E 7 fixed to the insulator, E 8, is bent over to make contact with the end of the lamp, E 13. Red and green celluloid or tissue paper is used in front of the lamp to show "Danger" or "All Clear" signals.

# TRICY TRIX

MODEL  
WITH  
ELECTRIC  
LIGHTS.



**Model No. 19. Fig. 1.**

**Model No. 19.**

## HAND POWER ROBOT TRAFFIC SIGNAL.

**Made with 1 Box Tricy Trix, 2 Boxes Trix No. 1  
and 2 extra lamps.**

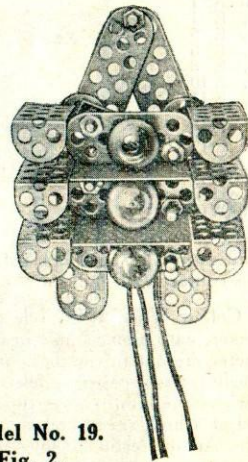
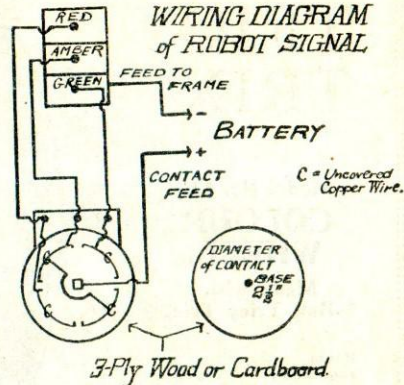
**Parts required :**

3	of	A	1	1	of	E	10	4	of	F	13
28	"	B	1	3	"	E	12	65	"	N	1
1	"	E	1	3	"	E	13	"	"	P	29
4	"	E	6	7	"	F	5	10	"	S	55
1	"	E	7	9	"	F	9	1	"	W	10
2	"	E	8								

The Control is made up of two circles of 3-ply wood or thick cardboard  $2\frac{1}{2}$ " diameter with a hole for an S 55 in the centre as shown in wiring diagram. These circles are fixed to the base by spindles. The four contacts are made of four pieces of copper wire, and a bent E 7, fixed on the centre spindle, acts as contact brush.

The lamps, which are coloured red, amber and green with lacquer, and lampholders E12 are fixed to the head by spindles. Two small pieces of cardboard,  $1\frac{1}{4}" \times 1\frac{1}{8}"$  are pushed between the lampholders as shown in Fig. 2, thus confining each colour to its proper place. Three bolts in the insulators (two E 8's and a piece of cardboard cut as an E 8) make contact with the ends of the lamps. Bell wire is used for wiring, which is shown in diagram.

### WIRING DIAGRAM of ROBOT SIGNAL



Model No. 19.  
Fig. 2.

DON'T MISS PAGE 20—MAGNETIC CRANE LIFTING TRIX PERMAG MOTOR.

# TRICY TRIX

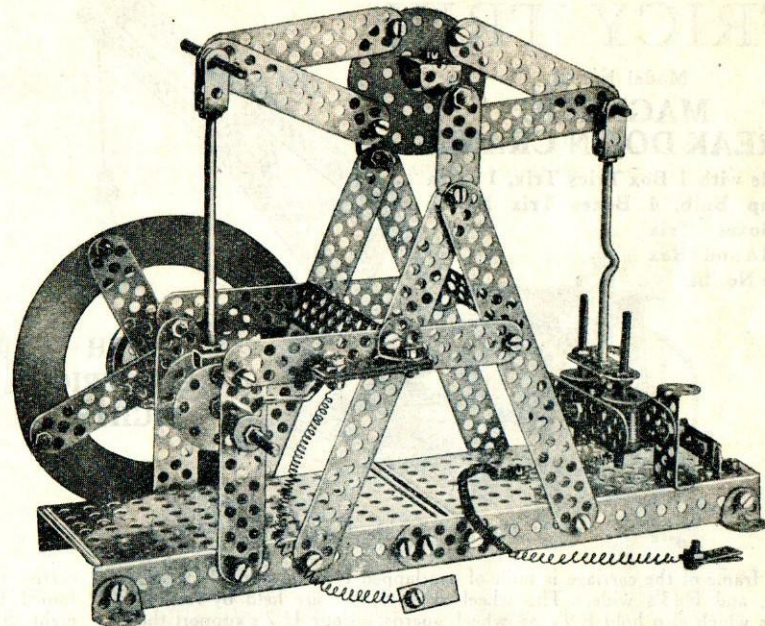
Model No. 20.

## BEAM ENGINE.

Made with 2 Boxes Tricy Trix, 1 Box Trix No. 1a and  
1 Box Trix No. 2a.

### Parts required :

6	of	A	1	1	of	ER	1	8	of	S	55
44	"	B	1	4	"	F	5	1	"	S	87
2	"	E	1	8	"	F	9	1	"	SU	1
2	"	E	3	4	"	F	13	2	"	SU	2
4	"	E	6	4	"	F	17	2	"	U	1
1	"	E	7	87	"	N	1	2	"	U	2
3	"	E	8	2	"	P	29	2	"	U	3
1	"	E	9	2	"	P	49	2	"	V	35
2	"	E	10	1	"	S	25	2	"	W	10



We see here a tower-shaped framework on which the Balance Beam is supported. From one end of it two spindles, S 55's, are suspended and these dip into the two magnetic spools, which represent the steam cylinders. The other end of the Balance Beam is connected to the crank shaft by a connecting rod. The crank shaft consists of two S 55's. The two P 29's are coupled by an S 25. At the front end of the shaft we fasten an ER 1, acting as a commutator. This is adjusted to complete the circuit

when the pistons are at the top of their stroke and break it when they are deepest in the spools. The back end of the shaft bears the fly-wheel consisting of two crossed F 13's and a pulley wheel of two V 35's. The model runs well with the current supplied by two pocket batteries connected in series as in ET 4 and is a very fine model—very smooth and noiseless in action. Circuit as in ET 3.

TRIX AND TRICY TRIX—A PERFECT COMBINATION.

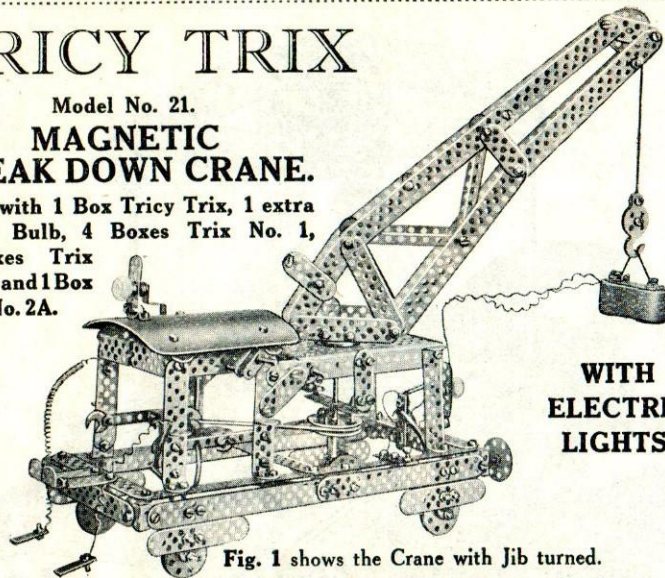
HAVE YOU SEEN TRIX BOOKS Nos. 1 and 2—FULL OF MODELS?

# TRICY TRIX

Model No. 21.

## MAGNETIC BREAK DOWN CRANE.

Made with 1 Box Tricy Trix, 1 extra Lamp Bulb, 4 Boxes Trix No. 1, 4 Boxes Trix No. 1A and 1 Box Trix No. 2A.



WITH  
ELECTRIC  
LIGHTS.

Fig. 1 shows the Crane with Jib turned.

The frame of the carriage is built of overlapped F 17's, 32 middle holes long, and F 13's wide. The wheel axles, S 55's, are held by vertical F 5's which also hold F 9's as wheel guards. Four U 2's support the cab framework of F 9's and U 2's. The upper shaft runs in the horizontal F 9's and consists of two S 55's coupled together with an SU 1. A pulley of P 29's and W 16's and a crank handle of an SU 2 and S 25 are fixed to the shaft. At this point a rubber driving band is inserted. The lower shaft runs in two U 1's, fastened to the cab framework by two spanners. Two pulleys, one of P 29's and W 16's, and the other of W 16's and W 10's, are fixed on the shaft and, as before, rubber driving bands are inserted. (See Fig 2).

An E 1 is supported by a U 3 in the front and F 5's at the back. It

### Parts required :

19 of A 1	1 of E 7	16 of F 17	2 of U 1
120 " B 1	2 " E 8	191 " N 1	9 " U 2
2 " C 1	1 " E 9	18 " P 29	2 " U 3
1 " E 1	1 " E 10	8 " S 25	4 " V 35
2 " E 3	1 " E R 1	14 " S 55	9 " W 10
2 " E 4	15 " F 5	1 " S 87	2 " W 16
2 " E 5	17 " F 9	2 " SU 1	7 Spanners
4 " E 6	7 " F 13	2 " SU 2	

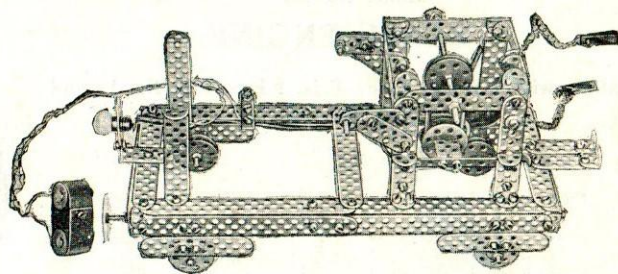


Fig. 2 shows the frame of the carriage and cab framework with shafts and pulley wheels.

carries the crane jib, which consists of two flat sides (each made of four F 17's, three F 9's, two F 5's and two spanners) joined up by eight S 55's and one S 25. The shaft, with jib pulley at the top consisting of one S 25, P 29's and W 16's, runs in the middle holes of the F 5's. The winch consists of an E 9, F 5 and S 25. The crane hook is made of two C 1's and is wound up and down by string which passes over the jib pulley. (See Fig. 3).

The jib is held in position by a P 29 above and two V 35's below the S 55's of the jib and an S 87 is secured in the middle hole of these. Below the E 1 is a second bearing for the S 87, and an SU 1 and a pulley of two V 35's and E R 1 are fixed immediately below the bearing. The rubber driving band is put over the pulley, and so

# TRICY TRIX

## MAGNETIC BREAK DOWN CRANE (continued).

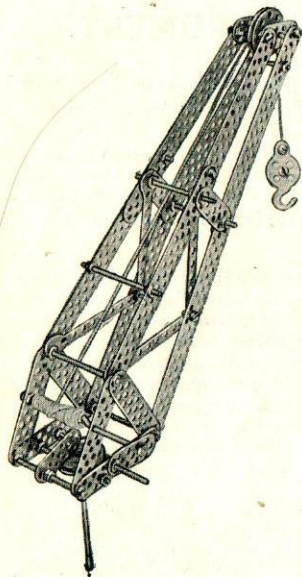


Fig. 3. The Jib.

The magnet consists of two bobbins connected in series by an F 5. One wire from these bobbins is connected to the insulating strip, E 8, in front of the crane, already mentioned, and the other wire goes to the end hole of an E 8 at the side of the crane. The E 8 swivels on the middle hole

the jib is swivelled by turning the crank handle at the side of the cab. An SU 2 is bolted to the E 1 and an F 5 held between locknuts on the S 55 prevent the jib from rotating when not in use.

The lamp and lampholder are fixed to a U 2 in the front of the crane and a fibre insulating strip, E 8, and commutator brush, E 7, with wire connected, are fixed to the other foot of the U 2. The commutator brush is bent over to make contact with the end of the lamp. The second lamp and lampholder are fixed to the cardboard roof and F 13. The brass contact strip is bolted to the cardboard with wire connection, and is bent to make contact with the centre of the lamp. Wires from the E 7 and E 5 are connected to one terminal of the battery.

For this model the batteries must be connected in parallel (see ET 3) to provide enough current to supply two lamps and two bobbins.

and acts as switch for the magnet. A wire is connected from the framework to the second terminal of the battery. The battery case is built at the back of the cab consisting of F 5's and A 1's.

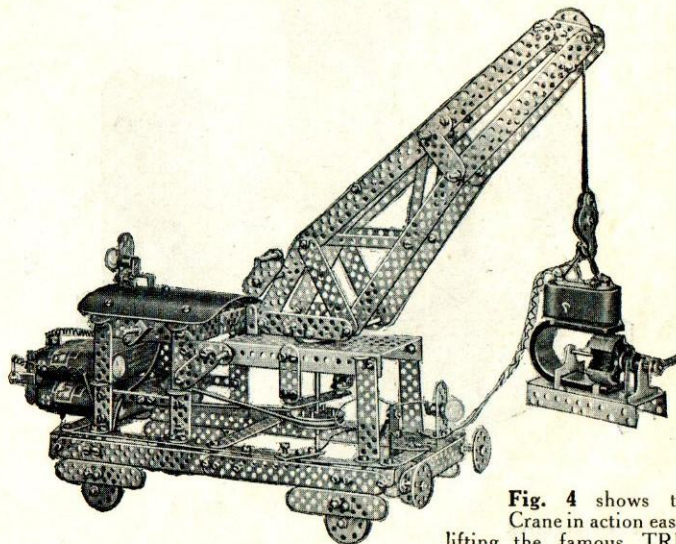


Fig. 4 shows the Crane in action easily lifting the famous TRIX Permagnet Motor. Note the batteries are connected in parallel.

# TRICY TRIX

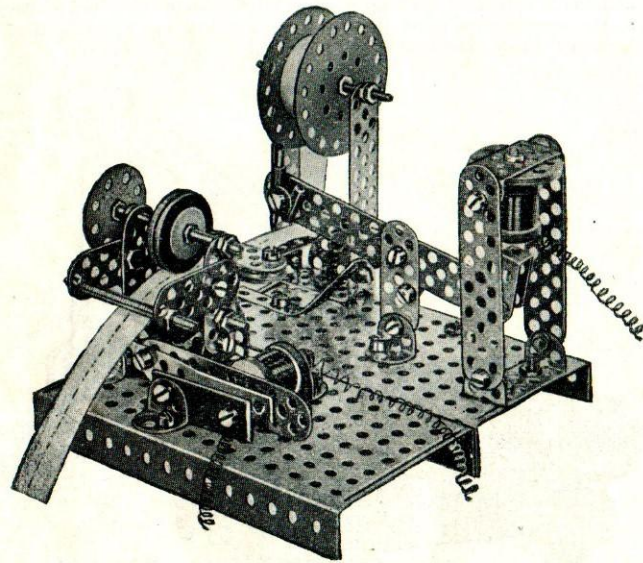


Fig. 1.

## Parts required

4 of A 1	2 of E 5	5 of F 9	5 of S 55
40 " B 1	2 " E 7	1 " F 13	1 " SU 2
2 " E 1	2 " E 8	77 " N 1	4 " U 2
2 " E 3	2 " E 10	6 " P 29	1 " U 3
2 " E 4	8 " F 5	2 " P 49	6 " W 10
			4 " W 16

Model No. 22.

## MORSE TELEGRAPH INSTRUMENT.

Made with 2 Boxes Tricy Trix, 1 Box Trix No. 1 and 1 Box Trix No. 2a, and 1 Packet of Bolts and Nuts.

This apparatus works like the real Post Office Telegraph Service. The operator warns by a buzz that a telegram is to be sent, and the receiver unwinds the paper ribbon on which the message is written down in Morse Code to the long and short signals sent by the current.

The base is built of two E 1's bolted together on their long sides. The tapping key with the bobbin, the paper roll and pencil are fixed to the back E 1, while the front E 1 carries the apparatus for supporting the paper and the buzzer. The tapper consists of a movable horizontal F 13 with an SU 2 on one end and a piece of soft lead on the other. A piece of paper is stuck on this SU 2. A brass strip, E 5, is fixed below the horizontal F 13 and serves the purpose of lifting the pencil quickly. The paper rollers are made of two P 49's which are fixed on an S 55 by nuts the width of the paper ribbon apart.

The unrolled paper is led underneath an S 55 placed transversely. A U 3 is fixed so that it lies horizontally at right angles to the S 55 with just enough space to allow the paper to pass between. The U 3 is supported by two P 29's fastened vertically to the base. Two nuts are placed on the spindle to allow the width of the paper. At the front of the U 3 another guide is fixed, consisting of three F 5's, one lying across the paper ribbon above, the second below and the third underneath the U 3. Two W 10's, placed on each of the two bolts, holding the F 5's together, make a space between the two top F 5's for the paper. The paper ribbon now goes between the two

# TRICY TRIX

## MORSE TELEGRAPH INSTRUMENT (continued).

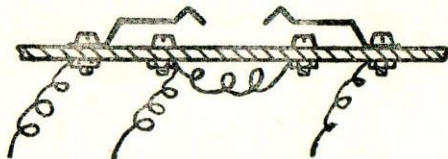


Fig. 2.

rubber rollers, consisting of india rubber washers. The shafts of these, S 5's, run in vertical F 5's, which are bolted to the feet of a U 2 fixed to the base. The horizontal F 5's and S 5's, fastened to the vertical bearings, can be left out if desired.

The buzzer described works on the principle of the Bell and Buzzer, shown in ET 5, and its component parts, brass strip, insulating strip with contact bolt and bobbin, are fastened on to the base plate by A 1's.

The bobbin wires are connected in the following way:—

Close to the apparatus two contact brushes, E 7's, are mounted on a small wood board or box lid, Fig. 2. Each contact key is connected up to one end of the two bobbins. The other two ends of the bobbins are secured under a bolt, thus making contact with the framework. A wire leads from the contact bolt of the buzzer, Fig. 1, to one terminal of the battery.

Very thin wire should **not** be used. Bell wire, which can be obtained very cheaply from an electrical shop, is the best kind to use. From the other terminal of the battery a connection is made to the bolts, B 1's of Fig. 2, which lie underneath the contact keys. This means the wire is wound, after it has been carefully scraped, first around one bolt and then around the other.

To telegraph, first press the buzzer key, and begin, after a slight pause, to give morse code signals by tapping the other key.

**It is very attractive and instructive to use two stations so that each can alternately send and receive.**

In this case the wiring remains the same for each apparatus, but in order to save a second battery the middle lead, Fig. 2, must be connected only once from the battery to the buzzer contact bolt. The buzzer contact bolt of the first is connected with the middle lead, Fig. 2, of the second apparatus and also the middle lead of the first with the buzzer contact bolt of the second apparatus.

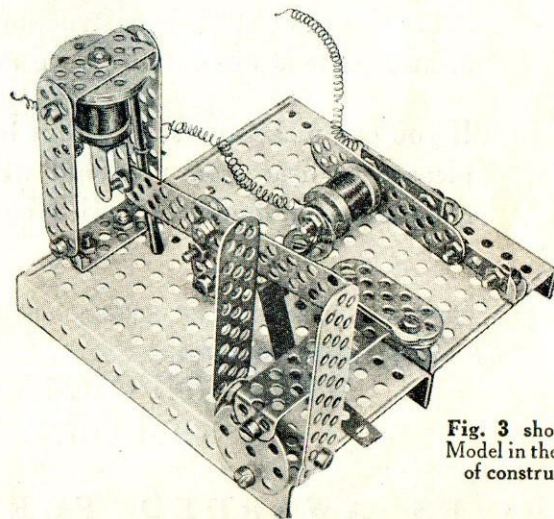


Fig. 3 shows the Model in the course of construction.

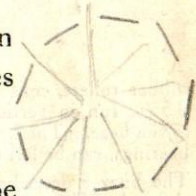
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(Electric Trix)

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