

THE FAMOUS No. 4
WITH POWERFUL ELECTRIC
MOTOR AND GEAR BOX

# MANUAL OF INSTRUCTIONS

THE NEW

## ERECTOR

THE ONLY CONSTRUCTION TOY WITH THE SQUARE GIRDER

THE A. C. GILBERT CO.,

New Haven, Conn., U. S. A.

IN ENGLAND
The A. C. Gilbert Company,
109 Kingsway, London, W. C. 2

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### Hello Boys!

I want to explain to you all about the Erector Family, the World's Standard in Construction Toys.

The Old Plan:-

The old type of Accessory Set merely converted one size construction toy set into the next higher-priced set. It mainly provided more parts of the same kind you already had.

The New Plan:-

Now when you obtain an Accessory Set, it will match with any standard Erector Set and in addition, the new Erector Family of Accessory Sets are complete units in themselves.

The Regular Erector Sets consist of:	
No. 1 Dandy Beginner's Set	
No. 3 The Set with the Long Girders	•••••
No. 4 The Famous No. 4 with Powerful Electric Motor and Gear Box	
No. 6 The Set with the Boiler	
No. 7 The Set that builds the Steam Shovel.	
No./½ Motorized Erector. The Set with the Chassis	
No. 8 Trail Blazing No. 8. The Set that Builds the Zeppelin	
No. 9 Mechanical Wonder Set, with 110 volt Motor.	*******
No. 10 Deluxe Set, Builds all Erector Feature Models.	
No. 12 Master Engineer's Set, Amazing — Gigantic — Complete	*******
The New Erector Family of Accessory Sets consists of:—	
No. 3005 Erector Electrical Set. The Set that Electrifies and Illuminates	
No. B Big Girder Set. The Set That Builds the Ferris Wheel	
No. C Erector Airplane Set	

These New Accessory Sets are for the purpose of featuring and specializing in certain types of Trumodel building, Construction Equipment, Electrification and Illumination, etc.

THERE IS WORLDS OF FUN IN ANY ERECTOR SET

Your Friend,



### Manual of Instructions

Section 1

MANY MODELS

ERECTOR SETS
BUILD THE
MOST MODELS



OTHER MANUALS FOR LARGER

MANUALS
FREE WITH
ALL SETS

SETS

BUILDS THE MOST MODELS
HAS THE MOST PARTS
THE ONLY CONSTRUCTION TOY WITH THE SQUARE GIRDER

The A. C. Gilbert Company, New Haven, Conn., U. S. A.

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### THE WORLD'S GREATEST TOY FOR BOYS.



## Hello Boys!

You are to be Congratulated!

Just think! You now own an Erector set which is the best toy of its kind ever made for boys.

It has girders like structural steel, exactly like those used in sky-scrapers, offices, factories and public buildings in New York, Chicago, London, Paris, Berlin and other great cities of the world. Then again, you can build derricks, machine

Paris, Berlin and other great cities of the world. Then again, you can build derricks, machine shops, battleships, aeroplanes, steam shovels, ferris wheels, engines, and thousands of other things for which only the special Erector parts are designed. These can be operated with the electric motor which is included with most of the sets.

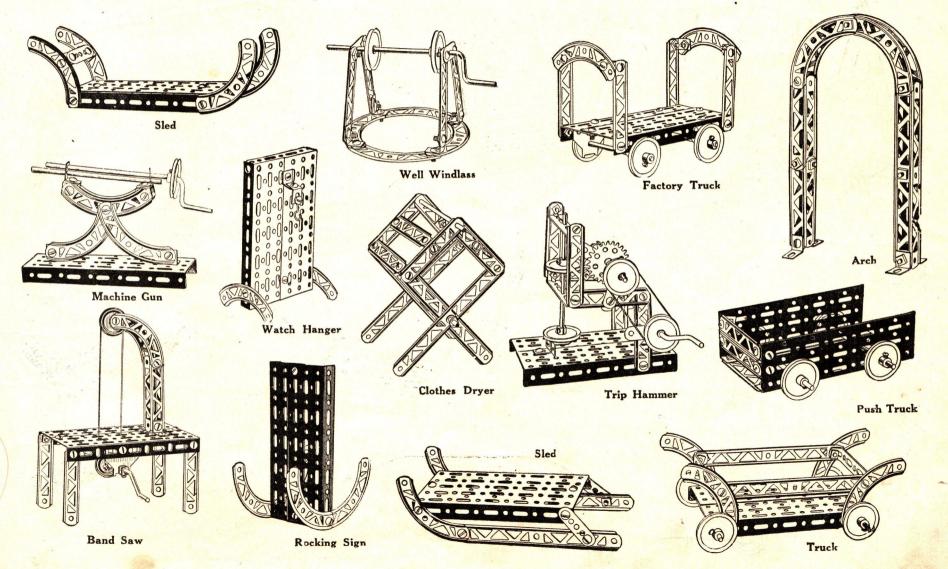
You will notice that the models in this manual cover a very wide range of subjects. Most of them were originated and designed by boys. For this reason I have not given a description under most of the models, because if other boys are able to invent models, I am quite sure that you will not have any difficulty in constructing them when you have the actual reproduction before you. It is much more interesting and also instructive to work out these models without being told every step in detail. This is what you will have to do when you become a real engineer.

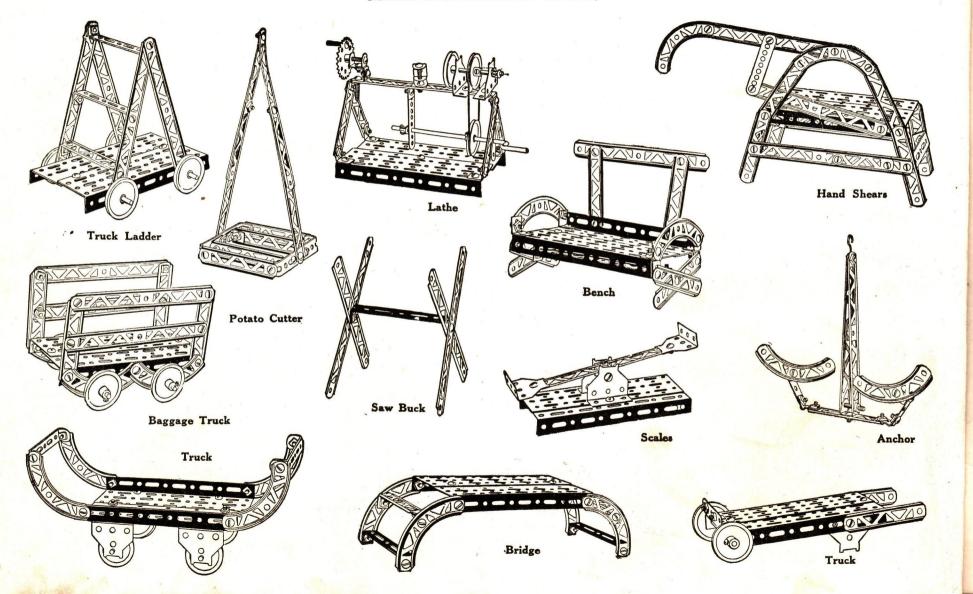
I know you are going to have lots of fun with Erector.

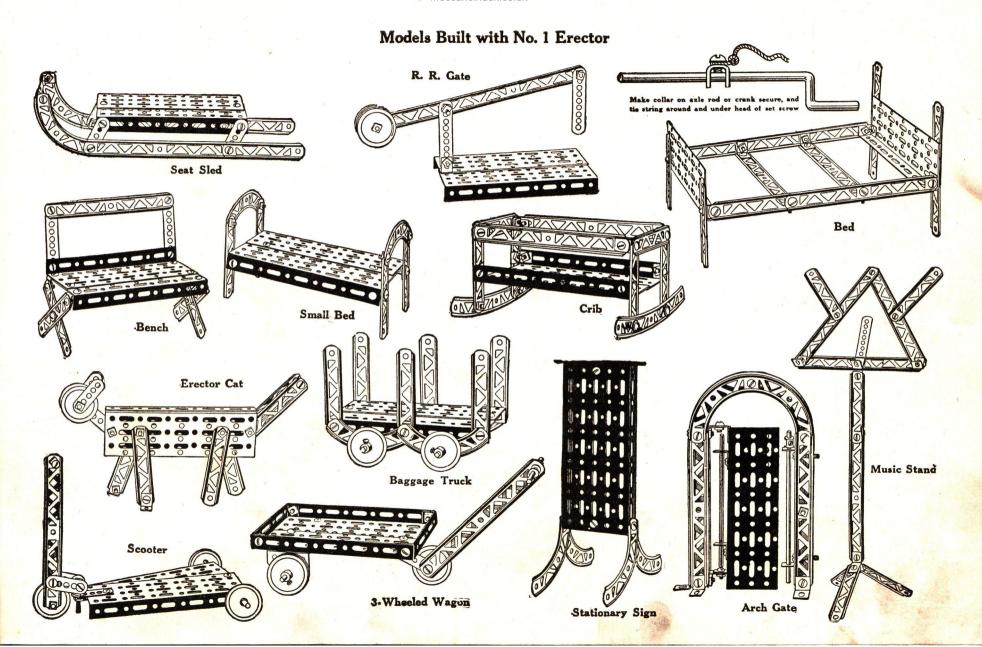
Your Friend,

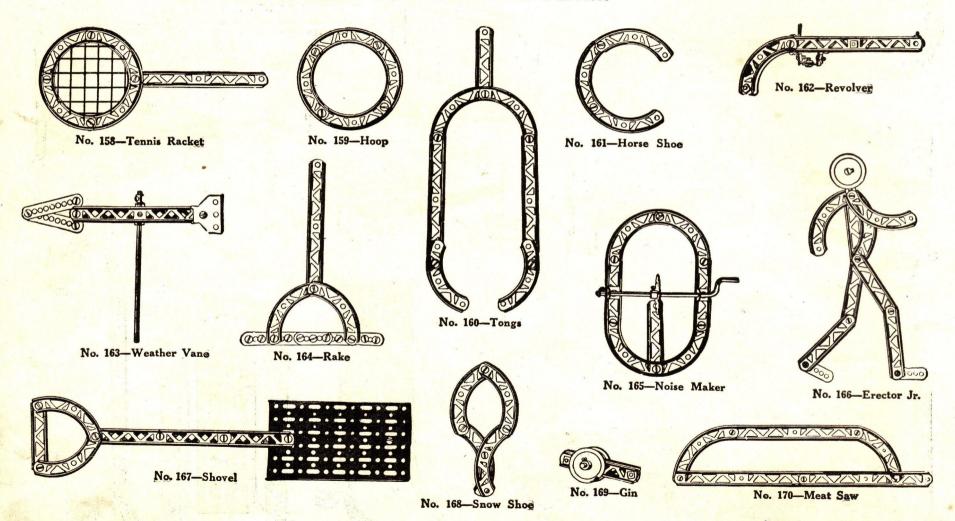
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The number of models that can be built with Erector is unlimited. While we show a great many in this book, they are only indications of the large number of different varieties and the adaptability of Erector, The World's Greatest Toy.

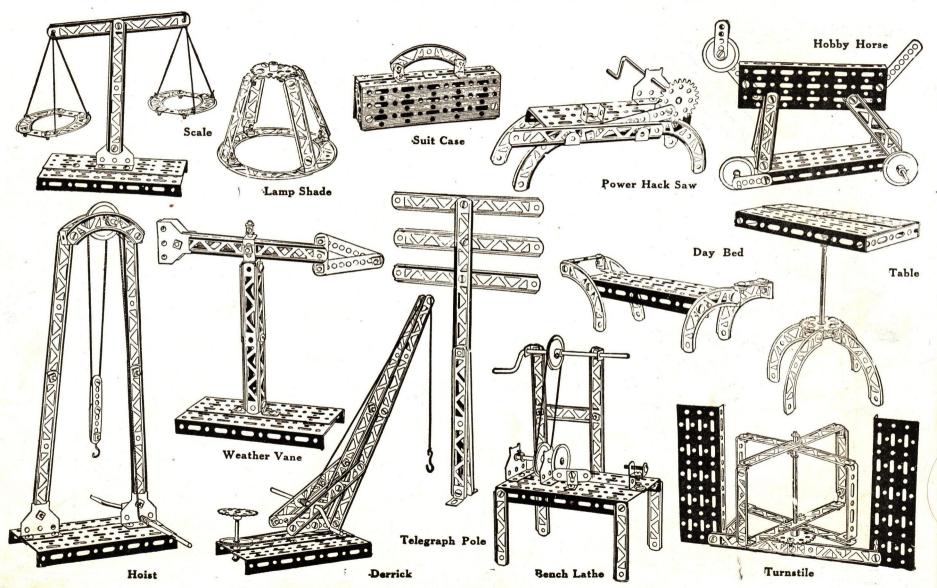








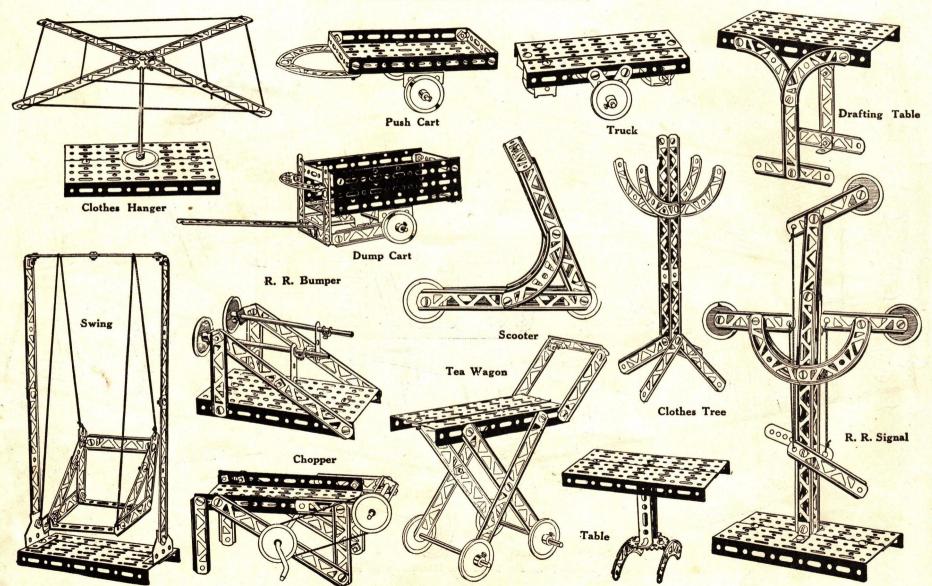
### Models Built with No. 1 Erector Well Arch Chute Table -Rack Punching Bag Stand Crane E. Rack Trip Hammer Mail Bag Hanger Engine Wind Mill Crane



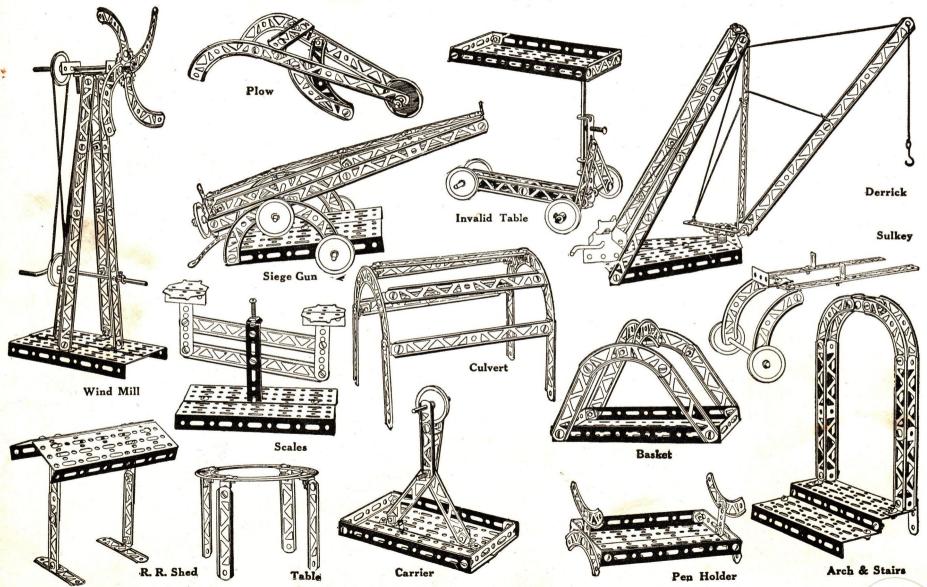
#### Models Built With No. 1 Erector (B0000) (00000) (00000) 100000 J (00000) (D0000) (DO:000) 00000 (000)0000 @00€ (8000 000 Ø000 (00000) (00000) 00000 00000

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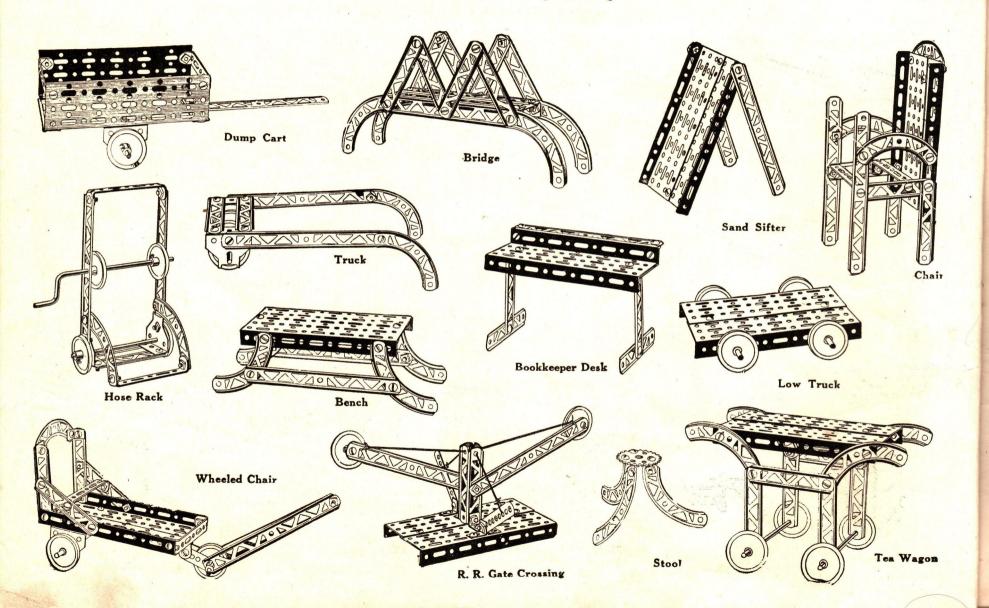


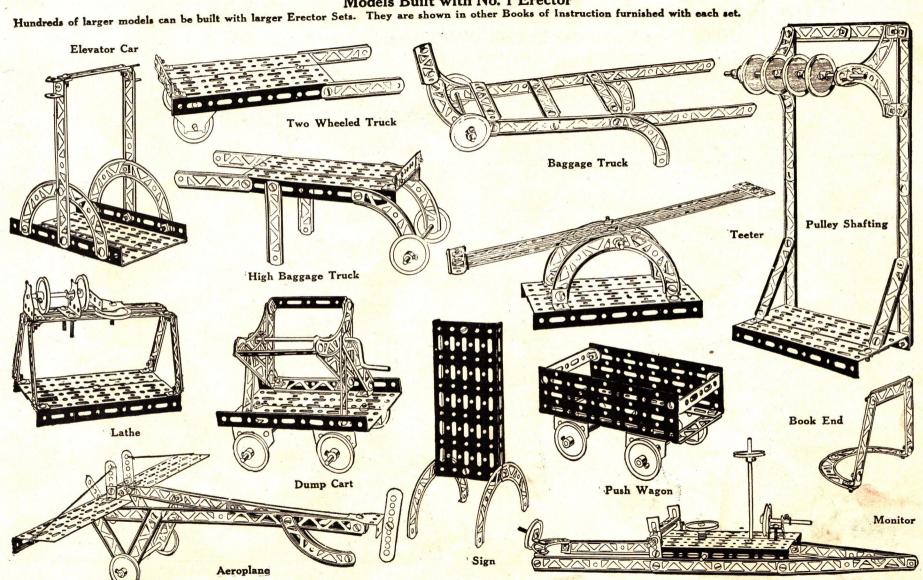
### Models Built with No. 1 Erector Merry Go Round Hammock House Hand Car Hoist Derrick Stool BACH VIEW AT POINT A SHOWING STRING B OVER SCREWC Jig Saw Hay Rake Derrick Truck Coal Shute Well Driller





Models from No. 209 to No. 252 shown on this page

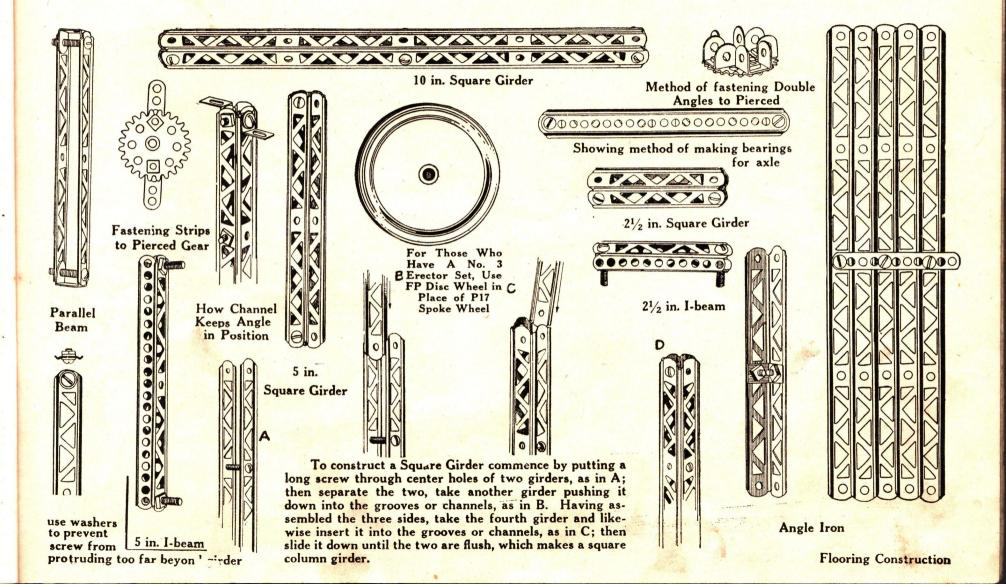


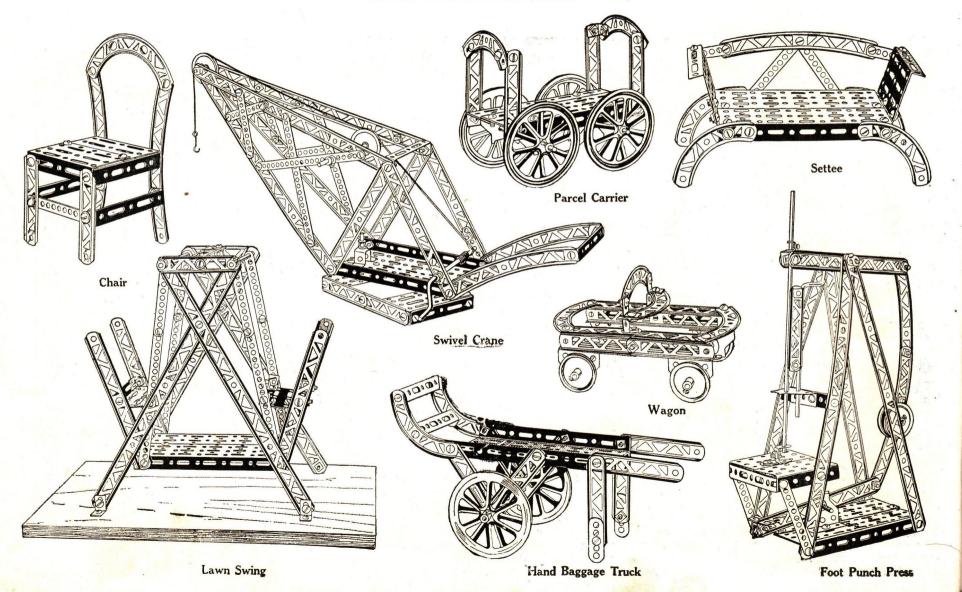


### The New Erector Builds These Wonderful Models

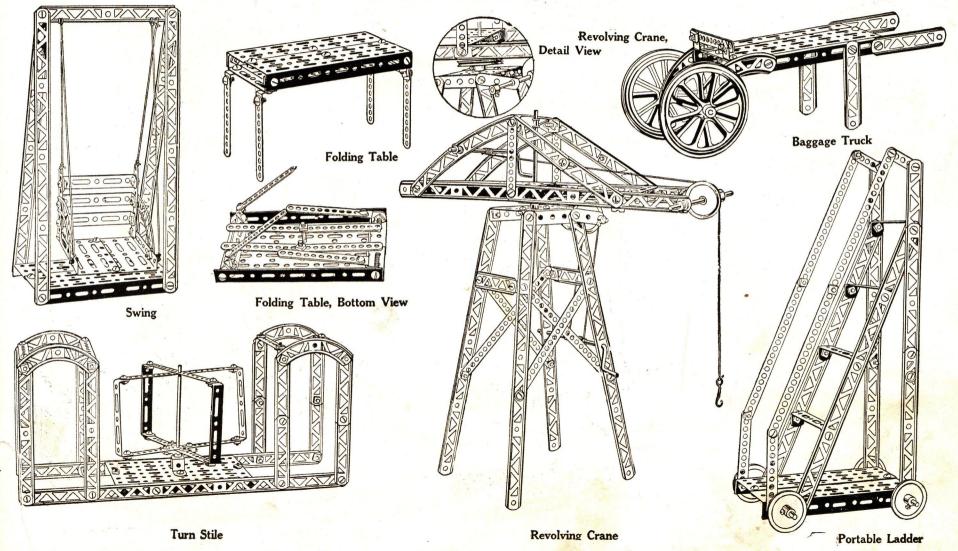
All Of These Models Can Be Built With The Larger New Erector Sets

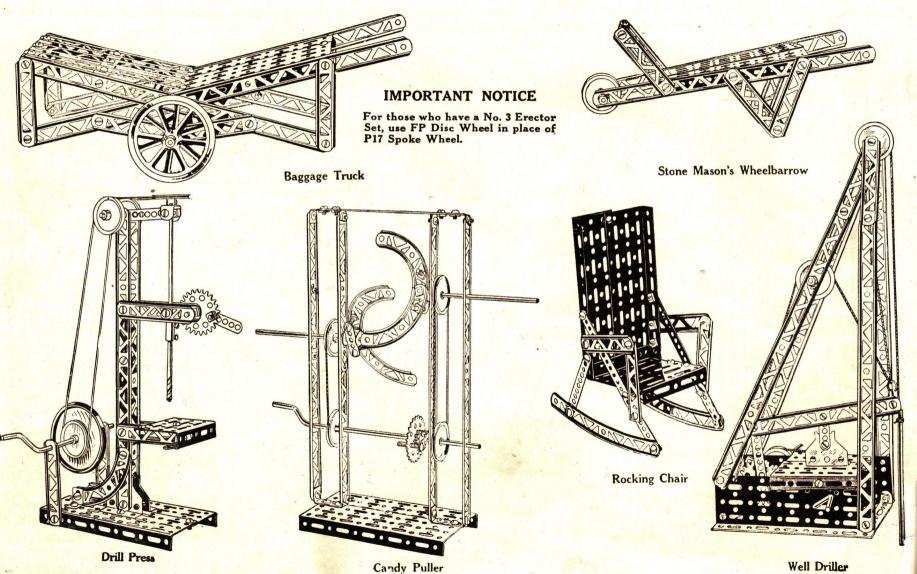
#### STANDARD DETAILS OF ERECTOR CONSTRUCTION

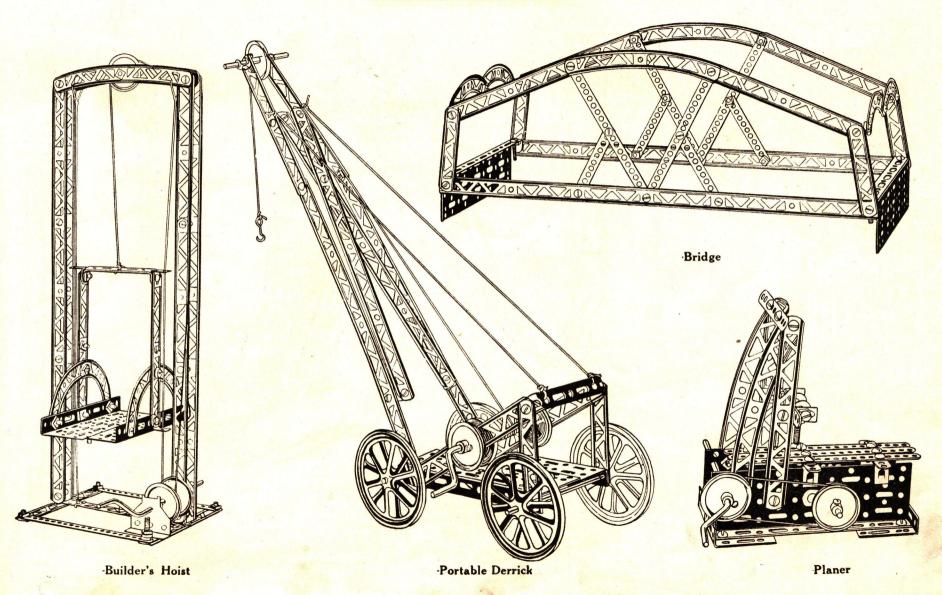


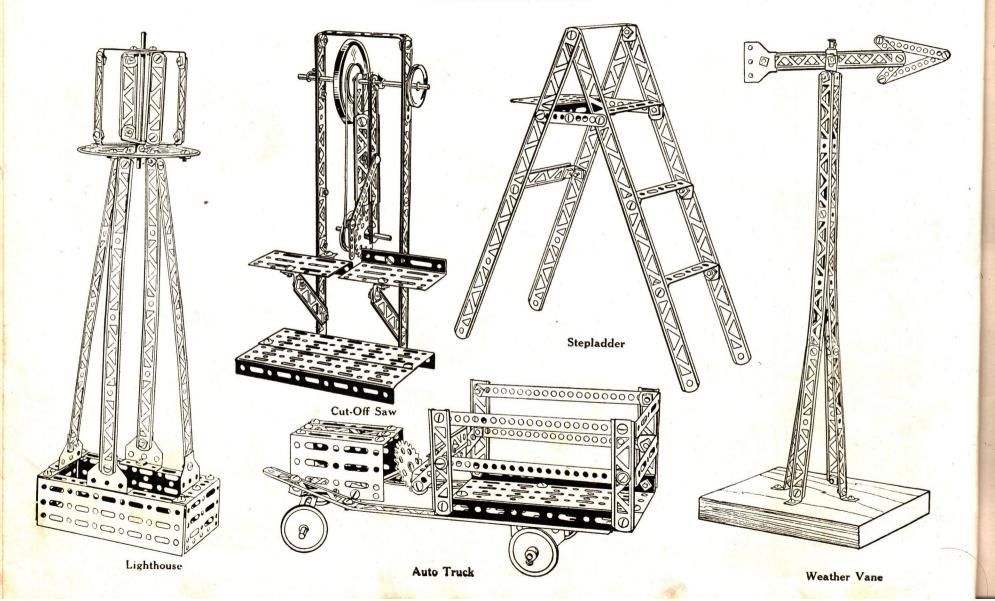


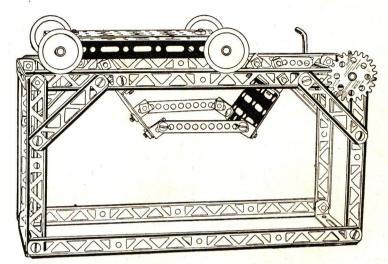
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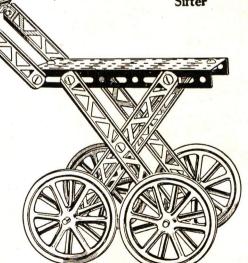










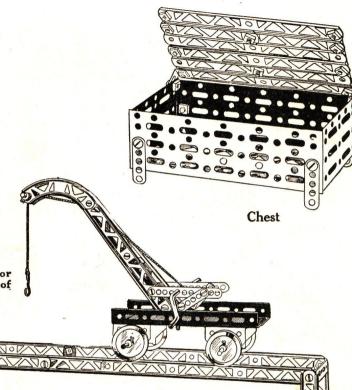


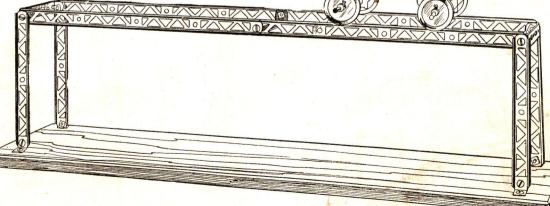
Tea Wagon



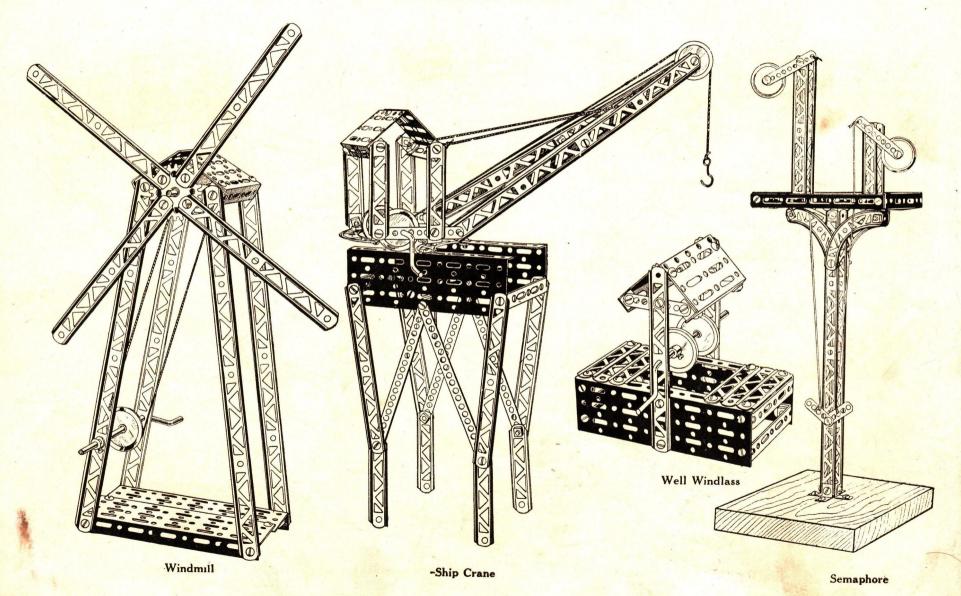
IMPORTANT NOTICE

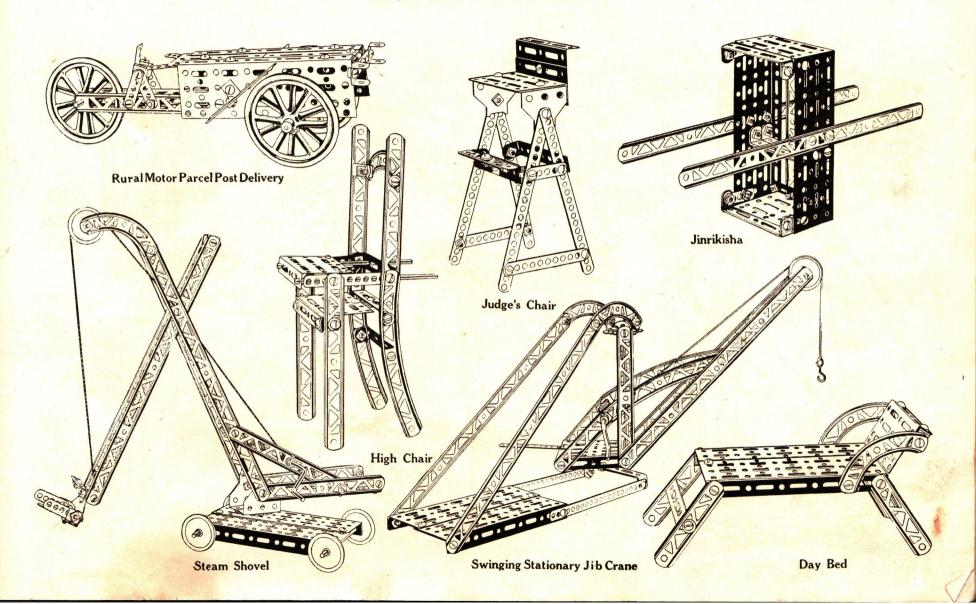
For those who have a No. 3 Erector Set, use FP Disc Wheel in place of P17 Spoke Wheel.

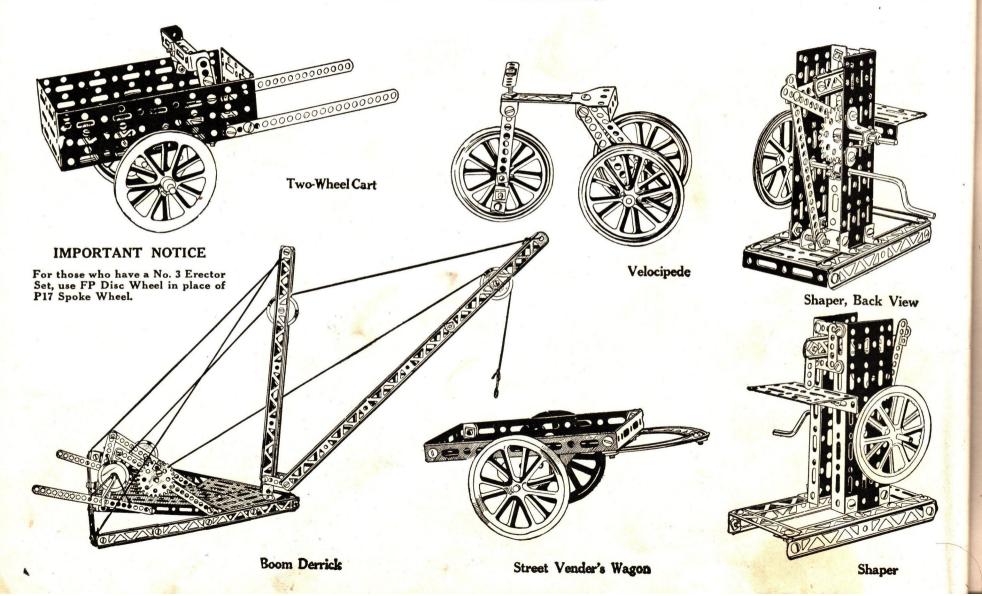


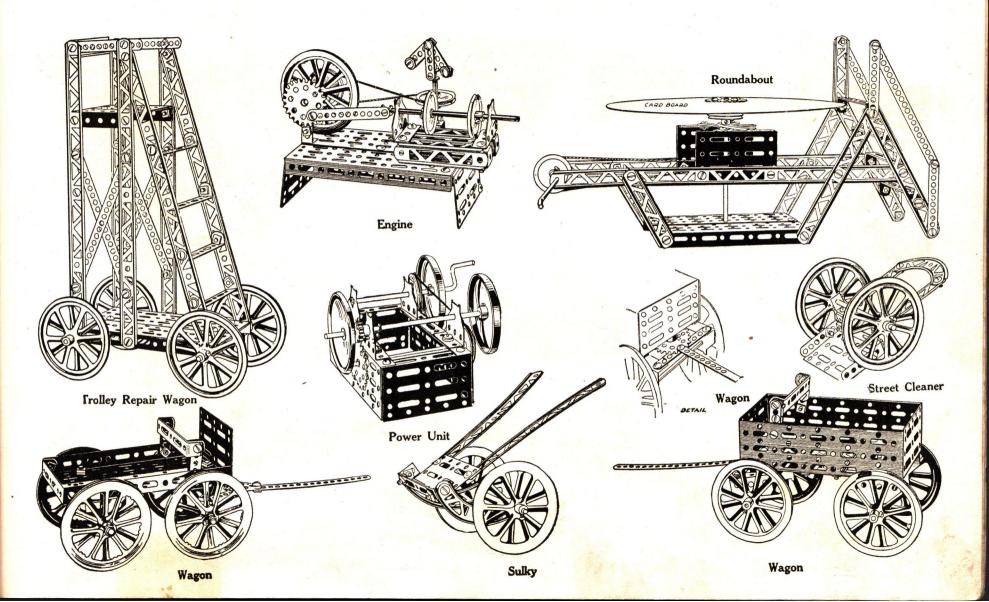


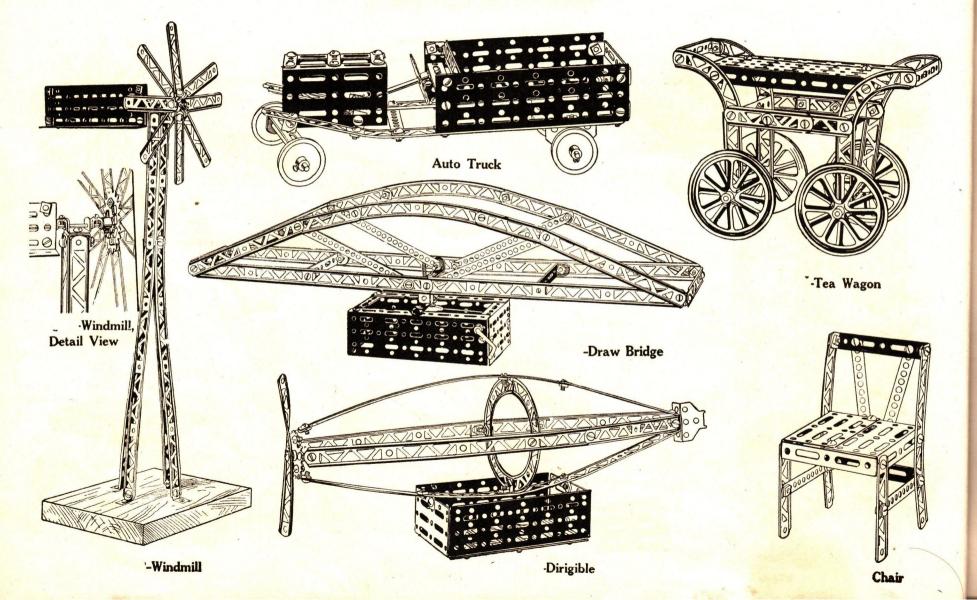
Travelling Crane

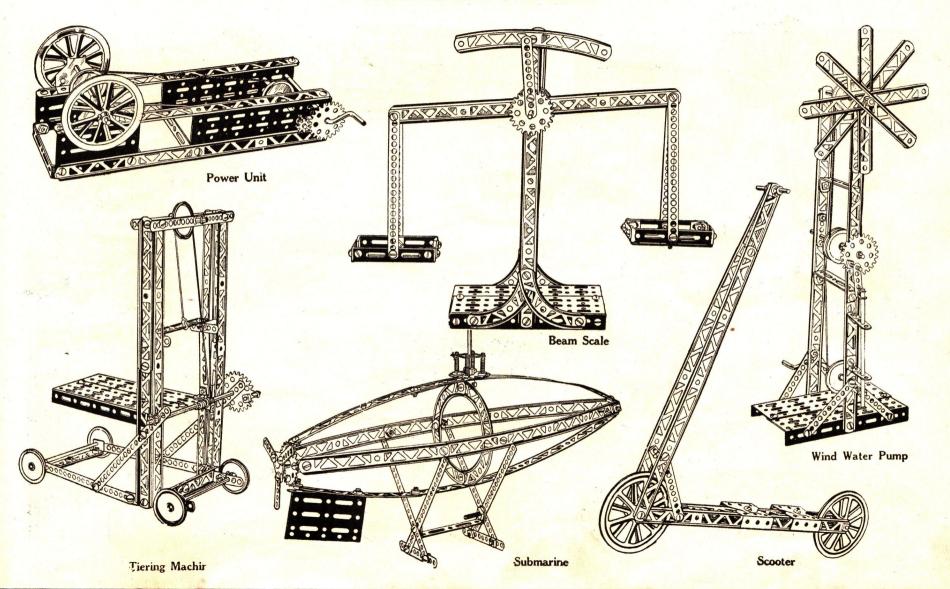




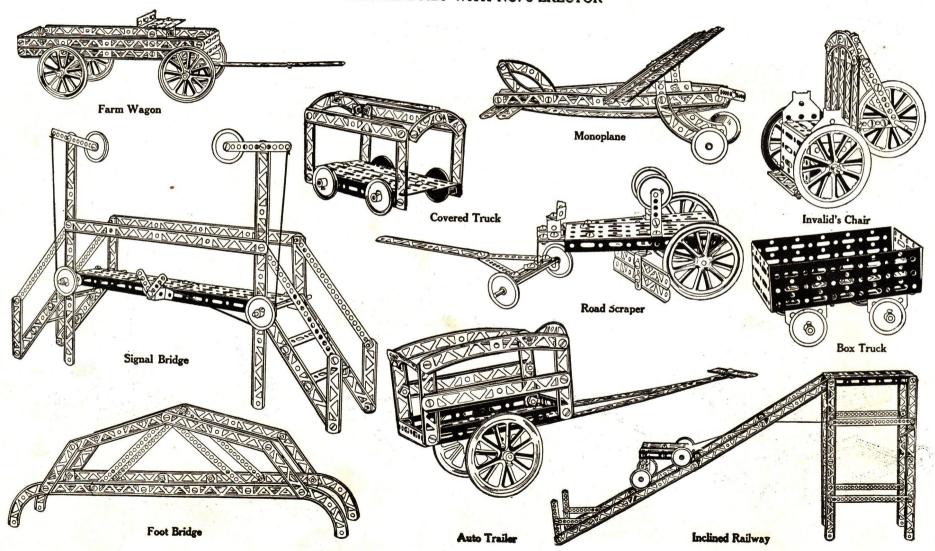








#### MODELS BUILT WITH NO. 3 ERECTOR



## MODELS BUILT WITH NO. 3 ERECTOR 00000000000 Timber Truck Music Stand Railroad Lift Gate Stationary Jib Crane Strength Tester O WAS A STATE OF THE STATE OF T Simple Brace Bridge Traveling Jib Crane Easel

Standard Gear Box Section No. 4

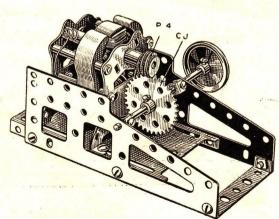
SLOW AND STRENGTH TYPE GEAR BOX

No. 1 - 4's

The small gear P49 is the driver and the large gear CJ is the driven. In this type the power is increased and the speed decreased It is de signed to lift heavy weights

WORM TYPE **GEAR BOX** No 3 - 4's

The worm P14 is the driver and the gear CJ is the driven This type is designed for use where power is vanted, not speed



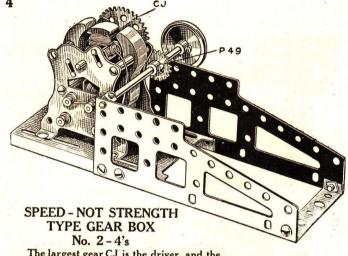
Gears and pulleys provide a means for transmitting power, increasing power, and regulating speed.

INTRODUCTION

If power is desired, speed must be sacrificed

If speed is desired, power must be sacrificed.

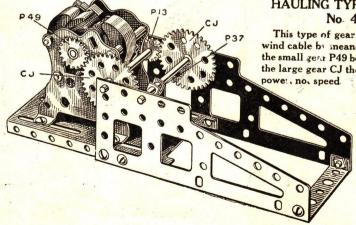
The driving wheel is called the driver, and the driven wheel the driven. These different styles of gear boxes are shown together to illustrate and treat practical mechanics. They also offer the builder a variety of different kinds of power from which he can select the most practical. By leaving end-play enough on one spindle of a train of gears provides a means for either release or reverse shift. With these many features and the ability to use either the P56G-110 volt Motor or P58 6 to 24 volt Motor, you will accommodate the requirements of any particular model.

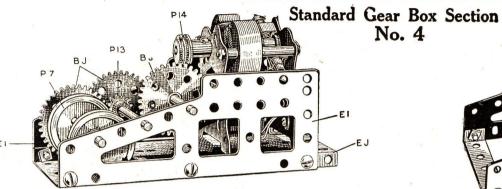


The largest gear CJ is the driver, and the small gear P49 the driven. In this type the speed is increased and the power diminished. It is designed for a gear box where high speed is wanted, not power.

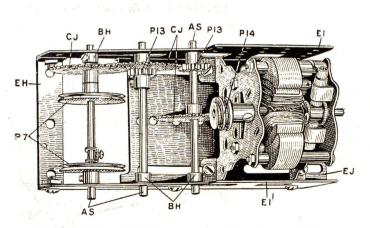
#### HAULING TYPE GEAR BOX No. 4-4's

This type of gear box is designed to wind cable by means of the last shaft, the small gera P49 being the driver, and the large gear CJ the driven. You get power, no, speed.

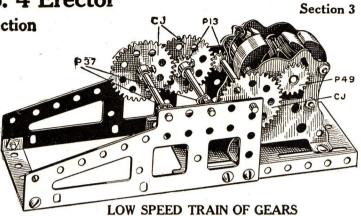




SINGLE DRUM HOIST - STANDARD GEAR BOX SIDE VIEW - No. 6 - 4's

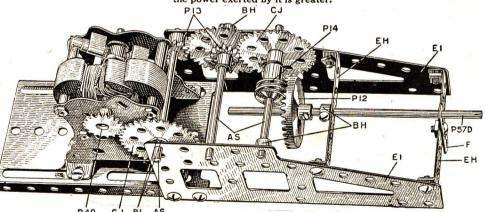


SINGLE DRUM HOIST - STANDARD GEAR BOX TOP VIEW DETAIL No. 6 - 4's



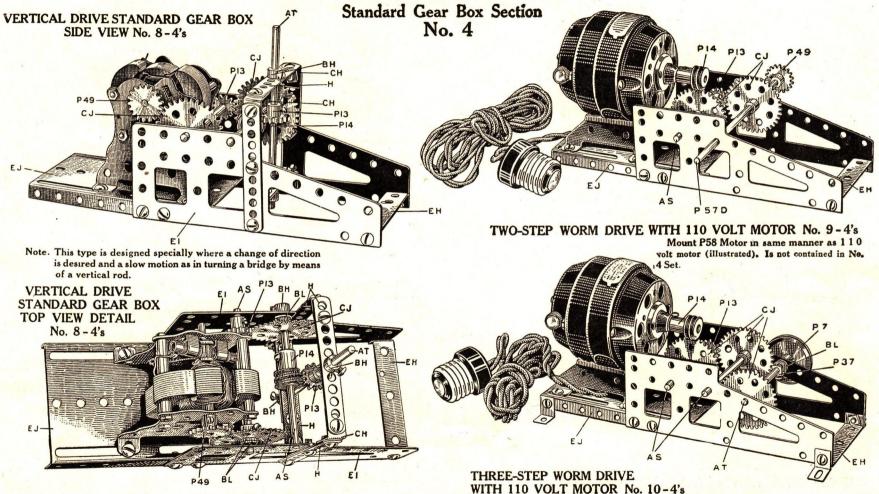
No. 5-4's

This type of gear box shows how the number of revolutions of a shaft may be decreased by a series of gears, and the power increased in proportion. When the power is applied, the speed of the drum shaft is greatly reduced but the power exerted by it is greater.



RIGHT ANGLE DRIVE-STANDARD GEAR BOX TOP VIEW DETAIL

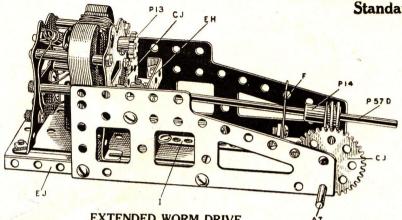
No. 7-4's



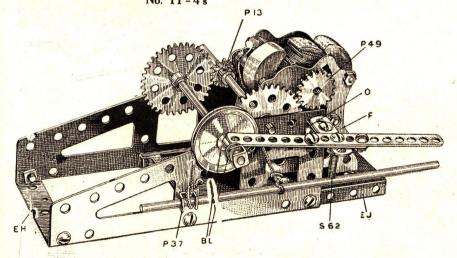
Note: This type is designed specially where a change of direction is desired and a slow motion as in turning a bridge by means of a vertical rod.

Mount P58 Motor in same manner as 110 volt motor (illustrated). Is not contained in No. 4 Set.

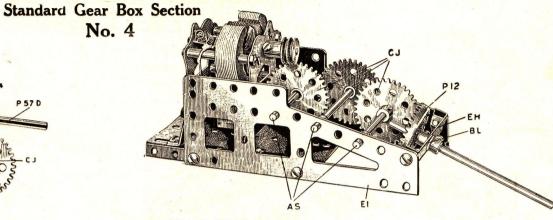
# Models Built With No. 4 Erector



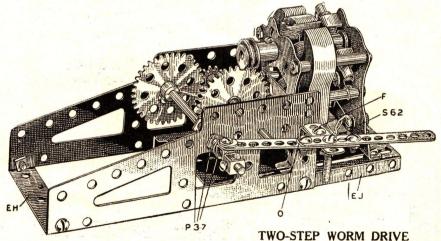
EXTENDED WORM DRIVE No. 11 - 4's



PIPLE TWO-STEP HOIST WITH GEAR RELEASE AND BRAKE .o. 13-4's

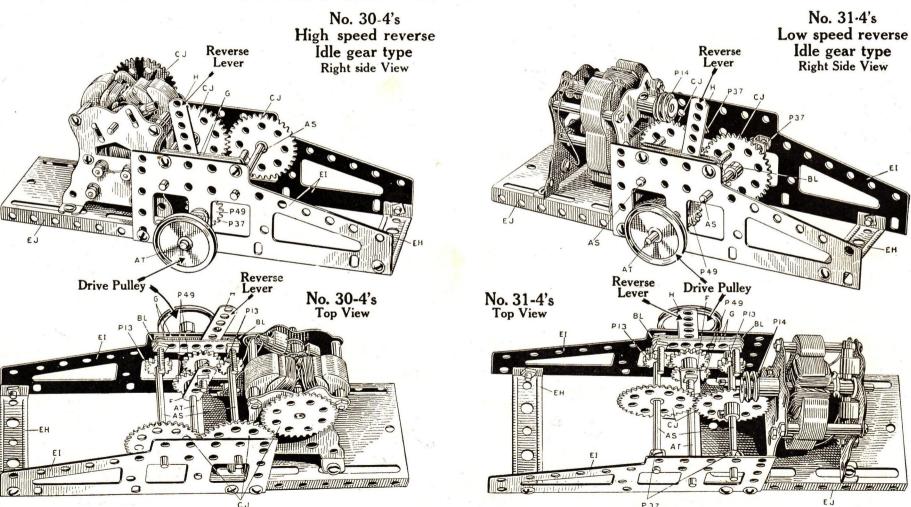


ANGLE END DRIVE STANDARD GEAR BOX No. 12 - 4's



WITH RELEASE SHAFT
No. 14-4's

## Models Built With No. 4 Erector Standard Gear Box Reverse Combinations



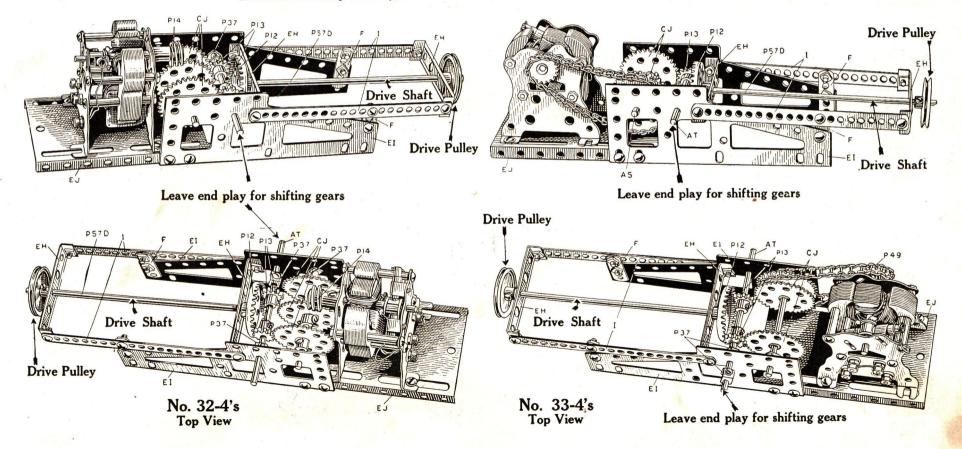
## Models Built With No. 4 Erector Standard Gear Box Reverse Combinations

No. 32-4's
Low speed reverse
Shift gear type
Right side view

The purpose of this section is to provide various combinations that will permit running models backward or forward. These combinations have many advantages over the reverse motor in that they provide the means of not only reversing direction but to regulate speed and power and provide a neutral point when model is idle.

If you desire a simple motor reverse, see part B. O. in Erector Separate Parts Section, electrical accessory column, or reverse base P59 under "Motors and Hoisting Units."

No. 33-4's
High speed reverse
Shift gear type
Right side view





# THE NEW ERECTOR MOTOR AND ITS BIG SPECIAL FEATURES

1st — Can be taken apart for experimental purposes.

2nd — Adapted for use with various gear combinations.

3rd — Armature shaft same size as all shafting and axles.

4th - Any gear or pinion can be directly attached to armature shaft.

5th — Double drive shaft. Pulleys and gears can be attached to both sides

of motor.



EXPERIMENT 1—HOW TO TEST THE FIELD MAGNET

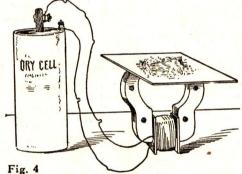
Connect the ends of a field magnet to the binding posts of a dry cell and then test it out with a soft iron wire, or nail, and you will find that it behaves just like a Horseshoe Magnet, except that it is much stronger. Fig. 1 shows how the connections are made.



Fig. 3

EXPERIMENT 2—TO TRY OUT THE
LIFTING POWER OF YOUR
FIELD MAGNET

Connect one end of the field coil with one of the binding posts of a dry cell, connect up the other end (Fig. 2) of the field coil to the other binding post of your dry cell. Now, hold the field magnet upside down, lay the pole pieces on a pile of small nails and see how many of them the magnet will lift up, as shown on Fig. 3.



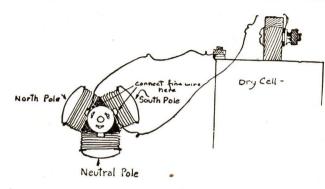
EXPERIMENT 3—HOW TO TRACE
THE MAGNETIC FIELD

Connect the coil of the field magnet to the dry cell, or battery, as shown in Fig. 4. Now lay the field magnet flat on a table, or other level surface, and on the poles of it lay a business card or a sheet of glass. Sprinkle some iron filings over the card, or glass, when they will arrange themselves in curved lines between the poles, which shows how the magnetic lines of force flow from one pole to the other.

# EXPERIMENT 4— HOW TO MAGNETIZE THE BLADE OF YOUR KNIFE

Place the blade of your pocket knife, a piece of steel watch spring, or some needles between the poles of the field magnet and then energize the latter by closing the circuit, and you will find that any or all of these steel objects will be permanently maganetized by what is called "induction," that is, the magnetic force acts through space without the magnet and the object being in actual contact with each other.

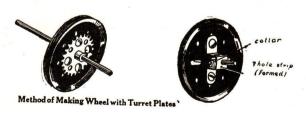
### THE NEW ERECTOR MOTOR

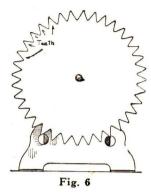


### Fig. 5

# EXPERIMENT 5—HOW TO TEST THE ARMATURE POLES FOR MAGNETISM

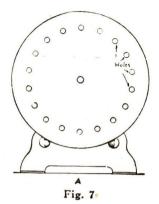
The core of the motor armature has three pole pieces and each one of these is wound with separate coil of wire. Now, the thing to do is to find out how many and which poles are magnetized when the current is passed through the coils of wires. You can test them out by twisting a piece of very fine wire around each of the connections where the ends of the armature coils are soldered to the commutator, as shown in Fig. 5. Connect two of these wires at a time with a dry cell or a battery. Now lay a little nail on the table and hold the armature over it. Try the magnetic power of each pole and you will find that two of them are magnetized and that the third one is not.





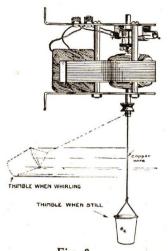
### EXPERIMENT 6—THE BUZZ SAW

Cut a saw-tooth edge on a cardboard disk 3 inches in diameter, as shown in Fig. 6. Mount the disk on the shaft of your motor and set it to rotating. Now hold the edge of a business card against the rapidly moving toothed wheel, when it will give out a musical note. By cutting out a number of disks and spacing the teeth differently, various musical notes will be provided. By spacing the teeth on a disk unevenly it will make a harsh sound-that is, a noise.



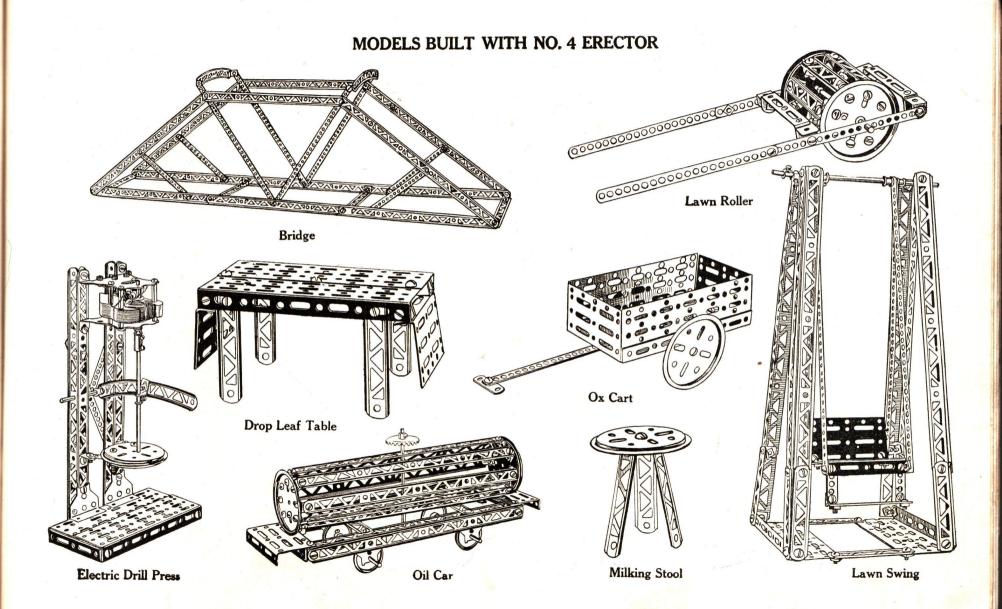
# EXPERIMENT 7—THE SONG OF THE SIREN

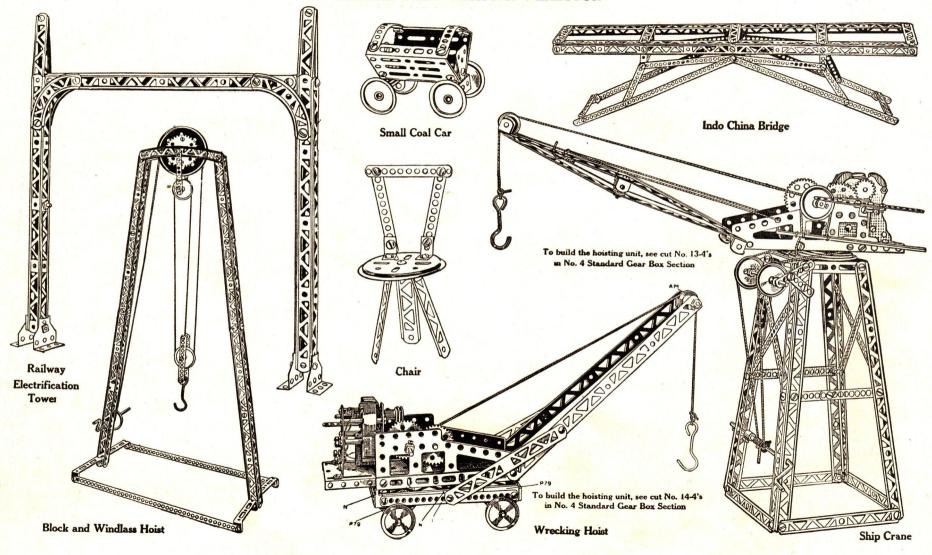
(1) Punch a ring of evenly spaced holes around the edge of a disk 3 inches in diameter with a sharp-pointed nail and make a hole in the center of it. as shown at A in Fig. 7, and mount it on the shaft of your motor. Take a rubber tube 1/4 inch in diameter and 1 foot long, make a mouthpiece of cardboard and fix the small end of it to one end of the tube. Now run vour motor and then blow with the mouthpiece, when the disk will give forth a musical note. (2) Punch a ring of unevenly spaced holes around the edge of the disk, rotate it, and blow into the tube as before, when it will give forth a curious noise.

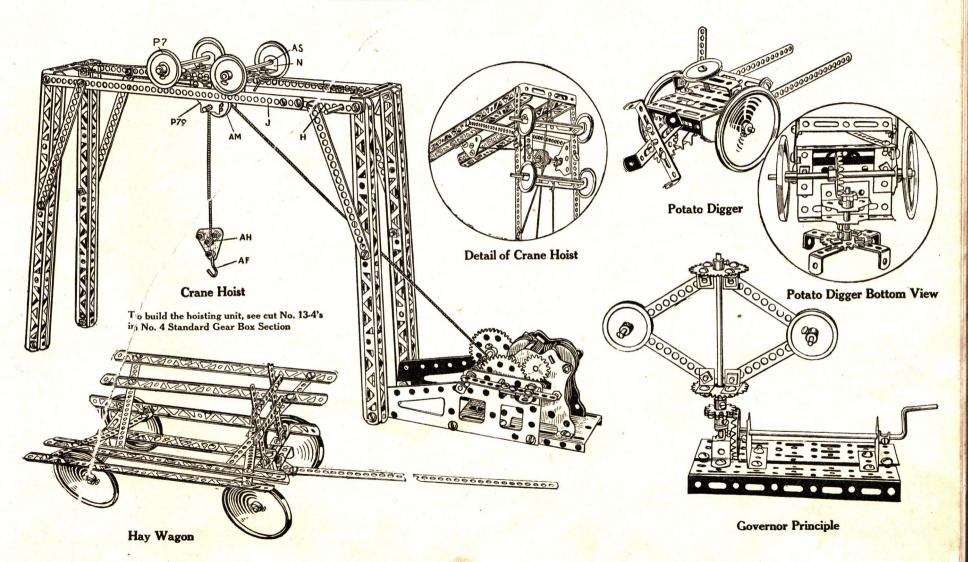


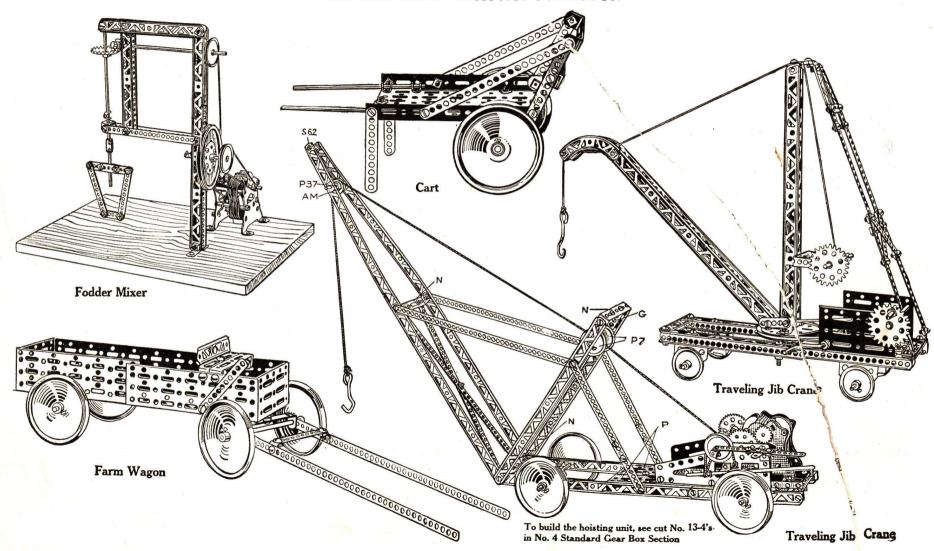
# Fig. 8 EXPERIMENT 8—THE PAIL OF WATER THAT JACK CAN'T SPILL

Fix a piece of No. 24 copper wire around the top of a thimble to form a bail on it as shown in Fig. 8. Suspend the little bucket thus made by a string from the end of the shaft of your motor and hold the latter so that the shaft is vertical. Fill thimble with water and start up your motor and as it gathers speed the centrifugal force will throw the little bucket out and up until it will be revolving in a horizontal plane. The water, however, will not spill out as the centrifugal force holds it in.

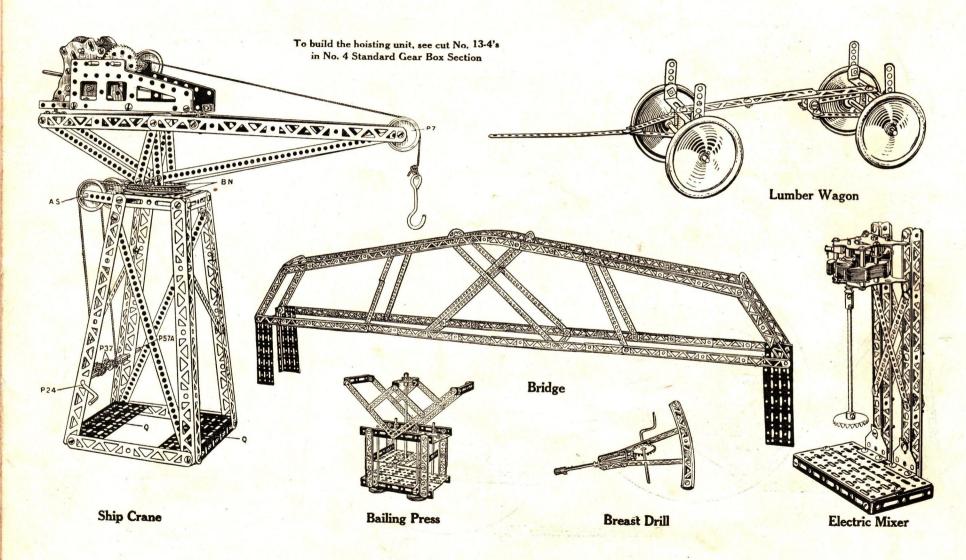


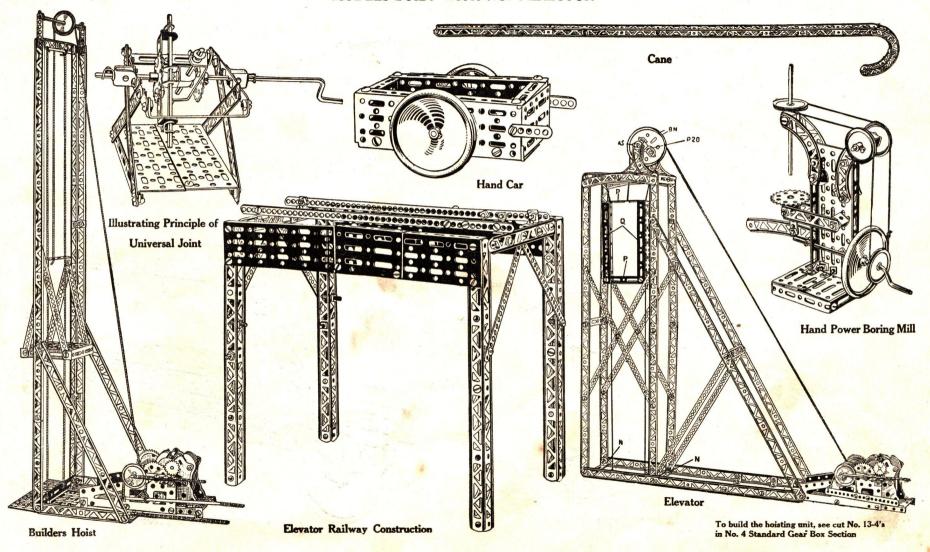


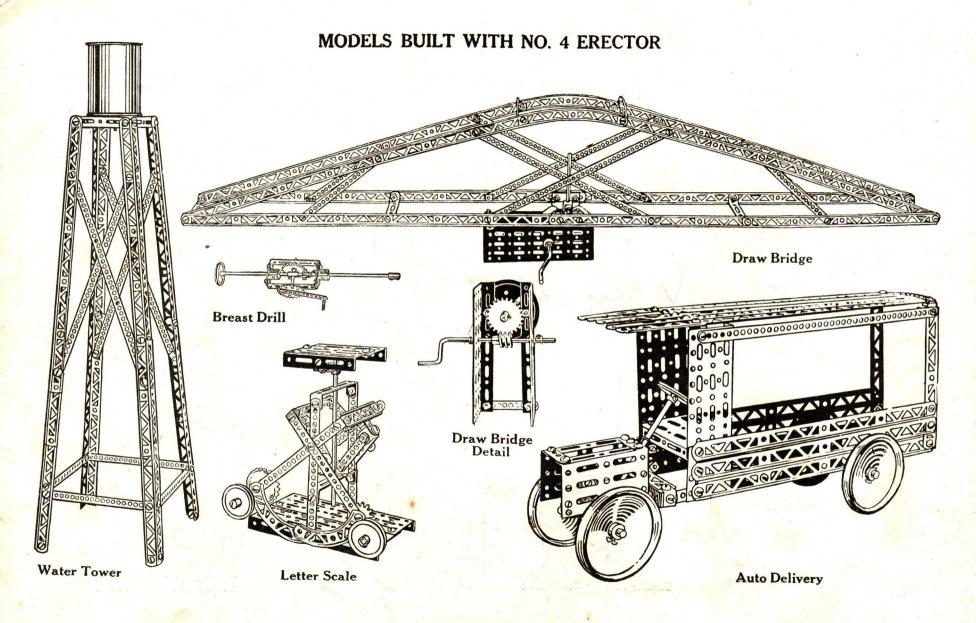




# MODELS BUILT WITH NO. 4 ERECTOR Lathe Bridge Carrier Hoist VANO 40 VANO VA Detail of Carrier Hoist Lawn Swing Detail of Carrier Hoist Wagon





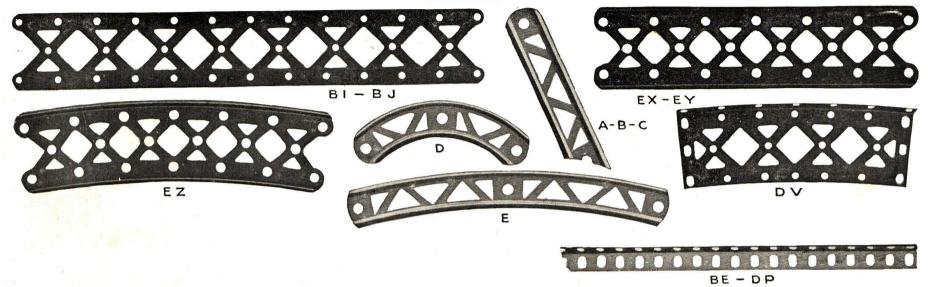


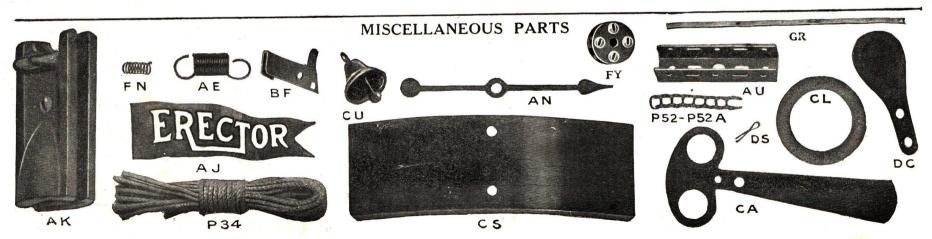
"SECTION 16"

## **ERECTOR SEPARATE PARTS**

Page 1

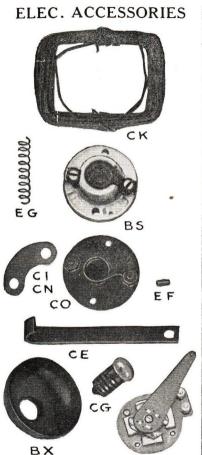
**GIRDERS** 



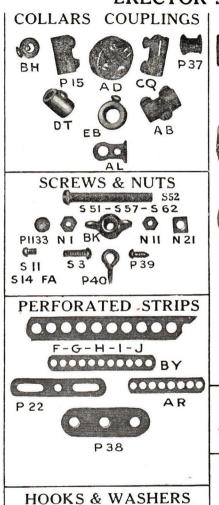


### Page 2

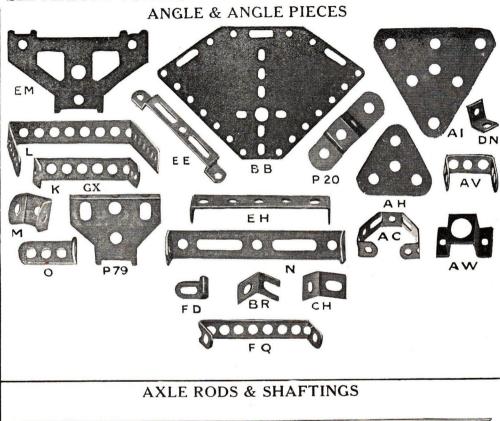
### **ERECTOR SEPARATE PARTS**

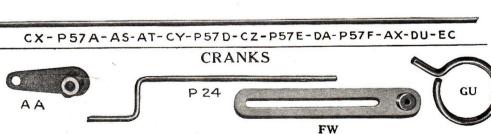


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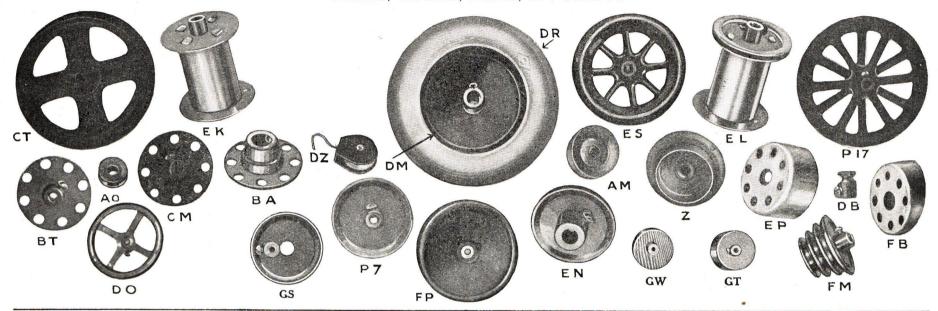
BL - AF-AG - CP





# ERECTOR SEPARATE PARTS

WHEELS, DRUMS, DISCS, & PULLEYS

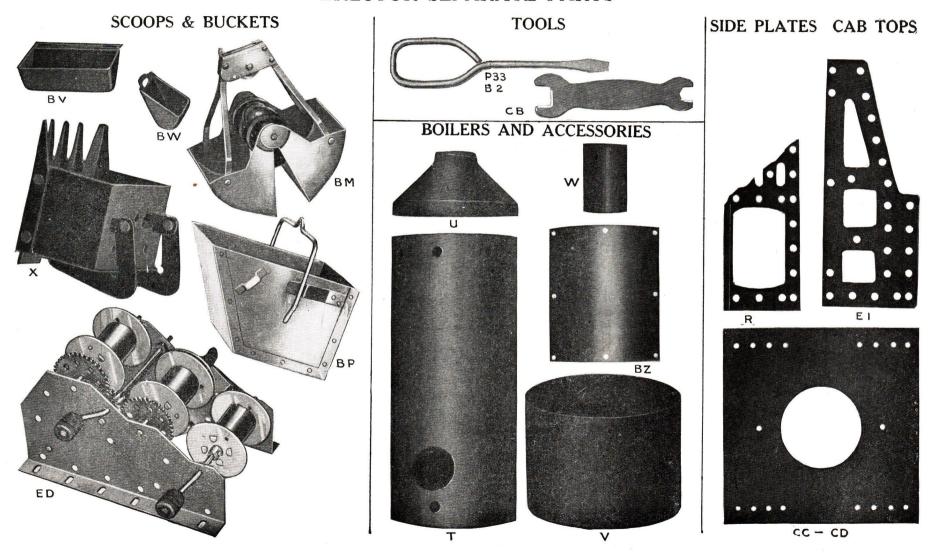




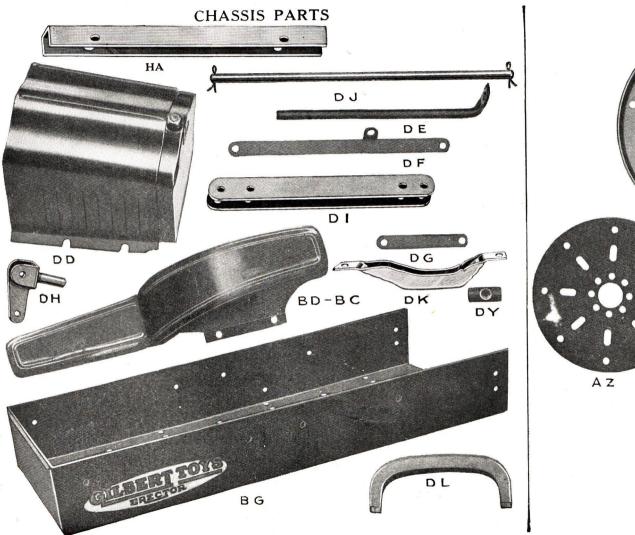
P 50

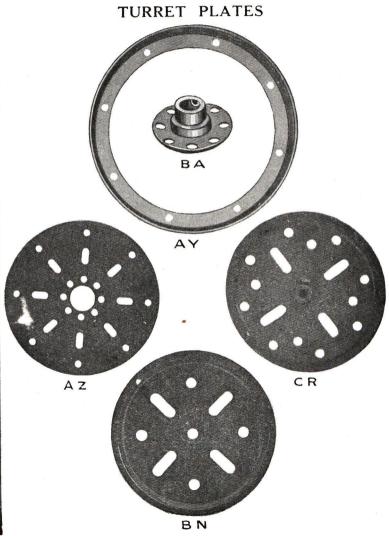
Page 4

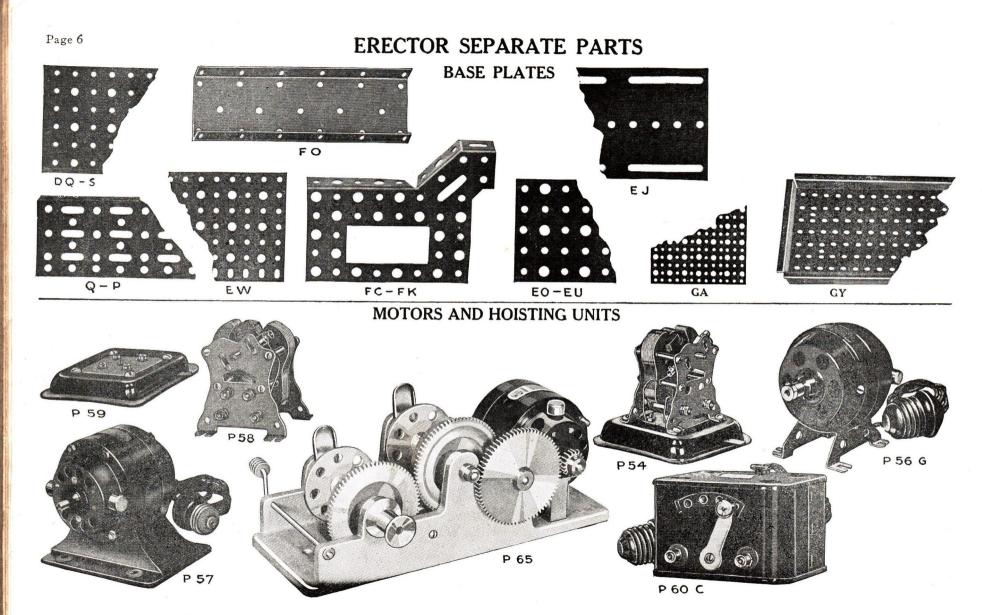
### **ERECTOR SEPARATE PARTS**



# **ERECTOR SEPARATE PARTS**







#### Form M999-28

### ERECTOR SEPARATE PARTS PRICES

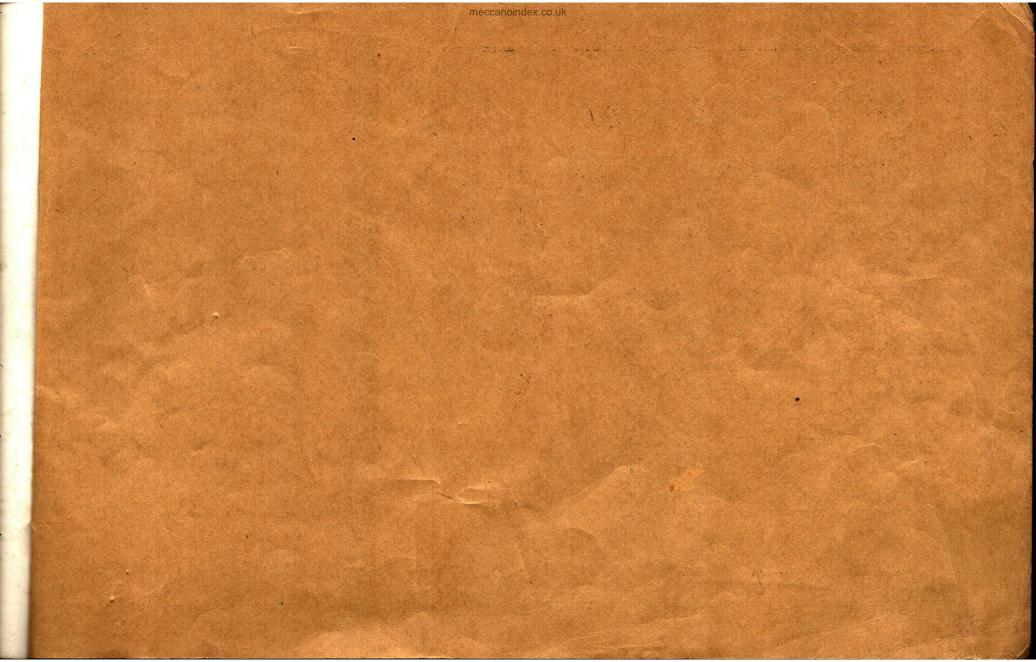
Most all dealers carry Separate Erector Parts. If unable to obtain in your city send us your check for the parts you want and we will be glad to send your order direct from here if you will send us the name of your dealer.

A. C. GILBERT CO., NEW HAVEN, CONN., U. S. A:

No.   4-9   Hex Nut.   3, 10 dos   5   10 dos   7   10

### ERECTOR SEPARATE PARTS PRICES (Continued)

Trade No. Name of Part	Page Price Tra	ade No. Name of Part Pa	age Price	Trade No.	Name of Part	Page Pric	e Trade No. Name of Part	Page Pi
FW Slotted Crank FX Quarter Gear FY Universal Ball FZ Internal Gear GA 6x8 Duplex Flat Ba Plate GR Flat Belt GS Eccentric GT Flat Pulley with H GU Eccentric Loop GW Wood Wheel with I GX 8 Hole Double Ang Bracket GY Metal Erector Tray HA Rear Axle Housing. S52 1/2 in, x 8-32 Screw	3. 15 ca. 1. 20 ca. HI 1. 20 ca. HI 1. 20 ca. HI 1. 3. 15 ca. HI 1. 4. 4. 4. 4. HI 1. 5. 4. HI 1. 6. 35 ca. HI 1. 10 ca. H	Tail Butt End Plate Nose Cap Gondola Strut Propeller 5 Inch Girder Formed Rudder — Right Rudder — Left Stabilizers Cover for Zeppelin 6 Inch Ring Zeppelin Support Rod Wood Screw Propeller Rod, 3 in. Ceiling Support Revolving Contact Unit, Ball Race Bearing Washer Hub Stationary Contact Unit with Cord and Plug. Swivel Unit Completely Assembled Propeller Rod, 2 in.	.\$ 25 ea25 ea10 ea25 ea30 doz10 ea50 doz10 ea10 ea10 ea20 ea25 ea10 doz10 ea25 ea10 doz55 ea10 doz55 ea10 doz55 ea10 doz55 ea10 doz55 ea100 ea25 ea100 ea25 ea100 ea25 ea100 ea25 ea100 ea25 ea100 ea25 ea100 ea.					
							REGULAR ERECTOR  No. 1 Erector Manual  No. 4 Erector Manual  No. 6 Erector Manual  No. 7 Erector Manual  No. 7½ Erector Manual  No. 8 Erector Manual  No. 9 Erector Manual  No. 10 Erector Manual	25 6 25 6 25 6 25 6 25 6 25 6 25 6 25 6
							No. 3005 Erector Electrical Set Manual No. B Big Girder Set Manu No. C Erector Airplane M	l 





# Hello boys! FERRIS WHEEL Built from

The Ferris Wheel pictured herewith is built out of the B Erector Accessory Set. It stands 3 ft. 31/2 in. high, circle is 2 ft. 11 in. in diameter. If you now own a regular Erector Set, the B Set will build this Ferris Wheel and many other interesting models out of the big channel straight and curved girders. There are over 100 big girders in this Set. If you do not own a regular Erector Set, the B Accessory Set is a complete set in itself, and will entertain you for days. There is no motor packèd in this set. If you own a regular Erector Set, use the motor you have. If you do not own an Erector Set, you can give action to the models you build by securing the famous Polar Cub 110 volt motor, P56G, that operates on any house current. For those who do not have 110 volt current, the P58 standard Erector motor will operate the models in this set.

a.c.gut

