THE ERECTOR

STRUCTURAL STEEL & ELECTRO MECHANICAL BUILDER

EDUCATIONAL, INSTRUCTIVE, AND AMUSING.

PATENTED 1913 BY THE MYSTO MFG. CO. NEW HAVEN CONN.

THE ERECTOR

The Structural Steel Builder's Manual of Instruction

The Only Realistic Structural Steel Building Toy Ever Made.

Features that illustrate the superiority of the Erector Building Outfit over all other lines of similar toys.

First. The Erector is the only model-building toy in which the girders themselves imitate exactly the steel girders used in modern construction.

Second. The patented feature of the turned over edge on the Erector strip makes it stronger in every way and makes possible the building of larger models in shorter time and with less screws.

Third. The Erector is the only model-building outfit that contains the parts from which a small powerful motor can be built.

Fourth. The fact that the Erector contains many more pieces to the outfit than any other model-building toy makes it possible to build larger and more realistic models.

Fifth. The Erector is the only building toy combining power and motion enabling the reproduction of third rail operating railroad, electrically operated machine shop, derricks, automobiles and machinery of every description and kind.

The Erector is the simplest of all model-building toys to construct and is very easy to build. The Erector is so ingenious that it gives a boy the foundation for a practical engineering education while at play. This is the only toy embodying all the fundamental principles of mechanical engineering. The Erector developes the ingenuity, teaches observation, and holds the attention of every member of the family. It is absolutely the most absorbing and fascinating educational toy the world has ever known.

Where Mysto Toys Are Made

Important details in learning the principles of the Mysto Erector construction work.

First. Before building any of the models illustrated in this Manual you should first familiarize yourself with all the different parts and the names of each article used in the construction of the models.

Second. After having done this study very carefully the first few pages on standard details for use in the construction. Each of these various joints, connections, wheel-assembling, gear-assembling, etc., should actually be accomplished before attempting the building of real models. After you have thoroughly familiarized yourself in this way you should then start with the very simplest of the models regardless of the size set you may have.

Technically speaking, the number of models that can be built with any particular set of the Erector cannot actually be stated, because this depends entirely upon the ingenuity and the amount of thought expended by the builder. The wide-awake boy will soon discover any number of new models which can be produced from any outfit from No. 1 up. In the larger sets there is absolutely no limit to the possibilities.

No manufacture has taken so much interest in the model-builder as the Mysto Manufacturing Company. We are maintaining an experimental department in our factory for designing new models and we earnestly solicit the name and address of every user of the Mysto Erector Outfit so that we may keep you in touch with all the latest models that are being built.

PRIZES FOR NEW MODELS

We are conducting a prize contest for the newest, most ingenious and original models. Write for information regarding contest prizes, etc.

Fig. 1

Fig. 1. Simple Lap Joint.

Fig. 2

Fig. 2. Adjustible lap joint for varying the length of a span.

Fig. 3.

Fig. 3. Simple right angle connection.

Fig. 4

Fig. 4. Simple Acute Angle Connection.

Fig. 5

Fig. 5. Simple Obtuse Angle Connection.

Fig. 6

Fig. 6. Right Angle Connection for Branch Girders.

Fig. 7

Fig. 7. Cross connection using Screw, Nut and Washer.

Fig. 8

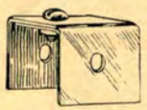


Fig. 9

Fig. 10

Fig. 11

Fig. 12

Figs. 8, 9, 10, 11, 12, show the various possibilities of angle connections.

Fig. 13

Fig. 13. Arrangement of Angles to produce a bearing for a shaft.

Fig. 14

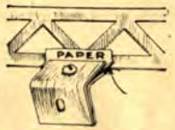


Fig. 15.

Figs. 14-15 show the method of insulating from and attaching to the third rail used in railroad construction.

Fig. 16

Fig. 16 shows the manner of fastening the copper strip as a shoe on the motor car.

Fig. 17

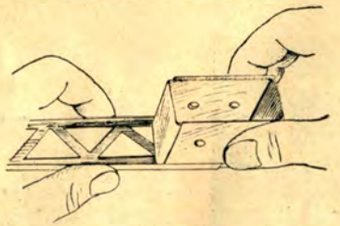


Fig. 18

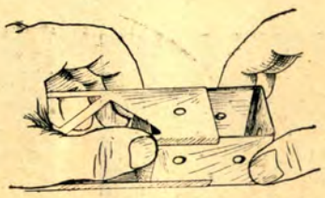


Fig. 19

Fig. 20

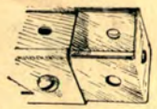


Fig. 21

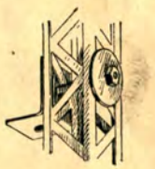


Fig. 22

Fig. 22 shows angle connection on square girder for branching.

Fig. 23

Fig. 23 shows possibilities for branching in any or every direction from the top or end of a square girder.

Figs. 17, 18, 19, 20, 21, show the different operations in their proper order, for building a full square girder. By following the illustrations carefully you will arrive at the position shown in Fig. 20. Insert the long screw as shown, fasten with a nut and the result is shown in Fig. 21. These illustrations should be carefully studied and the operations shown faithfully practiced as they are the foundation for the more elaborate Erector models.

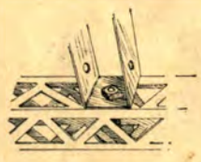


Fig. 24

Fig. 24 shows the connection by means of the double angle for branching one full square girder from another. See Fig. 29-30 for more common method.

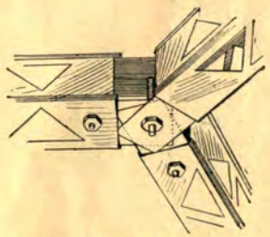


Fig. 25

Fig. 25 shows the way connections of square girders are used in our more elaborate bridge construction.

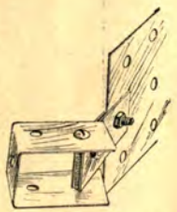


Fig. 26

Fig. 26 shows method of attaching plate to be used as a rudder in aeronautic construction.

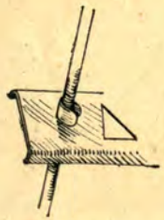


Fig. 27

Fig. 27 shows use of clip as collar to prevent sideway motion of shaft in its bearing.

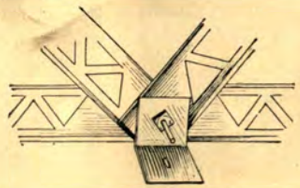


Fig. 28

Fig. 28 shows three way connection and the possibility of a fourth, used in all bridge models constructed from single girders. The angles for branching in the fourth direction is for connecting the two sides of the bridge together.

Figs. 29-30

Figs. 29 and 30 shows simplest method of branching one square girder from another. The arrows illustrate how the top strip being screwed to the angle with a short screw holds the other two in position making a single girder on the bottom unnecessary.

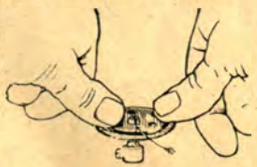


Fig. 31

Fig. 32

Fig. 33

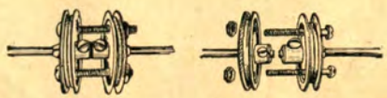
Fig. 34

Fig. 35

Figs. 31, 32, 33, 34 and 35 show a novel feature of the Erector outfits in making use of a hub and a series of separate shells in the building of wheels, pulleys, gears and railway flange wheels. In assembling place the hub in position shown in Fig 31, force on one shell, outside to the bottom, being careful that the key shown by the arrow in Fig. 32 enters into the slot in the hub. Force on the second shell, outside to the top, and the result is Fig. 33. To produce a tire wheel, as in Fig. 34, place one of the wire rings between the two shells. The gear shown in Fig. 35 is built by substituting the gear shell for one of the pulley shells.

Fig. 36.

To produce an extra strong pulley where great strain is required from a cord, bind with screws as shown in Fig. 36.



Figs. 37-38

Figs. 37 and 38 shows two pulleys fastened to the ends of two shafts and bound together with long screws to act as a coupling where a long shaft is required.

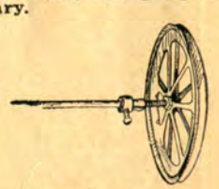
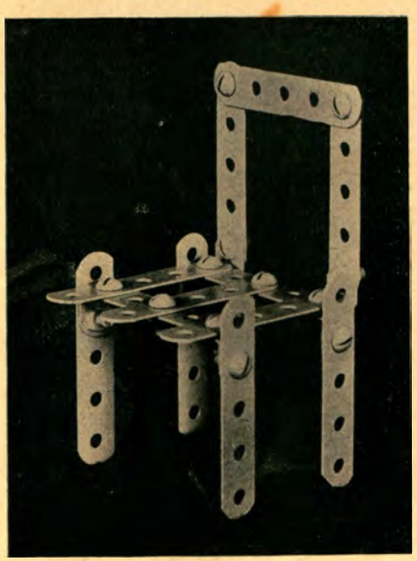


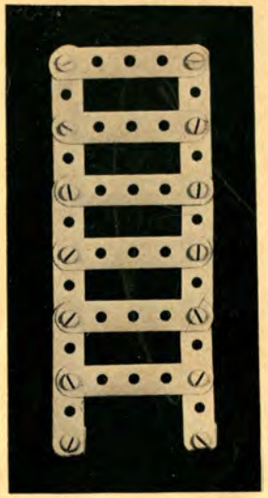
Fig. 39

Fig. 39 shows large pulley on end of shaft, connected by means of long screw locked to pulley with nut and driven into bushing. The simplest way of arriving at 37, 38 and 39 is to make use of the small brass coupling with two set screws, which is furnished with our sets.

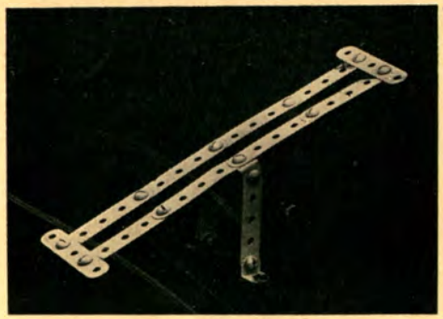
The Mysto Erector



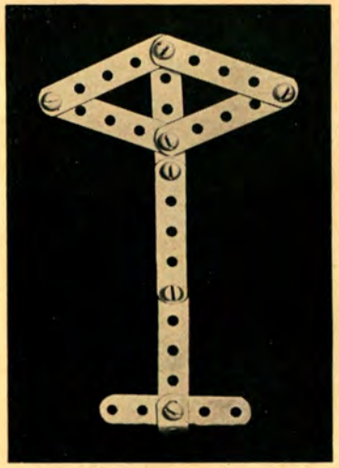
Chair, Model 1



Ladder, Model 2



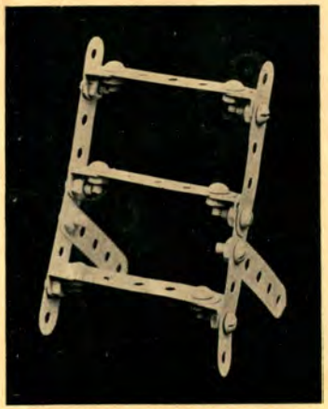
Teeter-totter, Model 3



R. R. Warning Post, Model 4

Music Stand, Model 5

Camp Stool, Model 6

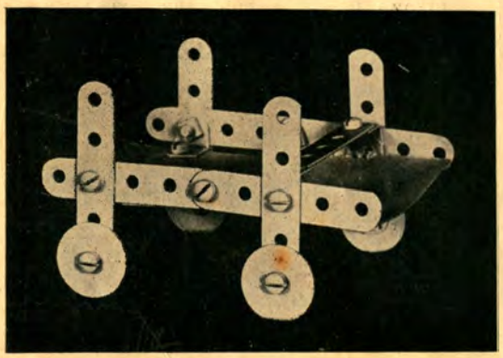


Step Ladder, Model 7

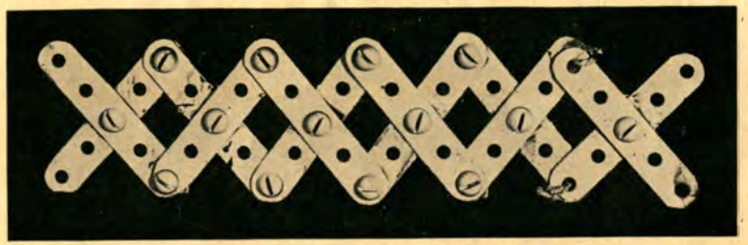
Bed, Model 8

Swing, Model 9

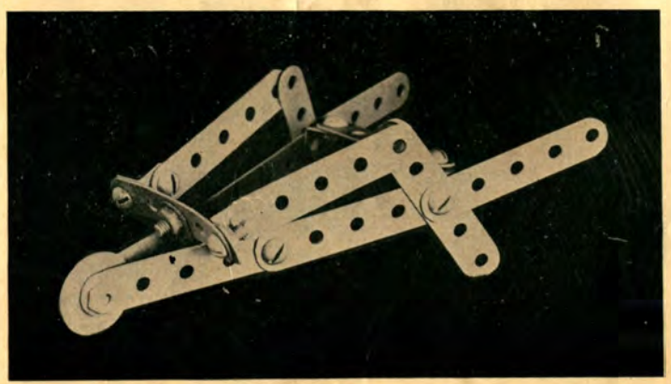
Tabourette, Model 10



Wagon, Model 11



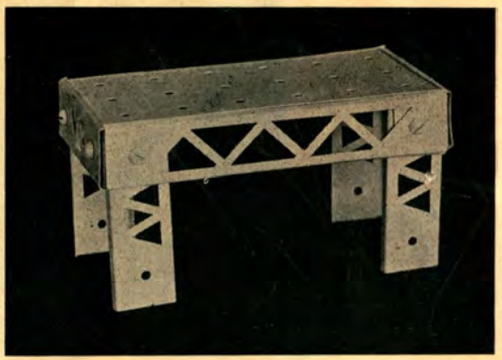
Fence or Jacob s Ladder, Model 12



Wheelbarrow, Model 13

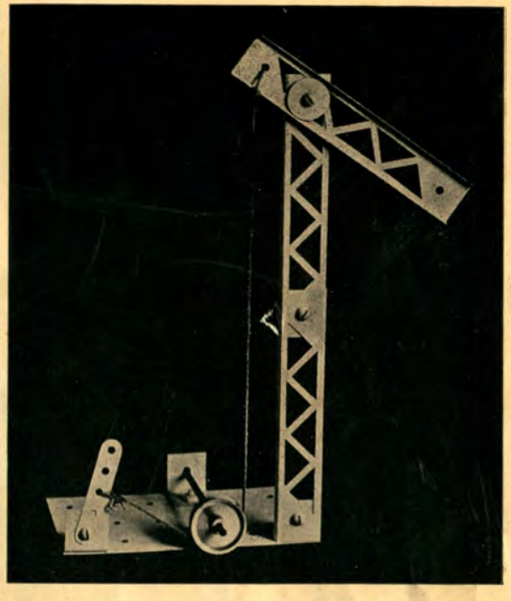
MODELS 1 to 13 BUILT WITH THE ERECTOR OUTFIT NO. 0

Truck, Model No. 14



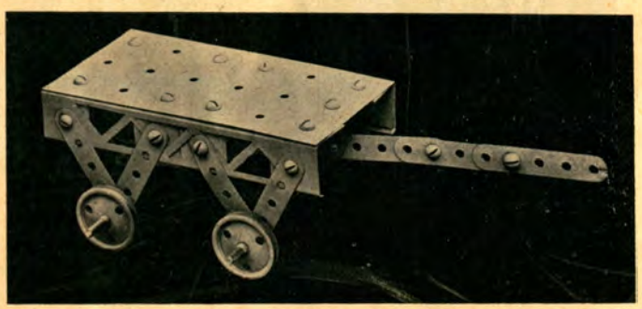
Table, Model No. 15

Flat Truck, Model No. 16

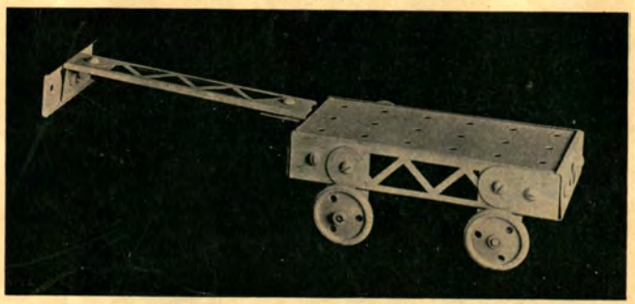


Railway Signal, Model No. 17

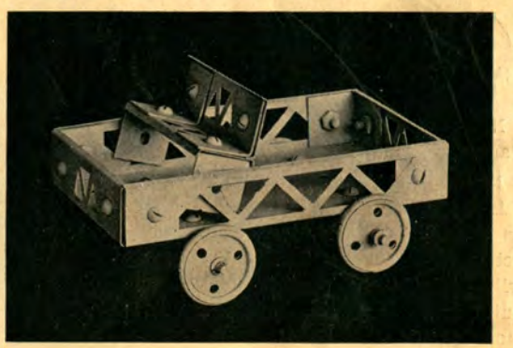
MODELS 1 TO 17 BUILT WITH OUTFIT NO. 0



Express Truck, Model No. 18

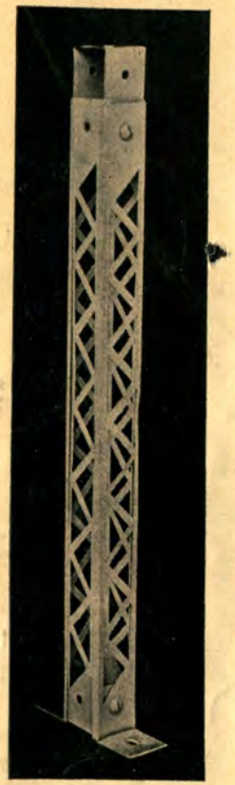


Platform Truck, Model No. 19



Wagon, Model No. 20

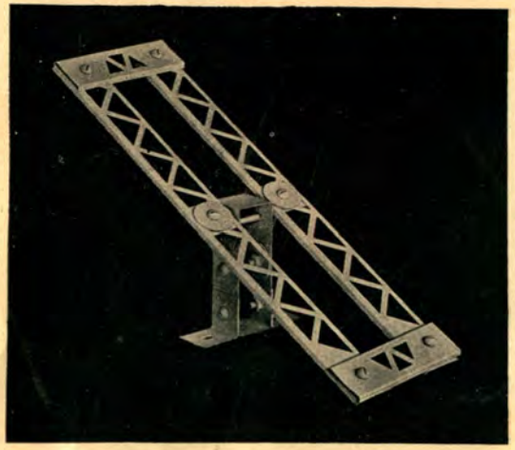
MODELS 1 TO 27 BUILT WITH THE ERECTOR OUTFIT NO. 1



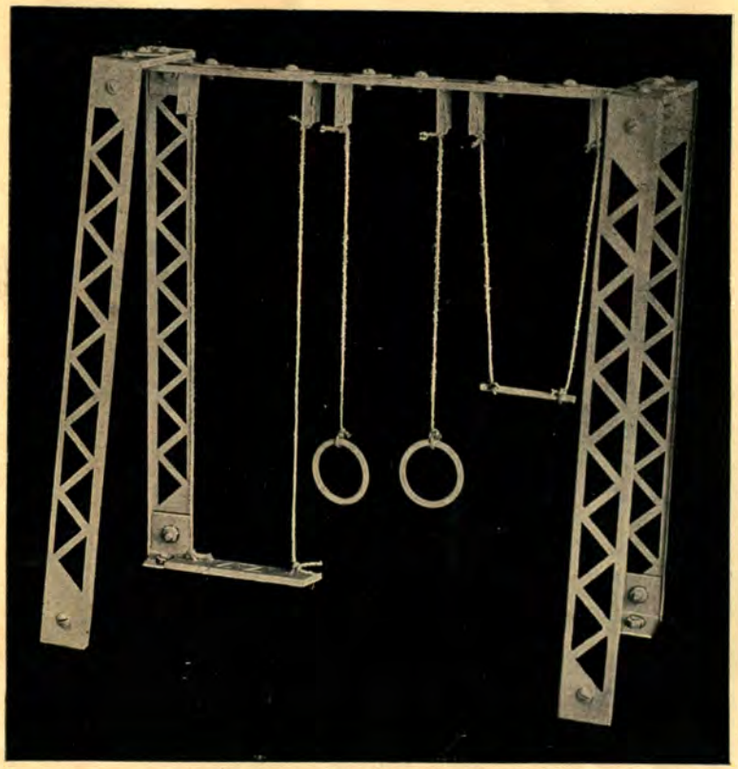
Steel Girder, Model No. 21

Note:—See Figs. 17 to 21, Page 1, for instructions.

Note:—Build and rebuild this model a number of times as it is the foundation of actual steel construction and will greatly help you in building the more elaborate models later on.

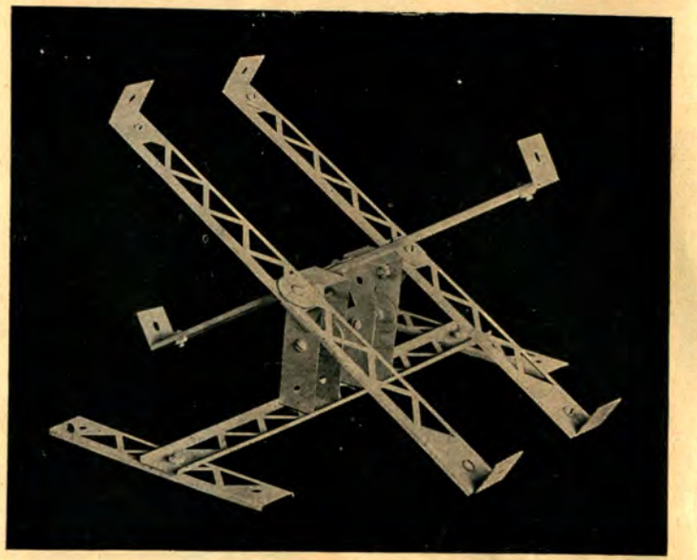


Single Teeter-totter, Model No. 25



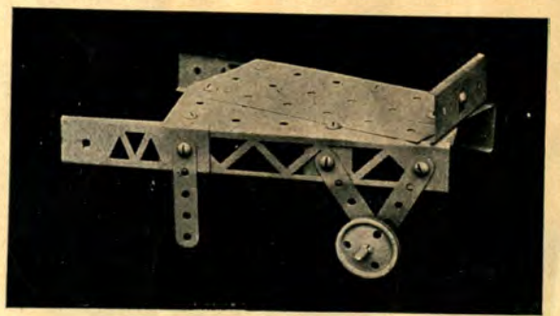
Playground Outfit, Model No. 24

Note:—Use tire rings from wheel for rings. Screw upright supports to board by means of angle at base.



Combination Teeter-totter, Model No. 22

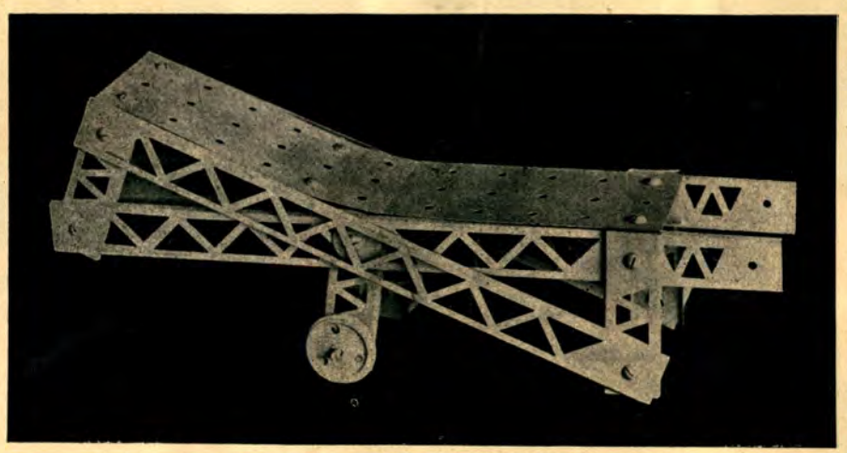
Note:—Two double angles form the base. Three-inch girders can be used for extending the height. Single angles are used for attaching the sides to the base 12-inch girder.



Luggage Truck, Model No. 23

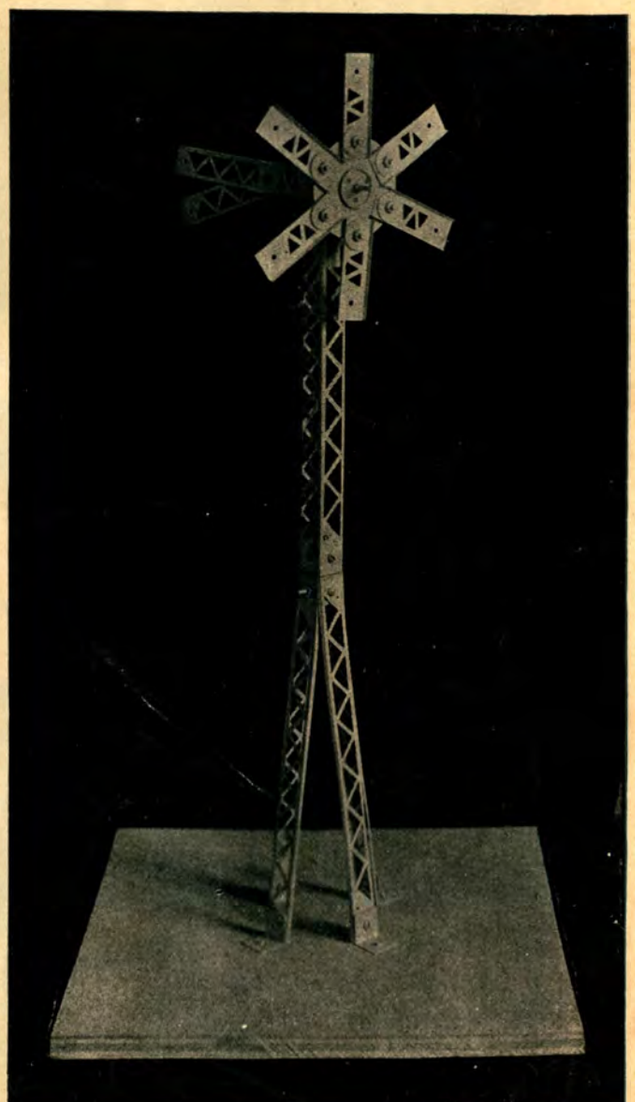
R. R. Semaphone, Model No. 26

Note:—Build girder first then platform complete with signals and attach platform to girder last.



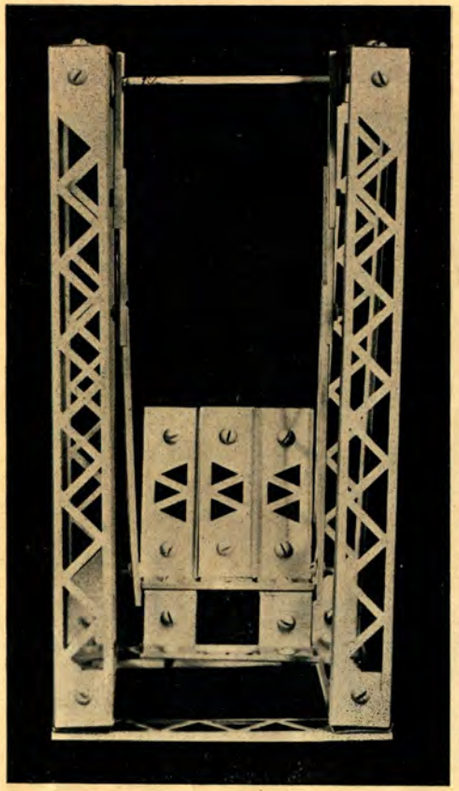
Baggage Truck, Model No. 27

Note:—If the builder should prefer for convenience, use one piece of ordinary cardboard for top instead of two steel metal base plates.



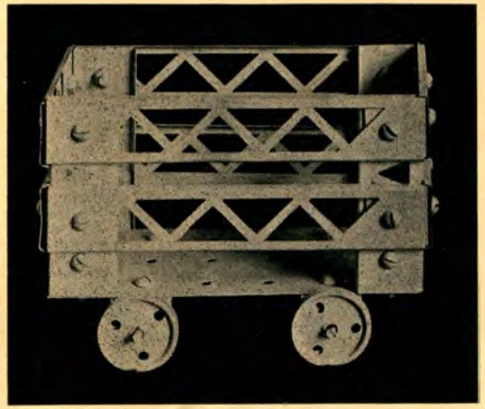
Windmill, Model No. 28

Note:—Build two girders and attach them together and spread them out, using it for a base and screw to board. The windmill part built separate is attached last.



Lawn Swing, Model No. 29

Note:—This model has six-inch girders forming a square base, and three-inch girders across the top with angle pointing down for shafting to rest in. The seat supports are made by lapping two six-inch girders. For seat see arrangement of angles in Fig. 11, Page 1.

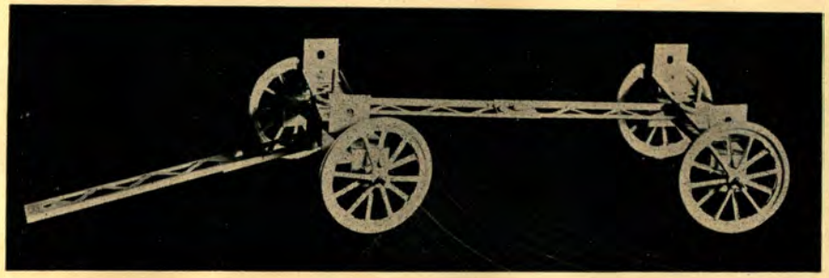


Box Truck, Model 30

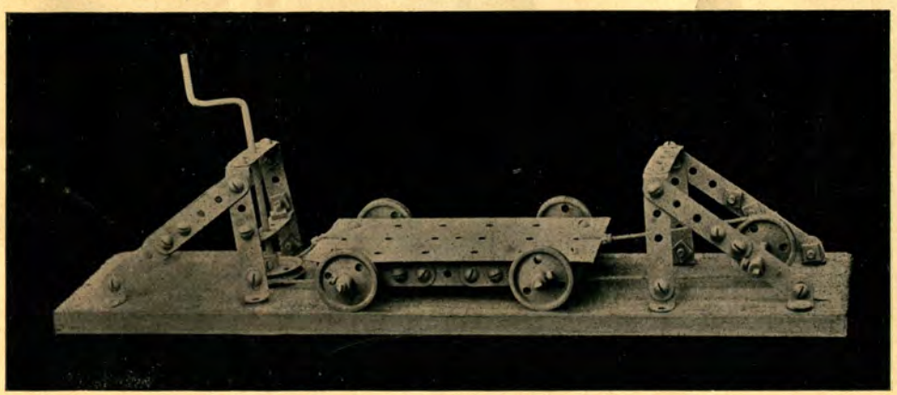
Invalid Chair, Model No. 31

Chair, Model No. 32

Build seat of chair first. See Fig. 8, Page 1, for arrangement of the angles at the corner of the seat for attaching the legs three angles are necessary at each of these connections.

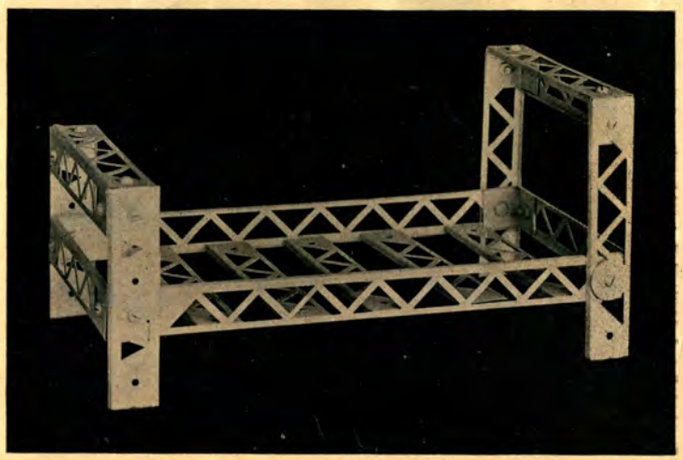


Lumber Wagon, Model No. 33



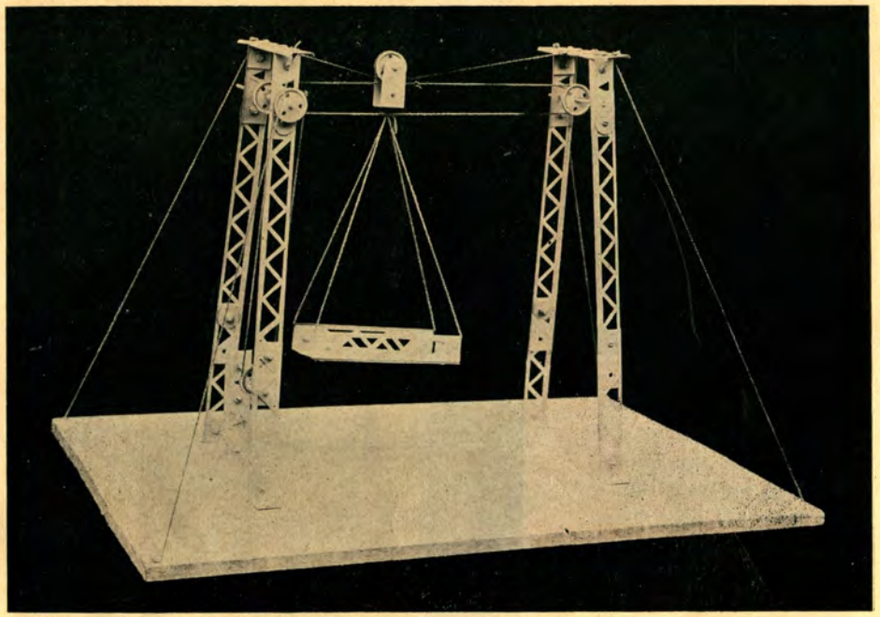
Endless Rope Railway, Model No. 34

Note:—Build the car from Model No. 16, Page 3. The braces can be as far apart as the designer wishes.

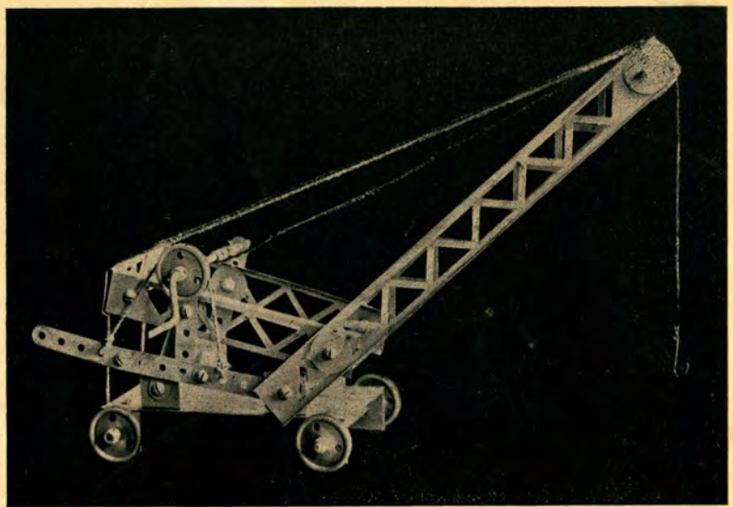


Bed, Model No. 35

MODELS 1 TO 39 BUILT WITH THE ERECTOR OUTFIT NO. 2

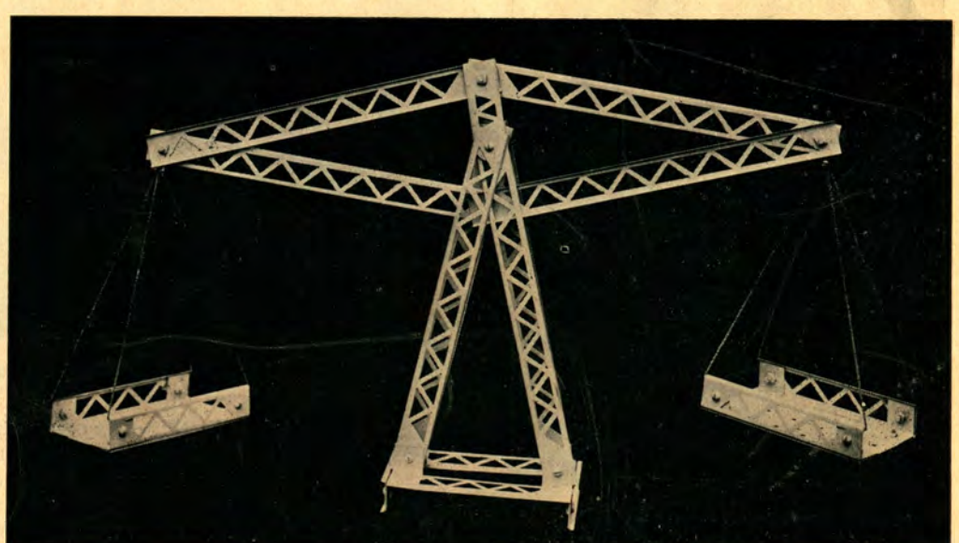


Telepher Conveyor, No. 36



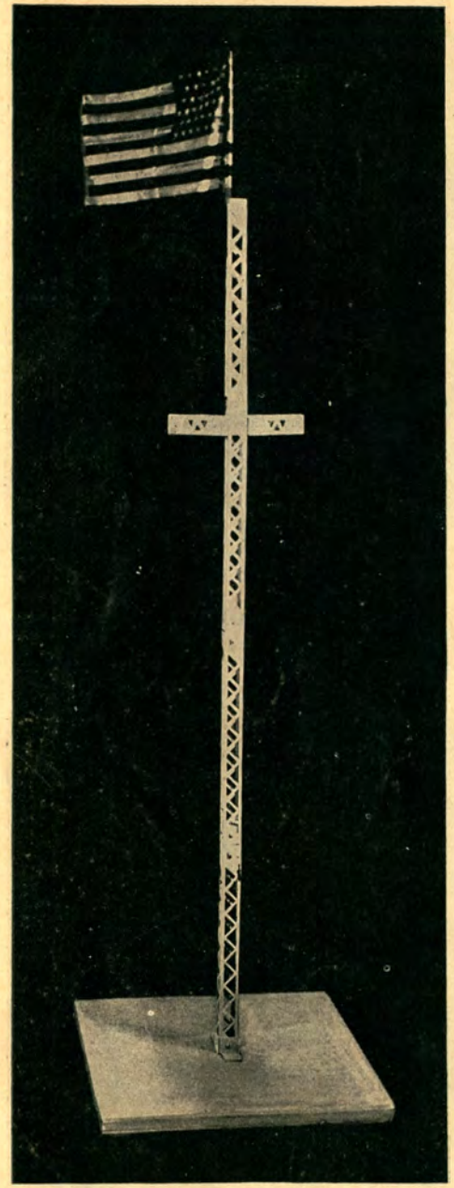
Traveling Jib Crane, Model No. 37

Wheelbarrow, Model No. 39

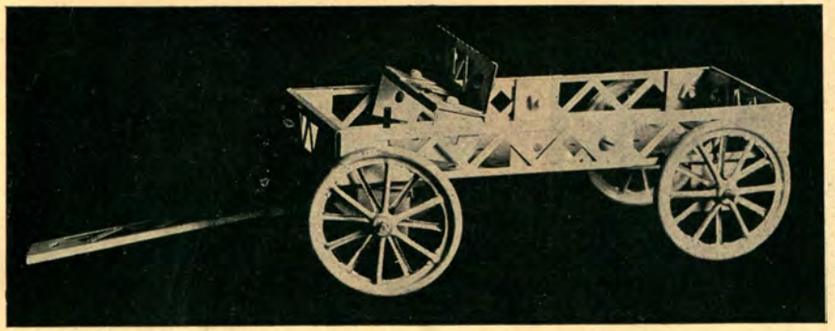


Apothecaries Balance, Model No. 38

MODELS 1 TO 39 BUILT WITH THE ERECTOR OUTFIT NO 2

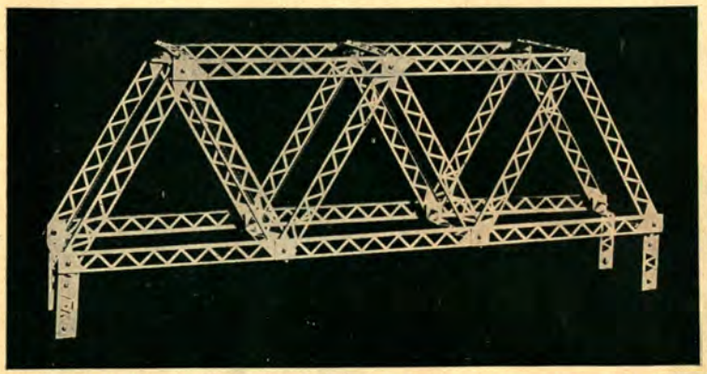


Flag Pole, Model 40



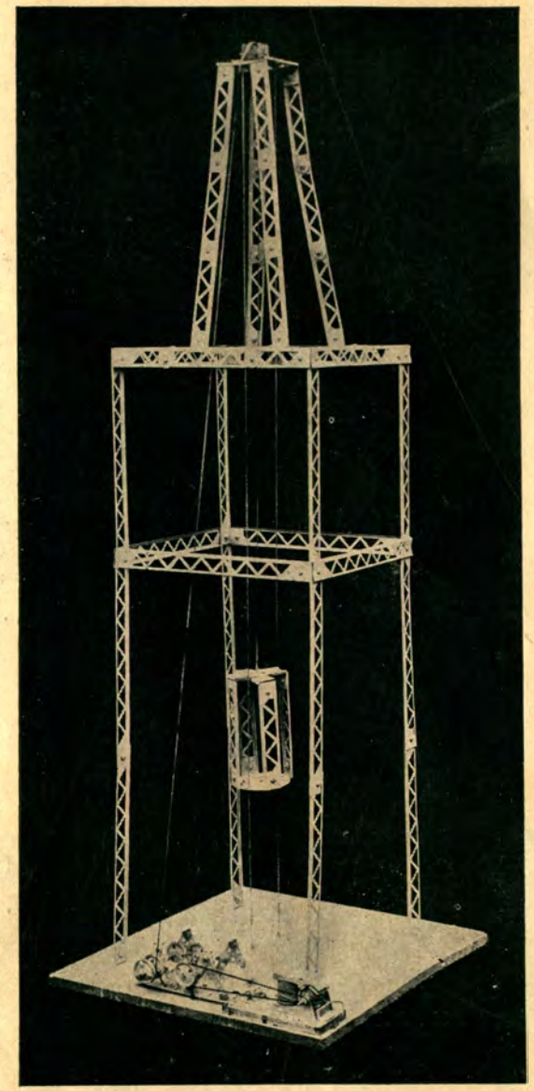
Farm Wagon, Model No. 41

Note:—Make the body of the wagon first, using two base plates. The front wheels pivot on a long screw using a three-inch girder with two angles through which the axle goes, washers are used to separate the three-inch girder from the bed of the wagon. The wheels are held on the axle by means of clips.



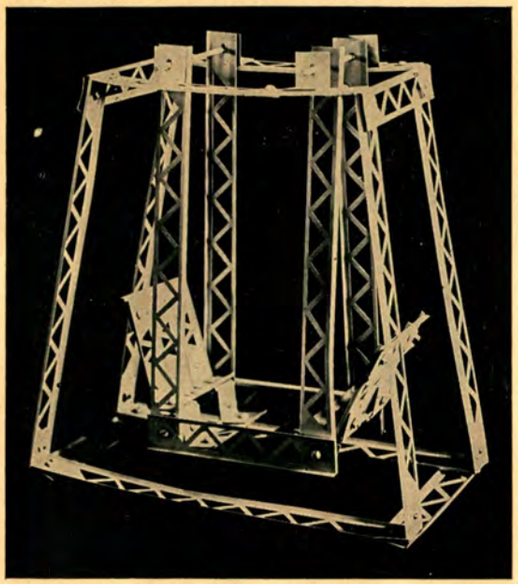
Girder Bridge, Model No. 42

Note:—Build the two sides first with design laid out on the floor. See Fig. 28, Page 1, for method of arranging connection with angle. Then connect the two sides with six-inch girders and last make four three-inch long girders (see Figs. 17 to 21) and attach for piers.

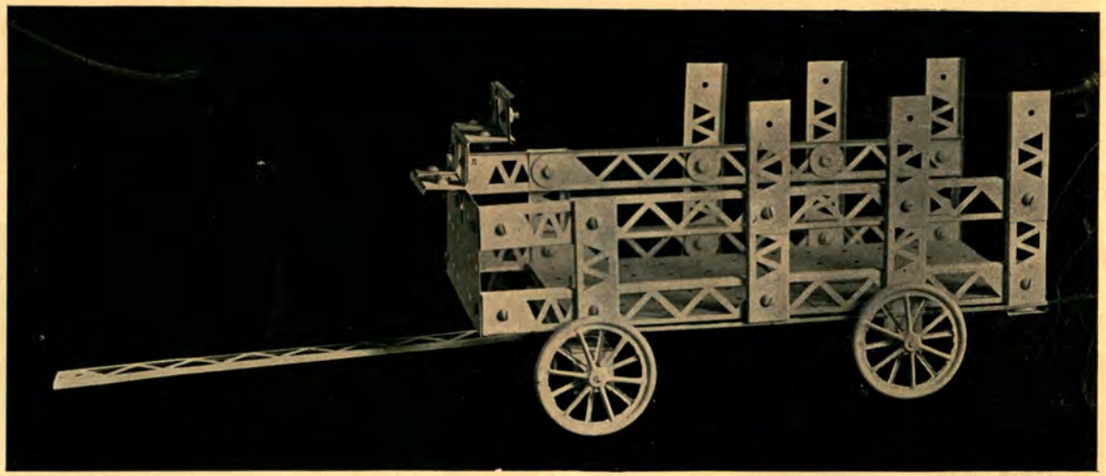


Sight-Seeing Tower, Model No. 43

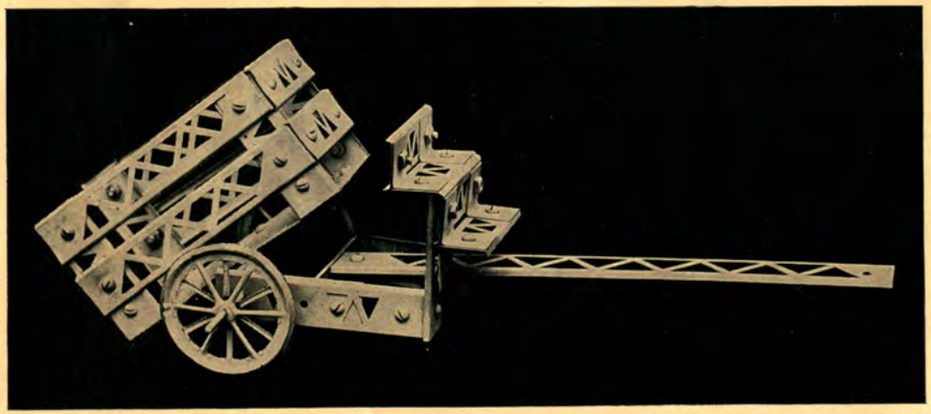
Note:—For gear box see drum gear box, Model No. 54. This model can be used in connection with a motor in sets No. 4 and up.



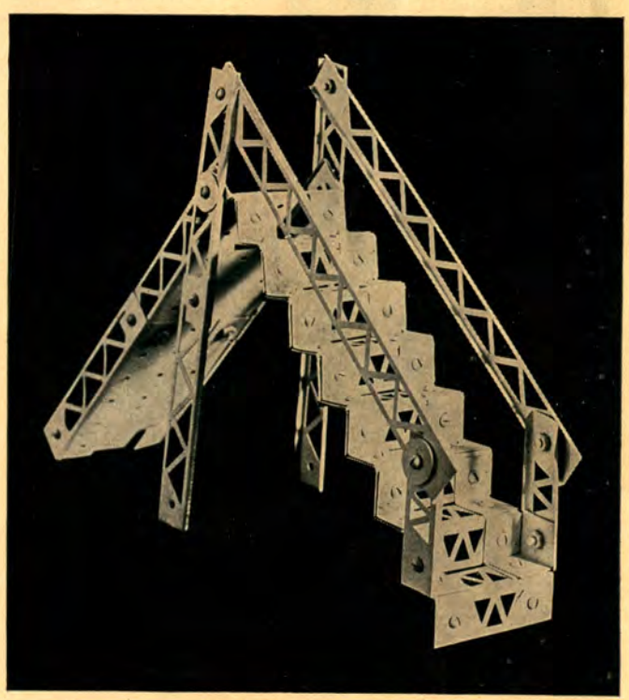
Double Lawn Swing, Model No. 45



Barrel Truck, Model No. 46



Dump Wagon, Model No. 47



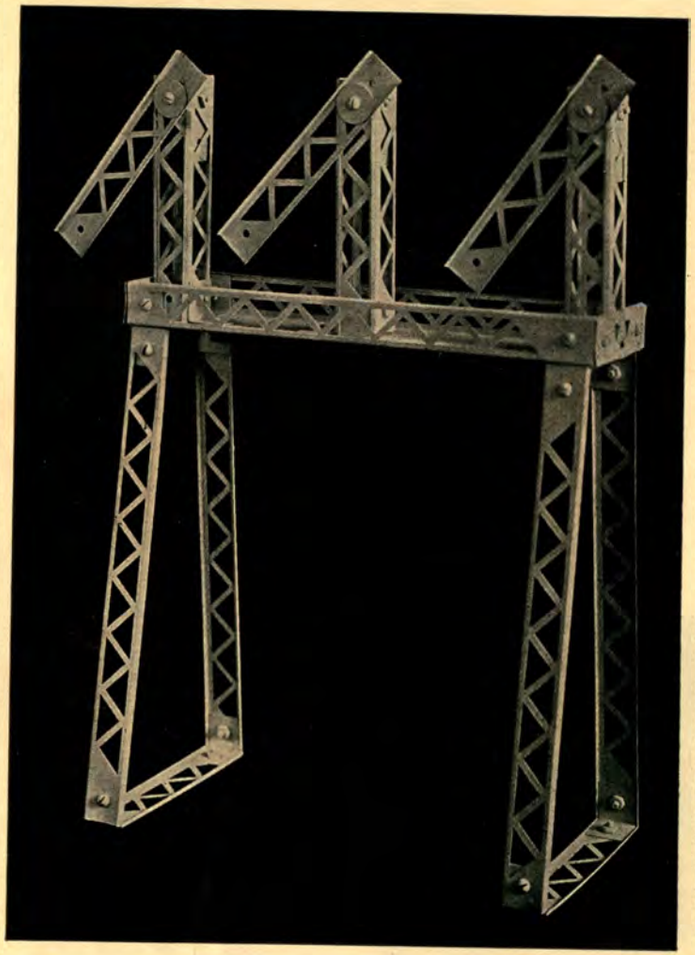
Amusement Slide, Model No. 44

Note:—Build stairs first then make other necessary connections.

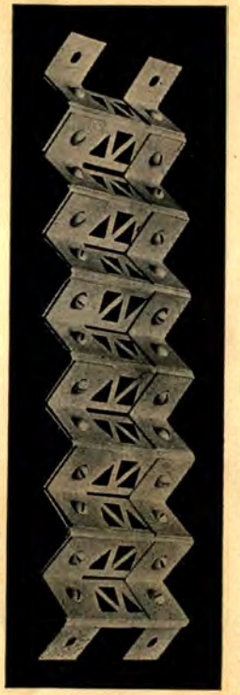
To save angles in building the stairs on one side of steps use single angle in front and back, on other end use angle in front only.

MODELS 1 TO 55 BUILT WITH ERECTOR OUTFIT NO. 3

Trolley Repair Ladder,
Model No. 48

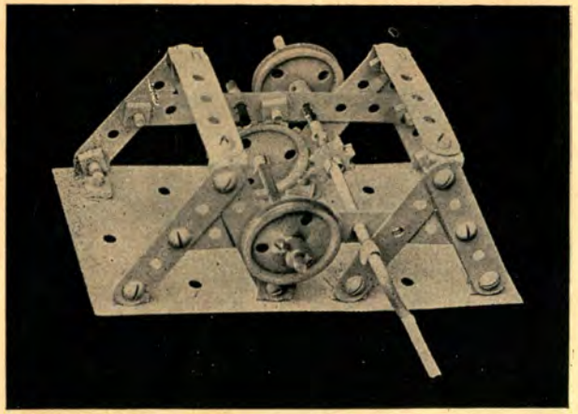


Triple Semaphone, Model No. 49



Stairs, Model No. 50

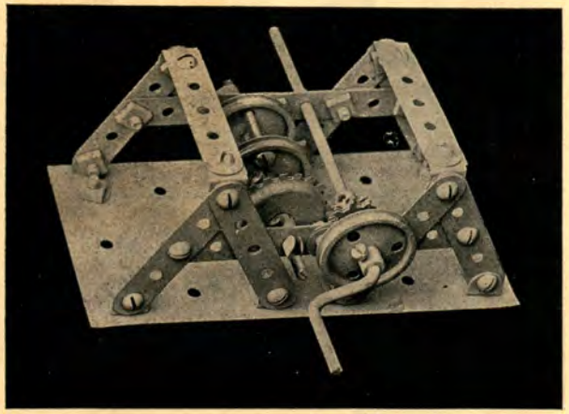
MODELS 1 TO 55 BUILT WITH ERECTOR OUTFIT NO. 8



Slow and Strength Type Gear Box, Model No. 51

The small pinion is the driver and the large gear the driven. In this type the power is increased and the speed decreased, and is designed to lift heavy weights.

Note:—Operated by hand or Mysto Erector Motor.



Drum Type Gear Box, Model No. 54

This type of gear box is designed to wind cable by means of the drum. The pinions being the driver and the gear the driven, you get power not speed.

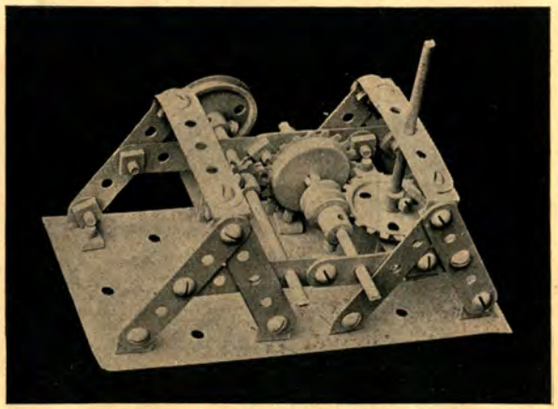
Gear and Pulleys.

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

If power is desired speed must be sacrificed.

If speed is desired power must be sacrificed.

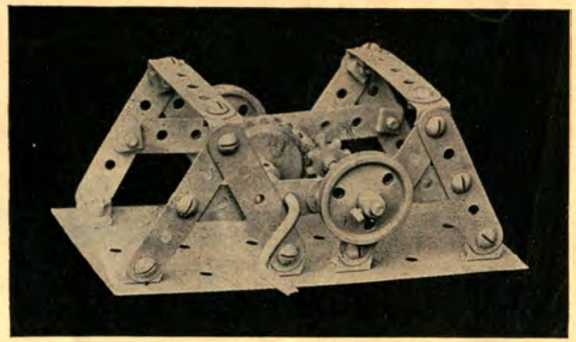
The driving wheel is called the driver and the driven wheel the driven. These different styles of gear boxes are shown together to illustrate and treat practical mechanics. They also offer the builder a variety of different kinds of power from which he can select the most practical for any particular model.



Change of Direction Type Gear Box, Model No. 53

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

Note:—These models are especially effective if demonstrated in connection with an Erector motor contained in sets four and up.

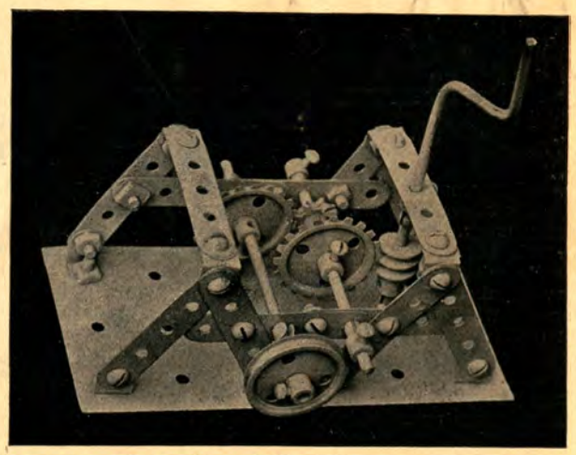


Speed Not Strength Type Gear Box, Model No. 52.

The large gear is the driver and the small pinion the driven.

In this type the speed is increased and the power diminished, and is designed for a gear box where high speed is wanted not power.

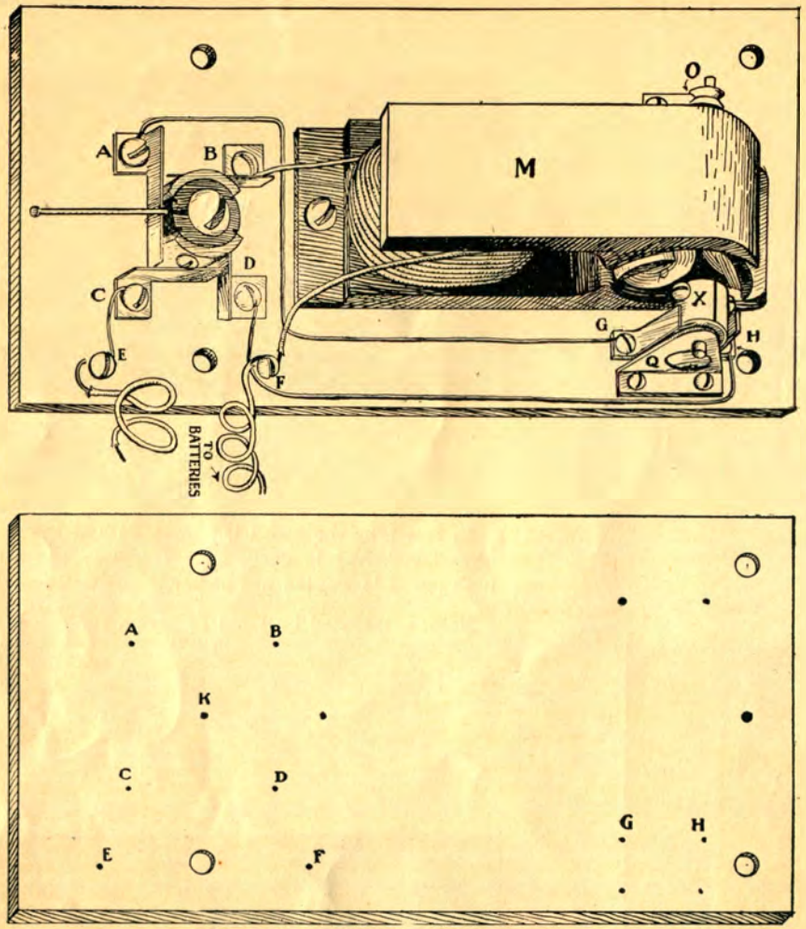
Note:—Operated by hand or Mysto Erector motor.



Worm Type of Gear Box, Model No. 55

The worm is the driver and the gear the driven. The power can not be reversed. This type is designed for use where power is wanted not speed, and where the power is transmitted at right angles.

MODELS 1 TO 55 BUILT WITH ERECTOR OUTFIT NO. 3



ELECTRIC MOTOR MODEL 56, FIG. A

MOTOR DIRECTIONS

All necessary parts to build motor complete, price $1.00. Motor assembled complete, $1.50.

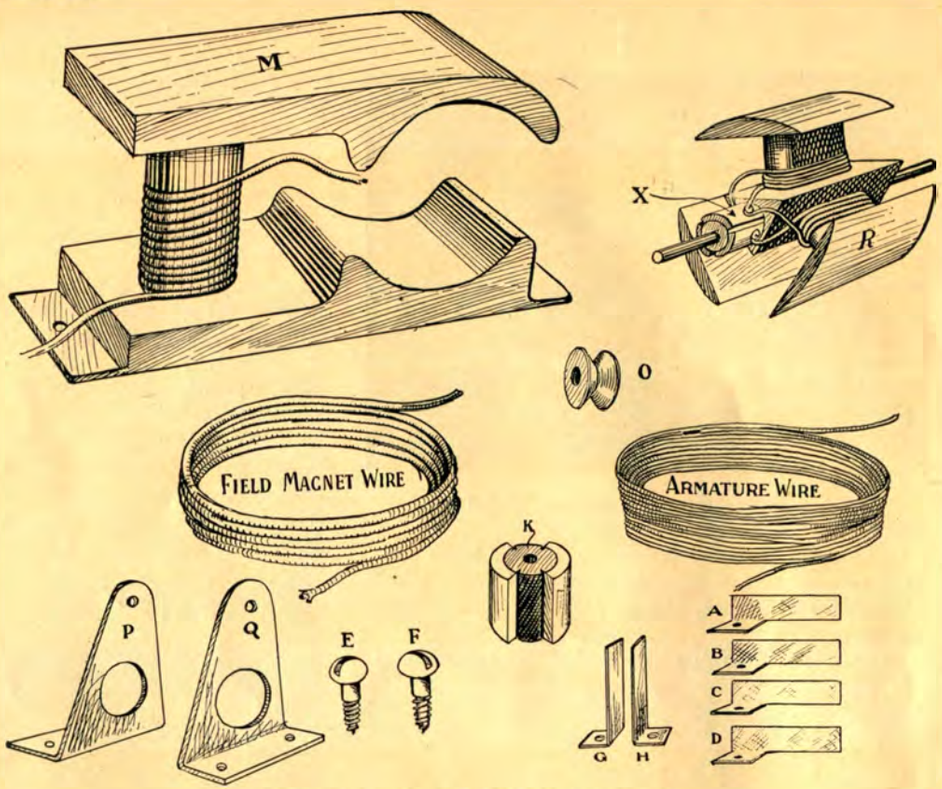
The above cuts show all the parts and also the manner of their arrangement when motor is complete. By following these directions carefully any intelligent boy can build a small but powerful motor that will more than pay him for the time expended.

To wind the field magnet M, take the casting in the left hand, holding it by its base and, leaving about five inches hanging over for the inside terminal, wind four layers of the heavier wire, starting at the base and winding in the direction that the hands of a clock turn. This will bring the outer end of the wire also at the base of the casting where the two can be twisted together for the time being while we proceed with the next operation.

Now for the armature R. The commutator X is found already mounted on a shaft. Drive the casting R on the long end of the shaft until it touches X and in such a position that the legs upon which the wire is to be wound will be exactly in a line with the screws in X. A drop of oil in the hole in armature will facilitate the driving of the shaft.

Now for the winding. Scrape the insulation off about a quarter inch of the end of the smaller wire and make it fast to one of the screws on the commutator X and holding the casting in the left hand wind six layers on the leg of the armature R which is directly beside the screw from which you started. Now, instead of cutting the wire, merely scratch the insulation at the point where you can take a turn around the next screw on the commutator and after making it fast to the screw proceed to wind the next leg with its six layers of wire and in the same direction as the first one. Go through the same operation with the next leg and the free end of the wire when you have finished is attached to the same screw from which you started.

Now, looking at the armature at the commutator's end it should be seen that the inside of every coil is connected to the screw immediately in front of it and the outside ends to the next screw to the left.



ELECTRIC MOTOR MODEL 56, FIG B

All this winding should be done as neatly as possible so as to get the greatest amount of wire on the cores and at the same time give a good appearance when finished.

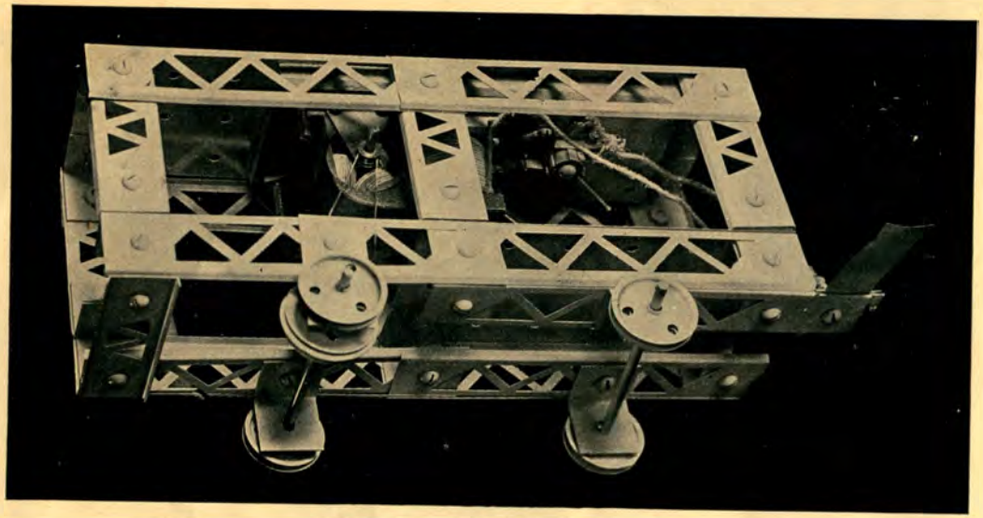
The winding finished, we are now ready for the assembling of the parts. First take the wooden base. Notice the holes punched in it and compare them with the lettered layout in the accompanying illustration. Fasten the field magnet M in position, next the two brushes G and H and cutting the wire in half that was left over from the armature. Scrape the end of each piece and fasten under the same screw that holds down G and H.

Now fasten down the pillar Q. After that that take pillar P and placing the shaft end of R which is on the opposite end from X through its bearing, drive the pulley O to within 1-16″ of binding the pillar tight to the casting. Now see that the ends of the brush G and H are sprung tight against each other and meeting on the line where the shaft will be. If they are not, bend them at the base until they do. Place the armature in the field magnet now, it being necessary to spring the brushes apart to get the X end of the shaft into the pillar Q. This being accomplished, P can be screwed to the base and the only difficult part of the job is finished.

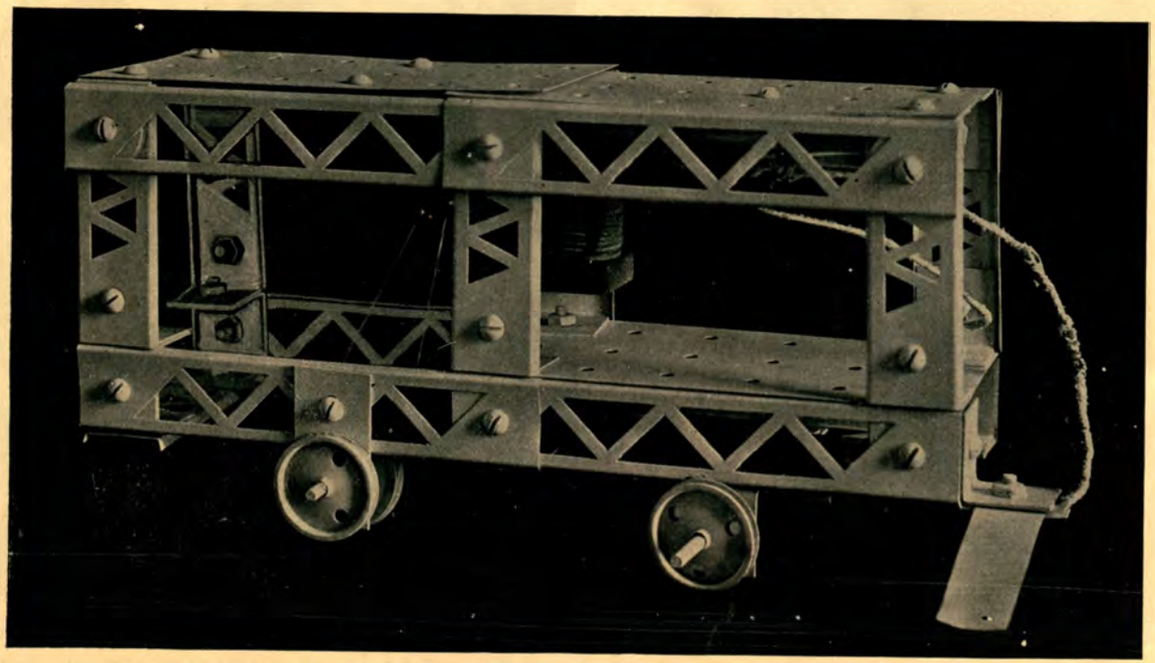
Now, for the reversing switch. First, fasten down K with the long screw but not so tightly that it cannot be rotated by means of its handle. Next screw down A, B, C and D in the position shown, and screw E and F part way into the base. Connect the different screws with the remainder of your wire as shown: G with A; H with D; B with one end of the field magnet winding; and F with the other. C is connected with E by a short piece of wire and under the heads of E and F are fastened the wires from your battery which should consist of at least two good standard dry cells. When switch handle is in position shown in illustration, the motor is at rest. Turning it toward A or C makes the motor run in either direction. Oil bearings frequently.

Compare your work frequently with the illustrations and you can make no mistakes. When you have finished you will have a motor that will surprise you. Care should be taken throughout that no bare wire touches the iron castings.

If any difficulty is experienced in the assembling of this motor, and you wish us to assemble it for you, send us the parts by parcel post with your remittanace of fifty cents, (which is the actual cost for labor and return mail charges), we will assemble it and return same day as received.



Motor Car, Model No. 57, Fig. B



Motor Car, Model No. 57, Fig. A

MOTOR CAR AND THIRD RAIL

The construction of the car itself is simple and needs no other description than the illustrations themselves, Figs. A and B of Model 56 and Model 57.

Only one plate is used for the floor of the car as is evident in Fig. A. The other end of the floor is left open for the passage of the belt from the motor to the grooved pulley on the rear axle. An elastic band makes the most efficient belt.

When plates are in place on the roof and lapped as shown, it will be found that four of the holes match correctly with the four holes in the base of the motor and to which it is easily attached.

The method of attaching and insulating the piece of thin metal acting as the trolley is shown distinctly in Fig. 16 on page 13. One wire from the motor and the piece of metal are clamped as shown, between two angles. The wire and trolley must touch each other but are insulated from the angles by a piece of thin card or heavy paper folded as shown.

The other wire from the motor is fastened under any screw head in the car, it only being necessary to make an electrical connection between it and the whole body of the car.

Now for the track and third rail. Model 58 on page 14 shows the general appearance of the track and how the third rail is supported above and to one side of the main track.

Figs. 14 and 15, on Page 1, show the method of insulating the third rail in a manner similar to that of insulating the trolley. A piece of thin card 5/8 inches wide and one inch long is folded along its length into three parts, two of which enclose the edge of the girder, the third standing up as shown in Fig. 15 on Page 1, to prevent the end of an angle from touching the face of the girder. These supports are attached at every lap joint of the third rail and attached as shown at every lap joint of the main track, the rails of which are spaced the proper distance apart by means of six-inch girders.

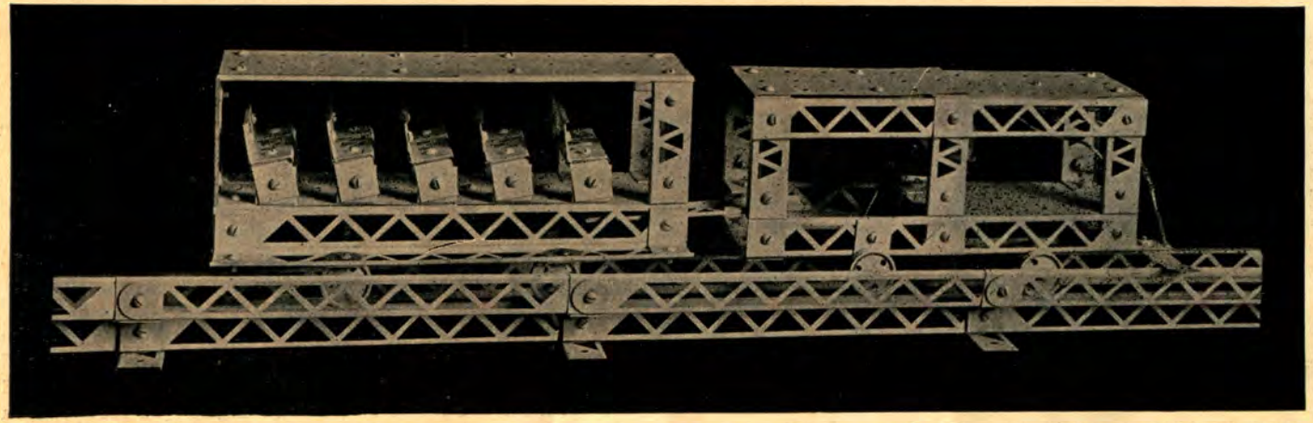
When track is complete, if directions are carefully followed, the third rail will be entirely insulated electrically from the rest of the track.

Now attach one wire of your battery anywhere to the main track and the other to your third rail thus making them merely extensions of the battery wire. Of course, when the car is on the track and the trolley sprung until it slides on the third rail, the motor is connected to the battery no matter what position it is in on the track.

In the third rail model, No. 58, is also shown the trail car, Model No. 59, drawn easily by the motor car.

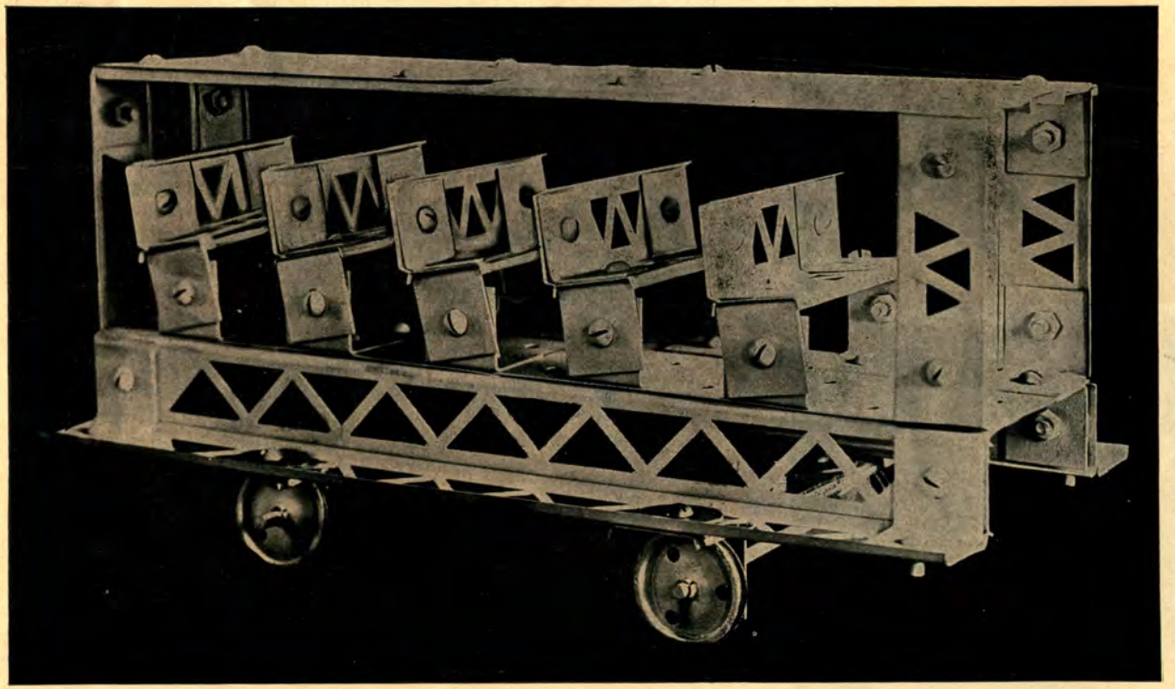
If care is taken throughout the construction of this model, to insulate perfectly as described, this car cannot fail to operate.

Note:—Remember we are always willing and ready to give any information desired—do not be afraid to write us.



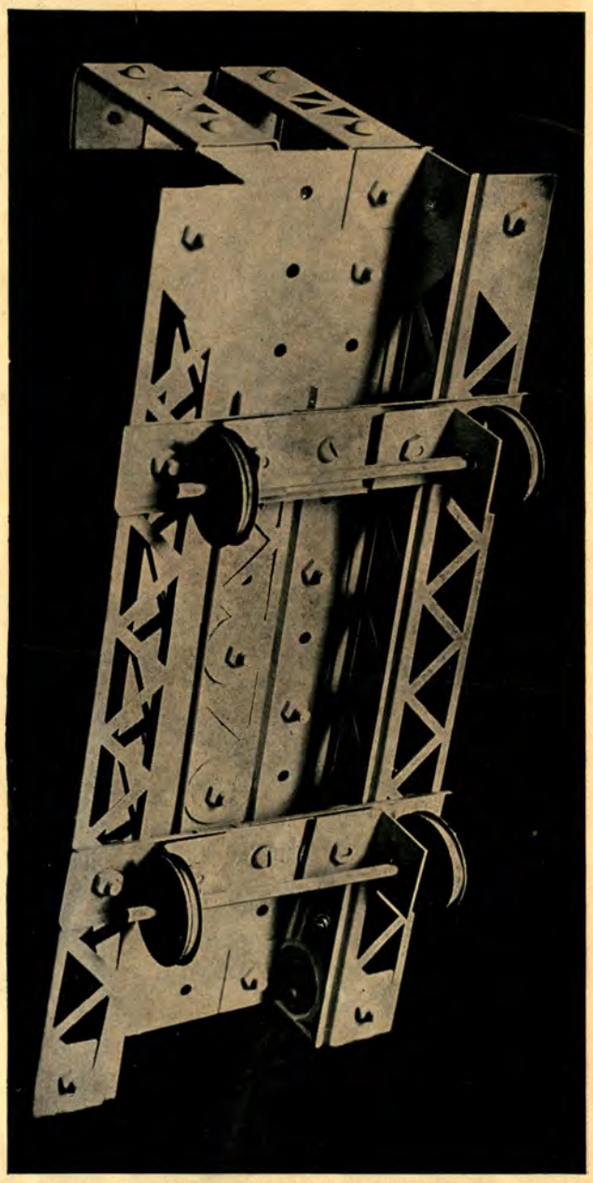
Motor Car and Trailer, Model No. 58

Read information on Page 13, Model No. 57, for this construction.



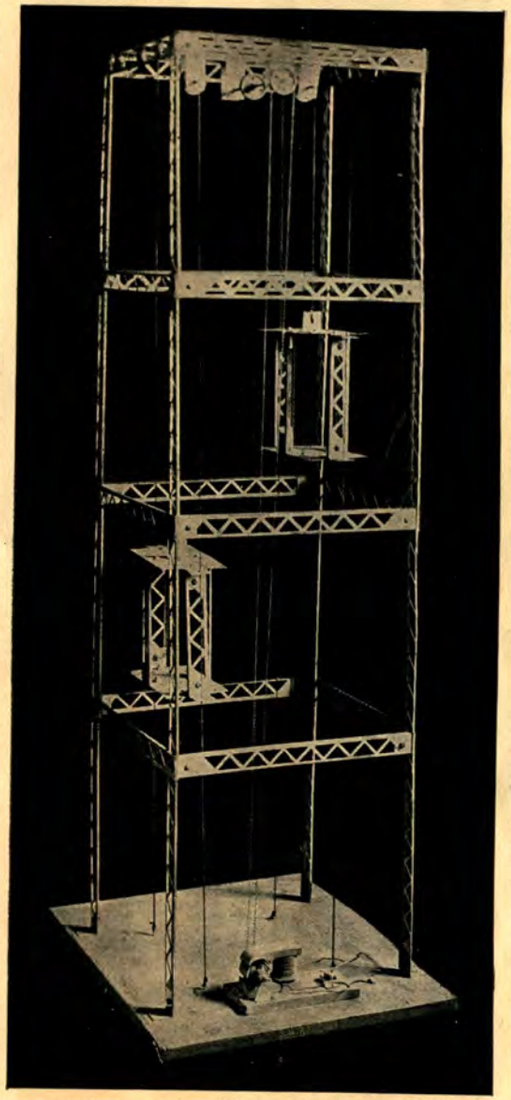
Trailer, Model No. 59, Fig. A

Note:—See Model No. 59 (Fig. B), for construction of bottom. Special Note:—Use flange wheels if you wish to use it on a track.



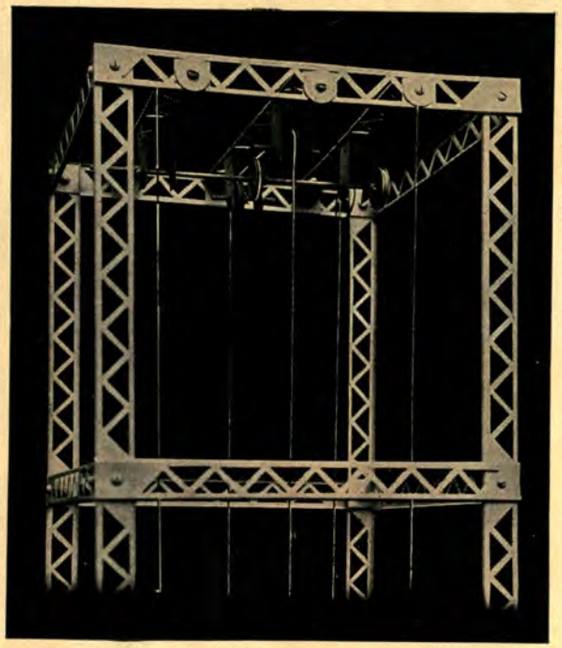
Trailer, Model No. 59, Fig. B

In this model flange wheels are more advisable than the pulleys shown in the illustration. The angles acting as bearings are blocked down by means of washers to give the proper clearance for the wheels.

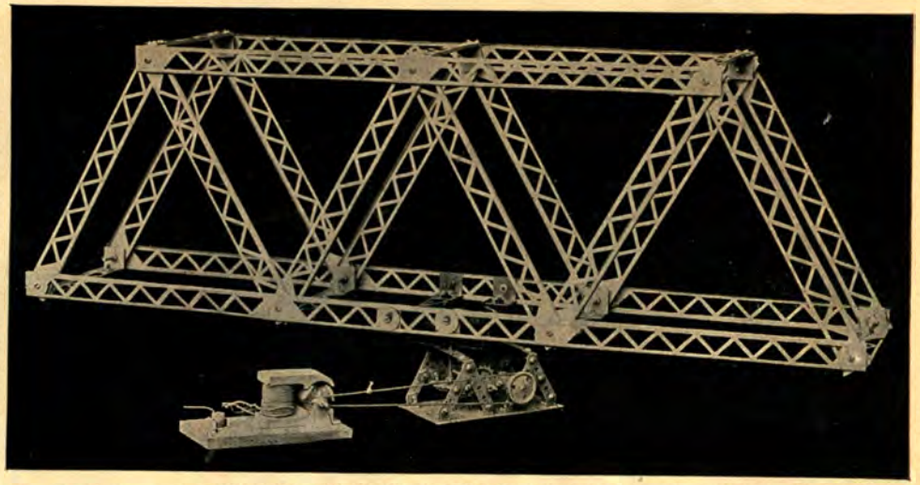


Erector Tower, Model No. 60, Fig. A

One of the most entertaining and fascinating models built with the Erector material. See Fig. B for top construction. The motor drives the shafting direct by a long belt. The motor and the tower are screwed to a board.



Model No. 60, Fig. B



Revolving Bridge, Model No. 6

See gear box Model No. 53, Page 11, and Model No. 42, Page 8, for construction of bridge. The vertical rod in the gear box is attached to the bottom of the bridge by means of the circular plate and a hub.

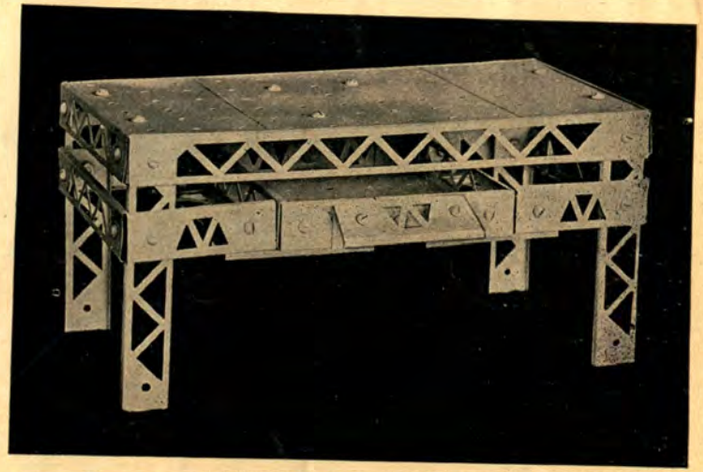
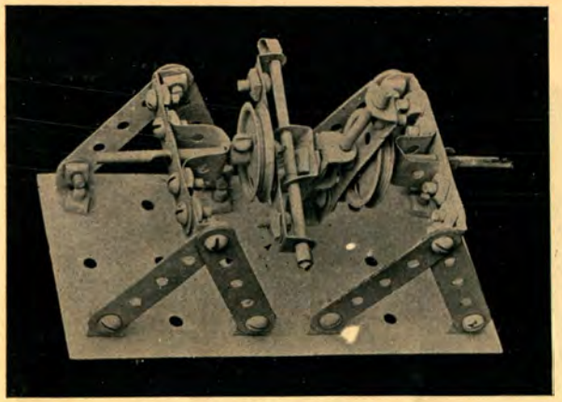


Table With Drawer, Model No. 62.

Note:—Cardboard can be used for a top and for the drawer.

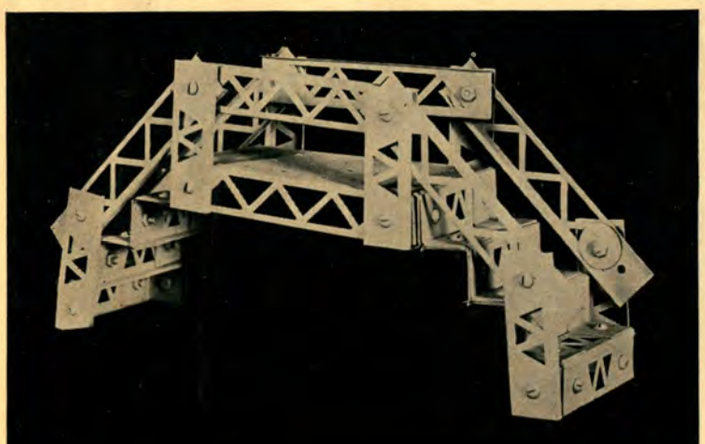


Universal Joint, Model No. 63

This model demonstrates the construction that will admit of two shafts to approach each other at different angles and still allow a perfect rotary movement; in the automobile driving shaft the universal joint is invariably used as it allows for the vibration, and the driving shaft does not in any way interfere with the power transmitted by the engine.

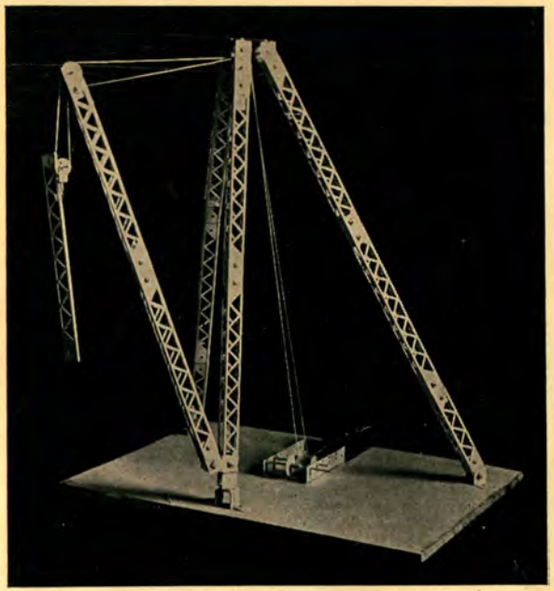
If two of these Universal Joints are connected in series the power may be transmitted from one to another of two shafts at right angles to each other, the two joints being connected by a short piece of shafting.

Close examination of the illustration will reveal that two wheels are used and are bolted to three-inch perforated strips by means of a screw, the screw being placed through the center hole of the perforated strip and screwed into the hole in the hub. The wheel itself is bound to the shafting by means of a set screw. Small angles are used for the other connections.



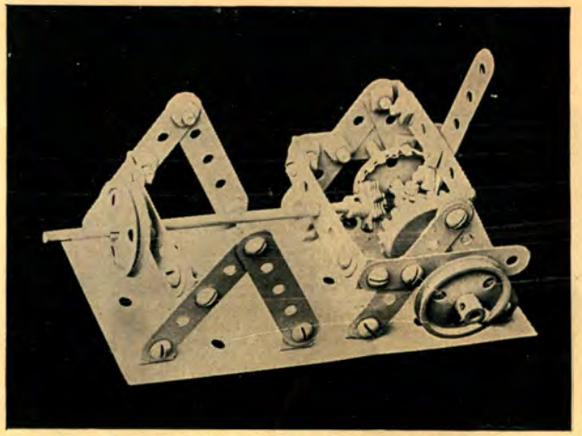
Foot Bridge, Model No. 67

Build two sets of stairs first, then attach the platform, then the upright posts, and last the railing.



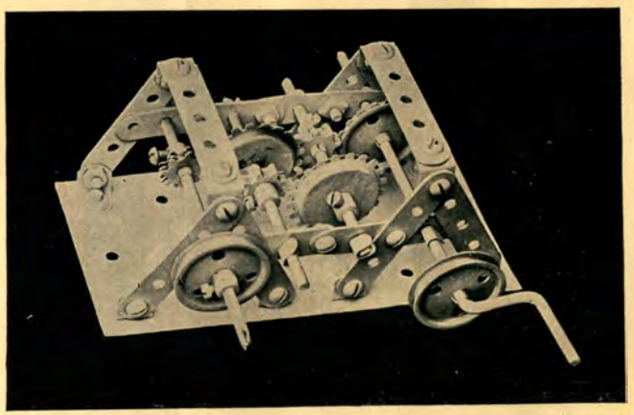
Derrick, Model No. 64

See Gear Box, Model No. 51.



Reversing Gear Box, Model No. 65

This type of gear box enables the operator to change the direction of motion of the shaft from which the power is transmitted without stopping the power. The lever is attached to the rod or shafting by placing a hub between two crown gears and then attaching a small angle by means of the set screw to the hub but allowing the rod to rotate freely, not tightening up on the set screw. The lever which is made of a three-inch perforated strip is attached to the small angle by a screw and nut. The rest of the construction will be understood from the illustration.



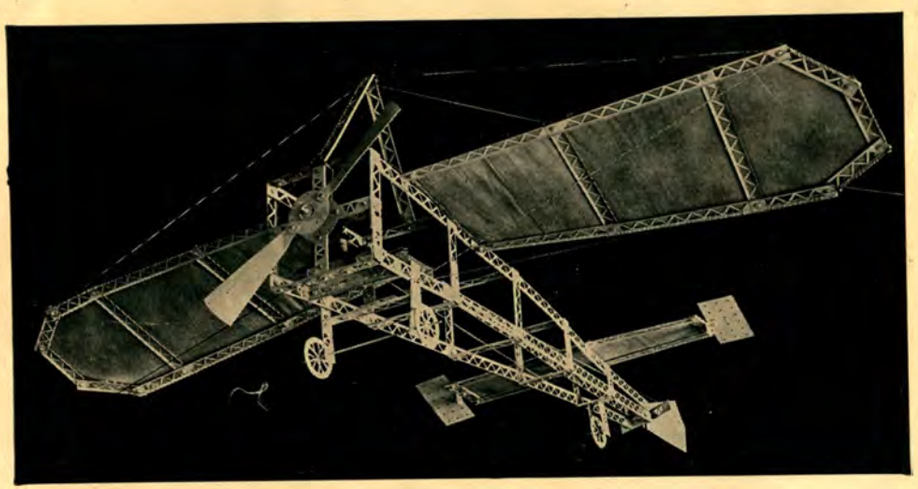
Train of Gears, Model No. 66

This type of gear box shows how the number of revolutions of a shaft may be increased or decreased by a series of gears, and the power of the driven shaft decreased or increased in proportion.

When the power is applied to shaft on the left, the speed of the shaft on the right is greatly reduced but the power exerted by it is greater.

If power is applied to the shaft on the right the converse is true. The shaft on the left is greatly speeded up but not much power is exerted by it.

The first of these principles is that which is applied to our Ferris Wheel, Model No. 101.



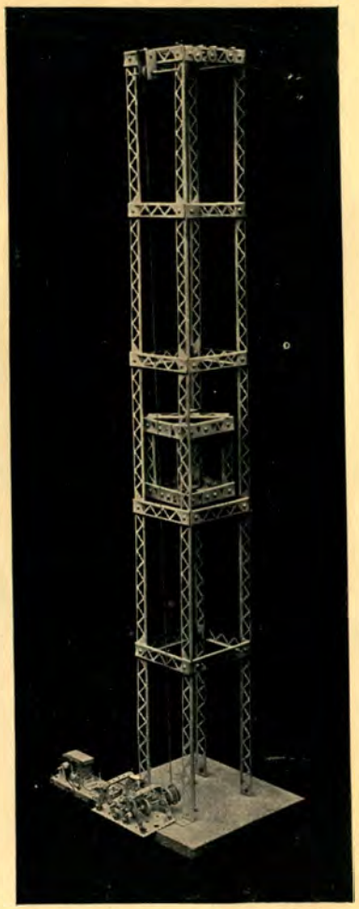
Bleriot Monoplane, Model No. 68, Fig. A

To construct this model, start at the small end of the body leading forward in 12-inch steps from one set of cross girders to another. The small end is started with only straight angle pieces for cross braces, next cross brace is of three-inch strips, next two three-inch lapped, then six-inch piece and the two forward cross braces each of a six and a three-inch girder lap jointed to the proper length as shown in Fig. B on this page. If this is managed properly the four edges of the body will be absolute straight lines.

The rudder is attached as per Fig. 28, on page 1, and controlled by a three-inch girder pivoted in front of the seat as shown in Fig. B.

Three circle plates are needed to mount the propeller. Two of these are fixed to the body by three-inch girders which when attached to four outer holes in the plate will just match up in length with the width of the front end. Two wheel shells are fastened one to each side of each of these plates with a hub. The set screws in the hub are not tightened and these form the bearing for the shaft.

The third plate is arranged in the same manner but made fast to the shaft and the propeller blades mounted thereon.

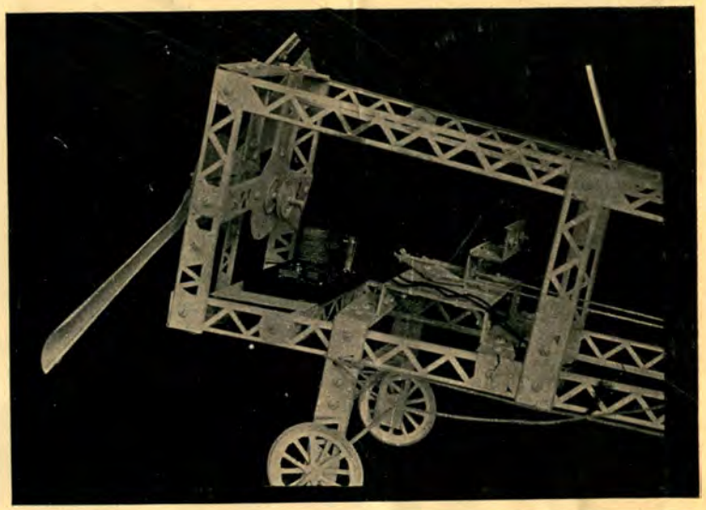


Single Elevator, Model No. 69

Model No. 69 is a simple direct lift elevator and very easy to build.

The uprights of the tower are single 12-inch girders braced crossways with six-inch ones.

The gear box is the same as our Model No. 54, and the car is raised by the cord winding on the drum and drawn over two pulleys arranged as shown in the top.

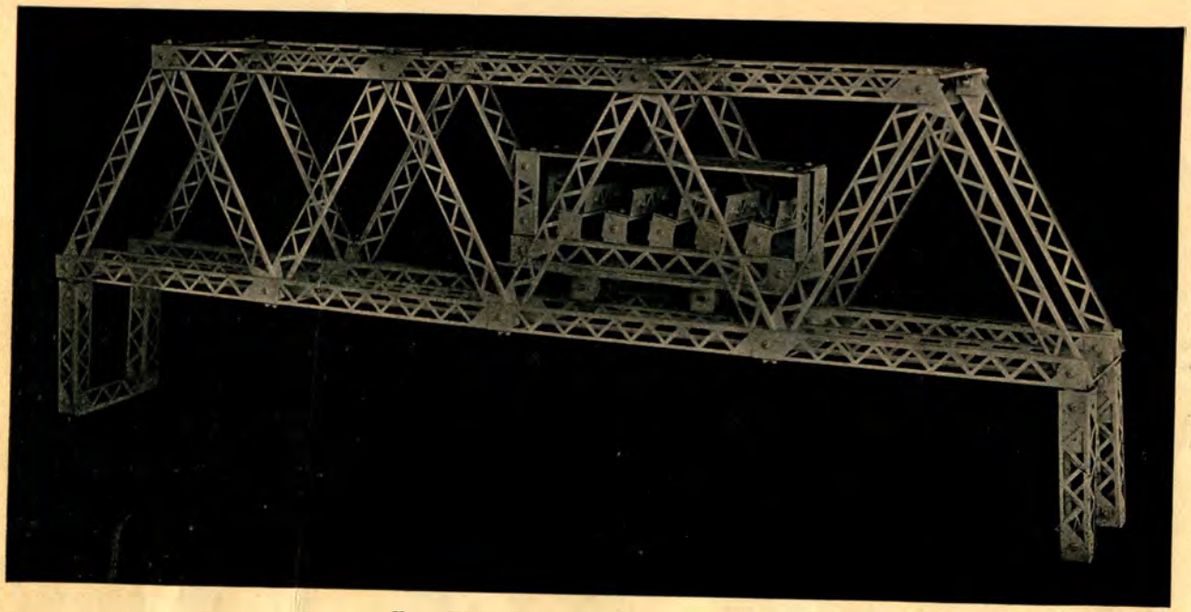


Areoplane, Model 68, Fig B

Fig. B also shows manner of driving the propeller shaft by means of a pulley fast to its inside end. The motor is mounted on a large plate forward in the machine and belted to the driving wheel with an elastic band.

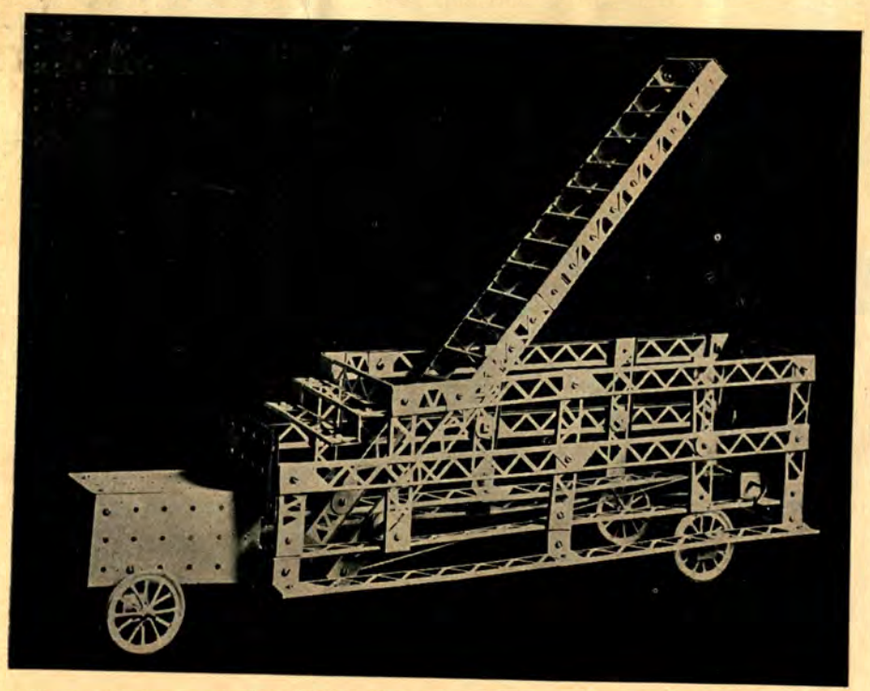
The construction and manner of guying the wings is self evident in Fig. A.

If three or four sets of small dry cells are mounted in the machine and the wings covered with cambric or some cheap material and braced to the proper angle by means of the guy cords, this model will, when hung by a long cord and balanced correctly, fly around in a large circle to the delight of any boy.

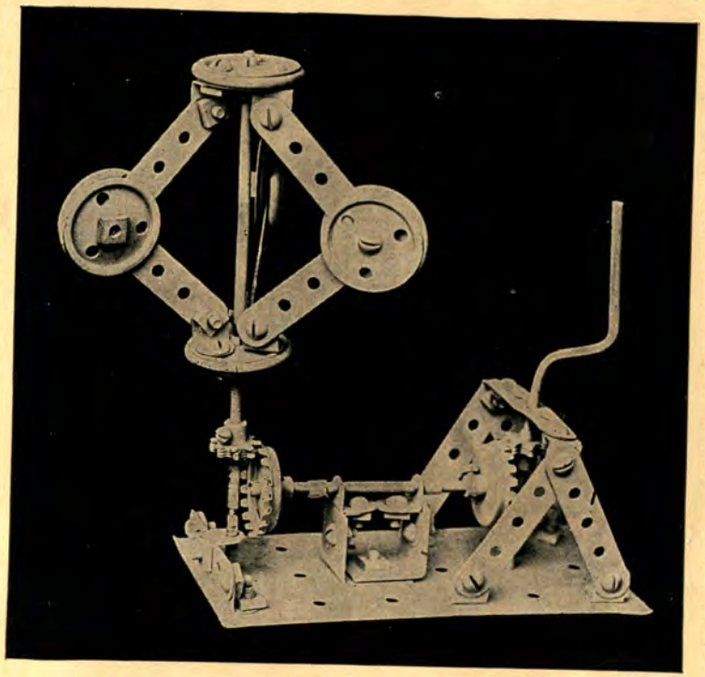


Four Foot Girder Bridge, Model No. 70

See Model No. 42 for bridge construction, and Model No. 59 for street car construction.



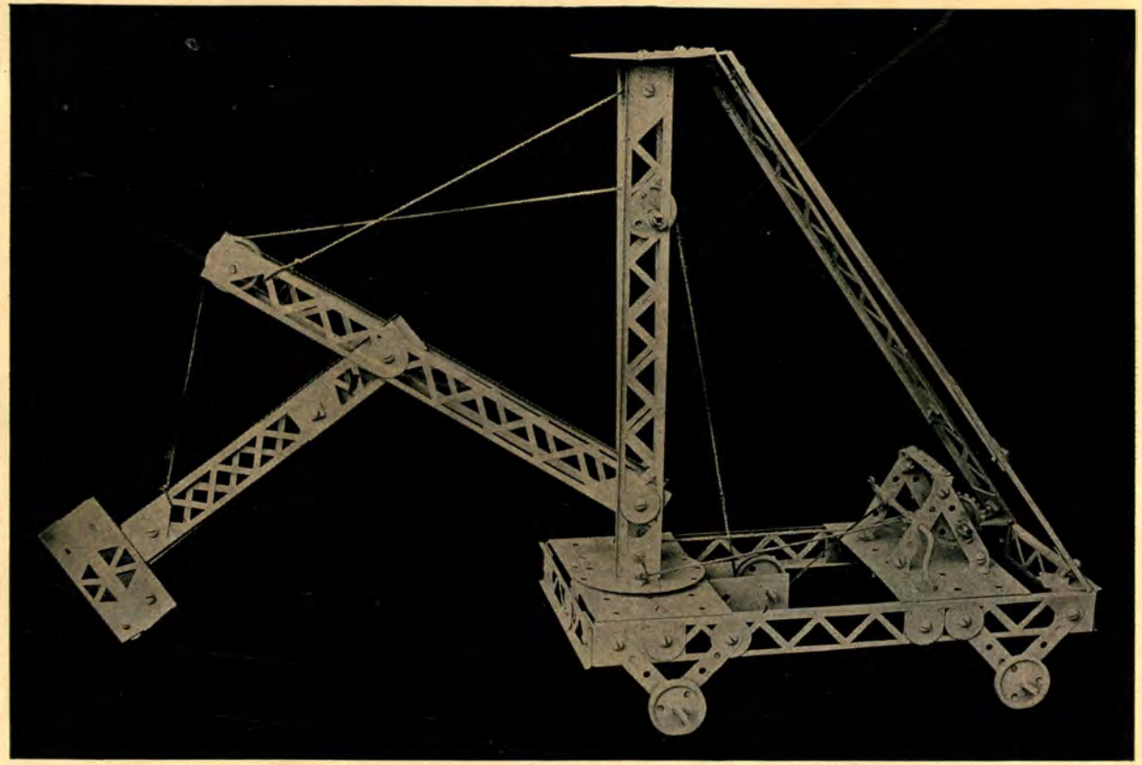
Ladder Truck, Model No. 71



The Centrifugal Governor, Model No. 72

This model shows the system of speed control as applied to an ordinary steam engine to regulate the opening and closing of the valve admitting the steam to the cylinder. The illustration is sufficiently clear to enable the builder to construct the model. The perpendicular shaft runs through two hubs. The upper hub is fastened to the shaft by means of a set screw but the lower wheel is free to move up and down. By speeding up the apparatus the centrifugal force throws out the three wheels, acting as a balance and draws up the bottom wheel. An actual steam governor controlling rod is operated by the rise and fall of the wheel.

MODELS 1 TO 76 BUILT WITH ERECTOR OUTFIT NO. 5

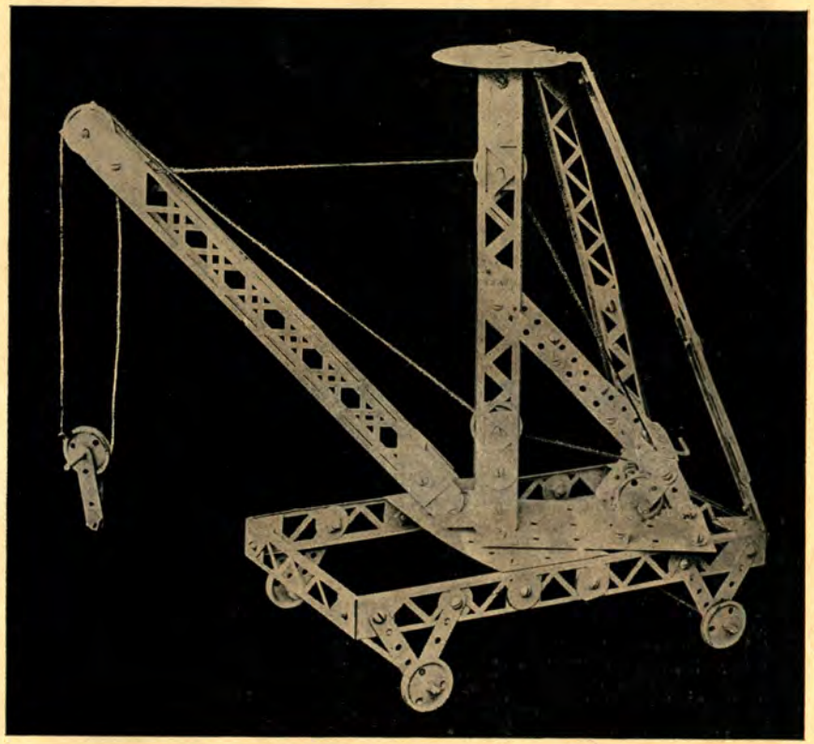


Sand Shovel, Model No. 73

The gear box and method of operation are the only things necessary of explanation in this model. The box takes five three-inch perforated strips as shown and one crank and one straight shaft with pinion and gear.

The cord that raises the bucket, which consists of five three-inch strips bolted together with angles to form a pentagon, passes over the pulleys on boom and mast as shown, under the pulley in the base of the car and fast to the straight shaft in the gear box. The boom itself is hung on a fixed cord from the mast and does not rise or fall.

The other cord is fastened as shown to one side of the circle base plate, which is pivoted to the car at its center, takes five or six turns around the crank shaft and returns to the other side of the plate. When the crank is turned the bucket rises and the crane also turns to right or left as the case may be. When the bucket falls the crane turns back to the same position.



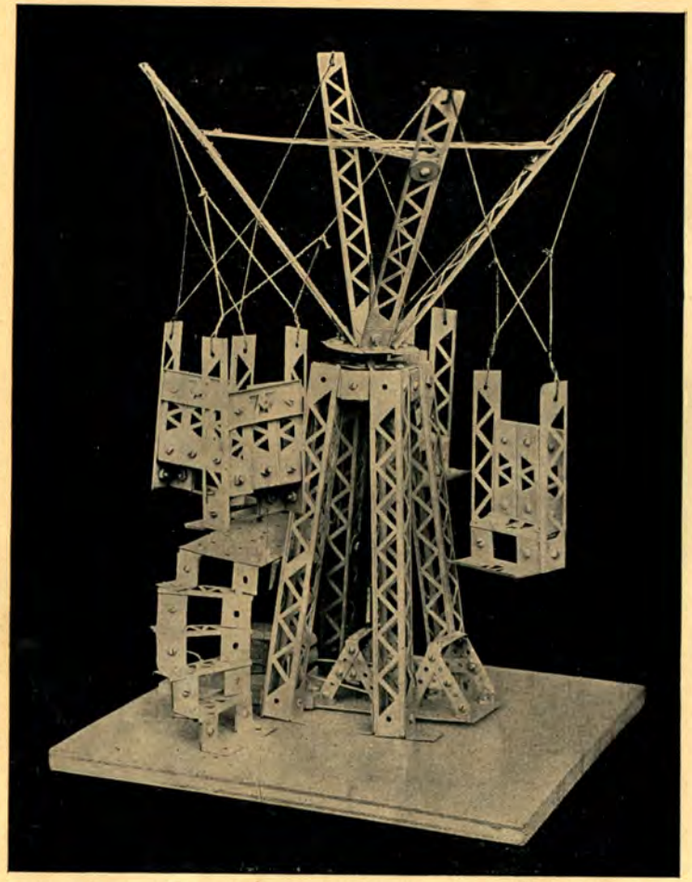
Rotary Traveling Crane, Model No. 74

The illustration of this model comes near to entirely explaining itself. The whole plate, gear box and all, swivels on a screw in the base of the mast.

The gear box is merely one shaft and one crank mounted in the triangular frame, which is fastened to the base plate with small angles.

The gearing consists of one small pinion fast to the crank shaft and one larger gear wheel fast to the straight shaft. The crank shaft necessarily makes many more revolutions than the other, and to it is attached the cord that raises the pulley to the left. To the straight shaft is attached the cord that raises the boom.

A better idea of the gear box can be gotten from Model No. 73.



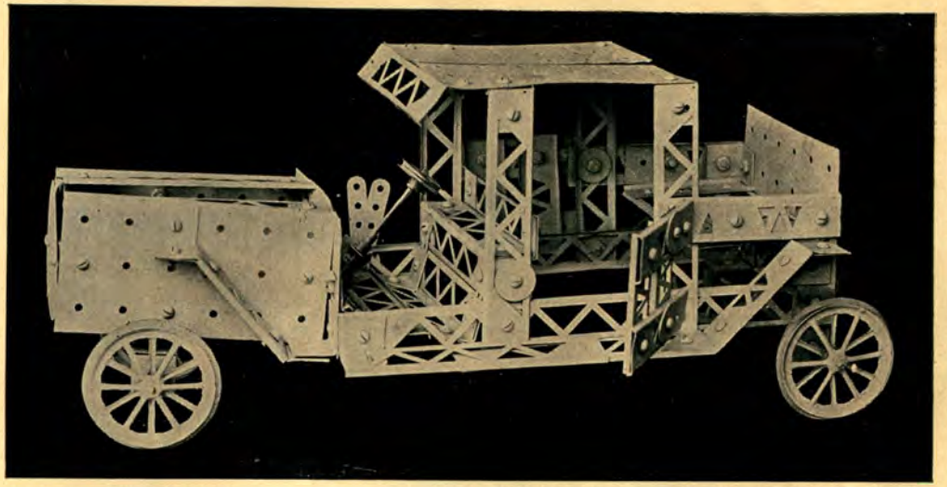
Circle Swings, Model No. 75

This model represents the aerial swing seen at most amusement parks and seaside resorts.

The top of the tower and the base of the revolving top are each made of circle plates, the latter fast to the shaft and the first loose to act as bearing. The manner of this construction is the same as that of mounting the propeller on our Model No. 68.

The rest of the illustration explains itself except the gear box below which is the same as our Model No. 53. The vertical shaft instead of being short as in No. 53 is made longer to reach to the revolving top as shown.

The motor for driving the gear box is seen to the rear of the steps on the left.

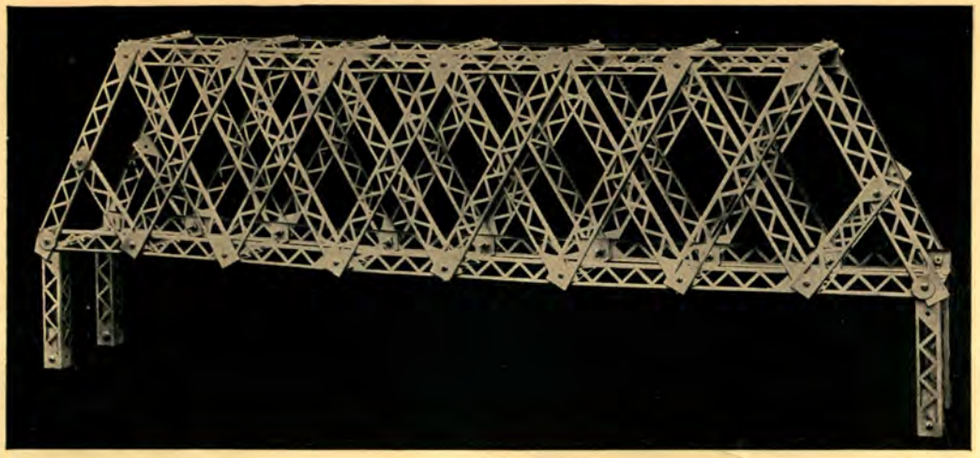


Limousine Auto Car, Model No. 76

This model represents the ordinary taxi-cab in use in our prominent cities. This car has no power applied to it as per illustration, but the motor can be easily attached under the rear of the body to drive the rear axle and small flash light batteries for power can be easily placed in the body of the car.

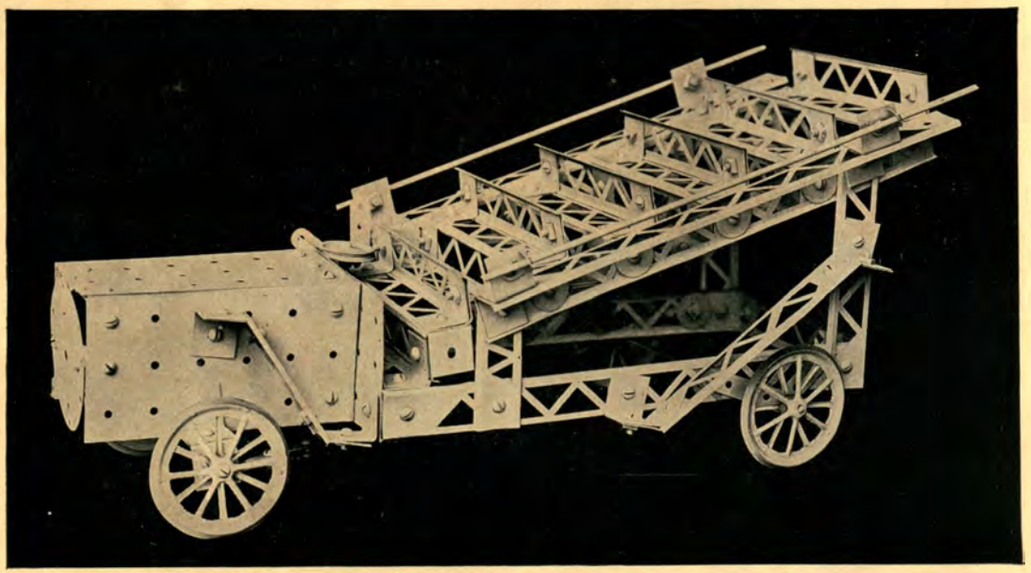
The doors are hinged by means of a pair of small angles, one fast to the body, the other to the door and connected to each other loosely with a screw.

The steering of the front wheels can be easily managed by several different ways that will not fail to suggest themselves to the builder.



Western R. R. Bridge, Model No. 77

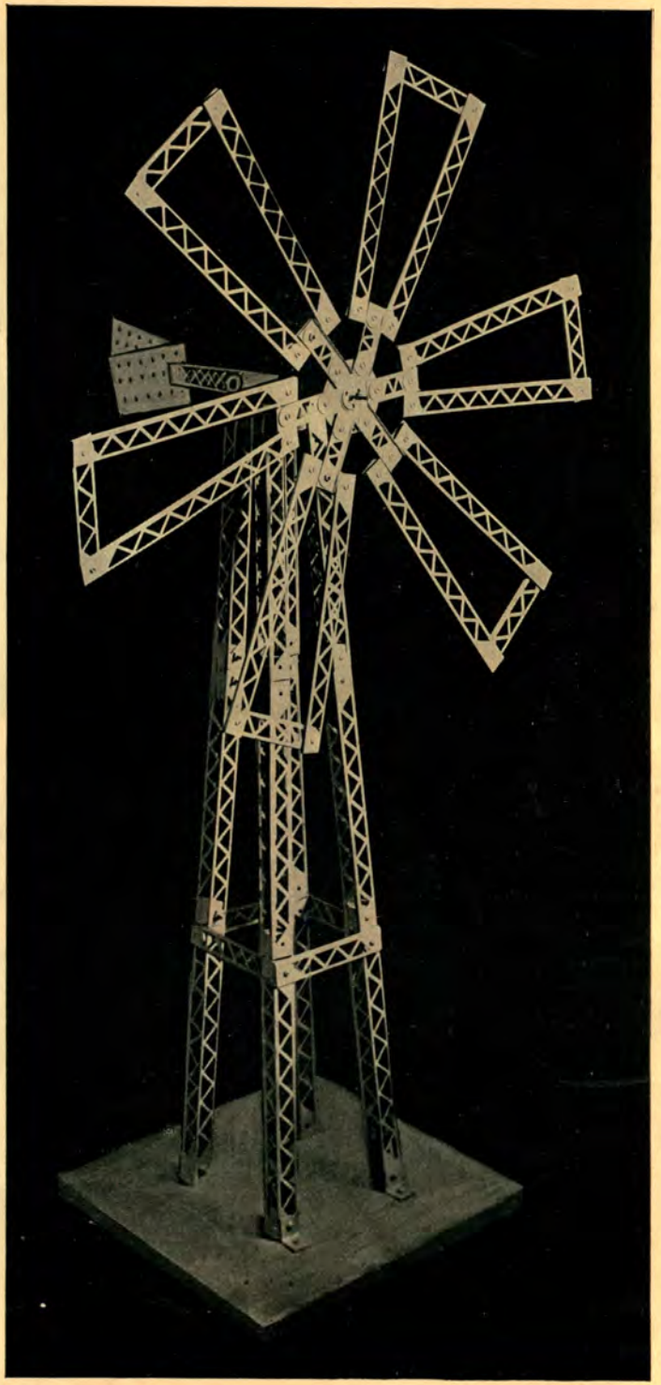
Lay out your design of the sides on the floor and make your connection as per Fig. 28, Page 1, then connect the two sides by means of six-inch girders and last add the four pieces—see Figs. 17 to 21 for their construction.



Sight-Seeing Car, Model No. 78

Build the seats first and join them by two twelve-inch girders, using washers; then build the car frame and attach the seats last. The front wheels can be arranged to guide by the stearing gear, using three-inch perforated strip.

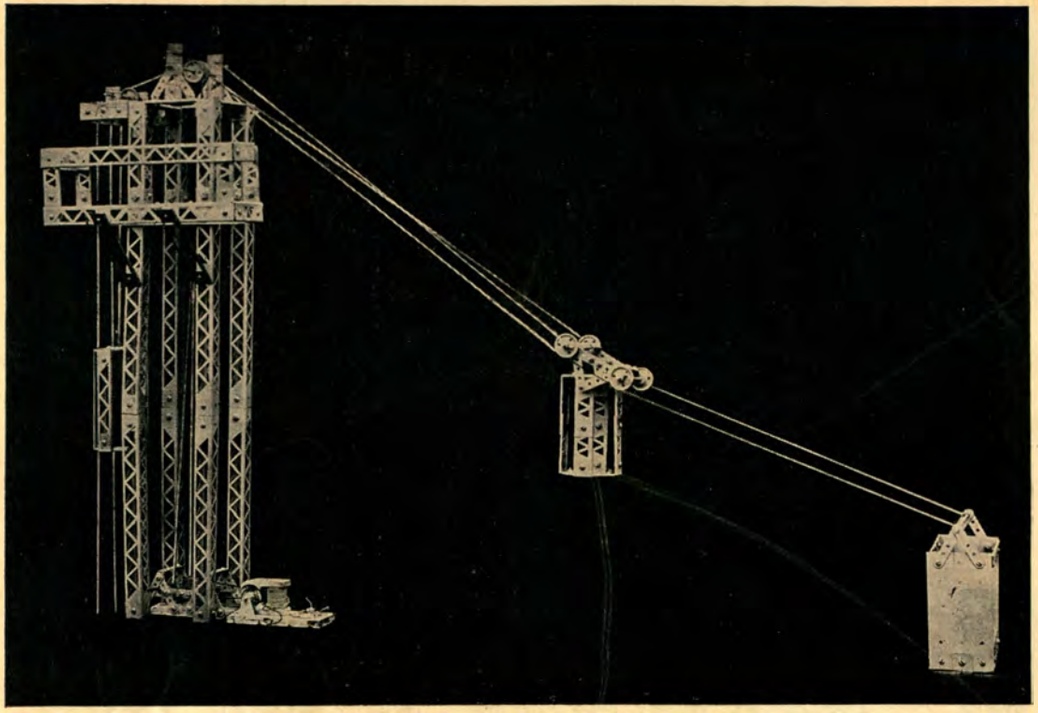
MODELS 1 TO 88 BUILT WITH ERECTOR OUTFIT NO. 6



Windmill, Model No. 79

WINDMILL, MODEL No. 79. Build the square girder first, starting at the base, but do not screw them down until the last thing. Figure on your connecting pieces in advance so you will not have to take it apart. The four girders at the top have angles connected to their sides; these angles are connected together by straight angles which hold the four girders together.

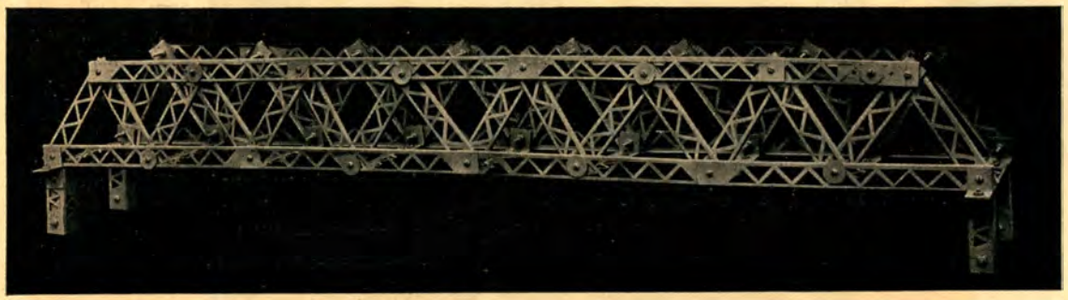
On top arrange two angles as Fig 9, Page 1, through which you run a rod to support the blades of the mill. A wheel and hub hold the blades to the shafting. If paper is placed on the blades and the blades turned at angles it will work if exposed to the wind. This mill can be rigged to run by a motor. See type of gear boxes.



Canyon Cable Railway, Model No. 80

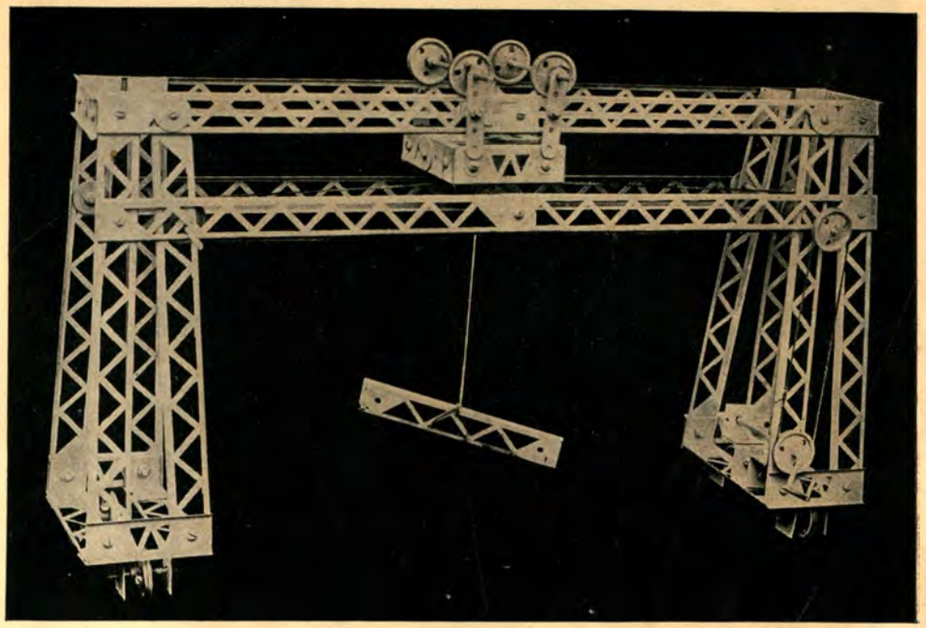
This model is operated by our No. 51 gear box (see its description). The cord drawing the car up the cableway is fastened direct to the driving shaft of the box and the cord raising the elevator is connected in the same manner to the driven shaft, each cord winding directly on the shaft. If the span is the proper length both the car and elevator will arrive at the top of the tower at the same time on account of the greater speed of the driving shaft winding its cord in faster.

The tops and bottoms of the cars are circle plates connected by six-inch or lapped three-inch girders as shown.



Long Single Track R. R. Bridge, No. 82.

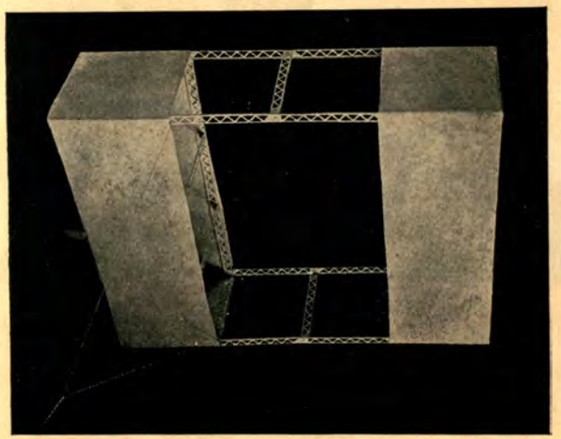
For construction of this model refer to description of Model No. 42, on Page 8.



Double Overhead Traveling Crane, Model No. 81

The power is applied to the lifting and lateral carry of this crane by the crank shown to the right. This crank shaft is belted direct to the shaft above it which same is belted by means of another pulley to a shaft in the corresponding position in the other end of the crane. One side of the long belt take a turn around a pulley shaft in the car, and this shaft is the drum on which is wound the cord that raises the load.

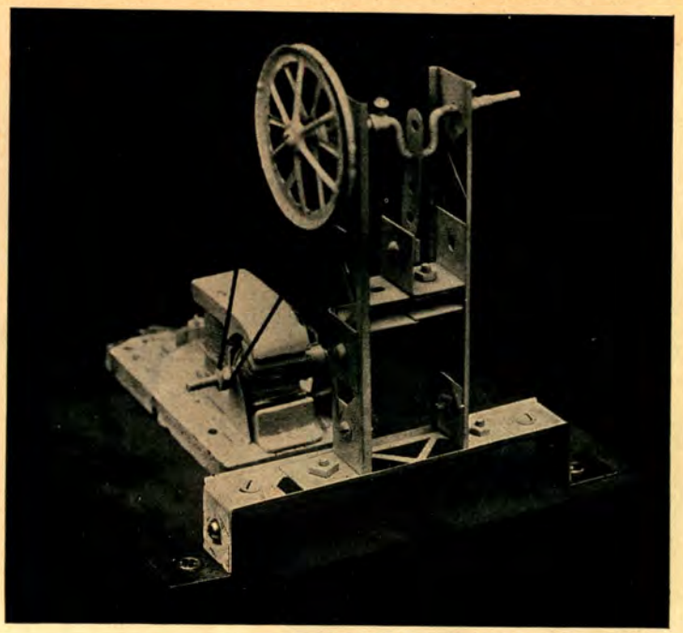
When crank is turned, the pulley in the traveling car is turned, drawing up the load, and when the knot in the belt reaches the pulley in the car, the whole car is drawn to one side or the other of the crane as the case may be.



Box Kite, Model No. 83

The construction of this kite is self evident. When covered with heavy paper or cambric it will actually fly in a good breeze.

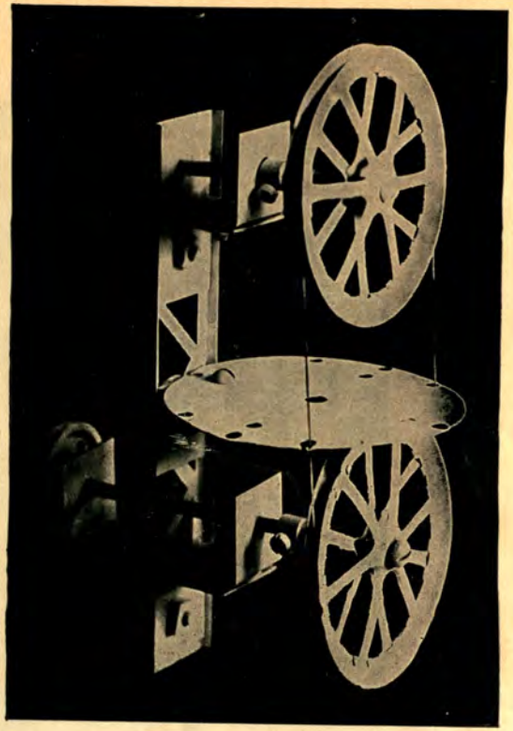
MODELS 1 TO 88 BUILT WITH ERECTOR OUTFIT NO. 6



Power Press, Model No. 84

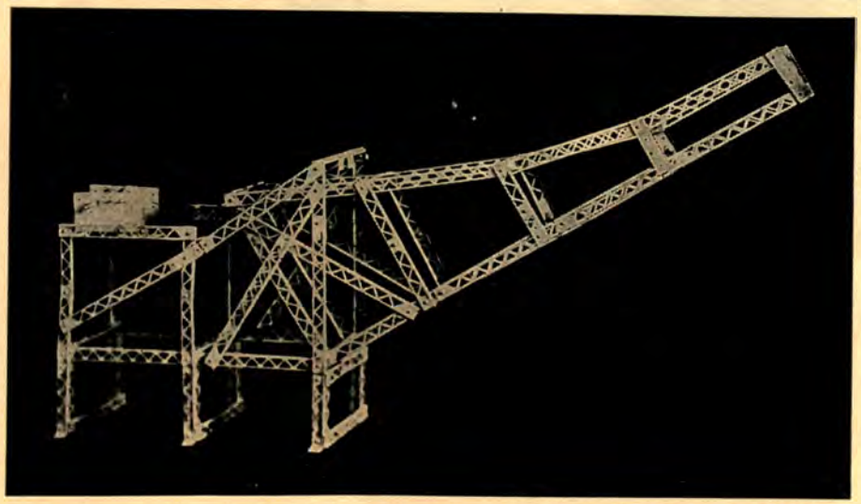
This model represents the heavy power press in use in sheet metal manufacture.

Large wheel is attached with a long screw pushed through the axel hole and a nut screwed on tight; the end of the screw is screwed into our regular coupling and the coupling attached to end of special crank.

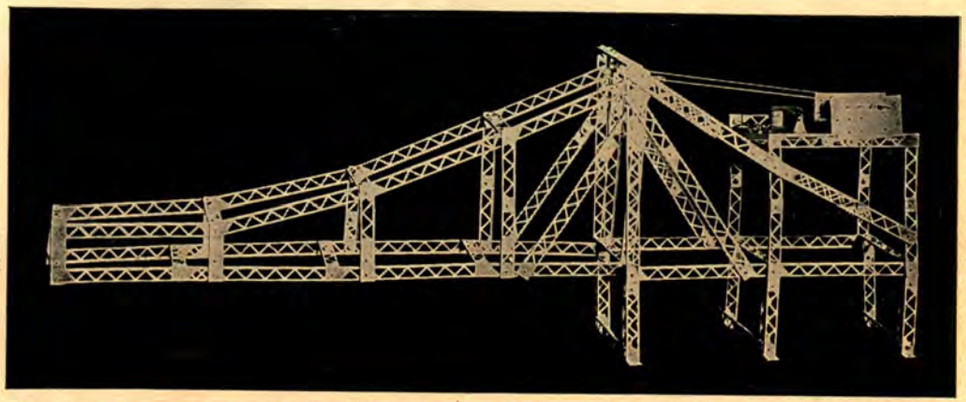


Band Saw, Model No. 85

This model shows the appearance of the band saw used in wood working concerns for cutting on curves and for producing general irregular outlined wood parts. See description opposite for method of attaching large wheel.



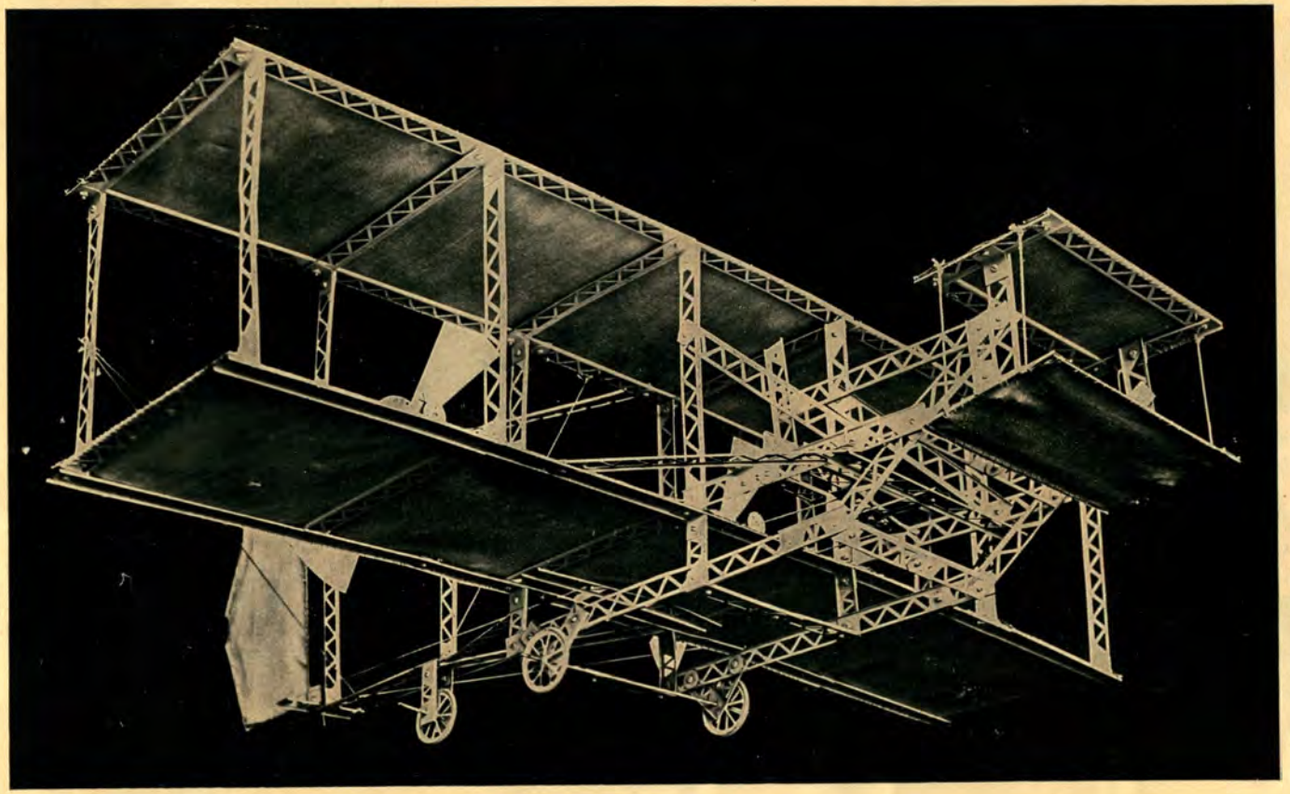
Roller Lift Bridge, Model No. 86, Fig. A



Roller Lift Bridge, Model No. 86, Fig. B

The construction of this model is clearly shown by the illustration.
The two photos show the opposite sides of the bridge being in different positions.
To build both sides complete will necessitate the buying of extra parts by the operator.
The gear box is the same as in our Model No. 99 and operated in the same manner.

MODELS 1 TO 88 BUILT WITH ERECTOR OUTFIT NO. 6



Wright Biplane Model No. 87.

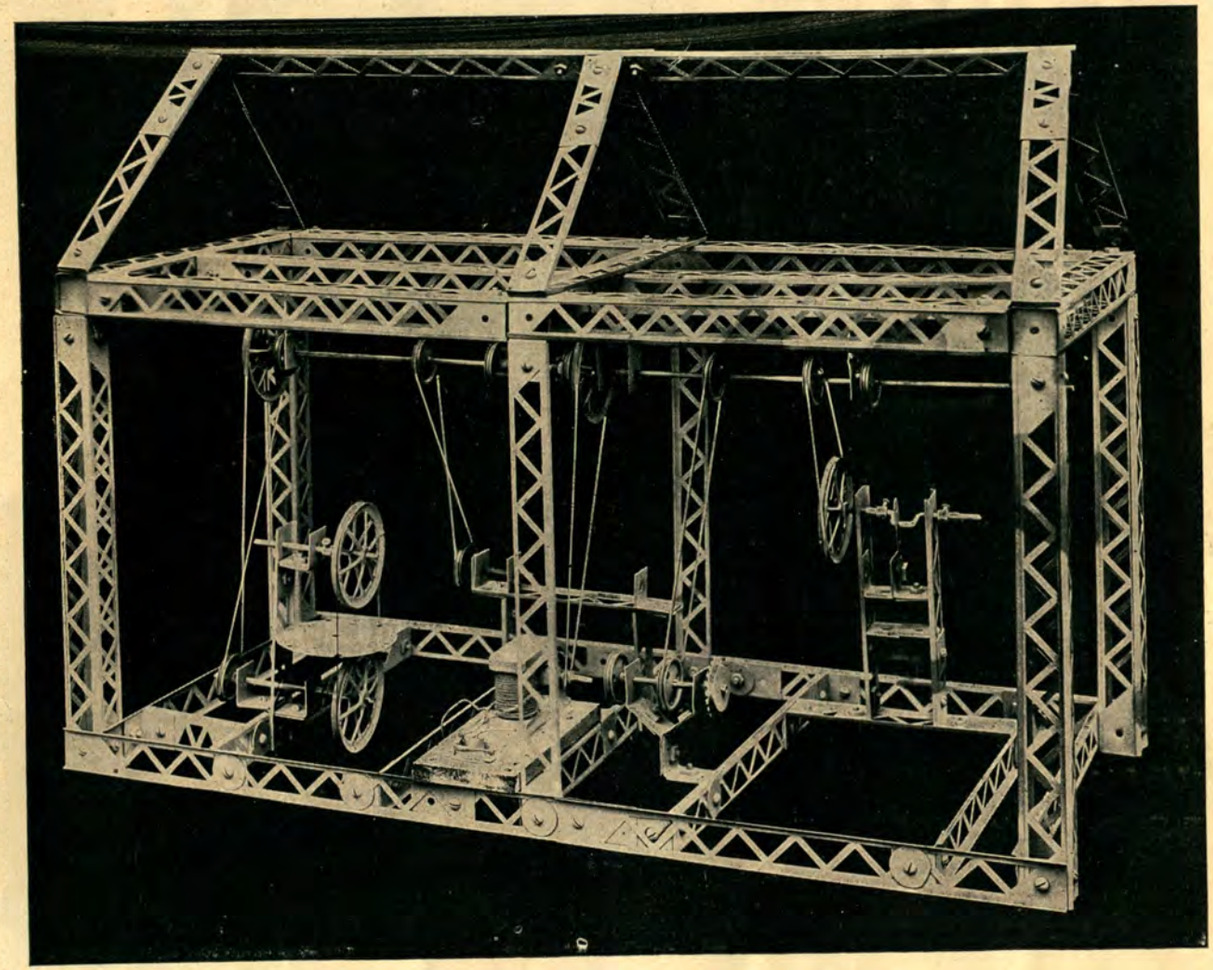
The construction of this rather difficult looking model is in reality very simple.

The rudder is five six-inch girders lap jointed and arched from one end to the other of the twelve-inch girder upright. It is pivoted between angles mounted to the top and bottom of the tail girders and operated similar to the rudder of Model No. 68, by a three-inch strip pivoted in front of the seat.

The elevating planes explain their own construction and are operated by the to and fro motion of the six-inch girder used as a lever to the right of the seat.

The propeller bearings are mounted on each side in the center of the next to the end section of the wings and at the rear. They are exactly the same as the bearings in No. 68 except that only one plate is used instead of two.

The motor is in rear center of the bottom wing and is connected to the driving pulleys on the propellers with one continuous belt.



Machine Shop, Model No. 88

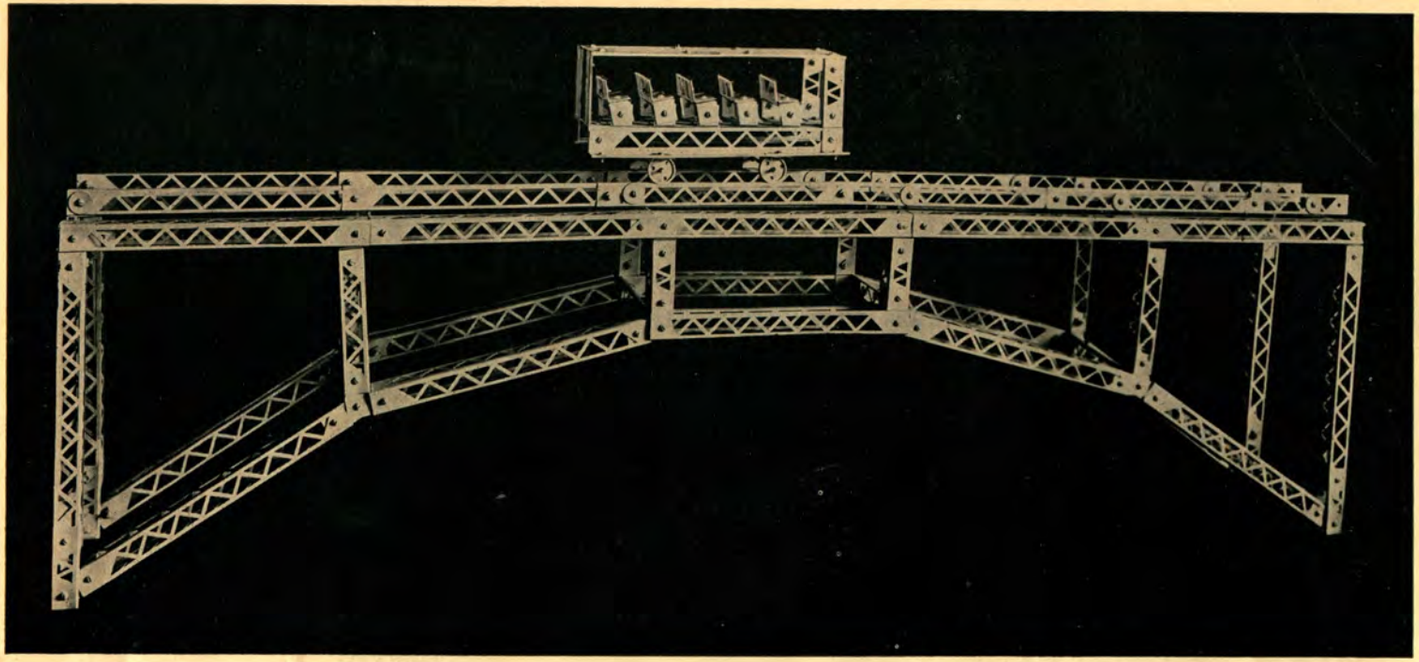
Not much description is necessary for this, one of our most elaborate models.

The construction of the band saw and the power press are plainly shown in Models No. 84 and No. 85.

The shaft is composed of two rods the proper length, joined as per Fig. 37 on Page 1, or with the regular coupling with two set screws furnished with this set.

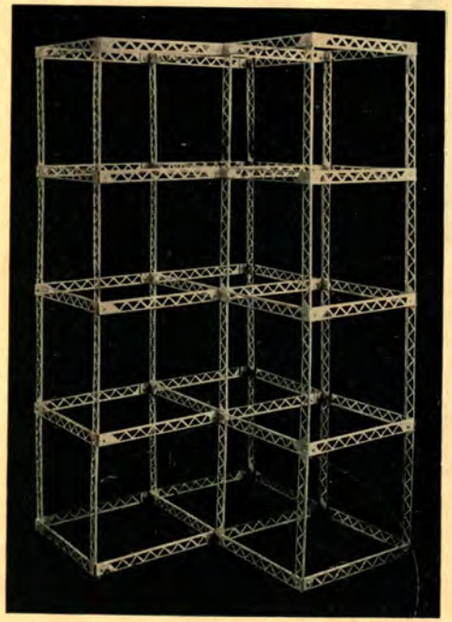
The large driving pulley to which the power is applied by the motor is made fast by tying or screwing it to the small wheel beside it, and the end wheel is attached by inserting a long screw through its center, locking it with a nut and connecting the screw itself in line with the shaft by means of a coupling. The large wheel on press and band saw are made fast in same manner.

The lathe and buffing wheel explain themselves.



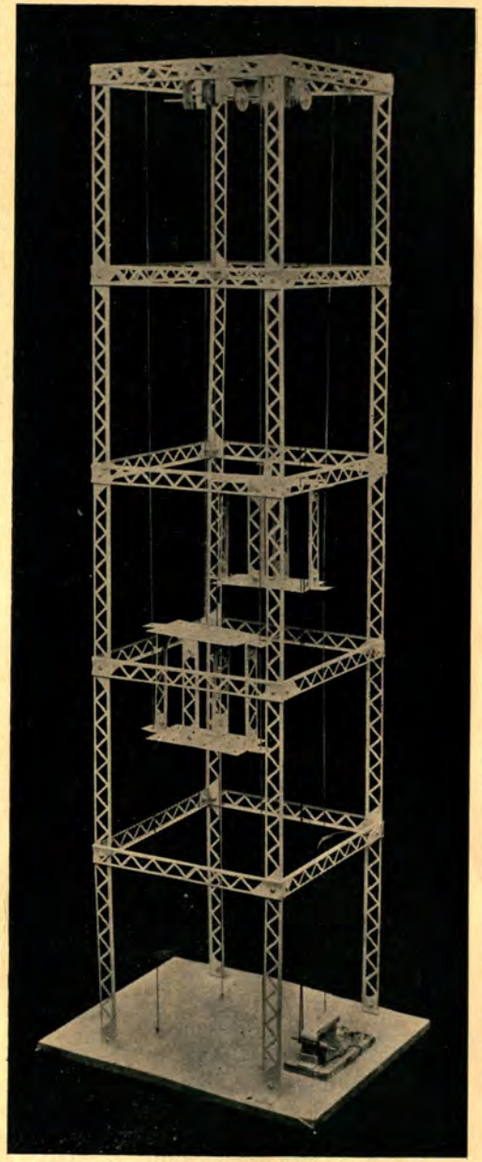
Arch Bridge, Model No. 89

Build the two sides of this bridge first, and for the three way square girder connection see Fig. 25, Page 1. Connect the two sides by single six-inch girders. For street car see Model No. 59, Figs. A and B. This model can be arranged with a third rail and motor car if desired, see Model No. 57, Page 13.



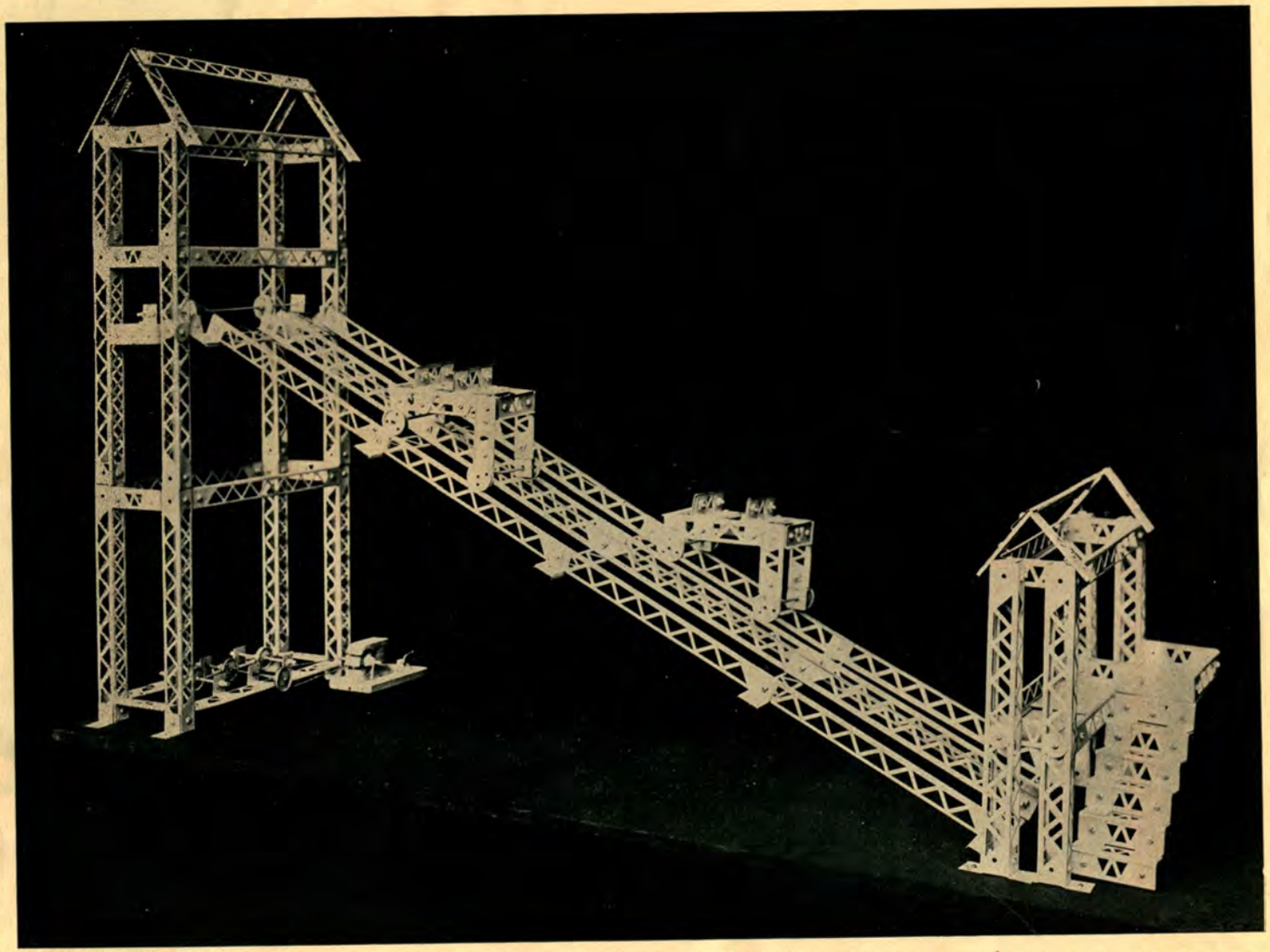
Single Girder Structure, Model No. 90

This is a single strip girder construction building. This type of building can be built fast and is very simple to build. It does not take so many pieces, consequently very large buildings can be erected. Use your own ingenuity and build a large high tower, etc.



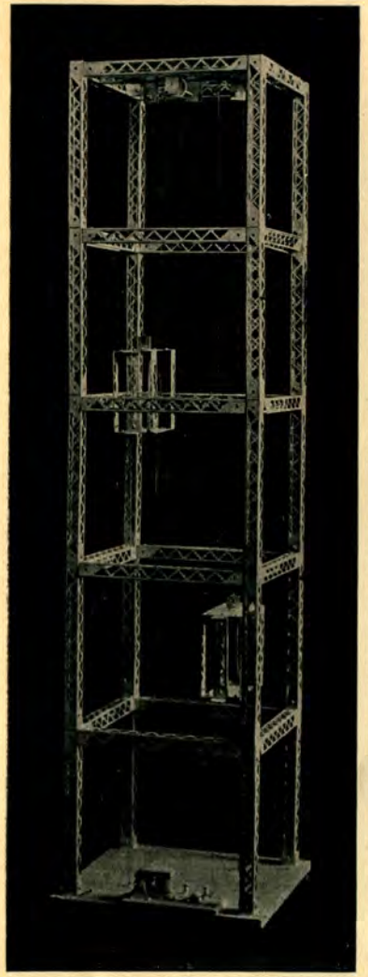
Five-Section Single Girder Elevator, Model No. 91

Exactly same in construction as Model No. 60 except that this one is one story higher.



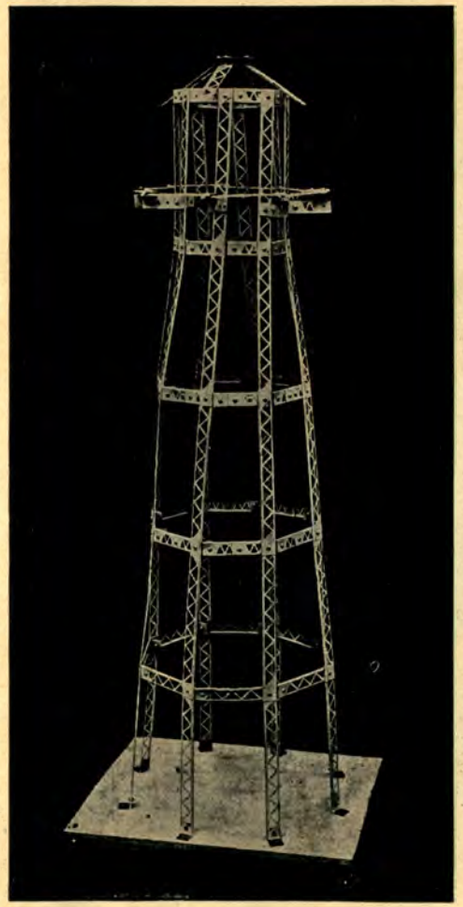
Inclined Railroad, Model No. 92

This model is very simple though rather elaborate looking. The windless devices at the base of the tower is similar to that shown in Model No. 60, Fig. B. The cord starts from one car, passes over pulley at top of track, under pulley directly under this and takes a full turn around the pulley on the driving shaft in center and back to the other car in the same manner.



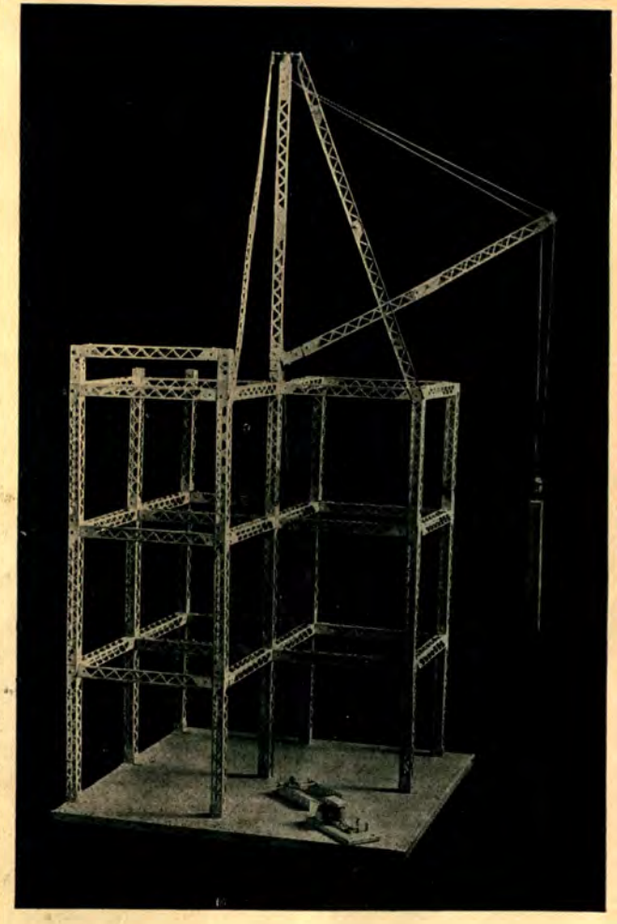
Elevator Tower, Girder Style
Model No. 93

This model is the same as Model No. 60 except it is built of square girders. For top construction see Fig. B, Model No. 60. For girder construction see Figs. 17 to 21, Page 1. In order to save 12-inch strip in the construction and to facilitate fast building, make your own connected girders as explained in Figs. 29 and 30, Page 1. These three twelve-inch strips take the place of four and require only one angle at an end.



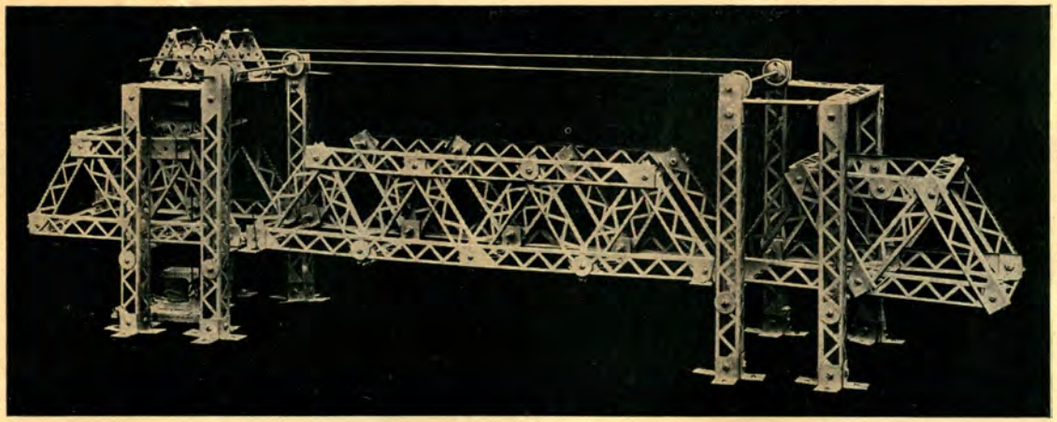
Lighthouse, Model No. 94

Start at the bottom and build one section at a time.



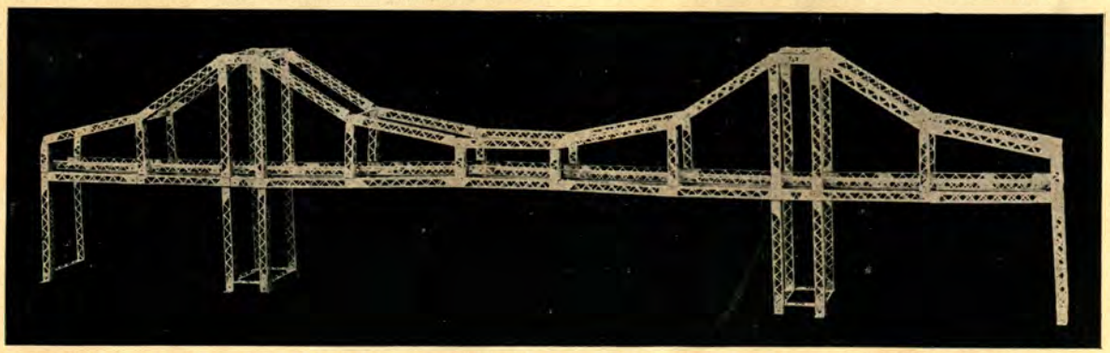
Structural Steel Building, Model No. 95

No other toy building material in the world can exactly duplicate real steel construction work as illustrated in this model. Get the model well in mind before building, lay out your foundation on a big board and start same as if building a steel building; put your eight girder piers up first and screw them to the board. Then make your cross girder connection same as Figs. 29 and 30, Page 1. Then start your second story, etc., until you reach the top. If you wish to hoist your girders as in real construction, place a derrick in position as each story is built, see Model No. 64, Page 16. Any style of building may be made to suit the fancy of the builder but you should always lay out your plan ahead so the necessary angle will come right for each connection.



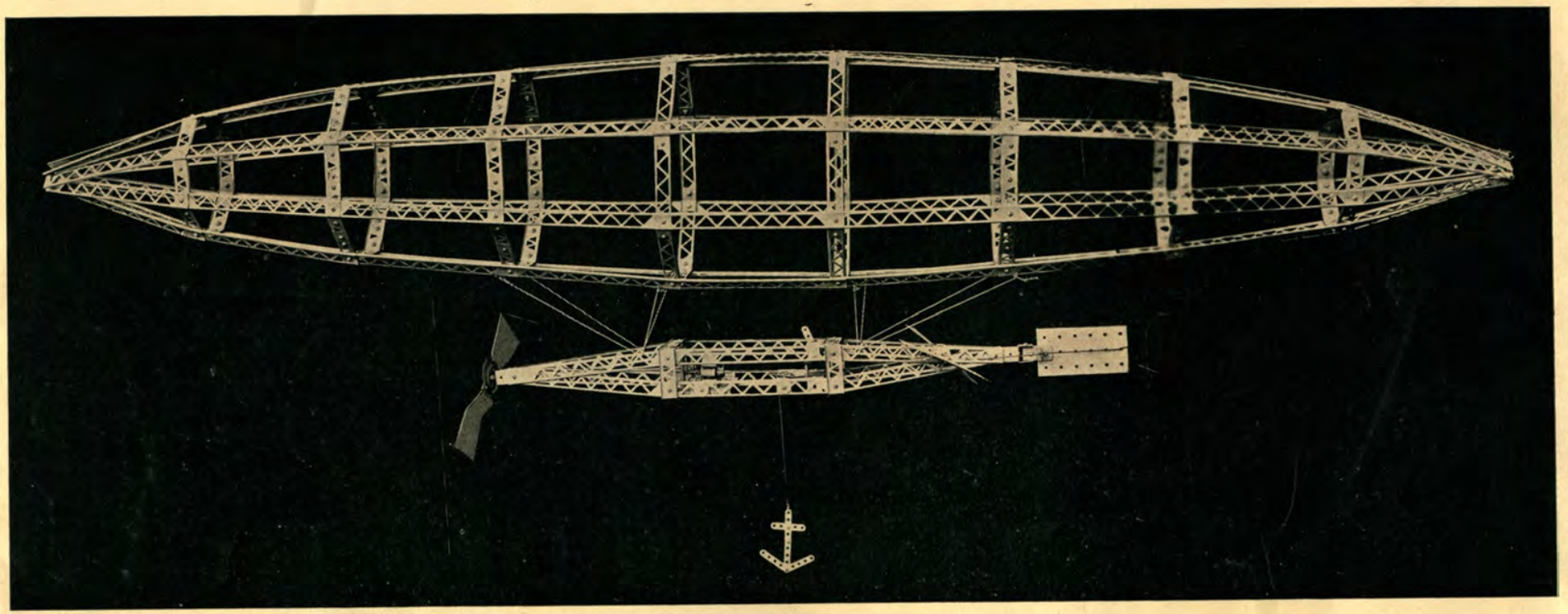
Lift Bridge, Model No. 96

This model shows the direct lift bridge as used in some parts of the world over small rivers and canals. The whole center section of the bridge is lifted straight up by the same gear box as described under Model No. 99.



Suspension Bridge, Model No. 97

This bridge approaches the appearance of some of our greatest cable suspension bridges and can well be called the Brooklyn Bridge.
The methods of joining the girder sections and attaching the suspending girders to the inverted arch are clearly shown in Figs. 17, 18, 19, 20, 21 and 25 on Page 1.



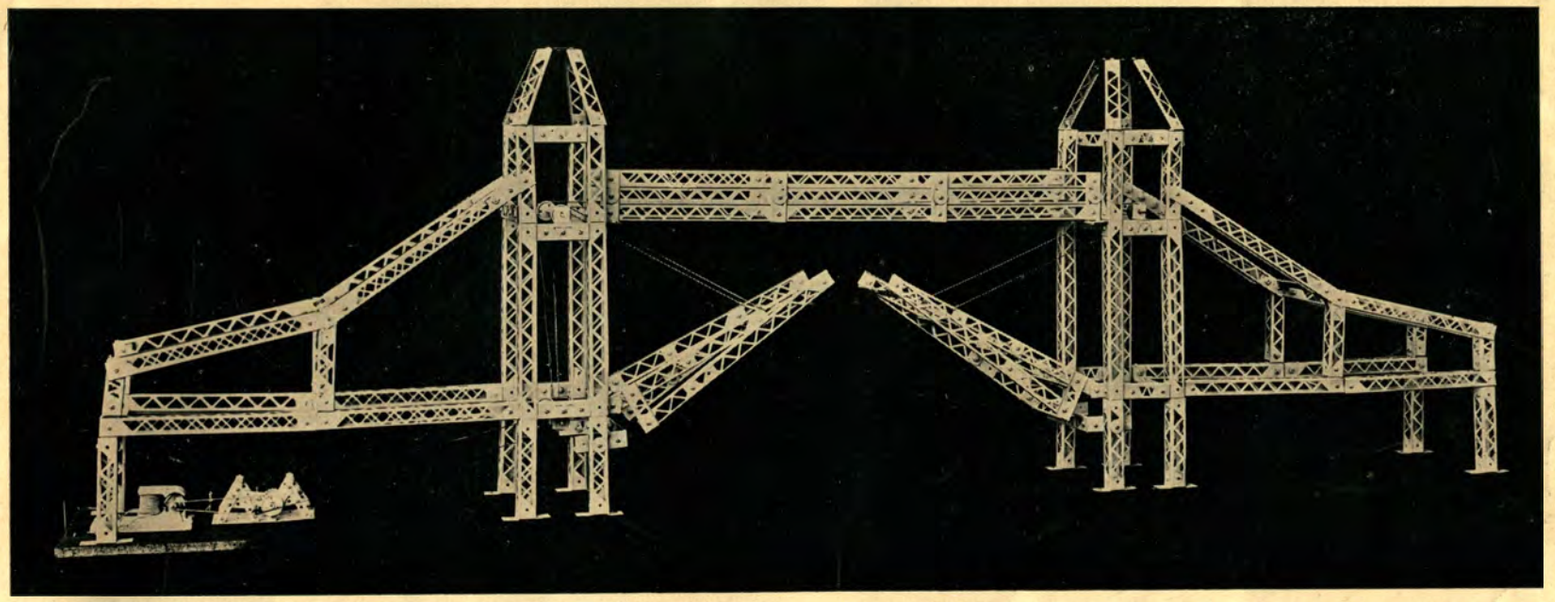
Derigible Balloon, Model No. 98

This model represents the car and frame for gas bag as used by some European armies for rigid derigible balloons.

The propeller is made fast to the shaft in the following manner: Place one wheel shell on its hub, lay over it a circle plate and spring the other shell on the hub, thus binding the circle plate firmly to it. Fasten the hub to the shaft by means of its set screw and screw on the two propeller blades to two opposite holes in the circle plate.

The shaft may be either connected direct to the motor by means of a coupling or belted by means of an elastic band to pulley fastened to inside end of shaft.

The battery cells may be placed in the gas bag and the whole machine hung by a long cord from some lofty support, when if the blades are bent to the proper angle and rotated in the right direction, the machine will sail around in circles.

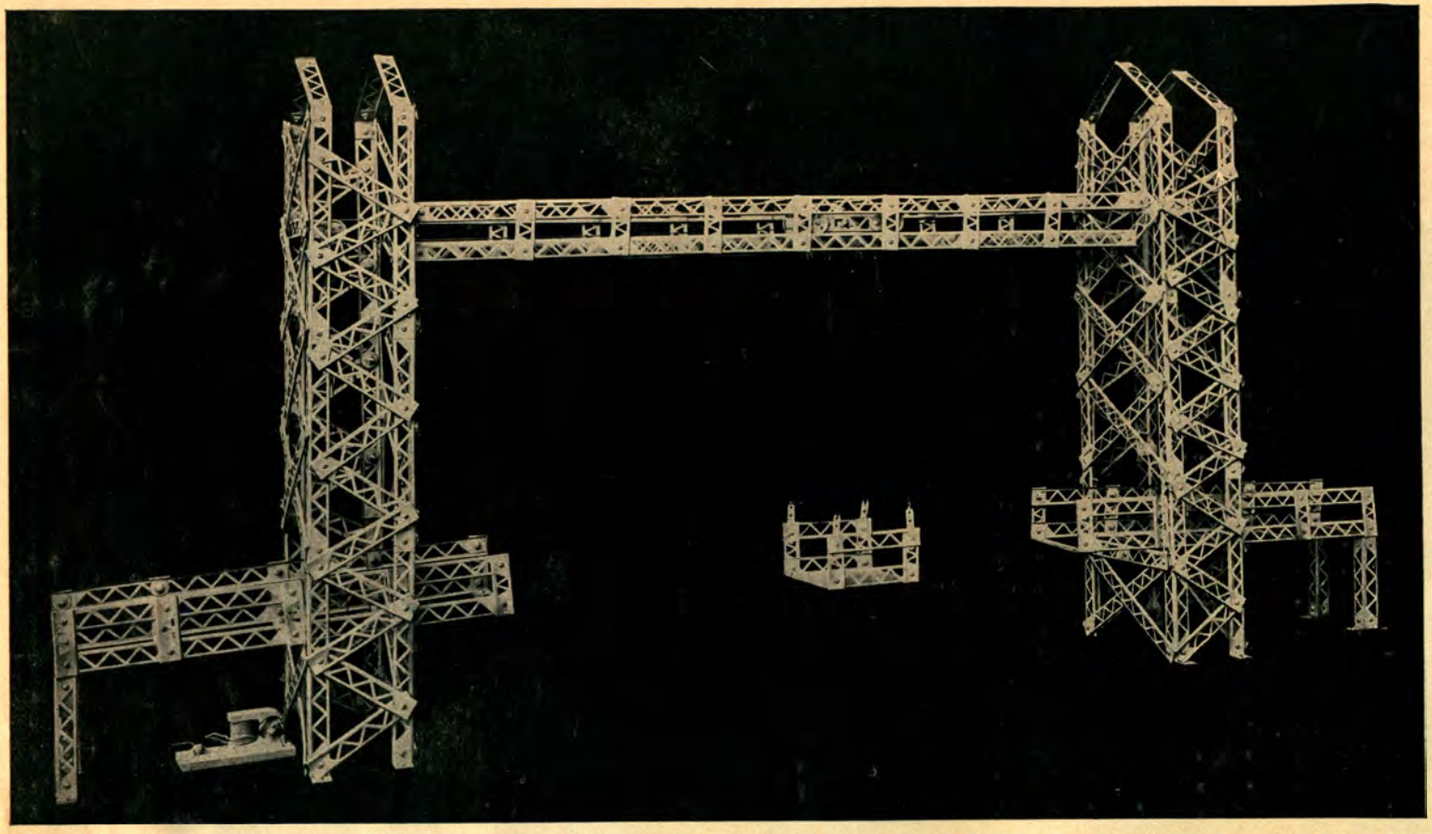


London Bridge, Model No. 99

No description is necessary for this model if you have been over all the details of Erector construction.

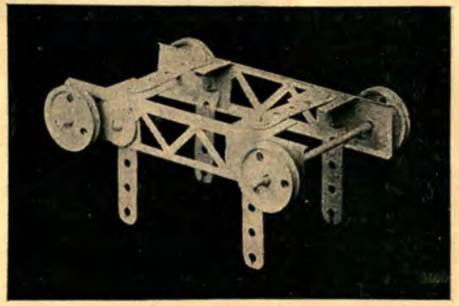
The cords raising the section on the right are easily traced to the tower on the left, passing over the same pulleys in the left tower as the cords that raise the left section. After passing these pulleys the cords are united, leaving only two cords under the pulley in the base of the left tower to the gear box.

The gear box itself is our Model No. 66. The power is applied by motor to the shaft on the left of the illustration and an eight-inch rod used on the right instead of a crank. The ends of the rod will project about three inches to each side of the box and the draw cords are wound directly on these ends.

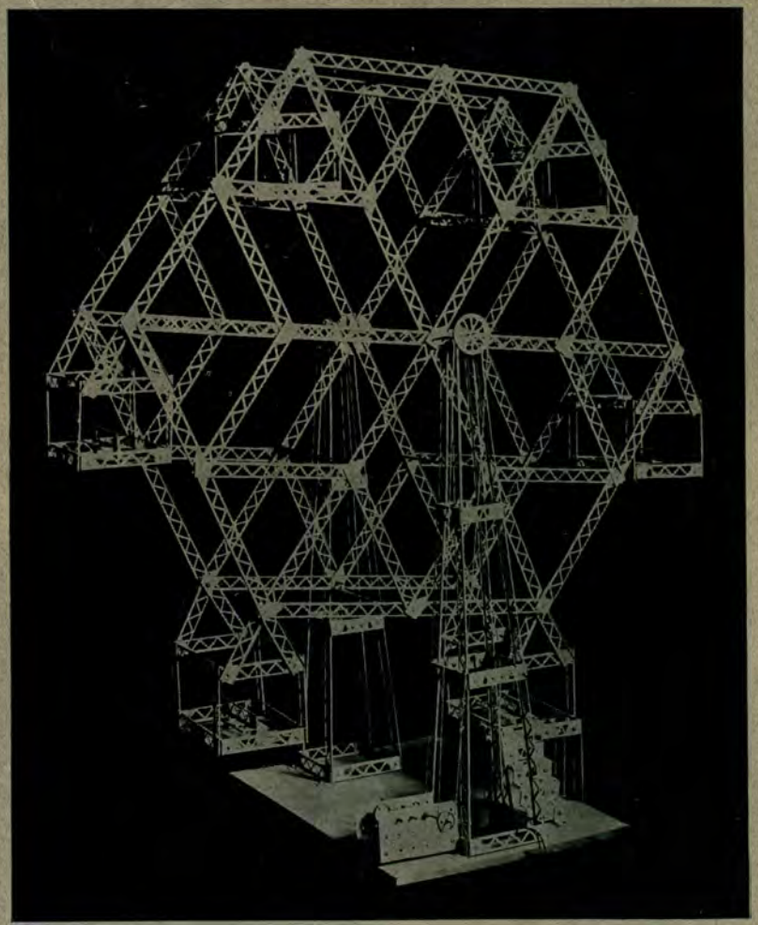


Ferry Bridge, Model No. 100, Fig. A

The piers of this model are first constructed. If difficulty is experienced in placing the six-inch girders on the piers then we would advise connecting the front and back of the piers with six-inch girders running straight across. After building the piers build the track on which the car is to run. Fig. 9, Page 1, gives cue to how the angles are arranged to support the track so that the car is free to run back and forth on the track and still not interfere with cables hanging down. See Fig. B opposite for construction of the car. Flanged wheels will work better on the track than the grooved ones. Now connect the track and the piers. Build the approach bridge separate and put in place. The power is a direct drive same as Endless R. R., Model No. 34. A long belt runs to your motor from the upper shaft on which the endless rope runs.



Ferry Bridge Car Truck, Fig. B, Model No. 100



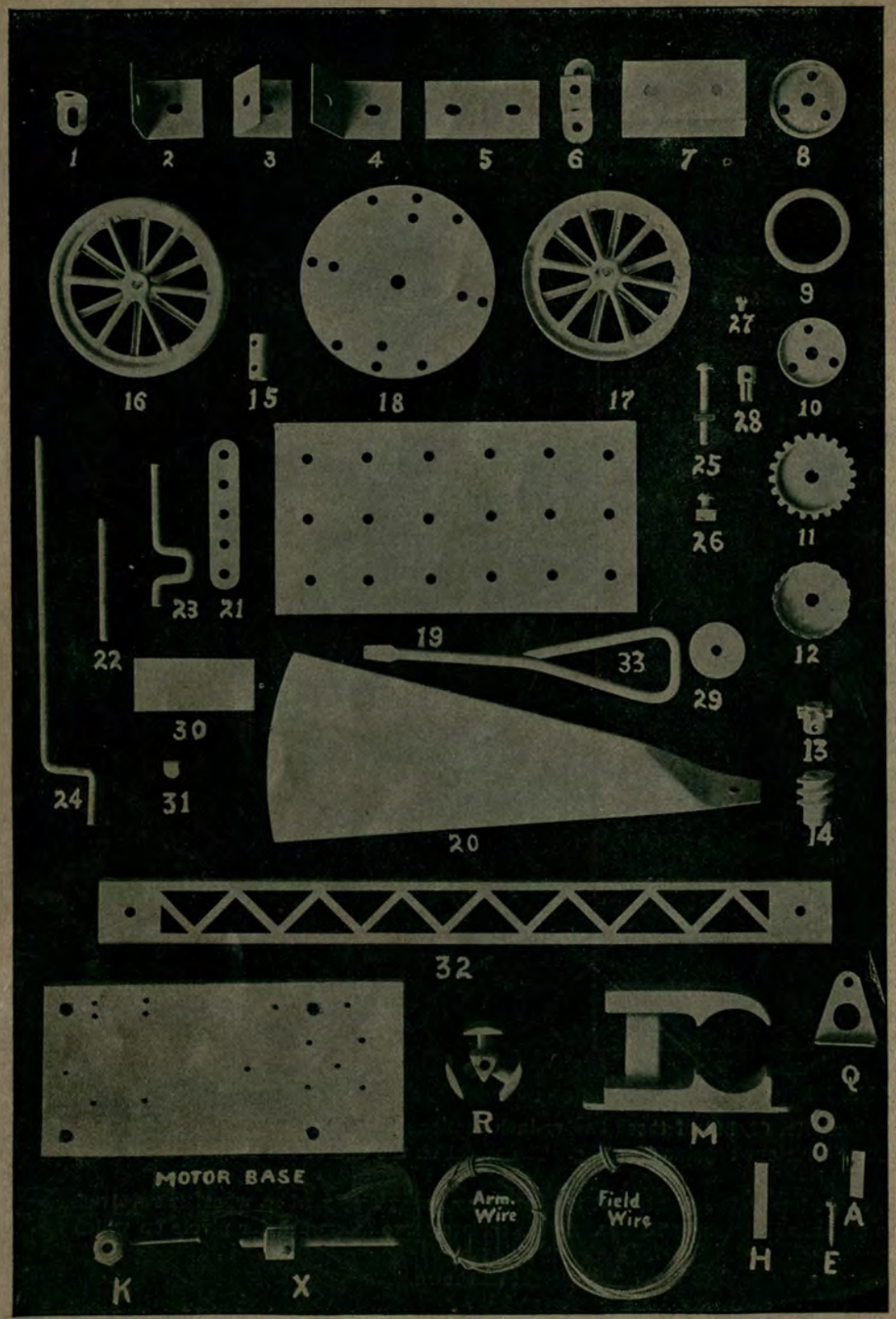
Ferris Wheel, Model No. 101

The towers that support this model are built in the same manner as the body of the monoplane, No. 68, but of three twelve-inch sections instead of five. Two angles are mounted on the tops of each tower for bearings and the shaft is in two sections coupled together with our regular coupling. The wheel on the end of the shaft is made fast, as per directions.

The sides of the wheel are made entirely of twelve-inch girders and spaced, when mounted, about ten inches apart, that the cars may swing freely when wheel is revolved.

The sides should be built first, laying flat on the floor, and the outside corners should be all bolted with long screws. These screws serve afterward for pivots on which to hang the cars.

The floors of the cars may be of card-board or left off entirely. A short flight of steps leads to a landing platform on the right as shown.



Mysto Erector Parts

No.		Price.
1	Small Angles	.10 per dz.
2	Large "	.12 " "
3	Acute "	.12 " "
4	Obtuse "	.12 " "
5	Straight Angle Pieces	.12 " "
6	Double Bent Perforated Strips,	.05 ea.
7	Double Angles	.25 per dz.
8	Pulley Sides, two for	.05
9	Wheel Tires	.02 ea.
10	Flange Blanks	.05 "
11	Gear Blanks	.05 "
12	Crown Gear Blanks	.10 "
13	Pinion Gears	.15 "
14	Worm Gears	.15 "
15	Couplings	.10 "
16	Large Wheel	.10 "
17	Large Grooved Wheels	.20 "
18	Circle Plates	.10 "
19	Base Plates	.10 "
20	Propeller Blades	.15 per pr.
21	Perforated Strips	.10 per dz.
22	2" Axle Rods	.02 ea.
22	4" " "	.05 "
22	6" " "	.05 "
22	8" " "	.10 "
22	10" " "	.10 "
22	12" " "	.15 "
22	14" " "	.15 "
23	Special Cranks	.10 "
24	Cranks	.10 "
25	Long Screws with Nuts	.10 per dz.
26	Small Screws with Nuts	.05 " "
27	Set Screws	.05 " "
28	Wheel Hubs	.05 ea.
29	Washers	.10 per dz.
30	Flat Copper (trolley for car)	.05 ea.

No.		Price.
31	Clips	.15 per dz.
32	12" Girders	.25 " ½ "
32	6" "	.15 " " "
32	3" "	.10 " " "
33	Screw Driver	.10 ea.

Motor Parts

A	Switch Brushes, two for	.05
E	Screws, three for	.05
H	Commutator Brushes, two for	.05
K	Switch Hub	.15 ea.
M	Field Casting	.25 "
O	Pulley	.05 "
Q	Bearings for Armature	.05 "
R	Armature Casting	.10 "
X	Commutator with Shaft	.15 "
	Wire for Armature	.10 "
	Wire for Field	.15 "
	Motor Base	.05 "

Mysto Erector Outfit Prices

No. 1	$ 1.00
No. 2	2.00
No. 3	3.00
No. 4	5.00
No. 5	7.50
No. 6	10.00
No. 7	15.00
No. 8	25.00

Erector Accessory Outfit Prices

No. 1A	$ 1.00
No. 2A	1.00
No. 3A	2.00
No. 4A	2.50
No. 5A	2.50
No. 6A	5.00
No. 7A	10.00

MYSTO MFG. CO., FACTORY, NEW HAVEN, CONN.