# Mechanics . .

# . . Made Easy.

## AN ADAPTABLE MECHANICAL TOY.

THIS INVENTION HAS FOR ITS OBJECT THE TRAINING OF THE YOUNG IN MECHANICAL CONSTRUCTION.

## ELLIOTT & HORNBY,

**18, James Street, Liverpool.**

**Patents applied for in the following Countries:—**

ENGLAND, UNITED STATES, CANADA, FRANCE, GERMANY, BELGIUM, NEW SOUTH WALES, VICTORIA, NEW ZEALAND.

LONDON: GEORGE PHILIP & SON, Ltd., 32, Fleet Street, E.C.
LIVERPOOL: PHILIP, SON & NEPHEW, 45 to 51, South Castle Street.

*MAY BE OBTAINED FROM THE LEADING STATIONERS AND TOY DEALERS.*

## Extract from "The Sports, Games, and Toy Trades Journal."

"It is indeed a very fascinating and useful toy, and we may with safety say that it will meet with a large and steady demand when its good qualities become known."

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## Extract from "Liverpool Journal of Commerce."

MECHANICS MADE EASY.

"An admirable method for training the young in mechanical construction is now before the public. This takes the form of an adaptable mechanical toy of many parts, which, by the exercise of meagre ability, can be so manipulated as to produce a large number of designs in bridge, crane, frame-work, railway, and other work; but by practice and exercise of skill—not to say genius—in such paths, the scope is indeed great, whilst the interest aroused in the youthful mind in his efforts to produce new designs, cannot but be of considerable benefit in the training of the mind, especially if the youngster possesses a mechanical turn of mind. The variety of objects that can be produced from the contents of the box, and the facility with which the boy can change their form, secure for this excellent idea rapt and constant attention. It is, in fact, ever fresh, and not only provides instruction for the young, but recreation for the mature, whilst an addition of parts would render the field for imagination and real pleasure almost unbounded. Unlike the ordinary mechanical toy no expensive tools or technical skill are required in obtaining the fullest benefit possible from the toy. All parts are so made—and well and strongly made—that it is simply a matter of adjustment: girders, curves, wheels, lines, plates, axles, etc., being kept in whatever form they may be put by means of keys and strong and well-finished screw-bolts and nuts. The only tool necessary is a screw-driver, which is supplied. An excellent feature is the practical unbreakability of the parts. They are all metal, and can fall or bend, or be subjected to fairly rough usage without destruction, and at the worst very little injury. With cardboard additions a great deal can be done in building and decorating stations, tunnels, &c."

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## Extract from "The Model Engineer and Amateur Electrician."

MECHANICAL TOY FOR EMBRYO ENGINEERS.

"Parents and elder brothers are very often at a loss to know what to purchase in the way of toys for the younger members of the family, who evince a natural liking for things mechanical. To meet this need, Messrs. Elliott and Hornby, of 18 James Street, Liverpool, have introduced an adaptable and practically unbreakable toy, with which the child is able to make up models of engineering structures and machines. The object of the invention is to train the young in mechanical construction, and accompanying this latest version of the box of bricks is a pamphlet entitled "Mechanics Made Easy," giving illustrations of the various models which can be made up by the set of apparatus. The set, packed in a neat tin box, are of good quality, and are not likely to speedily wear out; pulley and flanged wheels, with key-ways; cord, hooks, and ingeniously conceived keys, which are capable of making the pulleys and wheels either fast or loose upon the shafts. Models of wheel-barrows, rope-tramways, swing and bascule bridges, are possible, in fact, the scope of the toy is unlimited, and, to prove its capabilities, we built up in about a quarter of an hour a representation of the Rottingdean submerged railway. No turning, cutting, or drilling is required, and, above all, no dirt or mess is occasioned by its use."

# MECHANICS MADE EASY.

## An Adaptable Mechanical Toy.

*This Invention has for its object the Training of the Young in Mechanical Construction.*

There has been a long-felt want among young people for a Mechanical Toy which will enable them to construct mechanical objects without the trouble, labour, and difficulty of turning, boring, filing, &c.

It is believed this invention will fill this want, and will develop the constructive genius of the child, at the same time dispensing with expensive and intricate tools.

Everyone must have recognised how full of interest to a child's mind is "the building up of an object;" how hour after hour has been pleasantly spent in childish attempts to make

models of things which have attracted its attention. If then this bent of its mind can be turned into the right groove, an educational process has been commenced which may, later on, prove of great benefit. The aimlessness of an undeveloped fancy will give way to an organised method, and from confused, hazy ideas will spring order and precision.

Upon examination it will be found this invention will help to train the child's mind on these lines; chaos will give way to order; a hazy conception to a definite idea; guess work to accuracy; whilst at the same time the various parts will give endless scope to the constructive abilities of either a child or a grown-up person.

The several parts of this invention have been so made that they easily fit into each other in a great variety of ways. This being so, it is self evident they can be used to construct a great variety of objects. Herein lies the charm to the child's mind.

Moreover, when one object has been made, the several parts can be taken asunder, and used again and again in totally different directions.

Hence it will be found that even a young child will be able to construct Cranes, Machinery Shafting, Bridges, Wagons, Railway Lines, Inclines, Signals, &c. ; and with the addition of pieces of cardboard, Railway Stations, Towers, Tunnels, &c.

Another feature of this invention is that it is practically unbreakable—notwithstanding falls, blows, and constant usage—consequently it will last much longer than the usual mechanical toy at present on the market.

# CONTENTS OF BOX.

Each box contains the following articles :—

A. 12 Flat Metal Strips, 12½ inches long, ½ inch wide.

12 Flat Metal Strips, 5½ inches long, ½ inch wide.

12 Flat Metal Strips, 2½ inches long, ½ inch wide.

B. 18 Metal Angle Pieces.

C. 6 Brass Wheels.

D. 1 Brass Bush of Wheel.

E. 2 Pieces Grooved Steel Rod, 2 inches long.

2 Pieces Grooved Steel Rod, 5 inches long.

1 Piece Grooved Steel Rod, 12 inches long.

F. 1 Grooved Steel Crank.

G. 1 Small Box, containing 48 Nuts and Screws, 12 Steel Keys and 1 Hook.

H. 1 Screw Driver.

I. 1 Knot of String.

# EXPLANATION OF CONTENTS.

**A. Flat Strips.**—The Flat Strips are pierced with holes half an inch apart. The position of these holes enables the child to arrive at the correct place where the screw is to be fixed, by simply counting the number of holes, thus dispensing with a measure.

The holes are of such a diameter as to allow the grooved steel wire to revolve freely.

**B. Angle Pieces.**—These pieces have an elongated hole on one side, to permit of adjustment in the construction of several of the designs.

In the construction of Railway Lines this elongated hole enables the lines to be adjusted to the desired gauge.

**C. Wheels.**—Four of these wheels are made with a flat tread on the one side, and a V groove on the other, to enable them to be used as Railway Wheels or Pulleys. The other two are intended for Pulleys alone.

These wheels have a slot at the centre hole to permit of their being keyed to the rod if required.

**D. Bush for Wheel.** — This has four holes round the edge, to which the strips may be fastened, to form the spokes of a fly wheel. The rim of the wheel can be made by cutting out a circular piece of cardboard, and screwing it to the strips.

The bush, having a slot similar to the other wheels, may be keyed to the rods.

**E. Grooved Steel Rods.** — The two small pieces are intended to be used for such purposes as axles for the pulleys of cranes, &c.

The two five-inch pieces for axles of wagons, shafting, &c.

The twelve-inch piece for a shaft.

The groove in these rods permits of the wheels being fastened in any position by the special key.

**F. Grooved Steel Crank.**—This serves the purpose of a crank and barrel for a crane. It can be inserted in any of the holes of the strips, and is fastened in its place by the steel keys.

**G. Steel Keys.**—These are so shaped that the tongue can be used to fasten the wheels on to the shaft. This is done by inserting the tongue in the slot in the wheel corresponding to the groove in the rod. When, however, the wheels are required to revolve freely, the key is reversed, and the clip grips the rod. This prevents the wheels from moving out of their place.

These keys may also be used to prevent the rod from slipping out of the holes of the strips.

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Separate parts may be obtained at the following prices:—

| | | s. | d. |
|---|---|---|---|
| Perforated Strips, 12½ inches long ... | per doz. | 0 | 9 |
| ,, ,, 5½ ,, ,, ... | ,, | 0 | 6 |
| ,, ,, 2½ ,, ,, ... | ,, | 0 | 4 |
| Angle Pieces (containing 18) ... ... | ,, | 0 | 6 |
| Large Wheels ... ... ... ... | each | 0 | 5 |
| Small Wheels ... ... ... ... | ,, | 0 | 2 |
| Bush ... ... ... ... ... ... | ,, | 0 | 3 |
| Grooved Rods, 2 in. long ... ... | ,, | 0 | 0½ |
| ,, ,, 5 in. long ... ... | ,, | 0 | 1 |
| ,, ,, 12 in. long ... ... | ,, | 0 | 3 |
| Box (containing 48 Nuts and Screws, 12 Keys, 1 Hook) ... ... ... | ,, | 1 | 9 |

*Letter received from* PROFESSOR HELE-SHAW.

WALKER ENGINEERING
LABORATORIES.

UNIVERSITY COLLEGE,

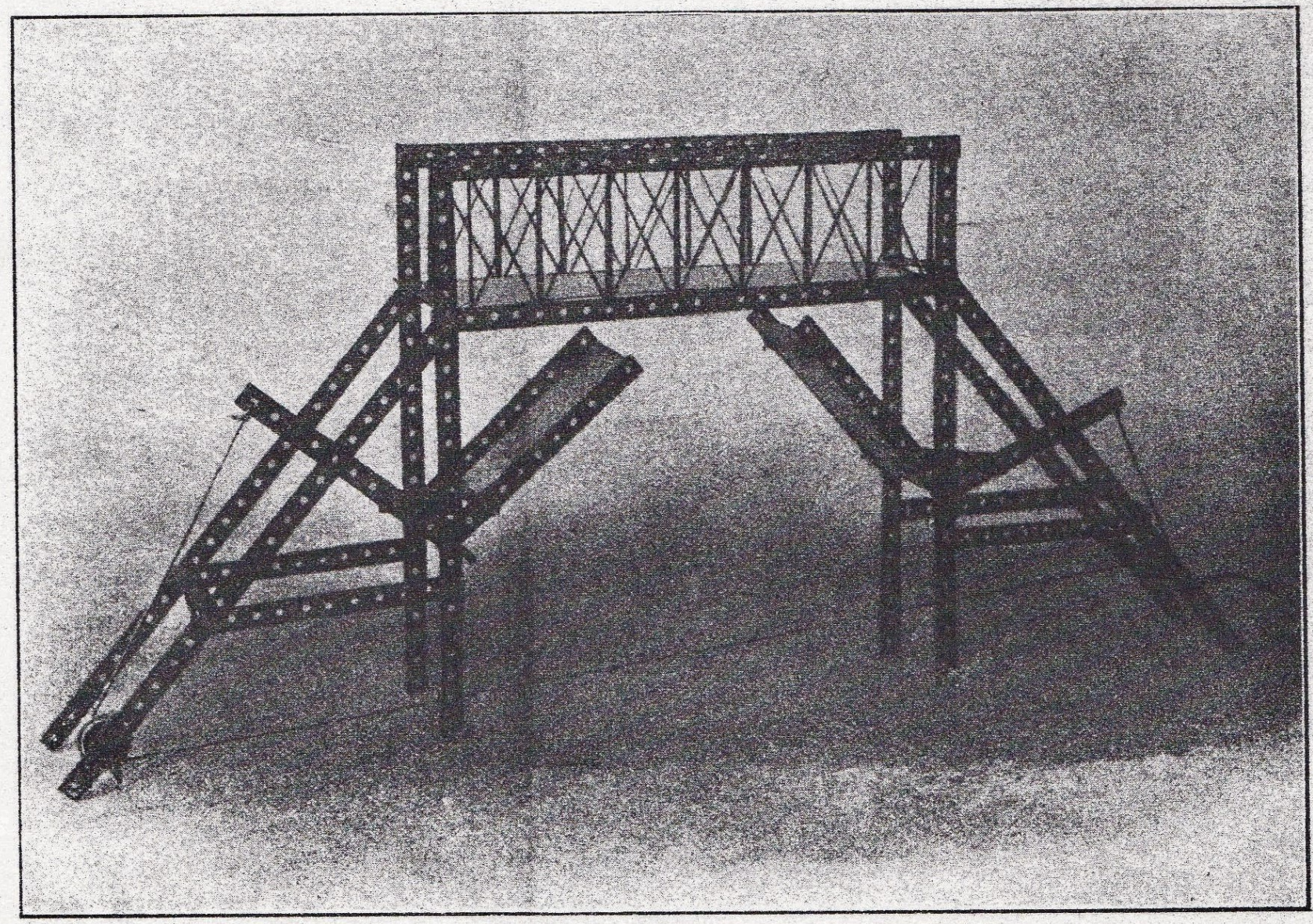
LIVERPOOL, *Nov. 5th, 1901.*

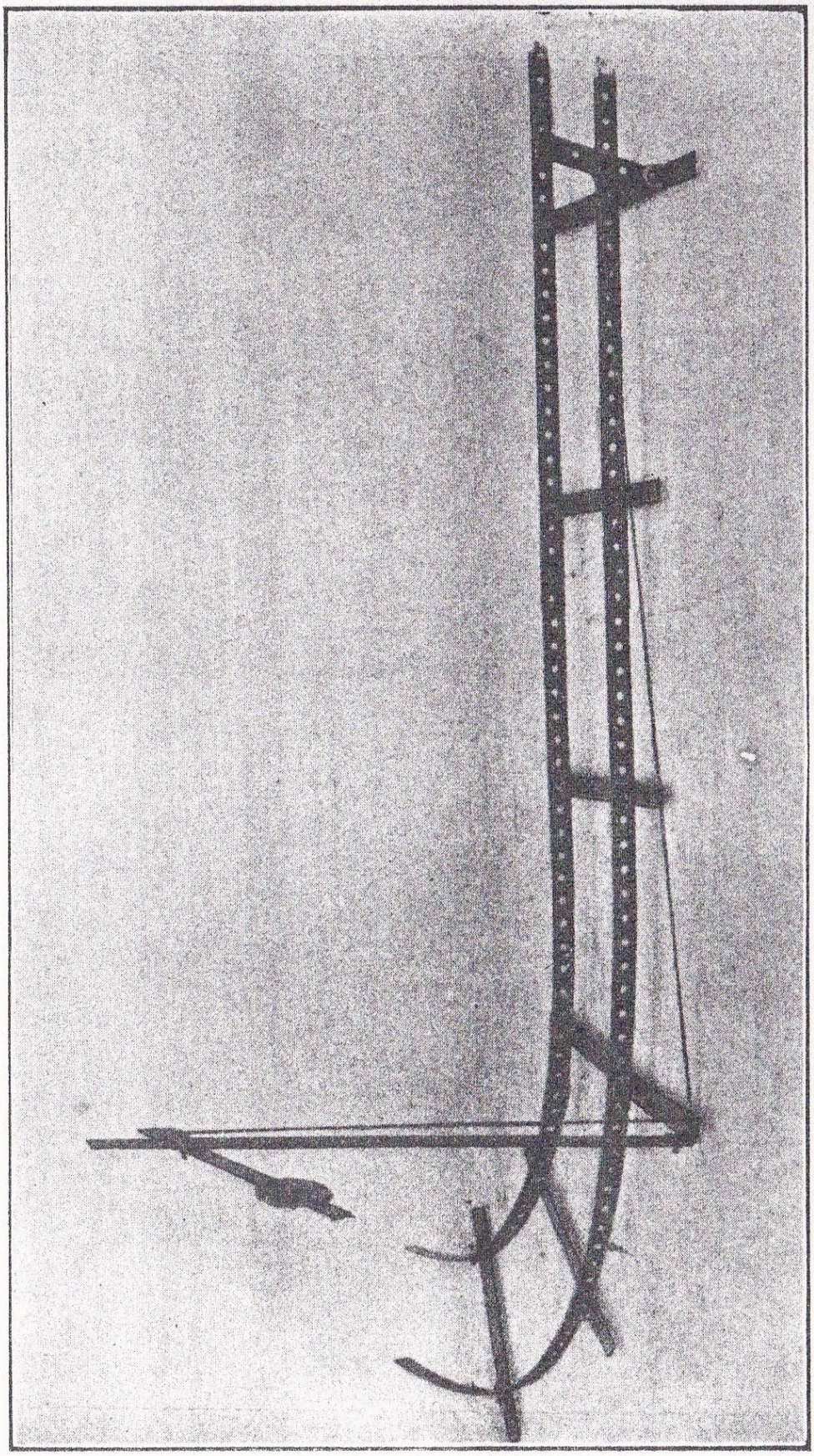
DEAR SIR,

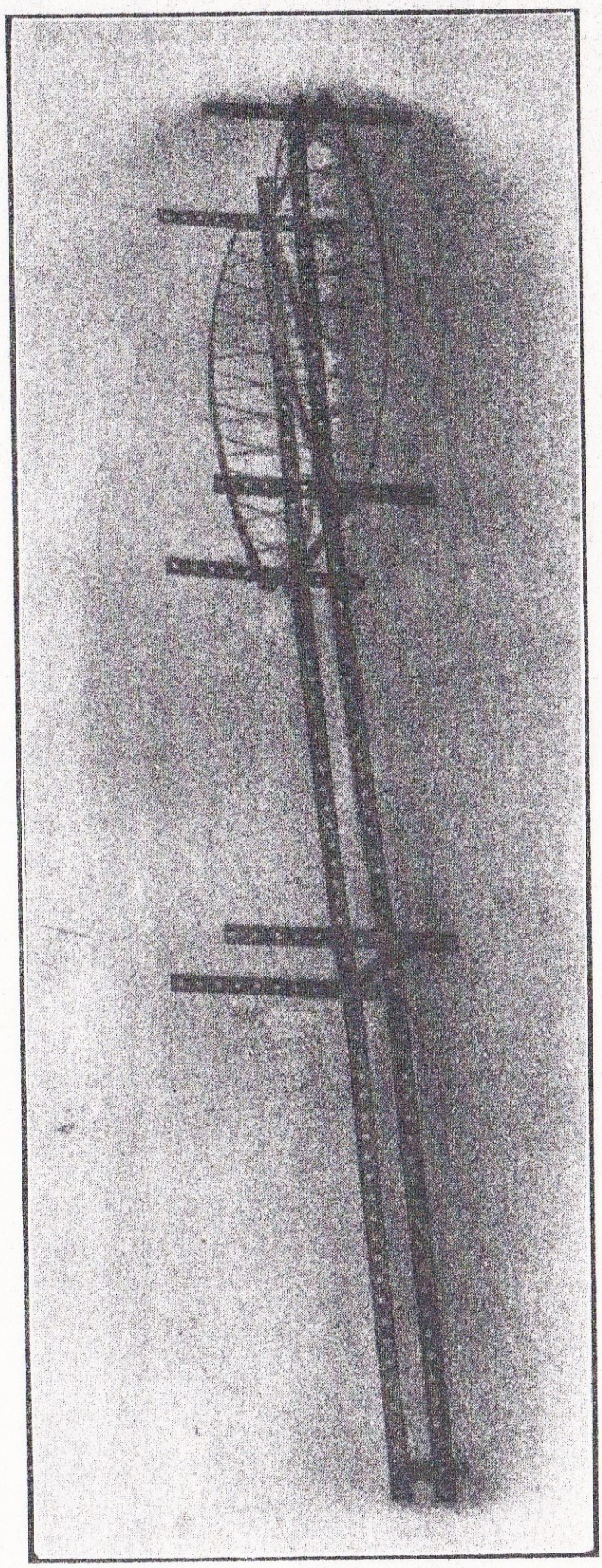
Thank you very much for the Photographs of your clever and useful form of Toy. When it is on the market I shall certainly buy a set for my little boy, and feel sure it will afford many hours of enjoyment both to father and son. With a little ingenuity and exercise of the imagination, it should be as good as a fairy story, and what can one say more!

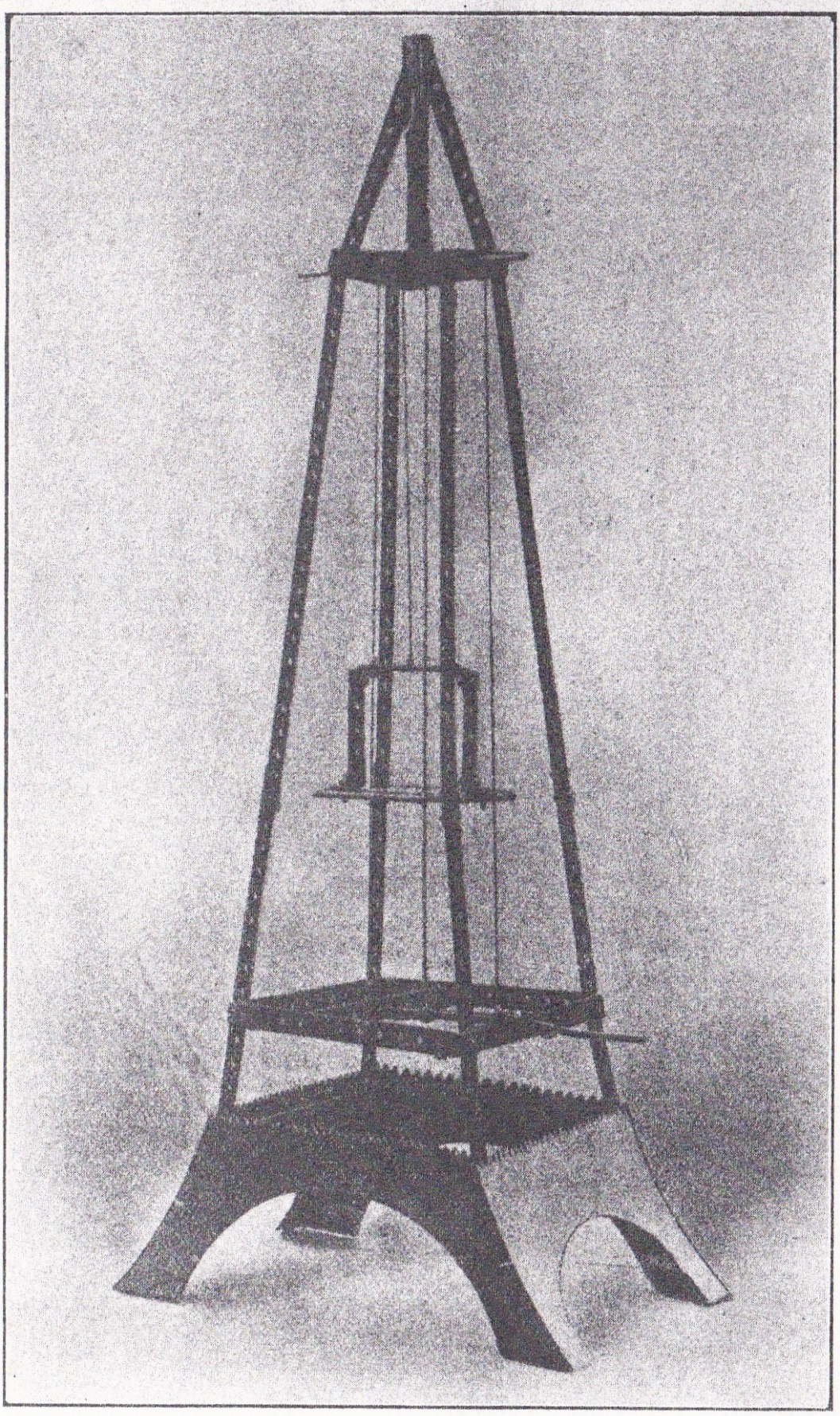
Yours truly,

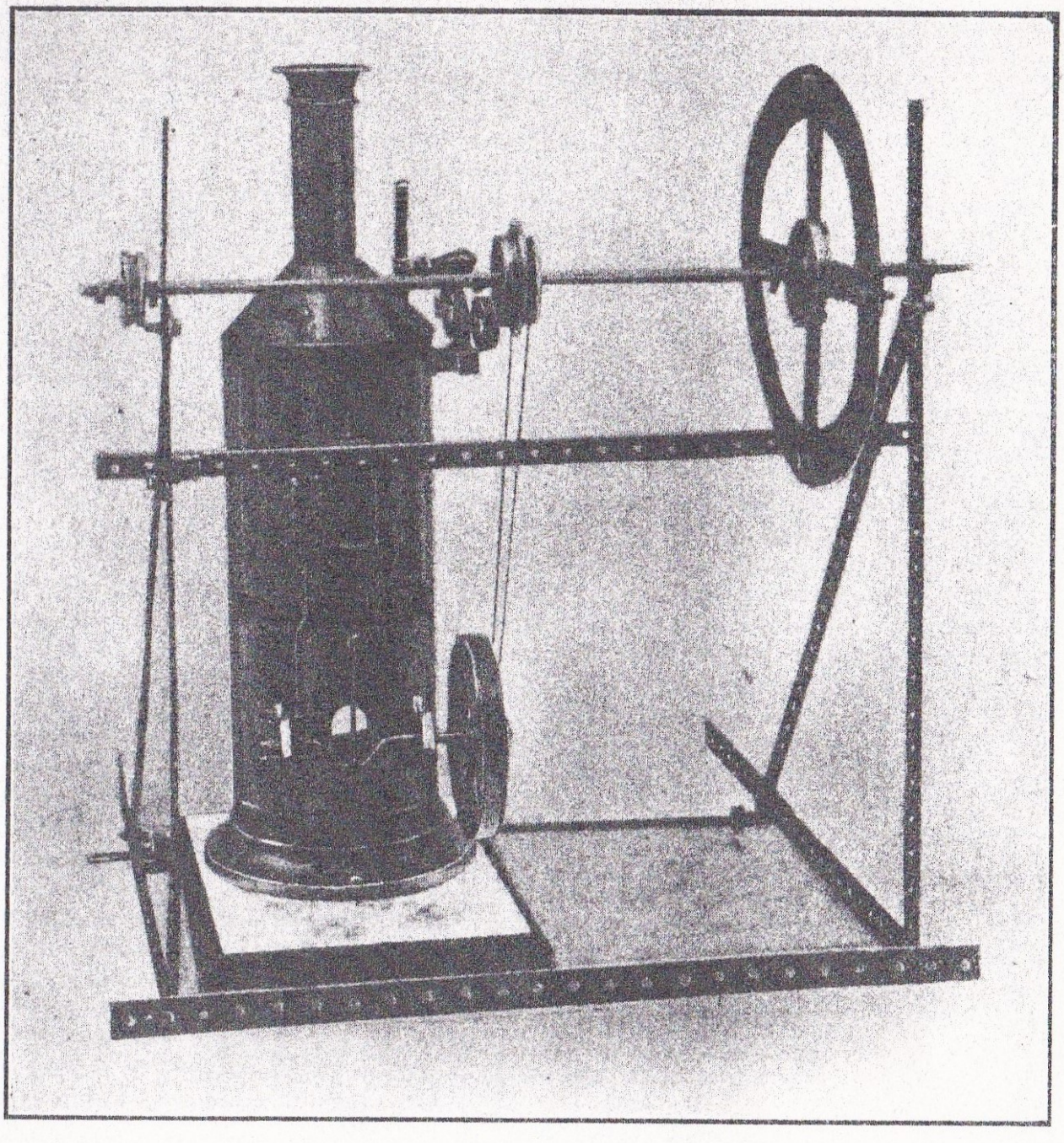
H. S. HELE-SHAW.

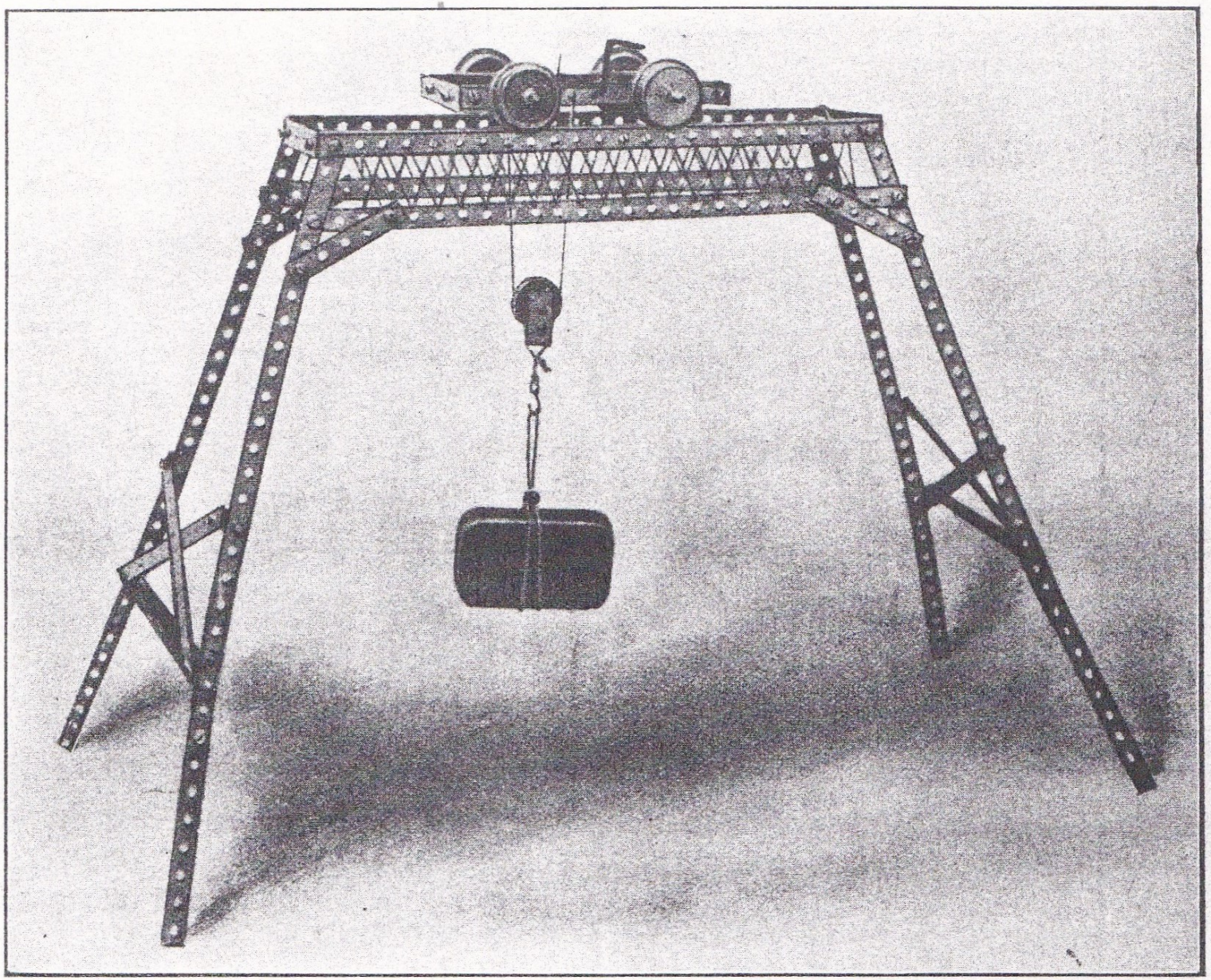


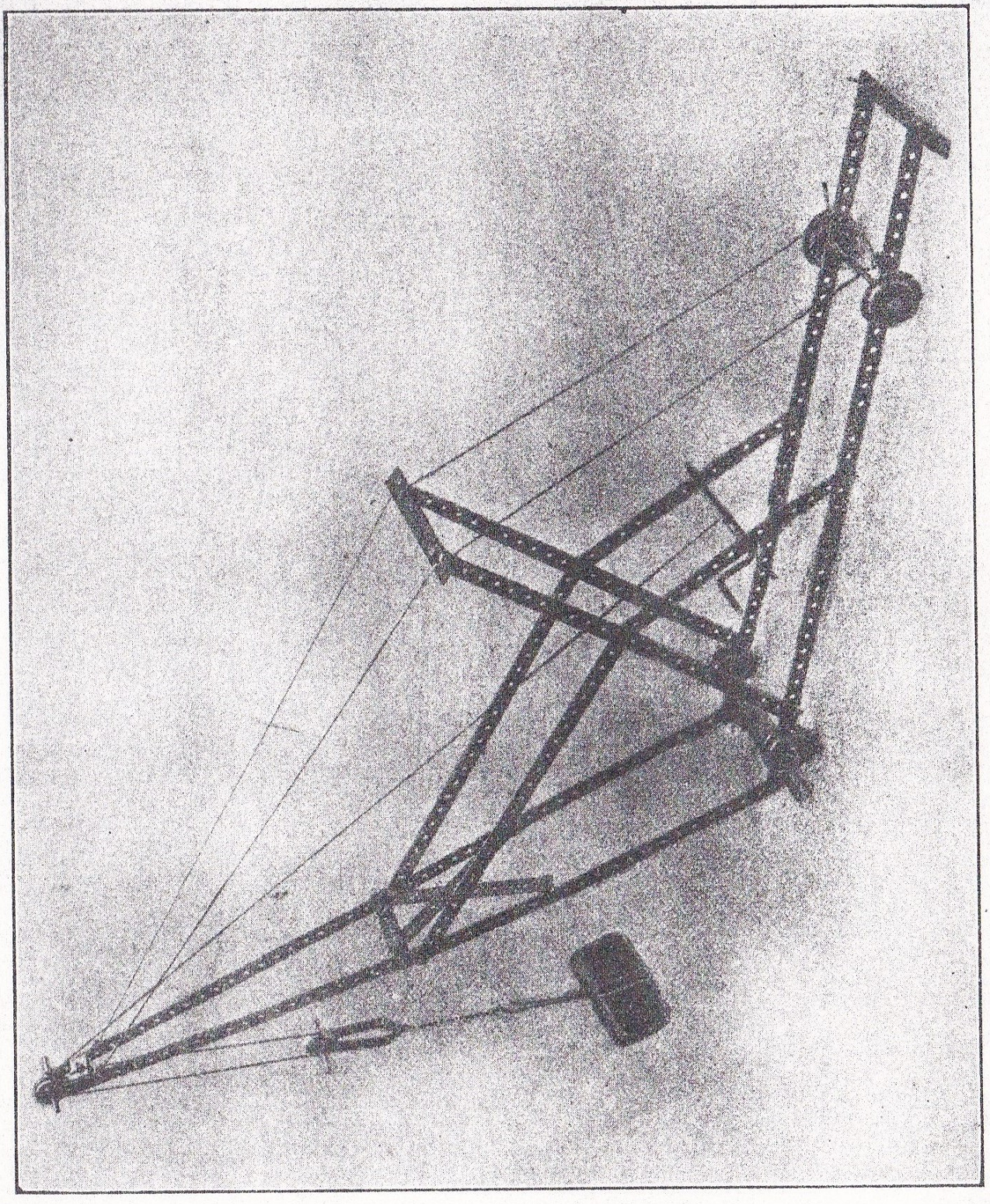


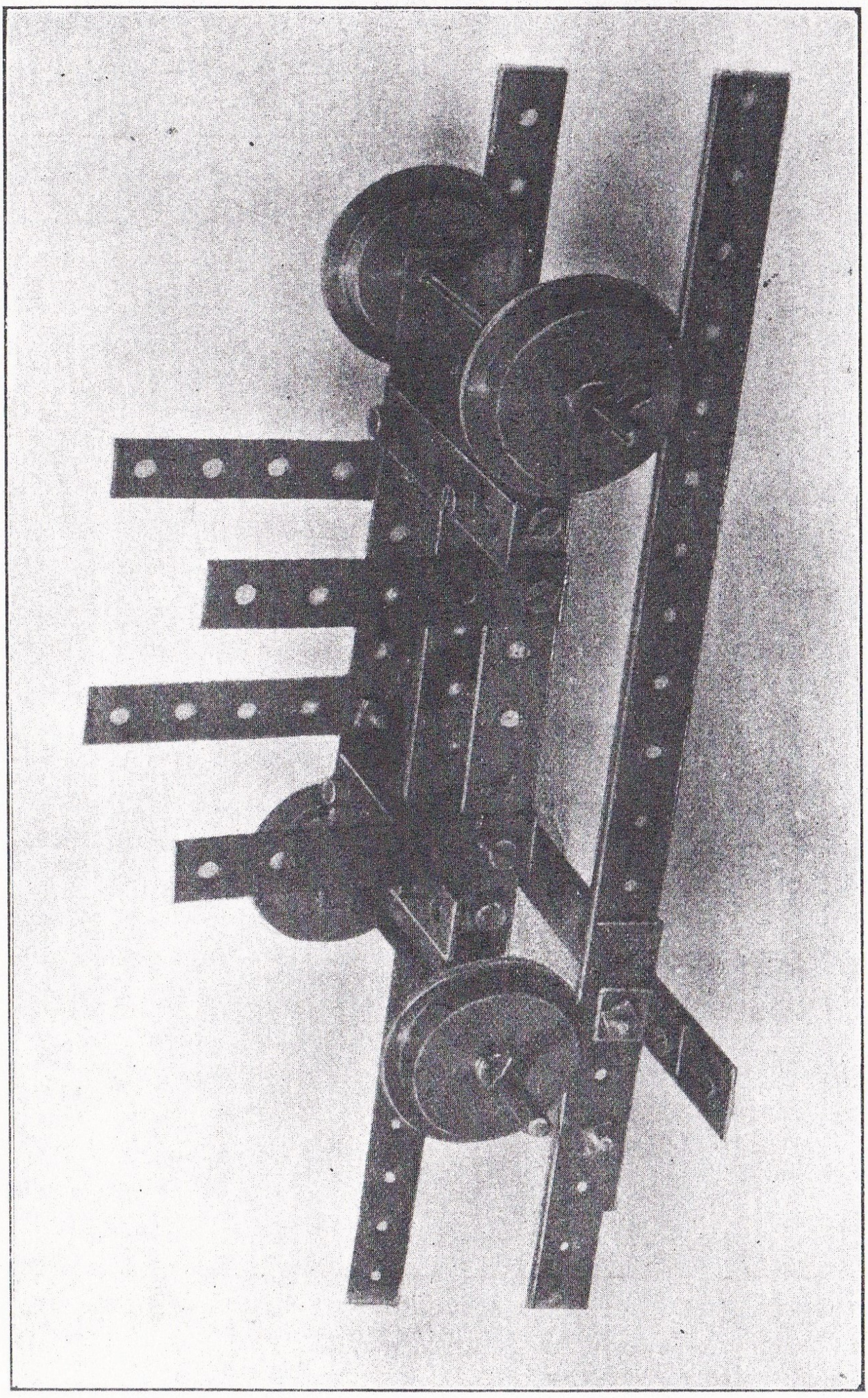


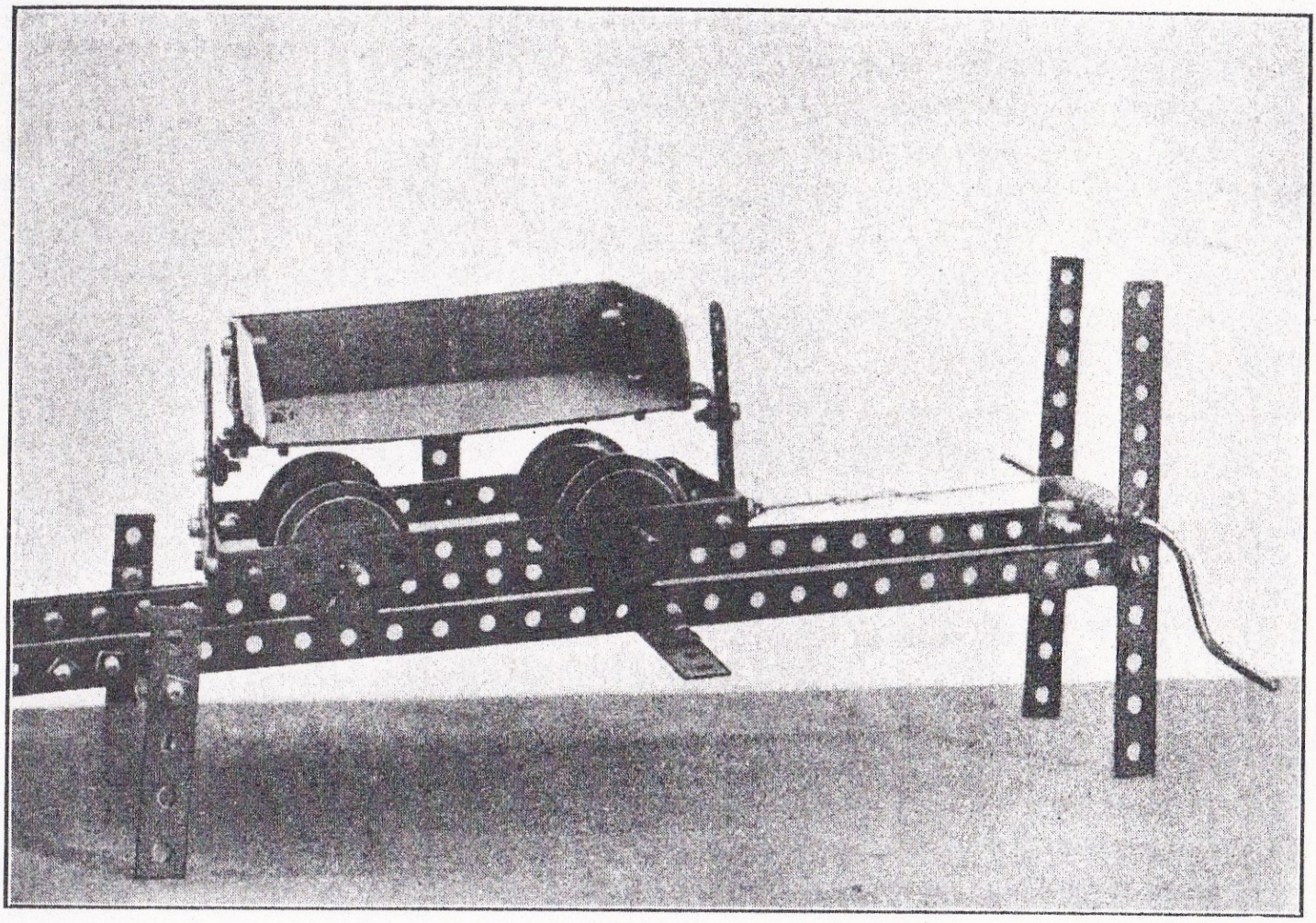




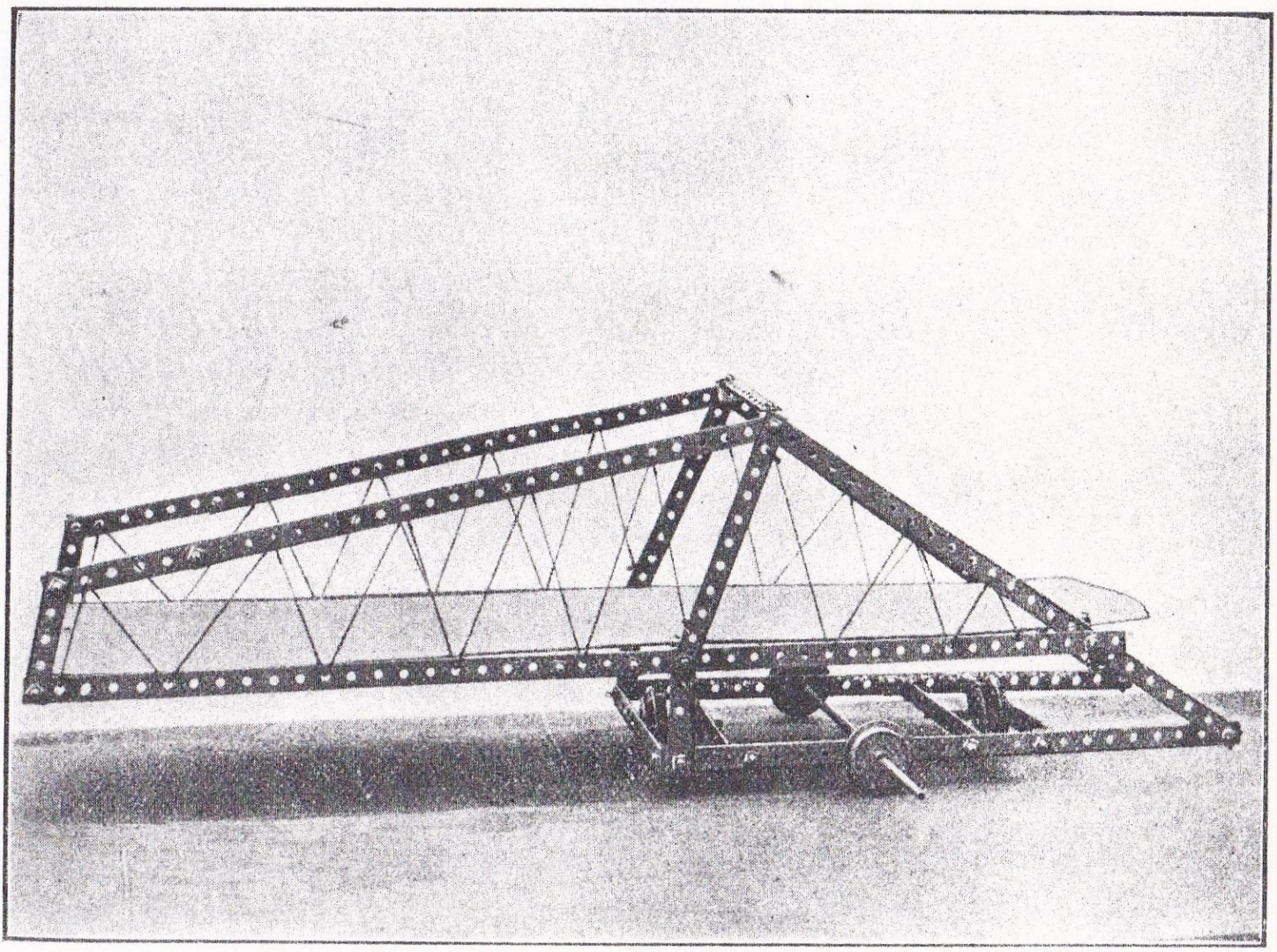


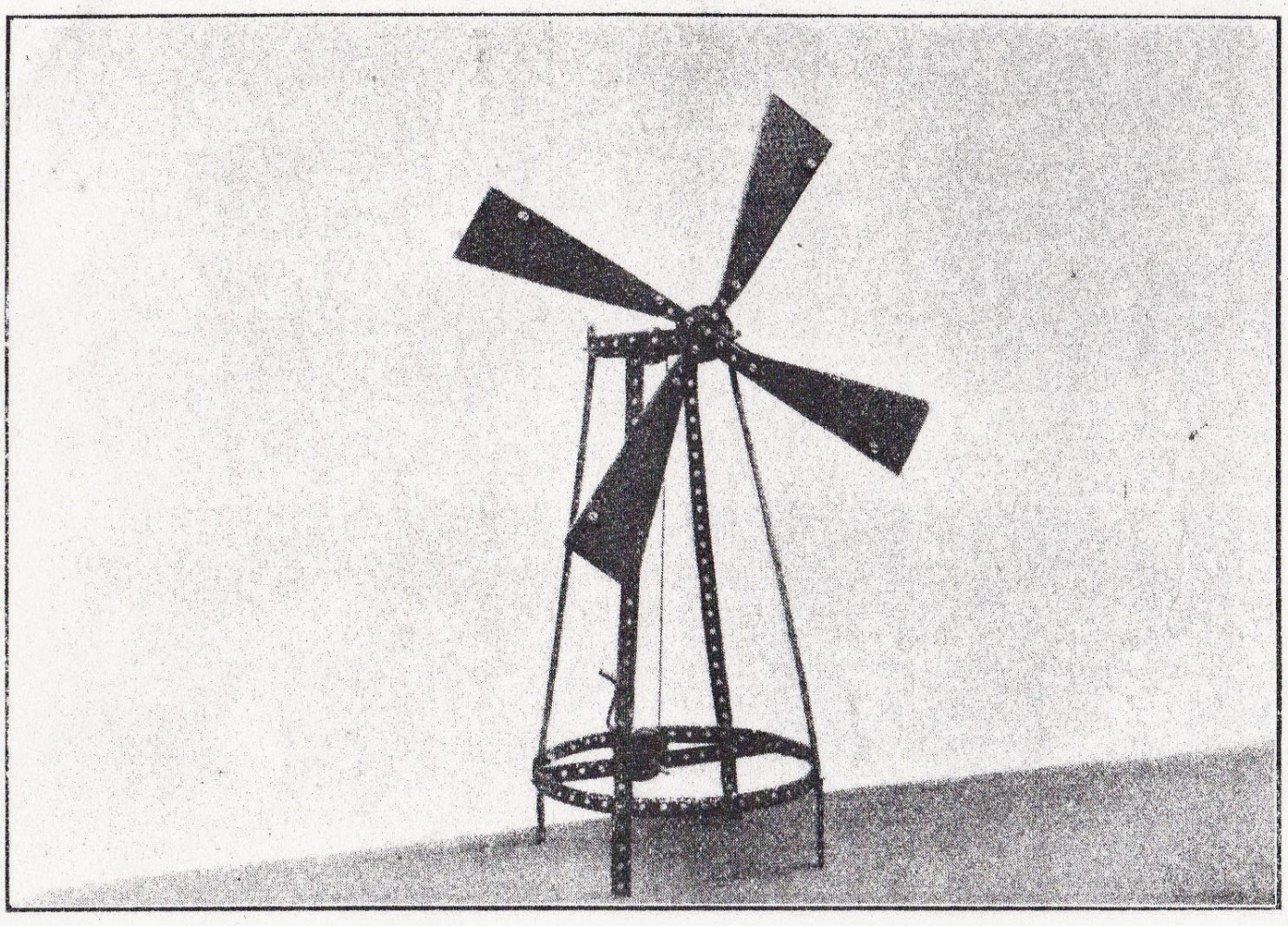






Tip Waggon.





Windmill.