

No. 751,458.

PATENTED FEB. 9, 1904.

L. CASPER.

STATION INDICATOR AND ADVERTISING DEVICE.

NO MODEL.

APPLICATION FILED MAY 2, 1898.

4 SHEETS—SHEET 1.

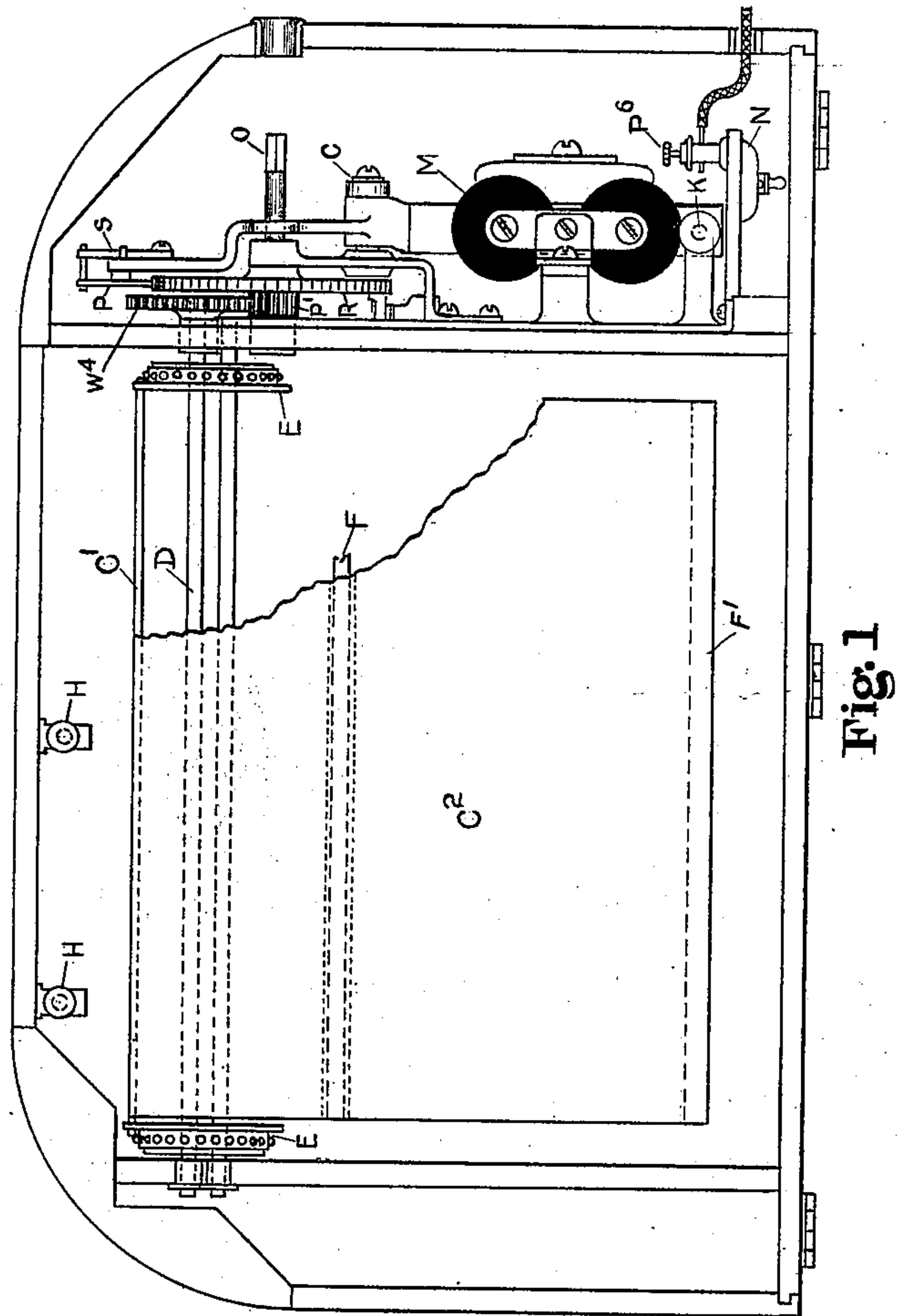


Fig. 1

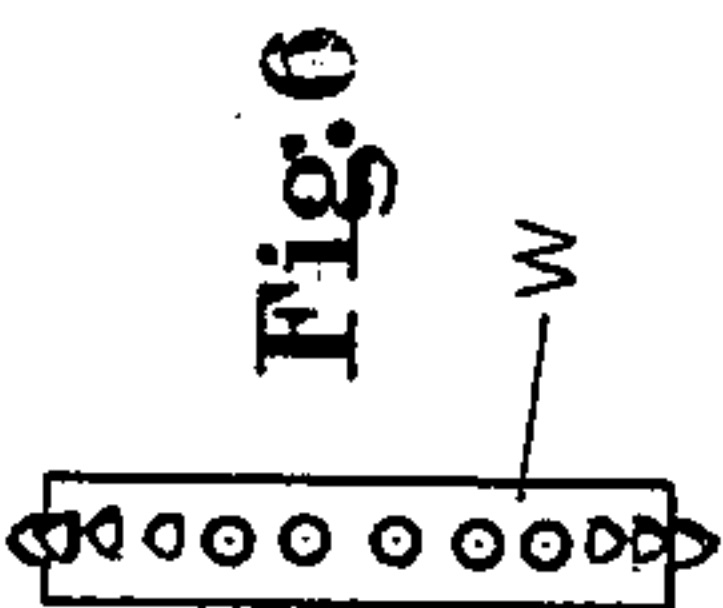


Fig. 6

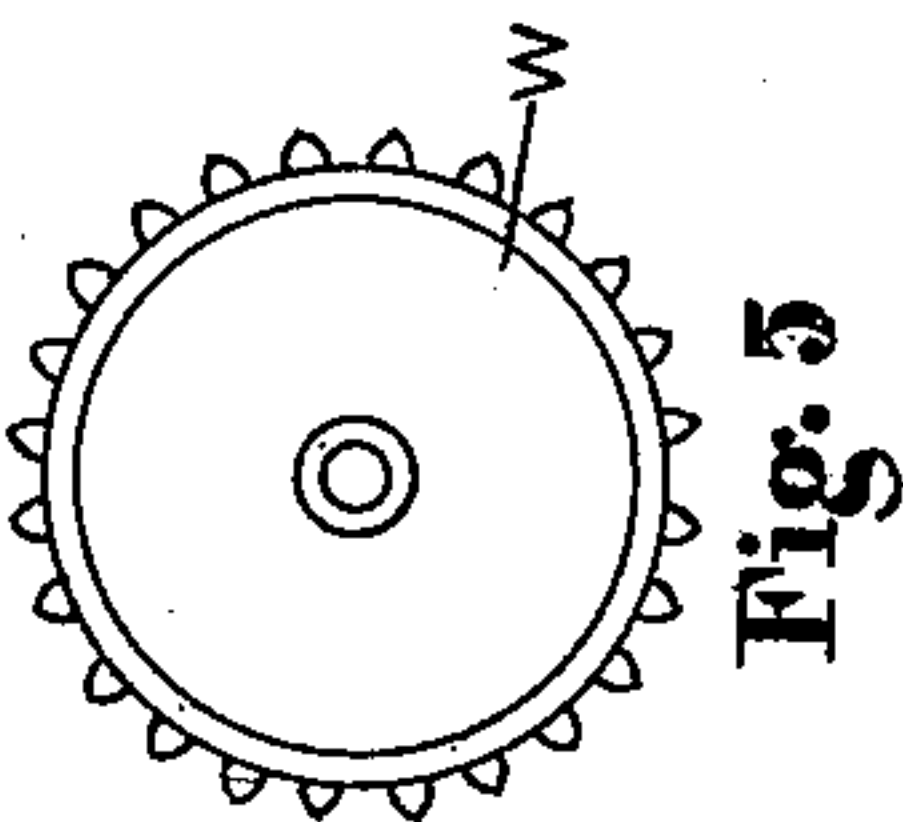


Fig. 5

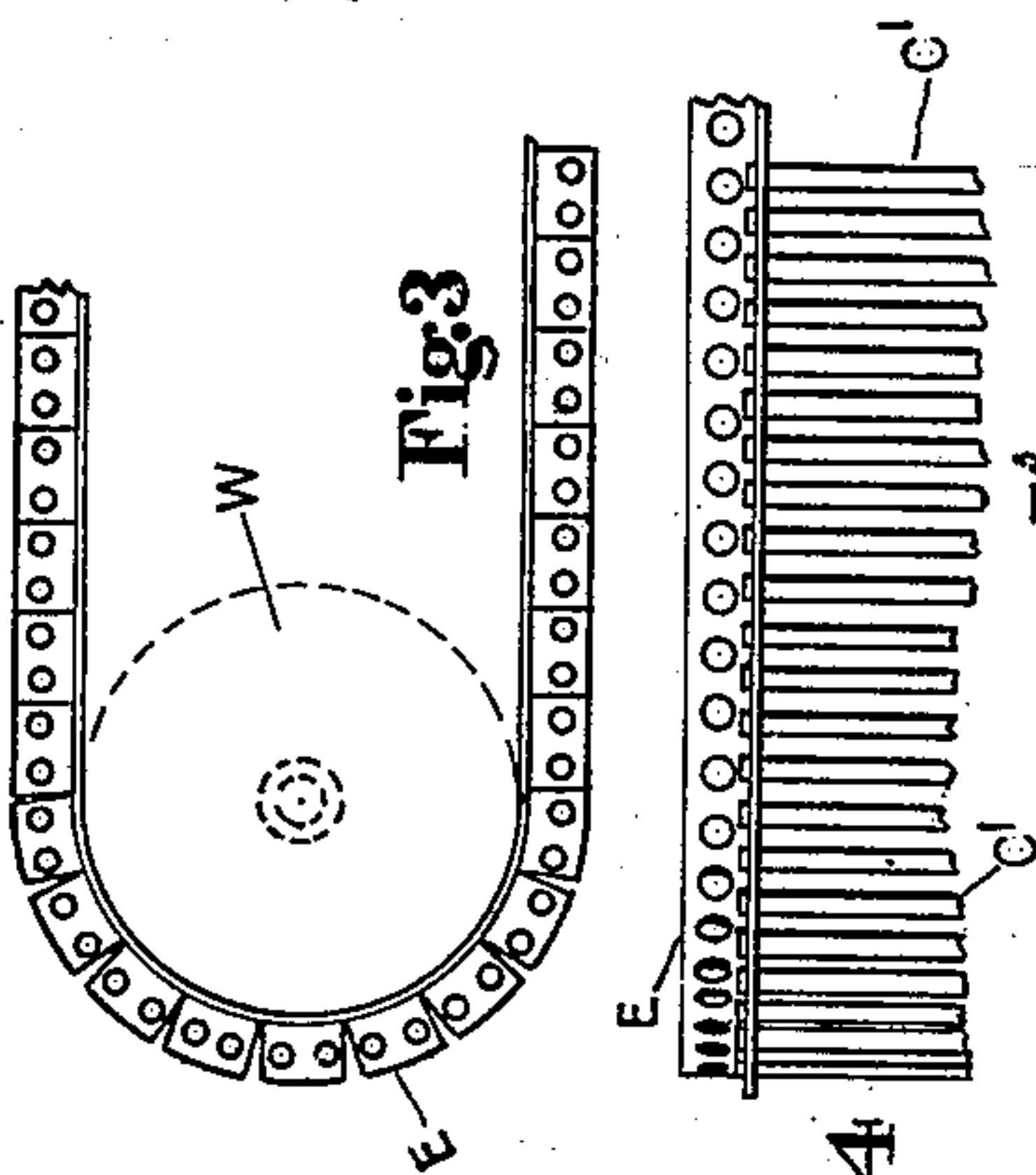


Fig. 3

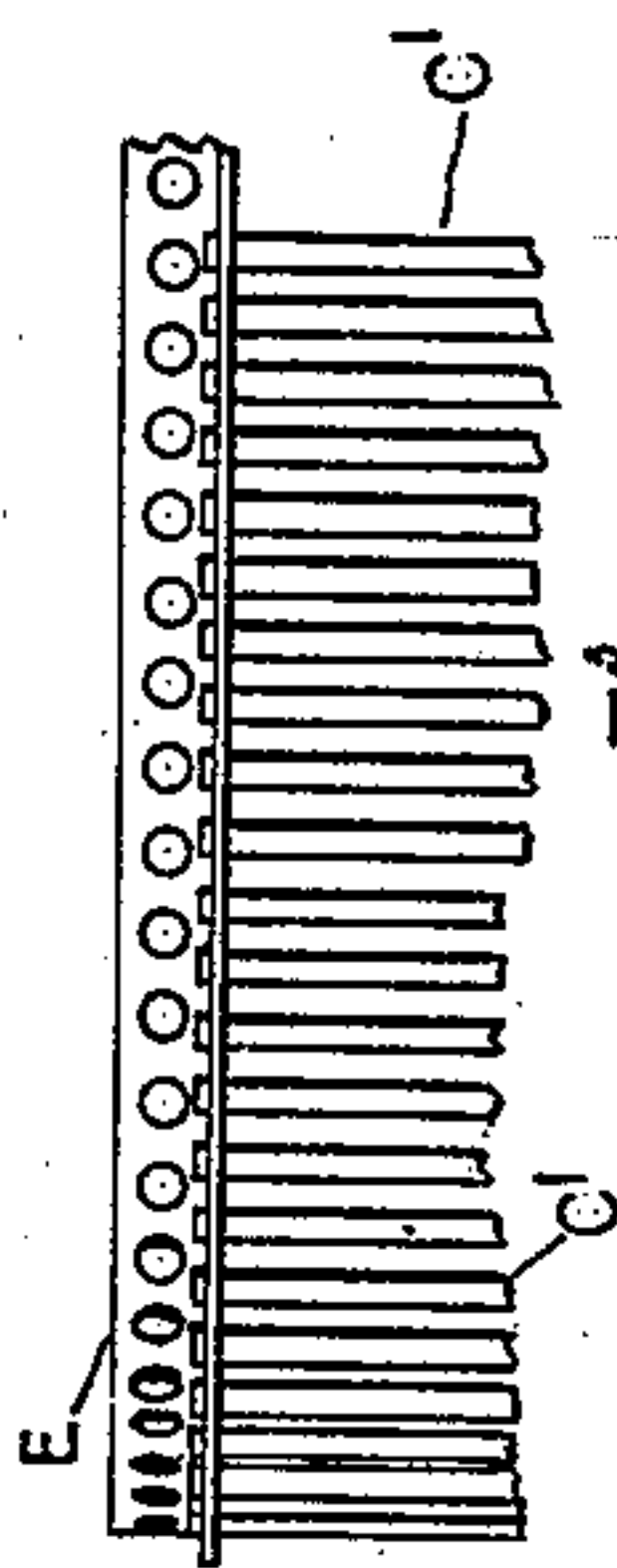


Fig. 4

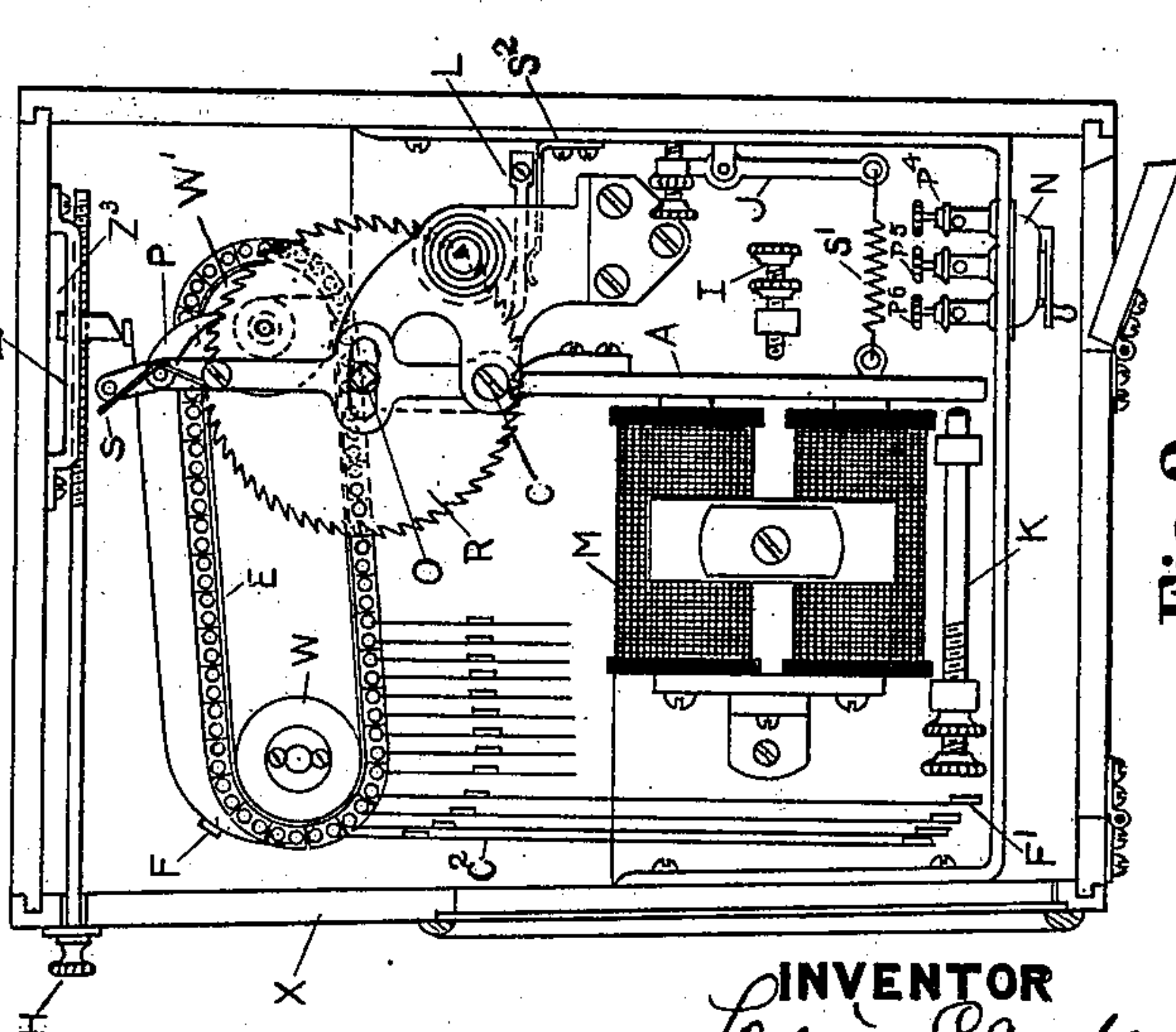


Fig. 2

WITNESSES  
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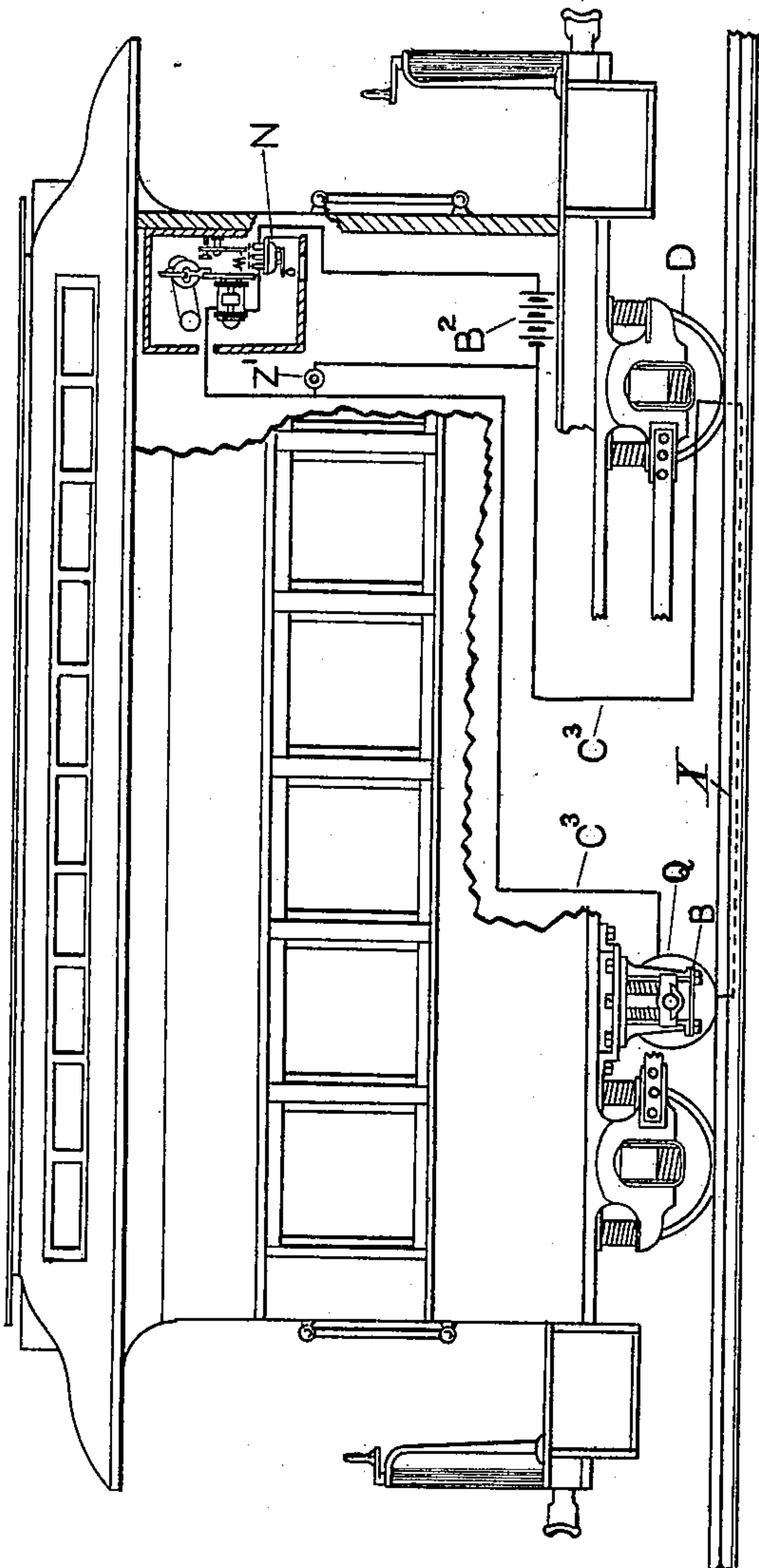


Fig. 8

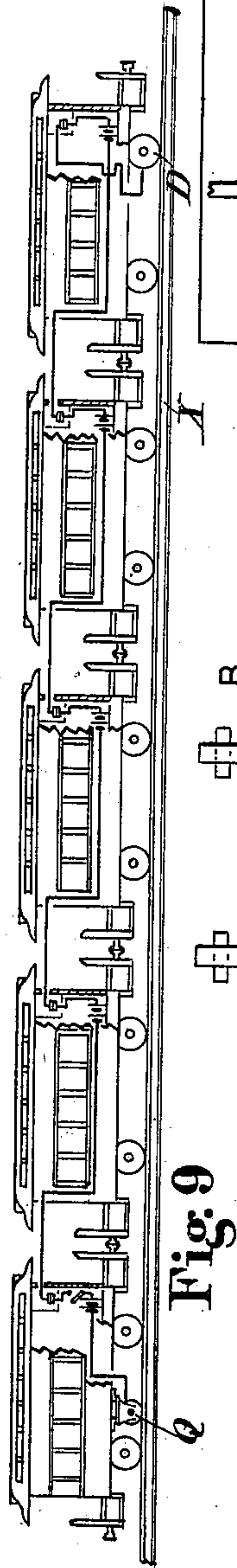


Fig. 9

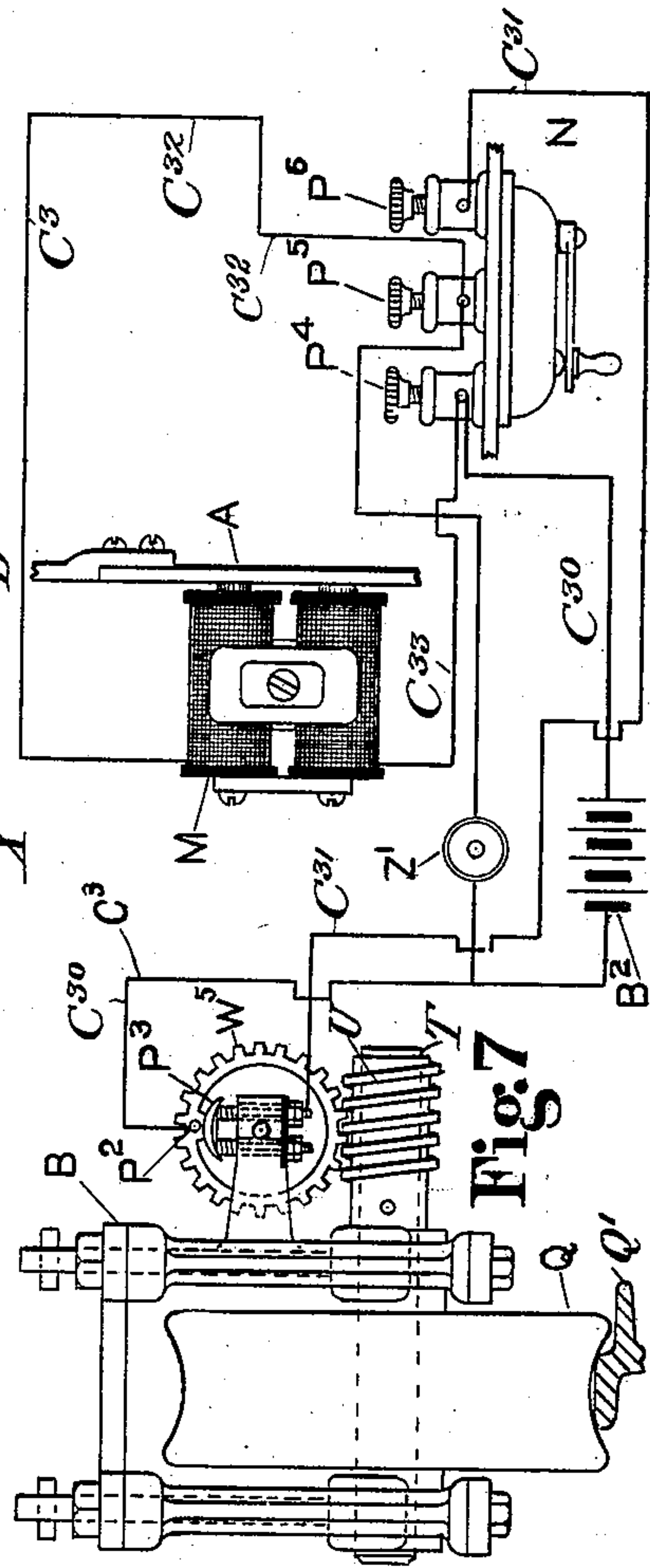


Fig. 7

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4 SHEETS—SHEET 3.

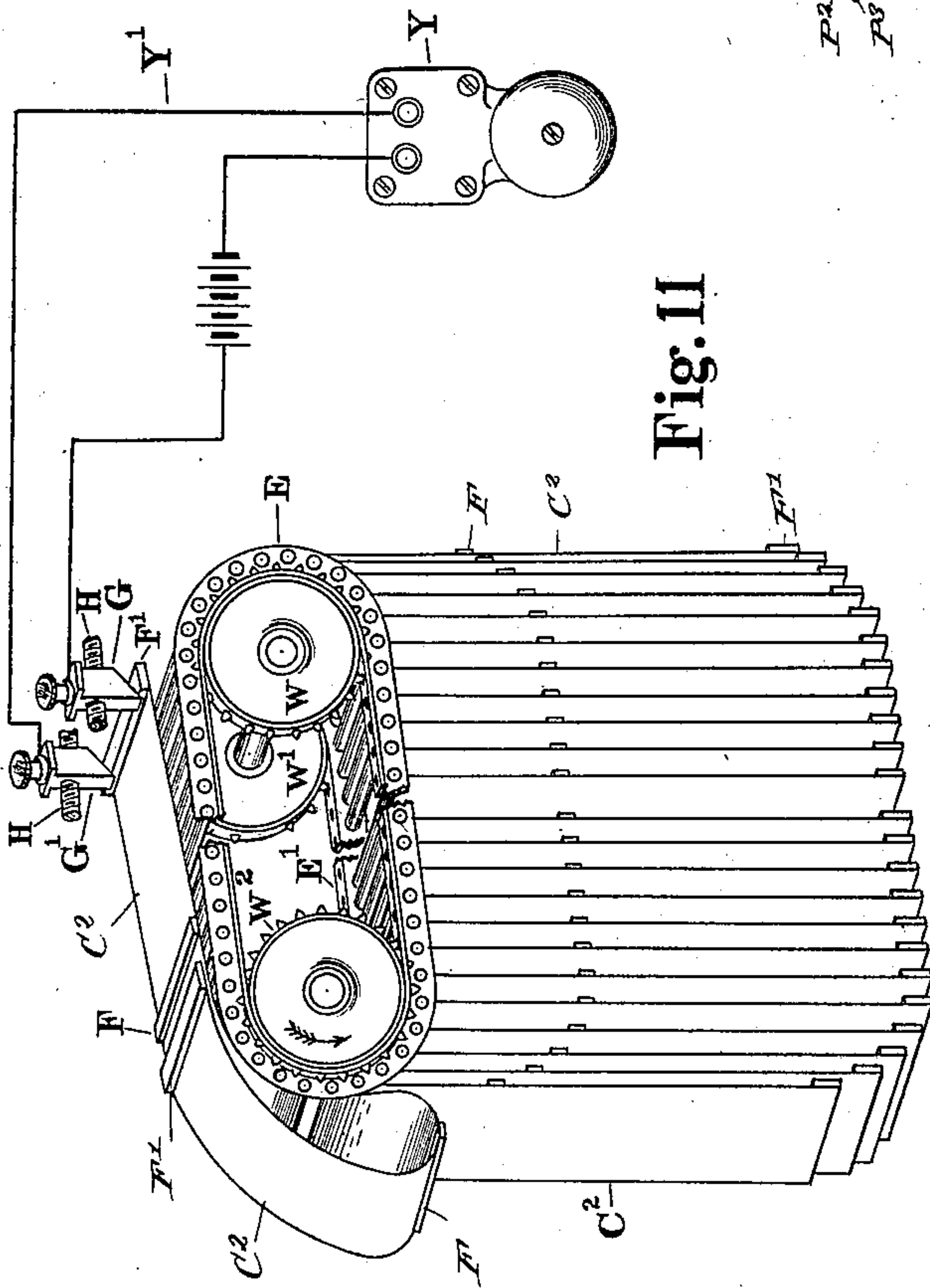


Fig. 11

Fig. 14.

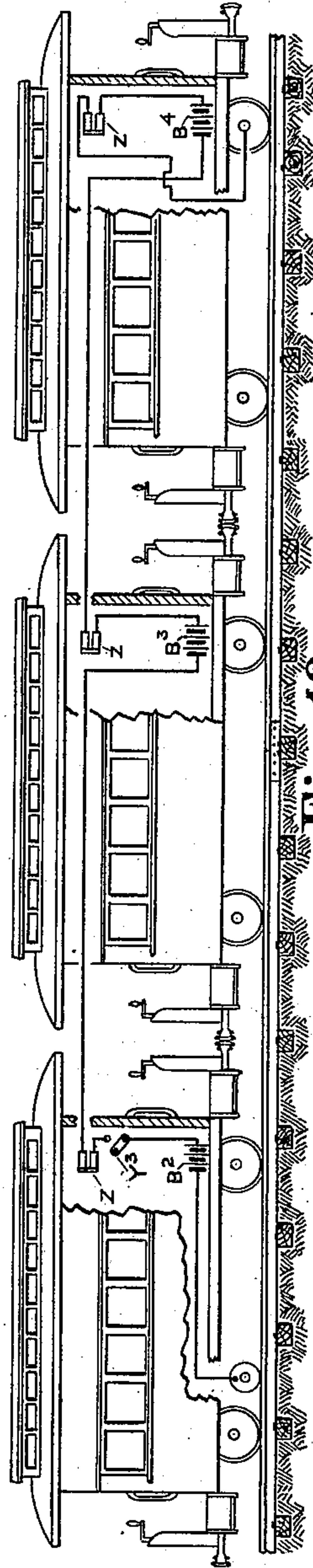
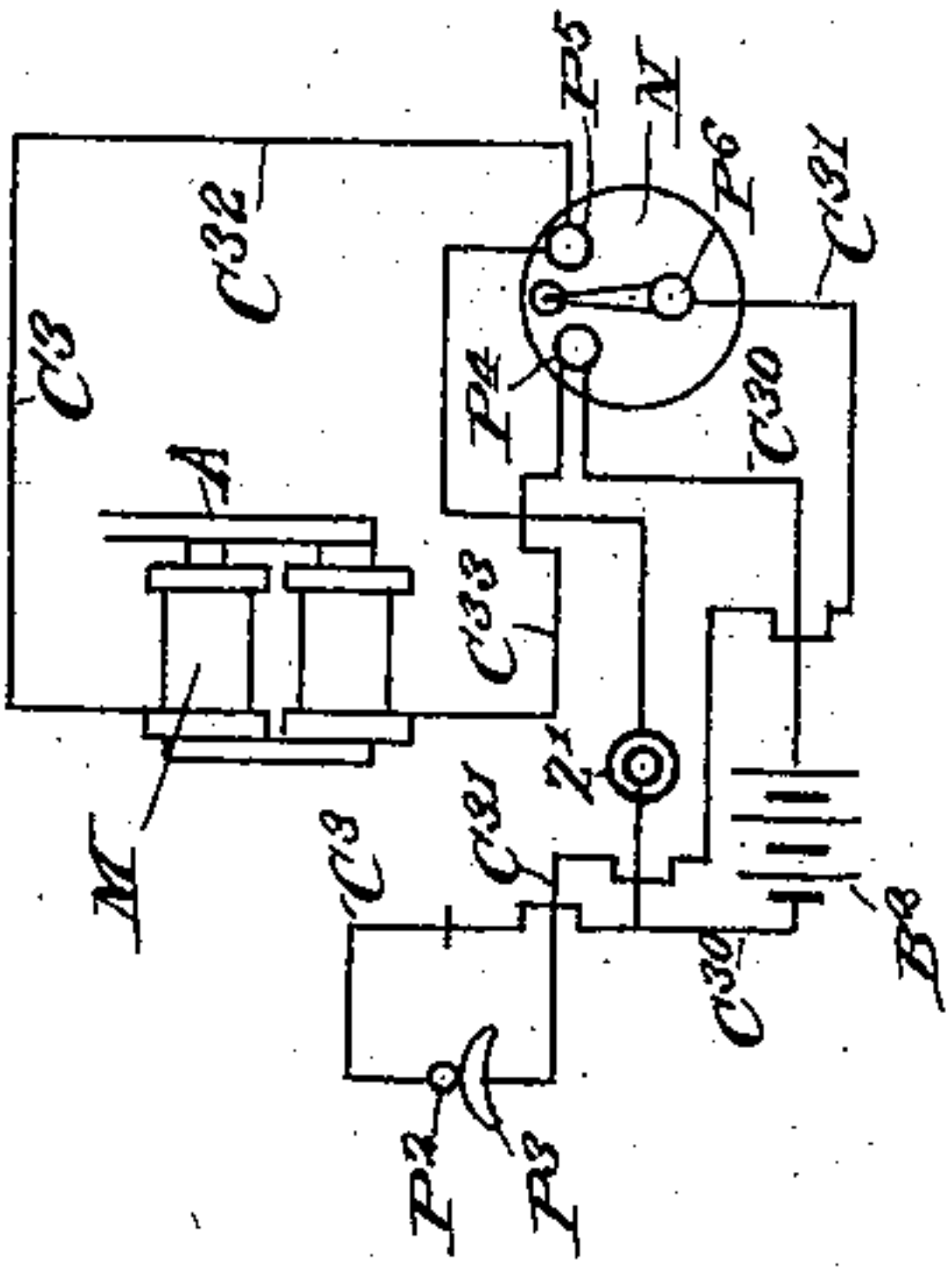


Fig. 10

WITNESSES:

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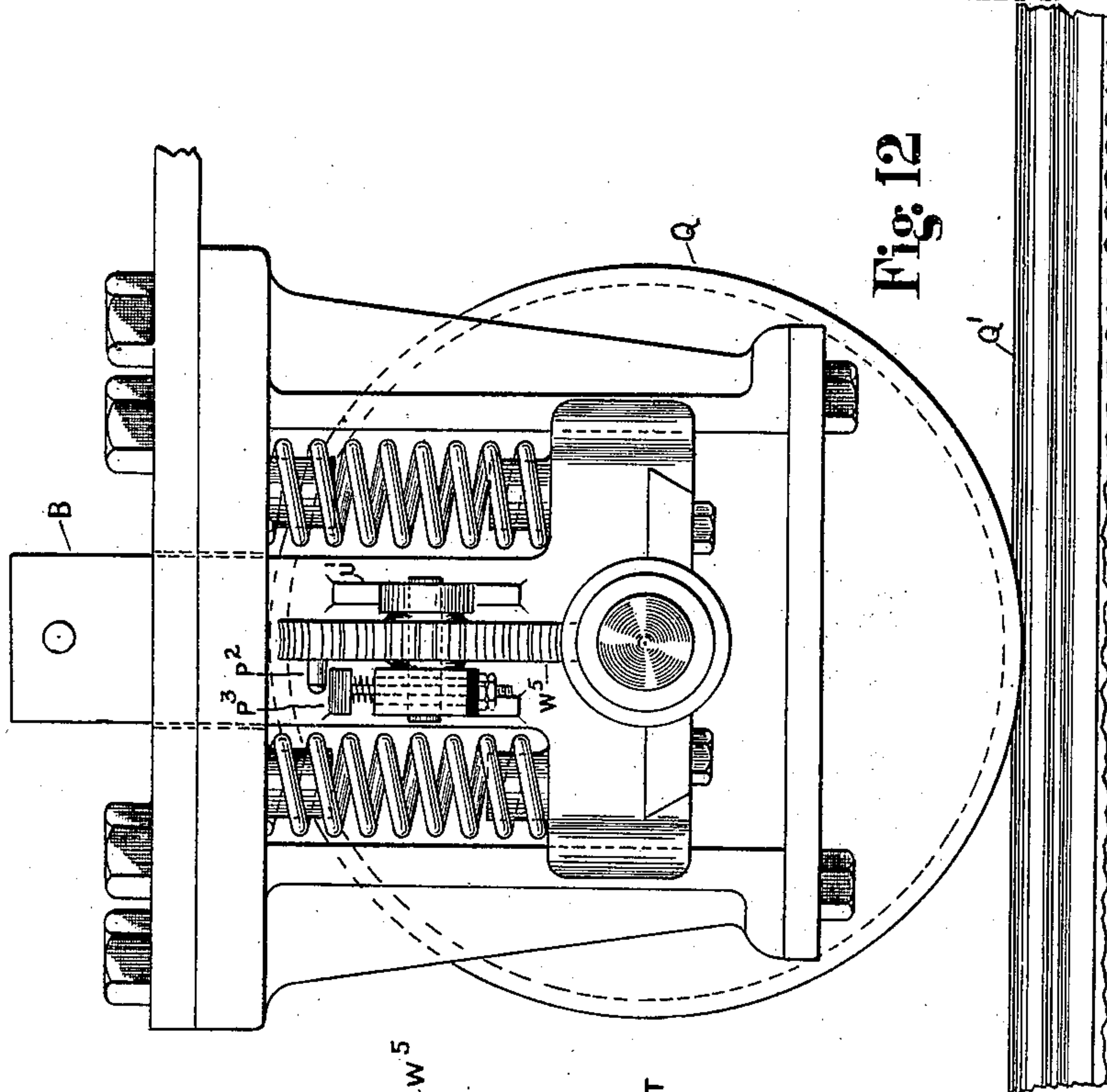


Fig. 12

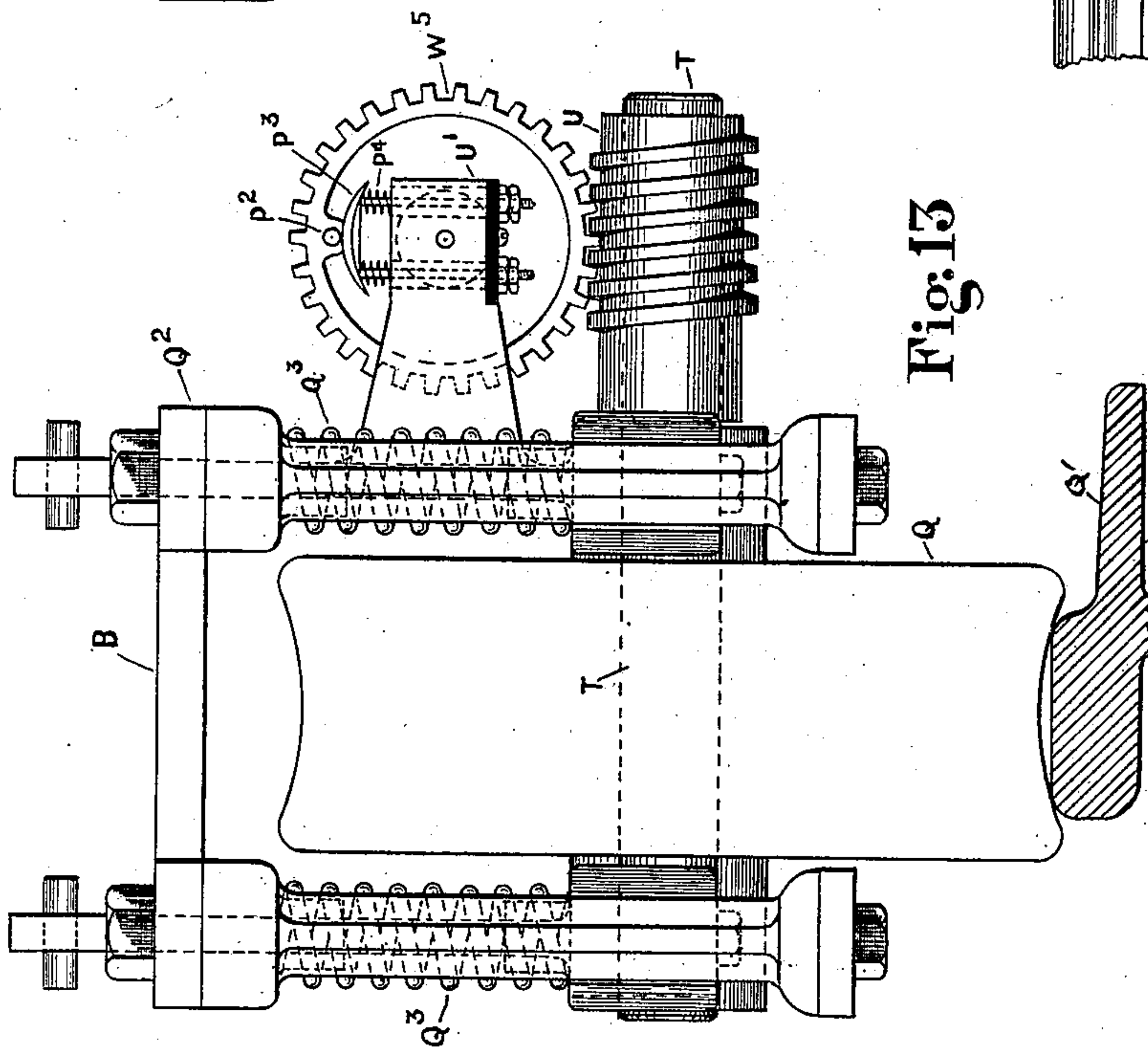


Fig. 13

WITNESSES

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A. E. Nauney

INVENTOR

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# UNITED STATES PATENT OFFICE.

LOUIS CASPER, OF CHICAGO, ILLINOIS.

## STATION-INDICATOR AND ADVERTISING DEVICE.

SPECIFICATION forming part of Letters Patent No. 751,458, dated February 9, 1904.

Application filed May 2, 1898. Serial No. 679,455. (No model.)

*To all whom it may concern:*

Be it known that I, LOUIS CASPER, a citizen of the United States, residing in the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Station-Indicators and Advertising Devices, of which the following is a full, clear, and exact description.

The object of my invention is to provide a simple, durable, and compact method of indicating streets or stations on a railroad-car or other vehicle by means of automatically-revolving display-curtains which admit of sufficient space on their surface for advertisements or other display matter in addition to street or station announcements. This arrangement also provides for a large number of curtains to be confined in a comparatively small space without loss of efficiency to the indicator proper or curtailing the length of the curtains. The indicator-box proper is applicable for display and advertising purposes in such places other than a car or other vehicle.

Referring to the drawings, which are hereto annexed and form a part of this specification, Figure 1 is a front view of the indicator or advertising device; Fig. 2, an end view of the same; Fig. 3, a detail of indicator, showing the endless-chain gear that holds the curtains; Fig. 4, another view of the same; Fig. 5, a view of sprocket-wheel W hereinafter described; Fig. 6, another view of the same; Fig. 7, a view showing electrical connections between magnet M and trail-wheel combination B; Fig. 8, a view of a car, showing position of indicator and trail-wheel combination on the same; Fig. 9, a train of cars with indicators connected up in series; Fig. 10, a train of cars, showing indicators connected up in series; Fig. 11, a detail view of indicator or advertising device; Fig. 12, a front view of the trail-wheel attachment; Fig. 13, a side elevation of the same. Fig. 14 is a diagrammatic view of the switch N and its connections.

Similar letters of reference designate corresponding parts in all the figures.

Referring to Figs. 1 and 2, M is an electromagnet which when energized attracts ar-

mature A, that swings at pivot C. Mounted on the upper end of said armature is an angular click or pawl which is held in constant tension against ratchet-wheel R, into which said pawl engages by means of spring S. Securely attached to ratchet-wheel R is pinion P', which engages with gear-wheel W<sup>4</sup>, that revolves shaft D. Mounted on this shaft are sprocket-wheels W and W', which drive endless chains E and E', that hold loosely pivoted between them curtain-rods C'. The endless chains E and E' extend over and around sprocket-wheels W and W', W<sup>2</sup> and W<sup>3</sup>. The sprocket-wheels W, W', W<sup>2</sup>, and W<sup>3</sup> are similar in construction. Wheel W<sup>3</sup> being hidden behind wheel W<sup>2</sup> is not shown.

C<sup>2</sup> represents curtains of any suitable pliable material, each having a rod C' at the upper end of the same. The curtains have an edging F', of tin or other suitable material, attached transversely at the lower end or bottom of each curtain. The edging or strip F' is for the purpose of metallic connection across the back of the curtain when the pillars G G' engage same. These curtains are also provided with a weight or counterbalance F. This weight is placed transversely on the back of each curtain and intermediately between the top and bottom of same, (approximately about one-third of the way from the top.) The weight F is for the purpose of quickly tripping or dropping a curtain after a portion of same has been pulled over the front sprocket-wheels. The preferable method of attaching the weight F is by having it sheathed between an extra strip of cloth and the back of the curtain proper, said extra piece of cloth being held in place by two rows of stitching, with the weight F between said rows of stitching. The weight F may be a strip of tin or the like. I do not wish, however, to confine myself to this method of attaching weight strictly, but merely describe same for convenience of illustration.

The operation of the device is as follows: The trailer or wheel Q through contact with one of the track-rails is rotated. This actuates the worm U, which turns the gear-wheel W<sup>5</sup>, having a contact-piece P<sup>2</sup>, which at a certain point engages a shoe or contact-piece



P<sup>3</sup>. This closes the circuit C<sup>3</sup>, thus energizing the magnet M, which actuates the armature A. In turn this operates the pawl P and the ratchet-wheel R, the said wheel driving the pinion P', and this pinion drives the shaft D. This shaft drives sprocket-wheels W and W', which are engaged with chain-gear E and E', that have the curtain-rods C' loosely pivoted between them. Each curtain is brought in its turn to release pieces G and G'. When said release-pieces liberate the curtain C<sup>2</sup> at edging F', the additional weight F brings the curtain down without any halt and also assists the same in forming a loop just before dropping, so that only a limited space is necessary between the dropping curtain and the outer casing X.

The release-pieces G are so shaped and adjusted that they press downward only on the foremost edging F' and as a consequence will only release one curtain at a time. The exact adjustment of release-pieces G is obtained by thumb-rods H, the threads of which pass through said release-pieces, and by turning one of the thumb-rods H either right or left the release-piece corresponding is set back or forward. The release-pieces slide in grooves Z<sup>3</sup>. Only one groove is shown.

S' is a retractile spring which brings armature A against check-screw I when the magnet M is not energized. The tension of spring S' is regulated by adjusting-lever J.

To prevent the armature A from striking the end of magnet M, a thumb-rod K is used, and the end of the same may be reinforced with soft rubber or the like to soften the blow and deaden the sound of armature A when the same is in action.

To prevent the pawl P from skipping a tooth, pawl L and spring S<sup>2</sup> are used, which act as a check while pawl P is returning to its normal or resting position after having forced ratchet-wheel R forward one tooth.

N is a switch by which the current may be turned off and on as desired.

O is a shaft connected securely with ratchet-wheel R and pinion P'. This shaft may be fitted with a key to allow adjustment by hand, if necessary.

Referring to Figs. 12 and 13, Q is a wheel resting on rail Q'. Through the center of said wheel is shaft T. At one end of said shaft is a worm-gear U, which engages in gear-wheel W<sup>5</sup>. The gear-wheel W<sup>5</sup> revolves on its axis, which is attached to extension-piece U'. On the inner face of said gear-wheel is attached contact-pin P<sup>2</sup>. As the gear-wheel W<sup>5</sup> revolves the contact-pin P<sup>2</sup> strikes curved contact-piece P<sup>3</sup>, which closes circuit that energizes magnet M, already described. The curved contact-piece is properly insulated from extension-piece U' and rests on adjustable cushion-springs P<sup>4</sup>. The trail-wheel Q is held in position in frame Q<sup>2</sup>, and jar is prevented by cushion-springs Q<sup>3</sup>. The frame Q<sup>2</sup>

is attached to a truck or other convenient portion of a car in such a manner as will enable trail-wheel Q to rest perfectly on the rail Q'.

Referring to Fig. 11, G and G' are release-pieces, already described, forming the contact-terminals of circuit y', which is connected with electric bell Y. In case it is desired that an alarm be rung when any particular curtain is about to drop the edging F on the curtain would consist of a metallic strip at least to extend from release-piece G to release-piece G', so that when said edging would pass under said release-pieces the circuit would be completed by contact of metal edging F with release-pieces G and G' aforesaid and an alarm would be rung. Should it be desired that no alarm be rung on some particular curtain, the edging F on that particular curtain is then insulated at such places where it would come in contact with release-pieces G and G'.

Fig. 10 represents a train of cars with indicators Z connected up in series. Y<sup>3</sup> is a starting-switch, which is located at a point near the trail-wheel. B<sup>2</sup>, B<sup>3</sup>, and B<sup>4</sup> are independent batteries in circuit with and under control of contacts P<sup>2</sup> and P<sup>3</sup> on trail-wheel attachment B, already described.

Referring to Figs. 7 and 8, N is a switch with terminal binding-posts P<sup>4</sup>, P<sup>5</sup>, and P<sup>6</sup> above the same. Z' is a push-button, which is used in case it is desired to make an adjustment in the indicator proper. The circuit is so connected that the magnet M will respond to either push-button Z' or contact-points P<sup>3</sup> and P<sup>2</sup> when the same come in contact with each other.

The trail-wheel combination described is applicable to indicators of other design operated electrically.

The general operation is as follows: The wheel Q revolves when the car to which said wheel is attached moves, said wheel being attached to the car in the manner shown and described. With every revolution of wheel Q the wheel W<sup>5</sup> would be forced around the distance of one tooth through worm-gear U on the end of axle T. The contact-pin P<sup>2</sup> on wheel W<sup>5</sup> would therefore in course of time be brought in contact with curved contact-piece P<sup>3</sup>, resulting in energizing magnet M in the indicator proper through circuit described. The above operation being continued would finally cause one of the curtains C<sup>2</sup> to drop, exposing a street or station announcement or other display matter printed thereon. The manner of adjusting the relative position of the curtains so that the street or station announcements will be shown on the curtains just before the street or station is reached is sufficiently well known as not to require detailed description here.

In Fig. 7 I have shown a diagrammatic view of the preferable form or construction of my device. Briefly described, it embodies the trailer or wheel Q, which is designed to run



on one of the ordinary rails of a track. This wheel has a shaft T, provided with a worm U, which engages the gear-wheel W<sup>5</sup>, provided with a contact-point P<sup>2</sup>, and this at a proper moment engages a contact piece or shoe P<sup>3</sup>. C<sup>3</sup> refers as a whole to a circuit which is completed when the contact-point P<sup>2</sup> engages the part P<sup>3</sup>. This circuit consists of a wire C<sup>30</sup>, leading from the wheel W<sup>5</sup> to a battery B<sup>2</sup> and thence to a switch N, and C<sup>31</sup> is a wire connected with the contact part P<sup>3</sup> and leading to the post P<sup>6</sup> on the switch N. Normally when the switch is closed the circuit includes the wires C<sup>32</sup> and C<sup>33</sup>, connected to the helices of the magnet M, which operates the armature A when the parts P<sup>2</sup> and P<sup>3</sup> complete the circuit. In Fig. 8 I have shown the circuit as completed through one of the track-rails, and this is the method I employ when using the trailer Q on a front car and allowing the circuit to be completed through the rail X, as is also shown in Fig. 9. When an extra car is taken off, it is to be understood that proper connections are employed to preserve the circuit.

Now, having described my invention, what I claim as new is—

1. In a device of class described, the combination of two endless chains, curtains pivoted between said chains, means for operating the chains, each of said curtains being provided with a transverse metallic edging at bottom of same, contact-pieces G and G' for engaging same and forming electric termi-

nals, an electric circuit and a signaling device within said circuit, as set forth.

2. In a device of the class described, a series of flexible curtains mounted on endless chains, means for driving same, each of said curtains being provided at its bottom, on the back thereof, with a transverse edging, in combination with the releasing devices or frictional contact-pieces G and G', and means for adjusting the position of said contact-pieces, as set forth.

3. In a device of the class described, a series of curtains mounted on endless chains, means for driving same, each of the said curtains being provided at its bottom with a metallic strip F' and a weight F placed intermediately between the top and bottom of the curtain, in combination with the release or contact pieces G G', the said pieces forming terminals in an electric circuit having a signaling device which is actuated by the edging F' closing the circuit, as set forth.

4. In a device of the class described, a series of curtains on endless chains, means for driving same, each of the said curtains being provided at its bottom with a metallic edging or strip F', in combination with the release or contact pieces G G', and means for adjusting the position of said contact-pieces, as set forth.

LOUIS CASPER.

Witnesses:

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C. G. HALL.