

(No Model.)

J. M. NELSON.
STATION INDICATOR.

No. 463,072.

Patented Nov. 10, 1891.

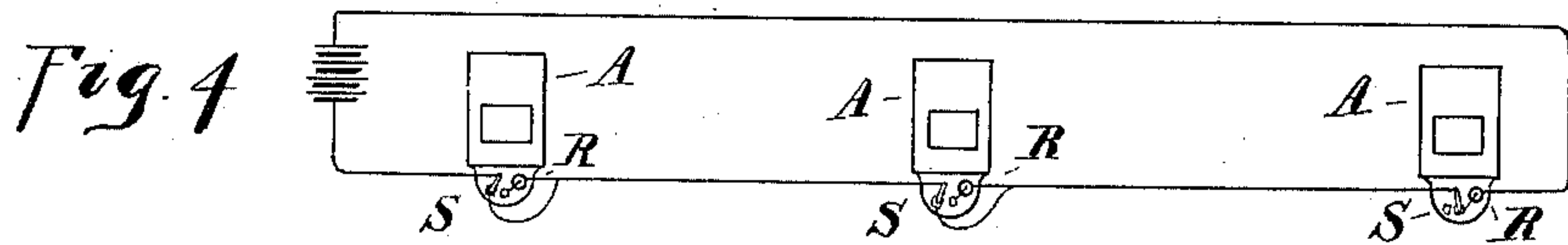


Fig. 1.

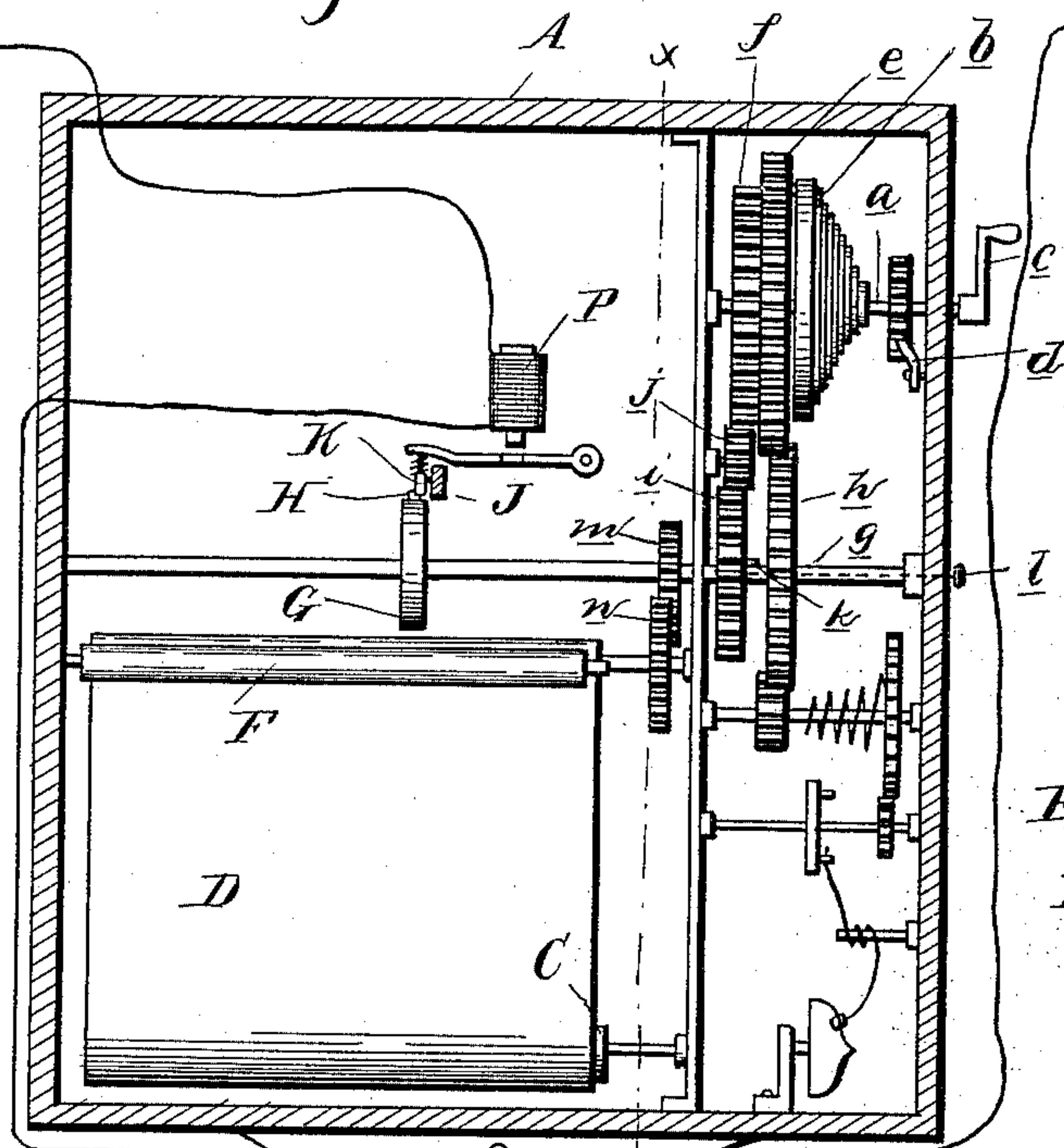


Fig. 2.

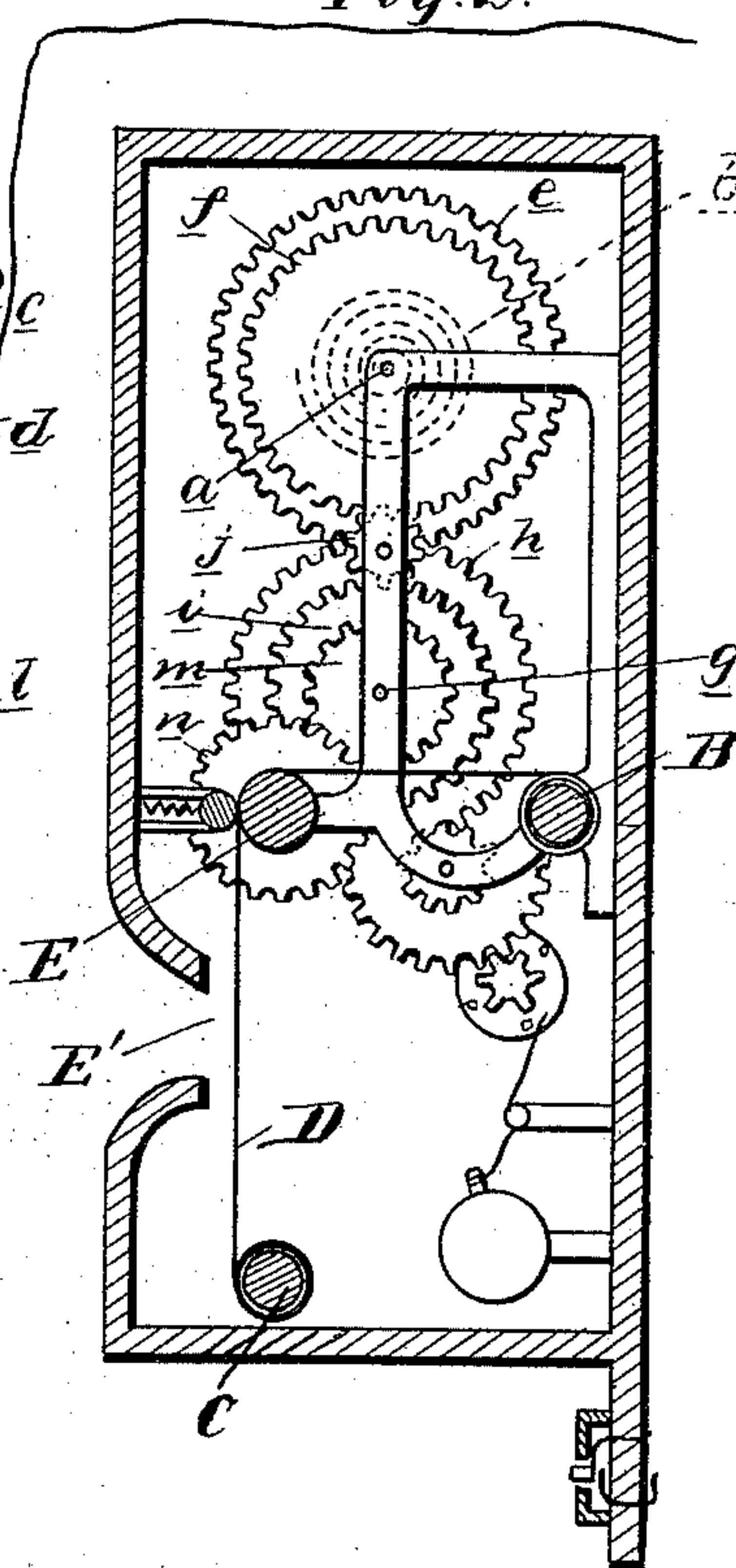
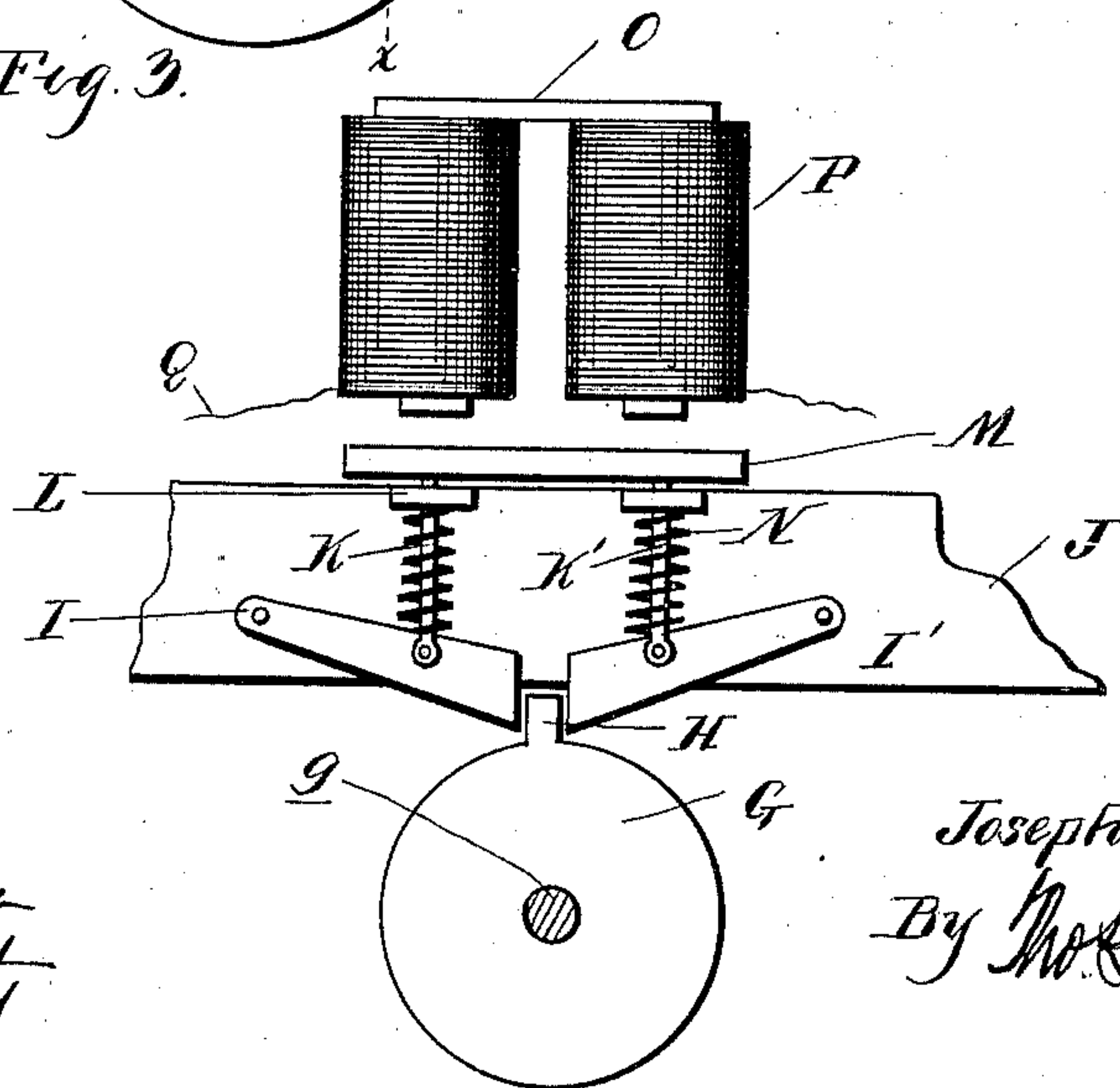


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

JOSEPH M. NELSON, OF COLEMAN, MICHIGAN.

STATION-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 463,072, dated November 10, 1891.

Application filed May 14, 1891. Serial No. 392,740. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH M. NELSON, a citizen of the United States, residing at Coleman, in the county of Midland and State of Michigan, have invented certain new and useful Improvements in Station-Indicators, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in station-indicators; and the invention consists in the peculiar construction of an indicator comprising a lettered ribbon or other mechanism for exhibiting the names of the stations successively, a motor for moving said indicating devices, a stop for holding said indicator in its adjusted position and checking the motor, and means for releasing the lock to allow the motor to effect the change of indication. The means which I preferably employ to actuate the lock and which I have shown is an electro-magnet.

The invention further consists in the application of this device to a series of cars so arranged and constructed that from any one point in the train all of the indicators may be simultaneously changed.

The invention further consists in the peculiar construction, arrangement, and combination of the various parts, all as more fully hereinafter described.

In the drawings, Figure 1 is a front elevation of my improved indicator with the front casing removed. Fig. 2 is a section thereof on line *x x*. Fig. 3 is an enlarged elevation of the lock and releasing mechanism therefor. Fig. 4 is a diagram view of the electrical connections applied to a train.

A is the case, in which are journaled the spring-rollers B and C, over which is wound a ribbon D, passing over a roller E.

F is a spring-roller pressing the ribbon against the roller E to keep it taut across the inspection-aperture E' of the casing. This ribbon is lettered successively with the names of the towns or cities designed to be shown. The means which I employ to move this ribbon are as follows: *a* is a shaft journaled in any suitable supports in the frame. This shaft is driven by any suitable motor, such as the spring *b*, which may be wound up by means of the crank-handle *c*, a suitable pawl

and ratchet *d* being provided to prevent the rotation of the shaft in the opposite direction. This spring is secured at its outer end to the gear-wheel *e*, sleeved upon the shaft and to which is secured a second gear-wheel *f*.

g is a shaft parallel to the shaft *a*, carrying loosely journaled thereon the gear-wheel *h*. The gear-wheel *h* meshes with the wheel *e* and the gear-wheel *i* meshes with the gear-wheel *f* by means of the intermediate pinion *j*. These wheels are connected to the shaft by any suitable clutch—such as the spline *k*—adapted to enter a notch in the hub of the wheel and which may be moved into engagement with either the wheel *h* or *i* by means of the shaft *l*, projecting through the casing of the machine. The shaft *g* has secured to it the gear-wheel *m*, which meshes with the gear-wheel *n* upon the shaft, which is secured upon the shaft of the roller E. It is apparent that if the spring be wound up and the spline in engagement with the wheel *h* the expansion of the spring will rotate the shaft *g* in one direction, moving the indicator, and if the spline be engaged with the wheel *i* the spring will wind the shaft and move the indicator in the opposite direction.

G is a wheel secured upon the shaft *g* and provided with a pin or shoulder H.

I and I' are latches, pivoted to the cross-bar J, having guide-rods K K' secured to their upper faces, which pass through lugs L upon the cross-bar and carry at their upper ends an armature M.

N are springs between the lugs L and the latches to normally hold the latches in the path of the pin H.

O is an electro-magnet. P are the coils, and Q is the wire-connecting the magnet with the battery or any other source of electricity.

It is evident that if an electric current is passed through the electro-magnet the armature will be lifted into contact with the magnet, raising the latches I I' and allowing the spring-motor to turn the indicator.

As soon as the shoulder H is freed from the latches the circuit may be broken and the armature and latches will fall to the position shown in Fig. 3; but the motor will continue to rotate the wheel G until the pin H is again locked between the ends of the latches. It is evident that the locking and unlocking of

the wheel G will be effected whether the shaft g is turned to the right or left.

R is an ordinary push-button for closing the circuit, and S is a switch to throw into
5 circuit all of the indicator devices, except the one at the end of the train. Then when the circuit is completed by pushing in the button at the end of the train all of the indicators will be simultaneously indicated in the man-
10 ner previously described.

By arranging the switch and push-button as described any indicator can be used as the one to operate the signal on the train, or each one may be operated independently.

15 What I claim as my invention is—

1. In an indicator, the combination, with the casing and indicating device, of a motor for actuating the indicating device, means for reversing the movement of the indicator,
20 and a double latch for limiting the movement of the same governing the movement of the motor, substantially as described.

2. In an indicator, the combination, with the casing and indicating device, of a motor
25 for actuating the indicating device, means for reversing the movement of the indicator, oppositely-inclined latches for governing the movement of the indicator, and an electro-magnet for moving the latches out of engage-
30 ment with the indicator, substantially as described.

3. In an indicator, the combination, with an indicating device, of a motor for actuating the same in opposite directions, and a latch
35 consisting of two members oppositely inclined, with which the actuating means engage, substantially as described.

4. In an indicator, the combination, with an indicating device, of a motor for actuating
40 the same in opposite directions, and a latch consisting of two spring-actuated members oppositely inclined, with which the actuating means engage, and means for disengaging

the latch from the actuating means, substantially as described. 45

5. In an indicator, the combination, with an indicating device, of a motor for actuating the same in opposite directions, and a latch consisting of two spring-actuated members
50 oppositely inclined, with which the actuating means engage, and an electromotor for disengaging the latch from the actuating means, substantially as described.

6. In an indicator, the combination, with the casing and shaft journaled in the same, of
55 an indicating device connected with the shaft, a motor for actuating the shaft, and a lock for governing the movement of the same, consisting of a wheel on the shaft provided with a shoulder H, a latch consisting of two piv-
60 otal parts for engaging with the shoulder, and an electro-magnet for disengaging the same, substantially as described.

7. In an indicator, the combination, with the casing and shaft journaled in the same, of
65 an indicating device connected with the shaft, a motor for turning the shaft in either direction, and a lock for governing the movement of the same, consisting of a wheel on the shaft provided with a shoulder H, latches for en-
70 gaging the opposite sides of the shoulder, and means for disengaging the same, substantially as described.

8. In an indicator, the combination, with the indicating means, actuating-shaft for the
75 same, and motor for actuating the shaft, of a double latch for governing the movement of the shaft and a reversible clutch connection between the shaft and motor, substantially as described. 80

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH M. NELSON.

Witnesses:

JOHN E. HUBBELL,

T. B. SIMONS.