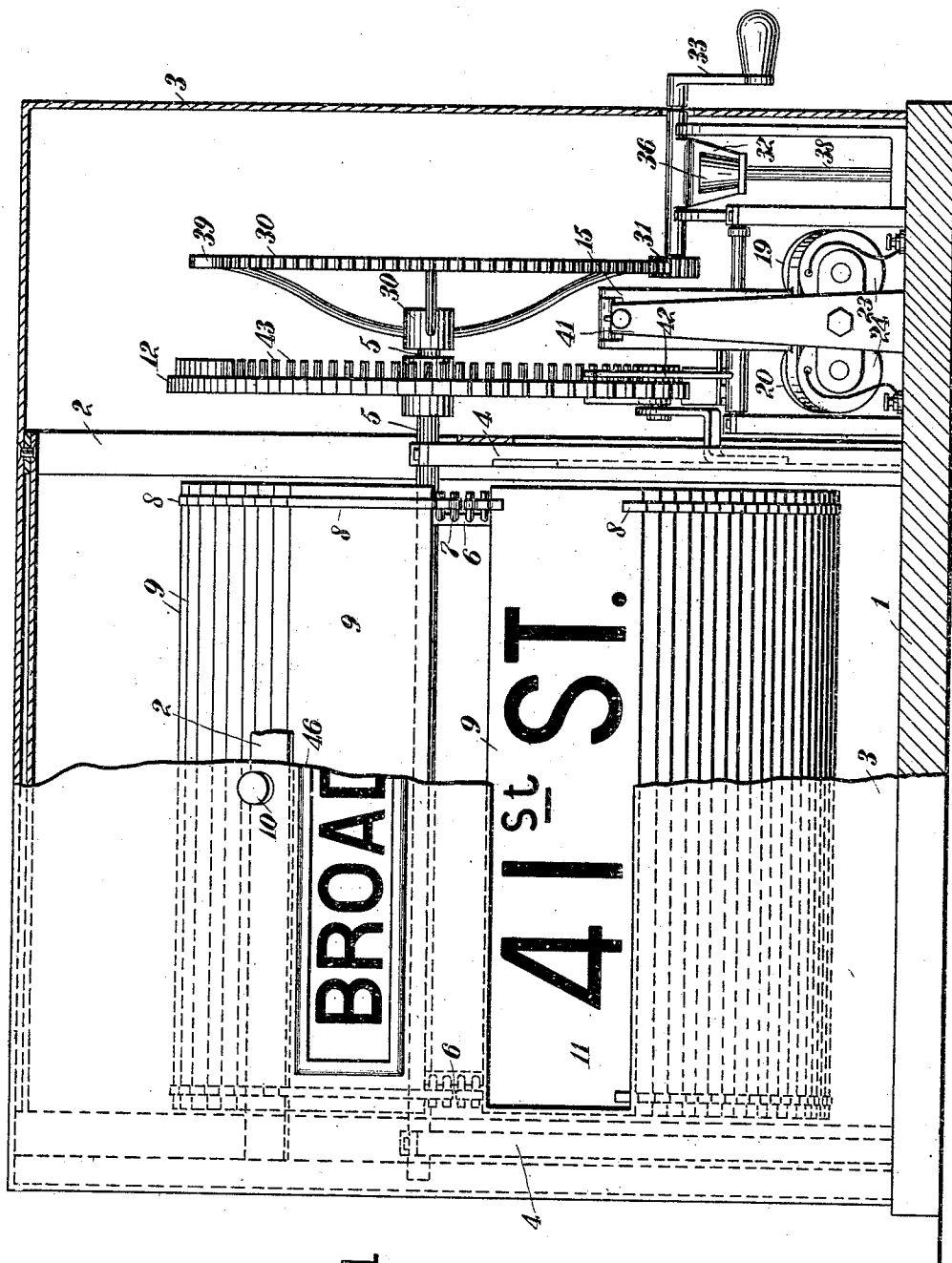


C. MESSING.
STATION INDICATOR.
APPLICATION FILED AUG. 21, 1909.

959,370.

Patented May 24, 1910.

3 SHEETS—SHEET 1.



WITNESSES
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A. Whiting

Fig. 1

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ATTORNEYS

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3 SHEETS—SHEET 2.

Fig. 2

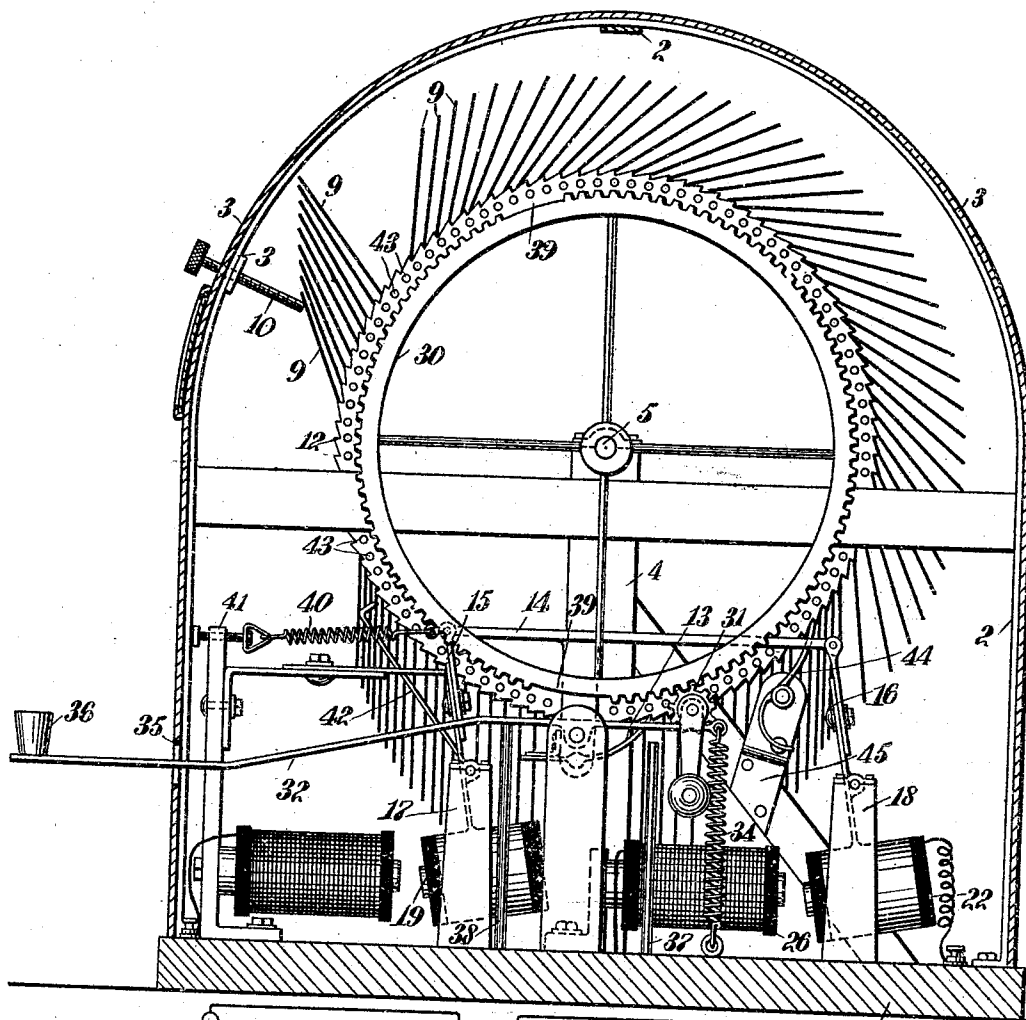
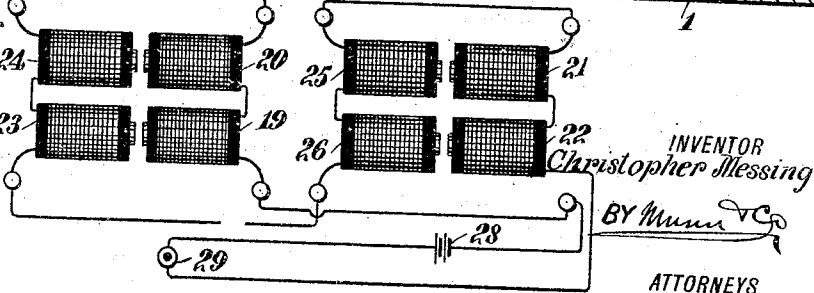


Fig. 5

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3 SHEETS--SHEET 3.

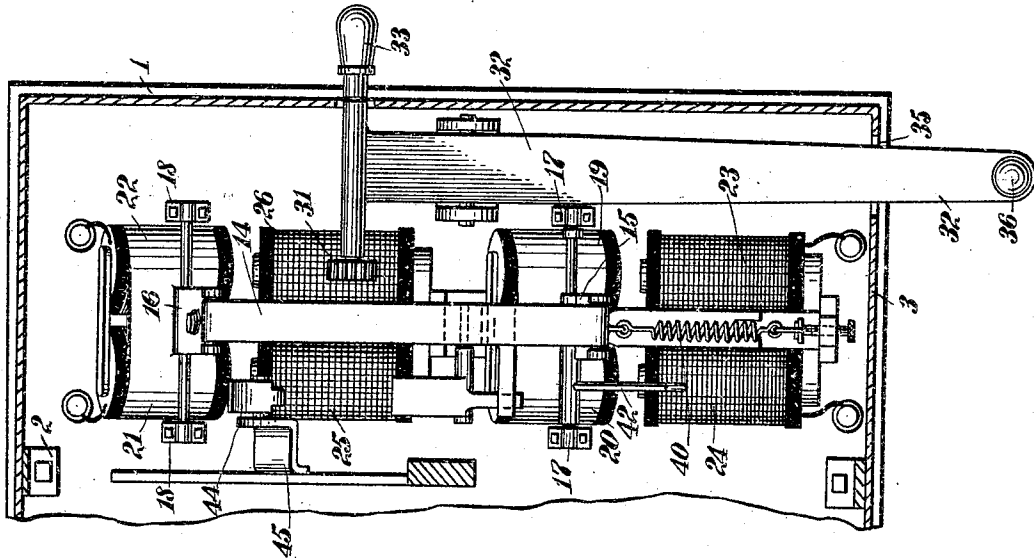
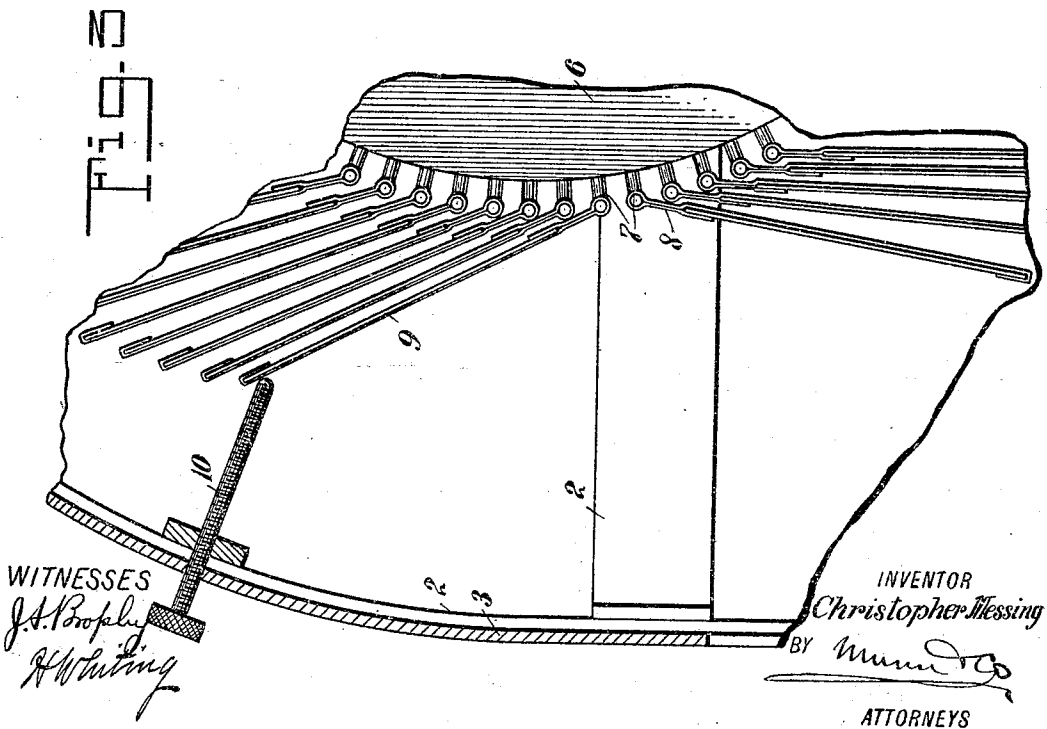


Fig-4



UNITED STATES PATENT OFFICE.

CHRISTOPHER MESSING, OF NEW YORK, N. Y.

STATION-INDICATOR.

959,370.

Specification of Letters Patent.

Patented May 24, 1910.

Application filed August 21, 1909. Serial No. 514,039.

To all whom it may concern:

Be it known that I, CHRISTOPHER MESSING, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Station-Indicator, of which the following is a full, clear, and exact description.

This invention relates to a new and improved device to be used in street cars, railroad cars, subway trains and the like, to indicate the various stations, stopping places or streets.

The object of this invention is to provide an indicator which will be simple in construction, inexpensive to manufacture, strong and durable, and easily operated.

A further object of this invention is to provide a station indicator, which may be used on any number of branch lines, with means for changing from one branch to another, such means including means for preventing the operator from over-running the changing point when adjusting the indicator.

These and further objects, together with the construction and combination of the parts, will be more fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a front view in elevation, showing part of the casing broken away to disclose the underlying mechanism; Fig. 2 is a vertical section taken at right angles to the view shown in Fig. 1; Fig. 3 is an enlarged fragmentary section showing the escapement for the display cards; Fig. 4 is an enlarged fragmentary horizontal section illustrating the operating magnets; and Fig. 5 is a diagrammatic view illustrating the method of connecting up the magnets.

Referring more particularly to the several parts of the device, 1 indicates the base, to which is secured in any well known manner a framework 2. The framework 2 supports an outside casing 3, which may be made of any suitable form or material. Within the casing 3 and supported in any suitable manner, as by means of upright brackets 4, there is provided a rotatable shaft 5, to which are secured heads 6. The heads 6 are spaced

from each other and have on their outer surfaces, adjacent to their peripheries, a plurality of pivot-pins 7, to which are pivotally secured a plurality of hangers 8. These hangers 8 are adapted to removably support a plurality of display-cards 9, on which there is placed a suitable inscription, such as the station or the street number and advertisements.

Adjustably secured in the frame 2 and the casing 3 is an adjustable escapement screw 10, which is adapted to engage the cards 9 near their outer edges and permit them to drop one by one into a position opposite a suitable opening 11 in front of the casing 3. In order to rotate the shaft 5 and thus display the cards 9 successively, a ratchet-wheel 12 is provided, secured on the shaft 5. Engaging in the ratchet-wheel 12, near the under side thereof, is a pawl 13, which is secured on a beam 14. The beam 14 is connected at each end to a pair of levers 15 and 16, which are rotatably supported on brackets 17 and 18 on the base 1. Secured to the lower ends of the levers 15 and 16 are floating magnets 19, 20, 21 and 22, arranged in pairs. Opposite each pair of floating magnets is a plurality of stationary magnets 23, 24, 25 and 26, arranged in pairs and so wound that they will offer to the floating magnets poles of opposite sign.

Fig. 5 illustrates one system of connecting up the floating and stationary magnets in series with a suitable source of current, indicated at 28, to a push-button 29. The source of current can either be a separate battery or may be a shunt circuit from the main line. The push-button 29 is adapted to be operated by the guard or the motor-man of the car.

The display-cards 9 may be of any number and for any number of branches. In order to change from one branch to another there is provided a spider gear-wheel 30, which is secured on the shaft 5 in any well known manner and is adapted to be operated by a pinion 31, which is secured to a shaft run through a bearing on a lever 32 and is adapted to be operated by any suitable means, such as a hand crank 33. The pinion 31 is normally held out of engagement with the gear-wheel 30 by means of a spring 34, which engages the lever 32 at one end and the base 1 at the other end.

The lever 32 extends through the casing 3 at 35 and is provided with a suitable handle 36, whereby it may be operated against the tension of the spring 34, to bring the pinion 31 into engagement with the gear-wheel 30. In order to limit the throw of the lever 32 stops 37 and 38, in the form of rods extending up from the base 1 and arranged on each side of the pivot-point of the lever 32, are provided. When the pinion 31 is used to rotate the gear-wheel 30 to bring the cards 9 from one branch to another, it is desirable that the point of change from one branch to another shall not be overrun. For this purpose there is arranged on the gear-wheel 30 a plurality of gaps or spaces 39 in the toothed periphery of the gear-wheel 30. Thus, when the pinion 31 arrives at one of these gaps 39 it will cease to rotate the gear-wheel 30, preventing too many of the display-cards 9 being run past the escapement 10.

In order to normally hold the floating magnets away from the stationary magnets and to return the pawl 13 after its stroke, there is provided a spring 40, which is secured at one end to the beam 14 and at the other end is adjustably connected to a bracket 41 on the base 1.

In order to prevent the pawl 13 from advancing the ratchet-wheel more than the desired amount to slip one display-card past the escapement 10, a locking pawl 42 is provided, which is secured to the lever 15 and so arranged that it will come in contact with one of a plurality of pins 43, secured in any well-known manner on the side of the ratchet-wheel 12. The ratchet-wheel 12 is prevented from back rotation by means of a locking-pawl 44, which is secured to a bracket 45 on the base 1. On the front of the casing 3, located above the opening 11, there is provided a holder 46, in which is adapted to be placed a card indicating the line on which the train is traveling.

In the operation of the device, the button 29 is pushed by the guard or motorman when the train approaches a station. Instead of having this operation performed manually it may be performed automatically by a stop on the road, located adjacent to the tracks. When a connection is made through the circuit the floating magnets will be drawn toward the stationary magnets, thereby shifting the beam 14 against the tension of the spring 40. The pawl 13 will thus advance the ratchet-wheel 12 the desired amount, which is limited by the locking pawl 42 coming into engagement with the pins 43. When pressure on the button 29 is released, the spring 40 will automatically return the pawl 13 ready for another operation. At the end of the forward throw of the pawl 13, the lowest card

9 of the series will slip by the escapement screw 10 and display the inscription on the card opposite the opening 11.

When it is desired to use the train on a different branch line from the one on which it is running, the operator changes the position of the rotating member in relation to the opening 11, by bringing the pinion 31 into engagement with the gear-wheel 30 and thus making a driving connection, whereby the hand-crank 33 may be caused to rotate the shaft 5 and thus advance the series of display cards to the changing point. When the first card of the branch line has reached the escapement screw 10, the pinion 31 will come opposite one of the gaps or spaces 39 in the wheel 30, thereby preventing the hand-crank 33 from rotating the gear-wheel 30 beyond this point. The lever 32 is prevented from allowing the pinion 31 coming in contact with the gear-wheel 30 and acting as a friction gear by means of the stop 38, which limits the downward throw of the lever.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In a station indicator, the combination of a rotatable member, a plurality of display-cards pivotally connected to said member, a ratchet-wheel on said member, a plurality of pairs of floating magnets for operating said ratchet-wheel, and a plurality of pairs of stationary magnets co-acting with said floating magnets.

2. In a station indicator, the combination with a rotatable member, of a plurality of display-cards secured to said member, electrical means for rotating said member, and manual means for rotating said member, said manual means being adapted to be automatically operatively disconnected from said member at a predetermined point.

3. In a station indicator, the combination with a rotatable member, of a plurality of display-cards secured to said member, electrical means for rotating said member, manual means for rotating said member, and means for normally holding said manual means out of operative connection with said member.

4. In a station indicator, the combination with a rotatable member, of a plurality of display cards secured to said member, electrical means for rotating said member, manual means for rotating said member, and means for forcing said manual means into operative connection with said member.

5. In a station indicator, the combination with a rotatable member, of a plurality of display cards secured to said member, electrical means for rotating said member, manual means for rotating said member, said manual means being adapted to be automatically operatively disconnected from said

member at a predetermined point, means for normally holding said manual means out of operative connection with said member, and means for forcing said manual means into operative connection with said member.

6. In a station indicator, the combination with a rotatable member, of a plurality of display cards pivotally connected to said member, a ratchet wheel for rotating said member, a pawl for operating said ratchet wheel, a beam carrying said pawl, a plurality of floating magnets, means coöperating with said magnets to produce a movement thereof and means actuated by said magnets for operating said beam.

7. In a station indicator, the combination with a rotatable member, of a plurality of display-cards pivotally connected to said member, a ratchet-wheel for rotating said member, a pawl for operating said ratchet-wheel, a beam carrying said pawl, a plurality of swinging levers for operating said beam, floating magnets on said levers, and stationary magnets co-acting with said floating magnets.

8. In a station indicator, the combination with a rotatable member, of a plurality of display-cards pivotally connected to said member, a ratchet-wheel for rotating said member, a pawl for operating said ratchet wheel, a beam carrying said pawl, a plurality of floating magnets, means coöperating with said magnets to produce a movement thereof, means actuated by said magnets for operating said beam in one direction, and a spring for operating said beam in the opposite direction.

9. In a station indicator, the combination with a rotatable member, of a plurality of display-cards pivotally connected to said member, a ratchet-wheel for rotating said member, a pawl for operating said ratchet-wheel, a beam carrying said pawl, a plurality of floating magnets for operating said beam, a gear-wheel having a blank space in its periphery connected to said member, a pinion for rotating said gear-wheel, means for rotating said pinion, and means for bringing said pinion into engagement with said gear-wheel.

10. In a station indicator, the combination with a rotatable member, of a plurality of display-cards pivotally connected to said member, a ratchet-wheel for rotating said member, a pawl for operating said ratchet-wheel, a beam carrying said pawl, a plurality of floating magnets for operating said beam, a gear-wheel connected to said member and having a plurality of blank spaces in its periphery, a pinion for rotating said gear wheel, means for rotating said pinion, a lever for bringing said pinion into engagement with said gear-wheel, a spring for drawing said pinion out of engagement with said gear-wheel, and stops for limiting the throw of said lever.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHRISTOPHER MESSING.

Witnesses:

JOHN J. McAULIFFE,
HENRY KRUCK.