

No. 753,798.

PATENTED MAR. 1, 1904.

J. A. KELLOGG & J. D. BRADY.

INDICATOR.

APPLICATION FILED SEPT. 18, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

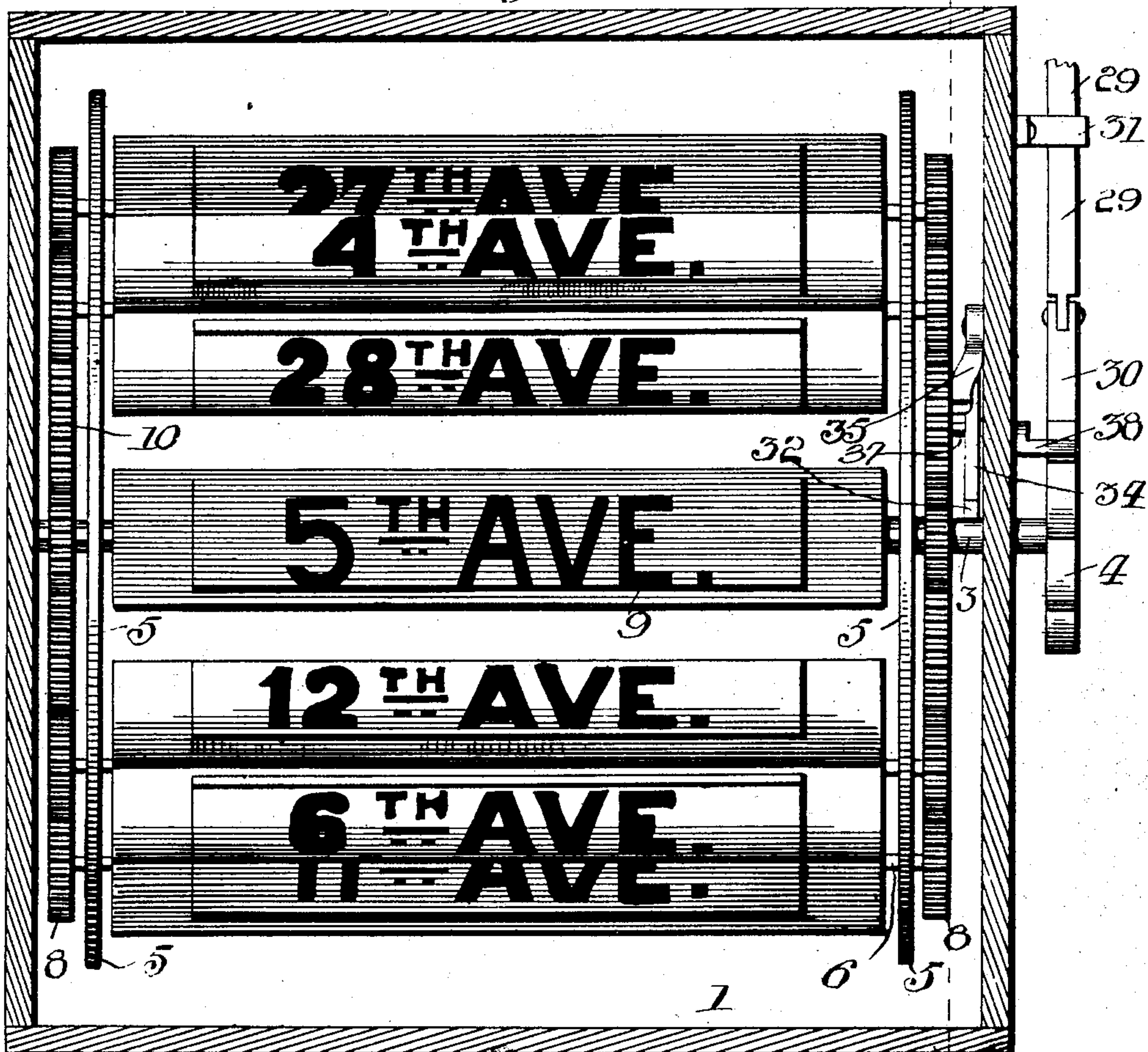
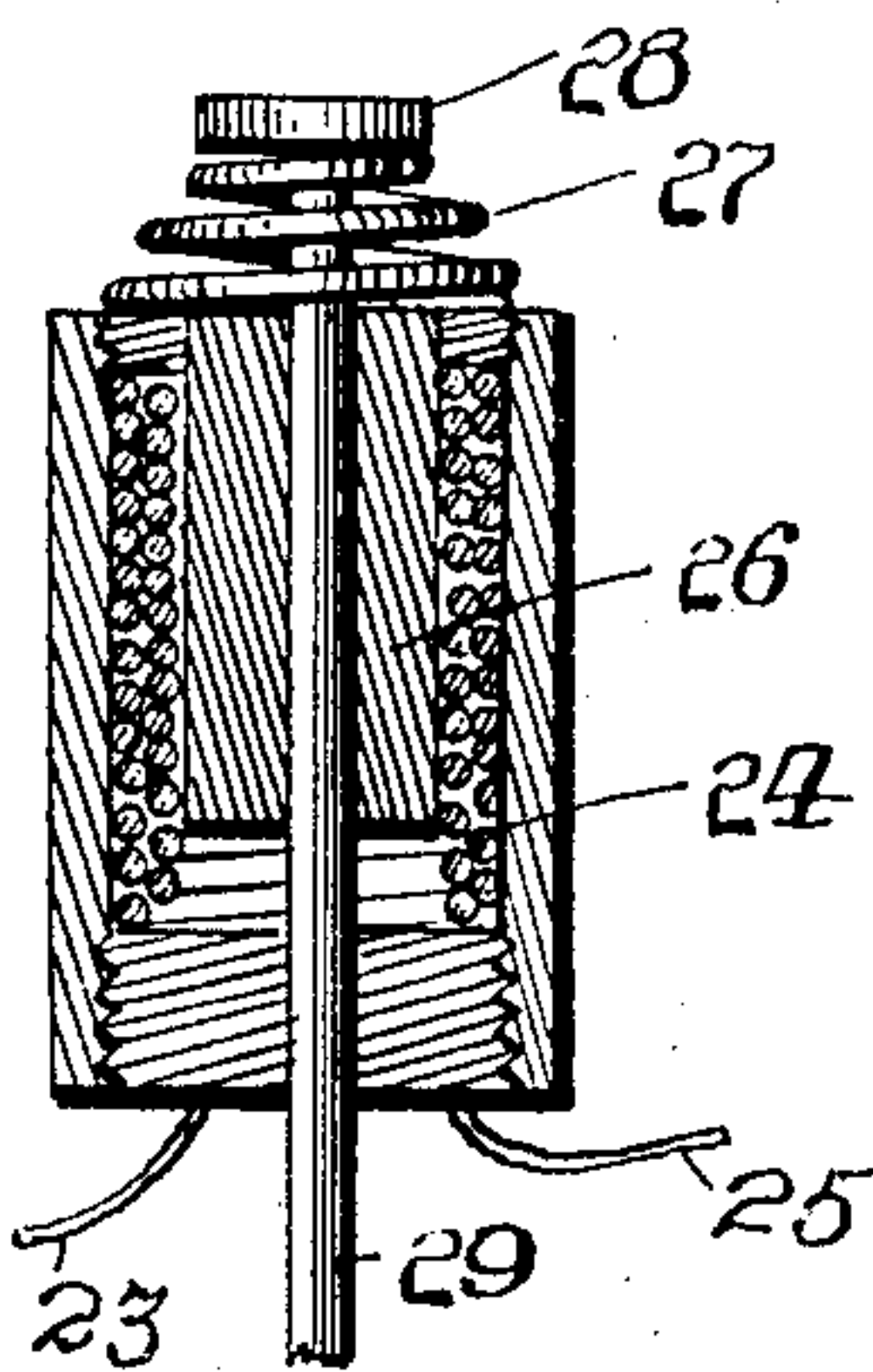


Fig. 2.



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2 SHEETS—SHEET 2.

NO MODEL.

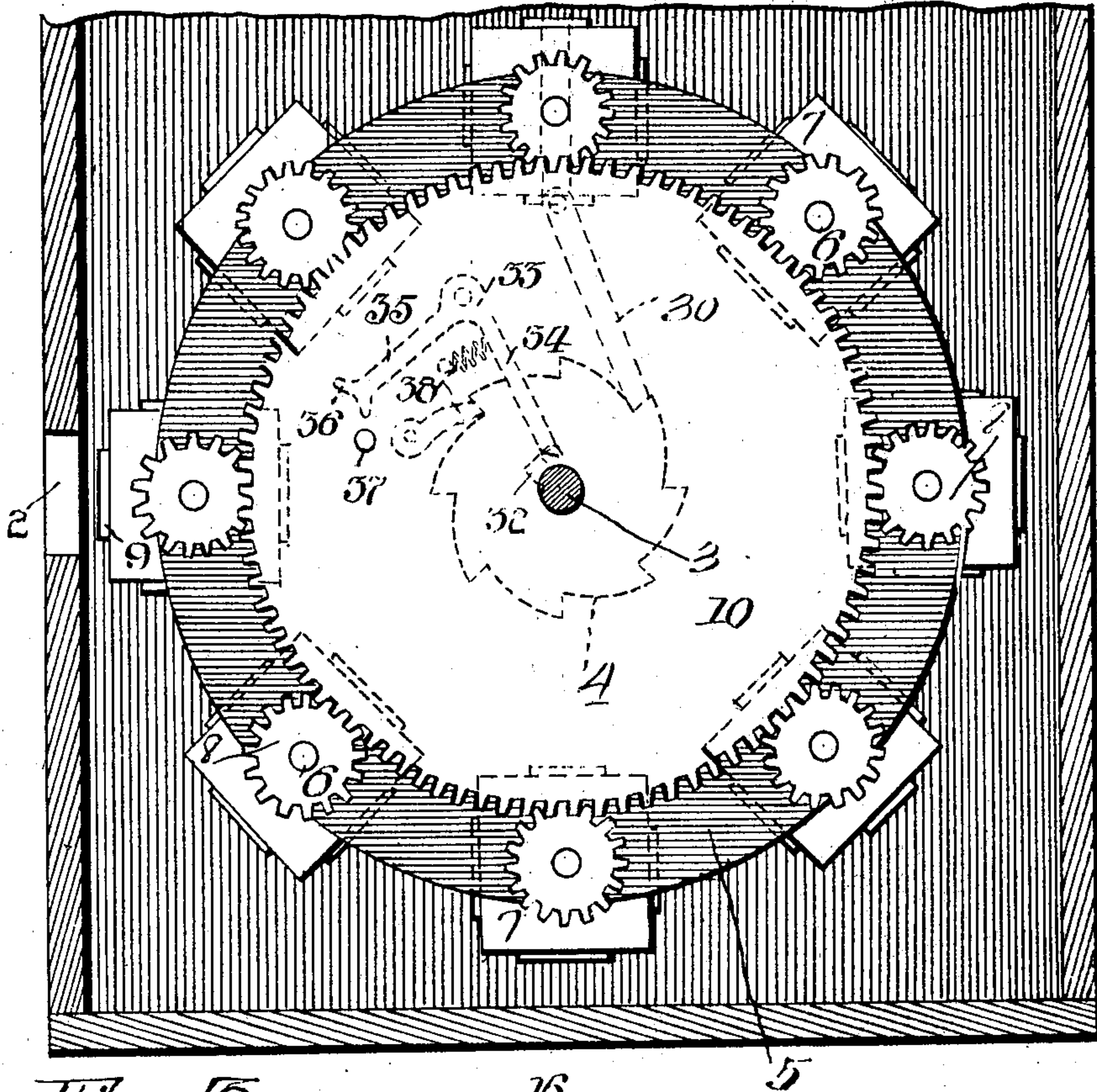


Fig. 5.

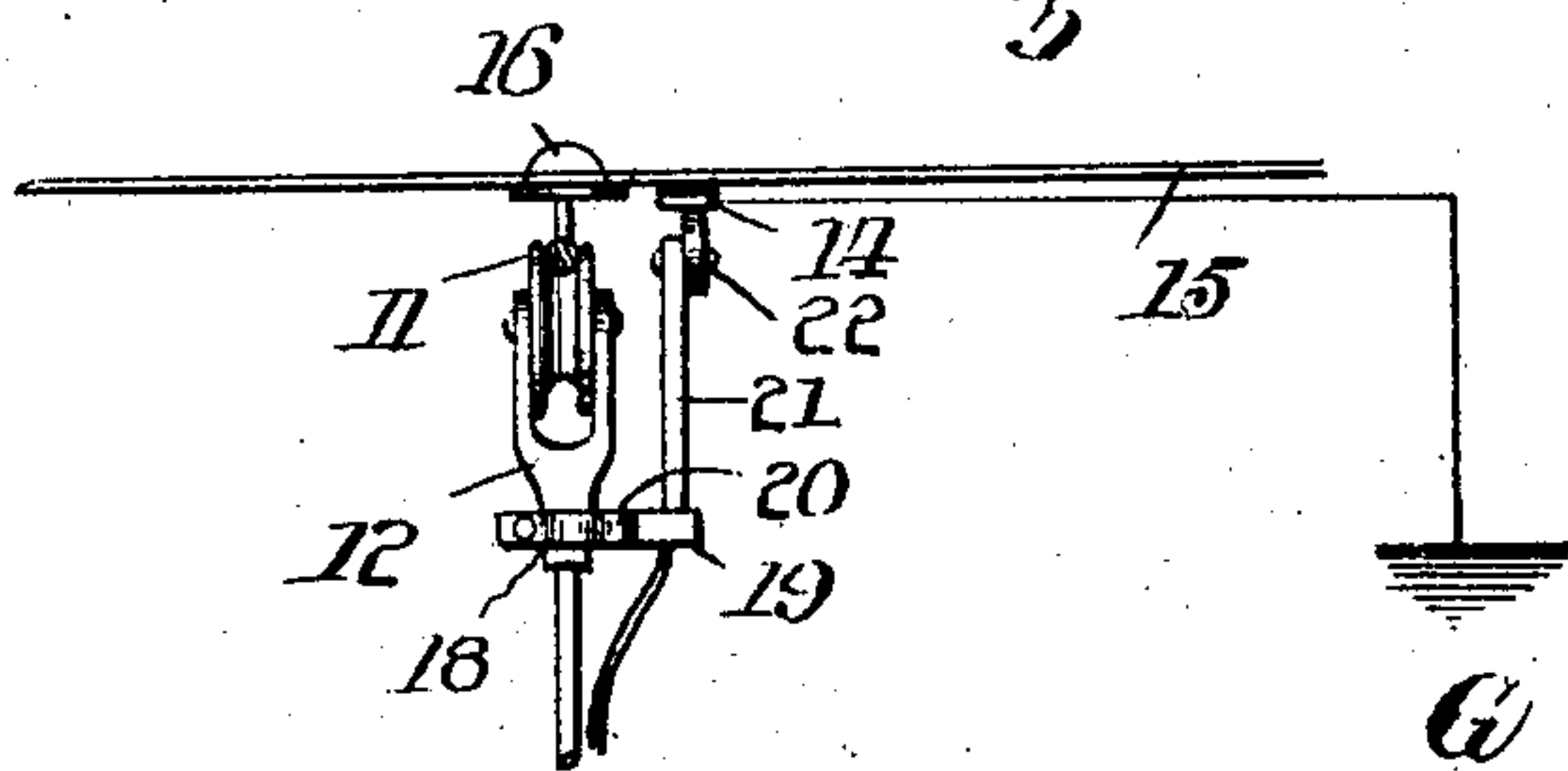


Fig. 4.

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UNITED STATES PATENT OFFICE.

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INDICATOR.

SPECIFICATION forming part of Letters Patent No. 753,798, dated March 1, 1904.

Application filed September 18, 1903. Serial No. 173,662. (No model.)

To all whom it may concern:

Be it known that we, JAMES A. KELLOGG and JOHN DUFFIELD BRADY, citizens of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Indicators, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in indicators, and relates more specifically to that type of indicators employed in connection with street or railway cars for displaying the names of the streets successively throughout the line of the road.

Our invention contemplates the provision of novel and effective means for accomplishing the above result, and it comprises a plurality of carriers mounted to travel in a circle and provided on each face with the name of a street. These carriers are mounted within a suitable casing and means is provided whereby when each of the carriers has completed one revolution it is automatically given a one-quarter turn whereby to bring the names of the streets on the succeeding sides of the carrier successively into view back of the sight-opening in the casing. The partial rotating of the carriers to bring another side thereof into view is mechanically accomplished, while the movement of the carriers in their circular path is preferably electrically accomplished.

The invention resides in the novel construction, combination, and arrangement of parts to be hereinafter more fully described, and specifically pointed out in the claims.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like numerals of reference indicate like parts throughout the several views, in which—

Figure 1 is a vertical sectional view through the casing, showing the carriers in front elevation. Fig. 2 is an enlarged detached detail view of the solenoid. Fig. 3 is a transverse vertical sectional view with the casing partly broken away and taken on line 3-3, Fig. 1, the ratchet 4 and its mechanism, as well as dog 33 and its correlated parts, shown in dot-

ted lines in their respective positions. Fig. 4 is an elevation of a part of a car, showing the electrical connections with the current-wire and the solenoid.

In the present illustration of our invention we have shown the same as constructed to be applied to electrically-operated street or railway cars in which the current-wire is arranged overhead, though it will be evident that the device could be readily operated with the underground system.

The device comprises a suitable box or casing 1, which is mounted in the car at any desirable point and is provided in its front with a sight-opening 2. Mounted in the side walls of the box or casing to revolve therein is a shaft 3, one end of which is extended beyond the side wall of the box or casing and has a ratchet 4 secured thereon. Mounted on the said shaft 3 to rotate therewith is a pair of disks or circular plates 5, in which are circumferentially arranged a plurality of shafts 6, which support the carriers 7, said shafts extending beyond the disks or plates 5 and having pinions 8 mounted on said extending ends. The carriers 7 are made two or more sided, and in the present illustration we have shown carriers having four sides, each side adapted to have the name of a street thereon, which names may be placed on strips 9 to be secured to the faces of the carriers, or the names may be printed or otherwise affixed direct to the faces of the carriers. In the present construction we have shown eight carriers, and as each side of these carriers bears the name of a street provision is made for the names of thirty-two streets.

Loosely mounted on the shaft 3 between the side walls and the disks or circular plates 5 are gear-wheels 10, which are engaged by the pinions 8, carried on the ends of the shafts 6. While we have herein illustrated two gear-wheels 10, still it is manifest that one of the same may be dispensed with, in which event the pinions for that gear-wheel may also be dispensed with. This provision of two gear-wheels and two sets of pinions, one for each end of a carrier, enables the actuating mechanism to be employed on either end of

the casing and to be transferred at will should it be found convenient or necessary to do so.

The shaft 3 is actuated electrically to impart intermittent rotary movement to said shaft, and thus successively bring the carriers into view back of the sight-opening 2, and to accomplish this end we provide electrical connection with the current-wire 11. This connection comprises, together with the trolley-pole 12, a contact 14, carried on the cross-wire 15 and insulated therefrom, which carries a hanger 16, supporting the current-wire 11. On the trolley is mounted a clamp 18, which carries a contact 19, insulated therefrom, as at 20. An arm 21 is secured to the contact 19 and carries a contact-wheel 22 for engagement with the contact 14. One terminal of the circuit leads from contact 14 to the ground. The wire 23 leads from the contact-pole to the actuating-solenoid 24, and the other wire 25 leads from said solenoid to the contact 19. The circuit is thus from current-wire 11 through trolley-pole, over wire 23 to solenoid, and from solenoid over wire 25, contact 19, arm 21, contact-wheel 22, and contact 14 to the ground. The core 26 of the solenoid is held normally elevated during the time the solenoid is de-energized by the spring 27, arranged on the stem of the core between the upper end of the solenoid-casing and the button 28 on the end of the stem. The lower end of the stem 29 of said core is pivotally connected to the pawl 30, which engages the ratchet-wheel 4, a keeper or guide 31 being preferably provided on the side of the casing for the stem 29. When a circuit is completed and the magnet is energized to draw the core 26 downwardly, the stem 29 thereof in its downward movement causes pawl 30 to actuate ratchet 4, and thus impart movement to the shaft 3, moving the carrier which is back of sight-opening 2 away from its position back of the opening and bringing the succeeding carrier into position back of said opening. The contacts 14 are arranged whereby this operation will take place at the desired time. After each of the carriers have made a complete revolution we provide means whereby the carriers are automatically rotated one quarter-turn in order to bring the names on the other side of the carriers into position to be shown in back of the sight-opening. To accomplish this, we provide a lug 32 on the shaft 3 and pivotally mount the somewhat L-shaped dog 33 on the inner face of one side wall of the casing. The longer arm 34 of this dog is beveled at its end and is adapted to engage with the lug 32, while the shorter arm 35 of said dog is somewhat Y-shaped, as shown at 36, and adapted to be engaged with the stop-pin 37, carried by one of the gears 10. The pawl 38 is pivoted to the outer face of the box or casing to engage back of the teeth on the ratchet 4, whereby to prevent backward movement of the shaft 3 after each actuation thereof.

In operation when the solenoid is energized whereby to cause pawl 30 to actuate ratchet 4 and impart a partial revolution to the central carriers, moving the carrier which is at that time back of the opening away from the same and bringing the succeeding one into position. This operation is continued until all of the carriers have been given a complete revolution, and at this time lug 32 may be brought into engagement with the end of arm 34 of dog 33, thus drawing the Y-shaped end 36 of said dog into engagement with pin 37 of the gear 10, thus locking said gear to the casing 1, and as the movement of the shaft continues the engagement of the gear 10 with the pinions 8 causes the shafts 6, which have the carriers mounted thereon, to be rotated, so as to bring the succeeding face of said carriers into position for displaying same through the sight-opening, or, in other words, imparting a one-quarter turn to the carriers. By this time the lug 32 will have passed out of engagement with the end of arm 34, and the spring 38, which is attached to said arm and to the side of the casing, will return the arm to its normal position, where it will remain until the shaft again completes a revolution, when the dog will again be brought into action to lock gear 10 to the casing in order to impart another one-quarter turn to the carriers and bring the names of the streets on another face of said carriers into position for display through the sight-opening. The length of the engagement between lug 32 and end of arm 34 to cause the dog 33 at its end 36 to engage pin 37 on gear 10, and thereby lock the latter to casing 1, is timed to effect this lock of gear 10 to the casing just sufficiently long to permit pinions 8 to make a quarter-turn, creating a corresponding movement upon carriers 7.

It will of course be evident that as many of the carriers may be employed as may be desired, and it will be evident that these carriers may be made octagonal or other suitable form and the mechanism so arranged as to rotate the carriers only sufficiently to bring the succeeding faces thereof into position for display. It will further be obvious that various slight changes may be made in the details of construction without departing from the general spirit of our invention.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In an indicator, a box or casing, a shaft journaled therein, gears loosely mounted on said shaft, disks fixed on said shaft, carriers mounted in said disks, pinions on the ends of said carriers to engage with the gears, a ratchet-wheel on the end of said shaft, actuating means engaging said ratchet for operating the shaft, and means for locking one of the gears to the casing at the completion of each revolution of said shaft to enable the car-

riers of the disks to be rotated by the movement of said disks about said gear, substantially as described.

2. In an indicator, an operating-shaft having a ratchet on one end, gears loosely mounted on said shaft, disks fixed on said shaft to revolve therewith, carriers mounted on shafts extending through said disks, pinions mounted on said shafts to engage the gears on the shaft, means engaging the ratchet for moving the carriers in a circular path of travel, and means for locking one of the gears to the casing at the completion of each revolution of said shaft whereby the carriers are rotated by their revolution about said shaft by engagement of their pinions with said locked gear, substantially as described.

3. In an indicator, the casing having the shaft journaled therein, with gears loosely mounted on the shaft, disks fixed to the shaft with carriers mounted in the disks and carrying pinions engaging with said gears, means for actuating the shaft and means for momentarily locking one of said gears to said casing to enable the carriers to be partially rotated about said locked gear by revolution of the disks.

4. In an indicator, an operating-shaft with

means for actuating the same, a series of carriers revolving with the shaft, means on the shaft engaging the carriers, and means for locking said last-named means to enable the carriers to be partially rotated by their revolution about the shaft and by their engagement with said means on the shaft.

5. In an indicator, a casing, an operating-shaft, means for imparting intermittent rotary movement to said shaft, a plurality of carriers mounted to be revolved by said shaft, gears loosely mounted on the shaft, pinions carried by the carriers to engage said gears, a lug on the operating-shaft, a pivoted dog for engagement with said lug, and a pin on one of the gears for engagement with said dog to lock one of the gears to the casing whereby said carriers will be partially rotated by their revolution about the shaft, and by the engagement of their pinions with said locked gear.

In testimony whereof we affix our signatures in the presence of two witnesses.

JAMES A. KELLOGG.
JOHN DUFFIELD BRADY.

Witnesses:

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