

No. 870,599.

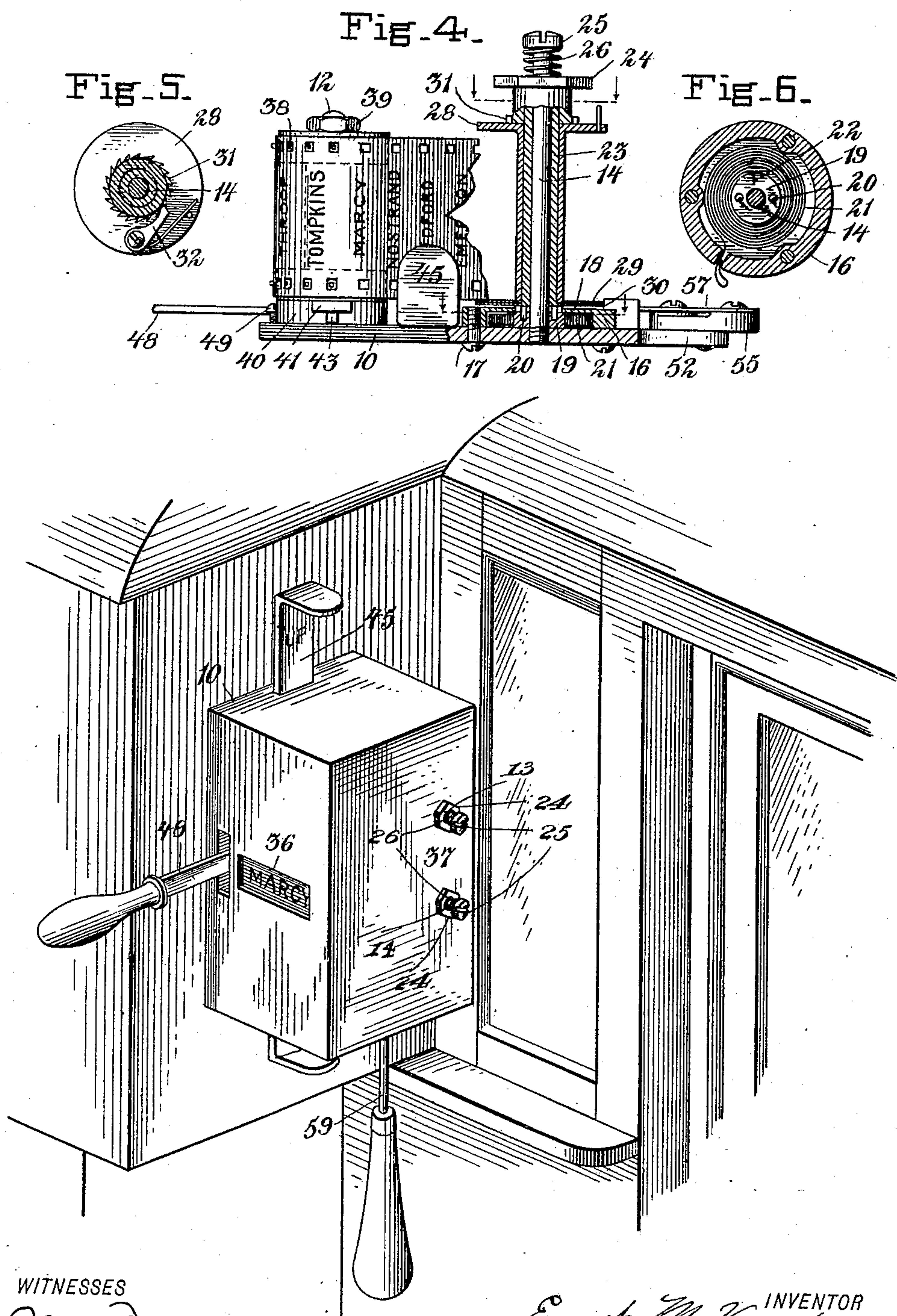
PATENTED NOV. 12, 1907.

E. M. VAUGHAN.

INDICATOR FOR RAILWAY AND OTHER PURPOSES.

APPLICATION FILED JAN. 19, 1907.

2 SHEETS—SHEET 1.



WITNESSES

J. C. S. Kipley.
N. Collins

Fig-1.

Ernest M. Vaughan ^{INVENTOR}
BY Frank W. Ashley
ATTORNEY

BY
Frank W. Ashley.
ATTORNEY

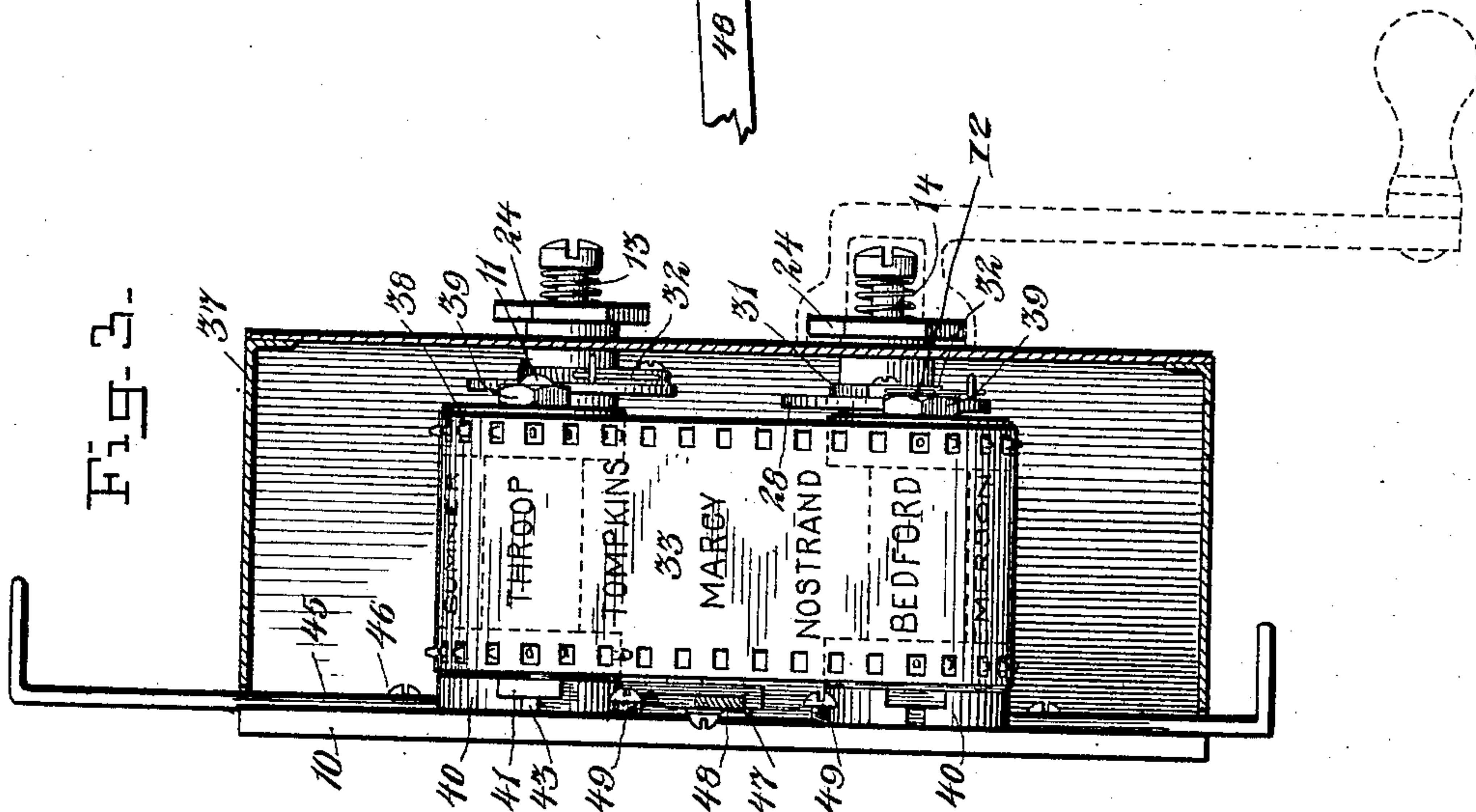
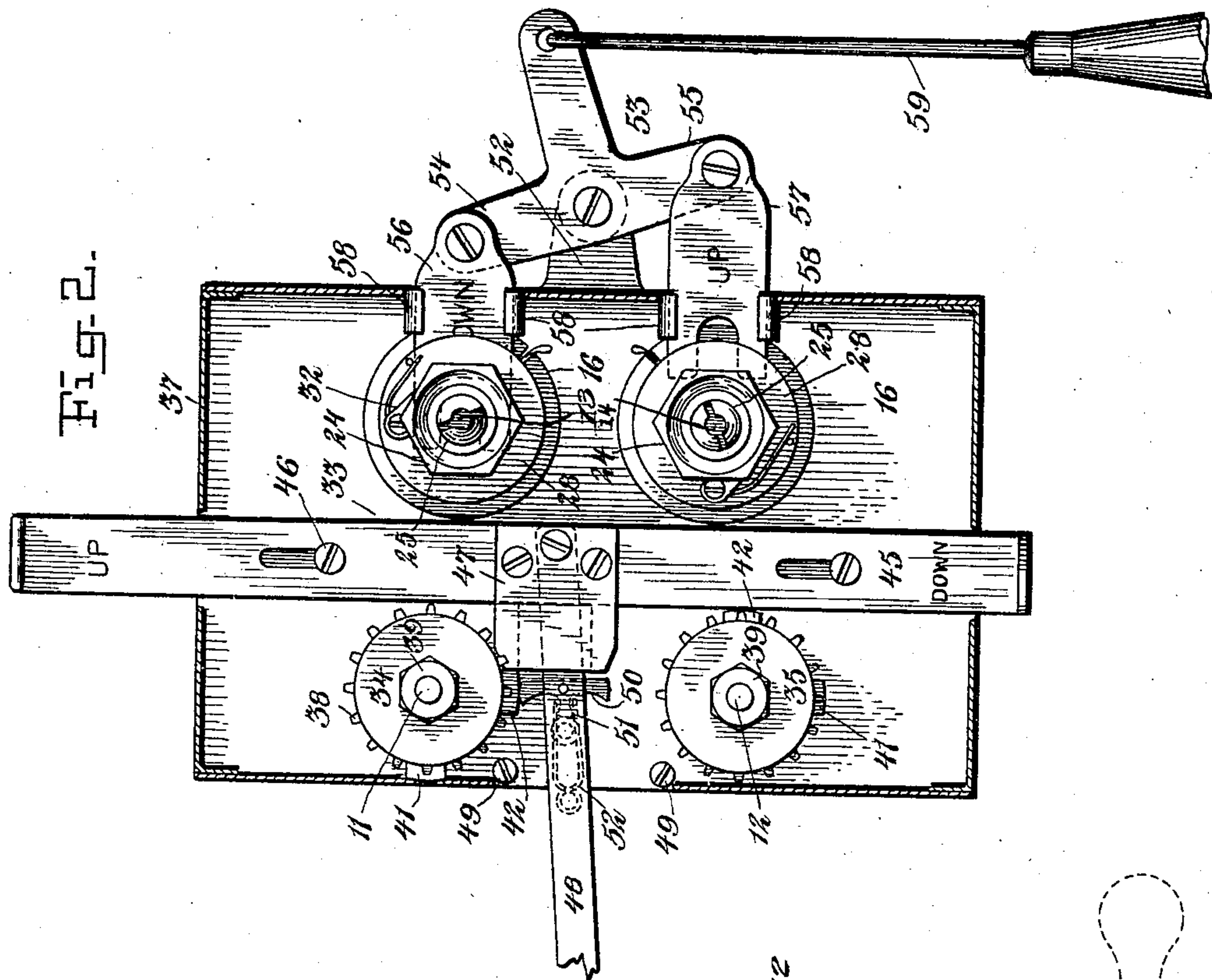
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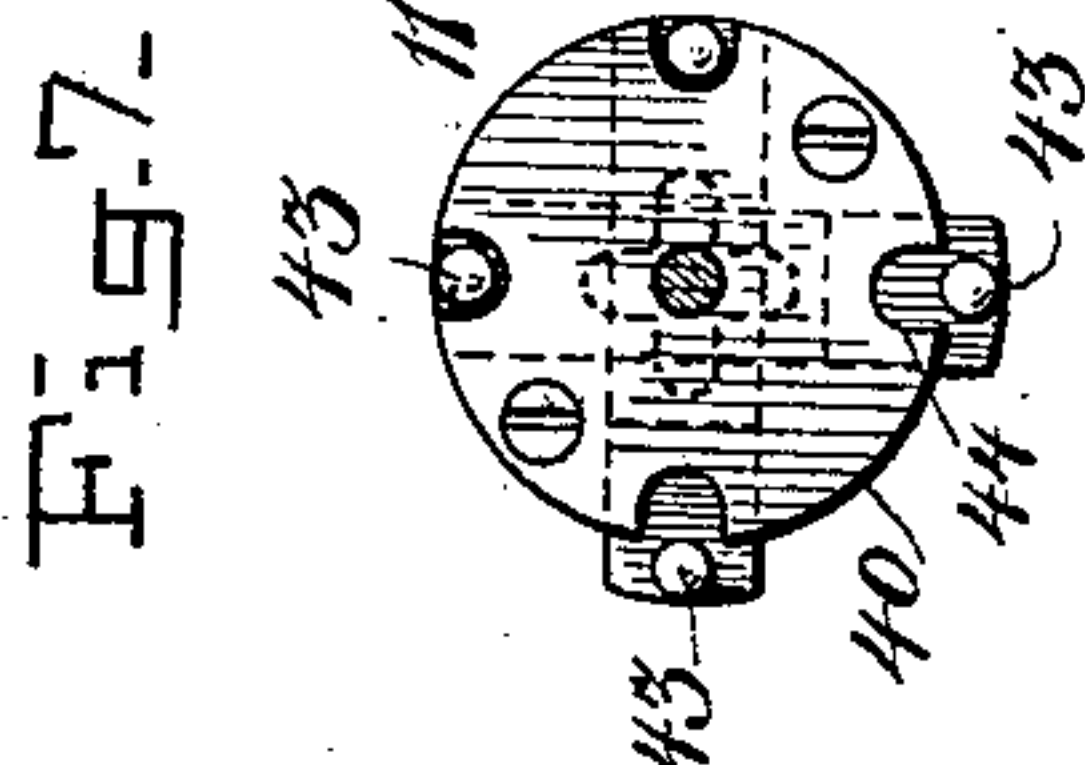
E. M. VAUGHAN.
INDICATOR FOR RAILWAY AND OTHER PURPOSES.

APPLICATION FILED JAN. 10, 1907.

2 SHEETS—SHEET 2.



WITNESSES
J. C. Carey
M. C. Williams



INVENTOR
Ernest M. Vaughan
BY
Frank M. Ashley
ATTORNEY

UNITED STATES PATENT OFFICE.

ERNEST M. VAUGHAN, OF NEW YORK, N. Y.

INDICATOR FOR RAILWAY AND OTHER PURPOSES.

No. 870,599.

Specification of Letters Patent.

Patented Nov. 12, 1907.

Application filed January 19, 1907. Serial No. 353,081.

To all whom it may concern:

Be it known that I, ERNEST M. VAUGHAN, M. D., a citizen of the United States, residing at New York city, borough of Brooklyn, county of Kings, State of New York, have invented certain new and useful Improvements in Indicators for Railway and other Purposes, of which the following is a specification.

The present invention relates to indicators for railway cars and other passenger conveyances and while particularly useful in connection with the announcement of streets, stations or other localities, is susceptible of other utilization, as for instance, the display of advertising matter or devices.

The more prominent objects of the invention are to effect quick and accurate announcements or displays, and in a manner that will be readily discernible to all those who may be interested.

With the above and other purposes in view, the invention consists in the novel indicating mechanism hereinafter disclosed, which is conveniently operable by an attendant, for making the required indications, and in which mechanism, the construction is in a comparatively simple form and capable of accuracy and high efficiency.

In the embodiment of the invention illustrated and described herein, the novel indicator comprises generally, a pair of independently revoluble reels upon which is designed to alternately wind, a flexible web or band provided with the desired announcements in successive order, each being associated with an actuating spring and its coactive parts, so that the reel can be caused to assume either an engaged or disengaged relation with regard to said spring and its parts, manually controlled novel stop and release devices being employed, whereby when one of the reels is engaged with its motor spring and the other reel is disengaged, the engaged reel will intermittently and at the proper periods, be driven to wind sufficient of the web or band thereon, to bring a succeeding announcement into view.

There are other important features connected with the invention, which in addition to those previously alluded to, are clearly explained in the subsequent detailed description.

In the accompanying drawings forming part of this specification,—Figure 1, is a perspective view illustrating a portion of a car interior with my novel indicator in position. Fig. 2, is a front view of the novel mechanism, the casing being shown in section in a plane contiguous to the back or supporting plate. Fig. 3, is a view at right angles to Fig. 2, the casing in this instance being sectioned in a plane immediately to one side of the reversing slide, the spring-winding key being illustrated in dotted lines, and the pendant 59 being omitted. Fig. 4, is a vertical detail view of the novel mechanism, one of the reels, its actuating

spring and housing, being shown in section. Fig. 5, is a detailed sectional view of the reel illustrated in Fig. 4, the plane of section being that indicated by the upper broken line in the last mentioned figure, looking in the direction of the contiguous arrows. Fig. 6, is a view similar in character, the plane of section being that indicated by the lower broken line in Fig. 4 looking in the direction of the immediately associated arrows. Fig. 7, is an inverted detailed plan of the parts at the base of one of the guide rollers or drums.

Similar reference characters are employed to designate corresponding parts throughout the several figures of the drawings wherein they occur.

The main or supporting part of the mechanism, is presented by the back or plate 10 designed to be secured at any suitable point within the car or other conveyance and which carries the indicating mechanism proper.

Rigidly bearing in and supported by the back or plate 10, are forwardly projecting posts or rods 11, 12, 13, and 14, in the companion relation indicated most clearly in Figs. 2 and 3, the posts 13 and 14 extending considerably beyond the other two posts mentioned. A shallow circular housing 16 is secured by screws 17 or other means, against the back or plate, concentric with each of the posts 13 and 14, each of said housings integrally embodying a top 18 having a central opening. Within the housing and revoluble upon the post is a small disk 19 the highest portion of which is in a plane below the housing-top while bearing in the inner depressed part of the disk, at diametrically opposite points are short vertical pins 20 which extend above the plane of the housing-top.

Secured within a slot in the housing 16, is one end of a coiled spring 21, the inner terminal of which is secured to the disk 19, as indicated at 22, in Fig. 6.

Mounted on the post 14, is an extended sleeve 23, which is of such length as to be capable of a limited vertical rising movement on the post, the lower end of the sleeve containing small radial slots, diametrically located, and within which, when the sleeve is in its lowest position and said slots are properly positioned, are adapted to engage the upper ends of the pins 20, so that the rotation of the sleeve will occasion the corresponding movement of the disk. The upper end of the sleeve 23, is enlarged and terminates at its top in an angular engaging-head 24, between which and the head 25, of the post is a thrust spring 26, normally serving to maintain the sleeve in its inner position, but permitting said sleeve to move outward, when necessary.

Confined by the shoulder presented by the inner side of the sleeve-enlargement, is a reel which snugly bears on the extended part of the sleeve 23, said reel having an outer head 28, and inner head 29, the

the lower plate bears the word "Up", either of which will be exposed upon the outward movement of the plate and be concealed upon the inward thereof.

Assume that the web or band is wound to its limit upon one of the reels, corresponding with the completion of a trip in one direction, for instance, down. The parts are then to be adjusted to provide for the announcements being properly made on the return or up trip. Fig. 2 illustrates such a condition. The bar 45 has been raised to bring one corner of its abutment of stop 47 in the path in which the projecting ends of the plates 41, 42 will rotate in being carried around by their rollers. The pendant 59 has been raised so that the plate 56 has been moved to disengage the sleeve 23 and reel on the post 13 from the spring actuated disk 19 at the inner end thereof. This leaves said last mentioned reel free to pay off the web 33 subject to desirable retardation due to the frictional contact between the disk 30 and head 29 at the inner end of the reel. The sleeve 23 pertaining to the other reel, being engaged with the hub 19 at the inner end thereof, the socket of a hand-key, properly conditioned, is engaged with the angular portion of said sleeve as indicated by dotted lines in Fig. 3. The angular portion of the sleeve under consideration as well as that of the other sleeve, projects beyond openings in the front of the case 37. The turning of the hand-key in a direction opposite to that corresponding with the reel movement to wind the web on the latter, operates to rotate the sleeve 23 and hub 19 to wind up the spring, the reel not partaking of this movement by reason of the fact that its pawl 32 rides over the ratchet on the sleeve enlargement. At the completion of the winding of the spring, the sleeve 23 will be subject to a tendency to be rotated in the reverse direction and through the pawl and ratchet engagement to rotate the reel with it, so as to wind the web thereon, but such tendency is opposed by the fact that the guide roller 34 is held against revolution through the end of one of its sliding plates bearing against the corner of the stop. Now, by raising the lever 48 to an extent sufficient to cause one of the striking portions of the tappet to force the projecting end of the sliding plate back and out of the way of the stop 47, said roller is released and the energized reel will now revolve to wind a portion of the web thereon and at the same time rotate the roller 34 until the projecting portion of the other sliding plate of said roller is arrested by the stop 47, whereupon the winding operation will for a time cease. It will be observed that the corner portions of the stop are beveled to afford clearance for any slightly projecting portions of the sliding plates of the rollers. The spring rocking capacity of the tappet, permits its striking portion to maintain proper bearing against the end of the sliding plate irrespective of the changing angle of the lever 48, when vibrated. The reeling action described will be sufficient to move one announcement out of and another announcement into position with respect to the display opening. Manifestly, this intermittent display of successive announcements will occur as often as the attendant operates the lever 48 and the capacity of the motor spring and web will permit. At the termination of the trip, the pendant 59 will be operated to withdraw the plate 56 and inwardly move the plate 57, whereupon the reel which

was previously the motor reel and now contains almost all of the web, will cease to become such motor reel and upon the proper engagement of the sleeve 23 of the other reel and winding of the spring pertaining thereto, together with the shifting of the bar 45 so as to bring the stop 47 and its tappet in operative relation with respect to the roller 35 and its sliding plates, the intermittent travel of the web will be reversed.

The advantage resulting from having the motor axially at the inner end of the reel and means at the other end of the reel, tending to establish an actuated relation between said reel and motor, is that this arrangement admits both of compactness and firmness of parts.

It will be appreciated from the foregoing description, that the indicating mechanism embodying my invention is not only comparatively simple in construction but is capable of absolute accuracy and efficiency in its operation. The character and arrangement of parts is such as to reduce the liability of derangement to a minimum. It will be convenient for the attendant to arrange or display the announcement for the next station or locality in advance, so that ample time will be afforded the passengers to note the character of said announcement.

I do not wish to be understood as limiting myself to the precise construction and arrangement of parts shown and described herein, but reserve to myself the right to all modifications which may be fairly within the scope of the appended claims.

Having now described my invention, what I claim as new and desire to secure by Letters Patent, is—

1. An indicator of the character described, comprising a longitudinally movable sleeve, a reel on said sleeve and revoluble therewith, a motor axially at one end of said sleeve and adapted to be directly engaged thereby, means at the other end of said sleeve, tending to establish an engaged relation between said motor and sleeve, means extending contiguous to the motor for interrupting and maintaining interrupted said engaged relation, a display web for winding on said reel, and means normally holding the web against movement but adapted to intermittently release the hold on said web.

2. An indicator of the character described, comprising a longitudinally movable sleeve, a reel on said sleeve and revoluble therewith, a motor axially at one end of said sleeve and adapted to be directly engaged thereby, means at the other end of said sleeve, tending to establish an engaged relation between said motor and sleeve, means extending contiguous to the motor for interrupting and maintaining interrupted said engaged relation, a display web adapted to wind on said reel, provision for holding said web counter to the winding tendency of the reel, and means for releasing said provision.

3. An indicator of the character described, comprising a spring motor, a longitudinally movable sleeve adapted to be engaged at one end with said motor, and having key engaging means at its opposite portion, a reel mounted on and revoluble with said sleeve, a display web adapted to wind on said reel, and means for disengaging the sleeve from the motor.

4. An indicator of the character described, comprising a spring motor, a longitudinally movable sleeve adapted to be engaged at one end with said motor, and having key engaging means at its opposite portion, a reel mounted on and revoluble with said sleeve, means for disengaging said sleeve from said motor, a display web for winding on said reel, and means normally holding the web against movement but adapted to intermittently release the hold on the web.

5. An indicator of the character described, comprising a spring motor, a longitudinally movable sleeve adapted to

be engaged at one end with said motor, and having key engaging means at its opposite portion, a reel mounted on and revoluble with said sleeve, means for disengaging said sleeve from said motor, a display web adapted to wind on said reel, provision for holding said web counter to the winding tendency of the reel, and means for releasing said provision.

6. An indicator of the character described, comprising a reel, driving means therefor, a display web adapted to wind on said reel, a rotative element rotated by the movement of the web, a movable plate carried by said rotative element and controlling the rotation of the reel, a stop against which said plate bears and provision for causing said plate to clear said stop and thereby permit the reel to be actuated.

7. An indicator of the character described, comprising a reel, driving means therefor, a display web adapted to wind on said reel, a rotating element actuated by the rotation of the reel, a plate carried by and adapted to slide relative to said element and having a projecting end, a stop against which said end bears, and provision for causing said end to clear said stop and thereby permit the reel to be actuated.

8. An indicator of the character described, comprising a reel, driving means therefor, a display web adapted to wind on said reel, a rotative element actuated by the rotation of the reel, a sliding plate carried by said element and of such length that when one end projects, the other end will be out of position, a stop against which the projecting plate-end bears, and provision for causing said projecting end to be moved out of position to clear the stop and the other plate-end to be projected to subsequently contact with said stop.

9. An indicator of the character described, comprising a longitudinally movable sleeve, a reel on said sleeve and revoluble therewith, a motor axially at one end of said sleeve and adapted to be directly engaged thereby, means at the other end of said sleeve tending to establish an engaged relation between said motor and sleeve, means extending contiguous to the motor for interrupting and maintaining interrupted said engaged relation, a display web adapted to wind and unwind on and from said reel, means for permitting the reel to intermittently wind portions of the web thereon, and provision in frictional engagement with said sleeve for retarding the paying-off rotation of said reel.

10. An indicator of the character described, comprising a pair of reels, driving means and parts for each reel, whereby the latter may be brought into or thrown out of engaged relation with its driving means, a display web for winding on and unwinding from said reels, a pair of rotative elements actuated from an engaged reel, a movable plate carried by each element, a stop against which one of said plates bears, means for displacing said plate to clear said stop, and provision for shifting the stop to bring it into juxtaposition with the plate of the other element.

11. An indicator of the character described, comprising a reel, means for driving the same, a display web adapted to wind on said reel, a rotative element actuated by the rotation of the reel, a movable plate carried by said rotative element and controlling the rotation of the reel, a stop against which said plate bears, and a manually operable lever carrying a tappet for displacing said plate to clear the stop and thereby permit the reel to be actuated.

12. An indicator of the character described, comprising a reel, means for driving the same, a display web adapted to wind on said reel, a sliding plate controlling the rota-

tion of the reel, a stop against which said plate bears, a manually operable lever, a rocking tappet thereon, adapted, when the lever is operated, to force said plate out of position to clear the stop and thereby permit the reel to be actuated.

13. An indicator of the character described, comprising driving means, a pair of reels, means for normally and independently maintaining each reel in engaged relation with the driving means, a display web for winding on and unwinding from said reels, a manually operable lever and plates connected thereto to be simultaneously moved inward and retracted respectively at each movement of the lever, whereby one plate longitudinally moves one reel out of engaged relation with the driving means, while the withdrawal of the other plate permits the reel pertaining thereto, to assume an engaged relation with said driving means.

14. An indicator of the character described, comprising a rotative disk, a spiral spring for driving said disk, a sleeve actuated by said disk, a reel carried by said sleeve means establishing an engaged relation between the sleeve and reel, when the sleeve revolves in one direction, but permitting a reverse rotation of the sleeve independent of the reel, a display web for winding on the reel, and means normally holding the web against movement but adapted to intermittently release the hold on said web.

15. An indicator of the character described, comprising independently revoluble disks, motor springs therefor, a longitudinally movable sleeve for engagement with and actuated by each disk, a reel carried by each sleeve means establishing an engaged relation between each sleeve and reel when the sleeve is revolved in one direction, but permitting a reverse rotation of each sleeve independent of its reel, a display web for winding on and unwinding from said reels, means normally holding the web against movement but adapted to intermittently release the hold on said web, and provision for disengaging either of said sleeves from its disk.

16. An indicator of the character described, comprising independently revoluble and longitudinally movable sleeves, driving means with which said sleeves are adapted to be engaged, a reel carried by each sleeve to be revolved thereby, said reel having a head at one end, a disk frictionally bearing against each head, provision for disengaging each sleeve, a display web for winding on and unwinding from said reels, and means normally holding the web against movement but adapted to intermittently release the hold on said web.

17. An indicator of the character described, comprising a display web, means for effecting the travel of the same, a rotative element actuated by said web, independently sliding plates at right angles to each other and guided in said element, each plate being of a length whereby when a portion thereof projects at one end, the other end will be out of position, a stop against which the projecting portion of a plate bears, and means for successively shifting each plate to clear the stop and permit the intermittent travel of the web.

In testimony whereof, I, ERNEST M. VAUGHAN, M. D. have signed my name to this specification in the presence of two subscribing witnesses, this 8th day of January 1907.

ERNEST M. VAUGHAN.

Witnesses:

R. E. JUSTIN,
DONALD LYONS.