

No. 854,416.

PATENTED MAY 21, 1907.

J. H. GOODIER.  
STREET INDICATOR.  
APPLICATION FILED JULY 17, 1906.

Fig. 1.

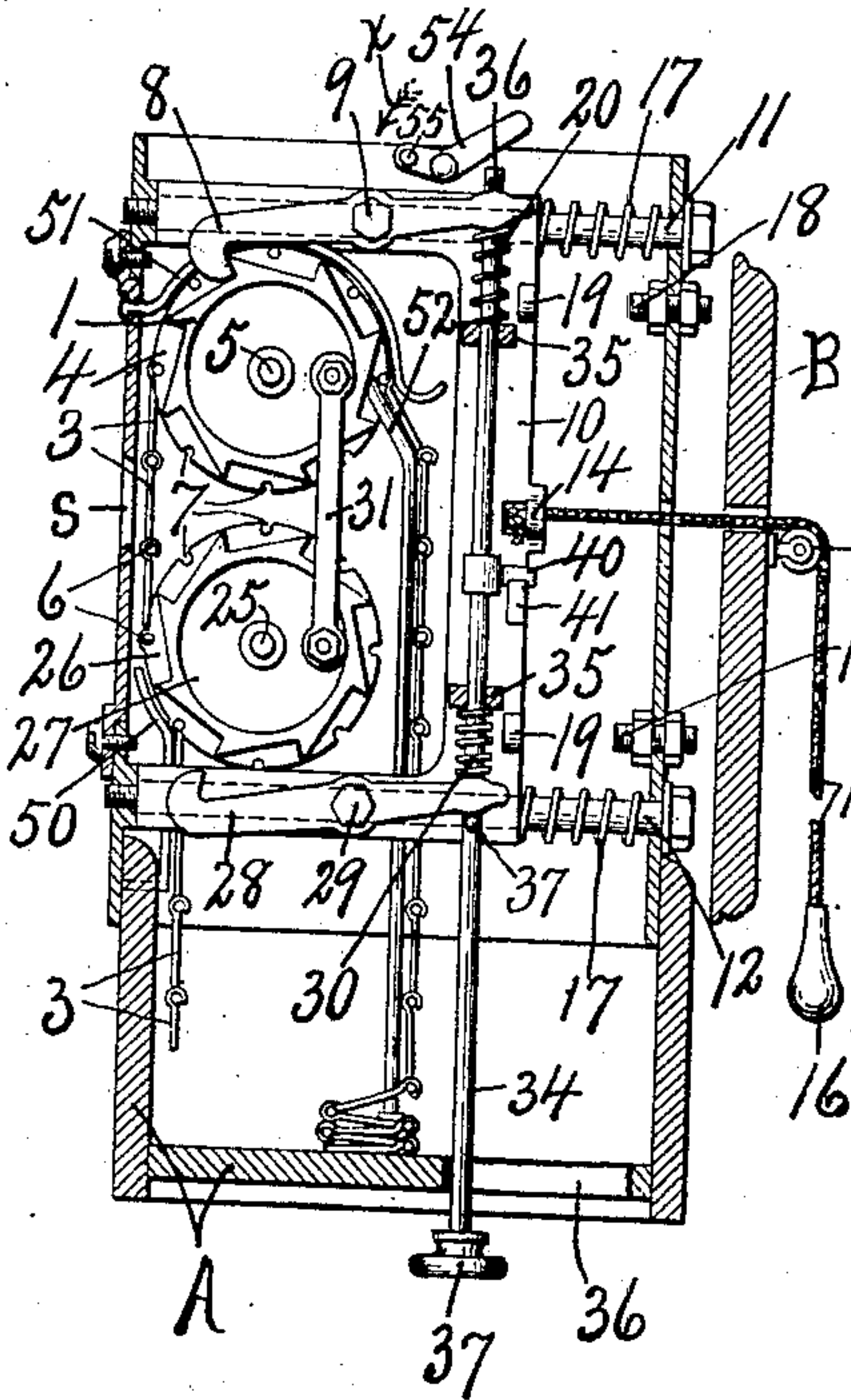


Fig. 2.

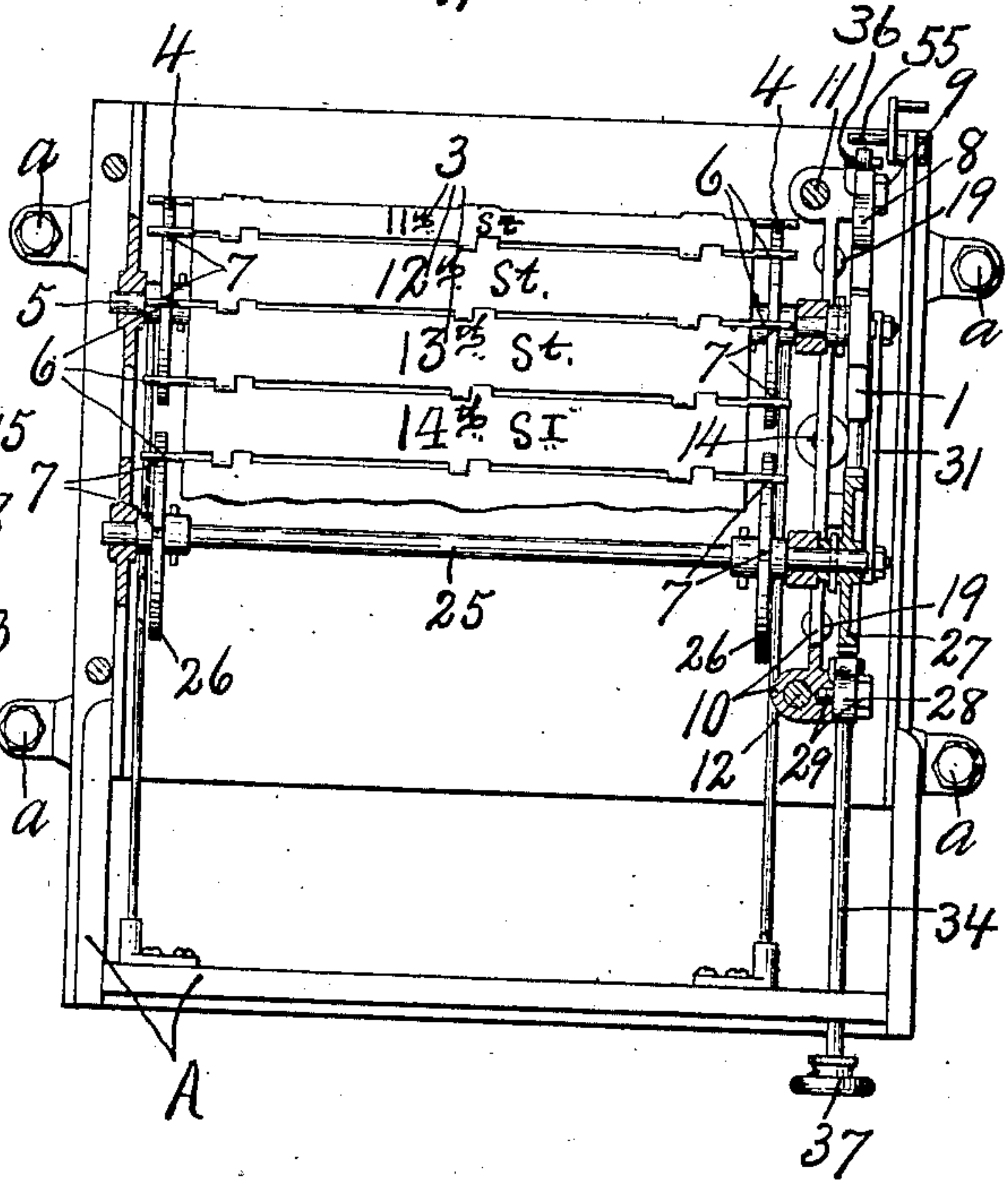


Fig. 3.

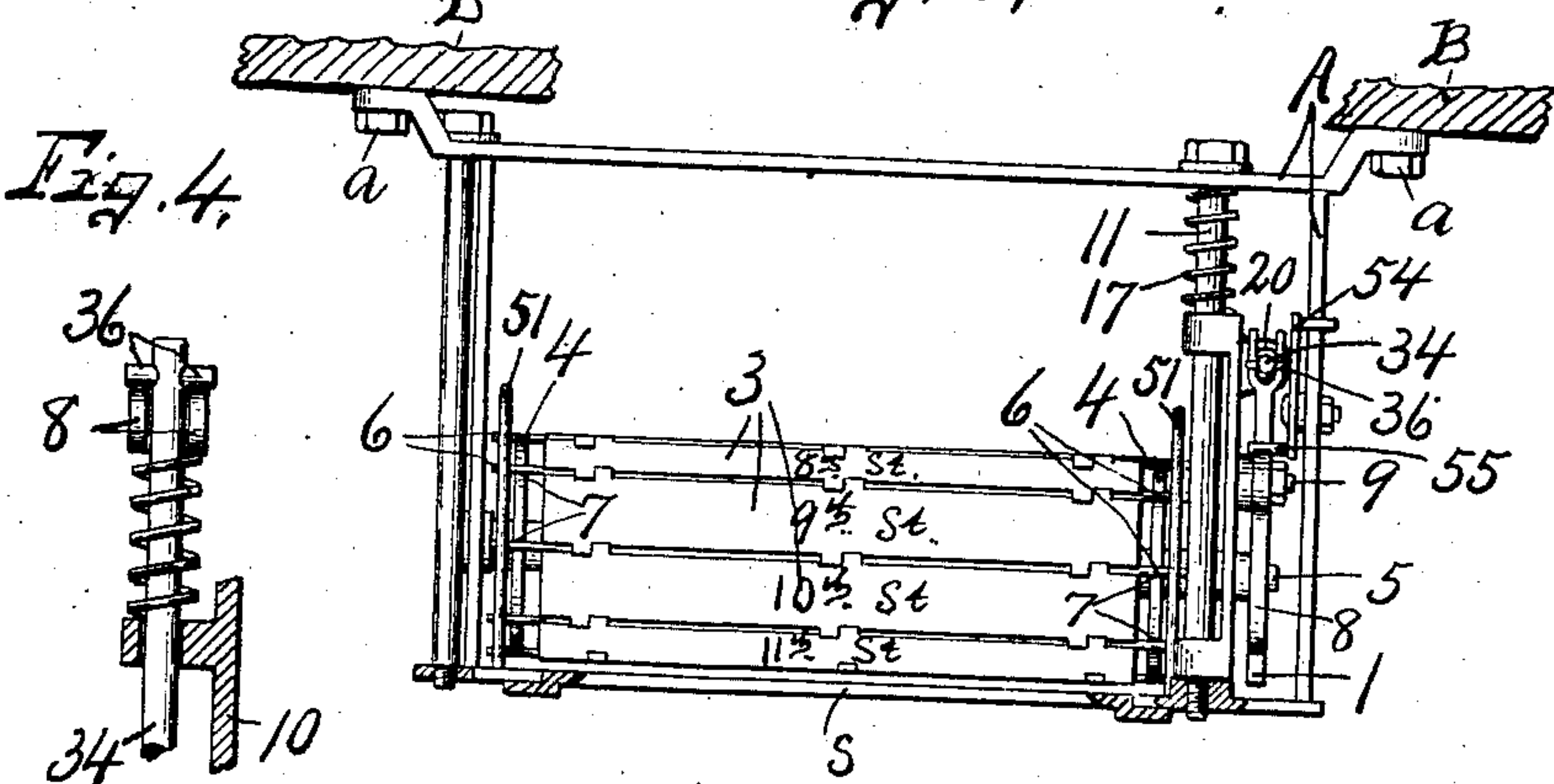


Fig. 4.

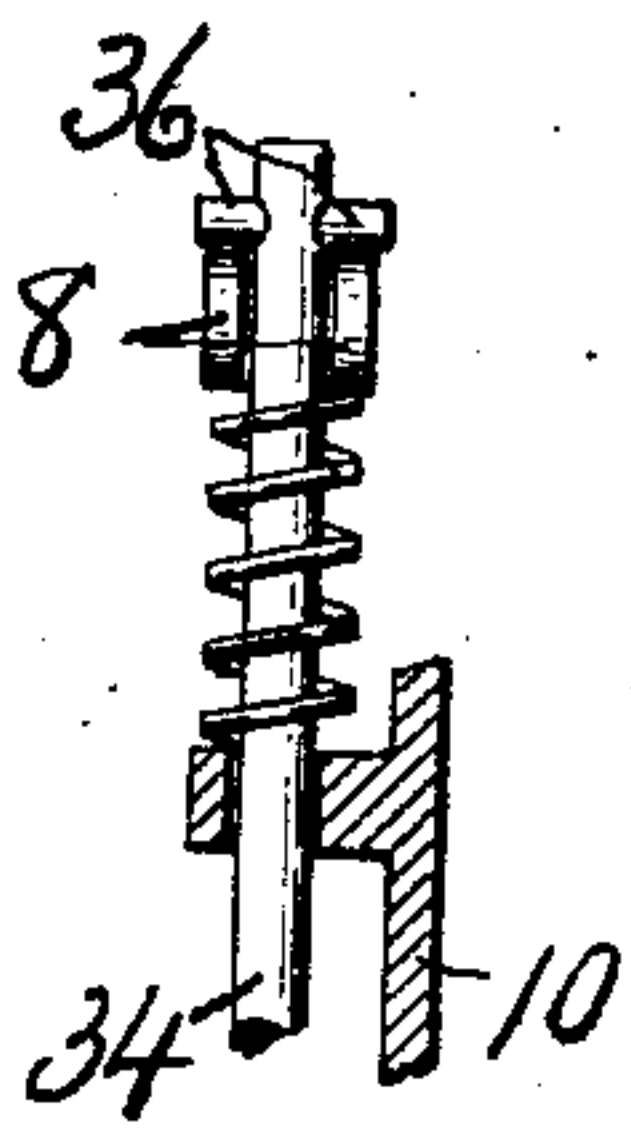
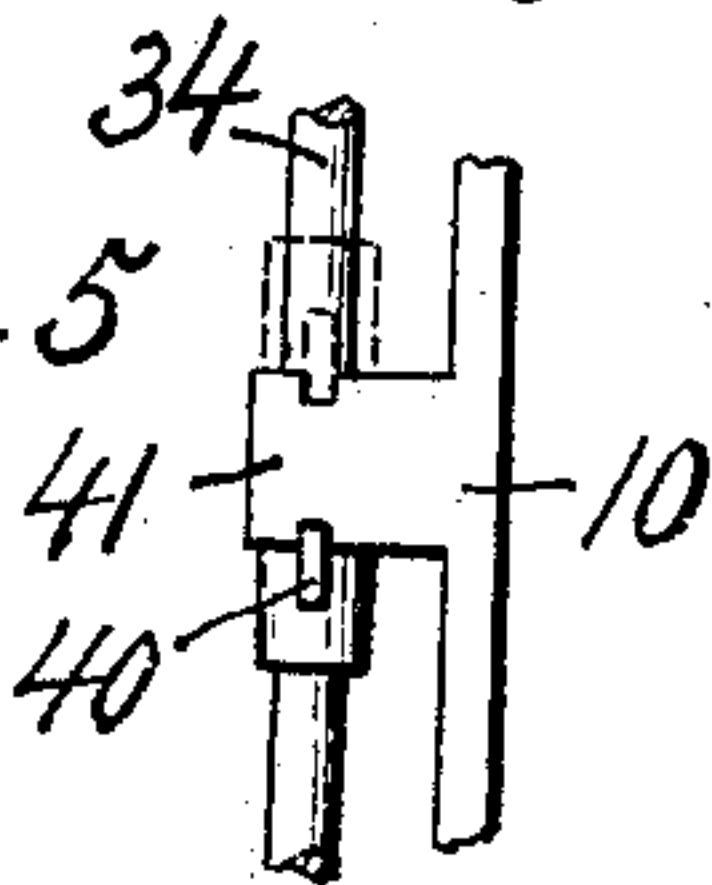


Fig. 5.



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# UNITED STATES PATENT OFFICE.

JAMES HURLBURT GOODIER, OF UTICA, NEW YORK.

## STREET-INDICATOR.

No. 854,416.

Specification of Letters Patent.

Patented May 21, 1907.

Application filed July 17, 1906. Serial No. 326,616.

*To all whom it may concern:*

Be it known that I, JAMES HURLBURT GOODIER, of Utica, in the county of Oneida, in the State of New York, have invented new and useful Improvements in Street-Indicators, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to certain improvements in street indicators, adapted to be placed upon the inside of a car in some conspicuous place visible to the passengers, and to be operated by the motorman or conductor to indicate names of streets or crossings, as they are successively approached by the car.

My main object is to provide a simple, practical and efficient street indicator consisting essentially of a series of plates hinged together and mounted upon a suitable drum or drums, each bearing the name of a street, and arranged in succession to correspond with the names of the streets as they occur along the line of travel of the street car, in combination with suitable actuating mechanism for the drum controlled by the motorman or conductor, whereby the plates may be successively brought into registration with a suitable sight-opening, visible to the passengers on the car, so that instead of the conductor being obliged to call out the names of the streets, the passengers may readily see for themselves what street will be next approached.

Another object is to enable the connected plates to be shifted in reverse directions, that is, in one direction for the outgoing car and in the opposite direction for the return car, over the same line.

A further object is to provide means for throwing the drum actuating mechanism out of action so that the linked plates may be easily adjusted, independently of their actuating mechanisms.

Other objects and uses will appear in the following description.

In the drawings, Figure 1 is an end view of my improved street registering device, showing the inclosing case in section to disclose the interior mechanism. Fig. 2 is a front elevation, partly in section of the interior mechanism shown in Fig. 1. Fig. 3 is a top plan of said interior mechanism and its inclosing case, partly in section, the upper deflecting bars for the apron being omitted. Figs. 4 and 5 are detail views of portions of the pawl

operating rod and sliding frame showing the pawl operating shoulders and spring in Fig. 4 and the lock in Fig. 5.

As shown in the drawings, I provide a suitable inclosing case —A— with a sight-opening —S— in its front side, and suitable attaching elements as clamping bolts —a—, usually on the back of the case, whereby it may be secured in some conspicuous place inside of the car, with the sight-opening —S— visible to the passengers.

A flexible apron consisting, in this instance, of a series of thin plates or strips —3— of sheet metal or other suitable material, hinged together edge to edge, is mounted upon a pair of revoluble disks —4—, which are spaced some distance apart and are rigidly secured to the opposite ends of a shaft —5—, the disks —4— and shaft —5— constituting a reel for actuating the flexible apron in one direction. The contiguous edges of the plates —3— are hinged to suitable rods or pins —6— extending parallel with the shaft —5— and projecting some distance beyond the ends of the plates —3—, and adapted to enter notches —7— in the periphery of the disks —4—, so that when the reels are rotated the apron is fed positively in one direction or the other as the case may be.

Printed or otherwise stamped upon the apron, one upon each plate —3—, are the names of the streets as they occur successively along the line of travel of the car, said apron being operated by the motorman or conductor in a manner hereinafter described, to bring the successive plates —3— bearing the name of the street, which the car is approaching, into registration with the sight-opening —S— in the front of the case. For this purpose, a ratchet wheel —1— is secured to the end of the shaft —5— and is engaged by a suitable pawl —8—, which is centrally pivoted at —9— to a sliding frame —10—, as best seen in Fig. —1—. This frame —10— is mounted for reciprocal action upon suitable guide rods —11— and —12—, which are secured in the front and back sides of the case, above and beneath the sight-opening —2—.

A pull-cord or cable —13— is attached at —14— to the central portion of the sliding frame —10—, and has its other end passed over a suitable sheave —15— on the front of the car as B, and is provided with a handle —16— within easy reaching distance of the motorman or conductor, whereby the sliding



frame or carriage —10— may be drawn rearwardly against the action of suitable retracting springs —17—, which are coiled around the rods 11— and —12— between the rear edges of the frame —10— and rear side of the case —A—, as best seen in Fig. —1—; the amount of movement of the sliding frame —10— being regulated by adjustable limiting stops —18—, consisting of screws in the back of the casing adapted to engage abutments —19— on the rear edge of the sliding frame —10—.

The pawl —8— is spring-pressed, by springs —20—, into engagement with the teeth of the ratchet wheel —1—, the distance between the ratchet teeth, and the movement of the sliding frame —10— being so relatively proportioned that the movement of the sliding frame from one extreme position to the other moves the street indicating apron one plate space, so as to bring each plate —3— successively into registration with the sight-opening —S—.

The ratchet —1— and its pawl —8— is arranged to feed the front side of the apron upwardly across the inner side of the sight-opening —S— while the rear side of the apron travels downwardly and folds in the bottom of the case until the car reaches the end of its route, it being understood that the motorman or conductor operates the sliding frame —10— and ratchet wheel —1— just before reaching each street, which intersects the line of travel of the car, such street being indicated by the name on the plate which is registered with the sight-opening —S—. The shaft —5— and parts mounted thereon are located above the sight-opening —S—. A similar shaft —25— is mounted in the casing —1— below the sight-opening —S— and parallel with the shaft —5—, and is provided with disks —26— and a ratchet wheel —27—, corresponding to the disks —4— and ratchet wheel —1— on the shaft —5—, for feeding the apron in the opposite direction, the ratchet wheel —27— being adapted to be engaged by a pawl —28—, which like pawl —8— is centrally pivoted at —29— to the lower end of the sliding frame —10—, and when in action is held in engagement with the teeth of the ratchet by a spring —30— similar to the spring —20—. The ratchet wheels —1— and —27— are connected by a pitman —31— for simultaneous action, the disks —26— like the disks —4— being provided with peripheral notches —7— for receiving pins —6— at the junctions of the plates —3—.

Pawls —8— and —28— are connected in such manner that when one is thrown into action, the other is thrown out of action and this is accomplished through the medium of a vertically slidable rock-bar —34—, which is mounted and guided in suitable bearings —35— on the sliding frame —10— and has its lower end projecting through an elongated

slot —36— in the bottom of the casing —1— and provided with a suitable hand-piece —37—, whereby it may be turned and moved axially in its bearings —35—. The pawls —8— and —28— are located respectively above and beneath their respective ratchet wheels —1— and —27— and have their rear ends bifurcated, as best seen in Fig. 3, and fitted around the adjacent portions of the rod —34—.

The springs —20— and —30— are coiled around the rod —34—, the spring —20— being interposed between the upper bearing —35— and lower face of the rear end of the pawl —8—, thereby yieldingly elevating the rear end of said pawl against a limiting stop —36— on the upper end of the rod —34—. In like manner, the spring —30— is interposed between the lower bearing —35— and upper face of the pawl —28—, and serves to hold the lower face of said pawl against a limiting stop —37—, also on the rod —34—. It is now clear that the rear ends of the pawls —8— and —28— are each interposed between a retracting spring and a limiting stop on the rod —34—, and that the adjacent ends of the springs abut against the bearings —35—, which are rigid on the sliding frame —10—. This rod —34— has a limited endwise or axial movement to throw the pawls —8— and —28— into and out of action, and for this purpose is provided with a catch —40— which is adapted to engage the upper and the lower side of a keeper —41— which is rigid on the sliding frame —10—, preferably at the rear side of the rod —34— between the bearings —35—, said catch —40— being held in its adjusted position by one or the other of the springs —20— and —30—, according to which pawl, —8— or —28—, may be in action.

As seen in Fig. 1, the detent —40— is engaged with the upper side of the keeper —41— to hold the pawl —8— in operative engagement with the ratchet wheel —1—, for feeding the front side of the apron upwardly as the carriage —10— is drawn rearwardly by the motorman or conductor when the car is traveling in one direction over its route. When the car reaches one terminus of a line over which it travels, it is necessary to reverse operation of the apron and for this purpose the catch —40— is disengaged from the upper end of the keeper —41— by slightly elevating the rod —34— and turning it out of the path of the keeper —41—, whereupon the lower spring —30— depresses the rear end of the pawl —28— to engage its front end with the lower ratchet wheel —27—, and this depression of the rear end of said pawl, which engages the stop pin —37—, also depresses the rod —34— axially. When the rod —34— is turned to release the catch —40— from the upper side of the keeper —41— said rod may be drawn downwardly



by hand, and turned until its catch —40— engages the lower end of the keeper —41—, thereby allowing the distension of the spring —30—, and compressing the upper spring —20—. During this adjustment of the rod —34— the lower pawl —28— is thrown into engagement with its ratchet wheel —27—, while the upper pawl —8— is thrown out of operative engagement with its ratchet wheel —1—, by the pin or stop —36— on the upper end of the rod —34—. This adjustment places the pawls in position for feeding the apron in the opposite direction from that previously described, that is, for feeding the front side of the apron downwardly at each rearward operation of the sliding frame —10— by means of the cable —13—, it being understood that the carriage is to be operated before the approach to an intersecting street, so as to bring the plate —3— bearing the name of such street into registration with the sight-opening —S—.

In order that the hinge pins —6— may positively enter the notches in the peripheries of the disks —4— and —26—, of both reels, they are projected a slight distance axially beyond the outer face of said disks to engage suitable deflecting bars —50—, —51— and —52—. These deflecting bars are rigidly mounted in the casing —A—, the bar —50— being located at the front lower side of the disks —26—, in alinement with the outwardly projecting ends of the pins —6—, so as to force said pins into their recesses —7—. In like manner, the deflecting bars —51— are located above and at the outside of the disks —4— to engage the projecting ends of the pins —6— and hold them in the disks —4—.

The deflecting bars —52— stand in an upright position with their upper ends deflected inwardly at the outer sides of the disks —4— and at the rear of the shaft —5—, so as to engage the inner faces of the descending pins —6—, thereby causing the apron to travel rearwardly and downwardly, some distance away from the rear edges of the disks —6—, so as not to interfere with the lower reel. The deflecting bars —52— practically divide the interior of the lower part of the case into two compartments, in which the ends of the apron may fold or collect as it is drawn across the sight-opening —S— in either direction.

It is some times necessary to shift the apron or to replace it with another one when the car is shifted to another line of travel, and under such conditions it is desirable to throw both pawls out of action, and for this purpose I provide a bell crank lever —54— which is pivoted in the upper part of the case above the pawl —8— and has an arm provided with a pin —55—, which is adapted to engage the rear end of the pawl —8— as the bell crank is rocked by hand in the direction indicated by arrow —X— in Fig. —1—, such action of

the bell crank serving to throw the pawl —8— out of action, it being understood that the other pawl —28— is now out of engagement with its ratchet wheel —27—.

In operation, assuming that the rod —34— is adjusted to throw the upper pawl —8— into action and the lower pawl —28— out of action, then as the car approaches an intersecting street along its line of travel, the motorman or conductor simply pulls upon the cord or cable thereby drawing the sliding frame —10—, and pawls mounted thereon, rearwardly, the upper pawl acting upon the ratchet wheel —1— to rotate both reels one plate space, the rearward movement of the sliding frame —10— being limited by the stops —18—, and returned to its starting position by the retracting springs —17— ready for the next operation. When the end of the car route is reached, the rod —34— is adjusted in the manner previously described, to throw the pawl —8— out of action and the pawl —28— into action so that by operating the carriage —10— back and forth the apron is fed in the opposite direction to indicate successive intersecting streets on the return of the car.

Although I have shown and described certain mechanism adapted for use in street cars, it is obvious that the same mechanism may be similarly employed in connection with other railways, to indicate the names of successive stations along the line of travel of such car.

What I claim is:

1. In a street indicator of the class described, two reels connected for simultaneous rotation and each provided with a ratchet wheel, a sliding frame and automatic means for returning it to one position, manually operated means connected to the frame for drawing the latter against the action of said means, separate pawls mounted on the frame and movable therewith, manually operated means for simultaneously throwing one pawl into engagement with one of the ratchet wheels and the other pawl out of engagement with the other ratchet wheel, whereby the movement of the sliding frame against the action of its returning means causes the pawl which is engaged with its ratchet wheel to rotate the corresponding reel, and an apron bearing the names of the streets actuated by said reels.

2. In a street indicator of the class described, an apron bearing the names of the streets and a pair of reels for actuating the apron, said reels being connected for simultaneous rotation and each provided with a ratchet wheel, a sliding frame and automatic means for returning it to one position, a single operating member to move the frame against the action of its returning means, separate pawls mounted on the sliding frame, one for each ratchet wheel, a sliding rod mounted on



the frame and connected to said pawls for throwing one of the pawls into engagement with one of the ratchet wheels and the other pawl out of engagement with the other ratchet wheel, whereby when the frame is moved against the action of its returning means, the pawl which is in engagement with its ratchet wheel will rotate the corresponding reel, and manually operated means movable independently of the sliding rod for forcing the active pawl out of operative position.

3. In a street indicator of the class described, a casing having a sight opening and apron bearing the names of the streets movable across said opening, reels for said apron located above and beneath said opening and connected for simultaneous rotation, each reel being provided with a ratchet wheel, a sliding frame and automatic means for returning it to one position, manually operated means connected to the frame for moving the latter against the action of its returning means, separate pawls mounted on the frame, one pawl for each ratchet wheel, one of the pawls being located above the upper reel, and the other pawl located below the lower reel to rotate said reels in opposite directions, means for simultaneously moving one pawl into engagement with one of the ratchet wheels and the other pawl out of engagement with the other ratchet wheel, whereby the movement of the frame causes the active pawl to rotate its reel.

4. In a street indicator, an apron bearing the names of the streets, a pair of reels for actuating said apron, each reel being provided with a ratchet wheel, connections between said reels to cause them to rotate in

the same direction, a sliding frame and automatic means for returning it to one position, means for operating the frame against the action of its returning means, separate pawls on the frame, one for each ratchet wheel, an axially movable rod rotatably mounted on the frame and connected to said pawls for moving the latter into and out of engagement with their respective ratchet wheels, and means for holding the rod in its axially adjusted position whereby one pawl is held into engagement with one of the ratchet wheels while the other pawl is held out of engagement with the other ratchet wheel.

5. In a street indicating device for street cars, a manually operated sliding frame and retracting means therefor, a flexible apron bearing the names of streets and a pair of actuating reels therefor, one for operating the apron in one direction and the other for moving it in the other direction, a pair of ratchet wheels each secured to one of the reels, a pair of pawls pivotally mounted upon the sliding frame and each movable into and out of engagement with one of the ratchet wheels, a vertically slidable rock bar connected to said pawls for simultaneously throwing one into action and the other out of action, means for holding said rock bar in its adjusted position, and separate means for throwing the active pawl out of action.

In witness whereof I have hereunto set my hand this 10th day of July 1906.

JAMES HURLBURT GOODIER.

Witnesses:

GEORGE E. PHILO,  
WILLIAM R. LEE.