

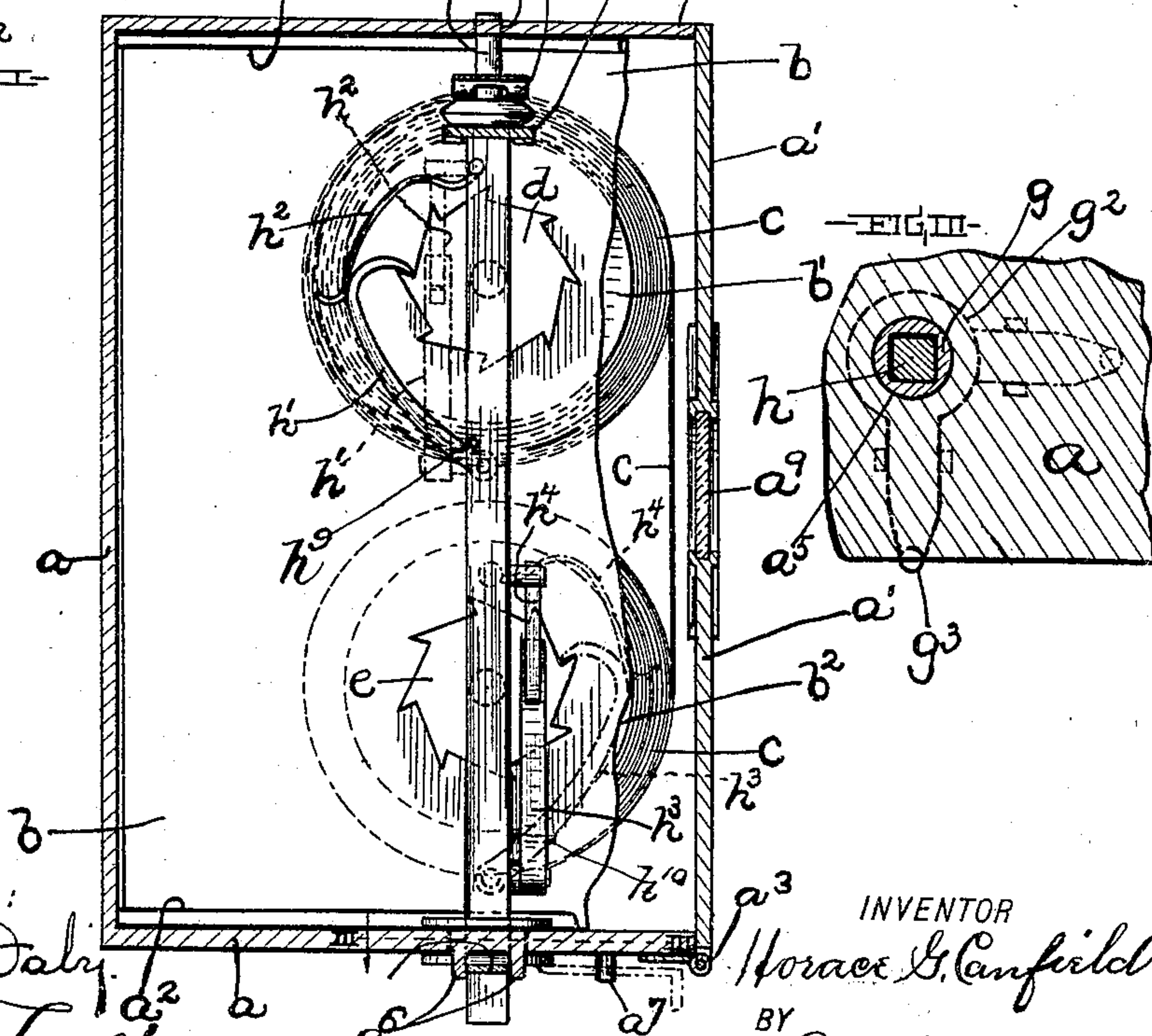
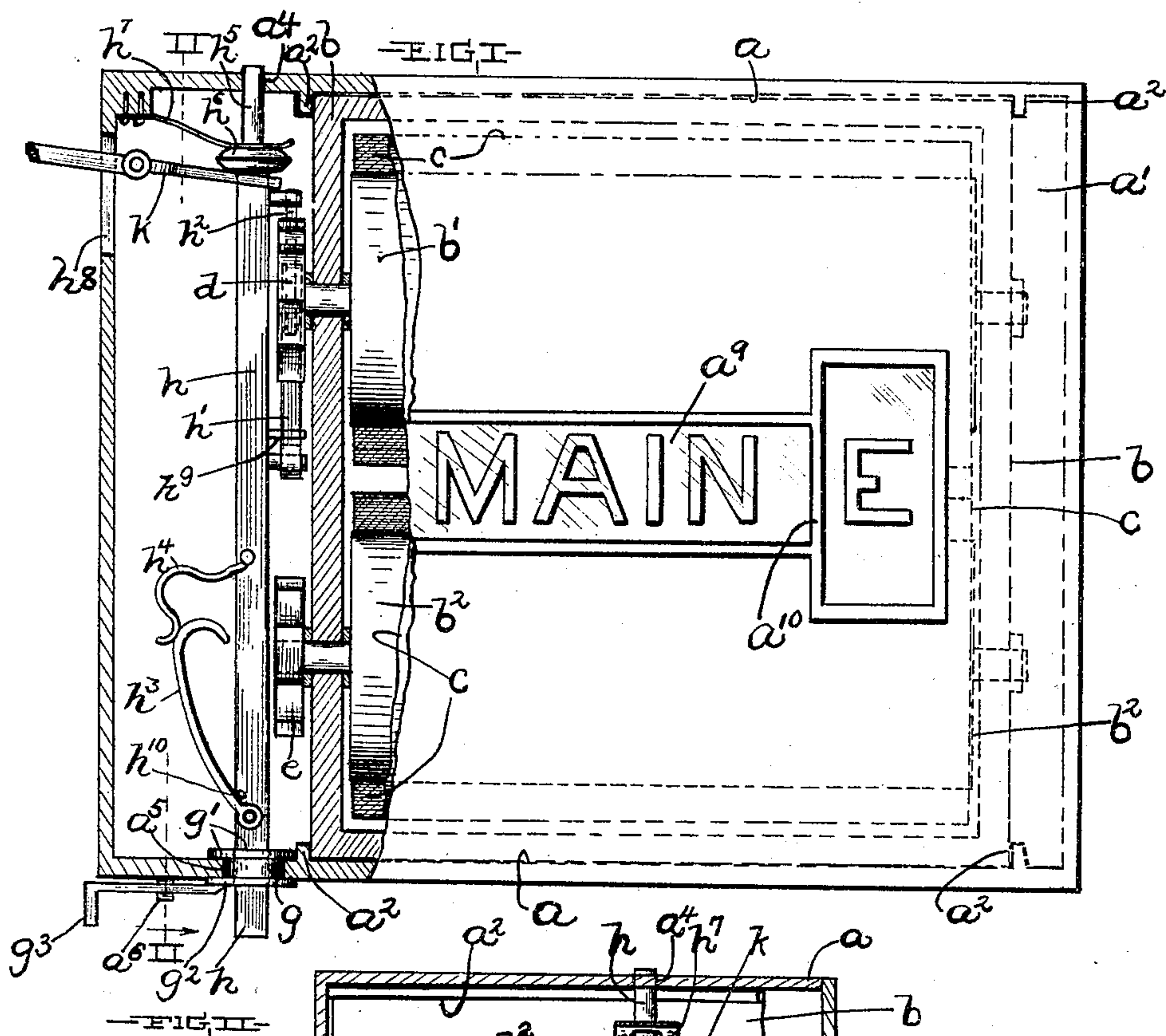
No. 773,922.

PATENTED NOV. 1, 1904.

H. G. CANFIELD.
STATION INDICATOR.

APPLICATION FILED SEPT. 29, 1902.

NO MODEL.



WITNESSES:

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UNITED STATES PATENT OFFICE.

HORACE G. CANFIELD, OF AKRON, OHIO.

STATION-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 773,922, dated November 1, 1904.

Application filed September 29, 1902. Serial No. 125,237. (No model.)

To all whom it may concern:

Be it known that I, HORACE G. CANFIELD, a citizen of the United States of America, residing at Akron, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Station - Indicators; and I hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in station-indicators for railway-cars, and especially to indicators for use on street or tram cars having designated stopping places or stations.

The object of my invention is to provide a station-indicator which may be readily operated by the motorman or conductor from any suitable point on the car to indicate or display to the passengers the successive stopping places or stations on the line.

Said invention consists in the combination, with an outer stationary case adapted to be attached to the wall of a car and having mounted therein the mechanism for actuating the indicator mechanism proper, of an inner removable case or framework, in which is operatively mounted winding drums or rollers carrying a street-name-indicating band, arranged within said stationary case, so that the said inner case with its contained mechanism may be readily removed from the outer case for the purpose of substituting a new name-slip or altering an old one without necessitating removal or disturbance of the actuating mechanism independently mounted in the outer case.

Said invention also consists in means for detachably connecting the street-name band or tape-winding mechanism, which is mounted in the inner case, with mechanism for actuating the same, which is independently mounted in the outer case, and also in means whereby the actuating mechanism can be readily adjusted to cause the street-name-carrying band to travel in either direction, so that one and the same strip can be used to indicate stations on the going and returning trips, respectively.

In the drawings, Figure I is a front eleva-

tion with part of the case broken away to show the interior mechanism. Fig. II is a longitudinal section on lines II II, Fig. I, in which the reversed position of the actuating mechanism is shown in dotted lines. Fig. III is a detail sectional view showing the device which locks the actuating-shaft against rotation.

a represents a suitable receptacle or box, preferably rectangular in cross-section, which forms the outer case of the indicator. This case a is adapted to be permanently attached to the wall of a car in any suitable manner and in a prominent position, so that the names of streets or stations displayed will be in full view of the passengers on the car. The case a is provided with a door- a' , hinged thereto at a^3 and adapted to be retained in its closed position by any suitable means. A slot of window a^9 is formed, preferably, centrally of the door a' , and said window or slot is enlarged perpendicularly at one end, preferably at its right-hand side, for a portion of its length, so that the said slot or window is substantially of an open-T shape. The horizontal and vertical portions of said window are preferably divided at their intersection by a narrow partition a^{10} . The horizontal slot is designed to display every cross-street or stopping-place and the vertical slot displays intersecting car-lines or transfer-stations.

Two parallel ribs or guide-strips a^2 are formed on the inside of both the bottom and top of case a . These strips extend from the face of case a rearwardly and form guideways for the removable inner case or framework b , hereinafter described. Interiorly of said case a and preferably near one side thereof a vertical shaft h is journaled and arranged so as to freely rotate in its bearings and also be capable of sliding vertically or moving up and down therein. The shaft h , which is rectangular in cross-section, is provided at its upper end with a long journal h^5 , extending axially of said shaft. The journal h^5 rotates in and extends through a bearing a^4 , formed in the top of case a . On the lower end of the shaft h is arranged a collar g , which has a square bore loose enough to allow the end of the shaft to slide freely therethrough. The

collar g is mounted in a bearing a^5 , formed in the bottom of the case a . The collar g is provided with annular flanges g' and g'' , which hold it in its bearing a^5 . The flange g' is preferably removably secured to the collar g . A flexible crank-arm g^3 , which is preferably formed integral with the lower flange g'' , extends out horizontally from the said flange g'' and forms a means for rotating the shaft h , for the purpose hereinafter disclosed. On the bottom of the case a are arranged two sets of lugs a^6 and a^7 , respectively, about ninety degrees apart. In order to lock the shaft h against rotation, the flexible arm g^3 is sprung down and allowed to come up between the lugs forming the sets a^6 or a^7 .

A collar h^6 is rigidly secured to said shaft h at any suitable distance from the upper end thereof, preferably the length of the journal h^5 therefrom. A lever k is pivoted at any suitable point in the case a in juxtaposition to said collar h^6 . One end of said lever k is forked and straddles the shaft h immediately below and against said collar h^6 , while the other end of said lever extends outwardly through a longitudinal slot h^8 , formed in the wall of the case a . A flat spring h^7 is rigidly secured at one end, in any suitable manner, to case a . The other end of the spring h^7 is forked or slotted and straddles the shaft h above and presses constantly against said collar h^6 . It will thus be seen that when the outer end of the lever k is depressed the shaft h is raised against the pressure of the tension of the spring h^7 and that when the lever k is released the spring h^7 will force the shaft h down again. Pivoted to the adjacent sides of the shaft h and near the upper and lower end, respectively, are two hook-shaped devices h' and h^3 each arranged to stand, when in its operative position, with its hook portion up. Flat springs h^2 and h^4 are attached at one end to shaft h and bear against said devices h' and h^3 . As the devices h' and h^3 are pivoted to adjacent sides of the bar h , they are approximately ninety degrees apart. Therefore by giving the collar g a quarter of a turn in either direction one or the other of the said devices will be brought into its operative position. Stops h^9 and h^{10} are arranged on the shaft h and together with the springs h^2 and h^4 hold the devices h' and h^3 in position so that they can readily engage with the respective ratchet-wheels d and e .

b represents the inner removable case or framework, and it is open at its front end. This case b is adapted to fit inside of the case a and be slidably arranged in the before-mentioned guideways a^2 in the top and bottom of the said case a . In the sides of the case b are formed bearings for the journals of parallelly-disposed drums or rollers b' and b^2 . One end of a strip or band c of paper, cloth, or other suitable material, upon which is printed the names of streets or stations, is attached in

any suitable manner to the periphery of one of the said rollers, and the other end is attached to the other roller. It will be understood that the name-carrying strip or band will be first wound upon one of the said rollers b' or b^2 and then wound therefrom upon the other of the said rollers. Ratchet-wheels d and e are mounted on the journals of the rollers b' and b^2 on the outside of the case b and adjacent to the shaft h . These ratchet-wheels are arranged so that the ratchet-wheel d on the roller b' will be engaged by the hook-shaped device or pawl h' when the said pawl is in its operative position, and the ratchet-wheel e on the roller b^2 will be engaged by the hook-shaped device or pawl h^3 when in its operative position. It will be observed, however, that but one of the said ratchet-wheels can be engaged by one of the hook-shaped devices or pawls at the same time, as the said pawls are pivoted to swing in planes at a right angle to each other.

The operation of this device is as follows: When the conductor or party in charge of the device desires to display a new street or station, he depresses the outer end of the lever k , and the inner end moves up, lifting the shaft h by means of a collar h^6 . As the shaft moves up the hook h' moves up the face of the ratchet-wheel, and when the shaft h has moved the proper distance the said hook or pawl h' will engage with a tooth on the ratchet-wheel d . When the lever is released, the spring h^7 will force down the shaft h , which in turn pulls down the pawl h' , thereby causing a rotation of the ratchet-wheel d , which will in turn cause a sufficient movement of the roller b' to bring into view at the window c the name of the next station. When the car has completed the trip in one direction, the lever k is pulled down, lifting the shaft h , and then the arm g^3 is snapped out of its engagement with the lugs a^6 and turned around one-quarter of a revolution and is again sprung in between the lugs a^7 , so as to lock it in its new position, and the lever is then released, and the shaft moving down actuates the mechanism as before and brings into view the name of the first stop on the return trip. The turning of the arms g^3 causes the shaft h to rotate one-quarter of a revolution, thereby disengaging the pawl h' from the ratchet-wheel d and bringing the pawl h^3 into engagement with the ratchet-wheel e , as shown in dotted lines in Fig. II. Again, when the outer end of the lever is depressed the shaft h will be raised and the pawl h^3 will engage with a tooth on the ratchet-wheel e . When the lever is released, the shaft h will move down under the pressure of the spring h^7 , carrying down with it the pawl h^3 , thereby causing a rotation of the ratchet-wheel e , which will in turn cause a sufficient movement of the roller b^2 to bring into view the name of a station.

What I claim is—

1. In a street or station indicator for railways, the combination of a case, two parallel drums mounted in said case, a shaft arranged
5 so as to be capable of both a rotary and longitudinal movement, means for actuating said shaft longitudinally, means for rotating said shaft and means for causing said shaft to engage with one or the other of the said drums
10 according to the direction in which the said shaft is rotated so as to cause a rotation of the drum with which it engages.

2. In a street or station indicator for railways, the combination of a case, two parallel
15 drums mounted in said case, a station-name-carrying band operatively arranged on said drums, ratchet-wheels mounted on the respective drums, a vertical shaft arranged in said case so as to be capable of both a rotary and
20 vertical movement, means for actuating said shaft vertically, means for rotating said shaft and means for causing the said shaft to engage with one or the other of the said ratchet-wheels according to the direction in which the
25 said shaft is rotated and means for returning said shaft to its normal position after it has been moved vertically.

3. In a street or station indicator the combination with a case, two parallel drums
30 mounted in said case and arranged one above the other, a station-name-carrying band operatively arranged on said drums, ratchet-wheels mounted on the respective drums, a vertical shaft arranged in said case so as to be capable
35 of both a rotary and vertical movement, a pawl pivotally secured to said shaft near its upper end, and arranged to engage when in its operative position with the ratchet-wheel on the upper drum, a pawl pivotally secured below the first-mentioned pawl so as to swing in a
40 different plane from the first-mentioned pawl and arranged when in its operative position to engage with the ratchet-wheel on the lower drum, means for rotating the shaft so as to
45 bring the said pawls in their operative positions, means for locking said shaft against rotation, means for raising said shaft, and means for returning said shaft to its normal position after being raised.

50 4. In a street or station indicator the combination with a case, two parallel drums mounted in said case and arranged one above

the other, a station-name-carrying band operatively arranged on said drums, ratchet-wheel
mounted on the respective drums, a vertical
55 shaft arranged in said case so as to be capable of both a rotary and vertical movement, a pawl pivotally secured to said shaft near its upper end and arranged to engage, when in its operative position, with the ratchet-wheel on the
60 upper drum, a pawl pivotally secured below the first-mentioned pawl so as to swing in a different plane from the first-mentioned pawl and arranged when in its operative position to engage with the ratchet-wheel on the lower
65 drum, a crank-arm secured to said shaft so as to rotate said shaft, a lever-arm pivotally mounted in said case and arranged to engage with said shaft, and a spring mounted in said case and arranged to exert a constant downward pressure on said shaft, substantially as
70 described and for the purpose set forth.

5. In a street or station indicator for railways, the combination of a case, two parallel drums mounted in said case, a ratchet-wheel
75 mounted on each of said drums, a shaft arranged so as to be capable of both a rotary and longitudinal movement, means for actuating said shaft longitudinally, means for rotating said shaft and means for causing the
80 said shaft to engage with one or the other of the said ratchet-wheels according to the direction in which the said shaft is rotated.

6. In a street or station indicator for railways, the combination of a case, two parallel
85 drums mounted in said case, a ratchet-wheel mounted on each of said drums, a shaft arranged in said case so as to be capable of both a rotary and longitudinal movement, means for actuating said shaft longitudinally, means
90 for rotating said shaft, means for causing the said shaft to engage with one or the other of the said ratchet-wheels according to the direction in which the said shaft is rotated, means for actuating the said shaft to its normal position after it has been moved longitudinally,
95 and a station-name-carrying band arranged on said drums.

In testimony whereof I sign the foregoing specification in the presence of two witnesses. 100

HORACE G. CANFIELD.

Witnesses:

VICTOR C. LYNCH,
G. M. HAYES.