

G. T. RUDE.
STREET INDICATOR.
APPLICATION FILED FEB. 6, 1911.

993,201.

Patented May 23, 1911.

2 SHEETS-SHEET 1.

Fig. 1.

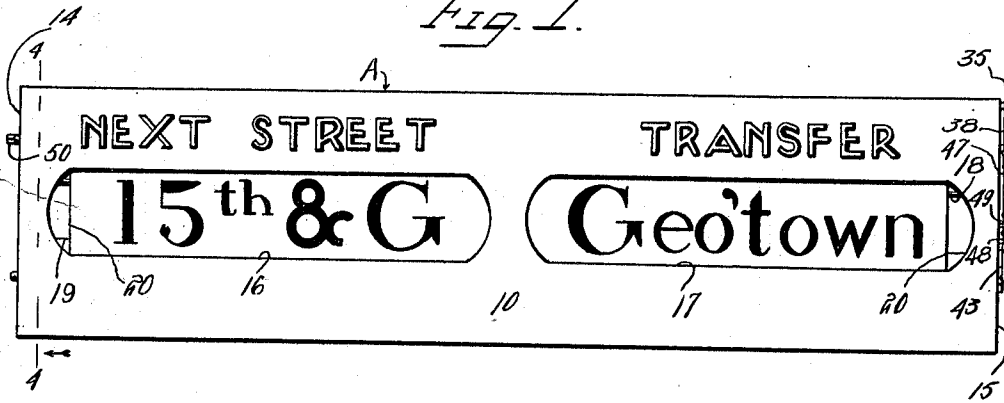


Fig. 2.

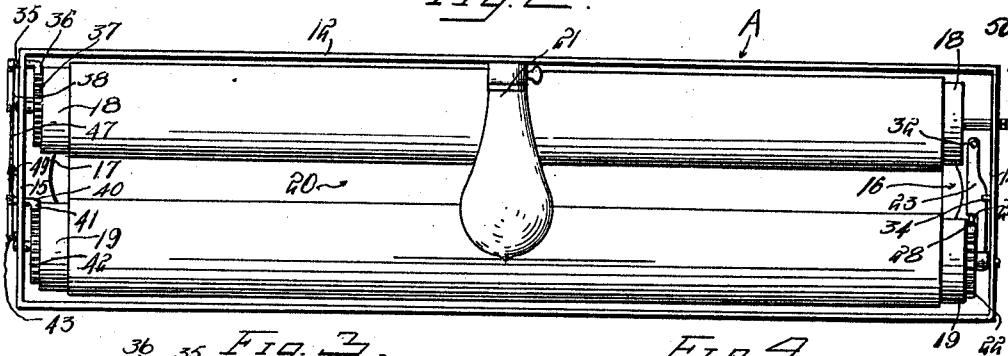


Fig. 3.

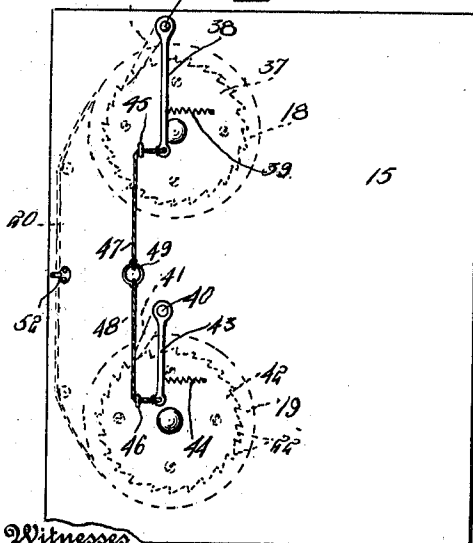
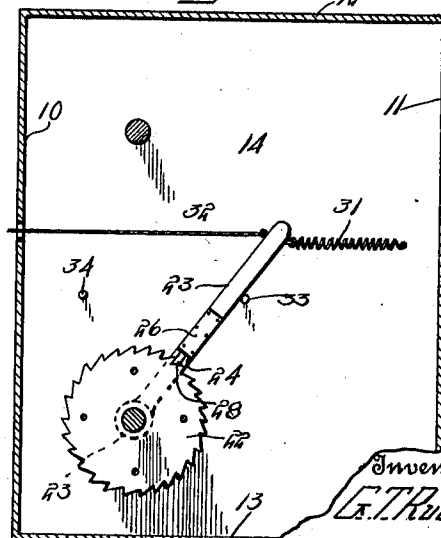


Fig. 4.



Witnesses

J. C. Simpson.
Henry T. Bright

Inventor
G. T. Rude.

By *[Signature]* Attorneys

G. T. RUDE.
STREET INDICATOR.
APPLICATION FILED FEB. 6, 1911.

993,201.

Patented May 23, 1911.

2 SHEETS-SHEET 2.

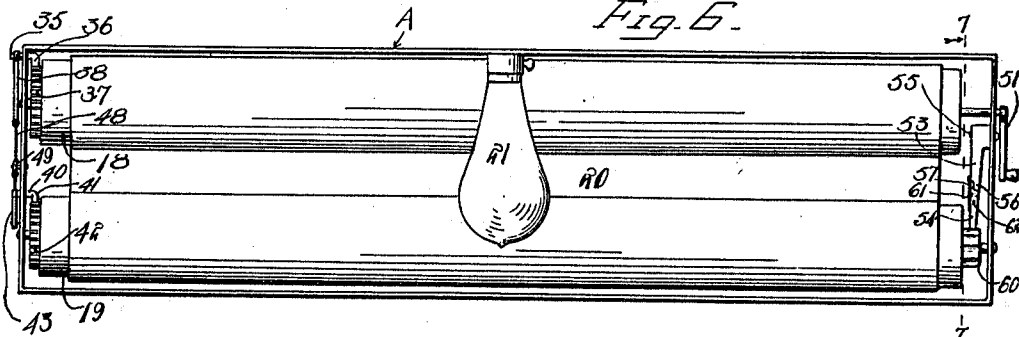


Fig. 5.

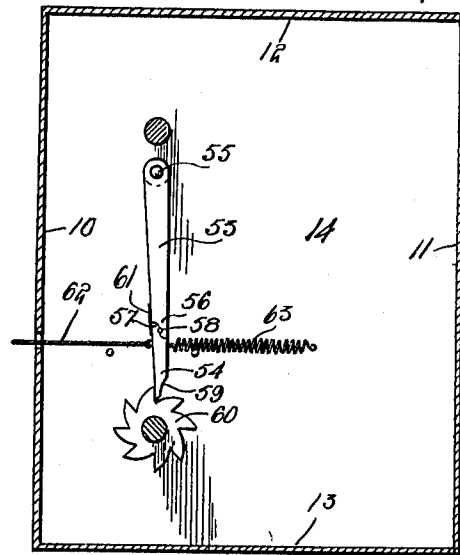
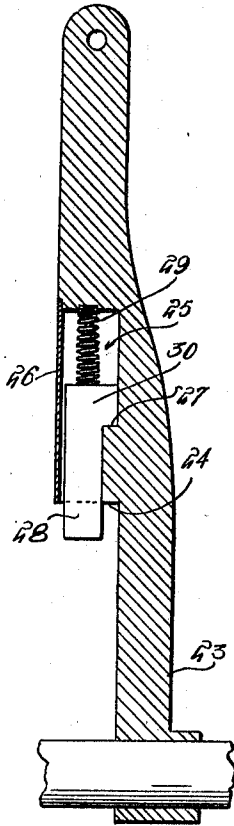
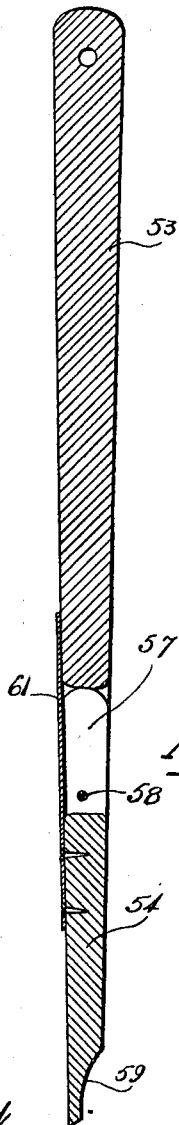


Fig. 7.

Fig. 6.



Witnesses
J. C. Dingerson.
Harry T. Bugh.

Inventor
G. T. Rude.

By *[Signature]*

Attorneys.

UNITED STATES PATENT OFFICE.

GILBERT T. RUDE, OF SEATTLE, WASHINGTON.

STREET-INDICATOR.

993,201.

Specification of Letters Patent.

Patented May 23, 1911.

Application filed February 6, 1911. Serial No. 606,831.

To all whom it may concern:

Be it known that I, GILBERT T. RUDE, a citizen of the United States, residing at Seattle, in the county of King, State of Washington, have invented certain new and useful Improvements in Street-Indicators; and I do 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 appertains to make and use the same.

This invention relates to street and station indicators, and especially to a type of indicator adapted for use with a pay-as-you-enter car where the conductor is stationed on the platform exteriorly of the car and the announcement of the various streets to the passengers within the car by the conductor greatly interfered with by reason of the onerous duties of the latter.

The object of the invention resides in the provision of an improved device of this character arranged for manual intermittent operation by the conductor to successively display the names of the streets or stations.

A further object of the invention resides in providing a device of the character named which includes a pair of rollers and a belt adapted to be wound and unwound thereon respectively, and in providing means whereby said rollers are locked against rotation in one direction during the operation of the indicator.

A still further object of the invention resides in the provision of common means whereby the rollers may be simultaneously released for rotation in a direction opposite to that in which the rollers are rotated during the normal operation of the indicator.

With these and other objects in view, the invention consists in the details of construction and in the combination and arrangement of parts to be hereinafter more fully described and particularly pointed out in the appended claims.

In describing the invention in detail, reference will be had to the accompanying drawings, wherein like characters of reference denote corresponding parts in the several views; and in which,

Figure 1 is a front elevation of an indicator constructed in accordance with the invention; Fig. 2, a rear elevation of the same, with the rear wall of the casing removed; Fig. 3, an end view looking toward the left in Fig. 1; Fig. 4, a section on the line 4—4

of Fig. 1; Fig. 5, an enlarged longitudinal section taken through the lever which constitutes a part of the mechanism for intermittently actuating the indicator; Fig. 6, a view similar to Fig. 2, illustrating a slightly modified form of indicator actuating mechanism; Fig. 7, a section on the line 7—7 of Fig. 6; and Fig. 8, an enlarged longitudinal section taken through the lever which constitutes a part of the modified form of mechanism for intermittently actuating the indicator.

Referring to the drawing, A indicates the casing of the indicator which includes front and rear walls 10 and 11 respectively, top and bottom walls 12 and 13 respectively, and end walls 14 and 15. Formed in the front wall 10 is a pair of longitudinally aligned openings 16 and 17, through one of which may be observed the indication of the next street and through the next opening the destination of the transfer if a transfer is possible at the street indicated in the first named opening. Rotatably mounted longitudinally of the casing A in the end walls 14 and 15 is a pair of spaced drums 18 and 19, upon and from each of which is adapted to be wound and unwound a transparent belt 20 which has indicated thereon successively the streets and destinations of the transfer points over which the vehicle or car travels. These indicated streets and transfer destinations on the belt 20 are so positioned that they aline successively with the openings 16 and 17 respectively during the operation of the indicator. Supported by the top wall 12 of the casing A at the rear of the drums 18 and 19 is an electric light 21 which is adapted to illuminate the transparent belt and thereby outline the characters by which the streets and transfer destinations are indicated on said belt.

The structure by which the drums 18 and 19 are intermittently and simultaneously operated so as to bring the streets and transfer destinations on the belt 20 in successive alinement with the openings 16 and 17 is as follows:—Fixed on the end of the drum 19 adjacent the end wall 14 is a ratchet 22, and rotatably mounted on the trunnion of the drum 19 which extends through the end wall 14 is a lever 23. This lever is provided with an enlarged portion intermediate its ends forming a shoulder 24, and in this enlarged portion is a recess 25 opening through one side of the lever and through the shoulder

24. The mouth of this recess which opens through the side of the lever is closed by a plate 26 and that portion of the recess 25 which is disposed adjacent to the shoulder 24 is reduced to form a shoulder 27. Mounted in the recess 25 so as to project beyond the shoulder 24 is a pawl 28 which is controlled by a spring 29. This pawl has its inner end provided with an enlarged portion 30; which is adapted for engagement with the shoulder 27 to limit the outward movement thereof under the influence of the spring 29. The lever 23 is so positioned with respect to the ratchet wheel 22 that the pawl 28 is adapted for coöperation with the teeth thereof so that when said lever is moved in one direction a rotation will be imparted to the drum 19, which in turn will be transmitted to the drum 18 through the medium of the belt 20. The lever 23 is normally held in the position shown in Fig. 4 by means of a spring 31, one end of which is secured to the free end of said lever and the other end to the end wall 14 of the casing A. A pull cord 32 is also attached to the free end of said lever and extends through the casing and to a point where the same can be conveniently manipulated by the conductor or other person designated for that purpose. The movement of the lever 23 under the influence of the spring 31 is limited by means of a stop 33, while the movement of said lever under the influence of the pull cord 32 is limited by a stop 34, both of the stops 33 and 34 being mounted in the end wall 14 of the casing A. By this construction it will be apparent that upon the pull cord 32 being operated by the conductor, the lever 23 will be rocked so as to impart a partial rotation to the drums 18 and 19 and a resultant movement of the transparent belt 20, such movement of the belt being sufficient to bring the next street indicated thereon and transfer destination, if there be one, into alinement with the respective openings 16 and 17. Upon the conductor releasing the pull upon the cord 32, the spring 31 will serve to return the lever to the position shown in Fig. 4 so as to render the indicator ready for its next intermittent movement. During this rear movement of the lever 23 under the influence of the spring 21, the pawl 28 will ride over the teeth of the ratchet wheel 22 and be without effect on the rollers 18 and 19.

To prevent any possible backward rotation of the rollers 18 and 19 as a result of the return of the lever 23 to the position shown in Fig. 4 or from any other cause, there is mounted in the end wall 15 a shaft 35, one end of which extends laterally of the casing and its other end exteriorly thereof. Fixed on the inner end of this shaft 35 is a pawl 36 which is adapted for coöperative engagement with the teeth of a ratchet wheel

37 fixed on the end of the drum 18 which is adjacent the pawl 36. Mounted on the end of the shaft 35 disposed exteriorly of the casing A is an arm 38 which has secured thereto one end of a spring 39, the other end of said spring being fixed to the end wall 15 of the casing. This spring constantly tends to rotate the shaft 35 so as to hold the pawl 36 in engagement with the teeth of the ratchet wheel 37, as will be apparent. Also journaled in the end wall 15 in proximity to the drum 19 is a shaft 40 which carries on its inner end a pawl 41 positioned for coöperative engagement with the teeth of a ratchet wheel 42 fixed on the adjacent end of the drum 19. Fixed on the outer end of the shaft 40 is an arm 43 corresponding to the arm 38 fixed on the shaft 35. A spring 44 has one end secured to the arm 43 and its other end secured to the end wall 15 and serves to rotate the shaft 40 so as to maintain the pawl 41 yieldingly in engagement with the teeth of the ratchet wheel 42. Mounted in the end wall 15 just forward of the arm 38 is an eye 45, while a similar eye 46 is mounted in the end wall 15 just forward of the arm 43. A flexible connection 47 is attached to the free end of the arm 38 and extended through the eye 45, while another flexible connection 48 is attached to the free end of the arm 43 and extended through the eye 46. The other ends of the said connections 47 and 48 are then secured to the ring member 49.

The trunnion of the drum 18 which extends through the end wall 14 is squared, as at 50 so as to permit detachable engagement of a crank arm 51 therewith for the purpose of winding the belt 20 back upon the drum 18. It will of course be apparent that such winding of the drum 18 is not possible so long as the pawls 36 and 41 are disposed in engagement with their respective ratchets. However, these pawls may be simultaneously moved from such engagement by a slight pull on the ring member 49 and in order to lock the pawls out of engagement with their respective ratchets so as to permit the winding of the belt upon the drum 18 by the crank 51, there is mounted on the end wall 15 a hook 52, over which the ring member 49 is adapted to be slipped. When the belt has been wound upon the drum 18 at the end of the round trip, the ring member 49 is disengaged from the hook 52 and the pawls 36 and 41 will be automatically brought into engagement with their respective ratchets through the instrumentality of the springs 36 and 44.

In the modified form illustrated in Figs. 6, 7 and 8, the lever which corresponds to the lever 23 in the construction just described is shown as constructed of a pair of pivoted sections 53 and 54, the upper end of which former is pivotally connected to the end wall

14 of the casing A, as at 55. The pivotal connection between the sections 53 and 54 is formed by overlapping portions 56 and 57, through which is passed a pivot pin 58.

5 The outer or free end of the section 54 is reduced so as to form an engaging foot 59 which is adapted to coöperate when moved in one direction with the teeth of a peculiarly shaped ratchet 60. Secured to the side

10 face of the section 54 is a flat spring 61 which is extended so as to overlie a portion of the side face of the section 53 of the lever. Secured to the section 54 of the lever in a suitable manner is a pull cord 62 adapted

15 for operation in precisely the same manner as that illustrated in Figs. 1 to 5 inclusive. When the lever formed by the sections 53 and 54 is operated by the pull cord 62, it will be apparent that the section 54 will en-

20 gage the teeth of the ratchet 60 so as to impart the necessary rotation to the drums 18 and 19 and movement to the belt 20. After the lever has been operated in this manner it is automatically returned to the

25 position shown in Fig. 7 by means of a spring 63, the flat spring 61 permitting sufficient movement between the sections 53 and 54 to permit the latter to ride over the teeth of the ratchet 60 and thus pass out of en-

30 gagement with said ratchet and into position to be operated so as to bring about an indication of the next street and transfer destination if there be one.

What is claimed is:—

35 1. In a street and station indicator, the combination of a casing having an observation opening, a pair of shafts journaled in said casing, drums mounted on said shafts respectively, a web oppositely wound on

40 said drums and bearing a successive series of characters, means for intermittently rotating said drums in a direction to bring the characters on the web successively in

45 alinement with the observation opening, means for locking said shafts against rotation in the opposite direction, said means comprising ratchet wheels fixed on the corresponding ends of said shafts, pivot pins

mounted in one end of the casing and extending exteriorly and interiorly of the latter, pawls fixed on the inner ends of said pivot pins and operatively engaging said ratchet wheels respectively, arms fixed on the outer ends of said pivot pins respectively, spring actuated means engaging said arms and constantly tending to force the pawls in respective engagement with the ratchet wheels, and a common means for simultaneously actuating said arms to move the pawls out of engagement with the respective ratchet wheels.

2. In a street and station indicator, the combination of a casing having an observation opening, a pair of shafts journaled in said casing, drums mounted on said shafts respectively, a web oppositely wound on said drums and bearing a successive series of characters, means for intermittently rotating said drums in a direction to bring the characters on the web successively in alinement with the observation opening, means for locking said shafts against rotation in the opposite direction, said means comprising ratchet wheels fixed on the corresponding ends of said shafts, pivot pins mounted in one end of the casing and extending exteriorly and interiorly of the latter, pawls fixed on the inner ends of said pivot pins and operatively engaging said ratchet wheels respectively, arms fixed on the outer ends of said pivot pins respectively, spring actuated means engaging said arms and constantly tending to force the pawls in respective engagement with the ratchet wheels, a common means for simultaneously actuating said arms to move the pawls out of engagement with the respective ratchet wheels, and means for locking said arms in position to hold the pawls out of engagement with the respective ratchet wheels.

In testimony whereof, I affix my signature, in presence of two witnesses.

GILBERT T. RUDE.

Witnesses:

F. R. CONWAY,
T. P. O'BRIEN.