

E. H. VOGEL.
STATION INDICATOR.
APPLICATION FILED SEPT. 21, 1912.

1,051,176.

Patented Jan. 21, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

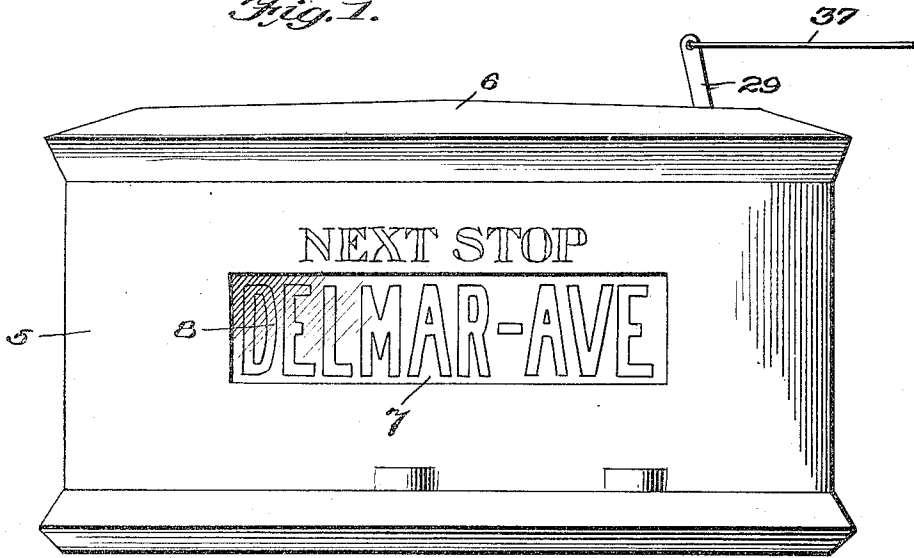
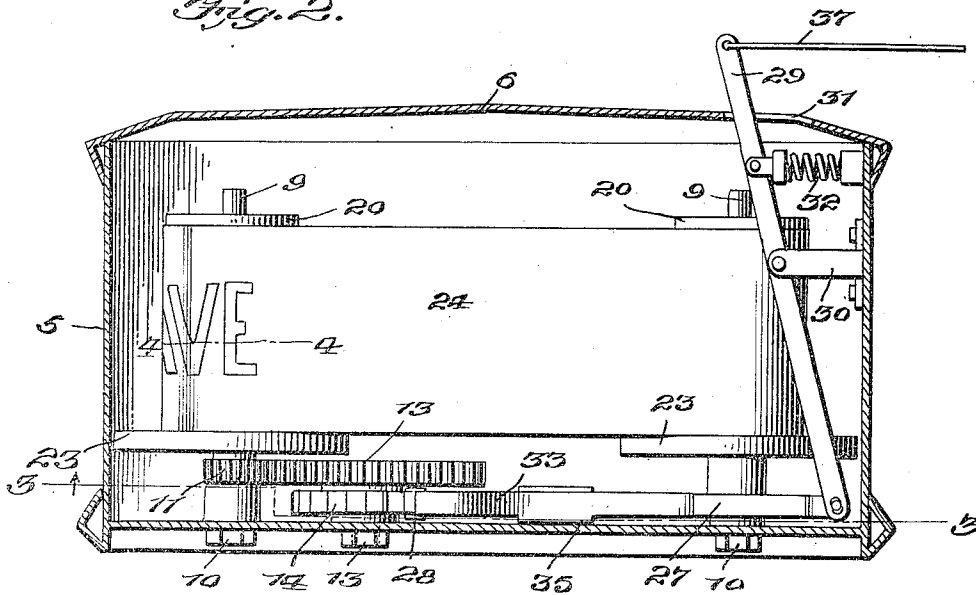


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

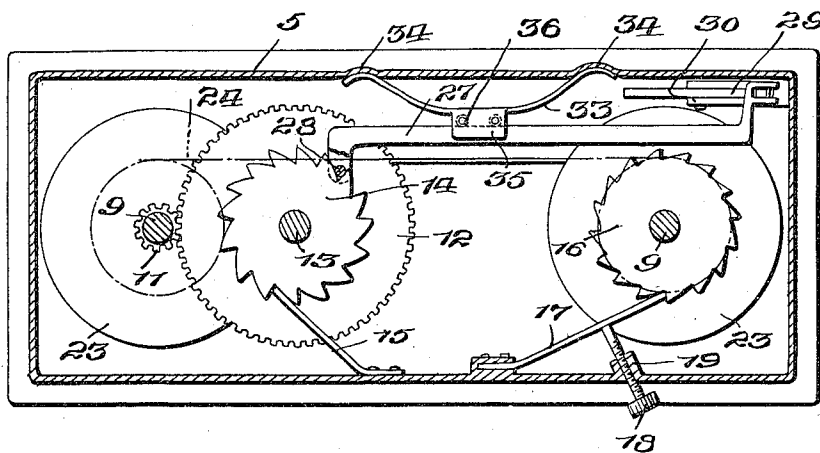


Fig. 4.

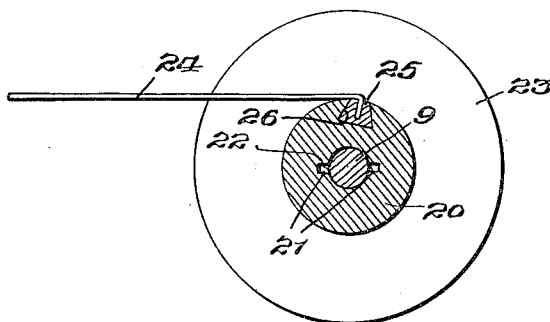
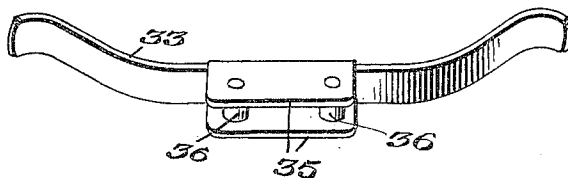


Fig. 5.



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UNITED STATES PATENT OFFICE.

ERNEST H. VOGEL, OF GORDONVILLE, MISSOURI.

STATION-INDICATOR.

1,051,176.

Specification of Letters Patent.

Patented Jan. 21, 1913.

Application filed September 21, 1912. Serial No. 721,561.

To all whom it may concern:

Be it known that I, ERNEST H. VOGEL, a citizen of the United States, residing at Gordonville, in the county of Cape Girardeau and State of Missouri, have invented certain new and useful Improvements in Station-Indicators, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improvements in street or station indicators for street cars, railway cars and the like and has for its primary object to provide a device of this character which is simple in construction, efficient in operation and may be manufactured at comparatively small cost.

Another and more specific object of the invention is to provide a pair of interchangeable tape carrying rollers, the tape having the names or numbers of the streets thereon, and novel and simple means for positively rotating one of the rollers to wind the tape thereon and successively bring the street names or numbers opposite to a sight opening in the roller casing.

With the above and other objects in view as will become apparent as the description proceeds, the invention consists in certain constructions, combinations and arrangements of the parts that I shall hereinafter fully describe and claim.

For a full understanding of the invention, reference is to be had to the following description and accompanying drawings, in which—

Figure 1 is a side elevation of a street or station indicator embodying the present invention; Fig. 2 is a vertical longitudinal section through the indicator casing, the operating parts being shown in elevation; Fig. 3 is a section taken on the line 3—3 of Fig. 2; Fig. 4 is a detail section taken on the line 4—4 of Fig. 2, and Fig. 5 is a detail perspective view of one of the parts. Referring in detail to the drawings 5 designates a rectangular casing preferably constructed of sheet metal with a removable top or cover 6. This casing is provided in its front wall with an opening 7 which is covered by a sheet of glass or other transparent material indicated at 8.

In each end of the casing 5 a vertical roller spindle 9 is arranged, the lower ends of said spindles being rotatably mounted in the bottom wall of the casing and having nuts 10 threaded thereon to engage the un-

der side of the casing. Upon one of the spindles 9 adjacent to the lower end thereof a pinion 11 is fixed with which a large gear wheel 12 meshes. This gear wheel is rotatably mounted upon a vertical stud shaft 13 which is fixed in the bottom wall of the casing 5 and has formed upon one of its faces a ratchet 14 with which the free end of a spring pawl or dog 15 engages, the other end of said pawl being secured to the rear wall of the casing.

The other of the vertical spindles 9 in the opposite end of the casing has a ratchet 16 fixed upon its lower end with the teeth of which a spring pawl 17 engages. The tension of the free end of this pawl against the teeth of the ratchet may be regulated by means of an adjusting screw 18, which is threaded in a lug 19 on the rear wall of the casing 5.

The rollers or spools 20 are longitudinally bored to loosely receive the spindles 9, and with the bores of the spools the diametrically opposed key ways 21 communicate. These key ways are adapted to receive the lugs 22 projecting from opposite sides of the spindles 9 adjacent their upper and lower ends. The spools or rollers will therefore be held upon the spindles 9 for rotation therewith. The lower ends of the spools 20 are provided with heads 23 of greater diameter than the spools so as to retain the wound tape or web thereon.

The tape or web 24 is provided with the names or numbers of the streets upon the route traversed by the car, which is provided with the indicator. These names or street numbers are arranged in proper spaced relation, the spaces between the adjacent names or numbers gradually increasing from one end to the other of the tape. At each end of the tape the same is provided with a bar 25 of triangular form in cross section which is adapted to be inserted into the longitudinal groove or channel 26 formed in the periphery of each of the spools 20. The opposed walls of the grooves 26 are oppositely beveled so as to retain the bars 25 therein. By attaching the ends of the tape to the spools in this manner, it will be seen that the tape may be readily removed from the spools and reversed so as to present the other side thereof to the sight opening 7.

The operating means for the spools or rollers consists of a longitudinally extend-

ing arm or bar 27 which is arranged closely adjacent to the bottom wall of the casing and is provided upon one of its ends with a lug or tooth 28 for engagement with the teeth of the ratchet 14 which is carried by the gear wheel 12. To the opposite end of this bar the lower end of an actuating lever 29 is pivotally connected. This lever is fulcrumed at a point intermediate of its ends upon a bracket 30 which is fixed to one of the end walls of the casing 5. The upper end of the lever 29 projects through and is movable in a short longitudinal slot 31 in the top 6 of the indicator casing. A coil spring 32 is fixed at one of its ends to the end wall of the casing and bears against the lever 29 above its fulcrum.

A bowed leaf spring 33 is arranged between the bar 27 and the front wall of the casing 5 and acts to hold the tooth or lug 28 on the end of said bar in engagement with the teeth of the ratchet 14. The ends of this leaf spring are seated in notches or recesses 34 formed in the front wall of the casing adjacent the bottom thereof which obviates any vertical movement of the spring or the bar 27 so that liability of the disengagement of the end of said bar from the ratchet 14 is eliminated. The intermediate portion of the bowed spring 33 is provided with spaced ears or flanges 35 between which the bar 27 is longitudinally movable. In the flanges 35, the ends of a pair of anti-friction rollers 36 are journaled against which one edge of the bar 27 bears. Thus a free movement of the bar 27 is obtained and undue friction between the same and the spring 33 overcome. A suitable pull cord 37 is connected to the upper protruding end of the actuating lever 29.

From the foregoing description the operation of the device will be understood as follows: When the car starts upon its trip the indicator is set with the first street name or number crossing the route of the car arranged opposite to the sight opening 7. As the car successively approaches the street crossings, the conductor or motorman pulls the cord 37, thus moving the bar 27 through the medium of the lever 29 and disengaging the lug 28 of the bar from the teeth of the ratchet 14. In this movement of the lever 29, the spring 32 is placed under compression and when the pull upon the cord 37 is released the expansion of this spring retracts the bar 27 so that the tooth 28 thereof engaging with the ratchet 14 rotates the large gear wheel 12. This gear wheel meshing with the small pinion 11 upon one of the roller spindles 9, rotates said spindle and the roller or spool thereon whereupon the tape 24 will be wound upon said spool to move the next street name or number upon the tape to a position opposite the sight opening of the casing. This operation is

repeated with each pull of the cord 37 until the car arrives at the end of its run and the last name upon the tape has been disclosed to view. It is of course understood that as the diameter of the wound tape upon one of the rollers 20 increases, there will be a greater extent of movement of the tape across the sight opening and for this reason the street names or numbers are gradually arranged a farther distance apart from one end to the other of the tape. In the return trip of the car, the ends of the tape are reversed, or in other words, the end of the tape is detached from the roller in one end of the casing and attached to the roller in the opposite end thereof. In the use of the device upon belt line railways, one half of the names or street numbers is printed upon one side of the tape and the other half on the other side in order to reduce the bulk of the tape when wound upon the spool. Thus when one half of the names have been run past the sight opening in the casing, the conductor or motorman reverses the tape in the manner above stated, or removes the spools or rollers 20 from the spindles 9 and reverses their positions in the ends of the casing, thereby showing the opposite side of the tape and the remaining street names or numbers as the car continues its run.

From the foregoing, it is believed that the construction and manner of operation of my improved street or station indicator will be clearly understood. The device consists of comparatively few elements which are of simple form and may therefore be manufactured at small cost.

It will also be appreciated that the device is highly efficient and reliable in practical use.

While I have shown and described the preferred construction and arrangements of the several elements, it will be understood that the same are susceptible of considerable modification in the form and proportion and the details of construction without departing from the essential features or sacrificing any of the advantages thereof.

Having thus described the invention, what is claimed is:—

1. In a street or station indicator, the combination with a casing having a sight opening, of shafts arranged in opposite ends of the casing, spools mounted thereon, a tape fixed at its ends to the said spools, and provided with street names or numbers for movement across the sight opening in the casing wall, a pinion fixed upon one of the spool shafts, a gear meshing with said pinion, a ratchet carried by the gear, a longitudinally shiftable bar provided with a lug on one end engaging the teeth of said ratchet, the casing wall being provided with recesses, a bowed leaf spring arranged between said lever and one of the casing walls

and having its ends seated in said recesses, the intermediate portion of said spring bearing against the bar to retain the lug thereof in engagement with the ratchet teeth, anti-friction rollers mounted in said spring with which the bar engages, and a spring-pressed actuating lever connected to one end of said bar.

2. In a street or station indicator, the combination with a casing having a sight opening, of a shaft arranged in each end of said casing, spools mounted thereon, a tape removably attached at its ends to said spools and having street names or numbers thereon for movement across the sight opening in one of the casing walls, a pinion fixed upon one of the spool shafts, a gear meshing with said pinion, a ratchet carried by the gear, a spring pawl engaging the teeth of the ratchet to prevent rotation of the gear in one direction, a longitudinally mov-

able bar provided with a lug on one end to engage the teeth of said ratchet, the casing wall being provided with recesses, a bowed leaf spring having its ends seated in said recesses and provided with flanges upon its intermediate portion between which said movable bar is disposed, anti-friction rollers mounted in said flanges and bearing against the bar, an actuating lever fulcrumed in the casing and pivotally connected to the other end of said bar, and a spring connected to one of the casing walls and to said lever to move the bar in one direction and rotate the gear to wind the tape upon one of the spools.

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

ERNEST H. VOGEL.

Witnesses:

PAUL FIÉHLER,
P. C. HAGER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."