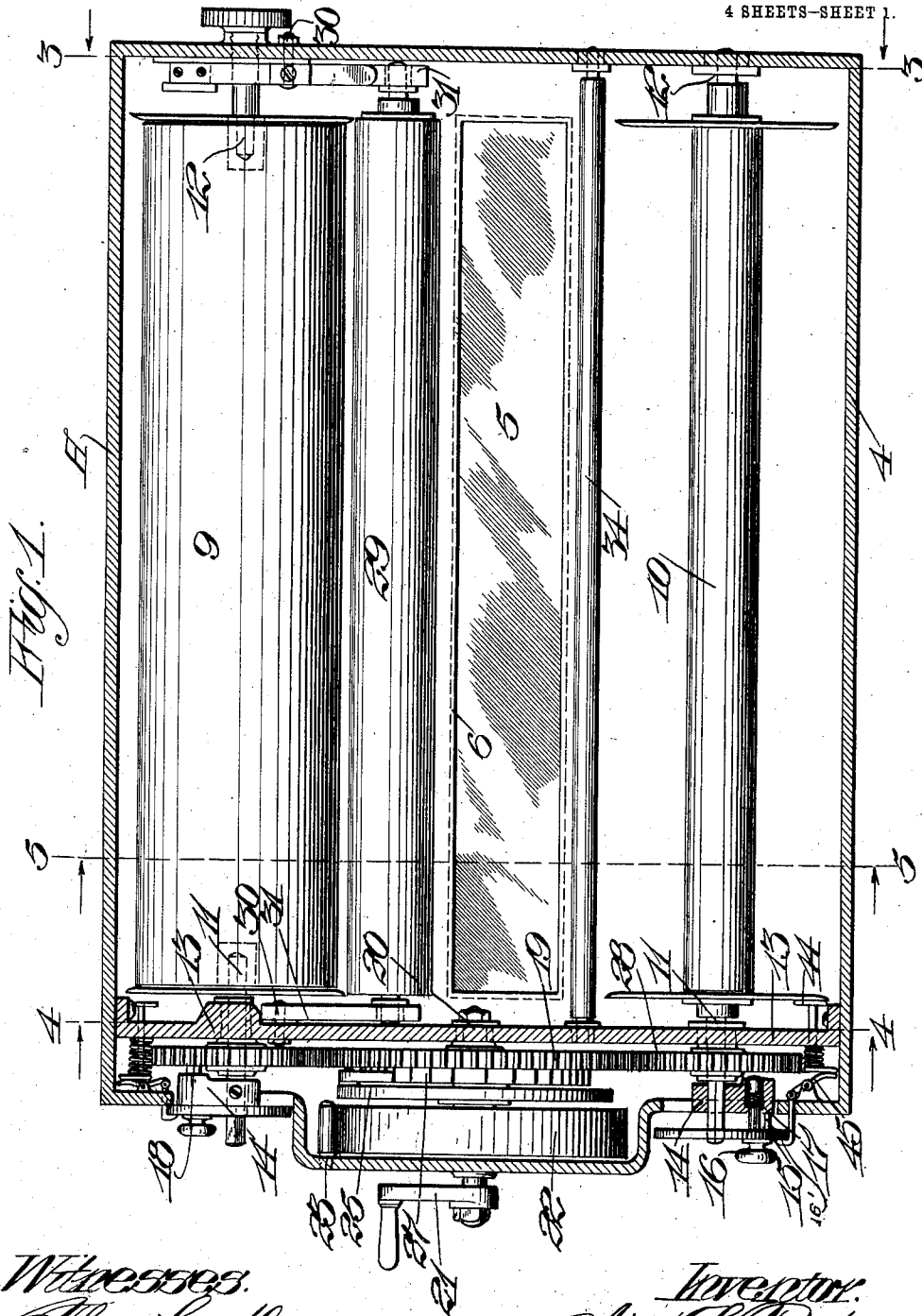


A. L. BRETON.
STREET AND STATION INDICATOR.
APPLICATION FILED DEC. 21, 1910.

1,025,560.

Patented May 7, 1912.

4 SHEETS—SHEET 1.



Witnesses:
Chas. Eastberg
J. E. Mamard.

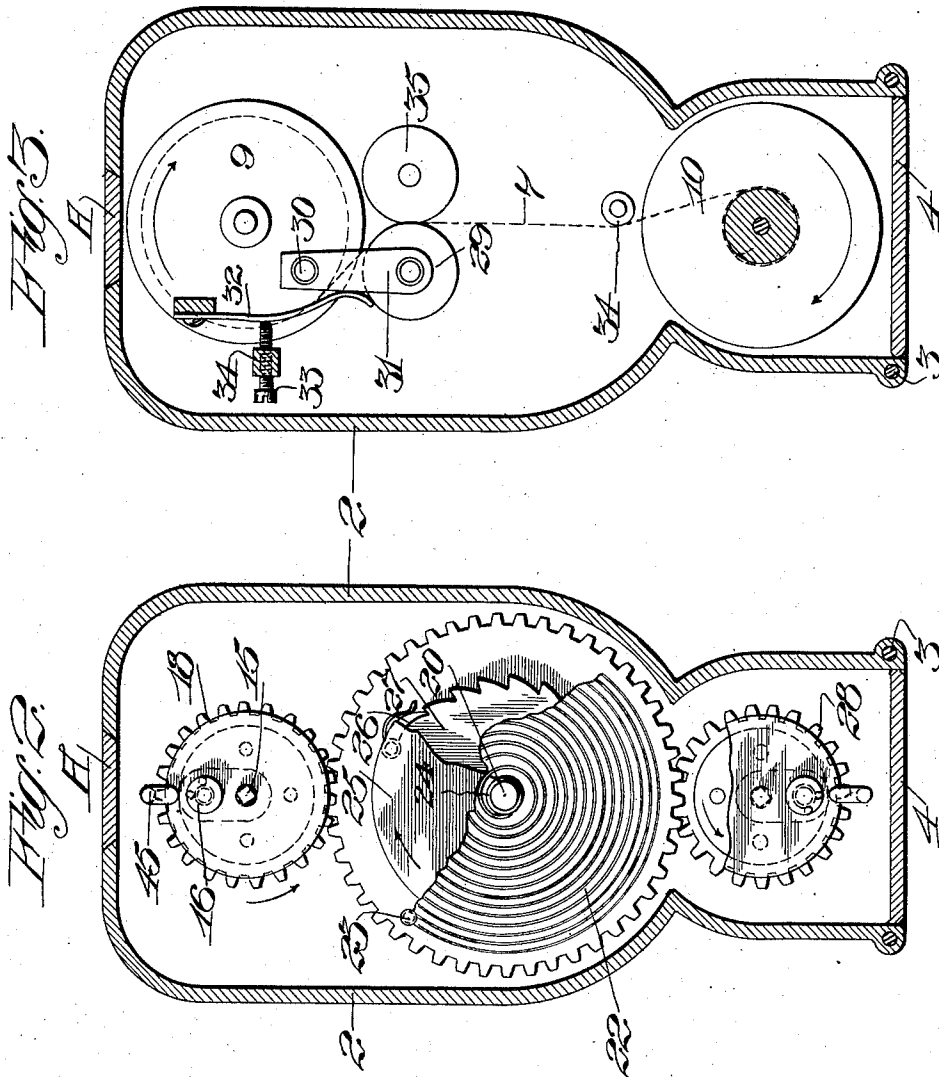
Inventor:
A. L. Breton.
by G. H. Strong,
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4 SHEETS—SHEET 2.



Witnesses.
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J. E. Maynard.

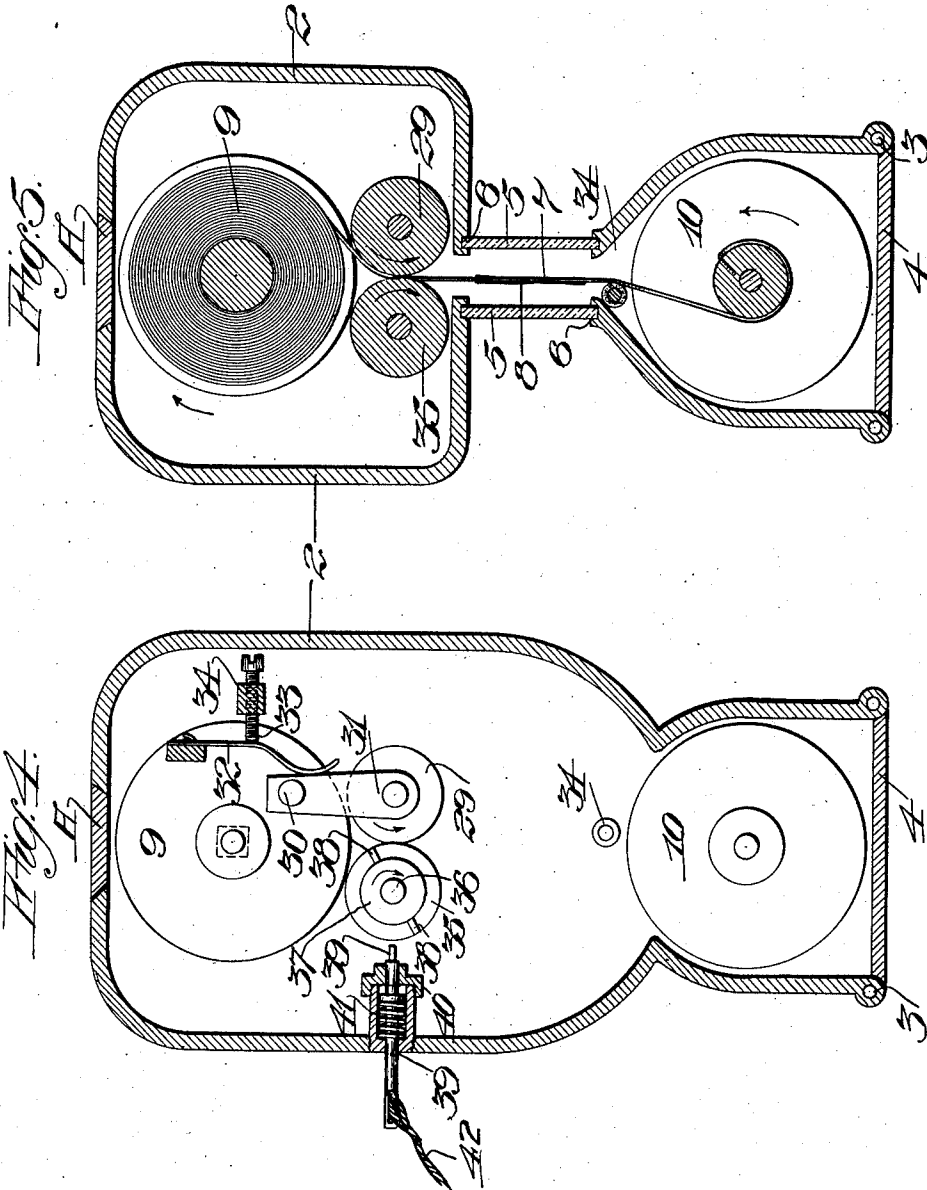
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4 SHEETS—SHEET 3.



Witnesses
Chas. Kestberg
F. E. Maynard

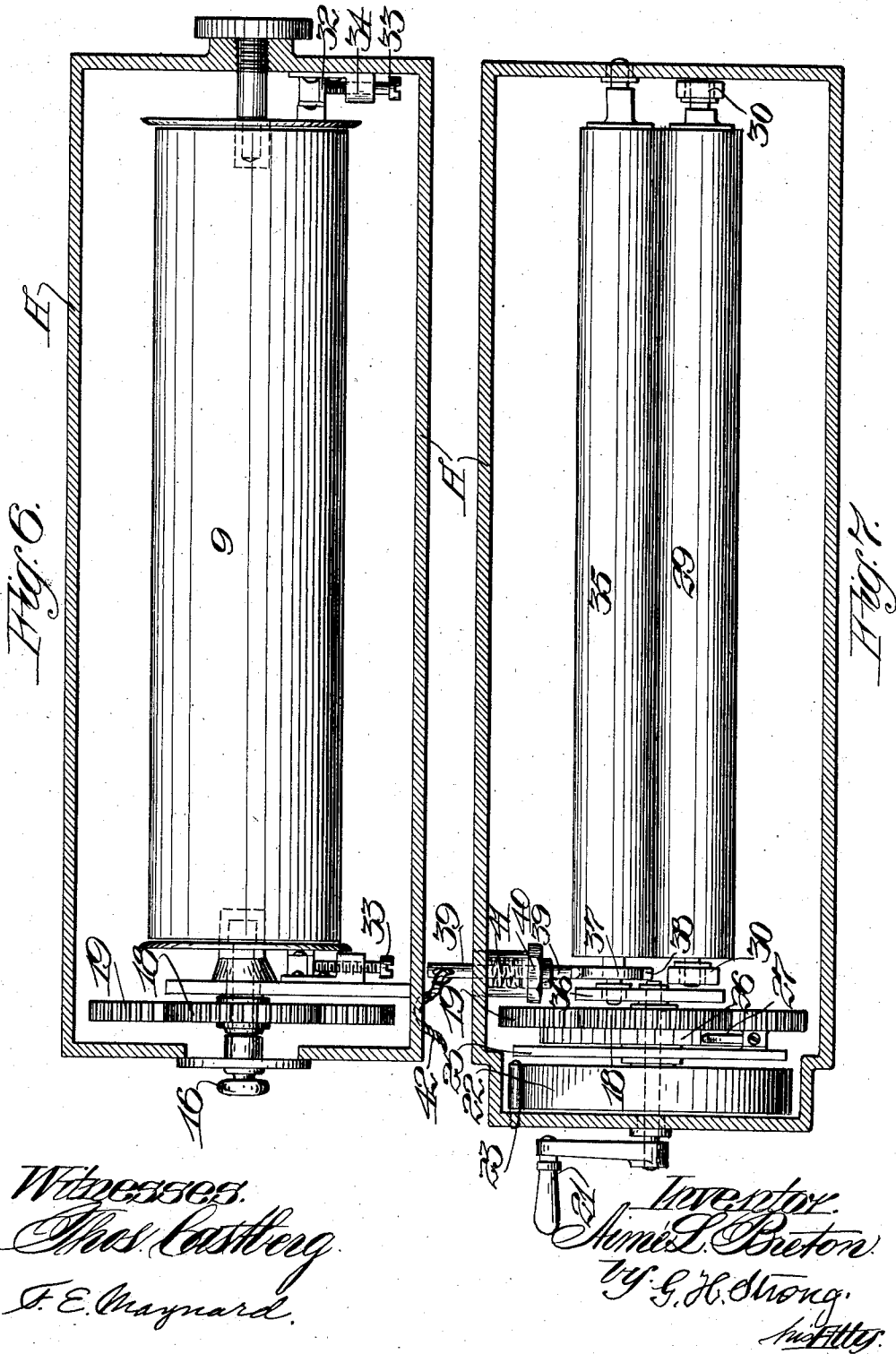
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4 SHEETS-SHEET 4.



UNITED STATES PATENT OFFICE.

AIMÉ L. BRETON, OF SAN FRANCISCO, CALIFORNIA.

STREET AND STATION INDICATOR.

1,025,560.

Specification of Letters Patent.

Patented May 7, 1912.

Application filed December 21, 1910. Serial No. 598,598.

To all whom it may concern:

Be it known that I, AIMÉ L. BRETON, citizen of the United States, residing in the city and county of San Francisco and State of California, have invented new and useful Improvements in Street and Station Indicators, of which the following is a specification.

This invention relates to street and station indicators, and is especially relative to automatically operable, manually controlled street or station indicators.

The object of this invention is to provide a simple, reliable, durable and easily adjusted indicator for street and railway cars, or which can be used in other places, as a directory or the like, and to provide in combination with the indicator a controlling device manually operable by a motorman, engineer or other person.

The invention consists of the parts and the combination and construction of parts as hereinafter described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a central longitudinal section through the indicator. Fig. 2 is a transverse vertical section through the indicator casing illustrating the gear train in elevation. Fig. 3 is a sectional view on line 3—3, Fig. 1. Fig. 4 is a sectional detail view taken approximately on line 4—4, Fig. 1. Fig. 5 is a central transverse section on line 5—5, Fig. 1. Fig. 6 is a horizontal sectional view showing the top reel and driving gear in plan. Fig. 7 is a horizontal section showing the guide rollers in plan.

In the present embodiment of my invention, A represents a suitable casing which may, if desired, be provided with hinged sides 2, which may be longitudinally swung about pivots 3, secured to the bottom 4 of the casing frame, and proximate the center of the sides 2 there are provided horizontal windows 5, suitably mounted in slots 6, through which windows may be seen, from either side of the indicator, a web 7, upon both sides of which are printed, or otherwise formed, characters or names, as at 8, of a sufficient height to be clearly discernible at a reasonable distance from the indicator. Manifestly, these names or symbols printed upon the web or sheet 7 may be either personal names, when the indicator is used as a directory, or street or station names when it is used as an indicator in railway service.

As clearly shown in Fig. 3, the web 7 is wound to and from one reel, as 9, to another, as 10, each of which reels is suitably journaled in or upon adjustable bearing spindles 11 and 12. The spindles may be moved outwardly to allow a reel, as 9 or 10, to be placed in position in the indicator when either of the sides 2 has been swung open so that access may be had to the interior of the indicator.

The spindles 11 supporting one end of the web reels are rotatably journaled in a suitable bracket or hanger 13, appropriately secured in the casing A and have secured upon their outer end an arm 14 carrying a latching device comprising a detent 15, having a knob 16, whereby latch 15 may be pulled to compress its actuating spring 17 and turnable slightly to carry an eccentric stop 16' around to rest upon the arms 14. The detent 15 is adapted to engage and disengage a gear 18, loosely mounted upon the reel bearing spindle 12, and the gear 18 is constantly in mesh with a master gear 19, which is loosely mounted upon an arbor 20, journaled in the casing A and the bracket 13, and provided at its outer end with a crank 21, whereby may be wound a suitable spring or equivalent device 22, securely fastened at one end, as at 23, to the casing A, and at its other end to the hub 24 of a disk 25 carrying a pawl 26, which is adapted to engage, when turning clockwise, with a ratchet wheel 27 secured to or formed with the master gear 19. There is also secured upon the lower spindle 12, which supports the reel 10, another latching device 15, similarly operable upon a gear 28 loosely mounted on the lower spindle 12 as the upper latching mechanism 15 is operable upon the upper gear 18.

The gear 28 is in constant mesh with the master gear 19, and is loosely mounted upon its respective spindle 12, and in operation one of the latches, as for instance the upper latch 15, may be thrown into interlocking engagement with its respective gearing 18, thereby locking the gear 18 to its respective spindle 12 so that power is transmitted from the spring 22 through the pawl 26 and its associated ratchet and gear 19 to drive the gear 18, which will thus cause its associated reel 9 to be revolved in a direction opposite that indicated by the full line arrow in Fig. 5, thus winding the web 7 from the lower reel 10, the direction of rotation of the reel

9 being the same as that of the rotation of the lower reel 10, since the latter is on the lower side of the center of the driving gear 19.

5 When it is desired to reverse the direction of travel of the web 7, the lower detent 15 is moved into engagement with its associated gear 28, whereby power is transmitted from the driving gear 19 to the lower spindle 12, thus driving the lower reel 10 in the direction of the arrow indicated in Fig. 5, and thereby winding the sheet from the upper reel to the lower reel. The sheet is guided during its traverse from reel to reel by horizontally disposed tension roller, 29, which is pivotally mounted, as at 30, on the casing, A, by a pair of hangers, 31. A spring 32 bears against the hangers and the tension of this spring may be increased or decreased by a set screw, 33, or other suitable means, said set-screw being mounted in a suitable nut, 34, conveniently fastened to the indicator case, A.

The relative position of the adjustable tension roller 29 is such that the web 7 is guided centrally between the transparencies 5, through which the indexed sheet or web is visible. Another guide roller 34 is mounted in the indicator casing just below the opening forming the window from which the web 7 runs as it is wound on to the lower reel 10.

One of the important and distinctive features of this invention is the provision of means whereby the travel of the web 7 from one reel to the other is controlled so that the web may have a limited movement sufficient to expose a name opposite the windows 5, and then to release the web so as to move sufficiently to present another name through the window, and so on, absolutely and reliably controlling the amount of travel of the web during the operation of the indicator, irrespective of the diameter of the web upon its carrying reels 9 or 10. That is to say, the indicating names printed on the web 7 at suitable and regular intervals will always be brought into proper alignment with the horizontal windows, irrespective of the increasing or decreasing diameter of the web as it rolls upon the winding reel. As here shown, this controlling mechanism comprises a roller 35 of suitable diameter, opposed to the flexibly supported roller 29 and supported upon a suitable shaft or bearing member 36 mounted in the casing A.

Secured adjacent one end of the roller 35 upon the shaft 36, is a disk member 37, provided with a pair of diametrically opposed lugs or projections 38, which are adapted to abut the inwardly projecting end of a controller 39 mounted in a suitable bracket 40, and normally under the inward thrust of a spring 41 surrounding the controller 39, to

the outer end of which may be attached a cord or other operating element 42, which is led to a convenient position within reach of the operator of the indicator when the indicator is used in railway service, or if the indicator is used as a directory the controller 39 may be provided with a button head, not shown. By either of these means the operator can pull on the controller or lock bolt 39 so as to carry its projecting end clear of the path of rotation of the complementary projections 38 carried upon the rotary member 37. When the disk 37 has been so released from restraint by the controller 39 it permits the roller 35 to be turned, due to the friction upon it of the traveling web 7 which is pressed upon the controller roller 35 by the spring pressed roller 29.

In operation, the controller 39 may be withdrawn from engagement with one of the lugs 38, thereby releasing the roller 35 from restraint and allowing the spring 22 to act through whichever one of the gears 18 or 28 is locked to its respective spindle, to rotate that particular reel or drum upon which the web 7 is being at the time wound. By adjusting the tension of the spring 32, by means of the screw 33, the friction roller 29 will press the index web 7 firmly against the controlling roller 35 with such pressure as to overcome the tension of the driving spring 22, and thereby prevent the web from being advanced until the controlling roller 35 is released by the controller 39, when it is retracted and disengaged from the stop 38 with which it is in momentary contact. Thus when the controller 39 has been retracted for an instant, the driving spring 22 is immediately operative to advance the web 7, and it will travel between the two contiguous rollers 29 and 35 until the opposite stop member 38 swings into encounter with and is stopped by the released inwardly thrust controller 39.

Manifestly, the length of each step by step advance of the index web 7 can be nicely predetermined and controlled in proportion to the diameter of the supporting roller 35, which, in the present instance, is such that at each half revolution it will permit of substantially a two-inch advance of web and thus disclose the printed symbol or characters indexed on the web 7 between the windows 5.

Any suitable means may be employed for the purpose of creating sufficient friction upon that particular reel 9 or 10 which is disengaged from its driving detent to prevent the momentum of the reel caused by its rotation from unduly slackening the web 7, and in the present instance a simple form of brake 44 is operatively connected to the respective detents 15, as by levers 45, so that when a detent is withdrawn from its asso-

ciated gear 18 or 28, the brake 44 may be made effective upon the reel with just sufficient pressure to prevent the reel from turning, except when it is moved by the web unwinding from it toward the other driven reel.

This structure provides a simple, manually controlled indicator involving a web adapted to be intermittently advanced in steps of regular lengths to successively present indexed matter to the observer, and by means of the reversing gear hereinbefore described, after the web has been used when the train or car is going in one direction successively indicating each street or station as the car approaches it, by reason of the releasing by the operator of the train or car of the controller member 39 at each station, the web may be reversed when the train or car is traveling back again over the same route. To accomplish this reverse the operator simply has to change the detents so as to release the reel which has just been in driving connection with the master gear, and to couple up the other reel which was running free, thus transmitting power through that reel to rewind upon itself the web 7 and naturally, in sequence, the indexed or station names will successively be presented in reverse order between the windows 5, as when the train or car was traveling in the other direction.

Having thus described my invention, what I claim and desire to secure by Letters-Patent, is—

1. A mechanical directory comprising a suitable casing, a main spring, a winding shaft therefor, a disk and driving pawl on the shaft, a master gear loose on the shaft and engaged by the pawl, pinions on opposite edges of the master gear and constantly in engagement therewith, spindles on which the pinions are loosely turnable and having polygonal ends, arms secured on said spindles, detent pins slidable and turnable in said arms and adapted to engage the pinions, winding reels mounted on and driven by the spindles, and an indexed web guided in the plane of the axes of the reels and moved thereby.

2. A mechanical directory comprising a suitable casing, a main spring, a winding shaft therefor, a disk and driving pawl on the shaft, a master gear loose on the shaft and engaged by the pawl, pinions on opposite edges of the master gear and constantly in engagement therewith, spindles on which the pinions are loosely turnable and having polygonal ends, arms secured on said spin-

dles, detent pins slidable and turnable in said arms and adapted to engage the pinions, winding reels mounted on and driven by the spindles, an indexed web guided in the plane of the axes of the reels and moved thereby, a brake for each reel, disks slidable on each spindle in which the pins are turnable, and devices engaging said disks whereby the brakes are operated.

3. A mechanical directory comprising a suitable casing, a main spring, a winding shaft therefor, a disk and driving pawl on the shaft, a master gear loose on the shaft and engaged by the pawl, pinions on opposite edges of the master gear and constantly in engagement therewith, spindles on which the pinions are loosely turnable and having polygonal ends, arms secured on said spindles, detent pins slidable and turnable in said arms and adapted to engage the pinions, winding reels mounted on and driven by the spindles, and an indexed web guided in the plane of the axes of the reels and moved thereby, and eccentric stops turnable with the pins, said detent pins being held disengaged from their respective pinions by said stops and said stops being adjustable to rest upon the arms.

4. A mechanical directory comprising a suitable casing, a main spring, a winding shaft therefor, a disk and driving pawl on the shaft, a master gear loose on the shaft and engaged by the pawl, pinions on opposite edges of the master gear and constantly in engagement therewith, spindles on which the pinions are loosely turnable and having polygonal ends, arms secured on said spindles, detent pins slidable and turnable in said arms and adapted to engage the pinions, winding reels mounted on and driven by the spindles, an indexed web guided in the plane of the axes of the reels and moved thereby, and eccentric stops turnable with the pins, said detent pins being held disengaged from their respective pinions by said stops and said stops being adjustable to rest upon the arms, a roller mounted adjacent to one reel, a manually operable bolt restraining the movement of the roller by the web-moving train, and a swinging tension roller holding the web against the roller.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

AIMÉ L. BRETON.

Witnesses:

F. E. MAYNARD,
THOS. CASTBERG.