No. 860,597. PATENTED JULY 16, 1907.

R. B. EUBANK, Jr.

ANNUNCIATOR FOR CARS.

APPLICATION FILED DEC. 18, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

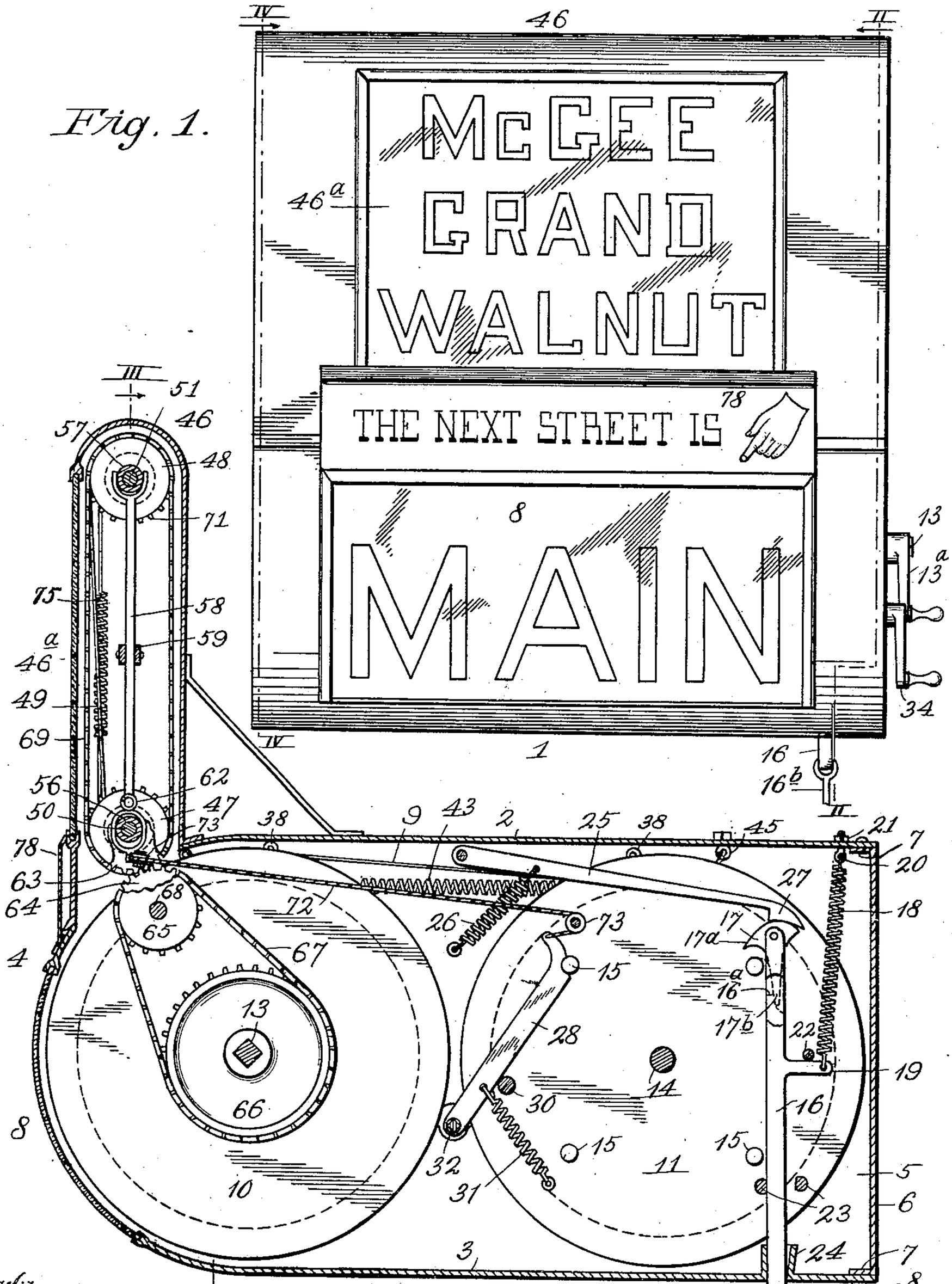

Fig. 2.

Witnesses:
R. C. Hamilton.
J. Moon.

Inventor
Reuben B. Eubank, Jr.
By F. G. Fischer
Atty.

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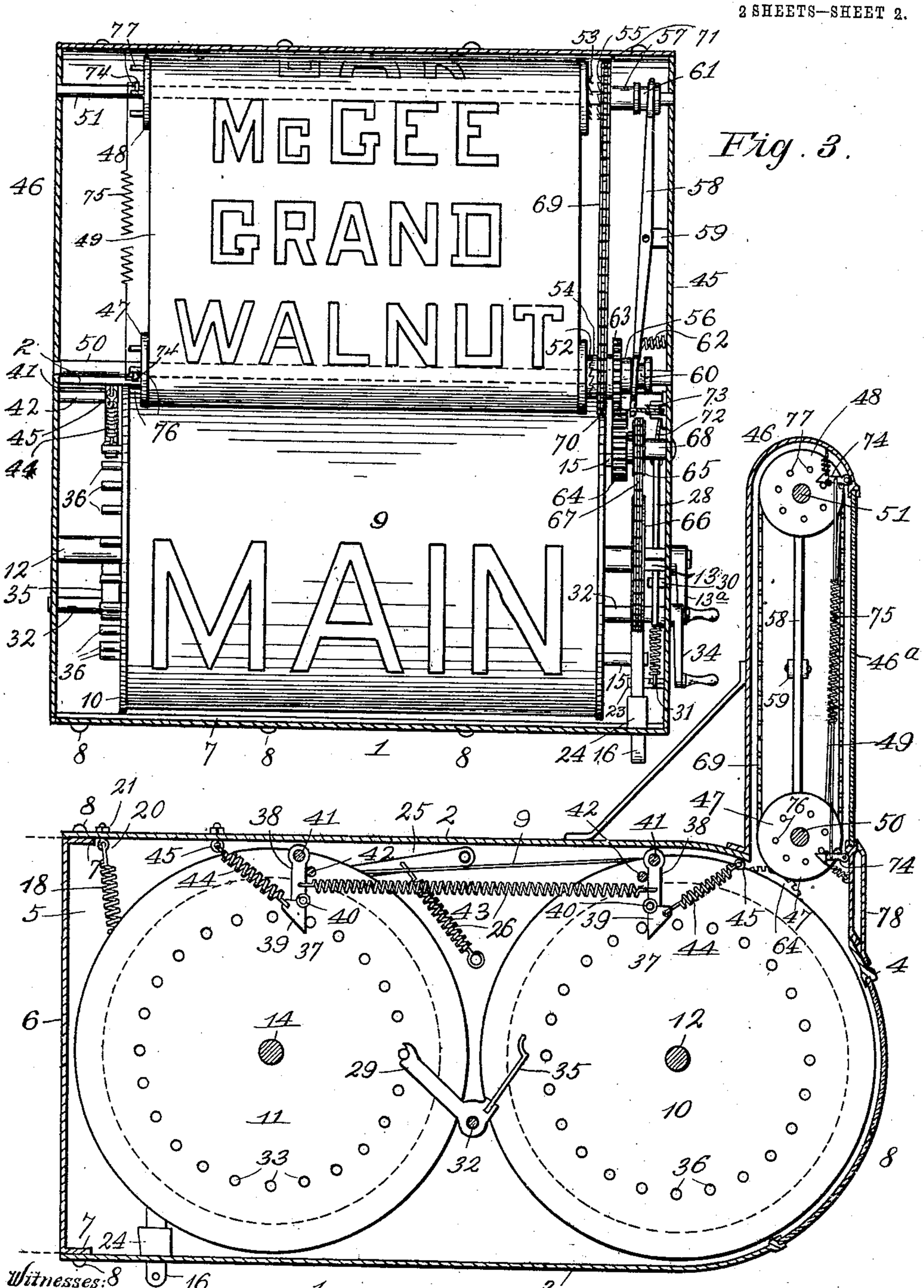

Fig. 3.

Fig. 4.

Witnesses:
R. C. Hamilton.
J. Moore.

Inventor,
Reuben B. Eubank, Jr.
By F. G. Fischer
Atty.

UNITED STATES PATENT OFFICE.

REUBEN B. EUBANK, JR., OF KANSAS CITY, KANSAS, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE EUBANK INDICATOR MANUFACTURING COMPANY, A CORPORATION OF MISSOURI.

ANNUNCIATOR FOR CARS.

No. 860,597. Specification of Letters Patent. Patented July 16, 1907.

Application filed December 18, 1905. Serial No. 292,128.

To all whom it may concern:

Be it known that I, REUBEN B. EUBANK, Jr., a citizen of the United States, residing at Kansas City, in the county of Wyandotte and State of Kansas, have invented certain new and useful Improvements in Annunciators for Cars, of which the following is a specification.

My invention relates to improvements in annunciators for cars; and my object is to provide a simple, compact apparatus of this character for use on street and railway coaches which may be operated by the motorman or brakeman, and will consecutively present the names of streets or stations plainly to the passengers.

The invention embodies a primary case containing mechanism for displaying the name of the next street or station, and a secondary case containing mechanism for displaying one or more succeeding names so that a passenger will have ample notice of the approach of the car to his destination and thus be prepared to leave the car at the proper time without unnecessarily delaying the same.

The invention consists further in the novel construction, combination and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and pointed out in the claims.

Referring now to said drawings, Figure 1 represents a front elevation of the apparatus. Fig. 2 is an irregular longitudinal section taken on line II—II of Fig. 1. Fig. 3 is an irregular transverse section taken on line III—III of Fig. 2. Fig. 4 is a longitudinal section taken on line IV—IV, Fig. 1.

In carrying out the invention I employ a primary case 1 comprising two U-shaped sections one of which consists of a top 2, a bottom 3, and a front portion 4, while the other consists of a U-shaped section having sides 5 and an integral back 6 which latter is provided at its top and bottom edges with flanges 7 for the reception of screws 8 whereby said U-shaped sections are secured together. The U-shaped section comprising sides 5 united by the back 6 is arranged to slide inwardly like a drawer at the rear portion of the first-mentioned section, and the greater portion of the mechanism is carried thereby so that it may be readily removed when necessary to replace or repair worn parts, by withdrawing said U-shaped section, see dotted lines, Fig. 4. The front lower portion of front 4 has a glazed opening 8 through which the names of the streets or other information inscribed upon the ribbon may be viewed as it consecutively appears. Said names are printed or otherwise placed upon a ribbon 9 attached at its opposite ends to a pair of spools 10 and 11. Spool 10 is provided at its opposite ends with stub-shafts 12, 13, journaled in sides 5. The outer end of shaft 13 extends through the adjacent side of the case and is rectangular in cross-section for the reception of a crank 13^a whereby said spool may be rotated when it is desired to wind the ribbon thereon. Spool 11 is provided at its opposite ends with stub-shafts 14 journaled in sides 5, and one end of said spool is provided with equally spaced studs 15 arranged an equal distance from the adjacent stub-shaft.

16 designates a pull-bar extending upwardly through bottom 3 and provided at its upper end with a pivoted hook 17 adapted to engage the studs, one at a time, and thus rotate the spools step by step at each downward stroke of said pull-bar the proper distance to bring each succeeding name in coincidence with opening 8. The pull-bar is drawn downwardly just after leaving each street-crossing to bring the name of the next street into view, and is then returned automatically to its normal position (see Fig. 2) by a retractile spring 18, attached at its opposite ends to an arm 19 projecting rearwardly from the pull-bar, and an eye-bolt 20 which latter extends through top 2 and is provided at its upper threaded end with an adjusting-nut 21 whereby the tension of the spring may be regulated. As the pull-bar moves upwardly in a straight line the face 17^a of hook 17 will contact with the upper rear stud 15 which latter will cause the depending arm 17^b, integral with said hook, to swing upwardly and backwardly until the face portion 17^a is substantially flush with the adjacent vertical surface of the pull-bar. This permits the pull-bar and the hook to move upwardly without creating undue friction between face 17^a and the stud. After the pull-bar has reached the end of its upward movement, which is limited by arm 19 contacting with a stop 22, arm 17^b will swing down and cause the hook to assume its normal position (see Fig. 2). The downward movement of the arm is limited by its lower terminal contacting with a shoulder 16^a on the pull-bar, said shoulder being provided for the purpose of holding the hook in contact with stud 15 when making a downward stroke. When the pull-bar is in its normal position the under side of hook 17 is a short distance above the adjacent stud so that the studs may pass said hook when the ribbon is being unwound from spool 11. Undue backward and forward movement of the pull-bar is limited by stops 23, extending inwardly from the adjacent side of the case, and a guide 24 surrounding the opening at the bottom of the case through which the pull-bar extends. The downward stroke of the pull-bar is limited by a pawl 25 which is drawn downwardly into the path of the succeeding stud by a retractile spring 26.

Pawl 25 has an elongated hooked end 27 which is engaged and raised out of engagement with the stud by hook 17 when the pull-bar is drawn upwardly by spring 18. By providing pawl 25 it is obvious that each backward turn of spool 11 will be limited to bring the names on the ribbon in coincidence with opening 8.

16[b] designates a cable attached to the lower terminal of the pull-bar, which may be extended to that part of the car most convenient from which to operate the pull-bar.

The taut ribbon 9 is prevented from turning spool 11 forwardly, while the pull-bar is ascending, by means of two clicks 28 29 the former of which automatically engages one of the studs 15, its upper end being normally held in the path of the studs by a stop 30 and a retractile-spring 31, which latter normally holds it in contact with the stop as shown in Fig. 2.

Clicks 28 29 are fixed upon a transverse shaft 32 mounted in the sides of the case, and the free end of click 29 is normally held in the path of a circular row of pins 33 projecting from the adjacent side of spool 11; thus should the operator release the pull-bar before completing a downward stroke click 29 will engage one of said pins and prevent the spool from turning forwardly. One end of shaft 32 projects through the adjacent side of the case and has a crank 34 for throwing the clicks out of the path of the studs and the pins when it is desired to wind the ribbon upon spool 10. When the last-mentioned operation is taking place a detent 35, secured to click 29, is thrown into the path of a circular row of pins 36 on the adjacent end of drum 10, for the purpose of engaging any one of the latter, and thus prevents the taut ribbon from turning spool 10 backwardly should the operator release crank 13[a] before said winding operation has been completed. Detent 35 is made of spring metal to prevent the vibration imparted thereto by the moving pins 36 from being transmitted to crank 34; thus the latter may be held without inconvenience.

As it is desirable to wind the ribbon fairly tight upon the spools I retard their movement by a pair of detents 37 each of which consists of an arm 38 having a head 39 secured thereto by a hinge 40 which will permit the head to move in one direction only. The arms are pivotally mounted upon pins 41 projecting from the adjacent side of the case, and said arms are normally held in contact with pins 42 by means of a retractile-spring 43 connected at its ends to said arms. Heads 39 are normally held from moving independently of the arms by retractile-springs 44 attached at their opposite ends to said heads and eye-bolts 45. Springs 44 are weaker than spring 43 so that the latter will normally hold the arms in contact with pins 42. With this arrangement of detents the movement of spool 10 will be retarded while the ribbon is being wound upon spool 11, by pins 36 contacting with the adjacent detent and overcoming its spring 44; while the movement of spool 11 will be retarded in the same manner when the ribbon is being wound step by step upon spool 10, consequently the ribbon will not become slack.

Having thus described the primary mechanism in the primary case for displaying the names of each successive street before arriving at said street, I will now proceed to describe the secondary mechanism for simultaneously displaying the names of two or more following streets.

46 designates a secondary case secured to the upper front portion of case 1 and provided at its front side with a glazed opening 46[a].

47 48 designate two spools to which the opposite ends of a ribbon 49 bearing the names of the streets in regular order are attached. Said names correspond to those on ribbon 9 but are arranged in reverse order to the latter because said ribbons travel in opposite directions. Spools 47 48 are fixed upon shafts 50 51, respectively, journaled in the side of case 46. Said spools are provided at one end with clutch-members 54 55, respectively, integral with the adjacent ends of sleeves 56 57 slidingly mounted upon shafts 50 51; respectively. Sleeves 56 57 are simultaneously slid in opposite directions by a shifting-lever 58 pivotally secured to a lug 59 and having its ends loosely arranged in grooves 60 61 in sleeves 56 57, respectively.

62 designates an expansion spring interposed between one side of the case and the lower end of the shifting-lever so that the latter will normally hold clutch-member 54 in engagement with clutch-member 52 and thus cause ribbon 49 to be wound upon spool 47, step by step, at each downward movement of the pull-bar 16. Sleeve 56 is rotated in the proper direction to accomplish this result by a train of gearing consisting of a cog-wheel 63, driven by a cog-wheel 64 having a fixed sprocket-wheel 65 driven by a sprocket-wheel 66 through the instrumentality of an endless sprocket-chain 67. Cog-wheel 63 is fixed upon sleeve 56. Cog-wheel 64 is mounted upon a stub-shaft 68, and sprocket-wheel 66 is fixed upon shaft 13 so that it will rotate with the latter, hence ribbon 49 will be intermittently wound upon spool 47 simultaneously with the winding of ribbon 9 upon spool 11.

After the car reaches the end of a trip, ribbon 49 is wound upon spool 48 simultaneously with the winding of ribbon 9 upon spool 10. This result is accomplished by engaging clutch-members 53 55 so that the driving power will be transmitted to spool 48 through the instrumentality of sprocket-gearing consisting of an endless sprocket-chain 69 and sprocket-wheels 70 71 which latter are fixed upon sleeves 56 57, respectively. In order that clutch members 53 55 may be engaged simultaneously with the disengagement of clicks 28 29 from their studs and pins, I connect the lower end of the shifting-lever to the upper end of click 28 by a cable 72 operating over guide-pulleys 73.

From the above description it is obvious that ribbons 9 49 will be simultaneously wound upon spools 10 48, respectively, when crank 13 is rotated, and clicks 28 29 will be disengaged from the studs and pins simultaneously with the shifting of clutch-member 55 into engagement with clutch-member 53, when crank 34 is pushed backwardly. As the studs and pins will vibrate the clicks when ribbon 9 is being wound upon spool 11 and thus cause click 28 to vibrate the shifting-lever through the instrumentality of cable 72, I make grooves 60 61 of sufficient length to permit said lever to vibrate without affecting the position of the sleeves.

Rollers 47 48 are retarded in their movement by means of detents 74 connected by a retractile spring 75 which holds them in the path of circular rows of pins 76 77 projecting from the ends of spools 47 48 respectively. As said detents are substantially the same in construction and arrangement as detents 37 further description thereof is considered unnecessary. By allowing one roller to run idle while the ribbon is being wound upon the other, and by providing the retarding mechanism just described, it is obvious that ribbon 49 will always be kept taut.

In order that the name of the next street or station exposed at opening 8 can be readily distinguished from the names of the following streets exposed at opening 46ª, I provide a sign 78 bearing the inscription "The Next Street Is", and the representation of a hand with the index finger pointing to opening 8.

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

1. In an annunciator, a ribbon bearing suitably spaced information to be exhibited in the order in which it is arranged upon said ribbon, two spools upon which said ribbon is arranged to be alternately wound, a pull-bar for rotating one of said spools step by step so that the ribbon will be wound thereon, spacing mechanism for limiting the movements of said spool to distances corresponding with those at which the information is spaced, means for rotating the other spool so that the ribbon will be wound thereon, pins projecting from one end of each spool, and detents yieldingly held in the path of said pins.

2. In an annunciator, a ribbon bearing suitably spaced information to be exhibited in the order in which it is arranged thereon, two spools upon which said ribbon is arranged to be alternately wound, studs projecting from the end of one of said spools, a pull-bar for successively engaging the studs in order to rotate said spools step by step, a pawl arranged to successively engage the studs and thus limit the movements of said spool to distances corresponding to those at which the information is spaced, the engaging end of said pawl being arranged in the path of the pull-bar so that the former will be disengaged from the studs by the latter, and means for restoring said pull-bar to its normal position.

3. In an annunciator, a ribbon bearing suitably spaced information to be exhibited in the order in which it is arranged thereon, two spools upon which said ribbon is arranged to be alternately wound, studs projecting from the end of one of said spools, a pull-bar for successively engaging the studs in order to rotate said spools step by step, a pawl arranged to successively engage the studs and thus limit the movements of said spool to distances corresponding to those at which the information is spaced, a spring for drawing said pawl into contact with the studs, the engaging end of said pawl being arranged in the path of the pull-bar so that the former will be disengaged from the studs by the latter, and means for restoring said pull-bar to its normal position.

4. In an annunciator, a primary ribbon bearing suitably spaced information to be exhibited in consecutive order, spools upon which said ribbon is alternately wound, means for rotating one of said spools step by step to wind the ribbon thereon, spacing mechanism for limiting said steps to distances corresponding with those at which the information is spaced, means for rotating the other spool in a reverse direction to wind the ribbon thereon, a secondary ribbon bearing information corresponding to that upon the primary ribbon, spools upon which said secondary ribbon is alternately wound, gearing for rotating said spools, and means for shifting said gearing so that said spools will be alternately rotated in opposite directions synchronously with the first-mentioned spools.

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

REUBEN B. EUBANK, JR.

Witnesses:
F. G. FISCHER,
LESLIE E. BAIRD.