May 22, 1928. 1,670,629

J. H. McBRIDE

ANNUNCIATOR

Filed Dec. 4, 1926 2 Sheets-Sheet 1

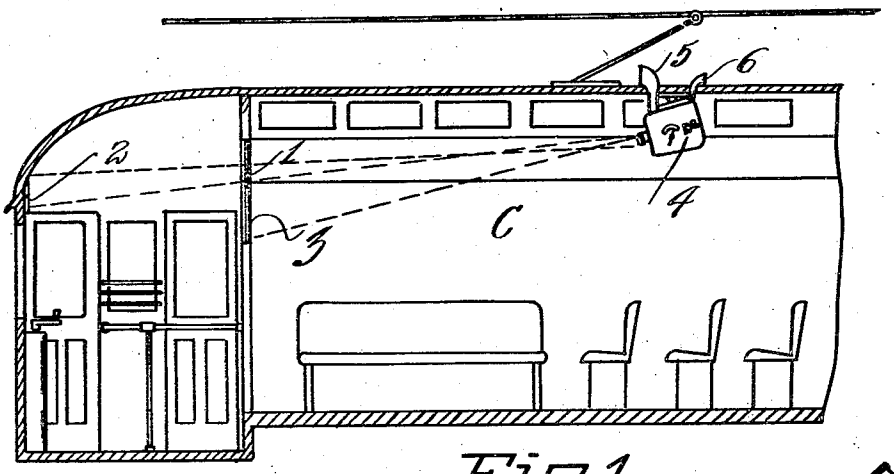


Fig. 1

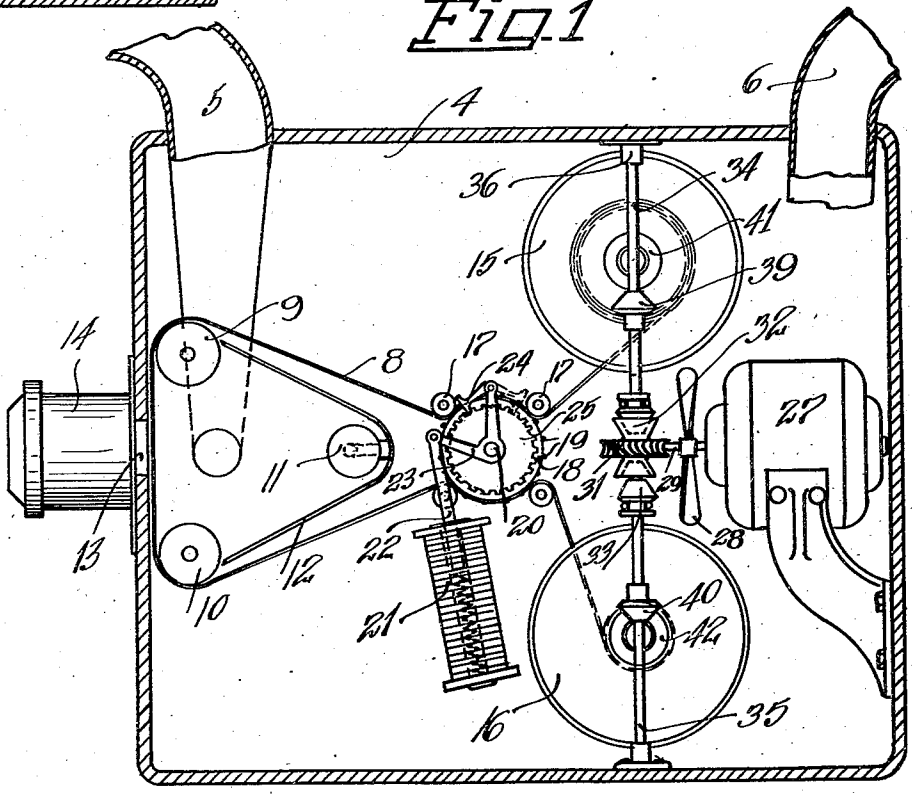


Fig. 2

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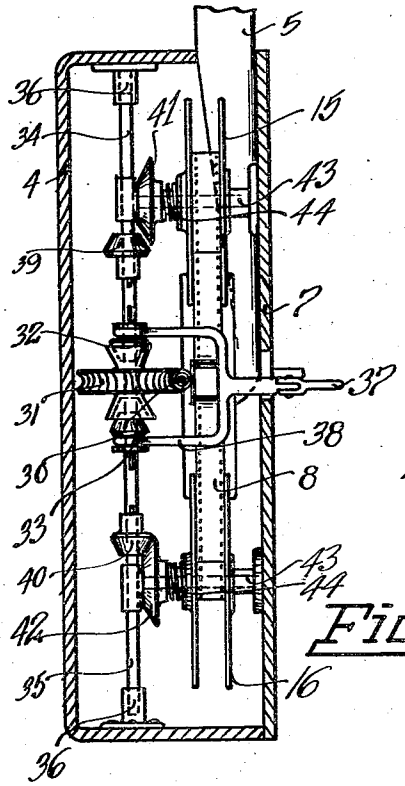


Fig. 3

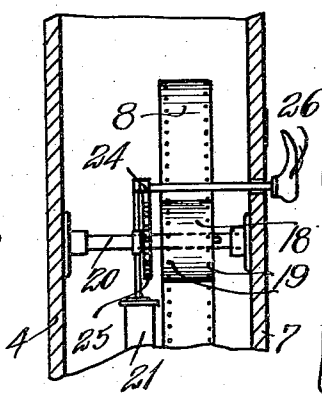


Fig. 4

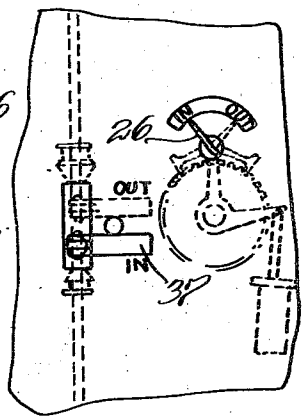


Fig. 5

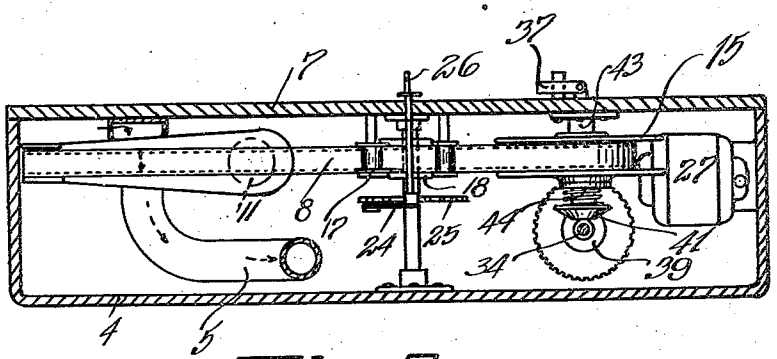


Fig. 6

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UNITED STATES PATENT OFFICE.

JAMES H. McBRIDE, OF SPOKANE, WASHINGTON.

ANNUNCIATOR.

Application filed December 4, 1926. Serial No. 152,573.

My present invention relates to improvements in annunciators of the type employed upon street railway cars and other vehicles for indicating the approach to the next street or station of the railway. My invention contemplates the use of a reversible web upon which the streets or stations are printed or otherwise applied, the web preferably being a transparent film of usual form; intermittently operating means electrically actuated, are employed for advancing the web to display the successive signs or street data; and the winding and unwinding mechanism for the web is actuated with a friction drive from an electric motor, to take up slack, maintain the web in proper condition for use, and retain the ends of the web on its respective main reels. The electrically operated drive and the electrically operated intermittently actuated means are both controlled from a switch or button that is manipulated by one of the crew of the railway car to successively advance the web as the streets or stations are passed.

In connection with the web I employ a projecting apparatus or stereoscope, with the web passing between the lamp and lens of the apparatus with an intermittent movement. It will be understood that the changeable exhibitor constituting the annunciator may be used to display or announce various kinds of subject matter, but I have herein shown and described the invention applied as a street or station indicator for railway cars. Three screens are used for the reception of the data on the web, the main screen that displays the streets or stations to the passengers on the car being semi-opaque in order that the light rays from the projecting apparatus may pass therethrough and be displayed upon an auxiliary screen or surface located in position at the front of the car to be observed by the motorman of the vehicle. A third screen or surface is employed to display an advertisement with each change in the street announcement that may be read by the passengers of the car.

The invention consists in certain novel combinations and arrangements of parts as will hereinafter be more fully set forth and claimed. In the accompanying drawings I have illustrated one complete example of the physical embodiment of my invention wherein the parts are combined and arranged according to the best mode I have thus far devised for the practical application of the principles of my invention.

Figure 1 is a vertical, longitudinal sectional view at the front end of a street railway car showing the annunciator in the clerestory of the car and directing its rays to the front of the car where the screens are located to receive the data projected from the web.

Figure 2 is an enlarged, vertical sectional view of the housing or cabinet for the projecting apparatus which is shown in side elevation and in position to wind the web on the lower main reel.

Figure 3 is a vertical, transverse sectional view of the cabinet or housing showing one end of the annunciator mechanism with the drive mechanism winding the web on the lower main reel.

Figure 4 is a detail view showing the manually operated lever for reversing the movement of the operating mechanism for the web.

Figure 5 is an exterior view showing the reversing lever for the operating wheel and the clutch lever-handle for the reverse drive of the winding reels.

Figure 6 is a longitudinal sectional view of the cabinet showing the mechanism as seen from above.

In order that the general assembly and arrangement of parts may readily be understood I have shown in Figure 1 a portion of the interior of a standard type of street railway car C in the front portion of which car are arranged the three screens or display surfaces 1, 2, and 3. The screen 1 is preferably of semi-opaque material to receive the street announcement and display it to the passengers in the car, and also to permit passage of the light rays therethough to the screen 2 which is located in position where it may be observed by the motorman, who may be thus informed as to the operation of the annunciator and correct errors if necessary. The screen 3 is located below the street screen 2 in position to receive advertisements that are arranged with the respective street indications on the film or web.

The annunciator cabinet or housing 4 is located preferably in the clerestory of the car, and vent flues 5 and 6 are carried from

the interior of the cabinet to the exterior of the car for disposing of heat that may be generated within the cabinet.

The cabinet is fashioned with a suitable door 7 through which access may be had to the interior of the cabinet or housing, and the web which bears the street indications and advertisements is designated as 8. The web is guided over an upper roller 9 and a lower roller 10, which rollers guide the web in a vertical plane in front of the electric lamp 11 that is enclosed within the reflector 12. The light rays project the subject matter on the web through an opening 13 in the cabinet, and the image is then projected through the usual magnifying lens in the cap 14 exterior of the housing or cabinet.

The ends of the web are alternately wound and unwound upon the upper main reel 15 and the lower main reel 16 and the flights of the web are guided and supported on a number of guide rollers 17 journaled on shafts disposed transversely of the cabinet.

The upper and lower flights of the web are acted upon by an operating wheel 18 located back of the reflector, standing in a vertical plane, and provided with two series of spurs or rows of pins 19 that engage in the complementary holes in the film or web. The operating wheel is journaled on an axle 20 and is intermittently turned the required distance to change the exhibited street through the action of an electrically controlled solenoid 21 which is energized at the proper time to operate the wheel. The core bar 22 of the solenoid is pivotally connected to a bell crank lever 23 and at the free end of one of the arms of the lever is pivoted a reversible ratchet or pawl 24 adapted to co-act with the ratchet wheel 25 on the axle 20. A reverse lever 26 which is accessible from the exterior of the cabinet is turned at the end of the line to swing the ratchet on its pivot for opposite engagement with the ratchet wheel in its intermittent operation to move the web or film.

The winding and unwinding movements of the web or film are accomplished to take up slack and maintain the web in proper taut position by means of an intermittently operated electric motor 27 controlled in circuit with the solenoid 21. A ventilating fan 28 is provided on the motor shaft 29 and this shaft carries a drive worm or screw 30 for co-action with the worm wheel 31 disposed in a horizontal plane in the cabinet. Two clutches 32 and 33 are provided for this wheel 31, one above and one below the wheel for alternately rotating the main reels 15 and 16 through friction drives. Shaft sections 34 and 35 supported in bearings 36 and alined to receive alternately power imparted through the respective clutches 32 and 33, and the clutch lever 37 and its yoke 38 are employed for shifting the clutches, i. e. engaging one and disengaging the other to accommodate the reverse movement of the web or film.

The upper shaft section is fashioned with a beveled friction drive disk 39 and the lower shaft section is provided with a similar disk 40 for selected or alternate engagement with the upper driven disk 41 and the lower driven disk 42. The larger driven disks are carried on the shafts 43 of the main reels and springs 44 coiled about the shafts and interposed between the respective driven disks and the reels provide friction means for imparting the rotary winding movement to the receiving reel as 16 and for permitting the delivering wheel as 15 to unwind and permit the operating wheel to move the film or web.

It will be apparent that after the annunciator has been properly set it is intermittently operated to change the exhibited or displayed data and this intermittent operation is manually controlled. The mechanism is manually reversed at the end of the line or road, and on the return trip the film or web is intermittently moved in reversed direction.

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

In a changeable exhibitor, the combination with an image projecting device, a web and its spaced rollers, and an operating wheel at the rear of the rollers adapted to engage the two flights of said web, of a pair of reels at the rear of said wheel for the web ends and a friction drive for each reel, a motor, a worm screw and worm wheel actuated by the motor, a pair of clutches for alternate use with said worm wheel, means for shifting the clutches, and operative connections between said clutches and said friction drives.

In testimony whereof I affix my signature.

JAMES H. McBRIDE.