

No. 715,547.

Patented Dec. 9, 1902.

H. F. BRISTOL.

ILLUMINATED SIGN FOR CARS AND MEANS FOR OPERATING SAME.

(Application filed Feb. 19, 1901.)

(No Model.)

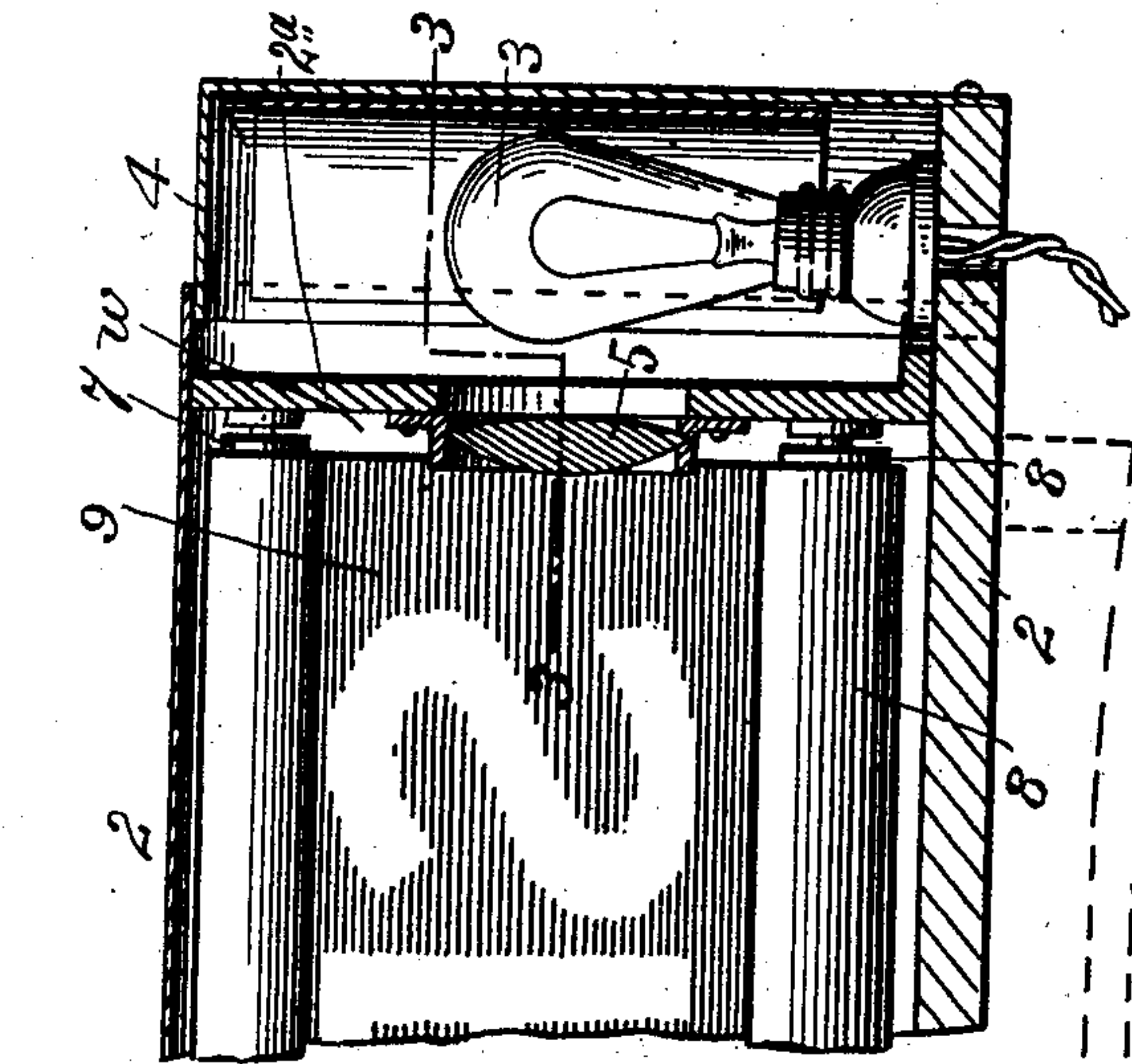


Fig. 1.

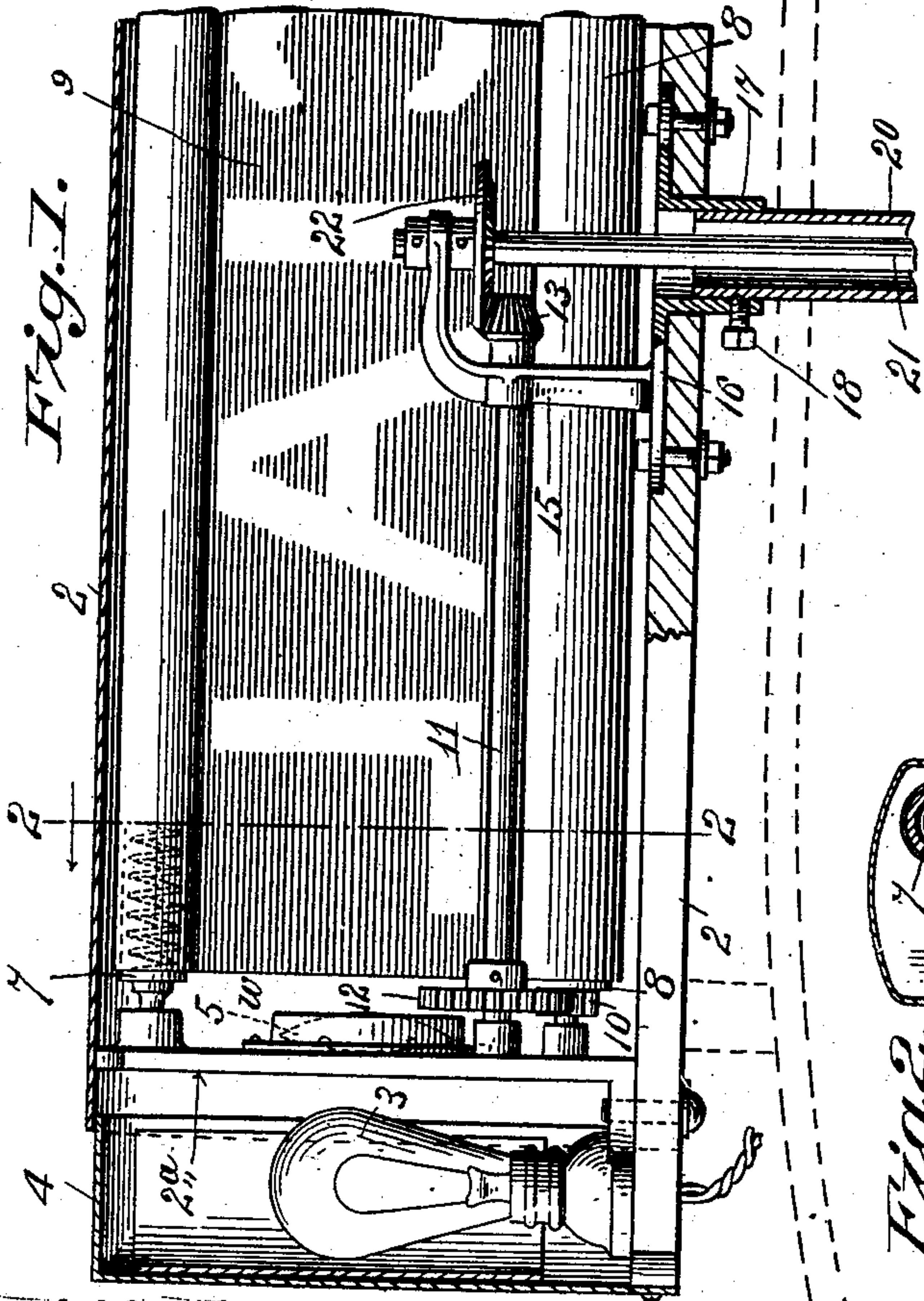


Fig. 2.

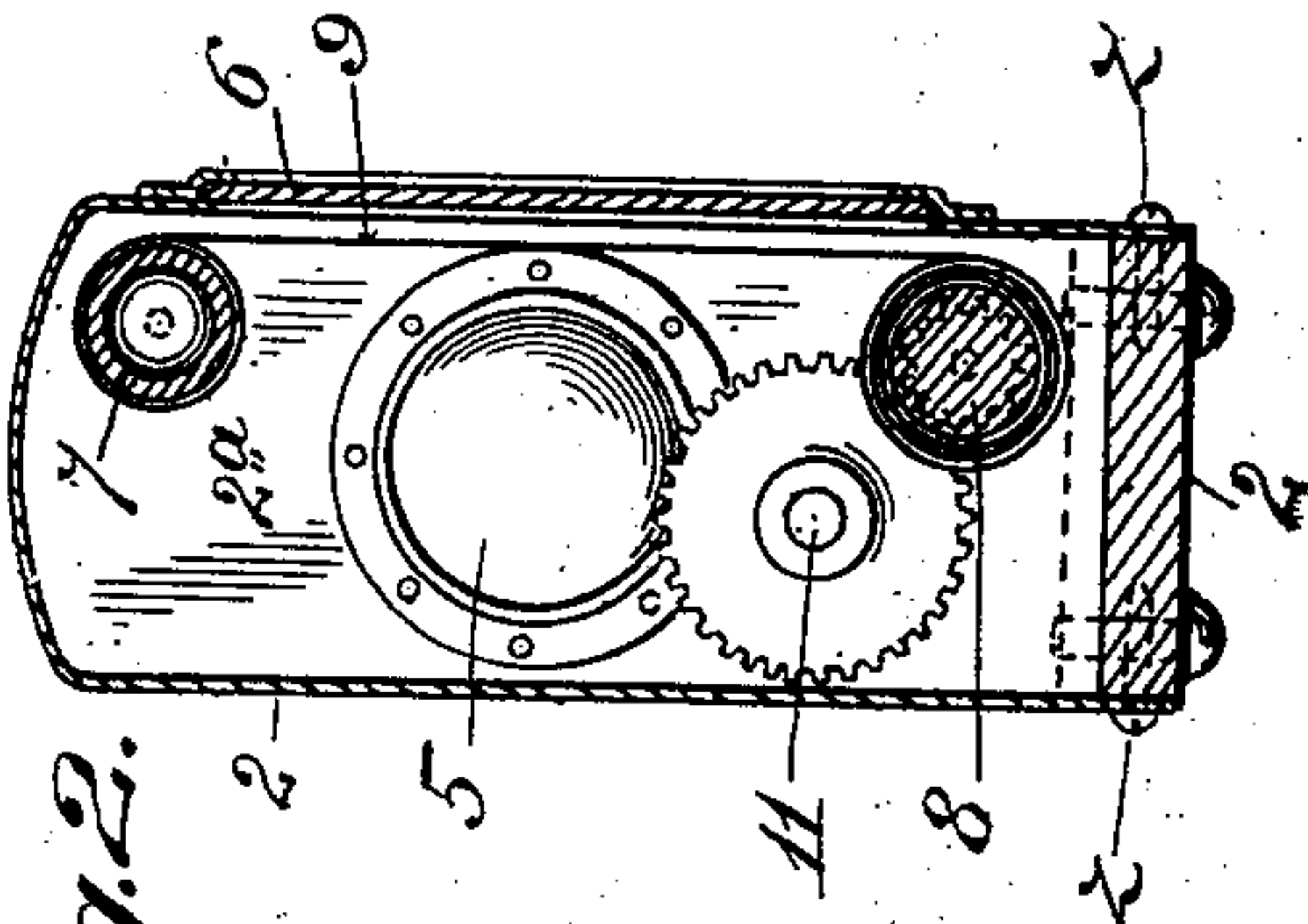


Fig. 3.

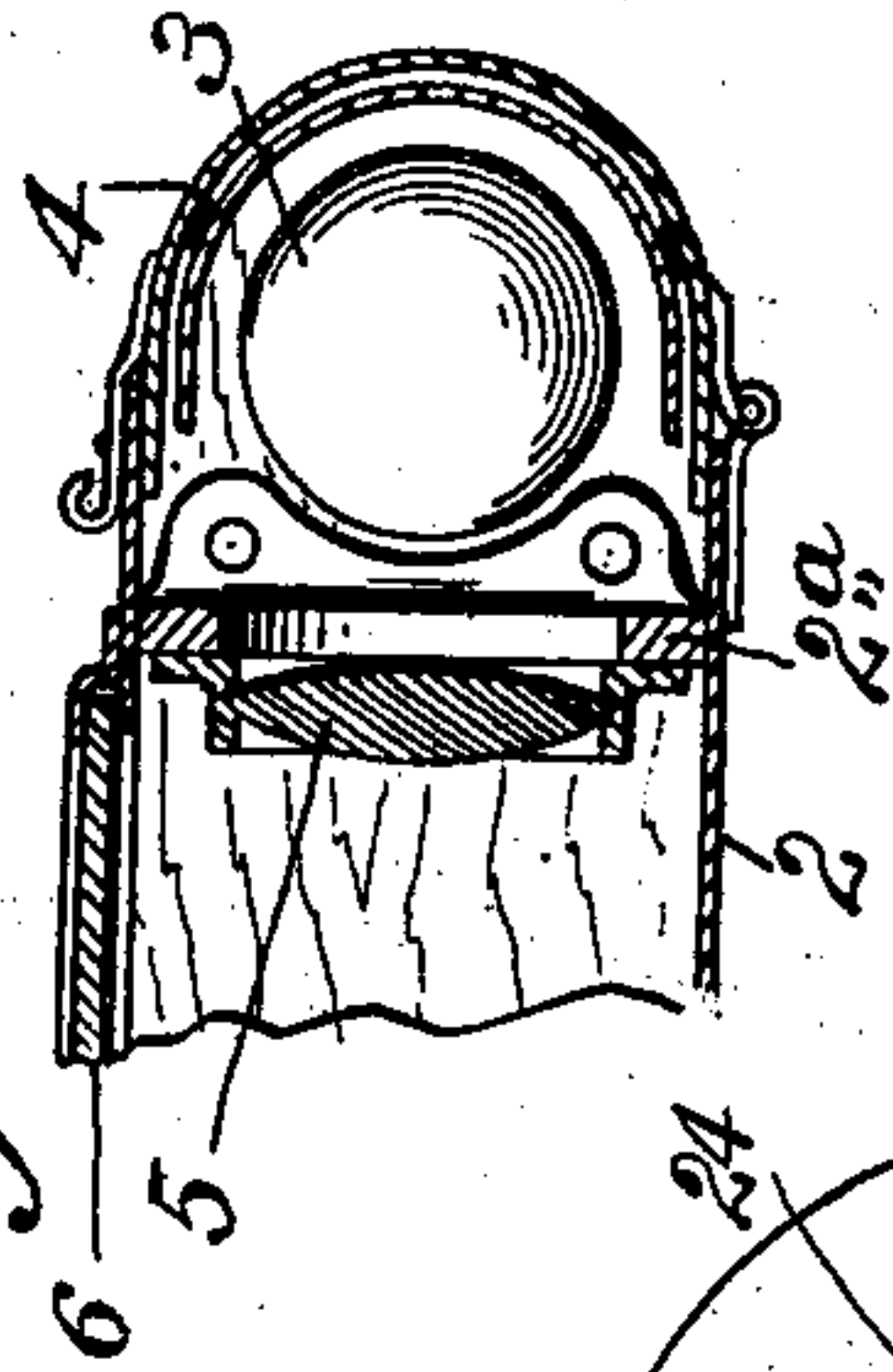
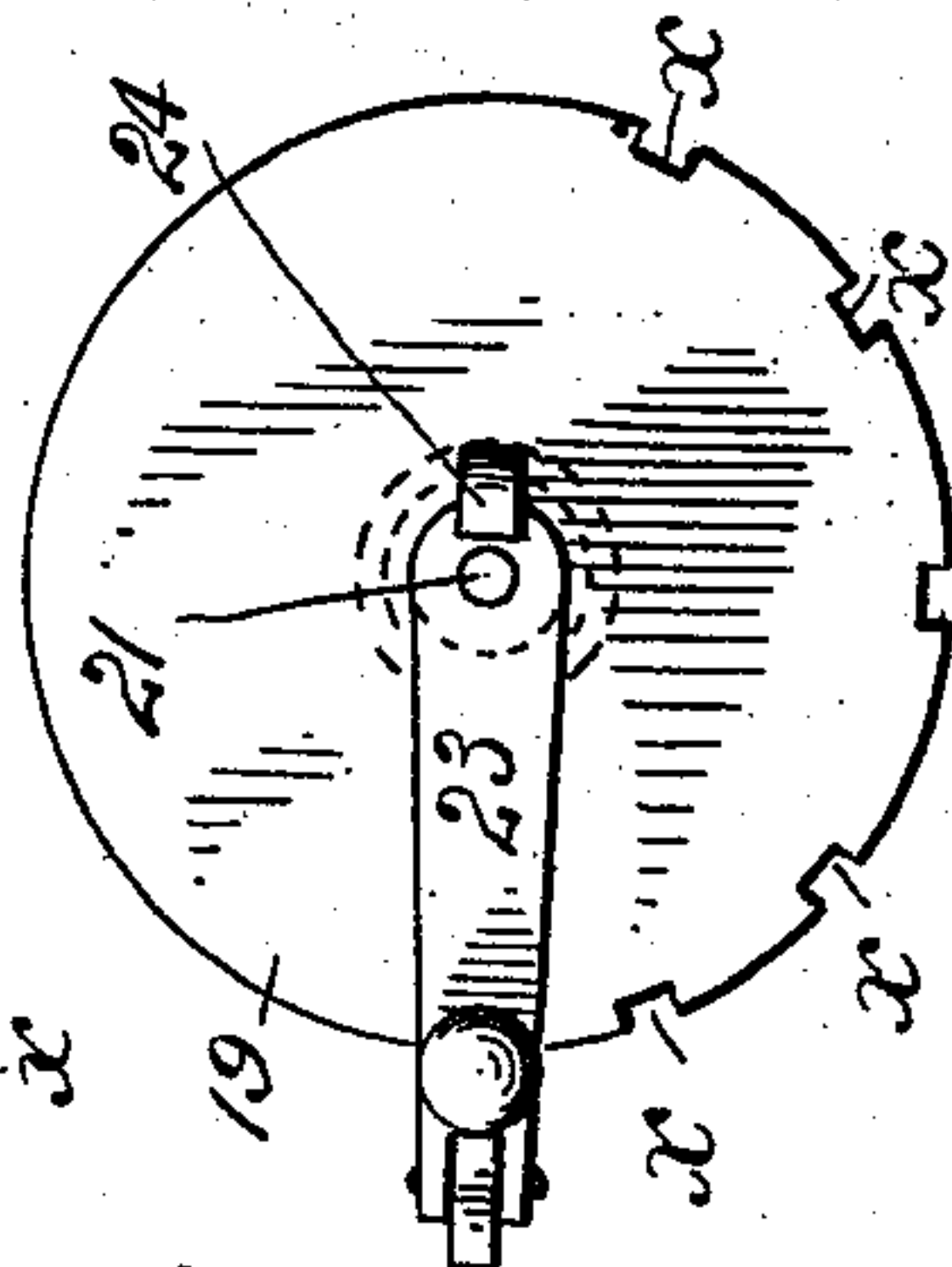


Fig. 4.



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UNITED STATES PATENT OFFICE.

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DIRECT AND MESNE ASSIGNMENTS, TO JAMES W. ANDERSON, OF
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ILLUMINATED SIGN FOR CARS AND MEANS FOR OPERATING SAME.

SPECIFICATION forming part of Letters Patent No. 715,547, dated December 9, 1902.

Application filed February 19, 1901. Serial No. 47,978. (No model.)

To all whom it may concern:

Be it known that I, HORACE F. BRISTOL, a citizen of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Illuminated Signs for Cars and Means for Operating the Same, of which the following is a specification.

This invention relates to an improved construction of illuminated signs for cars and other places, wherein a movable curtain bearing thereon various street or station indicating letters or figures is supported, containing improved means operative by a person at a distance from the sign or within a car for moving the curtain at will, whereby said various indicating elements are in succession displayed to persons outside the car, and containing improved means for maintaining said elements for any desired period in positions; and the invention consists in the peculiar construction of the sign-case and of the means therein contained for suitably illuminating the same and for roller-supporting said curtain therein, and in the peculiar means applied to said case and curtain whereby successive movements are imparted to said curtain and the latter is retained in different positions, all operative as aforesaid. I attain these objects by the mechanism and means illustrated in the accompanying drawings, in which—

Figure 1 illustrates an illuminated sign, showing the case thereof mostly in longitudinal section and the letter-bearing curtain and the operating devices thereof and the illuminating elements in side elevation, all constructed according to my invention. Fig. 2 is a vertical section on line 2 2, Fig. 1; and Fig. 3 is a view taken on line 3 3, same figure. Fig. 4 is a bottom plan view of certain curtain-operating mechanisms hereinafter fully described.

In Figs. 1, 2, and 3 of the drawings, 2 indicates the sign-case, in which is the compartment *w*, which comprises a suitable base, preferably of wood, having a superposed part, preferably of sheet metal, as shown in said figures, attached by the lower borders to said base by screws *z z*, and on the front side

thereof, held in suitable clips, is a glass plate 6, through which the below-described indicating characters on said curtain are plainly visible. The ends 2^a of said sign-compartment *w* are perforated, as shown in Figs. 1 and 3, to admit light from one or more lamps 3, as below described, which lamps are secured on the bottom of the sign-case, as shown, just outside of the vertical ends 2^a of the same, leaving portions of the said bottom and top and sides of the sign-case projecting beyond each of said ends thereof, as shown in Figs. 1 and 3. Said end projecting parts of the case, together with a lamp-inclosing cover 4, hung to swing over and away from each lamp, as shown in Figs. 1 and 3, constitute a lamp-chamber at each end of said sign-case for protecting the lamp therein and serving to so confine the light of each lamp that it cannot shine in any direction excepting directly back of the sign-bearing curtain 9 and through a lens, as below described. One or more of said lamps may be used. Oftentimes it is found that by using a lens, as described, one lamp of strong candle-power suffices to make the letters on the sign-curtain quite clear. The lamps 3 illustrate those of the ordinary incandescent electric type, together with parts of electric connections therefor; but other lamps may be employed, if desired. In each of said sign-case ends 2^a, opposite said lamps 3, is fixed a light-magnifying lens 5 in a suitable holder, as shown in Figs. 1, 2, and 3, whereby the brilliancy of the light from said lamps back of the sign-bearing curtain 9 is greatly increased. The lettered portions of said sign are transparent. The said curtain 9 is opaque, excepting the parts thereof on which the letters, as shown in Fig. 1, are formed, and said parts of the surface are arranged to be transparent in order that the letters may be highly susceptible to the action of the bright light back of the curtain. A convenient and effective way of making said curtain is to take a strip of thin white textile material and to temporarily attach a series of rows of suitable letters or figures across the same and then apply an opaque coloring-matter to those parts of the surface not covered by said letters.

The curtain 9 is supported on two rollers 7 and 8, the shafts of said rollers being supported by and rotating in cup-like bearings, as shown in Fig. 1, secured on the inner face of said ends 2^a of the sign-case 2. The upper one, 7, of said rollers is of the class known as a "spring-curtain" roller, and the normal action of the internal spring thereof is such that it automatically winds the curtain 9 thereon, and so draws upon it as to keep the part thereof between the two rollers under sufficient tension to hold the lettered part thereon steady, to the end that the word or words may be easily read. The lower curtain-holding roller 8 runs freely in its bearings under the spring-action of said upper roller 7 when permitted so to do, whereby the curtain 9 for change of sign-matter is drawn upward and wound onto the upper roll 7. Means are herein provided for automatically controlling the rotation of said two rollers 7 and 8, to the end that only such degree of rotary movement thereof shall be permitted as may be requisite for displaying the next succeeding word to that in view on the curtain. Furthermore, by the use of said curtain-controlling means the curtain may, if desired, be permitted to display any name thereon at the will of the operator. Said curtain-controlling devices, operative by a person within a car, conjointly with said spring-roller 7, are constructed and operate as follows: In the drawings beneath the sign-case 2, Fig. 1, are two parallel dotted lines, which indicate the roof-line of a car and substantially the relative positions of the sign-case and said car-roof when the sign devices shall be mounted thereon. On the inner side of the base of the sign-case 2 is fixed a metallic bracket-stand 15, having a flat base 16, which is let into said base of the sign-case 2 flush with the surface of the latter and is bolted thereto, as shown, and the base 16 of said bracket-stand 15 has thereon a tubular pending socket 17 extending through the base of the sign-case, as shown, in the side of which socket 17 is a set-screw 18. A pending tube 20 is rigidly secured in said socket 17 by said set-screw 18, and to the lower end of said tube is rigidly fixed a dial-plate 19, in the border of which are several notches x , the number of which is equal to the number of names or other indications borne upon said sign-curtain 9. A shaft 21 extends vertically through the center of said dial-plate 19 and said tube 20 and entering said sign-case 2 has its upper end passing through and supported for rotation in the extremity of said bracket-stand 15, a collar being pinned to the upper end of said shaft, as shown in Fig. 1, above said bracket-stand 15, and securely suspending said shaft 21 on said arm. Said shaft has fixed on the lower end thereof below said dial-plate 19 a crank 23, having a pending handle 25 near the free end thereof and a dial-engaging latch 26, pivoted to said

crank beyond said handle. A finger-rest 24 is fixed on the hub of said crank 23 in a position opposite said handle 25. Connections between said shaft 21 and the lower curtain-roller 8 are provided, as below described, whereby through the rotary movement of said shaft 21 by a person within a car on which the curtain-holding devices are mounted said lower roller 8 may be positively rotated to wind the curtain 9 thereon, drawing it downward from the upper spring-roller 7, or to govern the upward movement of said curtain when the upper spring-roller 7 is permitted to rotate and wind the curtain thereon, and said connections are constructed and operate as follows: A bevel-gear 22 is fixed on said shaft 21, as shown. A horizontal shaft 11, having one end supported in said bracket-stand 15 and its opposite end in a suitable bearing, as shown, on one end of the sign-case 2, has a beveled pinion 13 fixed thereon, which engages said bevel-gear 22, and on the opposite end of said shaft 11 is fixed a gear 12, which engages a pinion 10 on the shaft of said lower roll 8.

The operation of the curtain-controlling devices is as follows, the parts having the relative positions shown in Fig. 1: The operator grasps the handle 25 and the latch 26 and at the same time carries one or more fingers around the finger-rest 24, and then by pressing the lower end of said latch its dial-plate-engaging end is disengaged from the dial and at once the spring in the upper curtain-roller acts to rotate the lower curtain-roller and draw up the curtain and rotate the lower roller; but this tendency to curtain-and-roller movement is controlled by the operator, who permits such a degree of rotation of the shaft 21 as is required to bring the succeeding or other sign to view, and then said latch becomes reengaged with one of the notches of the dial and retains the last-displayed sign in view as long as required. The said latch-engaging notches x are in the periphery of the dial arranged both in varying and equal degrees of separation, according to the degree of movement required to be given to the curtain 9, to bring lettered matter thereon of one, two, or more lines covering varying superficial areas to proper position back of the glass plate 6 of the sign-case 2. The preferable manner of manipulating said latch 26 after swinging its dial-engaging end out of one of said notches x is after a slight movement of the crank 23 to let the upper end of said latch swing against the border of the dial, and thus automatically become engaged with the succeeding notch, whereby the curtain movement will be arrested at the proper time.

At the end of the car-route wherein the curtain has been moved to display the several signs thereon it becomes partly wound upon the roller 7, and to replace it again upon the roller 8 the operator disengages the crank 23,

as before, and turning the shaft 21 in the proper direction the curtain becomes rewound upon the roller 8, as before.

5 Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

10 In an illuminated sign, the combination with the case, and means for illuminating the same, of a sign-bearing curtain confined within the case, a pair of spaced winding and unwinding rollers carrying the curtain, one of said rollers being spring-actuated, a rigid bracket-stand projecting into the case and having a base member mounted upon the floor
15 of the latter, a pendent housing-tube having a detachable connection at its upper end with the base member of the interior bracket-stand, a dial-plate rigidly fitted to the lower end of

said tube and provided with a series of peripheral notches, an operating-shaft extending through the tube and journaled at its opposite ends respectively on the interior bracket-stand and in the exterior dial-plate, said shaft having a geared connection with the other of said rollers, a swinging crank fitted to the lower end of the shaft and having a rigid handle at its swinging end and a rigid finger-grip at its heel end, and a pivotal latch pivoted upon the swinging end of the crank and having one end cooperating with the notches of the dial-plate. 20 25 30

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