L. L. SIMPSON.

ANNUNCIATOR.

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1,038,795.

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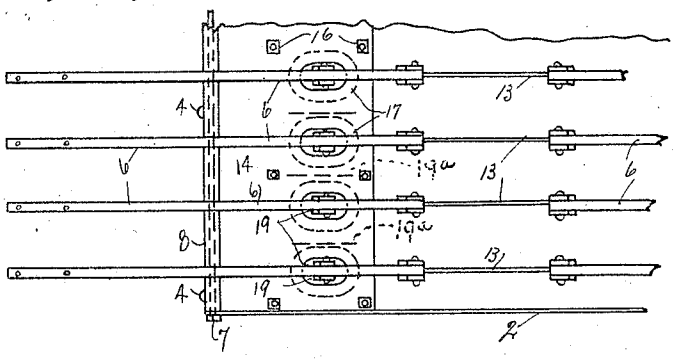


Fig. 2.

Fig. 1.

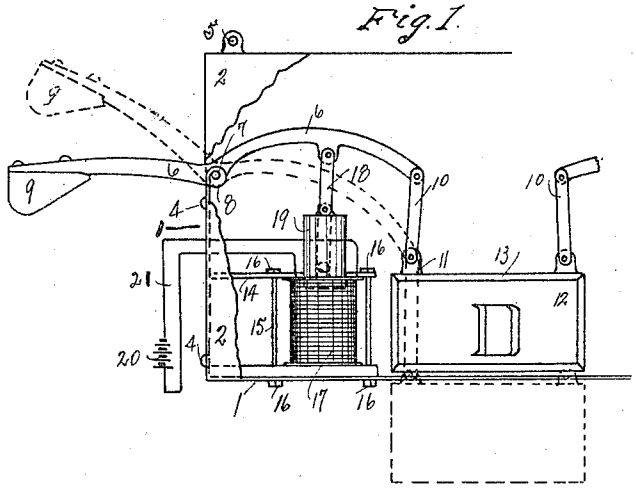


Fig. 5.

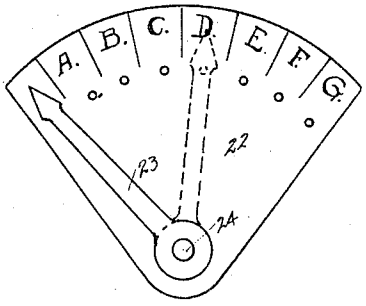


Fig. 3.

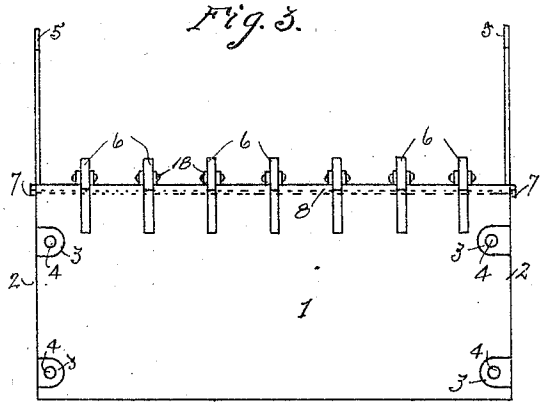
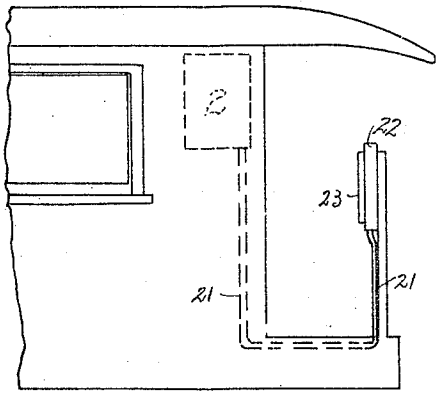


Fig. 4.



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UNITED STATES PATENT OFFICE.

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ANNUNCIATOR.

1,038,795. Specification of Letters Patent. Patented Sept. 17, 1912.

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To all whom it may concern:

Be it known that I, LEO LEON SIMPSON, a citizen of the United States, and a resident of Seattle, in the county of King and State of Washington, have invented a certain new and useful Improvement in Annunciators, of which the following is a specification.

The principal object of this invention is to provide an improved annunciator especially adapted for use in street cars, coaches and the like which is operated by combined mechanical and electrical means and at all times under complete control of the driver.

The invention will be fully described in the following specification and shown in the accompanying drawings—in which,

Figure 1 is a side elevation of the device with parts broken away; the parts broken away being identical with those shown. Fig. 2 a plan view with parts broken away. Fig. 3 an end elevation. Fig. 4 a fragmentary view of an ordinary street car showing the manner of applying my device thereto. Fig. 5 a plan view of the switchboard.

Referring now more particularly to the drawings, 1 is a metal sheet bent at right angles, as shown in Fig. 1. 2 designates the side coverings of similar sheets, and having the ears 3 bent over the edges of the sheet 1 (Fig. 3) and secured thereto by the screws 4. This box like structure may be suspended for instance, at either end of the car by means of the hangers 5, and constitutes the housing for the working mechanism which I will now describe.

6 designates a series of levers pivoted upon the rod 7 which runs through the loop or eye 8 formed at the upper edge of the sheet 1, and upon the free ends of which levers are the weights 9. To the inner end of each of these levers is pivotally attached one end of the link 10, to the other end of this link is similarly attached the ear 11 of the card 12, which may be of ordinary paste-board reinforced with the metal strip 13. The bottom of the housing is cut away directly beneath these cards 12 so that the same may drop therethrough when required, as will be explained. Parallel with the horizontal portion of the sheet 1 is a similar sheet 14, passing through both of which sheets are the binding posts 15 which are reduced and threaded at their ends to receive the nuts 16. Between the sheet 14 and the horizontal portion of the sheet 1 are the electromagnets 17. Suspended from the levers 6, by means of the links 18, are the metallic plungers 19. The magnets 17 are connected with the battery 20 by the wires 21.

22 is the switch-board, having the arm 23 pivoted at 24 so that the arm may be swung into any one of the divisions A, B, C, D, E, F, G, to close the electrical circuit, as will be understood.

It will be appreciated that economy of space is of great importance in the use of this class of annunciators and that such economy results from the use of my improved construction, the working levers, magnets and their connections being arranged side by side, and if necessary can be closed up together almost entirely, the spaces between the magnets being separated only by a thin sheet of card board or other insulating material such as indicated by the reference numeral 19ª (Fig. 2).

From the foregoing it is believed that the construction and operation of my device will be fully understood by those skilled in the art.

When the arm 23 is in the position shown in Fig. 5 the circuit is broken and the magnets 17 deënergized, which causes the levers 6 to swing about their pivots 7, the weighted ends 9 descending by gravity and their opposite ends ascending carrying with them the plungers 19 and their attached cards 12 which latter are then obscured by the sides 2. Now, supposing that the device is attached to an ordinary street car, for example, an occupant of the car such as the motorman, upon the car reaching an intersecting street "D", swings the arm 23 around to the corresponding division "D" upon the switchboard 22, as shown in dotted lines (Fig. 5), thus closing the electrical circuit from the battery 20 thereby energizing the magnet 17 which through its connections controls the card 12 marked "D". This energization of the magnet causes its plunger 19 to be drawn downwardly, overcoming the weighted end 9 of the lever 6, carrying with it its link 18, inner end of its lever 6, link 10 and its attached card 12 which is marked to correspond to the division upon the switchboard to which the arm 23 has previously been moved. The parts are now in their dotted positions as shown in Fig. 1, the card 12 marked "D" being exposed to view below the bottom of the horizontal

portion of the sheet 1. After holding the arm 23 in its dotted position for a suitable interval of time the same may then be returned to its normal position, which causes all the magnets 17 to be deënergized and the resultant return of the cards to their normal positions behind the sides 2, until the name of the next street is desired to be announced when the operation just described is repeated.

I have shown but a limited number of cards 12 but it is obvious that any desired number may be used with equal efficiency, within reasonable limits, and while I have shown my device as applied to a street car it is clear that the same may be successfully applied to many other analogous uses.

Many other changes as to construction and detail will readily suggest themselves to others skilled in the art, without departing from the spirit and scope of my invention, and I do not, therefore, desire to be limited to the exact form of construction herein shown and described except as set forth in the appended claims.

What I claim as new and desire to protect by Letters Patent of the United States is—

1. The combination in an annunciator of a housing and rods extending along two of its sides, levers pivoted upon said rods and arranged in oppositely disposed pairs, the inner ends of the levers upon one of the rods being in spaced relation to the inner ends of the levers upon the other rod and all the levers having their outer ends weighted; display cards, the length of each of which substantially equals the space between the inner ends of each pair of levers; means for attaching one of said cards between the inner ends of each pair of levers whereby each card has a true vertical and free movement when its levers are moved about their pivots, said means including a substantially vertical link extending from the inner end of each lever to the upper edge of the card, a magnet under each lever to attract the inner end thereof, and means for energizing and deënergizing the two magnets of a pair of levers at a time.

2. The combination in an annunciator of a housing having its bottom formed of a sheet of metal and two of its sides formed by upwardly bending each end of said sheet, eyes formed by rolling the upper edges of said sheet, rods extending through said eyes, a series of levers arranged in pairs oppositely disposed upon each side of said housing and pivoted upon said rods, a magnet for each lever and means for energizing and deënergizing the same, display cards, means for suspending said cards between the inner ends of said levers whereby the cards have a true and free vertical movement, said means including links extending vertically from the upper corners of each card to the corresponding inner ends of a pair of said levers.

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