P. L. DIRKING.

ELECTRICALLY OPERATED PRICE CARD.

APPLICATION FILED FEB. 14, 1908.

926,393. Patented June 29, 1909.

Fig. 1.

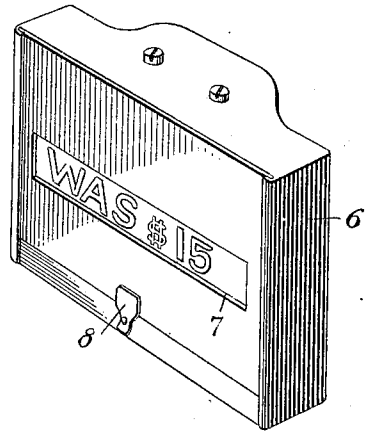


Fig. 2.

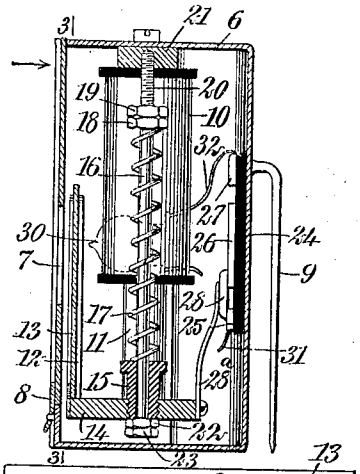


Fig. 3.

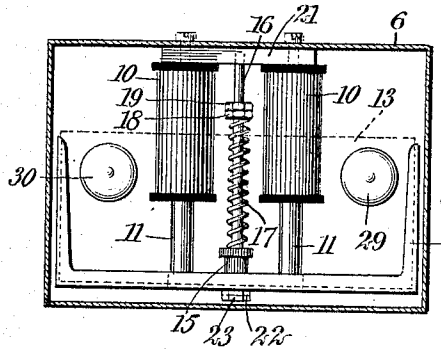


Fig. 4.

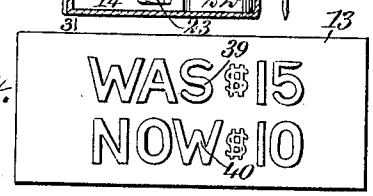
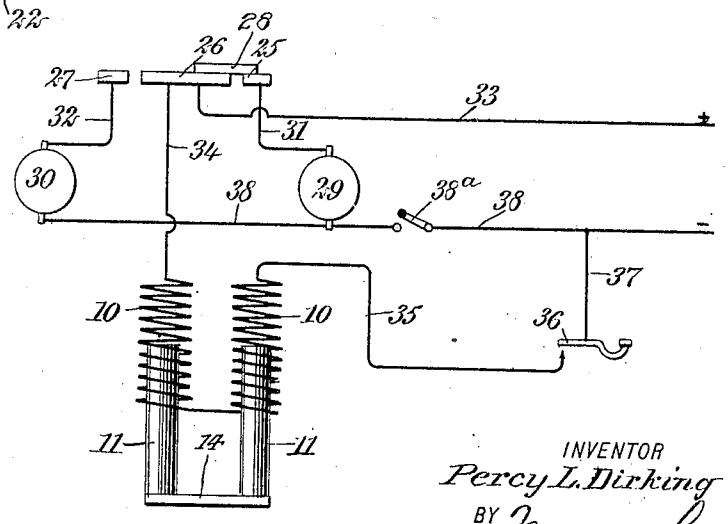


Fig. 5.



WITNESSES

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ELECTRICALLY-OPERATED PRICE-CARD.

No. 926,393. Specification of Letters Patent. Patented June 29, 1909.

Application filed February 14, 1908. Serial No. 415,817.

To all whom it may concern:

Be it known that I, PERCY L. DIRKING, a citizen of the United States, and a resident of Spokane, in the county of Spokane and State of Washington, have invented a new and Improved Electrically-Operated Price-Card, of which the following is a full, clear, and exact description.

My invention relates to signs, my more particular object being to produce an electrically-operated price card of simple construction and possessing certain structural advantages, as hereinafter described and pointed out in the accompanying claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view showing the casing used for containing the mechanism, this casing being provided with a slot through which the movable card may be seen; Fig. 2 is a substantially central vertical section through the casing, showing the card, the reciprocating platform upon which it is mounted, the magnetic mechanism for actuating this platform, and also showing the contact mechanism; Fig. 3 is a section upon the line 3—3 of Fig. 2, looking in the direction of the arrow and showing the incandescent lamps for illuminating the card, the solenoids for raising the card rack and the spring for carrying part of the weight of the armature and attachment; Fig. 4 is a plan view of the card removed from the card rack and provided with legends indicating prices; and Fig. 5 is a diagram of the wiring and electrical connections.

A casing is shown at 6 and it is provided with a slot 7 disposed across its front, and it is further provided near its bottom with a fastening 8. Mounted upon this casing are supports, one of which is shown at 9, for the purpose of sustaining it. A pair of solenoids are shown at 10 and they are provided with movable cores 11. A card rack is shown at 12, and mounted within it is a card 13 which may serve as a price card, as hereinafter described. This card rack is mounted upon a platform 14 which is connected with the cores 11 and adapted to reciprocate therewith when the solenoids 10 are energized and deënergized.

A sleeve 15 extends through the platform 14 and is connected securely therewith. Connected securely with the sleeve 15 is a spiral spring 17, and extending through this spiral spring and through the sleeve 15 is a guide rod 16. A nut 18 and a lock nut 19 are mounted upon the upper portion of this guide rod which is provided with a thread 20 for this purpose. A plate 21 supports the solenoids 10. Mounted upon the lower end of the guide rod 16 is a nut 22 secured in position by a lock nut 23 so as to serve as a limiting stop for preventing undue downward travel of the card rack 12. The spring 17 hangs from the nut 18.

A plate 24 of insulating material is mounted within the casing, and secured upon it are contact plates 25, 26, 27 spaced apart, as indicated in Fig. 2. A contact slide 28 is mounted upon a leaf spring 28^a, in such manner as to bear against one or more of the plates 25, 26, 27. The leaf spring 28^a is carried by the platform 14. Incandescent lamps are shown at 29, 30 and are supported by the casing. A wire 31 connects the contact plate 25 with the incandescent lamp 29. Another wire 32 connects the lamp 30 with the contact plate 27. A wire 33 is connected with the plate 26 and from this plate a wire 34 extends to the solenoids 10. From the latter a wire 35 leads to a key 36, or equivalent device for periodically opening and closing the circuit, and from this member a wire 37 leads to another wire 38. This wire is connected with both of the lamps 29, 30, through a hand switch 38^a. The price card 13 is provided with legends 39, 40 preferably indicating prices, and is translucent so as to exhibit these legends.

The operation of my device is as follows: The card 13 being mounted within the card rack 12, as indicated by dotted lines in Fig. 3, and the switch 38^a being closed, the key 36, or equivalent member, is caused to make the contact. A circuit, controllable entirely by the key 36, is thereupon closed, this circuit being as follows: wire 33, contact plate 26, wire 34, solenoids 10, wire 35, key 36, wire 37, wire 38, thence through the source of electricity, not shown, to wire 33. The solenoids 10 being energized, the cores are lifted and carry with them the card rack 12 and the card 13. The legend 39 being normally exposed to view through the slot 7, when the card is raised this legend is hidden, and in its place the legend 40 makes its appearance.

The card remains in its uppermost position so long as the circuit above traced remains closed, and as soon as this circuit is opened the spring 17 allows the platform 14 to gently descend by force of gravity, thus again exposing the legend 39.

It will be understood that the platform 14 and parts movable with it, including the card rack 12, hang from the lower end of the spring 17, and that this spring pulls in the same direction as the solenoids 10. This is for the purpose of allowing the platform to return gently to its normal position, and to carry part of the weight of the platform, thereby permitting it to act under the influence of feeble currents.

While the circuit above traced is controlled directly by the key 36, there are other circuits not thus directly controlled. When the contact slide 28 is in its lowermost position, as indicated in Fig. 2, it connects together the contact plates 26, 25, as indicated by the diagram in Fig. 5. The following circuit is thus completed: wire 33, contact plate 26, contact slide 28, contact plate 25, wire 31, lamp 29, wire 38, to the source of power, and thence to wire 33. This circuit lights the lamp 29 at the instant when the platform is practically in its lowermost position. Upon the up stroke of the platform, however, the slide 28 connects together the contact plates 26, 27, thereby completing another circuit, as follows: wire 33, contact plate 26, contact slide 28, contact plate 27, wire 32, incandescent lamp 30, wire 38, to source of power, thence to wire 33. The lamp 29 is therefore lighted when the platform 14 is practically at its uppermost limit. Such being the case, the lamps 29, 30 successively flash, one at the instant when the legend 39 is exposed, and the other when the only legend visible is the one numbered 40. The effect upon the eye of the observer, therefore, is simply that one legend, together with the light for exhibiting it, disappears, and that the other legend, accompanied by the light for exhibiting it, makes its appearance, the legends thus being presented alternately to the gaze of the observer. The hand switch 38^a controls the lamp circuit only, the solenoid circuit being independent of it, as will be seen from Fig. 5.

Except as required by the scope of the appended claims, I do not limit myself to the particular apparatus above described, nor to the exact arrangement of the electrical connections, nor in all instances to the use of lamps in the particular relation stated.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. The combination of a casing, a magnetic member mounted therein, a platform provided with means whereby it may be lifted by said magnetic member, a card provided with a plurality of legends, means for supporting said card upon said platform so that said legends are exposed successively to view as said platform is moved, and means for automatically illuminating said legends at the instant only when they occupy certain predetermined positions.

2. The combination of a reciprocating platform, a display member mounted thereupon and provided with legends to be brought successively into view, contact mechanism controllable by said platform, and a plurality of electric lamps connected with said contact mechanism, said lamps being thus controllable by movements of said reciprocating platform.

3. The combination of a reciprocating platform, a display member mounted thereupon and provided with legends to be brought successively into view, magnetically-operated mechanism for actuating said platform, contact mechanism controllable by movements of said platform, and electric lamps connected with said contact mechanism and adapted to be lighted and extinguished thereby.

4. The combination of a display member provided with a plurality of legends, a spring for supporting said display member, and a magnetic member for lifting said display member by aid of said spring, said magnetic member thus consuming a minimum of electric energy.

5. The combination of a movable display member, means for imparting a reciprocating motion thereto, a contact to be closed by the movement of said display member in one direction, a different contact to be closed by the movement of said reciprocating member in the opposite direction, separate lamps connected with said contacts and each adapted to be lighted when said reciprocating member reaches a predetermined point in its travel, and to be extinguished when said reciprocating member leaves said point.

6. The combination of a casing provided with a slot, a movable platform mounted within said casing, magnetic mechanism for moving said platform in one direction, a spring for cushioning the movement of said platform in the opposite direction and for assisting said magnetic mechanism a card rack mounted upon said platform, a card mounted within said card rack and provided with legends, said legends being adapted to register with said slot, an electric lamp for illuminating said legends, and contact mechanism controllable by movements of said platform for lighting and extinguishing said lamp.

7. The combination of a reciprocating member provided with legends, mechanism for actuating said member so as to bring said legends alternately into substantially the same position, a lamp disposed adjacent to

said reciprocating member, and means controllable by said last-mentioned mechanism for automatically lighting said lamp when one of said legends reaches said position, and for extinguishing said lamp when said legend moves from said position.

8. The combination of a movable display member provided with a plurality of intelligible characters, means for actuating said display member so as to cause one of said characters to occupy a position formerly occupied by another, a plurality of stationary lamps disposed adjacent to said position, and mechanism for lighting said lamps alternately and for extinguishing the same.

9. The combination of a display member provided with a plurality of legends, means for causing said display member to reciprocate so as to move said legends into substantially the same position, a plurality of stationary lamps, one for each legend, said lamps having different positions relatively to said first-mentioned position, and means for automatically lighting and extinguishing said lamps one at a time.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

PERCY L. DIRKING.

Witnesses:
H. E. SCHULER,
MARK SALMON.