Feb. 8, 1938. M. G. RUPP 2,107,767

ELECTRIC SIGN

Filed April 10, 1936

Fig. 1

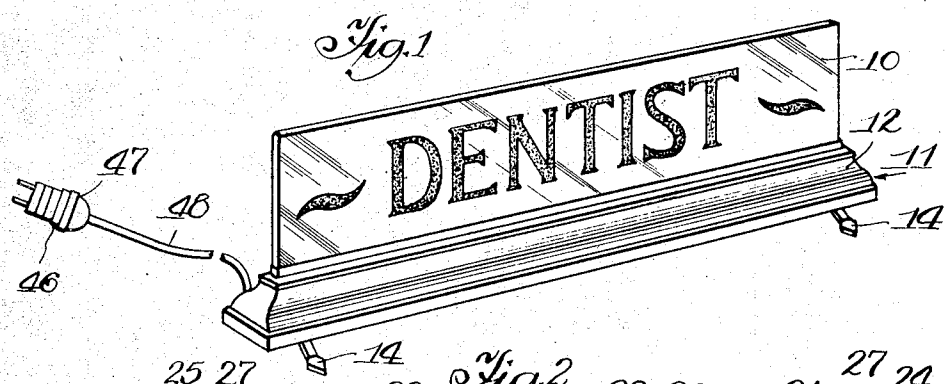


Fig. 2

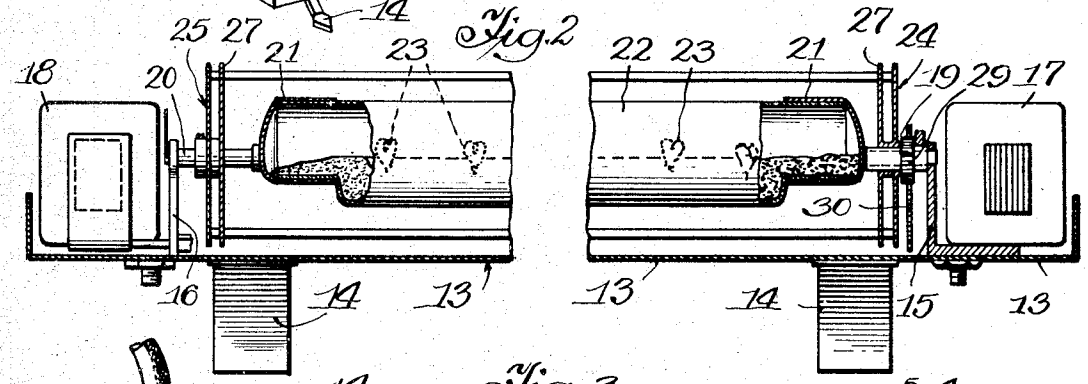


Fig. 3

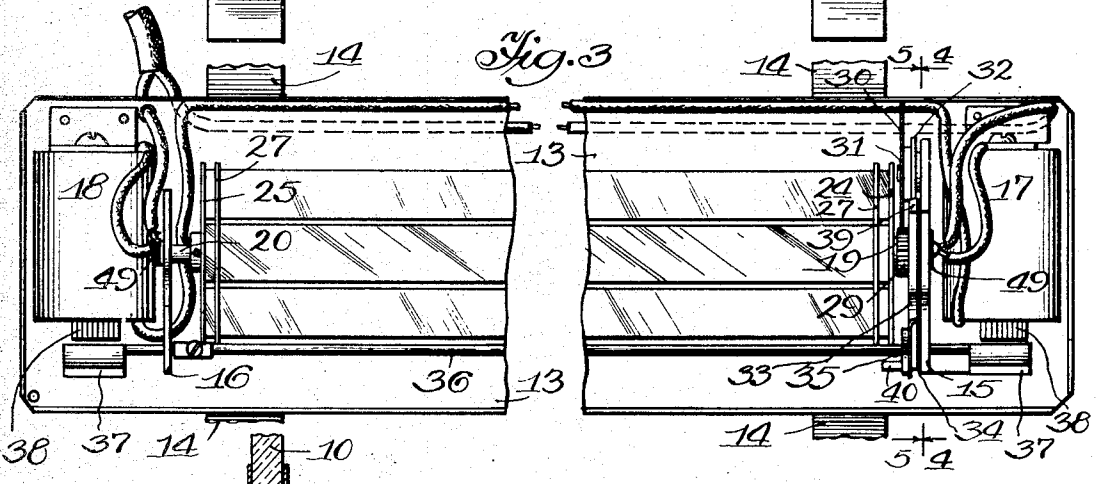


Fig. 4

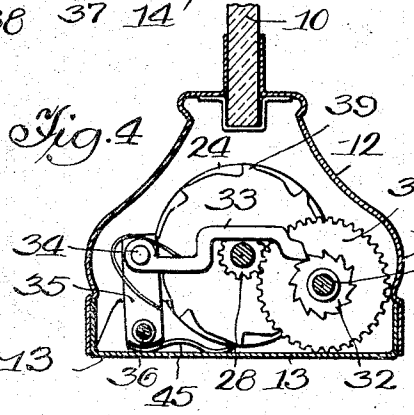


Fig. 5

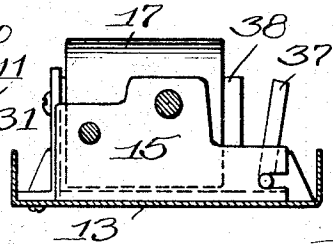
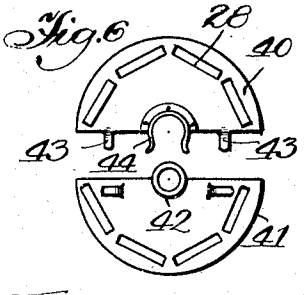


Fig. 6



Witness:
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UNITED STATES PATENT OFFICE

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ELECTRIC SIGN

Max G. Rupp, Chicago, Ill.

Application April 10, 1936, Serial No. 73,612

3 Claims. (Cl. 40—130)

This invention relates to improvements in electric signs.

One object of the invention is to provide an electric sign comprising a piece of glass on which is etched, sandblasted, painted or otherwise formed the advertising word or words or designs which are illuminated by light directed edgewise through the glass, the device being provided with means for varying the color of the illuminated sign automatically.

Another object of the invention is to provide mechanism for varying the color of the illuminated letters or characters which can be operated by either direct or alternating current and which is so arranged that it can be concealed within an ornamental base or top casing which supports the glass.

A further object is to provide an intermittent electro-magnetically operated mechanism for changing the color of the illuminated letters, words or characters of the sign, thereby eliminating the use of a motor or other relatively costly parts.

Other objects relate to various features of construction and arrangement of parts which will be apparent from a consideration of the following specification and accompanying drawing, wherein:

Figure 1 is a perspective view of a sign embodying the present improvements.

Figure 2 is a vertical sectional view of the base of the sign with the upper portion thereof removed.

Figure 3 is a top plan view of the base of the casing the upper section being removed.

Figure 4 is a vertical section taken along the line and in the direction of the arrow 4—4 of Figure 3.

Figure 5 is a vertical section taken along the line and in the direction of the arrows 5—5 of Figure 3, and

Figure 6 is a center view of a form of an end plate of the color changing device.

In the drawing, 10 indicates a piece of plate glass having formed therein as by etching the letters of a sign. The letters are etched from one side of the glass and as light passes edgewise through the glass from a source of illumination within the casing 11, the letters or other indicia of the sign become luminous.

The glass is supported along one edge by the top portion 12 of the casing 11, the glass being secured to the casing by any approved means so as to expose the inner edge of the glass to the source of light.

The casing 11 comprises also a base 13 which may be provided with ornamental legs 14, when the device is used in the position shown in Figure 1. When the device is inverted, the legs 14 of course may be omitted.

Secured to the bottom of the base 13 are brackets 15 and 16. Supported by the brackets are electro-magnets 17 and 18 respectively. As will be obvious from the following description one magnet only may be used, if desired.

Extending inwardly from the brackets are short shafts or trunnions 19 and 20 which are made of conducting material and which at their inner ends contact with the terminals 21 of an elongated electric light bulb 22 having a plurality of spaced filaments 23 therein. The trunnions 19 and 20 are stationary and have mounted thereon supports 24 and 25 for holding narrow strips 26 of colored transparent material such as glass. Each of the members 24 and 25 in the form illustrated, is provided with an inner plate 27 having rectangular openings 28 therein for receiving the ends of the strips 26. Secured to the end member 24 is a pinion 29 which meshes with a gear 30 which is supported on a stub shaft 31 carried by the bracket 15. Also mounted on the shaft 31 and secured to the gear 30 is a ratchet wheel 32, the successive teeth of which are engaged by a ratchet 33 pivoted on a pin 34, which is carried by the arm 35 which at its lower end is fixed to the oscillatable shaft 36. This shaft is journaled near each end thereof in the brackets 15 and 16. At the free ends of the shaft 36 armatures 37 are provided which are attracted to the cores 38 of the respective magnets when the latter are energized.

The outer plate of the member 24 is provided with escapement teeth 39 as shown in Figure 4 which teeth are engaged successively by a stop 40 carried by the arm 35. Thus when the magnets are energized the armatures 37 are moved toward the cores 38 rocking the shaft 36 and swinging the arm 35 to the right or clockwise as viewed in Figure 4. The ratchet 33 being in engagement with the ratchet wheel 32 moves the same clockwise, thus rotating the gear 30 in the same direction and the pinion 28 counter-clockwise.

The gear train and ratchet mechanism are arranged to move the pinion 28 at each stroke of the armatures, and consequently the color changing device, a distance sufficient to interpose the colored strips 26 successively between the lamp 22 and the inner edge of the glass 10. Thus as the device operates, the color of the illuminated indicia of the sign changes successively, presenting a very attractive advertising sign.

As shown in Figure 1, the members 24 and 25 are preferably made in two sections 40 and 41. The lower section 41 carries a bearing 42 rotatable on the respective stub shafts or trunnions 19 and 20, while the upper section 40 may be provided with friction means 43 and 44 for rendering said section detachable from the other whereby when the upper section is removed, access may be had to the lamp 22 for renewal when necessary.

To operate the magnets the current must be momentarily interrupted to permit the spring 45 to retract the armatures 35 and the ratchet 33. The interruption of the current is accomplished by means of a conventional flasher plug 46 which in Figure 1 is shown attached to the conventional receptacle plug 47. These flashers are of well known construction and need not be described in detail.

The current flows interruptedly through the conductors 48 to the coils of the magnets which are shown connected in series. The lamp is preferably connected in parallel with the magnet by means of conducting members 49 which make contact with the respective trunnions 19 and 20.

In operation, as soon as the flasher 46 has become warm the current flows interruptedly through the magnets, and the lamp, the light of which in passing through one of the colored strips 26, gives the sign a corresponding color.

When the flasher cuts off the current, the spring 45 retracts the armatures and the ratchet 33 and when the circuit is closed again the succeeding strip is brought into registering position between the lamp and the lower edge of the glass 10, to change the color of the sign.

While I have shown and described an embodiment of my improvements for the purpose of illustration, I do not wish to be restricted specifically thereto except as so limited by the appended claims.

I claim:

1. A sign comprising a glass plate in which the indicia of the sign are formed, a casing for supporting said plate, a stationary electric light bulb in said casing having end terminals, conducting trunnions for connecting said terminals in an electric circuit, a cylindrical color changing device rotatably mounted on said trunnions, said device comprising end members carried by said trunnions adjacent each end of said bulb and a plurality of differently colored transparent panels spanning said bulb lengthwise, electromagnetic means in said casing for rotating said device intermittently for interposing said panels in succession between said bulb and plate, circuit conductors for supplying current to said magnetic means and trunnions and a current interrupting member in said circuit for effecting the intermittent energization of said bulb and electro-magnetic means.

2. A sign comprising a glass plate in which the indicia of the sign are formed, a casing for supporting said plate, a stationary electric light bulb in said casing having end terminals, conducting trunnions for connecting said terminals in an electric circuit, a cylindrical color changing device rotatably mounted on said trunnions, said device comprising end members carried by said trunnions adjacent each end of said bulb and a plurality of differently colored transparent panels spanning said bulb lengthwise, electro-magnetic means in said casing for rotating said device intermittently for interposing said panels in succession between said bulb and plate, circuit conductors for supplying current to said magnetic means and trunnions, and a current interrupting member in said circuit for effecting the intermittent energization of said bulb and electromagnetic means, said color changing device having a removable section to provide access for the removal of said lamp.

3. A sign comprising a glass plate in which the indicia of the sign are formed, a casing for supporting said plate, an electrical lamp in said casing aligned with the lower edge of said plate, conducting means for connecting the terminals of said lamp in an electric circuit, a color changing device mounted for intermittent rotation about said lamp, said device comprising a plurality of differently colored transparent panels spanning said lamp lengthwise and arranged for movement into alignment with the lower edge of said plate, electromagnetic means in said casing for rotating said device intermittently for interposing said panels in succession between the said lamp and plate, circuit conductors for supplying current to said magnetic means and lamp, and a thermostatically actuated current interrupting member in said circuit for effecting the intermittent energization of said lamp and electromagnetic means.

MAX G. RUPP.