

Dec. 3, 1940.

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2,223,685

ADVERTISING DISPLAY DEVICE

Filed Oct. 15, 1938

2 Sheets-Sheet 2

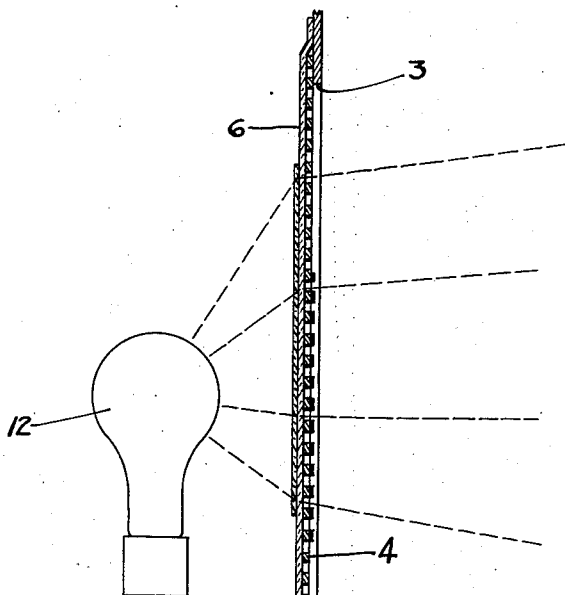


FIG. 5

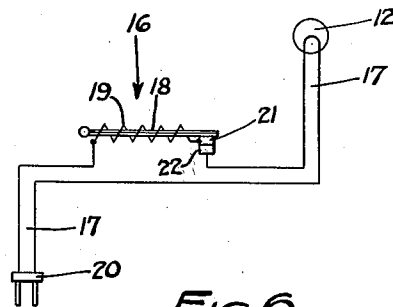


FIG. 6

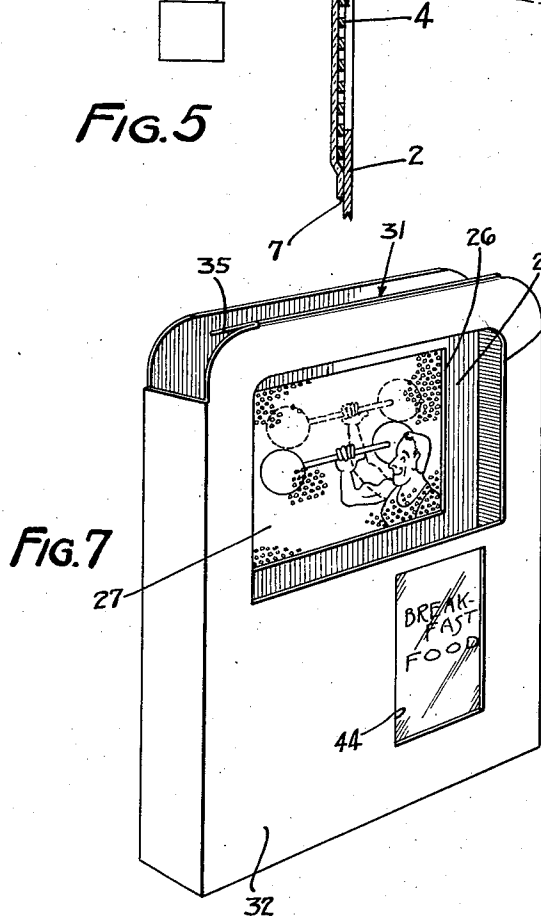


FIG. 7

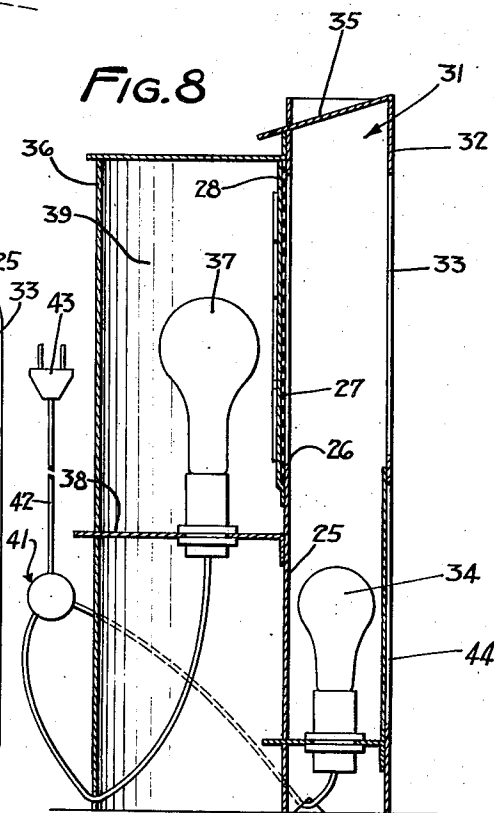


FIG. 8

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2,223,685

ADVERTISING DISPLAY DEVICE

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Application October 15, 1938, Serial No. 235,199

4 Claims. (Cl. 40—133)

This invention relates to new and useful improvements in illuminated electric signs, dealers' displays, and signal lights, and an object of the invention is to provide a practical and inexpensive device of this character comprising a simple and efficient operating mechanism, whereby a motion illusion or animated effect of an object or figure may be obtained without the use of costly motors and other mechanical devices.

Animated signs, displays, and signals, as now commonly constructed, usually employ motors and/or other mechanical devices for operating them, when the figures or illustrated objects thereon are to have the appearance of being in motion or action. Such apparatus is expensive to install, and the maintenance cost may be high because of wear, breakage of parts, and motor failures, which may result from power line difficulties, and various other causes. It is therefore desirable that some simple and inexpensive means be provided for operating advertising display devices, animated electric signs, and various forms of signals, whereby the objectionable features, above mentioned, are entirely eliminated, and whereby such apparatus may be operated continuously over long periods at very small cost.

One of the primary objects of the invention, therefore, is to provide a simple and inexpensive method of operating an animated advertising display sign or signal, which comprises no movable parts or mechanisms, whereby the cost of operation and maintenance is reduced to a minimum.

A further object is to provide an advertising display device or sign comprising an opaque, perforated sheet, upon the front or outwardly exposed surface of which is printed or painted an illustration of the subject to be animated, and means being provided back of said plate for imparting action to the figure appearing on the front of said plate.

A further object is to provide an apparatus of the character described, comprising a plurality of plates or thin sheets of material having means embodied in the construction thereof, whereby when a light is placed back of said sheets or plates and intermittently turned on and off, a motion illusion or animated effect is imparted to a figure affixed to an exposed surface of one of said sheets, thereby to attract attention.

A further and more specific object is to provide an illuminated display sign or signal comprising an opaque perforated sheet having one

position of the figure to be animated printed or painted thereon, and a second sheet of translucent material being arranged back of the perforated sheet and having the same figure provided on a surface thereof in another position, and a suitable flasher light being placed back of both of said sheets within a suitable enclosure, whereby the light is concentrated on the back of the inner sheet, whereby when the light is intermittently flashed on and off, it will create an illusion of action in the figure provided on said sheets.

A further object is to provide a simple and inexpensive means for imparting motion illusion or an animated effect to a figure affixed to the front side of a suitable display sign or signal.

Other objects of the invention will appear from the following description and accompanying drawings and will be pointed out in the annexed claims.

In the accompanying drawings there has been disclosed a structure designed to carry out the various objects of the invention, but it is to be understood that the invention is not confined to the exact features shown as various changes may be made within the scope of the claims which follow.

In the drawings:

Figure 1 is a front view of an advertising display device showing the invention embodied therein;

Figure 2 is a view similar to Figure 1, showing the figure in another position;

Figure 3 is a vertical sectional view on the line 3—3 of Figure 1, showing the general construction of the apparatus;

Figure 4 is a detail sectional view substantially on the line 4—4 of Figure 3;

Figure 5 is an enlarged detail sectional view showing the arrangement of the perforated and imperforate sheets, upon which the figure to be animated is affixed;

Figure 6 is a wiring diagram;

Figure 7 shows a display device of slightly different construction wherein two light bulbs are utilized; and

Figure 8 is a vertical sectional view of the apparatus shown in Figure 7, showing the general construction thereof.

In the selected embodiment of the invention here shown, there is illustrated in Figures 1 to 3, inclusive, an advertising display device comprising a suitable supporting structure which may be made of cardboard or any other suitable material. This structure comprises a front

panel 2 provided with an opening 3, through which the image or figure to be animated is shown.

A perforated sheet or plate 4, of any suitable thin, opaque, and preferably light weight material, provides a closure for the opening 3. The plate 4 has its entire surface perforated, and the figure or image to be animated, here shown to be in the form of a hand with pointing forefinger, is shown in a lowered position on this sheet. The figure is printed or painted on the outer exposed surface of the plate 4, as shown at 5 in Figures 2 and 5, in such a manner as not to obstruct or close the perforations in the plate.

To the back side of the perforated plate 4, there is secured a translucent sheet 6 of a suitable thin material, such as parchment paper, laminated glassine, or any other material suitable for the purpose. The translucent sheet 6 is imperforate, and may be secured directly to the back side of the perforated sheet 4; or it may have its marginal edges secured to the front wall 2 of the supporting structure, as shown at 7 in Figure 5. A milk white translucent sheet has been found to serve admirably for many types of display devices.

On the back or rear surface of the translucent sheet 6, the illustration or figure to be animated is shown in another position, as illustrated in Figure 4, wherein it will be noted that the hand is elevated. When the apparatus is operated, the hand intermittently moves up and down with the fore finger, alternately pointing at the information or advertising matter appearing at 8 and 9 on the front face of the wall 2 of the structure. The figure of the hand is of a suitable color which may readily be seen through the sheet 6, when a light bulb 12 is placed behind the plates or sheets 4 and 6, as shown in Figure 3.

To impart action to the hand, a light bulb is placed back of the two sheets 4 and 6. The light bulb is shown provided with a base 13, which may be conveniently supported in the rear wall 14 of an enclosing structure, generally indicated by the numeral 15. This enclosing structure has opaque walls, and is suitably secured to the front panel 2. It serves to concentrate the light rays on the back side of the plate 6, and whereby the light bulb will not illuminate the area back of the display device.

The light bulb 12 is provided with a suitable circuit breaker or flasher, generally indicated by the numeral 16, which may be mounted in the base 13 or, in any other suitable location in the current supply cord 17 of the light bulb. This circuit breaker or flasher is diagrammatically illustrated in Figure 6, and may comprise a suitable bi-metal or thermostatic element 18 having a heating coil 19 coiled thereabout, which is arranged to be connected in series with the supply circuit. The thermostatic element 18 is supported at one end and carries a movable contact 21 at its opposite end adapted to engage a fixed contact 22. In the circuit shown in Figure 6, the tension in the bi-metal bar 18 is such that when the plug 20 is not connected to a power circuit (not shown), the movable contact 21 is electrically engaged with the fixed contact 22, to complete the circuit to the light bulb. When the plug 20 is connected to the power circuit, current will flow through the heating coil 19, whereby the coil will heat the bar 18 and cause it to warp in such a direction as to move the contact 21 out of engagement with the fixed

contact 22. The specific construction of the circuit breaker or flasher 16, forms no part of the present invention, and it is to be understood that any suitable flasher device which will cause intermittent operation of the light bulb 12, may be employed without departing from the scope of the invention. The thermostatic element 18 may be located within the base 13 of the bulb, and operates continually when the cord 17 is connected to the supply circuit to alternately open and close the circuit to the light bulb so that the operation of the light bulb is intermittent. This turning on and off of the bulb in connection with the arrangement and construction of the plates 4 and 6, is what causes the figure or illustration of the hand on the front of the display device to be animated, or have the appearance of being in motion.

It will thus be seen, that by the use of a suitable flasher, which continually turns the bulb on and off, a dual two-view effect is obtained, and by showing the same figure or subject in two different positions, on the plates 4 and 6, that is, with the hand raised on the plate 6, as shown in Figure 1, and lowered on the plate 4, as shown in Figure 2, the hand will have the appearance of alternately moving up and down and pointing at the information or advertising matter provided on the front of the panel 2. This animated action is obtained by reason of the perforated plate 4 being disposed in flatwise relation to the translucent plate 6. When the light bulb is on, the figure of the hand appearing on the back plate 6 will show up in a sharply defined outline through the perforations in the front plate 4, and the figure of the hand on the front plate 4 will be substantially blotted out, or become invisible, because of the brilliancy of the light rays projected through the perforations in the front plate 4. The moment the light is turned off, the hand on the back plate 6 becomes invisible, and the hand on the front plate 4 then becomes clearly visible. It will thus be seen that to impart action or the effect of motion to the hand on the display device, as shown in Figures 1 and 2, no moving parts are employed, the only power required being the flasher light bulb 12 provided back of the plates 4 and 6.

In Figures 7 and 8, I have shown a display device more particularly adapted for use in dark places, such as night window displays. In the form here shown, a supporting structure is provided comprising an inner wall 25 having an opening 26 therein corresponding to the opening 5 in the panel 2 of the structure illustrated in Figures 1 to 4. A similar opaque perforated plate 27 is fitted over the opening 26 and has secured to its back side, an imperforate translucent plate 28, upon which is provided the outline of the figure or illustration to be animated. In the present instance, I have shown the representation of an arm 29 holding a dumb-bell in elevated position. On the front side of the opaque sheet or plate 27, there is shown a similar figure with the arm in a lowered position. This figure is painted, printed, or otherwise affixed to the front side of the perforated panel in a manner similar to the structure illustrated in Figure 2.

The form shown in Figures 7 and 8 comprises a box-like structure, generally indicated by the numeral 31 arranged in front of the panel 25 and comprising a front wall 32. The front wall 32 has a window or opening 33, which is aligned with the opening 26 in the panel 25 so that the

figure appearing on the perforated plate 28 may readily be seen therethrough.

A light bulb 34 is arranged in the lower portion of the box-like structure 31 below the window 33, and illuminates the interior of the structure 31, so that the front side of the perforated plate 28 is well illuminated, when the light bulb 34 is turned on. A top wall 35 prevents the light rays from being projected above the structure 31.

Rearwardly of the panel 25 and preferably secured thereto, is a casing 36, in which is mounted a second light bulb 37. The light bulb 37 is shown mounted in a horizontal wall 38 which cooperates with the upper portions of the walls of the casing 36 to provide a light chamber 39 which is substantially imperforate so as to prevent the light from the bulb 37 from being projected through the walls thereof.

The two light bulbs 34 and 37 are shown connected to a suitable flasher, generally indicated by the numeral 41, to which current is supplied by a cord 42 having a suitable connecting plug 43 provided at one end thereof. The flasher 41 may be of conventional design, and is so arranged that the light bulbs 34 and 37 are alternately turned on and off, whereby the figure appearing through the window or opening 33 in the box-like structure 31 may readily be seen when the light 34 is turned on.

In the operation of the structure shown in Figures 7 and 8, when the light bulb 34 is on, the front side of the plate or perforated sheet 27 is illuminated so that the figure provided thereon may readily be seen through the opening 33. When the light 34 is turned off, the light 37 is simultaneously turned on, whereupon the light rays projected through the perforations in the plate 27 will obscure or blot out the figure appearing on the front side of the plate 27. The figure in its raised position then becomes clearly visible through the perforations in the front sheet or plate.

In the structure illustrated in Figures 7 and 8, when the lights are operating, the muscular arm of the figure on the perforated sheet will become animated or, in other words, will have the appearance of being alternately raised and lowered, as indicated by the full and dotted lines in Figure 7. The structure here shown is particularly well suited for use in store windows or, in other dark places, as it is not dependent upon any other illumination for its operation. The two light bulbs 34 and 37 provide all the illumination necessary to obtain the desired results.

To render the display device still more attractive, a suitable window opening 44 may be provided in the front wall 32 of the box-like structure 31, as shown in Figure 7. This window may be provided with a translucent sheet, upon which a suitable figure and advertising matter may be printed, so that each time the light bulb 34 is turned on, the window 44 will be illuminated, as will be readily understood.

From the foregoing, it will be noted that the novel apparatus herein disclosed, is dependent entirely upon the intermittent operation of the light bulb or bulbs for its operation. The perforations in the front plates 4 and 27 may be of any suitable shape and are so spaced as to provide the most desired effects. The figure or illustration appearing on the front side of the perforated plate covers all or whatever portion desired, of the solid areas between the perforations thereof, to provide the desired effect. For exterior use, the entire apparatus is made from

a suitable material which is impervious to moisture and unaffected by heat and light. The openings in the panels 2 and 25, in which the perforated plates 4 and 27, respectively, are mounted, may be of any suitable size and shape, depending upon the subject matter to be displayed.

The invention may also be embodied in various forms of traffic control signals or automobile lights, signals, or other indicating means, such as an arrow or a hand with pointing finger, to which an animated action may be imparted by a suitable flasher embodied in the lighting circuit. Thus, the invention may be used in the construction of apparatus for controlling automotive and pedestrian traffic, and other apparatus to which it may be found applicable.

I claim as my invention:

1. In an animated sign adapted to simulate motion, an opaque plate having a uniformly perforated area, a picture applied to the front side of the opaque plate in the perforated area, a translucent sheet adjacent the rear side of the opaque plate in the perforated area, a similar picture applied to the rear side of the translucent sheet in offset relation to the first picture, a light back of the translucent sheet, and means for intermittently operating the light whereby the two pictures become alternately visible and impart an animated effect to the sign.

2. In a sign of the class described, a casing having an opening in a wall thereof, an opaque plate closing said opening and having an exposed surface, the entire surface of which is uniformly perforated, the figure to be animated being shown in one position on the exposed surface of said plate, an imperforate sheet of a suitable translucent material arranged directly back of said plate within the casing and having the figure applied to the rear surface thereof in another position, and a light bulb within the casing back of said sheet having a flasher device for intermittently turning said light on and off, whereby the two positions of the figure may be alternately seen, as the light is flashed on and off, whereby a motion illusion or animated effect is imparted to the figure.

3. In an apparatus of the class described, a casing having an opening in a wall thereof, an opaque plate closing said opening and having an exposed surface, the entire surface of which is uniformly perforated, the figure to be animated being shown in one position on the exposed surface of said plate, an imperforate sheet of a suitable translucent material arranged back of said perforate plate and having the figure shown thereon in another position, and whereby that portion of the translucent sheet covered by the figure may be seen in sharp outline through the apertures in the opaque plate, when the interior of the casing is illuminated, a light within the casing directly back of said sheet for illuminating the interior of the casing, and means for intermittently turning the light on and off, whereby the two positions of said figure become alternately visible and thereby impart a motion illusion or animated effect to the figure.

4. In an apparatus of the class described, a casing having an opening in a wall thereof, an opaque plate normally closing said opening and having an exposed surface the entire surface of which is uniformly perforated, and the combined areas of said perforations substantially equalling the total area of the solid portion of said surface the figure to be animated being shown in one

position on said perforated surface, an impermeate plate of a suitable translucent material placed against the rear of said screen plate and having the figure shown thereon in another position, a light bulb within the casing directly back
5 of said plates, and thermostatic means for inter-

mittently turning the light on and off, whereby the two positions of the figure may be alternately seen, thereby to impart an animated effect to the figure.

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