

Aug. 27, 1940.

J. R. JACKSON

2,212,642

ILLUMINATED ILLUSORY ACTION DEVICE

Filed June 10, 1938

2 Sheets-Sheet 1

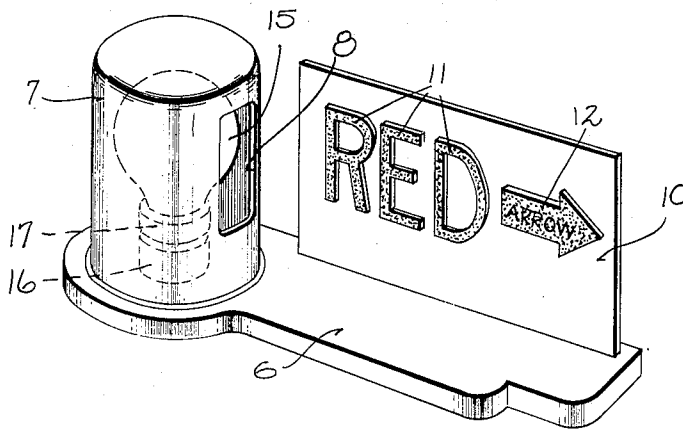


Fig. 1.

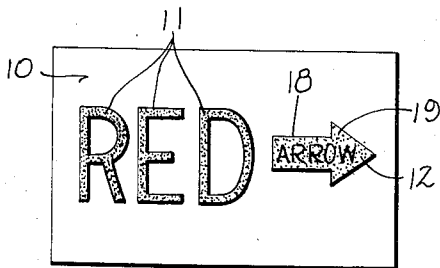


Fig. 2.

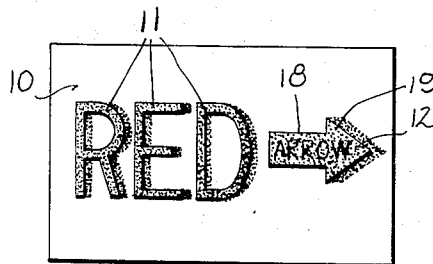


Fig. 3.

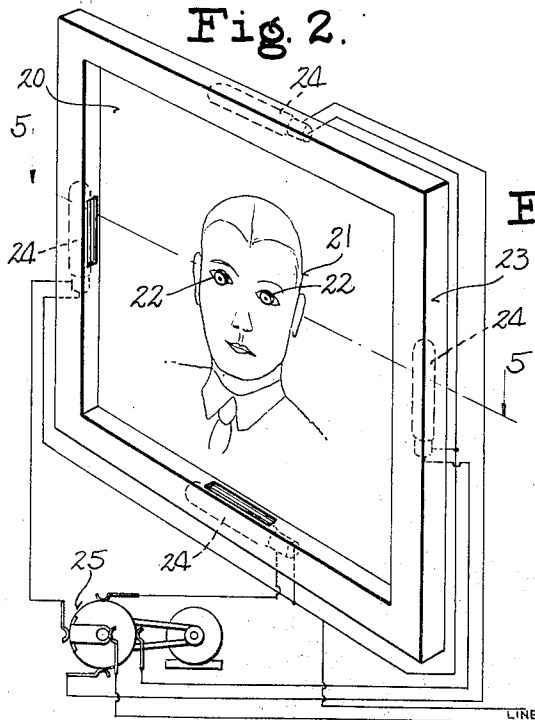


Fig. 4.

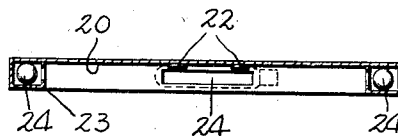


Fig. 5.

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2 Sheets-Sheet 2

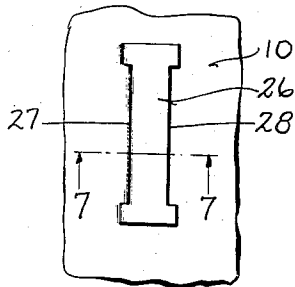


Fig. 6.

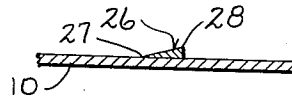


Fig. 7.

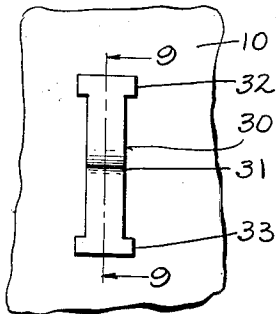


Fig. 8.

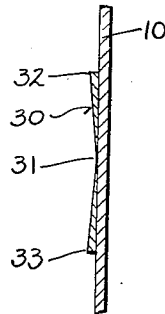


Fig. 9.

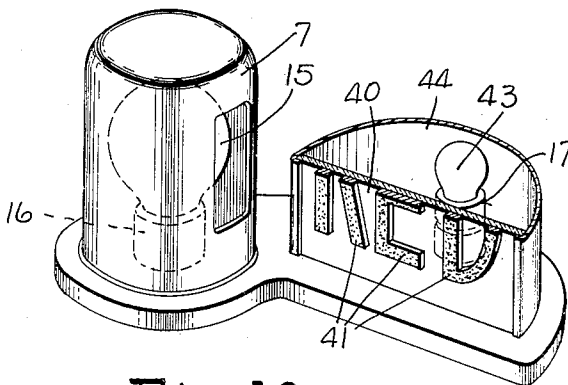


Fig. 10

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UNITED STATES PATENT OFFICE

2,212,642

ILLUMINATED ILLUSORY ACTION DEVICE

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Application June 10, 1938, Serial No. 212,945

8 Claims. (Cl. 40—130)

This invention relates to improvements in illuminated illusory action devices.

It is the object of the invention to give a static symbol the appearance of motion to attract the attention of an observer for advertising and other purposes by intermittently rendering its shadow apparent by subjecting it to side lighting in an organization such that the light will not destroy the form or proportions of the letters or symbols illuminated.

More specifically stated, it is proposed to provide a sign or symbol differentiated in sharp relief and contrasting color from a light toned background and subjected to abrupt changes in relative lighting as between background illumination and illumination from the front and side. By the intermittent flashing of light laterally upon the face of a design in relief, and particularly where the face of the line is in sharp and relatively dark contrast to a relatively light background, the shadows thereby created are rapidly protracted and retracted by the flashing of the light to produce a startling effect of motion in the design without making any apparent change in the size or proportions thereof. The direction of the illusion of motion is determined by the placement of the light, and by flashing light alternately from opposite sides of a design in relief the apparent extent of the motion can be doubled. Moreover, if lights at several sides of the relief design are flashed successively the design may be given the appearance of a gyratory movement.

By intermittently illuminating the background to eliminate shadows while leaving the side light in continuous operation, similar effects may be produced.

Other objects will be apparent from the following disclosure.

In the drawings:

Figure 1 is a view in perspective showing an appropriate embodiment of the invention.

Figure 2 is a detail view showing the appearance of the sign when viewed by natural or other background illumination.

Figure 3 is a view of the same sign as it appears when illuminated from one of its sides.

Figure 4 is a view in perspective showing a modified embodiment of the invention in which gyratory motion may be simulated by the successive operation of flashing lamps at several sides of the relief objective, as by an appropriate switch.

Figure 5 is a detail view taken in section on line 5—5 through the device shown in Fig. 4.

Figure 6 is a fragmentary detail view in front elevation of a single symbol representing a modified embodiment of the invention.

Figure 7 is a view taken in cross section on the line 7—7 of Figure 6.

Figure 8 is a view like Figure 6 showing a further modified embodiment of the invention.

Figure 9 is a detail view taken in section on the line 9—9 of Figure 8.

Figure 10 is a view in horizontal section and perspective through apparatus representing a further modified embodiment of the invention.

Like parts are identified by the same reference characters throughout the several views.

In the simple embodiment of the invention selected for exemplification thereof in Fig. 1, there is a base at 6 upon which is mounted a lamp housing 7 with a window at 8 directed from the side toward the face of the panel 10 upon which the letters 11 and symbol 12 are disposed in relief. The shading on the face of the letters indicates that such face is preferably dark with reference to the background panel 10 which is preferably white or of other light color.

Within the lamp housing 7 is a lamp 15 between which and its socket 16 is interposed a flasher unit 17 of any desired conventional arrangement. In fact, the flasher unit is intended merely to indicate one means of intermittently operating the light for periodically illuminating the face of the panel 10 and the letters mounted in relief thereon. Any appropriate switch operated mechanically or otherwise may be used at any point in the lamp circuit.

The device is intended for use in a situation where the face of the panel and the design or lettering applied in relief thereto will at all times be clearly visible. Naturally, the permanent lighting cannot be too intense or the shadow cast by the lateral illumination will not be readily apparent. Ordinarily the light entering through a window or supplied by the permanent illumination within a room will be entirely adequate for the general illumination contemplated.

The letters, symbols, or designs used on the panel 10 may be mounted thereon either by casting them with the panel or by embossing, etching, or molding, or by cementing any cut-out design to the background panel. They may be of any height of projection in relief but their height will have an important bearing on their spacing and on the best position of the lamp. If the projection of the letters or designs from the face of the panel is relatively slight, the light should be closer to the plane of the panel than

is required where the projection of the letters or designs from the panel is very substantial. The object in either case is to project a substantial shadow but one which will not touch the next successive letter or part of the design in such a way as to obliterate or confuse the pattern.

The comparison of Fig. 2 and Fig. 3 will show how the illusion is produced, but it is not a correct portrayal of the appearance which results from the illusion. Unlike the attempts which have in the past been made through the use of intaglio to produce such illusory effects, the present invention, because of the fact that the design is in relief, does not produce any appearance of altering the proportions or spacing of the letters, strokes, or lines composing the design. To the ordinary observer the letters 11 making up the word "red" in the exemplification portrayed in the drawings, appear to have bodily movement. The shank portion 18 of the arrow appears to remain stationary but the head 19 thereof appears to move. In all cases the apparent motion is opposite to the direction from which the intermittent illumination comes. When the light is extinguished there appears to be a bodily reverse movement of the letters and the arrow head toward the source of light. The shadow seems to merge with the design in each instance to extend the design but, contrary to what what be expected, the design does not appear to increase in width. This phenomenon is probably due to the fact that the entire face of the design remains brightly illuminated. This effect exists only in a design which appears in relief.

By way of indicating the fact that the direction of movement is always along a line drawn from the light to the relief design, I have shown in Figs. 4 and 5 an arrangement wherein the panel 20 is provided with a portrait drawing 21 from which the eyeballs 22 constitute a design projecting in relief. The frame 23 contains a series of lamps 24, and some means (not illustrated in detail) such as a conventional rotary switch diagrammatically shown at 25 is used for illuminating these lamps sequentially about the consecutive sides of the frame. The result would be to impart a gyratory movement to the eyes of the figure. If the movement desired is not necessarily gyratory but merely an erratic movement in four directions, the lamps may simply be actuated at random by separate flashers such as the unit shown at 17 in Fig. 1.

In addition to its use as a novelty in the manner illustrated in Figs. 4 and 5, the invention has particular importance in the advertising field. The fact that the design is in relief is highly significant in that the only effect created by the change in lighting is motion. The design will remain clearly legible under all circumstances, being in this respect unlike any other illusory device known to me. This fact is particularly significant where the strokes used in making up the design or letters are relatively fine. In all such instances legibility would be destroyed but for the fact that the design appears in relief.

As indicated in Figs. 6 and 7, the relief need not be a full relief. It is only important that the letter constituting the symbol or design shall be in relief at that side from which the shadow is to be projected. The symbol 26 in Figs. 6 and 7 is wedge-shaped in transverse cross section to merge at 27 with the face of the background panel 10, but it is in relief at 28 to provide a shoulder for casting the shadow upon which the illusion depends. The lateral illumination provided for

the device shown in Figs. 6 and 7 would naturally require that the source of light be at the left as viewed in these drawings.

By varying the height of the relief in a direction at right angles to the path of the light, it is possible to change the form of the shadow and thus to cause an apparent distortion of the symbol. This is illustrated in Figs. 8 and 9 where the symbol 30 has little or no relief at 31 at its center but is in sharp relief at 32 and 33 at the respective ends. In this device, or where the symbol constitutes virtually a straight line, the shadow will be distinctly curved, thus apparently distorting the symbol each time the light flashes.

While I have referred to natural or relatively permanent illumination as being important to the successful use of the invention, I wish to make it clear that such illumination need not necessarily fall upon the panel solely from the front thereof. I contemplate the possibility of using a translucent panel which may be illuminated wholly or partly from the rear alternately with the illumination of the relief design thereon from the side and front.

By way of illustrating one manner of using a translucent panel for the purposes of this invention, I have shown in Fig. 10 a panel 40 made of ground glass upon which the symbols or designs 41 appear in relief. The lateral illumination provided to cast the necessary shadow may be furnished by a lamp 15 in a lamp house 7, as in the construction illustrated in Fig. 1, but the lamp in this instance is mounted directly in its socket 16 to remain permanently incandescent for such period as the device is in operation.

The background illumination, instead of coming from the front, as in the case of the other devices herein described, is provided by a supplemental lamp 43 in a lamp house 44 which confines the light to the translucent panel 40. The intensity of the background illumination will be such that when the lamp 43 is in operation the shadows cast by the light from lamp 15 will not be apparent.

A flasher 17 controls lamp 43 so that the illumination of the background is only intermittent. When lamp 43 is extinguished by the usual operation of the flasher, the sharp shadow cast by the designs in relief on the face of the panel or light from the lamp 15 will immediately be apparent. The light 15, it will be understood, need not remain permanently in operation but may be connected to flash on when the light 43 is flashed off.

Various other modes of operation will occur to those skilled in the art. In each case, however, the fact that the symbol is in relief to cast a shadow on the face of the panel will be responsible for the desired effect when the relative illumination provided by the side lighting and the background lighting respectively is abruptly varied.

I claim:

1. The combination with a light background panel and a relatively dark design in sharply shouldered shadow-casting relief thereon, of means for intermittently illuminating such design and panel from the front and side, whereby to produce the illusion of motion of the design with respect to the panel.

2. The combination with a light background panel and a relatively dark design in sharply shouldered shadow-casting relief thereon, of means for the background illumination of the panel, means for illuminating the design and

panel from the front and side to cast the shadow of the relief design on to the face of the panel, and means for abruptly varying the relative effect of said illuminating means whereby to render the shadow alternately visible and relatively invisible.

3. The combination with a background panel and means for intermittently illuminating the face of the panel from the front and side, of a design on the face of the panel shouldered in relief at least at the side of the design opposite to the direction from which it is illuminated, whereby such front and side illumination will cast the shadow of said shouldered portion of the design on to the face of the panel, said panel and the face of the design being subject to background illumination, and means for abruptly varying the relative effect of the front and side illumination with respect to the background illumination, whereby to render such shadow alternately visible and invisible to produce the illusion of motion of the design with respect to the panel.

4. A device of the character described, comprising in combination a panel and a design in relief on the face thereof, the face of the design and the face of the panel being in contrasting colors whereof the panel color is the lighter, and means for periodically illuminating the design from the front and side, whereby to cast upon the relatively lighter face of the panel the shadow of the relief design and thus to produce the illusion of bodily movement of the design with respect to the panel.

5. A device of the character described, comprising the combination with a panel and a symbol in relief thereon, of a base upon which said panel is mounted, a lamp disposed forwardly and laterally of said symbol and arranged to illuminate the face of the symbol and the face of the panel, a socket for said lamp on the base, and means comprising a flasher unit for periodically operating said lamp whereby to cast the shadow of the relief symbol on to the face of the panel

and thereby to create the illusion of bodily movement of the symbol respecting the panel.

6. A device of the character described, comprising the combination with a translucent panel and a design appearing in relief on the face thereof, of means for illuminating the panel and design from the front and side, means for the background illumination of the panel from the rear, and means for abruptly varying the relative intensity of the respective illuminating means to an extent sufficient to render the shadow cast by the relief design alternately apparent and non-apparent.

7. In a device of the character described, the combination with a translucent panel and a design projecting in relief from the front face thereof, of means for illuminating said design and panel from the front and side, a lamp behind the panel of sufficient intensity to render non-apparent the shadows cast by the design when subject to illumination from the side, and means for intermittently flashing off the source of background illumination, whereby to leave said shadows sharply apparent on the face of the panel.

8. In a device of the character described, the combination with a panel providing a background and a design projecting in relief from the front face thereof, of means for illuminating said design and panel from the front and side, whereby to project on to the panel background the shadow of a relief portion of said design, a second means of illumination arranged to direct light on to the background portion of the panel upon which said shadow is cast by the first means of illumination, and means for sequentially rendering one of said means of illumination intermittently effective and non-effective, whereby to render said shadow alternately apparent and non-apparent as a means of producing the illusion of movement of the design with respect to the panel.

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CERTIFICATE OF CORRECTION.

Patent No. 2,212,642.

August 27, 1940.

JAMES R. JACKSON.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 2, first column, line 29, for the words "what what" read --what might--; page 3, first column, line 7, claim 3, strike out "intermittently"; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 1st day of October, A. D. 1940.

(Seal)

Henry Van Arsdale,
Acting Commissioner of Patents.

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