

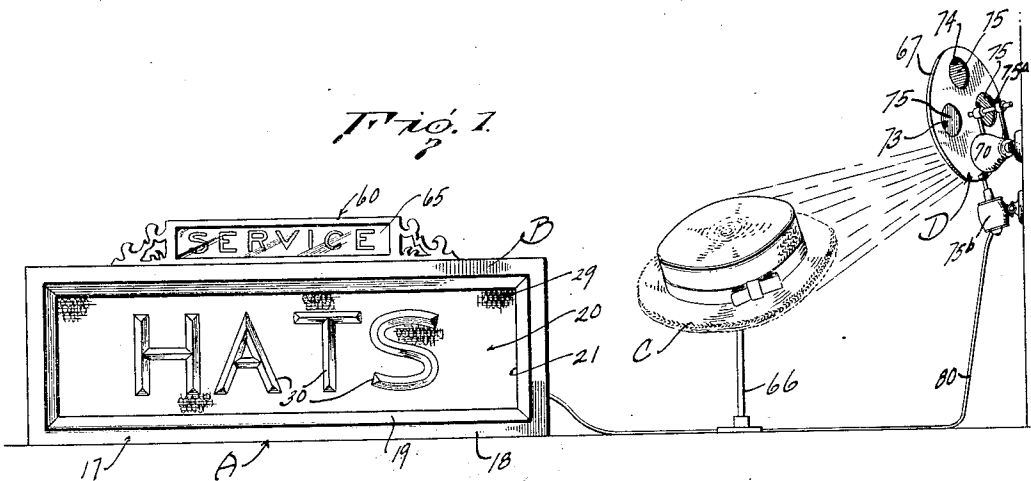
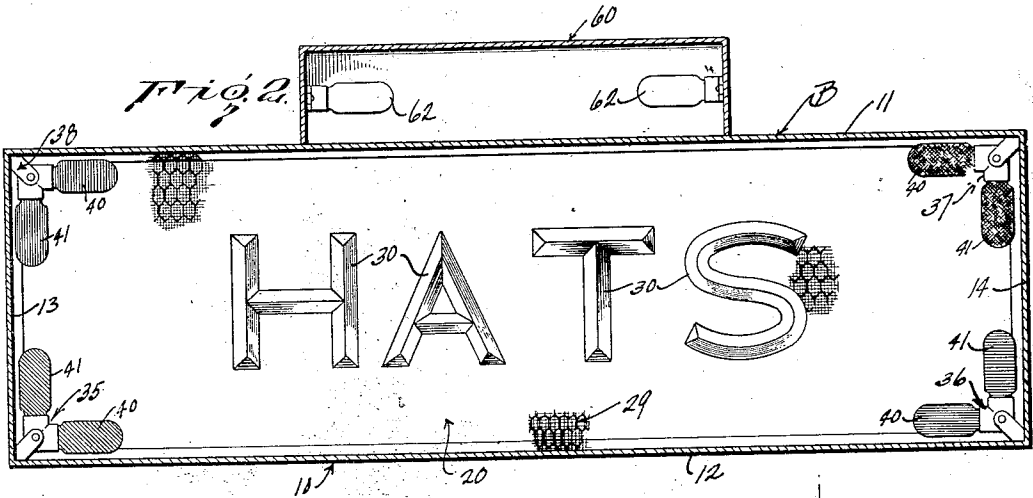
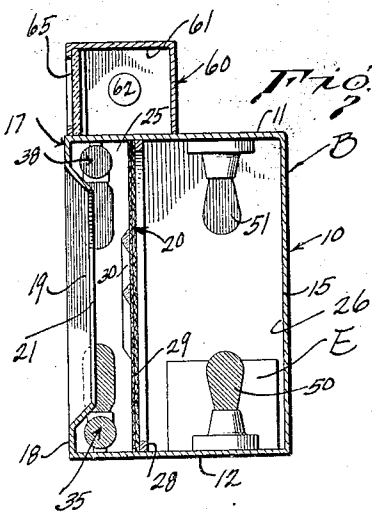
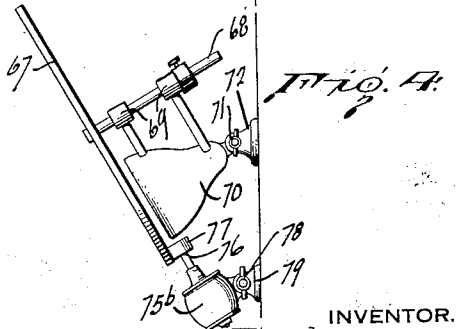
March 1, 1932.

W. T. GOOLEY
ELECTRIC FLASH SIGN

1,847,647

Filed Dec. 26, 1929

2 Sheets-Sheet 1



INVENTOR.
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BY *Laurester and Allwine*
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2 Sheets-Sheet 2

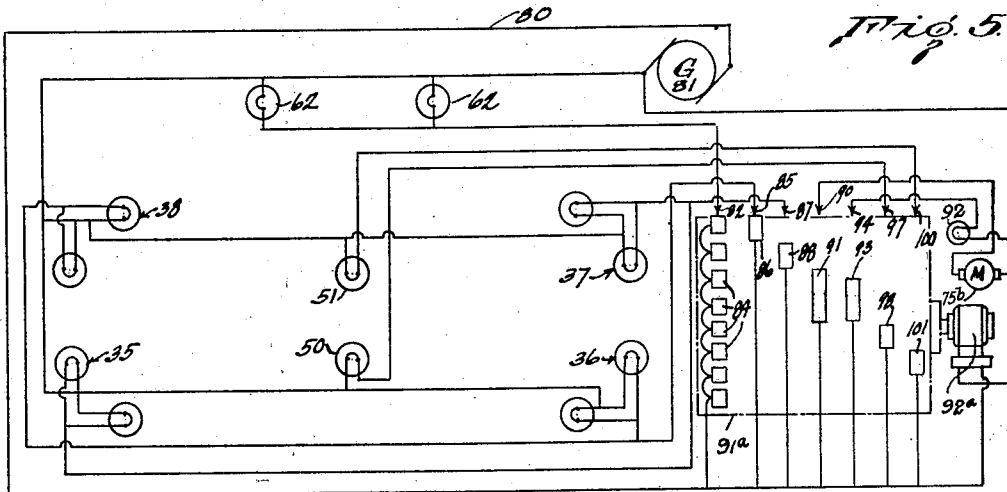
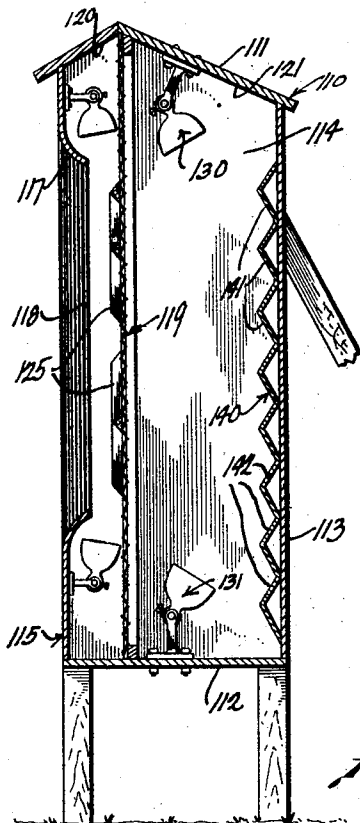
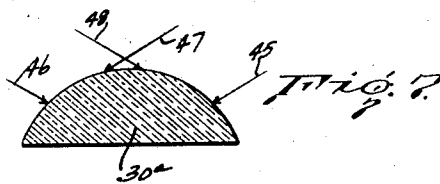
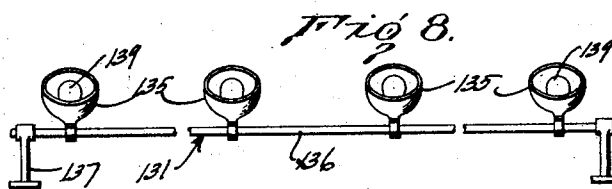


Fig. 6.

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ELECTRIC FLASH SIGN

Application filed December 26, 1929. Serial No. 416,617.

This invention relates to improvements in electrically operated and illuminated signs.

The primary object of this invention is the provision of an improved advertising or display sign, utilizing characters, such as letters arranged for advertising or display purposes, which are disposed in relief with opposed convergent surfaces; having associated therewith flashing lights, preferably in diagonally disposed relation, which simultaneously illuminate the characters of the sign from opposite sides, in contrasting colors, producing a pleasing effect in which the character appears to stand in pyramidal relief to an observer.

A further object of this invention is the provision of an advertising or display sign comprising a box-like frame wherein characters are supported with sources of light for illuminating them from the front in a pleasing melodizing color combination, with a second source of light rearwardly of the characters, alternating with the illumination of the characters at the front thereof, in illuminating the characters at their back-ground and diffusing their rays in such relation that the characters appear in silhouette to an observer.

A further object of the invention is the provision of a display or advertising sign having the above mentioned characteristics, which has associated therewith improved means for intermittently flashing contrasting colored lights upon an article of merchandise, or the like, to which the characters of the sign pertinently apply.

Other objects and advantages of this invention will be apparent during the course of the following detailed description.

In the drawings, wherein for the purpose of illustration are shown preferred and modified forms of the invention:

Figure 1 is a front elevation of the improved display device.

Figure 2 is a longitudinal sectional view taken through the sign portion of the display device, showing the relation of sources of light with respect to the letters or characters to be illuminated.

Figure 3 is a transverse sectional view taken through the sign of Figure 2.

Figure 4 is a side elevation of a light flashing device used to throw contrastingly colored spot lights on an article of merchandise which is being advertised.

Figure 5 is a diagrammatic view of the wiring arrangement, showing more particularly the relationship in which the sources of light are successively illuminated.

Figure 6 is a vertical sectional view taken through a modified form of the sign, particularly well adapted for outdoor use.

Figure 7 is a cross sectional view taken through a portion of a character or letter to be displayed, showing a modified shape thereof.

Figure 8 is a somewhat diagrammatic view of flood lights used to diffuse rays in silhouetting the characters of the display or advertising sign of Figure 6.

In the drawings, wherein similar reference characters designate corresponding parts throughout the several views, the letter A may generally designate the improved display device which may include a sign portion B whereon advertising may appear, such as the mention of an article of merchandise, and the name of the establishment selling the same. In cooperation therewith an article of merchandise C pertinently mentioned in the sign B may be supported adjacent thereto, and illuminated by an improved flashing spot-light arrangement D in a contrastingly colored flashing effect.

The sign B preferably includes a casing 10, consisting of top and bottom walls 11 and 12, end walls 13 and 14, a rear wall 15, and a front marginal or border wall 17 of novel construction, including the outer portion 18, shown best in Figure 3, bordering each of the top, bottom, and end walls, and the flaring portion 19 which extends convergently from the border portion 18 inwardly into the casing 10, providing a shield, so to speak, for the lamps or bulbs disposed in the compartment, to prevent the direct passage of rays of light therefrom to an observer looking into the opening defined by the flaring portion 19, upon the characters

or designs supported upon a member 20, mounted within the casing 10 and facing the opening 21 defined by said flaring border portion 19.

5 The member 20 may be termed a screen, and it is disposed in the casing 10 spaced between the front and rear walls thereof, and sub-dividing the casing into a front compartment 25 and a rear compartment 26. 10 The screen 20 includes a frame 28 to which the body 29, is attached. The body 29 may be translucent, of ground glass, fabric, paper, or it may be of wire mesh. In the example shown it consists of wire mesh 15 mounted on the frame 28 and covered with translucent fabric. It extends entirely longitudinally throughout the height of the compartment in the casing 10 and completely subdivides the casing into the compartments 25 and 26 which are non-communi- 20 cating.

On the front of the screen, facing the opening 21 are mounted the characters which are to be displayed. In the example shown 25 these characters comprise letters 30, and the specific word illustrated is "Hat" which is of course descriptive of the article of merchandise manufactured or on sale by the user of the device. The letters or characters 30 30 are formed of strips or bars, in relief, on the screen 20, having a cross section which may be pyramidal, and the opposite sides of each character being convergent from the screen body 29 to the peak thereof. The 35 sides may be beveled with plane surfaces, in pyramidal form, as shown in Figure 2 of the drawings, and in this connection the ends of the bar portions of the letters may also be beveled. The cross section may have gener- 40 ally the convergent opposite sides, but convexly or concavely arcuated in relief, such, for example, as shown in Figure 7, where the opposite sides are convexly arcuated to the peak.

45 Lamp sets 35, 36, 37, and 38 are disposed in the lower and upper corners of the compartment 25 in front of the screen 20 rearwardly of the bordering front wall 17 and secreted from the observer thereby. Each set includes 50 a pair of lamps 40 and 41. The lower and upper sets 35 and 37 in diagonally opposed corners of the compartment 25 are adapted to be illuminated at the same time for casting their rays of light upon opposite sides of the let- 55 ters 30, due to the peculiar cross section of the latter. The lamps are, of course, electrically operated, and the bulbs of the set 35 are colored contrastingly with the color of the bulbs of the set 37, so that opposite sides of 60 each character or letter 30 are differently colored, preferably in a harmonious relation, and along the apex of the character or letter, particularly in the case of a rounded, blunt, or convex cross section, such as with the let- 65 ter having a cross section as shown in Fig-

ure 7, the colors blend to produce another color. The sets of lamps 35 and 37 while illuminated simultaneously, alternate in their flashing with the other diagonally opposed sets of lamps 36 and 38; the latter being rel- 70 atively contrastingly colored, and differently colored from the sets 35 and 37, to likewise produce the pleasing effect of illuminating opposite sides of the letters or characters 30. 75 As shown, the lamps of the set 38 are red and will cast a red ray. The bulbs of the set 36 are colored blue and will cast a blue ray. When simultaneously illuminated they throw the letters 30 into relief with their colored rays impinging on the facing sides thereof, 80 and at the apices of the characters 30 the colors blend to provide the secondary color purple. Similarly, the sets 35 and 37 have bulbs therein respectively adapted to cast green and orange rays, with which the letters 85 or characters 30 will be illuminated on respective facing sides, and along the meeting line of opposed convergent sides of the character, the colors will blend to produce the ter- 90 tiary color citrine. Of course, it is contemplated that the diagonally opposed sets of lamps may be arranged with other contrast- ing colors than those mentioned. For in- stance, blue and yellow; purple and green, etc.

In Figure 7 is shown a character 30^a, hav- 95 ing a convex exposed surface, the arrow 45 designating rays of a lamp of one color, and at the opposite side the arrow 46 designates rays from a lamp of a contrasting or other color, and at the peak of the section the ar- 100 rows 47 and 48 designate overlapping colored rays which produce along the medial line of the raised character the resultant of the blended colors, as can readily be understood.

Any grouping or number of bulbs or lamps 105 in each set at the corners of the compartment 25 may be provided or arranged, but it is preferred that only a pair of the bulbs 40 and 41 be provided for each set, of the elongated type, in a relative right angled relation ex- 110 tending along the adjacent walls. The bulbs of the sets in the compartment 25 are positioned so as to be entirely hidden from an ob- server, and thus preventing direct rays from passing through the opening 21. 115

In the rear compartment 26 there are posi- 120 tioned lower and upper lamps 50 and 51 respectively, which may be arranged in sets if desired, but which are contrastingly col- ored for emitting contrastingly colored 125 rays in the compartment. The lamps 50 and 51 are arranged, as will be subsequently mentioned, to flash alternately, so that the rays therefrom striking upon the translucent screen 20 will throw the characters 30, which 130 are preferably opaque, into silhouette to an observer looking through the opening 21. It should be mentioned that the lamps 50 and 51 come into play only after the sets of lamps 35 to 38 inclusive have been in operation, 135

and while the latter are inoperative. The compartment 26 may also house the mechanism E which controls the operation of the various circuits and the flashing of the lamps.

5 On top of the casing 10 there is an auxiliary casing 60, smaller than the casing 10, and preferably centered with respect thereto, having a compartment 61 wherein one or more bulbs 62 may be positioned, adapted to emit ordinary rays or colored rays, as desired; the casing 60 having a translucent or transparent lens 65 facing forwardly, upon which may be delineated a slogan, or the name of a manufacturer or the name of a dealer pertinent to the characters displayed on the screen 20. The bulb lamps 62 are illuminated at a period intermittent with the flashing of the sets of bulbs heretofore mentioned.

20 In the example shown the article of merchandise C is a hat supported upon a suitable pedestal or stand 66, and pertinently described by the word "Hat" on the sign screen 20.

25 The device D for intermittently flashing contrasting spot-lights upon the hat C consists of a disc or member 67 having a central shaft 68 bearing at 69 in suitable bearings mounted upon an adjustable reflector 70 wherein a lamp bulb is housed; the reflector 70 being mounted in an adjustable relation at 71 upon a bracket 72. The disc member 67 has a plurality of openings 73, 74, 75^a, etc. therein, wherein translucent colored lenses 75 are positioned, which are relatively contrastingly colored, as shown in Figure 1. The opening in the reflector 70 housing the bulb 92 (Figure 5) thru which rays are directed to the disc 67, is in position to have the lenses 75 align therewith during rotation of the disc 67. The disc 67 and the bulb in the reflector 70 are in position to cast rays of light, with a spot-light effect, upon the article of merchandise C.

45 The disc 67 is rotated at a desired speed by means of a motor 75^b which has a shaft 76 provided with a friction pinion 77 bearing on a peripheral margin of the disc 67, as shown in Figure 4 of the drawings. The motor 75^b is preferably adjustably mounted at 78 upon a wall bracket 79. The motor 75^b is electrically operated; the wires of which are within a cable 80 leading to a detachable plug-in socket, connected in circuit with the wiring for the lamps of the sign B, and operated by the controller mechanism E, in a relation to be subsequently described in detailing the wiring diagram of Figure 5.

60 Referring to Figure 5, the same comprises a circuit 80 wherein a generator or source of current 81 is interposed. The lamps above described are operatively connected in this circuit 80 and are controlled by means of a movable switch device, which may be of conventional construction, such as the ordinary

rotatable cylinder type of circuit maker and breaker. The cylinder 91^a (shown in dotted lines) is driven by a motor 92^a, the latter being connected in the circuit 80. As shown in Figure 5, the lamps 62 are disposed in the circuit 80, and are intermittently flashed by means of the circuit maker and breaker device of the means E consisting of a fixed contact 82 and a plurality of relatively insulated spaced contacts 84 carried by the cylinder 91^a which successively operate over the contact 82; the contacts 84 of course being in the circuit 80 and operating over the contact 82 to intermittently flash the lamps 62 for illuminating the compartment 61 and throwing into silhouette the characters on the lens 65 thereof. The lamps of the sets 36 and 38 are disposed in the circuit 80, which are controlled by a switch consisting of a stationary contact 85 and a movable contact 86 carried by cylinder 91^a, which periodically operates over the contact 85 for simultaneously closing the circuit through the sets 36 and 38 and illuminating the characters 30 upon the screen from opposed diagonal corners in the compartment 25, as will be apparent. Similarly the sets 35 and 37 are arranged in the circuit 80 and controlled by a switch consisting of a stationary contact 87 and a movable contact 88, carried by cylinder 91^a, which is so related to the contact 87 that the same comes into engagement with the contact 87 succeeding the closing of the switch which operates the sets 36 and 38, so that the sets of lamps 35 and 37 are thrown simultaneously into operation only succeeding the operation of the sets 36 and 38, and when the latter are inoperative. This may be gained from the relative positioning of contacts of the two switches controlling said sets 35 to 38 inclusive, as shown in Figure 5. The motor 75^b is operatively shunted in the circuit 80 and controlled by a switch consisting of a stationary contact 90 and a movable contact 91 carried by cylinder 91^a which operates over the contact 90 at a time immediately succeeding the illumination of the sets of lamps 35 and 37 and just after said sets of lamps have been rendered inoperative. Setting the motor 75^b into operation causes the disc 67 to revolve. Immediately thereafter the bulb 92, shown in Figure 5, as disposed in the reflector 70 shown in Figure 4, is illuminated by the riding of the cylinder carried contact 93 into engagement with a stationary contact 95; said contacts 93 and 94 comprising a switch controlling the direction of current through the circuit 80 into the lamp bulb 92. It will be noted from Figure 5 that there is an overlap of the contacts 91 and 93, so that the circuit through the lamp 92 is closed at the same time that the circuit through the motor 75^b is closed, for directing rays of light through the various openings 73, 74, 75^a, etc. as the latter

align with the opening through the reflector 70, and casting differently colored spot-lights upon the article of merchandise C. Immediately succeeding the opening of the switch through the lamp 92 by reason of riding of the contact 93 out of engagement with the contact 94, the lamp 50 in the compartment 26 of the display device is illuminated. This lamp 50 is in the circuit 80 and controlled by a switch comprising a stationary contact 97 and a movable contact 98 carried by cylinder 91^a which rides against the contact 97 as described, succeeding the operation of illuminating the lamp 92. Thereafter, the other and differently colored lamp 51 in the compartment 26 of the display device is illuminated. It is in the circuit 80 and controlled by means of a switch consisting of a stationary contact 100 and a movable contact 101 carried by cylinder 91^a, the latter riding into engagement with the contact 100 immediately after the contact 98 of the switch device of the lamp 50 has moved out of engagement with its companion switch contact 97, so that the lamps 50 and 51 illuminate alternately to direct differently colored rays of light in a diffused relation through the translucent screen 20, for the purpose described. It will be well understood by those skilled in this art that the contacts 84, 86, 88, 91, 93, 98, and 101, in the relation shown in Figure 5, are mounted upon the cylinder 91^a, or a movable member which receives current through the circuit 80 and when engaging with their respective contacts 82, 85, 87, 90, 94, 97, and 100 will close the circuit 80 for setting into operation the various features described. The member on which the movable contacts are mounted may be a slidable plate, a cylinder as shown, or any of the well known expedients.

Some features of the above described form of invention do not adapt themselves to outdoor advertising or display device use. For outdoor display or advertising purposes, the device of Figure 6 may be used, which consists of a housing 110 including a top wall 111, bottom wall 112, rear wall 113, end walls 114, and a front marginal or border wall 115 of the character of the wall 17 above described, having an inwardly divergent flared entrance 117 with an opening 118 through which an observer looks upon suitable display characters mounted upon a screen or support 119 which is in the casing 110 and subdivides the same into a front compartment 120 and a rear compartment 121 for the same purpose above described in setting forth the preferred embodiment of the invention. The roof structure 111 may comprise oppositely sloping parts, to shed water and the like. The screen 119 in the outdoor display device shown in Figure 6, is preferably of wire mesh material, since it is impractical to use fabric or glass for such a

screen. Thereon are supported characters 125 of the same nature and construction as the characters 30 above described for the form of invention A. In the corners of the compartment 120 are disposed sets of lamps which are illuminated in the same relation as the sets of lamps 35 to 38 inclusive, for the preferred form of invention.

The arrangement for silhouetting the letters or characters 125 for the form of invention of Figure 6 is somewhat different than that above described, and comprises upper and lower sets 130 and 131, of flood-lights, which as shown in Figure 8, are preferably arranged in rows along the top and bottom of the compartment 114. The lamps of the sets 130 and 131 are contrastingly colored, that is, the lamps of set 130 may be blue, and the lamps of set 131 may be red, for casting like colored rays. They are illuminated alternately, and not simultaneously, although if desired, they may be illuminated simultaneously. Each of these sets, as shown in Figure 8, comprises a series of reflectors 135, mounted upon a supporting rod 136 carried by standards 137, preferably in an adjustable relation. The reflectors 135 house the bulbs 139 therein, and the reflectors are turned to cast the rays of light towards the rear wall 113. Against the inside surface of this rear wall 113 is disposed a reflector 140, of a corrugated formation, in which the corrugations run horizontally; the sides 141 of the corrugations facing in parallel planes for receiving the rays from the lamps of the set 131, and the angularly disposed sides 142 of the corrugations facing the reflectors of the set 130 for receiving its rays of light thereagainst. Thus, no direct rays are cast from the lamps in the compartment 114 thru the screen 119. Rather, the reflector 140 diffuses the rays and disposes the characters 125 in silhouette to an observer. With the sets of bulbs 130 and 131 alternately illuminated, a spaced striped reflected appearance is given as a back-ground to the observer, against which the characters 125 are silhouetted. If the bulbs of both sets 130 and 131 are simultaneously ignited, an alternately colored striped effect is given off by the reflector 140, as is apparent.

Various changes in the shape, size, and arrangement of parts may be made to the forms of invention herein shown and described, without departing from the spirit of the invention or the scope of the claims.

I claim:

1. A sign composed of characters in relief having convergently arranged sides, a lamp arrangement at one side of the characters disposed so that the rays of light therefrom will project against the facing sides of the characters, lamp means at the opposite sides of the characters disposed so that the light rays therefrom will project against the other

facing sides of said characters, means for simultaneously illuminating both of said lamp means, one of said lamp means being arranged to cast rays of a color contrasting with the color of the rays cast by the other lamp means whereby the opposite sides of each of said characters will be simultaneously illuminated with different colors, said characters at the meeting of said sides being bluntly formed so that the contrasting rays from said lamp means will blend at said blunt edge into a resultant color in producing a pyramidal effect of said characters.

2. A sign composed of characters having the sides thereof convergently arranged in relief, contrastingly colored lamps arranged diagonally at diametrically opposite sides of said characters positioned so that one of said lamps casts its rays of light diagonally only on the facing sides of said characters and the other of said lamps casts its rays of light diagonally on the other sides of said characters, both of said lamps being arranged in a plane forwardly of said characters, other contrastingly colored lamps arranged in diagonal diametrically opposed relation with respect to said characters for casting rays of light diagonally on opposite sides of said characters from a plane forwardly of the characters and in intersecting angular relation with the line of rays of light from the first mentioned lamps, and means for intermittently flashing the first mentioned diametrically opposed lamps with respect to the second mentioned diametrically opposed lamps.

3. In a device of the class described a casing having an observer's opening therein, means on the casing supporting characters visible thru the observer's opening, a reflector back-ground in the casing rearwardly of said characters presenting adjacently acutely inclined reflecting surfaces with a corrugated effect, means for casting colored rays of light upon the reflecting surfaces facing in one direction, and means for directing colored rays of light upon the reflecting surfaces facing in another direction, the reflector being positioned so that the rays of light will be reflected therefrom for placing the characters in silhouette to one looking through the observer's opening.

4. In a sign the combination of a casing having characters supported therein in relief, the characters in cross section being shaped so that opposite sides thereof are convergent forwardly, lamps at opposite sides of said characters arranged in the casing forwardly of the characters for transmission of incident rays to only the sides of the characters immediately facing the respective lamps, the casing being formed to provide an observer's opening through which the characters are visible forwardly of the casing and preventing the transmission of the direct rays there-

through, said lamps being contrastingly colored for directing light colored rays upon the respective sides of said characters, means for simultaneously illuminating said lamps, said lamps being arranged in diagonally opposed corners at said opposite sides of the characters, and other lamps arranged in the casing in the other diagonally opposed corners thereof in the same relative ray casting position with respect to said characters as the first mentioned lamps, said last mentioned lamps being contrastingly colored, and means for simultaneously illuminating the last mentioned lamps at predetermined periodicity alternating with the illuminating of said first mentioned lamps.

5. In a sign of the class described a casing having an observer's opening therein, a translucent screen supported in the casing having characters in relief thereon facing said opening and visible to an observer looking into the opening, the characters in cross section having convergent sides, contrastingly colored illuminating means in the casing forwardly of the characters at opposite sides thereof for casting different colored rays on the sides of the characters respectively facing the same, said illuminating means being invisible through the observer's opening, illuminating means in the casing rearwardly of the characters for placing said characters in silhouette to an observer looking through said opening, and means for alternately illuminating the last mentioned illuminating means with respect to the first mentioned illuminating means forwardly of the characters.

6. In a sign of the class described a casing having an observer's opening therein, a screen supported in the casing having characters in relief thereon facing said opening and visible to an observer looking into the opening, the characters in cross section having convergent sides, contrastingly colored illuminating means in the casing forwardly of the characters at opposite sides thereof for casting different colored rays on the sides of the characters respectively facing the same, said illuminating means being invisible through the observer's opening, illuminating means in the casing rearwardly of the characters for placing said characters in silhouette to an observer looking through said opening, means for alternately illuminating the last mentioned illuminating means with respect to the first mentioned illuminating means forwardly of the characters, an article to which the characters of the sign are pertinent, spot-light means arranged to cast rays of light therefrom on said article, and means operatively associated with the above mentioned illuminating means for setting the spot-light means into operative illumination at periods alternating with the illumination of said first mentioned illuminating means.

7. In a display device the combination of

a casing having an observer's opening therein, a screen supported in the casing subdividing the casing into forward and rearward compartments, characters mounted in relief upon the screen forwardly thereof, differently colored illuminating means mounted in the casing at opposite sides of the characters and forwardly of the screen for casting their differently colored rays upon opposite sides of the characters in a relation visible through the opening, means to simultaneously operate said illuminating means, means in the compartment rearwardly of the screen for illuminating the characters in silhouette to an observer looking through said opening, in an alternate relation with the illumination of the first mentioned illuminating means, a second set of the characters pertinent to the first mentioned set of characters, and means for intermittently illuminating the second set of compartment rearwardly of the screen for illuminating the characters in silhouette to an observer looking through said opening, in an alternate relation with the illumination of the first mentioned illuminating means, a second set of characters pertinent to the first mentioned set of characters, means for intermittently illuminating the second set of characters in an alternate relation with illumination of the first mentioned characters, means for supporting an article pertinent to the first mentioned set of characters adjacent to said casing, spot light means for directing flashing rays of light upon said article, and means placing the spot light means in operating circuit with said illuminating means above mentioned in an intermittent and alternate flashing relation therewith.

WILLIAM T. GOOLEY.