

Nov. 1, 1932.

E. B. KIRK

1,886,341

DISPLAY METHOD AND APPARATUS

Filed April 13, 1929

Fig. 1

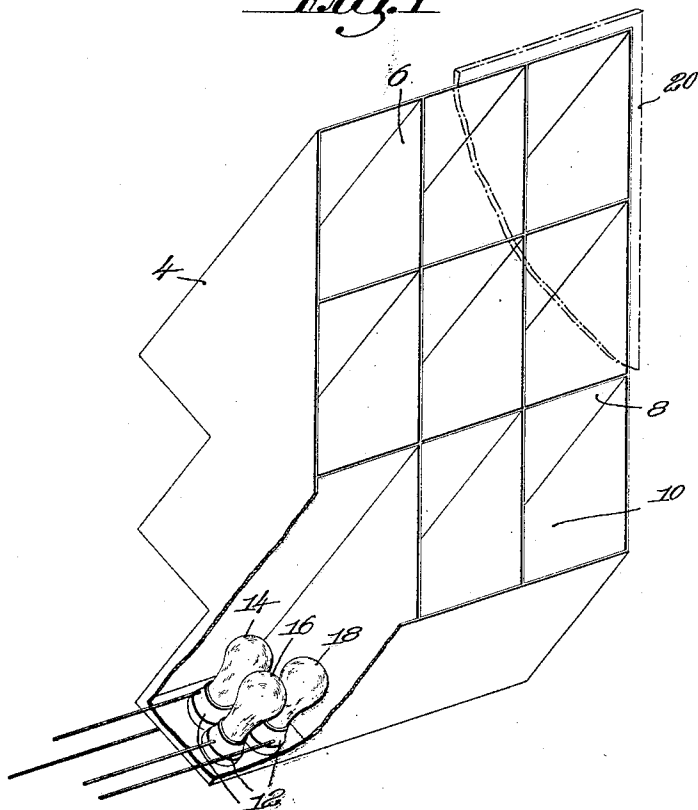
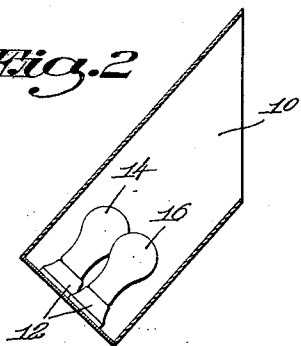


Fig. 2



Witness

Fredrick S. Grunkef.

Inventor

Edward B. Kirk
by his attorney
Van Everen Fish Hildreth Cary.

UNITED STATES PATENT OFFICE

EDWARD B. KIRK, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO KIRK HOLDING CORPORATION, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK

DISPLAY METHOD AND APPARATUS

Application filed April 13, 1929. Serial No. 354,895.

The present invention relates to methods and apparatus for producing illuminated displays.

The object of the present invention is to provide an illuminated display of pleasing appearance which will display substantially any design or succession of designs in any desired arrangement of colors.

With this object in view, the principal feature of the present invention consists of a plurality of cells or compartments each containing one or more light emitting devices, such as incandescent lamps. The cells are so constructed either by an inclined arrangement, by translucencies, or other suitable means to prevent direct visualization of the rays, the light beams being so reflected or diffused that each cell is visible as a separate area of practical uniform illumination. As viewed by the observer, each cell constitutes a source of light. The pattern formed by the display of a number of illuminated areas makes a complete connected design as distinguished from the disconnected display of a number of points of light which characterizes the usual sign having exposed lamps.

Another feature of the invention contemplates striking and effective color effects by the use of a plurality of different colored light-emitting devices in each cell. The colored rays emitted by the several devices in each cell are thoroughly diffused and mixed to form a composite color which is observed as such over the visible area of the cell. Thus, by the use of three primary colors, such as red, blue and green, and a proper control of the relative brilliancies of each, the observed composite color may be anything from nearly white light to the deepest colors of the spectrum. Changes of color effects may be obtained by variations of relative intensities of illuminations, a simple operation that may be carried out at the control apparatus without the necessity for changing the individual lamps. The pattern composed of the connected illuminated areas may be of any desired arrangement and combination of colors.

The sign may be constructed to display a permanent pattern or a sequence of patterns. The invention offers advantages in semi-per-

manent displays because these may be altered either in form or in color arrangement by merely changing the intensities of illumination of different lamps without requiring any alteration in the lamps or the sign itself. One of the most important advantages of the invention, however, resides in its capacity for showing changing effects such as words or figures in motion or in varying colors.

Other features of the invention consist in certain novel features of construction, combinations and arrangements of parts hereinafter described and particularly defined in the claims.

In the accompanying drawing, Fig. 1 is a perspective view of a group of cells forming a sign having the features of the present invention; and Fig. 2 is a sectional elevation of one of the cells.

The illustrated embodiment of the invention consists of the sign having the casing 4 which is divided by the vertical partitions 6 and horizontal partitions 8 to form a plurality of cells or compartments 10. Received in the bottom of each cell are a plurality of sockets 12 to receive the lamps 14, 16 and 18. Any number of lamps may be employed but for practical purposes, it is necessary to use only a red, blue and green lamp in each cell. As shown in Fig. 2, the cells are of considerable depth and are inclined upwardly so that the direct rays from the lamps are not permitted to be observed. The walls of each cell are provided with a reflecting surface, preferably white enamel, although plated metal may be used, if desired. The separate cells are as nearly light-proof as possible in order that each one may be visible as a separate point of light. The different colored rays of light emitted from the three lamps are reflected from the walls and are thereby diffused and mixed so that the color of each cell, as viewed by the observer, depends upon the composite effect of the rays of the three lamps. By varying the relative intensities of illumination of the lamps, practically any desired composite color may be obtained, including even nearly white light.

The sign may be covered with a translucent pane 20 of ground glass, oiled silk, or the

like, to protect the cells from the weather and also to enhance the diffusing and mixing effect. If the pane is sufficiently translucent to prevent the direct rays of the lamps from being observed, the inclined arrangement of the cells may be dispensed with.

The sign, as above described, is adapted with selective illumination of the lamps to produce permanent or semi-permanent displays in any desired pattern and with any desired arrangement and combination of colors.

Although the cells or compartments have been illustrated as being substantially light-proof, whereby the separate illuminated areas of the cells are separately visible, it will be understood that the cells are not necessarily completely light-proof, but where soft or diffused effects are desired, provision may be made for permitting rays of light to pass from one cell to another.

The color effects obtainable with the sign are striking, it being possible to produce substantially any color, including nearly white light, by mixing of the colors of the rays emitted by the several lamps in each cell. The colors may be instantaneously varied to produce motion effects of any kind, such as moving words or figures.

Having thus described the invention, what is claimed is:

1. A sign comprising a plurality of cells each containing a plurality of light emitting devices of different colors, the cells being inclined with respect to the front thereof to prevent direct visualization of the rays and having reflecting inside surfaces to mix the rays and produce light of a composite color, each of the separate cells being visible as an area of the composite color.

2. A sign comprising a plurality of cells each containing a number of different colored lamps, the cells being inclined with respect to the front thereof and of sufficient depth to prevent direct observation of the lamps, the walls of the cells having reflecting surfaces to diffuse and mix the rays of the lamps to produce in each cell a composite color.

3. A sign comprising a plurality of similar, regularly shaped cells, a source of light in each cell whereby the separate cells are rendered visible as small independently illuminated connected areas, the cells being composed of reflecting walls, the walls being inclined with respect to the front of the cell to exhibit only the reflected illumination therefrom.

4. A sign comprising a plurality of separate cells, a plurality of colored light sources in each cell to exhibit the cells as a plurality of separate, connected, independently illuminated areas, the cells being inclined with respect to the front thereof to prevent direct visualization of the light sources, and means

for selectively varying the relative intensities of illumination of the light sources of the cells to produce a changing design.

In testimony whereof I have signed my name to this specification.

EDWARD B. KIRK.

70

75

80

85

90

95

100

105

110

115

120

125

130