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ANIMATED INDICIA BY COLOR OCCLUSION

Filed April 4, 1955

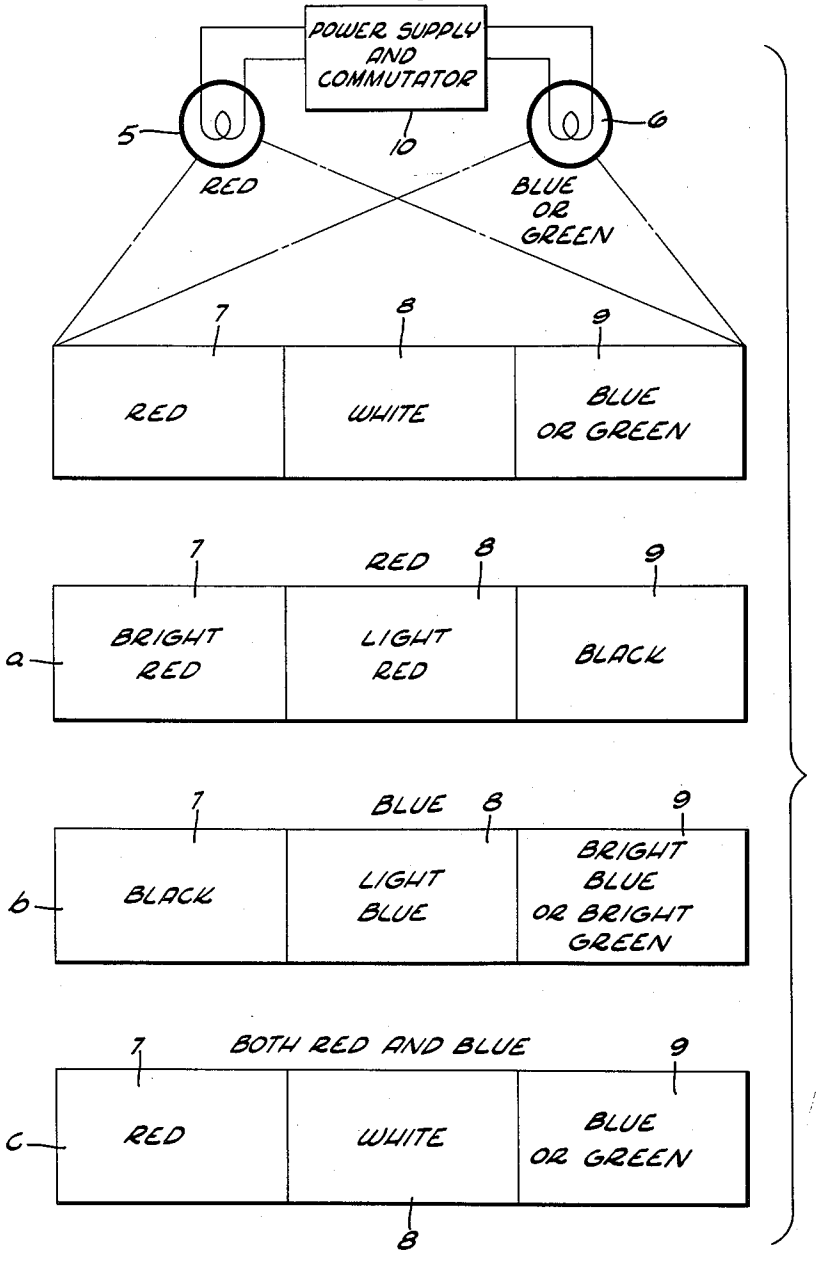



FIG. 1.

BERNARD R. GLUKES
INVENTOR.

BY Orl R. Gorham

ATTORNEY

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# ANIMATED INDICIA BY COLOR OCCLUSION

Bernard R. Glukes, North Hollywood, Calif., assignor to Clara Glukes, Los Angeles, Calif.

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This invention relates to animated signs and displays, and particularly to such signs and displays where the animation is obtained by the principle of color exclusion or occlusion.

In my U.S. Patent No. 2,300,447 of November 3, 1942, I disclosed and claimed an animated sign using the principles of color occlusion to produce animation. By the use of substantially complementary colors in alternation, each color may be caused to disappear or become colorless and another color to become visible by comparison. In this patent, I have disclosed that the rate of change of the animation may be controlled and a certain arrangement of the colored indicia will provide a particular effect for an observer.

In my co-pending application, Ser. No. 461,317, filed October 11, 1954, now Patent No. 2,863,239, I disclose an improved mechanism for obtaining colored light alternations and an improved arrangement of the colored indicia to increase and enhance the animation effects while reducing any possible eye fatigue. In this co-pending application, I use three light sources, one of which includes all the colors, namely, a white light source. This source is used in combination with colored segments or non-colored and/or transparent segments in the indicia of a display or sign. It was found that this combination created a greater illusion of motion by obtaining a greater separation of the apparent moving elements by providing border separation elements between the colored segments of the indicia.

The present invention is an improvement over my prior devices by providing all the above-mentioned advantages thereof while reducing the number of light sources required and simultaneously obtaining the enhanced animation effects as disclosed in my co-pending application. It has been found that the system disclosed hereinafter provides a sort of glowing effect similar to fluorescence to the colored indicia which is not present in the prior systems and a more brilliant white for the white indicia than when a source of white light is used. This effect provides a brighter and more brilliant visible sign or display compared to the prior devices.

The principal object of the invention, therefore, is to facilitate the presentation of indicia of signs by the principle of color occlusion.

Another object of the invention is to provide an improved animated sign or display using the principles of color occlusion.

A further object of the invention is to provide an improved system of obtaining animation in a colored sign or display using the minimum of colored light sources.

The novel features which are believed to be characteristic of this invention, both as to the manner of its organization and the mode of its operation, will be better understood from the following description, when read in conjunction with the accompanying drawing, in which:

The single FIGURE is a diagrammatic view of the invention.

Referring now to the drawings, the upper part of the figure shows a red light source **5**, and a blue light source **6**, positioned behind an indicia, one section **7** of which is red, another section **8** of which is white, and a third section **9** of which is blue. As indicated, the source **6** may also be green, since red and green are substantially complementary. A power supply and commutator **10** may be of the general type shown in my above-mentioned



co-pending application. The indicia may be on an opalescent plate, ground glass plate, or other suitable form of light diffuser, the indicia being colored paint, colored Celluloid, glass, or similar material which will transmit light. The red and blue or green lamps may have their glass envelopes painted or dipped in a paint having a special colored pigment of the same color as the colored indicia, or they may be fluorescent lamps in which the gas is given the desired color hue.

The indicia, **7**, **8**, and **9**, is shown solely to illustrate the invention, it being understood that this indicia may be in the form of figures or lettering such as disclosed in my co-pending application, the present invention being directed to a system which uses only two colored light sources which will produce not only the same animation provided by the use of an additional white light source but provides enhanced visibility which appears as a sort of fluorescent light.

The energization rate of the red and blue light sources may be controlled by unit **10**, which may be a cam system such as described in my co-pending application, the operation, however, being such that the energization of the red and blue or green lamps is produced alternately and simultaneously; that is, the red lamp will first be energized, then the blue or green lamp, and then both and then the red and blue or green lamps again.

The animation is obtained as follows: When the red lamp **5** is energized, the light rays therefrom will pass through the red indicia **7** providing a bright red color. The red light rays will also pass through the white indicia **8** providing a red color of lesser intensity, and when the red light is impressed on the blue or green indicia **9**, this indicia will become black. Thus, when the red light is energized, we have a display having a high intensity red color, a low intensity red color, and black. This is the first step and is illustrated in panel **1***a* of the drawing.

Now, when the blue or green lamp is energized, the red indicia **7** will appear black by the principle of light occlusion, the white indicia **9** will be blue or green of a certain intensity, and the blue or green indicia will be a bright blue or green.

Now, when both the red and blue or green lamps are energized simultaneously, the result is shown in panel **1***c*, and in this instance the red and blue panels appear brighter than when illuminated with only one of the colored light sources as shown in panels **1***a* and **1***b*, while the white panel appears a whiter white than when a white light source only is used, thus providing the three particular indicia shown with red, white, and blue or green in bright, glowing hues, the white being obtained solely by the combination of two substantially complementary colored light sources **5** and **6** without a white light source. As mentioned above, the colored indicia appear to fluoresce while the white indicia appears brighter than when solely white light is used. Thus, the red and blue or green indicia appear much brighter by contrast with the bright white indicia.

Thus, the above invention not only reduces the cost of a sign or display using the principle of color occlusion but one which provides a greater illusion of motion and enhanced color hues of the particular indicia. As mentioned above, the indicia may be arranged in any desired order to illustrate figures or words as disclosed and patented in my above-mentioned co-pending application.

I claim:

1. An animated indicia system comprising a pair of substantially complementary colored light sources, means for energizing said sources at predetermined mutually exclusive uniform intervals and simultaneously, and light transmitting indicia illuminated by light from said sources

and having substantially complementary colored elements of the same colors, as said light sources separated by white light transmitting elements, said white light elements transmitting white light during the simultaneous energization of said light sources and transmitting the respective colored light during the alternate energization of said light sources.

2. A system for obtaining animation by the principle of color occlusion comprising a pair of colored light sources, the color of said light sources being substantially complementary, means for energizing said light sources during mutually exclusive uniform periods and simultaneously, a plurality of indicia, some of which are adapted to transmit light of only the color of said light sources and another of which is adapted to transmit light from either and both of said light sources, the transmission of colored light from both of said light sources providing white light to produce white areas in said indicia, said white areas transmitting the particular color of light from the respective light source when separately energized, and means for controlling the energization of said light sources.

3. A system for obtaining animation in accordance with claim 2, in which said light sources are red and blue or green and said indicia is red, white, and blue or green.



4. A system for obtaining animation in accordance with claim 2, in which one of said colored indicia occludes the light from one colored light source and transmits light from said colored light source.

5. A system for obtaining animation in accordance with claim 4, in which the other of said colored indicia occludes the light from the other of said colored light sources and transmits light from said other colored light source.

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