Oct. 7, 1930. R. M. CRAIG 1,777,551

DISPLAY APPARATUS

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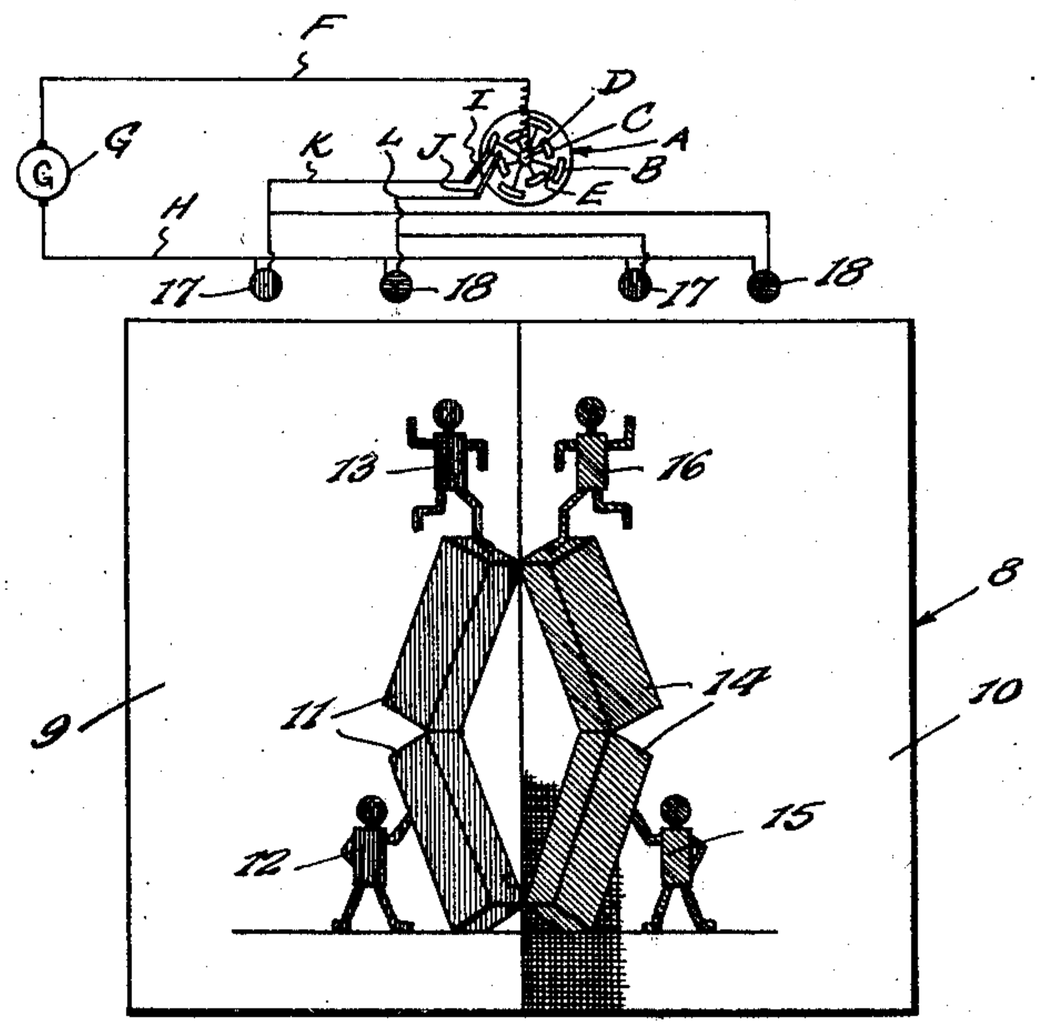

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UNITED STATES PATENT OFFICE

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DISPLAY APPARATUS

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This invention relates to display apparatus and more particularly to an advertising sign of the type disclosed in my Patent No. 1,698,216, issued January 8, 1929, of which the present application is a division.

One object of the invention is to provide a sign consisting of a background having figures painted thereon in pigment colors against neutral backgrounds and subjected to the effect of spectral light rays which change in color so as to impart an animated effect to the sign as the pigment colors are caused to be absorbed or clearly presented by the effect of the colored light rays which are of contrasting colors and alternately turned on and shut off.

Another object of the invention is to provide a sign which will attract attention and be very pleasing and interesting to the observer.

The invention is illustrated in the accompanying drawing wherein is illustrated an embodiment of the invention.

In the description which is to follow reference will be made to pigment colors and by this term is meant colored pigments or the colors in which the images are represented on the display surface. Where reference is made to spectral colors such reference applies to colors of the spectrum as represented by colored light rays. Reference will also be made to neutral colors, which I employ as backgrounds, and by neutral colors I mean such as do not materially change under the spectral colors by which the images are displayed or, in other words, those which display no decided color characteristics such as relate to primary colors, and remain of about the same apparent density under complementary or primary colored light rays.

In the embodiment illustrated in the drawing, the numeral 8 indicates in general the display surface on which there is painted a background 9 of a light neutral color and a background 10 of a dark neutral color. At this point it may be stated that the extremes of neutral colors are white and black and that there are many color tints which may be employed for a light background and many dark tints which may be employed for a dark background, so that in none of the embodiments of the invention are the backgrounds restricted to any particular neutral color, the colors being selected in accordance with the pigment colors to be employed in representing the different images and the judgment of the one supervising the arrangement and painting of the advertising or other matter to be displayed. In the said drawing, and upon the background 9, there are represented, for example, two blocks standing approximately on end and indicated by the numeral 11, these blocks being represented in red, for example, and figures 12 and 13 may likewise be represented upon the said background, in red, and the former apparently supporting the blocks and the latter standing upon the upper one of the blocks. Similar blocks 14 are represented in green upon the background 10, and figures 15 and 16 similar to the figures 12 and 13 are likewise represented in green upon this background. Red light bulbs 17 or any other source of red spectral light rays, and green, blue, or bluish green bulbs 18, or other sources of spectral rays of similar color, are so arranged with respect to the display surface that the surface may be successively flooded with the complementary or contrasting spectral colors. In this embodiment of the invention, when the display surface is flooded with red light, the images upon the background 9 will be obliterated as will also the images upon the background 10, but when the surface is flooded with blue light or blue green light, the images 11, 12 and 13 upon the background 9 will appear substantially black, and the images 14, 15 and 16 upon the background 10 will stand out substantially white, by contrast with the dark background. Thus, by successively flooding the display surface with spectral light rays of complementary or contrasting colors, the matter represented in pigment colors upon the surface will be caused to appear and disappear.

It will be understood, of course, that in the embodiment just described, the images 11, 12 and 13 upon the background 9 may be represented in green and the images 14, 15 and 16 upon the background 10 may be represented

in red so that both sets of images will appear under the red light but will both be obliterated under blue light.

It will be evident that while reference has been made to the use of pigment colors in the representation of the images or other matter to be displayed, they may be represented by colored lithographic prints, dyes, opaque or transparent oil or water colors, etc., and the invention may be employed for advertising, theatrical, amusement, educational and other purposes.

In the embodiment of the invention illustrated and described, the principles have been adapted primarily to advertising displays, but it will be understood that this is merely representative of one application of the principles of the invention and that the principles may be employed in color displays for any purposes whatsoever such for example as scenic effects, amusement displays, educational displays, walls, cabarets, etc.

It is, of course, essential to employ means for effecting illumination of the display surface which means will operate automatically, and inasmuch as there are many flashing devices which may be employed for this purpose, I have illustrated in connection with the figure a flasher indicated as a whole by the reference letter A, which may be a rotary disc of insulating material having concentric series of contact strips B and C upon its face in circuit with a shaft D which supports the disc for rotation, wires E serving to electrically connect the said contact strips and the shaft, and a conductor wire F being led from the shaft to one side of a source of current supply indicated by the numeral G. A conductor wire H leads from the other side of the source of current supply and is connected to the sockets for all of the electric light bulbs regardless of their distinctive colors. Brushes I and J are arranged to coact respectively with the contact strips B and C, and conductor wires K and L are led respectively from the brushes I and J and are connected, one with the other terminal of each socket for a light bulb of one color and the other with the other terminal of the socket for each light bulb of the other color. The contact strips B and C are arranged in staggered relation so that the circuit will be successively alternately closed through the bulbs of the two distinctive colors.

What is claimed is:

1. Display apparatus comprising a display surface having background areas of contrasting neutral colors, each area bearing matter to be displayed, the matter in each area being of a distinctive pigment color and the pigment colors being in contrast, and means for displaying said surface successively in the presence of contrasting spectral colors each of which corresponds substantially to a respective one of the pigment colors.

2. Display apparatus comprising a display surface having background areas of contrasting neutral colors, each area bearing matter to be displayed, the matter in each area being of a distinctive pigment color and the pigment colors being in contrast, and means for displaying said surface successively in the presence of contrasting spectral colors each of which corresponds substantially to a respective one of the pigment colors and the other spectral color of which is complementary to the other color.

3. Means for displaying the effect of animation of separated images comprising a display surface having contrasting neutral colored background areas and having upon said areas the matters to be displayed represented in colors having a visible spectral difference, and means for dsplaying said surface at successive periods under light rays of a character to obliterate one representation and render the other representation visible.

In testimony whereof I affix my signature.

RICHARD M. CRAIG. [L. s.]