

# UNITED STATES PATENT OFFICE

JOHN H. KLIEGL, OF NEW YORK, N. Y.

## COLOR DISPLAY DEVICE

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An object of the present invention is to disclose a device, of particular utility in the art of display advertising, in which an attractive changeable color display is partially interrupted at intervals in order to show advertising messages. It is well adapted for use in locations such as show windows, for attracting the attention of passers-by.

The device, in one form comprises; a stationary plate bearing advertising messages; a rotatable color disc in front of the plate and having slots through which, under certain conditions the advertising messages may be read; and a power driven shutter in front of the color disc.

In the particular embodiment illustrated and described herein the advertising messages are on a translucent plate illuminated from the rear; an electric motor is placed behind the plate with its shaft passing through the plate; the color disc is mounted on the motor shaft and is impositively driven therefrom; and the shutter is secured to the motor shaft to rotate therewith.

Further and other objects and advantages will be apparent from the specification and claims, and from the accompanying drawings which illustrate what is now considered the preferred embodiment of the invention.

In the drawings:

Fig. 1 shows the device in cross section.

Fig. 2 is a view on line 2—2 of Fig. 1.

Fig. 3 is a view on line 3—3 of Fig. 1.

Fig. 4 is a front view of the color disc.

Fig. 5 is a cross-section on line 5—5 of Fig. 4.

Figs. 6 and 7 are views of the device in operation while displaying different advertising messages and color combinations.

Figs. 8 and 9 are views of different color displays while no advertising messages are visible.

In the drawings the motor is designated 20 and its shaft is 22. A translucent plate 24 is supported, concentric with shaft 22, by rubber packing 26 in annular channels 28 which are fastened to the interior walls of casing 30.

Behind plate 24 are lamps 32 held in sockets 34 mounted on brackets 36 attached to casing 30. In front of plate 24 is the color disc

38 having a hub structure 40 fitted to shaft 22 but free to rotate thereon. In front of disc 38 is the shutter plate 42 attached, by hub 44 and screw 46, to shaft 22.

With the above described structure in mind it will be appreciated that shutter 42 rotates at the same speed as the motor, while disc 38, due to friction between its hub and shaft 22, will also rotate, but at a speed different from that of the shutter. In addition to the frictional resistance between hub 40 and shaft 22, additional resistance is obtained by placing a washer 48 between hub 40 and shutter hub 44, and by pressing hub 40 against washer 48 by means of compression spring 50 through the instrumentality of washer 52. The thrust of spring 50 towards the motor is taken by washer 54, and it has been found advantageous to place a rubber washer 56 between washer 54 and the end of the motor hub 58. The action of the rubber washer is not fully understood, but it serves to cause the color disc 38 to more rapidly pick up speed when the motor is started.

When the motor is running at its predetermined speed, shutter 42 being fast on shaft 22 rotates at the same speed as the motor while color disc 38, being impositively driven by friction, rotates at a somewhat slower speed than the motor.

Shutter 42 (Fig. 2) is simply a circular disc of metal having radial slots 60 cut therein. Translucent stationary plate 24, as shown in Fig. 3, is provided with two advertising messages arranged in two concentric rings, one ring near the outer rim of the plate and the other ring at a lesser radius.

Color disc 38 (Fig. 4) has spaced slots 62 near its rim through which the outer ring of advertising matter may be seen, and spaced slots 64, through which the inner ring of advertising may be viewed. The remaining surface of disc 38 is divided into sectors each variously colored in concentric zones.

In the illustrated embodiment of the invention, each slot 62, 64, and each color sector is  $22\frac{1}{2}$  degrees in width while each shutter slot 60 is half that width. The shutter slots are 90 degrees apart, as are also slots 62 and 64, slots 64 being midway between slots 62.