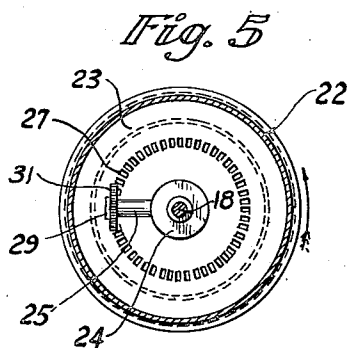
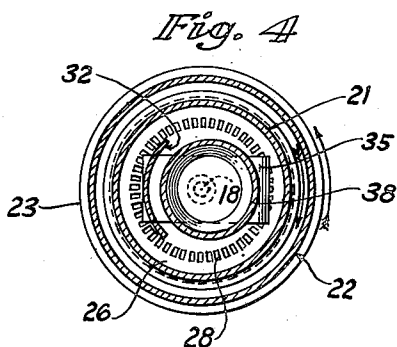
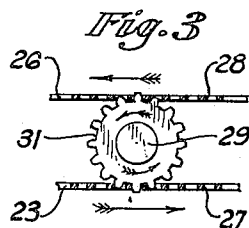
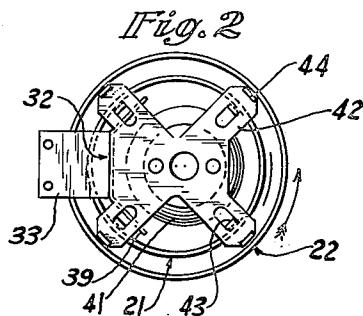
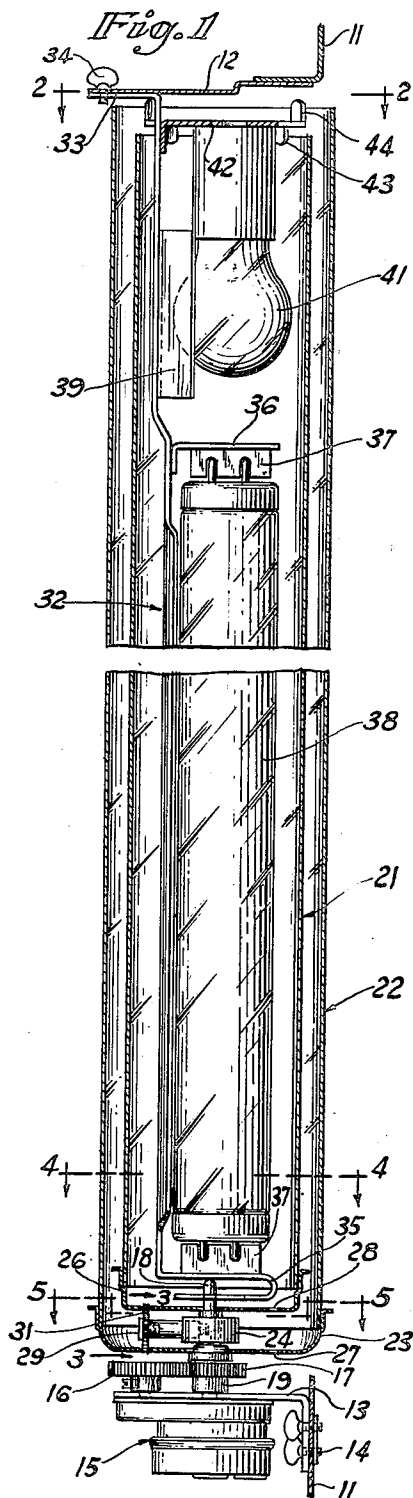


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ILLUMINATIVE DEVICE FOR PROJECTING CONTINUOUSLY
CHANGING COLOR DESIGNS
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ILLUMINATIVE DEVICE FOR PROJECTING
CONTINUOUSLY CHANGING COLOR DE-
SIGNS

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3 Claims. (Cl. 240—10.1)

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This invention relates in general to color animation, and more particularly to novel means for providing continuously changing color designs for decorative and attention-commanding purposes, preferably in connection with merchandising equipment, such as automatic, coin-controlled phonographs.

A principal object of the invention is the provision of a color animation device of simplified construction in the form of hollow, concentrically disposed, oppositely rotated, color carrying members surrounding a suitable light source, which presents a constantly changing design of harmonizing colors to produce an eye-arresting arrangement which is also interesting, restful and pleasing to an observer.

Another important object of the invention is to provide a simplified mechanism for imparting the desired opposite rotation to such concentric color carrying members which is simple to install in any desired location and is cheap and easy to manufacture.

A further object is to provide for different visual effects being presented by such a device when viewed from different angles by mounting a simple light reflector between the light source and the inner color carrying member to produce intensified or direct illumination within the field of the reflector and softer or indirect illumination when viewed from a point outside the field of the reflector.

Numerous other objects and advantages of the invention will be apparent from a consideration of the following specification and accompanying drawings, wherein:

Figure 1 is a vertical sectional view through a color animation device embodying the features of the instant invention;

Fig. 2 is a horizontal section taken substantially on the line 2—2 of Fig. 1;

Fig. 3 is a detail vertical section taken substantially on the line 3—3 of Fig. 1; and

Figs. 4 and 5 are detail horizontal sections taken substantially on the lines 4—4 and 5—5, respectively, of Fig. 1.

Referring more particularly to Fig. 1 of the drawings, the instant embodiment of the invention is therein illustrated as being mounted upon a supporting structure 11 by means of an upper bracket 12 secured by welding or the like thereto and a lower bracket 13 mounted thereon by means of suitable thumb screws 14. Secured to the lower bracket 13 in any desired manner and depending therefrom is an electric motor and reduction gear assembly 15, the driving shaft of

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which extends upwardly freely through the bracket 13. Secured to this driving shaft of the motor assembly 15 is a driving gear 16 in mesh with a companion driven gear 17. A stationary spindle 18 is rigidly secured at its lower end to the bracket 13 and extends vertically upward therefrom. The driven gear 17 is mounted upon and secured to a sleeve 19 rotatably mounted upon the stationary spindle 18 and resting at its lower end upon the bracket 13.

Inner and outer hollow cylindrical color carrying members 21 and 22 are mounted concentrically relative to each other for rotation in opposite directions through the gear train above described in the following manner. The upper end of the sleeve 19 is formed to receive a supporting flange or driving member 23 press-fitted or otherwise suitably secured thereon. The peripheral portion of the flange member 23 is formed to receive the lower end of the outer color carrying cylinder 22 and supports the latter in vertical position. With this arrangement, rotation of the sleeve 19 by the motor and reduction gear assembly 15 through the gears 16 and 17 will cause similar rotation of the outer color carrying member 22 through its driving member 23.

Rigidly secured in any suitable manner, as by means of a set screw or the like, to the stationary spindle 18 above the sleeve 19 is a collar 24 having a stud shaft 25 extending horizontally therefrom and either secured thereto or formed integrally therewith. A supporting flange or driving member 26 similar to, but of smaller dimensions than, the member 23 is rotatably mounted upon the upper end portion of the stationary spindle 18 and rests upon the upper end surface of the collar 24. This flange member 26 is formed at its marginal edge portion to receive the lower end of the inner color carrying member 21 to support the latter concentrically within the outer color carrying member 22. As best seen in Figs. 4 and 5, the lower flange member 23 is provided with an annular series of apertures 27 and the upper flange member 26 is provided with a similar series of apertures 28 vertically aligned with the apertures 27. Rotatably mounted upon a shouldered bolt 29 screwed into a suitable aperture in the outer end of the stud shaft 25 is a spur gear 31 meshing with the annular gear means comprising the apertures 27 and 28 in the driving members 23 and 26. With this arrangement, as best illustrated in Fig. 3, rotation of the lower driving member 23 rotates the gear 31 to cause rotation of the upper driv-

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ing member 26 in the opposite direction. Consequently, this extremely simple construction comprises a readily assembled arrangement for supporting the inner and outer color carrying members 21 and 22 and rotating them in opposite directions.

Means are provided for mounting a suitable light source and a reflector therefor interiorly of the inner color carrying member 21 and for retaining the upper ends of the color carrying members 21 and 22 in proper position. This means is supported from the upper bracket 12 and comprises a reflector, indicated generally by reference numeral 32, having a horizontal flange 33 at its upper end, attachable and secured to the upper bracket 12 by means of suitable thumb screws 34. At its lower end, the reflector 32 is provided with a substantially U-shaped flange 35, the upper portion of which may rest upon the upper end of the stationary spindle 18 and the lower portion of which is adapted to engage the latter in any suitable manner to maintain proper vertical alignment of the reflector 32. Mounted upon the upper portion of this U-shaped flange 35 and upon a horizontal flange 36 secured in any suitable manner to the reflector 32 adjacent the upper end thereof, are a pair of end plugs 37 for receiving a primary light source in the form of a tubular fluorescent light 38. As shown in Figs. 1 and 4, that portion of the reflector 32 disposed behind the light tube 38 is curved and extends laterally around the tube to provide a suitable reflecting surface for the light rays normally directed rearwardly therefrom. The reflector member 32 is also provided with a similar, but laterally wider, reflector portion 39 secured thereto above the horizontal flange 35, as shown in Figs. 1 and 2, which is disposed behind a secondary light source in the form of an inverted incandescent bulb 41 having the upper end of its socket secured to a horizontal bracket 42, in turn mounted upon the reflector 32 adjacent its upper flange 33. The bracket 42, as best seen in Fig. 2, is formed as a spider having a plurality of downwardly extending guide lugs 43 struck from the main body portion thereof which are adapted to slidably engage the inner surface of the upper end of the inner cylinder 21. The outer ends of the bracket 42 are turned upwardly to provide a plurality of vertically disposed lugs 44 which slidably engage the inner surface of the upper end of the outer color carrying cylinder 22 to guide rotational movements thereof.

With the above described mechanism, it will be seen that the two light sources 38 and 41, each one of which produces light of different characteristics from that provided by the other, are supported by the reflector assembly 32 from the brackets 12 and 13, and that the color carrying members 21 and 22 are supported at their lower ends by the bracket 13 and guided at their upper ends by the bracket 42. It will be readily understood that the motor in the assembly 15 and the two lights 38 and 41 are adapted to be connected in any desired manner to a suitable source of electrical energy, either in the same or separate circuits, and that any desired type of switch control or controls may be incorporated in such circuits. Operation of the motor and reduction gear assembly 15, through the gears 16 and 17, will rotate the lower supporting flange 23 to rotate the outer color carrying member 22 in one direction, which will cause rotation of the inner color carrying member 21 in the opposite direction, through the

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agency of the gear 31 and the supporting flange member 26.

The members 21 and 22, while illustrated herein as being cylindrical in shape, may have any other desired cross-sectional shape, with either of them differing from the other in this respect, so long as the inner one is permitted to rotate freely within the outer one. Each of these members 21 and 22 are provided on either their inner or outer surfaces with suitable designs in various harmonizing colors. In this respect, these color carrying members are similar to those disclosed in my co-pending application Serial No. 691,155, filed October 6, 1946, now abandoned.

Like in said co-pending application, the instant color animation device may be mounted in the forward portion of an automatic phonograph, or the like, the supporting structure 11 herein comprising part of the front wall structure of such a machine. In this respect, a suitable transparent or semi-transparent viewing member or lens may be mounted on the supporting structure 11 forwardly (to the right in Fig. 1) of the animation device if desired. In any setting in which the present device is arranged, however, continuously changing color designs will be produced thereby when viewed from the forward side (from the right in Fig. 1), the light rays from the tube 38 and bulb 41 passing through the color carrying members 21 and 22, which are formed of any suitable transparent or semi-transparent material, preferably cellulose acetate. In view of the disposition of the reflector assembly, including the portion 39 thereof, intensified or direct illumination through the color carrying members will be provided forwardly of the device within the field of such reflectors, and softer or indirect illumination of the changing color designs will be provided at either side of the device when viewed from a point outside the field of such reflector.

The present arrangement herein illustrated incorporating the two separate light sources 38 and 41 is provided for use in a vertical panel having a horizontally disposed dividing portion between the lower end of the reflector 39 and the bracket 36. With this arrangement, different visual effects will be obtained from the upper and lower portions of the device, in view of the different configurations of the main part of the reflector 32 co-operating with the light tube 38 and the reflector portion 39, as well as the different types of illumination emanating from the different light sources 38 and 41. It will also be appreciated that the present construction permits of ready substitutions of color carrying members having different color designs thereon, since these members 21 and 22 have merely a tight sliding fit at their lower ends in the supporting flange members 23 and 26.

While I have shown and described a preferred embodiment of the invention, various details of structure may be varied without departing from the scope and spirit of the invention exemplified by the following claims.

I claim:

1. In a device of the class described, a supporting structure, upper and lower vertically spaced brackets mounted on said supporting structure, a stationary, vertically disposed spindle mounted on said lower bracket, a light source, an intermediate bracket for supporting said light source depending from said upper bracket and having a portion formed as a reflector for said light source and retained in vertical alignment by said station-

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ary spindle, a pair of hollow, semi-transparent color carrying members surrounding said light source and said intermediate bracket and mounted on said stationary spindle for rotation relative to each other, and a motor and reduction gear assembly mounted on said lower bracket for rotating said members.

2. In a device of the class described, a pair of hollow color carrying members, a stationary spindle, a pair of flange members rotatably mounted on said spindle and respectively supporting said color carrying members, means for drivingly rotating one of said color carrying member supporting flange members, driven gear means interposed between said flange members for translating such rotation of said flange member into opposite rotation of the other said flange member, and a stationary shaft fixed to and extending normal to said stationary spindle for rotatably supporting said driven gear means.

3. In a device of the class described, a light source, a bracket disposed below said light source, a pair of concentrically disposed, hollow, semi-transparent color carrying members surrounding said light source, a stationary spindle secured to said bracket in axially disposed relationship to said members, a lower driving member rotatably

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mounted on said spindle and engaging the outer one of said color carrying members, an upper driving member rotatably mounted on said spindle and engaging the inner one of said color carrying members, said driving members having annular gear means formed thereon in vertical alignment with each other, a collar secured to said spindle for spacing said driving members from each other, means for rotating said lower driving member in one direction, and a vertically disposed gear rotatably mounted on said collar and engaging said annular gear means to rotate said upper driving member in the opposite direction.

DAVID C. ROCKOLA.

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