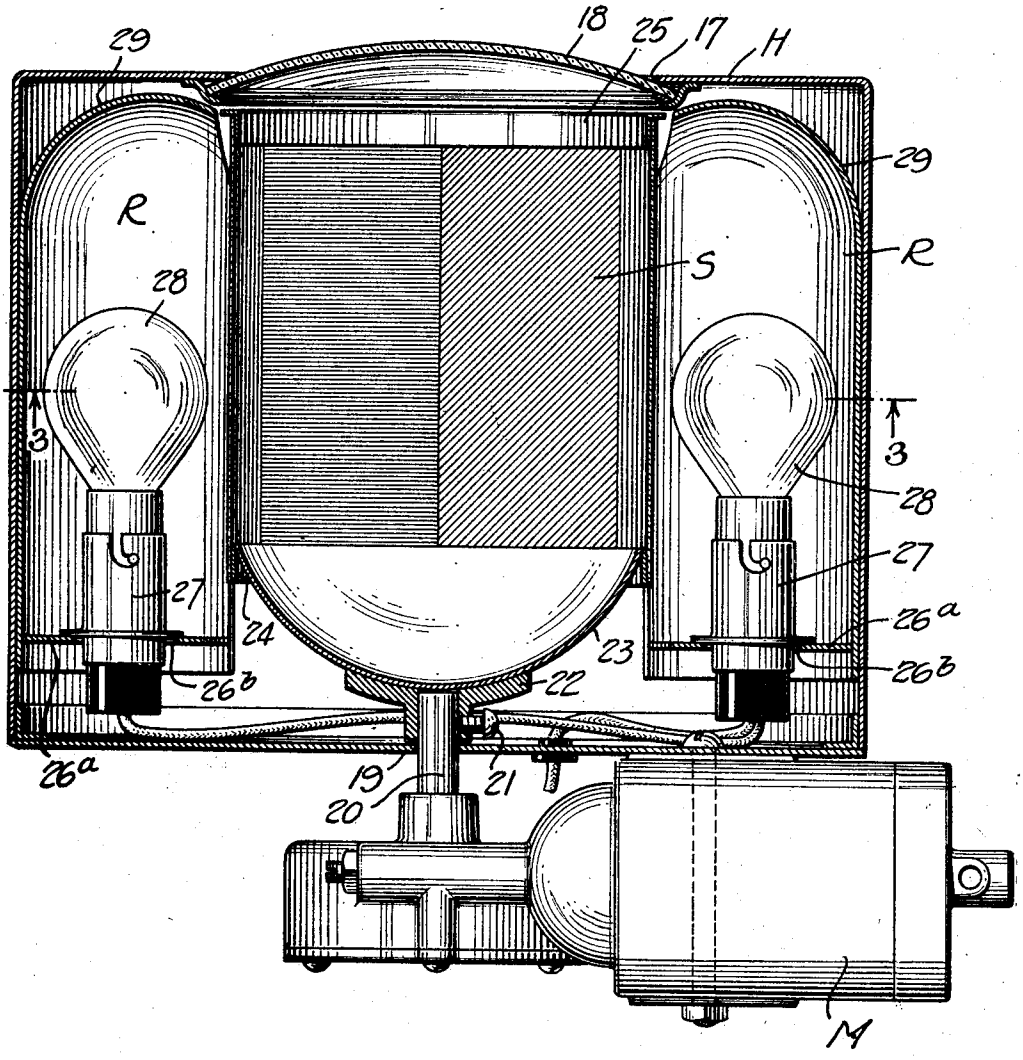
Nov. 10, 1931. H. W. BISHOP 1,831,090

LANTERN

Filed March 11, 1930 2 Sheets-Sheet 1

Fig. 1.



INVENTOR.
HOWARD W. BISHOP
BY
ATTORNEYS.

Nov. 10, 1931. H. W. BISHOP 1,831,090

LANTERN

Filed March 11, 1930 2 Sheets-Sheet 2

Fig. 2.

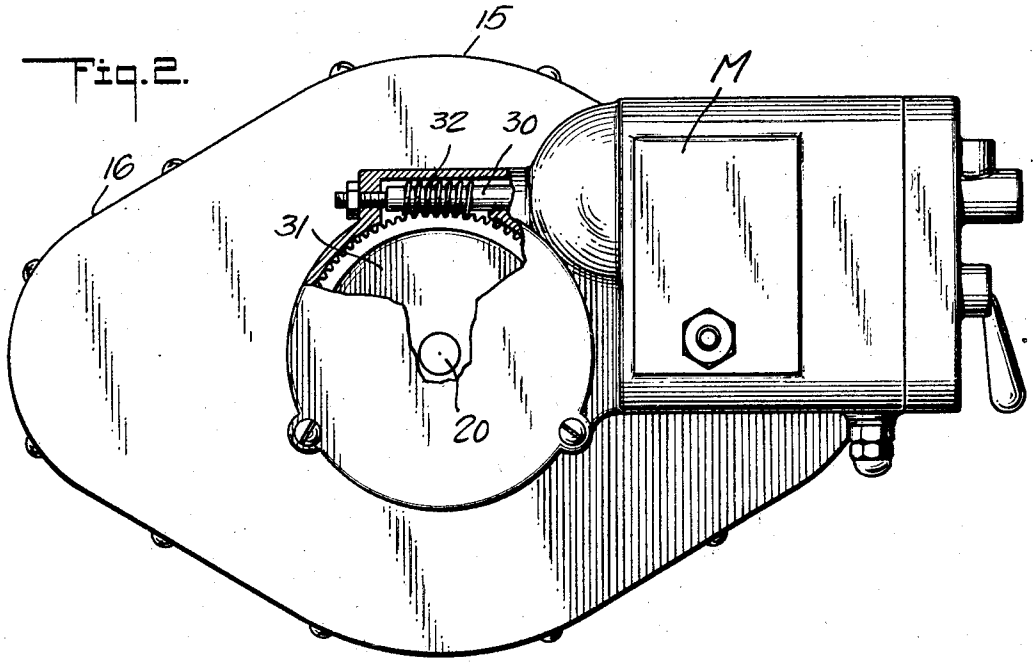
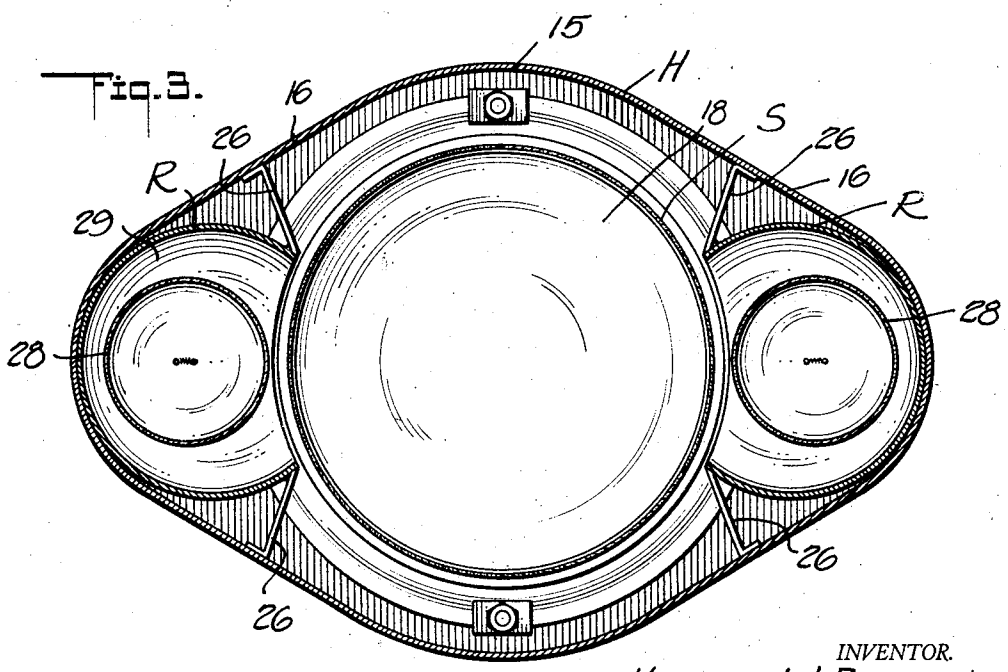


Fig. 3.



INVENTOR.
HOWARD W. BISHOP
BY
ATTORNEYS.

Patented Nov. 10, 1931 1,831,090

UNITED STATES PATENT OFFICE

HOWARD W. BISHOP, OF LOS ANGELES, CALIFORNIA

LANTERN

Application filed March 11, 1930. Serial No. 434,878.

My invention relates to lanterns of that type having a multi-colored screen which is movable in respect to a source of light for changing the color of the rays projected.

It is a purpose of my invention to provide a lantern of the above described type which is operable to produce new and pleasing spectacular lighting effects.

It is also a purpose of my invention to provide a lantern which embodies a multi-colored and tubular screen with a source of light exteriorly of the screen, and reflectors associated with the light sources and screen by which the light rays emanating from said sources are first projected through the screen and then outwardly thereof, the reflectors serving to reflect and concentrate the light rays in a manner to intensify the resultant light projected from the lantern, and the screen being rotatable to effect variable coloring of the light rays projected.

I will describe only one form of lantern embodying my invention and will then point out the novel features thereof in claims:

In the accompanying drawings:

Fig. 1 is a view showing in vertical section one form of lantern embodying my invention with a driving means for the screen thereof in elevation.

Fig. 2 is a view showing the lantern in rear elevation and with a portion of the casing for the driving means broken away to disclose parts not otherwise revealed.

Fig. 3 is a transverse sectional view taken on the line 3—3 of Fig. 1.

In carrying out my invention, I provide a housing H of a form to accommodate the component parts of the lantern, and as in this embodiment of my invention a single screen and two lamps are employed, the housing is constructed of triangular form to provide a substantially circular central portion 15, and lateral portions 16 disposed at diametrically opposed points with respect to the central portion to accommodate the two lamps and the reflectors with which they are associated. The front side of the housing is formed with an opening 17 in the central portion 15, and a lens 18 closes this opening, and through which lens the light rays of the lantern are adapted to be projected. At the rear side of the housing and centrally with respect to the opening 17 is a small opening 19 in which a shaft 20 is rotatably fitted, this wall of the housing being separately formed from the remainder of the housing and detachably secured thereto by means of screws in order that access may be had to the housing in assembling and disassembling the component parts of the lantern.

As illustrated to advantage in Fig. 1, that portion of the shaft 20 extending into the housing H has secured thereto, by means of a set screw 21, a head 22 the forward side of which is of concave form and has secured thereto a reflector 23 which, in the present instance, is of parabolic form. At the perimeter of the reflector 23 is secured an annulus 24, while secured to the annulus is the rear end of a color screen S, the forward end of the color screen being reinforced by a second annulus 25.

The color screen S is made up of segmental sections or panels of colored and translucent material, and as in this embodiment of my invention I employ two sources of light, and to combine the light rays therefrom in producing light of one or a number of given colors, those panels which are diametrically opposed are of the same color. It is to be understood however, that diametrically opposed panels may be of unlike colors in order to produce a third color of the rays projected from the lantern.

As illustrated to advantage in Fig. 1, the lateral portions 16 of the housing each contain an elongated reflector R which is secured in fixed position within the housing in any suitable manner, such as by arms 26.

This reflector is of substantially tubular form except that its inner side is cut away as best illustrated in Fig. 3 in order to accommodate the screen S, but primarily to permit the projection of light rays through the panels of the screen. The rear end of the reflector is closed by a transverse wall 26^a, the inner side of which is mirrored to form a reflecting surface, and this wall is formed with an opening 26^b in which a lamp socket 27 is secured to receive an electric lamp 28 which is disposed within the tubular reflector. The forward end of the reflector is rounded as indicated at 29, and in such manner that its reflecting surface is positioned to reflect light rays emanating from the lamp 28 outwardly of the opening 26^b, inwardly through the screen S, and rearwardly thereof in the general direction of the reflector 23. It will of course be understood that certain of the rays emanating from the lamp 28 are projected directly through the panels of the screen on to the reflector 23, and other rays are reflected from the tubular surface of the reflector through the screen and in advance of the reflector 23. In constructing the reflector 23 of parabolic form, the major portion of the rays emanating from both of the lamps 28 are received and projected laterally through the screen S and a portion of which will ultimately be projected through the lense 18.

In practice, the screen S is adapted to be slowly rotated by means of the shaft 22 in order to successively present the panels of the screen to the openings of the reflectors R in order that the rays emanating from the lamps 28 will be projected through the panels and thus be colored by the latter. Consequently, the rays as projected through the lens 18 and by the reflector 23 are controlled as to color by the color of the panels exposed to the lamps. As opposed panels are of like color, all light rays projected through companion panels are of the same color, and hence the light rays combine to produce a beam projected from the lantern by the projector 23. By rotation of the screen the colored panels successively pass the reflectors R, and in so doing change the light beam from one color to another, there being a perfect blending of one color into another during the change by reason of the fact that there is an intermixing of the rays projected through portions of adjacent and different colored panels. For example, as a panel of one color is passing from the illuminating influence of the adjacent lamp 28, the succeeding panel is passing into the illuminated position occupied by the first panel, so that portions of both of the panels are illuminated simultaneously. As a consequence, the light rays projected through these two differently colored panel portions are projected into the interior of the screen and against the reflector 23 where they combine with like colored rays projected from the other lamp 28 and through corresponding panel portions, and with the net result of a perfect blending of all of the rays as projected forwardly through the lens 18. It will of course be understood that the predominating color of these rays as projected constantly changes until the complete succeeding panel has passed completely into position before the lamp, when the projected rays assume a single color corresponding to that of the respective screen panel. Thus there is eliminated an abrupt change in color of the light beam projected from the lantern as the screen is rotated, and instead there is effected a blending of one color into another to produce a lighting effect which is artistic and spectacular.

The shaft 20 may be rotated in any suitable manner, and in the present instance I employ a motor M, the shaft 30 of which is operatively connected to a worm wheel 31 by means of a worm 32. The worm wheel 31 is fixed to the shaft 20, as illustrated in Fig. 2, and consequently when the motor is energized the shaft 30 is operated to effect rotation of the screen S and the reflector 23 by means of the shaft 20. Through the medium of the worm and worm wheel, rotation of the motor is reduced in its transmission to the screen S and, as a consequence, slow rotation of the screen is produced to effect the successive movement of its panels across the openings of the reflectors R.

Although I have herein shown and described only one form of lantern embodying my invention, it is to be understood that various changes and modifications may be made herein without departing from the spirit of the invention and the spirit and scope of the appended claims.

I claim:

1. A lantern comprising a multi-colored and tubular screen mounted for rotation, a reflector at one end of the screen for projecting light rays forwardly from the tube formed by the screen, a stationary lamp positioned exteriorly of the screen and projecting light rays through at least a part of the screen, and means for rotating the screen to present different parts thereof to the lamp.

2. A lantern comprising a multi-colored and tubular screen mounted for rotation, a reflector at one end of the screen for projecting light rays forwardly through the screen, a stationary lamp positioned exteriorly of the screen and projecting light rays through at least a part of the screen, a second reflector exteriorly of the screen and positioned with respect to the lamp to reflect rays projected thereon from the lamp through the screen and onto the first reflector, and means for rotating the screen to present different parts thereof to the lamp and between the two reflectors.

3. A lantern comprising a multi-colored and tubular screen mounted for rotation, a plurality of lamps positioned exteriorly of the screen so as to project their rays through parts of the screen, means for rotating the screen to present different parts thereof successively to the lamps, and a reflector positioned with respect to the screen to reflect light rays projected thereagainst outwardly of the screen.

4. A lantern comprising a multi-colored and tubular screen mounted for rotation, a lamp exteriorly of the screen for projecting rays through at least a part of the screen, means for rotating the screen to present different parts thereof successively to the lamp, and a reflector so positioned with respect to the screen as to reflect light rays projected through the screen forwardly and outwardly of the screen.

5. A lantern comprising a tubular screen having segmental panels of various colors but those panels diametrically opposed of the same color, means for mounting said screen for rotation about its major axis, a pair of lamps disposed exteriorly of the screen and at diametrically opposed points in respect thereto, a reflector for reflecting light rays projected through the screen forwardly and outwardly of the screen, and means for rotating the screen.

6. A lantern comprising a tubular screen having segmental panels of various colors but those panels diametrically opposed of the same color, means for mounting said screen for rotation about its major axis, a pair of lamps disposed exteriorly of the screen and at diametrically opposed points in respect thereto, a reflector for reflecting light rays projected through the screen forwardly and outwardly of the screen, and reflectors associated with the lamps for concentrating the rays therefrom so that they are caused to be projected through the screen and in the general direction of the first reflector.

7. A lantern comprising a housing, a shaft journaled in the housing, a reflector secured to the shaft, a tubular screen secured to and surrounding the reflector and made up of a plurality of segmental panels of various colors, said reflector and screen being disposed within said housing, a lamp within the housing and exteriorly of the reflector for projecting light rays through the reflector, and means connected to said shaft for rotating the latter whereby the screen is rotated to present different panels successively to the lamp.

8. A lantern as embodied in claim 7 wherein a reflector is associated with the lamp and disposed within the housing for concentrating the rays from said lamp in the general direction of the first reflector.

9. A lantern comprising a housing, a shaft journaled in the housing, a parabolic reflector secured to the shaft and disposed within the housing, a tubular screen secured to the reflector and made up of segmental panels of various colors, the colors of diametrically disposed panels being the same, lamps within the housing disposed at diametrically opposed points in respect to the reflector, reflectors in the housing and positioned in respect to the lamps to project light rays therefrom through the screen and in the general direction of the first reflector, an opening in the housing at one end of the screen, a lens within said opening, and means for rotating said shaft.

HOWARD W. BISHOP.