June 25, 1929. H. P. HOLLNAGEL 1,718,560

FLOODLIGHT

Filed Dec. 8, 1925

Fig. 1.

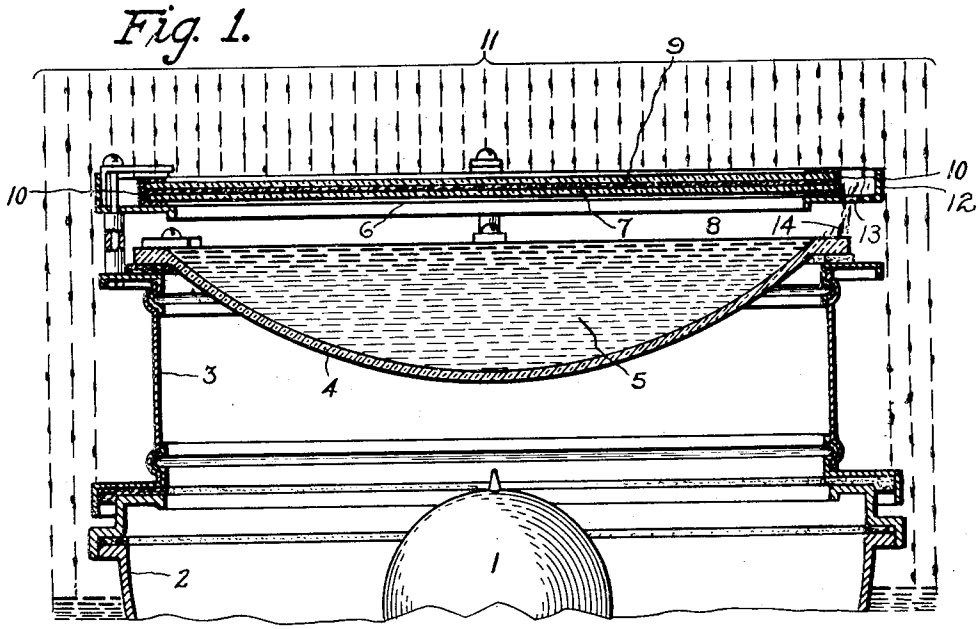


Fig. 2.

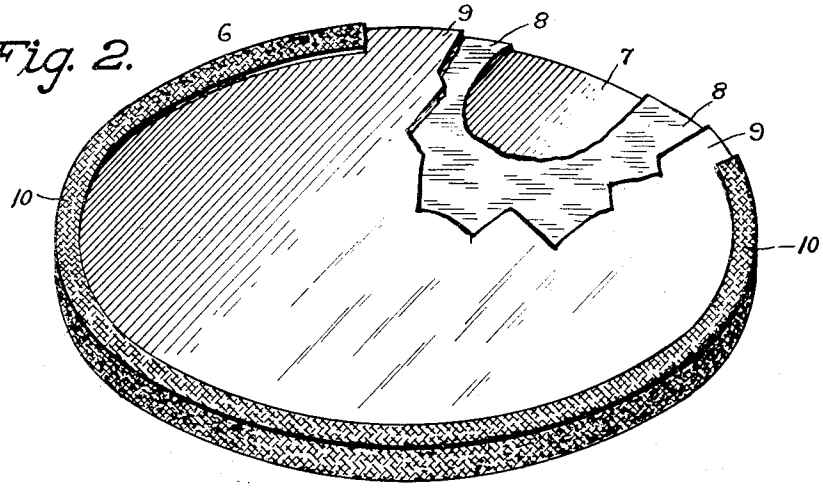
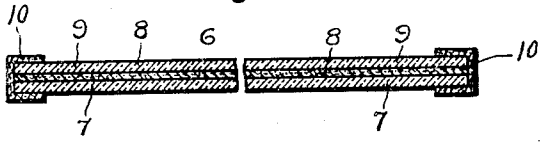


Fig. 3.



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UNITED STATES PATENT OFFICE.

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FLOODLIGHT.

Application filed December 8, 1925. Serial No. 74,155.

My invention relates to improvements in flood lights. More particularly the invention relates to flood lights in which the character of the beam is changed by causing it to pass through suitable means such as so-called color or absorbing screens.

My invention is particularly adapted for use in the illumination of fountains, for example. Ordinarily the glass door of a flood lighting device becomes quite hot when the light is turned on. While in this condition, if cold water is allowed to fall upon it as from a fountain the glass is very likely to crack. This is particularly true in the case of colored glass. It is one of the objects of my invention to provide a flood lighting device free from this objection. It is an object to provide a flood lighting device of the kind described in which instead of the usual flat or upwardly bulging or convex glass a concave glass is arranged to receive and hold water so that if the light is turned on before the fountain water begins to fall the glass will not become overheated.

The invention will be more fully understood from the following specification and by reference to the accompanying drawing in which Fig. 1 is an elevation of a section of the flood lighting unit of my invention; Fig. 2 is a perspective drawing of the color screen with portions broken off to more clearly illustrate the construction; Fig. 3 is a section through the color screen.

Referring more in detail to the drawing, it will be seen that the flood light comprises a reflecting element 2 which may be a surface of revolution of any suitable form, such as parabolidal, hyperbolidal, or the like. This reflector may be supported in any suitable manner. Upon the rim of the reflector there is supported an annular frame 3 upon which rests a concave transparent or translucent glass closure 4 adapted to serve as a basin for a volume of water 5. This glass 4 and the water 5 form a composite lens. Below this lens and located within the focal region of the reflector 2 there is located a source of light 1 which may be of any suitable character such as an incandescent lamp. Supported above the lens in any suitable manner, as for example by the frame 3 and through the medium of suitable clamps and bolts as indicated, there is the absorbing screen 6. Through this screen the beam from the searchlight passes after passing through the composite lens 4 and 5. The screen 6 may be either transparent or translucent. This screen is of a suitable character. The rays of light emanating from the device will pass through the screen and emerge therefrom with a spectral composition and energy distribution quite different from that originally emitted from the incandescent filament.

By referring to Figs. 2 and 3 it will be seen that the screen consists of a pair of glass plates 7 and 9 holding between them a layer of colored transparent material 8 which acts not only as a screen for the light, but may serve also as an adhesive to firmly hold the two glass plates together. Under heat and pressure the glass plates and the colored medium may become practically integral with one another. This construction, however, may be modified by merely having the absorbing material laid between the two sheets of glass after which the edges of glass may be covered with a coat of water-proof material 10 to prevent the disintegration of the color absorbing substance. As a water-proofing material, rubber, bakelite, collasta, marine glue, tar and the like may be used. It will be understood that the color screen may consist of a number of units similar to that shown in Fig. 2 placed one upon the other. These units when constructed as described are very strong.

As a base for the color absorbing medium, bakelite, collasta, urea-resin or any condensation product which has been properly dried may be utilized. Gelatine or cellulose compounds may also be utilized.

In Fig. 1 I have represented by the dotted lines 11 water falling from a fountain, for example. As the water impinges upon the screen 6 it flows off and trickles into the concave basin 4. In order to insure that the water shall flow from the screen into the basin the holder of the screen is provided with a flange 12. In the marginal region of the holder a series of openings 13, only one of which is shown, is provided. Therefore, as the water runs off of the screen it passes through the openings 13 into the basin as indicated in Fig. 1, by the stream 14. After the water has once collected in the glass 4 the source of light may be allowed to run even before the fountain is turned on without much danger of either the glass 4 or the glass plates 7 and 9 being broken by the cold water falling upon it.

With the arrangement described very little heat will pass through to the plates of the color screen. The same is true with respect to the ultra-violet rays. This is due to the fact that the water 5 absorbs the energy from both the infra-red and ultra-violet regions of the spectrum. More particularly is this true of that portion of the infra-red region of the spectrum in which the resulting energy effects are a maximum.

While I have illustrated my invention in connection with a specific form of device in compliance with the requirements of the patent statutes, it will be understood that in view of the disclosure, variations may be readily carried out without departing from the spirit of the invention or from the scope of the claims herein.

What I claim as new and desire to secure by Letters Patent of the United States, is:

1. A flood light comprising a light source, a housing for the light source, an opening in said housing over the light source, a transparent basin located in said opening for holding water and for allowing light from the light source to pass through, a color screen located over said basin for coloring the light that passes through said basin, said screen being supported by said housing, and means for maintaining the basin full of water.

2. A flood-lighting device having in combination a reflector, a closure for said reflector, said closure comprising a transparent water container adapted to hold water, said container being located above said reflector, a color screen located above said container, said elements being all assembled in order along a common axis whereby when a light source is located in front of the reflector a beam may be projected from the reflector through said container and said screen and whereby the screen may be protected from damage due to heat from the light source.

In witness whereof, I have hereunto set my hand this thirtieth day of November, 1925.

HERBERT P. HOLLNAGEL.