Nov. 2, 1965 J. V. McCLEES 3,215,883

PHOTOGRAPHIC LAMP

Filed Aug. 10, 1960

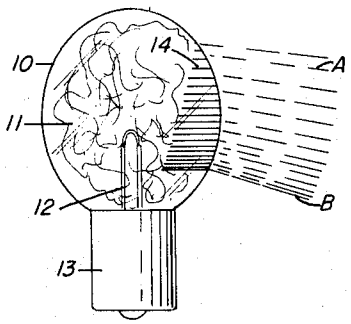


FIG. 1

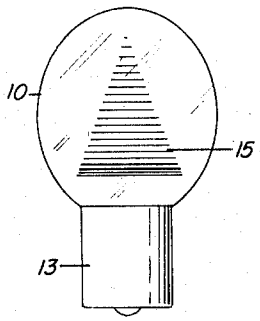


FIG. 2

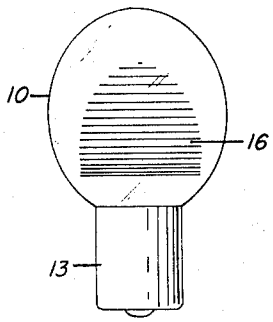


FIG. 3

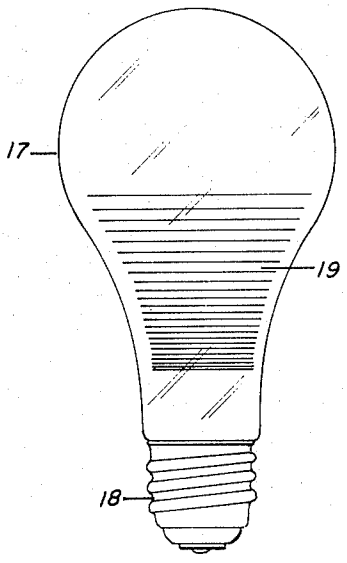


FIG. 4

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PHOTOGRAPHIC LAMP

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1 Claim. (Cl. 313—112)

This invention relates to photographic lamps or bulbs and is especially appplicable to flash bulbs. However, the invention is not limited to flash bulbs. It may, for example, be applicable to photographic flood lights, or illuminating panels. It is a well known fact that the intensity of light varies inversely according to the square of the distance. In order to equalize the foreground light falling on any object from any bulb, I propose the use of a graduated filter. This filter may be applied internally or externally to any bulb.

Prior to my invention, electric lamps generally comprise a clear or completely and uniformly coated glass envelope containing a light producing element. In the case of flash-bulbs, the type disclosed by Ostermeier, in his U.S. Patent No. 1,776,637, were manufactured and used. This type of lamp was further modified by an overall filter as disclosed by Kurlander, U.S. Patent No. 2,046,388, and Munder, U.S. Patent No. 2,269,984. These filters proposed to control the color of the light emitted by the bulb and only indirectly had any effect on the intensity of the light source.

The object of my invention is to provide an electric light bulb having a filter over only a portion of its envelope and so graduated that the light passing through will be lessened in the immediate foreground in such a manner that objects close by will receive an equal intensity of light as those more distant. To one skilled in the photographic arts it will be evident that a bulb capable of producing nearly equal reflected light characteristics from objects at unequal distances offers novel and important exposure control.

My invention will be more clearly understood and other objects of my invention will appear from the following description taken in conjunction with the accompanying drawings in which:

FIG. 1 is a side elevation of an electric light bulb embodying my invention.

FIG. 2 is a front view of the bulb.

FIG. 3 is a front view of a modified form of the bulb.

FIG. 4 is a view similar to FIG. 3 and illustrates a further modification.

Referring now to the drawings, there is shown in FIG. 1 a bulb which in the illustrated form is a flash bulb. This photoflash bulb comprises essentially a vitrious enclosing envelope **10**, a readily oxidizable charge **11**, and a filament **12**, therein adapted to be incandesced for igniting the charge **11**. The base is indicated at **13** and the filter at **14**. In accordance with my invention the filter **14**, lessens the passage of light so as to cast a shadow of graduated value A–B.

These filters may be formed on the bulb by spraying, dipping, etching, printing, or any means commonly used to apply design to glass, glass coatings, or substitutes. The filter itself may be made up of lines, cross hatchings, dots, or graduating by overlaying suitable materials such as the following:

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378 grams of cellulose acetate 5-second viscosity
3024 cubic centimeters of acetone
756 grams of ethyl lactate
3–10 grams of any alcohol soluble organic dye.

By first coating the base to the desired height to keep it clear, successing dippings to varying levels creates a graduated filter. The density ratio of any given material may range from 0 to opacity. The most useful range photographically is between 3% to 50%.

It is obvious that this filter may be applied to any incandescent light bulb or lighting area of incandescense for the purpose of retarding a portion of the light emission. Some of the varying forms such a filter may take are shown in the following illustrations. FIG. 2 shows the same type bulb as FIG. 1 but is a front view displaying the filter **15**, within the boundaries ABC. FIG. 3 shows the same type bulb with the filter **16**, in an alternative shape. The actual dimension and shape are determined by the area it is desired to shade. FIG. 4 illustrates a larger type of flash-bulb **17**, normally manufactured with a screw base **18**, requiring a larger filtration area such as the band filter **19** shown herein. This filter is different from earlier methods of light control in that it does not control the entire light output but does allow small area control with but little interference in the normal bulb pattern. This latter effect is achieved by having the filter above the base area and only partially obscuring the charge area. This allows the light, both reflected and direct, from the charge to flow around the filter and cast no harsh edge shadow. A certain irregularity in the upper and lower outlines may be used to increase this effect.

What is claimed is:

In an electric photographic lamp having an electrically conductive base for receipt in an electric socket, a lighting wire and a transparent envelope surrounding the lighting wire and extending from the base, the combination with the photographic lamp of a light-intensity-controlling filter applied to a minor portion of the envelope to control the intensity of light transmitted therethrough, said filter having a varying density of decreasing magnitude from substantially the base upwardly towards the terminus of said filter and having a continually decreasing dimension with decreasing density, said lamp thereby being adapted to provide illumination for the taking of a photograph to lessen the illumination of the immediate foreground and tend to effect a uniform illumination of the entire photographic subject.

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