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LIGHT-MODIFYING ATTACHMENT FOR LAMPS USED IN PHOTOGRAPHY

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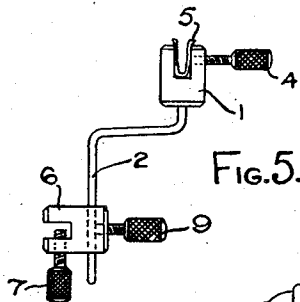
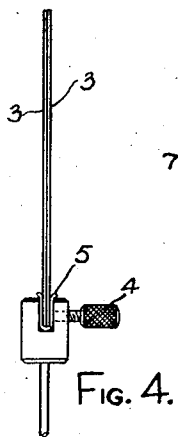
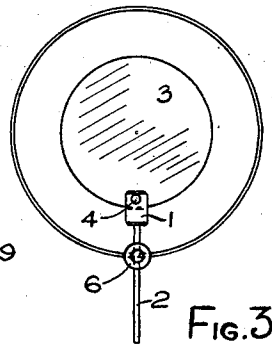
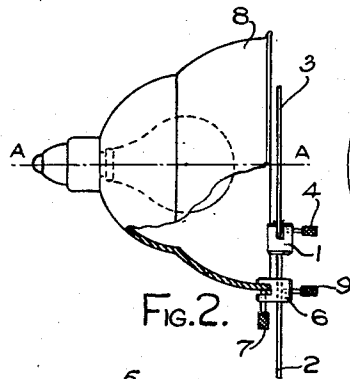
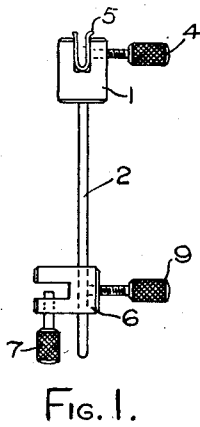


FIG. 5.

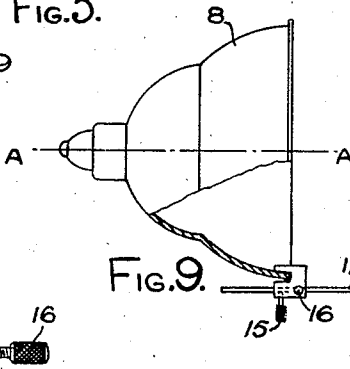


FIG. 9.

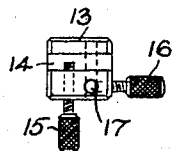


FIG. 8.

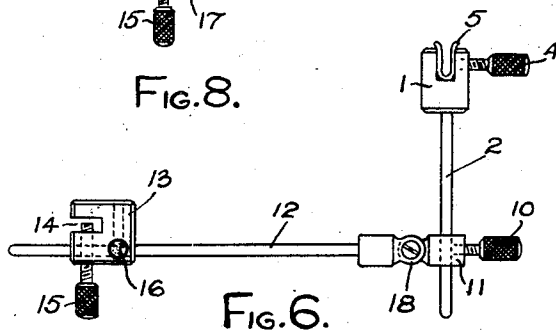


FIG. 6.

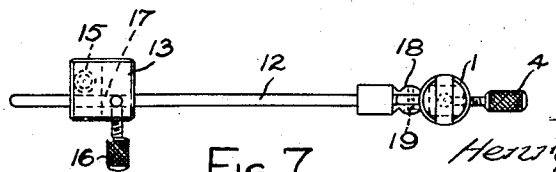


FIG. 7.

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UNITED STATES PATENT OFFICE

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LIGHT-MODIFYING ATTACHMENT FOR
LAMPS USED IN PHOTOGRAPHY

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3 Claims. (Cl. 240—1.3)

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This invention relates to a light-modifying attachment for lamps used in photography for illuminating the subject or object to be photographed.

Lamps for this purpose usually comprise an electric filament lamp mounted in a bowl or hood forming a reflector.

For intense illumination, high powered electric filament lamps, usually termed "photoflood bulbs," are usually employed.

Correct color rendering in terms of black and white photography requires faithful translation into monochrome of color as seen by white daylight.

The normal electric filament lamp produces a white light which differs appreciably from daylight, inasmuch as although it is rich in red and yellow, it is lacking in the blue and adjacent components at the blue end of the spectrum.

Even the more intense white light produced by the aforesaid photoflood bulbs fails closely to simulate daylight owing to its deficiency in the blue component.

An object of the invention is to provide a simple attachment for lamps used in photography for illuminating purposes, whereby to effect blending, filtering and control of the light so as to obtain correct color values in portraiture by artificial light, with all types of photographic films or plates.

According to the present invention, a holder is provided for one or more light-modifying filters, screens or the like elements, said holder being adapted for attachment to the reflector of a lamp used in photography for illuminating purposes, so as to support said element or elements in front of the light source to modify the light transmitted from said light source to suit particular requirements.

According to the invention, moreover, the holder may be such that its effective length is adjustable so that it can be applied with equally effective results to reflectors of differing sizes.

In the drawings:

Figure 1 is an elevational view of one form of the holder.

Figure 2 shows in side elevation and to a smaller scale the holder illustrated by Figure 1 applied to a bowl type of reflector, which is shown broken away to illustrate more clearly the mode of attachment.

Figure 3 is a front elevation corresponding to Figure 2.

Figure 4 is an elevation of the top of the holder illustrated by Figure 1, showing two light-modifying screens held therein.

Figure 5 shows in elevation a modified form of the holder for use where the lamp projects to a point on or beyond the rim of the reflector.

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Figure 6 is a side elevation of another form of the holder.

Figure 7 is a top plan view corresponding to Figure 6.

Figure 8 is an end view of the clamping block by which the holder is attached to the rim of the reflector, and

Figure 9 shows to a smaller scale and in side elevation the holder illustrated by Figures 6 to 8 applied to a bowl type of reflector.

In the embodiments illustrated, a clamping head 1 fixed on one end of a rod 2 is employed as a holder for one or more light modifying filters or screens 3, in the form of circular discs.

The clamping head 1 consists of a bifurcated body, conveniently of cylindrical form, provided with a binding screw 4 to grip the edge of the light modifying disc or discs inserted between the bifurcations of the head 1.

A strip of rubber or felt doubled upon itself is preferably inserted in the head to cover the inserted edge of the disc or discs 3 for protective purposes.

In the embodiment illustrated by Figures 1 to 5, the rod 2 is slidably mounted in an attaching clamp 6, also in the form of a bifurcated body conveniently cylindrical, provided with a binding screw 7, to clamp it on to the rim of a bowl type reflector 8 of a lamp employed in photography for illuminating the subject or object to be photographed, the rim being received between the bifurcations of the attaching clamp 6 as shown in Figure 2.

As shown in Figures 2 and 3, the attaching clamp 6 is clamped on the rim of the reflector 8 at the bottom thereof, and with the lamp in the position illustrated, in which the optical axis A—A is horizontal. The rod 2, which is located in a diametrical direction in relation to the front of the reflector, is axially adjustable vertically in the attaching clamp 6, to centralize the light modifying disc or discs 3 carried by the clamping head 1, in relation to the lamp bulb or reflector, a binding screw 9 being provided in the attaching clamp to hold the rod in the position to which it is adjusted. It will be appreciated, however, that the attaching clamp 6 can be clamped on the rim of the reflector 8 at any other position around said rim to support the rod 2 so that its axis extends in a diametrical direction in relation to the front of the reflector 8.

The clamping screws 4, 7 and 9 are provided with knurled heads to facilitate tightening and slackening.

The light modifying discs 3 in the present embodiments consist of one circular disc of clear blue glass and another of white ground glass, said discs being used independently, or together face to face, according to the effect required.

The light modifying discs 3 are of less diameter

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than that of the front of the reflector 8 as they are required to cover only the central field of the lamp bulb.

In the most convenient mode of use, the attaching clamp 6 is clamped by the screw 7 on the rim of the reflector 8 at the bottom, so that the rod 2 inserted in said clamp 6 is located in an upright position, assuming the reflector to be in the position illustrated.

The selected light-modifying disc 3, or, if required, both discs 3 face to face, are clamped at the bottom edge in the clamping head 1 by the binding screw 4, and the rod 2 is adjusted axially in the attaching clamp 6 to centralise the disc or discs 3 with the lamp bulb or reflector 8, whereupon the rod 2 is clamped in the adjusted position in the attaching clamp 6 by the binding screw 9.

The rubber or felt strip 5 covers the clamped edge of the light-modifying disc or discs 3, so affording protection against fracture in the clamping operation.

By reason of the capability of axial adjustment of the rod 2 in the attaching clamp 6, the attachment can be applied effectively to existing reflectors or hoods of known types of photographic lamps of various sizes.

To suit the known types of lamp, in which the lamp bulb approaches closely to, or projects from the front of the reflector, the rod 2 can be cranked at the end carrying the clamping head 1 as shown in Figure 5, or the clamping head 1 could be set forward on the rod 2.

With the blue glass disc 3 alone supported, as above described, in front of the lamp bulb, the direct red rays are filtered out and the blue rays retained, and these blended with the indirect light reflected by the reflector produce a light which is both soft and actinic and of a quality similar to that of daylight.

With both the blue disc and white ground glass disc supported face to face in the clamping head 1 in front of the lamp bulb, the light obtained is as last described, but diffused.

With the white ground glass disc alone supported in the clamping head 1 in front of the lamp bulb, the usual harsh quality of the light is mellowed by cutting out the "hot spot" only, without reducing the reflected light which is soft in character, the disc forming a light diffuser.

As the light-modifying disc or discs 3 cover only the central field of the reflector, adequate ventilating space is provided and overheating is avoided.

In the embodiment illustrated by Figures 6 to 9, in which the same reference numerals as those in the previously described embodiments are used to denote corresponding parts, the rod 2 carrying the clamping head 1 is slidably mounted and held by a binding screw 10 in a support 11, preferably cylindrical, which is carried by a second rod 12, provided with an attaching clamp 13 to clamp on the rim of the reflector 8, so that said rod 12 extends in the direction of the optical axis of the lamp.

The attaching clamp 13 is in the form of a rectangular metal block, bifurcated or notched as at 14 to engage over the rim of the reflector on which it is clamped by a binding screw 15.

The rod 12 is slidably mounted in the attaching clamp 13 so that it can be adjusted axially therein, and a binding screw 16 is provided in said clamp 12 to clamp the rod 12 in its adjusted position therein.

As shown more clearly in Figure 8, the bore 17

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for the rod 12 is off-set to one side of the middle of the clamp 13, and the clamping screw 14 is positioned to the other side.

By means of the rod 12, the light modifying disc or discs 3 mounted in the clamping head 1 can be adjusted forwards and backwards in front of the lamp in the direction of the optical axis of the lamp besides being adjustable in the diametrical direction of the lamp by the rod 2.

The rod 12 is connected to the support 10 for the rod 2 by a pivotal joint 18, which provides also for angular adjustment of the light modifying disc or discs mounted in the clamping head 1, as indicated diagrammatically by the dotted lines in Figure 9, such angular adjustment of the light modifying disc or discs providing for partial diffusion.

In the embodiment illustrated, a plain pivotal joint 18 with a pivot pin 19 is shown, but a ball and socket joint can be used, so providing for universal adjustment of the light modifying screens 3 mounted in the clamping head 1.

With the attaching clamp 13 clamped to the rim of the reflector 8 at the bottom and the rod 2 set at right angles to the rod 12, as shown in Figure 9, then assuming the lamp is in the position illustrated in that figure, in which the optical axis A—A of the bulb or reflector is horizontal, the light-modifying disc or discs 3 mounted in the clamping head 1 can be adjusted in a vertical direction by the rod 2, and in a horizontal direction by the rod 12, the joint 18 providing for any angular adjustment that may be required.

The attachment in any of the embodiments described with its light-modifying discs 3 avoids undue contrast effects in the photograph made; also, it does not bring about the unnatural strained expression of the sitter usually prevailing under the glare of uncovered lamps and, moreover, it presents a neat appearance and avoids the unpleasant odors of scorching and overheating of the reflector incidental to the use of muslin or like screens as frequently provided heretofore to cover the entire front of the reflector for diffusing purposes.

The invention is not restricted to the particular embodiments described by way of example.

I claim:

1. A light-modifying screen holder for application to a reflector of a lamp used in taking photographs by artificial light, comprising a bifurcated head with a binding screw for selective and edge reception between the bifurcations and clamping by said screw of light-modifying screens, a rod having one end attached to said bifurcated head, and a bifurcated attaching element with a binding screw for clamping it on to the rim of the reflector, said attaching element having a transverse bore for the slidable reception of said rod and another clamping screw for clamping said rod in said bore to position such of said light-modifying screens as are clamped in said bifurcated head in front of the lamp.

2. A light-modifying screen holder for application to a reflector of a lamp used in taking photographs by artificial light, comprising a bifurcated holding clamp with a binding screw for the selective reception between the bifurcations and clamping by the binding screw of light-modifying screens, a rod carrying said bifurcated clamp, a holding for said rod, said holder providing for axial adjustment of said rod therein, a binding screw for clamping said rod in said holder, a bifurcated attaching clamp with a binding screw for clamping it on the reflector rim, a

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second rod slidable axially in said attaching clamp towards and away from the reflector, a binding screw for clamping said second rod in said attaching clamp, and a pivotal joint between said second rod and said holder for the first rod to set such of said light-modifying screens as are mounted in said holding clamp at an angularly adjustable position in front of the lamp.

3. A light-modifying screen holder for application to a reflector of a lamp used in taking photographs by artificial light, comprising two rods connected together at right-angles to one another, a screw clamp on the end of one of said rods for selective reception and edge clamping therein of light-modifying screens and a clamp on the end of the other rod for clamping it to the reflector rim to extend therefrom in the direction of the optical axis of the lamp and support the first mentioned rod in the diametrical direction of the reflector with such of said light-

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modifying screens as are clamped in said clamp on said first mentioned rod in front of the lamp, each of said rods being axially adjustable.

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