

W. N. McCOMB.
LIGHT SHIELD.
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1,027,621.

Patented May 28, 1912.

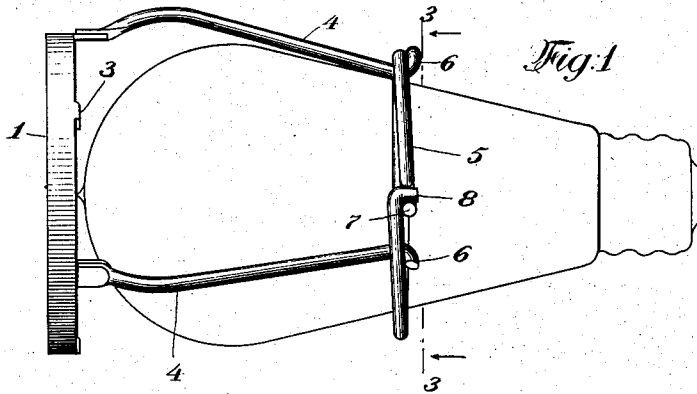


Fig. 1

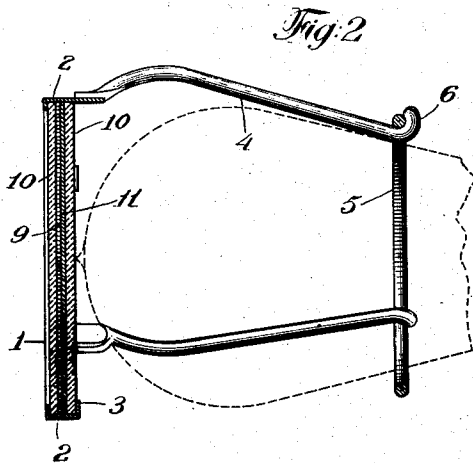


Fig. 2

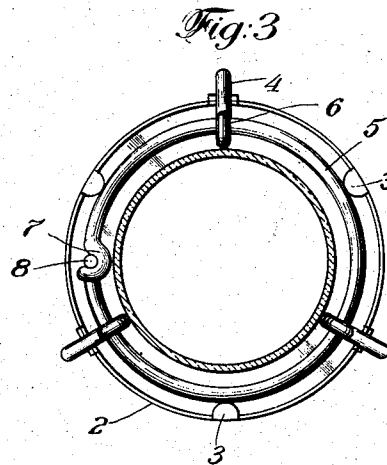


Fig. 3

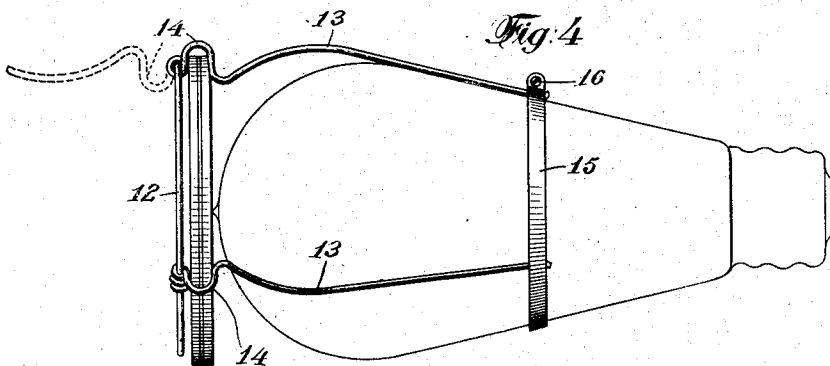


Fig. 4

Witnesses:
Philip S. McLean.
Teresa V. Lynch

Inventor
William N. McComb
By his Attorneys
Rock Beeken & Smith

UNITED STATES PATENT OFFICE.

WILLIAM N. McCOMB, OF NEW YORK, N. Y.

LIGHT-SHIELD.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM N. McCOMB, a citizen of the United States, and a resident of the borough of Manhattan, city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Light-Shields, of which the following is a specification.

My invention relates to improvements in light shields for lamps, and particularly for electric incandescent lamps.

The invention is especially adapted for use in electric signs and kaleidoscopes wherein the lamps are placed in channel-like depressions or compartments, the walls of the compartments then serving as a reflector to reflect the light outwardly. The lamps used for this purpose have been colored in various ways, usually by employing colored glass for the lamp globe, or by coating the tip of the lamp with a light reflecting covering. Both these methods are objectionable. Colored lamp globes are expensive and frequently defective, and the coating on the end of the lamps wears off sooner or later. When colored glass is used, the lamp filament is plainly visible and forms an objectionable glare. When the light reflective coating is employed, the glare of the filament is obviated, but inasmuch as in this case the entire tip or head of the lamp has to be covered, a very small percentage of the light can issue from the forward sides of the lamp, and the lighting efficiency of the lamp is therefore diminished when the light reflective coating is employed.

In its practical embodiment, the invention consists of a light shield which is so shaped and disposed as to reflect all the light rays issuing from the forward sides of the lamp without reducing the lighting capacity of the lamp. This result is accomplished preferably by making the light shield of a size sufficient to cover the end of the bulb, and of a shape different from that of the lamp globe. Thus the shield is preferably made in the form of a flat disk so as not to conform to the contour of the lamp globe, and is disposed in front of the end of the lamp so as to permit all the light rays to issue from the lamp, thus serving not to cut off any of these rays but only to reflect them against the walls of the compartment or re-

lector. The means for supporting this light shield consists preferably of an annular ring member in which the shield is seated, this ring member being preferably held in place by means of spring clamping arms engaging the sides of the lamp globe. The disks are preferably of a translucent material such as celluloid, and differently colored disks are used to effect the various colors. I find in practice, that when these colored light shields are placed over the end of the lamps, a certain amount of the light is absorbed by the shield itself.

Another feature of my invention, therefore, consists in providing means for counteracting this light absorptive effect of the colored screen. In its preferred form this means consists of a disk of light reflective material which is placed beneath the layer of colored material and next to the lamp, so as to reflect into the compartment a certain amount of the light rays emanating from the lamp.

In the accompanying drawings is illustrated several preferred embodiments of the invention, but it will be understood that various changes may be made therein without departing from the spirit and scope of the invention.

In the drawings: Figure 1 is a side elevation of my invention as applied to an incandescent lamp. Fig. 2 is a cross-sectional view of the invention. Fig. 3 is a sectional end view of the invention looking in the direction of the arrow in Fig. 1. Fig. 4 is a detail view of a slightly modified form of the invention.

Similar reference characters denote like parts throughout the several views.

The body of the support for the light shielding material is preferably in the form of an annular member 1, which is preferably angular in cross-section, as shown in Fig. 2, so as to provide a confining rim 2, within which are seated the disks or layers of material which go to make up the light shield. These disks are preferably held within the annular supporting member so as to be easily removed therefrom, and this may be done as by means of the intumed clips 3 carried on the periphery of the annular support, but these clips are not necessary, for, the disks may be held in position by reason of contact with the end of the lamp body. The annular support may be

variously secured to the lamp, but this is preferably done by means of spring clamping arms 4 which are carried by the annular member and are curved to correspond more or less to the curvature of the sides of the lamp body. These arms are preferably made of spring material so as to normally clamp the lamp body, and to further insure of proper engagement with the lamp body. a securing ring may be used for holding the ends of the arms in contact with the lamp globe. This means consists preferably of a split ring 5, of wire or other spring material, as in Figs. 1, and 2, which is passed around over the ends of the clamping arms. The clamping arms are preferably formed with angularly disposed or curved terminal portions 6, to prevent the ring from slipping off, and the ring may be locked closed, as illustrated in Fig. 1, by means of a hook 7 forming one terminal of the split ring, which engages the angular part 8, forming the opposite terminal of the split securing ring. The shield or screen proper is thus preferably supported substantially at right angles to the longitudinal axis of the lamp and it consists preferably of a disk 9 of suitably colored material, such as celluloid, which is preferably held in place between two disks of glass 10, or other transparent material. The glass serves to protect the celluloid from the heat of the lamp and also from the effect of the weather, but, if found desirable, the glass may be dispensed with. The celluloid possesses translucent qualities and thus serves to overcome the objectionable glare of the lamp filament. For this reason I prefer to use the celluloid, although for certain purposes I may simply use a colored piece of glass for the shield. A certain amount of the light is absorbed by the colored screen and in order to overcome this loss as much as possible, I preferably employ an additional disk 11 of light reflective material, such as white paper or celluloid. The light reflective material is placed adjacent the lamp so that a good many of the rays will be reflected into the compartment, without affecting to any material extent the color produced by the translucent material. It will thus be evident that the color effect produced by the lamp may be changed at any time by simply inserting a disk of a different color, and that in this same way this color may be readily renewed should it become faded or otherwise changed.

A slightly different and somewhat simpler form of the invention is illustrated in Fig. 4. As is shown in this view, the annular supporting member may consist of a ring 12, of wire or like material, to which the clamping arms 13 are attached. Each of these clamping arms is provided near the point of connection with the ring, with an offset or looped portion 14, which is adapt-

ed to receive the disk or disks forming the shield or screen. In order to permit the removal and replacement of the colored disks, one of the clamping arms is connected to the supporting ring so as to pivot or swing back out of the way, as shown in dotted lines in Fig. 3. Another form of securing ring also is shown in this view of the invention. As shown here, the securing ring may consist of an encircling band 15, the ends of which are secured together by means of a screw 16.

The light shield is usually associated with some sort of a reflector, such as a compartment, and in such case, the walls of the compartment serve to project the light of the lamp from the open mouth of the compartment or reflector. In order to accomplish this action, the reflector could be made as large as the greatest diameter of the lamp and smaller than the size of the compartment, so as to leave a space between the edge of the shield and the walls of the compartment for the issuance of the light rays.

It will of course be understood that my invention is not limited to the particular uses described, and it may be used wherever found practicable. For instance, the light shield may be applied to the lamps in store windows, and it would then serve to reflect the light back into the window and at the same time attract attention. The disks forming the shield could also contain advertising matter, if desired. The shield may also be used in connection with lamp shades or reflectors for the purpose of obviating the objectionable glare of the filament and for softening the light. The color of the light shield will usually correspond to the color of the compartment or reflector so that when the lamp is viewed end-on, the lamp filament will not be visible and the compartment will be evenly illuminated in the same color throughout.

What is claimed, is:

1. The combination with a support adapted for removable attachment to an incandescent lamp, of a light shield removably engaged in said support and comprising a series of transparent and translucent members.

2. A shield for incandescent lamps comprising a support adapted for removable attachment to the lamp, and a series of alternately disposed transparent and translucent members engaged in said support.

3. A light shield for incandescent lamps comprising a frame adapted for attachment to the lamp, a sheet or sheets of shield material carried by said frame, and means for removably securing said shield material within the frame.

4. A light shield having outer transparent members, layers of translucent and light reflective materials interposed between the

transparent members, and means for supporting said parts with the reflective material toward the lamps.

5 5. In combination, an annular supporting member, light shielding material inclosed in and supported by said annular member, and clamping arms on the annular member to engage the sides of a lamp globe.

10 6. A light shield comprising an annular supporting member, light shielding material carried within said annular member, spring clamping arms on said member to engage the sides of a lamp globe, and an annular member adapted to secure the arms in
15 clamping engagement with the lamp globe.

20 7. In combination, an annular supporting member, spring clamping arms thereon to engage the sides of a lamp globe, layers of light shielding material carried within the annular supporting member, and clips bent inwardly to engage the material for securing said material to the annular member.

8. In combination, an annular supporting member, spring clamping arms thereon to engage the sides of a lamp globe, layers of
25 light shielding material carried by the annular supporting member, clips bent inwardly to engage the material for securing said material to the annular member, and
30 an annular ring adapted to secure the clamping arms against the sides of the bulb.

9. A light shield for incandescent lamps comprising a frame adapted for attachment to the lamp, sheets of translucent and light
35 reflective material carried by said frame, and means for removably securing said shield material within the frame.

Signed at New York city in the county of New York and State of New York this 23rd day of July A. D. 1909.

WILLIAM N. McCOMB.

Witnesses:

MABLE SHAW,

PHILIP S. McLEAN.