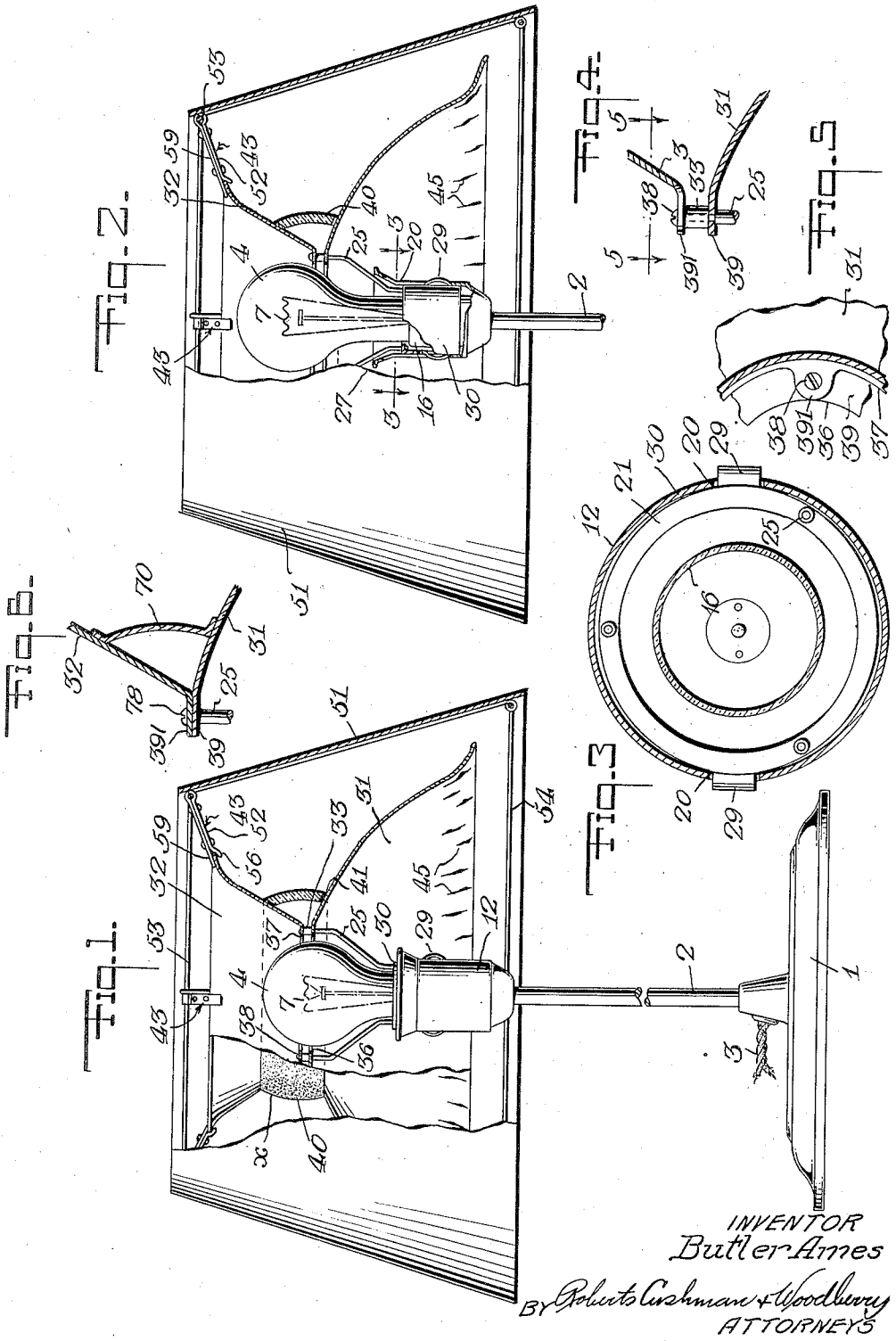
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LIGHT

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# UNITED STATES PATENT OFFICE.

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## LIGHT.

Application filed May 6, 1927. Serial No. 189,265.

This invention relates to an improved form of light for household or kindred uses.

In my copending application Serial No. 117,006, filed June 19, 1926, I disclosed an improved form of light which was designed to effect the scientific distribution of light radiations for reading, sewing, or similar purposes as well as general illumination of the room, means being provided to vary the proportion of rays cast upwardly and cast downwardly in accordance with the requirements of particular conditions. Some aspects of the present invention comprise improvements upon the light disclosed in the aforesaid copending application. A light constructed according to this invention has advantageous æsthetic properties which are particularly appropriate and desirable in a luxuriously furnished room or among surroundings wherein artistic as well as utilitarian factors are important considerations.

One aspect of the present invention concerns the arrangement of a light of this character in which the direction of the light radiations is scientifically controlled so that a proportion of the light rays is used for casting a diffused light through a translucent decorative shade of colored glass, parchment, or a shade provided with pictorial or figured decorations. For this purpose the reflectors, which are adapted to control the upward and downward dispersion of the light rays, are slightly spaced and are provided with an intermediate ring of light diffusing material which permits a light field of low intensity to be cast and reflected in the direction of the translucent shade while at the same time permitting utilization of the major portion of light energy for illuminating purposes.

In conjunction with this novel and advantageous light controlling and directing means, I provide a support for a translucent shade which is particularly adapted to hold the shade in the desired relation to the light reflectors in their various adjusted positions in order to permit the maximum illuminating efficiency which is compatible with an æsthetic and pleasing arrangement of the translucent shade in relation to the light source.

A further feature of the present invention relates to the provision of improved forms of reflectors which are inexpensive and easy to manufacture and have a distinctive and attractive appearance while having structural advantages over the type of reflectors commonly known to the art. A further improvement in the reflectors relates to the provision of a new plated surface which is particularly desirable upon an upwardly disposed light reflective surface that is normally exposed to dust which is suspended in the atmosphere and tends to collect on the reflector in considerable quantities. The new type of reflective surface disclosed herein permits cleaning without scratching and consequent impairment of its reflecting efficiency.

The present invention also discloses an improved, simple and very convenient support for adjusting the dual reflector in relation to the light source to vary the effective distribution of the light radiations to suit individual conditions.

The above and further advantageous features of the invention will be apparent to those skilled in the art upon a reading of the subjoined description and claims in conjunction with the accompanying drawings in which

Fig. 1 is an elevational view of the improved form of light with parts broken away and parts shown in section;

Fig. 2 is a similar view of a portion of the light with the dual reflector member shown in another adjusted position in relation to the light source;

Fig. 3 is a section on line 3—3 of Fig. 2;

Fig. 4 is an enlarged sectional detail;

Fig. 5 is a section on line 5—5 of Fig. 4; and

Fig. 6 is a view corresponding to Fig. 4 but showing another form of the invention.

Referring to the form of light shown particularly in Figs. 1 and 2 of the drawing, it is to be understood that a light of this type may preferably be provided in the form of a table or floor light for household or kindred uses. Such a light is provided with the conventional base 1 and the upstanding tubular standard 2 connected thereto and adapted to receive the electric wires 3 for providing energy to the incandescent bulb 4. This bulb may be of conventional form and may be provided with a filament in which the light source 7 is concentrated comparatively close to one horizontal plane. Secured to the upper end of standard 2 is a sheet metal shell 12 adapted to receive a conventional Edison socket 16 into which the bulb 4 is screwed. Disposed within shell 12 and surrounding socket 16 is the hollow reflector

support 30 (Figs. 2 and 3). This reflector support is in the form of a tubular sheet metal member having an inturned upper flange 21 which receives a series of upwardly and outwardly extending arms 25.

Preferably support 30 is normally slightly oval in cross section but is adapted to be inserted in the tubular shell 12, the upper portion of which has an outwardly flared extension 27 adapted to engage the lower edge of the support and to guide it into the shell. Thus when these members are brought into telescoping relation the normally oval support 30 is bent into a form which is substantially circular, and distortion of the support tends to provide a firm gripping engagement between the same and the shell 12. In order to permit movement of support 30 in relation to shell 12, I provide the support with diametrically disposed, struck-out finger grips 29 which are adapted to slide in the vertically extending slots 20 in the shell 12. Thus vertical adjustment of support 30 may be effected by pressing inward upon the finger grips 29 and moving them in relation to the shell 12, the slots and grips serving to limit the normal relative vertical movement of the members, but being designed to permit manual separation thereof if desired.

The upper ends of supporting rods 25 are secured to the dual reflectors 35 by means of threaded fasteners which may be in the form of screws 38. Preferably the downwardly disposed reflector element 31 and the upwardly disposed reflector element 32, both of which may be of dished or distorted parabolic form, are slightly separated by spacer members or sleeves 33 which surround the screws and the ends of which abut portions of the reflectors 31 and 32.

The preferred manner of effecting such an arrangement consists in providing intermediate openings 36 and 37 in reflectors 31 and 32 respectively, the opening 36 being defied by an inwardly extending substantially horizontally disposed flange 39 extending around the circumference of the opening 36 and provided with suitable openings for registering with fastening members 38 (Figs. 4 and 5). The upper reflector is preferably provided with inwardly extending lugs 391 having openings adapted to register with each of the fastening members, these lugs being spaced from each other at a considerable distance. Preferably openings 36 and 37 are so proportioned that they have a slightly larger diameter than that of the largest portion of the bulb 4, which is received within these openings.

Extending between the outer surface of reflectors 31 and 32 and surrounding the spaced openings 36 and 37, I preferably provide a diffusing ring 40 of any suitable translucent material such as frosted or opal glass. This ring may conveniently have a convex curvature in a vertical as well as a horizontal direction, substantially to resemble a section of a hollow hemisphere, as shown in Figs. 1 and 2. Preferably the edges of the ring are secured to the reflectors 31 and 32 by the interposition of strips of felt or similar filler material 41 which is adhesively fixed to the glass and to the metal of the reflectors.

The reflectors are preferably formed of metal which is adapted to be stamped or drawn and may thus preferably be provided with a series of corrugations 45 adjoining their outer peripheries, these corrugations being irregularly disposed and giving a pleasing and distinctive appearance to the metal reflectors while serving to reinforce and stiffen their peripheral portions and thus avoiding the necessity of providing peripheral beading or a separate metal reinforcement for the same. Corrugations of this character are provided in the reflectors by drawing them in the conventional manner to a form of the character illustrated herewith, and leaving the folds or wrinkles which result from the drawing operation in the manner in which they may happen to occur.

The reflectors are preferably plated with chromium in order to provide a highly reflective yet hard surface which is difficult to abrade. This is especially important and desirable in the case of the upwardly disposed reflector 32, since provision of a hard surface of this character permits the removal of deposited dust by an ordinary cloth and yet avoids scraping or abrading of the surface such as will ordinarily occur with the delicate surface of the ordinary silvered reflector.

The present invention also discloses a shade supporting frame 50 which is adapted to hold a shade 51 of parchment or similar material in proper relation to the light source 7 and the diffusing ring 40 in order to permit a subdued light to be cast upon and through the translucent material of the shade. The shade frame may be conventional form, comprising upper and lower peripheral rings 53 and 54 and wires which connect these rings to each other. In order firmly to hold the shade upon the lamp and to permit ready detachment and attachment of the same, I provide brackets 43 each of which comprise sheet metal strips 52 and 59, the mid-portions of which are secured to each other, and the outer ends of which are bowed outward and bent about the upper ring 53 of shade 50. Preferably the opposite end of the lower strip 52 terminates in a downwardly inclined lip 56 which is adapted to snap under the upper edge of upper reflector 32 due to the resiliency of parts 43 and of the wire ring 53. Thus the edge of the reflector is gripped between the lip 56 and the end of strip 59 which rests upon the reflector. Shade 51 may thus be applied

to the light by snapping lips 56 under the edge of the reflector and the shade may be as easily removed by reversing this operation.

Preferably frame 50 and shade 51 are so arranged and proportioned in relation to the dual reflector and to the range of vertical movement or adjustment of the light source 7 that direct radiations from the light source avoid passing directly through the translucent material of the shade, even when the light source and reflector are in their extreme relative adjusted positions; it being desirable, however, to have direct radiations of light pass outwardly along lines which closely approach these limits. It is thus evident that, irrespective of the relative position of the light source and of the dual reflector, soft diffused light is cast through the translucent shade 51 by means of the diffusing ring 40 which not only receives direct rays passing through the space between reflectors 31 and 32, as defined by spacers 33, but also a certain proportion of the light rays as reflected upon the inturned flange 39 of the lower reflector, which is preferably brightly polished; such an arrangement being particularly advantageous, for example, when the dual reflector and the light source are in an adjusted position, such as disclosed in Fig. 2. The casting of direct undiffused rays of light from the light source through the translucent shade is thus avoided and only a soft substantially uniform glow is visible through the translucent shade.

Fig. 6 illustrates a modified form of the invention adapted to be used in conjunction with a light of this character provided with an opaque shade. In this form of the invention the flange 39 is clamped directly against the lugs 391 by fastening means 78, and the reflectors are reinforced by a ring 70 which may be welded or otherwise secured thereto and which is adapted to perform the same structural functions as permitted by the diffusing ring 40 without having the optical effect of the same.

Obviously a light of the character described is adapted to be used for household purposes, for instance, in installations wherein it is often desirable to use a large portion of the rays emanating from the light source for reading, sewing, drawing, or the like, and yet where it is desirable to have a certain proportion of the rays cast upwardly, both directly to light the room and to reflect against the ceiling to provide indirect lighting for the same. Thus a portion of the light may be concentrated in a comparatively small area immediately surrounding and below the light source, while a large part of the remainder of the light may be cast upwardly and utilized for general illumination. A small proportion of the light radiations are used for casting a soft glow behind the decorative shade in order properly to define the designs or pictorial images which are depicted thereon. The arrangement of the finger grips 29 and the telescoping members 12 and 30 permits instantaneous relative adjustment between the dual reflector and the light source in order to vary the proportion of light used for general illumination and for lighting a limited area in the immediate vicinity of the lamp.

I claim:

1. A light comprising a light source, a dual reflector comprising an upwardly disposed dished reflecting surface, and a downwardly disposed dished reflecting surface, said surfaces being spaced from each other, intermediate aligned openings in said reflectors, an incandescent bulb located in said openings, and means for supporting the bulb and dual reflector to permit relative vertical adjustment therebetween, said means comprising hollow, telescoping sheet metal members, one of said members being resilient and distortable out of normal shape by engagement with the other member.

2. A light comprising a light source, a dual reflector comprising an upwardly disposed dished reflecting surface and a downwardly disposed dished reflecting surface, intermediate aligned openings in said surfaces, an incandescent bulb located in said openings, and means for supporting the bulb and dual reflector to permit relative vertical adjustment therebetween, said means comprising hollow, telescoping sheet metal members, one of said members being resilient and distortable out of normal shape by engagement with the other member, finger grips extending from one of said members through slots in the other member to effect and limit relative movement thereof.

3. A light comprising a light source, a dual reflector comprising an upwardly disposed dished reflecting surface, and a downwardly disposed dished reflecting surface, said surfaces being spaced from each other, intermediate aligned openings in said surfaces, an incandescent bulb located in said openings, means for supporting the bulb and dual reflector to permit relative vertical adjustment therebetween, a translucent shade concentrically located about said dual reflector, supporting means for the reflector, bulb and shade being arranged to prevent substantial casting of direct radiations from the light source through the shade other than rays passing through the space between the reflecting surfaces.

4. A light of the class described, comprising a dual reflector consisting of oppositely dished reflector surfaces, intermediate openings in said surfaces, a light source in the vicinity of said openings, a space between the surfaces, a shade of translucent material encircling the space and adapted to receive light radiations cast therefrom, a frame securing said shade upon the reflector and comprising

peripheral elements secured to the shade and resilient parts holding the latter upon the reflector.

5. A light comprising a light source, a dual reflector comprising an upwardly disposed dished reflective surface and a downwardly disposed dished reflective surface, intermediate aligned openings in said surfaces, said reflectors being spaced from each other to permit the casting of light rays therebetween, a light diffusive ring arranged about the space between the reflectors, an incandescent bulb located in said openings, means for supporting the bulb and dual reflector, and a translucent shade arranged about the reflector and adapted to receive rays cast through the light diffusive ring.

6. A light comprising a light source, a dished reflector having a downwardly disposed reflective surface, a dished reflector having an upwardly disposed reflective surface, intermediate openings in said reflectors adjoining which the light source is located, a space between said openings, elements bridging said space and connecting the reflectors to each other, and a light diffusive ring disposed outwardly from said space and inwardly from the peripheries of the reflectors, said ring being adapted to admit some diffused light radiations into the space between the reflectors.

Signed by me at Lowell, Massachusetts, this third day of May. 1927.

BUTLER AMES.