Nov. 20, 1928. 1,692,069

B. AMES

LAMP

Filed June 19, 1926

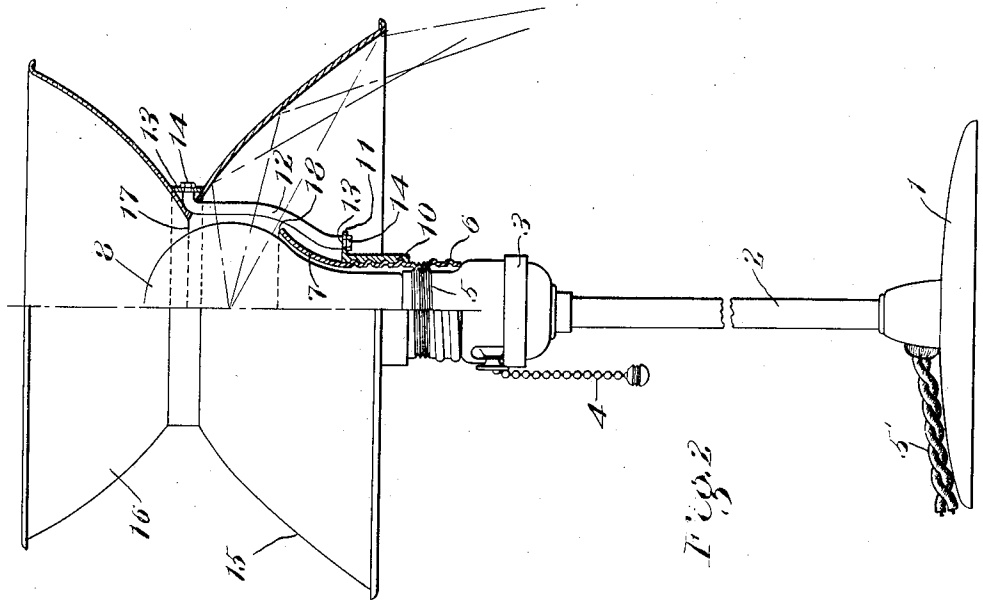


Fig. 2

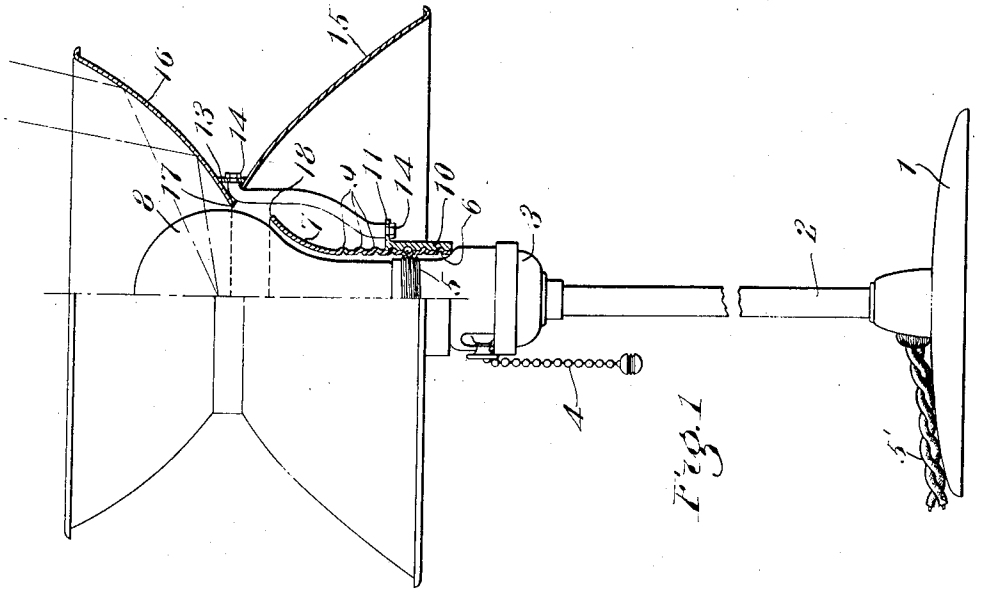


Fig. 1

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UNITED STATES PATENT OFFICE.

BUTLER AMES, OF LOWELL, MASSACHUSETTS.

LAMP.

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This invention relates to lamps and more particularly to lamps of the type where it is desired to throw a desired proportion of the light from a light source in one direction as onto a table or desk and throw at least a part of the remainder of the light in substantially the opposite direction whereby to illuminate the entire room by indirect lighting.

Among the objects of the invention are to provide for a desired distribution of the light for ordinary use in lighting rooms principally by indirect light and at the same time to provide a fairly concentrated light in the part of the room near where the lamp is located, thus serving the double purpose of a desk or table lamp and also a lamp for general illumination. This has ordinarily required the use of two lamps of different type. This invention will be much less expensive than two separate lamps and will be more convenient in use. Another object of the invention is to limit the lateral downward spread of the light. This downwardly directed light is of very little use except within a comparatively short radius of the lamp for studying, writing, reading, etc., and it is better to limit this light and direct it upwardly instead of downwardly, thereby to give a general illumination over the whole room.

Other objects and advantages of the construction will be apparent as the description proceeds and will be particularly pointed out in the appended claims.

Referring to the drawings wherein is shown for purposes of illustration one embodiment of the invention:

Fig. 1 represents a view partly in elevation and partly in central vertical section of the lamp in position for providing general illumination for the room in which it is placed; and

Fig. 2 is a similar view of the lamp in position to throw a great part of its light downwardly for reading.

The lamp may consist of a base 1 having a standard 2 suitably mounted thereon and a means for holding the source of light at the top of the standard. In the present case this means is shown as a conventional type of electric light socket 3 having a pull chain 4 to operate any common type of switch therein. The current is conducted to the light through wires 5 from any suitable source which wires may enter the base and extend through the standard to suitable terminals within the socket 3. As this is an ordinary construction common to many lamps, it is not described in detail. The socket 3 may be provided with threads 5 in the well known manner and a tube 6 may be provided with internal threads to cooperate therewith. It is understood, however, that tube 6 may be attached to the socket 3 in any other suitable manner. At its upper portion the tube 6 is flared outwardly to provide a cupped portion or calyx 7. Mounted in the socket 3 and partly within the calyx 7 is a source of light which in the present instance takes the form of a pear-shaped incandescent bulb 8, with the light filament an arc at right angles with the axis of the bulb. This may be frosted internally.

The tube 6 may be provided on its outside with any suitable means, for example, relatively coarse threads 9, for engagement with a sleeve 10, said sleeve may be adjusted vertically relatively to the tube 6, socket 3 and the bulb 8. The sleeve 10 may be provided at its upper portion with some means as outstanding lugs or a flange 11 for the reception of supports 12. These supports may be made of metal rods having reduced portions at their ends as seen at 13 extending through suitable apertures in the flange 11 and being threaded for the reception of bolts 14. Supports 12 may also be attached by refitting or in any other suitable way or may be made integral with sleeve 10. An annular ring 13 may be suitably attached to the upper ends of each of the supports 12 in any suitable manner as for example, by bolts 14. The reflectors may be mounted on this ring.

The reflectors in the embodiment shown comprise a downturned conic reflector 15 and an upturned conic reflector 16 substantially co-axial and in some instances also substantially paraboloidal. The conical reflecting surfaces shown intersect along a circular line 17, there being provided through both reflectors an axial opening, the limit of which is the circle 17. The axis of the reflectors and of the circle 17 may be the same as that of the socket 3 and bulb 8. The diameter of the bulb 8 is less than that of the circle 17 so that the bulb may be adjusted vertically through the opening as seen on the drawings. The ring 13 extends on the outside of the reflectors between them and may be attached to them in any suitable manner as by soldering, welding, etc. The supports 12 may protrude through suitable openings in the lower reflector 15 for attachment to the ring 13.

The operation of the device is as follows. In the position illustrated on Fig. 1 the bulb

is shown elevated relatively to the reflector so that the upper margin 18 of the calyx 7 is near the circle 17. In this position only a comparatively small amount of the light may pass between the edge 18 and the circle 17 and be deflected downwardly while the major portion of the light will be directed upwardly both by direct rays from the bulb 8 and by reflected rays from the reflector 16 and the inside of the calyx 7. In the position shown in Fig. 2 the bulb is situated lower relatively to the reflectors and a much greater part of the light will be directed downwardly by the reflector 15 as the distance between the upper edge 18 of the calyx 7 and the circle 17 is much greater. In the position shown in this figure a much smaller portion of the light will be directed upwardly by the reflector 16. In either case the calyx 7 being of non-transparent material will prevent the lateral spread of light in a downward direction beyond a certain predetermined area, thereby conserving the light and directing it where it will be most effective to illuminate the room.

While I have shown only one embodiment of the invention I do not intend to be limited to the exact shape, size or construction of the embodiment shown but merely by the scope of the appended claims as many other lights could be constructed using the same broad principle. For example, the light could be used as a wall light by using only one-half of each of the reflectors and having a bulb suitably vertically adjustable relatively thereto.

I claim:

1. A lamp comprising a support, a source of light mounted on said support, a double reflector cooperating with said source of light, and comprising co-axial conic reflecting surfaces directed in opposite directions and intersecting along a circle of a diameter less than that of the mouths of either surface and a calyx carried by said support and surrounding the lower end of said source of light whereby all direct rays of light downward are cut off, said source of light being so located that the majority of the rays from said source are thrown against said reflectors and diverted substantially upwardly or downwardly.

2. A lamp comprising a support, a source of light mounted on said support, a double reflector cooperating with said source of light, and comprising co-axial conic reflecting surfaces directed in opposite directions and intersecting along a circle of a diameter less than that of the mouths of either surface and a calyx carried by said support and surrounding the lower end of said source of light whereby all direct rays of light downward are cut off, said source of light being so located that the majority of the rays from said source are thrown against said reflectors and diverted substantially upwardly or downwardly, and means for shifting said reflector relative to said source of light thus controlling the distribution of the rays between said reflecting surfaces.

3. A lamp comprising a support, a source of light mounted on said support, a double reflector cooperating with said source of light, and comprising co-axial conic reflecting surfaces directed in opposite directions and intersecting along a circle of a diameter less than that of the mouths of either surface and a calyx carried by said support and surrounding the lower end of said source of light whereby all direct rays of light downward are cut off, said source of light being so located that the majority of the rays from said source are thrown against said reflectors and diverted substantially upwardly or downwardly and means engaging said calyx for raising or lowering said reflector relative to said source of light thus controlling the distribution of the rays between said reflecting surfaces.

4. A lamp comprising a support, a socket carried by said support, a bulb in said socket, a double reflector cooperating with said bulb and comprising co-axial conic reflecting surfaces directed in opposite directions and intersecting along a circle the diameter of which is less than that of the mouths of either surface a calyx carried by said support and enclosing the lower end of said bulb, whereby direct rays of light downward from said bulb are cut off, an adjustable sleeve carried by said support and connected to said ring whereby said reflector can be raised or lowered relative to said bulb thus controlling the distribution of the rays between said reflecting surfaces.

Signed by me at Lowell, Massachusetts, this 16th day of June, 1926.

BUTLER AMES.