Oct. 11, 1949. S. J. HIRSHFIELD 2,484,091

OUTDOOR REFLECTING LAMP

Filed Nov. 20, 1946

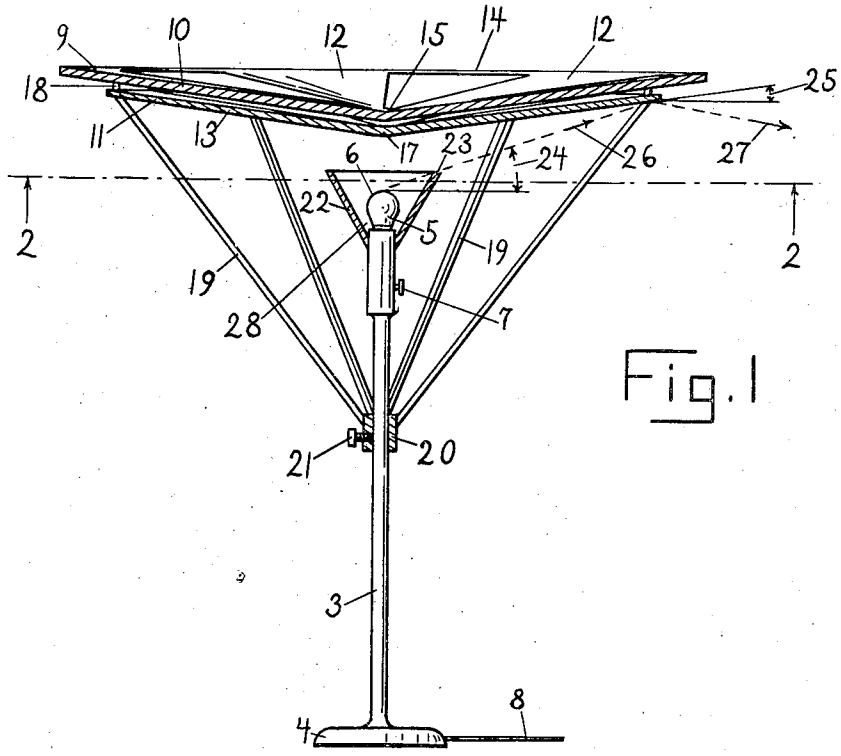


Fig. 1

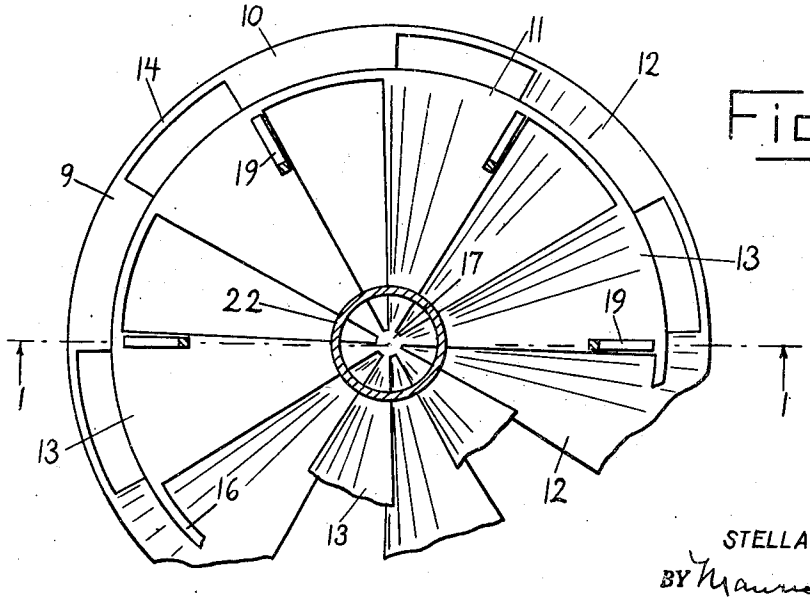


Fig. 2

INVENTOR:
STELLA J. HIRSHFIELD
BY Maurice Block
ATTORNEY

Patented Oct. 11, 1949

2,484,091

UNITED STATES PATENT OFFICE

2,484,091

OUTDOOR REFLECTING LAMP

Stella J. Hirshfield, New York, N. Y.

Application November 20, 1946, Serial No. 710,958

3 Claims. (Cl. 240—81)

1

My invention relates to lamps and, more particularly, to lamps for the illumination of roof gardens or other outdoor areas.

Objects of my invention are to provide for the illumination of a wide area around the lamp, to illuminate this area by indirect or reflected light, to arrange reflecting surfaces or mirrors over a light source in such a manner that the light reflected by these surfaces is spread over a wide circular area of the floor or soil without any of the light rays being directed horizontally or upwardly, and to avoid, thereby, any substantial waste of light.

Other objects are to arrange the light source and the reflecting surfaces in such a manner that no direct light will be visible, and, thereby, to provide for a smooth or not blinding and comfortable illumination.

Further objects are to avoid excessive heat in the lightened area and excessive heat of the reflecting surfaces or reflectors and of other parts of the lamp, and to provide for ventilation of the reflectors and of the space between the light source and the reflectors.

Still another object is to provide for adjustment of the position of the reflecting surfaces whereby the light can be optionally spread very widely or condensed over a less wide area.

As well known, outdoor lamps attract bugs. These bugs, when recoiling from the light source, annoy people in the lighted area. Still further objects are to avoid this nuisance, to provide a structure that does not allow an easy escape of bugs from the heat of the light source after they have approached the same whereby the space around the light source acts as a trap for bugs, and to provide for deposition of burned or dead bugs in a concealed recess of the lamp.

Still other objects are to obtain these results with handy and reliable means, and to provide a structure that can be inexpensively and quickly made, installed and maintained.

Still other objects and advantages will appear from the following description of an exemplifying embodiment of my invention, from the appended claims and from the accompanying drawing in which:

Fig. 1 shows a partly sectional side view of an illustrative embodiment of my invention, the cross-section of the sectionally represented parts being taken along the line 1—1 in Fig. 2.

Fig. 2 shows a cross-section taken along the line 2—2 in Fig. 1 and seen from the bottom, a part of the reflector being broken off.

2

Referring to the drawing, numeral 3 indicates a post which may be affixed to a pedestal 4 and may be either permanently secured to the floor or soil of an outdoor place or temporarily positioned on a selected spot of this floor or soil. The upper end of the post 3 carries a light source 5 having an upwardly directed light emitting surface 6. Preferably, the light source 5 is constituted by one or several electric bulbs. The usual accessories necessary for the operation of these bulbs may be arranged in any suitable manner. For example, there may be a switch with a handle 7 positioned aside of the post 3, and a cable 8 entering the pedestal 4 and passing through a longitudinal bore of the post 3.

A reflector 9 is positioned over the light source 5 and covers a preferably circular area concentric with the vertical axis of the light source. The reflector 9 may comprise more than one layer. For example, there are two vertically spaced layers 10 and 11. Each of the layers 10 and 11 comprises a plurality of parts or sectors having lower reflecting surfaces and being separated from each other by gaps or open sectors. These two layers are so shaped and positioned that the reflecting sectors 12 of the upper layer 10 extend over the gaps of the lower layer 11 and overlap with the reflecting sectors 13 of the lower layer. The gaps and the space between the layers provide for ample ventilation whereby air heated by the light source 5 will readily rise from the space between the light source and the reflector 9 and will escape quickly into the surrounding space.

The parts of the reflector 9 may be connected in any suitable manner. For example the sectors of the layer 10 may be connected by a rim 14 and a central disk 15, and the sectors of the layer 11 by a rim 16 and a central disk 17. Bolts or rods 18 may connect the two layers.

The reflector 9 may be supported in any suitable manner, preferably in a manner allowing adjustment of the distance between the reflector and the light source. For example, arms 19 have upper ends affixed to the layer 11 and lower ends affixed to a sleeve 20 surrounding the post 3. The sleeve 20 is slidable along the post 3 and can be secured at any desired height by a screw 21.

The layers 10 and 11 extend substantially horizontally and may be plane or slightly curved. Preferably, they rise slightly from the center toward the circumference whereby the reflected light is spread over a wider area. But the inclination of the reflecting surfaces is sufficiently small to avoid any reflection in a horizontal or even

higher direction. In the shown embodiment, the reflecting surfaces are parts of very flat cones. I have found that reflecting surfaces of this or approximately the same shape and of approximately horizontal positions give the most favorable distribution of light.

A hollow body 22 is affixed to the upper part of the post 3 and is formed by a wall of opaque or semi-opaque material. This wall surrounds the light emitting surface 6 like a bowl or a funnel, is spaced from the surface 6 and has an open upper side and a closed bottom. The upper edge 23 of the body 22 has a higher level than the surface 6 whereby only upwardly directed light rays can pass from the surface 6 over the edge 23.

Obviously, the mutual position of the surface 6 and of the edge 23 determines the smallest angle 24 between the horizontal direction and rays projected from the light source toward the reflector 9. The small angle 25 between the horizontal direction and the reflecting surface is so measured that all rays, including those rising under the angle 24, are reflected downwardly. The geometrical condition for this effect is that the angle 25 is smaller than one half of the angle 24. The shown embodiment shows an angle 25 slightly smaller than this critical measure whereby, for example, a ray 26 is reflected in the direction of the arrow 27 and the reflected light covers a very large area.

The body 22 has the additional advantage to serve as a trap for bugs attracted by the light source 5. When these bugs are dazzled or partly burned by the heat of the surface 6, they will tumble against the heated inner surface of the body 22, will not escape into the open and will not have an opportunity for recovery. Instead, these bugs will remain in the body 22, will die and will fall into a recess 28 formed at the bottom of the body 22 between its wall and the outer wall of light source 5.

I desire it understood that my invention is not confined to the particular embodiment shown and described, the same being merely illustrative, and that my invention may be carried out in other ways without departing from the spirit of my invention as it is obvious that the particular embodiment shown and described is only one of the many that may be employed to attain the objects of my invention.

Having described the nature of my invention, what I claim and desire to protect by Letters Patent is:

1. A lamp comprising a light source projecting light upwardly, a support for said light source, an inverted funnel-shaped holder body carried on said support and surrounding said light and having the top edge of said body extending above said light source, and a reflector positioned over said light source and having reflecting surfaces positioned at its lower side and rising toward the circumference of the reflector at an angle smaller than one half of the smallest angle between a line passing through the top edge of said funnel shaped holder body and the light rays projected onto the rising surfaces from said light source and that do not pass through said funnel shaped body.

2. A lamp comprising a light source projecting light upwardly, a perforated reflector positioned over said light source and having reflecting surfaces facing said light source, a second reflector positioned above said first reflector and having reflecting surfaces registering with the perforations in said first reflector and being separated from said first reflector by gaps, each of said reflectors forming a part of a very flat cone pointing down toward the center of said light source.

3. A lamp comprising a support, a source of light carried on said support, an inverted funnel shaped hollow body carried on said support and surrounding said light and having the top edge of said body extending above said light source, supporting arms extending upwardly and outwardly from said support, a perforated reflector positioned on said arms at a point above said light source and said hollow body, said reflector being depressed slightly from its circumference to its center, the side of said reflector toward said light source having light reflecting surfaces, a second reflector positioned above said first reflector and spaced therefrom and having substantially the same contour of deflection as said first reflector, said second reflector having reflecting surfaces that register with the perforations in said first reflector, said reflectors being positioned sufficiently above said hollow body that all light rays from said source not contacting said hollow body are reflected by said reflectors downwardly to be below a horizontal plane passing through the circumference of said first reflector.

STELLA J. HIRSHFIELD.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,744,270	Kellogg	Jan. 21, 1930
1,893,071	Sherbinin	Jan. 3, 1933
2,066,631	Gorre	Jan. 5, 1937
2,121,575	Shoemaker	June 21, 1938