

Sept. 26, 1933.

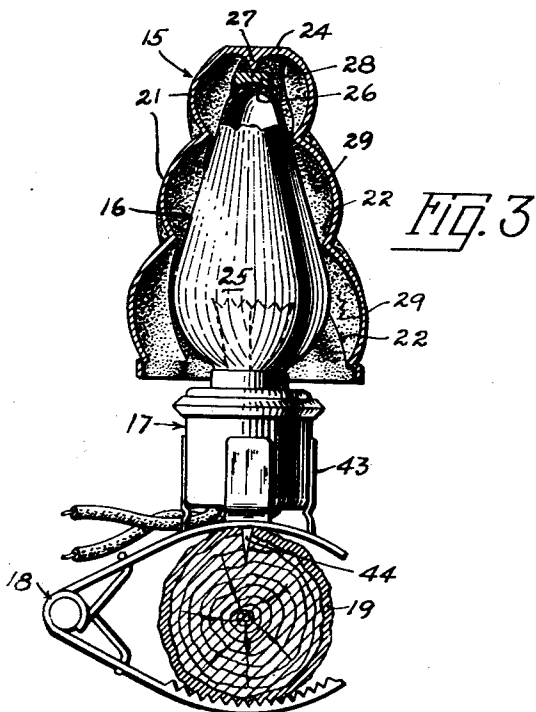
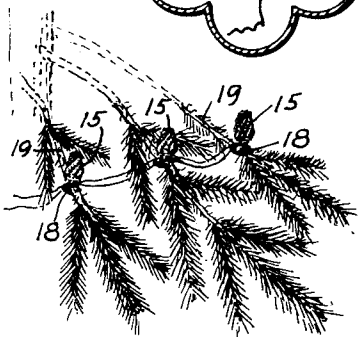
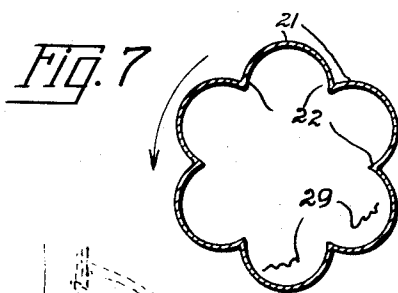
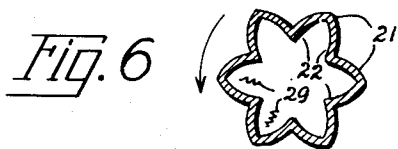
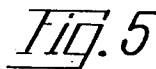
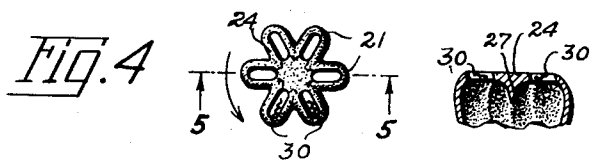
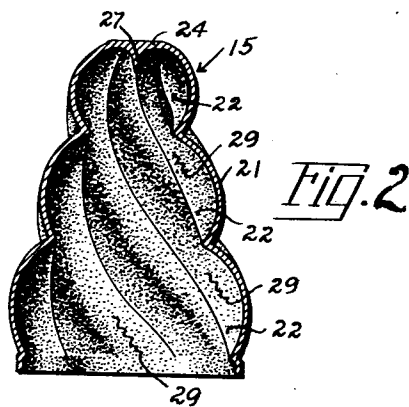
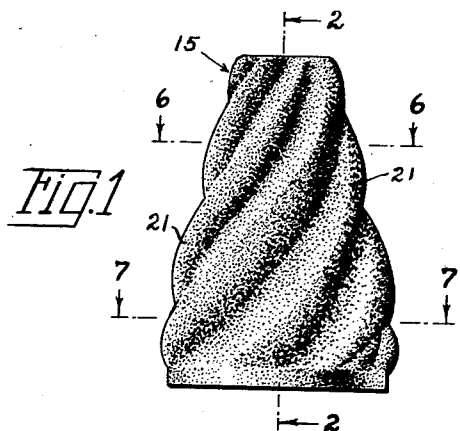
B. J. COFFIN

1,928,329

REVOLVING LAMP SHADE

Filed April 25, 1931

2 Sheets-Sheet 1



INVENTOR.

BY *BART J. COFFIN.*
Henry N. Young
ATTORNEY

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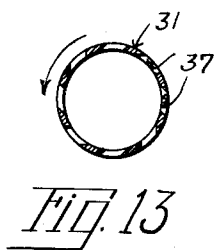
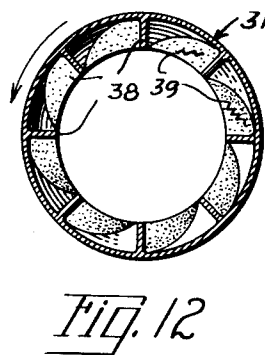
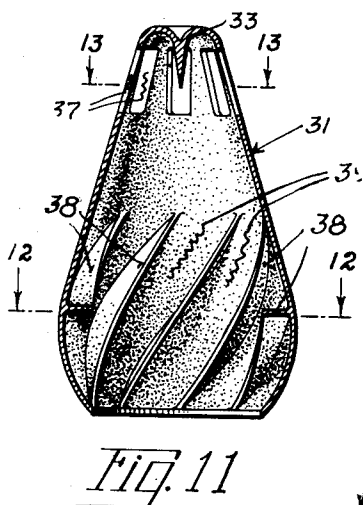
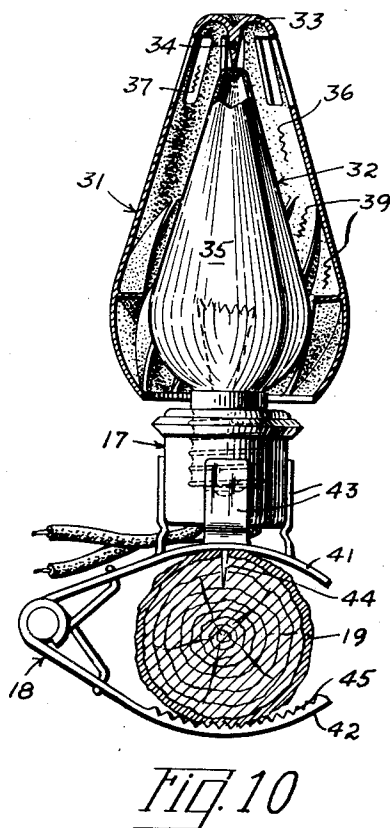
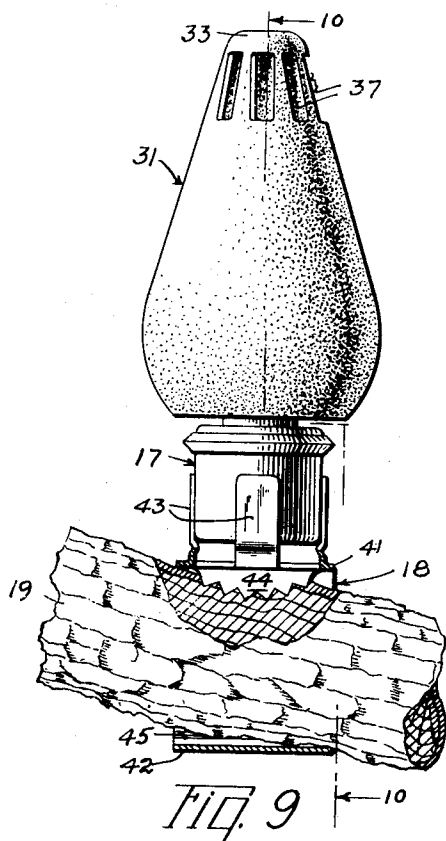
B. J. COFFIN

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REVOLVING LAMP SHADE

Filed April 25, 1931

2 Sheets-Sheet 2



INVENTOR.
BART J. COFFIN
BY Henry N. Young
ATTORNEY

UNITED STATES PATENT OFFICE

1,928,329

REVOLVING LAMP SHADE

Bart J. Coffin, Alameda, Calif.

Application April 25, 1931. Serial No. 532,910

9 Claims. (Cl. 240—10.1)

The invention relates to a lamp shade which is arranged for rotation while the lamp with which it is associated is lit.

An object of the invention is to provide an improved shade structure wherein the heat generated by the lamp is utilized to effect the rotation of the shade.

Another object of the invention is to provide a shade of the class described which may have the same general outline as the lamp with which it is associated.

A further object is to provide an improved means to support a shade of the class described directly on a lamp for rotation thereabout.

Yet another object is to provide a shade-mounting means for application to electric lamp globes of standard design.

A more specific object is to provide a shade of the character described for use as an ornamental feature with Christmas tree lights.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth or be apparent in the following description of typical embodiments of the invention, and in the accompanying drawings, in which,

Fig. 1 is an external elevation of a shade embodying the present invention.

Fig. 2 is a vertical section of the shade at 2—2 in Fig. 1.

Fig. 3 discloses the shade operatively supported on a Christmas tree light which is mounted on a tree limb, the shade being shown in section as in Fig. 2, and certain other elements of the assembly being shown more or less in section.

Fig. 4 is a plan view of the shade taken solely in the plane of the shade top.

Fig. 5 is a fragmentary section at 5—5 in Fig. 4, and shows the shade structure at and adjacent the top thereof.

Fig. 6 is a section at the plane of the line 6—6 in Fig. 1.

Fig. 7 is a section at the plane of the line 7—7 in Fig. 1.

Fig. 8 is a fragmentary view showing a number of the shades in use as ornamental features of a Christmas tree.

Fig. 9 discloses in elevation a second embodiment of the shade as mounted on a Christmas tree lamp supported on a tree limb, a holder for the lamp socket being shown in partial section and a portion of the limb being broken out.

Fig. 10 is a partly sectional view taken on the broken line 10—10 in Fig. 9.

Fig. 11 is a vertical section of the shade alone and as in Fig. 10.

Fig. 12 is a section of the shade taken at the line 12—12 in Fig. 11.

Fig. 13 is a section solely at the plane of the line 13—13 in Fig. 11.

Referring to the disclosure of Figures 1 to 8 inclusive, a shade 15 embodying the present invention is shown as mounted on a Christmas tree electric lamp 16 which is carried in a usual screw socket 17. The socket is in turn mounted in a holder 18 which engages a tree limb 19 for supporting the lamp 16 in upright position. The holder 18 is of such structure as to permit any necessary adjustment in the position of the lamp, it being required with the present shade that the lamp axis be as nearly vertical as possible.

In general outline, the shade 15 closely approximates that of the lamp 16 and said shade is longitudinally and helically fluted whereby its outer surface provides protruding and rounded ribs 21 extending along its length. The side walls of the shade are of uniform thickness whereby an helical thread effect is produced at the inner face of the shade. Preferably, and as shown, the sides of adjacent inner flutes intersect at acute angles whereby sharp-edged ribs 22 are defined within the shade in alternate relation to the rounded outer ribs 21.

In the present embodiment, the ribs 22 extend for the full length of the shade and in such manner that sections through the shade perpendicular to its longitudinal axes define symmetrical figures, typical said sections being shown in Figures 4, 6 and 7. The flutes or grooves defined at the inner shade face and by and between the ribs 22 taper to a termination at a transverse upper end wall 24 of the shade while the grooves remain of substantially uniform depth; for this reason, the sections at different levels of the shade are different, as is shown.

Means are provided for mounting the shade 15 directly on the globe 25 of the lamp 16, said lamp globe having an upper portion conically tapering to a rounded tip 26. A pintle 27 depends axially from the top shade wall 24, and the free end of said pintle is arranged to engage a suitable bearing socket provided at the globe tip. Preferably, and as shown, a bearing block 28 is secured directly to the globe tip, and in fitted engagement therewith, by means of a suitable adhesive, said block providing a socket to receive the bearing point of the pintle.

It will now be noted that the effective shade bore defined by and between the ribs 22 is arranged

to substantially parallel and lie close to the globe, whereby the spaces of the flutes provide helical passages 29 around the globe, there being just enough clearance between the ridges of said ribs and the globe to permit a rotation of the shade about the globe. Openings 30 are provided in the top shade wall 24 in registration with the passages 29, and since the bottom of the shade is open, an upward passage of air is permitted into and through the shade.

The present lamp 16 is of a type which generates heat while lit, and this heat, through warming the air within the shade produces an upward and continuous convection flow of the air through the passages 29. Owing to the specific form of the passages 29, the aforesaid flow of air through the shade is arranged to effect a rotation of the shade about the lamp, it being noted that the ribs 22 are operative as helical vanes.

The shade 15 is preferably constructed of a light and rigid material, and if illumination through the shade is desired, the shade material would be translucent. Since a particular use for which the present shade is intended is in combination with a Christmas tree lamp, and since the globes of such lamps are shaped generally as shown and are more or less standard, shades embodying the present structural features are arranged to be provided as decorative accessories for such lamps, the mounting of the shade requiring only a fixing of the bearing block 28 to the tip of the lamp globe. It is noted that the pintle 27 may be integral with the shade, as is particularly shown.

Referring now to the embodiments disclosed in Figures 9 to 13 inclusive, it is noted that the essential features of the present invention are shown as incorporated in the structure of a shade 31 having a generally smooth exterior and of the same general outline as a lamp 32 which it encloses. The upper end wall 33 of the present shade is formed to provide an integral and depending pintle 34, and is imperforate. The pintle 34 is arranged to provide for a mounting of the shade on the lamp globe 35, and in the present embodiment the required socket is provided in the structure of the globe tip, said globe thus being of more or less special structure. The interior wall of the shade 31 is spaced from the opposite globe face to substantially the same degree at all points of the globe, whereby a passage 36 of annular cross-section is defined about and along the globe. Outlet ports 37 are provided in the upper shade end portion generally opposite the globe tip and below the end 33, and the lower shade end is open to provide an air inlet to the shade about the lamp base.

As in the previously described embodiment, means are provided in the shade structure whereby air passing upwardly through the shade will effect a rotation of the shade about the lamp. In the present instance, such means comprises the provision of a number of vanes 38 extending from the inner shade surface and toward the globe. The vanes 38 extend helically upwardly from the shade bottom and in a mutually similar manner whereby like helical passages 39 are defined within the shade and about the globe. In the present instance, the vanes 38 terminate somewhat below the shade openings 37, whereby the operation of the vanes as a shade-rotating means occurs chiefly at the lower and larger globe portion. The passages 39 it is noted, taper to smaller sections at their upper ends, and the side edges of the outlet port 37 are bevelled (see Fig. 13) in a manner to facilitate a tangential discharge

of air therethrough. The rotative operation of the shade 31 is understood to correspond to that of the shade 15.

Referring now and more specifically to the structure of the holder 18, the same being shown in use in Figs. 3, 8, 9 and 10 of the drawings, it is noted that said holder comprises spring-pressed clamping jaws 41 and 42. The upper holder jaw 41 is provided with upstanding spring clips 43 cooperative to retain the lamp socket 17 in fixed mounted position on the jaw. A serrated and segmental blade 44 depends from the jaw 41 for engagement in the top of a limb 19 longitudinally thereof and for rocking in its plane and about an axis perpendicular to the lamp axis to adjust the angularity of the lamp. The lower jaw 42 is provided with teeth 45 for adjustably engaging the lower limb side whereby to permit adjustment of the lamp positioning about a line at right angles to the first axis and the lamp axis. In this manner the lamp is arranged to be set upright in its mounted position on a tree limb whereby a shade 15 or 31 supported thereby may rotate about it without contact of the shade with the globe therein. The present holder is intended merely as illustrative of a means for mounting a lamp on a limb of a tree, and it will be understood that the disclosed shades are operative in connection with lamps generally, regardless of the specific mounting means therefor.

While the shades 15 and 31 are both of somewhat decorative appearance by reason of their structures, the shades may be colored or additionally decorated as desired. Furthermore, if shades embodying the present invention are to be used with lamps which do not generate heat (neon lamps, for instance), an independent up-draft may be provided and utilized for rotating a disclosed shade which is mounted as described. Should the shades be opaque and arranged for indirect illumination thereof, the lamps might well be replaced with elements which solely generate heat, it thus being understood that for the purpose of operating the disclosed shade structures, it is the heat-emanating quality of the enclosed element which is then of primary importance. It is further noted that the disclosed arrangement of vanes laterally of the enclosed lamp permits a designing of the shade to conform to the lamp shape, which feature of design is impossible with shades provided with propelling vanes in their top walls.

From the foregoing description taken in connection with the accompanying drawings, the advantages of the construction and method of operation will be readily understood by those skilled in the art to which the invention appertains, and while I have described the principle of operation, together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative, and that such changes may be made, when desired, as fall within the scope of the appended claims.

Having thus described my invention, I claim as new and desire to secure by Letters Patent of the United States the following:

1. In combination with a heat-emanating element, an exposed and decorative member enclosing said element and open at the top and bottom thereof, means supporting said member for rotation about a vertical axis, and means of said member providing a laterally closed and helical passage extending upwardly about and laterally of said element and arranged to contain the

convection air stream generated by the heat from said element whereby said stream is operative to effect the rotation of said member about said axis.

2. In combination with a heat-emanating lamp, a decorative shade enclosing said lamp and provided with a top opening, means supporting said shade for rotation about an upright axis, and means of said shade cooperative with said lamp to define a laterally closed and helical passage between the shade and lamp and discharging at said top opening of the shade whereby a convection current of air induced through said passage by the heat emanated by the lamp is arranged to effect the rotation of the shade about the lamp.

3. In combination with a heat-emanating lamp, a decorative shade enclosing said lamp and open at the top, means supporting said shade for rotation about an upright axis, and means of said lamp and shade cooperative to define an helical passage between the shade and lamp whereby a flow of air longitudinally through said passage is reactive with the shade to effect the rotation of the shade about said lamp.

4. In combination with a heat-emanating lamp, a decorative shade of similar outline to the lamp generally enclosing the latter and having a top opening, said shade imperforate laterally of said lamp, means supporting said shade for rotation about a vertical axis, and means of said shade cooperative with said lamp laterally thereof to define an helical passage longitudinally of the shade and lamp through which a confined and solely upward convection circulation of air generated by said lamp is arranged to be effected for causing a rotation of said shade.

5. In combination with a heat-emanating electric lamp, a shade generally enclosing the lamp and open solely at the top and bottom thereof, means supporting said shade for rotation about a vertical axis, and vane elements carried by and within said shade and cooperative with the lamp globe to define a plurality of helical passages longitudinally of and along said globe, said passages arranged to carry the convection air streams generated by the heat of said lamp whereby said streams are operative solely upwardly and against the vanes to effect the rotation of said shade.

6. In combination with a heat-emanating electric lamp, a shade generally enclosing the lamp

and open at the top and bottom, means supporting said shade for rotation about a vertical axis, and vane elements carried by and within said shade and cooperative with the lamp globe to define a plurality of helical passages longitudinally of and along said globe, said passages providing for an upward and restricted convection flow of air heated by said lamp whereby to cause a rotation of the shade about the lamp.

7. In combination with a tree having a laterally extending limb, a holder for an electric lamp globe mounted on said limb, an electric lamp globe carried by said holder, said holder adjustable on said limb to dispose said lamp to have the longitudinal axis thereof vertical, means providing a bearing socket at the upper point of said globe, a shade generally enclosing said globe and having a depending pintle engaged in said socket whereby said shade is arranged for rotation about the globe, and vane means of and within the shade cooperative with said globe to define an helical air passage between the shade and globe whereby an upward flow of air through said passage is arranged to effect a rotation of the shade about the said axis.

8. In combination with an heat-emanating element, a decorative member generally enclosing the element and having top and bottom openings, means supporting said member for rotation about an upright axis, and vane elements provided by and within said member and cooperative with said element to define an helical passage longitudinally of and along said heat-emanating element, said passage providing for an upward and restricted convection flow of air heated by said element whereby to cause a rotation of the member about said axis.

9. In combination with an heat-emanating element, a unitary member generally enclosing said element and provided with openings solely adjacent its top and bottom, and means mounting said member in place for rotation about a vertical axis, the side walls of said member of uniform thickness and spirally fluted whereby to define within the member an air circulation passage extending spirally along and about said element whereby a convection current of air induced through said passage by the heat emanated by the lamp is arranged to effect the rotation of the member about the heat-emanating element.

BART J. COFFIN.

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