

June 2, 1942.

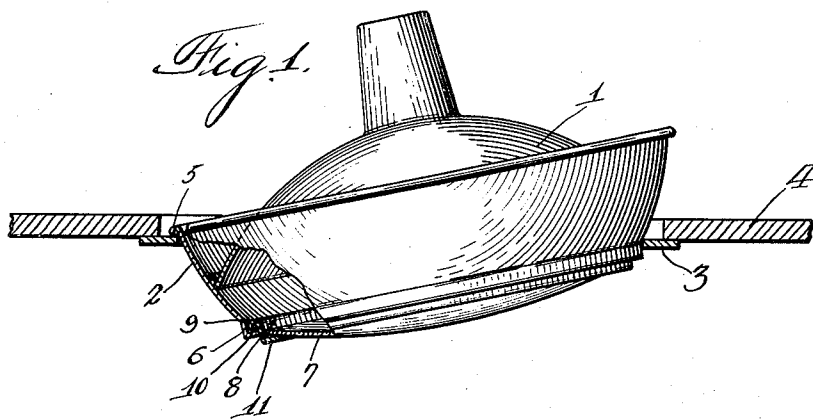
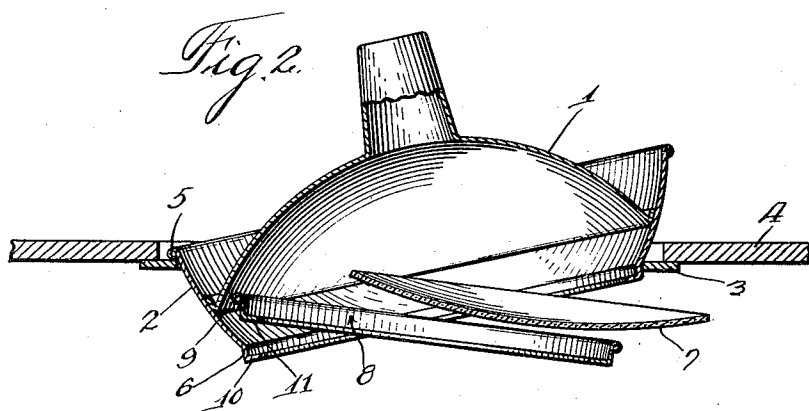
W. WILSON

2,285,002

LIGHTING FIXTURE

Filed Dec. 15, 1939

2 Sheets-Sheet 1



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Fig. 3.

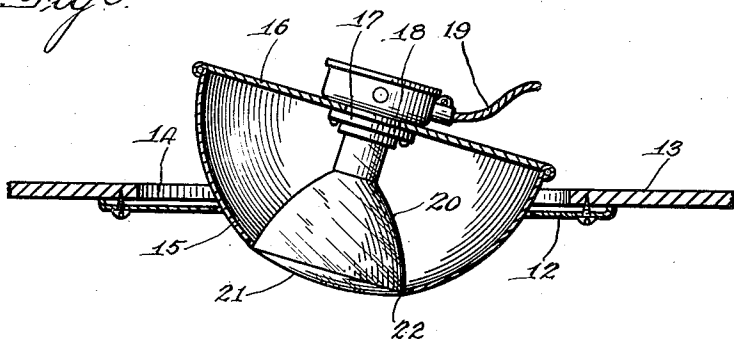


Fig. 4.

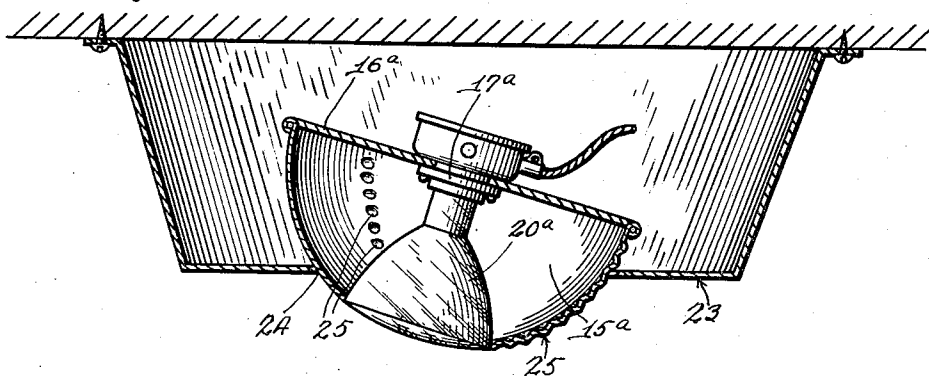
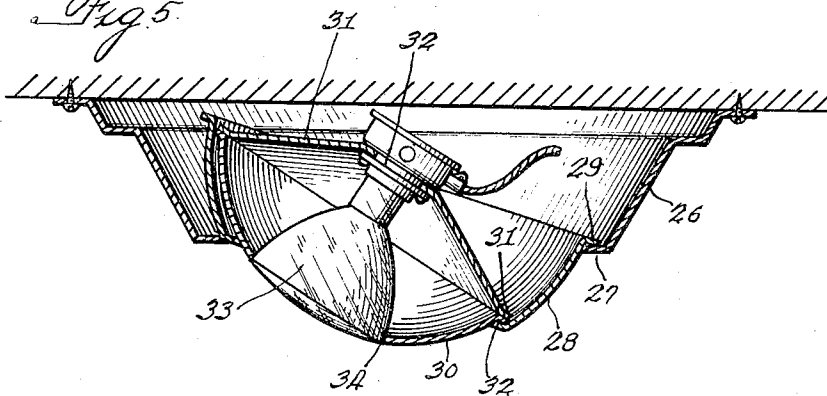


Fig. 5.



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UNITED STATES PATENT OFFICE

2,285,002

LIGHTING FIXTURE

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Application December 15, 1939, Serial No. 309,361

6 Claims. (Cl. 240—78)

My invention relates to lighting fixtures.

One of the objects of my invention is to provide a lighting fixture for overhead locations which, when installed, may give a substantially flush appearance and in which a reflector carrying the lamp or bulb can be rocked or tilted in any direction in order properly to direct the light in a desired direction.

A further object is the provision of a ceiling fixture in which the light-directing unit including the bulb and reflector may be tilted around a center through a comparatively wide angle in substantially any direction and be retained in adjusted position by friction induced by gravity.

A further object of my invention is to provide a construction in which the glass cover can be easily and quickly removed and replaced to enable the lamp to be replaced or the reflector to be cleaned.

Another object is the provision of a fixture of the character described in which a so-called "sealed beam" bulb having a reflector and cover glass or lens intimately associated therewith, and which, for convenience herein, may be termed a reflector bulb, forms a part of an adjustable unit which may be tilted around a restricted center of gravity, gion substantially on the vertical axis of the unit to distribute the total weight of the unit on an annular support around said axis to thereby retain the unit in adjusted position by friction.

A further object is to provide a fixture in which the required adjustment may readily be effected without the use of tools.

Further objects and advantages of the invention will be apparent from the description and claims.

In the drawings:

Fig. 1 is a side elevational view of one embodiment of the invention, parts being broken away, showing the reflector mounted and in tilted position.

Fig. 2 is an axial sectional view of the embodiment shown in Fig. 1 and illustrates the manner of removing the glass cover.

Fig. 3 is a sectional elevation of another embodiment having a sealed beam lamp or reflector bulb forming a part thereof, with the fixture adapted for flush mounting.

Fig. 4 is a view similar to Fig. 1, but adapted for surface mounting and illustrating means for increasing the frictional resistance.

Fig. 5 is a view similar to Fig. 4, but illustrates an embodiment adapted to enable the use of a

smaller housing with the bulb closer to the ceiling.

Referring to the drawings in detail, the embodiment shown in Figs. 1 and 2 comprises a concave reflector 1 which may be formed as a surface of revolution about the axis of the reflector; an annular band 2 surrounding the reflector adjacent its periphery and secured to the reflector as by spot welding, or the like, and having a substantially spherical outer surface; and an annular supporting member 3, which may be of sheet metal or the like, engaging the spherical surface of the supporting band 2 for supporting the band 2 and reflector thereon for universal rocking movement, whereby the light from the reflector may be adjusted angularly in any direction.

The supporting member 3 may be secured in any suitable manner to a ceiling construction 4. The reflector can be rockably adjusted in any direction simply by grasping the lower portion of the annular band 2 and exerting pressure to cause the spherical surface of the supporting band to slide on the annular edge of the supporting member 3. The weight of the fixture is sufficient to cause friction to hold the fixture in any position to which it may be adjusted. The annular bead 5 on the band 2 and the annular shoulder 6 on the lower edge of the band may serve to prevent excessive rocking movement of the reflector.

A glass cover 7 is supported on an annular band or ring 8 and this ring is provided with an upper shoulder or beaded portion 9 which rests on an inwardly-extending annular flange 10 on the spherical band 2. A lower inwardly-extending flange 11 on the ring 8 provides a shoulder on which the edge of the glass cover 7 may rest. In order quickly to remove the glass cover, the cover-supporting band 8 may be tilted to the position shown in Fig. 2 so as to provide an opening between the cover-supporting ring 8 and the reflector-supporting band 2, through which the cover 7 may be removed or replaced. When the cover is in position, gravity is sufficient to hold the cover 7 and ring 8 in place. If desired, the inner surface of the supporting band 2 may have a spherical reflecting surface, the center of which may lie approximately at the light source so that rays reflected therefrom will be reflected back toward the light source and onto the concave reflector 1.

The embodiment illustrated in Fig. 3 is adapted for flush mounting and comprises a plate or ring 12 which may be secured to a ceiling 13 through which an opening 14 has been provided to allow

the fixture to extend therethrough, whereby it may be completely installed from below the ceiling line.

A spherical band or housing 15 is provided which may be similar to the spherical band 2 previously described and is provided with an upper cover plate 16 secured thereto. A socket 17 is supported on this cover plate and an outlet box 18 may be provided, if desired, from which a flexible conduit 19 extends. A so-called reflector bulb 20, which may be of the so-called sealed beam type, is supported in the socket 17 and its outer end or lens portion 21 is exposed through an axial opening 22 in the spherical band 15. The end of the bulb 20 may be substantially flush with the spherical surface.

The center of gravity of the assembled adjustable portion of the device is substantially on the vertical axis of the unit and the weight is so distributed that the center of gravity remains in a restricted region substantially on the vertical axis of the unit in all positions of adjustment. Therefore, the friction induced by gravity is sufficient to hold the fixture in adjusted position.

Fig. 4 illustrates an embodiment adapted to be secured to a ceiling or other support and comprises an outer housing or false ceiling 23 which may be supported in any suitable manner as shown. The false ceiling 23 is provided with a circular opening 24 to receive a spherical housing or band 15a which may be similar to the spherical band 15 previously described. This band is also provided with an upper cover plate 16a and socket 17a, in which is mounted the reflector bulb 20a in the same manner as previously described in connection with Fig. 3.

The spherical band 15 is provided with a plurality of radially spaced vertical rows of small projections 25 preferably formed by indenting the inside of the band to form a substantially vertical line of small outwardly extending corrugations. Such corrugations may be provided on any of the fixtures disclosed and are particularly intended for use in places where the ceilings or other supports are subjected to extreme vibration. These corrugations increase the frictional effect between the adjustable member and its support.

Fig. 5 illustrates a nested arrangement of spherical elements which enables a more compact construction without reducing the range of adjustment and at the same time permits the mounting of the fixture in closer relationship to the ceiling than in the embodiment disclosed in Fig. 4. This embodiment comprises a housing or canopy 26 having an intumed annular flange 27 on which is supported a shallow spherical band 28 having an upper outturned flange 29 to limit the movement of the band by engagement with the intumed flange 27 of the housing. An inner spherical band 30 is nested in the band 28 and provided with an adjustment-limiting flange 31 co-operating with an intumed flange 32 on the outer band 28. The inner band 30 is provided with a concave cover 31a adapted to support a socket 32 in which a reflector bulb 33 of the same type as previously described may be supported. The end of the bulb 33 is exposed through an axial opening 34 in the spherical band 30. In this construction the vertical depth of the fixture is materially reduced, and in all positions of adjustment the center of gravity of the adjustable portion is maintained in a restricted region adjacent the vertical axis as in the embodiments previously described.

This is a continuation in part of my copending application Serial No. 156,117, filed July 28, 1937.

Further modifications will be apparent to those skilled in the art and it is desired, therefore, that the invention be limited only by the prior art and the scope of the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A lighting fixture comprising a concave reflector, means for supporting a light source in said reflector, an annular band surrounding the reflector adjacent its periphery and secured to said reflector, said band having a substantially spherical outer surface, a supporting member having an annular portion engaging said spherical surface for supporting said band and reflector for universal rocking movement whereby the light from the reflector may be adjusted angularly in any direction, the diameter of the outer edge of the reflector being greater than the diameter of the inner edge of the annular band, a glass cover, and a cover supporting band having an upper outwardly-extending annular flange detachably engaging said annular band and a lower inwardly-extending annular flange detachably engaged by said cover whereby the supporting band may be slipped and rocked to cause a portion of the supporting band to swing outwardly to provide an opening between the cover-supporting band and the annular band for the insertion and removal of the glass cover.

2. A ceiling lighting fixture construction comprising a unitary construction including a concave downwardly and outwardly flaring reflector, a light source within said reflector and movable therewith and an annular supporting band having a spherical surface and supported so as to move with said reflector, and a supporting member having a circular opening lying in a horizontal plane below the center of said spherical surface on the edge of which said spherical surface rests and tilts in any direction, said edge supporting the entire weight of said unitary construction, the center of gravity of said fixture being close to the center of said spherical surface so that the friction due to gravity alone is sufficient to hold the fixture in adjusted position.

3. A ceiling lighting fixture construction comprising a unitary construction including a concave downwardly and outwardly flaring reflector, a light source within said reflector and movable therewith and an annular supporting band having a spherical surface and supported so as to move with said reflector, and a supporting member having a circular opening lying in a horizontal plane below the center of said spherical surface on the edge of which said spherical surface rests and tilts in any direction, said edge supporting the entire weight of said unitary construction, the center of gravity of said fixture being close to the center of said spherical surface so that the friction due to gravity alone is sufficient to hold the fixture in adjusted position, said annular supporting band being provided with an annular stop for engaging said supporting member to limit the tilting movement in any direction.

4. A ceiling lighting fixture construction comprising a unitary construction including a concave downwardly and outwardly flaring reflector, a light source within said reflector and movable therewith, a lens movable with the reflector extending across the reflector opening and cooper-

ating with the reflector to house the light source and an annular supporting band having a spherical surface and supported so as to move with said reflector, and a supporting member having a circular opening materially greater in diameter than the diameter of said lens lying in a horizontal plane below the center of said spherical surface on the edge of which said spherical surface rests and tilts in any direction, said edge supporting the entire weight of said unitary construction, the center of gravity of said fixture being close to the center of said spherical surface so that the friction due to gravity alone is sufficient to hold the fixture in adjusted position.

5. A ceiling lighting fixture construction comprising a unitary construction including a concave downwardly and outwardly flaring reflector, a light source within said reflector and movable therewith and an annular supporting band having a spherical surface and supported so as to move with said reflector, and a supporting member having a circular opening lying in a horizontal plane below the center of said spherical surface on the edge of which said spherical surface rests and tilts in any direction, said edge supporting the entire weight of said unitary construction, the center of gravity of said fixture

being close to the center of said spherical surface so that the friction due to gravity alone is sufficient to hold the fixture in adjusted position, said supporting band having a meridional row of embossments for engagement with said edge to increase frictional resistance to displacement.

6. A ceiling lighting fixture construction comprising a unitary construction including a concave downwardly and outwardly flaring reflector, a light source within said reflector and movable therewith and an annular supporting band having a spherical surface and supported so as to move with said reflector, and a supporting member having a circular opening lying in a horizontal plane below the center of said spherical surface on the edge of which said spherical surface rests and tilts in any direction, said edge supporting the entire weight of said unitary construction, the center of gravity of said fixture being close to the center of said spherical surface so that the friction due to gravity alone is sufficient to hold the fixture in adjusted position, said supporting band having a plurality of spaced meridional rows of embossments for engagement with said edge to increase frictional resistance to displacement.

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