H. A. HOLLOWAY AND L. E. TRACHSEL.

LIGHTING FIXTURE.

APPLICATION FILED JUNE 2, 1919.

1,366,911. Patented Feb. 1, 1921.

2 SHEETS—SHEET 1.

Fig. I.

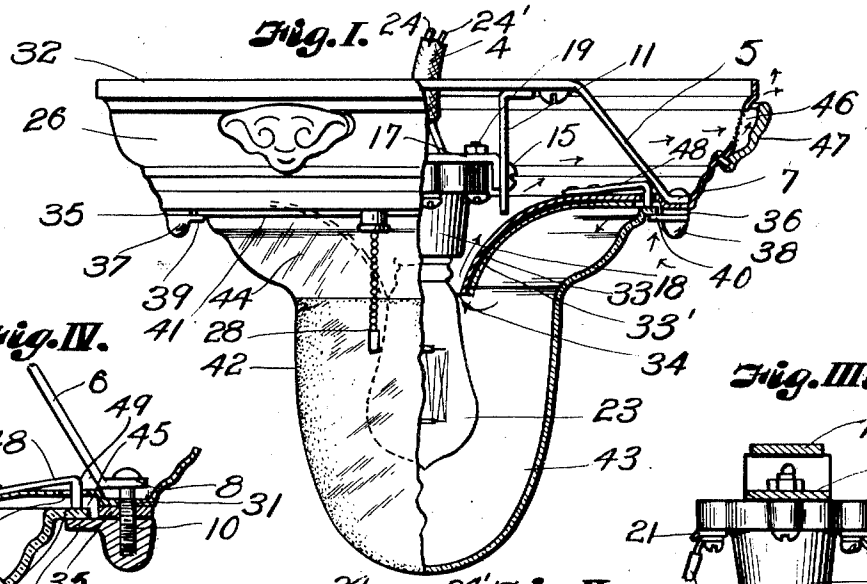


Fig. IV.

Fig. III.

Fig. II.

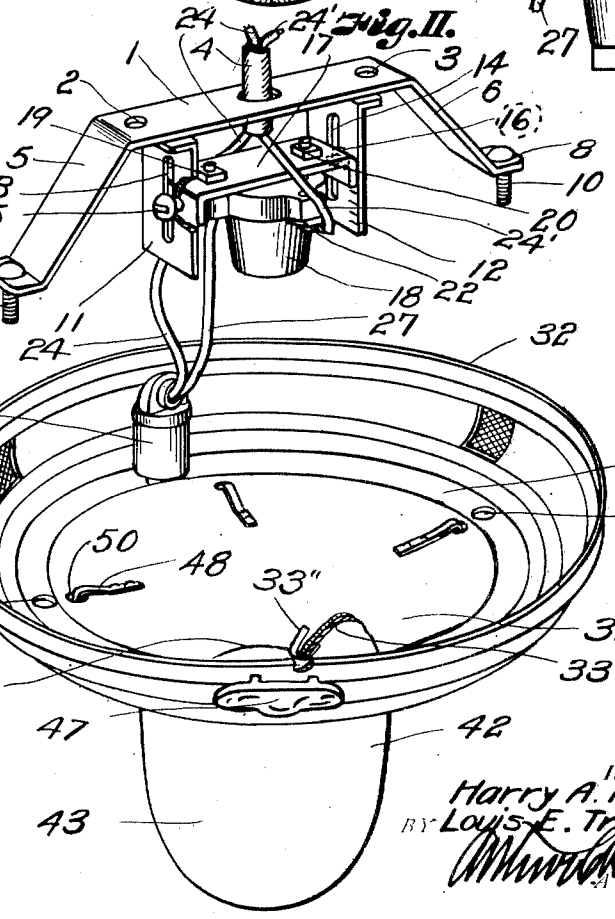
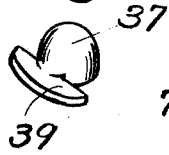


Fig. V.



INVENTORS

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2 SHEETS—SHEET 2.

Fig. VII.

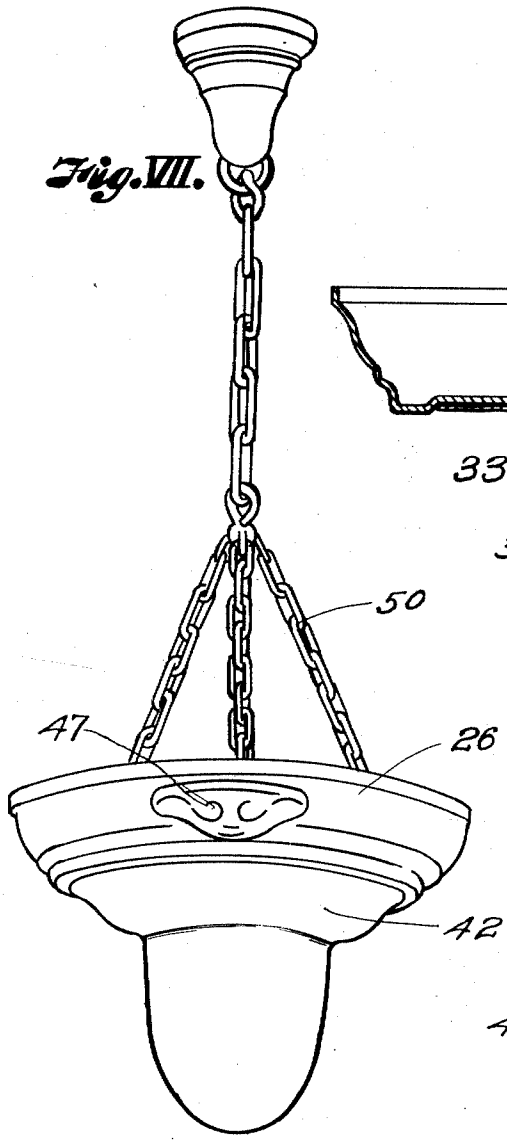


Fig. VI.

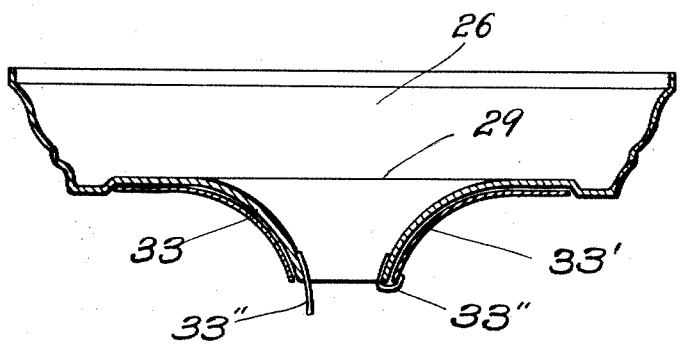
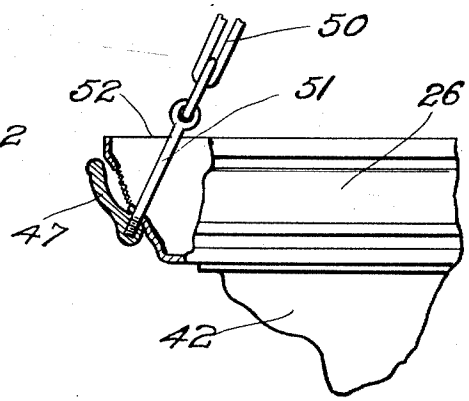


Fig. VIII.



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UNITED STATES PATENT OFFICE.

HARRY ALDRICH HOLLOWAY AND LOUIS EDWARD TRACHSEL, OF ST. JOSEPH, MISSOURI; SAID HOLLOWAY ASSIGNOR OF HIS RIGHT TO THE KING MANUFACTURING COMPANY, OF ST. JOSEPH, MISSOURI, A CORPORATION OF MISSOURI.

LIGHTING-FIXTURE.

1,366,911. Specification of Letters Patent. Patented Feb. 1, 1921.

Application filed June 2, 1919. Serial No. 301,176.

To all whom it may concern:

Be it known that we, HARRY ALDRICH HOLLOWAY and LOUIS EDWARD TRACHSEL, citizens of the United States, residing at St. Joseph, in the county of Buchanan and State of Missouri, have invented certain new and useful Improvements in Lighting-Fixtures; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to electric light fixtures and one of the objects thereof is to provide an electric light fixture which may be conveniently attached to and detached from a ceiling or other support, there being means provided whereby the axes of the inclosing globe, the reflector and the light source may be maintained in a true perpendicular irrespective of the deviation of the ceiling from a horizontal plane.

Another object of the invention is to provide means whereby a true focal distance may be maintained between the light source and the reflector under varying conditions. Fixed reflectors have fixed focal points. Commercially, it has been found impractical to construct electric light bulbs of uniform size for different wattages. An incandescent lamp which consumes 75 watts may have the center of its light source three-fourths of an inch shorter from its base than a lamp consuming 100 watts, and a 150 watt lamp may have the center of its light source an inch or more farther away from its base than does a lamp consuming 75 watts. Therefore, it will be apparent that the center of the light source may vary a considerable distance on either side of the true focal point of the reflector.

We have provided means whereby the focal distance may be maintained irrespective of the mechanical difficulties encountered on account of employing lamps of different wattage.

It is also the purpose of our invention to yieldingly support the globe to allow for expansion and contraction and to permit a space between the globe and the canopy of the fixture or the reflector so that a current of air may pass therethrough for the purpose of ventilation and cooling, and to provide means for permitting the exit of the cooling air without the liability of insects or dust entering the interior of the fixture. The device is so constructed that the receptacle and its support together with the globe supporting canopy and reflector may be primarily attached to the ceiling in a convenient manner before attaching the inverted globe.

Other objects and minor details of construction will be referred to hereinafter, the specific construction of the device being apparent by reference to the following description in connection with the accompanying drawings, in which—

Figure I is an elevational view of a completed fixture, parts being broken away to show the interior construction thereof.

Fig. II is a disassociated view of the supported bracket, the canopy or base and the globe.

Fig. III is a detail view of the lamp socket.

Fig. IV is an enlarged fragmentary view of the thumb knob and support for the globe.

Fig. V is a detail view of the thumb knob.

Fig. VI is a sectional view through the canopy illustrating a method for securing the reflector.

Fig. VII is a perspective view of the fixture suspended from the ceiling by chains.

Fig. VIII is a view illustrating the chain connection.

In the preferred embodiment of our invention, we employ a bridge strip 1 having screw-receiving openings 2 and 3 whereby the strip may be fastened to the ceiling or other suitable support adjacent to an opening therein for the conductor cord 4. The strip is provided with downwardly diverging arms 5 and 6 terminating in lateral flanges 7 and 8 to receive the bolts 9 and 10, which are welded thereto. 11 and 12 are depending bracket plates fastened to the strip 1, as best seen in Figs. I and II and these plates are slotted longitudinally, as indicated at 13 and 14, to slidably receive the trunnion screws 15 and 16 carried by the vertically adjustable receptacle hanger 17.

The receptacle hanger carries an incandescent lamp receptacle 18, which is fastened thereto by the bolts 19 and 20 so that when the hanger 17 is adjusted vertically or swung on the trunnion screws 15 and 16, like movement will be imparted to the receptacle 18, as will be explained hereinafter. The receptacle 18 is provided with terminals 21 and 22 in the usual manner to provide current for the incandescent lamp 23 which may be of any preferred construction. The wire 24 in cord 4 passes down to a pull plug 25 in the fixture canopy 26 and is connected to a terminal thereof in the usual manner and a return conductor 27 leads therefrom to the terminal 21. The conductor 24′ in the cord 4 is connected to the terminal 22 and the two cords are in electric circuit with a suitable source of generation. The pull plug or switch 25 may be operated in the usual manner by the pull cord 28 so that the filament in the lamp 23 may be heated to incandescence by operating the cord 28.

The fixture canopy 26 is shown as comprising a ring-shaped member having an inwardly projecting flange 29 provided with bolt openings 30 and 31 to receive the bolts 9 and 10 on the flanges 7 and 8 carried by the bridge strip 1, it being understood that the only points of support for the canopy are through the openings 30 and 31.

Projecting inwardly and downwardly from the flange 29 is a parabolic reflector 33 having a central opening 34 through which the lamp 23 may project, as best shown in Fig. I. In actual practice, we prefer to construct the canopy, the flange 29 and the parabolic reflector 33 of a single spinning whereby the major portion of the fixture may be quite inexpensively constructed.

For mechanical reasons we may find it expedient to employ a separate removable reflecting surface 33′ which is secured by the bendable fingers 33″ which are secured to the canopy as shown in Figs. II and VI.

On the ends of the screw bolts 9 and 10, which project through the openings 30 and 31, we prefer to apply spacing washers 35 and 36 against which may abut thumb knobs 37 and 38 having laterally projecting lips 39 and 40 to engage the under side of the peripheral flange 41 of the globe 42, which is in the form of an inverted semi-elipse 43 with an enlarged portion 44, as best seen in Fig. I. The semi-elliptical portion of the globe is preferably translucent while the portion 44 is transparent, this being substantially in line with and directly surrounding the reflector 33 which is slightly upwardly offset from the flange 29, as will be apparent by reference to Figs. I and IV. The flange 41 on the globe is slightly spaced from the reflector 33 and is of slightly less diameter than the diameter of the reflector to provide a ventilating space 45 through which air may pass between the globe and the reflector and through the opening 34 up between the canopy and ceiling through the reticulated openings 46, which may be covered by spaced ornamental members 47, which, however, will not interfere with the circulation of air to assist in carrying off some of the accumulating heat when the device is in use.

In the event that the ceiling is not in a true horizontal plane, the canopy may be adjusted to a true perpendicular by adjustment of the thumb knobs 37 and 38 on the screw bolts 9 and 10.

The space 45 also permits expansion and contraction of the globe due to heat or other causes and the globe is held firmly upon the lips 39 and 40 of the thumb knobs 37 and 38 by the resilient fingers 48, each of which is fastened at one end to the upper side of the reflector and each of which is provided with a projecting finger 49 extending through an opening 50 in the reflector to bear against the upper face of the flange 41 of the globe.

The depending plates 11 and 12 are suitably calibrated for lamps of different wattage so that when it is determined to utilize a lamp of given wattage in setting up the fixture, the bridge member 1 is first secured to the ceiling by screws passing through the openings 2 and 3. The screws 15 and 16 are then loosened so that the hanger 17 may be vertically adjusted along the calibrated scale on members 11 and 12 to fix it with respect to the particular incandescent lamp to be employed, this being capable of easy accomplishment because lamps of a given make having a given wattage have the light source distance from the base standardized. If the ceiling is slightly out of a horizontal plane, the receptacle 18 and hanger 17 may be swung on the trunnions 15 and 16 so that the axis of the receptacle will be in a true perpendicular. The proper electric connections may then be made and the canopy 26 may then be moved into place so that the bolts 9 and 10 will project through the openings 30 and 31, the particular lamp 23, having been previously selected, may then be screwed into the receptacle 18 and the thumb knobs which have previously been used to fasten the canopy to the ceiling may be rotated so that the lips 39 and 40 will fit under the flange 41 of the globe to hold it in place.

It will be apparent that the bolts 9 and 10 support the entire structure including the canopy, the reflector and the globe and that the same may be conveniently attached to or removed from the permanently fastened bridge member 1 by simply removing the thumb knobs. It will also be apparent that the fixture, when set up, will be capable of having the proper focal distance maintained

between the light source and the reflector so that an annular beam will be transmitted through the transparent portion 44 of the globe while a softer light will be diffused through the translucent portion of the globe.

Since the canopy is only secured at two points, it is obvious that it may be tilted sufficiently to aline the axes of the reflector, the globe and the light source even when the ceiling is rough or out of horizontal plane. It will be apparent that the device may be easily constructed, conveniently attached to its support and expeditiously disassembled for inspection or repairs and that in practice it will well perform the service for which it is intended.

In Fig. VII we show a means of suspending the canopy from the ceiling by chains 50 which are fastened to the canopy by eye bolts 51 which also support the ornaments 47.

In this case the bracket 1 is supported by a plate 52 at the top of the canopy.

Having thus described our invention, what we claim as new therein and desire to secure by Letters-Patent is:

1. A light fixture comprising a canopy, a reflector supported thereby, a light source coöperating with the reflector, an inverted globe surrounding said reflector, thumb knobs carried by the canopy and having lips for engaging the under edge of the globe in spaced relation from the canopy, and yielding fingers carried by the reflector and projecting against the upper surface of the edge of the rim of the globe to maintain it in yielding contact with the lips on the thumb bulbs.

2. A light source comprising a canopy, a reflector carried by the canopy, an offset with respect thereto to form a shoulder, a light-source support adjacent to the reflector, an inverted globe having a rim flange in the recess formed by the shoulder, the flange being spaced away from the reflector and canopy, and supporting devices carried by the canopy and engaging the under side of the rim flange.

3. A light source comprising a canopy, a reflector carried by the canopy, an offset with respect thereto to form a shoulder, a light-source support adjacent to the reflector, an inverted globe having a rim flange in the recess formed by the shoulder, the flange being spaced away from the reflector and canopy, and means yieldingly pressing the rim flange against the supporting devices.

4. A light fixture comprising a canopy and a reflector, a light-source support, and means for longitudinally and swingingly adjusting said light-source support.

5. A light fixture comprising a bridge member having depending bracket plates, a lamp socket hanger vertically adjustable and rotatably secured to the bracket plates, a canopy surrounding the bridge member and bracket plates, and a reflector carried by the canopy and having an opening in line with the socket hanger.

6. A light fixture comprising a bridge member, depending bracket plates carried by the bridge member, a lamp socket hanger vertically and rotatably secured to the bracket plates, depending arms carried by the bridge member, a canopy, means for securing the canopy to the depending arms, and a reflector carried by the canopy and having an opening in line with the lamp socket hanger.

7. A light fixture comprising a canopy and a reflector, the reflector and canopy being formed in a single spinning, a bridge member adapted to be secured to a support and having terminal arms, means for securing the ends of the arms to the canopy, a light-source socket carried by said bridge member and adapted to support a light source in focus with the reflector, and a globe supported by the means for securing the arms and the canopy together.

In testimony whereof we affix our signatures.

HARRY ALDRICH HOLLOWAY.
LOUIS EDWARD TRACHSEL.