July 16, 1963 N. R. SCHWARTZ 3,097,800

RECESSIBLE LIGHTING FIXTURE FOR LAMP HAVING PLUG TERMINALS

Filed May 26, 1959 2 Sheets-Sheet 1

FIG. 1

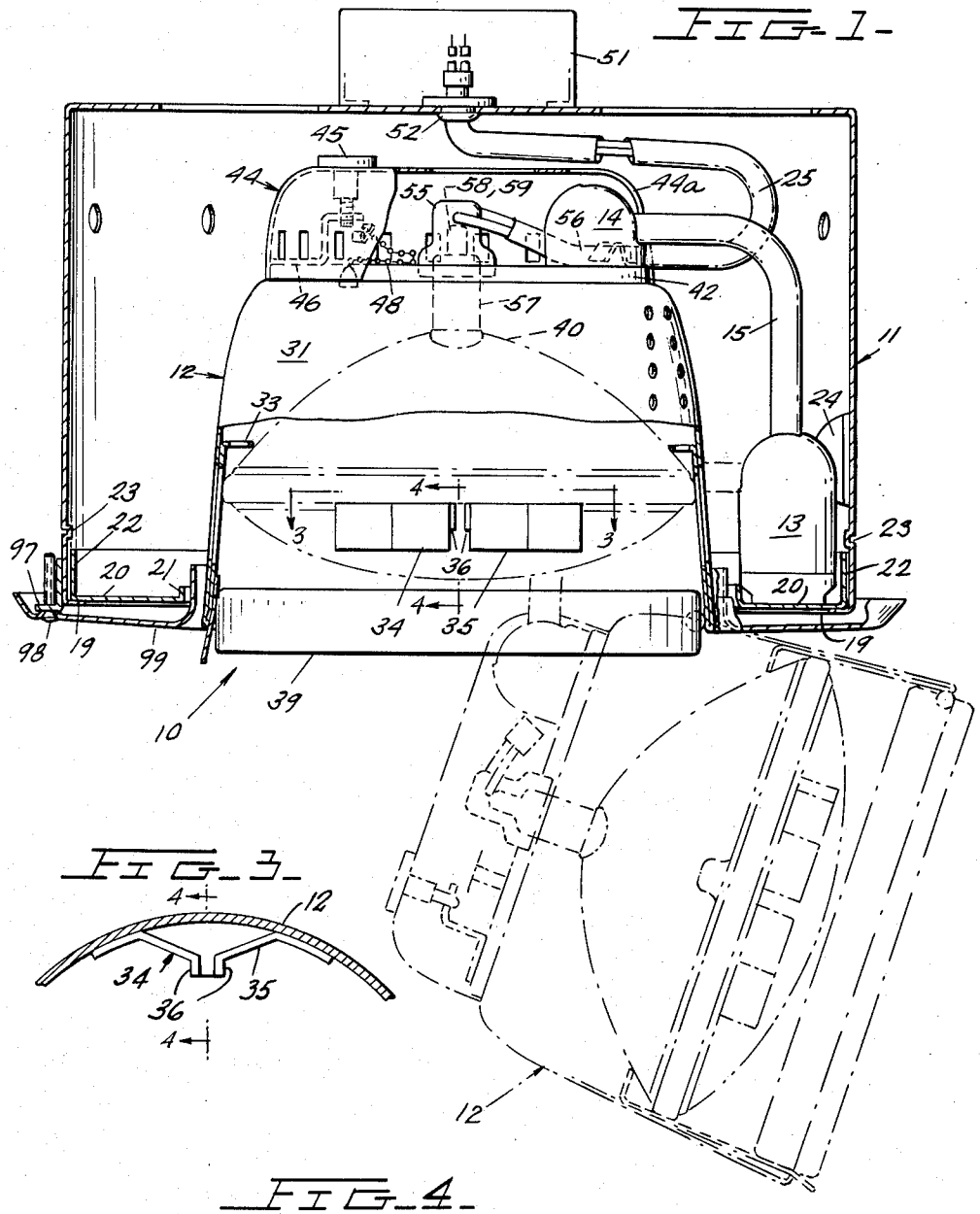
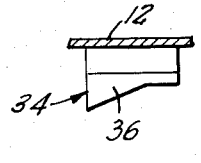


FIG. 3

FIG. 4



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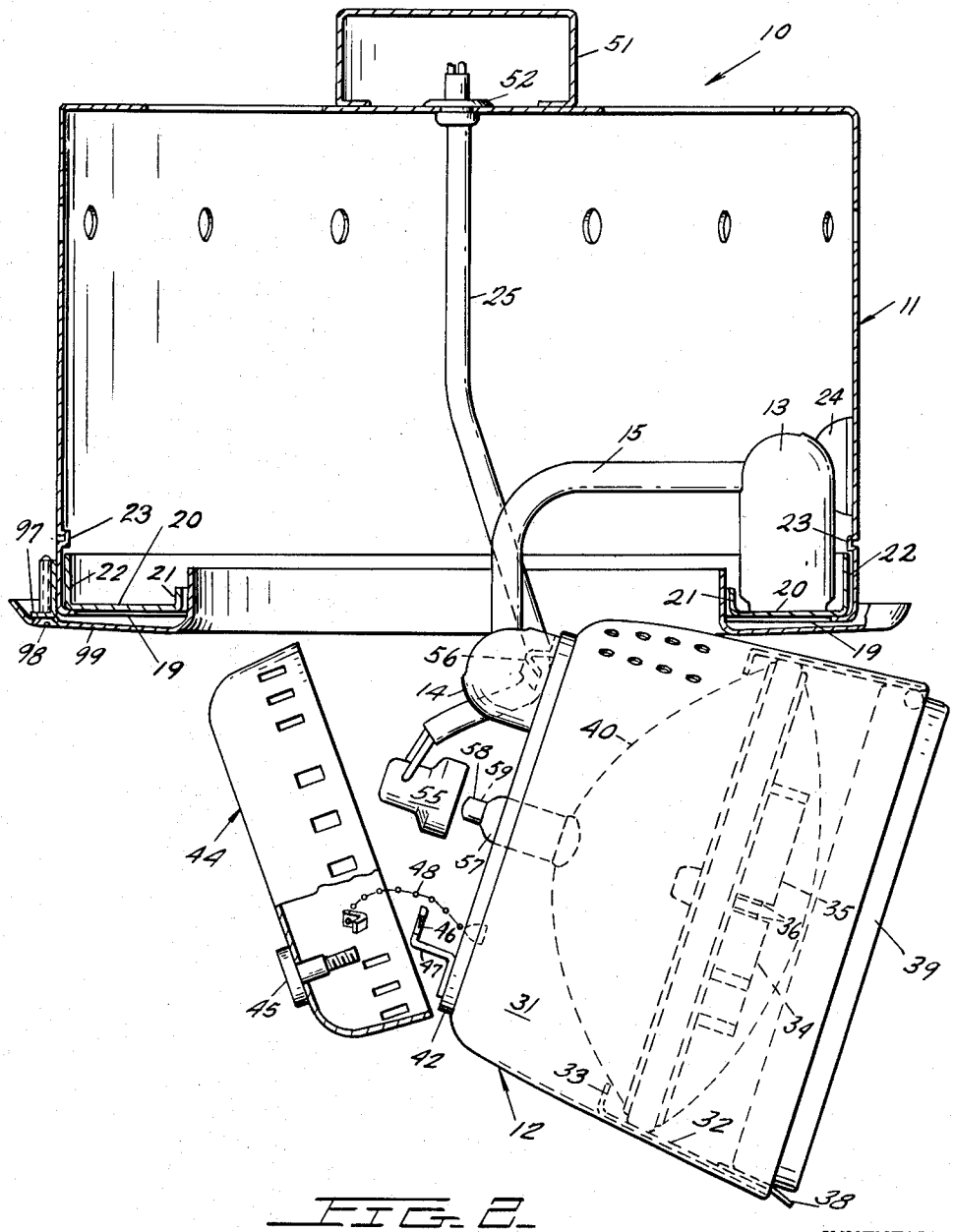


FIG. 2

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RECESSIBLE LIGHTING FIXTURE FOR LAMP HAVING PLUG TERMINALS

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Filed May 26, 1959, Ser. No. 815,861
3 Claims. (Cl. 240—78)

The instant invention relates to lighting fixtures in general and more particularly to recessed-type lighting fixtures for high wattage lamps.

In my U.S. Patent No. 2,636,979 and my copending application Serial No. 744,261 filed June 24, 1958, now Patent No. 3,007,040, issued October 31, 1961 and assigned to the assignee of the instant invention, there are illustrated recessed-type lighting fixtures for a lamp having a screw-type terminal arrangement. While this arrangement is satisfactory for lamps of relatively low wattage, lamps of relatively high wattage, say 500 watts, are usually constructed with plug terminals. The plug terminals are mated with the contacts of a female receptacle.

In the case of a recessed-type fixture, the receptacle has been mounted to the end of a flexible cable with the cable being positioned in the space between the outside of the lamp and the inside of the lamp shade.

Further, prior art fixtures of this type required a long cable for carrying the receptacle since it was necessary to first remove the lamp from the shade before disconnecting the receptacle. Thus, quite often the cable came in direct contact with the bulb which caused excessive heating of the cable insulation leading to premature failure.

The instant invention overcomes this disadvantage of the prior art by removing the cable, to which the receptacle is connected, from the inside of the lamp shade. This is accomplished by having the lamp plug terminals extend through an opening in the lamp shade at the back surface thereof. The receptable is mounted to a cable that is positioned completely outside of the lamp shade.

In order to delamp the fixture of the instant invention, the shade is pivoted out of its recessed housing. A cover secured to the shade is removed and the receptacle becomes accessible for disconnecting it from the lamp. After disconnecting the receptacle, the shade clips which retain the lamp are depressed with one hand while the other hand exerts a force at the neck of the lamp urging the lamp out of the opening at the front of the shade.

By positioning the receptacle cable outside of the shade, a shorter cable can be utilized and the cable will never be in direct contact with the bulb or in such close proximity thereto that the cable can be damaged by overheating.

The high wattage bulbs are physically large thereby requiring strong retaining clips, hence a large force is required for removal of the lamp. In the instant invention, this force is applied from the back of the shade which results in better control and makes the job more simple. That is, prior art devices relied upon gravity to move the lamp out of the shade after the force of the retaining clips was overcome. After being free of the clamping means, the lamp quite often dropped to the floor. This is in contrast to the instant invention wherein one hand pushes the lamp from the back while the other hand is in a position to receive the detached bulb.

Accordingly, a primary object of the instant invention is to provide a novel recessed-type lighting fixture for high wattage lamps.

Another object is to provide a novel recessed fixture for high wattage lamps having plug terminals.

Still another object is to provide a novel recessed fixture which may be conveniently delamped.

A further object is to provide a high wattage recessed-type lamp fixture in which the plug receptacle flexible connecting cable is positioned entirely outside of the lamp shade.

These as well as other objects of the instant invention shall become readily apparent after reading the following description of the accompanying drawings in which:

FIGURES 1 and 2 are cross-sections of a recessed fixture constructed in accordance with the teachings of the instant invention. In FIGURE 1, the shade is positioned within its housing while in FIGURE 2, the shade is outside the housing and the delamping operation has commenced.

FIGURE 3 is a plan view of some of the lamp retaining clips looking in the direction of arrows 3—3 of FIGURE 1.

FIGURE 4 is an end view of one of the clips looking in the direction of arrows 4—4 of FIGURE 1.

Now referring to the figures, recessed fixture **10** generally comprises a circular housing **11** and a shade assembly **12** which is operatively mounted to housing **11** by means of swivel units **13** and **14** which are interconnected by L-shaped hollow metal tube **15** in a manner fully described in my aforesaid U.S. Patent No. 2, 636,979.

Housing **11** is usually mounted within a ceiling recess by means well known to the art and when so mounted, the open front of housing **11** is at the lower end thereof. The free edge of housing is inwardly turned at **19** to form a circular track for ring **20**. Inner **21** and outer **22** edges of ring **20** are upwardly turned with the latter cooperating with housing indentation **23** to retain ring **20** on track **19**.

Stop **24** extends inwardly from the wall of housing **11** and is positioned in the path of swivel unit **13** which is secured to ring **20**. Thus, while ring **20** is freely rotatable upon track **19**, the engagement between swivel unit **13** and stop **24** limits the rotation of ring **20** to somewhat less than 360° thereby protecting cable **25** against undue twisting.

Shade assembly **12** comprises a generally circular open ended shade **31** having a ring-like member **32** positioned internally of and at the open end of shade **31**. The upper end of member **32** is inwardly turned to form a stop **33** and also provide rigidity for shade **31**. Two pairs of springs clips **34**, **35** are mounted to the inner surface of member **32** and are provided with cam portions **36**.

When high wattage lamp **40**, rated at 500 watts and commonly designated par **64**, is entered through the open end of shade **31**, the cam portions **36** of clips **34**, **35** are first engaged by lamp **40**. This forces clips **34**, **35** outwardly thereby permitting lamp **40** to move inwardly until it abuts stop **33**. At this time, lamp **40** is free of cam portions **36** so that spring clips **34**, **35** move to their normal positions in the path of lamp **40**. Thus, inward movement of lamp **40** is arrested by stop **33** and outward movement is arrested by spring clips **34**, **35**.

Louvre assembly **39**, of the type described in my copending application Serial No. 672,154 filed July 16, 1957, now Patent No. 2,947,855, issued August 2, 1960 and assigned to the assignee of the instant invention, is removably mounted over the shade opening. A clip **38** secured to member **32** extends beyond the open end of shade **31** to provide means which may readily be grasped so that shade assembly **12** can be conveniently moved into and out of housing **11**. Trim ring **99** is removably secured to housing **11** by means of screws **98** which are received by threaded apertures in L-shaped brackets **97** secured to the outside of housing **11**.

The back of shade **31** is abruptly reduced in size to form a locating means **42** for round bowl-shaped cover **44**. Thumb screw **45**, freely rotatable in cover **44**, en-

gages the threaded aperture 46 in offset bracket 47 secured to the back of shade 31 thereby removably securing cover 44 to the back of shade 31. Chain 48, connected at one end to shade 31 and at the other end to cover 44, prevents cover 44 from falling completely free of shade 31 when thumb screw 45 is disengaged from bracket 47.

Two conductor cables 25 extend from outlet box 51 through a nylon bushing 52 which surrounds an opening in the back surface 53 of housing 11. The end of cable 25 entered into housing 11 is electrically connected to a two place electrical receptacle 55. Clamp 56 secures cable 25 to the back of shade 31.

With lamp 40 resting against stop 33, lamp neck 57 extends through an opening in the back of shade 31. Thus, the plug terminals 58, 59 of lamp 40, extending from neck 57 thereof, are positioned externally of shade 31 and are disposed within cover 44. The female contacts (not shown) of receptacle 55 are in engagement with plug terminals 58, 59 to electrically connect cable 25 to lamp 40.

One end of tube 15 is connected to swivel unit 13 while the other end of tube 15 is connected to swivel unit 14. As explained in my aforesaid U.S. Patent No. 2,636,979, each of the swivel units are constructed to permit a 90° relative movement of gooseneck 15. That is, tube 15 is rotated 90° relative to swivel unit 13 when moving between the positions of FIGURES 1 and 2.

In a similar manner, with gooseneck 15 in the position of FIGURE 2, swivel unit 14 may be rotated 90° clockwise about a horizontal axis relative to gooseneck 15, thereby permitting shade assembly 12 to be tilted after removal from housing 11. Slot 44*a* in cover 44 provides clearance for tube 15 as well as an entrance for cable 25. The cooperation of ring 20 and track 19 permits shade assembly 12 to be rotated about a vertical axis.

Delamping is accomplished by moving shade assembly 12 out of housing 11 to the position of FIGURE 2. Thumb screw 45 is disengaged from bracket 42 and cover 44 is removed from its closed position seated against the back of shade 31. Chain 48 loosely retains cover 44 in its open position to shade 31 so that cover 44 cannot accidentally fall to the ground. Receptacle 55 is disengaged from the terminals 58, 59 of lamp 40 and lower assembly 39 is dismounted.

With one hand, the maintenance man exerts a force on the neck 57 urging lamp 40 through the open end of shade 31. At the same time, the maintenance man, utilizing his other hand, depresses one set of spring clips 34, 35 until lamp 40 is forced passed these clips 34, 35 and may readily be removed from shade 31. It is to be noted that during the delamping period, the open end of shade 31 is not facing straight downward so that the likelihood of lamp 40 falling to the ground when freed of spring clips 34, 35 is minimized.

For relamping, lamp 40 is forced passed spring clips 34, 35 until seated against stop 33. Thereafter, the procedure previously set forth for delamping is followed in reverse order.

Thus, I have provided a novel construction for a recessed-type lamp fixture for high wattage lamps in which the delamping and relamping operations are materially simplified. The construction is such that the cable for energizing the lamp is positioned externally of the lamp shade thereby essentially eliminating heat damage to the cable and shortening the required length of cable.

In the foregoing, I have described my invention only in connection with preferred embodiments thereof. Many variations and modifications of the principles of my invention within the scope of the description herein are obvious. Accordingly, I prefer to be bound not by the specific disclosure herein, but only by the appending claims.

I claim:

1. A lighting fixture comprising a housing, a lamp shade, connecting means pivotally mounting said shade to said housing; said connecting means comprising a first swivel unit secured to said shade, a member secured at one end to said first swivel unit, a second swivel unit secured to the other end of said member, a ring means having said second swivel unit secured thereto; said housing having track means for guiding movement of said ring means whereby said shade is pivotable about a first axis normal to the plane of said ring means; said swivel units forming spaced apart pivotal axes for said shade which are positioned parallel to said plane; first means for positioning and removably maintaining a lamp in said shade; flexible electrical conducting means entered into said housing; a receptacle connected to said conducting means and adapted to engage terminals of a lamp all but a small portion of which is disposed within said shade with lamp terminals external of said shade; said first means being separate from said receptacle; said shade being movable to a position out of said housing while remaining mounted to said connecting means; said receptacle being manually accessible when said shade is in said position whereby said receptacle is disengageable from terminals of a lamp prior to disengagement of this lamp from the first means for positioning and removably maintaining a lamp in the lamp shade; said shade having a first opening through which said small portion extends and a second opening through which a lamp is enterable into said shade.

2. A lighting fixture comprising a housing, a lamp shade, connecting means pivotally mounting said shade to said housing; said connecting means comprising a first swivel unit secured to said shade, a member secured at one end to said first swivel unit, a second swivel unit secured to the other end of said member, a ring means having said second swivel unit secured thereto; said housing having track means for guiding movement of said ring means whereby said shade is pivotable about a first axis normal to the plane of said ring means; said swivel units forming spaced apart pivotal axes for said shade which are positioned parallel to said plane; first means for positioning and removably maintaining a lamp in said shade; flexible electrical conducting means entered into said housing; a receptacle connected to said conducting means and adapted to engage terminals of a lamp all but a small portion of which is disposed within said shade; said first means being separate from said receptacle; said shade being movable to a position out of said housing while remaining mounted to said connecting means; said receptacle being manually accessible when said shade is in said position whereby said receptacle is disengageable from terminals of a lamp prior to disengagement of this lamp from the first means for positioning and removably maintaining a lamp in the lamp shade; all portions of said conducting means and said receptacle being positioned externally of said lamp shade; said shade having a first opening through which said small portion extends and a second opening through which a lamp is enterable into said shade.

3. A lighting fixture comprising a housing, a lamp shade, connecting means pivotally mounting said shade to said housing; said connecting means comprising a first swivel unit secured to said shade, a member secured at one end to said first swivel unit, a second swivel unit secured to the other end of said member, a ring means having said second swivel unit secured thereto; said housing having track means for guiding movement of said ring means whereby said shade is pivotable about a first axis normal to the plane of said ring means; said swivel units forming spaced apart pivotal axes for said shade which are positioned parallel to said plane; first means for positioning and removably maintaining a lamp in said shade; flexible electrical conducting means entered into said housing; a receptacle connected to said conducting means and adapted to engage terminals of a lamp all but a small portion of which is disposed within said shade; said first means being separate from said receptacle; said shade being movable to a position out of said housing while remaining mounted to said connecting means; said

receptacle being manually accessible when said shade is in said position whereby said receptacle is disengageable from terminals of a lamp prior to disengagement of this lamp from the first means for positioning and removably maintaining a lamp in the lamp shade, said shade having a first opening through which said small portion extends and a second opening through which a lamp is enterable into said shade; all portions of said conducting means and said receptacle being positioned externally of said lamp shade; a bowl-like cover removably secured to said lamp shade; said receptacle and a portion of said cable being disposed within said cover; said cover being removable without moving said receptacle.

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