March 12, 1968 W. KOZIOL 3,372,835

CURVED PANEL LAMP ASSEMBLY

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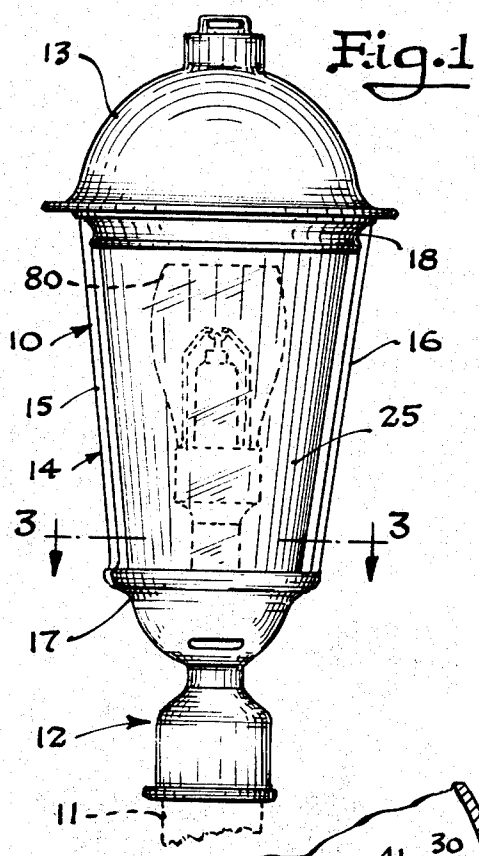


Fig. 1

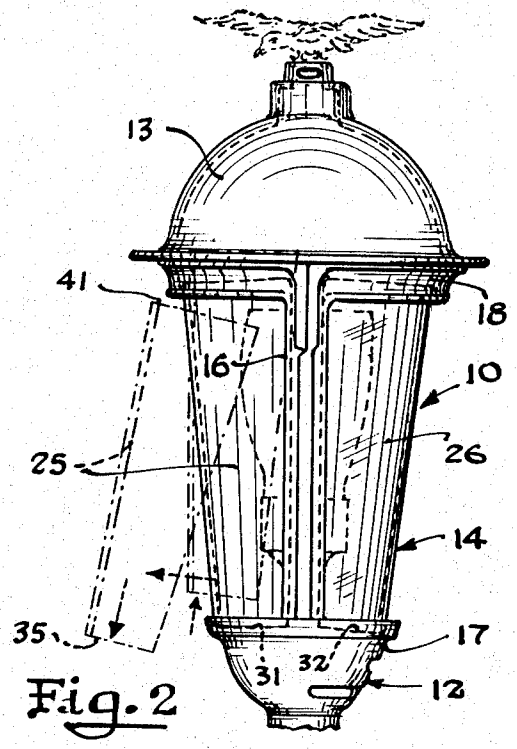


Fig. 2

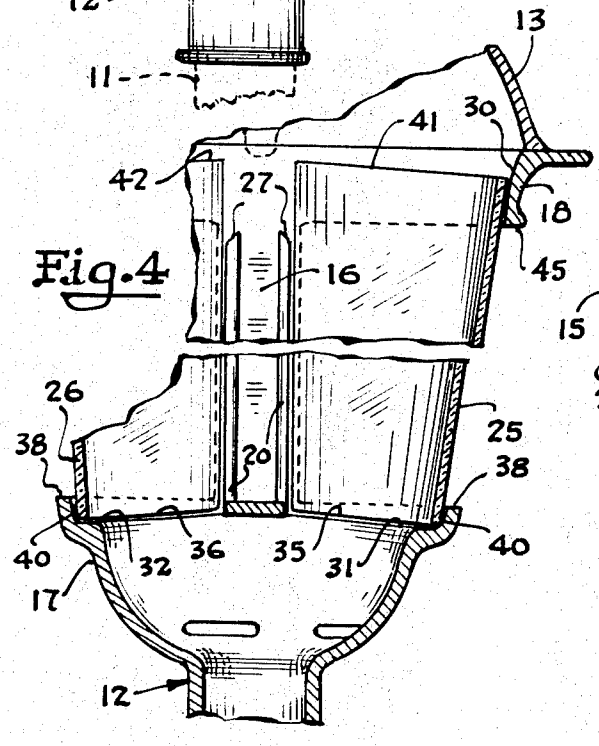


Fig. 4

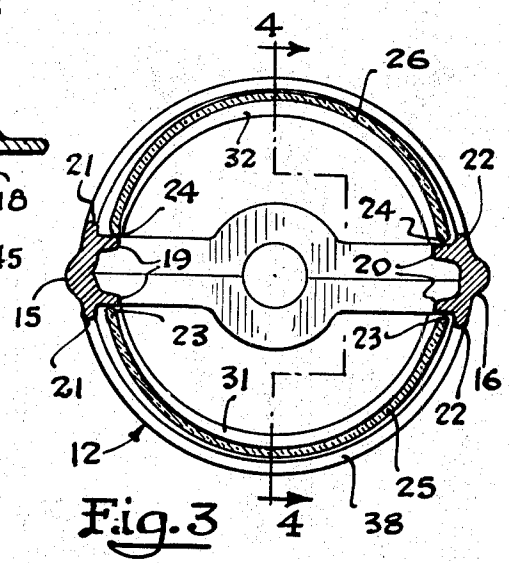


Fig. 3

Inventor
WALTER KOZIOL
By Neil E. Hamilton
Attorney

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Fig.9

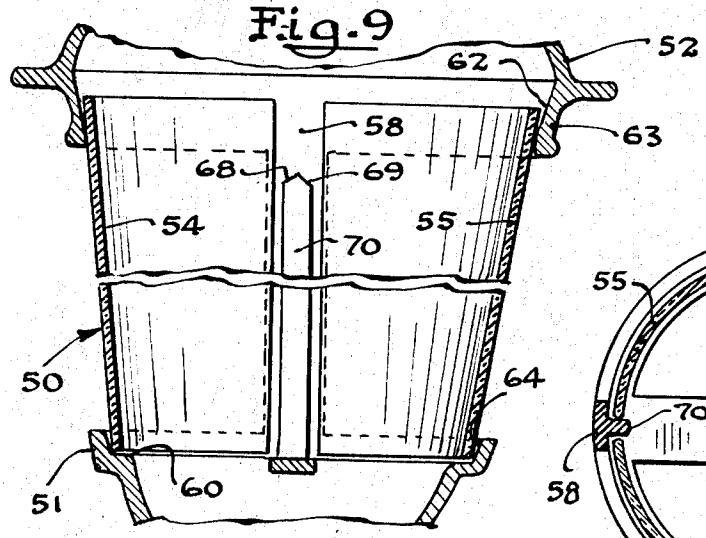


Fig.8

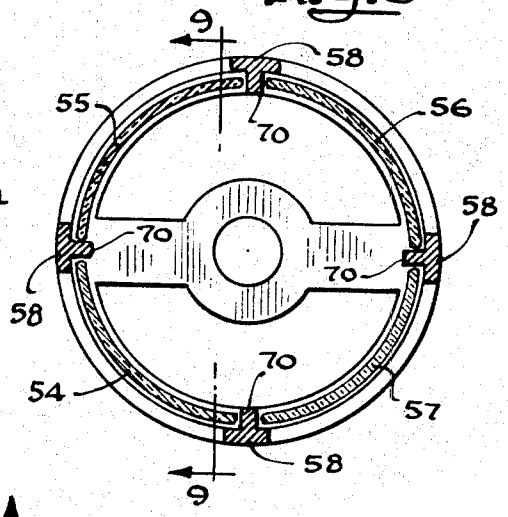


Fig.5

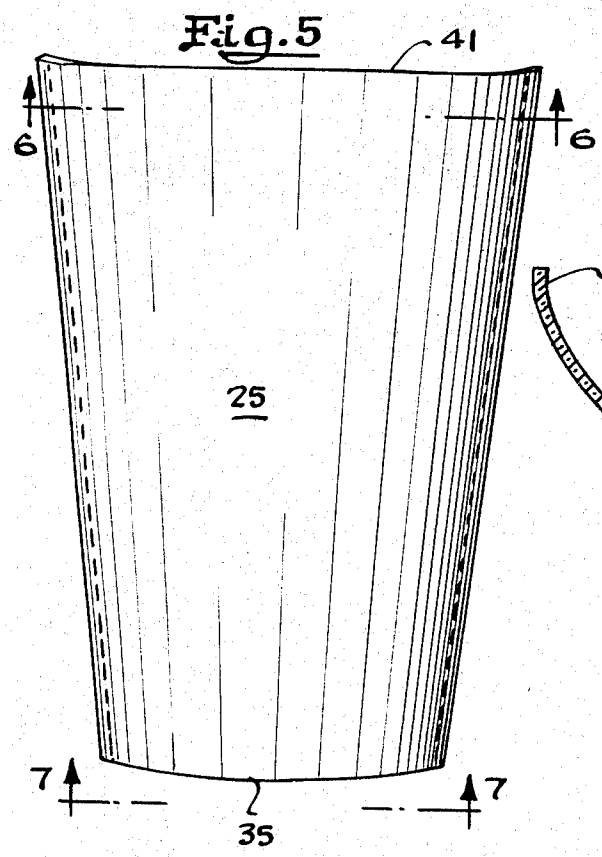
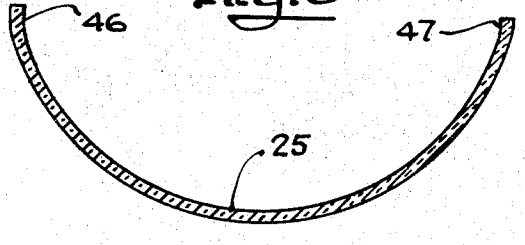


Fig.6



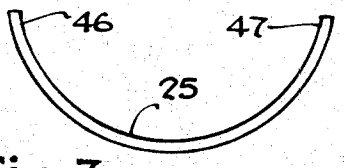


Fig.7

Inventor
WALTER KOZIOL
By Neil E. Hamilton
Attorney

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CURVED PANEL LAMP ASSEMBLY

Walter Koziol, Russell, Ill., assignor to Charmglow Manufacturing Co., Antioch, Ill., a corporation of Illinois

Filed Nov. 14, 1966, Ser. No. 593,892
10 Claims. (Cl. 220—82)

ABSTRACT OF THE DISCLOSURE

Basically, the novel lamp assembly of the present invention comprises one or more curved panel members freely carried by accommodating frame members with curved portions. A curved surface is disposed in the upper portion of the frame for receiving a top portion of the curved panel while a curved base portion of the frame is provided for supporting the base of the curved panel. Stop means are disposed in the base portion of the frame to prevent the base of the curved panel from moving off the base portion of the frame. The upper portion of the curved frame is adapted to allow a portion of the panel to pass therein sufficient to permit the curved base of the panel to clear the means in the base of the frame. The curved panel is designed and constructed to contact the upper frame portion when it rests by its own weight on the base. Laterally extending flanges and ribs are provided on the frame to arrest inward movement of the curved panel and form a windproof enclosure, respectively.

This invention relates to a novel lamp assembly. More particularly, this invention relates to an easily removable curved panel member for a lamp.

In a copending application Ser. No. 477,469 filed Aug. 5, 1965, now abandoned, by the present inventor and entitled, "Lamp Assembly," a removable panel member for a lamp is disclosed which lies substantially in one flat plane. The assembly therein described, as well as the present assembly, obviates the use of hinges, screws, nuts and/or bolts in addition to the manipulation of tools to remove a panel member from a lamp assembly. This not only saves considerable time when a lamp must be cleaned, repaired, or in the case of an electric lamp, relamped, but also affords faster and less expensive construction. For design and esthetic reasons, lamps with curved or arcuate exterior transparent or translucent globes are preferred. One such assembly is shown in U.S. 139,394 wherein two curved glass panels are inserted or withdrawn from the top of a street lamp. A more modern styling is the globe type street lamp where a globe is hingedly attached to a cover housing. In the prior art lamp assemblies having curved panels of glass, either the top of the lamp must be removed to allow removal of the panels or hinges, clips or similar members must be provided to allow positioning of the panel and/or removal to gain access to the interior of the lamp.

It is therefore an object of the present invention to provide a novel curved panel lamp assembly. It is another object of the present invention to provide a novel lamp structure wherein a curved panel member is easily insertable in, freely carried by, and readily removable from said lamp structure. It is still another object of the present invention to provide a curved panel member for a lamp which is easily manufactured with a minimum number of parts and with readily available equipment. It is a further object of the present invention to provide a novel lamp structure wherein a curved panel member can be inserted or removed therefrom without any accessories or parts being loosened, removed, moved or hinges being moved. It is yet another object of the present invention to

provide a novel lamp assembly wherein a curved panel member can be removed without the need of tools.

The foregoing objects, and other objects which will be apparent from the following disclosure, are now accomplished by the present invention which is described in detail in the following description and illustrated in the attached drawing wherein:

FIGURE 1 is a view in side elevation of one of the lamp assemblies of the present invention.

FIGURE 2 is a view like FIGURE 1 except that the lamp assembly is turned ninety degrees and further illustrates the removal of a curved panel member.

FIGURE 3 is a view in horizontal section taken along line 3—3 of FIGURE 1.

FIGURE 4 is a view in vertical section taken along line 4—4 of FIGURE 3.

FIGURE 5 is a side elevational view of one of the curved panel members employed in the embodiment of FIGURES 1–4.

FIGURE 6 is a view in horizontal section taken along line 6—6 of FIGURE 5.

FIGURE 7 is an end view taken along line 7—7 of FIGURE 5.

FIGURE 8 is a horizontal sectional view of an alternative embodiment of the present invention.

FIGURE 9 is a view in vertical section taken along lin 9—9 of FIGURE 8.

Proceeding to a detailed description of the present invention and in particular the embodiment shown in FIGURES 1–7; the novel lamp assembly generally **10** is supported by the usual cylindrical pole **11** on an hourglass-shaped base **12** and covered by a domed top **13**. A two-part illumination portion of generally frusto-conical configuration generally **14** is composed of two upwardy and outwardly angled posts **15** and **16** which extend from the annular top portion **17** of base **12** to annular lower skirt **18** of top **13**. Posts **15** and **16** each have two inwardly, laterally extending flanges **19** and **20**, respectively, and two outwardly, laterally extending ribs **21** and **22**, respectively. Flanges **19** and **20** provide a lateral abutment surface for the lateral edges **23** and **24** of curved panels **25** and **26**, respectively, and ribs **21** and **22** are constructed to permit withdrawal of panels **25** and **26** with a short upward movement. Formed at the top of flanges **20**, as well as at the top of flanges **19**, are inclined surfaces **27** which serve to guide panels **25** and **26** during insertion and withdrawal of the panels into frames formed by the circular internal surface **30** of skirt **18**, lateral flanges **19** and **20** and the supporting ledges **31** and **32** in top portion **17** of base **12**. Supporting ledges **31** and **32** provide a substantially semicircular supporting upper surface for the bottom edges **35** and **36** of panels **25** and **26**, respectively. However, ledges **31** and **32** do not lie in the same horizontal plane but instead in separate planes which are pitched downwardly in a direction away from posts **15** and **16** so that ledges **31** and **32** are farthest from the top surface **38** of base portion **12** at points midway between posts **15** and **16**. This is best seen in FIGURES 2 and 4. Referring to FIGURE 4 is will be noted that internal wall section **40** in base portion **17** is tapered slightly outwardly so as to be concentric with the circular internal surface **30** of skirt **18**.

Curved panels **25** and **26** are preferably formed with smooth bottom and top surfaces such as indicated at **35**, **36** and **41**, **42** respectively in FIGURE 4 so that bottom surfaces **35** and **38** conform substantially to and rest upon the flat surface of supporting ledges **31** and **32**, respectively. Panels **25** and **26** are constructed with radii of curvature so as to substantially enclose lamp **10** between posts **15** and **16** along the internal wall surface **40** of base portion **17** with one radius of curvature and the internal

surface 30 of skirt 18 with larger radius of curvature The heights of panels 25 and 26 are such that a portion of the top lateral surface of panels 25 and 26 rests outwardly against inner surface 30 when the bottom surfaces 35 and 36 rests by weight of gravity on supporting ledges 31 and 32 and the pitch of the supporting ledges causes an outward pitch to tops of panels 25 and 26.

The novel advantages of the present lamp assembly are seen in the simple procedures taken to remove panel 25 from the lamp assembly. The outer surface of panel 25 is merely clasped by one's hand with the palm turned preferably transversely thereto and panel 25 moved straight upwardly until the bottom edge 35 clears the upper surface 38 of the base portion 17. At this point panel 25 is tilted slightly inwardly toward lamp 10 with the lateral edges 23 of panel 25 contacting inclined surfaces 27 on flanges 19 and 20. This permits the entire bottom edge 35 to clear surface 38, the upper edge 41 to clear the lower edge of skirt surface 30 and lateral edges 23 to clear the outermost surfaces of ribs 21 and 22 as a smaller width of panel 25 is orientated therewith. Inclined surfaces 27 terminate just short of the lower edge 45 of skirt 18 to permit guidance of a large cross-section of panel 25 without binding between posts 15 and 16. To aid in the insertion and withdrawal of panel 25 it will be noted in FIGURES 6 and 7 that sections of the panel adjacent the edges are turned inwardly, and not along a true curve, as shown at 46 and 47. Panel 25 is then moved completely out from its frame in lamp 10. To insert panel 25, the previously indicated steps are merely reversed. As panel 25 drops into position as shown in FIGURE 4, a snug and rattle-proof fit is provided for panel 25 by contact of its lateral edges 23 with flanges 19 and 20 and simultaneous engagement by the lower outer portions of the panel with wall section 40.

Turning to the embodiment shown in FIGURES 8 and 9, it will be seen that assembly generally 50 like assembly 10 is comprised of the usual base member 51 and top 52. Assembly 50 differs from assembly 10 in that four curved panels 54, 55, 56 and 57 each extending through an arc of about ninety degrees are held along their lateral edges within frames formed by four T-shaped lateral post members 58. Curved panels 54–57 are supported at their bases by circular supporting surface 60 which in this instance and unlike supporting surfaces 31 and 32 lies in the same horizontal plane and is contiguous around base 51. An inner vertical, circular supporting surface 62 is also provided on skirt 63 which prevents outward movement of panels 54–57 as does outwardly tapered vertical surface 64 in base 51. Inclined surfaces 68 are disposed at the top of lateral rib 70 of lateral posts 58 to provide for removal and insertion of panels 54–57 in the manner described for panels 25 and 26. The withdrawal and insertion of panels 54–57 are the same as for panels 25 and 26.

It will be seen that assembly 50 does not have means for pitching panels 54–57 outwardly against skirt 63 to better assure a rattle-free arrangement. However, by close design and fitting a substantially rattle-free panel structure can be obtained.

Both assemblies 10 and 50 are fabricated from aluminum by casting top sections 13 and 52, bottoms 12 and 51 and posts 15, 16 and 58 as separate pieces. Top sections 13 and 52 are joined to bottom sections 12 and 51, respectively, by means of posts 15, 16 and 58, respectively, by welding or the like. While aluminum is the preferred nonresilient material, any suitably rigid material can be employed and the parts riveted, screwed or otherwise adhered. Curved panels 25, 26 and 54–57 are preferably made of glass. However, any plastic composition or other similar material whether transparent or translucent can also be used.

It will be seen from embodiments 10 and 50 that any number of curved panels can be employed in the novel assembly of the present invention. The only consideration is to the number of posts and panels which one would want to have in an assembly. Further, while embodiments 10 and 50 disclose panels which have surfaces that conform to frusto-conical surfaces, the present assembly is operable with any curved panel having various radii of curvatures, an example of an alternative shape being a panel which has a surface conforming to the cylindrical.

In assembly 10 as shown in FIGURE 1, a single gas mantle 80 is described. It will be appreciated that any type of gas mantle or electric socket and bulb or other illumination means is also operable in the present assembly.

It will thus be seen that through the present invention there is now provided a novel lamp assembly wherein a curved panel member is easily inserted into and removed therefrom without the need of hinges, screws, latches or other types of common pivoting and fastening means. Corrosion and paint are no longer a problem in removing a curved panel member. The novel assembly is easily and economically manufactured without special tooling or parts and provides a rattle-free construction. With respect to gas lamps, the curved panel is removable without disturbing the mantle which allows a person to keep the panel clean without turning off the gas and breaking the mantle. The present assembly is also of particular advantage to street lights which are positioned at great heights because it allows for single-handed removal and insertion of the panel.

The foregoing invention can now be practiced by those skilled in the art. Such skilled persons will know that the invention is not necessarily restricted to the particular embodiments presented herein. The scope of the invention is to be defined by the terms of the following claims as given meaning by the preceding description.

I claim:

1. A novel lanmp assembly comprising: a frame with curved portions, a curved panel insertable into said frame from outside said lamp assembly and freely carried by said frame, a curved base portion in said frame for supporting the curved base of said panel, stop means on said curved base portion to prevent the lower portion of said panel from moving outwardly off the base portion of said frame, a curved retaining surface extending across the top of said frame, said curved panel while freely resting on said base also resting against said retaining surface, and a pair of lateral flange members disposed on said frame for contact with the lateral edges of said curved panel when said curved panel rests against said frame base and said retaining surface.

2. The novel lamp assembly as defined in claim 1 wherein said stop means on said curved base portion for preventing said lower portion of said panel from moving off said base is a curved wall surface.

3. The novel lamp assembly as defined in claim 1 wherein said lateral flange members extend substantially the entire distance from top to bottom of said frame but terminate a sufficient distance from said top to permit a portion of said panel to be inserted therein.

4. The novel lamp assembly as defined in claim 1 wherein said stop means and said lateral flange members effect a binding engagement with said panel.

5. The novel lamp assembly as defined in claim 1 wherein said curved base portion comprises a pitched supporting surface to pitch said curved panel outwardly against the inner surface of said curved top retaining surface.

6. The novel lamp assembly as defined in claim 1 wherein said lateral flanges are provided with inclined surfaces disposed to provide an upwardly angled guide for the surfaces of the upper portion of said panel.

7. The novel lamp assembly as defined in claim 1 wherein said assembly is comprised of more than two of said frames and said panels.

8. The novel lamp assembly as defined in claim 1 wherein said panels are comprised solely of curved glass.

9. The novel lamp assembly as defined in claim 5 wherein lateral edge portions of the said curved panel are disposed inwardly while the top and bottom of said frame are formed in a substantially true curve.

10. The novel lamp assembly as defined in claim 8 wherein said frame for said panel is composed of non-resilient metal.

References Cited

UNITED STATES PATENTS

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RAPHAEL H. SCHWARTZ, *Primary Examiner.*