Jan. 23, 1968 W. KOZIOL 3,365,571

LAMP ASSEMBLY

Original Filed Aug. 5, 1965 3 Sheets-Sheet 1

Fig. 1A

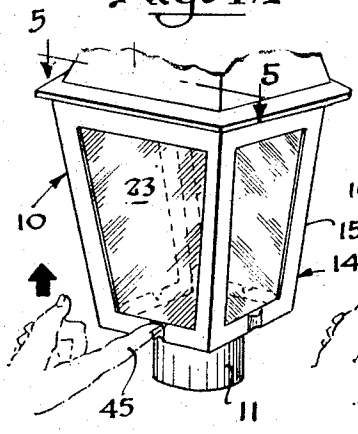


Fig. 1B

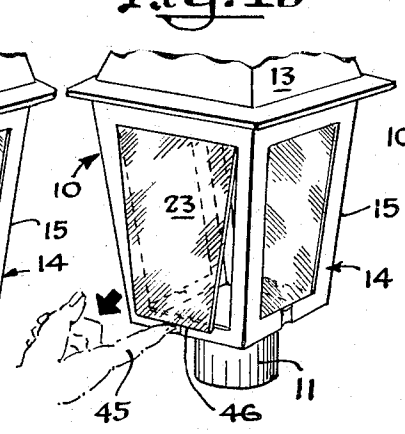
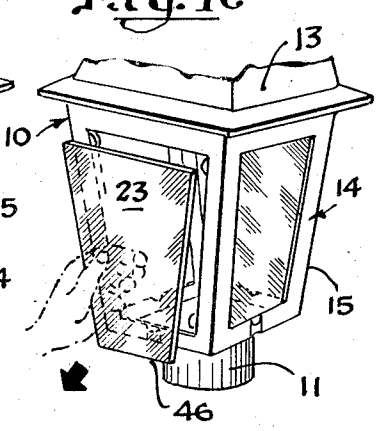


Fig. 1C



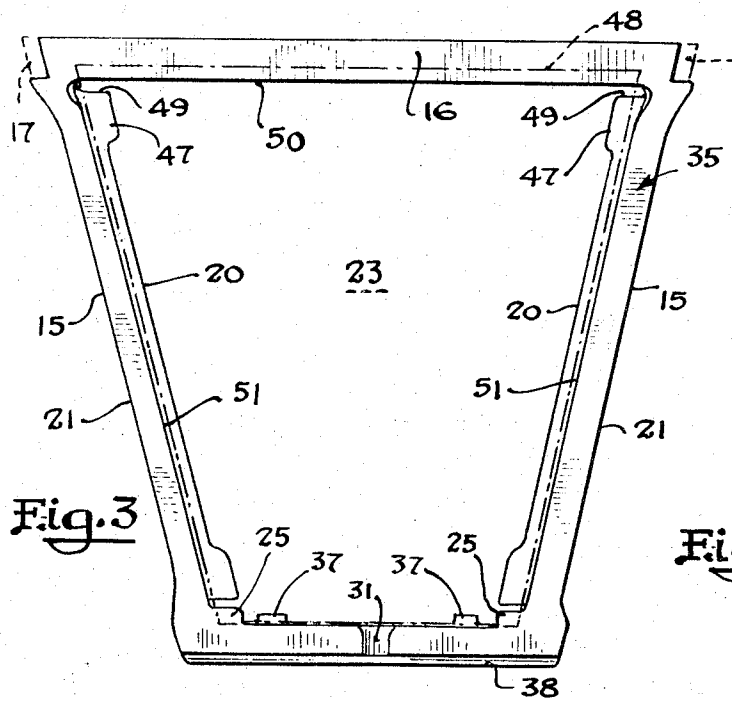


Fig. 3

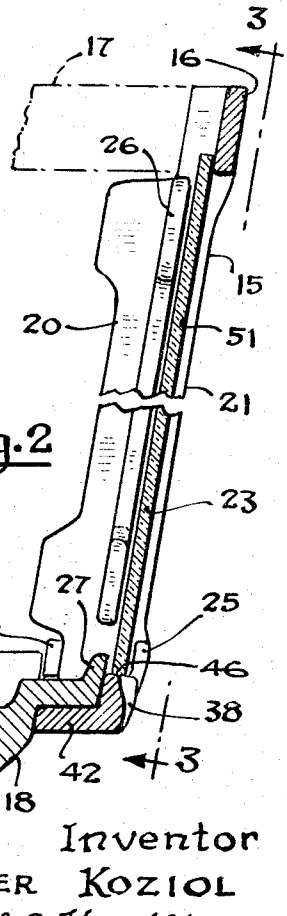


Fig. 2

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LAMP ASSEMBLY

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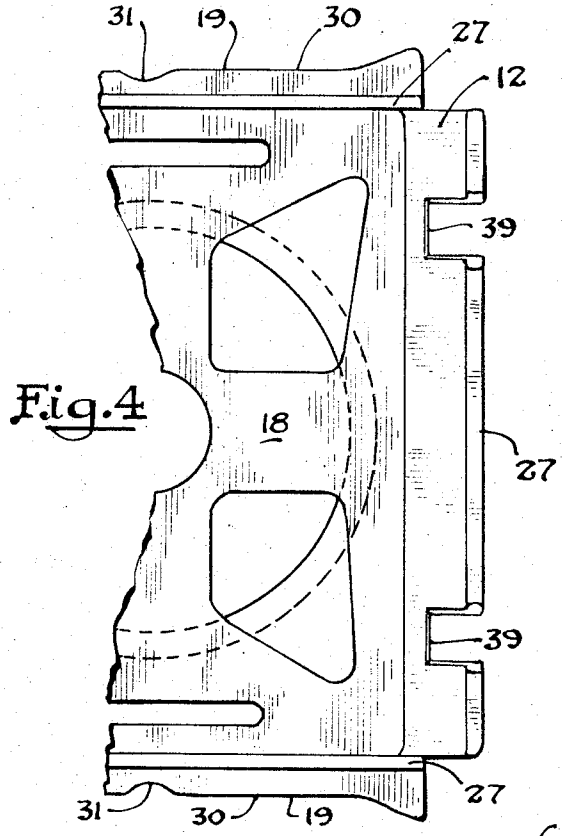


Fig.4

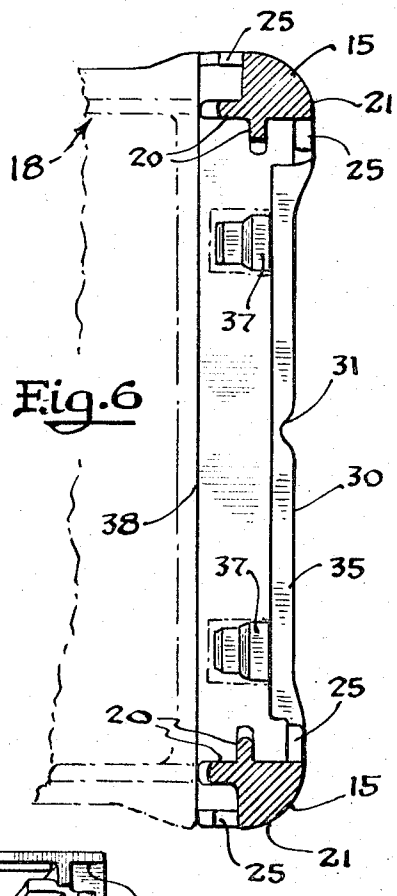


Fig.6

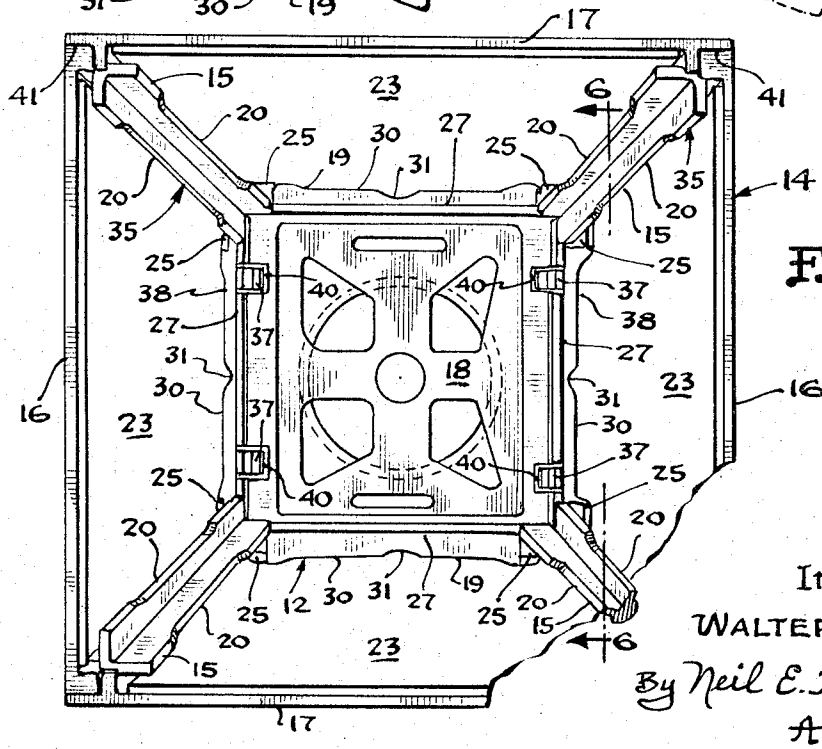


Fig.5

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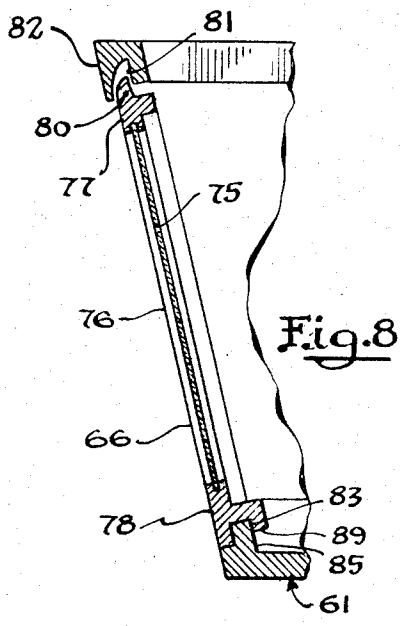


Fig.8

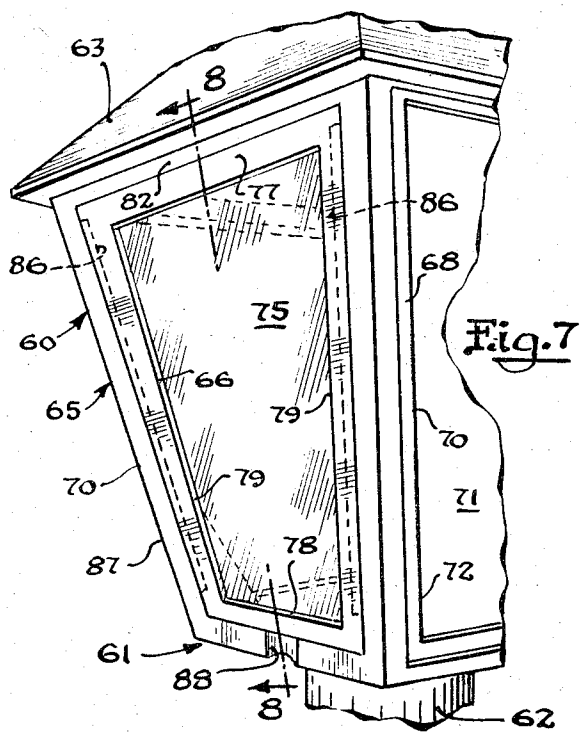


Fig.7

Fig.10

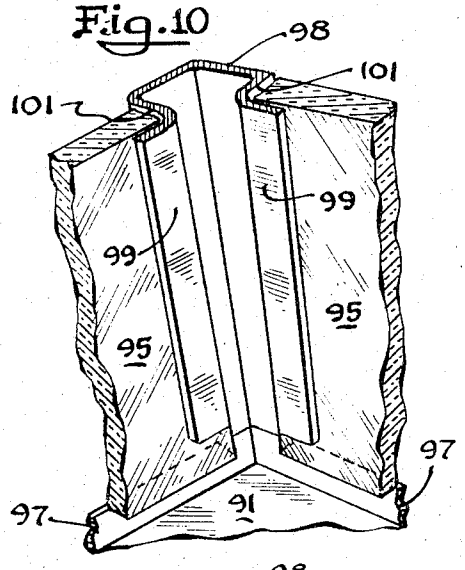


Fig.9

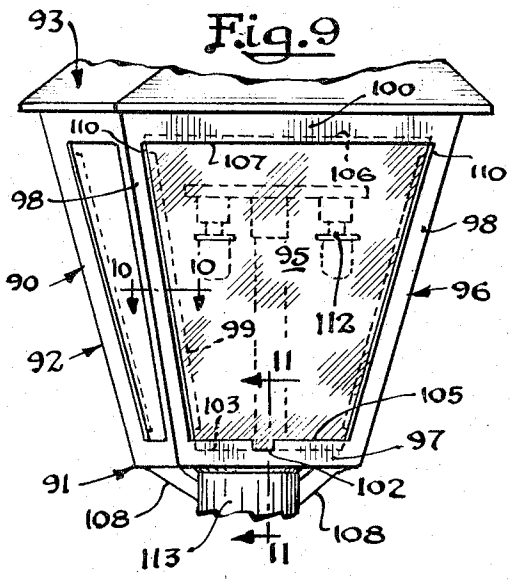
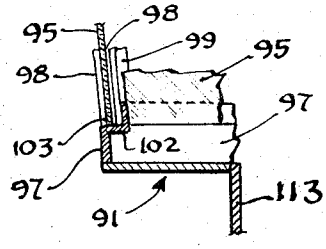


Fig.11



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3,365,571

Patented Jan. 23, 1968

3,365,571

LAMP ASSEMBLY

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Continuation of application Ser. No. 477,469, Aug. 5, 1965. This application May 18, 1967, Ser. No. 639,586

19 Claims. (Cl. 240—11.2)

ABSTRACT OF THE DISCLOSURE

A lamp assembly wherein a panel can be inserted and removed without fastening means or removal of any parts or the top of the lamp and without lateral grooves. A frame is provided with an opening in the top to receive the panel, and supporting surfaces are disposed in the top and the bottom of the frame with projections or grooves to prevent lateral displacement from the base. The panel rests against the upper support surface and on the base, yet the opening in the top is sufficient to allow the panel to be inserted a sufficient distance to permit the lower portion of the panel to clear the projections or grooves in the base.

This is a continuation of U.S. application Ser. No. 477,469, filed Aug. 5, 1965, now abandoned in favor of the instant application.

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

The necessity of obtaining access into a yard-type lamp whether for cleaning, relamping in the instance of an electric lamp assembly, adjustment or maintenance of any type is presently a task requiring the handling of many small parts such as screws, nuts and/or bolts as well as the manipulating of numerous tools such as wrenches, pliers, screwdrivers, etc. Such parts as well as the tools are easily dropped and/or lost and much time is wasted looking for replacements. It is also true that such parts may have become rusted or painted closed. Attempts to overcome these problems are evidenced in U.S. 347,478 as well as in the luminaire assembly shown in U.S. 3,170,635. However, these structures require either special molding for hinge members or require enlarged screw means and specially fitted parts to eliminate the previous problems of handling small parts. It will be understood that even hinge members and large screws have the disadvantages of becoming rusted or covered with multi-layers of paint and thus present removal or operating problems.

It is therefore an object of the present invention to provide a novel lamp assembly. It is another object of the present invention to provide a novel lamp frame structure wherein a 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 panel member for a yard-type lamp which is easy to manufacture with a minimum amount of parts and with readily available equipment. It is a further object of the present invention to provide a novel lamp structure wherein a panel member can be inserted or removed therefrom without any accessories or parts being loosened or hinges being required to be moved. It is yet another object of the present invention to provide a novel lamp assembly wherein a panel member can be removed therefrom 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:

FIGURES 1A, B, and C are perspective views showing the sequence of steps in removing a panel of glass from one of the embodiments of the novel lamp assembly of this present invention.

FIGURE 2 is a view in side elevation of the embodiment shown in FIGURE 1 and partially in vertical section to illustrate the positioning of the glass panel in the frame member.

FIGURE 3 is a side elevational view taken along line 3—3 of FIGURE 2.

FIGURE 4 is a plan view of the base of the novel lamp assembly.

FIGURE 5 is a horizontal section view taken along line 5—5 of FIGURE 1A.

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

FIGURE 7 is a perspective view of another embodiment of the present invention.

FIGURE 8 is a view in vertical section taken along line 8—8 of FIGURE 7.

FIGURE 9 is a perspective view of still another embodiment of the present invention.

FIGURE 10 is a fragmentary horizontal sectional view taken along line 10—10 of FIGURE 9.

FIGURE 11 is a fragmentary view in vertical section taken along line 11—11 of FIGURE 9.

Basically, the novel lamp assembly of the present invention comprises one or more frame members carried by the lamp. The frame member is formed to accommodate a panel which is insertable into the frame and freely carried therein. Means are disposed in the upper portion of the frame for receiving a top portion of the panel while the base portion of the frame is provided in the assembly for supporting the base of the panel. Means are disposed in the base portion of the frame to prevent the base of the panel from moving off the base portion of the frame. The means in the upper portion of the frame is adopted to allow a portion of the panel to pass therein sufficient to permit the base of the panel to clear the means in the base of the frame. The panel is designed and constructed to engage the means in the upper portion of the frame when it rests by its own weight on the means in the base of the frame.

Proceeding to a detailed description of the present invention and in particular the embodiment shown in FIGURES 1–6: the novel lamp assembly generally 10 is supported by the usual cylindrical pole attachment member 11 on a T-shaped base generally 12 and is covered by the standard top member generally 13. A four-sided illumination portion of a trapezoidal configuration generally 14 is composed of four corner posts 15 joined at the top by four metal strip-like and flat bar members 16 and 17. Each post 15 has two laterally extending flanges 20 which are disposed a short distance inwardly from the outer surface 21 of the posts and on the side from a substantially flat pane of glass 23 also of trapezoidal shape opposite bars 16 or 17. This is best shown in FIGURE 2.

As shown throughout FIGURES 2–6, base 12 comprises a main portion 18 and two side portions 38 which are integrally molded to two posts 15. Extending upwardly from base 12 from portions 38 adjacent posts 15 are projecting means 25 which are in the same vertical plane as the inner surface of bars 16 or 17. Projecting means 25 serve to keep the bottom of pane 23 from moving outwardly off base 12. Extending between each post 15 are upwardly projecting ridges 27 which serve as a windbreak and also keep the base of panel 23 from moving inwardly off base 12. Ridges 27 fall within the same vertical plane as flanges 20.

It will be noted that the base portions 38 as well as corresponding portions 19 in main frame 18 between

projection means 25 are indented as indicated at 30 and also have a centrally positioned groove 31. Thus, with pane 23 disposed between projections 25 and flanges 20 a portion of the base of the pane will be accessible either by a finger or a small instrument such as a pencil or a screwdriver.

One method of fabricating novel lamp assembly 10 is to mold base portion 18 from aluminum in one piece as indicated in FIGURE 4. Two frame members generally 35, one of which is shown in FIGURE 3, are also molded from aluminum in one piece each containing: two posts 15, a base portion 38, and two base projections 25 adjacent the corners of the posts 15. Molded integrally across the top of each frame 35 and joining two posts 15 are metal bars 16. A pair of locating tabs 37 upwardly extend from the base portion 38 of each frame member and are accommodated by pairs of slots 39, on opposite sides of main base 18. As best shown in FIGURE 2, each base portion 38 of frame 35 has a lower ledge 42 molded to slip beneath opposite sides of the main base 18 and when this is effected, tabs 37 will form a coplanar continuation of ridges 27. With two frames 35 in the previously described position, four spot welds 40 are made where tabs coincide with grooves 39 and simultaneously two bar members 17 are placed across the tops of posts 20 to complete a four frame structure of assembly 10 and welds are made at 41. It will be noted that each of the four frames is formed by two oppositely disposed flanges 20 transversed by either bars 16 or 17 at the top and base portions 19 or 38 at the bottom. The roof 13 is placed on top bars 16 and 17 and also welded at the same time. The roof 13 like the two frames 35, base 18 as well as bars 17 is molded from aluminum. For best results, lamp assembly 10 is designed so that the inner surface of bars 16 or 17 contacting pane 23 has an outward angle in the range of about 10° to 20° with an angle of 14° being preferred.

The novel and superior results of the present lamp assembly are seen in the three simple procedures taken to remove panel 23 from an accommodating frame such as 35 in assembly 10. A finger 45 is inserted into groove 31 (FIGURE 1A) and moved upwardly to contact the bottom edge 46 of pane 23. Upward movement is continued until bottom edge 46 clears over projections 25. Pane 23 is then moved outwardly (FIGURE 1B) and the free hand is used to grip the pane (FIGURE 1C) and move it downwardly and out from between posts 15. To replace pane 23 the previously referred to steps are merely reversed. It should be noted, however, that flanges 20 have enlarged upper portions 47 terminated short of bar 16 to allow the upper and widest portion of pane 23, as shown by 48, to be readily inserted through a channel formed between the upper ledge 49 of portion 47 and the lower surface 50 of bar 16. The upper portion 48 of pane 23 is inserted a short distance with portion 47 serving as a guide until the bottom 46 clears projections 25 at which point pane 23 is aligned in a plane parallel with bars 16 or 17 and projections 25 and pane 23 allowed to rest on base 12. Pane 23 is cut so that about a three-sixteenths inch portion rests outwardly against bar such as 16 while resting on base 12. It will be noted that an unencumbered inner surface is provided by bars 16 and 17 for pane 23 to be raised or lowered therealong. Further, pane 23 is cut to be accommodated between lateral faces 51 of posts 15. A glass pane of one-eighth inch thickness with five-thirty seconds inch clearance between the inner faces of lateral flanges 20 and projections 25 have been found to work well. The height of the pane 23 is about seven and three-quarters inches and the pane 23 weighs about eight and one-half ounces. This serves to keep pane 23 from being rattled by the wind as some clearance is allowed between the lateral ledges of pane 23 and faces 51 to allow for expansion from heat of a gas mantle.

Turning now to the embodiment shown in FIGURES 7 and 8, the lamp assembly generally 60 like assembly 10 has the usual T-shaped rectangular base generally 61 with pole receiving member 62, and a top portion generally 63. An illumination section generally 65 is also composed of four glass panel members of trapezoidal shape, and in a preferred manner, one is removable and shown at 66 and the three remaining panels, one of which is illustrated at 68, are permanently secured in assembly 60 between four corner posts such as 70. A trapezoidal piece of glass 71 enclosed by frame 72 composes permanent panels 68. As the present invention is concerned with removal of panel 66 it will be described in more detail, it being understood that lamp assembly 60 can be provided with one or more removable panels such as panel 66 and the remaining sides of the illumination section can be framed in any suitable manner.

A glass pane 75 of trapezoidal configuration comprises panel member 66 which is permanently secured in a frame 76 formed by a top portion 77, a bottom portion 78 and two lateral portions 79. The fastening of the glass to the frame is effected by clips screwed into the frame on the inside. A transversely disposed tongue member 80 projects from top portion 77 and is accommodated by groove 81 transversely disposed in the top portion 82 of illumination section 65. Bottom portion 78 of panel 66 is provided with a U-shaped groove 83 for seating on ridge member 85 transversely disposed across base 61 between two adjacent posts 70. Two laterally extending flanges 86, similar to flanges 20 of assembly 10, are recessed from the face of posts 70 so that when the back surfaces of lateral portions 79 rest against flanges 86 the outer surfaces of posts 70 and of lateral portions 79 are substantially coplanar.

The removal of panel member 66 from assembly 60 is very similar to that for assembly 10. To remove panel 66 from the accommodating frame 87 formed by top portion 82 flanges 86 and base 61, a finger is inserted into groove 83 formed in base 61 to contact the base 78 of frame 76. An upward lift is imparted until surface 89 clears ridge 83, sufficient space being allowed in groove 81 to allow tongue 80 to also move upwardly for the required distance. With surface 89 above ridge 85, one merely moves base 78 outwardly until the entire base 78 of frame 76 clears ridge 85 and then permits frame 76 to fall until tongue 80 is no longer in contact with groove 81. To reinsert frame 76 into the accommodating frame 87 carried by lamp assembly 60, the preceding steps are merely reversed. It should be noted that tongue 80 is of sufficient length to engage groove 81 when ridge 85 engages groove 83. If desired, all four panels can be made removable by designing the illumination section 65 of the lamp to receive a removable panel such as described in the manner for panel 66.

Turning to the embodiment of FIGURES 9–11, lamp assembly generally 90 like assemblies 10 and 60 is of the same geometric design and comprises the usual base, illumination and top portions generally 91, 92 and 93, respectively. Assembly 90 is similar to assembly 10 in that a glass panel 95 without a frame or tongues or grooves is insertable in and freely carried by a frame generally 96 carried by assembly 90. Four such frames are formed by one wall 97 of rectangular base 91, two integrally secured corner posts 98 with recessed laterally disposed flanges 99 with accommodating faces 101 for panels 95 extending in substantially the same manner as flanges 20 of embodiment 10. A top bar-like member 100 extending between two posts 98 completes the four-sided trapezoidal frame 96.

As best seen in FIGURE 11, base wall 97 has a portion thereof formed inwardly and upwardly to provide a combined ledge 102 and access means to the bottom portion 103 of glass panel 95. It will be noted that panel 95 is cut so that when the base portion 103 rests on ledge 102 and consequently a relatively short distance below the upper edge 105 of wall 97, a top portion 106 of panel 95 contacts bar 100 and extends a short distance beyond

the lower edge 107 of bar 100. A complete closure is formed by the lateral edges of panel 95 overlapping flanges 99.

Bar 100, as it true with top portion 82 of assembly 60 with respect to its base 61, is in the same plane as the base wall 97 and disposed outwardly at an angle of about 14° from base 91. This causes panel 95 as well as panel 66 to have their respective top portions 106 and 77 rest outwardly against their respective top bar members 100 and 82.

The removal of panel 95 from assembly 90 is very similar to that described for the other embodiments. The base 103 of panel 95 is engaged by a pencil tip or finger and moved upwardly until it clears the upper edge 105 of base wall 97 at which point base 103 is moved outwardly and over base wall 97 and panel 95 allowed to drop outwardly from lamp frame 96. To insert panel 95 back into lamp frame 96, the process is merely reversed with top portion 106 of panel 95 inserted between the slightly enlarged sections 110 of posts 98, and when base portion 103 clears edge 105 of base wall 97 it is merely let down until it engages ledge 102.

Lamp assembly 90 like the other embodiments has a pole receiving member 113. Assembly 90 with the exception of panel 95 is made of riveted copper and suitable bracing 108 extends between member 113 and the underside of base 91. An ordinary gas mantle 112 is shown in phantom in assembly 90 and is the preferred lighting means for illuminating assemblies 10 and 60. It will be understood that the usual electric light socket and bulb can also be employed with all of the embodiments of the present novel lamp assembly.

Assembly 60 like assembly 10 is made of cast aluminum although any suitable metal can be employed and the parts welded, riveted or screwed together.

As previously indicated, enlarged portions 110 are disposed in posts 98 and consequently in the frame 96 which accommodates panel 95. This is due to the fact that panel 95 is of a trapezoidal configuration and the top largest portion 106 will be more easily inserted between top bar 100 and the upper edges 111 of flanges 99 which extend substantially the entire distance from base wall 97 to top wall 100. The same remarks are true regarding assembly 10 and assembly 60, although not shown in detail therein.

While embodiments 10, 60 and 90 disclose four-sided paneled trapezoidal type assemblies, which geometrical configurations are most popular, the present assembly is operable in any polysided lamp assembly having polygonal panels such as rectangular, square or triangular.

It will thus be seen that through the present invention a novel lamp assembly is provided wherein a 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 is no longer a problem in removing a panel member. The novel assembly is easily and economically manufactured without special tooling and parts. And with respect to gas lamps, the panel is removable without disturbing the mantle which allows a person to keep the glass clean without turning off the gas and breaking the mantle in the process.

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 lamp assembly comprising: a frame, a panel insertable in and freely carried by said frame, said frame comprising a top member presenting an inner surface for contact with an upper portion of said panel, a base portion in said frame supporting the base of said panel, means mounted on said base to prevent the base of said panel from moving horizontally off the base portion of said frame, substantially vertically disposed spaced side members extending between said top member and said base member, said side members presenting opposing lateral faces for accommodating said panel and confining movement therebetween, laterally extending flanges mounted on each said side member and disposed in the same vertical plane inwardly of said lateral faces to freely permit insertion and withdrawal of the top portion of said panel between said inner surface and said flanges at the top of said frame, said inner surface of said top member and said mounted means in said base portion being the sole retentive means for preventing movement of said panel outwardly from said lamp assembly, said inner surface and said flanges adapted to allow a portion of said panel to pass upwardly therebetween sufficient to permit the panel to be in substantial vertical alignment therewith for subsequent retention by said mounted means in said base portion, said panel constructed and arranged to engage said inner surface of said top member in one instance and a portion of said flange members in another instance when said panel rests by its own weight on said base portion.

2. The lamp assembly of claim 1 wherein an indented portion is provided in the base of said frame and said panel can be removed from said frame solely by means of contact with the panel through said indented portion.

3. The lamp assembly of claim 1 wherein said inner surface defining said opening in said upper portion is at an outward angle in the range of about 10° to about 20° from said base portion.

4. The lamp assembly of claim 1 wherein said lateral flanges are disposed substantially the entire distance between the top member and the base portion.

5. The lamp assembly of claim 1 wherein said panel is composed solely of glass.

6. The lamp assembly of claim 1 wherein said panel comprises a piece of glass retained in an integral frame adapted to fit in the frame member of said assembly.

7. A lamp assembly comprising: a frame, a panel insertable in and freely carried by said frame, said frame comprising a top bar member presenting an inner surface for contact with an upper portion of said panel, a base portion in said frame supporting the base of said panel, projecting means integral with and positioned at the corners of said base portion to prevent the base of said panel from moving horizontally off said base portion of said frame, substantially vertically disposed spaced side members extending between said top bar member and said base member, said side members presenting opposing lateral faces for accommodating said panel and being the sole means for confining movement therebetween, laterally extending flanges mounted on each said side member and disposed in the same vertical plane inwardly of said inner surface in said top bar member to freely permit insertion and withdrawal of the top portion of said panel between said inner surface and said flanges at the top of said frame, said inner surface of said top bar member and said integral means in said base portion being the sole retentive means for preventing movement of said panel outwardly from said lamp assembly, said inner surface and said flanges adapted to allow a portion of said panel to pass upwardly therebetween sufficient to permit the base of said panel to pass over and clear said projecting means in said base portion, said panel constructed and arranged to engage said inner surface of said top bar member in one instance and a portion of said flange members in another instance when said panel rests by its own weight on said base portion.

8. The lamp assembly of claim 7 wherein said means projecting upwardly from said base and said bar are in the same plane and said plane is at an angle in the range of about 10° to about 20° from said base portion.

9. The lamp assembly of claim 7 wherein said lateral flange members extend substantially the entire distance from top to bottom of said frame.

10. The lamp assembly of claim 7 further including a raised partition extending substantially across said base and behind said panel.

11. The lamp assembly of claim 7 wherein the panel member is loosely fitted in the frame laterally as well as between the upward projecting means in the front of said base and the laterally extending flange members in the rear.

12. The lamp assembly of claim 7 wherein four of said frame members are joined in horizontal rectangular cross-section comprising the entire luminating portion of said lamp and said frame members and said panels are trapezoidal in vertical cross-section.

13. A lamp assembly comprising: a first frame, a second frame enclosing a panel adapted to be freely carried by and insertable within said first frame, a base portion in said first frame, an extending member and a groove member adapted for interengagement positioned in and on the base portion of said first frame and the bottom of said second frame, a tongue member and a groove member adapted for interengagement disposed in and on the top portion of said first frame and the top of said second frame, substantially vertically disposed spaced side members comprising said first frame and extending between said top member and said base member, said side members presenting opposing lateral faces for accommodating said second panel and being the sole means for confining movement therebetween, said upper tongue and groove members and said extending and groove members in the base portions of said frames being the sole retentive means for preventing movement of said second frame outwardly from said lamp assembly, said top tongue and groove members adapted to allow a portion of said second frame to move upwardly in said first frame sufficient to permit the extending member to be seated in the groove member in the base and bottom portions, said second frame constructed and arranged to permit interengagement between the upper tongue and groove members and the extending and groove members in the base and bottom portions when said second frame rests by its own weight on said base portion of said first frame.

14. The lamp assembly of claim 13 wherein laterally extending flanges are integral with each said side member and are disposed in the same vertical plane inwardly of the lateral faces to freely permit insertion and withdrawal of said tongue member in said upper groove member and said lateral flange members extend substantially the entire distance from top to bottom of said frame and rearwardly of said second frame.

15. The lamp assembly of claim 13 wherein said second frame freely rests in said first frame at an outward angle in the range of about 10° to about 20° from the bottom of said first frame, said upper tongue member extending from the upper portion of said second frame member and said projection member extending upwardly from the base of said first frame.

16. A lamp asembly comprising: a frame, a panel insertable in and freely carried by said frame, said frame comprising a top bar member presenting an inner surface for contact with an upper portion of said panel, a base portion in said frame comprising an upwardly extending wall, a portion of said wall formed to provide a ledge to support the bottom of said panel as well as provide access thereto, substantially vertically disposed spaced side members extending between said top member and said base member, said side members presenting opposing lateral faces for accommodating said panel and being the sole means for confining movement therebetween, laterally extending flanges integral with each side member and disposed in the same vertical plane inwardly of said inner surface in said top bar member to freely permit insertion and withdrawal of the top portion of said panel between said inner surface and said flanges at the top of said frame, said inner surface of said top bar member and said wall in said base being the sole retentive means for preventing movement of sail panel outwardly from said lamp assembly, said inner surface and said flanges adapted to allow a portion of said panel to pass upwardly therebetween sufficient to permit the base of said panel to pass over and clear said upwardly extending wall in said base portion, said panel constructed and arranged to engage the inner surface of said top bar member in one instance and a portion of said flange members in another instance when said panel rests by its own weight on said ledge in said base portion.

17. The lamp assembly of claim 16 wherein said base wall and said bar are in the same plane and said plane is at an angle in the range of about 10° to about 20° from the base of said lamp assembly.

18. The lamp assembly of claim 16 wherein said lateral flange members extend substantially the entire distance from top to bottom of said frame.

19. The lamp assembly of claim 16 wherein said portion in said wall in said base portion forming said ledge provides access by a finger to engage a portion of said panel.

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