

[54] LAMP HOUSING STRUCTURE

[72] Inventor: Anthony Louis, Los Angeles, Calif.

[73] Assignee: Aquaria, Inc., Los Angeles, Calif.

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[58] Field of Search240/2 R, 2 AD, 2 LC, 4, 6, 240/10 R, 36, 41.5, 41.55, 52 R, 52.6, 103 B; 119/5

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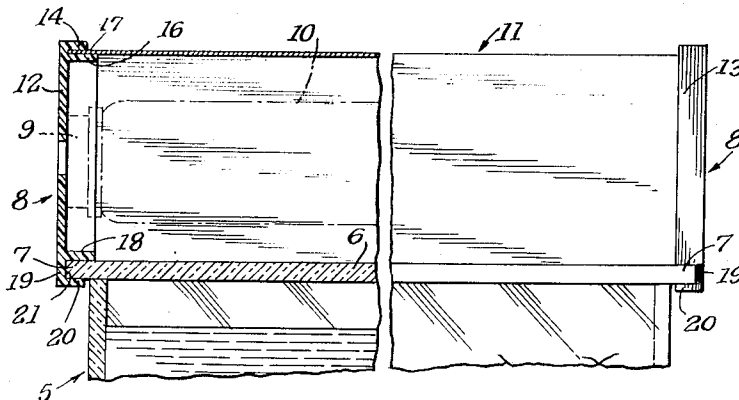
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Primary Examiner—Joseph F. Peters
Attorney—Hyman Jackman

[57] ABSTRACT

A lamp housing structure based upon a transparent cover of a household aquarium or like housing and comprising similar end caps of plastic material formed at their lower ends with grooves into which the opposite ends of said cover are frictionally fitted to, thereby, support and retain said caps in fixed relative position, and a sheet metal housing of inverted U-section having its ends telescopically and frictionally fitted into inwardly facing grooves in said caps, one or both said caps being provided with a fitting for a lamp that is enclosed by the housing and provides illumination for the interior of the aquarium.

4 Claims, 3 Drawing Figures



LAMP HOUSING STRUCTURE

BACKGROUND OF THE INVENTION

1. Field of the Invention

For lighting structures mounted on open-topped containers covered by transparent lids or closures, for illuminating the interiors of such enclosures.

2. Description of the Prior Art

It is common to mount a lamp housing on an aquarium cover for illuminating the interior thereof. Such housings, usually, are unitary devices. Some of the following U.S. Pat. Nos. are representative of such devices:

2,002,380	3,091,220
2,227,739	3,110,539
3,066,645	3,125,065

SUMMARY OF THE INVENTION

The invention combines a transparent panel serving as a base or support and having opposite parallel edges, two lamp-mounting end caps of plastic or other non-metallic composition having telescopic and position-retention engagement with said edges and in aligned, opposed relation, the inner faces of said caps being grooved, and a sheet metal housing with its ends engaged in the mentioned grooves and spanning between them to cover the lamps.

An object of the invention is to provide a combined lamp housing and support therefor that is adapted for simple knock-down assembly and adapted to retain such assembly without the need for fasteners.

Another object of the invention is to provide a combined housing and support, as above characterized, the elements of which are adapted to be compactly packaged, shipped and stored.

This invention also has for its object to provide such means that are positive in operation, convenient in use, easily installed in a working position and easily disconnected therefrom, economical of manufacture, relatively simple, and of general superiority and serviceability.

The invention also comprises novel details of construction and novel combinations and arrangements of parts, which will more fully appear in the course of the following description, which is based on the accompanying drawing. However, said drawing merely shows, and the following specification merely describes preferred embodiments of the present invention, which are given by way of illustration or example only.

In the drawing, like reference characters designate similar parts in the several views.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a foreshortened view showing the present lamp housing structure partly in side elevation and partly in vertical section.

FIG. 2 is a perspective view of one end of the structure and showing the components thereof separated one from the other.

FIG. 3 is a fragmentary view of a modification of one of the end caps of the structure.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

A household aquarium 5, shown in FIG. 1, is provided with a transparent top of lid 6. The latter may be removable, at least in part, to afford access, through the open top of the aquarium, to the interior thereof for servicing. In the present case, said top 6 has its opposite ends 7 extended beyond the ends of the aquarium which is intended as representative of any similar container, preferably rectangular, but not necessarily so.

The present structure comprises, in combination, said cover 6 serving as a base plate for the structure, two similar end caps 8 engaged with the opposite ends 7 of said cover, one or both of which is provided with a socket fixture 9 for a lamp 10, preferably of the electric discharge type, containing neon gas,

and a bottom-open housing member 11 with its ends engaged with said caps 8 and enclosing the neon lamp or lamps 10.

The material of which the caps 8 are formed may vary. It is preferred, however, that they be non-metallic and preferably of a rigid or semi-rigid plastic. While said caps may be machined, molding thereof would be satisfactory and have the advantage of lower production cost.

Each cap 8 is shown as an integral member having an end wall 12 that is provided along its side and top peripheries, side flanges 13 and a top flange 14. As seen best in FIG. 1, the respective flanges 13 and 14 of the two caps 8 are directed toward each other.

Within and slightly inwardly spaced from the respective flanges 13 and 14 of each cap, side inner flanges 15 and an upper flange 16 cooperate respectively with the peripheral flanges 13 and 14 to form grooves 17, clearly shown in FIGS. 1 and 3.

The lower ends of the inner side flanges may be unconnected, as in FIG. 3, or they may be connected by a bottom flange 18. The flanges 13 and 14 may be narrower than the respective flanges 15 and 16, as best seen in FIGS. 1 and 2, the extending portions of the flanges 15 and 16 providing lead-in surfaces for guiding the ends of the housing member 11 into the grooves 17.

Along the lower edge of the wall 12 of each cap and below the lower end of the flanges 15 or the flange 18, the wall 12 is extended as at 19 for a distance equal to the thickness of the top or lid 6, or in any case, the thickness of the end 7 thereof. Along the lower edge of said extension 19, a horizontal flange 20 cooperates with the lower edges of the flanges 13 and 15 or with the bottom flange 18, if one is provided, to form a groove 21 that receives the end 7 of the cover or lid 6.

It will be seen that the cover 6 serves to locate the two caps 8 in spaced relation, the flanges 18 and 20 thereof, by frictional engagement with the cover ends 7, holding each respective cap 8 in proper vertical position on the ends 7 of the cover.

The housing member 11 is preferably formed of sheet metal and into the shape conforming to the grooves 17. Thus, the member 11 is formed as an inverted U having sides 22 connected to a top 23, the former being enterable into the groove defined between the flanges 13 and 15 and the latter between the flanges 14 and 16. The length of the member 11 is determined by the spacing of the caps from each other.

The bottom of member 11 being open, the light generated by a lamp or lamps 10 carried by the end caps 8 will illuminate the interior of the tank 5 through the transparent cover 6.

It is contemplated that the housing 11 may be packaged with two end caps 8 and with the housing 11 either bent to the above described form or in flat condition with score or like lines to guide bending along the corners 24. The gauge of metal used for the housing may be quite thin so it may readily be cut to the desired length according to the length desired for the cover 6. The latter may serve as a guide to which the sheet metal, of which the housing 11 is formed, may be cut to length.

The housing components may have other cross-sectional shape. Instead of the square shape shown, the same may have upwardly converging sides or be half-round, the grooves 17 and the peripheral form of the caps conforming.

Assembly does not require tools of any sort, it being necessary only to mount one cap, fitted with a lamp 10, onto one end 7 of the cover, slip an end of the housing 11 into the grooves 17 of said cap, and then fit the second cap onto the opposite end 7 of said cover while telescopically engaging the opposite end of the housing into the grooves 17 of the latter cap. The friction among the components will retain them in position on the cover 6.

While the foregoing has illustrated and described what are now contemplated to be the best mode of carrying out the invention, the constructions are, of course, subject to modification without departing from the spirit and scope of the invention.

Having thus described the invention, what is claimed and desired to be secured by Letters Patent is:

1. A lamp housing structure comprising, in combination:

a transparent base plate,
 two end caps, each of said caps comprising lower portions 5
 forming a transverse groove,
 said base plate having opposite ends that extend into the
 grooves of the respective end caps,
 said end caps extending upwardly from the portions
 thereof having the transverse grooves, 10
 said end caps being in opposed and aligned relation, and
 an elongated housing member extending between said end
 caps with its ends frictionally engaged with said caps,
 said end caps, housing member, and the portion of the
 transparent base member beneath the housing member 15
 being adapted to enclose a lamp and such lamp being
 adapted to direct its light downwardly through said men-
 tioned portion of the base plate.

2. A lamp housing structure according to claim 1 in which

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each cap, around its side and top peripheral edges, is provided with pairs of parallel flanges that define grooves into which the opposite ends of the lamp-housing member are frictionally engaged, the outer flange of each pair being narrower than the flange that is parallel with it to provide lead-in surfaces for guiding insertion of the ends of the housing into said grooves.

3. A lamp housing structure according to claim 1 in which the end caps are formed of non-metallic material and having grooves in the upwardly extending portions into which the opposite ends of the housing member are frictionally engaged.

4. A lamp housing structure according to claim 3 in which the housing member is formed of sheet metal bent to have a U-shaped cross-sectional form, and the grooves in the upwardly extending portions of the end caps being shaped to conform to the U-shape of the housing member, the open side of the U-shaped housing member facing the transparent base plate to pass the light of the lamp to and through the base plate.

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