May 27, 1969 F. A. BAILEY ET AL 3,446,955

LAMP HOUSING

Filed April 29, 1966

Sheet 1 of 2

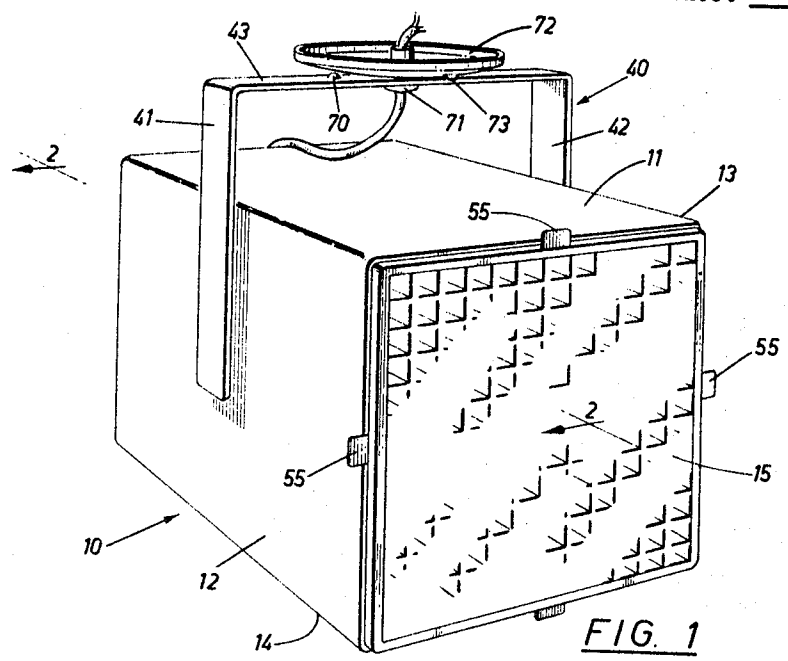

FIG. 1

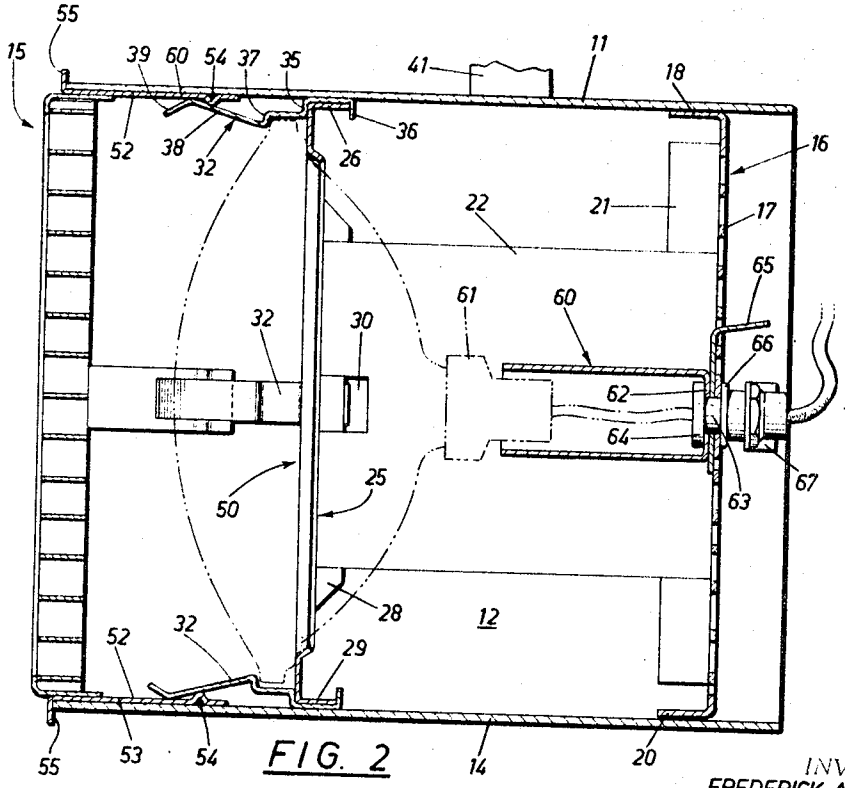

FIG. 2

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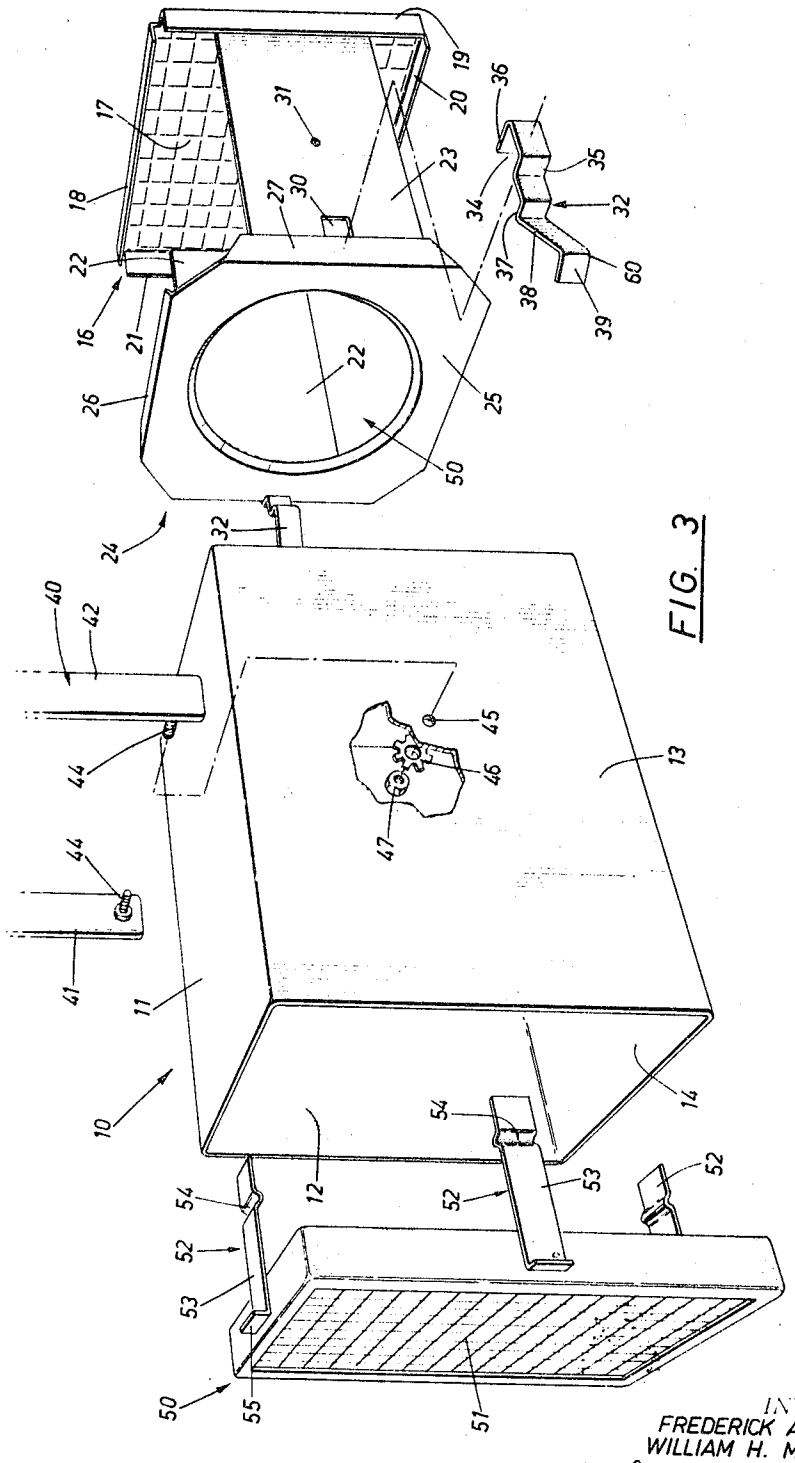

FIG. 3

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LAMP HOUSING

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ABSTRACT OF THE DISCLOSURE

A display lamp comprising a main body having an optical element with peripherally mounted spaced apart tongue elements secured to one end and a lamp supported within the main body. Spring clips are provided for holding the lamp and the optical element in the main body. The spring clips cooperate at their forward ends with an individual one of the tongue elements on the optical element to hold the tongue, and are bent intermediate their length to receive a peripheral portion of the lamp. An arm projects through the rear of the main body and cooperates with the spring clips for rotating the lamp about an axis.

This invention relates to lamp housings and more particularly to such housings as are employed for display lamps.

Many types of lamp housing have been provided for display lamps but due to the wide variety of lamps employed it has not always been possible to substitute one type of lamp for another.

The heat generated by lamps varies greatly according to their wattage and their design and lamps which may be suitable in one housing may not be suitable for use in a second housing.

Furthermore, many display lamps of the prior art have been limited in their application to simple display purposes and they are not adapted to cope with other uses such as in the theatre.

These limited uses of structure of the prior art may have arisen from a consideration of the competing elements of cost and adaptability.

It is therefore the main object of the present invention to provide a lamp housing which is adaptable to various uses and which is economical to produce.

It is another object of the present invention to provide a lamp housing which will accommodate various types of lamps without affecting their performance.

In accordance with these objects there is provided in this present invention a lamp housing which is itself of simplified structure which permits for the substitution and securement by simplified means of various types of lenses, louvres or filters with facility. Another feature of the present invention resides in the means by which the various components are secured together with a minimum of fastening means.

These and various other objects and features of the invention will be more apparent from the following description and drawings in which a preferred embodiment of a lamp housing is illustrated by way of example and in which:

FIGURE 1 is a general perspective view from the front of a lamp housing in accordance with the invention;

FIGURE 2 is a section taken along line 2—2 of FIG. 1; and

FIGURE 3 is an exploded view of a lamp housing in accordance with the present invention.

Referring now to the drawings as illustrated in FIGURE 1 a lamp housing in accordance with the present

invention comprises a main body **10** having a generally rectangular appearance with top side and bottom walls **11**, **12**, **13** and **14**, respectively. In this particular embodiment there is mounted in the open front end of body **10** a louvre **15**. It will of course be understood that coloured lenses or heat or colour filters or other similar components may be substituted. As will be evident from FIGURE 2 the rear end for this louvre or rear opening of body **10** has mounted therein a grille or similar perforate structure **16** to permit the entry and exit of air and keep the structure cool.

Referring now more particularly to FIGURES 2 and 3 it will be observed that grille **16** comprises a main planar portion **17** having a rectangular form conforming to the internal form of the rear opening in body **10** and inwardly extending flanges **18**, **19**, **20** and **21**. These flanges fit within the body **10** as illustrated in FIGURE 2. To the inner surface of flanges **21** and **19** plates such as **22** and **23**, respectively, are secured in any suitable manner as shown in FIGURE 3, and to the forward ends of plates **22** and **23** a lamp chassis **24** is secured. Lamp chassis **24** comprises a substantially planar plate **25** with peripheral inwardly extending flanges such as **26**, **27** formed on the edges thereof in the manner shown. Similar flanges are provided on the corresponding edges **28** and **29** or plate **25**. The corner of plate **25** are cut off for easy insertion and improve ventilation. In the centre of plate **25** there is a circular hole **50** through which a light bulb, shown in dotted outline, will pass and be supported. As will be observed from FIGURE 3, plate **23** is provided with an opening **30** adjacent its forward end and plate **22** is provided with a similar opening. Intermediate the length of both plates **22** and **23** correspondingly aligned holes such as **31** are provided. It will, of course, be evident from FIGURE 2 that plate **25**, as was grille **16**, is dimensioned to sit within the body **10**.

On either side of chassis **24** spring clips such as **32** are provided.

Spring clips **32** have the form illustrated in FIGURES 2 and 3. They each have at their rear end a channel **34** which is defined by walls **35** and **36** so that when assembled wall **36** passes through the opening **30** and channel **34** snugly engages flange **27**. Forward of channel **34** a further step **37** is provided from the upper edge of which the clip slopes out as at **38** and at **60** is bent to slope inwardly to the forward end as at **39**. As will be seen from FIGURE 2 step **37** on clip **32** engage diametrically opposed parts of the peripheral rim on the light bulb and serve to hold a bulb in secure engagement with the chassis **24**. The form of clip **32** and the relationship between the adjacent housing wall and the chassis place these clips under tension which is increased with the insertion of a lamp.

To secure the chassis and the spring clips a support yoke **40** having a pair of downwardly extending legs **41** and **42** connected by a transverse bar **43** is provided with inwardly extending threaded projections **44**. These projections extend through aligned holes **45** on the body **10** and **31** on the plates **22** and **23** and final securing is accomplished by means of a tension washer **46** and lock nut **47**. In this manner the clips **32** are held securely against the inner side walls of housing **10**. Similar clips are also provided and sit between flange **26** and the corresponding flange along edge **29** and the corresponding adjacent body walls.

This arrangement of securing the support yoke, the housing body, and the lamp chassis has been accomplished with simplicity, while at the same time providing an effective control of the attitude of the lamp housing. The attitude of the lamp housing may be adjusted by virtue of the tension washer and lock nut. When the attitude is

changed to a second required position the housing is locked. Furthermore, the removal of the chassis and the dismantling of the lamp may be easily accomplished.

It will also be noticed that louvre **50** comprises a regularly shaped frame **50** within which a louvre element **51** is secured. Intermediate of each of the outer surfaces of louvre frame **50** retaining tongues such as **52** are mounted. These frame retaining tongues each comprise a substantially planar portion **53** which is crimped as at **54** and provided with an upstanding or outstanding lip **55**. When the louvre is inserted in the front opening the crimped portions **54** will engage the corresponding clips such as shown by the engagement between clip **32** and tongue **52** in FIGURE 2 and the louvre is secured in position. The other components which may be substituted are of a similar structure.

Electrical connection between the bulb and the source of the supply and the control of the attitude of the bulb is governed in at least one plane by a lamp connecor support **60** within which a lamp connector **61**, shown in dotted outline is housed. The connector support **60** comprises a channel with side walls and a rear wall **62** through which a threaded sleeve **63** having collar or flange **64** extends sleeve **63** then passes through a beam limit arm **65** and the adjacent grille structure **16** so that beam limit arm **65** has a portion extending through the grille. On sleeve **63** external to grille **16** a beam adjusting handle to hold collar **64**, rear wall **62**, and grille **16** in engagement and on the outermost end of sleeve **63** an insulating cap is provided to insulate a power cord which is passed through sleeve **63** and electrically connected to the connector **61**. In this manner the bulb may be rotated.

The transverse member of yoke **40** is provided on its upper surface with a stop **70** which is spaced apart from a central hole through which a hollow stud **71** is passed. Stud **71** engages with a centrally disposed threaded hole on a canopy **72**. Canopy **72** may be secured to an adjacent surface and the power cord can be passed through the hollow stud **71** and connection made with the power source. On the under surface of canopy **72** there is also provided a downwardly extending projection **73**. This projection upon engagement with the projection **70** will limit the travel of the lamp to just under 360° and thereby prevent the cord supplying the lamp from being twisted.

As will be evident from the foregoing description the lamp housing which has been provided is of simple structure and it is easy to assemble. The entire structure is held together by two tension washers which not only permit adjustment of the attitude of the lamp housing but also secure the various components of the lamp housing together.

The provision of the outwardly extending flanges on the frames of these louvres or similar elements coupled with the regular form of these elements and the lamp housing body openings permit facility in removing and replacing these components without the operator having to look into the lamp to ensure that the various elements are correctly aligned and provide for easy fitting of the various components together.

It will also be apparent that various types of bulbs may be employed without fear of damaging through heat by virtue of the ample openings provided for air circulation.

While the present invention has been particularly described with reference to a specific embodiment it will of course be understood that other and various modifications may be made thereto without departing from the spirit and scope of the invention as defined by the appended claim.

I claim:

1. A lamp housing comprising a main body including a first opening and a second opening; an optical element removably mounted in said first opening; a lamp support chassis mounted in said main body and secured thereto; means for effecting electrical connection with a lamp supported in said housing; means for holding said lamp and said optical element in said main body; said optical element including at least two peripherally mounted spaced apart tongue elements, said means for holding said lamp and said optical element comprises at least two spring clips, each cooperable at their forward ends with an individual one of said tongue elements on said optical element to hold said tongue, each of said clips being bent intermediate their length to receive a peripheral portion of said lamp; said means for holding said lamp permits rotation of said lamp and includes means for rotating said lamp about an axis.

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