Aug. 17, 1965 H. D. HIRSCH 3,201,581

RESILIENTLY SUPPORTED LAMP

Filed Aug. 22, 1961 2 Sheets-Sheet 1

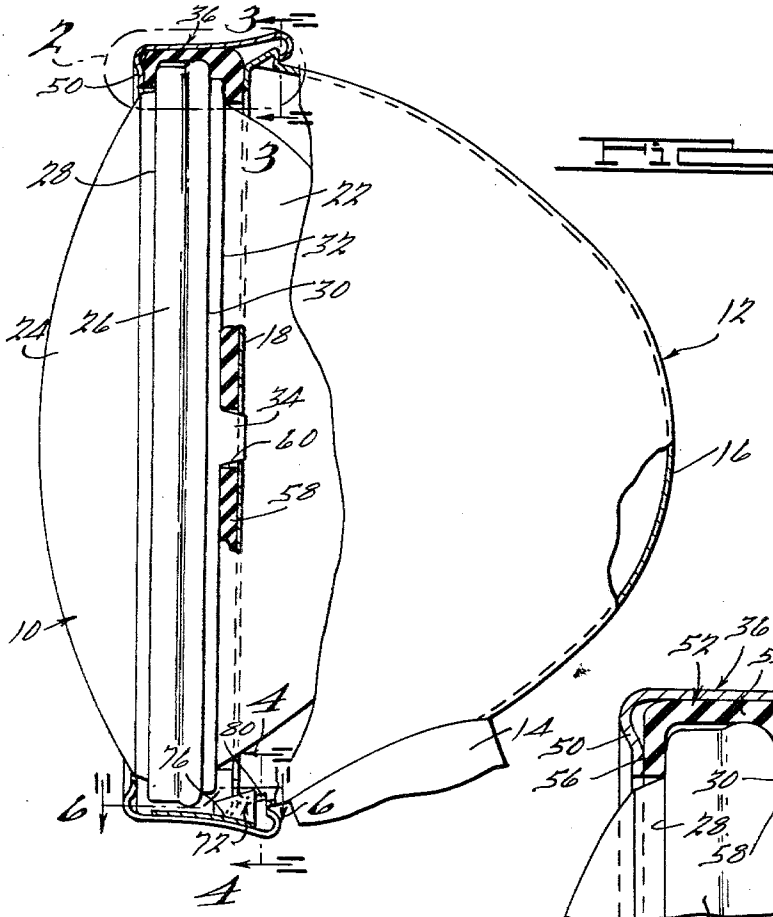


FIG. 1.

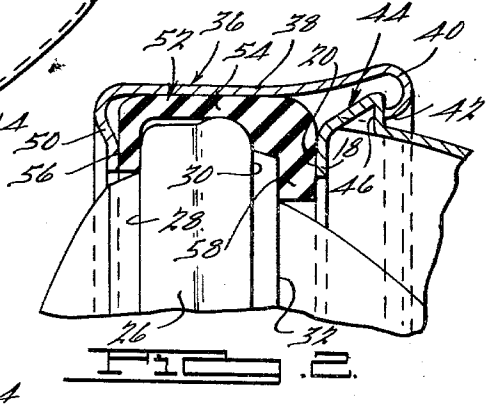


FIG. 2.

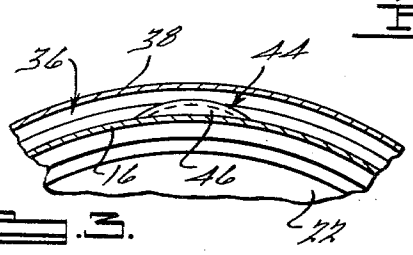


FIG. 3.

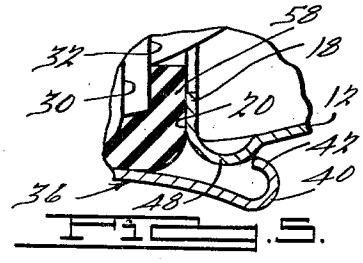
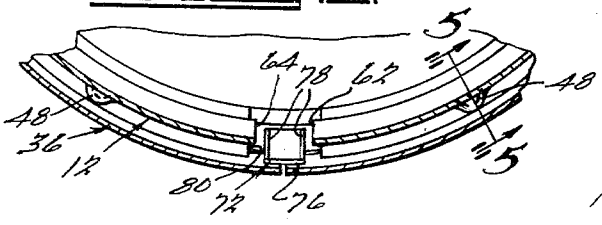


FIG. 5.

FIG. 4.



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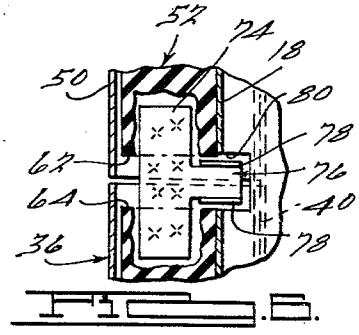


Fig. 1

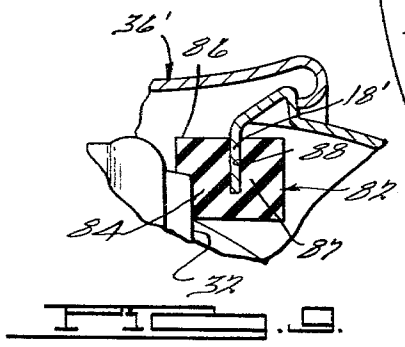


Fig. 3

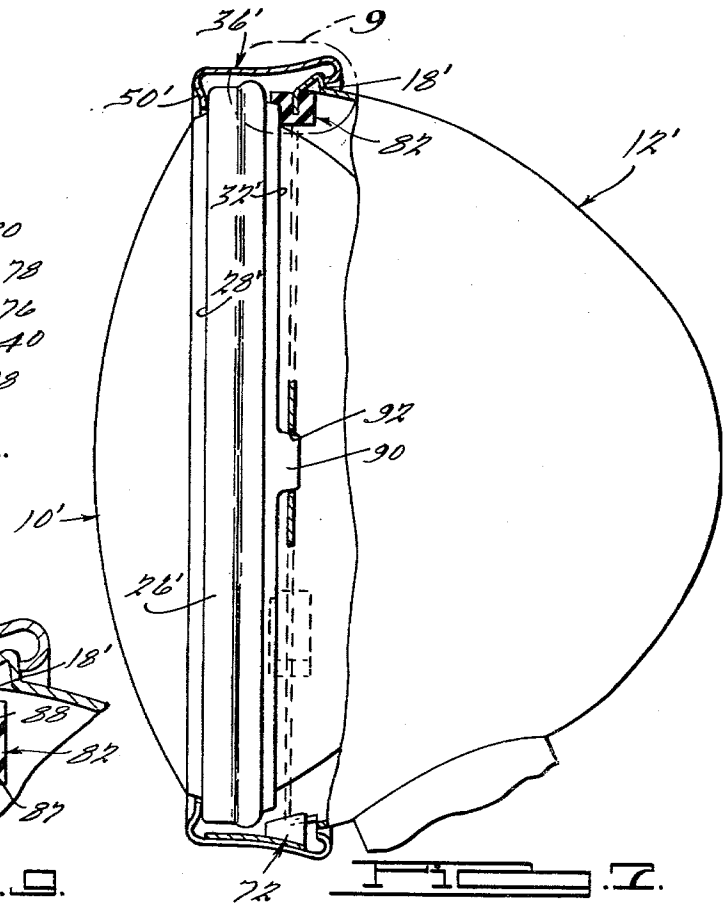


Fig. 2

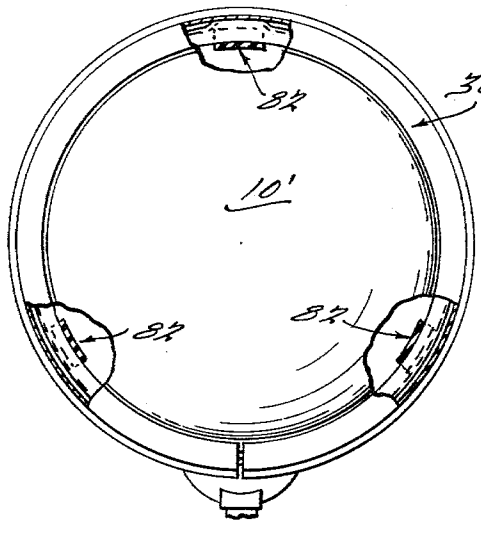


Fig. 4

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RESILIENTLY SUPPORTED LAMP

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Filed Aug. 22, 1961, Ser. No. 133,157
12 Claims. (Cl. 240—41.5)

This invention relates to resiliently supported lamps and more particularly to lamps in which the light unit, such as a sealed beam unit or a bulb assembly, is resiliently supported and/or positioned within a hollow lamp body.

An object of this invention is to improve the resilient mounting of a light unit within a lamp housing.

Another object of this invention is to improve the means for securing a resilient grommet in light unit supporting relationship with a lamp body.

Another object of this invention is to improve and reduce the cost of light unit supporting grommets by providing a plurality of circumferentially located grommet segments for radially positioning and/or resiliently supporting a light unit within a lamp body.

Another object of this invention is to improve the establishment of a preselected rotational orientation between a light unit and a lamp body.

The manner of accomplishing the foregoing objects and other objects and features of this invention will become apparent from the following detailed description of embodiments of the invention when read with reference to the accompanying drawings in which:

FIGURE 1 is a view in side elevation, partially in section, of a lamp assembly embodying certain of the principles of the present invention;

FIG. 2 is an enlarged view of the area 2 on FIG. 1;

FIG. 3 is a view in vertical section taken along the line 3—3 of FIG. 1;

FIG. 4 is a view in vertical section taken along the line 4—4 of FIG. 1;

FIG. 5 is an enlarged view in vertical section taken along the line 5—5 of FIG. 4;

FIG. 6 is a view in horizontal section taken along the line 6—6 of FIG. 1;

FIG. 7 is a view in side elevation, partially in section, of a modification of the lamp assembly illustrated in FIG. 1 and embodying certain of the principles of the present invention;

FIG. 8 is a view in front elevation, partially in section, of the embodiment of FIG. 7; and

FIG. 9 is an enlarged view of the area 9 on FIG. 7.

While the principles of the above invention may be applied to other types of lamp assemblies, they are illustrated in the embodiment of FIGS. 1–6, as including a bulb assembly 10, such as a sealed beam unit, supported within a lamp body or housing 12 which is relatively non-resiliently mounted upon a vehicle by suitable mounting means such as by means including a projection 14 on the housing 12.

The lamp body 12 includes a hollow metal shell 16 having a forwardly located, radially inwardly directed circumferential flange portion 18 having a forwardly facing outer surface 20. For purposes of this application the "forward" direction is defined as the direction in which the light faces.

The lamp body 12 supports the bulb assembly 10 including a filament (not shown), a reflector portion 22, and a lens portion 24, all of which are illustratively combined in an integrated assembly in the form of sealed beam unit. The lens portion 24 (or the lens portion or the reflector portion on a non-integrated unit) is provided with a raised, stepped, circumferential bead 26 having a forward circumferential shoulder 28, an intermediate shoulder 30 and a rearward circumferential shoulder 32. In addition, the bead is provided with one or more discontinuities such as the boss 34 for rotational keying purposes.

The bead 26 of the bulb assembly 10 lies within a door or bezel 36 having an outer circumferential portion 38 with its inner surface surrounding the bead 26 on the bulb assembly in spaced relationship therewith. A radially inwardly directed, circumferential lip 50 connects to the outer circumferential portion 38 forwardly of the shoulder 28 on the bead 26 for limiting forward movement of the bulb assembly 10 in the bezel 36. The circumferential portion 38 also connects to a radially inwardly turned, rearwardly located circumferential flange 40 which terminates in a forwardly directed end portion 42 that engages a protuberance 44 on the outer surface of the lamp housing 12 at a point adjacent the flange portion 18.

The protuberance 44 has an arcuate shoulder 46 with a rearwardly facing substantially vertical surface against which the end 42 of the flange 40 abuts for holding the bezel 36 on the lamp housing 12. The bezel 36 is further secured on the housing 12 by a coacting engagement between the end portion 42 and a plurality (representatively two) of circumferentially spaced protuberances 48 (FIGS. 4 and 5) on the outer surface of housing 12 at points adjacent the flange portion 18 and substantially diametrically opposite the protuberance 44.

In the embodiment of the invention illustrated in FIGS. 1–6, the bulb assembly 10 is retained and resiliently supported in the bezel 36 by means of a grommet 52. Grommet 52 includes a circumferential portion 54 which engages the inner surface of the circumferential portion 38 of the bezel 36 and the bead 26 on the bulb assembly 10 to radially position it within the bezel 36 and resiliently hold it against radial movement with respect to the lamp body 12.

The inner surface of the circumferential portion 54 of the grommet 52 is grooved to define a forward, generally annular, radially inwardly directed flange portion 56 and a stepped rearward flange portion 58. The flange portion 56 press-fits between the forward circumferential shoulder 28 of the bead 26 and the inner surface of the lip 50 on the bezel 36. Similarly, the flange portion 58 press-fits between the shoulders 30, 32 on the bead 26 and the forward surface 20 of the flange 18 on the housing 12. In this manner, the bulb assembly 10 is secured in the grommet 52 and hence is resiliently held against either forward or rearward movement with respect to the lamp body 12.

It should be noted that the inner edge of the forward circumferential lip 50 on the bezel 36 is spaced from the bulb assembly 10 so that the bulb assembly 10 only engages the resilent grommet 52 and is thereby insulated from vibrational forces and the like transmitted from the rigid lamp housing mounting and the lamp body 12 to the bezel 36. In the preferred form there is no metal to sealed beam unit contact at the inner edge of the forward circumferential lip 50 or at the boss 34, but with some improvement of the mechanical shock insulating properties of the unit, the inner edge of the lip 50 can engage the sealed beam unit for supporting and positioning the sealed beam unit relative to the lamp body 12.

As may best be seen in FIG. 1, the rearward flange portion 58 of the grommet 52 has a notch 60 which receives the key boss 34 so as to establish a preselected rotational orientation between the bulb assembly 10 and the grommet 52. The flange 18 on the housing 12 is preferably cut away to clear the top of the boss 34 extending from notch 60 to avoid metal to sealed beam unit contact and may also serve to rotationally position the bulb assembly with respect to the lamp body.

While the grommet 52 may be a continuous, molded unit, it is preferred that it be in the form of a split ex-

truded strip which is formed into a circle as an incident of the assembly of the grommet to the other elements, with its two ends **62**, **64** (FIG. 4) brought into proximity to one another at a fixed point in the circumference of the bead **26** and the bezel **36** as defined by a keying element **72**. As illustrated in FIG. 6, the keying element **72** (FIG. 1) includes tab portions **74** fastened by suitable means such as welding to the inner surface of the bezel **36** and a rearwardly extending arm portion **76** with radially inwardly directed projections **78** which lie between the ends **62**, **64** of the grommet strip at a point on the circumference of the bezel at which the ends **62**, **64** are in proximity to one another.

To locate the bezel **36** in preselected rotational orientation with respect to the lamp body **12**, in order to complete the orientation of the bulb assembly **10** with respect to the lamp body **12**, the projections **78** engage a notch **80** in the flange **18** and forward portion of the body **12**. The rotational orientation of the bulb **10** and grommet **52** in the bezel **36** along with such orientation of the bezel relative to the lamp body **12** orients the filaments of the bulb assembly **10** in the body **12** so that the unit will have a predetermined lighting pattern.

The embodiment of the invention illustrated in FIGS. 7–9 is similar to the embodiment of the invention illustrated in FIGS. 1–6 except that the grommet **52** is replaced by a plurality of circumferentially located discontinuous grommet portions or arcuate segments **82** each of which has a forward portion **84** having its forward surface grooved to define a radially outer, forwardly directed flange **86**. A rearward portion **87** of each segment **82** has a groove **88** located in the radially outer surface thereof rearwardly of the flange **86**. The sides of the groove **88** grip an inwardly directed flange **18'** on a housing **12'** to secure each grommet portion thereon.

An inwardly directed lip **50'** on a bezel **36'** engages a shoulder **28'** on a bead **26'** to hold a bulb assembly **10'** against the forward portions **84** of each grommet segment so that they engage a shoulder **32'** on the bead **26'** and the forwardly directed flanges **86** engage a portion of the periphery of the bead **26'** to cushion movement of the bulb assembly **10'** relative to the lamp body **12'**.

It is contemplated that the inner edge of the lip portion **50'** on the bezel **36'** will engage the bulb assembly **10'** forwardly of the circumferential surface **28'** on the bead **26'** for radially positioning the bulb assembly **10'** in the lamp body **12'** or, alternatively, the inner edge of the lip **50'** may be spaced from the bulb assembly **10'** and the flanges **86** on each of the grommet portions **82** may be the sole means for radially positioning the bulb assembly **10'** on the housing **12'**.

The filaments of bulb assembly **10'** are located in a preselected rotational orientation with respect to the lamp body **12'** by a keying boss **90** on the bead portion **26'** of the bulb assembly **10'** which locks in a notch **92** in the inwardly directed flange **18'** on the lamp body **12'**.

While it will be apparent that the embodiments of the invention herein disclosed are well calculated to fulfill the objects of the invention, it will be appreciated that the invention is susceptible to modification, variation and change without departing from the proper scope or fair meaning of the subjoined claims.

What is claimed is:

1. In a lamp assembly including a lamp lens having a circumferential bead, the combination of a lamp body having a forwardly located inwardly directed circumferential flange and a plurality of circumferentially spaced, rearwardly located and radially outwardly extending protuberances formed on the outer surface of said lamp body adjacent said flange, a bezel having an inner surface and adapted to surround the circumferential bead on the lens in spaced relationship therewith, said bezel further including a rearwardly located flange portion engaging said lamp body only at said protuberances thereby operatively supporting said bezel on said lamp body and an inwardly directed circumferential lip located forwardly of the circumferential bead on the lens to prevent forward movement of the lens relative to said lamp body, and a resilient grommet including a circumferential portion located between the inner surface of said bezel and the circumferential bead on the lens, said grommet further including a forward portion engaging the circumferential bead on the lens and a rearwardly located portion engaging said forwardly located flange on said lamp body for resiliently supporting the lens relative to said lamp body.

2. The lamp assembly of claim **1** wherein said grommet is formed as a discontinuous resilient member having a plurality of circumferentially located arcuate segments, carried by said forwardly located flange on said body engaging the circumferential bead on the lens.

3. The lamp assembly of claim **1** wherein said grommet is formed of a discontinuous resilient member having a plurality of circumferentially located arcuate segments, each of said segments having forward and rearward portions engaging the outer and inner surface of said forwardly located flange respectively, and said forward portion having a forwardly facing shoulder engaging the circumferential bead on the lens.

4. The lamp assembly of claim **1** wherein said grommet is formed as a discontinuous resilient member having a plurality of circumferentially located arcuate segments, carried by said forwardly located flange on said body engaging the circumferential bead on the lens and coacting means on the lens and said lamp body for establishing a preselected rotational orientation between said lens and said lamp body.

5. The lamp assembly of claim **1** wherein said grommet is formed as a discontinuous resilient member having a plurality of circumferentially located arcuate segments, each of said segments having forward and rearward portions engaging the outer and inner surface of said forwardly located flange on said body respectively, each of said forward portions have a forwardly facing shoulder engaging the rearward circumferential shoulder on the circumferential bead on the lens for resiliently holding the lens against rearward movement relative to said lamp body and a forwardly directed flange engaging the periphery of the circumferential bead on the lens for radially positioning the lens in said lamp body.

6. In a lamp assembly including a lamp lens having a circumferential bead, the combination of a lamp body having a forwardly located inwardly directed circumferential flange and a plurality of circumferentially spaced, rearwardly located and radially outwardly extending protuberances formed on the outer surface of said lamp body adjacent said flange, a bezel having an inner surface and adapted to surround said circumferential bead in spaced relationship therewith, said bezel further including a rearwardly located flange portion engaging said lamp body only at said protuberances thereby operatively supporting said bezel on said lamp body and an inwardly directed circumferential lip located forwardly of the circumferential bead on the lens to prevent forward movement of the lens relative to said lamp body, and a resilient grommet within said bezel including a circumferential portion having an inner surface engaging the periphery of the circumferential bead on the lens for radially positioning the lens in said lamp body, said grommet further including a forward portion engaging the circumferential bead on the lens and a rearwardly located portion engaging said forwardly located flange on said lamp body for resiliently supporting the lens relative to said lamp body.

7. In a lamp assembly including a lamp lens having a circumferential bead, the combination of a lamp body having a forwardly located inwardly directed circumferential flange and a plurality of circumferentially spaced, rearwardly located and radially outwardly extending protuberances formed on the outer surface of said lamp body adjacent said flange, a bezel having an inner surface

and adapted to surround the circumferential bead on the lens in spaced relationship therewith, said bezel further including a rearwardly located flange portion engaging said lamp body only at said protuberances thereby operatively supporting said bezel on said lamp body and an inwardly directed circumferential lip located forwardly of the circumferential bead on the lens to prevent forward movement of the lens relative to said lamp body, a resilient grommet including a circumferential portion located between the inner surface of said bezel and the circumferential bead on the lens, said grommet further including a forward portion engaging the circumferential bead on the lens and a rearwardly located portion engaging said forwardly located flange for resiliently supporting the lens relative to said lamp body, and coacting means on the lens and said lamp body for establishing a preselected rotational orientation between the lens and said lamp body, said coacting means including means on the grommet for rotationally positioning said lamp lens with respect to said grommet and coacting means on the bezel and the grommet for establishing a preselected rotational orientation between the bezel and said grommet.

8. In a lamp assembly including a lamp lens having a circumferential bead, the combination of a lamp body having a forwardly located inwardly directed circumferential flange, a plurality of protuberances on the outer surface of said lamp body adjacent to said forwardly located flange, a bezel having an inner surface and adapted to surround the circumferential bead on the lens in spaced relationship therewith, said bezel further including a rearwardly located forwardly directed end portion engaging said lamp body only at said protuberances thereby operatively supporting said bezel on said lamp body and an inwardly directed circumferential lip located forwardly of the circumferential bead on the lens to prevent forward movement of the lens relative to said lamp body, and a resilient grommet including a circumferential portion located between the inner surface of said bezel and the circumferential bead on the lens having a forward portion engaging the circumferential bead on the lens and a rearwardly located portion engaging said flange on said lamp body for resiliently supporting the lens relative to said lamp body.

9. In a lamp assembly including a lamp lens having a circumferential bead with forward and rearward circumferential shoulders, the combination of a lamp body having a forwardly located inwardly directed circumferential flange and a plurality of circumferentially spaced, rearwardly located radially outwardly extending protuberances formed therefrom on an outer surface of said lamp body adjacent said flange, a bezel having an inner surface and adapted to surround the circumferential bead on the lens in spaced relationship therewith, said bezel further including a rearwardly located flange portion engaging said lamp body only at said protuberances thereby operatively supporting said bezel on said lamp body and an inwardly directed circumferential lip spaced forwardly of the circumferential bead on the lens, and a resilient grommet including a circumferential portion engaging the inner surface of said bezel and the periphery of the circumferential bead on the lens, said grommet further having a forwardly located inwardly directed circumferential flange engaging said lip on said bezel and the forward circumferential shoulder on the circumferential bead on the lens and a rearward inwardly directed flange engaging the rearward circumferential shoulder on the circumferential bead on the lens and said forwardly located flange on said body for resiliently holding the lens against forward, rearward or radial movement relative to said lamp body.

10. In a lamp assembly including a lamp lens having a circumferential bead with forward and rearward circumferential shoulders with said rearward shoulder having a discontinuity therein, the combination of a lamp body having a forwardly located inwardly directed circumferential flange and a plurality of protuberances formed on an outer surface of said lamp body adjacent said flange, a bezel having an inner surface and adapted to surround the circumferential bead on the lens in spaced relationship therewith, said bezel further including a rearwardly located flange portion engaging said lamp body only at said protuberances thereby operatively supporting said bezel thereon and an inwardly directed circumferential lip spaced forwardly of the circumferential bead on the lens, a resilient grommet including a circumferential portion engaging the inner surface of said bezel and the periphery of the circumferential bead on the lens, said grommet further having a forwardly located inwardly directed circumferential flange engaging said lip on said bezel and the forward circumferential shoulder on the circumferential bead on the lens and a rearward inwardly directed flange engaging the rearward circumferential shoulder on the circumferential bead on the lens and said forwardly located flange on said body for resiliently holding the lens against forward, rearward or radial movement relative to said lamp body, and coacting means on said bezel and said lamp body for positioning said bezel in a rotational sense with respect to said body, said coacting means including means for positioning said resilient grommet in a rotational sense with respect to said bezel, and means on said grommet engaging the discontinuity on the circumferential bead on the lens for positioning the lens in a rotational sense with respect to said grommet.

11. In a lamp assembly including a lamp lens having a circumferential bead with forward and rearward circumferential shoulders with said rearward shoulder having a discontinuity therein, the combination of a lamp body having a forwardly located, inwardly directed circumferential flange, a bezel having an inner surface and adapted to surround the circumferential bead on the lens in spaced relationship therewith, said bezel further including means engaging said lamp body thereby operatively supporting said bezel on said lamp body and an inwardly directed circumferential lip spaced forwardly of the circumferential bead on the lens, a resilient grommet including a circumferential portion located between the inner surface of said bezel and the periphery of the circumferential bead on the lens, said grommet further having a forwardly located inwardly directed circumferential flange engaging said lip on said bezel and the forward circumferential shoulder on the circumferential bead on the lens and a rearward inwardly directed flange engaging the rearward circumferential shoulder on the circumferential bead on the lens and said forwardly located flange on said body for resiliently holding the lens against forward, rearward or radial movement relative to said lamp body, and coacting means on said bezel and said lamp body for positioning said bezel in a rotational sense with respect to said body, said coacting means including means for positioning said resilient grommet in a rotational sense with respect to said bezel, and means on said grommet engaging the discontinuity on the circumferential bead on the lens for positioning the lens in a rotational sense with respect to said grommet.

12. In a lamp assembly including a lamp lens having a circumferential bead with forward and rearward circumferential shoulders with said rearward shoulder having a discontinuity therein, the combination of a lamp body having a forwardly located inwardly directed circumferential flange and a plurality of protuberances formed on an outer surface of said lamp body adjacent said flange, a bezel having an inner surface and adapted to surround the circumferential bead on the lens in spaced relationship therewith, said bezel further including a rearwardly located flange portion engaging said lamp body only at said protuberances for supporting said bezel thereon and an inwardly directed circumferential lip spaced forwardly of the circumferential bead on the lens, a resilient grommet

including a circumferential portion located between the inner surface of said bezel and the periphery of the circumferential bead on the lens, said grommet further having a forwardly located inwardly directed circumferential flange engaging said lip on said bezel and the forward circumferential shoulder on the circumferential bead on the lens and a rearward inwardly directed flange engaging the rearward circumferential shoulder on the circumferential bead on the lens and said forwardly located flange on said body for resiliently holding the lens against forward, rearward or radial movement relative to the lamp body, and coacting radially inwardly extending keying arm on said bezel and axially outwardly extending notch on said lamp body for positioning said bezel in a rotational sense with respect to said body, said coacting means including means for positioning said resilient grommet in a rotational sense with respect to said bezel, and means on said grommet engaging the discontinuity on the circumferential bead on the lens for positioning the lens in a rotational sense with respect to said grommet.

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