Dec. 7, 1926. 1,610,126

C. E. GODLEY

LENS HOLDER FOR LAMPS

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Fig. 1

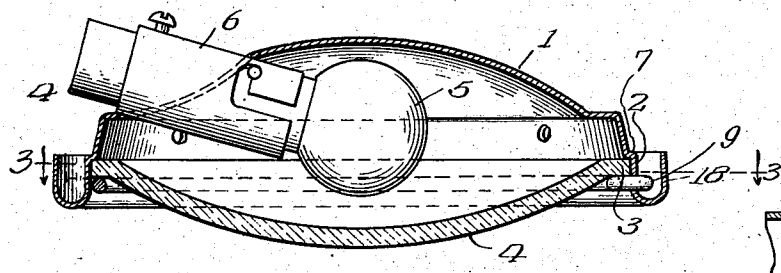


Fig. 9

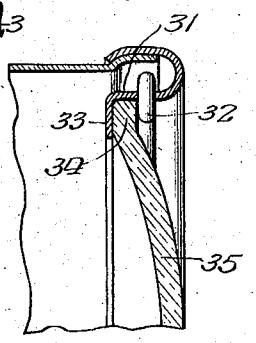


Fig. 3

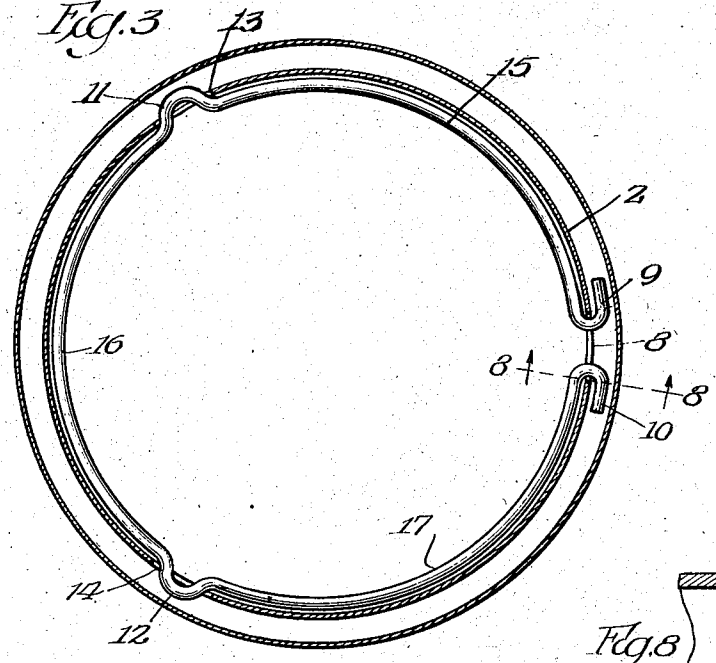


Fig. 10

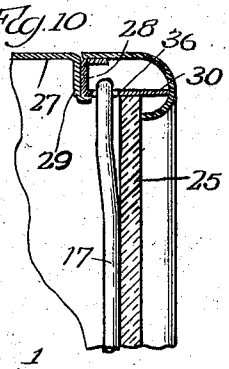


Fig. 8

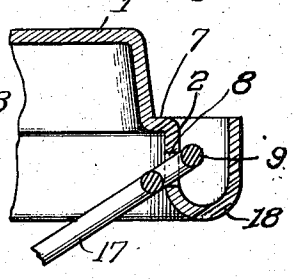
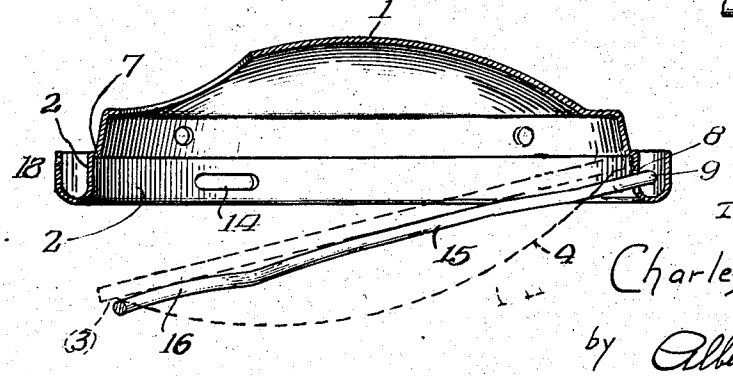


Fig. 2



Inventor:
Charles E. Godley
by Albert Scheible
Attorney

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Fig. 4

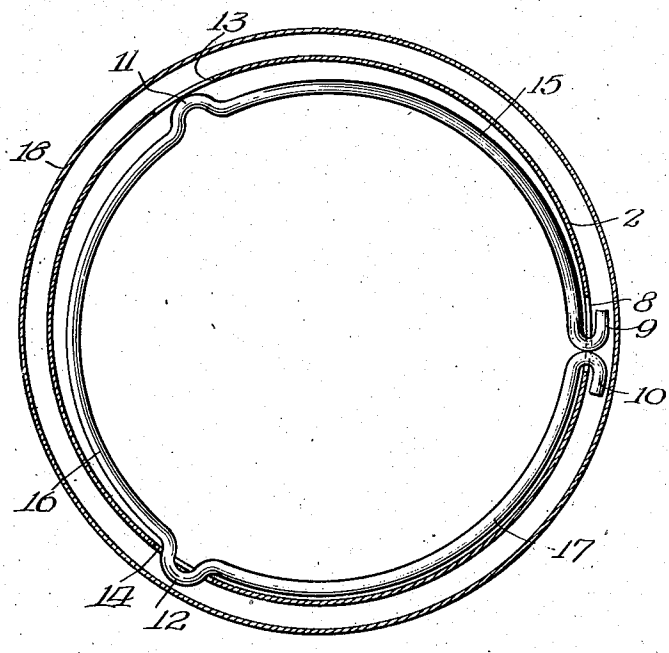


Fig. 5

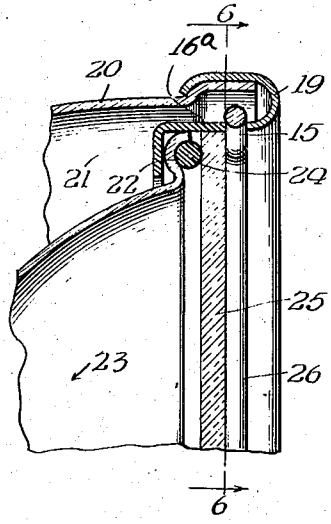


Fig. 6

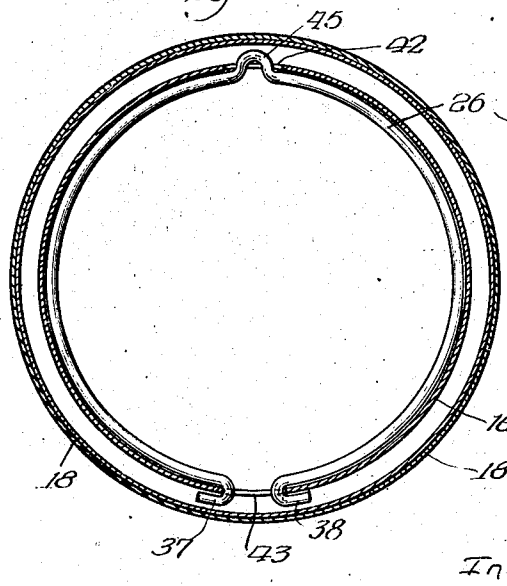
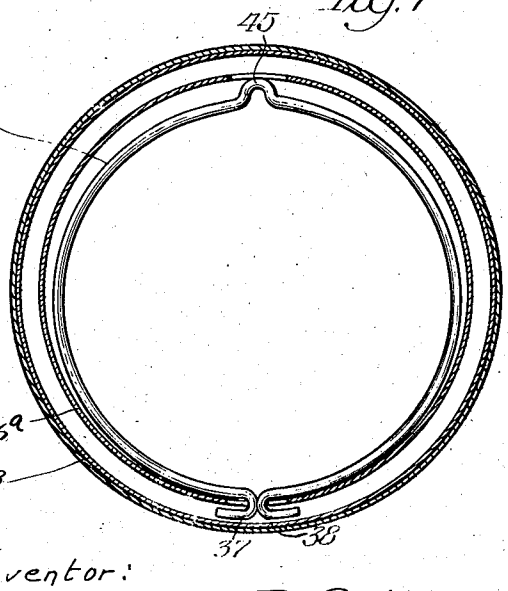


Fig. 7



Inventor:
Charles E. Godley
by Albert Scheible
Attorney

Patented Dec. 7, 1926. 1,610,126

UNITED STATES PATENT OFFICE.

CHARLES E. GODLEY, OF DETROIT, MICHIGAN, ASSIGNOR, BY MESNE ASSIGNMENTS, TO C. M. HALL LAMP COMPANY, A CORPORATION OF MICHIGAN.

LENS HOLDER FOR LAMPS.

Application filed November 6, 1925. Serial No. 67,253.

My invention relates to lighting appliances and in its general objects includes the providing of simple, inconspicuous and easily manipulated means for detachably securing the lens or other translucent member of the appliance to the body or other lens-holding portion. Moreover, my invention aims to provide an arrangement for this purpose in which the means for retaining the translucent member in its normal position are hinged to the body or other holder member, and are normally retained in position by the resiliency thereof, and in which a simple and inexpensive construction may be employed.

Furthermore, my invention aims to provide a construction of this class in which the retaining member is formed so that its resiliency will compensate for irregularities in the shape or thicknes of the portion of the translucent member engaged by the said means; in which this retaining member can be constructed of a single piece of wire, in which simple perforations in the body or other holder member of the appliance will serve for interlocking with the retaining member, in which the body or holder member can readily be formed to conceal the interlocking portions of the retaining member, and in which the partial or entire releasing of the retaining member is permitted by an approaching of the ends of the latter to each other. My invention also provides a construction which may be employed with equal facility for a wide variety of lamp constructions, including lamps having a single piece body and lens-holding member and also including lamps in which my invention is applied to a door or lens-holder which is detachable from the lamp body.

Still further objects will appear from the following specification and from the accompanying drawings, in which—

Fig. 1 is a central and vertical section through a dome light embodying my invention and showing the lens of the dome light and the lens-retaining ring in their normal positions, the retaining ring in this embodiment having two spaced bights intermediate of its ends.

Fig. 2 is a similar section, with the lamp socket and lamp bulb omitted, showing the lens-retaining ring as swung out of its normal position to permit the attaching or detaching of the translucent member which is shown in dotted lines.

Fig. 3 is a horizontal section taken through Fig. 1 along the line 3—3.

Fig. 4 is a section similar to Fig. 3, showing one of the bights of the lens-retaining ring as released from the part of the body or holder member with which it is normally interlocked.

Fig. 5 is a fragmentary central and vertical section through an automobile headlight embodying my invention, in a construction in which only a single bight is formed in the resilient lens-retaining ring.

Fig. 6 is a transverse section through the same headlight taken from the line 6—6 of Fig. 5 and showing the lens-retaining member in its normal position.

Fig. 7 is a section similar to Fig. 6 but showing the lens-retaining ring as flexed to release its bight.

Fig. 8 is an enlarged section taken along the line 8—8 of Fig. 3 but with the retaining ring swung downwardly out of its normal position.

Fig. 9 is a fragmentary central and vertical section through a side lamp for automobile use embodying my invention.

Fig. 10 is a fragmentary central and vertical section through another embodiment of my invention, namely one in which my invention is applied to a door or lens front detachable from the body of a lamp and in which the retaining ring is behind the lens.

In its immediate commercial application, my invention is particularly suited for affording simple, attractive and inexpensive lens fastenings for lamps as used on automobiles. I am therefore illustrating and describing my invention primarily in such embodiments, although I do not wish to be limited to any particular use of the same.

Referring first to Figs. 1 to 4 inclusive, these show a dome lamp having a body member 1 of inverted cup shape provided adjacent to its mouth end with a cylindrical collar portion 2 for slidably receiving the annular rim 3 of a lens 4, which lens softens the light from a lamp bulb 5 carried by a socket 6 extending through the upper portion of the said body member. The body member also has an annular portion 7 for limiting the upward insertion of the lens by affording a seat against which the rim 3 of

the lens is pressed by a retaining member which desirably is formed of a single piece of resilient wire. To retain this wire in position, I provide the collar portion 2 of the holder member with three apertures 8, 13 and 14 spaced circumferentially of this collar portion and also elongated circumferentially of the latter, these apertures all being normally below the rim 3 of the lens.

The lens-retaining member consists of a single piece of resilient wire bent into a ring of an outside diameter normally greater than the bore of the collar 2 and having its free ends turned outwardly of the ring and extending through the aperture 8 from the interior of the collar. The extreme end portions 9 and 10 of the wire are recurved away from each other as shown in Fig. 3, so as to afford hooks adapted to interlock with the end walls of the aperture 8, thereby co-operating with the relatively small height of the said aperture in limiting the extent to which the wire ring can be swung downwardly out of its normal position about the hinging connection afforded by the engagement of the hook-shaped ends of the wire with the collar portion 2.

The retaining member is also provided intermediate of its ends with at least one bight projecting radially outward of the general curvature of the split ring, and each such bight normally extends through a correspondingly located aperture in the collar portion 2 so that the bottom wall of this aperture affords a shoulder normally supporting the bight. In the embodiment of Figs. 1 to 4 inclusive, the wire has two such bights 11 and 12 spaced circumferentially of the ring from each other and from the ends of the ring, and these bights normally project respectively through two apertures 13 and 14 in the collar portion 2, so as to be supported by the bottoms of the said apertures, which bottoms both afford shoulders engaged by the bights. To avoid rattling and to compensate for irregularities in the thickness of the rim 3 of the lens, I preferably bow each of the main arcuate portions 15, 16 and 17 of the split wire ring slightly upward or toward the lens, as shown to an exaggerated extent in Fig. 2, thereby permitting these bowed portions to be flattened when the retaining ring is in position and to clamp the lens rim tightly against the annular seat 7. I may also recurve the body member at its mouth end so as to afford an outer collar 18 as shown in Figs. 1 and 2, which outer collar conceals the projecting bights and wire end portions and adds to the general appearance of the lamp.

With the dome light thus constructed, it will be obvious from Fig. 2 that the lens can readily be slid into position over the wire retaining ring while the latter is tilted out of its normal position. When the ring is then swung upwardly, the bights 11 and 12 are engaged by the outwardly curved bottom portions of the collar 2 with a cam action which forces them inwardly by contracting the diameter of the split ring, such a contraction being permitted by the space between the bights of the hooks at the free end of the wire, which space permits these hooks to approach each other as shown in Fig. 4. As soon as the bights 11 and 12 aline with the corresponding apertures 13 and 14 respectively, they are snapped into and partly through these apertures by the resiliency of the wire, thereby latching the wire retaining member in position. Since the split ring is then expanded against the bore of the collar portion 2, this retaining ring is inconspicuous, while the bights 11 and 12 as well as the wire tip portions 9 and 10 are concealed by the outer collar formation 18. Consequently, I can secure a handsome appearance for such a lamp although employing an inexpensive and single-piece body and holder member.

When the lens is to be detached, the bights 11 and 12 can successively be swung out of their normal latching position one at a time by inserting the tip of a screw driver or the like between the collar portion 2 and the respectively adjacent part of the ring, so as to contract this ring after the manner shown in Fig. 4. By making the length of the perforation 8 such that the space between the bights of the two hook formations on the wire is normally slightly greater than the effective length of each of the recurved wire end portions 9 and 10, I permit a ready attaching of the wire to the body member while still enabling the resiliency of the wire to retain the two hooks effectively interlocked with the body member when the wire retaining ring is moved to and from its released position of Fig. 2. When the ring is swung to this position, its resiliency keeps the hooks engaged with the ends of the aperture 8 and the extent of the swinging is limited by the engagement of each wire tip with the exterior of the collar portion 2 while the ring is supported by the bottom of the aperture, as shown in Fig. 8.

In the embodiment of Figs. 5, 6, and 7, the resilient retaining wire has only a single bight 45 formed in the middle of the wire, and the tubular supporting portion 16^a has only two elongated perforations respectively entered by the bight 45 and by the hook-ends 37 and 38. In this case, the apertured collar portion 16^a is a part of a lens ring 19 spun over the forward end of a lamp casing 20, and this lens ring has at its rear end an inwardly directed radial flange 21 which affords a seat for the forwardly concave rim 22 of a reflector 23. Seated in the groove formed by the concaving of the reflector rim

is a packing ring 24 against which the lens 25 of the lamp is pressed by the split wire retaining ring 26. When the retaining ring thus has only a single bight intermediate its ends, the entire ring is flexed to a substantially oval shape during the attaching or releasing of its medial bight from the lens ring, as shown in Fig. 7.

Fig. 9 shows a portion of a side lamp, in which the lens-receiving perforated collar 31 associated with a split-wire ring 32 (constructed after the manner of Fig. 3 or Fig. 6) carries an annular flange 33 directly engaging the rim 34 of the lens 35.

Fig. 10 shows still another embodiment, being a fragmentary view of a side lamp in which the lens 25 is mounted in a door or lens holder detachable from the body 27 of the lamp. In this case, the lens holder has an inner member including a radial flange 28 normally engaging a corresponding flange 29 on the lamp body, and a collar 30 provided with apertures for receiving formations in the retaining wire ring 17 after the manner of the previously described embodiments, such as the aperture 36.

In view of the illustrated embodiments it will be obvious that the construction and arrangement can be varied greatly without departing either from the spirit of my invention or from the appended claims.

I claim as my invention:

1. A lamp front construction comprising a lens; a lensholder including a collar peripherally housing the lens and a seat engaging one face of the lens, the collar having apertures spaced from and at the other side of the lens from the seat; a retaining ring formed of a single piece of resilient wire and having its main portion disposed within the collar and having its ends projecting through one aperture and recurved to afford oppositely directed hooks having their bights directed toward each other, said hooks respectively engaging opposite ends of the aperture to afford a hinging connection between the ring and the collar, the ring having an outwardly directed bight spaced circumferentially of the ring from its hinged connection to the collar, and engaging the other aperture; the resiliency of the wire serving to expand the major portion of the ring so as to normally cause the said bight to project into the said second aperture and to spread the free ends of the wire apart, the hinged connection between the free ends of the wire and the collar being arranged to permit an approaching of the said free ends when the ring is flexed to contract it in diameter so as to withdraw the bight from the aperture, the ring being so formed and the said first aperture and hinging connection being so disposed with respect to the lens and the seat that the ring normally holds the lens against the seat, the portion of the collar beyond the apertures being recurved radially outward of the collar to conceal the said bight and hinging connection.

2. A lamp front construction comprising a lens; a lensholder including a collar peripherally housing the lens and a seat engaging one face of the lens, the collar having an aperture spaced from and at the other side of the lens from the seat; a retaining ring formed of a single piece of resilient wire and having its main portion disposed within the collar and having normally spaced hook ends to engage in the aperture, thereby providing a hinging connection between the ring and collar, the ring having an outwardly directed bight spaced circumferentially of the ring from its hinged connection to the collar; the resiliency of the wire serving to expand the major portion of the ring so as to normally cause the said bight to project into the said aperture and to spread the free ends of the wire apart, the hinged connection between the free ends of the wire and the collar being arranged to permit an approaching of the said free ends when the ring is flexed to contract it in diameter so as to withdraw the bight from the aperture, the ring being so formed and the said aperture and hinging connection being so disposed with respect to the lens and the seat that the ring normally holds the lens against the seat, the portion of the collar beyond the aperture being recurved radially outward of the collar to conceal the said bight and hinging connection.

Signed at Detroit, Michigan, October 21st, 1925.

CHARLES E. GODLEY.