E. A. HAWTHORNE.

WINDOW OR LENS RETAINER FOR LAMPS AND THE LIKE.

APPLICATION FILED JUNE 2, 1914.

1,255,877. Patented Feb. 12, 1918.

Fig. 1.

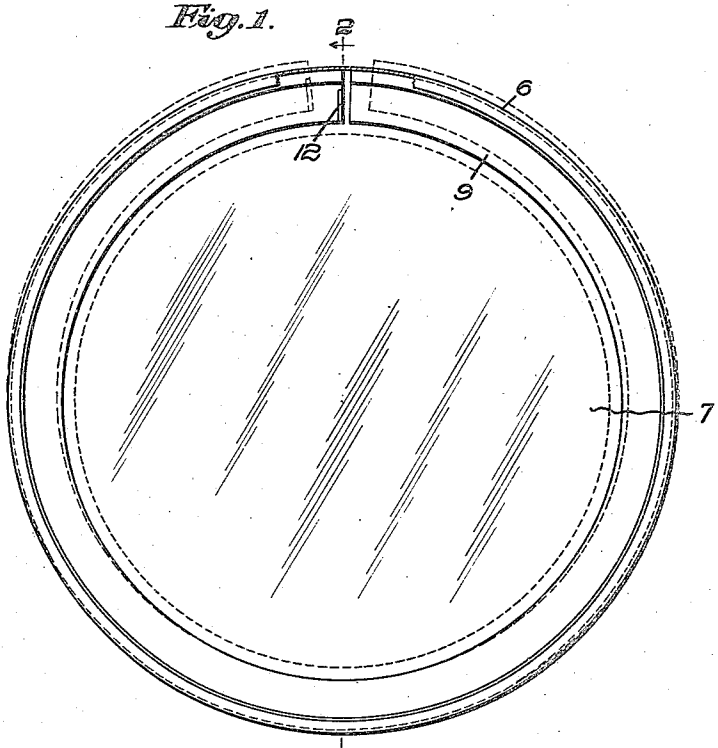


Fig. 2

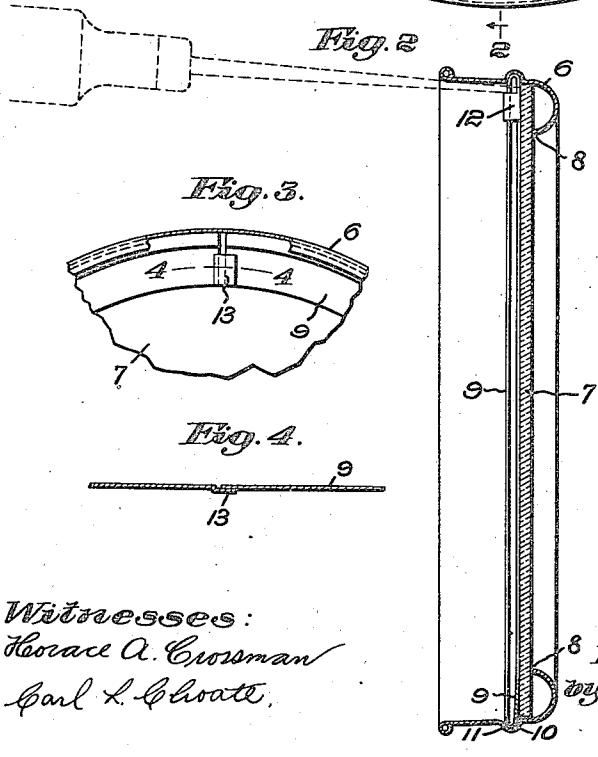
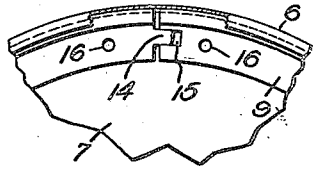


Fig. 3.

Fig. 4.

Fig. 5.



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UNITED STATES PATENT OFFICE.

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WINDOW OR LENS RETAINER FOR LAMPS AND THE LIKE.

1,255,877. Specification of Letters Patent. Patented Feb. 12, 1918.

Application filed June 2, 1914. Serial No. 842,502.

To all whom it may concern:

Be it known that I, ELLSWORTH A. HAWTHORNE, a citizen of the United States, and a resident of Bridgeport, in the county of Fairfield and State of Connecticut, have invented an Improvement in Window or Lens Retainers for Lamps and the like, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to window, or lens, retainers for lamps and the like, and will be best understood by reference to the following specification, when taken in connection with the accompanying drawings of three illustrative embodiments thereof, while its scope will be more particularly pointed out in the appended claims.

In the drawings:—

Figure 1 is an elevation, partly in section, of a window or lens frame or bezel embodying my invention;

Fig. 2 is a sectional view on line 2—2 of Fig. 1;

Fig. 3 is a partial elevation, partly in section, similar to Fig. 1, showing a slight modification;

Fig. 4 is a detail sectional view on line 4—4 of Fig. 3; and

Fig. 5 is an elevation, partly in section, similar to Fig. 3, showing another modification.

Referring to the drawings and to the embodiments of my invention which I have selected for illustration, I have there shown a suitable mounting 6, which may be the frame or bezel of a lamp. This frame serves as a mounting for an element 7, which may be a window or lens and which may be seated in the mounting in any appropriate manner, as by providing the latter with a seat 8, against which one face of the window is disposed.

As a means for retaining the element 7 against its seat I have herein provided a member which, in the form shown in Figs. 1 and 2, consists of a ring 9 of suitable sheet material, such for example as sheet metal, disposed flatwise against the element 7 and having its circumference engaging the mounting 6. This ring, it will be observed (Fig. 2), is disposed at a very slight angle to the element 7, so that when firmly held at its circumference and tensioned against said element it will press the latter toward its seat. To this end the mounting 6 has suitable provision for engaging the circumference of the ring 9 and herein consisting of a circumferential groove 10 in which the ring is seated. Preferably the latter is provided with a correspondingly shaped bead 11 seated in the groove 10 whereby the retaining ring is interlocked with the mounting. The flange of the ring extends from the bead on the side next adjacent the glazing whereby it may readily take a firm, flat bearing thereagainst. It will be understood that the retaining ring will be suitably proportioned in cross-section so that when seated in its groove its inwardly extending flange will constitute a stiff spring firmly holding the element 7 against its seat, yet permitting the same to expand and contract without danger of its cracking. In other words, the flange of the ring is very slightly frusto conical and the bead is turned inwardly at the base of the frustum and toward the center of the same. It should here be observed that the arrangement of the bead in the circumferential groove provides a sort of rocking joint permitting the described spring action of the retaining ring to take place without interference.

An important feature of my invention is the provision of a retaining ring of the character described, which is initially larger in diameter than its mounting and is yielding or spring-like in its action, so that it will occupy the position shown in dotted lines in Fig. 1, but may be contracted and introduced into its seat, whereupon by its expansive action it interlocks with its mounting and remains thus under tension until it is purposely contracted to effect its removal. The cross-sectional form of the ring as herein shown is such that it possesses a considerable degree of strength, and when in place is so tensioned that there is no danger of its displacement accidentally.

In the present instance, the adjacent ends of the retaining ring, when assembled with the mounting, are separated by a space; that is to say, they do not abut and lock one against the other. The space thus provided, however, is such that even though the ends were to be brought into engagement with each other by any cause, such as shocks or vibrations, the ring would still engage with its groove and would be securely held in place until it is intentionally removed.

Thus far, the construction of all three

forms or embodiments of my invention as herein shown are preferably identical, and therefore corresponding numerals indicate corresponding parts in all three forms.

Referring now to Figs. 1 and 2, in the form therein shown, the retaining ring is provided at one of its terminal portions with a lug 12 which is separated from the internal circumference of the mounting by a space permitting the introduction of an implement, such for example as a screw-driver indicated in dotted lines, to remove the ring by forcing such terminal portion inwardly, thereby contracting that part of the ring and disengaging it from the circumferential groove, whereupon the ring may be removed from its place without difficulty.

Referring now to the form illustrated in Figs. 3 and 4, I have there shown a retaining ring having a lug 13 similar to that just described and serving in a similar manner, except that in this case, the lug extends beyond and overlaps the adjacent edge of the other terminal portion of the ring, thus locking the latter terminal portion and compelling the removal of the former first, by the employment of the method already described in connection with the form shown in Figs. 1 and 2.

Referring now to Fig. 5, I have there shown a retaining ring, one of whose terminal portions is provided with a lug 14 corresponding in a general way to those already described, but in this case engaging a corresponding slot 15, provided in the other terminal portion of the ring, whereby both terminal portions are interlocked with each other. In this case, as a preliminary to the removal of the retaining ring, the lug 14 must be bent or sprung out of its slot 15 by the introduction of an appropriate implement beneath the end of the lug, after which the lug may be utilized as before to effect the removal of the ring, by placing the implement against the lug, as in the forms shown in Figs. 1 to 4, inclusive. If desired, however, the ring may be provided with a pair of perforations 16 in its terminal portions to receive a suitable implement or implements, such for example as the jaws of a pair of pliers, whereby the terminal portions of the ring may be forcibly drawn toward each other to assist in its removal.

While I have herein shown and described three forms or embodiments of my invention for illustrative purposes, and have disclosed and discussed in detail the construction and arrangement incidental to three specific applications thereof, it is to be understood that the invention is limited neither to the mere details or relative arrangement of parts, nor to its specific embodiments shown herein, but that extensive deviations from the illustrated forms or embodiments of the invention may be made, without departing from the principles thereof.

Having thus described my invention, what I claim and desire by Letters Patent to procure is:—

1. In combination a frame-like member having a seat, a framed element mounted against the seat, the mounting being provided with a circumferential groove adjacent said element, a sheet metal member of a contour substantially similar to that of the said groove and resiliently tending to regain said contour against deformations in the approximate plane thereof, said member having a circumferential bead fitting said groove, said member being disposed under tension with the bead engaging said groove, and also having an inwardly directed flange having inner and outer substantially parallel surfaces, one of which lies flat upon the element when the member is in place and is tensioned against the same by the transverse elasticity of the flange.

2. In combination a frame-like member having a seat, a framed element mounted against the seat, the mounting being provided with a circumferential groove adjacent said element, a sheet metal member of a contour substantially similar to that of the said groove and resiliently tending to regain said contour against deformations in the approximate plane thereof, said member being slightly frusto-conical and having its exterior edge turned inwardly at the base of and toward the center of the frustum to form a bead fitting said groove, whereby the member will be under tension and substantially flat against said element.

3. In combination a frame-like member having a seat, a framed element mounted therein against said seat and means to retain it against said seat comprising a split ring placed in the frame-like member under tension and by such tension held in place therein, said member having two adjacent terminal portions, one of which is provided with a lug and the other with a slot in which said lug is disposed.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

ELLSWORTH A. HAWTHORNE.

Witnesses:
E. HORACE HAWTHORNE,
E. STEWART HAWTHORNE.