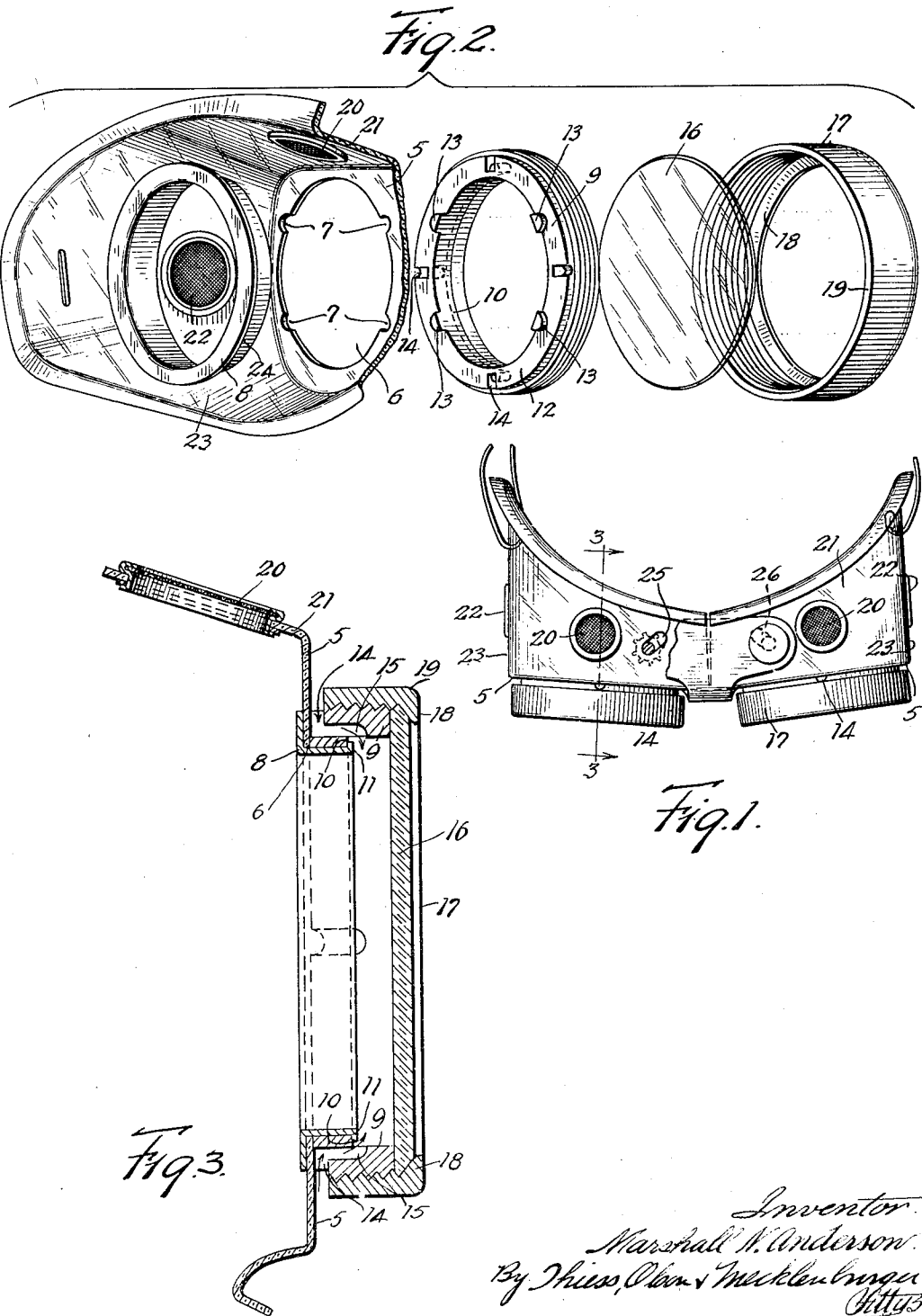


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VENTILATED LENS RING
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VENTILATED LENS RING

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1

The present invention relates to improvements in lens mountings for goggles, helmets, masks and the like.

In welders' helmets, masks and goggles, and in similar types of safety equipment, it has been the fairly common practice to employ a lens mounting capable of holding a lens in proper relationship to a mask or goggle frame. If these frames fit fairly tightly against the face of the wearer, the lenses frequently become clouded, particularly in cool weather, by reason of the moisture evaporating from the skin and eyes of the user, which condenses on the inside of the lenses, thereby fogging or obscuring them.

Even though ventilating devices may be present in the frame of the helmet or goggles, it appears that, particularly in the eye cup portions, sufficient moisture can condense upon the lens to fog the same.

It is therefore one of the objects of the present invention to provide a simplified form of construction in which positive ventilation is provided closely adjacent the lens itself for the purpose of causing a slight draft of air thereover.

A further object of the present invention is to provide a lens mounting consisting of a plurality of readily connected parts some of which can be disengaged from the others for the purpose of changing the lens by the user without the necessity of taking the entire structure apart.

This is accomplished by providing the frontal member of a goggle frame, which is provided with suitable openings, with a suitably deformable holding ring which is connected with a preferably threaded lens-spacing-ring that is provided with an internal shoulder against which the retaining ring may be rolled or crimped to hold it in place on the frontal portion of the goggle frame. A suitable, preferably threaded, lens-retaining ring may be provided to keep the lens in contact with one side of the lens-spacing ring.

While the invention is applicable to a variety of types of helmets, goggles and the like, it is illustrated, for exemplificative purposes only, in connection with a goggle, such for example as that illustrated in the accompanying drawing in which:

Fig. 1 is a top plan view of a complete goggle employing two of the lens mountings of the present invention;

Fig. 2 is an exploded perspective view showing the various portions of the lens-mounting in disassembled condition so that their relationship may be more readily appreciated; and

2

Fig. 3 is a sectional view, on a considerably enlarged scale, through the goggle and lens assembly along the line 3—3 of Fig. 1.

The frontal member 5 of the goggle is provided with an eye opening 6 which is preferably also provided with a plurality, for instance four, of peripheral recesses or notches 7. Passing through the opening 6 is a ring 8 of a suitably deformable material such as metal or plastic. This ring, when pushed through the opening 6 will thus leave the recesses 7 open.

A lens-spacing and ventilating ring 9 having an internal annular shoulder 10 is secured to the ring 8 by having the outer edge portion 11 thereof rolled over the shoulder 10 as shown in Fig. 3, thereby retaining the ring in place with its face 12 in contact with the frontal member 5 of the goggle frame. Suitable axially extending lugs 13, corresponding in size and shape with the cooperating recesses 7, are provided on the ring 9, so that when once engaged by the rolled lip 11 of the holding ring 8, ring 9 will be thus prevented from rotational movement. The ring 9 is provided with a plurality, for example four, of lateral ventilating openings each of which consists of a transversely extending passageway 14 and a therewith connecting axially extending passageway 15 through which air may pass as shown by the arrows in Fig. 3, without permitting the passage of direct light.

Lying against the outer flat edge of the ring 9 is the lens 16 which is retained in place by the retaining ring 17 which consists of a flange 18 and a therefrom depending internally threaded skirt 19; the ring 9 being provided with matching threads which enables the threaded skirt 19 of the ring 17 to be screwed upon the ring 9, thereby holding the lens in place. By reason of the fact, however, that the lateral ventilating openings allow a certain amount of space at the point where the openings are provided between the frontal member 5 and the ring 9, air may pass freely to the lens, thus preventing its fogging.

The goggle also may have further ventilating openings 20 provided in the bridge member 21, and there also may be ventilating openings 22 in the temple portions 23 of the goggle frame. These, however, are optional, as in many cases the provision of the lateral ventilating passageways 14 and 15 in the ring 9 will suffice.

In assembling the lens mounting the ring 8 is pushed through the opening 6 until the flange end 11 extends slightly beyond the internal shoulder 10 of the ring 9, and flange 24 of ring

3

8 abuts against the interior wall of the frontal portion 5, whereafter said end 11 is rolled or crimped over and around the said shoulder 10 as shown in Fig. 3 thereby holding the lens-spacing ring 9 in place. A similar result can be attained by having projections or ears on the ring 8 which can be bent around the internal shoulder 10 of the ring 9, but the construction illustrated is the preferred one.

The present construction not only prevents the formation of fog or mist on the internal portions of the lens 16, but also enables the changing of the lens by merely unscrewing the lens retaining means 17 from the lens-spacing ring 9, and then substituting a different lens and rescewing the ring 17 upon the ring 9. The ring 9 is preferably made of a molded composition, but may of course be made of any suitable material such as any type of plastic, metal or the like. The general construction of the goggle is obviously unimportant so far as the present invention is concerned, and, moreover, is fully disclosed in applicant's co-pending application filed concurrently with the present application.

Applicant claims as his invention:

1. A lens-mounting for goggles, helmets, masks, and the like comprising a frontal lens-mount holding member provided with a substantially circular opening having recesses at a number of points about its periphery, a deformable holding-ring extending through and secured in said opening, an externally threaded lens-spacing-ring secured to said holding-ring, and an internally threaded lens-retaining-ring screwed upon said spacing-ring, said spacing-ring being provided with tortuous lateral light-trapping ventilating passages.

2. Lens-mounting for goggles, helmets, masks and the like, comprising a frontal lens-mount-holding member provided with a substantially circular opening having at least one peripheral recess, an externally threaded lens-spacing ring

4

having at least one axially extending lug capable of engaging with said recess to prevent rotational movement of said lens-spacing ring, the latter being also provided with tortuous lateral light-trapping passages, means for securing said ring to the lens-mount-holding member, and an internally threaded lens-holding bezel screwed onto said ring.

3. Lens-mounting for goggles, helmets, masks and the like comprising a frontal lens-mount-holding member provided with a substantially circular opening having a plurality of peripheral recesses, an externally threaded lens-spacing ring having axially extending lugs registering with and extending into said recesses to prevent rotational movement of said ring, the latter being also provided with an internal annular shoulder and with tortuous lateral light-trapping passages, a holding ring securing the lens-spacing ring to said lens-mount-holding member, a lens in contact with the outer surface of said lens-spacing ring, and an internally threaded bezel screwed onto said lens-spacing ring.

4. The lens-mounting as claimed in claim 3, in which the holding ring is peripherally crimped over the internal shoulder on said lens-spacing ring.

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