June 13, 1944. F. I. MINER 2,351,358

GOGGLE

Filed Oct. 17, 1940

Fig. 1.

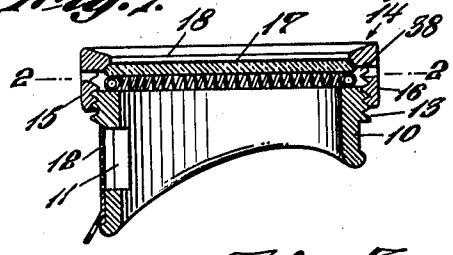


Fig. 2.

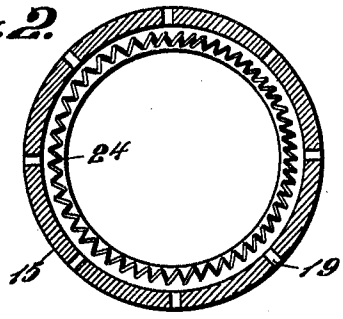


Fig. 3.

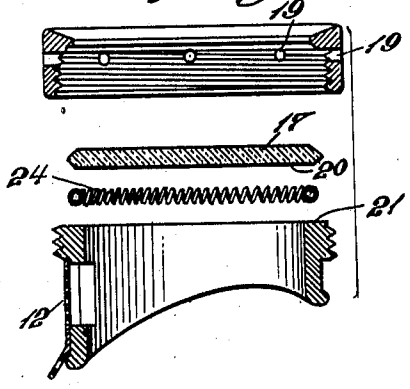


Fig. 4.

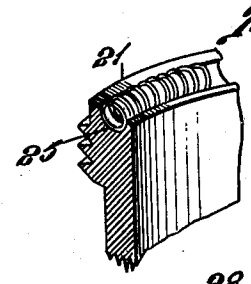


Fig. 5.

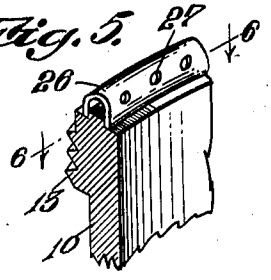


Fig. 6.

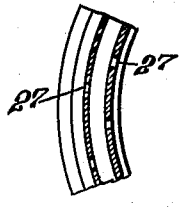


Fig. 7.

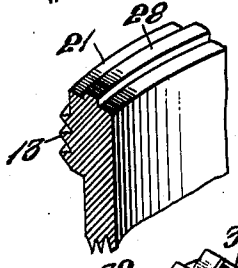


Fig. 8.

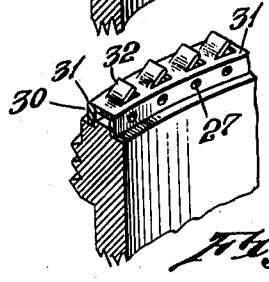


Fig. 9a.

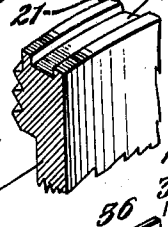


Fig. 9.

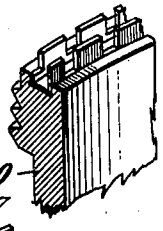
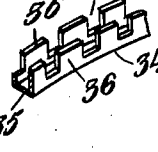


Fig. 9b.



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UNITED STATES PATENT OFFICE

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GOGGLE

Frederic I. Miner, Providence, R. I., assignor to Welsh Manufacturing Company, a corporation of Rhode Island

Application October 17, 1940, Serial No. 361,502

7 Claims. (Cl. 2—14)

This invention relates to a goggle and more particularly to the framing device for the lens; and has for one of its objects to provide a simple and effective means for providing free and abundant ventilation to the inner surface of the lens while at the same time excluding dust and other such foreign matter.

Another object of the invention is to provide a simple means for affording flow of air in somewhat of a baffled manner.

Another object of the invention is to provide in the ventilating means a cushion that some resilience may be had for assisting in preventing breakage of the lens when subjected to pressure or shock.

With these and other objects in view the invention consists of certain novel features of construction, as will be more fully described, and particularly pointed out in the appended claims.

In the accompanying drawing:

Fig. 1 is a sectional view through the eye cup of the goggle showing the lens and cap mounted in place;

Fig. 2 is a section on line 2—2 of Fig. 1;

Fig. 3 is an exploded view of the various parts illustrated in Fig. 1;

Fig. 4 is a perspective fragmental view of a modification showing a portion of the eye cup and the spacer member;

Fig. 5 is a view similar to Fig. 4 of a different modified form of cup and spacer;

Fig. 6 is a section on line 6—6 of Fig. 5;

Fig. 7 is a fragmental persepective view of the cup alone as shown in Fig. 6;

Fig. 8 is a perspective view of structure similar to that shown in Fig. 5, but illustrating a still different spacer member positioned on the cup; and

Figs. 9, 9*a* and 9*b* are a series of fragmental perspective views illustrating the two parts separated and also these parts in assembled relation.

In various occupations, operators are subjected to heat or the hazards of flying particles, making it desirable that the eyes should be carefully shielded, as by goggles. In such goggles it is also desirable that there be good ventilation so that the lens will not steam up or cause any obscuring of vision due to moisture condensation. It is also desirable that the ventilation be near the inner surface of the lens and be abundantly provided. In order to accomplish this result in a very simple and effective manner, I have arranged a spacer member which will engage the end of the eye cup to be positioned between the lens and the eye cup, and provided the same with a novel formation and in some instances arranged for retaining this spacer member in position by the formation of the end of the eye cup such, for instance, as grooving or providing a projecting guide. The spacer is formed of metal and either cut or bent into desired shape such as by coiling or other means to provide a spacing for the lateral flow of air; and the following is a more detailed description of the present embodiment of this invention, illustrating the preferred means by which these advantageous results may be accomplished:

With reference to the drawing, 10 designates an eye cup usually formed of some plastic, molded material, although metal may be utilized, provided with a ventilating opening 11, shielded by some perforated member 12. The outer surface of this cup is threaded as at 13 and a cap 14 provided with a flange 15 having threads 16 in engagement with the threads 13 of the cup. The lens 17 is engaged by the inwardly-extending portion 18 of the cap so as to force the lens toward the edge of the cup as the cap is screwed in place.

The flange of the cap is provided with a series of openings spaced peripherally about the same as at 19 for the passage of air therethrough. The spacing member is located to engage the undersurface 20 of the lens 17 and to engage the upper edge 21 of the cup. This spacing element may take several different forms. In Fig. 3 I have illustrated this spacing member 24 as formed from a helical coil of wire, the spaces between the helical coil providing lateral passages for the flow of air through them. In some cases this helical coil member may be set into a recess 25 in the edge 21 of the cup as illustrated in Fig. 4, while in other instances it may rest upon the edge 21 of the cup as illustrated in Figs. 1 and 3. By this arrangement the air as it passes through openings 19 may pass through the convolutions of the coil directly along the inner surface of the lens for ventilation of the same. The inclination and close spacing of the coils of wire serve to baffle the air entering the cup.

In other cases I may provide the spacer in the form of an inverted U, as illustrated at 26 in Fig. 5. In this case, openings 27 will be provided through both walls of the U in staggered relation so that air as it passes will be baffled rather than having direct flow through the spacing member.

In order that this spacer 26 may be retained in place centrally of the cup 10, a rib 28 is raised

on the edge 21 of substantially a width to fit between the inverted channel of the spacer 26. In Fig. 8 this inverted channel instead of being bent on the arc as illustrated in Fig. 5 is designated generally 30 and is provided with right angular bends 31 and with projections 32 cut and raised from the stock of the bridging wall of this inverted channel. These raised portions serve to provide a cushion or some resiliency for engagement with the edge of the lens such as provided by the coil wire above mentioned.

In Fig. 9 the edge 21 of the cup is recessed as at 33 and a channel 34 having bottom wall 35 and side walls 36 notched as at 37 may be set into this recess 33 as illustrated to provide a different form of spacing member from that heretofore mentioned. The notches 37 will be in staggered relation in the walls 36 so that no direct passage of air through the spacing member will be provided.

By providing a guide formation on the edge of the cup I may easily and quickly lock the spacing member so that there may be an adequate annular space 38 provided between the cap and the spacing member for annular circulation of air supplied through the openings 19. By the arrangement of the openings in staggered relation, and by reason of the formation of the helical wire in that form of the device, any foreign particles which may be flying would be prevented from entering the cup to be a hazard.

I claim:

1. In a goggle, an annular eye cup having one end to fit the face, a lens covering the other end, a cap member over said lens and having a flange telescoping said cup, means to secure the cap directly to said cup, a washer independent of said securing means located between the said other end of said cup and the lens and provided with openings for the lateral flow of air, and a guide formation on the edge of the cup engaging and assisting in retaining the washer at all points about the periphery laterally with respect to said cup against inward as well as outward movement.

2. In a goggle, an annular eye cup having one end to fit the face, a lens covering the other end, a cap member over said lens and having a flange telescoping said cup, means to secure the cap directly to said cup, a washer independent of said securing means located between the said other end of said cup and the lens and provided with openings for the lateral flow of air, and a recess in the edge of the cup, receiving the washer and assisting in retaining the washer laterally with respect to said cup.

3. In a goggle, an annular eye cup having one end to fit the face, a lens covering the other end, a cap member over said lens and having a flange telescoping said cup, means to secure the cap directly to said cup, a washer independent of said securing means located between the said other end of said cup and the lens and provided with openings for the lateral flow of air, and a projection on the edge of the cup engaging and assisting in retaining the washer laterally with respect to said cup.

4. In a goggle, an annular eye cup having one end to fit the face, a lens covering the other end, a cap member over said lens and having a flange telescoping said cup, means to secure the cap in place, a washer between the said other end of said cup and the lens and provided with openings for the lateral flow of air, and a projection on the edge of the cup engaging and assisting in retaining the washer laterally with respect to said cup, said washer being an inverted U shape in cross section and straddling said projection.

5. In a goggle, an annular eye cup having one end to fit the face, a lens covering the other end, a cap member over said lens and having a flange telescoping said cup, means to secure the cap in place, a washer provided with openings for the lateral flow of air located between the said other end of said cup and the lens, and a recess in the edge of the cup, receiving the washer and assisting in retaining the washer laterally with respect to said cup, said washer being U shape in cross section and received in said recess.

6. In a goggle, an annular eye cut having one end to fit the face, a lens covering the other end, a cap member over said lens and having a flange telescoping said cup, means to secure the cap in place, a washer having openings for the lateral flow of air and located between the said other end of said cup and the lens, and a recess in the edge of the cup, receiving the washer and assisting in retaining the washer laterally with respect to said cup, said washer being in the form of a helical coil.

7. In a goggle, an annular eye cup having one end to fit the face, a lens covering the other end, a cap member over said lens and having a flange telescoping said cup, means to secure the cap in place, and a helical coil of material located between and engaging the lens and the end of the cup to resist axial movement and to space and cushion the lens said cap flange being provided with ventilating openings in communication with the helical coil for conducting air to the interior of said cup.

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