

Jan. 6, 1948.

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2,434,076

EYESHIELD

Filed April 9, 1945

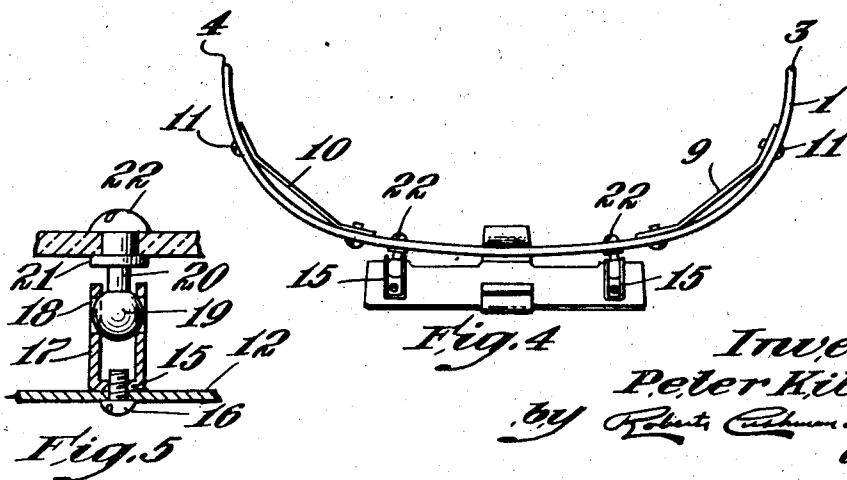
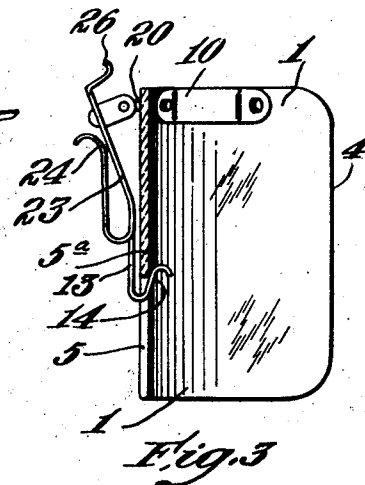
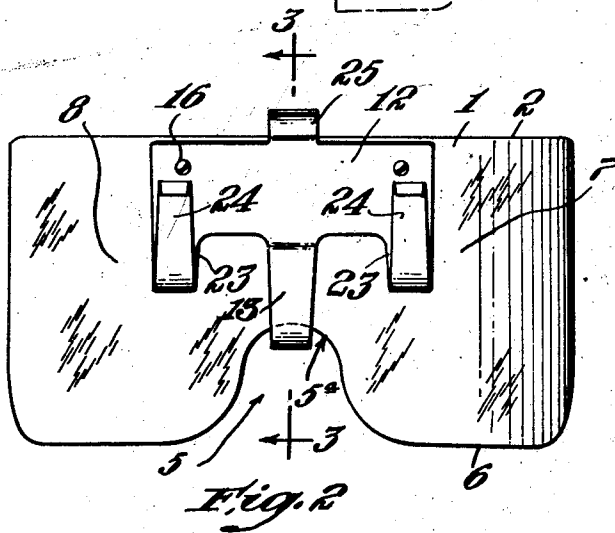
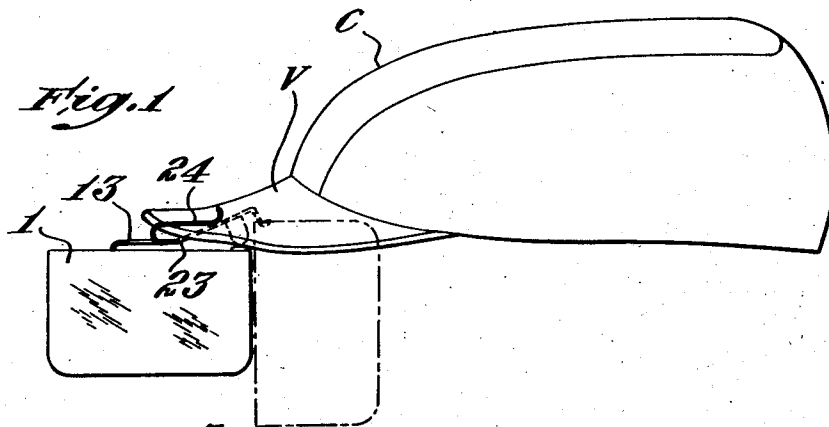


Fig. 5

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UNITED STATES PATENT OFFICE

2,434,076

EYESHIELD

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Application April 9, 1945, Serial No. 587,303

3 Claims. (Cl. 2—10)

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This invention pertains to eye shields useful for protecting the eyes of the wearer from glaring light, heat, or solid particles, and relates more especially to an eye shield designed for ready attachment to a hat or cap.

Shields of this general type are used by participants in winter sports to protect the eyes from the intense reflection of the sun from the snow; by drivers of motor vehicles to shield their eyes from the glare of headlights and from road reflections; and by industrial workers to protect the eyes from the light and heat of welding torches or the like, or from solid particles projected from grinding wheels, etc.

Customarily, such shields are secured in place by straps or bands (elastic or not) encircling the wearer's head. This mode of securing the shield in place is not entirely satisfactory since it constricts the wearer's head; it may necessitate loosening and readjusting the band each time the shield is doffed and donned; it is not well adapted for use when a hat is being worn; and is not always reliable in respect to holding the shield in proper position.

One object of the present invention is to provide an eye shield so devised that it may readily be attached to or detached from a conventional visored cap or hat, the cap or hat thus constituting the support for the shield and permitting the wearer to don and doff the shield with the greatest ease, and without subjecting the head to undue constriction.

The wearer of such a shield may, from time to time, desire temporarily to remove the shield from his field of vision without necessitating doffing the shield entirely. A further object of the present invention is to provide an improved shield having provision for moving it into and out of the field of vision while it is still attached to the wearer's head, and which will remain securely in either position to which it may be adjusted. Other and further objects and advantages of the invention will be pointed out in the following more detailed description and by reference to the accompanying drawings wherein

Fig. 1 is a side elevation showing the improved shield attached to a visored cap of conventional design, the shield being shown in full lines in its inactive position, its operative position being indicated in broken lines;

Fig. 2 is a front elevation of the improved shield, to larger scale than Fig. 1, and showing it detached from the cap;

Fig. 3 is a vertical section substantially on the line 3—3 of Fig. 2;

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Fig. 4 is a plan view of a shield shown in Fig. 2; and

Fig. 5 is a fragmentary section, to larger scale, illustrating one of the hinge connections between the shield proper and its attaching clip.

Referring to the drawings, the numeral 1 designates a transparent shield panel of appropriate material, for instance glass, or preferably a material which is less easily fractured, for example, Celluloid or one of the synthetic resins. Preferably, as here illustrated, this shield panel is of sufficient length to extend across both eyes of the wearer, being here illustrated as of generally rectangular, horizontal elongate outline having a substantially straight upper edge 2, and the vertical rear edges 3 and 4, and having an upwardly directed recess 5 in its lower edge 6, the recess 5 being designed to receive the wearer's nose. Preferably, as illustrated in Fig. 4, this shield panel 1 is bent so that in plan or horizontal section it is of substantially semi-elliptical contour, with its major axis extending from right to left. The forward portions 7 and 8 of this panel, at opposite sides respectively of the nose-receiving recess 5, are disposed directly in front of the wearer's eyes when the panel is in the broken-line position of Fig. 1.

In order to strengthen this panel, which will usually be of thin material, for example, 0.1 inch thick, and to maintain its desired curvature, metal brace bars 9 and 10 are secured by rivets or screws 11 to the panel near its upper edge 2, one at each side respectively of its center. Instead of two separate brace bars, a single reinforcing strip may extend substantially from one edge 3 to the other edge 4 of the shield, and this bracing strip may be of any desired transverse section in order to impart the desired stiffness and rigidity, but without unduly increasing the weight of the shield.

For attaching the shield panel 1 to the wearer's hat or cap, there is provided a clip, here shown as comprising a unitary plate 12, preferably of resilient sheet metal, so shaped as to provide the downwardly directed central finger 13 whose lower portion is bent to form a hook 14 (Fig. 3) designed to be engaged beneath the edge 5^a of the panel 1 at the upper part of the nose-receiving recess 5. The hook 14 is so shaped that when snapped over the edge of the panel 1, it will retain the shield panel in the inoperative full-line position of Fig. 1.

The plate 12 is hinged to the shield panel 1 by a pair of hinge devices, one of which is shown more in detail in Fig. 5. Thus each hinge device

comprises a U-shaped bracket member 15 secured, at its closed end, by means of a screw or rivet 16 to the plate 12 at the inner side of the latter, each of the brackets 15 comprising substantially parallel resilient arms 17 having aligned openings 18 near their free ends. Interposed between the arms 17 and seating in the opposed openings 18 is a ball 19 fixed to a shank member 20 having a collar portion 21 which bears against the outer surface of the panel 1 and which is headed over at 22 at the rear side of the panel so as securely to anchor the part 20 to the shield panel. The ball 19 is resiliently gripped by the arms 17 and defines an axis about which the bracket 15 and panel may relatively turn, the resilient pressure of the fingers on the ball resulting in a frictional resistance to turning which effectively prevents rattling and vibration and which automatically takes up wear.

The plate 12 is provided with resilient fingers 23 at opposite sides of and spaced from the central finger 13, these resilient fingers being bent to provide upwardly extending spring clip members 24 designed to grip the visor of the hat or cap between them and the main body of the plate 12. Preferably the plate 12 is also provided with an upwardly directed central finger 25 terminating in a detent or hook element 26.

In Fig. 1 the improved shield is illustrated as secured to the visor V of a cap C, the visor being of stiff material such as is customarily employed in the visors of caps of this general type. In applying the improved eye shield to the cap visor, the edge of the visor is inserted between the spring clip fingers 24 and the main body of the plate 12, the resiliency of the fingers 24 reliably retaining the shield device in cooperative relation with the cap visor. When the shield panel is to be used to protect the eyes of the wearer, it is swung downwardly about the axis defined by the balls 19, to the broken line position illustrated in Fig. 1. In this position the detent or retainer element 26 engages over the upper edge of the panel 1 and resists upward swing of the shield panel so that it can not readily be displaced, for example by a blast of air acting against its rear surface. On the other hand, when the eye shield is to be held out of the field of vision it is swung upwardly about the axis defined by the balls 19 until the spring element 14 engages the upper edge 5* of the recess 5 in the shield panel, the shield panel thus being held reliably in the position shown in full lines in Fig. 1 until it is desired to restore it to its operative position. When it is desired to use it again the operator may swing it downwardly by the application of sufficient force, or if desired he may first, by means of his finger, release the spring retaining member 14 from the panel, before attempting to turn the panel downwardly.

While the hinge construction herein described is very desirable, it is to be understood that other and equivalent hinge connections may be substituted therefor, and that in all other particulars as well, the invention is broadly inclusive of any and all modifications falling within the scope of the appended claims.

I claim:

1. An eye shield comprising a transparent panel, a plate having integral portions constitut-

ing spring clips for detachably securing the plate to the visor of a cap, a pair of spaced brackets attached to the rear side of the plate, each bracket comprising a pair of parallel spaced resilient arms having aligned openings, a stud having a ball-head seating in the opposed openings and which is resiliently gripped between the arms of each bracket respectively, means fixing the studs to the panel near the upper edge of the latter, the brackets cooperating with the ball-head studs to define a pivotal axis about which the plate and panel may be swung, the plate also having integral resilient fingers depending from each end thereof, the finger at one end being adapted to engage the upper edge of said panel to hold it in operative position and the other finger adapted to engage the lower edge of said panel to hold it in inoperative position.

2. An eye shield comprising a thin, transparent, horizontally elongate panel, which in horizontal section is of substantially semielliptical curvature, reinforce means adjacent to the upper edge of the panel for maintaining its desired shape, the panel having a central recess in its lower edge for the reception of the wearer's nose, a supporting member hinged to the upper portion of the panel, spring clips carried by the supporting member for detachably securing it to the visor of a cap or hat, integral resilient fingers depending from each end of said supporting member, the finger at one end being adapted to engage the upper edge of said panel to hold it in operative position and the other finger adapted to engage the lower edge of said panel at the central recess therein to hold it in inoperative position.

3. An eye shield adapted to be detachably mounted on the visor of a cap, comprising a normally horizontal plate having integral portions constituting spring clips for detachably securing the plate to the visor of a cap, hinge means attached to one side of said plate, a transparent panel hingedly mounted on said plate by said hinge means, and an integral resilient finger depending from each end of said plate, one finger being adapted to engage the upper edge of said panel to hold it in eye-protecting position and the other finger adapted to engage the lower edge of said panel to hold it out of eye-protecting position.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
918,975	Dice	Apr. 20, 1909
1,228,341	Maynard	May 29, 1917
1,298,636	Altman	Apr. 1, 1919
1,671,342	Cantor	May 29, 1928
1,693,505	Fisher	Nov. 27, 1928
1,871,461	More	Aug. 16, 1932
1,879,216	Hannan et al.	Sept. 27, 1932
1,955,232	Galloway	Apr. 17, 1934

FOREIGN PATENTS

Number	Country	Date
200,635	Great Britain	July 19, 1923