Feb. 4, 1964 G. BLUMENTHAL 3,120,002

EYE-PROTECTIVE DEVICE

Filed April 17, 1962 2 Sheets-Sheet 1

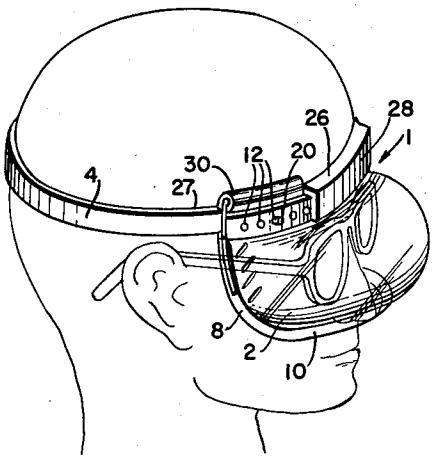


FIG. 1.

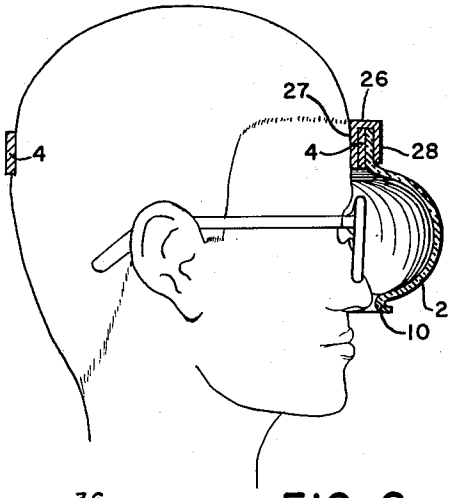


FIG. 2.

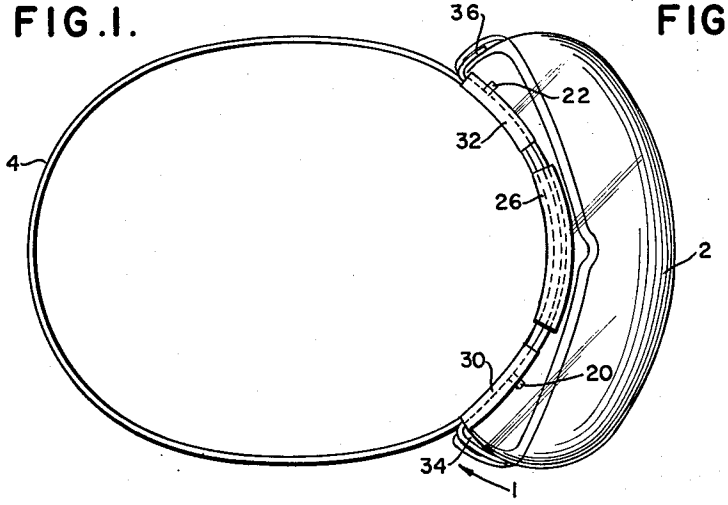


FIG. 3.

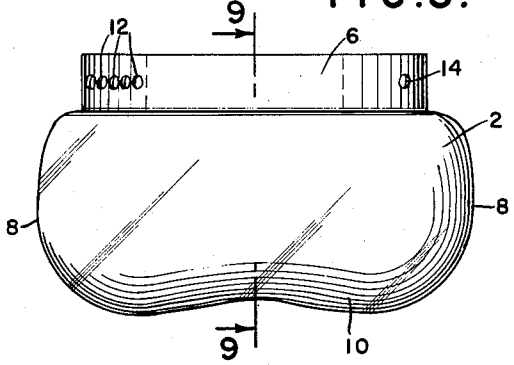


FIG. 8.

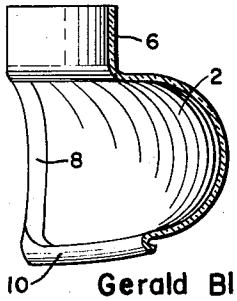


FIG. 9.

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EYE-PROTECTIVE DEVICE

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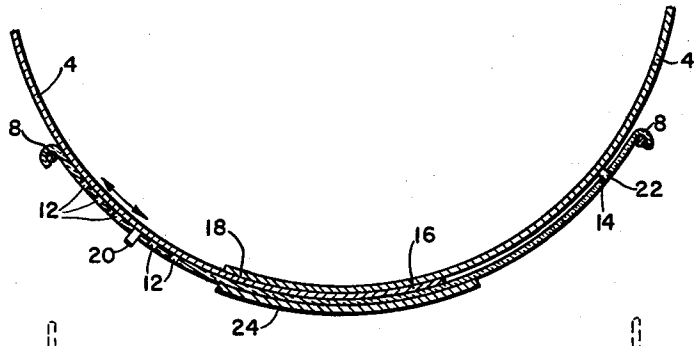


FIG. 5.

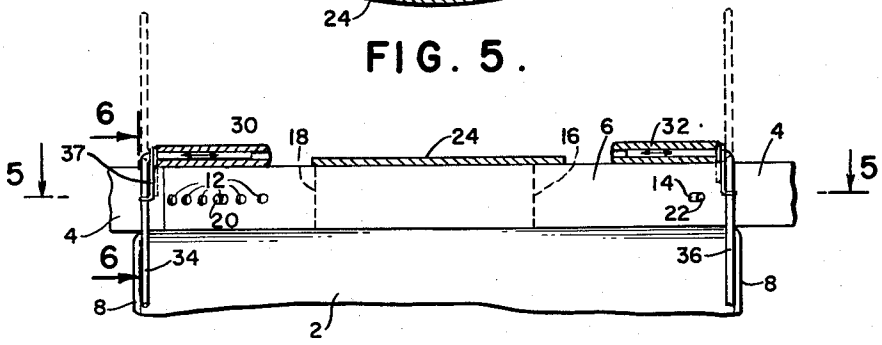


FIG. 4.

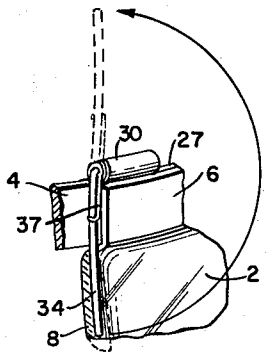


FIG. 6.

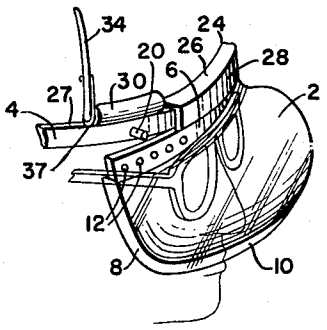


FIG. 7.

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EYE-PROTECTIVE DEVICE

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1 Claim. (Cl. 2—9)

This invention relates generally to face-shields and masks and more particularly to an eye-protective device to be worn primarily by workmen or mechanics as a protective measure against injury engendered by flying particles or the like.

Objects and advantages of the invention will be set forth in part hereinafter and in part will be obvious herefrom, or may be learned by practice of the invention, the same being realized and attained by means of the instrumentalities and combinations pointed out in the appended claim.

The invention consists in the novel parts, constructions, arrangements, combinations and improvements herein shown and described. The accompanying drawings referred to herein and constituting a part hereof, illustrate one embodiment of the invention, and together with the description, serve to explain the principles of the invention.

FIGURE 1 is a perspective view of the eye-protective device operatively positioned upon the wearer, a pair of spectacles being worn therebeneath;

FIGURE 2 is a half cross-sectional elevation of the invention illustrated in profile upon the wearer shown in FIGURE 1;

FIGURE 3 is a top plan view of the combined elements of the instant invention;

FIGURE 4 is a front elevational view of the invention, parts thereof being in cross-section;

FIGURE 5 is a top plan view of the invention taken along line 5—5 of FIGURE 4;

FIGURE 6 is a fragmentary perspective view taken along line 6—6 of FIGURE 4;

FIGURE 7 is a perspective view of the eye-protective device wherein the removable relation of eye-shield and headband is illustrated;

FIGURE 8 is a front plan view of the eye-shield; and

FIGURE 9 is a cross sectional elevation taken along lines 9—9 of FIGURE 8.

The invention has for its primary object, the provision of an eye-protective device having a bubble-shaped eye-shield which is readily removable therefrom and disposable in nature.

Another object of the invention is to provide an eye-protective device which may be simultaneously and conveniently worn over a pair of spectacles.

A further object of the present invention resides in the provision of an eye-protective device constructed to permit of its use without affecting the vision of the wearer.

Another object is to provide an eye-protective device of the character aforesaid wherein the adjustable headband member is retained in head size accommodating adjustment by cooperating action thereof with respect to the eye-shield member.

A still further object is to provide a device of this nature which is extremely light, flexible, non-shatterable, comfortably fitting and convenient to wear or to carry.

It will be understood that the foregoing general objectives and the following detailed description as well are exemplary and explanatory but are not restrictive of the invention.

Referring now in detail to the present preferred embodiment of the invention illustrated by way of example in the accompanying drawings, FIGURES 1 and 2 show the eye-protective device, designated generally by numeral 1, suitably adjusted to the head of the wearer, the bulbous character of the face-shield 2 being readily apparent. It

will also be observed that eye-glasses or spectacles may be simultaneously worn freely of interference with said eye-protective device by virtue of the bubble-shaped face-shield configuration, thus obviating any inconvenience otherwise encountered by the machine-worker or outdoorsman because of goggles, shields and other protective devices which are inadequate in this respect.

It will be further noted that the majority of goggles and shields which are useful in protecting the user against dust, wind, flying particles and the like are worn close to the face and often cloud-up due to warm moist air from the eyes being trapped and condensed on the inside surface of the goggles. Accordingly, it will be appreciated that clouding and fogging occasioned by poor ventilation, abrupt temperature variations, warm moist air emanating from the eyes and nose and other contributory conditions will be appreciably reduced and virtually eliminated by dint of the bubble-shaped construction disclosed herein.

In addition to the bubble-shaped face-shield construction and the advantages attendant thereto, the invention further derives from the readily removable and hence disposable nature of said face-shield 2, this feature being shown in FIGURES 7, 8 and 9, the latter figure showing the face-shield partially removed with respect to headband 4 the assembled relation therebetween being disclosed in FIGURES 4 and 5 of the drawings.

The bulbous character of said face-shield 2, as shown in said FIGURES 8 and 9, consists of a substantially elongated concavity having a hemispherically dished cross-section, a flat upper marginal edge 6 and continuous side and bottom U-shaped marginal edges 8 and 10, respectively, said upper marginal edge 6 having a plurality of grouped, spaced, linearly arranged holes or perforations 12 and singular hole or perforation 14, said holes 12 and 14 being positioned at opposite ends of said edge 6 as seen in the drawings.

The novel adjustable nature of said headband 4 and the cooperative interaction thereof with said face-shield 2 will be observed in FIGURES 4 and 5 wherein said headband is seen to comprise ends 16 and 18, said ends being adapted to mutually overlap thereby producing superposed headband portions in the region of the forehead, this condition being illustrated in FIGURE 2 of the drawings. Locating pins 20 and 22, integral with said headband, project outwardly therefrom at regions substantially inwardly of each said end 16 and 18, said projecting locating pins being arranged for registration with one of said holes 12 and hole 14, respectively, of said face-shield 2. Elongated angular member 24, comprised of side 26 integral with upper edge 27 and perpendicular to said headband 4 in the region of end 18 and side 28 parallel-spaced with respect to said headband, provide means cooperable with said locating pins and said holes for retaining said face-shield and said headband in adjusted contiguous relation. To that end it will be appreciated that subsequent to extending said locating pin 22 through said hole 14, said end 16, slidably superposed with respect to said end 18, is moved thereover until adjustment of said headband to the head of the wearer is attained, whereupon locating pin 20 is extended through the correspondingly aligned one of said holes 12.

Elongated support members 30, 32, mounted upon said upper edge 27 of said headband, journally support L-shaped clamping wires 34, 36, one of the legs thereof being pivotally and slidably received within respective passages provided axially thereof. Functionally, it will be observed that said clamping wires are accordingly adapted for engagement with said U-shaped marginal edges 8 of said face-shield 2 to thus urge, by virtue of spring 37, said face-shield against the temples and face of the wearer. In view of the slidable association between said clamping wire and said support members,

registry of said clamping wires and said marginal edges may be accomplished notwithstanding the movement of said support members during the aforedescribed headband adjustment operation.

Consonant with the readily removable nature of the face-shield with respect to the headband, the replacement of a smeared, marred or broken face-shield with a new face-shield of congruous proportions may be quickly effectuated. Accordingly, the bubble-shaped face-shields of elongated hemisphere cross-section, may be stacked one within another and drawn from one by one as the requirement arises. It will be apparent that automatic or semi-automatic dispensing means may be employed to facilitate the replacement of face-shields, such dispensing means being provided in the plant or workshop or nearby any activity whereat the eye-protective device is being used.

Although the preferred embodiment of the device has been described, it will be understood that changes may be made in the form, construction and arrangement of parts from that disclosed herein without in any way departing from the spirit of the invention or sacrificing any of the attendant advantages thereof, provided, however, that such changes fall within the scope of the claim appended hereto.

What is claimed is:

An eye-protective device comprising an adjustable headband having ends adapted to overlap in the region of the forehead, locating pins integral with and projecting normally of said headband, one of said locating pins being positioned inwardly of each respective end of said headband, an elongate right-angled retaining member, one side thereof being perpendicular to said headband, the other side being in spaced parallel relation therewith, a support member connected to each respective end of said headband, a spring biased clamping-wire slidably connected to each said support member, a bubble-shaped face-shield member removably associated with said headband, said face-shield member having a flat upper marginal edge and continuous side and bottom U-shaped marginal edges, said upper marginal edge having a plurality of spaced linearly arranged holes provided therein, said clamping-wires being each urgingly receivable within respective side U-shaped marginal edges, said flat upper marginal edge being restrained by said other side of said retaining member, said locating pins being in registry with said holes corresponding therewith upon adjustment of said headband with respect to the head of the wearer.

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