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PROTECTIVE HELMET

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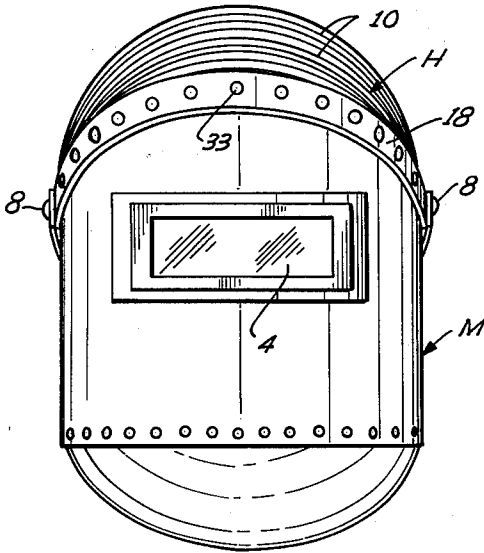


Fig. 1

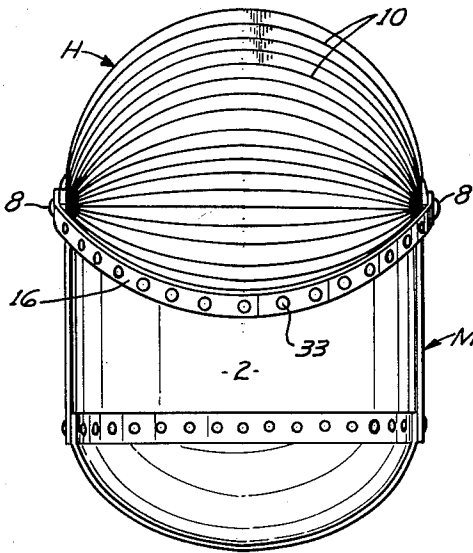


Fig. 2

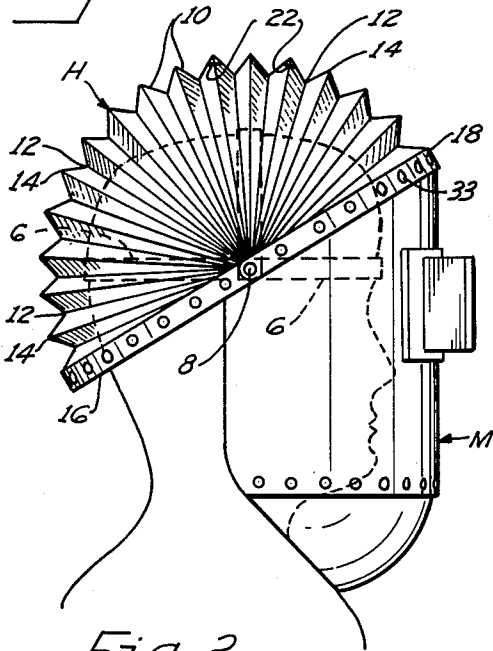


Fig. 3

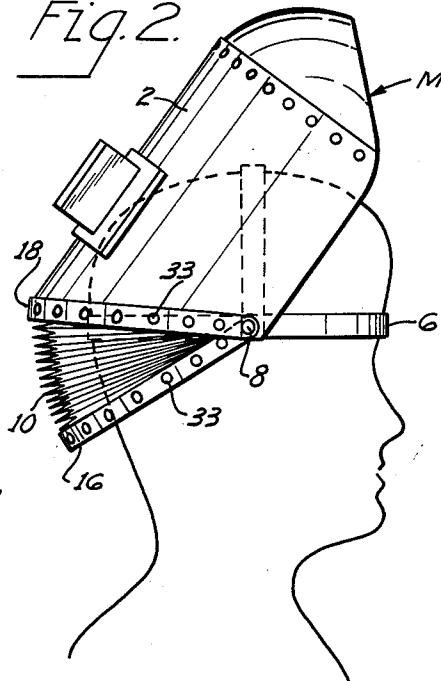


Fig. 4

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**PROTECTIVE HELMET**

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1 Claim. (Cl. 2—8)

This invention relates to protective helmets and more particularly to welding helmets for protecting the welder's eyes from welding arc lights and from spattering acids and molten metals.

Conventional welding helmets usually comprise a semi-cylindrical, elongated shield supported by a head gear in generally upright position in front of the wearer's face, and open at the rear, the shield having a window disposed in the front thereof at eye level forwardly from the eyes of a welder and closed by a suitable clear or colored pane of glass or the like. The rear edges of such helmets are spaced a considerable distance from the head of the wearer, so that welders are often seriously aggravated by rays of light entering the helmet from the rear, such rays of light striking the inside of the glass window and being reflected therefrom directly into the welder's eyes. Since the window is usually of very dark glass, it reflects glancing rays of light almost as effectively as a mirror. These light reflections are extremely annoying, and often seriously interfere with the welder's vision.

It is an object of the present invention to provide a welder's helmet which prevents rays of light from entering the interior of the helmet from the rear at the sides and top thereof.

A further object of the invention is to provide a welder's helmet having a cup-shaped accordion pleated hood portion completely covering the head of the welder to prevent rays of light from entering the helmet and striking the inner surface of the helmet window in all operating positions of the helmet.

A further object of the invention is to provide a welder's helmet for excluding rays of light that is simple to operate, inexpensive to manufacture and dependable in operation.

A more specific object is to provide a helmet and hood combination in which the light excluding hood is maintained at all times in spaced relation to the wearer's head for affording ventilation and for facilitating collapsing of the hood by the helmet simply by raising the helmet to inoperative position.

Briefly, the foregoing objects are accomplished by the provision of a welder's helmet pivotally supported by a head gear and having a pleated accordion type hood secured to the upper and side portions of the helmet. The hood, in the preferred form, is of the accordion or bellows type which comprises a series of folded pleats interconnected to form a continuous hood portion expandable back over the head of the welder in the manner of a camera bellows.

More specifically, the hood includes a sheet of flexible, light-impervious, material transversely folded along substantially parallel equi-distant lines in accordion pleats extending in a direction generally transversely of the shield. The pleats are secured together at their ends and are secured to the sides of the helmet, respectively, for rotation relative to the head gear. Each of the ends of the hood are formed into attaching strips with one of the attaching strips being secured to the top edge of the helmet and the other attaching strip being connected to a support so as to be displaceable over the top and down the back of the welder's head, thereby expanding the hood to provide a light impervious shield spaced from and covering the welder's head. With this construction, there is provided a combination of a hood and a welder's helmet which effectively prevents any rays of light from

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entering the interior of the helmet from the rear and striking the inner surface of the helmet window.

Other objects and advantages of the invention will become apparent from the following description taken in conjunction with the drawings, in which:

FIGS. 1, 2, and 3 are a front elevation, a rear elevation, and a side elevation, respectively, of a welder's helmet constructed in accordance with the invention and showing the hood in expanded position and the shield in operative position on the head of a wearer;

FIG. 4 is a side elevational view of the helmet shown in FIGS. 1 through 3, showing the helmet tilted up into inoperative position for the purpose of direct observation, the hood thereon being in collapsed position.

Referring to the drawings, there is shown, by way of example, a conventional elongated, semi-cylindrical welder's helmet or mask M comprising a main shield or mask portion 2 containing a window opening 4 in the front thereof and having a pane of light translucent material, such as glass, therein. Such glass normally is very dark to cut down the intensity of the rays from a welding arc and consequently is almost as highly reflective as a mirror with respect to light rays entering the rear of the mask and striking its surface.

Suitable head gear, in the form of an elliptical, flexible headband 6 is secured to the shield 2 by studs 8 and enables a user to detachably secure the helmet to his head in operating position. The shield 2 is rotatably supported by the studs 8 so that the user may tilt the helmet upwardly to the open or inoperative position shown in FIG. 4 for the purpose of direct observation. Although a specific form of welder's helmet is shown and described herein, any form of helmet may be employed since the helmet per se forms no part of the invention. In all such helmets, the front, side walls and top wall are disposed in spaced relation to the head of the wearer for purposes of ventilation and, as a result, light can enter freely into the helmet from the rear.

Connected to the top and side walls of the helmet M is a collapsible head-enclosing cup-shaped hood H embodying the principles of the invention. The hood H may be formed of a rectangular sheet of light impervious material transversely folded along substantially parallel, equi-distant lines in accordion-like pleats 10 to form the inner and outer folds 12 and 14, respectively. Such strip may then be bent into hemispherical form with the ends of the pleats at each end of such folded strip being secured together and fastened to the sides of the helmet respectively by the studs 8, whereby the material may be expanded to form the cup-shaped hood H in the manner of a camera bellows, as shown, and thereby enclose the back, top and sides of the welder's head while being retained by the pleats in spaced relation thereto.

In one form of the invention, the longitudinal end folds of such folded strip may be formed of relatively rigid attaching strips or bands 16 and 18, respectively, with the forward attaching strip 18 being secured to the top transverse edge of the helmet, as shown. The hood band 16 is rotatably secured to the head band 6 of the head gear by the studs 8 and thus is rotatable relative to the sides of the helmet and extends rearwardly of the head gear, as shown.

In the above construction of the hood H, the folds and pleats thereof and the hood band 16 retain the hood in spaced, extended position over the head of the welder to provide a substantial space therebetween for free air circulation and ventilation above the welder's head. However, to further insure that the hood will always be so spaced from the user's head, suitable resilient means in the form of a flat semi-circular band or wire spring 22 may be disposed in some of the folds, as shown in FIG. 3.

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Thus, the hood H provides an effective means for preventing light from entering the interior of the helmet from the rear and reflecting off of the inner surface of the glass in the window opening 4. When the helmet is swung upwardly to open position for the purpose of direct observation, as shown in FIG. 2, the hood becomes collapsed against the hood band 16 and does not afford any obstruction to the lifting of the hood. It is prevented from touching the head of the wearer during expansion and collapse of the hood.

It may be desirable to occasionally remove the hood H from the helmet M for cleaning or replacement purposes. Accordingly, the hood H may be detachably secured to the shield 2, the band 18, and to the band 16 by suitable attaching means in the form of conventional snap buttons 33, as shown.

Having thus described my invention, I claim:

A welder's helmet comprising a face enclosing light impervious shield having a forward face with a window opening therein containing a light transmitting material, and having light impervious top and side walls, head gear on the shield for supporting the same on the welder's head in an operative position wherein the shield is positioned forwardly of, and in spaced relation to, the welder's face in generally upright position, a hood support connected to the head gear and extending rearwardly therefrom beyond the rear of the head gear to a position to be spaced rearwardly from the head of a wearer of the head gear and shield, means pivotally connecting the shield to the head gear for swinging of the shield rela-

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tive to the head gear and support upwardly to an inoperative position, a light masking, head-enclosing hood secured at its rear margin to the support and at its forward margin to the shield and extending rearwardly from the top and side walls to the support in position so as to be out of contact with the head when the shield and hood are in normal operating position and extending downwardly to a level to prevent rays of light from entering the inside of the helmet at the top, back, and sides of the helmet, said hood being collapsible in a direction rearwardly upon swinging of the hood, relative to the head gear and hood support, upwardly to inoperative position and extendable forwardly upon swinging the hood, relative to the head gear and hood support, downwardly to operating position, and said hood including means located between the hood support and the shield for maintaining the hood in a position in which it is out of contact with the head of the welder in all relatively swung positions of the helmet.

#### References Cited in the file of this patent

##### UNITED STATES PATENTS

2,354,502	Cockrill et al. -----	July 25, 1944
2,485,117	Settle -----	Oct. 18, 1949

##### FOREIGN PATENTS

1,896	Great Britain -----	June 5, 1913
273,040	Germany -----	Sept. 19, 1913
772,253	France -----	Aug. 13, 1934