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MOVABLE WINDOW FOR A WELDER'S HELMET

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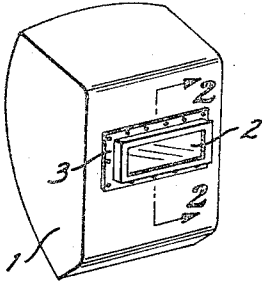


FIG. 1

FIG. 2

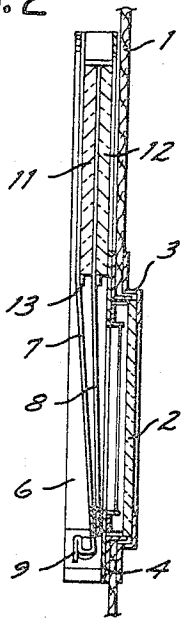


FIG. 3

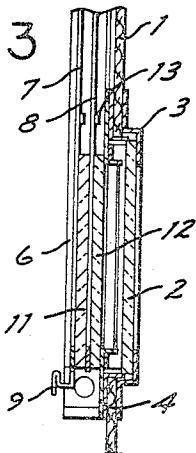


FIG. 4

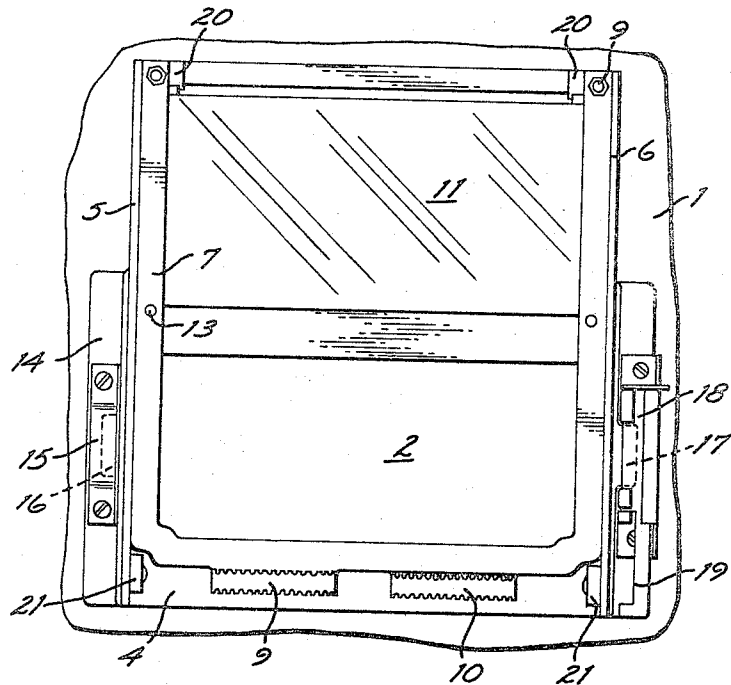
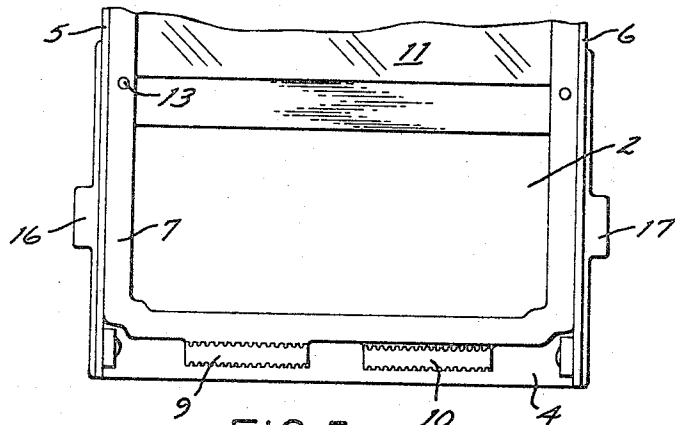


FIG. 5



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MOVABLE WINDOW FOR A WELDER'S HELMET

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ABSTRACT OF THE DISCLOSURE

In a welder's helmet which has a movable transparent window it is of importance to enable the user to slide the transparent window to positions either over the eyes of the user or spaced above or below the eyes of the user. For this purpose the transparent window is mounted in a frame which, in turn, is mounted on spaced tracks with means to hold the frame in various adjusted positions as required by the user.

This invention relates to a movable window for a welder's helmet, whereby it is possible for the user to slide a glass pane of different colors or density to shield the eyes of the user from certain dangerous light rays emitted by a welding torch, or by a welding flame.

An object of my invention is to provide a novel movable window for a welder's helmet in which one or more movable and removable glass shutters are slidably mounted in a frame into different positions relative to a sight opening in the welder's helmet.

Another object of my invention is to provide a novel movable window for a welder's helmet, in which the movable window may be slid into different positions by gravity, and where the colored shutter is held in different positions by the spring tension of the track.

Still another object is to provide a novel device of the character stated, in which the entire shutter assembly is removably mounted in the welder's helmet by means of a novel latch construction.

Other objects, advantages and features of invention may appear from the accompanying drawing, the subjoined detailed description and the appended claims.

In the drawing:

FIGURE 1 is a perspective view of a welder's helmet embodying my invention.

FIGURE 2 is an enlarged fragmentary sectional view taken on line 2-2 of FIGURE 1.

FIGURE 3 is a view similar to FIGURE 2 but showing the glass shutters in another position.

FIGURE 4 is an elevation taken from inside of the welder's helmet.

FIGURE 5 is an elevation of the track and shutters removed from the welder's helmet.

Referring more particularly to the drawing, the numeral 1 indicates a welder's helmet of usual and well known construction, and which includes a window 2 fitted within a rectangular metal frame 3 attached to the outside of the helmet 1. The glass or window 2 is usually formed of a colored glass and is intended to protect the eyes of the user against flying particles, particularly metal, while the workman is engaged in a grinding, buffing, or burning operation. The welder's helmet 1 is also used while the workman is engaged in welding and, consequently, it is necessary to move the window or shutter over the window 2 in order to protect the welder's eyes from dangerous light rays which are emitted by the welder's torch or the welding arc. In order that a glass window or shutter of different colors or density may be positioned over the window 2, I provide the following track and shutter assembly consisting of a rectangular frame 4, which also includes vertical flanges 5 and 6 on each side thereof. These flanges

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are preferably integrally formed with the frame 4 and extend vertically when positioned within the helmet 1, and serves as guides for the colored windows or shutters, as will be subsequently described. A pair of control fingers 7-8 are mounted within the frame 4 and between the flanges 5-6. These control fingers are superimposed, and the upper ends of both are fixedly attached to the upper end of the frame 4 by means of the bolts or rivets 9. Both of the control fingers are formed of a spring material and, due to their shape, tend to press downwardly against the frame 4 to hold the colored windows or shutters in different positions, as will be subsequently described. Each control finger is provided with a lug or projection 9-10, respectively, so that the operator can engage the projection to lift the control finger when it is desired to shift the colored windows.

A colored glass panel 11 is slidably mounted between the flanges 5-6 and under the pressure finger 7. A second colored glass window 12 is also mounted between the flanges 5-6 and under the pressure finger 8. The spring tensions of the control fingers 7-8 will frictionally hold the glass shutters 11-12 in either their raised position, as shown in FIGURE 2, or their lowered position, shown in FIGURE 3. By raising either of the control fingers 7 or 8 the colored shutters 11 and 12 are released and will move either upwardly or downwardly by gravity, depending upon the position in which the operator holds the helmet 1. Small inwardly projecting pins 13 are provided on the control fingers 7 and 8 and these small pins engage the upper or lower edges of the shutters 11 and 12 to hold these shutters in either of two positions, particularly when the helmet 1 is in use and is, therefore, in a substantially vertical position.

To hold the frame 4 within the helmet 1, and on the inside thereof, I provide the following latching construction which consists of a metal strip 14 which is fixedly attached to the inside of the helmet 1, and on one side of the frame 4. The strip 14 is formed with an upwardly bent socket 15 which receives a lug 16, which projects outwardly from the side of the frame 4. This holds one side of the frame 4 in fixed position in the helmet. The other side of the frame 4 is held in position by means of the outwardly extending lug 17 on the side of the frame 4. The lug 17 is engaged by a sliding latch bar 18 which is slidably mounted on the inside of the helmet 1. The latch 16 is formed with an elongated notch 19 in which the lug 17 fits in the open position of the latch. When the latch is closed the bar 18 extends over the lug 17, as shown in FIGURE 4, to thus hold it in the frame 4 in its operative position within the helmet 1.

Bumper blocks 20 are positioned at the upper end of the frame 4, and similar bumper blocks 21 are positioned at the lower end of the frame. These blocks serve as a resilient stop as the shutters 11-12 slide upwardly or downwardly. The blocks thus serve to protect the glass shutters and prevent their chipping or breaking.

In operation

The user can lift the lug 9 or 10, which will thus raise the spring operating finger 7 or 8 upwardly. This releases the spring tension against the colored glass shutters 11 or 12, and by tilting the helmet 1 these glass shutters can be caused to slide by gravity into either the raised position, shown in FIGURE 2, or the lowered position shown in FIGURE 3. When the operating fingers 7 or 8 are released, the spring tension of the material of the spring fingers will hold the shutters 11 or 12 in the desired position. By raising the spring fingers 7 or 8 upwardly, the glass shutters 11 or 12 can be reached for replacement, when necessary. The entire frame 4 can be removed from the inside of the welder's helmet 1 by sliding the latch bar 18 to a position

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to disengage the lug 17, and the frame 4 can be replaced in the welder's helmet in the same manner.

Having described my invention, I claim:

1. In a welder's helmet having a sight opening therein through which the user may see, spaced tracks, means detachably mounting said spaced tracks in said helmet so that the spaced tracks straddle said opening, a spring finger positioned within one of the tracks, means securing one end of one of the spring fingers to the tracks, a glass shutter slidably mounted in the tracks, said spring fingers yieldably engaging the glass shutter, resilient stop blocks provided at the upper end of said tracks, and resilient stop blocks at the lower end of said tracks.

2. In a welder's helmet having a sight opening therein through which the user may see, a frame positioned on the inside of the helmet, latch means engaging the frame detachably holding the frame within the helmet, said latch means comprising an outwardly projecting lug on each side of the frame, a strip, means mounting said slidable latch in the helmet, said strip having a socket therein to receive one of the lugs, and a slidable latch mounted in the helmet, said slidable latch engaging the other lug in one position of the latch.

3. In a welder's helmet as recited in claim 2, and the latch means having a notch therein through which a lug extends in one position of the latch.

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4. In a welder's helmet as recited in claim 2, and wherein a glass shutter is slidably mounted in a frame, a spring operating finger, means mounting said spring operating finger in the frame, said operating finger yieldably engaging the glass shutter to hold the shutter in either of two positions.

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