

Oct. 15, 1935.

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2,017,059

FILTER WINDOW FOR WELDERS' HELMETS

Filed Nov. 4, 1933

FIG. 3.

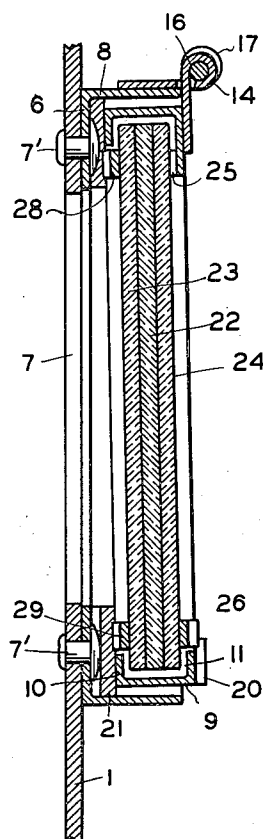


FIG. 1.

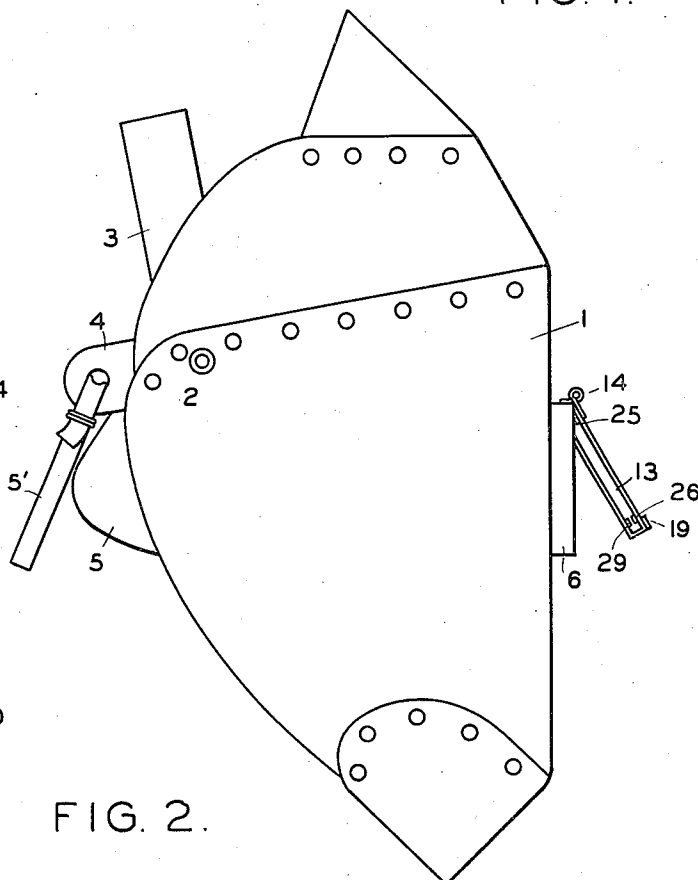
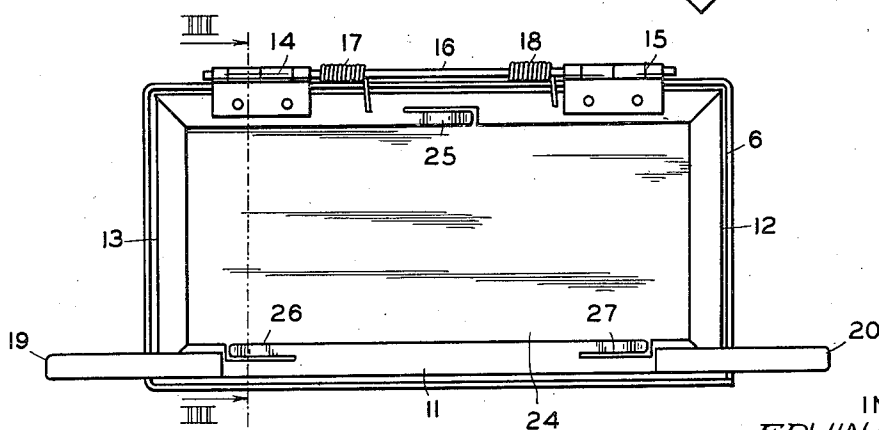


FIG. 2.



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## UNITED STATES PATENT OFFICE

2,017,059

## FILTER WINDOW FOR WELDERS' HELMETS

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Application November 4, 1933, Serial No. 696,680

2 Claims. (Cl. 2-8)

This invention relates to improvements in filter windows for welders' helmets and more particularly to the structure and arrangement of the filter window.

Among the objects of the invention is to protect the eyes of the welder from the deleterious light rays incidental to the welding operation.

Another object is to so construct and arrange the filter window that the filter glass is protected against injury.

Another object is to facilitate the removal and replacement of the protective means without disassembling the mounting means.

Other objects and advantages will appear as the description progresses.

In this specification and the accompanying drawing the invention is disclosed in its preferred form. It is to be understood, however, that it is not limited to this form because it may be embodied in other forms within the spirit of the invention as defined in the claims following the description.

Autogenous welders are constantly being sprayed with molten metal incidental to the fusion of the metals forming the weld. These bombarding particles become embedded in the protective glass overlying the ray filter mounted in the helmet window, necessitating that this protective glass be replaced from time to time.

It has been the practice heretofore to assemble the window structure with screws and the like so that it may be disassembled to effect a change of protective glass. Since the ray filter is expensive it is subjected to the danger of breakage when it is removed in the environment where welders must operate. It is not in line with a welder's duties to manipulate small and delicate parts, especially under adverse conditions.

In addition to the optical merits of the invention, the protective glass can be removed and replaced without disturbing the remainder of the window assembly.

In the one sheet of drawings:

Fig. 1 is a side elevation of a welder's helmet having a window combined therewith in accordance with this invention.

Fig. 2 is an enlarged detail in front elevation of the window assembly.

Fig. 3 is a further enlarged detail of the same in cross section taken on the line III-III, Fig. 2.

In detail the construction illustrated in the drawing referring to Fig. 1, comprises the face shield or visor 1 pivoted at 2 to a head piece including the overhead strap 3 joined to the brow band 4 and the ear guards 5 all meeting at and

engaging the pivot 2. The ends of the brow band are joined by the elastic strip 5' which completes a horizontal band encircling the head of the wearer. However, the present invention is applicable to any conventional welder's helmet.

Referring to Fig. 3, the window comprises a rectangular frame 6 preferably composed of metal angular in cross section and surrounding the opening 7 in the front of the visor. The base 6 of the angle frame is riveted at 7' to the visor and 10 has the upstanding flange 8.

The window sash 9 is preferably composed of metal of channel section having the opposed flanges 10 and 11. This sash is closed at the end 12 and open at the end 13, see Fig. 2. The open end presents the same appearance as the end in Fig. 3.

The sash is supported within the frame by the hinges 14 and 15 engaging the common pintle 16. the torsion springs 17 and 18 encircle this pintle 20 and normally urge the sash inward toward the frame 6. The overhanging finger pieces 19 and 20 extend beyond the frame to provide convenient means for swinging the sash outward and upward on the hinges against the tension of the springs 17, 18. This provides means for unobstructed inspection of the weld between welding operations.

The felt strip 21 is interposed between the sash and the frame to absorb the impact should the sash snap back and also to aid in excluding light rays that may penetrate between the frame and the sash.

The window is made up of the filter plate 22 with the protective glass plates 23 and 24 overlying its opposite sides respectively, see Fig. 3.

Because of the heat radiated from the weld and the shocks of rough usage, these glass plates are very liable to fracture if held too tightly within the sash 9. This condition is relieved by the spring fingers such as 25, 26, 27, 28, formed in the flanges 10 and 11 by cutting an L shape slot in these flanges and curving the fingers inward. The laminated glass window is thus held firmly between these fingers without limiting its normal expansion and contraction. The yielding fingers also facilitate the insertion of any or all of the glass plates 22, 23, 24.

Eventually so much fused metal becomes embedded in this protective glass 24 that its transparency is impaired. The yielding fingers 25-28 make it possible to slide it endwise from the open end 13 of the sash without withdrawing the plates 22 and 23. Likewise a replacement pane 24 can be inserted without in any way altering the window structure.

Having thus described this invention, what is claimed and desired to secure by Letters Patent is:

1. A welder's helmet having an opening in the  
5 front thereof; a flanged frame surrounding said opening; a sash open at one end fitting within and hinged to the flanged enclosure of said frame, and composed of a U shape channel having opposed inner and outer flanges; spring members formed  
10 in both of said flanges by slots cut therein, said members being tensioned inwardly; a translucent plate insertable into the open end of said sash and held out of contact with said sash flanges by said spring members.

2. A welder's helmet having an opening in the front thereof; a flanged frame surrounding said opening; a sash open at one end, fitting within and hinged to the flanged enclosure of said frame and having internal channels in its opposite sides  
5 respectively; a translucent plate lying within said channels; spring members holding said plate out of contact with the sides of said channels; a spring normally urging said sash into said frame and a finger piece attached to said sash and ex-  
10 tending beyond the edge of said frame.

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