Sept. 18, 1945. O. J. O. CONWAY 2,384,798

WELDER'S HOOD

Filed May 31, 1943 2 Sheets-Sheet 1

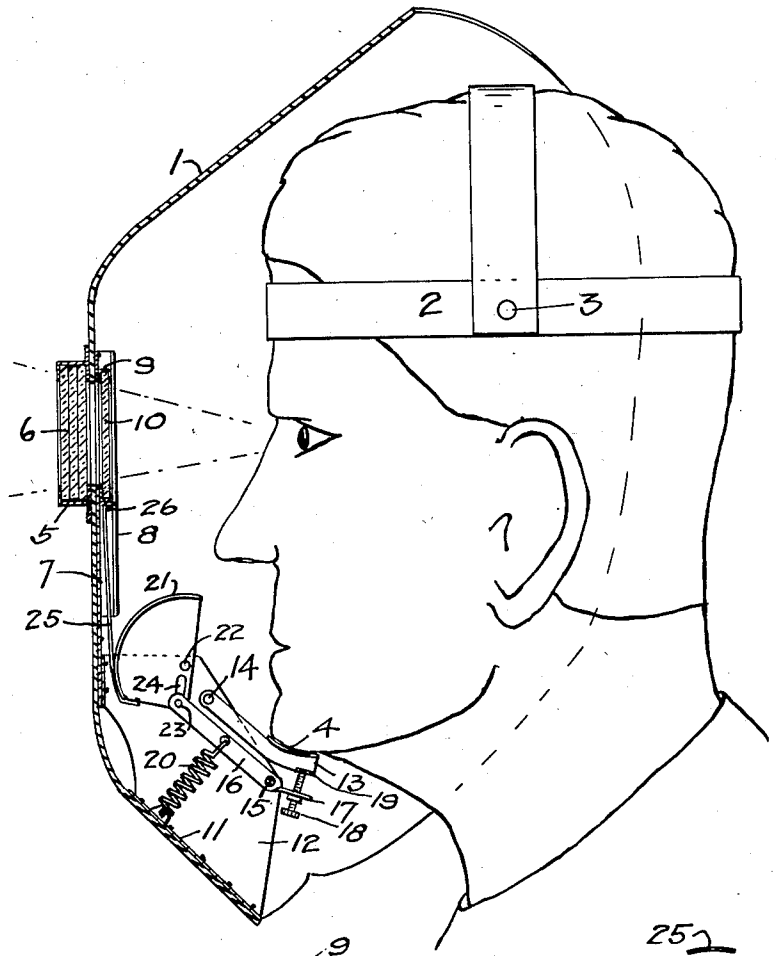


Fig. 1.

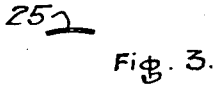


Fig. 3.

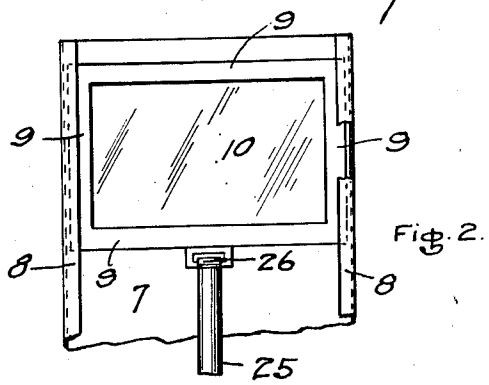


Fig. 2.

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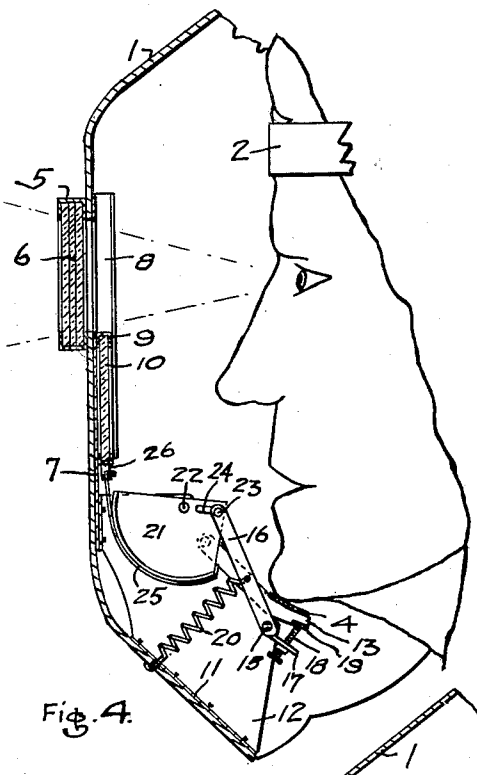


Fig. 4.

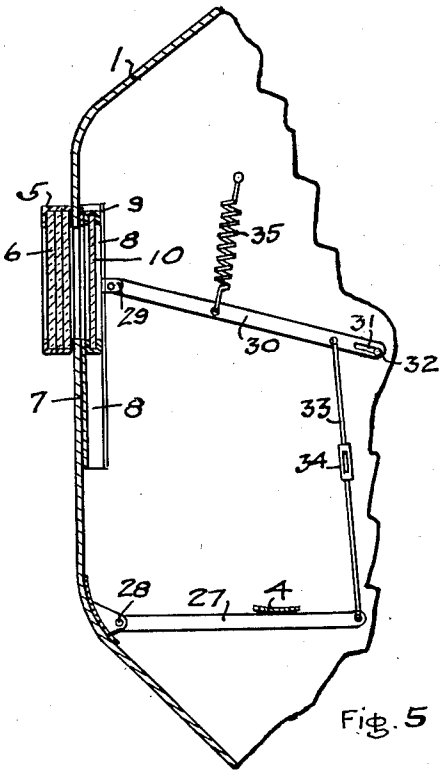


Fig. 5

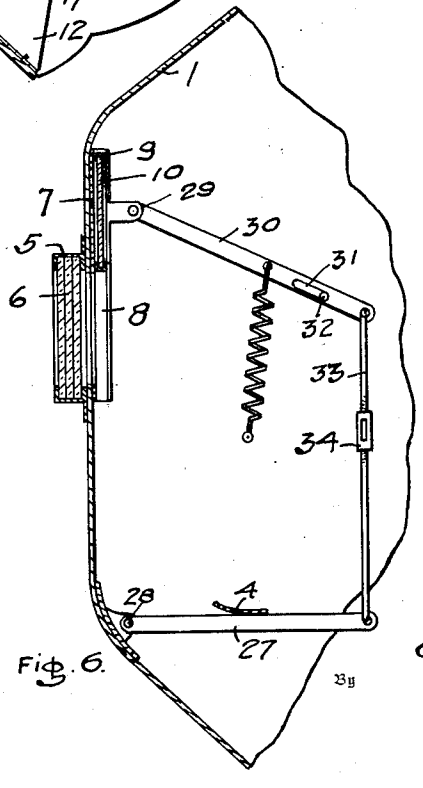


Fig. 6.

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Patented Sept. 18, 1945 2,384,798

UNITED STATES PATENT OFFICE

2,384,798

WELDER'S HOOD

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Application May 31, 1943, Serial No. 489,122

4 Claims. (Cl. 2—8)

This invention relates to welder's hoods and more specifically to the mechanism for moving the colored glass to or from the window of such a hood.

The objects of my invention are, first, to provide means for removing the colored glass from the line of sight of the welder without having to use the hands or to interrupt the continuity of action of the welder, thereby saving time and effort and expediting his work; and second, to accomplish this movement with the simplest possible mechanism.

I attain these and other objects by the devices, mechanisms and arrangements illustrated in the accompanying drawings, in which—

Fig. 1 is a vertical section of the preferred form of my invention, showing the colored glass in its normal position in front of the hood window; Fig. 2 is an inside elevation of the colored glass window frame and its mounting; Fig. 3 is a section of the metal tape used for operating the window in its form shown in Fig. 1; Fig. 4 is a view, similar to Fig. 1, in which the colored glass has been removed from the line of vision; and Figs. 5 and 6 are views similar to Fig. 1, showing two variations of the mechanism for operating the colored glass window.

Similar numerals of reference refer to similar parts throughout the several views.

In the practice in the art of welding it is necessary for the welder's head to have protection from the splash and rays emitted by the welding operation, and this protection is provided in the form of a hood or helmet which, normally, is pivotally mounted on a head band, encompassing the head of the welder, in such manner that it can be either hung in front of the face or swung above the head when not in use. This hood is provided with a window, placed in the line of sight of the wearer, and comprising a series of sheets of clear glass adapted to protect the eyes and face from the heat and spray of the welding operation without interfering with the clear vision, and also a sheet of colored glass adapted to protect the eyes from the injurious rays emitted by the weld while it is being made. However, the colored glass interferes somewhat with clear vision, hence it has been the practice when using the customary welder's hood, for the welder to swing the hood up over the head, when the weld is not actively being made, in order that the work may be clearly seen and inspected. This act makes it necessary to release and use at least one hand to raise the hood, and it is the general purpose of my invention to eliminate this waste motion and the time consumed in performing this act.

Referring to Figs. 1–4, inclusive, wherein the preferred form of my invention is illustrated. The hood 1 is mounted on the head band 2 by means of the usual pivot connection 3, and its chin-rest 4 engages the chin of the wearer to hold the hood 1 in proper position when in use. The window frame 5 is secured to the outside of the hood 1, in the line of vision, and contains a plurality of sheets of clear glass 6. A metal sheet 7 is secured to the inner side of the hood 1, in front, said sheet having a suitable hole coordinated with the window 5 and also having its side edges turned to form two parallel guides 8 (Fig. 2). A metal frame 9 slides vertically in said guides 8 and carries the sheet of colored glass 10. Normally this frame 9 with the glass 10 is held in its uppermost position, directly in the line of vision, and effectively protects the eyes from the deleterious effects of the weld rays. This frame 9 is adapted to be slid downward out of this operating position by the following described mechanism:

A central plate 11 is secured to the lower front of the hood 1, and its sides are turned at right-angles to form the parallel brackets 12. The chin-rest 4 is mounted on a pair of arms 13, pivoted at 14 between the said brackets 12.

The operating mechanism is also pivoted between the brackets 12, at 15, and comprises the lever 16 extending on both sides of the pivot 15. The inner end 17 of the lever 16 is provided with an adjusting screw 18 which engages under the bar 19 forming a part of the arms 13, thus holding the chin-rest 4 in normal position by means of the spring 20, engaging the lever 16 and the plate 11.

A quadrant 21 is pivoted at 22 to the brackets 12 and is provided with a peripheral flange. The outer end of the lever 16 is provided with a pin 23 which engages in a radial slot 24 in the said quadrant 21 in such manner that when the inner end 17 of the lever 16 is depressed, against the action of the spring 20, the said quadrant 21 is turned on its pivot 22. The periphery of the quadrant is connected to the window frame 9 by means of a concaved metal tape 25 (Figs. 1–3), one end of which is secured to the flange of the quadrant 21 and the other end of which is hooked into a loop 26 formed on the lower member of the frame 9. The concave form of the metal tape 25 insures its having sufficient stiffness to raise the frame 9, under the action of the spring 20 (Fig. 1) while allowing sufficient

flexure to permit its freely bending around the peripheral flange of the quadrant 21 (Fig. 4).

Thus it is evident that by slightly depressing the chin the wearer forces the chin-rest 4 down, thus moving the lever 16 to turn the quadrant 21, to wind the tape 25 on its periphery, and to draw the frame 9 down, thus removing the colored glass 10 from the line of sight, against the action of the spring 20.

Referring, now, to Fig. 5 it will be seen that the same action on the frame 9 is attained through a system of levers mounted on the inner sides of the two sides of the hood 1. The chin-rest 4 is mounted on a pair of levers 27, pivoted at 28 to the sides of the hood 1. The frame 9 has ears 29 which are pivotally connected to the ends of another pair of levers 30. These levers 30 are provided with slots 31 through which the fixed pivot pins 32 pass. The levers 30 are connected to the free ends of the levers 27 by means of links 33, which may be adjusted in length by suitable means, such as the turn-buckles 34. Springs 35 connected between the hood 1 and the levers 30 hold the frame 9 in its upper position. It is to be understood that the leverage, above described, is duplicated on each side of the hood 1, and that the parts are suitably formed to fit against the sides of the hood.

Thus it will be seen that depressing the chin against the action of the springs 35, pulls the frame 9 and its colored glass 10 down out of the line of vision, and that releasing the downward pressure of the chin returns the glass 10 up to its position in the line of sight.

Referring, now, to Fig. 6 it will be seen that the motion of the frame 9 and glass 10 has been reversed from that above described, that is to say, the line of sight is slightly lower, in relation to the top of the hood 1 and the frame 9 is lowered in its slide, when in use, and is raised when removed from the line of sight (Fig. 6). To accomplish the action the positions of the pivots 32 and springs 35 are changed, as clearly seen in the drawings, otherwise the action is the same as in the form shown in Fig. 5.

Since the head band 2 supports the hood 1, it is evident that the movement of the wearer's chin will not move the hood but will move the above-described mechanisms and that, therefore, it is unnecessary for the welder, when he wishes to inspect his work, to drop his tools or to move his hood in any way, but simply to slightly lower his chin in relation to his head, in order to accomplish the removal of the colored glass from the line of vision.

The necessary adjustment of the chin-rest 4 to fit the wearer's face is accomplished, of course, by the screw 18 or the turn-buckles 34.

It is, of course, to be understood that many other variations of my invention, besides those illustrated and described, may be resorted to without departing from the spirit of my invention as outlined in the appended claims.

Having, therefore, described my invention, what I claim and desire to secure by Letters Patent, is:

1. In a welder's hood having a colored glass eye-shield movably mounted therein and normally lying in the line of sight; in combination with a chin-rest pivotally supported in the hood and adapted to engage the wearer's chin; a lever pivotally mounted in said hood and adapted to be energized by the movement of said chin-rest; means including a metal tape and a swingable quadrant for connecting said lever with said eye-shield whereby the movement of the chin-rest will cause the lever to rock the quadrant and wind the tape thereon to move the eye-shield out of the line of sight; and a spring engaging said lever and through the medium of the tape and quadrant holding the eye-shield in its normal position, the portion of said tape extending free of the quadrant being arcuate in cross-section to give rigidity to the free tape portion.

2. In a welder's hood having a colored glass eye-shield movably mounted therein and normally lying in the line of sight; a chin rest movably supported in the hood and adapted to engage the wearer's chin; a quadrant pivotally mounted in the hood and operatively connected to the chin rest so as to be energized by the movement of the chin-rest; a metal tape supporting the eye-shield and being connected to the arcuate portion of the quadrant, the part of the tape extending between the quadrant and eye-shield being arcuate in cross section so as to form a rigid support, the quadrant having a periphery for flattening the tape contacting therewith for permitting the contacting portion of the tape to follow the quadrant periphery when the quadrant is moved to wind the tape thereon; and yielding means for causing the quadrant to hold the eye-shield in normal position.

3. The combination with a welder's hood; of a chin rest pivotally carried by the hood; a lever actuated by the chin rest; a spring for holding the lever in normal position; a quadrant pivotally carried by the hood and operatively connected to the lever so that a lowering of the chin will swing the quadrant; a colored glass eye-shield movably mounted in the hood and normally lying in the line of sight; a metal tape connecting the quadrant with the eye-shield, that portion of the tape extending free of the quadrant being arcuate in cross-section so as to provide a rigid support for the eye-shield; whereby a lowering of the chin will rock the quadrant for winding a portion of the tape thereon for moving the eye-shield out of the line of sight.

4. The combination with a welder's hood; of a chin rest pivotally carried by the hood; a lever actuated by the chin rest; a spring for holding the lever in normal position; a quadrant pivotally carried by the hood and operatively connected to the lever so that a lowering of the chin will swing the quadrant; a colored glass eye-shield movably mounted in the hood and normally lying in the line of sight; a metal tape connecting the quadrant with the eye-shield, that portion of the tape extending free of the quadrant being arcuate in cross-section so as to provide a rigid support for the eye-shield; whereby a lowering of the chin will rock the quadrant for winding a portion of the tape thereon for moving the eye-shield out of the line of sight, and adjustable means connecting the chin rest with the lever for positioning the chin rest against the chin.

OTTO J. OLSON CONWAY.