Oct. 7, 1930. W. SHIRMER 1,777,454

WELDER'S HELMET

Filed Dec. 26, 1928 2 Sheets-Sheet 1

Fig. 1.

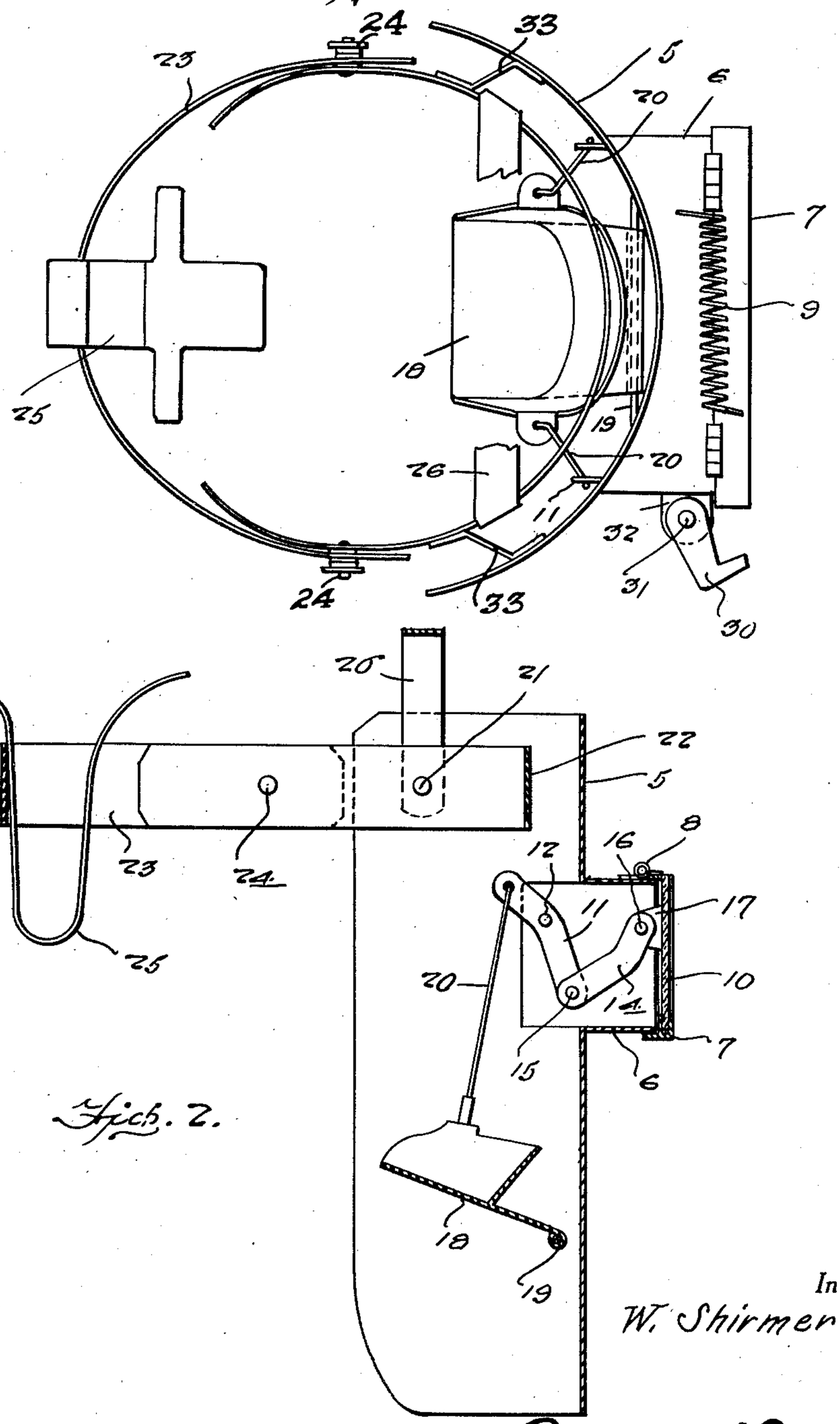

Fig. 2.

Inventor
W. Shirmer

By Clarence A. O'Brien
Attorney

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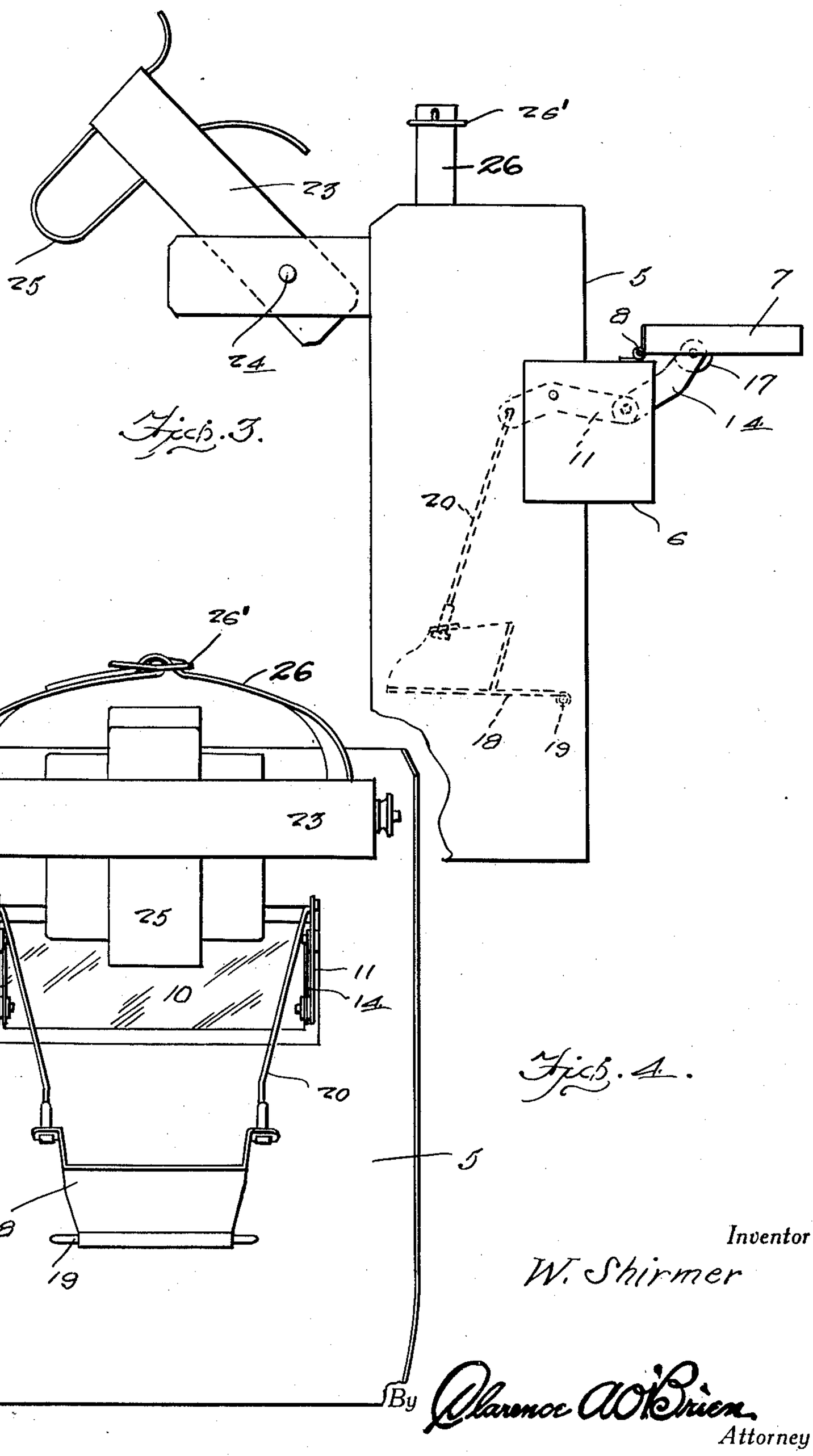

Fig. 3.

Fig. 4.

Inventor

W. Shirmer

By Clarence A. O'Brien

Attorney

Patented Oct. 7, 1930 1,777,454

UNITED STATES PATENT OFFICE

WILLIAM SHIRMER, OF PHOENIX, ARIZONA, ASSIGNOR OF ONE-HALF TO WILLIAM L. ALLISON, OF PHOENIX, ARIZONA

WELDER'S HELMET

Application filed December 26, 1928. Serial No. 328,597.

The present invention relates to a helmet designed for use by welders and the prime object of the invention resides in the provision of a helmet including a shield having transparent panels associated therewith through which the worker views his work, and means whereby the panel may be raised and lowered by movement of the chin, thus leaving the wearer's hands free for his duties.

A still further very important object of the invention resides in the provision of a device of this nature which is exceedingly simple in its construction, inexpensive to manufacture, strong and durable, thoroughly efficient and reliable in use and operation, easy to manipulate, light, and otherwise well adapted to the purpose for which it is designed.

With the above and numerous other objects in view as will appear as the description proceeds, the invention resides in certain novel features of construction, and in the combination and arrangement of parts as will be hereinafter more fully described and claimed.

In the drawing:

Figure 1 is a top plan view of the device embodying the features of my invention,

Figure 2 is a vertical section therethrough,

Figure 3 is a side elevation thereof, and

Figure 4 is a rear elevation thereof.

Referring to the drawing in detail it will be seen that the numeral 5 denotes a shield which is elongated vertically and curved transversely. A rectangular frame 6 projects forwardly or outwardly from the shield and a frame 7 is hingedly mounted thereon as at 8 being normally held in a closed position by means of a spring 9. A transparent panel 10 is mounted in the frame 7.

Levers 11 are rockably mounted intermediate their ends as at 12 in the rear portion of the frame 6 at the ends thereof and links 14 are pivotally connected therewith as at 15 and pivotally connected as at 16 with ears 17 on the frame 7. A chin receiving member 18 is pivotally mounted in the lower portion of the shield as indicated at 19 and rods 20 are connected with this chin receiving member 18 and with the other ends of the levers 11.

Suitable means is provided for holding the shield 5 in front of the face of the welder and the means preferred by me includes an arcuate bail 26, pivotally engaged at its opposite ends with an arcuate forehad band 22, as at 21. The band 22 is rigidly secured in spaced relation to the upper portion of the shield 5 by a pair of Z-shaped brackets 33. Adjacent the rear ends of band 22, an arcuate back head bail 23 is pivoted thereto as at 24.

A spring 25 is engaged in the center of the bail 23 for engaging with the back of the head to hold the supporting structure firmly on the head against accidental slipping off and, of course, to accommodate different sized heads.

If desired the bail 26 may be in the form of a strap adjustable by means of a buckle 26′ as indicated to advantage in Figure 4.

From the above detailed description it will be seen that when this device is being worn by the welder he can view his work through the transparent panel 10 in the usual well known manner but when it is desired to raise this panel it is only necessary for him to open his mouth that is to move his chin downwardly thereby rocking the member 18 causing the frame 7 with its panel 10 to move to the position shown clearly in Figure 3 without the welder leaving his hands off any necessary work, implement or the like.

If desired all parts of contact with the wearer's face and skin may be covered with suitable padding not shown in the drawings. The principal advantage claimed in this device is that it permits the wearer to use both his hands in handling his tools and work and raising the glass or transparent panel.

It is thought that the construction, operation, utility and advantages of this invention will now be quite apparent to those skilled in this art without a more detailed description thereof.

A catch 30 is pivotally mounted as at 31 on an ear 32 extending outwardly from one side of the frame 6 and when the frame 7 is raised to an open position this catch may be moved manually so as to be located in the

path of the frame 7 and hold it up for longer periods than would be desirable than by the wearer holding his chin depressed.

The present embodiment of the invention, however, has been disclosed in considerable detail merely for the purposes of exemplification since in actual practice it attains the features of advantage enumerated as desirable in the statement of the invention and the above description.

It will be apparent that changes in the details of construction, and in the combination and arrangement of parts may be resorted to without departing from the spirit or scope of the invention as hereinafter claimed or sacrificing any of its advantages.

Having thus described my invention, what I claim as new is:

1. A device of the class described including a shield, means for supporting the shield in front of the face of a wearer, a frame projecting forwardly from the shield and an opening therein, a second frame hingedly mounted on the first mentioned frame and having a panel therein, and chin actuated means for swinging the second frame to an open position, spring means for normally holding the panel frame closed, said chin actuated means comprising links pivotally engaged with the second mentioned frame, levers pivotally engaged with the links and rockably mounted on the first-mentioned frame, a chin engaging member pivotally mounted in the shield, rods connecting the chin engaging member and the levers.

2. A device of the class described including a shield, means for supporting the shield in front of the face of a wearer, a frame projecting forwardly from the shield and having an opening therein, a second frame hingedly mounted on the first-mentioned frame and having a panel therein, a chin actuated means for swinging the second frame to an open position, spring means for normally holding the panel frame closed, said chin actuated means comprising links pivotally engaged with the second-mentioned frame, levers pivotally engaged with the links, and rockably mounted on the first-mentioned frame, a chin engaging member pivotally mounted in the shield, rods connecting the chin engaging members and the levers, the means for supporting the shield comprising a forehead band rigidly secured to the shield, and a back bail pivotally secured to the forehead band.

3. A device of the class described including a shield, means for supporting the shield in front of the face of a wearer, a frame projecting forwardly from the shield and having an opening therein, a second frame hingedly mounted on the first-mentioned frame and having a panel therein, a chin actuated means for swinging the second frame to an open position, spring means for normally holding the panel frame closed, said chin actuated means comprising links engaged with the second-mentioned frame, levers pivotally engaged with the links, rockably mounted on the first-mentioned frame, a chin engaging member pivotally mounted in the shield, rods connecting the chin engaging members and the levers, the means for supporting the shield comprising a forehead band rigidly secured to the shield, a back bail pivotally secured to the forehead band, and a strap secured to the forehead band to extend over the top of the head of the wearer.

4. A device of the class described including a shield, means for supporting the shield in front of the face of a wearer, a frame projecting forwardly from the shield and having an opening therein, a second frame hingedly mounted on the first-mentioned frame and having a panel therein, a chin actuated means for swinging the second frame to an open position, spring means for normally holding the panel frame closed, said chin actuated means comprising links engaged with the second-mentioned frame, levers pivotally engaged with the links, and rockably mounted on the first-mentioned frame, a chin engaging member pivotally mounted in the shield, rods connecting the chin engaging members and the levers, the means for supporting the shield comprising a forehead band rigidly secured to the shield, a back bail pivotally secured to the forehead band, a strap secured to the forehead band to extend over the top of the head of the wearer, and a spring of U-shaped formation secured to the back bail.

In testimony whereof I affix my signature.

WILLIAM SHIRMER.