Aug. 6, 1957 T. D. TAPP 2,801,419

WELDER'S MASK

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FIG. 1

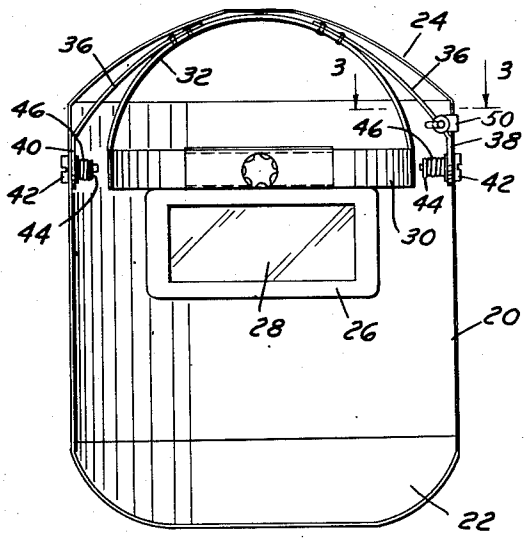


FIG. 3

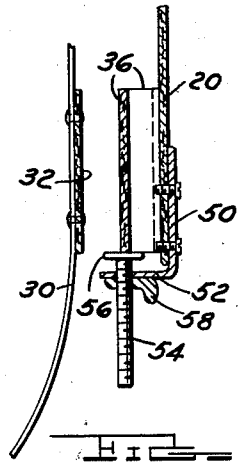


FIG. 4

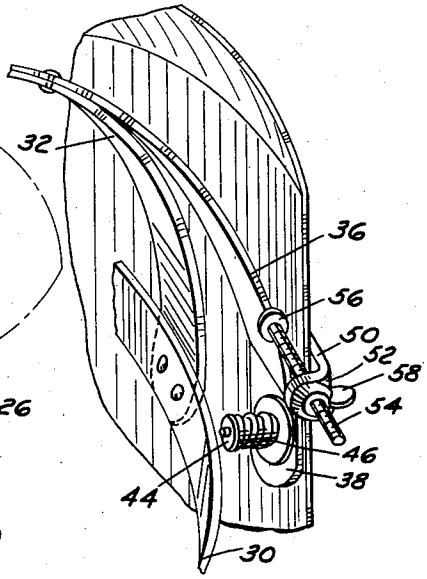
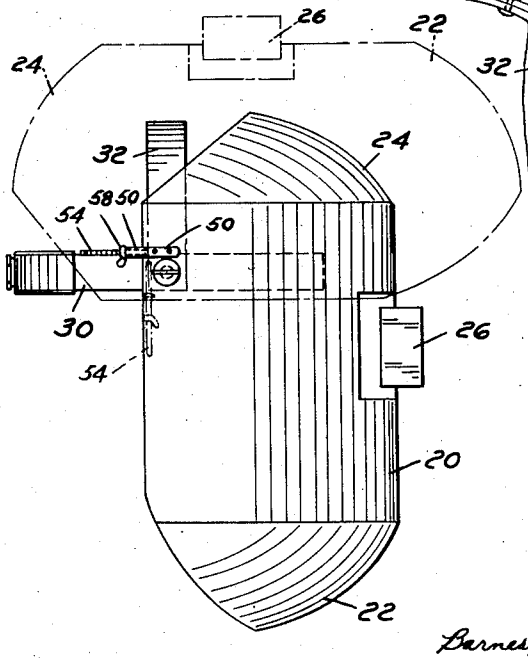


FIG. 2



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FIG. 7

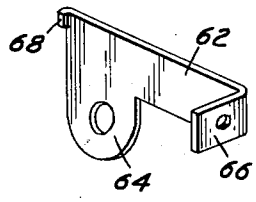


FIG. 11

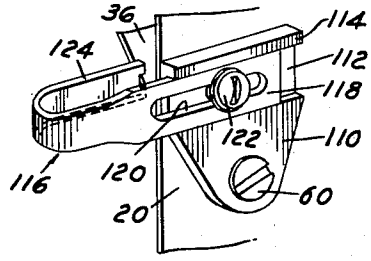


FIG. 9

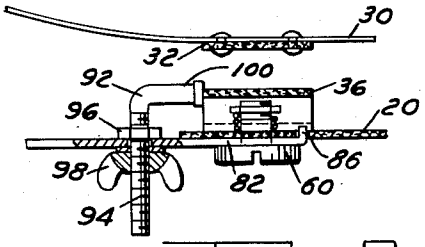


FIG. 6

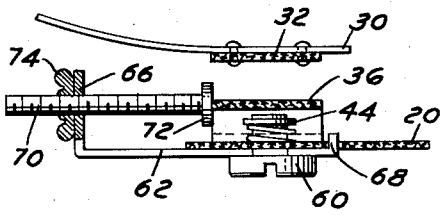


FIG. 8

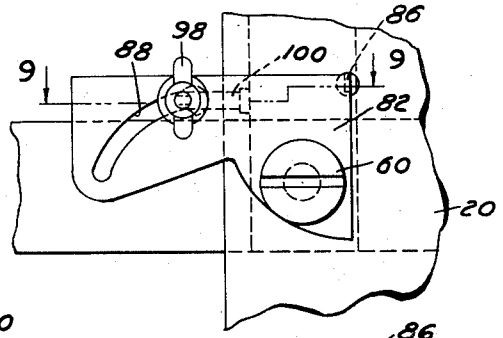


FIG. 5

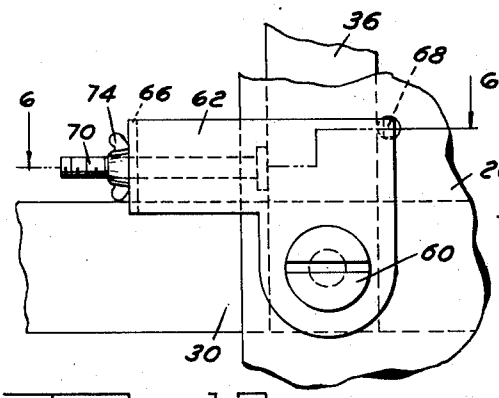


FIG. 10

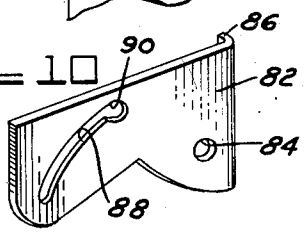


FIG. 12

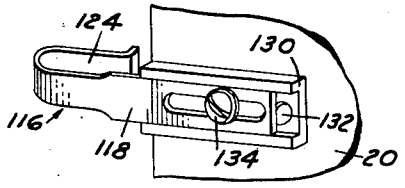
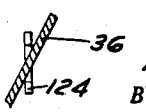


FIG. 13



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WELDER'S MASK

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Application February 23, 1951, Serial No. 212,240

6 Claims. (Cl. 2—8)

This invention relates to a welder's mask.

In the art of arc welding, it is very common for the welder to wear a mask or shield which covers his face, head and neck during the welding operation.

The shield is provided with a transparent window which permits him to see the work while being protected from the glare of the arc and spattering of hot metal that might result from the weld.

This shield is commonly carried by a head mount which consists of an adjustable band that surrounds the head in a substantially horizontal plane and an arch band which goes over the head to carry some of the load. The shield is pivotally fastened to the head mount so that the head mount may be moved from an out-of-the-way or clear position on the top of the head to an operative position in front of the face.

In the past the location of the shield with respect to the welder's eyes has been controlled by a chin strap in the lower portion of the shield which brought the shield down to a stop as it moved into the operative position. This has been a source of annoyance to individual welding operators since the chin strap is apt to cause chafing and inconvenience when the mask is in place, and also the viewing window of the shield does not always fall directly before the eyes as it moves to position.

It is an object of the present invention to provide a welder's shield which has the head mount so related to the shield as it moves to operative position that it will always be in the same position and also may be individually adapted to the needs of a particular operator.

These shields are issued to an operator and used as personal equipment until returned to stock and properly cleaned for another user. Thus, once an adjustment is made for a particular user it can remain over an indefinite period of time.

Inasmuch as the circular head band and the head mount in general is worn at different angles by different operators, it is essential that this relationship between the shield and the head mount be adjustable to a particular user so that the viewing window of the shield will always fall directly before his eyes.

Frequently, when a welder is working at great heights on steel construction work or otherwise working so that both hands are occupied, he brings the welding shield into operative position by simply moving his head downward and utilizing the force of inertia to bring the shield down.

The present invention permits this type of use to great advantage since it always stops the shield at the exact point with relation to the head mount and does not require adjustment by the hands of the welder after it comes down.

Briefly, the invention consists of a bracket which is fastened to the side of the shield upwardly thereof around the ear location and means on the bracket which will project at varying distances behind the shield and into the shield into the path of a portion of the head mount to locate it in a definite manner with relation to the shield as it approaches the operating position.

It is an object of the invention to provide a relatively inexpensive adjusting mechanism which can be applied to the shield either by the original manufacturer or by the user and which may be readily adjusted to the particular needs without intricate instructions.

Other objects of the invention and details of operation will be apparent in the following description and claims.

Drawings accompany the specification, and the various views thereof may be briefly described as:

Figure 1, a rear view of a welding mask showing the locator in place.

Figure 2, a side view of the welding mask showing in dotted lines the shield in out-of-the-way position.

Figure 3, a sectional view on line 3—3 of Figure 1.

Figure 4, a perspective view showing one embodiment of the device as illustrated in Figures 1 to 3.

Figure 5, a view showing a modified construction.

Figure 6, a sectional view on line 6—6 of Figure 5.

Figure 7, a perspective view of the bracket plate shown in Figures 5 and 6.

Figure 8, a second modified construction.

Figure 9, a sectional view on line 9—9 of Figure 8.

Figure 10, a perspective view of the holding plate shown in Figures 8 and 9.

Figure 11, a third modified construction viewed from the outside of the welder's shield.

Figure 12, a fourth modification in perspective.

Figure 13, a sectional view taken at the head mount contact point of Figure 11 illustrating the relationship between the locator and the head mount.

Referring to the drawings, a typical welder's shield or mask is shown in Figures 1 and 2 having a semicylindrical body portion 20 and a curved bottom and top portion 22 and 24 respectively.

In the main body portion is a window frame 26 having therein a transparent glass pane 28 colored to protect the eyes of the welder against glare. A head mount for the shield consists of an adjustable head band 30 adapted to lie more or less in a horizontal plane around the welder's head, and connecting the mid-portions of this band is an arched member 32 which will rest on the top of a welder's head to support some of the load.

The head mount is connected to the shield by curved straps 36 having end portions 38 and 40, respectively, lying flat against the sides of the shield at the upper rear edge thereof. Transfixing the sides of the shield and the ends 38 and 40 are threaded screws 42, on the end of which are threaded spring holders 44. Surrounding the shanks of screws 42 between members 38 and 40 and the spring holders 44 are coil springs 46.

With this arrangement the frictional relationship between the shield and the head mount may be controlled by rotating the screws 42. The members 36 are fastened to the arch member 32 by suitable flush rivets.

With this arrangement the shield may be worn in a dotted-line position as shown in Figure 2 when the operator is not welding; and if he has adjusted the coil springs 46 to his satisfaction, he can, with a nod of the head, bring the shield down in front of his eyes.

A control is provided for the construction above described to bring the device to operating position as it comes down. In Figure 3, which is a sectional view of Figure 1, this control is shown as an L-shaped bracket 50 screwed or riveted to the side of the shield just above the screw location 42. This bracket has an L member 52 through which is threaded a shaft 54 having a head 56.

A locking nut 58 locates the shaft 54 positively. The head 56 is so positioned that it falls in the path of the member 36, moving relative to the shield, and contacts the member 36 to stop its movement, depending on the position of adjustment of the shaft 54. This arrangement is best shown in perspective in Figure 4.

In Figures 5, 6 and 7 a modified construction is shown which is directly attachable to the shield by use of the adjusting bolt **60** which passes through the wall of the shield. The attachment consists of a plate **62** having a downward extending apertured ear **64** and an L-shaped angle portion **66** with a threaded hole therein.

At the other end of the plate from the L member **66** is a small tab **68** extending at right angles to the plate intended to project into a hole in the wall of the shield to locate the plate. The head of the bolt **60** will clamp the device on the wall of the shield and a threaded member **70** with head **72** extends into the shield to contact the member **36**. A small thumb screw **74** can lock the screw shaft **70** in place. This member operates in the same way as described in connection with the embodiment of Figure 1. It is readily attachable by an individual operator.

In Figures 8, 9 and 10 a second modification is shown consisting of a plate **82** having a hole **84** to cooperate with the bolt **60** in the same manner as described in connection with Figure 6. A tab **86** prevents rotation of the plate, and an arcuate slot **88** having an enlarged end **90** is provided at the rear of the plate **82**.

An L-shaped member **92** has a shank **94** passing through the slot **88**, the shank **94** being almost square in cross section so that it will not rotate when positioned in the slot **88**. The corners of the shank **94** are rounded and threaded and a nut **96** is positioned on the shaft **94** on one side of plate **82**, while a thumb screw **98** locks the shaft in place, leaving the angled end **100** to contact the member **36** in a variety of positions to make the adjustment for the control member.

In Figure 11 a third modification is shown. This consists of a mounting plate **110** held in position on the side of the shield by the usual adjusting bolts **60** and provided at the upper portion with a slide or track **112** having at least one side member **114**.

Mounted on this slide or track is a U-shaped member **116** having one extended leg **118** riding in the track **112** and provided with an elongate slot **120**. A screw or bolt **122** passes through the slot **120** and through a threaded aperture in the plate **110** and into a hole in the shield wall **20**. The leg **118** is thus adjustably positionable in the slide **112** in a variety of positions.

The other leg **124** of the U-shaped member extends behind the shield and forward into the shield so that it can serve as a locator for the member **36** as described in connection with the other embodiments.

In Figure 12 a similar device is shown with a small track bracket **130** held to the shield plate **20** by flush rivets **132**. A screw **134** serves to lock the leg **118** in position.

In Figure 13 the relationship between the leg member **124** of Figure 11 and the head band member **36** is shown, the end of the member **124** being notched to serve as a positive recess for the member **36**.

I claim:

1. A welder's mask protecting the eyes, face and neck of a welder which comprises a shield portion, a head support harness, and a connecting band therebetween, means rotatably mounting the shield portion on the connecting band to permit shifting from an operative position before the face to a clear position above the head, means on the shield portion co-operating with a portion of the band to limit the movement from one position to the other, said means comprising a slide bracket affixed to the shield at the upper portion of one side thereof, means slidably fastened to said bracket projecting to the rear of and into the shield to lie in the path of movement of said band, and means to lock the bracket and the last-named means in a fixed position.

2. A device as defined in claim 1 in which the bracket means comprises a plate having a track formation therein affixed to a side of the shield and the adjustable means comprises a U-shaped member having one leg longer than the other and slidable in said bracket track, the other leg projecting behind and into the shield to meet a portion of the connecting band as the shield moves from the clear position to the operative position, and releasable means fastening said bracket and said U-shaped member together in a plurality of adjustable positions.

3. In a welder's mask having a shield part and a head support harness, an arcuate mounting band, and a pivot screw or bolt passing through said shield and mounting band on opposite sides of the shield to pivotally connect the two whereby the shield part may be moved from an inoperative position above the head to an operative position before the face of the welder, a means to position the shield relative to the mounting band in the operative position comprising an apertured bracket plate held in place by at least one of said pivot bolts or screws, and means extending from said bracket part to a point within the shield to contact directly the mounting band, said last means being shiftable to a plurality of positions to regulate the position of the shield relative to the face and eyes of the welder.

4. A device as defined in claim 3 in which the adjustable means mounted on the bracket comprises an L-shaped pin member threaded at one end mounted in a slot in said bracket, the threaded portion of said pin member passing through said slot, and means threaded on said pin to locate said L-shaped pin member in a plurality of positions relative to said bracket, said pin member extending toward the inside of said shield member to contact the mounting band.

5. A device as defined in claim 3 in which said apertured bracket plate lies on one outside face of the shield adjacent the pivot point between the shield and the mounting band, means projecting from the plate at one end and insertable into a locating aperture in the shield to restrict rotation of the plate on the shield, and means at the other end of the plate extending behind the shield, and an adjustable projectable member mounted on said last means to project into the shield to contact the mounting band as it approaches the operative position.

6. In a welder's mask having a shield part including sidewalls and a head support harness, means secured to said head support harness and forming arcuate mounting bands projecting toward said sidewalls, and a pivot screw or bolt passing through the sidewalls of said shield and mounting bands on opposite sides of the shield to pivotally connect the two whereby the shield part may be moved from an inoperative position above the head to an operative position before the face of a welder, a means to position the shield relative to the mounting bands in the operative position comprising means forming a bracket held in place on a sidewall of said shield, and means extending from said bracket to a point within the shield spaced radially from said pivot so that said extending means rotates around said pivot relatively to one of said mounting bands with said shield, said extending means being positioned to contact directly said one mounting band, said extending means being shiftable to a plurality of positions to contact said one mounting band in different rotative positions of said shield relatively to said one mounting band, whereby to regulate the position of the shield relative to the face and eyes of the welder.

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