Dec. 24, 1963 A. J. RUGGIERO 3,114,914

HEAD AND FACE PROTECTOR

Filed July 1, 1960

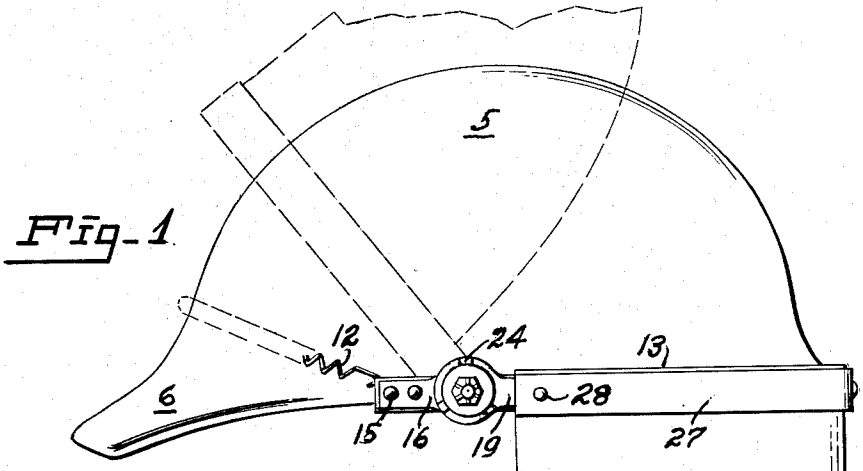


Fig. 1

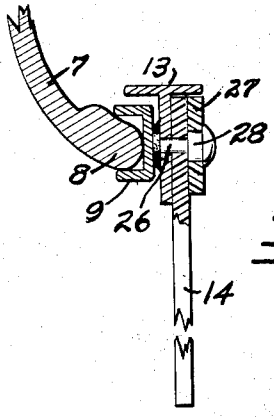


Fig. 3

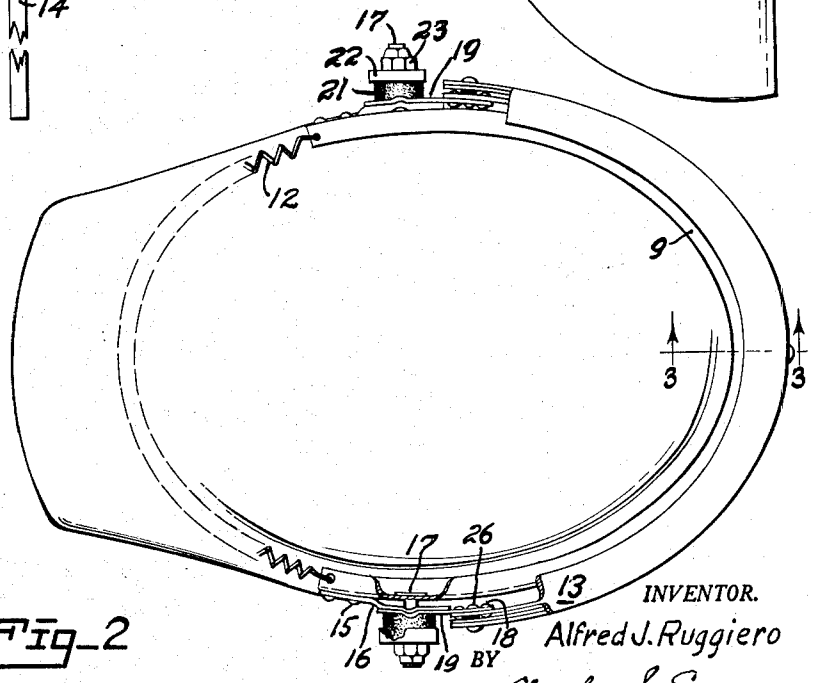


Fig. 2

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United States Patent Office 3,114,914 Patented Dec. 24, 1963

3,114,914

HEAD AND FACE PROTECTOR

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Filed July 1, 1960, Ser. No. 40,340
3 Claims. (Cl. 2—8)

My invention relates to safety means useful in protecting the head and face of a workman when subjected to the hazard of flying particles or the glare of a welding arc, such for example as commonly produced during abrasive wheel grinding, and by welding operations.

The principal object of the invention is the protection of the head and face, and particularly the eyes of the wearer of my protecting device.

Another object of my invention is the provision of a face shield having means for readily mounting it on the brim of a safety hat so that hat and shield plate provide full head and face protection.

Still another object of my invention is the provision of a face shield having mounting means including pivotal connections by which the shield plate may be readily swung from its lowered and protective position to a position above the hat, where it is resiliently retained until needed again.

The invention possesses other objects, which with the foregoing will be brought out in the following description of the invention. I do not limit myself to the showing made by the description and drawing, since I may adopt variant forms of the invention within the scope of the appended claims.

Referring to the drawings:

FIG. 1 is a side elevation of my head and face protector. The shield for the face is shown in lowered position.

FIG. 2 is a top or plan view of my protector. Portions are shown in section.

FIG. 3 is a vertical sectional view on an enlarged scale taken in the plane indicated by the line 3—3 of FIG. 2.

The use of head protecting devices has become widespread in all industries. Two forms of such protective devices have achieved particular importance in saving lives and preventing injury. The first and most important is the light weight hard safety hat or cap for the protection of the head from falling or thrown objects. The second is the face shield particularly directed to the protection of the eyes and face. It is the broad purpose of my invention to bring these two protective means into a convenient combination, so that the wearer is provided with a high degree of protection against particles and small objects thrown in his direction, and against the glare of the welding arc or flame.

As the hat element of my protector, I prefer to use a cap having a crown 5 and visor 6. At the rear of the crown, opposite the visor, the lower portion 7 of the crown extends outwardly a small amount in the beaded edge or rim 8. I utilize this beaded edge or rim to mount the arcuate bracket 9. The bracket in cross section is shaped as a channel as shown in FIG. 3, and embraces the beaded edge 8 around about one-half of the crown. A long coil spring 12 is connected at its ends to the ends of the arcuate channel, and when looped about the crown just above the visor, holds the bracket firmly but removably on the beaded edge 8, which in this combination, becomes the front edge of the cap, the visor 6 being at the rear.

An arcuate T-section frame 13 is provided for hinging a face shield 14 to the ends of the bracket 9. Fixed by rivets 15 to the outer face of the bracket at each end are short plates 16, offset as shown in the lower part of

FIG. 2 to provide a short cantilever spring arm. A small bolt 17 is fixed in each end of the channel wall and extends outwardly through the cantilever arm to provide a pivot pin on each side of the cap, upon which the face shield may swing from its lowered position as shown in FIG. 1 to its raised position indicated by the broken lines of the figure.

Secured to each end of the frame 13 by rivets 18 is a short plate 19 similar to plate 16, and also pierced by the bolt 17. A thick soft rubber washer 21 on the bolt is pressed against the plate 19 by the metal cup 22 and the nut 23 threaded on the outer end of the bolt.

Radial interengaging beads 24 formed in each of the plates 16 and 19 convert them into matching wrinkle plates; and arranged as shown in each pair, provide added pressure on the deformable washers and spring cantilever arms when the shield frame is moved from one position to another; and thus tend to hold the shield frame in whatever position it is placed. This pressure is adjusted as desired by turning the nuts 23.

Means are provided for demountably securing the face shield 14 to the T-section frame. Adjacent each end of the frame and at its center is fixed a stud element 26 of a conventional snap fastener. The upper straight edge of the face shield sheet is provided with matching holes, so that it may be applied over the studs. A binding strip 27 is provided with socket elements 28 of the snap fastener, so arranged that the strip may be pressed down over the stud elements to secure the shield sheet to the center wall of the T-section frame. Thus, the face shield 14 and the T-section frame 13 with its rigidly attached short plates 19 at each end pivots as a unit upwardly to inoperative position about the bolts 17 attached to each end of the arcuate bracket 9. The bracket 9 is held relatively stationary on the rim or bead 8 of the hat as described heretofore.

For many types of work, the shield plate is a properly shaped sheet of transparent synthetic resin readily demountable for cleaning or replacement. The shield plate may also be made of aluminum or thin steel provided with a suitable opening covered by glass or transparent plastic suitably colored to protect the eyes from the intense light of a welding arc or flame.

Since hard safety caps are uniform in size, the two elements of my head and face protector may be sold as a single combination or separately, so that one already having a cap need buy only the bracket element.

I claim:

1. The combination of a cap having a hard crown and a stiff projecting arcuate rim along a lower portion of the crown, with a continuous arcuate channel member within which the crown rim is seated to fix the channel upon the rim, a resilient tie means connecting the ends of the channel member and looped about the side of the crown opposite the rim to retain the rim within the channel member, an arcuate frame embracing the channel member, pivot means connecting the respective adjacent ends of said arcuate channel member and said arcuate frame whereby said arcuate frame may be pivoted with respect to said channel member, said arcuate frame having a flange at its upper end extending over the adjacent portion of said arcuate channel member and a face shield secured on and depend from said arcuate frame.

2. A face shield, comprising a continuous arcuate channel-section member to form a rigid support, a coil spring connecting the two ends of the channel section member, an arcuate frame embracing the channel member, pivot means connecting the respective adjacent ends of said channel section member and said arcuate frame whereby said arcuate frame may be pivoted with respect to said channel member, said arcuate frame having a

flange at its upper edge extending over said channel member, and a face shield secured to the arcuate frame to depend therefrom.

3. A face shield according to claim 2 wherein said arcuate frame has a second flange extending from the top thereof opposite to said first flange whereby the cross section of the frame is T-shaped, said face shield being secured to said arcuate frame so that its upper edge underlies said second flange.

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