

Velasquez

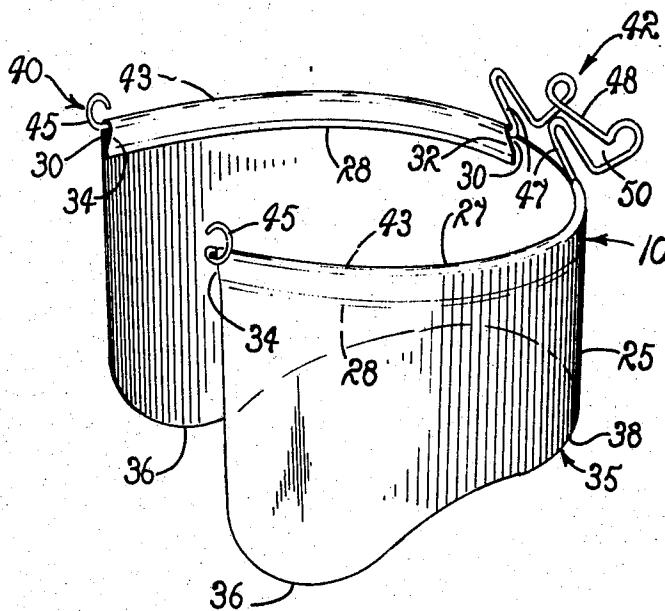
[45] June 13, 1972

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|-----------|---------|-----------------|------|
| 1,008,109 | 11/1911 | Bickerton | 2/10 |
| 899,334 | 9/1908 | Seitzman | 2/10 |
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[57] ABSTRACT

A shield attachment for safety helmets and the like having front and back portions and a brim circumscribing a lower edge of the helmet providing a band of shielding material and a wire frame selectively detachable suspending the band from the brim of either the front or back portions of the helmet in wrap-around relation to the head of a wearer of the helmet so as to provide additional protection for the face and/or back of the neck of the wearer.

5 Claims, 5 Drawing Figures



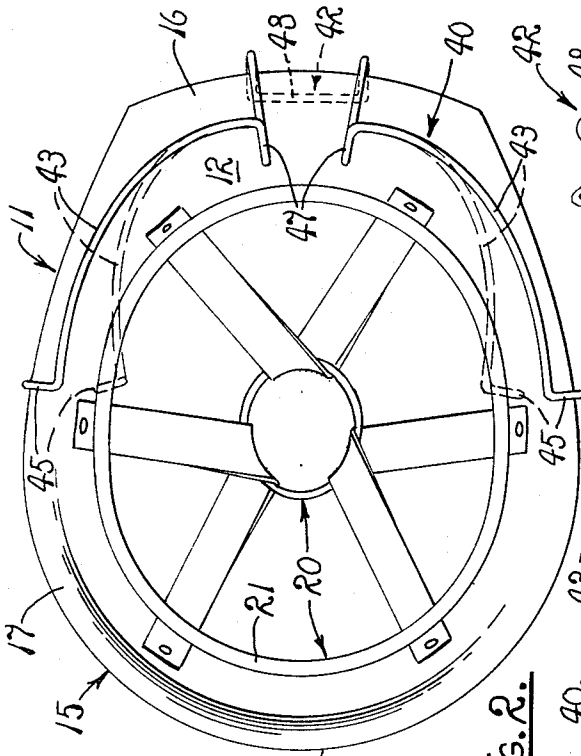


FIG. 1.

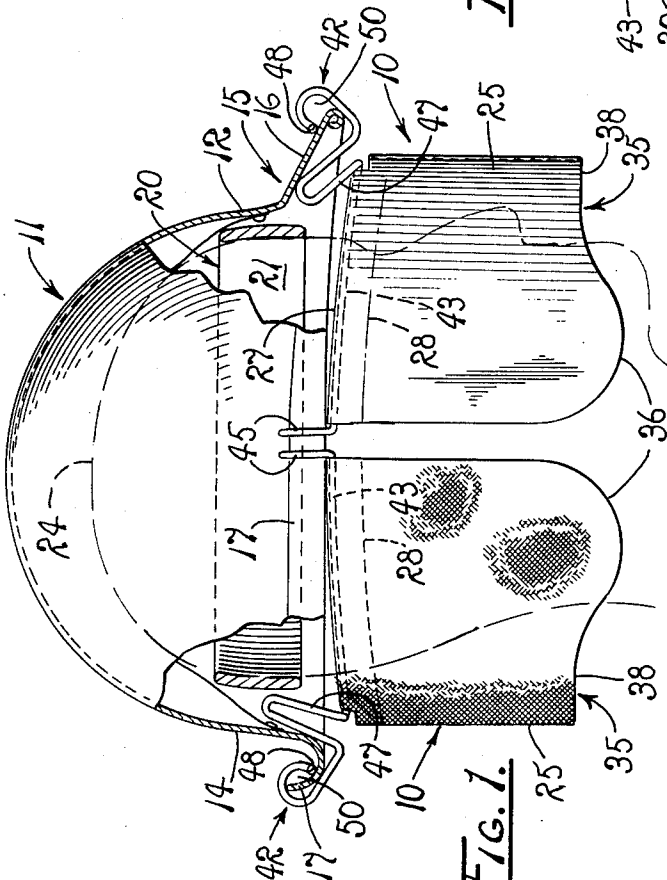


FIG. 2.

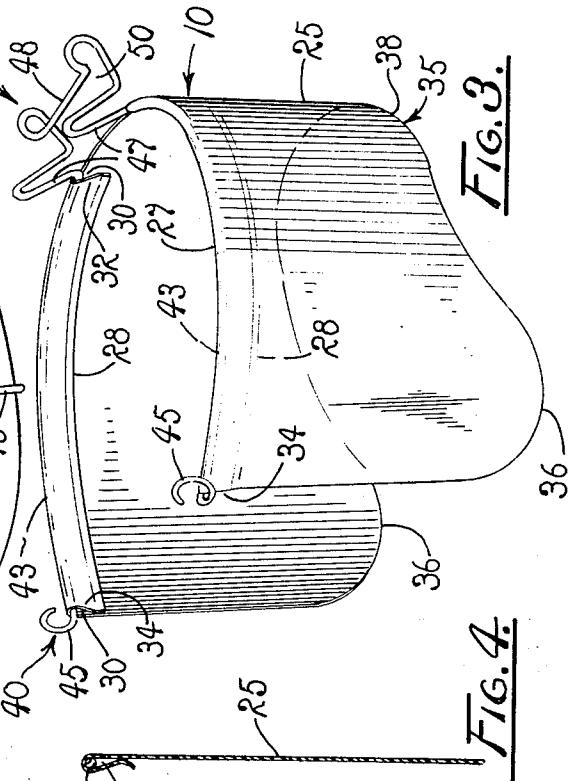


FIG. 3.

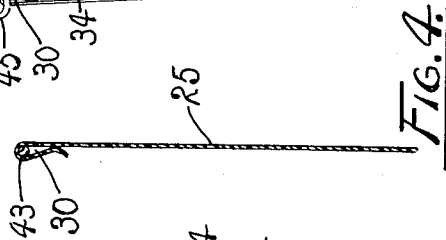


FIG. 4.

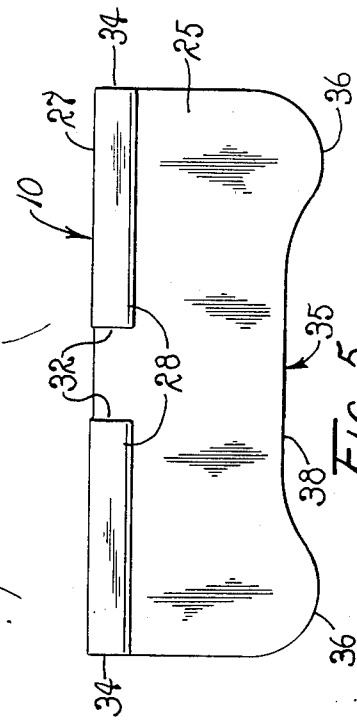


FIG. 5.

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SHIELD ATTACHMENT FOR SAFETY HELMETS

BACKGROUND OF THE INVENTION

The safety helmets usually worn by construction workers have a relatively small brim which is not effective to provide any appreciable amount of protection or shading of the face or back of the neck of the wearer from sun, rain, and the like. The relatively hard material employed in the construction of the helmets precludes providing an integral shield on the helmet for the back of the wearer's neck because of the restrictions to movement that such structure imposes. Furthermore, the lower edge, if extended downwardly from the helmet sufficiently to provide an effective shield, would tend to abrade or dig in to the wearer's neck and shoulders, causing greater problems than that which it is intended to overcome. Presently, none of the commercially available safety helmets provides any means for releasably mounting any type of additional protective shield except those which are permanently mounted at the factory on the front of the helmet for protecting the face of the wearer. Certain operations such as metal chipping and grinding require the use of goggles or a special helmet having a transparent face shield similar to a welder's mask. Such special helmets, however, cannot be comfortably worn during normal construction work because of the restriction of the wearer's field of vision and their generally cumbersome nature. Accordingly, it is necessary for the construction workmen to have a plurality of helmets for the variety of tasks performed which must be stored when not in use. Such storage and maintenance of the helmets in a good condition is a particular problem for the workmen in the field. It is desirable, therefore, that the workmen's safety helmet be supplemented with a shield attachment which requires no modification of the conventional helmet.

SUMMARY OF THE INVENTION

Accordingly, it is an object of the present invention to provide a shield attachment for safety helmets.

Another object is to provide such a shield attachment which can be quickly and conveniently removably mounted on a wide variety of conventional safety helmets.

Another object is to provide a shield attachment of the character described which is adapted to be mounted on either the front or back of the helmet or a pair of such attachments simultaneously disposed at both locations for protecting the face and/or back of the neck of the wearer, as desired.

Another object is to provide a shield attachment which does not interfere with the fit of the helmet on the wearer's head or with the wearer's normal movements.

Another object is to provide a shield attachment which can be constructed of a wide variety of materials depending upon the specific use and purpose of the shield.

Another object is to provide a shield attachment which utilizes a lightweight wire mounting frame which can be quickly and easily releasably mounted on the brim of virtually any conventional safety helmet.

Another object is to provide a shield attachment in which the material of the shield can be releasably and dependably mounted on the mounting frame for ease and convenience of cleaning the shield particularly when a fabric material is employed.

Other objects and advantages of the present invention will subsequently become more clearly apparent upon reference to the following description and accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side elevation showing a pair of shield attachments mounted on a safety helmet disposed on the head of a wearer.

FIG. 2 is a bottom plan view of the helmet of FIG. 1 showing the attachment mounting frame disposed at the front portion of the helmet.

FIG. 3 is a somewhat enlarged perspective of the shield attachment removed from the helmet.

FIG. 4 is a transverse vertical section through the shield attachment of the present invention.

FIG. 5 is a plan view of the shield disposed in a substantially flat condition removed from the attachment mounting frame.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring more particularly to the drawing, a shield attachment embodying the principles of the present invention is generally indicated by the reference numeral 10 for mounting on a construction worker's safety helmet 11. The helmet has predetermined front and back portions 12 and 14, respectively, and a relatively narrow brim 15 circumscribing the lower edge of the helmet. At the front portion 12 of the helmet, the brim forms an eye-shading bill 16 and at the back portion 14 of the helmet, the brim provides an arcuately upturned rain trough 17. A liner 20 having a sweat band 21 is mounted within the helmet in fitted relation to the head 24 of a wearer.

The shield attachment 10 of the present invention provides a shielding band 25 which may be constructed of various materials depending upon the purpose and location of the shield on the helmet 11. For example, when the shield attachment is intended to be mounted on the front portion 12 of the helmet, a somewhat flexible transparent plastic material is employed, as shown in FIG. 1, for protecting the face of the wearer without impairing the wearer's field of vision. This material may also be employed for the band 25 when the shield attachment is disposed at the back portion 14 of the helmet when it is intended for use as a rain shield or if provided in colors may also serve as a sun shield. Alternatively, the band 25 can be constructed of a washable fabric material when disposed at the back portion 14 of the helmet which can be dampened to provide an evaporative cooling effect against the back of the neck of the wearer when working in an extremely hot environment.

The shielding band 25 has a substantially straight upper edge 27 which is formed by folding over a pair of spaced flaps 28 with the flaps being securely attached to the underlying body of the band by stitching when fabric is employed or by heat sealing or the like when the transparent plastic material is utilized. Secured in this manner, the flaps form a pair of elongated spaced passages 30 providing adjacently spaced entry ends 32 and opposite outer ends 34. The band has an opposite lower edge 35 having spaced arcuate portions 36 interconnected by an inwardly extended arcuate indentation 38 for a purpose subsequently to be described.

The shield attachment 10 of the present invention further includes a lightweight wire band mounting hanger frame generally indicated by the reference numeral 40. The frame is generally U-shaped to provide a central bight portion generally indicated by the reference numeral 42 and a pair of opposite arcuately extended leg portions 43. Each of the legs has an outer hooked end 45 outwardly extended in planes substantially normal to the axis of their respective legs. The bight portion 42 of the hanger frame includes a pair of return-bent fingers 47 which are upwardly outwardly angularly extended from the plane of the leg portions 43 thereof. The fingers are interconnected by a hooked bar 48 in outwardly spaced relation to the fingers to form therebetween a restricted brim receiving and clamping passage 50.

OPERATION

The operation of the described embodiment of the subject invention is believed to be clearly apparent and is briefly summarized at this point. The selected shielding band 25 is first mounted on the hanger frame 40 by inserting the hooked legs 43 through the passages 30, as shown in FIG. 3, with the hooked ends 45 of the frame protruding outwardly from the outer ends 34 of the passages. Such operation is easily accomplished by virtue of the inherent flexibility of the wire hanger frame and the shielding band with the opposite legs 43 being flexed inwardly for simultaneous insertion into the entry ends 32 of the passages.

In order to mount the shield attachment 10 on the front portion 12 of the helmet to provide a face shield for the wearer of the helmet, the bill 16 of the brim 15 is inserted into the clamping passage 50 between the fingers 47 and the hook bar 48. The outer hooked ends 45 of the hanger frame are normally inwardly sprung to the dashed line positions shown in FIG. 2. In order firmly to mount the hanger frame and shielding band 25 on the helmet, the hooked ends 45 of the hanger frame are spread apart and hooked over the adjacent edge of the brim 15. Such outward springing action of the legs causes the hooked bar 48 to be tensioned against the outer surface of the bill and the hooked fingers 47 to be firmly tensioned against the inner surface of the bill in tightly clamping relation. This disposes the shielding band 25 in outwardly spaced wrap-around relation to the face of the wearer effectively to shield against flying particles without any appreciable restriction of the wearer's field of vision. Furthermore, the indentation 38 is disposed symmetrically of the wearer's face in order to provide substantially unrestricted access to the wearer's mouth for eating, drinking, smoking and the like without removing the helmet 11 or the shield attachment 10. The indentation further provides a substantially unobstructed opening adjacent to the wearer's nose for relatively free breathing so as to minimize fogging of the shielding band and impairment of the wearer's vision.

The shield attachment 10 is alternatively or simultaneously mounted at the back portion 14 of the helmet 11 in substantially the same manner as that described for the mounting at the front portion 12 thereof. In this position, the hooked bar 48 of the hanger frame is snapped over the rain trough 17 and the rearward wall portion of the helmet is received within the clamping passage 50. The fingers 47 are extended upwardly against the inner surface of the rearward wall of the helmet between the wall and the sweat band 21 of the liner 20 in a position not to interfere with the fit of the liner upon the wearer's head. The hooked ends 45 of the hanger frame are outwardly spread and snapped over the adjacent side edges of the brim 15, as before. Such engagement also serves to tension the hooked bar 48 and fingers 47 of the hanger frame in tightly clamping relation against the engaged portions of the helmet. In this rearwardly disposed neck-shielding position of the shield attachment, it is noted that the indentation 38 in the lower edge thereof is disposed in substantially conforming relation to the neck and shoulders of the wearer in order to provide full protection without restricting the normal body movements of the wearer. Accordingly, the back of the wearer's neck is effectively shielded against the sun and provides an effective deflector to preclude the entry of rain, dust and the like downwardly between the wearer's neck and shirt collar or the like.

In view of the foregoing, it is readily apparent that the structure of the present invention provides an improved shield attachment for safety helmets and the like which can be quickly and conveniently removable mounted on a wide variety of brim configurations employed on such helmets. The shield attachment of the present invention is also adapted to be mounted on either the front or back of the helmet to provide either a face shield which does not substantially interfere with normal body function of the wearer while working and, alter-

natively, may be positioned at the backside of the helmet in order to afford an effective shield for the back of the wearer's neck as a further protection against the sun or the entry of rain, dust, dirt and the like down the wearer's shirt collar or the like.

Although the invention has been herein shown and described in what is conceived to be the most practical and preferred embodiment, it is recognized that departures may be made therefrom within the scope of the invention, which is not to be limited to the illustrative details disclosed.

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

1. A shield attachment for safety helmets and the like having a circumscribing substantially rigid brim comprising an arcuate hanger frame of a continuous length of resilient wire having spaced arcuate legs disposed in a common plane in substantially semi-circular arrangement adapted to extend along and beneath the brim of such a helmet, the frame having opposite ends providing hooks extended outwardly from respective legs of the frame in individual planes substantially radially of their respective legs and curved arcuately inwardly to provide opposed mouths engageable with such a brim, the ends of the legs opposite to the hooks, each having return bent fingers continuous therewith extended upwardly and inwardly and thence downwardly and outwardly of their respective legs in individual planes substantially radial to their respective legs adapted resiliently to engage the underside of such a brim, portions continuous with said fingers outwardly and upwardly extended and thence arcuately upwardly and inwardly extended and interconnected by a top portion adapted to engage downwardly against such a brim with the brim clasped between said top portion and the fingers; and a shielding band pendantly supported on the legs of said frame.

2. The attachment of claim 1 in which the shielding band is of flexible sheet material.

3. The attachment of claim 1 in which the hooks and the top portion and the fingers of the frame are slidably engageable with the brim for selective positioning of the shielding band peripherally thereof.

4. A shield attachment for safety helmets and the like having a circumscribing substantially rigid brim providing an extended bill portion comprising an arcuate hanger frame of a continuous length of resilient wire having a central bar adapted to engage the top of such a bill portion, arcuate portions continuous with opposite ends of the bar extended downwardly under the bill, return bent fingers individually continuous with said arcuate portions resiliently engaged with the underside of the bill to clasp the bill against the bar, legs individually continuous with the fingers extended oppositely rearwardly beneath the brim and providing extended ends resiliently urged toward each other, and opposed hooks on said extended ends adapted to clasp the brim therebetween; and a shielding band of flexible transparent material pendantly suspended on the frame.

5. The attachment of claim 4 in which the legs are disposed in substantially semi-circular arrangement and the shielding band has an upper edge providing a passage through which the legs are extended to conform the shielding band to their substantially semi-circular arrangement.

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