March 23, 1937. A. A. STRAUSS 2,074,627

SAFETY HAT OR CAP

Filed April 28, 1936 2 Sheets-Sheet 1

Fig. 1.

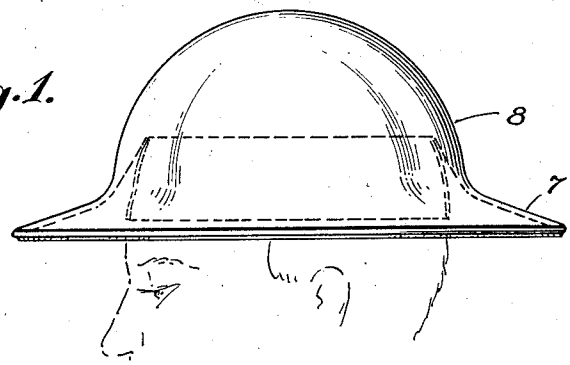


Fig. 2.

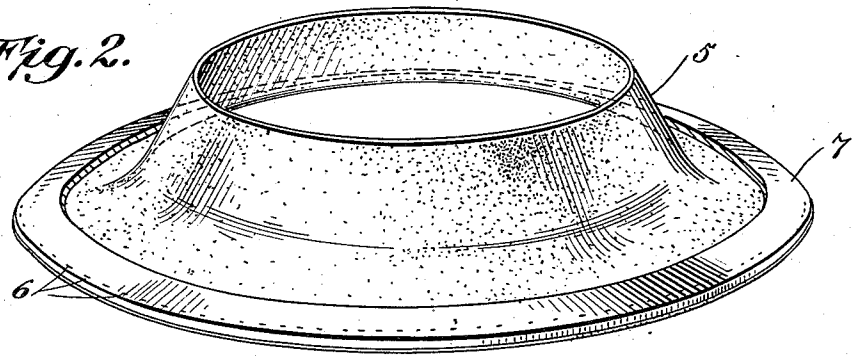


Fig. 3.

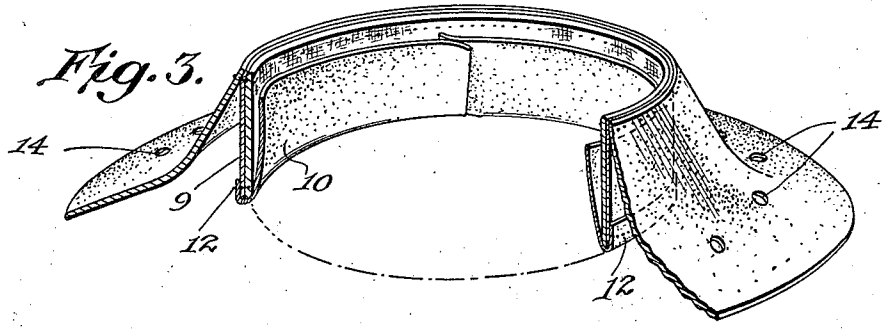
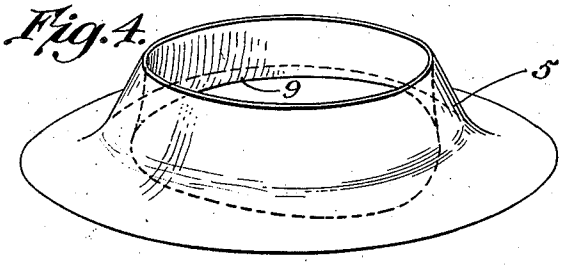


Fig. 4.



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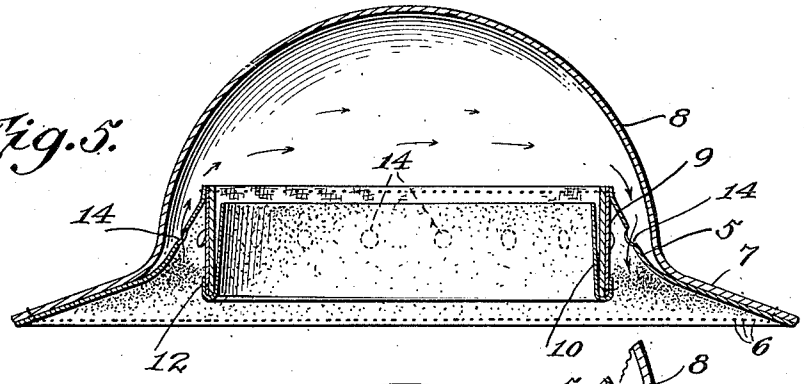
Attorney

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Fig. 5.



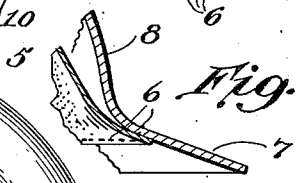


Fig. 6.

Fig. 7.

Fig. 8.

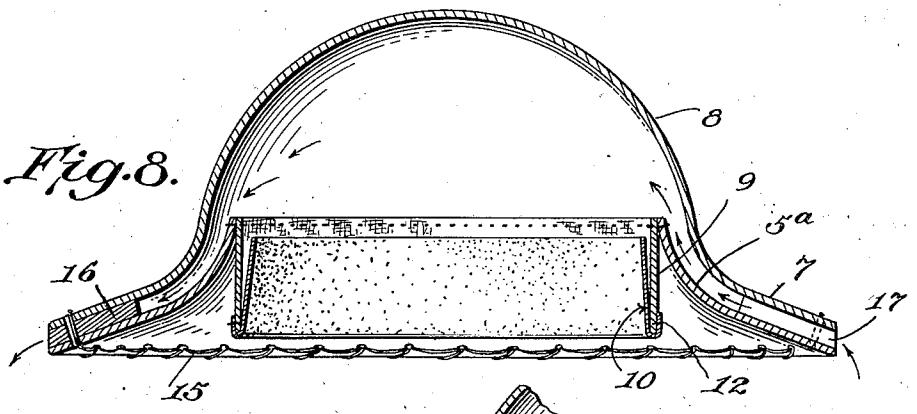
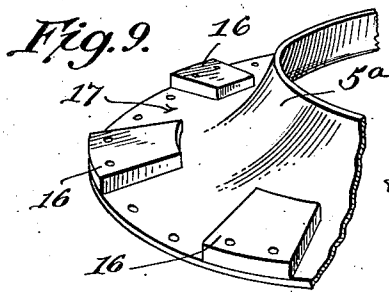


Fig. 9.



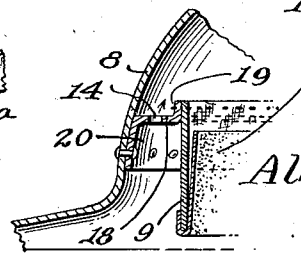


Fig. 10.

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2,074,627

SAFETY HAT OR CAP

Albert A. Strauss, Pittsburgh, Pa.

Application April 28, 1936, Serial No. 76,843

1 Claim. (Cl. 2—3)

This invention relates to headgear and especially to safety hats or caps worn by miners and others engaged in hazardous occupations where there is danger of being struck by falling objects.

Protective headgear must be made of material which possesses sufficient rigidity to protect the wearer from injury by falling objects, such as hard compacted fibrous material, and is still light enough to be worn without discomfort. In order to distribute the effects of shocks or blows to which the hat may be subjected it is desirable that the head-band should be spaced from the crown and at the same time it should conform to the shape of the head of the wearer. Any shifting of the crown with respect to the head-band as the wearer moves his head from side to side or forward and backward during his movements, reacts upon the nerves of the wearer to produce tire, headache and other inconvenience.

One of the objects of my invention is to provide means for rigidly supporting the head-band in spaced relation to the crown and preventing the hat from vibrating or wobbling during the movements of the head and at the same time permitting the lower edge of the head-band to nonresistingly conform to any shaped head..

Another object is to provide a lining which is so shaped and secured to the crown in such a manner that its inner top edge is substantially rigid and maintained in fixed relation to the crown, thus forming a suitable support for the head-band.

Furthermore, since the material of which the protective headgear is constructed is usually substantially air-tight, additional inconvenience may be experienced by reason of the lack of ventilation. My invention, therefore, also provides for the circulation of air through the interior of the crown.

In the following description of my invention I shall refer to the accompanying drawings, in which—

Figure 1 is a side elevation of a hat provided with my head-band support.

Figure 2 is a perspective view of the conical or funnel-shaped head-band support and showing the manner of mounting it and securing it to the base or brim of a hat.

Figure 3 is a transverse sectional view of the support with a head-band attached thereto.

Figure 4 is a perspective view of the head-band support and indicating in dotted lines the manner in which the lower edge of the head-band conforms to the shape of the head of a wearer.

Figure 5 is a vertical sectional view of a hat provided with my truncated conical support with the head-band secured thereto.

Figure 6 is a fragmentary view showing the conical head-band support attached at the inner edge of the hat brim.

Figure 7 is a side elevation, partly in section, of another form or modification of my invention.

Figure 8 is a vertical sectional view of Fig. 7.

Figure 9 is a fragmentary perspective view showing the arrangement of spacing blocks which provide ventilation in the form shown in Figs. 7 and 8.

Figure 10 is a fragmentary sectional view showing another form of support for the head-band.

In prior hat construction, particularly in protective headgear, various devices have been employed to support the head-band in spaced relation to the hat crown and to provide ventilation for the interior of the hat. In certain constructions the head-band was attached to blocks of sponge rubber spaced apart and secured to the inner side of the crown. While this provided passages for ventilation, it did not permit a natural conforming of the head-band to the head of the wearer and the elasticity of the sponge-rubber blocks permitted vibration of the hat crown, caused by the movements of the head.

It has also been proposed to secure the head-band adjustably to rigid brackets fastened to the inside of the hat crown. Again the head-band has been attached adjacent to the bottom edge of a cloth lining which is gathered at the top or by bands of webbing tied together by a lace or cord at the top.

I have overcome the objection to prior constructions by providing a support for the head-band which forms a continuous unbroken support to which the inner upper edge of the head-band is attached and which is held substantially rigid with relation to the hat crown, while permitting the lower outer edge of the head-band to yield and conform to the shape of the head of the wearer. As a result of this construction the hat is held comfortably upon the head while vibration or wobbling is absolutely prevented.

Referring to Figs. 1 to 6, the head-band support is formed of a continuous unbroken truncated cone or funnel-shaped piece of cloth or other suitable material 5. The perimeter of the lower bottom edge is secured around its entire circumference by stitching 6 or other suitable manner to the brim 7 of the hat 8. The base of the frusto-conical supporting structure 5 is thus rigid and unyielding. The head-band 9, which may be made of one or more bands of buckram,

belting or other suitable material, is stitched around its entire inner or upper edge to the upper or inner edge of the frusto-conical or funnel-shaped support 5. It will be seen that any stress tending to distort the circular shape of the continuous upper edge of the truncated cone is resisted and counterbalanced by the stresses transmitted to the rigid unyielding base. The circular shape of the upper edge of the head-band is constantly maintained and hence any shifting, wobbling or vibration of the hat crown on the head of the wearer is absolutely prevented.

The suspension of the head-band 9 by its attachment at the upper or inner edge, permits the free lower edge to yield and conform to the shape of the head of the individual wearer. Thus, as indicated in Fig. 4, my head-band support permits the bottom head engaging edge of the head-band to conform to the shape of the head of the wearer but resists any distortion of the circular top edge of the head-band. Consequently, the hat crown is maintained in the same relative position on the wearer's head during his various bodily movements.

The sweat-band 10 of the soft leather or other suitable flexible material is stitched to the lower edge of the head-band as indicated at 12 and loosely conforms to the inner side of the head-band. Perforations 14 in the intermediate part of the conical support provide ventilation for the interior of the crown.

In Figs. 7, 8 and 9, I have shown a modification in which the truncated cone 5a, forming the head-band support is made of molded hard fibre or other suitable material, the same as the material of the crown, and is secured to the hat brim by stitching 15, being held in spaced relation thereto by means of hard fibre blocks 16. Ventilating passages 17 are thus provided between the blocks 16. The conical member 5a thus constitutes an auxiliary under brim.

In Fig. 10, I have illustrated another modification in which the support for the head-band is formed of a continuous rigid ring 18 having an upturned flange 19 to which the head-band is secured and a downturned flange 20 which is riveted to the hat crown.

I have illustrated several forms or embodiments of my invention for the purpose of clearly disclosing its purpose and advantages but it will be evident to engineers that other modifications can be made within the scope of my claims. It will also be apparent that the method disclosed herein for supporting the head-band rigidly in spaced relation to the crown, while permitting the lower edge of the band to conform naturally to the shape of the wearer's head, is not confined to safety hats or protective headgear, but is also useful in other types.

What is claimed is:

A safety headgear to protect the head from blows and shocks of falling objects comprising integrally molded rigid crown and brim portions in combination with a frusto-conical member centrally positioned within said crown and secured throughout the extent of its basal perimeter to the under side of said rigid brim and a flexible head-band having its inner marginal edge secured throughout its extent to the top marginal edge of said frusto-conical member, said head-band depending freely from said top marginal edge, whereby the top edge of the head-band is substantially rigidly held in spaced relation with respect to the crown while the bottom free edge of the head-band may conform to the shape of the wearer's head.

ALBERT A. STRAUSS.