May 30, 1933. E. W. BULLARD 1,911,348

SAFETY HEADGEAR

Filed Jan. 9, 1931

Fig. 1

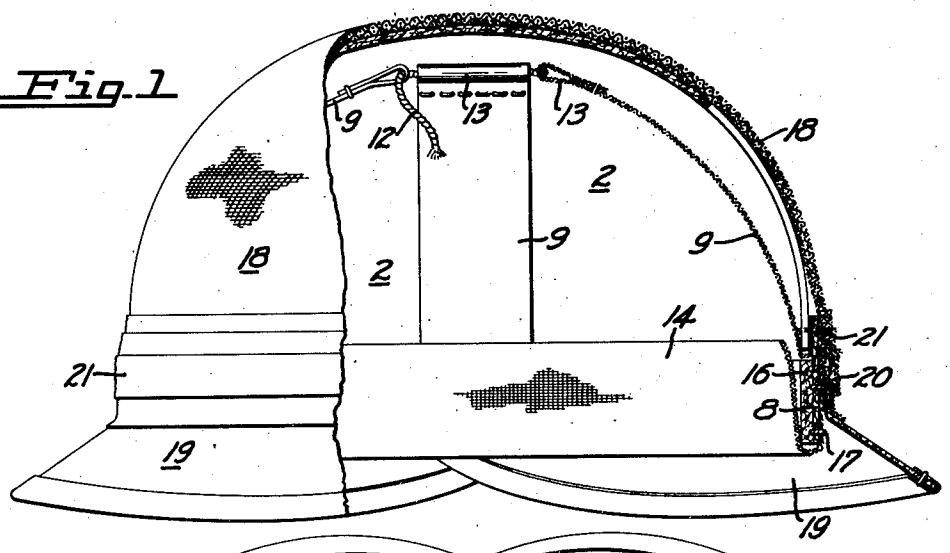


Fig. 2

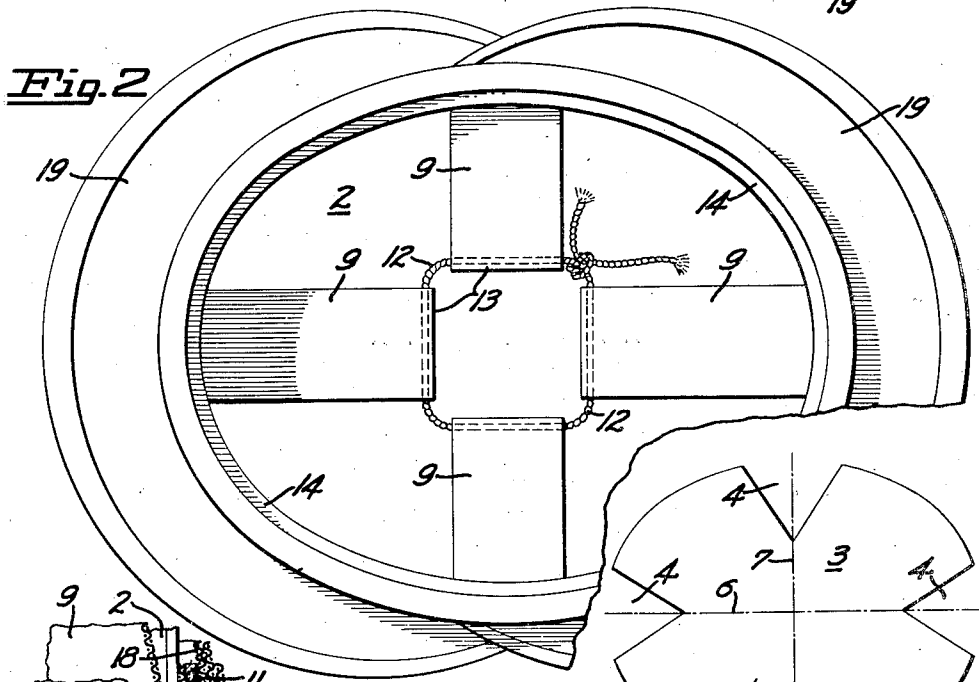


Fig. 3

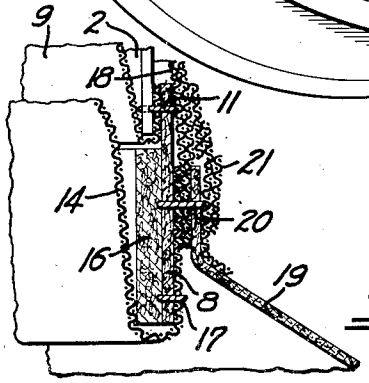


Fig. 4

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UNITED STATES PATENT OFFICE

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SAFETY HEADGEAR

Application filed January 9, 1931. Serial No. 507,617.

My invention relates to a safety headgear, particularly to a safety hat for the protection of a wearer working in localities where there is danger of being struck by falling objects.

It is among the objects of my invention to provide a headgear possessed of a sufficient degree of rigidity to protect the wearer from injury by falling objects, and still light enough to be worn without discomfort.

Another object of my invention is the provision in a safety headgear of the character described, of waterproofing means for protecting the wearer against rain or other conditions of moisture.

Another object of my invention is to provide a safety headgear offering great resistane to damage.

Further objects of my invention include the provision, in a safety headgear of the character described, of improved means for supporting the headgear on the head of a wearer, so that circulation of air adjacent the wearer's cap is allowed, and whereby the headgear may be adjustably positioned.

The invention possesses other objects and features of advantage, some of which with the foregoing, will be set forth in the following description of my invention. It is to be understood that I do not limit myself to this disclosure of species of my invention, as I may adopt variant embodiments thereof within the scope of the claims.

Referring to the drawing:

Figure 1 is a side view, partly in elevation and partly in vertical section, of the safety hat embodying my invention; and

Figure 2 is a bottom view of the same.

Figure 3 is a plan view, on a reduced scale, of the blank from which the crown of the hat is formed.

Figure 4 is a detail vertical sectional view taken at the base of the crown, and shows the manner in which the various elements of the hat are tied together.

In terms of broad inclusion, the safety headgear embodying my invention comprises a crown of light and relatively stiff material, preferably a hard compacted fibre; this crown being strong and rigid enough to protect the wearer from injury by falling objects, such as rock, bricks, hot rivets and the like. The crown preferably comprises a single sheet of material provided with peripheral notches to facilitate shaping the crown, and a ring is preferably provided for holding the crown in shape.

A water-proof cover is adhesively secured over the crown. The cover is preferably of fabric; a water-proof cement being applied to the cover to saturate it and at the same time adhesively unite it with the crown. A lining for supporting the headgear on the head of the wearer is provided, and preferably comprises a plurality of straps; the lower ends of the straps being held between the crown and ring, and the upper ends being adjustably secured together. A brim is preferably provided overlying the cover, and means are provided for securing the brim, cover and crown together. A water-proof crown band is also preferably provided overlying the cover and brim and adhesively secured to both.

In greater detail, the headgear or safety hat embodying my invention comprises a dome-shaped crown 2 preferably formed from a single sheet of relatively thin hard compacted fibrous material; a sheet substantially $\frac{3}{32}$ of an inch in thickness being preferably used. This material has been found ideal for the crown construction of a safety hat, because it is tough, chemically inert, and a non-conductor of both heat and electricity. At the same time the crown material is light enough to make the hat comfortable for wearing, and still possesses sufficient rigidity and strength to protect the wearer against injury from falling objects.

As shown in Figure 3 the sheet material is punched or otherwise cut to provide a blank 3. The blank is ovoid in shape, and is provided with notches 4 at the intersection of the blank periphery with the major axis 6 and minor axis 7 of the ovoid. In forming the crown the blank 3 is steamed. After being steamed for about fifteen minutes the fibre becomes sufficiently pliable to be readily pressed into a dome shape, with the notches 4 substantially closed.

A retaining ring 8, preferably of fibrous

material similar to that used in the crown, but more flexible, is secured adjacent the edge of the crown 2 and preferably on the outside thereof to hold the crown in shape. A lining for supporting the hat on the head of a wearer is provided, and preferably comprises a plurality of straps 9 of heavy fabric or other strong flexible material. These straps, which may conveniently be four in number, are spaced about the periphery of the crown 2, and are caught at their lower ends between the crown and retaining ring 8. Any suitable fastening means, such as the stitching 11, may be used to secure the ring, lining and crown together.

The upper ends of the lining straps 9 are secured together by suitable connecting means. This is preferably accomplished by folding back and fastening the ends of the straps, and then passing a tie cord 12 thru the loops 13 thus formed. By tying the cord ends together the lining straps are adjustably secured, and by merely loosening or tightening the tie cord the hat may be adjustably positioned on the wearer's head. Since the crown is supported on the lining straps, any load applied to the crown is distributed over the head of the wearer. Also, in passing the straps over the edge of the crown a snubbing action is provided, which feature adds considerable strength to the fastening.

By building the lining up of a plurality of straps a strong support is provided, and at the same time circulation of air adjacent the wearer's scalp is allowed. Furthermore, the straps contact with only portions of the head, which feature of the lining adds to the spring and flexibility of the headgear. These features of the lining are particularly important in a safety hat, because it is the lining that supports the hat and serves to transmit the force of a blow to the wearer's head.

A sweat band 14 of suitable soft material is provided, and is folded over the lower edge of the retaining ring 8 to extend up the inner and outer sides of the ring. The band overlaps the lower ends of the lining straps 9 to protect the wearer's head, and a spacing strip 16 of soft felt or other suitable material is interposed between the sweat band and retaining ring to add to the comfort of the wearer. Fastening means, such as the stitching 17, is passed thru the sweat band 14 and retaining ring 8 adjacent the lower edge of the ring to secure the band.

A water-proof cover is provided over the crown 2 to protect the wearer against rain or other conditions of moisture. The cover preferably comprises one or more sheets 18 of fabric or other suitable material; two sheets being shown for the purposes of illustration. The water-proof cover is adhesively secured to the crown, so that the cover and crown are united to form an integral mass. This may conveniently be accomplished by stretching the fabric cover sheets 18 over the crown 2 and then applying a suitable water-proof cement to saturate the cover and at the same time adhesively unite it to the crown.

The edges of the cover sheets 18 preferably extend down over the retaining ring 8 and overlap the outer edge of the sweat band 14. A suitable brim 19 is provided, and preferably overlies the retaining ring and the overlapping portions of the cover sheets 18 and sweat band 14. As best illustrated in Figure 4, the brim, cover, sweat band and ring are held together by suitable binding means, such as the stitching 20. This binding ties these elements together into a strong, compact and unitary structure.

In order to completely water-proof the headgear a crown band 21 is provided. The crown band overlies the cover sheets 18 and brim 19, and is adhesively secured to both. Adhesive tape may be used to make the crown band, or an ordinary strip of fabric could be employed. In the latter case an application of water-proof cement would serve to saturate the crown band and bind it to the cover and brim. In all events, the brim 19, cover sheets 18 and crown band 21 are adhesively united together to present a water-proof surface to the weather.

An important feature of the safety hat construction lies in the fact that the cover sheets 18 are adhesively united to the crown 2 to form an integral mass. This follows because the cover is an integral part of the crown, and as such is not likely to become torn by falling objects.

I claim:

1. The combination with a hat crown having a ring secured adjacent the edge thereof on the outside of the crown, of a lining comprising a plurality of spaced straps, the lower ends of said straps extending over the edge of said crown and held between the ring and the crown, binding means passing thru ring, lining and crown for holding them together, and means for securing the upper ends of said straps together in free spaced relation to the crown.

2. A safety headgear comprising a crown, a water-proof cover over the crown, a brim overlying the cover, means securing the brim, cover and crown together, and a water-proof crown band overlying the cover and brim and adhesively united to both.

3. A safety headgear comprising a crown, a ring secured adjacent the edge of the crown, a water-proof cover over the crown and overlapping the ring, a brim overlying the ring and cover, binding means securing the brim, cover and ring together, and a water-proof crown band overlying the cover and brim and adhesively united to both.

4. A safety headgear comprising a crown, a fabric cover over the crown, a brim overlying the cover, means securing the brim,

cover and crown together, a fabric band overlying the cover and brim, and a water-proof cement saturating the cover and band and adhesively uniting them together and to the substructure.

5. A safety headgear comprising a crown formed from a single sheet of hard compacted material, a ring secured on the outside of the crown and adjacent the edge thereof, and a lining extending directly over and binding against the edge of said single-sheet crown and held between the ring and the crown.

6. A safety headgear comprising a hat crown having a ring secured adjacent the edge thereof on the outside of the crown, a lining comprising a plurality of straps secured at spaced points along the edge of the crown, the lower ends of said straps extending over the edge of said crown and held between the ring and the crown, said straps extending upwardly in free spaced relation to the crown and terminating in close proximity to each other adjacent to the top of the wearer's head, the upper ends of said straps being provided with loops, a drawstring free of said crown and passing through said loops and engaging only said loops for adjustably securing the upper ends of the straps together, and binding means passing through said ring, straps and crown.

In testimony whereof, I have hereunto set my hand.

EDWARD W. BULLARD.