Nov. 19, 1957 L. P. BARKER, JR 2,813,270

SAFETY HAT

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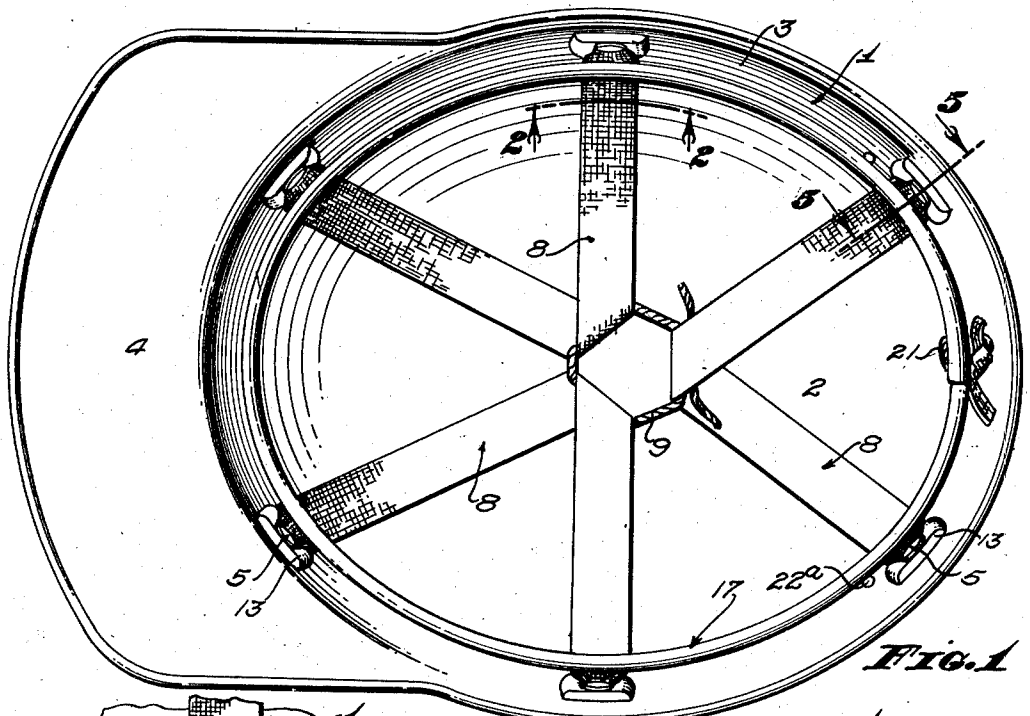


FIG. 1

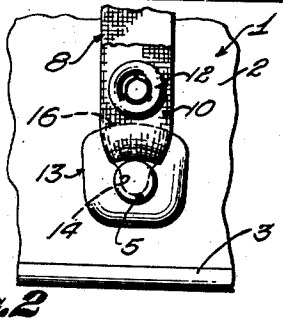


FIG. 2



FIG. 3

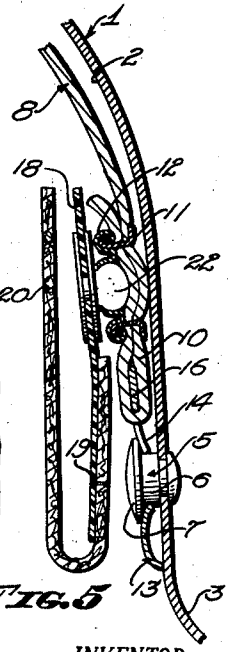


FIG. 5

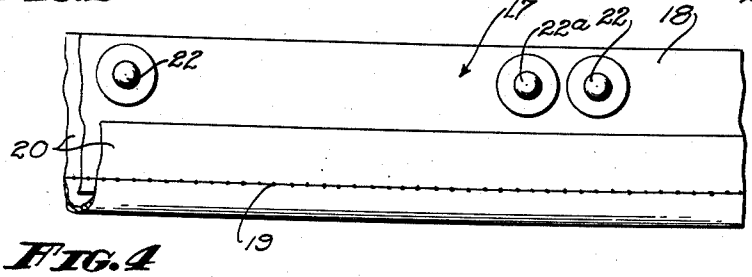


FIG. 4

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SAFETY HAT

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6 Claims. (Cl. 2—3)

My invention relates to safety hats, and included in the objects of my invention are:

First, to provide a safety hat having a removable and separable cradle and headband so that either of these elements may be removed for cleaning or replacement.

Second, to provide a safety hat wherein the attaching means for the head cradle is within the crown of the hat and thus hidden from view when the hat is worn, to improve the appearance thereof but without sacrificing its safety features.

Third, to provide a safety hat wherein the head cradle is formed of straps having clips at their extremities for attachment to the hat, and the devices for connection between the straps and clips form permanent fastening means between the straps and clips and also form the elements of separable fastener means for connection to the headband to permit independent removal of the headband.

With the above and other objects in view, as may appear hereinafter, reference is directed to the accompanying drawings, in which:

Figure 1 is a bottom view of a safety hat incorporating my invention;

Fig. 2 is an enlarged fragmentary elevational view, taken from within the crown of the hat substantially along the line 2—2 of Fig. 1;

Fig. 3 is an elevational view of one of the clip members employed to secure the head-receiving cradle structure to the hat;

Fig. 4 is a fragmentary elevational view of the headband structure as viewed from the radially outer side thereof; and

Fig. 5 is an enlarged fragmentary sectional view through 5—5 of Fig. 1, showing the manner in which the cradle straps and headband are attached.

My safety hat includes a hat member 1 formed of metal or plastic, or other impact resistant material. The hat member 1 includes a crown 2 and a rim 3. In the illustration a narrow rim is shown and a visor 4 is provided. It should be observed, however, that a continuous wide rim may be provided.

Secured within the crown 2, adjacent the rim 3, is a plurality of rivets 5. Six such rivets are shown. They are substantially equally spaced and include stem portions 6 projecting into the hat and terminating in head portions 7.

A plurality of cradle straps 8 are provided. These are formed of flexible plastic or cloth webbing. Three such straps are shown. These are folded at their mid portions and connected by a tie member 9, the circumference of which is adjustable. Six radiating strap portions are thus formed which terminate in looped ends 10. Each looped end is secured in its closed position by a clamp ring 11, having prongs which project through the material of the strap and are anchored into the marginal portions of a separable fastener socket 12. The clamp ring 11 and separable fastener socket 12 are per se conventional elements.

Supported in each looped end 10 is a clip member 13 formed of sheet metal, and having an aperture 14 widened at one end, as indicated by 15, so that the clip may be slipped sidewise over the head of the rivet 5 so that the margins of the aperture 14 may interlock therewith, as shown best in Figs. 2 and 5. Beyond the wide end 15 of the aperture 14 there is formed a web 16 through which the end of the corresponding cradle strap is slipped, before it is looped upon itself and secured. The separable fastener socket 12 is thus located in spaced relation to the rivet 5, and is capable of limited circumferential, as well as radially inward, movement within the limits of flexibility of the cradle strap 8.

A headband 17 is provided which includes a reinforcing strip 18 formed of plastic material or of treated cloth, so that, though it is flexible, its ability to stretch is limited. Secured to one margin of the reinforcing strip 18 by stitching 19 is a sweatband 20 formed of leather, plastic material, or fabric. The sweatband 20 is folded longitudinally upon itself and disposed so as to form the radially inner side of the headband 17. The folded margin of the sweatband is directed downwardly, that is, toward the open side of the crown 2.

The extremities of the headband 17 telescope and are joined by a tie member 21. A plurality of apertures are provided, as indicated by dotted lines in Fig. 1, so that the circumference of the headband may be adjusted by relocation of the tie member 21.

Secured to the reinforcing strip 18 is a plurality of separable fastener pins 22 which snap into the separable fastener sockets 12.

It will thus be seen that the headband 17 may be removed without removal of the cradle straps 8 and clips 13. This is highly desirable, inasmuch as the headband usually requires replacement much oftener than the cradle straps.

It will be observed that the hat member 1 is supported on the head primarily by the cradle formed by the cradle straps 8 and tie member 9, and that the cradle straps are connected through their looped ends 10 directly to the clips 13 which are anchored to the rivets 5. Thus any impact against the hat member is taken primarily by the cradle structure, and no load is imposed on the separable fastener sockets and pins. Although the headband is readily removable, its means of attachment does not reduce the safety features of the hat.

Lateral displacement afforded by each loop 10 permits adjustment of the circumference of the headband 17. The required lateral displacement of the fasteners is, however, cumulative from the front to the rear of the headband, so that the rear two snap fasteners are displaced farther than the front two. Thus, to increase the range of adjustment, auxiliary snap fastener pins 22*a* are provided near the telescoping portions of the headband.

Having fully described my invention, it is to be understood that I do not wish to be limited to the details herein set forth, but my invention is of the full scope of the appended claims.

I claim:

1. A safety hat, comprising: an impact resistant hat member including a crown and a plurality of attachment elements within the crown adjacent the brim thereof; a plurality of cradle straps, each having a loop at each end; interlocking means permanently securing each loop in closed condition and forming an element of a separable fastener; a clip secured in each loop and arranged for connection to a corresponding attachment element in said hat member; a headband; and a plurality of separable fastener elements secured to said headband and adapted for engagement with the separable fastener elements of

said interlocking means to permit removal of said headband independently of said cradle straps.

2. A safety hat as set forth in claim 1, wherein: means are provided to adjust the circumference of said headband; said cradle straps are yieldable to permit limited circumferential displacement of said separable fastener elements; and auxiliary separable fastener elements are provided on said headband to permit further change in the circumference of said headband.

3. A safety hat, comprising: an impact resistant hat member including a crown and a plurality of attachment elements within the crown adjacent the brim thereof; an attachment clip adapted for removable engagement with each attachment element; a plurality of cradle straps, each having an end looped through a clip and secured to itself; means joining said cradle straps to form a head-receiving cradle to support said helmet in spaced relation thereto; a headband; and separable fastener means on said headband and said cradle straps at their looped ends for removably securing said headband within said cradle.

4. A safety hat, comprising: an impact resistant hat member including a crown and a plurality of attachment elements within the crown adjacent the brim thereof; an attachment clip adapted for removable engagement with each attachment element; a plurality of yieldable cradle straps, each having an end looped through a clip and secured to itself; means joining said cradle straps to form a head-receiving cradle to support said helmet in spaced relation thereto; a headband; means for adjusting the circumference to said headband; and separable fastener means on said headband and said cradle straps at their looped ends for removably securing said headband within said cradle; said cradle straps permitting limited circumferential displacement of said separable fastener means to accommodate different headband circumferences, and auxiliary fastener elements on said headband to permit further change in the circumference of said headband.

5. A suspension means for safety hats having a plurality of attachment elements secured within its crown adjacent its brim, comprising: a plurality of cradle straps, each folded intermediate its ends, and also folded adjacent each of its extremities; a tie element joining said straps intermediate their ends; separable fastener elements permanently securing the folded extremities of each strap together to form closed loops; a clip secured in each loop and removably engageable with an attachment element of said hat; a headband; and a plurality of separable fastener devices thereon removably engageable with said separable fastener elements.

6. A safety hat, comprising: an impact resistant hat member; a plurality of attachment buttons secured within the crown of said hat member adjacent its brim, said attachment buttons including shanks terminating in enlarged heads spaced from the surface of the hat member; a plurality of cradle straps, each folded intermediate its ends, and also folded adjacent each of its extremities; a tie element joining said straps intermediate their ends; separable fastener elements permanently securing the folded extremities of each strap together to form closed loops; a clip for each end of each strap, said clip being formed of sheet metal and having a single aperture widened at one end and threaded on the end of said strap and permanently secured thereon upon said end being looped and secured by said separable fastener element; the widened end of each clip aperture adapted to slip over the head of an attachment button for removably attaching the corresponding end of a strap thereto; a headband; and a plurality of separable fastener devices thereon removably engageable with said separable fastener elements.

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