June 11, 1968 J. N. SIMPSON ETAL 3,387,304

SAFETY CAP SUSPENSION

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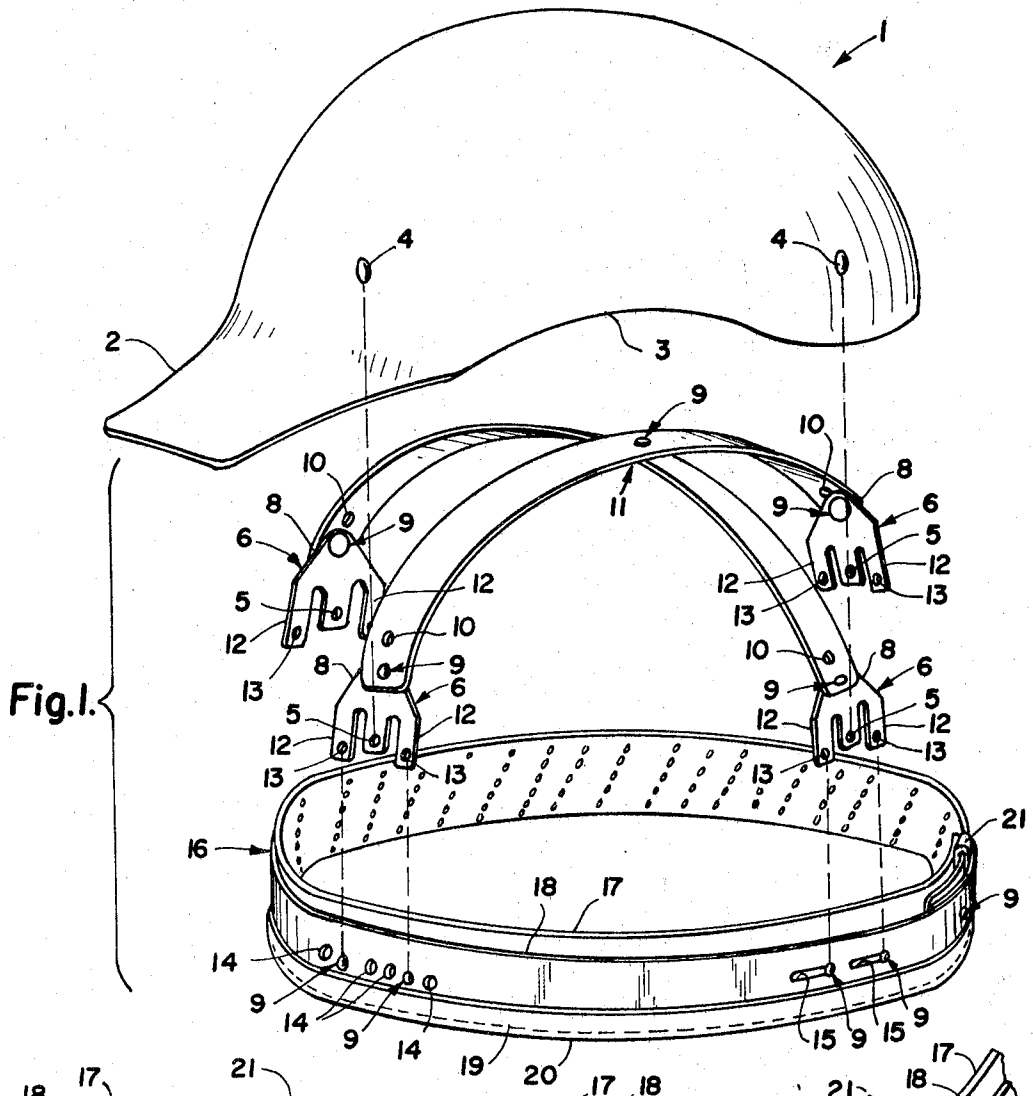


Fig. 1.

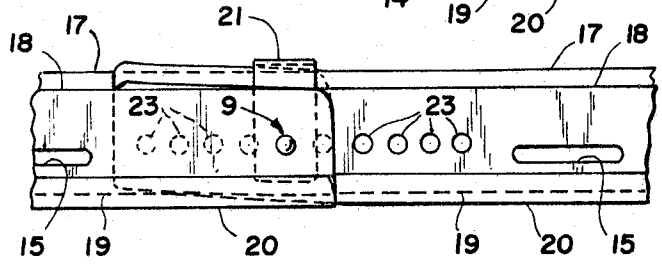


Fig. 2.

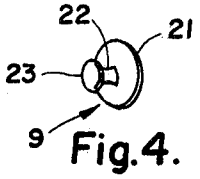


Fig. 4.

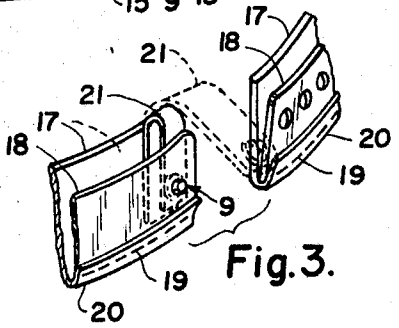


Fig. 3.

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SAFETY CAP SUSPENSION

Filed March 10, 1965 2 Sheets-Sheet 2

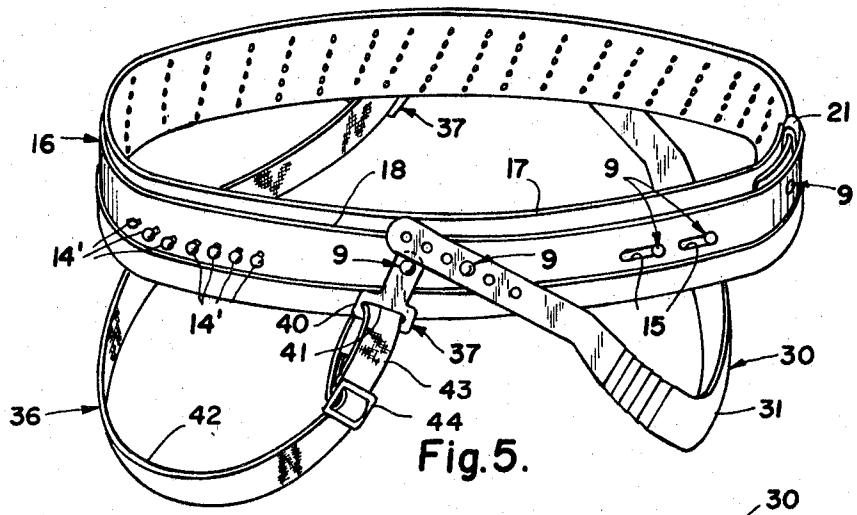


Fig.5.

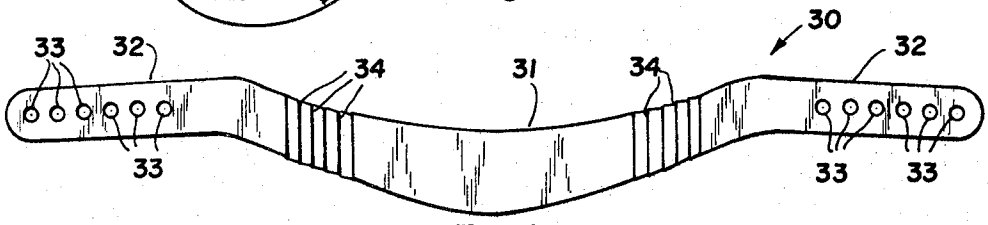


Fig.6.

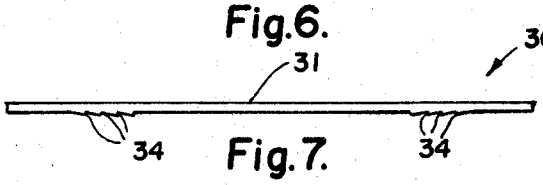


Fig.7.

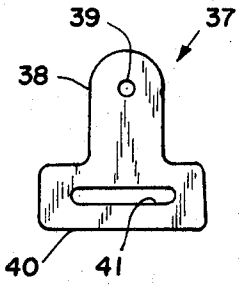


Fig.8.

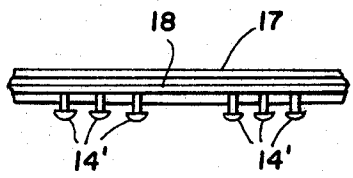


Fig.9.

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SAFETY CAP SUSPENSION

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1 Claim. (Cl. 2—3)

This invention relates generally to a safety cap construction and, more particularly, to a crown strap suspension therefor for enabling easy and quick adjustment in height and perimeter of the suspension.

In the past, adjustable crown strap suspensions for safety headgear have often involved difficulty in making adjustments in circumference and have generally required removal of the entire suspension for making adjustments in height.

An object of the present invention is to provide a novel safety cap construction and a novel suspension therefor which overcomes the above named disadvantages and which enables adjustment in girth and height without the necessity of removing the entire head band suspension, but by the mere detachment and attachment of collar buttons.

A more specific object of the invention is to provide a novel crown strap suspension which is permanently fastened to the inside of a safety cap and in which the height of the suspension may be quickly varied merely by the detachment and re-attachment of the end portions of the cross straps which suspend permanently fastened, fingered suspending elements.

Another object of the present invention is to provide a crown strap suspension for safety headgear which enables easy and quick detachment and attachment to selective holes on the front portion of the headband and two slots at the rear portion thereof, for greatly facilitating adjustment in circumference or girth of the headband.

Other objects and advantages will become more apparent from a study of the following description taken with the accompanying drawings wherein:

FIG. 1 is a top, perspective view of a safety cap embodying the present invention and provided with a crown strap suspension detachably secured to a headband, and wherein the cap, crown strap suspension, and headband are shown separated or exploded to more clearly illustrate the adjustable features thereof;

FIG. 2 is a side, fragmentary view of the rear adjustable portion of the headband **16** of FIG. 1;

FIG. 3 is a top, perspective, fragmentary view of the rear adjustable portion of headband **16** of FIG. 1 showing the ends of the headband separated to more clearly illustrate their construction;

FIG. 4 is an enlarged, perspective view of a collar button **9** such as used throughout the suspension shown in FIGS. 1, 2 and 3;

FIG. 5 is a top, perspective view of a modification of the headband and including chin and nape straps.

FIG. 6 is a plan view of the nape strap shown in FIG. 5;

FIG. 7 is a fragmentary side view of the nape strap shown in FIG. 6;

FIG. 8 is an enlarged plan view of element **38** of FIG. 5; and,

FIG. 9 is an enlarged, fragmentary top view of the headband shown in FIG. 5.

Referring more particularly to FIG. 1 of the drawing, numeral **1** generally denotes a safety cap of plastic, metal or other suitable material (although it should be understood that a safety hat could be used instead), which cap has an integral front visor portion **2** and arcuate side portions **3**. The opposite side of the cap has the same

appearance. The arcuate portions **3** prevent contact with the ears of the wearer and attendant discomfort.

At circumferentially spaced points about the perimeter of the cap are attached four rivets **4** for permanently fastening the central finger portions, through holes **5** of plastic three-fingered suspending elements **6**. In some instances, however, readily detachable fasteners may be used instead of rivets **4**. Four of such suspending elements **6** are provided, each having side finger portions **12** having holes **13** for receiving neck portions **22** of collar buttons **9** of the construction more clearly shown in FIG. 4, provided with a neck **22**, bead **23** and base **21**. The collar button, in turn, is detachably secured to selective pairs of holes **14** formed at the front of plastic band **18** of the headband **16**. At the rear portion of the headband **16**, the collar buttons **9** mounted on the side finger portions **12** are projected into slots **15** formed in the plastic band **18** to provide adjustability in girth. Two such pairs of slots **15** are provided, one on each side of the rear portion, whereas two sets of holes **14** are provided, one on each side of the front portion of the headband so that the two pairs of front fingers or suspending elements **6** are held in selective holes at fixed points, whereas the two pairs of rear suspending elements **6** are automatically slidable in slots of the headband after the headband has been adjusted in circumference.

In order to provide for vertical adjustment of crown strap suspension **11** for different sizes of heads, two cross strips of plastic material are disposed in intersecting relationship with a collar button **9** extending through registering holes at the center of the strips. Each end portion of each strip is provided with two slots **9** and **10** for selective use in attaching to the collar buttons **9** extending through a hole in the top of suspending element **6**, whereby the height of the intersecting straps, that is, the height of the central portion of the crown strap suspension **11** may be varied.

The plastic strip **18** of headband **16** has sewed at **19** to the lower portion a leather sweat band **17** which is folded at the bottom **20** and provided with a plurality of diagonally extending perforations for ventilation. The end portions of the headband **16** are overlapped by variable amounts so as to provide an adjustment of the circumference or girth of the headband for different head sizes of the wearer. When the proper overlap or adjustment has been obtained, and as best shown in FIGS. 2 and 3, a collar button **9** is extended through the selected registering holes **23** in plastic strip **18** and an encircling flexible strap portion **21** is looped over the tops of seatband **17** and strip **18** of the headband so that the collar button **9** may also be inserted through a hole formed at the free end of strap portion **21** to compact the assembly.

The headband may be readily adjusted in the girth or circumference merely by attaching or detaching a collar button **9**, also the height of the crown strap suspension may be varied without removal of the suspension elements **6** from their permanent attachment to the inner surface of cap **1**. It is merely necessary to detach the collar button **9** from one hole **10** and insert it in another, vertically disposed therewith, to raise the height of the crown strap suspension.

FIG. 5 shows a modification of the headband and wherein like numerals indicate the same parts illustrated in FIG. 1.

A modification is made by integrally molding buttons or projections **14'** on both sides of the front portion of the headband instead of providing holes through which separate collar buttons are projected.

In order to hold the headband and suspension firmly on the head, a chin strap **36** may be provided including a strap portion **42** for engaging the chin and an adjustable

portion 43 which projects through a slot 41 in portion 40 of a clip 38, which clip is pivotally mounted by projecting a collar button 9 through hole 39. The entire chin strap assembly, denoted by numeral 37, is used alone under ordinary circumstances.

In some situations, and more often, instead of using a chin strap assembly 37, a nape strap 31 is used which comprises a central portion 31 which is serrated at 34 to provide frictional contact under the nape of the neck. Each end portion 32 of the nape strap is provided with holes 33 through which a collar button 9 may be selectively inserted to adjust the strap to fit different head sizes of wearers. Thus it will be seen that we have provided a light and efficient safety cap construction and suspension for enabling quick and easy adjustment of the girth and height of the crown strap suspension involving the mere detachment and attachment of collar buttons; furthermore, we have provided a novel suspension which is also useful for safety hats.

While we have illustrated several embodiments of our invention, it will be understood that these are by way of illustration only, and that various changes and modifications may be made within the contemplation of our invention and within the scope of the following claim.

We claim:

1. A crown strap suspension for safety headgear comprising a pair of cross straps of plastic strip material, the ends of said straps having longitudinally disposed holes, a plurality of plastic suspending elements each having a top central portion having a hole therein, a corresponding plurality of collar buttons, each of said suspending elements being attached to the end of a different one of said straps by aligning the hole in the central portion of said suspending element with a selected one of the holes in said straps enabling adjustment of the height of the suspension, each of said suspending elements having a central finger for attachment to the inside surface of said headgear and having side fingers having holes therein with collar buttons and a headband having selectively overlapped end portions for adjusting the girth of the headband and having slots adjacent each of said end portions into which said collar buttons of the side fingers extend, whereby adjustment in height may be made without detaching said suspending elements from said headgear.

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