Nov. 28, 1967 C. E. BOWERS, JR 3,354,468

NAPE STRAP

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Fig. 3

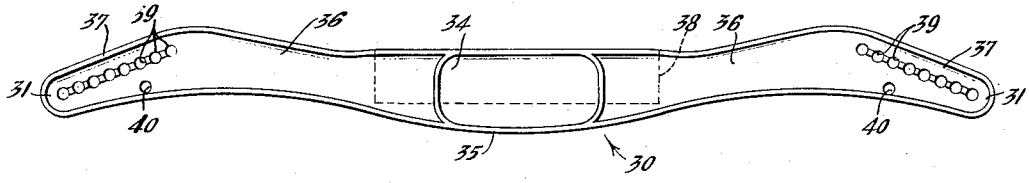


Fig. 4

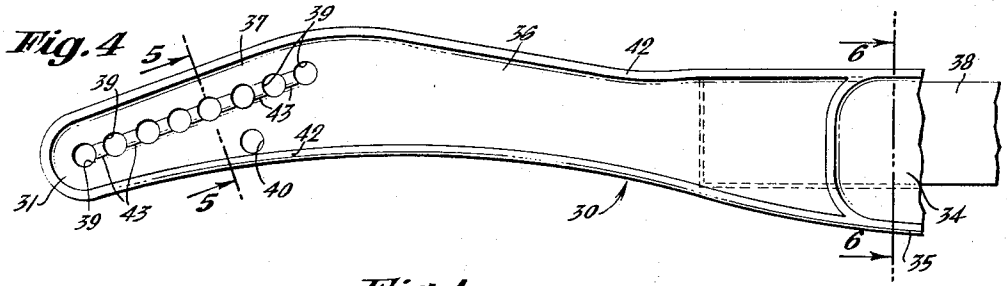


Fig. 1

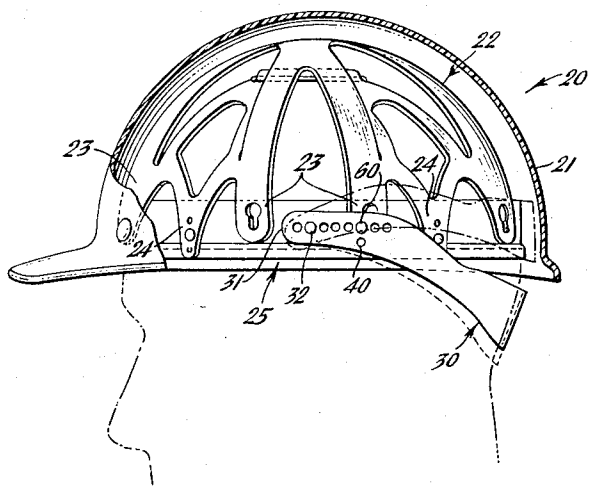


Fig. 5

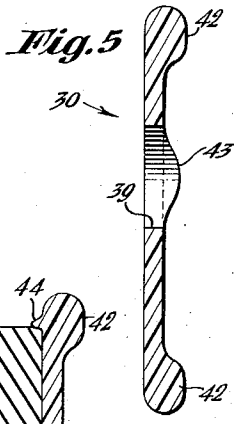


Fig. 6

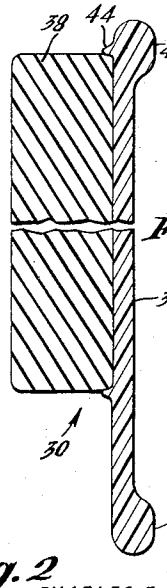
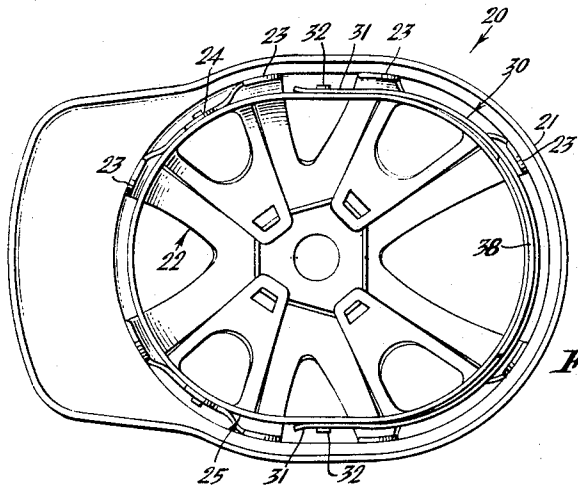


Fig. 2



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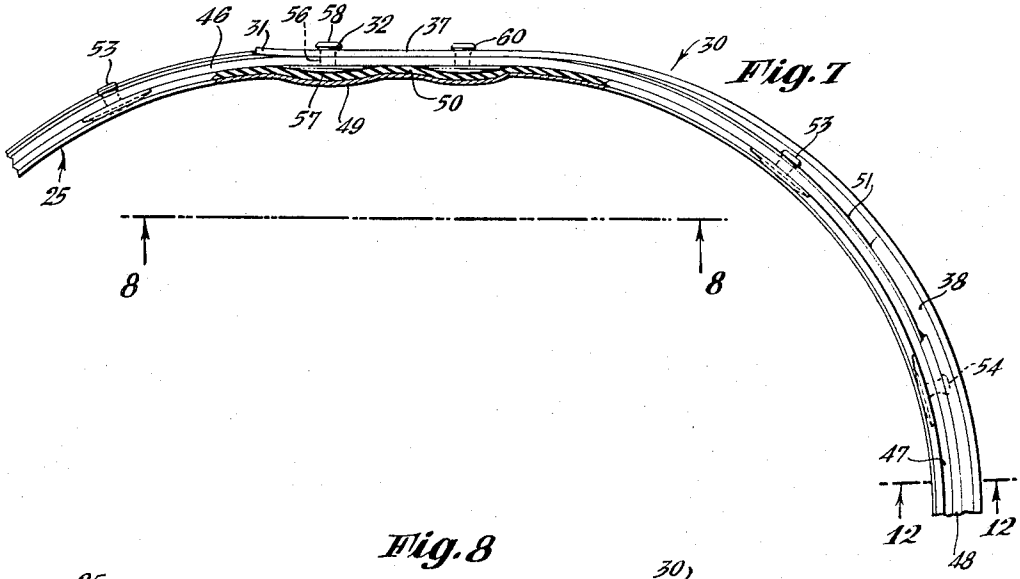


Fig. 1

Fig. 8

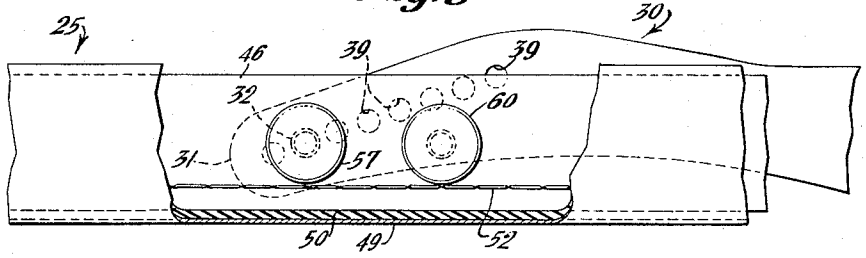


Fig. 9

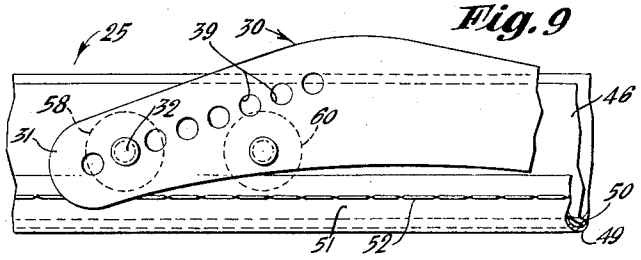


Fig. 10

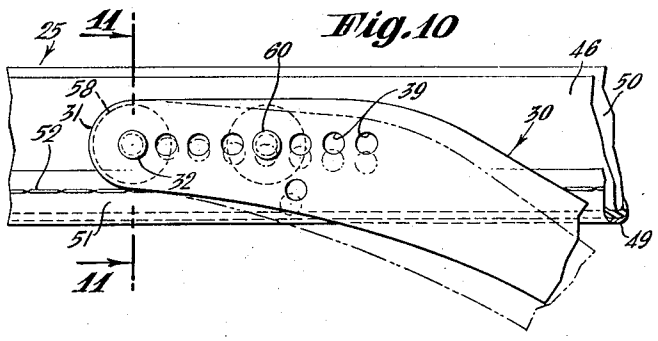


Fig. 11

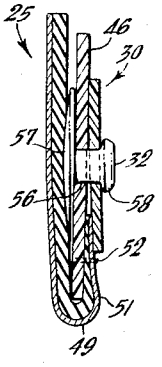
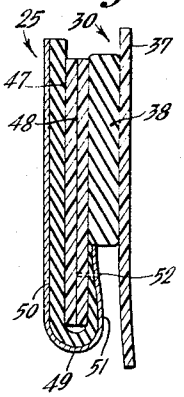


Fig. 12



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United States Patent Office 3,354,468 Patented Nov. 28, 1967

3,354,468

NAPE STRAP

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Filed June 29, 1965, Ser. No. 467,868
5 Claims. (Cl. 2—3)

This invention relates to improvements in hats and caps, and is especially concerned with unique means for retaining hats and caps in position on a wearer's head.

While the device of the present invention is primarily concerned with a hat construction or attachment for use with a hat construction of the hard-shell type, such as industrial hard hats, and will be illustrated and described hereinafter with particular reference thereto, it is appreciated that the present invention is capable of many varied applications, all of which are intended to be comprehended herein.

In the customary usage of hard hats, such as have a hard outer shell, a flexible headband in spaced relation within the shell, and suspension means supporting the headband within the shell, as often worn by linemen, miners, and other such workmen, a wide variety of attitudes are assumed by the wearer's head, some of which may tend toward inadvertent removal or falling of the hat from the head. A common position assumed by wearers of hard hats resulting in removal or loss of the hat from the wearer's head is the simple act of bending over, say to look down, as through a manhole, or otherwise.

Accordingly, it is an important object of the present invention to provide a unique hat construction wherein a flexible back or nape strape is selectively engageable with the lower back of the wearer's head or nape, to comfortably and effectively insure retention of the hat on the wearer's head.

It is a further object of the present invention to provide an attachment strap of the type described for use in conjunction with conventional hats and caps.

The invention further contemplates the provision of a hat construction or attachment therefor having the advantageous characteristics mentioned in the preceding paragraphs, which is extremely simple in structure, easy to use, durable and reliable throughout a long useful life, and which can be selectively employed with existing hats requiring little or no modification thereof.

Other objects of the present invention will become apparent upon reading the following specification and referring to the accompanying drawings, which form a material part of this disclosure.

The invention accordingly consists in the features of construction, combinations of elements, and arrangements of parts, which will be exemplified in the construction hereinafter described, and of which the scope will be indicated by the appended claims.

In the drawings:

FIGURE 1 is a side elevational view, partly broken away showing a hard hat of the general type disclosed in U.S. Patent No. 3,026,523 to Bowers et al., in position on a wearer's head, and illustrating the construction of the present invention in alternate positions;

FIGURE 2 is a bottom plan view of the hat construction shown in FIGURE 1;

FIGURE 3 is a plan view or development of the attachment of the present invention apart from a hat;

FIGURE 4 is a partial plan view similar to FIGURE 3, but showing the attachment in greater detail;

FIGURE 5 is a transverse sectional view taken generally along the line 5—5 of FIGURE 4;

FIGURE 6 is a transverse sectional view taken generally along the line 6—6 of FIGURE 4;

FIGURE 7 is a partial bottom view similar to FIGURE 2, but greatly enlarged and partly broken away for clarity of understanding;

FIGURE 8 is a fragmentary view taken generally along the line 8—8 of FIGURE 7, also partly broken away;

FIGURE 9 is a view similar to FIGURE 8, but taken from the other side thereof;

FIGURE 10 is a view similar to FIGURE 9, but showing the attachment strap in alternate positions;

FIGURE 11 is a transverse sectional view taken generally along the line 11—11 of FIGURE 10; and

FIGURE 12 is a transverse sectional view taken generally along the line 12—12 of FIGURE 7.

Referring now more particularly to the drawings, and specifically to FIGURES 1 and 2 thereof, a hat is there generally designated **20**, and may include a generally semispherical outer shell **21**, say of plastic or the like. Interiorly of the shell **21** is secured a suspension harness **22**, say of the type disclosed in U.S. Patent No. 3,026,523, or other suitable suspension means. The particular illustrated suspension harness **22** includes a plurality of circumferentially spaced outer legs **23** secured to the inner surface of the shell **21**, and an additional plurality of circumferentially spaced inner legs **24** spaced within the shell. A generally annular headband **25** is connected at circumferentially spaced points thereabout to the inner legs **24**, and thereby supported spacedly within the shell **21**. In use, the suspension or harness **22** seats comfortably on the wearer's head, see FIGURE 1, and the headband **25** extends circumferentially about the head to support the shell **21** in spaced relation about the wearer's head and the headband **25**.

In accordance with the instant invention, a nape strap or attachment, generally designated **30**, is of elongate, flexible character and extends generally along the rear or back of the headband **25**, with opposite end portions **31** each pivotally connected, as by a button or pin **32** to a respective adjacent side of the headband **25**. The strap **30** is thereby mounted for swinging movement between an upper, retracted inoperative position, shown in dot-and-dash outline in FIGURE 1, and a lowermost, extended operative position, shown in dashed outline.

The overall configuration and arrangement of strap attachment **30** is best seen in FIGURE 3. The strap may include a generally straight medial portion **34** having its lower edge **35** of outwardly bowed or convex configuration symmetrical about a transverse center line. From opposite ends of the medial portion **34**, the strap may extend outwardly and slightly obliquely upwardly, as at intermediate portions **36**, and thence outwardly and slightly obliquely downwardly, as by terminal portions **37**. In practice, the strap **30** may advantageously be fabricated of flexible, resiliently deflectable material, such as plastic, or other suitable material. On one surface of the medial strap portion **34**, the inner surface in its assembled condition, there is advantageously provided a pad **38** of soft, preferably resilient cushioning, such as plastic foam, or the like. The terminal portions **37** of the strap **30** are each provided with a series of thru holes

or apertures 39, each such series being arranged in a row extending longitudinally of the respective terminal portion and oblique to the longitudinal dimension of the strap. An additional thru hole or aperture 40 may be provided in each terminal portion 37 below and out of line with the adjacent series of apertures 39.

As best seen in FIGURES 4, 5 and 6, the strap 30 may advantageously be molded, or otherwise formed with a peripheral bead or rib 42 extending entirely about the strap on the outer face thereof. Also, the strap region of each terminal portion 37 formed with the row of apertures 39 may be thickened, as by an interrupted bead or rib 43. The beads or ribs 42 and 43 afford additional strength and effectively resist rupture without appreciably increasing weight or reducing flexibility. In addition, on the inner surface of the strap 30, surrounding the pad 38 may be a relatively small locating bead or ridge 44. The pad 38 is thus more effectively retained in position on the medial strap portion 34 by the retaining action of ridge 44, together with suitable intersurface adhesive.

The headband 25 includes an elongate flexible strap 46, see FIGURE 8, bent to an annular configuration and having overlapping inner and outer end portions 47 and 48 at the back of the hat. The strip 46 may be covered on its inner side with a sweatband 49 advantageously having a foam lining 50. The sweatband 49 may be secured to the strip 46 by having one longitudinal edge portion 51 of the sweatband folded upward about the lower edge of strip 46 onto the outer surface thereof and secured thereto, as by stitching 52. At spaced locations about the strip 46 there are provided apertures receiving buttons 53 for attachment to the suspension 22. Additional buttons 54 extend through the overlapping end portions 47 and 48. The buttons 53 and 54 may be similar to conventional collar buttons, including a shank and end enlargements or heads on opposite ends of the shank.

The pivot members 32 at opposite sides of the headband 25 may be of similar collar-button-type structure, each including a shank 56, an enlarged, relatively large inner head 57, and an enlarged, relatively small outer head 58. The shank 56 of each button 32 extends through a respective terminal strap portion 37, through a selected one of the apertures 39, and through the adjacent portion of strip 46. The inner head 57 lies on the inner side of strip 46 and the outer head 58 on the outer side of terminal strap portion 37. Adjacent to and spaced rearward from each button 32, there is provided extending through the strip 46 an additional button 60, which may also be of collar-button-type structure. As shown in FIGURES 7–9, the button 60 passes through the strip 46 and also through aperture 40 of the adjacent terminal strap portion 37, with its end enlargements on opposite sides of the strip and terminal strap portion. This is the condition shown in dot-and-dash outline in FIGURE 1, with the strap 30 retained in its retracted position against swinging movement about the pivots 32. In this condition, the nape strap 30 is located in the space between the headband 25 and shell 21. In this inoperative condition no extra space is required for storage of the strap 30. In the event that relatively frequent swinging movement of the strap 30 between its retracted and extended positions is desired, the use of the buttons 60 may be avoided and the strap swung to its retracted position with the cushion or pad 38 frictionally engaging the rear side of the headband and retaining the nape strap in retracted position. When use of the nape strap 30 is desired, it is then only necessary to pull the strap down to its comfortable position with the cushion or pad engaging the lower back portion of the wearer's head.

The effective length of the nape strap 30 may be readily adjusted by insertion of the buttons or pins 32 in selected apertures 39. For example, in FIGURES 8 and 9 the button 32 passes through one aperture 39, while in FIGURE 10 the button 32 passes through another aperture 39 for longer effective length of the nape strap. Also, while the nonaligned aperture 40 may be employed to positively retain the nape strap 30 in its retracted, nonuse position, as described above, the buttons or pins 60 may be engaged in one of the apertures 39 to hold the nape strap against rotation while in an extended or operative position. This condition is shown in solid lines in FIGURES 1 and 10.

Obviously, with the nape strap 30 swung to its extended position and conformably engaging about the lower back of a wearer's head, substantial resistance is provided against removal of the hat by any force having a forward component.

From the foregoing, it is seen that the present invention provides a hat construction or attachment which fully accomplishes its intended objects and is well adapted to meet practical conditions of manufacture, installation and use.

Although the present invention has been described in some detail by way of illustration and example for purposes of clarity of understanding, it is understood that certain changes and modifications may be made within the spirit of the invention and scope of the appended claims.

What is claimed is:

1. In a hat or cap, the combination comprising an outer shell, a headband supported in spaced relation within said shell, a resiliently deflectable strap extending externally along the back of said headband within said shell, pivot means connecting opposite ends of said strap to opposite sides of said headband for swinging movement of said strap between a retracted position within said shell and an extended position externally of said shell for retaining engagement with the lower back of a wearer's head, and holding means for releasably holding the strap in its retracted position.

2. In a hat or cap, the combination comprising an outer shell, a headband supported in spaced relation within said shell, a flexible strap extending externally along the back of said headband within said shell, pivot means connecting opposite ends of said strap to opposite sides of said headband for swinging movement of said strap between a retracted position within said shell and an extended position externally of said shell for retaining engagement with the lower back of a wearer's neck, and a pad on the medial region of said strap for conforming engagement with a wearer's head when said strap is extended and for frictional retaining engagement with said headband when said strap is retracted.

3. In a hat or cap, the combination comprising an outer shell, a headband supported in spaced relation within said shell, a flexible strap extending externally along the back of said headband within said shell, and pivot means connecting opposite ends of said strap to opposite sides of said headband for swinging movement of said strap between a retracted position within said shell and an extended position externally of said shell for retaining engagement with the lower back of a wearer's head, said strap including a medial portion extending along said headband when in said retracted position, an intermediate portion extending obliquely upwardly and forwardly from each end of said medial portion, and a terminal portion extending obliquely downwardly and forwardly from each inttermediate portion, said terminal portions each being formed with a row of thru apertures for selective reception of said pivot means to adjust the effective length of said strap.

4. The combination according to claim 3, in combination with a button on each side of said headband adjacent to and spaced rearward from said pivot means and insertable through one of said apertures for holding said strap against swinging movement in its extended position.

5. The combination according to claim 4, said strap terminal portions each being formed with an additional aperture spaced below said row of apertures for optional

reception of the adjacent button to hold the strap against swinging movement in its retracted position.

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