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3,555,561

PROTECTIVE HELMET

Filed April 25, 1969

FIG. 1.

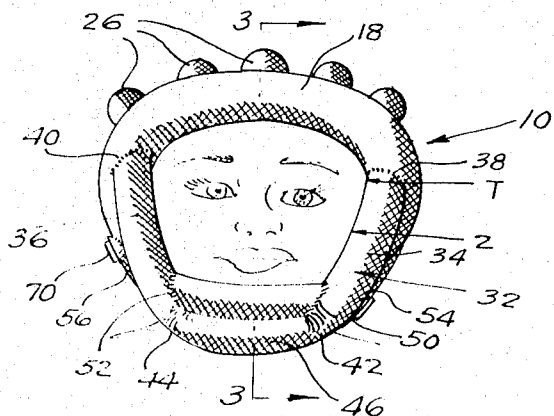


FIG. 2.

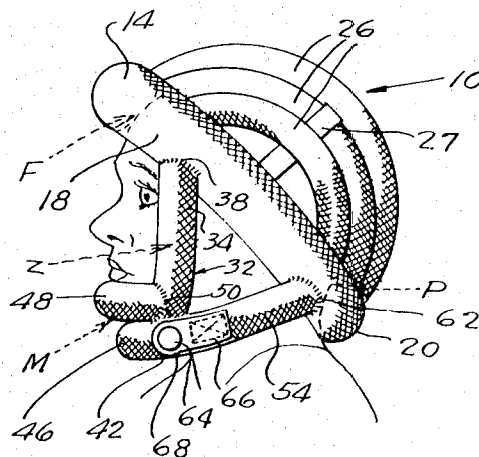


FIG. 3.

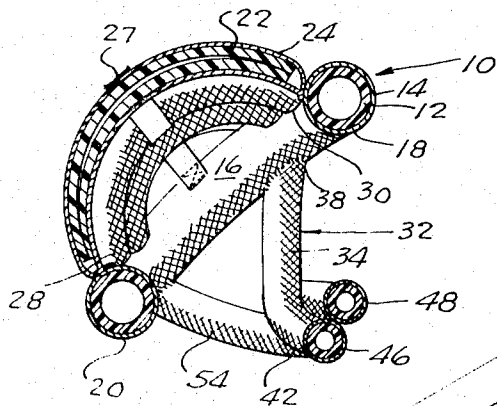
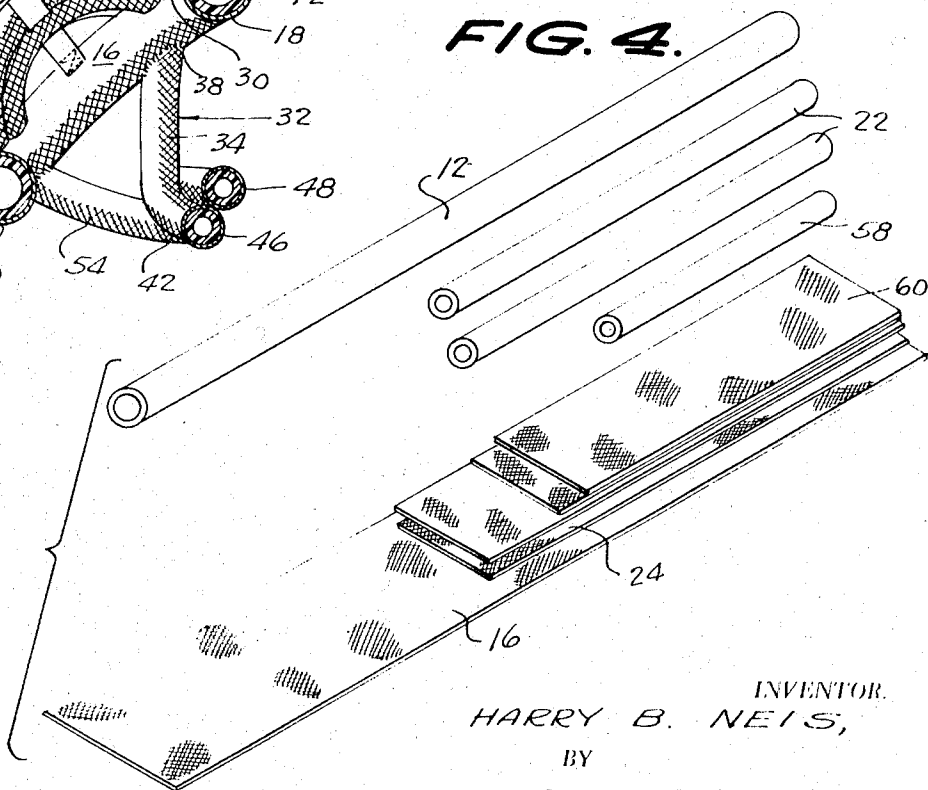


FIG. 4.



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PROTECTIVE HELMET

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2 Claims

ABSTRACT OF THE DISCLOSURE

A protective helmet to prevent head injuries employs a series of bands and straps and is arranged to encase the head of the wearer providing protection at those areas most likely to receive serious injury. The helmet embodies tubular or other resilient bands and straps.

BACKGROUND OF THE INVENTION

(1) Field of the invention

This invention relates to protective gear worn on the head and may be employed wherever such protection is required. A principal area of intended use resides in the employment of this apparatus in the care of individuals afflicted with physical or mental incapacities which make them particularly susceptible to falls and the like.

(2) Statement of the prior art

The need for protective head gear in the fields of both athletic activity and institutional care has long been recognized. Many helmets embodying padding, chin straps, and the like have been developed to meet this need, some of which have been effective to prevent injuries under some circumstances. However, these prior devices have been criticized from the standpoints of expense, discomfort, ineffectiveness under certain circumstances, and difficulty of cleaning and unsightliness.

SUMMARY OF THE INVENTION

This invention provides a helmet of the character particularly adapted to use with incapacitated persons, which is principally adapted to furnish maximum protection for critical cranial areas. The principal objective of the invention resides in the provision of a helmet of this character wherein a main band encircles the cranium and has crown protective means affixed thereto and extending from an upper portion, and further has protective means for the chin and the side portions of the face depending from the band.

A related objective of importance is to provide a helmet which is light in weight, comfortable to the wearer, and of open construction permitting air circulation about the wearer's head.

Another objective resides in forming a helmet of inexpensive, readily available materials, which may be covered with attractive fabrics, and which is easily cleaned by simple washing procedures.

The present invention is directed to the provision of protective means functioning to guard the wearer against brain damage as by concussion, which may be of critical importance in the case of a patient already suffering from a cranial injury. The invention further protects the wearer against external cuts, abrasions and the like, the latter often constituting a substantial deterrent to sound therapy in the care of such persons when encountered.

Other and further objects and advantages of the invention will become apparent to those skilled in the art from a consideration of the following specification and the annexed drawing.

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BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a front elevational view of a helmet constructed and assembled in accordance with this invention as worn by a patient;

FIG. 2 is a side elevational view of the helmet in place; FIG. 3 is a transverse sectional view of the helmet, taken substantially on the line 3—3 of FIG. 1, looking in the direction of the arrows; and

FIG. 4 is a disassembled perspective view of representative components of the invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to the drawing in more detail, a helmet of preferred construction is therein illustrated and identified by reference numeral 10. As shown, the helmet 10 is intended to be worn in protective fashion about the head of a wearer. The helmet hereof, while of generally uniform construction insofar as components are concerned, must be particularly fitted, and in some cases manufactured or altered, to the needs of the individual user in order to be of maximum effectiveness. Also, the components may be of variable sizes. This is particularly true in the case of persons afflicted with certain disabilities which result in unusual head configurations. By way of environment and orientation of the helmet as to its position with respect to the head of the wearer, which is a factor of importance to the invention, the wearer's head is herein referred to as including a frontal prominence area identified in the drawing by the letter F, an occipital point P, a mental prominence M, temples T, and zygomatic prominences Z.

The invention is here shown as formed of strips of tubular rubber or plastic material by way of non-limiting example. These strips are formed into the various elements described below, and are tightly covered in enveloping wrappings of washable fabric. The fabric covering, in addition to functioning as a decorative and protective covering for the tubular elements, additionally serves as a means for connecting the elements to one another as by sewing.

A main component of the invention comprises an enlarged first tubular element 12 forming an annular main band 14. The band 14 is encased in a fabric covering 16 and is shaped and dimensioned to extend about the head in a circular path encompassing the frontal prominence F and the occipital point P. In such position, the band 14 includes a forward section 18 and rearward section 20.

A series of tubular crown bars 22 have fabric coverings 24, and form curvilinear crown protectors 26 which extend across the band 14 being attached thereto as by stitching of the compacted ends 28 and 30 of the fabric 24 to the fabric 16 of the main band, as shown in FIG. 3. It will be noted in the drawing that the crown protectors are arranged in parallel, extending from front to rear, and that the stitching is arranged in interior, concealed locations. In some circumstances, a further series of cloth spacers is necessary to hold the protectors 26 in this desired position, this being a function of a type of material employed. As seen in FIG. 2, a band 27 underlies the parallel crown bars 22 to prevent the crown bars from falling over the ears of the wearer.

The cheek prominence guard means hereof is identified in the drawing by reference numeral 32. The means 32 comprises a cheek guard having side portions 34 and 36 fixed to the band 14 by sewing of the fabric encasement thereof at stitching 38, 40 in such position as to overlie the temple area P, and permit the side portions to depend behind the zygomatic points (cheek prominence) Z. At bend portions 42, 44, respectively, the side portions are interconnected by a forward portion 46 which is

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extended below the mental prominence M. Secured above the forward portion 46 is a supplemental chin protector 48 which has its fabric casing secured to the side portions 34 and 36 by stitching 50, 52. The supplemental chin protector 48 is arranged above the mental prominence M, and below the lips. The cheek prominence guard means, like the before mentioned elements, is formed of tubular stock, covered by fabrics.

Also of that construction are a pair of side straps 54 and 56, each formed of a tube 58 with a cover 60. The strap 54 is joined to the main band 14 at stitching 62 adjacent the rear portion 20 thereof, and has the opposite end of its fabric cover reverted and attached to a flexible panel 64 by stitching 66. The panel has a snap member 68 on its outwardly extending portion, the snap member being releasably engageable with a coacting snap member (not shown) on the bend portion 42. The strap 56 is similar but of opposite orientation, being sewn to the bend portion 44, and having its snap assembly 70 at its point of connection with the main band adjacent the rear 20 thereof. This arrangement permits the face portion of the helmet to be moved out of the way for eating or drinking without the necessity for removal of the head encircling portion.

While dimension forms no critical part of the invention, it is contemplated that the tubing forming the bands and protectors hereof will be on the order of 1½ to 2 inches in diameter when covered with fabric.

It will be understood that other and different materials may be substituted for the tubular members hereof, such as cylindrical strips of foam rubber, without departure from the spirit of the invention.

I claim:

1. A protective helmet for the cranial region comprising:
 - an annular main band formed of a tubular, resilient protective material and extending about the head in substantial alignment with the occipital point and the frontal prominence thereof;
 - a series of curvilinear crown protectors secured to the main band at spaced intervals and extending thereacross.

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means for maintaining the crown protectors at said spaced intervals;

a cheek prominence guard strap comprising side portions fixedly secured to the main band at locations in alignment with the opposite temples of the wearer, the side portions having opposite bend portions;

the cheek prominence guard strap having a forward portion connected to the side portions at said opposite bend portions and interconnecting the side portions below the mental prominence of the cheek;

a supplemental chin protector extending between the side portions of the cheek prominence guard strap in closely spaced relation to the forward portion of the cheek prominence guard strap above the mental prominence and below the wearer's lip;

a pair of side straps extending from the bend portions to the main band; and

one of the straps having snap means thereon for connection with the band and the other strap having snap means for connection with the adjacent bend portion of one of the side portions of the cheek prominence guard strap.

2. The invention of claim 1, wherein:

the band, crown protector, side straps, and chin protector are encased in fabric; and
the elements are connected by stitching extended through said fabric.

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