

[54] SAFETY HARNESS FOR A HELMET

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[76] Inventor: **John H. Sawyer**, 247 Cary's Lane,
 Pensacola, Fla. 32507

FOREIGN PATENTS OR APPLICATIONS

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Primary Examiner—Alfred R. Guest
 Attorney, Agent, or Firm—Edward F. Connors

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[58] Field of Search..... 2/3, 2, 1

[57] ABSTRACT

A safety harness for securely holding a helmet on the head of a person, such as, a motor cyclist to prevent accidental displacement of the helmet from the head even in case of a severe accident which includes a strap arrangement adapted to be worn by the body of the person and which is manually releasable from the body of the person and from the helmet.

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5 Claims, 7 Drawing Figures

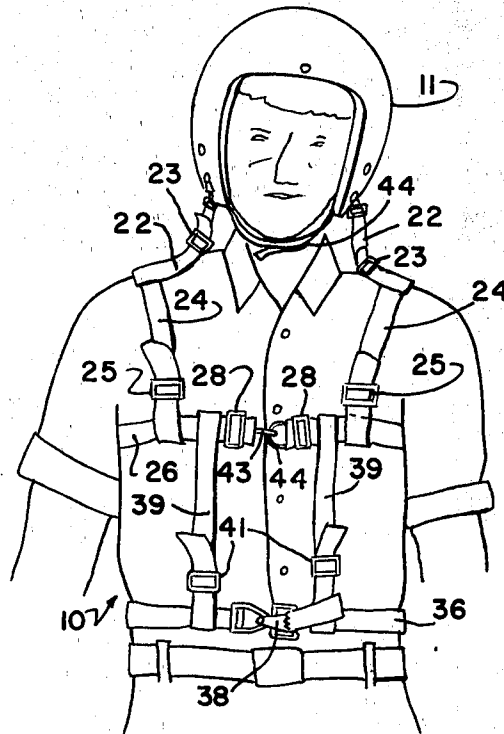


FIG. 1

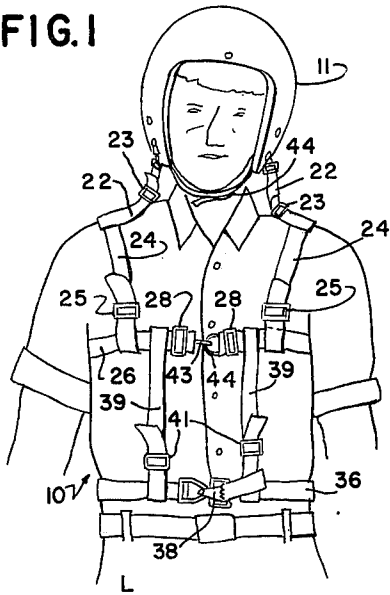


FIG. 5

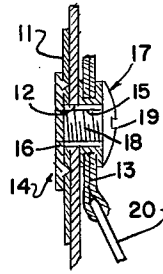


FIG. 2

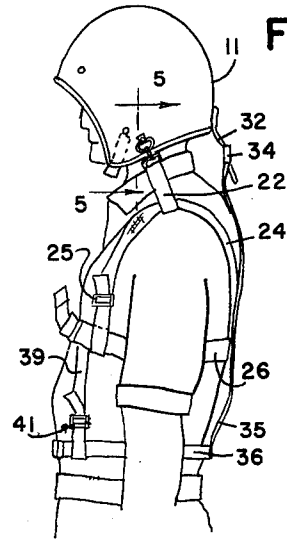


FIG. 7

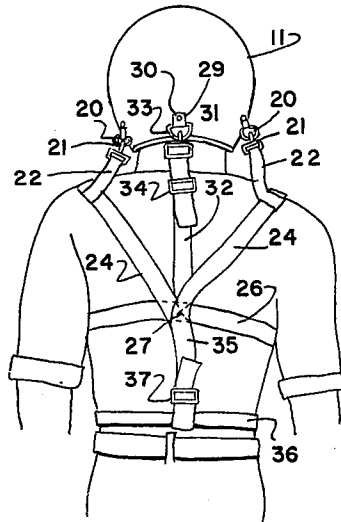
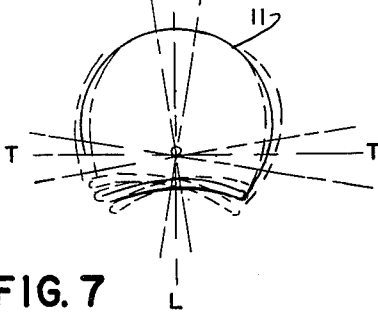


FIG. 3

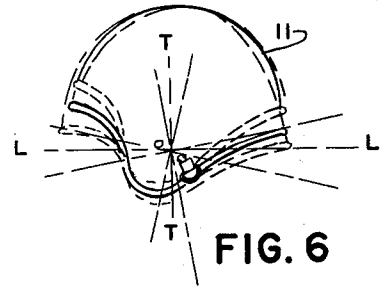
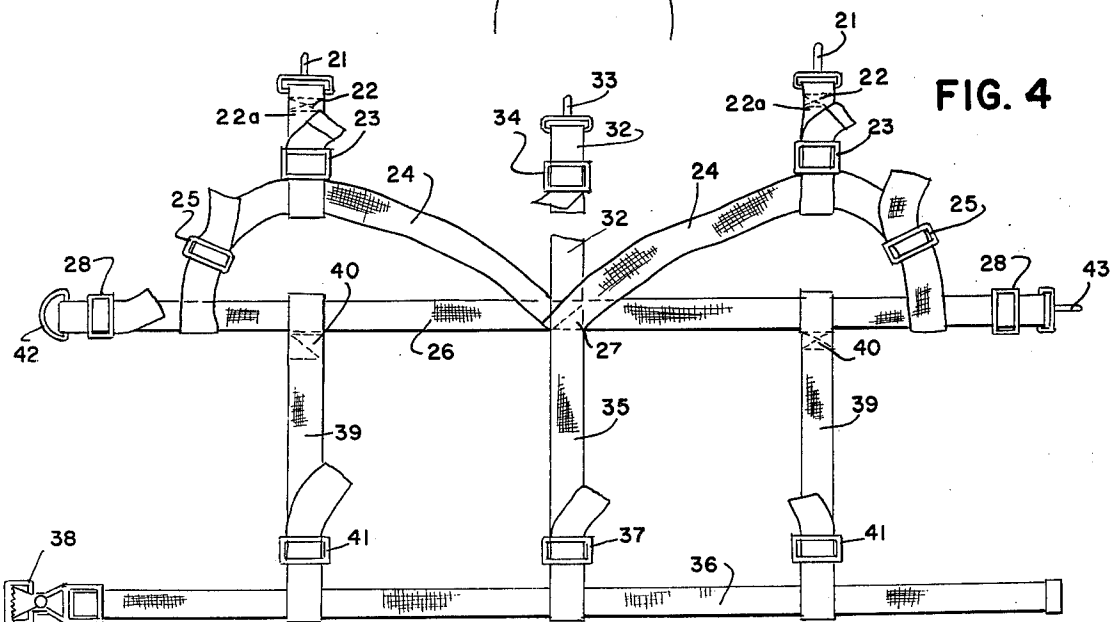


FIG. 6

FIG. 4



SAFETY HARNESS FOR A HELMET

BACKGROUND OF THE INVENTION

1. Field Of The Invention

The present invention generally appertains to new and novel improvements in safety harnesses for securely attaching helmets to the head of persons, for example, the heads of motor cyclists or athletes in cases in which severe or critical injury may be inflicted to the head of the wearer of the helmet.

2. State Of The Prior Art

There are many and varied known types of devices for holding helmets on the heads of persons but in the main the prior art devices are used in connection with football player helmets and do not afford the safety factor, the freedom of movement and the security of the present device which can be worn with any conventional garments.

SUMMARY OF THE INVENTION

A primary object of the present invention is to provide a safety harness for securely attaching the helmet of a person, such as a motor cyclist, to the head of the person so that the helmet cannot be inadvertently dislodged from the person's head while riding a motor cycle even in the event of an accident in which the cyclist may be thrown from the motor cycle thus preventing injury to the person's head.

Another important object of the present invention is to provide such a safety harness which can be quickly and easily donned and removed from the body of the person.

A further object of this invention is to provide such a harness which can be worn with comfort and freedom of movement with any conventional type of clothing.

Generally considered, the present invention includes a strap arrangement comprising a chest strap to which are attached right and left shoulder straps adapted to engage over the shoulders of the wearer and which in turn are adapted to be secured to the helmet. A waist strap adapted to encircle the waist of the wearer to which the shoulder straps are secured and a back strap which is secured to the chest strap and to the waist strap. The shoulder straps are also attached to the waist strap. The chest and waist straps may be easily and quickly unbuckled to permit removal of the harness from the body of the person without disturbing the connection of the shoulder and back straps to the helmet.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a front elevational view of the device as operatively mounted on a person and on a helmet.

FIG. 2 is a left side elevational view of the same.

FIG. 3 is a rear elevational view of the same.

FIG. 4 is a plan view of the device constructed in accordance with the present invention.

FIG. 5 is a view taken on the line 5—5 of FIG. 2.

FIG. 6 is a side elevation of helmet showing the transverse and longitudinal axes of the helmet and

FIG. 7 is a rear elevation of helmet showing both axes.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now more particularly to the accompanying drawing and initially to FIGS. 1 through 3 thereof,

the reference numeral 10 generally designates a person which in the present instance is a motor cyclist showing a conventional type of crash helmet 11 applied to the head of the person 10. An opening 12 is formed at each side of the helmet adjacent the lower edge thereof. A strap loop 13 is secured to each side of the helmet adjacent said opening 12 by a tubular nut 14 having an internally threaded tubular extension 15 and an enlarged head 16. A screw 17 includes a threaded shank 18 arranged to be threaded into the tubular extension 15 of the nut 14 and has an enlarged head 19. A ring 20 is carried by the strap loop 13 into which engages a snap hook 21. A connecting strap 22 is carried by the snap hook 21 and the connecting strap is provided with a conventional adjusting device 23 by means of which the length of the connecting strap 22 may be varied. The upper end of the strap 22 is folded over upon itself and the folded over portion is stitched to the main part of the strap as at 22a to form a loop which retains the snap hook 21 in place.

Each of the connecting straps is adjustably connected to a shoulder strap 24 each of which is provided with a conventional adjusting device 25 for adjusting the length of the shoulder strap 24. Each shoulder strap 24 is connected to a chest strap 26 at their forward ends. At their rear ends the shoulder straps 24 are secured to the chest strap 26 in overlapping relation as by sewing or the like as indicated at 27. The chest strap 26 is provided adjacent each end thereof with a conventional adjusting device for adjusting the length of the chest strap as indicated at 28.

An opening similar to the openings 12 in the side of the helmet is provided in the medial portion of the helmet adjacent the lower back edge thereof and a strap loop 29 similar to the strap loop 13 is secured to the rear of the helmet adjacent said opening by a tubular nut 30 similar to the tubular nut 14, the extension 15 and the screw 17 which attaches the connecting straps 22 to the helmet. A ring 31 is carried by the strap loop 29 to which is detachably connected an upper back strap 32 by means of a snap hook 33. The upper back strap carries at the upper end thereof a conventional adjusting device 34 and the lower end portion of the upper back strap 32 is connected to the chest strap as by sewing or the like as indicated at 27.

The lower back strap 35 has its upper end secured as by sewing as indicated at 27 to the chest strap and its lower end is attached to a waist strap 36. The lower back strap carries a conventional adjusting device 37 by means of which the length of the lower back strap may be adjusted. The lower back strap is detachably and adjustably connected to the waist strap. One end of the waist strap 36 carries a conventional toothed type buckle 38 by means of which the waist strap is detachably and adjustably secured around the waist of the person 10.

A pair of side straps 39 extend between the chest strap and the waist strap at the front of the person 10. The upper end portion of each side strap 39 is folded upon itself and the folded over portion is secured as by stitching 40 or the like to the upper main portion of the side strap to form a loop so that the side strap may be adjusted laterally on the chest strap. The lower end portion of each side strap 39 carries a conventional adjusting device 41 so that the length of each side strap 39 may be adjusted.

One end of the chest strap 26 carries a ring 42 into which snaps a snap hook 43 carried by the opposite end

of the chest strap so that the chest strap may be easily and readily secured about the chest of the wearer under his armpits.

THE USE OF THE HARNESS

Assuming that the crash helmet 11 is placed upon the head of the person, snap hooks 21 of the connecting straps 22 may be engaged in the rings 20 on the helmet 11 and the arms of the person 10 may be inserted through the space between the shoulder strap 24 and the chest strap 26. The chest strap 26 may then be encircled around the chest of the user and the snap hook 43 snapped into the ring 42 of the chest strap. The waist strap 36 may then be secured around the waist of the user 10 and secured therearound by the toothed type buckle 38.

The conventional chin strap 44 of the helmet may then be secured in the conventional manner. The upper back strap 32 is so adjusted that it exerts a slight pull on the helmet downwardly and rearwardly about the transverse axis T—T of the helmet so that the chin strap 44 is brought up snugly against the underside of the person's chin to prevent further rearward and downward movement of the helmet about its transverse axis T—T to prevent accidental dislodgement of the helmet rearwardly. The connecting straps 22 are so adjusted that they will tend to cause a movement about the longitudinal axis L—L of the helmet in opposite directions to substantially nullify the movement of the helmet in opposite lateral movements to prevent lateral dislodgement of the helmet. This movement of the helmet about its transverse and longitudinal axes is illustrated in FIGS. 6 and 7 of the drawings. This lateral movement of the helmet will tend to bring the chin strap 44 into firmer engagement with the under surface of the chin of the wearer at opposite sides of the chin.

It is thus apparent that the harness of the present invention cooperates with the conventional chin strap 44 of the helmet 11.

The conventional chin strap on the helmet prevents the helmet from being dislodged rearwardly and the present safety harness exerts a pull rearwardly and downwardly at the center of the helmet and at each side thereof to prevent accidental dislodging of the helmet forwardly and laterally. Accordingly, the present safety harness supplements and cooperates with the chin strap to prevent dislodgement of the helmet in all directions. The rearward and lateral pull on the helmet by the present safety harness tends to keep the conventional chin strap engaged under the chin of the wearer for imparting a comfortable and secure feeling to the wearer of the helmet.

In the case of crash helmets worn by motor cyclists and the like a much more secure fastening means is required than a chin strap or other means employed for holding a football player's helmet in place since in an accident involving a motorcycle and for example an automobile the force of the impact is more violent and greater securing means is essential in order to hold the helmet in place even if the motor cyclist is thrown a considerable distance through the air. Even if either the chest strap or the waist strap of the present invention becomes unbuckled during an accident the other strap will hold the harness securely to the body of the user and hold the helmet securely on the head of the cyclist.

Of course, while the best known form of the present invention has been described herein and shown in the drawing, it is obvious that changes can be made therein

so that the inventive concept is only restricted by the spirit and terms of the appended claims.

It will be noted that this harness may be worn by all ages and sexes.

5 What is claimed is:

1. In combination, a crash helmet for motor cyclists or the like having an opening on each side thereof adjacent the lower edge of the helmet and a centrally disposed opening at the rear of the helmet adjacent the lower edge thereof and having a chin strap, a safety harness cooperating with the chin strap for securing said helmet on the head of the cyclist to prevent accidental dislodgement of the helmet from the head of the cyclist during an accident comprising a fastening element secured in each side opening of the helmet, a flexible shoulder strap for engaging over each shoulder of the cyclist, a flexible connecting strap removably and swivelly secured to each said fastening element and to each shoulder strap, a flexible chest strap to which the opposite ends of each shoulder strap is attached, a rear fastening element secured in the rear central opening of the helmet, a flexible back strap removably and swivelly secured at one end to said rear fastening element and at its other end to said chest strap, a flexible waist strap for encircling the waist of the cyclist, a right and left side flexible strap each secured at one end to said chest strap and at their opposite ends to said waist strap and a second flexible back strap secured at one end to said chest strap and at its other end to said waist strap.

2. For use with a motorcycle crash helmet or the like having integral opposing sides, top and back with the sides having spaced apart front edges that define a face opening and with the sides and back having free bottom edges and said helmet having a chin strap provided with opposing ends attached to the sides adjacent their front edges, a safety body harness comprising flexible strap means adapted to be fastened around the upper torso of the body of a wearer of the helmet, flexible shoulder straps adapted to fit over the shoulders of a wearer and having opposing front and back ends adjustably connected to the front and back of the torso encircling flexible strap means, flexible connecting straps connected to the shoulder straps and extending upwardly from about the middle thereof, means removably and swivelly attaching said connecting straps to the sides of the helmet rearwardly of the front edges thereof and adjacent the bottom edges of the sides, a flexible back strap connected to the back of the torso encircling strap means substantially at the middle thereof and means removably and swivelly connecting the back strap to the back of the helmet adjacent the bottom edge thereof and substantially at the middle thereof whereby said straps connect the sides and back of the helmet to the torso encircling strap means and exert a downward and rearward pull on the worn helmet about its transverse and longitudinal axes to bring the chin strap into firm engagement with the under surface of the chin of a wearer so that accidental dislodgement of the helmet from the head of a wearer is prevented.

3. The invention of claim 2 wherein said torso encircling strap means includes an adjustable flexible waist encircling strap having a front and rear portion, an adjustable flexible chest encircling strap having a front and rear portion, adjustable flexible vertical straps connecting the front portions of the waist and the chest straps, and an adjustable flexible vertical strap connecting the rear portions of the waist and the chest straps

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substantially at the middle thereof.

4. The invention of claim 3 wherein said back ends of the shoulder straps and the lower end of the back strap are attached at a common point to the rear portion of the chest strap substantially at the middle thereof.

5. The invention of claim 2 wherein said means removably and swivelly attaching the connecting straps to the sides of the helmet and for removably and swiv-

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elly attaching the back strap to the back of the helmet includes rings fastened to the helmet sides and back, said sides and back having transverse openings, screw means fitted in said openings for attaching the rings to the helmet and said straps having upper ends provided with snap hooks adapted to engage in the rings.

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