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HIP PROTECTOR FOR ATHLETES

Original Filed Dec. 27, 1923

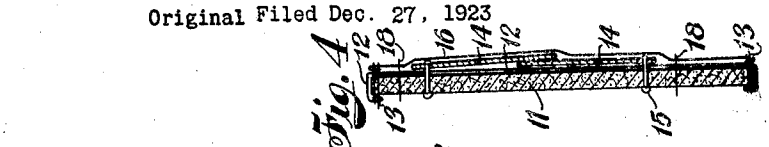


Fig. 4.

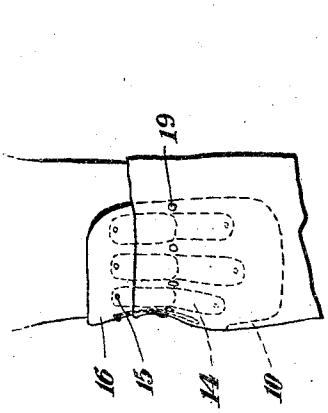


Fig. 2.

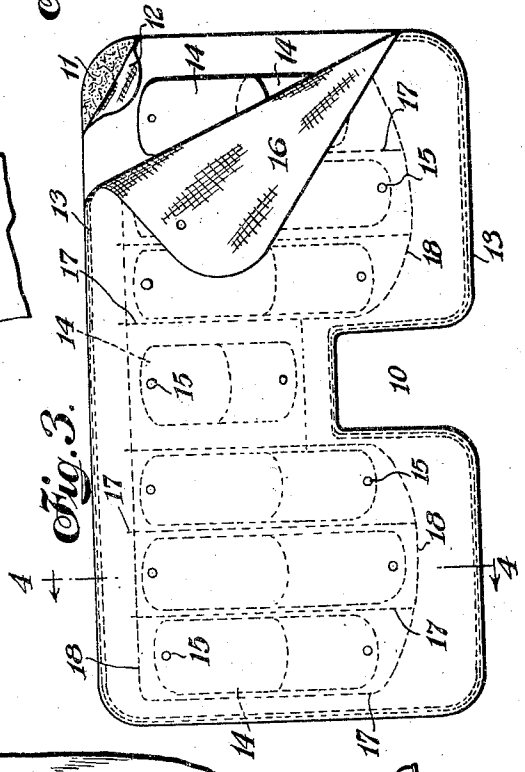


Fig. 3.

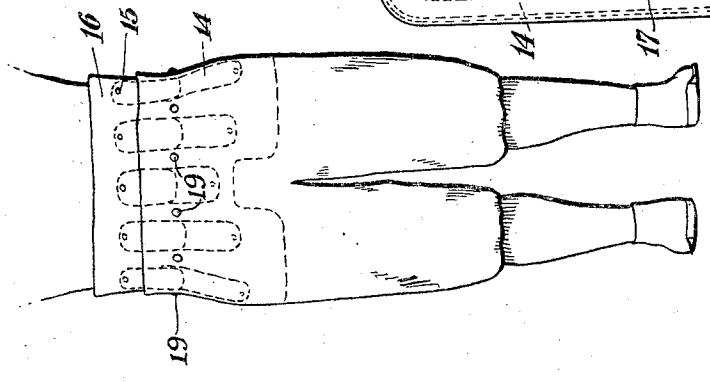


Fig. 1.

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UNITED STATES PATENT OFFICE.

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HIP PROTECTOR FOR ATHLETES.

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This invention relates to devices to be worn by athletes, particularly football players, and its chief object is to provide a device for protecting the hips and spine of the player, which will afford adequate protection without materially impeding the free bending movement of the wearer's body in all directions. Another object is to provide for the purpose a device which can be manufactured at reasonable cost. A further object is to provide a protecting device which can be applied and worn with garments not designed especially for such devices. To these and other ends the invention consists in the novel features and combinations hereinafter described.

One form of the invention and its manner of use is illustrated in the accompanying drawings, in which—

Fig. 1 is a back view and Fig. 2 a side view of a player wearing my improved hip and spine protector.

Fig. 3 is a detail view of the device, on a larger scale, with a portion of the outer cover folded back to show the protecting plates.

Fig. 4 is a section on line 4—4 of Fig. 3.

The device illustrated is of a generally rectangular shape, with rounded corners and a rather deep recess 10 extending upwardly from about the middle of its lower edge. The device comprises a thick pad 11 of yielding material of any suitable character, as for example cotton felt. Over this, on the outer side thereof, I preferably employ a layer of heavy canvas or other fabric of proper strength, indicated at 12, the edges of which may be fastened to the pad in any convenient manner, as by bringing them inwardly over the edges of the pad and running one or more rows of stitching 13 around the same.

On the inner canvas layer 12, or directly upon the felt pad if the inner canvas layer is omitted, is a series of protector plates 14, arranged in two horizontal rows with the plates of the upper row overlapping those immediately below in the lower row, as shown. The plates are made of any suitable material having the requisite stiffness to afford the desired protection and having at the same time sufficient toughness to withstand hard usage without breaking or tearing. I prefer to make the plates of the material known as "fibre board". This material, in sheets about $\frac{3}{32}$ of an inch thick, has been found highly satisfactory, and being waterproof it does not soften when wet. The plates themselves may be about 2½ inches wide. Their lengths depend somewhat upon the size of the trousers in which they are to be used, being preferably longer for large trousers than for smaller trousers. Similarly, the spaces between adjacent sets of overlapping plates may be varied to make the protector fit trousers of different size around the hips or at the waist line, as will be readily understood, and it may be desirable in some cases to vary the number of sets, or to make the individual plates wider or narrower, or both, in order to obtain a good fit and insure adequate protection to the wearer. I also prefer to have the outer plates of each row, and those next to the recess 10, somewhat shorter than the plates between these pairs; and those above the recess are considerably shorter than any of the others. These features contribute greatly to the desirable advantage of causing minimum interference with the movements of the wearer.

The overlapping protector plates 14 are securely fastened in the device, the upper plates being secured at their upper ends and the lower plates at their lower ends, but are not secured together. They simply overlap, as indicated. The result is that as the body of the wearer bends, the plates slide on each other, up or down, or sideways, or both, thus causing practically no sensible interference with his movements. For fastening the plates in place I preferably employ rivets, as indicated at 15, passing through both the inner canvas layer 12 and the felt pad 11 as well.

Over the plates is an outer canvas layer or cover 16, the edges of which may be secured to the inner layer 12 and pad 11 by the stitching 13, as clearly indicated in Fig. 4.

I also prefer to enclose the protecting plates 14 in vertical pockets or "cells", to limit their relative lateral or sidewise movement and prevent too great lateral movement, which might result in such disarrangement as to seriously impede the wearer or permit injury to his person between plates thus spread apart. These pockets or cells are preferably made by vertical rows of stitching 17, through at least the two canvas layers 12, 16, and preferably also through the felt pad 11. I also prefer to close the cells or pockets at top and bottom by like rows of stitches 18.

The protector is worn inside the trousers, as indicated in Figs. 1 and 2, in such position as will bring it across the lower portion of the spine and around the sides far enough to extend over the hip bones of the wearer. The recess 10 is to be directly above the crotch. The protector may be sewed in place in the trousers, but I prefer to use rivets for the purpose, placing them between the cells or pockets about half way between the top and bottom thereof, forming a row of rivets as indicated at 19, Figs. 1 and 2. This method and arrangement have been effective and thoroughly satisfactory, holding the protector securely in place and causing no appreciable interference with the bending movements of the wearer, forwardly, backwardly, or sidewise.

When worn as described the device affords ample protection to the hips and spine, practically eliminating danger of any real injury to these parts and thus tending to increase the confidence of the wearer, a result particularly desirable in a game like football, in which serious injuries are not uncommon.

It is to be understood that the invention is not limited to the specific construction herein illustrated and described but can be embodied in other forms without departure from its spirit as defined by the following claims.

I claim:

1. A hip and spine protector for football players and others, adapted to be worn across the base of the spine and to extend laterally and forwardly over the hips, comprising an inner pad of yielding material, an outer layer of fabric on the outer or rear face of the pad, a plurality of vertical protector plates inside of the outer fabric layer, arranged in an upper transverse row, and fastened in place individually and at their upper ends only for free movement independently of each other, and a lower row of like vertical protector plates overlapped by the respective plates of the upper row and fastened in place at their lower ends only, to permit the plates of each row to slide freely on the contiguous plates of the other row.

2. A hip and spine protector for football players and others, adapted to be worn across the base of the spine and to extend laterally and forwardly over the hips, comprising an inner pad of yielding material, an outer fabric layer secured to the pad, an upper transverse row of vertical protector plates between the pad and said fabric layer and fastened in place at their upper ends only, to permit individual movement of the plates, a lower row of vertical protector plates overlapped by the respective plates of the upper row and fastened in place at their lower ends only to permit the plates of each row to slide freely on the contiguous plates of the other row, and vertical rows of stitching between the overlapping plates to provide cells or pockets for the plates in vertical sets or pairs.

3. A hip and spine protector for football players and others, adapted to be worn across the base of the spine and to extend laterally and forwardly over the hips, comprising an inner pad of yielding material, inner and outer fabric layers on the outer or rear face of the pad, an upper transverse row of vertical protector plates between the inner and outer fabric layers, rivets extending through the upper ends of the plates in said upper row and through the inner fabric layer and pad to fasten the said plates individually in place, a lower row of vertical protector plates overlapped by the respective plates of the upper row, and rivets extending through the lower ends of the plates in the lower row and through the inner fabric layer and pad to fasten the said plates individually in place, whereby the plates of each row are permitted to slide freely on the contiguous plates of the other row.

4. A hip and spine protector for football players and others, adapted to be worn across the base of the spine and to extend laterally and forwardly over the hips, comprising an inner pad of yielding material, inner and outer fabric layers on the outer or rear face of the pad, an upper transverse row of vertical protector plates between the inner and outer fabric layers, rivets extending through the upper ends of the plates in said upper row and through the inner fabric layer and pad to fasten the said plates individually in place, a lower row of vertical protector plates overlapped by the respective plates of the upper row, rivets extending through the lower ends of the plates in the lower row and through the inner fabric layer and pad to fasten the said plates individually in place, and vertical rows of stitching through the inner and outer fabric layers between the overlapping plates to provide cells or pockets for the plates in pairs, whereby the plates of each row are permitted to slide freely on the contiguous plates of the other row.

5. A hip and spine protector for football players and others, adapted to be worn across the base of the spine and to extend laterally and forwardly over the hips, comprising an inner pad of yielding material, inner and outer fabric layers on the outer or rear face of the pad, said pad and fabric layers having a recess extending upwardly from their lower edges at the center thereof, and upper and lower rows of protector plates between the inner and outer fabric layers, extending from side to side across the back and riveted in place at their upper

and lower ends respectively, the plates of one row overlapping the respective plates of the other and capable of sliding freely upon each other to permit free bending movement of the wearer's body.

6. In a protector adapted to be worn in the trousers of a football player, a pair of vertically elongated plates arranged one above the other and overlapping each other, the upper plate being secured in place by a rivet through its upper end and the lower by a rivet through its lower end.

7. The combination with football players' pants, of a hip and spine protector as described in claim 1, fastened to the trousers by rivets between pairs of upper and lower plates, in position to extend across the base of the spine and laterally and forwardly over the hips of the player when the pants are worn.

In testimony whereof I hereto affix my signature.

RAY HANSON.