Sept. 10, 1957 T. J. SOWLE 2,805,418

COMBINATION HIP AND BODY PROTECTOR

Filed May 26, 1955

Fig. 1.

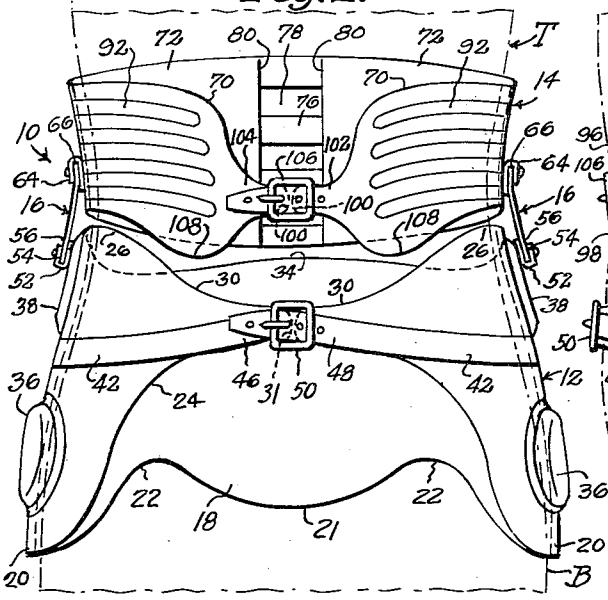


Fig. 2.

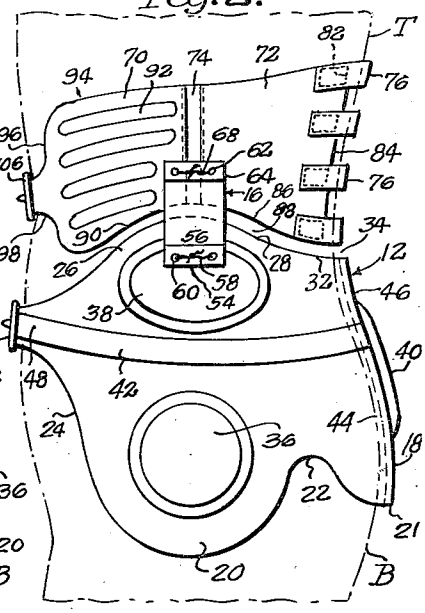


Fig. 3.

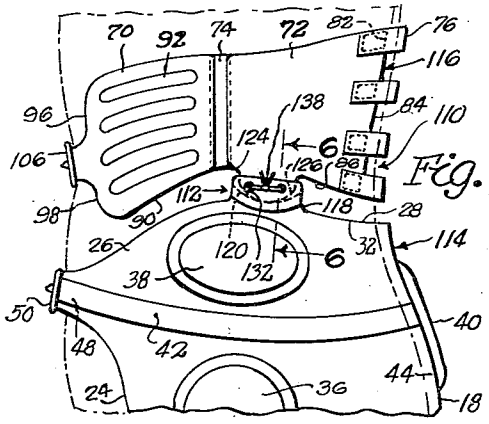


Fig. 4.

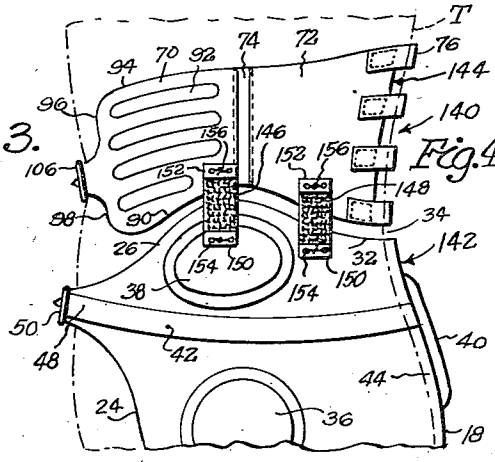


Fig. 5.

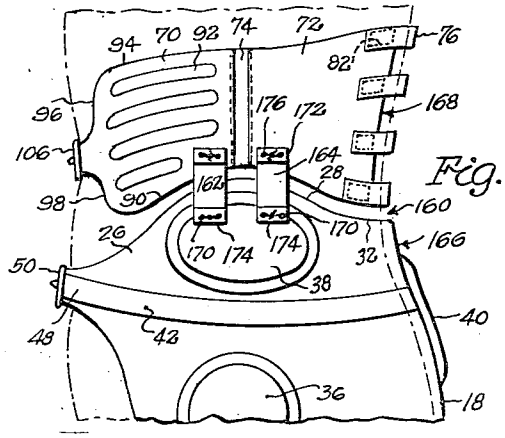
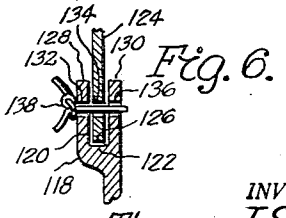


Fig. 6.



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COMBINATION HIP AND BODY PROTECTOR

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10 Claims. (Cl. 2—2)

This invention relates to football players' protectors and, in particular, to combination hip and body protectors.

Hitherto, hip and body protectors for foot ball players have either provided inadequate protection or have been rigid and inflexible as well as uncomfortable to wear. Such prior protectors have ordinarily provided hip protectors (also called hip pads) and rib-and-kidney protectors (also called body protectors or blocking pads) as separate pieces of equipment which move apart from one another to expose vulnerable parts of the body when the player crouches or bends forward. Even in the normal positions, these separate protectors have provided inadequate protection because the hip pad did not rest high enough on the hips to protect the kidneys and lower back and the rib protector did not rest low enough on the hips to likewise protect the kidneys and lower back, whereas neither one have adequate protection to the iliac crests (tops of hip-bones).

Such prior hip pads had a natural tendency to slip down on the hips so as to expose the iliac crests to blows resulting in painful and sometimes crippling injuries. This was especially true in the case of youthful football players, who wore their hip pads low in so-called "cowboy fashion" because this gave more comfort and freer movement, in their immaturity not realizing the great dangers of this practice. Moreover, prior attempts to provide combination or interconnected hip and rib pads or protectors have taken the form of rib protectors tightly encircling the upper part of the body and hip pads suspended from the rib protector (blocking pad). As a result, these prior combination pads were inflexible and uncomfortable to wear because of the necessity for tightly compressing the rib protector around the body in order to provide complete support for the hip pads, with the result that their manufacture has been discontinued.

The present invention provides a combination hip and body protector wherein the rib-and-kidney protectors or body pads loosely encircle the wearer's waist above the iliac crests (tops of hip bones) to provide flexible body movement, and are supported from below by upstanding semi-rigid supporting connectors articulatedly attached to the kidney and body pad and extending upward from pads of semi-rigid blow-resistant material covering the hips and iliac crests, the hip protector in turn being supported by a belt-like device encircling the hips not the waist) below the iliac crests but above the bulge of the buttocks so that the bulge of the buttocks provides a stop for preventing slipping downward of the pads and the pads are positively maintained in their protecting positions while enabling free relative motion in all directions between the body protector and the hip protector. The front of the body protector is also provided with vertically-spaced approximately-horizontal bars or strips of semi-rigid blow-resistant material permitting compression of the intervening material while the player bends forward.

Accordingly, one object of the present invention is to provide a combination hip and body protector wherein

the hip protector is positively positioned by a belt device encircling the hips below the iliac crests and above the bulge of the buttocks, and the body protector for the ribs and kidneys loosely encircles the rib-and-kidney areas of the body and is supported from below by upstanding semi-rigid supporting connectors resting upon and secured to the hip protector in such a manner as to provide complete flexibility and relative motion between the two protectors and at the same time maintain them in their protecting positions without separation thereof, when the player crouches or bends forward.

Another object is to provide a combination hip and body protector of the foregoing character wherein the semi-rigid connectors are articulated to the body protector and hip protector so as to further enhance the relative flexibility therebetween.

Another object is to provide a combination hip and body protector of the foregoing character wherein the hip and body protectors are positioned close to one another yet without the overlapping which in prior protectors hindered relative motion between the protectors and hampered the wearer in his bodily movements during play.

Another object is to provide a combination hip and body protector of the foregoing character wherein the hip protector has upwardly-rising iliac crest protecting portions and the body protector has upward indentations receiving such upwardly-rising portions in vertically-spaced relationship so as to insure such protection at all times while enabling complete flexibility of bodily movement in all positions of the body.

Another object is to provide a combination hip and body protector of the foregoing character wherein the hip protector and the body protector cannot separate from one another and thereby expose portions of the spine or kidney areas to danger of blows and consequent injuries, yet which will be free from tight encirclement of the body and will permit comfortable wear and ventilation as well as free breathing than prior protectors.

Another object is to provide a combination hip and body protector of the foregoing character wherein the upstanding semi-rigid connections are also of blow-resistant material, such as plastic or fiber, so that in addition to providing a flexible interconnection between the hip and body protectors, they themselves also provide additional protection for the iliac crests and adjacent portions of the body, these members thereby performing a three-fold function of supporting, connecting and protecting.

Another object is to provide a combination hip and body protector of the foregoing character wherein shoulder straps and other parts common to prior protectors have been eliminated, with a consequent reduction in the cost of manufacture and a resulting lower cost to the player or institution equipping these players.

Other objects and advantages of the invention will become apparent during the course of the following description of the accompanying drawings, wherein:

Figure 1 is a front elevation of a combination hip and body protector according to one form of the invention, with the body outline shown in dotted lines;

Figure 2 is a side elevation of the combination hip and body protector shown in Figure 1;

Figures 3 is a fragmentary side elevation of the major part of a modified combination hip and body protector of the type shown in Figures 1 and 2;

Figure 4 is a fragmentary side elevation of a further modification of the combination hip and body protector shown in Figures 1 and 2;

Figure 5 is a fragmentary side elevation of a still further modification of the combination hip and body protector shown in Figures 1 and 2; and

Figure 6 is an enlarged fragmentary approximately vertical section taken along the line 6—6 in Figure 3.

Referring to the drawings in detail, Figures 1 and 2 show a combination hip and body protector, generally designated 10, according to one form of the invention, as consisting of a hip protector 12, a body protector, generally designated 14, and upstanding supporting connectors, generally designated 16, by which the body protector 14 is pivotally supported from below by the hip protector 12. The hip protector 12 is shaped to conform to the contour of the torso T and curved outwardly and rearwardly as at 18 to form a rearward guard portion 18 conforming to the bulge of the buttocks B. The hip protector 12 also has a downwardly-extending side guard portion 20 on each side thereof, separated from the rearward guard portion 18 by a rearward and upward indentation 22. The rearward guard portion 18 has a downwardly-arched central part 21 (Figure 1). The side guard portions 20 are separated from one another at the front by an upwardly-arched indentation or cutaway portion 24. Each side guard 20 also has an upwardly-curving iliac crest protecting portion 26 (Figure 2) having an upwardly-arched edge 28 which curves downwardly and centrally at the front in downwardly-arched indentations or edges 30 toward their free ends 31 at the front (Figure 1). The edges 28 also curve downward to meet the ends 32 of the upper edge 34 of the rearward guard portion 18, the upper edge 34 being arched upward at its center (Figure 1).

The side guard portions 20 of the hip protector 12 are provided near their lower ends with hip pads 36 of semi-rigid blow-resistant material (Figure 2) and the iliac crest protecting portions 26 are provided with iliac pads 38 of similar material, located adjacent the iliac crests (tops of the hip bones). The rearward guard portion 18 immediately above the bulge of the buttocks B is provided with a spine-protecting pad 40 also of simi-rigid blow-resistant material, and a belt device 42 encircles the hip protector 12 at a location below the iliac pads 38 but above the bulge of the buttocks B, namely above the outwardly and rearwardly-curving lower portion 44 of the rearward guard portion 18 immediately below the inwardly-curved portion 46 thereof which bends inwardly and forwardly to conform to the shape and contour of the spine. The belt device 42 is secured to the hip protector 12 and at its forward ends 46 and 48 is provided with a buckle 50 for facilitating adjustment and tightening or loosening of the hip protector 12 at its free ends 31.

Secured as by stitching, riveting or in any other suitable manner to the upwardly-extending iliac protecting portions 26 of the hip protector 12 are lower brackets 52 of U-shaped cross-section (Figure 1) which have recesses 54 serving to support the lower ends 56 of the upstanding supporting connectors 16 in a pivotal manner, such as by a lacing 58 extending through holes 60 in the brackets 54 and connectors 16. As shown in Figures 1 and 2, the brackets 52 are secured to the iliac pads 38 for convenience and strength of anchorage. The upstanding supporting connectors 16 are in the form of bars or stripes of semi-rigid material, such as plastic of fiber, and the holes 60 are sufficiently larger than the lacing 58 to permit a pivotal or rocking motion between the brackets 52 and the supporting connectors 16.

The upper ends of the upstanding supporting connectors 16 are also perforated in line with holes 62 in downwardly-facing inverted U-shaped upper brackets 64 which are secured by riveting, stitching or in any other suitable manner to the body protector 14. The upper brackets 64 have recesses 66 which receive the upper ends of the upstanding supporting connectors 16 and a lacing 68 extends through the holes 62 and performations in the supporting connectors 16, so as to pivotally interconnect these members. The holes 62 are sufficiently larger in diameter than the lacing 68 to enable a pivotal or rocking motion therebetween. In this manner, the body protector 14 is supported from below by the upstanding semi-rigid supporting connector 16 in a manner which permits not only forward and rearward but also sidewise relative rocking between the body protector 14 and the hip protector 12. This connection by means of the upstanding supporting connectors 16 also enables the body protector 14 to encircle the body loosely for comfort, ventilation and ease of breathing and flexibility of bodily motion.

The body protector 14 consists of forward segments 70 and rearward segments 72 of flexible material connected at the sides by gussets 74 of fabric or similar material enabling the forward and rearward segments 70 and 72 to flex relatively to one another. The rearward segments 72 on the other hand are interconnected by multiple vertically-spaced straps 76 extending across the gap 78 between the spaced rearward edges 80 (Figure 1) and secured at their opposite ends to the rearward segments 72 by stitching or the like, as at 82. The rearward segments 72 at their rearward portions 84 are inwardly-curved to fit the configuration of the back and at their lower edges 86 are upwardly-arched to conform to the upwardly-arched upper edge 28 of the iliac protecting portions 26 of the hip protector 12, but spaced apart therefrom to provide a narrow gap 88 therebetween, this gap 88 extending between the same edge 28 and the lower edges 90 of the forward segments 70. The lower edges 90 are also upwardly arched toward the edges 86, the highest point being at the gussets 74.

The forward segments 70 are provided with vertically-spaced multiple bars or strips 92 of semi-rigid blow-resistant material extending approximately horizontally across the front and side portions of each forward segment 70. The material between the bars or strips 92 is sufficiently flexible to compress slightly when the player bends forward, while still giving him complete protection at the front. The upper edge 94 of each forward segment 70 is curved downwardly as at 96 and the lower edge 90 curved upwardly as at 98 toward the free ends 100 of the narrow strap portions 102 and 104, which are secured to one another by a buckle 106. The forward segments 70 between the edge portions 90 and 98 have downwardly-extending edge portions 108 curving downwardly toward the upper edge portions 30 of the hip protector 12.

The modified combination hip and body protector, generally designated 110, shown in Figures 3 and 6 is generally similar in construction to the protector 10 of Figures 1 and 2, differing only in the articulation or connection 112 between the hip protector 114 and the body protector 116. The hip protector 114 has an upstanding bracket portion 118 (Figure 6) of inverted U-shaped cross-section with an upwardly-facing recess 120 having an arcuate bottom 122. The body protector 116, on the other hand, has a downwardly-extending tongue 124 with an arcuate lower edge 126 preferably of shorter radius than the arcuate bottom 122 so as to rock thereon in a forward and rearward direction. The tongue 124 and outer and inner bracket portions 128 and 130 respectively are provided with aligned holes 132, 134 and 136 respectively receiving a lacing 138. The holes 132, 134 and 136 are of larger diameter so as to permit relatively rocking loose connection therebetween.

The further modified hip and body protector, generally designated 140, shown in Figure 4 is generally similar to the forms shown in Figures 1 to 3 inclusive, except that the hip and body protectors 142 and 144 are interconnected on their opposite sides by double upstanding connectors 146 and 148 respectively spaced apart from one another in a forward and rearward direction and are made of elastic material. The brackets 150 and 152 and their lacings 154 and 156 are similar to those described in connection with Figures 1 and 2 and require no further description.

The still further modified hip and body protector, generally designated 160, shown in Figure 5 is also general-

ly similar to the forms of the invention shown in Figures 1 to 4 inclusive. It more particularly resembles Figure 4, differing from it by providing double upstanding connectors **162** and **164** located in a forwardly and rearwardly-spaced relationship on opposite sides of the hip protector **166** and body protector **168** respectively. The upstanding supporting connectors **162** and **164** are of a semi-rigid material, such as fiber, and their brackets **170** and **172** and lacings **174** and **176** are of similar construction to those described above.

In the operation of the invention, as regards the combination hip and body protector **10** of Figures 1 and 2, the player opens up the hip protector **12** and body protector **14** by unfastening their respective buckles **50** and **106** so that he may slide their free ends **31** and **100** respectively past his body, fastening the buckles **50** and **106** at the front when the protectors **12** and **14** are in their proper positions. The buckle **50** is fastened relatively snugly so that the hip protector **12** rests properly upon the hip and buttocks, without danger of sliding down. The buckle **106**, however, is fastened comparatively loosely so that the body protector **14** loosely encircles the rib and kidney portions of the body and provides flexibility of motion between the protector **14** and body or torso T.

With the protector **10** thus put on, adjusted and fastened, the vital organs, spine and iliac crests of the wearer are completely protected at all times, regardless of whether the wearer is standing, kneeling, crouching or bending in any direction. The upstanding semi-rigid supporting connectors **16** which provide articulation between the upper or body protector **14** and the lower or hip protector **12** afford relative motion between the protectors **12** and **14** while maintaining them in their proper relationship without opening up a gap between them sufficient to expose any vital area and leave it unprotected against blows. The upwardly-extending iliac protecting portions **25**, the iliac pads **38** and the semi-rigid upstanding supporting connectors **16** themselves afford complete protection to the otherwise vulnerable iliac crests or tops of the hip bones and completely prevent the painful and sometimes crippling injuries previously resulting from the lack of protection thereof by prior guards or pads. The bars or strips **92** add to the protection of the ribs and viscera yet the material between them is compressible when the wearer bends forward. Finally, the relatively loose connection between the lacings **58** and **68** and their larger holes **60** and **62** enables further universal motion sidewise as well as forward and backward between the upper or body protector **14** and the lower or hip protector **12**. The spine is fully protected by the protectors **12** and **14** and the base of the spine by the pad **40** on the rearward portion **18** of the hip protector **12**, whereas the sides of the hips are protected by the hip pads **36**.

The modified combination hip and body protectors **110**, **140** and **160** are installed in the same manner as the combination hip and body protector **10** of Figures 1 and 2 and differ only in the articulation between their upper and lower portions. In Figure 3, the rocking connection between the upper or body protector **116** and the lower or hip protector **114** is enhanced by the arcuate lower edge **126** of the tongue **124** riding on the arcuate bottom **122** of the bracket **118** on each side of the protector **110**, so that forward and rearward relative rocking motion is enhanced.

In the operation of the modified protector **140** of Figure 4, the double upstanding elastic supporting connectors **146** and **148** also afford forward and rearward relative rocking motion by their elasticity yet they still function to support the upper or body protector **144** upon the lower or hip protector **142** with the advantages described above.

The operation of the modified protector **160** of Figure 5 is also similar to that of the protector **140** of Figure 4, the double semi-rigid upstanding supporting connectors **162** and **164** also affording forward and rearward relative rocking motion by their laced loose connections even

though somewhat less flexible than the elastic supporting connectors **146** and **148** of Figure 4.

What I claim is:

1. A combination hip and body protector for football players, comprising a padded hip guard adapted to encircle the player's hips and fit against the back and sides thereof, means engaging and drawing said hip guard laterally against the hips for firmly securing said hip guard around the hips against downward movement therealong, a plurality of upstanding supports having their lower portions connected to the upper portions of said hip guard on opposite sides thereof, and a rib-and-kidney guard adapted to loosely encircle the player's body at the rib-and-kidney level thereof in vertically-spaced relationship with said hip guard and having its lower portion connected to the upper portions of said upstanding supports in supported relationship thereon, said upstanding supports interconnecting said guards for forward and backward relative rocking motion therebetween.

2. A combination hip and body protector for football players, comprising a padded hip guard adapted to encircle the player's hips and fit against the back and sides thereof, means engaging and drawing said hip guard laterally against the hips for firmly securing said hip guard around the hips against downward movement therealong, a plurality of upstanding supports having their lower portions connected to the upper portions of said hip guard on opposite sides thereof, and a rib-and-kidney guard adapted to loosely encircle the player's body at the rib-and-kidney level thereof in vertically-spaced relationship with said hip guard and having its lower portion connected to the upper portions of said upstanding supports in supported relationship thereof, said upstanding supports interconnecting said guards for forward and backward relative rocking motion therebetween, said upstanding supports being pivoted to one of said guards at the points of connection therebetween.

3. A combination hip and body protector for football players, comprising a padded hip guard adapted to encircle the player's hips and fit against the back and sides thereof, means engaging and drawing said hip guard laterally against the hips for firmly securing said hip guard around the hips against downward movement therealong, a plurality of upstanding supports having their lower portions connected to the upper portions of said hip guard on opposite sides thereof, and a rib-and-kidney guard adapted to loosely encircle the player's body at the rib-and-kidney level thereof in vertically-spaced relationship with said hip guard and having its lower portion connected to the upper portions of said upstanding supports in supported relationship thereon, said upstanding supports interconnecting said guards for forward and backward relative rocking motion therebetween, said upstanding supports being pivoted to both of said guards at the points of connection therebetween.

4. A combination hip and body protector for football players, comprising a padded hip guard adapted to encircle the player's hips and fit against the back and sides thereof, means engaging and drawing said hip guard laterally against the hips for firmly securing said hip guard around the hips against downward movement therealong, a plurality of upstanding supports having their lower portions connected to the upper portions of said hip guard on opposite sides thereof, and a rib-and-kidney guard adapted to loosely encircle the player's body at the rib-and-kidney level thereof in vertically-spaced relationship with said hip guard and having its lower portion connected to the upper portions of said upstanding supports in supported relationship thereon, said upstanding supports interconnecting said guards for forward and backward relative rocking motion therebetween, one of said guards having vertically-directed extensions thereon adapted to overlie the player's iliac crests.

5. A combination hip and body protector for football

players, comprising a padded hip guard adapted to encircle the player's hips and fit against the back and sides thereof, means engaging and drawing said hip guard laterally against the hips for firmly securing said hip guard around the hips against downward movement therealong, a plurality of upstanding supports having their lower portions connected to the upper portions of said hip guard on opposite sides thereof, and a rib-and-kidney guard adapted to loosely encircle the player's body at the rib-and-kidney level thereof in vertically-spaced relationship with said hip guard and having its lower portion connected to the upper portions of said upstanding supports in supported relationship thereon, said upstanding supports interconnecting said guards for forward and backward relative rocking motion therebetween, said hip guard having vertically-directed extensions thereon adapted to overlie the player's iliac crests.

6. A combination hip and body protector for football players, comprising a padded hip guard adapted to encircle the player's hips and fit against the back and sides thereof, means engaging and drawing said hip guard laterally against the hips for firmly securing said hip guard around the hips against downward movement therealong, a plurality of upstanding supports having their lower portions connected to the upper portions of said hip guard on opposite sides thereof, and a rib-and-kidney guard adapted to loosely encircle the player's body at the rib-and-kidney level thereof in vertically-spaced relationship with said hip guard and having its lower portion connected to the upper portions of said upstanding supports in supported relationship thereon, said upstanding supports interconnecting said guards for forward and backward relative rocking motion therebetween, one of said guards having vertically-directed extensions thereon adapted to overlie the player's iliac crests and the other guard having vertically-directed cutaway portions receiving said extensions in vertically-spaced relationship therewith.

7. A combination hip and body protector for football players, comprising a padded hip guard adapted to encircle the player's hips and fit against the back and sides thereof, means engaging and drawing said hip guard laterally against the hips for firmly securing said hip guard around the hips against downward movement therealong, a plurality of upstanding supports having their lower portions connected to the upper portions of said hip guard on opposite sides thereof, and a rib-and-kidney guard adapted to loosely encircle the player's body at the rib-and-kidney level thereof in vertically-spaced relationship with said hip guard and having its lower portion connected to the upper portions of said upstanding supports in supported relationship thereon, said upstanding supports interconnecting said guards for forward and backward relative rocking motion therebetween, said hip guard having vertically-directed extensions thereon adapted to overlie the player's iliac crests and the rib-and-kidney guard having vertically-directed cutaway portions receiving said extensions in vertically-spaced relationship therewith.

8. A combination hip and body protector for football players, comprising a padded hip guard adapted to encircle the player's hips and fit against the back and sides thereof, means engaging and drawing said hip guard laterally against the hips for firmly securing said hip guard around the hips against downward movement therealong, a plurality of upstanding supports having their lower portions connected to the upper portions of said hip guard on opposite sides thereof, and a rib-and-kidney guard adapted to loosely encircle the player's body at the rib-and-kidney level thereof in vertically-spaced relationship with said hip guard and having its lower portion connected to the upper portions of said upstanding supports in supported relationship thereon, said upstanding supports interconnecting said guards for forward and backward relative rocking motion therebetween, said upstanding supports having contact portions thereon and said rib-and-kidney guard having downwardly-projecting arcuate portions thereon disposed in rocking engagement with said contact portions.

9. A combination hip and body protector for football players, comprising a padded hip guard adapted to encircle the player's hips and fit against the back and sides thereof, means engaging and drawing said hip guard laterally against the hips for firmly securing said hip guard around the hips against downward movement therealong, a pair of upstanding supports disposed on each of the opposite sides of said guards and having their lower portions connected to the upper portions of said hip guard, one of the supports of each pair being spaced rearwardly away from the other support thereof, and a rib-and-kidney guard adapted to loosely encircle the player's body at the rib-and-kidney level thereof in vertically-spaced relationship with said hip guard and having its lower portion connected to the upper portions of said upstanding supports in supported relationship thereon, said upstanding supports interconnecting said guards for forward and backward relative rocking motion therebetween.

10. A combination hip and body protector for football players, comprising a padded hip guard adapted to encircle the player's hips and fit against the back and sides thereof, means engaging and drawing said hip guard laterally against the hips for firmly securing said hip guard around the hips against downward movement therealong, a plurality of upstanding supports having their lower portions connected to the upper portions of said hip guard on opposite sides thereof, and a rib-and-kidney guard adapted to loosely encircle the player's body at the rib-and-kidney level thereof in vertically-spaced relationship with said hip guard and having its lower portion connected to the upper portions of said upstanding supports in supported relationship thereon, said upstanding supports interconnecting said guards for forward and backward relative rocking motion therebetween, said rib-and-kidney guard being of compressible material at the front thereof and having elongated approximately horizontal semi-rigid protecting strips secured thereto in vertically-spaced relationship.

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