LEG HANDLE COMPRISING HOLLOW CYLINDRICAL SECTION

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ABSTRACT

A leg handle with preferably hollow cylindrical sections, is used to aid in lifting a jumping player, especially for lineouts in Rugby Union. The handles are preferably made of one or more foam sausages attached to a thin stretch fabric sleeve which is placed on the leg of the jumper and when jumping allow for secure grasp by lifters. The simple, reusable, easy to use leg handles provide a level of effectiveness, comfort, convenience, and safety not provided by conventional methods. To use, leg handles are applied to one or more legs of a jumper and held in place with tape. When the jumper jumps, one or more lifters place there hands against the leg handle. The lifters lift the jumper higher, support the jumper in the jump while the jumper attempts to intercept a ball, and safely lower the jumper. Leg handles comprising cylindrical sections are embodied with a single sausage; a lower front sausage and a higher back sausage; or as a pair of such sausages integrated into respective legs of a pair of compression shorts.
LEG HANDLE COMPRISING HOLLOW CYLINDRICAL SECTION

BACKGROUND

[0001] 1. Field of the Invention
[0002] This invention relates to a leg handle used when lifting a person who is jumping or being lifted, for example a jumper in a Rugby lineout. In particular, a leg handle comprising a hollow cylindrical section.
[0003] 2. Description of Prior Art
[0004] There is a need to jump high in order to intercept a ball in many sports, such as Rugby, volleyball, or baseball.
[0005] For example, in Rugby, when a ball goes out of bounds it is returned to play using a set formation known as a lineout. In a lineout, players from both teams line up near where the ball went out of bounds. Each team forms its own line. A space of about one yard is formed between the lines of players, referred to as the tunnel. The ball is then thrown back into the playing field. The ball must be thrown straight into the middle of the tunnel. Players compete for the ball. A player has a greater likelihood of winning the ball if he is higher in the air than others. Therefore, players jump and/or are lifted up by teammates to be in a favorable position to win possession of the ball.
[0006] Other activities such as ice skating and dancing also involve lifts.
[0007] Various methods have been employed to accomplish these types of lifts and jumps.
[0008] Originally, players jumped unassisted by teammates, but the laws (rules) of Rugby Union have changed to allow teammates to support a player while in the air. At first, lifters would grab the waist of the jumper’s cotton Rugby shorts. It is currently illegal to grab on to or bind to the player while the player is on the ground. As time passed, it became common to support a jumping player by grabbing the player by the bottom of the shorts and lifting him/her by the shorts long enough to play the ball. More recently, it has been made legal to grab the jumping player by the thighs above the knee. Many jumping players wrap a combination of materials and tapes around the thigh to offer those lifting a better grip.
[0009] The use of such techniques has several disadvantages such as:
[0010] Being ineffective, as a good grip is often still difficult to maintain
[0011] Being unsafe, as jumping players that are dropped because of poor grip can fall up to 10 feet and land in an awkward position
[0012] Damage to or tearing of clothing, especially if the proper shorts are not worn
[0013] Extreme discomfort to the jumper, especially in the groin area
[0014] Taking too much time to apply during the critical stages of pre-match preparation
[0015] Requiring a large amount of tape, e.g. almost a full roll of athletic tape
[0016] Requiring help to apply, as taping one’s own leg is often difficult to do satisfactorily
[0017] Needing to be taped before every game or practice
[0018] It is also desirable to have a means for lifting that does not cause additional bunching and riding up of the short Rugby shorts, and that looks better.
[0019] Regulation Rugby shorts are made of thick, non-stretch cotton fabric. The shorts are used to bind onto other players during play such as scrums, rucks, and mauls. The shorts are also used to lift jumpers. The legs of the Rugby short are short and wide allowing the player a large range of leg movement and reducing the surface area that may be used to disadvantageously tackle the wearer. Thus, a primary characteristic of Rugby shorts are that they are non-stretch, short-legged, and loosely fitting.

[0020] For extra support, modesty, and comfort, it is common for Rugby players to also wear skin-tight, longer-legged, compressions shorts made of low denier stretch fabric, known as Spandex or Elastane. These separate and distinct compression shorts are worn under their regulation Rugby shorts.

[0021] On Feb. 26, 1999, Halbro Sportswear applied for a UK patent, application GB 2347067 A, where strips of non-stick material are sewn into the sides and lower edges of regulation Rugby shorts. These strips of non-stick material allow team mates to more easily grip the Rugby shorts during a Rugby lineout.

[0022] Later, elastic neoprene sleeves comprising a non-slip gripping surface have been placed around legs. On Apr. 22, 2003, Mark Giarcheri filed application PCT/GB03/01719 showing a neoprene sleeve comprising a non-slip gripping surface with a ridge at the top. In 2005, KooGa introduced a “Lineout Support” comprising a neoprene sleeve with a non-slip gripping surface.

[0023] Elastic sleeves comprising other types of means for gripping have been placed around legs. For example, U.S. patent application Ser. No. 11/499,023, filed Aug. 3, 2006, and U.S. patent application Ser. No. 11/800,356, filed May 4, 2007, disclose my earlier attempts to solve these problems. While successful in part, those earlier attempts still suffer from various problems.

[0024] More recently, the Centurion brand (Primo Play Ltd.) introduced Aerial Supports™ consisting of a heavy neoprene housing a rubber lifting block. Deacon Manu developed Aerial Supports™.

[0025] Elastic leg sleeves have several disadvantages such as:

[0026] Being constricting during the activity between lifts
[0027] Being too elastic and sliding up during lifts
[0028] Being hot, causing excessive sweating and odor
[0029] Having material break down
[0030] Being relatively heavy
[0031] Having relative expensive materials
[0032] Having materials requiring expensive equipment to manufacture
[0033] Being complex, and thus costly to manufacture
[0034] Sliding down the leg
[0035] There is a need for a means to improve lifting in all levels of play, as ineffective lifts can be costly, dangerous, and contribute significantly to losing a game.
[0036] What is needed is an improved lightweight, low cost, easy to manufacture, quick, simple, easy to use, reusable device that provides an effective means of obtaining a sure grip that offers comfort and safety to the players involved.
[0037] Further, what is needed is a device that can be used by new players and youth to safely develop their technique, skill, and timing during practices and prior to game situations that may require conventional lifting aids.

SUMMARY OF THE INVENTION

[0038] Accordingly, it is an objective of the present invention to provide an improved lightweight, low cost, easy to
Objects and Advantages

Accordingly, beside the objects and advantages described above, some additional objects and advantages of the present invention are:

1. To provide a comfortable method of lifting a player who is jumping.
2. To provide a more effective method of obtaining a sure grip on the thighs of a jumping player.
3. To provide an increase of safety for a jumping player being lifted by the thighs.
4. To provide means and methods of lifting that are easy to use.
5. To provide means and methods of lifting that are reusable.
6. To provide means and methods of lifting that offer higher performance.
7. To provide means and methods of lifting that can be quickly applied and removed.
8. To provide means and methods of lifting that are adjustable to varying conditions.
9. To empower a less skilled lifter to lift a jumper by himself.
10. To provide means and methods of lifting that are minimal in cost and waste.
11. To provide means and methods of lifting that do not worsen a user's appearance.
12. To provide means and methods of lifting that improve a user's appearance.
13. To provide means of lifting that do not stretch and slide up the jumper's leg during the lift.
14. To provide a youth and new player development device that can be safely used to teach technique, skill, and timing.
15. To reduce the waste of materials such as tape.

REFERENCE NUMERALS IN DRAWINGS

DESCRIPTION OF THE INVENTION

The present invention comprises a leg handle comprising a hollow cylindrical section. When a person jumps, one or more other people can assist the jumper by gripping leg handle. Such a lifter is able to lift the jumper higher, support the jumper while in the air, and safely lower the jumper to the ground. When the jumper is not jumping, the jumper is able to run or otherwise move without hindrance or discomfort.

FIG. 1A

FIG. 1A illustrates two conventional means of lifting. As shown on the right, a first jumper 110 is lifted by a first lifter 120 and a second lifter 130. As shown on the left, a second jumper 150 is lifted by a third lifter 160 and a fourth lifter 170.

FIG. 1B

A first conventional means for lifting (gripping the shorts) is shown on right. The first jumper 110 is lifted by his shorts 112. The first lifter 120 lifts using both his left hand 121 and his right hand 122 on the bottom front of the shorts 112.
The second lifter 130 is gripping the shorts with his left hand 131 and his right hand 132 (not shown) to lift. These grips allow the first lifter 120 and second lifter 130 to lift first jumper 110 to a height where he can intercept the ball 140.

A second conventional means for lift (gripping the thigh) is shown on the left. The fourth lifter 170 is using a similar technique of lifting as the second lifter 130 and uses both his right hand 171 and his left hand 172. Third lifter 160 is lifting second jumper 150 by his thigh 154. Note that the second jumper 150 is unstable, is falling, and was unable to intercept the ball because of the bad lift.

Lifting by the shorts has many disadvantages including, for example, discomfort for the jumper, less than optimal lift performance, and difficulty to obtain grip. It is also difficult to obtain a secure grip on a bare thigh (e.g., third lifter 160), especially when the skin is covered with sweat.

FIG. 1B

FIG. 1B illustrates a third jumper 180 with material wrapped around his thighs 154, just above each knee 992. The one-time-use material consists of an underwrap 190 covered by an upper strip of tape 192a and a lower strip of tape 192b. The tape underwrap 190 may consist of fabric athletic tape, stretch tape, or foam underwrap tape. Typically the tape 192 is black, plastic, electrical tape. This arrangement creates a bulge 194. The bulge 194 may include additional layers of the foam tape underwrap 190 or cloth material.

The one-time-use thigh wrap also has many disadvantages including, for example, difficulty in applying consistently, requiring application by coach, trainer, or other player during the critical pre-game preparation time, discomfort, waste of materials, and debris often left behind.

FIG. 1C

FIG. 1C illustrates a neoprene sleeve comprising a non-slip gripping surface with a ridge at the top. The high friction gripping member 301 comprises a non-slip surface 302, with a first half-sphere protruding point 303 and a second half-sphere protruding point 304, and rectangular ridge member 305.

FIG. 2

FIG. 2 illustrates an embodiment of a foam sausage 201. The sausage 201 is shown with rounded ends.

FIG. 3

FIG. 3 illustrates a hollow cylinder 204. In a preferred embodiment, the hollow cylinder is made of soft foam with a wall thickness of between four (4) and twenty-nine millimeters.

FIG. 4A and FIG. 4B

FIG. 4A and FIG. 4B show cross sections of cylindrical sections. The cylindrical section of the present invention may be molded to shape or cut from a pre-manufactured foam cylinder such as one shown in FIG. 3. A hollow cylinder can be cut in half resulting in two half-cylindrical sections, 202a and 202b, as shown in FIG. 4A. Alternately, it may be cut into three or more smaller cylindrical sections, as illustrated by smaller cylindrical sections 203a-b in FIG. 4B.

FIG. 5

FIG. 5 shows a cylindrical section 202 made, for example, by cutting a hollow cylinder 204 in FIG. 3 in half as shown in the cross section of FIG. 4A.

FIG. 6

FIG. 6 shows a foam sausage 201 formed by rounding the ends of the cylindrical section shown in FIG. 5. A currently preferred embodiment of a foam sausage 201 conforms to my design patent application Ser. No. 29/293,086, filed Dec. 11, 2007, and has a length of about five inches, and a radius of about three-quarters of an inch resulting in a convex surface distance of over two inches. Other embodiments may have a larger radius and convex face, for example, a radius of about one and one-quarter inches.

FIG. 7A

FIG. 7A illustrates a thin stretch fabric 232a sleeve with a front sausage 209. In a currently preferred embodiment, the thin stretch fabric is low denier fabric with about ten to fifteen percent spandex (elastane) and a remainder of nylon, and having a thickness of substantially about one-half of a millimeter. The front sausage 209 is preferably a foam sausage 201 (FIG. 2).

FIG. 7B

FIG. 7B illustrates a thin stretch fabric 232a sleeve with a front sausage 208 and a back sausage 209. The sausages (208 and 209, respectively) are preferably a foam sausage 201 (FIG. 2).

FIG. 7C

FIG. 7C illustrates compression shorts comprised of thin stretch fabric 232c with a front sausage 209 and a back sausage 208 in each leg (e.g. 208a and 209a in the right leg and 208b and 209b in the left leg, as worn by a jumper).

FIG. 8A through FIG. 8C

FIGS. 8A through 8C illustrate a single sausage pattern 871, a double sausage pattern 872, and a compression short pattern 876.

FIG. 8A shows a single sausage pattern 871 for the thin stretch fabric 232a. The front sausage position 879 is represented by a dashed line. In one method of construction, a pocket is formed by sewing a sausage cover 877 to the inside of the thin stretch fabric 232a, a sausage 201 is inserted into the pocket and the pocket is sewn closed. Flexible adhesive may also be used.

FIG. 8B shows a double sausage pattern 872, thin stretch fabric 232b. In addition to the front sausage position 879, the back sausage position 878 is shown.
FIG. 8C a partial, compression short pattern 876, thin stretch fabric 232c. Only one leg is shown with each respective front sausage position 879 and back sausage position 878.

FIG. 8D

FIG. 8D a pattern for a sausage cover 877 which may comprise the same thin stretch fabric. The edges of the pocket may be folded over prior to sewing resulting in a smooth edge.

FIG. 9

FIG. 9 illustrates using tape over the thin stretch fabric 232a of a single sausage (FIG. 7A) on a lower thigh 990. To apply the device is placed over the leg and position above the knee 992. To prevent the device from slipping down the leg, while running around, at least one wrapping of tape 192a is used to tape the thin stretch fabric 232a to the skin of the lower thigh 990. To prevent the device from slipping up the leg during the lift, one or more wrappings of tape 192b (and optionally 192c) are taped over the thin stretch fabric 232a below (and optionally above) the front sausage 209. The tape, 192b and 192c, may be fabric athletic tape or may be plastic electrical tape.

Although not shown a similar arrangement of tape may be applied over each sausage (208, 209, 208a, 209a, 208b, and 209b, respectively).

In yet another embodiment of a method for use, a wrapping of stretch tape with a tacky surface, is applied over the respective sausage (e.g. 209) prior to applying tape 192b and 192c.

Other Uses

While the descriptions of the various embodiments have been made in reference to Rugby Union, the present invention could also be used for other sports which involve, or in the future may involve, lifting, such as Volleyball, International Rules Football, Australian Rules Football, baseball, ice skating, dance, or other sports.

ADVANTAGES

Comfortable

The leg handles of the present invention offer comfort to the jumping player. The leg handles do not apply pressure to the sensitive crotch areas of the body, as conventional methods of lifting do. The wearer also reduce pulling out the hairs of the leg during removal, as in certain conventional methods.

Effective

The leg handles of the present invention are effective. A lifter has much better odds for obtaining and maintaining a sure grip with the present invention than with conventional methods. Thus, the jumper is more consistently able to obtain an optimum jump.

Safe

Because of the effectiveness of the the present invention in allowing lifters to have a sure grip, the present invention offers greater safety and lessens risk of injury to both jumping and lifting players, and even opponents

Simple

The present invention is simple to make and use. The present invention requires less time to put on.

Easy to Use

The present invention is easy to use. To install, the potential jumper simply applies one or more legs. The lifters easily can find a grip while lifting the jumper.

Unlike conventional methods of lifting, which require a second party such as a trainer or coach to apply and runs the risk of inconsistency, the present invention is easily put on and taped by one person (including the wearer) and gives consistent results.

Reusable—Reduced Waste

The present invention can be used over and over again. The conventional method of using entirely tape, most of the material can only be used once. The materials to be used every application. With these devices and methods, most of the material is reused and much less tape is required.

Because the conventional foam wraps and tape can only be used once, the materials become trash after use. The remains of the foam wraps and tape are often strewn on the field and leave an unsightly, unprofessional appearance requiring extra effort to clean up.

Higher Performance

The present invention offers higher performance in jumping than conventional methods. The quality of grip maintained allows stronger and higher lift, for example during a Rugby lineout. Use of the present invention gives teams more options on plays to be run during the lineout. The use of the present invention does not hinder agility or running, as conventional taping sometimes does, because the taping is much less and can be applied looser.

Quick

The present invention can be quickly applied and removed. Time from warm-up and pre-game training need not be taken to apply the leg devices. The conventional method can take several minutes to apply and removal can also be a slow process. Conventional taping often requires assistance from a coach or other highly skilled person and detracts from the critical pre-game preparation.

Adjustable

One embodiment of the present invention can easily be adjusted for different players and thus are easily switched from player to player to accommodate substitutions.

Efficient

The conventional method of taping is wasteful. Trash is created after every game, and more tape and foam wrap materials need to be replaced and bought, adding to expenses. The present invention reduces the cost and trash significantly.

Better Appearance

Conventional methods of lifting worsen the look of players. The present invention has a smooth, professional
look. While conventional taping has limited options, the present invention can easily be manufactured in a variety of colors to match the team color or the individual preference of the wearer. Space on the device material may also be used to bear a team logo, national insignia, or advertising.

Cost Effective

[0107] Because the leg handles can be made relatively inexpensively, are reusable, and reduce waste, the present invention is cost effective. In particular, the leg handle can be made very inexpensively, providing a larger market and encouraging less waste.

Conclusion, Ramification, and Scope

[0108] Accordingly, the present invention provides an easy to use, simple, safe, comfortable, reusable, and effective means for lifting a jumper.

[0109] While the above descriptions contain several specifics these should not be construed as limitations on the scope of the invention, but rather as examples of some of the preferred embodiments thereof. Many other variations are possible. For example, different shapes and sizes of cylindrical sections of strap could be used. The cylindrical section could be made from a solid cylinder of foam, rubber, or similar material. Additionally, the leg devices could be made of different materials or have additional features, or be used in different sports, without departing from the scope and spirit of the novel features of the present invention.

[0110] Accordingly, the scope of the invention should be determined not by the illustrated embodiments, but by the appended claims and their legal equivalents.

I claim:

1. A leg handle to be worn on a leg of a jumper and engaged by one or more lifters, said leg handle comprising:
   a) a thin stretch fabric material, having a thickness substantially less than about one millimeter,
   b) at least one cylindrical section attached to the thin stretch fabric,
   wherein the thin stretch fabric material is of sufficient size and shape to be worn around the lower thigh of the jumper,
   wherein the thin stretch fabric material is sufficient size and shape wherein at least one wrapping of tape may be applied over below the cylindrical section on the thin stretch fabric without touching the skin of the leg of the jumper, whereby the leg handle is prevented from slipping up during the lift and whereby the skin and hair of the leg of the jumper is not adversely affected,
   wherein, when the jumper jumps to obtain a higher position, the jumper is lifted and held in the higher position by the one or more lifters,
   whereby the jumper when wearing the leg handle:
      i) is lifted and held in the higher position by at least one lifter, and
      ii) runs and jumps free of discomfort or interference from the leg handle, and
   whereby at least one of the lifters:
      iii) readily ascertains the location of the cylindrical section while the jumper is jumping, and
   iv) securely engages at least one cylindrical section with at least one hand while lifting, supporting, and lowering the jumper.

2. The leg handle of claim 1, wherein the cylindrical section has rounded ends, and
   wherein, when attached to the leg of a jumper, all of the edges of the cylindrical section taper smoothly down to the leg of the jumper,
   whereby the edges which are engaged the hand of the lifter correspond to the shape of the hand of the lifter.

3. The leg handle of claim 1, wherein the cylindrical section is about five inches long.

4. The leg handle of claim 1, wherein the cylindrical section is between about three-quarters of an inch and about one and one-quarter inches in radius.

5. The leg handle of claim 1, wherein the wall thickness of cylindrical section is between about four and about twenty-nine millimeters.

6. The leg handle of claim 1, wherein the wall thickness of cylindrical section is between about three-eighths of an inch.

7. The leg handle of claim 1, wherein the cylindrical section is formed from a hollow cylinder.

8. The leg handle of claim 1, wherein thin stretch fabric material forms compression shorts with two short legs,
   wherein each of the two short legs are attached to at least one cylindrical section,
   whereby at least one of the cylindrical sections is prevented from slipping down by the compression shorts compressing about the waist and legs of the jumper.

9. The leg handle of claim 1, wherein the thin stretch fabric material forms a leg sleeve, and
   wherein the thin stretch fabric material is capable of being taped to the thigh of the jumper, whereby the leg handle is prevented from slipping down.

10. A system for supporting a jumper by one or more lifters, said system comprising two leg handles in accordance with claim 1, said two leg handles comprising a first leg handle to be worn on one leg of the jumper and a second leg handle to be worn on the other leg of the jumper,
   wherein, prior to jumping, the first and second leg handles are applied to the corresponding legs of the jumper, and
   wherein, when jumping, a first hand of the at least one lifter grips handle of the first leg handle and a second hand of the at least one lifter grips handle of the second leg handle,
   whereby when the jumper jumps to higher position the at least one lifter is able to support the jumper with the first hand on the first leg handle and the second hand on the second leg handle.

11. A method for supporting a jumper by one or more lifters comprising the steps of:
   a) applying at least two of the leg handles of claim 1 to the legs of the jumper,
   b) tapping below each of the cylindrical sections,
   c) the jumper jumping into the higher position,
   d) the one or more lifters ascertaining the location of each cylindrical section,
   e) the one or more lifters engaging each handle with each hand,
   f) lifting the jumper to a second higher position,
   g) holding the jumper firmly in the second higher position until the jumper is able to intercept the ball, and
h) lowering the jumper safely and securely,  
   ii) runs and jumps free of discomfort or interference  
   from the leg handle, and  
   j) removing the leg handles,  
   iii) readily ascertains the location of the cylindrical sec-
   k) reapplying the leg handles, and  
   tion while the jumper is jumping, and  
   l) repeating steps b) through h) for a second predetermined  
   iv) securely engages at least one cylindrical section with  
   period of time.  
12. A method for supporting a jumper by one or more lifters  
   whereby at least one of the lifters:  
   comprising the steps of:  
   a) applying two leg handles to the legs of the jumper, each  
   claiming each cylindrical section has rounded ends, and  
   leg handle comprising at least one cylindrical section  
   wherein, when attached to the leg of a jumper, all of the  
   and thin stretch fabric, said stretch fabric having a thick-
   edges of each cylindrical section taper smoothly down to  
   ness of about one half millimeter,  
   the legs of the jumper,  
   b) the jumper jumping into a higher position,  
   whereby the edges which are engaged the hands of the lifter  
   c) the one or more lifters gripping one of the handles with  
   correspond to the shape of the hands of the lifter,  
   each hand,  
   d) lifting the jumper to a second higher position,  
   iv) securely engages at least one cylindrical section with  
   e) holding the jumper firmly in the second higher position  
   at least one hand while lifting, supporting, and lower-
   until the jumper is able to intercept the ball,  
   ing the jumper,  
   f) lowering the jumper,  
   g) repeating steps b) through f) at least once,  
   h) removing the leg handles,  
13. A unit of compression shorts with integrated leg handles,  
   i) reapplying the leg handles, and  
   to be worn over legs of a jumper and engaged by one  
   j) repeating steps b) through f) at least once.  
   or more lifters, said compression shorts comprising:  
   a) thin stretch fabric material of sufficient size and shape to  
   wherein the thin stretch fabric material is sufficient size  
   b) a plurality of hollow cylindrical sections attached to the  
   be worn around the wasted and thighs of the jumper,  
   shape wherein at least one wrapping of tape may be  
   thin stretch fabric,  
   wherein the thin stretch fabric material is sufficient size  
   applied over below each cylindrical section on the thin  
   and shape wherein at least one wrapping of tape may be  
   stretch fabric without touching the skin of the leg of the  
   stretch fabric on the thin stretch fabric without touching  
   jumper, whereby the leg handle is prevented from slipping  
   the skin of the leg of the jumper, whereby the leg handle  
   up during the lift and whereby the skin and hair of  
   wherein the jumper jumps to obtain a higher position, the  
   the leg of the jumper is not adversely affected,  
   wherein, the jumper is lifted and held in the higher position  
   wherein, when the jumper jumps to obtain a higher posi-
   by the one or more lifters,  
   tion the jumper is lifted and held in the higher position  
   whereby the jumper when wearing the leg handle:  
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   i) is lifted and held in the higher position by at least one  
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