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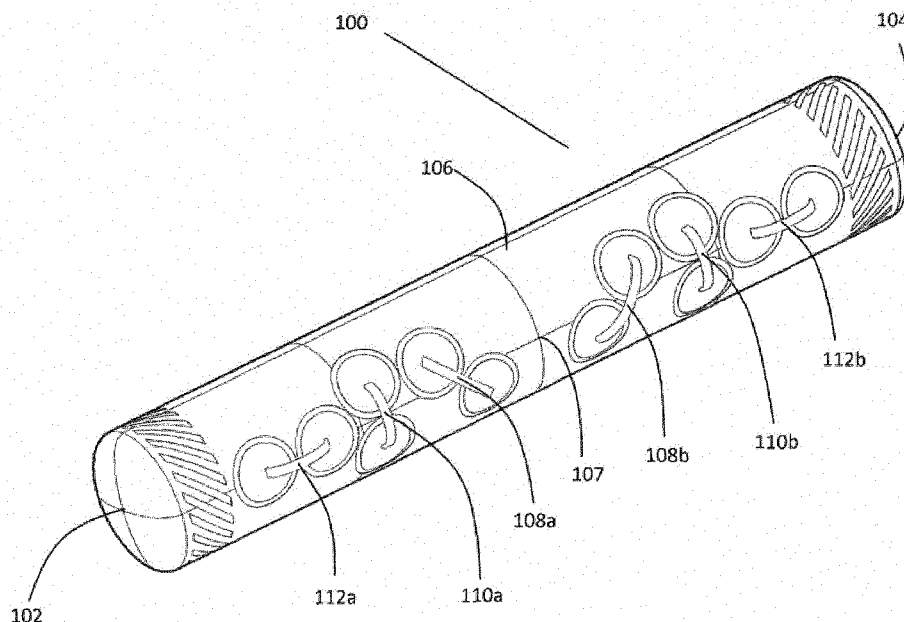


Figure 1

(57) Abstract: The present invention is directed to a contact training stick suitable for use in practicing skills associated with contact sports, wherein the contact training stick is substantially cylindrical in shape and comprises a first end cap, a second end cap, and a curved surface extending therebetween; the contact training stick further comprises at least two weighted elements, namely a first weighted element and, a second weighted element whereby, the contact training stick further comprises at least a first plurality of spaced-apart, pairs of gripping handles along a first side of the curved surface.



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“A Contact Training Stick”

Introduction

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This invention relates to a device for practicing contact sports.

In particular, the present invention is directed towards a device, hereinafter referred to as a contact training stick, which is utilised in practicing certain skill sets and drills
10 important for the improvement of a player engaging in a contact sport. In particular, the device is useful in practicing movements and skills in real-time game play speed without the need for player to player contact.

In contact sports, fending off an opponent, who is a would-be tackler, also known as
15 a defender, is a critical skillset to practice and improve upon. Additionally, in contact sports, driving or attacking directly against an opposing player in order to gain an advantage for your team is also a critical skill to practice and develop through repetition.

20 Throughout this specification, the term “contact sports” shall be understood to encompass any type of sports or recreational activity which involves physical contact with an opponent or fellow participant. For example, ball-related contact sports, also referred to as collision sports, would include, *inter alia*, American football, rugby union, rugby league, lacrosse, Australian rules football and the like.

25 In these sports direct contact with opposing players and/or fellow participants is an essential element of the game; quite often the contact situation in these sports is in the form of tackling, blocking, defending, rucking and scrummaging. There are other more limited contact ball-related sports where the contact activity is a lesser element within the playing of the game although contact situations still exist and are
30 legal in the game. Examples of such sports are association football (which is also known as soccer), Gaelic football, ice hockey, field hockey, and basketball. All of these full contact and limited contact activities in these sports are considered to fall within the term “contact sports” as used hereinafter.

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Moreover, the term "scrimmage" has been used hereinunder to refer to the act of a player driving into an opposing player, where the opposing player is also driving into the player in an opposite direction. The line of scrimmage in American football is a good example of this. It is also prevalent in rucks and mauls in rugby union.

- 5 Typically, a player is attempting to drive the opponent player backward or pivot the opponent player so as to gain an advantage for their own team.

In contact sports, repetition of a technique, aspect, skill or drill during practice sessions can be hugely beneficial to executing that particular technique during a match, game or contest. The best way to practice these repetitions is frequently through the use of direct player-on-player training drills. This is as close to game realism which can be achieved in a training ground scenario. However, repetition of the technique in a direct player-on-player situation is dangerous as injuries can easily occur when two players are involved in a contact situation. This is particularly prevalent for practicing contact skills such as scrimmaging, tackling, blocking, defending and rucking, where both players engaging in the practice drill will be exerting maximum force upon each other. It is easy to obtain an injury, such as to the ankle, knee and the like, as the players will be pushing and twisting each other during the scrimmaging. It is easy for a player to lose grip on the other player and/or perform a poor rep, which can lead to an injury to either or both players. As a result, it is common practice to ban direct player-on-player contact during training sessions, particularly in the US. Moreover, moves to ban such direct player-on-player contact during training sessions is gaining traction in other countries, particularly in contact sport youth groups. However, the sharpness and game-readiness of those player's skills will diminish as a result of not practicing such contact situations.

An alternative to direct player-on-player contact during a training session is to employ the use of practice dummies and practice equipment to replace direct player-on-player situations by replicating some aspects of the direct player-on-player realism through contact between the player and the practice equipment. Existing prior art practice dummies and practice equipment tend to offer an unrealistic replication of a contact situation. In many cases, the practice equipment is static and is constructed of heavy grade materials such as a metal framework

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and wooden parts so as to stand up to the rigours of repeated contacts with players. Such static pieces of practice equipment cannot offer a player an opportunity to develop their reactive skills, or a realistic representation of what happens in the game. Moreover, the prior designs are considered to be too heavy
5 to be able to replicate an in-game contact situation. In other cases, the practice equipment, such as tackle pads and the like, are considered to be static, but also too light so as not to be realistic, as they are usually constructed of cushioning foam or other lightweight materials.

10 The contact training stick of the present invention addresses issues with the currently available practice equipment which is not considered to be capable of replicating a realistic contact situation, as the heavy devices carry too much weight and momentum and do not react as an opponent would in contact. Or, a light device does not carry enough energy through the contact situation and also does
15 not react as an opponent would in contact.

Moreover, the contact training stick of the present invention allows for controlled player-on-player interaction in certain practice drills, through providing dynamic forces and impacts by utilising the capabilities of gaseous matter, such as air, and
20 liquid matter, such as water along with offset, off-balanced, weighted elements.

The present invention also addresses issues regarding the usability of many prior art devices which are capable of, or only suitable for, assisting in conducting a specific training drill. A contact training piece of apparatus which can be used
25 across a multitude of different drills is desirable, so as to be cost-effective and useful.

It is a goal of the present invention to provide an apparatus that overcomes at least one of the above mentioned problems.

30

Summary of the Invention

The present invention is directed to a contact training stick suitable for use in practicing skills associated with contact sports, wherein the contact training stick is

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substantially cylindrical in shape and comprises a first end cap, a second end cap, and a curved surface extending therebetween; the contact training stick further comprises at least two weighted elements, namely a first weighted element and, a second weighted element; and, whereby, the contact training stick further
5 comprises a first plurality of spaced-apart, pairs of gripping handles along a first side of the curved surface .

The advantage of providing a contact training stick having pluralities of pairs of gripping handles on opposing sides of the contact training stick is that indirect player-
10 on-player training is facilitated. The players can grip the contact training stick on opposing sides of the contact training stick and begin to drive against one another in order to practice their scrimmaging, rucking, defending and blocking techniques. The contact training stick acts as a barrier between the two players and prevents direct player-on-player contact.

15 A further advantage of the provision of the plurality of pairs of gripping handles allows each player to hold the contact training stick in a secure manner and reduces the likelihood of a player losing their grip during the training exercise, slipping, and injuring themselves. It will be appreciated that the contact training stick of the present
20 invention enables gameplay speed scenarios to be practiced in training sessions without the need for player-on-player contact. It will also be appreciated that the contact training stick of the present invention enables scrimmaging, rucking, defending and blocking techniques to be practiced, which would otherwise be banned in training sessions.

25 A further advantage of providing a plurality of pairs of gripping handles is that the contact training stick can be manoeuvred into a variety of positions during use. It will be appreciated that such a contact training stick is not static and as such can be manoeuvred into and out of the path of an on-coming player, providing a more
30 realistic representation of real time gameplay.

Furthermore, the advantage of providing the first weighted element and the second weighted element adjacent the first end cap and the second end cap, respectively, is that if one player is gaining an advantage during their scrimmaging, rucking,

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defending and blocking the weighted element will tend to dampen this advantage. For example, it is often desirable to drive upwardly into an opponent. By driving upwardly into an opponent, the driving player will be lifting the opposing player's weight off the ground and the opposing player as a result will have less contact with the ground to form a solid base from which to drive back into the driving player. When practising this technique with the contact training stick of the present invention, the driving player's hand will tend to push upwardly. However, the first weighted element and second weighted element will counter-act this and will assist the opponent in resisting the upward drive. Therefore, it is more difficult for a stronger player to gain an advantage when practising the scrimmaging technique against a weaker opponent. The difference in driving power is lessened by the weighted elements and therefore the risk of an injury is also reduced as the difference between the levels of the player's abilities is less pronounced.

A further advantage of the contact training stick of the present invention is that the contact training stick provides a clear visual reference for an observing coach and allows the observing coach to easily ascertain which of the players is gaining an upper hand during a scrimmaging rucking, defending and blocking training drill. For example, in American football, at the line of scrimmage, it is desirable for an offensive player to drive into an opposing defensive player and either drive that defensive player backwards or pivot the defensive player out of the line of scrimmage so as to open a gap in the line of scrimmage for a running back and/or quarterback to take advantage of. It can be relatively difficult to completely drive a defensive player backwards so the normal technique employed is to attempt to open a gap in the line of scrimmage. This is accomplished by the offensive player by driving upwards with one of their hands and pivoting the defensive player as a result. When the contact training stick of the present invention is used between two players practising such a drill, an observing coach can easily determine who is gaining an upper hand as the rotation of the contact training stick provides an exaggerated indication of which player has been successful in driving upwardly with their hand.

In a further embodiment, the skills associated with contact sports of which the contact stick is suitable for use in practice may be selected from one or more of scrimmaging rucking, defending and blocking or any combination of the aforementioned skills.

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It should be noted that the contact training stick of the present invention is envisaged to have more than one method of use in contact training drill situations. For example, the practice of scrimmaging as described above allows for indirect player-on-player contact to be realised with the contact training stick acting as a barrier between the
5 players, further allows each of the players to have a secure grip so as to reduce any likelihood of injury as a result of slipping or off the opposing player during the drill, and further allows for players of different abilities to practice against one another whilst reducing the chances of injury by utilising the weighted elements to assist a player of lesser scrimmaging ability. A second example of how the contact training
10 stick can be used is for fending off would-be tacklers. In this method of use for the contact training stick, a coach will hold the contact training stick using any of the gripping handles and the contact training stick can be jabbed towards, rotated into, raised towards or lowered towards any on-coming player during a training drill. In this situation, the on-coming player must react to the contact training stick by fending off
15 the contact training stick using known techniques such as a stiff-arm, a hand-off, a high chop, a low chop and the like.

A further advantage of the contact training stick of the present invention is the multifunctional capability which is achieved through the combination of technical
20 features as herein described enabling the contact training stick to be used in a variety of scrimmaging rucking, defending and blocking training drills. As such a further advantage is that the contact training stick of the present invention eliminates the need for multiple independent differently structure training tools, each only suitable for use in singular training types. It will be appreciated that the contact training stick of
25 the present invention has the further advantage of decreasing cost associated with a need to purchase multiple training tools and decreases associated storage space issues through enabling a multitude of training tools in one contact training stick.

In a preferred embodiment, the first weighted element is adjacent the first end cap.
30

In a more preferred embodiment, the second weighted element is adjacent the second end cap.

In a further embodiment, the contact training stick comprises a second plurality of

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spaced-apart, pairs of gripping handles along a second side of the curved surface, where the first side of the curved surface is diametrically opposed to the second side of the curved surface.

- 5 It will be appreciated that the presence of a further set of gripping handles enables two players to interact without the need for contact.

In a further embodiment, the contact training stick is inflatable. In a further embodiment, the contact training stick comprises a main chamber which is suitable to be inflated with a gas, such as air. In a further embodiment, the main chamber extends intermediate the first weighted element and the second weighted element.

One advantage of providing a contact training stick that is inflatable is that it is readily deformable so as to minimise the risk of an injury to a player using the equipment.

15 A further advantage of providing a contact training stick that is inflatable is that it can be deflated for easier storage of the equipment.

In a further embodiment, the first weighted element and the second weighted element are located in abutment to the first end cap and the second end cap respectively. In a further embodiment, the first weighted element and the second weighted element are bladders suitable to be filled with a liquid, such as water.

25 The advantage of providing the contact training stick with a design which encompasses an gaseous matter (e.g. air) and liquid matter (e.g. water) combination to form a piece of weighted practice equipment is that the contact training stick will replicate the weight of an opposing player in a tackle or scrimmage situation, yet the contact training stick is deformable so as to minimise the risk of an injury when the contact training stick comes into contact with the player. This is particularly prevalent for the scenarios where the contact training stick of the present invention will be used to practice fending off techniques and securing the ball techniques.

A further advantage of providing the contact training stick with a combination of a gas filled main chamber and liquid filled weight elements is that it enables the coach and

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players to simulate unpredictable variable weight loads and angles that replicate real life gameplay scenarios.

5 In a further embodiment, the first weighted element and the second weighted element are substantially equal in mass.

10 In a further embodiment, the first weighted element and the second weighted element are located at opposing ends of the contact training stick. In a further embodiment, the first weighted element and the second weighted element are located at opposing ends of the main chamber within the contact training stick.

15 In a further embodiment, the contact training stick comprises a three layer polyvinyl chloride (PVC) construction. In a further embodiment, the contact training stick is double-banded.

In a further embodiment, the mass of the first weighted element and the second weighted element is adjustable.

20 It is to be appreciated that the first weighted element and the second weighted element may be adjusted independently of each other such that each weighted element differs in mass or they are substantially equal in mass.

25 In yet a further embodiment of the weighted elements may have a mass up to approximately 6 kilograms.

It will be appreciated that 6 kilograms is equivalent to approximately 6 litres of liquid.

30 In a further embodiment, the contact training stick comprises polyvinyl chloride (PVC).

In a further embodiment, the contact training stick comprises a diameter in the range of 20cm to 40cm. In a further embodiment, the contact training stick comprises a length in the range of 140cm to 220cm. In a further embodiment, the contact training stick comprises a diameter of 30cm and a length of 180cm. It will be appreciated that

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the diameter of the contact training stick shall be the approximate diameter of the end caps, and, the length of the contact training stick shall be the approximate distance between the first end cap and the second end cap.

5 In a further embodiment, the first weighted element is a first water bladder and is located in abutment against the first end cap; the second weighted element is a second water bladder and is located in abutment against the second end cap. In a further embodiment, the first water bladder and the second water bladder can each respectively hold up to 6 litres of water.

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In a further embodiment, the contact training stick comprises a central core bladder which extends between the first water bladder and the second water bladder;

15 In a further embodiment, the central core bladder, the first water bladder, and the second water bladder are all separate bladders and are not in fluid communication with one another.

20 One advantage of the contact training stick having a core central bladder is to provide additional weight in the mid-section of the contact training stick allowing the training sessions to readily mimic differently weighted opponents and the different levels of force that may result. It will be appreciated that variations in opponent weight is enabled without the need of multiple fixed weight training sticks.

25 In a further embodiment, the central core bladder, the first water bladder, and the second water bladder are all interconnectable bladders and are in fluid communication with one another.

30 One advantage of the contact training stick having the central core bladder and the weighted elements in fluid communication with one another is to mimic changes in mass distribution and changes in centre of gravity that may occur in real time game play. It will be appreciated that the above technical features provide a more realistic representation of real time gameplay scenarios.

Brief Description of the Drawings

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The invention will be more clearly understood from the following description of some embodiments thereof, given by way of example only, with reference to the accompanying drawings, in which:

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Figure 1 is a perspective view of a contact training stick in accordance with the present invention;

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Figure 2 is a diagrammatic view of a player evading a contact training stick during a practice session;

Figure 3 is a cut-through view of the contact training stick of Figure 1, showing the first weighted element and the second weighted element;

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Figure 4 is a diagrammatic view of a player and an opposing player using the contact training stick of Figure 1 during a practice session; and,

Figure 5 is a further diagrammatic view of a player and an opposing player using the contact training stick of Figure 1 during a practice session.

20

Detailed Description of the preferred Embodiments

Referring to Figure 1, there is provided a contact training stick indicated generally by reference numeral 100. The contact training stick 100 is substantially cylindrically shaped. The contact training stick 100 comprises a first end cap 102, a second end cap 104 and a curved surface 106 which extends between the first end cap 102 and the second end cap 104, and a midpoint 107 located between the first end cap 102 and the second end cap 104. The centre of gravity of the contact training stick 100 is generally positioned about the midpoint 107. A plurality of pairs of gripping handles are provided affixed to the curved surface 106 of the contact training stick 100. Each of the gripping handles in each pair of gripping handles is spaced apart from one another. The first pair of gripping handles (108a, 108b) are provided at an angle of approximately 45° relative to a longitudinal axis of the contact training stick 100. This first pair of gripping handles (108a, 108b) are spaced apart from one another but are both closest to a midpoint 107 between the first end cap 102 and the second end cap

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104, and are thus adjacent to one another without any other gripping handles being placed between this first pair of gripping handles (108a, 108b). A second pair of gripping handles (110a, 110b) are provided at an angle of approximately 90° relative to a longitudinal axis of the contact training stick 100. This second pair of gripping handles (110a, 110b) are located between the first pair of gripping handles (108a, 108b) and the first end cap 102 and second end cap 104, respectively. A third pair of gripping handles (112a, 112b) are provided an angle of approximately 0° relative to a longitudinal axis of the contact training stick 100. This third pair of gripping handles (112a, 112b) are located between the second pair of gripping handles (110a, 110b) and the first end cap 102 and second end cap 104, respectively. In this way, the third pair of gripping handles (112a, 112b) are the outermost gripping handles, the second pair of gripping handles (110a, 110b) are at the middle gripping handles, and, the first pair of gripping handles (108a, 108b) are the innermost gripping handles. The first pair of gripping handles (108a, 108b) are spaced apart but have the shortest distance between the pair of gripping handles, the second pair of gripping handles (110a, 110b) are also spaced apart and are held at the distance which is greater than the distance between the first pair of gripping handles (108a, 108b), and, the third pair of gripping handles (112a, 112b) are also spaced apart and held at a distance which is greater than the distance between the second pair of gripping handles (110a, 110b). The varying distances and angles of the plurality of pairs of gripping handles (108a, 108b, 110a, 110b, 112a, 112b) allow a player to grip the contact training stick 100 using different types of arm positions, hand positions and gripping techniques. This allows players in different positions along a line of scrimmage to practice the particular driving techniques associated with their position in the line of scrimmage.

It will be appreciated that the plurality of pairs of gripping handles (108a, 108b, 110a, 110b, 112a, 112b) are provided along a first side of the curved surface 106 of the contact training stick 100. A further plurality of pairs of gripping handles is provided on a second side of the curved surface 106 of the contact training stick 100. The first side of the curved surface 106 is diametrically opposed to the second side of the curved surface 106. This can be seen in Figure 4, where the further plurality of pairs of gripping handles is shown. The first pair of gripping handles (108a, 108b) on the first side of the curved surface 106 has a corresponding first pair of gripping handles (114a, 114b) on the second side of the curved surface 106 of the contact training

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stick 100. The second pair of gripping handles (110a, 110b) on the first side of the curved surface 106 has a corresponding second pair of gripping handles (116a, 116b) on the second side of the curved surface 106 of the contact training stick 100. The third pair of gripping handles (112a, 112b) on the first side of the curved surface
5 106 has a corresponding third pair of gripping handles (118a, 118b) on the second side of the curved surface 106. The further plurality of pairs of gripping handles (114a, 114b, 116a, 116b, 118a, 118b) on the second side of the curved surface 106 are angled and distanced from one another in a mirror-image fashion when compared to the plurality of pairs of gripping handles (108a, 108b, 110a, 110b, 112a,
10 112b) on the second side of the curved surface 106.

Looking at Figure 2, a coach 200 is shown holding the contact training stick 100 by one or more of the plurality of pairs of gripping handles (108a, 108b, 110a, 110b, 112a, 112b, 114a, 114b, 116a, 116b, 118a, 118b). The coach 200 can then use the
15 contact training stick 100 to impede the path of an on-coming player 202. The coach 200 may prod the contact training stick 100 towards the on-coming player 202, rotate the contact training stick 100 into the path of the on-coming player 202, or the like. As shown in Figure 2, the on-coming player 202 is fending off the contact training stick 100 by using a high block. The coach 200 may utilise the centre of gravity of the
20 contact training stick 100, which is generally positioned about the midpoint 107 of the contact training stick 100, to their advantage by prodding or imparting greater force onto the on-coming player 202. The coach 200 thereby has the force advantage needing to impart less force to create the obstacle. Conversely the on-coming player 202 is required to impart a greater force in order to overcome the obstacle that the
25 coach 200 has created using the centre of gravity about the midpoint 107 of the contact training stick 100.

Turning now to Figure 3, the contact training stick 100 is shown to have a first weighted element 302 which is in abutment to the first end cap 102 of the contact
30 training stick 100. A second weighted element 304 is in abutment to the second end cap 104. In a preferred embodiment, the first weighted element 302 and the second weighted element 304 are bladders which can be filled with fluid such as water. To this end, valves 306, 308 are located in the first end cap 102 and the second end cap 104. The bladders may be filled with water up to a weight of 6 kg (which is

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approximately equivalent to 6 L of water). It is envisaged that the amount of water placed into the bladders may be adjusted so as to provide a different mass to the first weighted elements 302 and/or the second weighted element 304. A main chamber 300 is provided within the contact training stick 100. This main chamber 300 is inflatable with a gas, such as air. A standard air valve, as is well known in the art, will be provided on the curved surface 106 of the contact training stick 100 to allow the main chamber 300 to be inflated with air. As can be seen, the main chamber 300 extends between the first weighted element 302 and the second weighted element 304.

10

As has been described hereinbefore, the contact training stick 100 is envisaged to be used in a multitude of different contact training drills. For example, the contact training stick 100 may be used in fending-off drills and separately in scrimmaging drills. Figure 2 shows an example of a fending-off drill. Figures 4 and 5 show examples of training drills where players are practicing scrimmaging techniques with the contact training stick 100.

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Turning now to Figure 4, a player 400 and an opposing player 402 each take grip of the contact training stick 100. The player 400 and the opposing player 402 drive toward one another to practice scrimmaging through this indirect player-on-player drill. Whilst, the player 400 and the opposing player 402 will typically take grip of a pair of gripping handles which corresponds to one another (e.g. 108a, 108b, 114a, 114b as shown in Figure 4), it is possible that the player 400 could use the second pair of gripping handles (110a, 110b) on the first side of the curved surface 106 and the opposing player 402 could grip the third pair of gripping handles (118a, 118b) on the second side of the curved surface 106. Once both the player 400 and the opposing player 402 have secured their grip to the contact training stick 100, a coach (not shown) will instruct the player 400 and the opposing player 402 to begin the training drill. It may be predetermined by the coach that the player 400 will attempt to pivot the opposing player 402 about the opposing player's left leg by virtue of the player 400 driving their own left hand forward. If the player 400 is successful in their task, then the coach will observe the contact training stick 100 rotating in such a manner that the first end cap 102 will rotate in a direction as indicated by reference arrow A, and the second end cap 104 will rotate in a direction as indicated by

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reference arrow B. As the end caps 102, 104 of the contact training stick 100 extend significantly beyond the sides of the player 400 and opposing player 402, any small rotation of the player 400 or opposing player 402 will be shown in a more pronounced fashion by the movement of the end caps 102, 104. This exaggerated and more pronounced movement gives the coach a better understanding of a player's performance during the execution of a training drill.

As the weighted elements are at the extreme outer points of the contact training stick 100, the law of the lever will apply during the scrimmaging drills and the players will have to work harder as a result of not just counter-acting each other, but also counter-acting the weight of the weighted elements 302, 304 in the contact training stick 100. The player 400 can use the centre of gravity of the contact training stick 100, which is generally positioned about the midpoint 107 of the contact training stick 100, to their advantage when practicing scrimmaging with an opposing player 402 in this indirect player-on-player drill. The player 400 can alter the centre of gravity positioned about the midpoint 107 of the contact training stick by selecting more advantageous gripping handles. If player 400 selects the corresponding pair of gripping handles (116a, 116b) and the opposing player 402 selects the corresponding pair of gripping handles (112a, 112b) then player 400 has the advantageous centre of gravity about the midpoint 107 of the contact training stick 100. As such player 400 requires less force to rotate the contact training stick 100 in such a manner that the first end cap 102 will rotate in a direction as indicated by reference arrow A and the second end cap 104 will rotate in a direction as indicated by reference arrow B, so that the opposing player 402 is pivoted about the opposing player's left leg. Conversely, the opposing player 402 will require greater force to counter the attack by the player 400.

It is to be appreciated that the above scenario provides one such example of the contact training stick 100 in action and is not intended to limit the invention in any way.

It is to be appreciated that the player 400 and opposing player 402 may select alternative gripping handles to those described above. The choice of gripping handles increases or lessens the advantageous centre of gravity about the midpoint 107 of

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the contact training stick 100 afforded to each of the players, namely the player 400 and the opposing player 402. As such different gameplay scenarios can be acted out in training without the need for direct player-on-player contact.

5 As discussed hereinabove, it is occasionally desirable for a player to drive one of their hands upwardly into the opposing player so as to place the opposing player off-balance and allow the player to drive the opposing player backward and/or pivot the opposing player so as to open a gap in a line of scrummage or in a ruck. As shown in
10 Figure 5, the player 400 and the opposing player 402 have taken hold of the contact training stick 100. In this drill, the coach (not shown) may instruct the player 400 to attempt to drive into the opposing player 402 and attempt to drive their right-hand upwardly at the same time. Of course, the opposing player 402 would be attempting to resist this by driving back at the player 400. If the player 400 is successful in executing the drill then the first end cap 102 will rotate upwardly as indicated by the
15 reference arrow C. As a consequence, the second end cap 104 will rotate downwardly as indicated by reference arrow D. As before, this will allow an observing coach to quickly determine how successful the player 400 has been in executing the drill as any small movement in raising the player right-hand will be exaggerated by the movement of the first end cap 102.

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As can be seen, the contact training stick 100 of the present invention is advantageous as it allows different contact training drills to be executed and simulate game realism through the use of appropriately weighted practice equipment which is also such as to minimise risk of injury. Furthermore the contact training stick 100 of
25 the present invention has been designed to allow a multitude of different contact training drills to be executed with it. In particular, the contact training stick 100 of the present invention allows players to engage in scrummaging drills by acting as a barrier between the players and thus facilitating indirect player-on player training, and, also provides coaches with exaggerated feedback as to the positions of the players
30 engaging in the scrummaging drill so the coaches can quickly ascertain which players are executing the contact training drill most successfully.

As can also be seen, the various options of gripping handles available in relation to the centre of gravity about the midpoint 107 in combination with the weighted

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elements (302, 304) located at the extreme outer points of the contact training stick 100, provides an advantage to a greater or lesser extent to each of the players (400, 402), which is determined by the selection of the gripping handle pairings made by each player (400, 402).

5

It will be readily understood that the present invention also relates to a method of use of the contact training stick 100 in the various contact training drills which have been described here in above, and generally in any type of drill for practising a contact situation which may arise in a contact sport.

10

The terms "comprise" and "include", and any variations thereof required for grammatical reasons, are to be considered as interchangeable and accorded the widest possible interpretation.

15

The terms "gaseous matter" and "gas", and any variations thereof required for grammatical reasons, are to be considered as interchangeable and accorded the widest possible interpretation.

20

The terms "liquid matter" and "liquid", and any variations thereof required for grammatical reasons, are to be considered as interchangeable and accorded the widest possible interpretation.

25

It will be understood that the components shown in any of the drawings are not necessarily drawn to scale, and, like parts shown in several drawings are designated the same reference numerals.

30

It will be further understood that features from any of the embodiments may be combined with alternative described embodiments, even if such a combination is not explicitly recited hereinbefore but would be understood to be technically feasible by the person skilled in the art.

The invention is not limited to the embodiments hereinbefore described which may be varied in both construction and detail within the scope of the claims.

CLAIMS

1. A contact training stick suitable for use in practicing skills associated with contact sports, wherein the contact training stick is substantially cylindrical in shape and comprises a first end cap, a second end cap, and a curved surface extending therebetween;
- 5
- the contact training stick further comprises at least two weighted elements, namely a first weighted element and, a second weighted element;
- 10
- whereby, the contact training stick further comprises at least a first plurality of spaced-apart pairs of gripping handles along a first side of the curved surface.
- 15
2. The contact training stick as claimed in claim 1 wherein the first weighted element is adjacent the first end cap.
3. The contact training stick as claimed in claim 1 or claim 2 wherein the second weighted element is adjacent the second end cap.
- 20
4. The contact training stick as claimed in any of claims 1 to 3 wherein the contact stick comprises a second plurality of spaced-apart pairs of gripping handles along a second side of the curved surface, where the first side of the curved surface is diametrically opposed to the second side of the curved surface.
- 25
5. The contact training stick as claimed in any of the preceding claims wherein the contact training stick is inflatable.
- 30
6. The contact training stick as claimed in any of the preceding claims wherein the contact training stick comprises a main chamber which is suitable to be inflated with a gas, such as air.
- 35
7. The contact training stick as claimed in claim 6 wherein the main chamber

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extends intermediate the first weighted element and the second weighted element.

- 5 8. The contact training stick as claimed in any preceding claim, wherein the first weighted element and the second weighted element are located in abutment to the first end cap and the second end cap respectively.
- 10 9. The contact training stick as claimed in any preceding claim, wherein the first weighted element and the second weighted element are bladders suitable to be filled with a liquid, such as water.
- 15 10. The contact training stick as claimed in any preceding claim, wherein the first weighted element and the second weighted element are substantially equal in mass.
- 20 11. The contact training stick as claimed in any preceding claim, wherein the first weighted element and the second weighted element are located at opposing ends of the contact training stick.
- 25 12. The contact training stick as claimed in any one of claims 6 to 11 wherein the first weighted element and the second weighted element are located at opposing ends of the main chamber within the contact training stick.
- 30 13. The contact training stick as claimed in any preceding claim, wherein the contact training stick comprises a three layer polyvinyl chloride (PVC) construction.
14. The contact training stick as claimed in any preceding claim, wherein the contact training stick is double-banded.
15. The contact training stick as claimed in any preceding claim, wherein the mass of the first weighted element and the second weighted element is adjustable.
- 35 16. The contact training stick as claimed in any preceding claim, wherein the

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weighted elements may have a mass up to approximately 6 kilograms.

- 5
17. The contact training stick as claimed in any preceding claim, wherein the contact training stick comprises polyvinyl chloride (PVC).
18. The contact training stick as claimed in any preceding claim, wherein the contact training stick comprises a diameter in the range of 20cm to 40cm.
- 10 19. The contact training stick as claimed in any preceding claim, wherein the contact training stick comprises a length in the range of 140cm to 220cm.
20. The contact training stick as claimed in any preceding claim, wherein the contact training stick comprises a diameter of 30cm and a length of 180cm.
- 15 21. The contact training stick as claimed in any preceding claim, wherein the first weighted element is a first water bladder and is located in abutment against the first end cap; the second weighted element is a second water bladder and is located in abutment against the second end cap.
- 20 22. The contact training stick as claimed in claim 21 the first water bladder and the second water bladder can each respectively hold up to 6 litres of water.
- 25 23. The contact training stick as claimed in claim 21 or 22 wherein the contact training stick comprises a central core bladder which extends between the first water bladder and the second water bladder;
24. The contact training stick as claimed in claim 23 wherein, the central core bladder, the first water bladder, and the second water bladder are all separate bladders and are not in fluid communication with one another.
- 30 25. The contact training stick as claimed in claim 23 wherein, the central core bladder, the first water bladder, and the second water bladder are interconnectable bladders and are in fluid communication with one another.
- 35

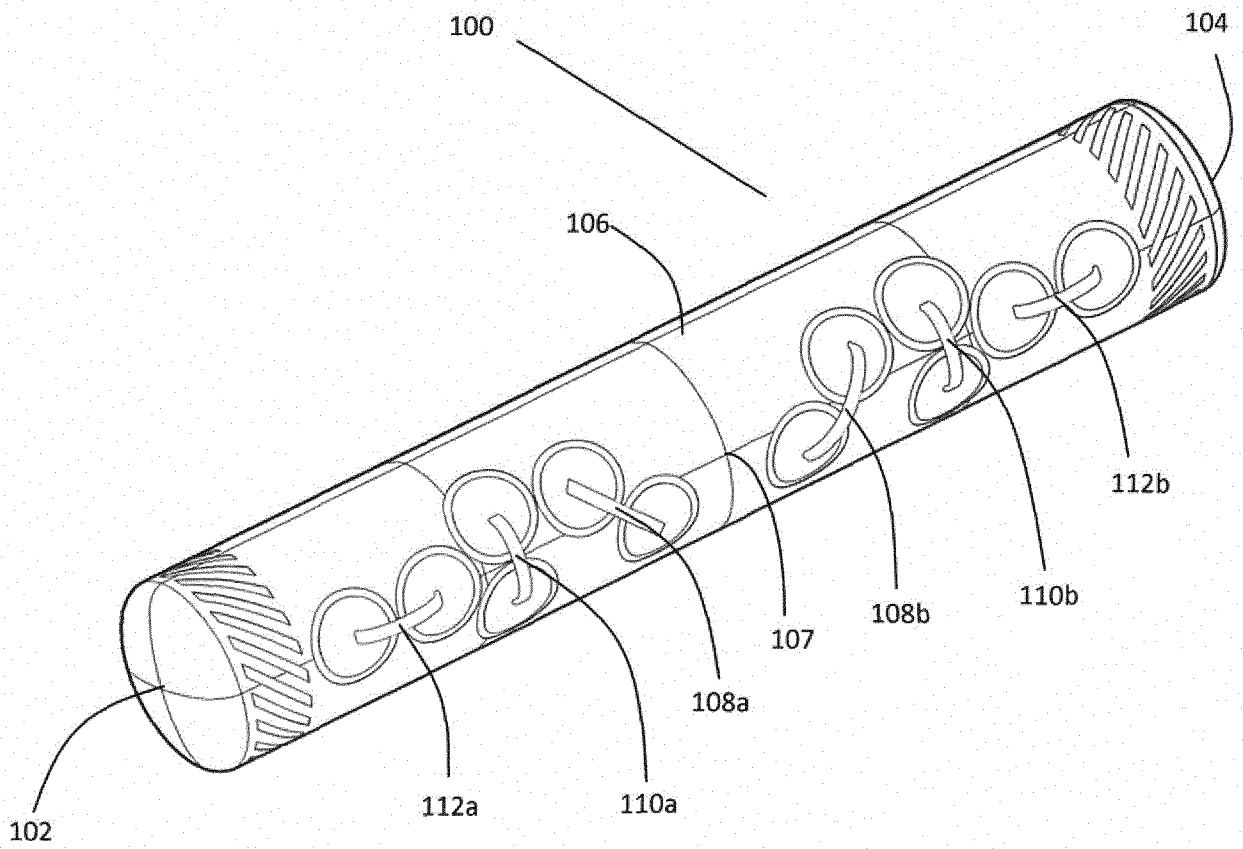


Figure 1

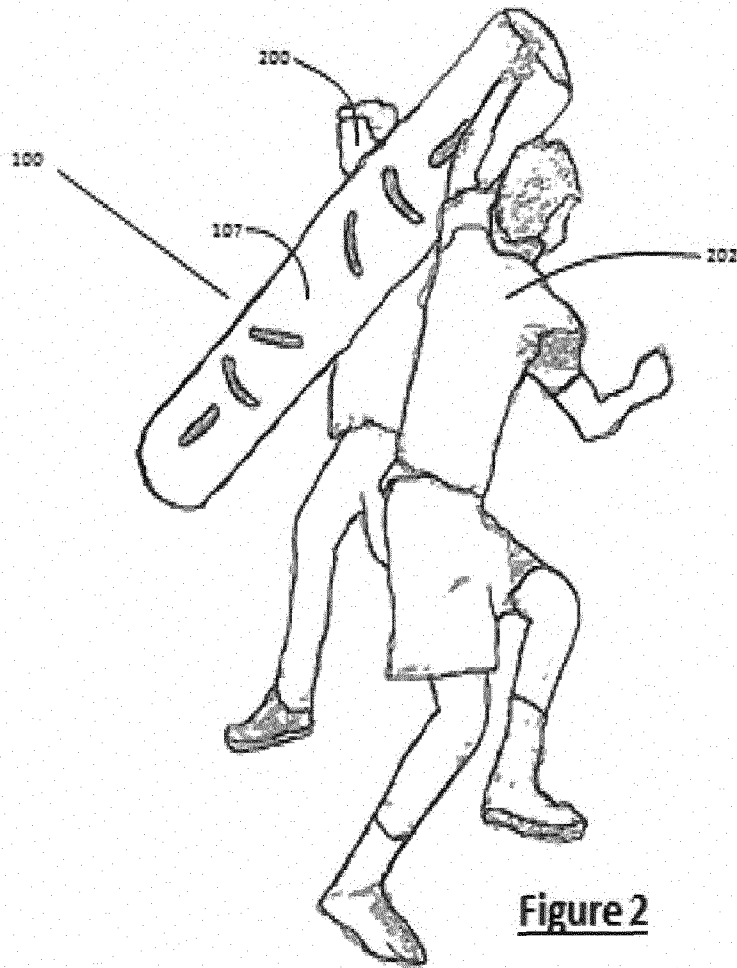


Figure 2

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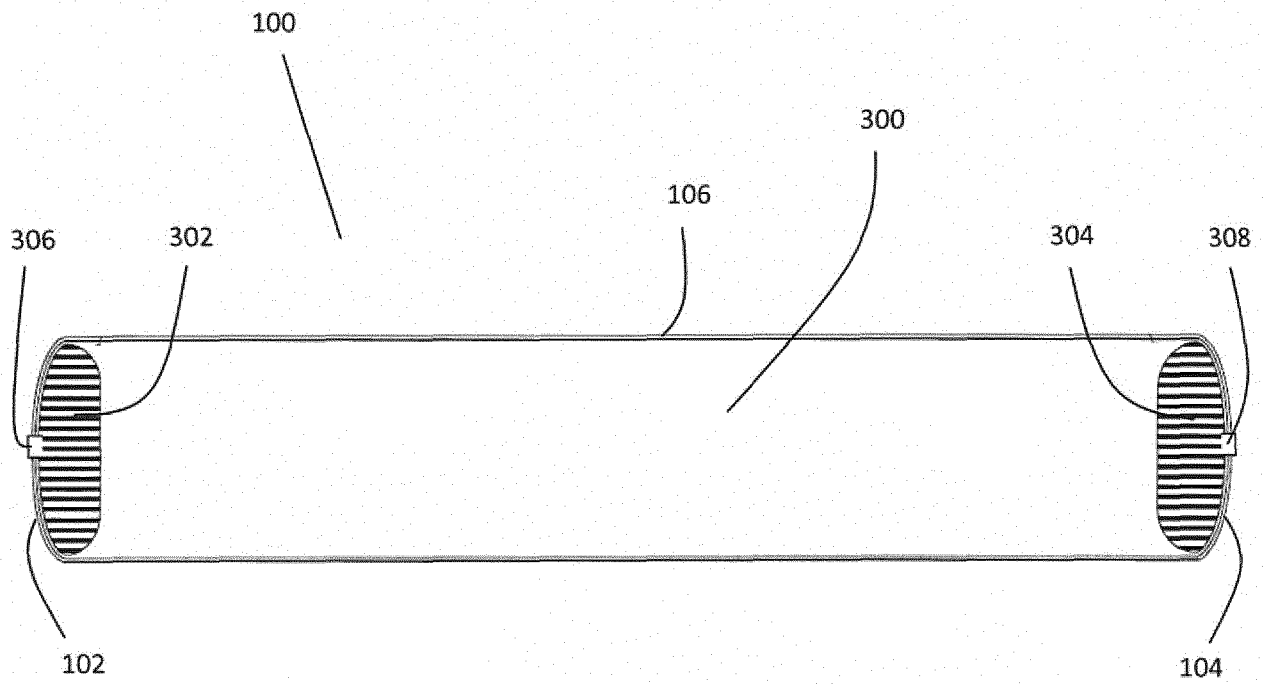


Figure 3

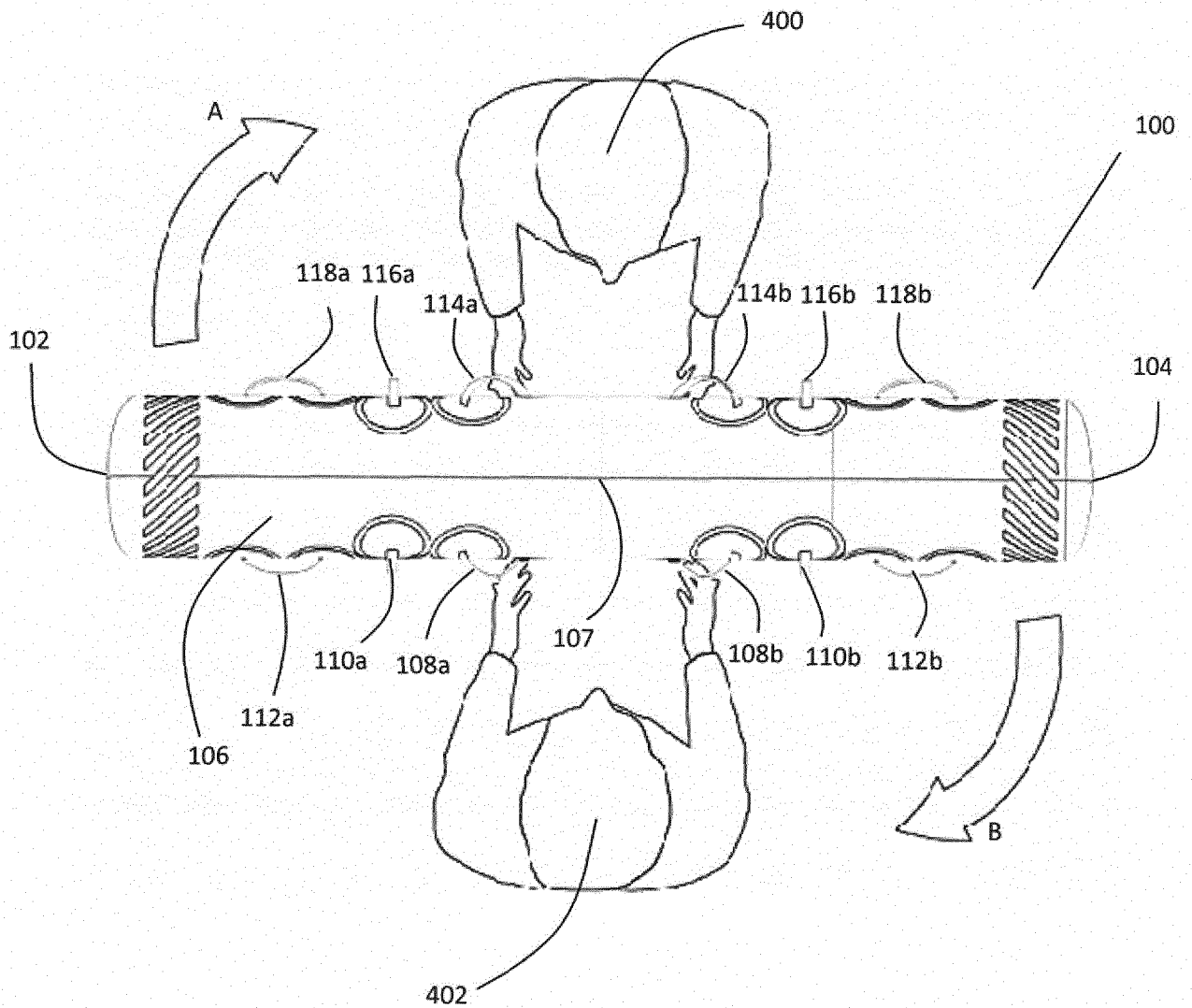


Figure 4

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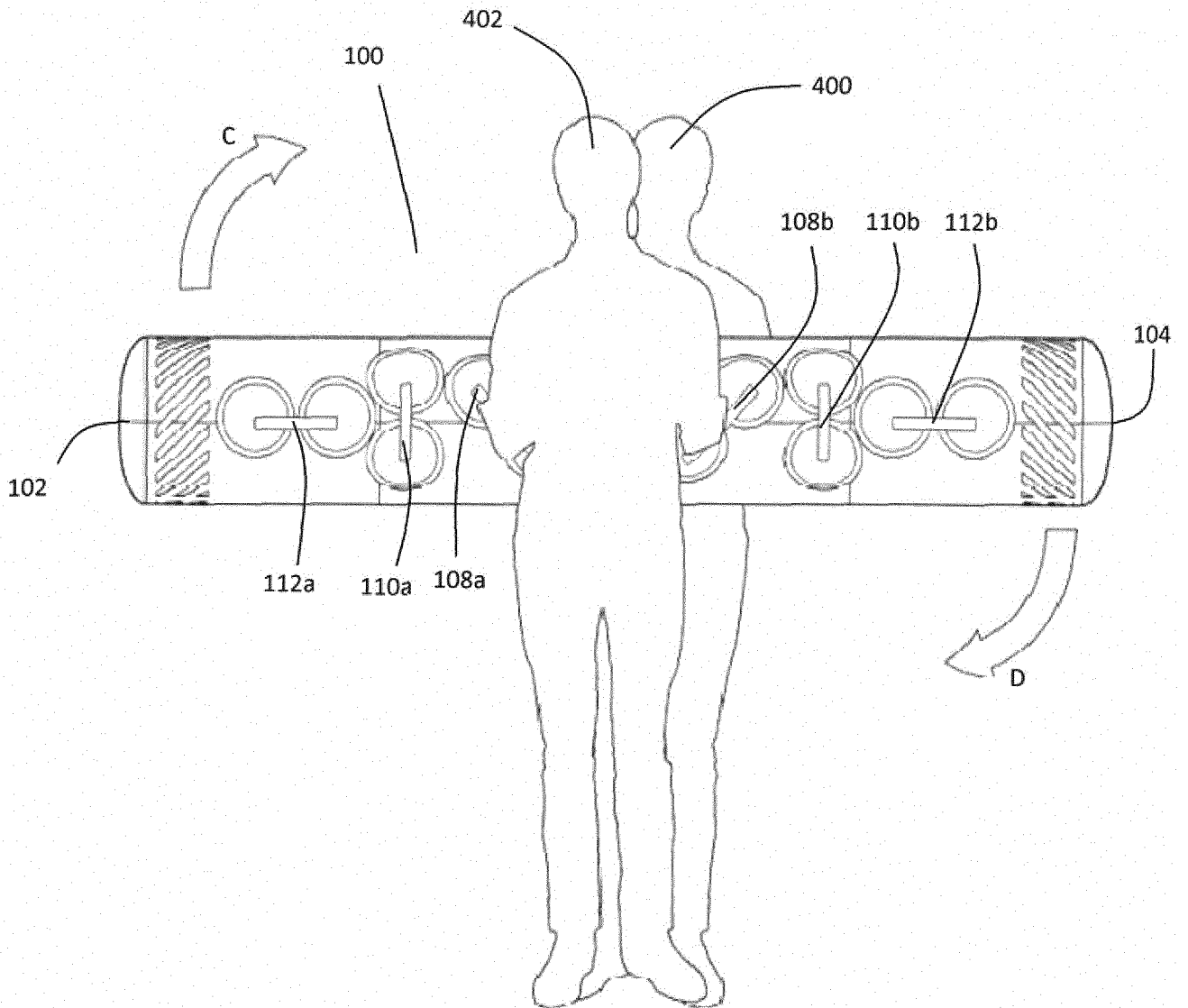


Figure 5

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2018/050381

A. CLASSIFICATION OF SUBJECT MATTER
INV. A63B21/06 A63B21/072 A63B21/075 A63B21/00 A63B21/28
ADD.
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
Minimum documentation searched (classification system followed by classification symbols)
A63B
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 20 2013 010971 U1 (SPORTSMEDICALCONSULT UG & CO KG [DE]) 24 February 2014 (2014-02-24)	1-4, 13-20,22
Y	paragraph [0084] - paragraph [0114]; figures	5-12,21, 23-25
Y	----- US 2014/226919 A1 (FU DICKSON [TW] ET AL) 14 August 2014 (2014-08-14) figures	5-12,21, 23-25
X	----- US 2002/086776 A1 (FIELDS SARAH [US] ET AL) 4 July 2002 (2002-07-04) paragraph [0013] - paragraph [0028]; figures	1-25
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Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
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Date of the actual completion of the international search 22 March 2018	Date of mailing of the international search report 05/04/2018
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Borrás González, E

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2018/050381

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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Y	US 2012/157269 A1 (FU DICKSON [TW] ET AL) 21 June 2012 (2012-06-21) paragraph [0025] - paragraph [0038]; figures	5-12

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