



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:  
**28.07.2010 Bulletin 2010/30**

(51) Int Cl.:  
**A41D 1/08** (2006.01) **A41D 13/00** (2006.01)  
**A61F 13/06** (2006.01) **A63B 71/12** (2006.01)

(21) Application number: **09000904.4**

(22) Date of filing: **23.01.2009**

(84) Designated Contracting States:  
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR**  
Designated Extension States:  
**AL BA RS**

(72) Inventor: **Aloy Font, Juan Manuel**  
**Barcelona (ES)**

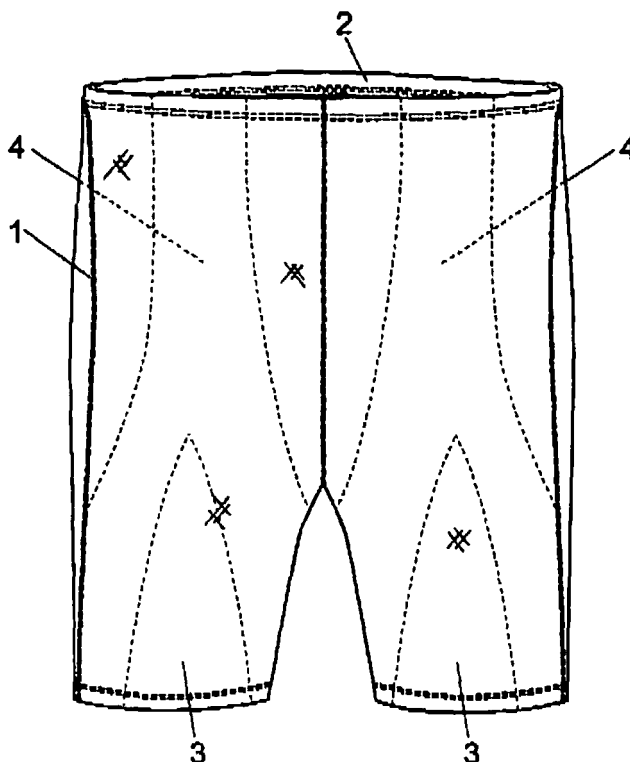
(74) Representative: **Maldonado Jordan, Julia Zuazo, Gauger, Maldonado & Asociados**  
**Raimundo Fernandez Villaverde, 45-1A exterior 28003 Madrid (ES)**

(71) Applicant: **Aloy Font, Juan Manuel**  
**Barcelona (ES)**

(54) **Protective sports garment**

(57) A protective sports garment, of the type formed like trousers with an upper waist (2) for passing the torso of the user and two longer or shorter legs or lower tubular extensions (3) for introducing and housing the legs and more specifically the thighs, where the garment (1) is made of an elastic fabric both in the longitudinal direction

and in the transverse direction, and comprises in the rear part of the garment (1) flat longitudinal reinforcements (4) intended to act on the hamstring muscles and extending from the waist (2) towards the lower area, said reinforcements (4) having considerable longitudinal elasticity, but reduced or nil transverse elasticity.



**Fig. 1**

## Description

### Object of the Invention

**[0001]** The present invention relates to a protective sports garment, more specifically to a trouser-type garment for protection against hamstring tears.

### Background of the Invention

**[0002]** The so-called hamstrings make up a muscular group located in the rear part of the thigh. Injuries in these muscles normally occur due to a distension of the fibres thereof as a consequence of a mechanism by means of which a strong muscular contraction associated to a stretching thereof are combined. Most of these tearing injuries happen when practicing sports, especially those which require performing abrupt acceleration and speed movements, such as tennis, football, basketball and others. Once the injury has occurred it is mainly treated by means of total rest and measures to prevent inflammation and swelling in the affected part.

**[0003]** A preventive solution against said muscular tears is to use compression bandages around the thigh and the nearby bone structures by means of special adhesive strips providing a resistance to the stretching of the muscle and it compresses it more or less constantly. This technique, called kinesiotaping, requires the use of elastic adhesive strips which are applied on the skin before practicing a sport and are removed once said practice of the sport has ended. This represents a considerable use of strips and bandage material which are put on by a specialist, mainly a physiotherapist, or a person with suitable training, requiring time and new strips for each use.

### Description of the Invention

**[0004]** The protective sports garment object of this invention has technical particularities intended to prevent the tearing of hamstring muscles by easy-to-use means and to improve the recovery of the user in the event of injury.

**[0005]** According to the invention, the sports garment is formed like trousers with an upper waist and two lower tubular extensions, for passing and housing the legs, the garment being made of an elastic fabric both in a longitudinal direction and in a transverse direction; the garment comprising flat longitudinal reinforcements in the rear part intended to act on the hamstring muscles and arranged from the waist towards the lower area, said reinforcements having considerable longitudinal elasticity, but reduced or nil transverse elasticity.

**[0006]** This allows the sportsperson to keep the leg compressed as if he/she wore a kinesiotaping bandage, with the reinforcements applied directly on the mentioned hamstring muscles which are to be protected and holding the garment firmly and tightly against the body contour

of said sportsperson. The longitudinal elasticity of the reinforcement allows the correct stretching of these muscles, but the reduced transverse elasticity suitably compresses said muscles while doing exercise.

**[0007]** To achieve a better adaptation to the shape of these muscles, the reinforcements are branched in their lower part, having an inverted Y configuration, with two inclined sections which are directed to the sides of the tubular extension, suitable for surrounding the rear part of the thigh of the user, suitably and anatomically distributing the pressure.

**[0008]** In an embodiment of the invention the reinforcements are made up of additional pieces of fabric permanently fixed to the fabric of the garment by fastening means, such as heat welding, sewing, gluing or any others.

**[0009]** The garment is easy to put on, like conventional sports trousers, and provides protection immediately, preventing the problem of the specific kinesiotaping technique bandage. Furthermore the garment is easily washed, and therefore reusable unlike the use of bandages and the like.

### Description of the Drawings

**[0010]** To complement the description being made and for the purpose of helping to understand the features of the invention, a set of drawings is attached to the present specification in which the following has been shown with an illustrative and non-limiting character:

Figure 1 shows an elevation view of the garment.

Figure 2 shows a sectional elevation view, with the reinforcements in the inner face of the rear part of the garment.

### Preferred Embodiment of the Invention

**[0011]** In the example shown the protective sports garment (1) is formed like shorts, with an upper waist (2) for passing the torso of the user and two lower tubular extensions (3) reaching a length of a little more than mid-thigh. The garment (1) is made of an elastic fabric with square elasticity, i.e., in a longitudinal direction and in a transverse direction, to be adapted to the contour of the body of the user and offer certain compression. A pair of longitudinal reinforcements (4) is arranged in the rear part of the garment (1), extending from the waist (2) to the lower end of the tubular extensions (3) forming the legs.

**[0012]** The reinforcements (4) have considerable longitudinal elasticity, but reduced transverse elasticity, which causes them to tighten on the hamstring muscles on the rear face of the corresponding thigh of the sportsperson.

**[0013]** Each reinforcement (4) has a flat inverted Y configuration with two inclined sections (5) in the lower part thereof, and which are directed towards the opposite

sides of the leg or tubular extension (3) in an arrangement for surrounding the rear part of the thigh of the user towards the side part thereof.

**[0014]** The reinforcements (4) are arranged in the inner face of the garment (1) and fixed by fastening means, in this case by means of heat welding, on the entire surface thereof to assure the correct tension of the fibres of the garment (1) and the adaptation and compression on the body of the sportsperson user. 5

**[0015]** Having sufficiently described the nature of the invention as well as a preferred embodiment, it is hereby stated for all relevant purposes that the materials, shape, size and arrangement of the elements described can be modified provided it does not involve altering the essential features of the invention which are claimed below. 10 15

### Claims

1. A protective sports garment, of the type formed like trousers with an upper waist (2) for passing the torso of the user and two longer or shorter legs or lower tubular extensions (3) for introducing and housing the legs and more specifically the thighs, **characterised in that** the garment (1) is made of an elastic fabric both in the longitudinal direction and in the transverse direction, and comprises in the rear part of the garment (1) flat longitudinal reinforcements (4) intended to act on the hamstring muscles and extending from the waist (2) towards the lower area, said reinforcements (4) having considerable longitudinal elasticity, but reduced or nil transverse elasticity. 20 25 30
2. The garment according to claim 1, **characterised in that** the reinforcements (4) are branched in their lower part and have an inverted Y configuration, with two inclined sections (5) which are directed to the sides of the tubular extension (3), operatively suitable for surrounding the rear part of the thigh of the user. 35 40
3. The garment according to claim 1, **characterised in that** the reinforcements (4) are made up of additional pieces of fabric permanently fixed to the fabric forming the garment. 45

50

55

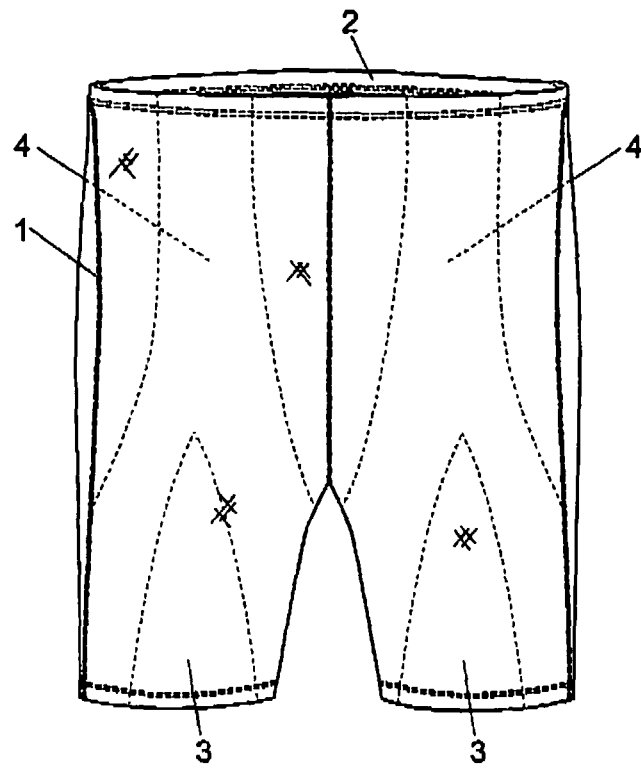


Fig. 1

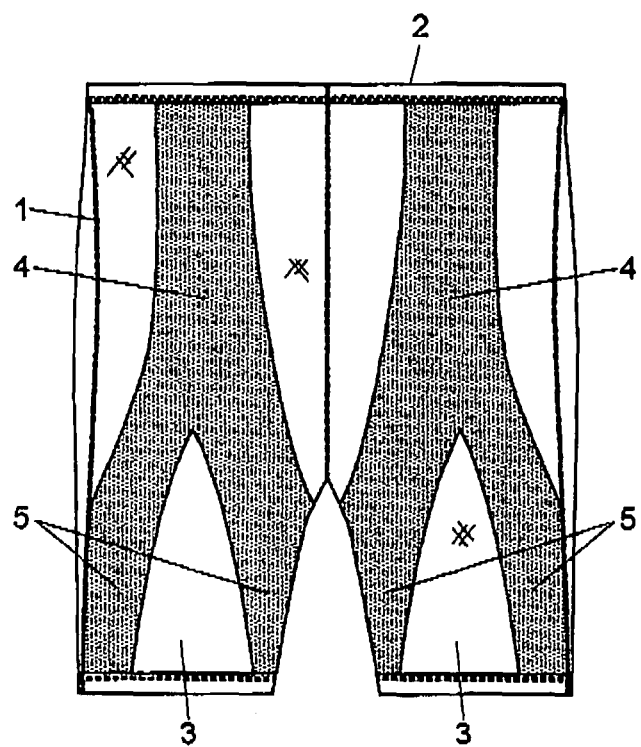


Fig. 2



## EUROPEAN SEARCH REPORT

Application Number  
EP 09 00 0904

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	FR 2 879 901 A (PROMILES SA [FR]) 30 June 2006 (2006-06-30) * abstract; figures 2,3 * * page 1, lines 15-19 * * page 2, line 22 - page 3, line 22 * * page 6, lines 6-32 * * page 9, lines 20-25 *	1-3	INV. A41D1/08 A41D13/00 A61F13/06 A63B71/12
X	EP 0 733 351 A (WACOAL CORP [JP]) 25 September 1996 (1996-09-25) * abstract; figure 6 * * column 3, lines 10-25,54-56 * * column 4, lines 37-40,50-57 * * column 5, lines 21-28 * * column 6, lines 46-48 * * column 7, lines 7-19 *	1,3	
X	JP 2007 182671 A (ASICS CORP) 19 July 2007 (2007-07-19) * abstract; figure 2 *	1,3	
X	GB 775 598 A (DORINE ABRABE GOURDON) 29 May 1957 (1957-05-29) * figure 3 * * page 2, lines 34-40,68-78,108-114 *	1,3	TECHNICAL FIELDS SEARCHED (IPC) A41D A61F A63B
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 17 June 2009	Examiner Contreras Aparicio
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... & : member of the same patent family, corresponding document	

2

EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 09 00 0904

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

17-06-2009

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
FR 2879901	A	30-06-2006	CN 1806706 A	26-07-2006
EP 0733351	A	25-09-1996	NONE	
JP 2007182671	A	19-07-2007	NONE	
GB 775598	A	29-05-1957	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82