

(19)



(11)

EP 2 820 964 A1

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
07.01.2015 Bulletin 2015/02

(51) Int Cl.:
A41D 27/24 (2006.01) A41D 1/08 (2006.01)

(21) Application number: **13174921.0**

(22) Date of filing: **03.07.2013**

(84) Designated Contracting States:
**AL 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 RS SE SI SK SM TR**
Designated Extension States:
BA ME

(72) Inventor: **Maier, Roger**
6914 Carona (CH)

(74) Representative: **Zardi, Marco**
M. Zardi & Co. SA
Via Pioda 6
6900 Lugano (CH)

(71) Applicant: **Assos of Switzerland S.A.**
6854 San Pietro di Stabio (CH)

(54) **A cycling suit with ameliorated construction of the leg portions**

(57) A cycling suit (1) comprising a plurality of fabric panels which are associated along structural seam lines, the suit comprising left and right leg portions (2), wherein each one of said left and right leg portions is made of a single fabric panel (3), said panel having two curvilinear opposite sides (5, 6) and being folded until said opposite sides meet each other, forming a curvilinear and substantially S-shaped seam line (4) in the rear part of the leg portion (2), and wherein said seam is the only seam of the respective leg portion of the suit.

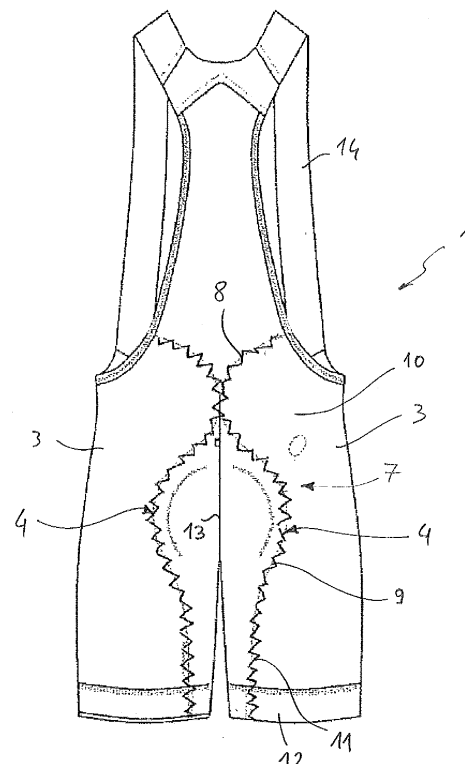


FIG. 2

EP 2 820 964 A1

Description

Field of the invention

[0001] The invention relates to the field of cycling sport suits. The invention is directed to cycling suits made of fabric panels joined together, and relates to a novel technique for making the leg portion.

Prior Art

[0002] A known structure of a cycling suit is composed of several fabric portions connected each other by suitable seams. Said fabric portions are also termed panels. A cycling garment with such a structure is described, for example, in EP-A-1834532.

[0003] One of the problems encountered by said cycling trousers lies in the realization of the trousers portions, or leg portions. They must remain adherent to the legs of the user, in order to ensure comfort and ergonomic. The prior art, however, does not provide a satisfactory solution. For example, a prior art solution provides that the leg portions are substantially tubular parts and comprise at least two seams, namely a front seam and a rear seam; this known embodiment, however, has proven to be poorly ergonomic.

Summary of the invention

[0004] The invention aims to solve this problem, that is to provide a novel and more efficient way of making the leg portions of the referred kind of cycling suits.

[0005] The problem is solved with a cycling suit according to independent claim 1. The cycling suit comprises a plurality of fabric panels which are associated along structural seam lines, comprises left and right leg portions, and **characterized in that:** each one of said left and right leg portions is made of a single fabric panel, said panel having two curvilinear opposite sides and being folded until said opposite sides meet each other, forming a substantially S-shaped seam line in the rear part of the leg, said seam being the only seam of the respective leg portion.

[0006] A number of preferred features are stated in the dependent claims.

[0007] A feature of the invention is the provision of only one seam in each of the leg portion. Accordingly, a first advantage of the invention is the construction featuring a single fabric panel and a single seam for each of the leg portions. Reducing the number of seams is an advantage in terms of the manufacturing process and comfort.

[0008] Furthermore, the applicant has found that this particular embodiment is surprisingly effective in following the pedalling movement and the sticking to the body of the user. The curvilinear form of the seam has been found to provide optimum adherence to the body and comfort, keeping a suitable tension of the elasticized fab-

ric under various conditions of use, and especially under intensive use.

[0009] In this description and in the attached claims, the term of seam line, or seam, are used to denote any applicable technique for joining fabric panels, including for example sewing, gluing, welding. Preferably, the seam is made by sewing. The term of cycling suit is used to denote various items including at least a trouser portion having a crotch area, such as a bodysuit, a pair of trousers and the like.

[0010] The features and the advantages of the invention will be further elucidated with the help of the following detailed description, which is given for indicative and not limiting purpose.

Brief description of the drawings

[0011]

Fig. 1 is a front view of a cycling suit according to an embodiment of the invention.

Fig. 2 is a rear view of the cycling suit of Fig. 1; the seam lines of the two fabric panels forming the leg portions are emphasized.

Fig. 3 shows a fabric panel for making one of the leg portions of the cycling suit of Fig. 1.

Fig. 4 is a view of the fabric panel of Fig. 3, when folded to form a leg portion of the cycling suit.

Detailed description

[0012] A cycling suit 1 is made of a plurality of fabric panels which are associated along structural seam lines. The suit 1 comprises left and right leg portions 2, and each of said portions 2 is made of a single fabric panel 3 (Fig. 3).

[0013] The suit 1, in the example, has two braces 14 but the invention can be implemented in other forms of a cycling suit comprising a trousers (leg) portion.

[0014] A panel 3, for the formation of a leg portion 2, comprises basically: two curvilinear opposite sides 5, 6; a slightly curvilinear base 17 and an upper boundary including a U-shaped cut 15, and an arc-shaped cut 16. An edge between said cuts 15 and 16 includes a first rectilinear side 19 and a second rectilinear side 20.

[0015] The opposite sides 5, 6 more in detail follow substantially sinusoidal lines, and are complementary to each other when the panel 3 is folded bringing the side 5 in contact with the side 6. The formation of a leg portion 2 is shown in Fig. 4: the panel 3 is folded around a median axis 18, which is substantially perpendicular to the base 17, until the opposite sides 5 and 6 are in contact; then they are joined together with a seam 4. Said seam 4 is located behind the thigh of the suit 1, as seen in Fig. 2. The sides 5, 6 can be sewn or attached with another

technique such as gluing or thermal welding, to form said seam 4.

[0016] The preferred shape of said seam 4 is illustrated in the figures. The seam 4 has a sinusoidal part 7 consisting of a first wave 8 and a second wave 9. Said sinusoidal part 7 is located in the upper leg portion denoted by the reference 10. Then, in a preferred embodiment, the seam 4 includes a substantially straight part 11, ending at the rim 12 of the leg portion 2 of the suit. It can also be seen that the two seams 4 are specular with reference a median line 13 of the suit 1.

[0017] Fig. 4 also shows that, when the panel 3 is folded, the U-shaped cut 15 forms the inner side of the crotch area, and the side 19 forms the fixation region for the braces 14.

Claims

1. A cycling suit (1) comprising a plurality of fabric panels which are associated along structural seam lines, the suit comprising left and right leg portions (2), **characterized in that:**
 - each one of said left and right leg portions (2) is made of a single fabric panel (3), said panel having two curvilinear opposite sides (5, 6) and being folded until said opposite sides meet each other, forming a curvilinear and substantially S-shaped seam (4) in the rear part of the leg portion (2), said seam (4) being the only seam of the respective leg portion.
2. A cycling suit according to claim 1, the seam (4) of the left leg portion (2) of the cycling suit being specular to the seam of the right leg portion of the same.
3. A cycling suit according to claim 1 or 2, seam (4) of each leg portion (2) being located substantially in the back of the thigh, when the cycling suit is worn.
4. A cycling suit according to any of the previous claims, wherein the seam (4) of each leg portion (2) of the suit comprises a sinusoidal part (7) consisting of a first wave (8) and a second wave (9), said sinusoidal part being located in the upper leg portion (10).
5. A cycling suit according to claim 4, the seam (4) of each leg portion (2) also comprising a substantially straight part (11) ending at the rim (12) of the leg portion.

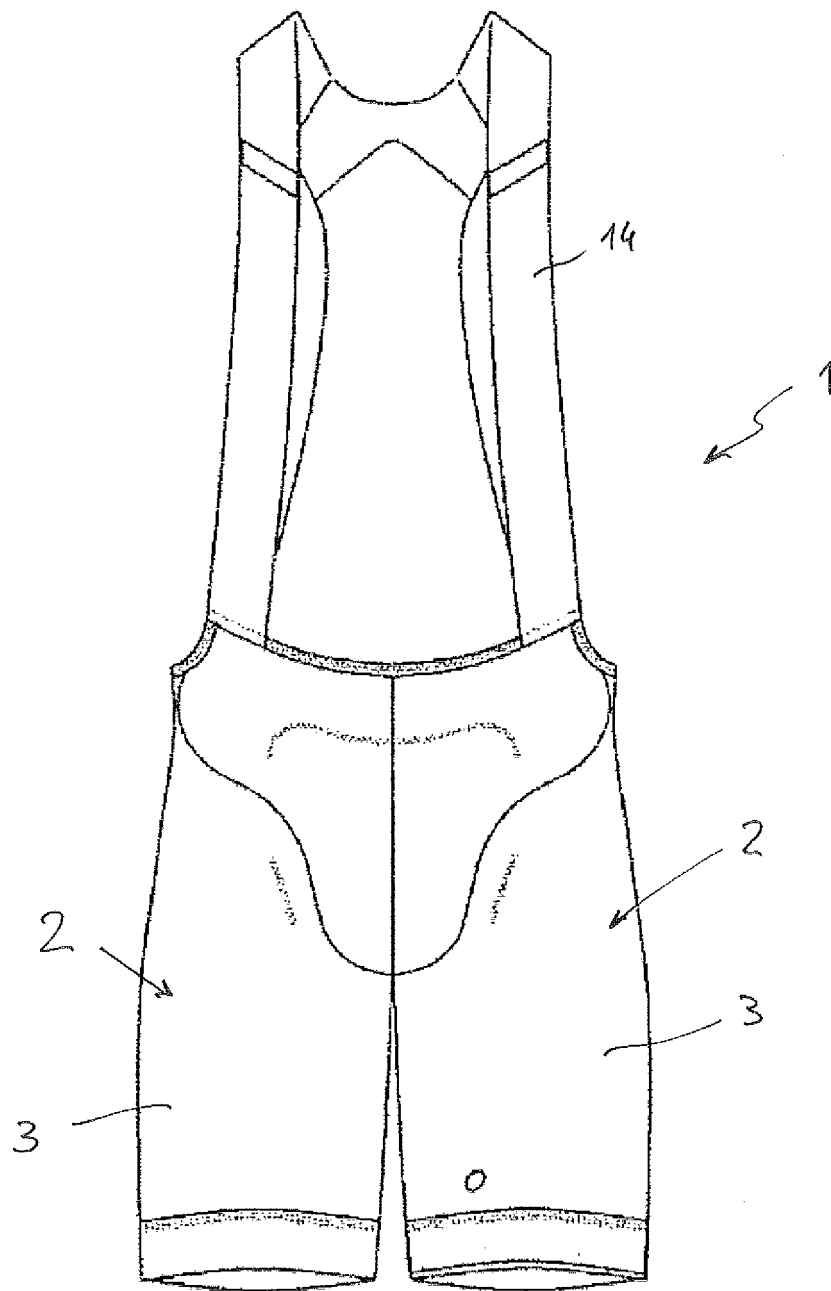


FIG. 1

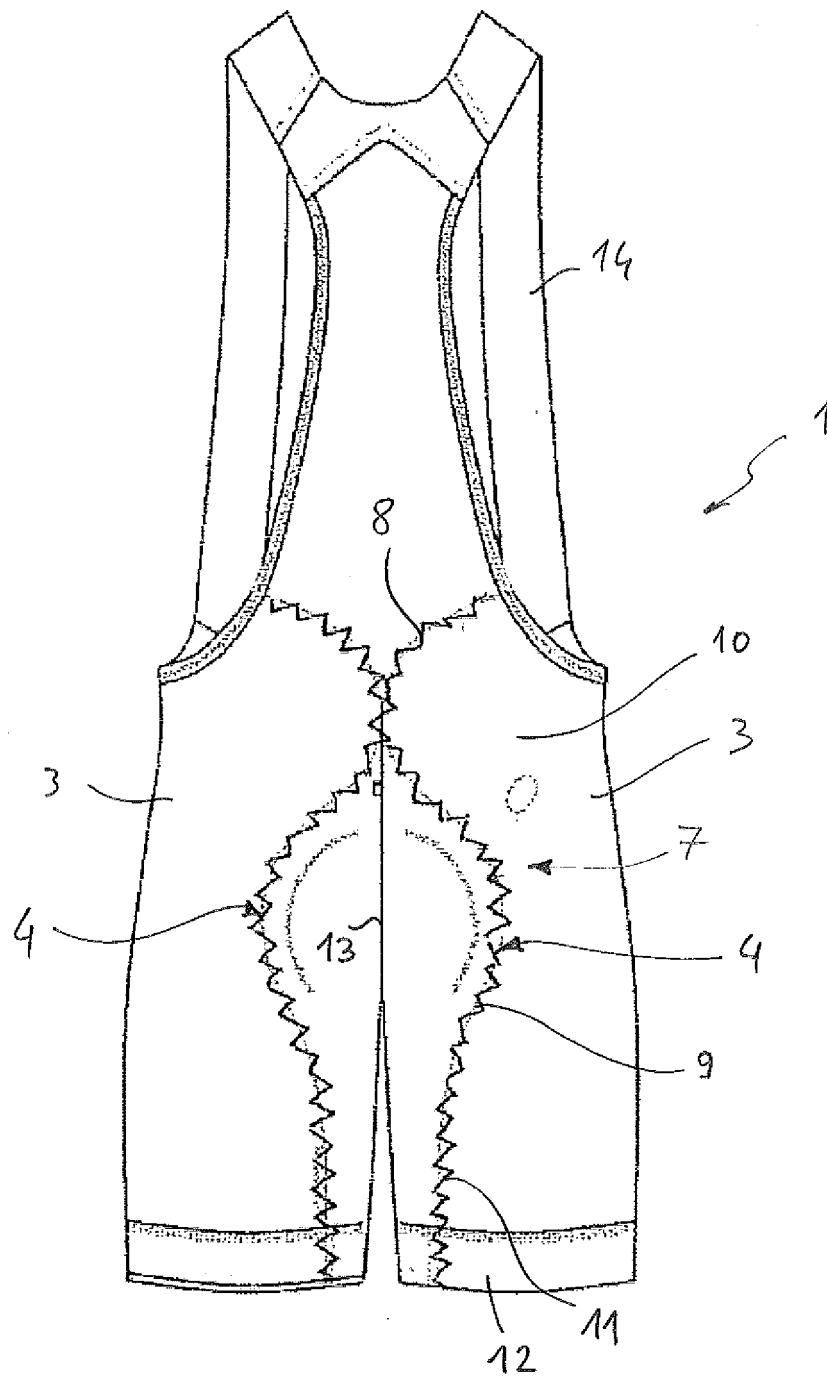
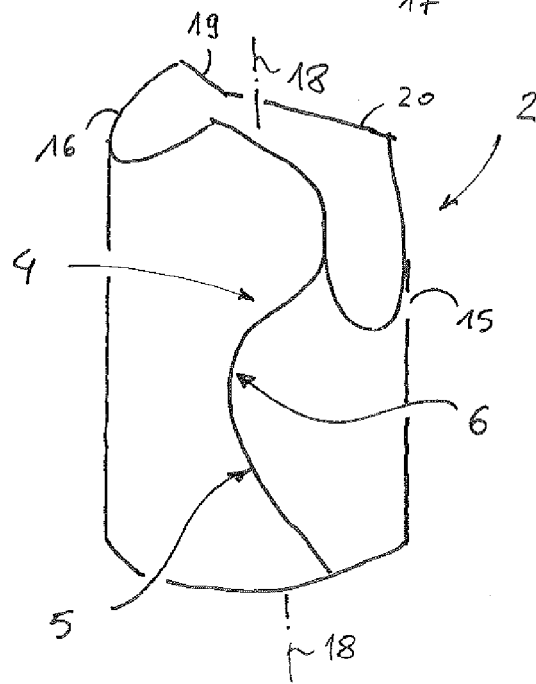
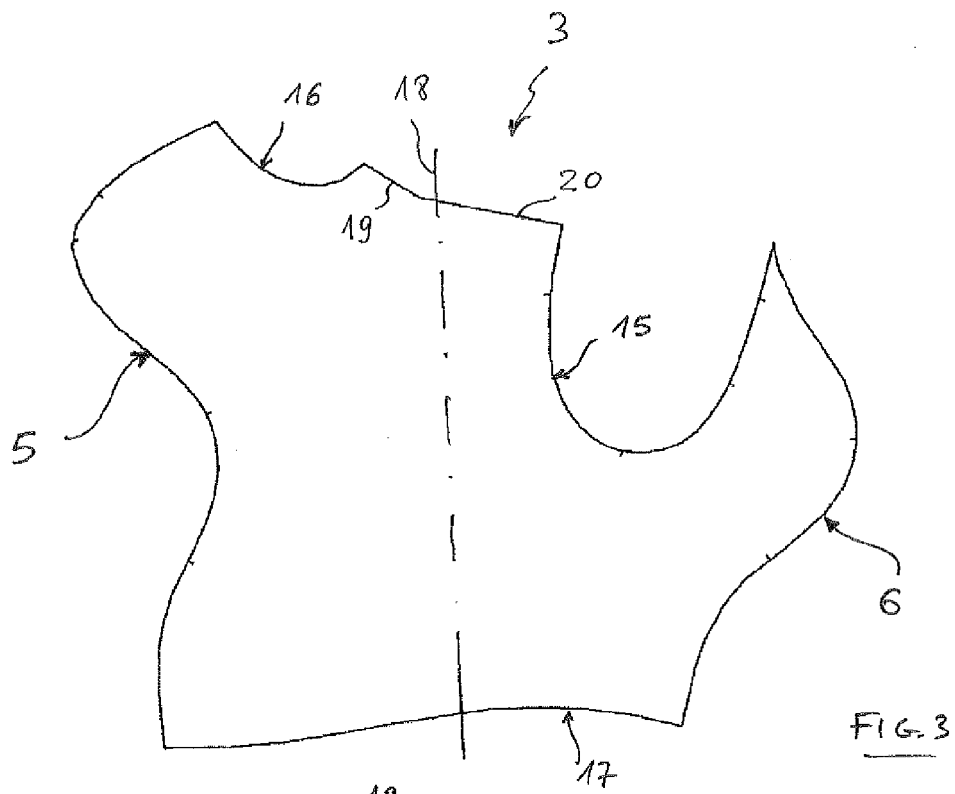


FIG. 2





EUROPEAN SEARCH REPORT

Application Number
EP 13 17 4921

5

10

15

20

25

30

35

40

45

50

55

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	US 2010/218298 A1 (STATTELMANN MARTINA [DE] ET AL) 2 September 2010 (2010-09-02) * paragraphs [0085] - [0098]; figures 10-12 *	1-5	INV. A41D27/24 A41D1/08
A	US 6 817 037 B1 (KING CHRISTOPHER JOHN [US]) 16 November 2004 (2004-11-16) * column 2, line 38 - column 3, line 15; figures 2,6 *	1	
A	US 2001/004771 A1 (CHOU CHAO-MU [TW]) 28 June 2001 (2001-06-28) * paragraphs [0021], [0023], [0028]; figure 3 *	1-5	
A	US 2005/115280 A1 (RESCHWITZ MICHAEL [IT]) 2 June 2005 (2005-06-02) * paragraphs [0009] - [0011]; figure 1 *	1	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			A41D
Place of search		Date of completion of the search	Examiner
The Hague		21 November 2013	D'Souza, Jennifer
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			

1

EPO FORM 1503 03.82 (P04C01)

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

EP 13 17 4921

5

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.

21-11-2013

10

15

20

25

30

35

40

45

50

55

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2010218298 A1	02-09-2010	CN 101653296 A	24-02-2010
		DE 102008038360 A1	04-03-2010
		EP 2156758 A1	24-02-2010
		US 2010218298 A1	02-09-2010

US 6817037 B1	16-11-2004	NONE	

US 2001004771 A1	28-06-2001	NONE	

US 2005115280 A1	02-06-2005	AT 328496 T	15-06-2006
		AU 8990601 A	02-04-2002
		DE 10047514 C1	21-03-2002
		EP 1320302 A1	25-06-2003
		ES 2266256 T3	01-03-2007
		US 2005115280 A1	02-06-2005
		WO 0224012 A1	28-03-2002

EPO FORM P0459

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

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- EP 1834532 A [0002]