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(54) **A cycling garment**

(57) A cycling garment (1) comprising a lower trousers portion (2) and an upper portion wherein said upper portion comprises a X-shaped suspension member (3) comprising four legs (4 to 7) extending from a crossing point (8) of said suspension member, each one of said

four legs being attached to a waist line (9) of said trousers portion, said legs being made of an elastic material, having a width of no more than 30 mm, and having no panel in between.

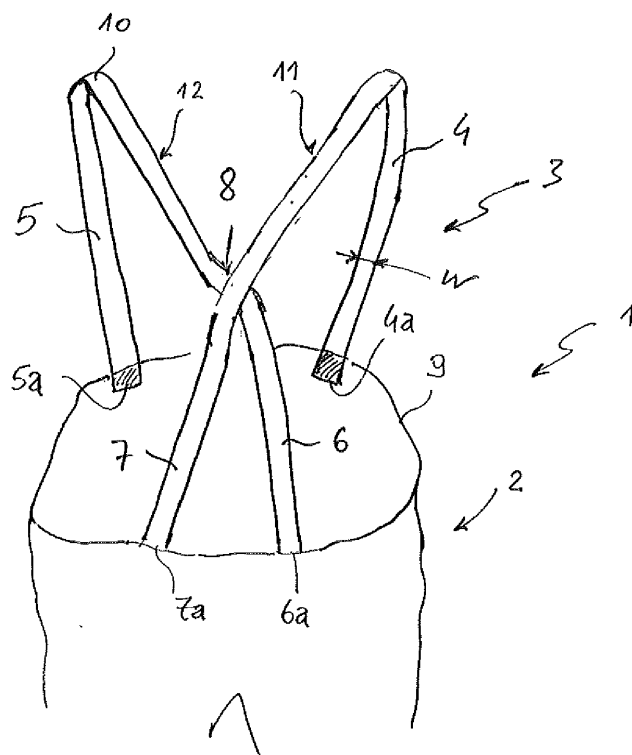


Fig. 1

Description

Field of the invention

[0001] The invention relates to the field of cycling garments. More in detail, the invention relates to a cycling garment with an upper portion acting as shoulder straps.

[0002] Cycling garments with shoulder straps are of common use, especially in hot weather conditions. Garments of this kind are also termed bibs.

[0003] According to the current prior art, they comprise two relatively large front shoulder straps which converge to a back panel below the user's neck. Said back panel may comprise a mesh portion in some known embodiments, for example a carbon fibre mesh to make the garment light and allow circulation of air.

[0004] A disadvantage of the above embodiment is that the back panel causes discomfort when riding under hot climate conditions. Another disadvantage is that the large straps and back panel add weight to the garment, and may friction against the skin and cause discomfort or pain. Another drawback is that said back panel is less elastic than the shoulder straps and, as consequence, pressure on the skin is not distributed uniformly.

[0005] In a performance-oriented garment, a proper fitting to the cyclist's body is of the utmost importance. A large garment will move around creating friction and skin irritation; a small garment will give less comfort and put seams and fabrics under stress, which will result in early deterioration. It is desirable that the garment be perfectly tailored for the riding position, contouring the body in a tight manner but without applying an excessive pressure. There is also a continuous effort to reduce weight and even the smallest advantage in terms of less weight is appreciated by the experienced users.

[0006] The purpose of the invention is to provide a new design of shoulder straps of a cycling garment, to meet the above requests and improve the performance of the garment itself.

[0007] Said purpose is achieved with a cycling garment in accordance with claim 1. The cycling garment comprises a trousers portion and an X-shaped suspension member. Said suspension member comprises four legs extending from a crossing point, each one of said four legs having an end attached to a waist line of said trousers portion, said crossing point being in the front or back of the cycling garment. Said legs are made of an elastic material and have a small width of no more than 30 mm. Furthermore, said suspension member has no panel between said legs.

[0008] In a preferred embodiment, said four legs of the X-shaped suspension member are made by two fabric tapes attached one to another at said crossing point. In an alternative embodiment, the suspension member can be integrally formed from a single fabric panel.

[0009] A feature of the invention is the reduced width of the shoulder straps, which can be regarded as tapes (or strings) instead of the relatively large fabric stripes of

the prior art.

[0010] In a preferred embodiment, the width of said legs is 15 to 25 mm.

[0011] Another feature of the invention is that shoulder straps are realized by an X-shaped suspension having a crossing point which can be at the front or back of the garment. The legs are nearly parallel or slightly inclined at one of the front side or back side of the garment, and cross at the other side.

[0012] The garment has no panel between the legs of the X-shaped suspension member. In other words, there is no fabric piece or mesh between the legs, the space between the legs being open and free. Accordingly, the top portion of the garment has a light and air structure, providing a reduced contact area with the skin. Another advantage is that the manufacturing process is simplified.

[0013] Preferably, the upper portion of the garment consists of the aforesaid suspension member.

[0014] A preferred aspect of the invention is that the elastic legs of said suspension member have no device for length adjustment. Accordingly, the elastic legs are self-regulated by virtue of their elasticity.

[0015] The advantages can be summarized as follows: a reduced weight, reduced friction and stress on the skin, better fit to the body, more thermal comfort especially in a hot climate. The advantages of the invention are felt particularly in the realization of a performance-oriented cycling garment and more particularly for riding in a hot climate.

[0016] 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, with the help of the figures where:

Fig. 1 illustrates a first embodiment of the invention;

Fig. 2 illustrates a second embodiment of the invention.

[0017] Referring now to the figures, a cycling garment 1 comprises a trousers portion 2 and an X-shaped suspension member 3 in the upper part. Said suspension member 3 comprises four narrow legs 4, 5, 6 and 7 extending from a crossing point 8.

[0018] Said legs 4 to 7 are made of an elastic material. The width w of said legs 4-7 is preferably not greater than 30 mm and more preferably not greater than 25 mm. Even more preferably said width w is 15 to 25 mm. The legs 4-7 may have the same or different width according to various embodiments.

[0019] The ends of legs 4-7 opposite to the crossing point 8 are attached to a waist line 9 of the trousers portion 2. The connection ends of the legs are denoted as 4a, 5a, 6a and 7a in Fig. 1. Attachment can be made by stitching or other suitable technique.

[0020] The legs 4 to 7 are made of an elastic material. Preferred materials include for example fabric materials such as Lycra and polyamide (PA) or polyester.

[0021] In a preferred embodiment, the legs 4-7 are part of two tapes 11, 12 attached (for example stitched) at the crossing point 8 (Figs. 1 and 3). For example in Fig. 3 the legs 4 and 7 are part of a first tape 11 and the legs 5 and 7 are part of a second tape 12. 5

[0022] In a different embodiment, the X-shaped suspension member 3 may be integrally formed by a single fabric panel (Fig. 4).

[0023] The crossing point 8 of the X-shaped suspension member 3 may be in front of the garment or behind. 10
Fig. 1 shows a front crossing point and Fig. 2 shows a back crossing point.

[0024] The length of the legs 4 to 7 is preferably determined in such a way that the crossing point 8 is substantially at mid distance between the waist line 9 and the upper end 10 of the tapes, when the garment 1 is properly worn. 15

[0025] The garment has no panel or other component between the legs 4-7. As seen in the figures, there is no fabric piece or mesh between the legs 4 and 5 and between legs 6 and 7. The space between said legs is fully open, leading to a lightweight structure with reduced skin contact area. 20

Claims 25

1. A cycling garment (1) comprising a lower trousers portion (2) and an upper portion, **characterized in that:** 30

said upper portion comprises an X-shaped shoulder suspension member (3) comprising four legs (4 to 7) extending from a crossing point (8) of said suspension member, 35

each one of said four legs has an end (4a to 7a) attached to a waist line (9) of said trousers portion (2), said crossing point (8) being in the front or back of the cycling garment,

said legs are made of an elastic material and have a width of no more than 30 mm, and 40

said suspension member (3) has no panel between said legs (4-7).
2. A garment according to claim 1, said legs having a width (w) not greater than 25 mm and preferably in the range of 15 to 25 mm. 45
3. A garment according to claim 1 or 2 said legs having no device for length adjustment. 50
4. A garment according to any of the previous claims, said legs (4-7) being part of two tapes (11, 12) attached one to another at said crossing point (8). 55
5. A garment according to any of claims 1 to 3, said X-shaped member (3) being integrally formed from a fabric panel.

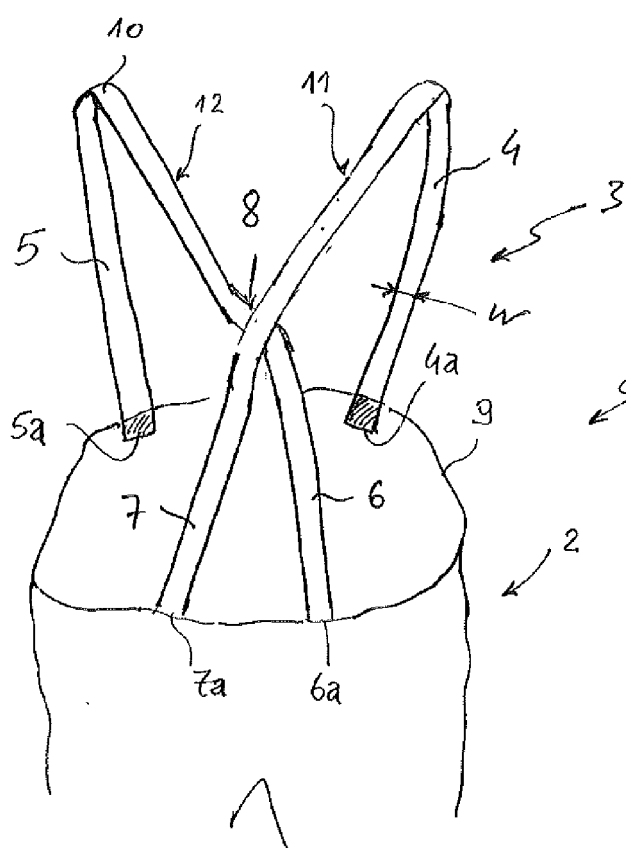


Fig. 1

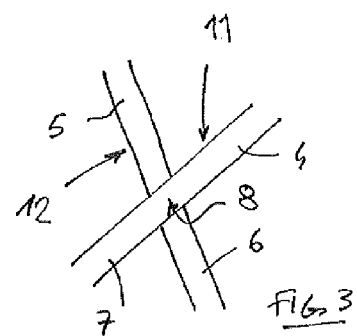


Fig 3

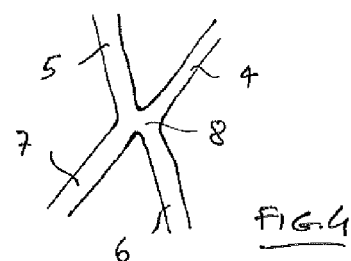
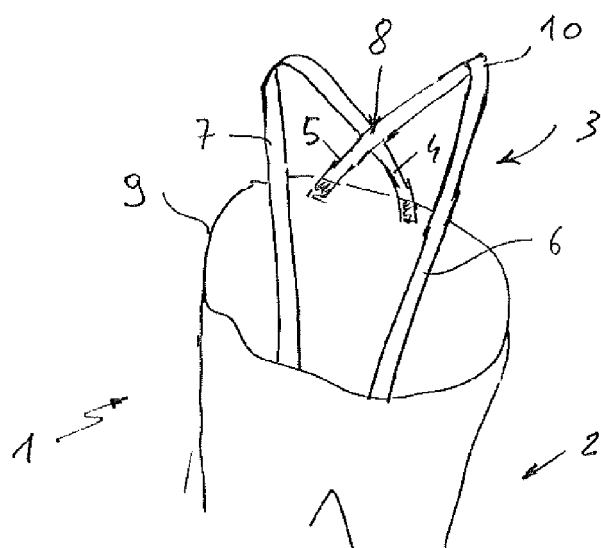


FIG. 4



Flv. 2



EUROPEAN SEARCH REPORT

Application Number
EP 14 15 9402

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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			TECHNICAL FIELDS SEARCHED (IPC)
			A41F A41D
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 4 August 2014	Examiner 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			

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

EP 14 15 9402

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
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