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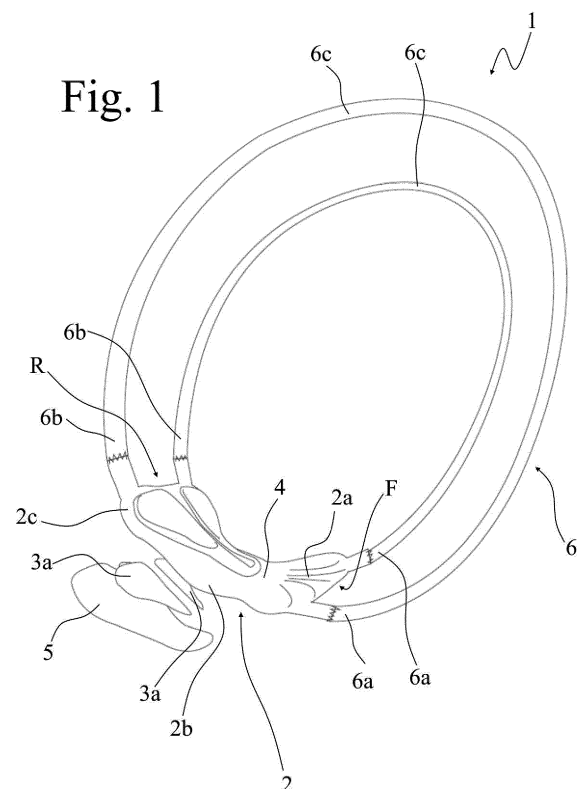
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(54) **SUPPORT AND PROTECTION DEVICE FOR THE PERINEAL-ISCHIAL AREA OF A DRIVER,
WHICH CAN BE USED IN A CYCLING SUIT OR PANT**

(57) The present invention concerns a support and protection device for the perineal-ischial area of a driver that can be used in a cycling suit or pants and a respective cycling suit or pants comprising such a support and protection device.

Furthermore, the present invention also concerns a method of obtaining a cycling suit or pants as mentioned above.



Description

TECHNICAL FIELD OF THE INVENTION

[0001] The present invention concerns a support and protection device for the perineal-ischial area of a driver that can be used in a cycling suit or pants and a respective cycling suit or pants comprising such a support and protection device.

[0002] Furthermore, the present invention also concerns a method of obtaining a cycling suit or pants as mentioned above.

STATE OF THE PRIOR ART

[0003] In the state of the prior art, various types of support and protection devices for the perineal-ischial area of a driver that can be used in cycling suit or pants are known.

[0004] In general, these devices simply include a seat pad, provided with special padding, which is attached directly to the cycling suit or pants. Suitable support suspenders are then provided, also attached directly to the pants or suit, which passing over the driver's shoulders can act as support elements for the pants or suit themselves during the guide.

[0005] In these devices, however, the seat pad is not perfectly adherent to the perineal-ischial area of the driver since it is directly connected to the pants or suit and, during the guide, it often happens that, by changing position, the seat pad does not provide adequate support and protection.

[0006] Furthermore, it should be considered that in the support and protection devices provided by the state of the prior art, the adherence of the seat pad to the perineal-ischial area of the driver is furnished by the constraint reaction generated by the weight of the driver on the saddle, i.e., a "passive" force, and therefore it acts only at the portion of the driver's perineal-ischial area in contact with such saddle. For this reason, the adherence of the driver's perineal-ischial area to the seat pad and the support it provides is not complete and changes depending on the position assumed by the driver on the saddle.

[0007] It is therefore advantageous and necessary to design and obtain a support and protection device for the perineal area of a driver that can be used in cycling suit or pants and a respective cycling suit or pants which allows the disadvantages of the prior art listed above to be overcome.

[0008] IT201600079611A1, EP3571945A1 and WO2021066197A1 describe solutions according to the state of the prior art.

OBJECTS OF THE INVENTION

[0009] The technical aim of the present invention is therefore to improve the state of the art in the field of support and protection devices for the perineal area of a

driver that can be used in a cycling suit or pants and in the field of cycling suit or pants in general.

[0010] An object of the present invention is to provide a support and protection device that allows optimal grip and support during all guiding phases.

[0011] Another object of the present invention is to provide a support and protection device that uses an active force to make the seat pad to adhere to the perineal-ischial area of a driver.

[0012] Another object of the present invention is to provide a support and protection device that uses an active force to support the perineal-ischial area of a driver.

[0013] A further object of the present invention is to provide a support and protection device that is comfortable even after several hours of guide.

[0014] This aim and these objects are achieved by a support and protection device for the perineal-ischial area of a driver for use in a cycling suit or pants according to claim 1.

[0015] This aim and these objects are also achieved by a cycling suit or pants according to claim 13 as well as by a method of obtaining a cycling suit or pants according to claim 22.

[0016] The dependent claims refer to preferred and advantageous embodiments of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] Other features and advantages of the invention will be more evident from the description of an embodiment of a support and protection device for the perineal-ischial area of a driver that can be used in cycling suit or pants and in a respective cycling suit or pants illustrated by way of example in the attached drawings, in which:

- figure 1 is a perspective view of a support and protection device for the perineal-ischial area of a driver that can be used in a cycling suit or pants according to an embodiment of the present invention,
- figure 2 is a top view of the support and protection device illustrated in figure 1,
- figure 3 is a cross-sectional view along the A-A plane of the seat pad illustrated in figure 2,
- figure 4 is a front view of a cycling suit or pants according to an embodiment of the present invention,
- figure 5 is a rear view of the cycling suit or pants illustrated in figure 4.

[0018] In the attached drawings, identical parts or components are identified by the same reference numbers.

EMBODIMENTS OF THE INVENTION

[0019] With reference to the attached figures, the number 1 indicates as a whole a support and protection device for the perineal-ischial area of a driver or cyclist that can be used in cycling suit or pants according to a non-limiting embodiment of the present invention.

[0020] The support and protection device 1 according to the present invention comprises:

- a seat pad 2 designed, in use, to come into contact with the perineal-ischial area of a driver, which defines a front, in use, portion 2a, a rear, in use, portion 2c and an intermediate or fitting or connection portion 2b between the front portion 2a and the rear portion 2c, and
- at least one support suspender 6, preferably elastically extensible, that is designed, in use, to engage or wrap the body of a driver to make the seat pad 2 to adhere to the perineal-ischial area of the latter.

[0021] In particular, the at least one support suspender 6 includes at least a first end or portion 6a and at least a second end or portion 6b connected directly with at least one portion 2a, 2c or each with a respective portion of the seat pad 2.

[0022] Advantageously, the first end or portion 6a is connected to the front portion 2a, while the second end or portion 6b is connected to the rear portion 2c of the seat pad 2.

[0023] In other words, the at least one support suspender 6 has ends or portions 6a, 6b which are connected, for example sewn or heat-sealed or glued or connected by ultrasound, directly with a portion of the seat pad, for example with the front portion 2a and with the rear portion 2c of the seat pad 2 and not with the cycling suit or pants as instead happens in the support and protection devices provided by the state of the prior art.

[0024] With reference to the connection by ultrasound, the same can be achieved in any suitable way, for example according to a sort of heat sealing, carried out using any suitable instrument, such as a sonotrode, which is preferably put in contact with at least one of the pieces or components, for example the seat pad 2 and the support suspender 6, being processed, advantageously applying pressure, so that the ultrasonic energy vibrating through the pieces generates frictional heat on the junction between the surfaces of the pieces or components themselves.

[0025] The term "directly" indicates that the ends or portions 6a, 6b of the support suspender 6 are connected, for example sewn, heat-sealed or glued or connected by ultrasound, to one or more respective portions 2a, 2c of the seat pad 2 without interposition of other elements or portions, in particular of the cycling suit or pants, so that the ends or portions 6a, 6b of the support suspender 6 are actually in physical contact with a respective portion 2a, 2c of the seat pad 2 to which they are connected.

[0026] According to a less preferred variant, one or each end or portion 6a, 6b is connected to another part of the seat pad, for example under it or to a surface of the same distal, in use, from the driver or cyclist.

[0027] As can be understood, the at least one support suspender 6, in particular if elastically extensible, allows an active force to be exerted directly on the seat pad 2

which can therefore adhere as best as possible to the perineal-ischial area of the driver in all the different positions assumed, obtaining a comfortable protection and support device 1 even following a prolonged period of guiding.

[0028] The optimized adhesion of the seat pad 2 to the perineal-ischial area of the driver generated by the active force exerted by at least one support suspender 6, if desired elastically extensible, effectively allows for improved support and protection.

[0029] If desired, the front portion 2a can be defined with reference to the area from the seat pad 2 which starts from the front F of the same and which extends in the direction of the back R for at least 6 cm² or 8 cm², for example 10 cm² or 12 cm².

[0030] Thus, for example, the intermediate or fitting or connection portion 2b can also be defined with reference to the area from the seat pad 2 which begins with the end of the front portion 2a and which extends in the direction of the rear R for at least 6 cm² or 8 cm², for example 10 cm² or 12 cm² or 18 cm².

[0031] Similarly, also the rear portion 2c can, for example, be defined with reference to the area from the seat pad 2 which begins with the end of the intermediate or fitting or connection portion 2b and which extends up to the rear R for at least 6 cm² or 8 cm², for example 10 cm² or 12 cm².

[0032] The configuration of the seat pad 2 can be any, for example with a widened rear portion 2c, an intermediate or fitting portion 2b with a maximum width lower or higher than the maximum width of the rear portion 2c and a front portion 2a with a maximum width lower with respect to the maximum width of the intermediate or fitting portion 2b.

[0033] Preferably, the first end or portion 6a is connected by sewing or heat-sealing or gluing or ultrasound with a portion, for example the front portion 2a, of the seat pad 2 and the second end or portion 6b is connected by sewing or heat-sealing or gluing or ultrasound with a portion, for example the rear portion 2c, of the seat pad 2.

[0034] Advantageously, the sewing or heat-sealing or gluing or connection by ultrasound of the first end or portion 6a extends for a length of at least 2 mm, for example about 5 mm or 10 mm, and the sewing or heat-sealing or gluing or connection by ultrasound of the second end or portion 6b extends for a length of at least 2 mm, for example about 5 mm or 10 mm.

[0035] In the non-limiting embodiment of the present invention illustrated in figure 1, the first end 6a connected by sewing with the front portion 2a of the seat pad 2 and the second end 6b connected by sewing with the rear portion 2c of the seat pad 2 are visible.

[0036] Clearly, as already mentioned above, the connection of the first end or portion 6a with the front portion of the seat pad 2 could also take place by heat-sealing or gluing or ultrasound and the connection of the second end 6b with the rear portion 2c of the seat pad could also take place by heat-sealing or gluing or ultrasound.

[0037] As can be deduced from the paragraph above, a mixed connection method could also be envisaged, for example the first end or portion 6a connected with a portion, for example the front portion 2a, of the seat pad 2 by sewing and the second end or portion 6b connected with a portion, for example the rear portion 2c, of the seat pad 2 by heat-sealing or other combinations.

[0038] As far as the at least one support suspender 6 is concerned, it can advantageously comprise a support suspender 6 which includes or is defined by a first main branch or section proximal to the front portion 2a or to the rear portion 2c from which at least two secondary branches or sections depart or extend, which convey into a second main branch or section proximal to the rear portion 2c or to the front portion 2a of the seat pad 2, or includes or is defined by a first main branch or section proximal to the front portion 2a or to the rear portion 2c from which at least two secondary branches or sections depart or extend, which convey to the rear portion 2c or to the front portion 2a of the seat pad 2, or the at least one support suspender 6 includes two or more support suspenders 6 which each include or are defined by a respective strap or strip 6c.

[0039] According to the non-limiting embodiment of the present invention shown in figure 1, the at least one support suspender 6 comprises two support suspenders 6 each defined by a respective strap or strip 6c.

[0040] In this case, the seat pad 2 defines four constraint points or zones with the at least one support suspender 6, of which two in the front portion 2a and two in the rear portion 2c.

[0041] Advantageously, the two constraint points or zones present at the front portion 2a are defined in symmetrical positions with respect to the longitudinal centerline plane of the seat pad 2 and/or the two constraint points or zones present at the rear portion 2c are defined in symmetrical positions with respect to the longitudinal centerline plane of the seat pad 2.

[0042] According to another non-limiting embodiment of the present invention (not shown in the figures), the at least one support suspender 6 is a support suspender 6 defined by a first main branch or section proximal to the front portion 2a or to the rear portion 2c from which at least two secondary branches or sections depart or extend, which convey into a second main branch or section proximal to the rear portion 2c or to the front portion 2a of the seat pad 2.

[0043] In this case, the seat pad 2 defines two constraint points or zones with the at least one support suspender 6, one of which in the front portion 2a and one in the rear portion 2c.

[0044] Advantageously, the constraint point or zone present at the front portion 2a and the constraint point or zone present at the rear portion 2c are defined in symmetrical positions with respect to the transverse centerline plane of the seat pad 2.

[0045] According to a further non-limiting embodiment of the present invention (not shown in the figures), the at

least one support suspender 6 is a support suspender 6 defined by a first main branch or section proximal to the front portion 2a or to the rear portion 2c from which at least two secondary branches or sections depart or extend, which convey into the rear portion 2c or the front portion 2a of the seat pad 2.

[0046] In this case, the seat pad 2 defines three constraint points or zones with the at least one support suspender 6, one of which in the front portion 2a and two in the rear portion 2c or vice versa.

[0047] Advantageously, the two constraint points or zones present at the rear portion 2c or the front portion 2a are defined in symmetrical positions with respect to the longitudinal centerline plane of the seat pad 2.

[0048] Optionally, the at least one support suspender 6 can be made of polyamide and/or at least one elastomeric material or component, i.e., a material or component which, when suitably stressed, has the ability to undergo large elastic deformations, in other words a material or component that can be stretched several times for finite displacements, resuming its initial dimension once a rest position has been recreated following the cessation or appropriate reduction of the stress.

[0049] Dimensionally, the at least one support suspender 6 can have any suitable width, for example 3 cm or 5 cm, optionally 7 cm or 10 cm.

[0050] Preferably, the at least one support suspender 6 is designed, in use, to engage or wrap around the body of a driver to make the seat pad 2 to adhere to the perineal-ischial area of the latter by passing over the shoulders of the same.

[0051] In particular, in the case in which the at least one support suspender 6 includes two support suspenders 6 each defined by a respective strap or strip 6c, each strap or strip 6c is advantageously designed, in use, to pass over a respective shoulder of a driver.

[0052] Instead, in the case in which the at least one support suspender 6 includes a support suspender 6 defined by a first main branch or section proximal to the front portion 2a or to the rear portion 2c from which at least two secondary branches or sections depart or extend, which convey into a second main branch or main section proximal to the rear portion 2c or to the front portion 2a of the seat pad 2, each secondary branch or section is advantageously designed, in use, to pass over a respective shoulder of a driver.

[0053] Similarly, in the case in which the at least one support suspender 6 includes a support suspender 6 defined by a first main branch or section proximal to the front portion 2a or to the rear portion 2c from which at least two secondary branches or sections depart or extend, which convey into the rear portion 2c or into the front portion 2a of the seat pad 2, each secondary branch or section is advantageously designed, in use, to pass over a respective shoulder of a driver.

[0054] Optionally, the seat pad 2 can be composed of two symmetrical portions connected, for example sewn or heat-sealed or glued or connected by ultrasound, at

the longitudinal centerline plane of the latter.

[0055] Preferably, the seat pad 2 includes or defines a perimeter edge or portion 7 and, if desired, at least one portion or flap 8 protruding from the perimeter edge or portion 7, which at least one protruding portion or flap 8, if provided, is connected with a respective end or portion 6a, 6b of the at least one support suspender 6.

[0056] Advantageously, the at least one portion or flap 8 are two protruding portions or flaps 8 which depart respectively from the front portion 2a and from the rear portion 2c of the seat pad 2 or are three protruding portions or flaps 8 which depart one from the front portion 2a and two from the rear portion 2c or vice versa, or are four or more protruding portions or flaps 8 which depart two or more from the front portion 2a and two or more from said rear portion 2c.

[0057] According to the non-limiting embodiment of the present invention shown in figure 1, two protruding portions or flaps 8 which depart from the front portion 2a of the seat pad 2 and two protruding portions or flaps 8 which depart from the rear portion 2c of the seat pad 2 are provided, each protruding portion or flap 8 that departs from the front portion 2a being connected with a respective first end or portion 6a of a support suspender 6 while each protruding portion or flap 8 that departs from the rear portion 2c being connected with a respective second end or portion 6b of a support suspender 6.

[0058] According to another non-limiting embodiment of the present invention (not shown in the figures), a protruding portion or flap 8 which departs from the front portion 2a of the seat pad 2 and a protruding portion or flap 8 which departs from the rear portion 2c of the seat pad 2 can be provided, the protruding portion or flap 8 which departs from the front portion 2a being connected with the first end or portion 6a of a support suspender 6 or, more particularly, of a first main branch or section while the protruding portion or flap 8 which departs from the rear portion 2c being connected to the second end 6b of a support suspender 6 or, more particularly, to a second main branch or section.

[0059] According to a further non-limiting embodiment of the present invention, a protruding portion or flap 8 which departs from the front portion 2a of the seat pad 2 and two protruding portions or flaps 8 which depart from the rear portion 2c of the seat pad 2 can be provided, the protruding portion or flap 8 which departs from the front portion 2a being connected with the first end or portion 6a of a support suspender 6 while the two protruding portions or flaps 8 which depart from the rear portion 2c being connected with the respective second ends 6b of the secondary branches or sections.

[0060] The at least one protruding portion or flap 8, if present, facilitates the connection with the at least one support suspender 6 and improves the overall comfort of the seat pad 2 since the constraint of these components, in use, does not interfere or, in any case, interferes less with a driver's body.

[0061] Dimensionally, the at least one protruding por-

tion or flap 8 can have a length of at least 2 cm or 4 cm, for example 6 cm, 10 cm or even 15 cm.

[0062] Preferably, the at least one protruding portion or flap 8 is made in a single piece with part of the seat pad 2.

[0063] Alternatively, the at least one protruding portion or flap 8 can be secured to the seat pad 2 by sewing or heat-sealing or gluing or ultrasound.

[0064] So far as the seat pad 2 is concerned, it preferably includes at least one cushioning layer 3 and at least one covering layer 4, connected with the cushioning layer 3, designed to come into contact with the perineal-ischial area of a driver.

[0065] Optionally, the covering layer 4 can be made of polyester and/or at least one elastomeric material or component, for which the above applies.

[0066] If desired, the covering layer 4 can have a thickness between about 2 mm and about 4 mm, for example about 3 mm.

[0067] Advantageously, the cushioning layer 3 includes or defines one or more padding components or portions 3a designed to dampen the stresses generated on the perineal-ischial area during the guide.

[0068] According to the non-limiting embodiment of the present invention shown in figure 1, the cushioning layer 3 includes two padding components or portions 3a spaced from each other and arranged symmetrically with respect to the longitudinal centerline plane of the seat pad 2.

[0069] If desired, each padding component or portion 3a can have a shape substantially similar to one half of a bicycle saddle.

[0070] In this case, if two padding components or portions 3a were provided, they could advantageously configure a padding in the shape of a bicycle saddle, as visible for example in figure 1.

[0071] Optionally, the one or more padding components or portions 3a can be made separately and then constrained by means of connective means, for example by sewing, with the cushioning layer 3.

[0072] Alternatively, the one or more padding components or portions 3a could be made in a single piece with the cushioning layer 3.

[0073] If desired, the one or more padding components or portions 3a can be made of expanded polyethylene, expanded polyester, expanded polyurethane or combinations/mixtures thereof.

[0074] Optionally, the one or more padding components or portions 3a, more particularly, the lower, in use, surface thereof, can be covered with a reinforcing layer, for example made of polyester.

[0075] Preferably, the cushioning layer 3 is or comprises a layer of expanded foam material, for example made of expanded polyethylene, expanded polyester, expanded polyurethane or combinations/mixtures thereof.

[0076] If desired, the cushioning layer 3 or, more particularly, the layer of expanded foam material can have a thickness between about 4 mm and about 20 mm, for

example about 12 mm.

[0077] Optionally, the seat pad 2 can include a coating layer 3b of the cushioning layer 3 or, more particularly, of the layer of expanded foam material, for example made of polyester.

[0078] If desired, the coating layer 3b can have a thickness between about 1 mm and about 3 mm, for example about 2 mm.

[0079] Preferably, in order to improve the breathability of the seat pad 2, the cushioning layer 3 or, more particularly, the layer of expanded foam material can delimit a plurality of through holes or openings, for example distributed homogeneously, if desired having a diameter or width of between about 0.5 mm and about 5 mm, for example about 2 mm.

[0080] In this case, the coating layer 3b, if present, will also delimit the same distribution of plurality of through holes or openings as that delimited by the cushioning layer 3.

[0081] Optionally, the cushioning layer 3 and, if present, the covering layer 3b, can include a lightening opening, for example at the front portion 2a of the seat pad 2, designed to lighten or alleviate the stresses generated on the driver's genital organs during the guide.

[0082] Advantageously, the seat pad 2 can also include a closing layer 5, connected with the padding layer 3, designed, in use, to come into contact with a cycling suit or pants, for example made of polyamide and/or elastane, for example of the type known under the well-known commercial brand Lycra®, i.e., a synthetic fiber of segmented polyurethane which presents an alternation of elastic segments and rigid segments.

[0083] If desired, the closing layer 5 can have a thickness between about 1 mm and about 3 mm, for example about 2 mm.

[0084] Subject-matter of the present invention is also a cycling suit or pants.

[0085] With reference to the attached figures, the number 10 indicates overall a cycling suit or pants according to a non-limiting embodiment of the present invention.

[0086] The cycling suit or pants 10 according to the present invention includes a suit or pant body 11 and a support and protection device 1 as indicated above operatively associated with the suit or pant body 11.

[0087] Preferably, the suit or pant body 11 includes or defines at least a connection portion 11a with the seat pad 2.

[0088] Advantageously, the at least one connection portion 11a is connected by sewing, heat-sealing or gluing or ultrasound with the seat pad 2.

[0089] If desired, the sewing or heat-sealing or gluing or the connection by ultrasound of the connection portion 11a with the seat pad extends for a length of at least 10 cm, for example between about 12 cm and about 18 cm.

[0090] Preferably, the at least one connection portion 11a is connected to the intermediate or fitting portion 2b of the seat pad 2.

[0091] With reference to this aspect, the connection between suit or pant body 11 and the seat pad 2 allows the latter to be kept in position more easily while guiding.

[0092] According to the non-limiting embodiment of the present invention shown in figures 4 and 5, two connection portions 11a are provided, connected respectively with the intermediate or fitting portion 2b of the seat pad 2 or with a respective lateral section thereof, if desired in two symmetrical positions with reference to the longitudinal centerline plane of the latter, for example at or around, if desired in a vicinity of 1 cm or 2 cm, optionally also 4 cm or 6 cm, of the crotch defined by the suit or pant body 11.

[0093] Therefore, the seat pad 2 is connected, or rather, sewn or heat-sealed or glued or connected by ultrasound to the suit or pant body 11 only at the connection portions 11a and not for its entire perimeter edge or portion 7.

[0094] Basically, the seat pad 2 is not integrated into or welded to the suit or pant body 11 as instead happens in the solutions according to the prior art, but is totally detached from it or at most is connected to it only at the connection portions 11a.

[0095] Furthermore, the support suspenders or braces 6 do not depart from the suit or pant body 11, but, in fact, from the seat pad 2, although it is possible to connect an intermediate portion of this component 6 to the pant body 11 at one or more slots 12 which will be discussed below.

[0096] Advantageously, the suit or pant body 11 includes or delimits at least one slot 12 for the passage and, preferably, sliding of the at least one support suspender 6 or better of a respective strap or strip or band 6c.

[0097] According to the non-limiting embodiment of the present invention shown in figures 4 and 5, the suit or pant body 11 has two slots 12 for the passage of two respective straps or strips or bands 6c on the front of the suit or pant body 11 and/or two slots 12 for the passage of the same straps or strips or bands 6c on the back of the suit or pant body 11.

[0098] Preferably, the at least one support suspender 6 is not connected, for example sewn or heat-sealed or glued or connected by ultrasound, in any of the slots 12, in which case the latter is responsible for the passage and sliding, in use, of the suspender.

[0099] Optionally, the at least one support suspender 6 is connected to a slot 12, optionally by means of one or more constraint points or zones, for example by sewing or heat-sealing or gluing or ultrasound. Clearly, in this case, there would preferably be the constraint of at least one suspender 6 only in one slot 12 and not in two or more slots 12.

[0100] In the case of at least one slot 12 designed for the passage and sliding without connection of a respective strap or strip or band 6c of the at least one support suspender 6, then the dimensions and configuration of the slot 12 and of the strap or strip or band 6c are such that there is interference or contact, for example sliding between the latter 6c and the at least one wall delimiting

the slot 12. The strap or strip or band 6c can therefore slide, following the application of appropriate force, in the slot 12, but the friction between the delimiting walls of the latter and the strap or strip or band 6c hinders, without preventing, this sliding, thus determining an engagement of the suspender 6 on the suit or pant body 11, also for the appropriate sustenance of the latter.

[0101] Thus, for example, the slot 12 could be, without the strap or strip or band 6c, substantially closed (not sealed) and expand slightly upon insertion of the strap or strip or band 6c depending on the dimensions or configuration of the latter, for example, but not necessarily, because the strap or strip or band 6c is longer than the slot 12 and/or only as a function of the thickness of the strap or strip or band 6c.

[0102] Naturally, the suit or pant body 11 can be suitably reinforced at the least one slot 12.

[0103] Subject-matter of the present invention is also a method of obtaining a cycling suit or pants according to the present invention or according to non-limiting embodiments of the present invention.

[0104] The method according to the present invention initially includes the step of providing a seat pad 2.

[0105] The step of providing at least one support suspender 6 is then envisaged.

[0106] Then, the step of providing the suit or pant body 11 is comprised.

[0107] Subsequently, the method comprises the step of connecting at least a first end or portion 6a and at least a second end or portion 6b of the at least one support suspender 6 respectively with the front portion 2a and with the rear portion 2c of the seat pad 2 so as to obtain the support and protection device 1.

[0108] The method according to the present invention includes the step of operatively assemble the suit or pant body 11 with the seat pad 2 and the at least one support suspender 6 before or after the step of connecting the first end or portion 6a and the second end or portion 6b of at least one support suspender 6 with at least one portion 2a, 2c of the seat pad 2.

[0109] Preferably, the step of connecting occurs by sewing or heat-sealing or gluing or ultrasound.

[0110] If desired, the step of operatively assemble occurs through sewing, heat-sealing or gluing or ultrasound.

[0111] According to the non-limiting embodiment illustrated in the figures, the step of operatively assemble involves the positioning of the seat pad 2 in the suit or pant body 11 or rather close to the inside of the crotch thereof, then the insertion of the at least a support suspender in at least one slot 12 delimited by the suit or pant body 11 and therefore the connection of at least one of the first end or portion 6a and the second end or portion 6b of the at least one support suspender 6 with at least one portion 2a, 2c of the seat pad 2.

[0112] Preferably, two, three or four slots 12 are provided for which respective branches or sections of the suspender(s) 6 must be inserted into them before con-

necting one or preferably more ends of the support suspender(s) 6 with respective portions 2a, 2c of the seat pad 2.

[0113] The support and protection device 1 allows for optimal grip and support during all guiding phases.

[0114] Furthermore, the support and protection device 1 is able to exploit an active force, i.e., the elastic force generated by at least one support suspender 6 when worn by the driver, to make the seat pad to adhere to the perineal-ischial area of the latter and support this area of the same.

[0115] It should be considered that the support and protection device 1 is comfortable even after several hours of driving, thanks to the protection and support provided by at least one support suspender 6 whose ends and/or portions 6a, 6b are connected respectively with a portion, for example with the front portion 2a and with the rear portion 2c of the seat pad 2.

[0116] Therefore, the seat pad 2 is brought into contact with the perineal-ischial area of a driver thanks to at least one support suspender 6 which, it is reiterated, does not depart from the pant body 11 and does not have its ends connected or welded or glued or heat-sealed or connected by ultrasound to the pant body 11, but possibly only an intermediate portion in a possible slot 12.

[0117] It has thus been seen how the invention fully achieves the proposed objects.

[0118] Modifications and variations of the invention are possible within the scope of protection defined by the claims.

Claims

1. Support and protection device (1) for the perineal-ischial area of a driver for use in a cycling suit or pants, comprising:

- a seat pad (2) designed, in use, to come into contact with the perineal-ischial area of a driver, which defines a front, in use, portion (2a), a rear, in use, portion (2c) and an intermediate or fitting or connection portion (2b) between said front portion (2a) and said rear portion (2c), and
- at least one support suspender (6) designed, in use, to engage or wrap around the body of a driver to make said seat pad (2) to adhere to the perineal-ischial area of the latter by passing over the shoulders of the same, wherein said at least one support suspender (6) comprises at least one first end (6a) and at least one second end (6b) both directly connected to at least one portion (2a, 2c) of said seat pad (2). wherein said at least one first end (6a) is connected to said front portion (2a) of said seat pad (2), while said at least one second end (6b) is connected to said rear portion (2c) of said seat pad (2).

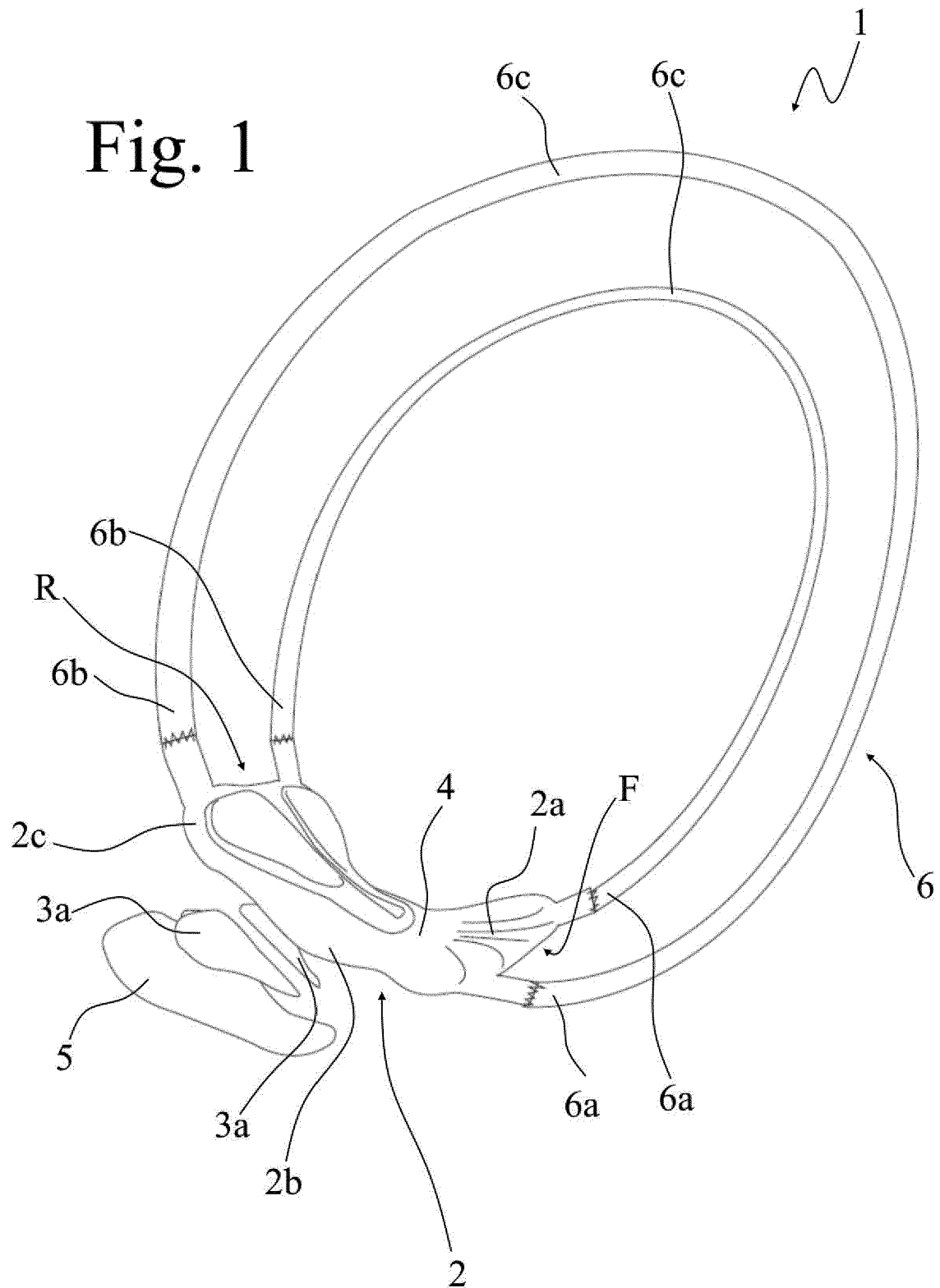
2. Support and protection device (1) according to claim 1, wherein each of said first end (6a) and said second end (6b) is connected by sewing or heat-sealing or gluing or ultrasound with at least one portion (2a, 2c) of said seat pad (2).
3. Support and protection device (1) according to the preceding claim, wherein said sewing or heat-sealing or gluing or connection by ultrasound of said first end (6a) extends for a length of at least 2 mm and said sewing or heat-sealing or gluing or connection by ultrasound of said second end (6b) extends for a length of at least 2 mm.
4. Support and protection device (1) according to any one of the preceding claims, wherein said at least one support suspender (6) comprises a support suspender (6) which includes or is defined by a first main branch or section proximal to said front portion (2a) or to said rear portion (2c) from which at least two secondary branches or sections depart or extend, which convey into a second main branch or section proximal to said rear portion (2c) or to said front portion (2a) of said seat pad (2), or includes or is defined by a first main branch or section proximal to said front portion (2a) or to said rear portion (2c) from which at least two secondary branches or sections depart or extend, which convey into said rear portion (2c) or into said front portion (2a) of said seat pad (2), or said at least one support suspender (6) comprises two or more support suspenders (6) which include or are each defined by a respective belt or strip (6c).
5. Support and protection device (1) according to any one of the preceding claims, wherein said seat pad (2) comprises or defines a perimeter edge or portion (7) and at least one portion or flap (8) protruding from said perimeter edge or portion (7), said at least one protruding portion or flap (8) being connected with a respective end or portion (6a, 6b) of said at least one support suspender (6).
6. Support and protection device (1) according to the preceding claim, comprising two protruding portions or flaps (8) branching off respectively from said front portion (2a) and from said rear portion (2c) of said seat pad (2) or three protruding portions or flaps (8) branching off one from said front portion (2a) and two from said rear portion (2c) or vice versa, or four or more protruding portions or flaps (8) branching off two or more from said front portion (2a) and two or more from said rear portion (2c).
7. Support and protection device (1) according to any one of the preceding claims, wherein said seat pad (2) comprises at least one cushioning layer (3) and at least one covering layer (4), connected with said cushioning layer (3), designed to come into contact with the perineal-ischial area of a driver.
8. Support and protection device (1) according to the preceding claim, wherein said cushioning layer (3) comprises or defines one or more padding components or portions (3a) designed to cushion the stresses generated on the perineal-ischial area during the guide.
9. Support and protection device (1) according to the preceding claim, wherein said cushioning layer (3) is or comprises a layer of expanded foam material.
10. Support and protection device (1) according to claim 8 or 9, wherein said seat pad (2) comprises a coating layer (3b) of said cushioning layer (3).
11. Support and protection device (1) according to any one of claims from 7 to 10, wherein said seat pad (2) comprises a closing layer (5), connected with said padding layer (3) and designed, in use, to come into contact with a cycling suit or pants.
12. Support and protection device (1) according to any of the preceding claims, wherein the ends (6a, 6b) of said at least one support suspender (6) are connected to one or more respective portions (2a, 2c) of said seat pad (2) without the interposition of other elements or portions, so that the ends (6a, 6b) of said at least one support suspender (6) are actually in physical contact with a respective portion (2a, 2c) of said seat pad (2) to which they are connected.
13. Cycling suit or pants (10) comprising a suit or pant body (11) and a support and protection device (1) according to any one of claims from 1 to 12 operatively associated with said suit or pant body (11).
14. Cycling suit or pants (10) according to the preceding claim, wherein said suit or pant body (11) comprises or defines at least one portion of connection (11a) with said seat pad (2).
15. Cycling suit or pants (10) according to the preceding claim, wherein said at least one connection portion (11a) is connected by sewing, heat-sealing or gluing or ultrasound with said seat pad (2).
16. Cycling suit or pants (10) according to claim 14 or 15, wherein said at least one connection portion (11a) is connected to said intermediate or fitting or connection portion (2b) of said seat pad (2).
17. Cycling suit or pants (10) according to claim 16, wherein said suit or pant body (11) comprises two connection portions (11a) each connected to said intermediate or fitting or connection portion (2b) of

said seat pad (2).

18. Cycling suit or pants (10) according to claim 17, wherein said seat pad (2) is connected to said suit or pant body (11) only at said connection portions (11a) and not for the whole perimeter edge or portion (7) of said seat pad (2). 5
19. Cycling suit or pants (10) according to any one of claims from 13 to 18, wherein said suit or pant body (11) comprises or delimits at least one passage slot (12) for said at least one support suspender (6). 10
20. Cycling suit or pants (10) according to the preceding claim, wherein said at least one support suspender (6) is not connected to said at least one slot (12) by sewing or heat-sealing or gluing or ultrasound. 15
21. Cycling suit or pants (10) according to the preceding claim, wherein the size and configuration of said at least one slot (12) and of said at least one suspender (6, 6c) are such that there is interference or contact between the latter and at least one wall delimiting said at least one slot (12), whereby said at least one suspender (6, 6c) can slide, following the application of a suitable force, in said at least one slot (12), but the friction between the delimitation walls of the latter and the suspender (6, 6c) hinders, without preventing, this sliding. 20
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22. Method for obtaining a cycling suit or pants according to any one of claims 13 to 21, comprising the steps of:
 - providing said seat pad (2),
 - providing said at least one support suspender (6), 35
 - providing said suit or pant body (11),
 - connecting said at least one first end (6a) and said at least one second end (6b) of said at least one support suspender (6) with at least one portion (2a, 2c) of said seat pad (2) so as to obtain said support and protection device (1), 40
 - operatively assemble said suit or pant body (11) with said seat pad (2) and said at least one support suspender (6) before or after the step of connecting said at least one first end (6a) and said at least one second end (6b) of said at least one support suspender (6) with at least one portion (2a, 2c) of said seat pad (2). 45
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23. Method for obtaining according to the preceding claim, wherein said step of connecting takes place by sewing or heat-sealing or gluing or ultrasound.
24. Method for obtaining according to claim 22 or 23, wherein said step of operatively associating takes place by sewing, heat-sealing or gluing or ultrasound. 55

25. Method for obtaining according to claim 22 or 23 or 24, wherein said step of operatively associating provides for positioning said seat pad (2) in said suit or pant body (11), inserting said support suspender in at least one slot (12) delimited by said suit or pant body (11) and then connecting at least one between said at least one first end (6a) and said at least one second end (6b) of said at least one support suspender (6) with at least one portion (2a, 2c) of said seat pad (2).

Fig. 1



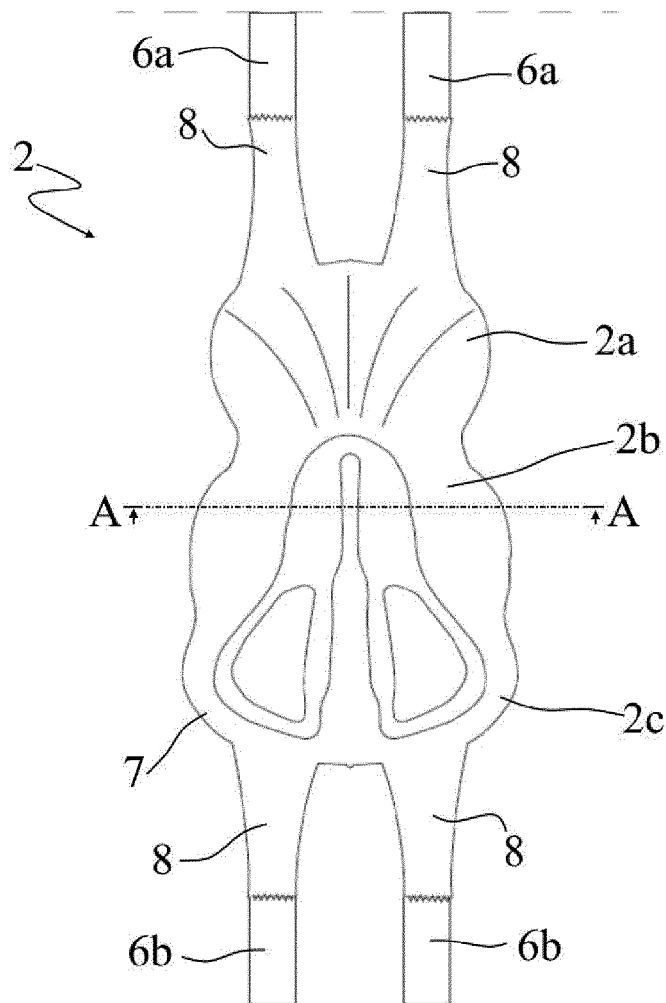
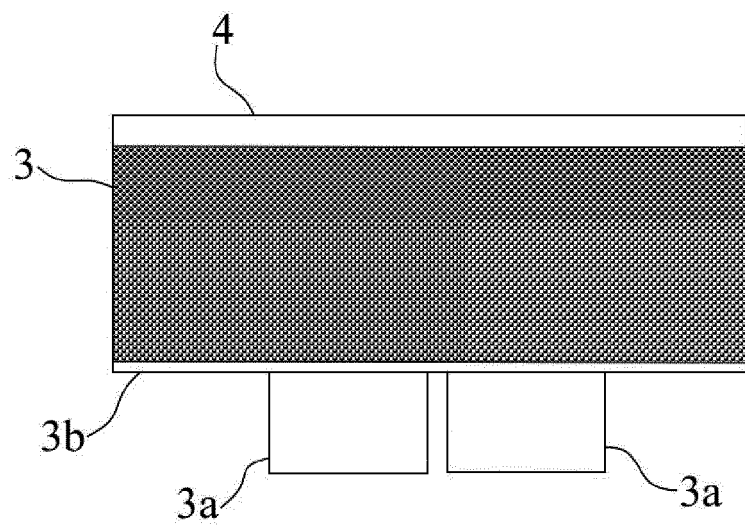


Fig. 2

Fig. 3



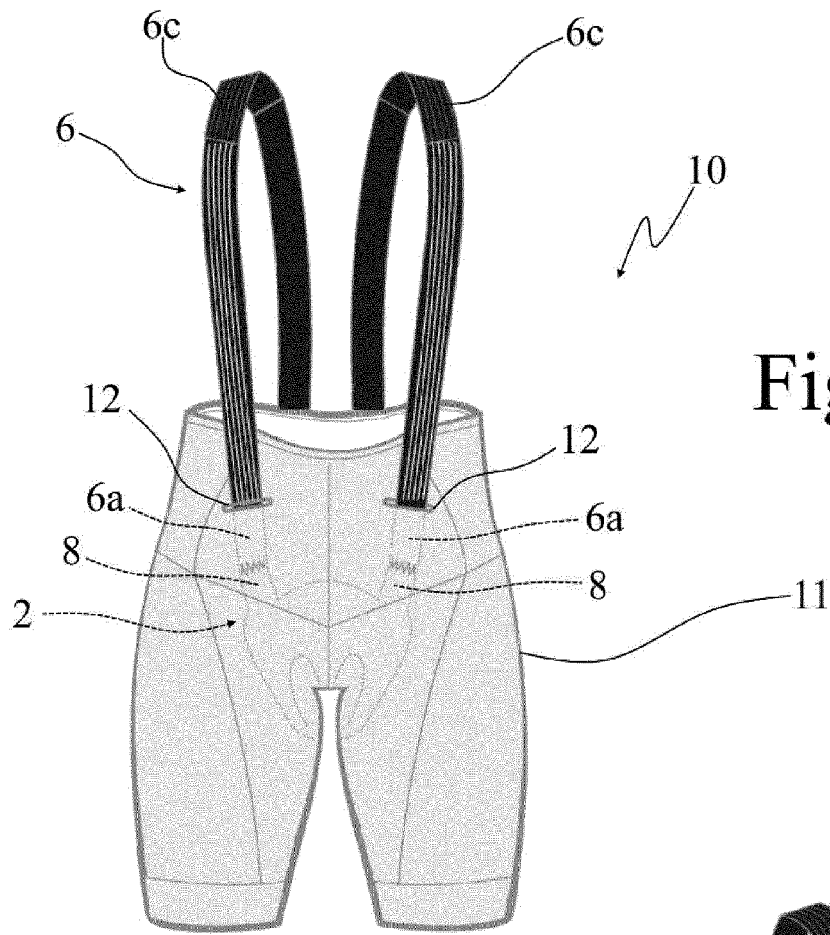


Fig. 4

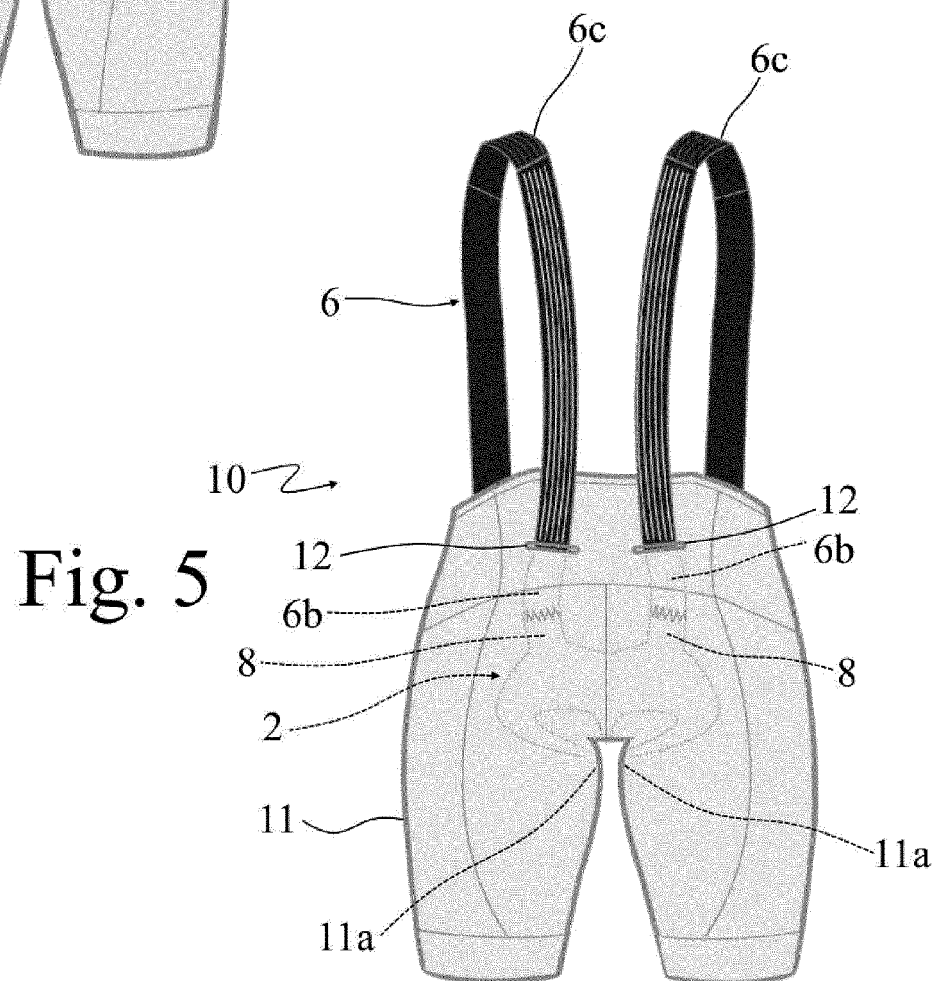


Fig. 5



EUROPEAN SEARCH REPORT

Application Number

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A,D	IT 2016 0007 9611 A1 (DOT HOLDING S R L) 28 January 2018 (2018-01-28) * the whole document *	1-25	INV. A41D1/084
A,D	WO 2021/066197 A1 (ISHII SATOSHI [JP]) 8 April 2021 (2021-04-08) * the whole document *	1	
A,D	EP 3 571 945 A1 (ASSOS OF SWITZERLAND GMBH [CH]) 27 November 2019 (2019-11-27) * the whole document *	1	
			TECHNICAL FIELDS SEARCHED (IPC)
			A41D
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 28 June 2024	Examiner Debard, Michel
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EP 24 15 2939

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28-06-2024

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
IT 201600079611 A1	28-01-2018	-----	-----
WO 2021066197 A1	08-04-2021	JP 2021059824 A	15-04-2021
		WO 2021066197 A1	08-04-2021
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EP 3571945 A1	27-11-2019	EP 3571945 A1	27-11-2019
		US 2019357600 A1	28-11-2019
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REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- IT 201600079611 A1 [0008]
- EP 3571945 A1 [0008]
- WO 2021066197 A1 [0008]