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(54) **Cyclist trousers**

(57) Cyclist trousers (10) of the type comprising a plurality of portions of fabric (12) reciprocally associated, perimetrically and at a median line of crotch (16), at a so-called above-saddle area, destined to be in contact with the saddle of a bicycle, a shaped protection pad being associated; two (17, 117, 217) of said portions of fabric (12) reciprocally associated at the median line of crotch (16), comprise at least one shaped protection pad (18, 20) each, said at least two shaped protection pads (18, 20) being positioned at the above-saddle area in reciprocally spaced relationship and symmetrically as to said median line of crotch (16).

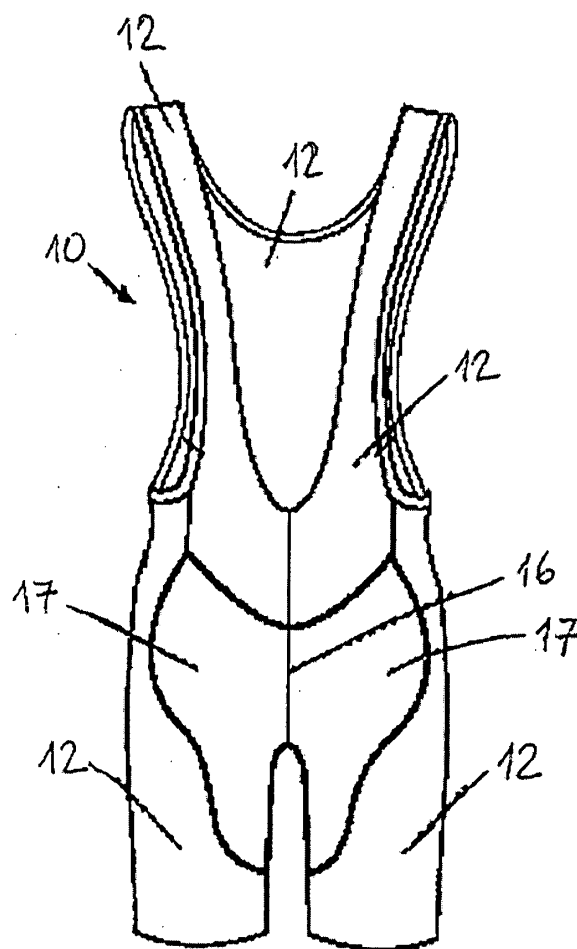


Fig.1

Description

Field of application

[0001] In its broadest aspect, the present invention relates to cyclist trousers, in that this term refers to any type of cyclist's sports clothes, in which a so-called above-saddle area is destined to be in contact with the saddle of a bicycle, i.e. for example short trousers (with or without braces), long trousers (with or without braces), tights trousers (with or without braces), trousers of the aforesaid types without braces, but with a top with short or long sleeves (in jargon, usually called body), etc.

[0002] In particular the invention relates to cyclist trousers of the type comprising a plurality of portions of fabric reciprocally associated, perimetrically and at a median line of crotch, at said above-saddle area a shaped protection pad being associated.

[0003] The present invention also relates to a manufacturing method of cyclist trousers of the aforesaid type.

Prior Art

[0004] In the practice of cycling as a sport, whether at amateur or professional level, symptoms of the so called "above-saddle pain" are known, connected with a prolonged contact between the bicycle saddle and the perineal zone of the cyclist, and related frictions during the pedalling action.

[0005] In order to reduce these symptoms, in addition to the correct choice of the shape and size of the bicycle frame and saddle thereof, it is important that the cyclist uses an appropriate protection of the above-saddle zone; in other words, it is important that the cyclist uses appropriate cyclist trousers that provide, at the above-saddle area, the presence of a appropriately shaped protection pad, said protection pad being called in technical jargon: "seat pad".

[0006] The seat pad is generally composed of a plurality of superimposed layers of materials and pads adapted to absorb the impacts, as well as one or more layers of fabric in contact with the cyclist's skin.

[0007] According to the prior art, such a seat pad of protection, associated with the fabric of the trousers for example by means of stitching, heat-welding, gluing or similar techniques, is positioned at the crotch of the trousers.

[0008] Although it is advantageous from different points of view, cyclist trousers structured according to the description supplied above, presents recognized drawbacks.

[0009] First of all, the pad, which is generally made of a more consistent material than the fabric (generally elasticized) used for the portions of the trousers, rubbing against the fabric, creates wrinkles, ridges and similar shapes thereon, which, because of the inevitable contact with the skin, provoke a consequential irritation/torment for the cyclist.

[0010] Moreover, the pad at the crotch median line of the trousers constitutes a kind of obstacle for the trousers wearability, i.e. for the good adherence between the elasticized trousers fabric and the body of the cyclist.

Summary of the invention

[0011] The technical problem underlying the present invention, is to devise and provide cyclist trousers of the type described, able to overcome the drawbacks described in prior art in a simple, effective manner, i.e. to guarantee the cyclist excellent wearability and maximum seating comfort on the saddle, by considerable reduction of the painful symptoms described above.

[0012] This problem is solved, according to the present invention, by cyclist trousers of the type described above, and characterized in that two of said portions of fabric reciprocally associated at the median line of crotch, comprise at least one shaped protection pad each, said at least two shaped protection pads being positioned at the above-saddle area in reciprocally spaced relationship and symmetrically as to said median line of crotch.

[0013] In practice, thanks to the trousers according to the invention, the prior art seat pad is advantageously eliminated, and its function is replaced by the assembly of the aforesaid two portions of fabric associated at the median line of crotch, that is called "crotch" in the technical jargon.

[0014] Further characteristics and advantages of the cyclist trousers according to the present invention will be made clear from the following description of a preferred embodiment thereof, given for indicating and not limiting purposes with reference to the attached drawings.

Brief description of the drawings

[0015]

Figure 1 schematically shows a front perspective view of cyclist trousers according to the present invention.

Figure 2 schematically shows a back perspective view of cyclist trousers of figure 1.

Figure 3 schematically shows an enlarged plan view, seen from above, of two of the portions of fabric of the trousers of figure 1, that is of two portions of fabric associated at the median line of crotch of the trousers.

Figure 4 schematically shows a section view of the two portions of figure 3, taken along plane IV-IV of figure 3.

Figure 5 schematically shows a section view of a further embodiment of the two portions of figure 3, taken along the plane IV-IV of figure 3 itself.

Figure 6 schematically shows an enlarged plan view, seen from above, of a further embodiment of the two portions of fabric of the trousers of figure 3.

Detailed description of a preferred embodiment

[0016] With reference to the figures, cyclist trousers according to the present invention are shown and globally identified by the numeral 10. In particular, in the figures short trousers with braces are shown.

[0017] The trousers 10 comprise a plurality of portions of fabric 12 (figures 1 and 2) which are reciprocally associated, perimetrically (that is: which are associated along at least one portion of their perimeter) and at a median line of crotch 16.

[0018] The portions 12 of the trousers 10 are generally made of an elasticized fabric. As an example, elasticized fabrics are employed, and they can be associated by thread stitching, taping, coupling, heat-welding, laser seaming, ultrasound seaming, gluing or the like, all of which are per se conventional.

[0019] In order to protect the perineal zone of the cyclist, at a so-called above-saddle area, destined to be in contact with the saddle of a bicycle, a shaped protection pad is associated.

[0020] Per se known materials are used for this pad, such as polyurethane foam, foam rubber, silicones, gels or the like, suitable to absorb the impacts.

[0021] In order to improve the wearability of the trousers 10, according to the present invention, two (17) of said portions of fabric 12 associated at the line of crotch 16 of the trousers 10, comprise a shaped protection pad each, 18 and 20 respectively (figure 3).

[0022] Preferably, the fabric of the two portions 17 of the trousers 10 has a greater consistency than the fabric of the remaining portions 12.

[0023] The pads 18 and 20 are positioned at the above-saddle area in reciprocally spaced relationship and symmetrically as to said median line of crotch 16. More precisely, the two pads 18 and 20 are physically separate from each other.

[0024] In general, although the pads 18 and 20 may assume various shapes, they are identically shaped and specular to one another. Alternatively, the shaped pads can be more than two in number, preferably four, two at the front and two at the back, set in specular symmetry in relation to the median line of crotch.

[0025] In particular (figure 4), according to a first embodiment of the invention, the two portions of fabric 17 each comprise a first and second layer of fabric, 22 and 24 respectively, reciprocally associated to define a hollow space, substantially in pocket form, the shaped pads 18 and 20 being positioned in said hollow space, and being associated with said layers 22 and 24.

[0026] More precisely, the specifically shaped pads 18 and 20 are associated with said layers 22 and 24 by means of thread stitching, taping, coupling, heat-welding, laser seaming, ultrasound seaming, gluing or the like, all

of which are per se conventional.

[0027] In Figure 5 a second embodiment of two portions of fabric 117 is shown, each one comprising a shaped protection pad (18 and 20 respectively), said portions being included in a cyclist trousers according to the present invention. In figure 5 structural elements which are identical or equivalent from the functional point of view to those of the portions of fabric 17 shown in figures 1-4 described above, will be identified with the same reference numerals and will not be described any further.

[0028] In particular, the two portions 117, each comprise a layer of fabric 122 on which the shaped pads 18 and 20 are associated.

[0029] In general the pads 18 and 20 are identically shaped and are specular with each other. Alternatively, the shaped pads can be more than two, preferably four, two at the front and two at the back, set in specular symmetry in relation to the median symmetry plane.

[0030] More precisely, the shaped pads 18 and 20 are associated with said layer 122 by means of thread stitching, taping, coupling, heat-welding, laser seaming, ultrasound seaming, gluing, or the like, all of which are per se conventional.

[0031] One face (18a and 20a) of the shaped pads 18 and 20 is positioned opposite/in contact with the layer 122, while the opposite face (18b and 20b) constitute an external surface of the portions 117. Once the trousers are worn, the opposite face (18b and 20b) can face the saddle of the bicycle, or can face the skin of the cyclist.

[0032] It must be noted that the aforesaid two portions of fabric, 17 and 117 respectively, can be associated at the line of crotch 16 of the trousers 10 by means of thread stitching, taping, coupling, heat-welding, laser seaming, ultrasound seaming, gluing, or the like, all of which are per se conventional.

[0033] Advantageously, the aforesaid two portions of fabric, 17 and 117, respectively, are made of a fabric identical to that of the other portions 12 of the trousers 10, but are subjected to different working. In particular, at least the side of the aforesaid two portions of fabric 17 and 117 which comes into contact with the skin of the cyclist, is subjected to a working chosen in the group comprising the scoring, the gigging or the grinding. Preferably, such at least one side is subjected to a grinding working. On the side of the aforesaid portions of fabric in which the aforesaid working is carried out, one obtains the raising of a down which makes such side soft and comfortable. In other words, an effect is obtained typical of the "pile" fabric. Alternatively, the aforesaid two portions of fabric, 17 and 117, respectively, can be made of a fabric different from that of the other portions 12 of the trousers 10 but in any case having characteristics of elasticity suitable for this type of trousers and in which at least the fabric side which comes into contact with the cyclist's skin is soft and comfortable as described above.

[0034] The present invention also relates to a portion of fabric of the type above identified by numerals 17 and 117, destined to be associated, at the median line of

crotch 16 of the trousers 10, with a second portion of fabric (17 and 117 respectively) of the same type and in specular symmetry to it in relation to the median line of crotch.

[0035] A manufacturing method is now described of cyclist trousers of the type indicated above with 10. Such method is of the type comprising the steps of shaping a plurality of portions of fabric 12 and reciprocally associating said portions of fabric 12 at at least part of their perimeter and at a median line of crotch 16. Furthermore, the method comprises the step of associating at least one shaped protection pad (18, 20) to each of two (17, 117) of said portions of fabric 12 reciprocally associated at the median line of crotch 16, said at least two shaped protection pads (18, 20) being positioned at a so-called above-saddle area of the cyclist trousers 10 which is destined to be in contact with the saddle of a bicycle, in a reciprocally spaced relationship and symmetrically as to said median line of crotch 16.

[0036] In order to facilitate the operations of the afore-said positioning of said at least two shaped protection pads (18, 20), i.e. for simplifying the centring and the relative positioning of said at least two shaped protection pads (18, 20), said at least two pads (18, 20) are connected to each other by means of at least one "bridge" portion (19).

[0037] In particular, in figure 6 a further embodiment is shown of two portions of fabric 217 included in a cyclist trousers according to the present invention, said portions 217 each comprising a shaped protection pad (18 and 20, respectively), said pads 18 and 20 being connected by a bridge portion 19. In figure 6, structural elements which are identical or equivalent from the functional point of view to those of the portions of fabric 17 shown in figures 1-4 described above, will be identified with the same reference numerals and will not be described any further.

[0038] Preferably, the bridge portion 19 extends transversely, for example orthogonally, with respect to the median line of crotch 16 of the trousers 10, has substantially rectangular form and has a reduced width L1 with respect to the axial extension L2 of the shaped protection pads 18 and 20: for example, the width L1 is lower than 15% of the axial extension L2.

[0039] Advantageously, the bridge portion 19 is provided at a position such that it keeps substantially motionless with respect to the bicycle's saddle, during the normal pedalling action of the cyclist. In this manner, the bridge portion 19 does not hamper the "movement" of the two shaped protection pads 18 and 20 during the pedalling action of the cyclist: in practice, the two pads 18 and 20 connected by such bridge portion 19 "move" substantially in the same manner as the two pads 18 and 20 of figure 3.

[0040] The present invention also relates to a couple of portions of fabric of the type indicated above with 217, where each portion 217 of said couple comprises a shaped protection pad 18 and 20, said two pads 18 and

20 being connected by a bridge portion 16 which extends orthogonally with respect to the median line of crotch 16 of the trousers 10.

[0041] A manufacturing method will now be described of cyclist trousers which are equipped with the two portions of fabric 217 of figure 6. Such method is of the type comprising the steps of shaping a plurality of portions of fabric 12 and reciprocally associating said portions of fabric 12 at at least part of their perimeter and at a median line of crotch 16. Furthermore, the method comprises the step of associating at least a couple of shaped protection pads (18, 20), connected with each other by at least one bridge portion (19) which arranges them in a reciprocally spaced relationship, to two (217) of said portions of fabric 12 reciprocally associated at the median line of crotch 16, said at least one couple of shaped protection pads (18, 20) being positioned at a so-called above-saddle area of the cyclist trousers 10 which is destined to be in contact with the saddle of a bicycle, and symmetrically as to said median line of crotch 16.

[0042] From the above description it can clearly be seen that the cyclist trousers according to the invention solves the technical problem and achieves numerous advantages the first of which being the unusual seating comfort on the saddle.

[0043] Moreover, thanks to the lack of wrinkles and to the excellent wearability of the trousers, the symptoms of the above-saddle pain are reduced to an unusual degree.

[0044] A further advantage of the cyclist trousers according to the invention, when compared to the prior art, is the fact that the surface of the protection pad can be suitably increased.

[0045] Another advantage of the cyclist trousers according to the invention, when compared to the prior art, is the fact that the pads are able to "move" in a independent manner from each other, permitting far greater freedom in the movements of the cyclist's legs.

[0046] Yet another advantage of the cyclist trousers according to the invention is the fact that the above-saddle zone can "breathe" in a better manner compared to the prior art, i.e. it has characteristics of better transpirability (especially in the embodiment shown in figure 5, where there is only one layer of fabric in the above-saddle area), thus permitting better removal of the perspiration.

[0047] A further advantage of the cyclist trousers according to the invention is the fact that, unlike in the prior art, the median line of crotch of the trousers has no stitches, heat-welding, gluing or the like, for the pad. This makes the trousers according to the present invention particularly comfortable, thanks to the elasticity of the crotch zone thereof, thus permitting the cyclist a natural freedom of movement, with almost no constraints or obstacles, thus minimizing the chances of irritations. Moreover, there is no danger of stitches becoming unstitched or detaching of the pad from the median line of crotch of the trousers, a fact that occurs frequently with trousers of the prior art.

[0048] Of course, a man skilled in the art can make numerous modifications and variations to the cyclist trousers described above, in order to satisfy specific and contingent requirements, all of which are in any case covered by the scope of protection of the present invention as defined by the following claims.

Claims

1. Cyclist trousers (10) of the type comprising a plurality of portions of fabric (12) reciprocally associated, perimetrically and at a median line of crotch (16), at a so-called above-saddle area, destined to be in contact with the saddle of a bicycle, a shaped protection pad being associated, **characterized in that** two (17, 117, 217) of said portions of fabric (12) reciprocally associated at the median line of crotch (16), comprise at least one shaped protection pad (18, 20) each, said at least two shaped protection pads (18, 20) being positioned at the above-saddle area in reciprocally spaced relationship and symmetrically as to said median line of crotch (16).
2. Cyclist trousers (10) according to claim 1, **characterized in that** the fabric of said two portions of fabric (17, 117, 217) each comprising at least one shaped protection pad (18, 20) has a greater consistency than the fabric of the remaining portions of fabric (12).
3. Cyclist trousers (10) according to claims 1 or 2, **characterized in that** said shaped pads are four in total, two at the front and two at the back, set in specular symmetry in relation to the median line of crotch (16).
4. Cyclist trousers (10) according to claims 1 or 2, **characterized in that** said two portions of fabric (17), each comprising at least one shaped protection pad (18, 20), each comprise a first (22) and a second layer of fabric (24) reciprocally associated to define a hollow space, said at least two shaped pads (18, 20) being positioned in said hollow space and being associated with said layers (22, 24).
5. Cyclist trousers (10) according to claim 4, **characterized in that** said shaped pads are associated with said layers (22, 24) by means of thread stitching, taping, coupling, heat-welding, laser seaming, ultrasound seaming, gluing or the like.
6. Cyclist trousers (10) according to claims 1 or 2, **characterized in that** said two portions of fabric (117), each comprising at least one shaped protection pad (18, 20), each comprise a layer of fabric (122) on which are associated said at least two shaped pads (18, 20).
7. Cyclist trousers (10) according to claim 6, **characterized in that** said shaped pads (18, 20) are associated with said layer of fabric (122) by means of thread stitching, taping, coupling, heat-welding, laser seaming, ultrasound seaming, gluing or the like.
8. Cyclist trousers (10) according to any one of the preceding claims, **characterized in that** said two portions of fabric (17, 117, 217) reciprocally associated at the median line of crotch (16) are made of a fabric which is subjected, at least on the face which is destined to be in contact with the skin of the cyclist, to a working chosen in the group comprising the scoring, the gigging or the grinding.
9. Portion of fabric (17, 117) for cyclist trousers (10), said trousers (10) being of the type comprising a plurality of portions of fabric (12) reciprocally associated, perimetrically and at a median line of crotch (16), **characterized in that** it comprises at least one shaped protection pad (18, 20), and **in that** it is destined to be associated, at the median line of crotch (16) of the trousers (10), with a second portion of fabric (17, 117) of the same type and specularly symmetrical to it in relation to the median line of crotch, said at least one shaped protection pad (18, 20) of said second portion of fabric (17, 117) associated with it, being positioned at a so-called above-saddle area, destined to be in contact with the saddle of a bicycle, in reciprocally spaced relationship and symmetrically as to said median line of crotch (16).
10. Manufacturing method of cyclist trousers (10), of the type comprising the steps of shaping a plurality of portions of fabric (12) and reciprocally associating said portions of fabric (12) at at least part of their perimeter and at a median line of the crotch (16), **characterized in that** it comprises the step of associating at least one shaped protection pad (18, 20) to each of two (17, 117) of said portions of fabric (12) reciprocally associated at the median line of crotch (16), said at least two shaped protection pads (18, 20) being positioned at a so-called above-saddle area of the cyclist trousers (10) which is destined to be in contact with the saddle of a bicycle, in reciprocally spaced relationship and symmetrically as to said median line of crotch (16).
11. Cyclist trousers (10) according to any one of the claims 1 to 8, **characterized in that** said at least two shaped protection pads (18, 20) are connected with each other by means of at least one bridge portion (19).
12. Cyclist trousers (10) according to claim 11, **characterized in that** said two portions of fabric (217) reciprocally associated at the median line of crotch (16) each comprise a shaped protection pad (18, 20), said two pads (18, 20) being connected by a bridge por-

tion (19) which extends transversely with respect to the median line of crotch (16) of the trousers (10).

13. Cyclist trousers (10) according to claim 12, **characterized in that** said bridge portion (19) has substantially rectangular form and has a reduced width (L1) with respect to the axial extension (L2) of the shaped protection pads (18, 20). 5
14. Couple of fabric portions (217) for cyclist trousers (10), reciprocally associated at the median line of crotch (16) of said trousers (10), **characterized in that** each portion of fabric (217) of said couple comprises a shaped protection pad (18, 20), said two pads (18, 20) being connected by a bridge portion (19) which extends orthogonally with respect to the median line of crotch (16) of the trousers (10), said bridge portion (19) arranging said two pads (18, 20) in reciprocally spaced relationship, symmetrically as to said median line of crotch (16) and at a so-called above-saddle area of the cyclist trousers (10) which is destined to be in contact with the saddle of a bicycle. 10
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15. Manufacturing method of cyclist trousers (10), of the type comprising the steps of shaping a plurality of portions of fabric (12) and reciprocally associating said portions of fabric (12) at at least part of their perimeter and at a median line of crotch (16), **characterized in that** it comprises the step of associating at least one couple of shaped protection pads (18, 20), connected to each other by at least one bridge portion (19) which arranges them in reciprocally spaced relationship, to two (217) of said portions of fabric (12) reciprocally associated at the median line of crotch (16), said at least one couple of shaped protection pads (18, 20) being positioned at a so-called above-saddle area of the cyclist trousers (10) which is destined to be in contact with the saddle of a bicycle, and symmetrically as to said median line of crotch (16). 25
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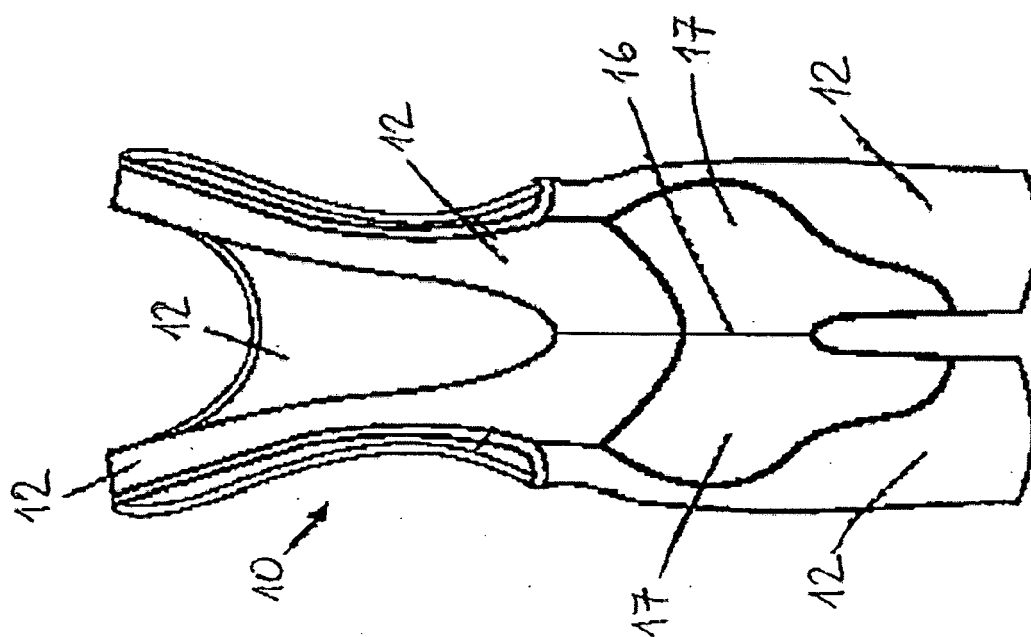


Fig. 1

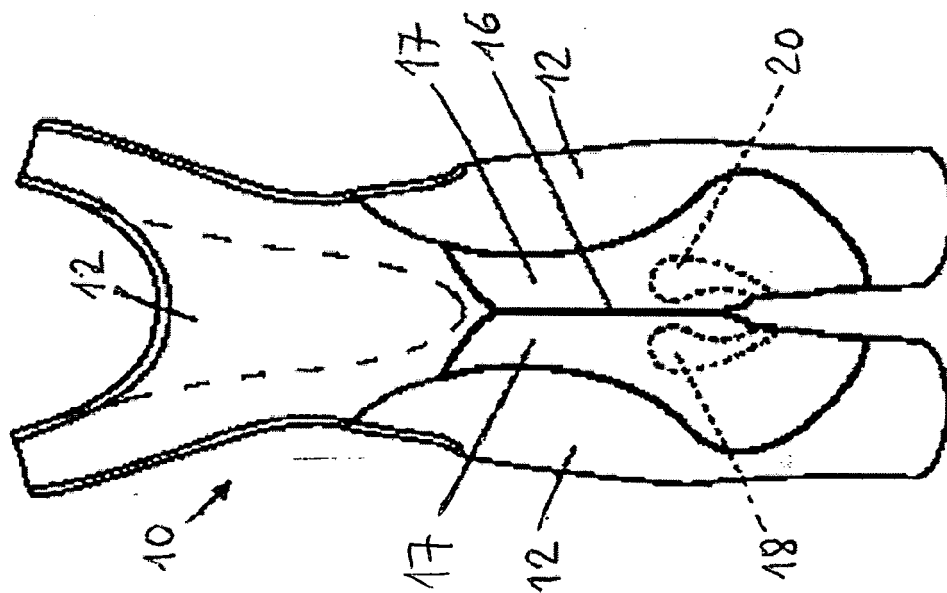


Fig. 2

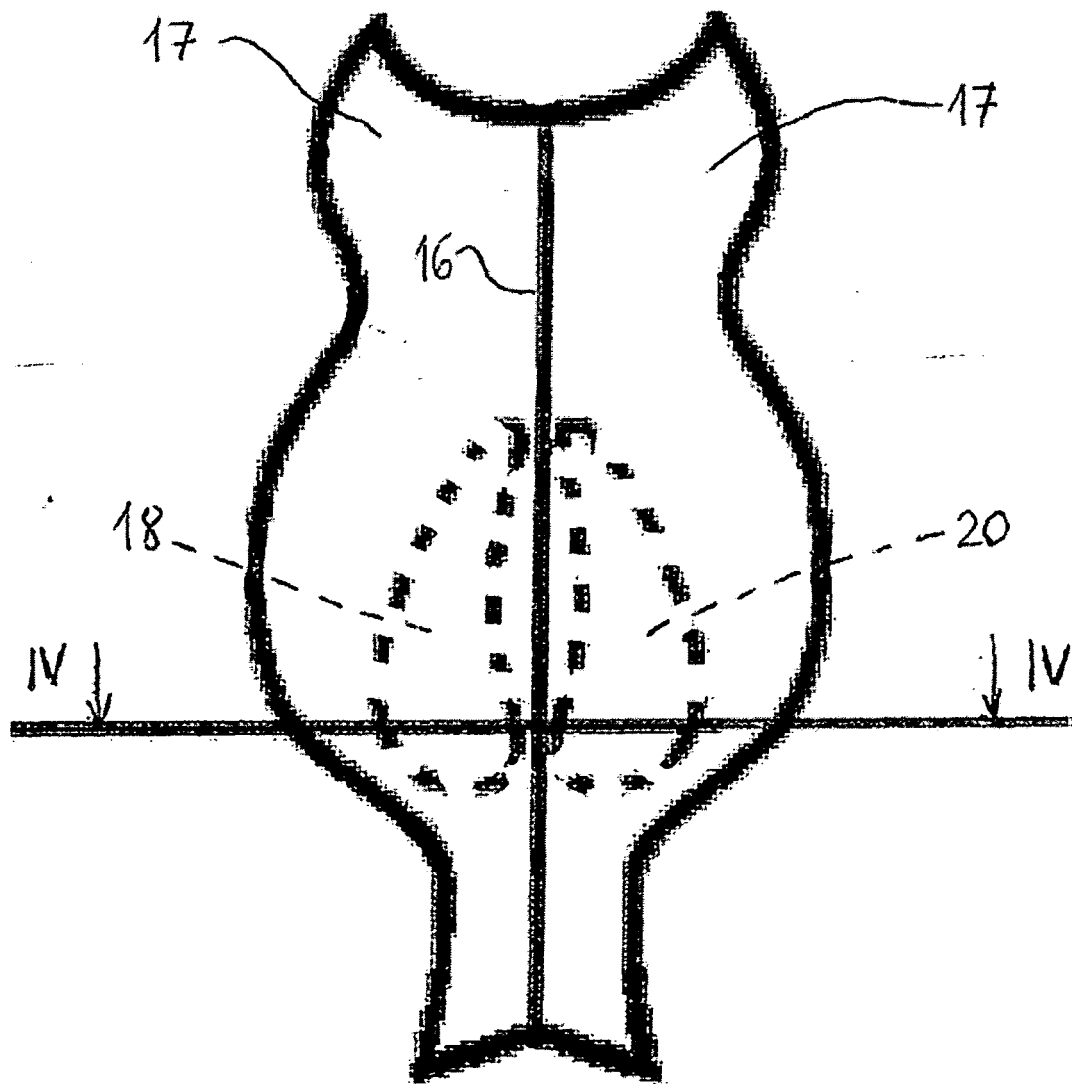


Fig.3

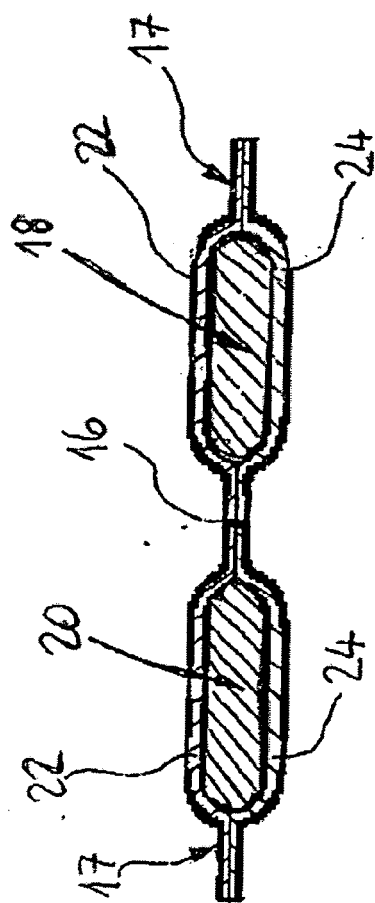


Fig.4

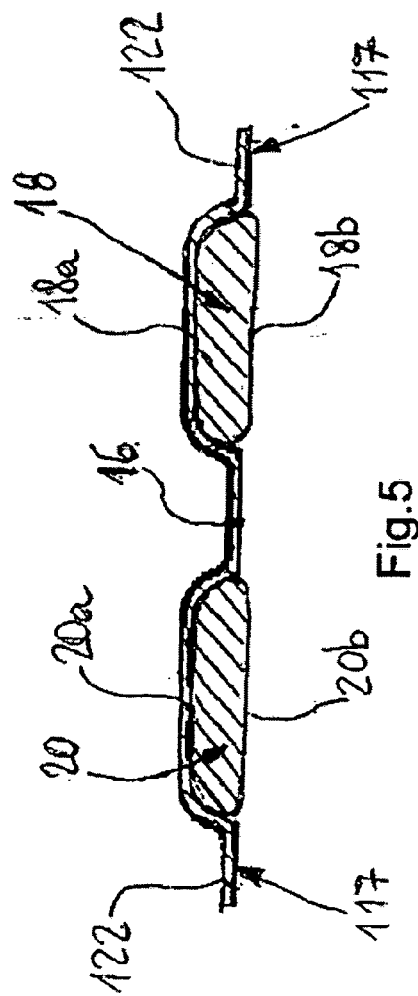


Fig.5

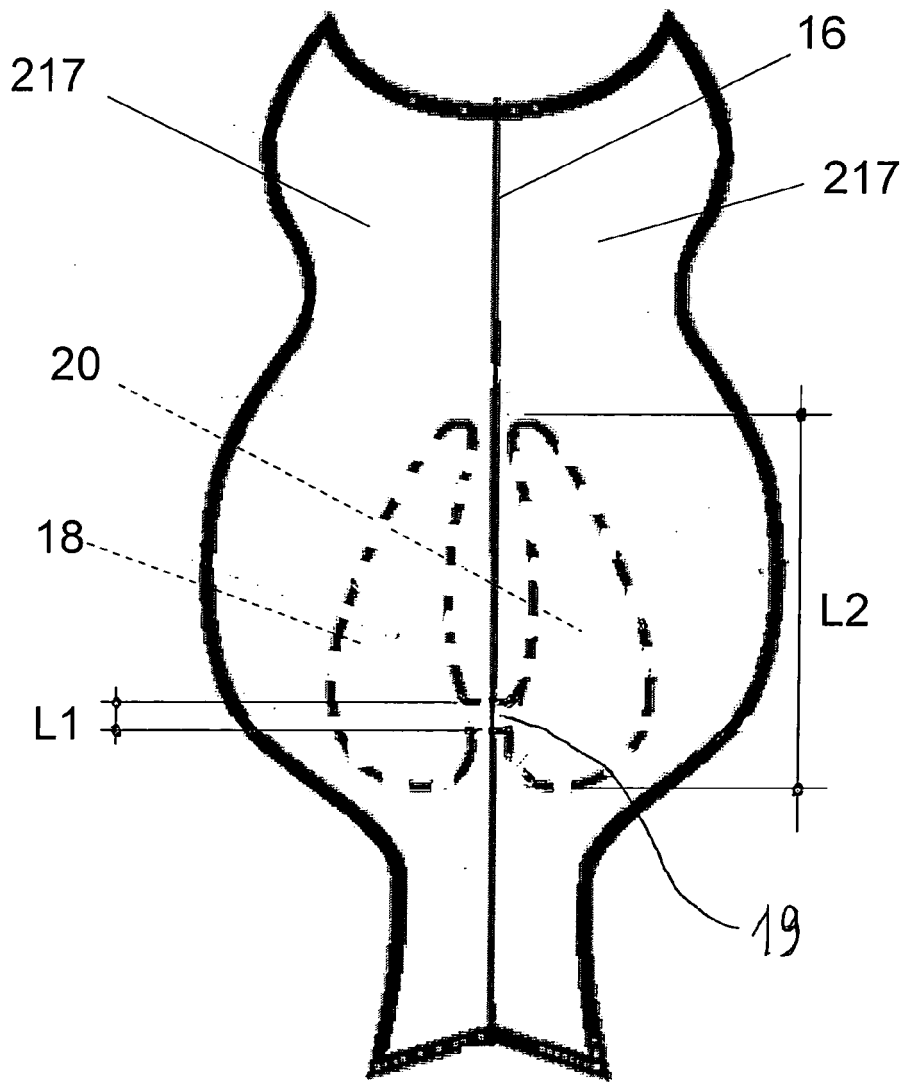


Fig.6



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EUROPEAN SEARCH REPORT

Application Number
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Place of search Munich		Date of completion of the search 10 May 2007	Examiner HERRY-MARTIN, D
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			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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