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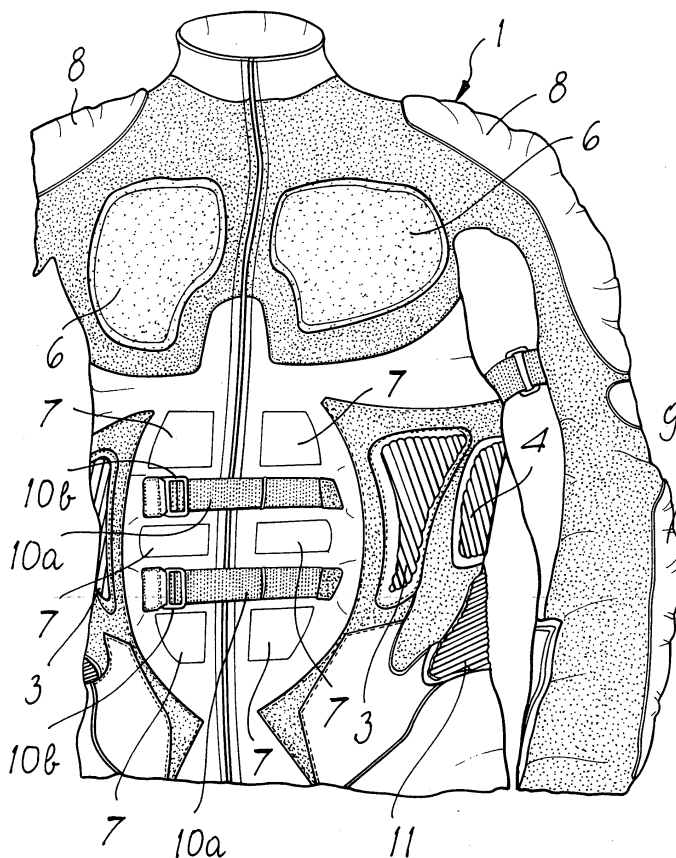
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(54) **Clothing item, particularly for karting**

(57) A clothing item (1), particularly for karting, comprising at least one protection (3, 4, 6, 7, 8, 9) for at least one part of the trunk of the body.



*Fig. 1*

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## Description

[0001] The present invention relates to a clothing item that is useful particularly but not exclusively in the field of karting.

[0002] As is known, racing cars have a considerable number of safety devices that cooperate in ensuring the safety of the drivers.

[0003] Each one of these devices has been developed to perform preset functions. Thus, for example, roll-bars protect the occupant of the cabin if the vehicle rolls over; seat belts secure the driver to the seat, protecting him in case of accident; impact-absorption protections prevent violent impacts against the rigid parts of the cabin from causing severe injuries particularly to the head of the driver.

[0004] Moreover, both the suit, which has the particular property of being fireproof, and the helmet, help to ensure further protection of the driver.

[0005] Differently from racing cars, go-karts have no passive safety components of any kind, such as seat belts or roll-bars.

[0006] Accordingly, the driver, who in any case wears a helmet and suit of the same kind used in motor racing, deals with entirely different driving conditions and is particularly exposed to damage and injuries in case of accident or of violent impacts against parts of the bodywork of the vehicle, such as for example the ribs that support the tank and the bulkheads for lateral support of the seat.

[0007] Moreover, the driver is often thrown out of the driver's seat, for example due to violent collisions with other vehicles, and finds himself sliding dangerously on the tarmac.

[0008] In such situations, drivers are affected by traumas that involve the upper limbs and particularly the shoulders, which can dislocate or fracture at the collarbone.

[0009] Furthermore, due to the rigidity of the go-kart, vibrations that can cause microtraumas to the back are transmitted through the seat to the body of the user.

[0010] Bruising caused by the friction of the back against the seat and rib fractures following collisions or violent impacts against the driver's compartment are equally important.

[0011] From the above description it is quite evident that clothing that merely duplicates the clothing usually used in motor racing cannot be sufficient for the safety of a go-kart driver.

[0012] The aim of the present invention is to provide a valid solution to the problems mentioned above, by providing a clothing item, particularly for karting, that allows to protect go-kart drivers from violent impacts against the rigid parts of the vehicle or against the tarmac.

[0013] Within this aim, an object of the present invention is to provide a clothing item that is particularly ergonomic in the driving position.

[0014] Another object of the invention is to provide a clothing item that can cling to the body so that it does not hinder the movements of the driver and penetration through the air.

[0015] This aim and these and other objects that will become better apparent hereinafter are achieved by a clothing item, particularly for karting, according to the invention, characterized in that it comprises at least one protection for at least one part of the trunk of the body.

[0016] Advantageously, the clothing item according to the invention is characterized in that such protections comprise at least one plate-like element.

[0017] Conveniently, such plate-like element is at least partially made of viscoelastic material.

[0018] Further characteristics and advantages of the invention will become apparent from the description of a preferred but not exclusive embodiment of a clothing item, particularly for karting, according to the invention, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

Figure 1 is a slightly perspective view of the upper part of a clothing item according to the invention;

Figure 2 is a rear view of the clothing item of Figure 1, in which the user is in the driving position.

[0019] With reference to the figures, a clothing item according to the invention, generally designated by the reference numeral 1, has the particularity that it comprises at least one protection for one or more parts of the trunk of the body.

[0020] For example, the protections used by the item 1 are constituted by one or more plate-like elements, so that they can be shaped substantially like panels.

[0021] Advantageously, such plate-like elements must be provided so as to ensure high wearability, i.e., they must be able to adapt easily to the body of the user.

[0022] At the same time, they must be able to provide adequate protection, which consists in the ability to absorb impacts against the ground and against the rigid parts of the go-kart cabin.

[0023] These requirements are met, for example, by a material that has a viscoelastic behavior, i.e., a material that is rigid at high deformation speeds and at the same time flexible at low deformation speeds.

[0024] Merely by way of example, the material known commercially as ElleRes, manufactured by the company R.E.S.® S.p.A., which is substantially an expanded resin made of polyurethane-polyester, has been found appropriate for the purpose.

[0025] Delving into the details of the clothing item 1 according to the invention, it has at least one backbone protection 2.

[0026] Accordingly, as shown in Figure 2, the item 1 can be provided with a protection 2a that is designed to protect the dorsal portion of the backbone, and with a protection 2b that instead protects the lumbar portion of the backbone.

[0027] With reference to Figure 1, the item 1 is provided with two ribcage protections 3, which lie in the lower part of the ribcage.

[0028] Advantageously, next to the chest protections 3 there are two hip protections 4, and respective lumbar protections 5 act approximately at loin height.

[0029] Conveniently, the lumbar band is surrounded by a protection band, not shown in the figures, which is preferably made of aramid fiber, such as for example Kevlar® by Du Pont®, so as to protect vital organs if contact with sharp objects occurs.

[0030] Again with reference to Figure 1, it can be seen that the item 1 further has a respective chest protection 6 and multiple abdominal protections 7, which also conveniently give the item of the invention a particular aesthetic value.

[0031] Advantageously, at the level of the shoulder there are protections 8, which are designed to avoid fractures of the collarbone and dislocation of the shoulder, since they extend to the scapulohumeral articulation.

[0032] The upper limbs are protected by at least one protection, which is arranged at the lateral region 9 of such limbs and conveniently by an elbow protection 9a, which is optionally coupled to the sleeve so that it is detachable.

[0033] The clothing item 1 further comprises means for tightening around the waist 10, located in the abdominal region, so as to assuredly cling to the body perfectly.

[0034] In particular, the waist tightening means 10 are constituted by one or more belts 10a, which connect two portions that are substantially lateral with respect to the abdominal muscles, and by respective per se known adjustment means 10b for adjusting the length of each belt 10a.

[0035] The clothing item 1 according to the example shown in the figures is shaped like a suit, having the pants and jacket joined into a single garment.

[0036] However, the item 1 might also be a simple jacket.

[0037] A few refinements have been used in order to ensure that the above cited protections adhere precisely to the parts of the body for which they are meant when the user assumes the driving position.

[0038] First of all, said refinements provide for an adaptation band 11, which lies substantially around the waist at least at the lumbar region, can be elongated substantially along the longitudinal axis of the body of the user, and has the particular aim of allowing the item 1 to cling perfectly to the back.

[0039] Secondly, the front part 1 of the clothing item is shorter than the rear part.

[0040] If the clothing item 1 is a suit, protections, not shown in the figures, are provided at the femoral articulations, at the knees and at the ankles in order to protect the legs.

[0041] Conveniently, the materials used to manufacture the clothing item 1 are selected among those pre-

scribed by currently applicable statutory provisions or in any case among those capable of ensuring high mechanical resistance to tearing and abrasion.

[0042] More particularly, leather has proved to be the most suitable in the parts that are most exposed to the wind stream (the outside of the arms, the collarbone area, the chest and the hips) thanks to its compactness, which greatly limits flutter of the fabric at high speed.

[0043] As regards instead the parts that are less exposed to the possibility of traumas but nonetheless subject to abrasions, the choice has been made to use Cordura® by Du Pont®, which, with respect to other commercially available fabrics, combines light weight with considerable strength and durability.

[0044] In practice it has been found that in all of the embodiments the invention has achieved its intended aim and objects.

[0045] In practice, the materials used, so long as they are compatible with the contingent use, as well as the dimensions and shapes, may be any according to requirements.

[0046] The invention thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims.

[0047] All the details may further be replaced with other technically equivalent elements.

[0048] The disclosures in Italian Utility Model Application No. VR2002U000007 from which this application claims priority are incorporated herein by reference.

[0049] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

## Claims

1. A clothing item, particularly for karting, **characterized in that** it comprises at least one protection for at least one part of the trunk of the body.
2. The clothing item according to claim 1, **characterized in that** said at least one protection comprises at least one plate-like element.
3. The clothing item according to claim 2, **characterized in that** said at least one plate-like element is at least partially made of viscoelastic material.
4. The clothing item according to one or more of the preceding claims, **characterized in that** said at least one protection comprises at least one back-bone protection.
5. The clothing item according to claim 4, **character-**

- ized in that** said at least one backbone protection is designed to protect the dorsal portion of the backbone.
6. The clothing item according to claim 4 or 5, **characterized in that** said at least one backbone protection is designed to protect the lumbar portion of the backbone.
7. The clothing item according to one or more of the preceding claims, **characterized in that** said at least one protection comprises at least one ribcage protection.
8. The clothing item according to claim 7, **characterized in that** said at least one ribcage protection is adapted to protect the lower part of the ribcage.
9. The clothing item according to one or more of the preceding claims, **characterized in that** said at least one protection comprises at least one hip protection.
10. The clothing item according to one or more of the preceding claims, **characterized in that** said at least one protection comprises at least one lumbar protection.
11. The clothing item according to one or more of the preceding claims, **characterized in that** said at least one protection comprises at least one chest protection.
12. The clothing item according to one or more of the preceding claims, **characterized in that** said at least one protection comprises at least one abdominal protection.
13. The clothing item according to one or more of the preceding claims, **characterized in that** said at least one protection comprises a shoulder protection.
14. The clothing item according to claim 13, **characterized in that** said shoulder protection comprises at least one collarbone protection.
15. The clothing item according to claim 13 or 14, **characterized in that** said shoulder protection comprises at least one scapulohumeral protection.
16. The clothing item according to one or more of the preceding claims, **characterized in that** it comprises at least one protection for the upper limbs.
17. The clothing item according to claim 16, **characterized in that** said at least one upper limb protection is in a lateral position on the upper limbs.
18. The clothing item according to claim 16 or 17, **characterized in that** said at least one upper limb protection is arranged at the elbows.
19. The clothing item according to one or more of the preceding claims, **characterized in that** it comprises means for tightening around the waist in the abdominal region.
20. The clothing item according to claim 19, **characterized in that** said means for tightening around the waist comprise at least one belt, which connects two portions of said item of clothing that are substantially lateral with respect to the abdominal muscles and means for adjusting the length of said belt.
21. The clothing item according to one or more of the preceding claims, **characterized in that** it comprises at least one protection for the legs.
22. The clothing item according to claim 21, **characterized in that** said at least one leg protection is arranged at the femoral articulations.
23. The clothing item according to claim 21 or 22, **characterized in that** said at least one leg protection is arranged at the knees.
24. The clothing item according to one or more of claims 21 to 23, **characterized in that** said at least one leg protection is arranged at the ankles.
25. The clothing item according to one or more of the preceding claims, **characterized in that** it comprises a band for adapting said item of clothing to the position of the user in driving conditions, said band being able to elongate substantially along the longitudinal axis of the body of the user and being arranged substantially around the waist at least at the lumbar region.
26. The clothing item according to claims 1 to 20, **characterized in that** it is a jacket.
27. The clothing item according to claims 1 to 25, **characterized in that** it is a suit.

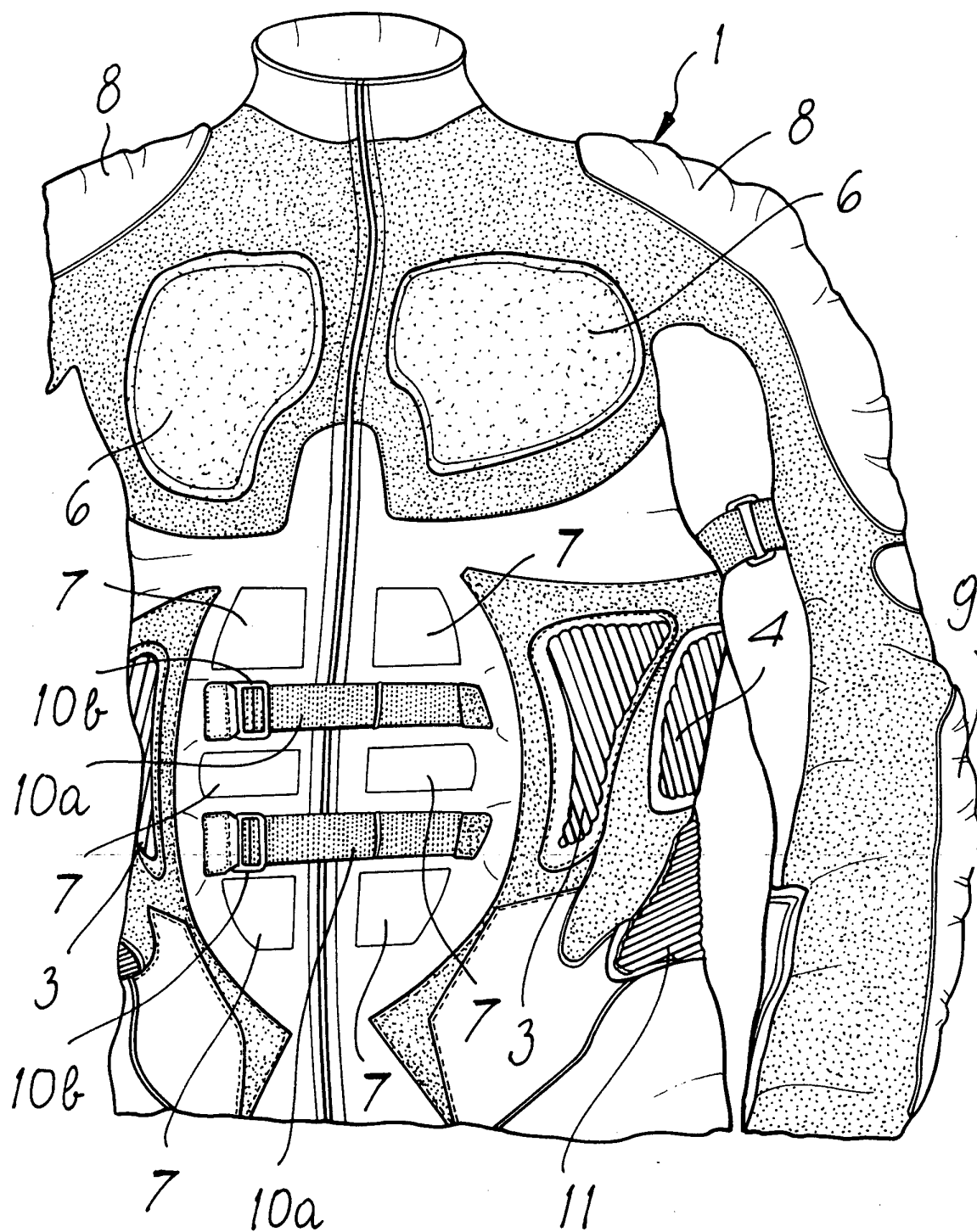


Fig. 1

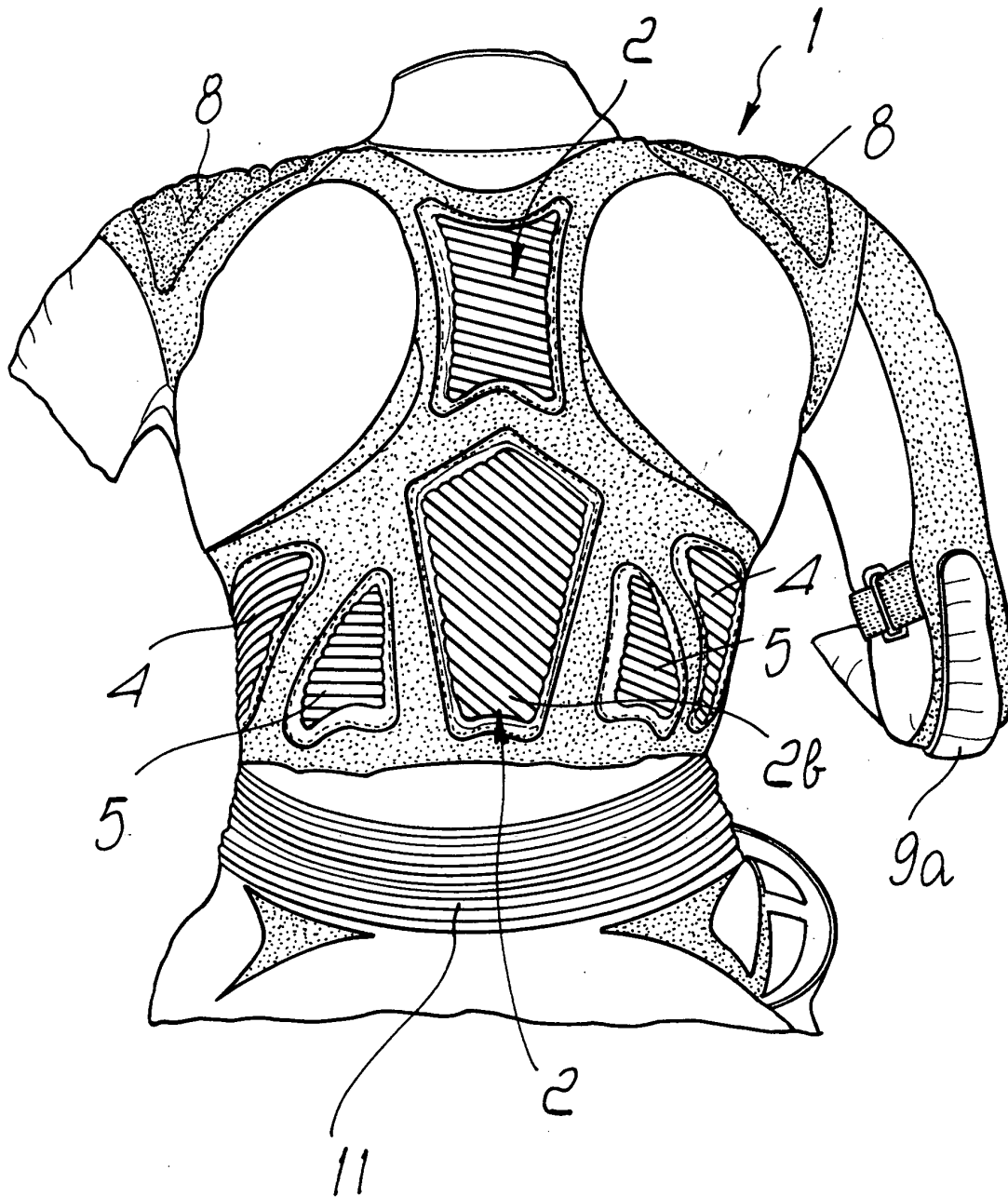


Fig. 2