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(54) **Clothing especially for patients and persons with reduced moveability**

(57) The invention relates to the clothing especially for patients and persons with reduced moveability, which is formed of two as to the shape identical parts (2,3,4,5).

These parts on their perimeter with exception of the opening for head and/possibly body and/or limbs are provided with means for repeated mutual connection and separation.

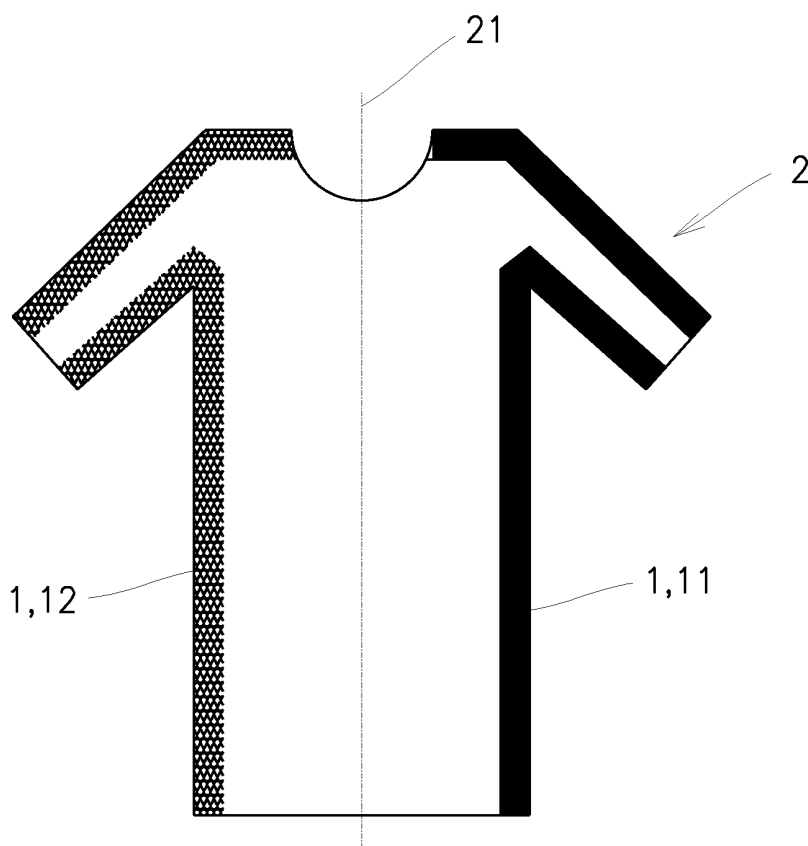


Fig. 1

Description**Technical field**

[0001] The invention relates to a clothing especially for patients and persons with reduced moveability.

Background art

[0002] Replacement of clothes is one of activities which troubles a person with reduced moveability. Especially for the laying patients changing the clothing is difficult both for them as well as for their nurses. There exists a number of various types especially of undoing systems, by means of which the parts of the clothing may be undone so that they may be easily removed or vice versa dressed.

[0003] For example a long night gown according to the DE 8483049 U1 along the entire length of the front side has a common closing by means of buttons, moreover on the outer side of sleeves from their ends up to the opening for head, and on both sides of the gown from where the sleeves are sewn-in up to the bottom border of the gown the night gown can be undone by means of zip fastener or a row of press buttons.

[0004] Similarly, the pullover according to the DE 3909718 A1 on the outer side of sleeves from their ends up to the opening for head is provided with openable closures, by means of which the clothing may be undone and undressed easier.

[0005] On the blouse according to the DE 202004003990 U1 there are provided the openable closures arranged along the inner side of sleeves, which always continue on the side of the blouse being adjacent to the inner side of the sleeve. Also this arrangement makes it easier to re-dress the patient.

[0006] The shirt or pyjama jacket with vertical button closing in the middle of the front side according to the DE 29517009 U1 on outer side of sleeves has the zip fasteners running always on the side of the forepart parallel with button closing up to the bottom border. Once the zip fasteners and the button closing are undone, the sleeves as well as the forepart may be deflected from the body, and the shirt as a whole may be removed from under the patient.

[0007] All such clothing according to the background art follows the goal of easy dressing and undressing. Difficult removing of the gown or trousers remains to be a common shortcoming, because the patient is laying passively on a part of already undone clothing. Frequently the clothing is damaged, especially the rear part of it, which devaluates the whole clothing. Moreover e.g. at patients in postoperative status the rear part is polluted with blood which in many cases cannot be removed.

[0008] The goal of the invention is to remove the shortcomings of the background art and to produce a clothing for patients, which next to an easy manipulation during dressing and undressing enables an easy replacement

of damaged part of the clothing.

Principle of the invention

[0009] The goal of the invention has been achieved through the clothing whose principle consists in that it is formed of two as to the shape identical parts which on their perimeter with exception of the opening for head and/or possibly body and/or limbs are provided with means for repeated mutual connection and separation.

[0010] Besides facilitating in dressing and undressing the clothing, the solution according to the invention enables to reduce the price of the product designed as two separate identical parts, and to simplify organisation in taking care of the hospital clothes especially for patients with reduced moveability.

[0011] It is advantageous if the means for repeated mutual connection and separation are formed of passive and active connecting means, while the active connecting means are with respect to the passive connecting means arranged mutually symmetrically with respect to the symmetry axis of the part.

[0012] Through this a complete interchangeability of parts of the clothing is secured.

[0013] It is also advantageous if the active connecting means are arranged on one side from symmetry axis of the part and the passive connecting means are arranged on opposite side. This enables to create a joint, which after dressing does not protrude out of the clothing's contour and does not restrain its wearer. At the same time, from the point of view of connection as well as a safe final joining the parts, it may be advantageous if the active connecting means and passive connecting means are arranged alternately.

[0014] Advantageously, the active connecting means are formed of buttons and the passive connecting means are formed of holes, or the active connecting means are formed of one part of zip fastener and the passive connecting means are formed of second part of zip fastener.

[0015] From the point of view of easy connection of the parts as well as comfortable wearing the clothing it is preferred if the active connecting means are formed of the hook part of the Velcro fastener and the passive connecting means of the loop part of the Velcro fastener. Taking into account the present wide utilisation of the Velcro fasteners, their price is relatively low.

[0016] When positioning the Velcro fasteners, the hook as well as the loop parts of the Velcro fastener are on respective sections of perimeter of the clothing arranged continuously, which is advantageous from the point of view of production at long borders being connected.

[0017] The hook section of the Velcro fastener and the loop section of the Velcro fastener may also be formed of elements of a certain length. In this case these elements are arranged either parallel with perimeter of the clothing or perpendicular to perimeter of the clothing. Selection of arrangement especially takes into account an

easy connection of the parts particularly during dressing the immovable persons.

[0018] A comfortable, non-protruding joint is created if sections of the Velcro fastener being positioned on opposite sides from symmetry axis of the clothing are attached on opposite surfaces of a part of the clothing.

[0019] The means for repeated mutual connection and separation may also be formed of identical connecting means, such as laces. Upon connection the identical laces then on one as well as the second part of the clothing are bound to create "the bow-knot".

[0020] In another advantageous embodiment the means for repeated mutual connection and separation are formed of holes, which serve for insertion of an active connecting means.

[0021] Then, the active connecting means is a lace or a flat roller with groove on its perimeter, so called bed tick double button.

[0022] Separate active connecting means are suitable because when they damaged during long-term usage, these may be replaced without any intervention into the part of clothing itself.

[0023] At the same time, the clothing for patients and persons with reduced moveability is advantageously formed of a shirt, blouse, trousers or dressing gown.

[0024] These are the most frequent parts of clothing for patients in hospitals as well as in home care.

Description of the drawing

[0025] Exemplary embodiments of solution according to the invention are schematically represented in the drawing where the Fig. 1 shows the view to the backside of shirt's part with longitudinal continuous joints arranged on the same surface of the part, the Fig. 2 the view in direction from above to a cross-section of long main part of the shirt with joints according to the Fig. 1, the Fig. 3 shows the view to the backside of front part of the shirt with longitudinal continuous joints arranged on opposite surfaces of the part, the Fig. 4 the view in direction from above to cross-section of a long main part of the shirt with joints according to the Fig. 3, the Fig. 5 the view to the backside of trousers' part with longitudinal discontinuous changing parts of the Velcro fastener, and the Fig. 6 shows a view to the frontside of front part of the blouse with short cross joints.

Examples of embodiment

[0026] Embodiments of clothing for patients according to the invention meet the requirement for an easy redressing of a person with reduced moveability. Each of the clothing incorporates a pair of identical, thus mutual interchangeable parts which are preferably connected as late as upon dressing by means of connecting means.

[0027] The connecting means may be both the active and passive connecting means.

[0028] The most advantageous connecting means for

these purposes seems to be the Velcro fastener 1, whose properties as well as price represent the present optimum. Therefore, in the following description mostly exemplary embodiments using first of all the Velcro fasteners will be described. In this case, the hook part of the Velcro fastener is the active connecting means and the loop part of the Velcro fastener is the passive connecting means.

[0029] The Fig. 1 represents the part 2 of a night gown. In this as well as in other represented embodiments the loop part 11 ("velvet", "loops") of the Velcro fastener 1 is indicated with straight line, while the hook part 12 of the Velcro fastener 1 with zigzag line. If the respective part of the Velcro fastener 1 is positioned on a visible surface of clothing's part, it is marked in a thick line, on the reverse (non visible) side of clothing's part in a thin line. In this embodiment the loop part 11 as well as the hook part 12 of the Velcro fastener 1 being continuous always along a whole length of the respective section of perimeter of the part 2 and both parts 11, 12 are fastened to the same, here visible, surface of the part 2 of the night gown.

[0030] The Fig. 2 represents an exemplary embodiment of connection of the Velcro fasteners 1 in cross-section of a long part of the gown formed of two identical parts 2 from the Fig. 1 when looking from above. In a similar manner also the sleeves and shoulders of the gown from the Fig. 1, 2 are connected. The advantage in this arrangement is an easier production through connection of both parts 11, 12 of the Velcro fastener 1 to the common surface of the part 2 of clothing. The disadvantage may be the protruding perimeter border which may restrain the user of the clothing, possibly during usage an unintentional opening of the Velcro fastener 1 may occur.

[0031] The Fig. 3 represents the part 3 of the same night gown, at which the loop part 11 and the hook part 12 of the Velcro fastener 1 is fastened on an opposite surface of the part 3 of the gown. In this embodiment from two identical parts 3 the clothing is created by joining according to the Fig. 4, while the borders do not protrude out of the surface of the gown in direction outwards. A comfortable wearing of such clothing is to an advantage.

[0032] In an analogical manner according to the Fig. 1 to 4 also trousers, pullover, night gown or similar parts of clothing for patients may be created.

[0033] The Fig. 5 represents a discontinuous joint of the Velcro fastener 1 using example of the part 4 of trousers. Longitudinal joints on perimeter of the part 4 are formed of short loop and hook parts 13, 14 of the Velcro fasteners 1, which are in a mirror manner changing according to the axis 41 of symmetry of the part 4 of the clothing. The parts 13, 14 of the Velcro fasteners 1 are similarly like in the Fig. 1 attached on the common side of the part 4 of the clothing. Joining of both identical parts 4 is performed in analogic manner like at embodiment according to the Fig. 1 and 2.

[0034] The Fig. 6 represents the part 5 of a blouse. The short connecting means formed of cross strips of

loop parts **15** and hook parts **16** of the Velcro fastener **1** are used here. This may be advantageous from the point of view of accessibility to the points of connection of the Velcro fasteners **1**, of strength of the joint, etc. Here, the loop parts **15** are connected by their entire backside surface with the part of the clothing in vicinity of its border, while the hook parts **16** by a section of their backside surface are firmly connected with the part of the clothing e.g. so that their section overhangs over perimeter of the part and the whole frontside or its section serves for connection with the frontside of the loop parts **15** of identical second part **5** of the blouse. Similarly, also the not represented dressing gown may be created, at which moreover the front part would be vertically split in a manner common for dressing gowns.

[0035] Instead of the Velcro fastener for realisation of the clothing according to the invention also other, not represented connecting means may be used, whose arrangement on parts of the clothing is analogical to the arrangement described on example of the Velcro fastener.

[0036] Especially for long joints the classic zippers (zip fasteners) with two toothed stripes and a puller may be used, while one toothed stripe is passive connecting means, and the second toothed stripe with puller is active connecting means.

[0037] Much more pleasant connecting means for wearing are the buttons along a perimeter of one part as active connecting means and button holes along perimeter of the second part as the passive connecting means. Instead of buttons, from laces created loops may be sewn on one perimeter of one part of clothing. After then always one loop is run through the hole in the second part of clothing and the end of loop is brought to the following hole, another loop is run through the hole and consequently through the previous loop and is brought to the following hole, etc. Similar connection is known for example at closures of small camping tents.

[0038] In analogic manner also two-part press-buttons, so called snap fasteners, may be used.

[0039] Connecting means on all connected sections of both parts of the clothing may also be unified. For example along all sections of both parts of the clothing being connected the holes forming the passive connecting means are performed, while separate laces as active connecting means serve for connection, these laces are always run through a pair of mutually adjacent holes and are bound to create "the bow-knot". Instead of laces there may also be used so called bed tick double buttons, while by means of such one button in principle formed of a flat roller with groove on its perimeter a pair of mutually adjacent holes is joined. Or on perimeters of both parts of the clothing being connected there are sewn in the laces which upon connecting are bound to create "the bow-knot".

[0040] The clothing for patients according to the invention facilitates dressing and undressing the patient, because e.g. during dressing it is more simple to position

under the patient only separate rear part of the clothing, it can be easily smoothened and prepared for connection with the front part. This one is simply applied from above on body of the patient and is fastened through mutual connection of the parts **11**, **12**, **13**, **14**, **15**, **16** of connecting means. Nevertheless the main advantage is identity of both parts of the pair, of which e.g. the shirt is composed, this both from the point of view of manipulation during re-dressing and from the point of view of replacement of damaged parts of the clothing. This is reflected favourably especially in large hospital complexes, where the costs for clothing for patients represent quite significant expenses.

[0041] Manner of connection and their mutual arrangement described on exemplary embodiments may be combined within the scope of protection of patent claims. Simultaneously, also other sorts and types of clothing may be performed analogical in a mentioned manner.

List of referential markings

[0042]

- | | |
|----|--------------------------------|
| 1 | Velcro fastener |
| 11 | loop part (of Velcro fastener) |
| 12 | hook part (of Velcro fastener) |
| 13 | loop part (of Velcro fastener) |
| 14 | hook part (of Velcro fastener) |
| 15 | loop part (of Velcro fastener) |
| 16 | hook part (of Velcro fastener) |
| 2 | part of a night gown |
| 21 | axis of symmetry |
| 3 | part of a night gown |
| 31 | axis of symmetry |
| 4 | part of trousers |
| 41 | axis of symmetry |
| 5 | part of a blouse |
| 51 | axis of symmetry |

Claims

1. Clothing especially for patients and persons with reduced moveability, **characterised in that** it is formed of two as to the shape identical parts (2, 3, 4, 5), which on their perimeter with exception of the opening for head and/or possibly body and/or limbs are provided with means for repeated mutual connection and separation.
2. Clothing according to the claim 1, **characterised in that**, the means for repeated mutual connection and separation are formed of passive and active connecting means, while the active connecting means are with respect to the passive connecting means arranged mutually symmetrically with respect to the axis of symmetry (21, 31, 41, 51) of the part (2, 3, 4, 5).

3. Clothing according to the claim 2, **characterised in that**, the active connecting means are arranged on one side from axis of symmetry (21, 31, 41, 51) of the part (2, 3, 4, 5) and the passive connecting means are arranged on opposite side. 5
4. Clothing according to the claim 2, **characterised in that**, the active connecting means and passive connecting means are arranged alternately. 10
5. Clothing according to any of the claims 2 to 4, **characterised in that**, the active connecting means are formed of buttons and the passive connecting means are formed of holes. 15
6. Clothing according to any of the claims 2 to 4, **characterised in that**, the active connecting means are formed of one part of zip fastener and the passive connecting means are formed of second part of zip fastener. 20
7. Clothing according to any of the claims 2 to 4, **characterised in that**, the active connecting means are formed of the hook part of the Velcro fastener and the passive connecting means are formed of the loop part of the Velcro fastener. 25
8. Clothing according to the claim 7, **characterised in that**, the hook as well as the loop parts of the Velcro fastener are on respective sections of perimeter of the clothing arranged continuously. 30
9. Clothing according to the claim 7, **characterised in that**, the hook section of the Velcro fastener and the loop section of the Velcro fastener are formed of elements of a certain length. 35
10. Clothing according to the claim 9, **characterised in that**, the elements of the hook and loop part of the Velcro fastener are arranged parallel with perimeter of the clothing. 40
11. Clothing according to the claim 9, **characterised in that** the elements of the hook and loop part of the Velcro fastener are arranged perpendicular to perimeter of the clothing. 45
12. Clothing according to any of the claims 7 to 11, **characterised in that**, the sections of the Velcro fastener being positioned on opposite sides from symmetry axis of the clothing are attached on opposite surfaces of a part of the clothing. 50
13. Clothing according to the claim 1, **characterised in that**, the means for repeated mutual connection and separation are formed of identical connecting means. 55
14. Clothing according to the claim 13, **characterised in that**, the connecting means are formed of laces.
15. Clothing according to the claim 13, **characterised in that**, the means for repeated mutual connection and separation are formed of holes, which serve for insertion of active connecting means, which is formed by a lace or a flat roller with groove on its perimeter.

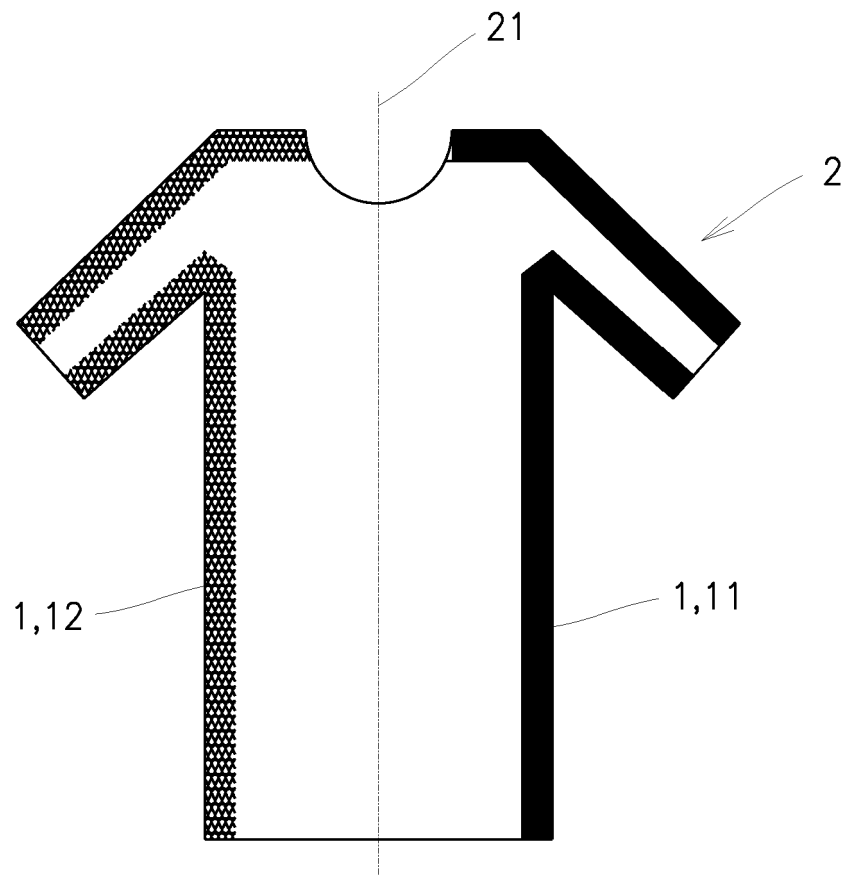


Fig. 1

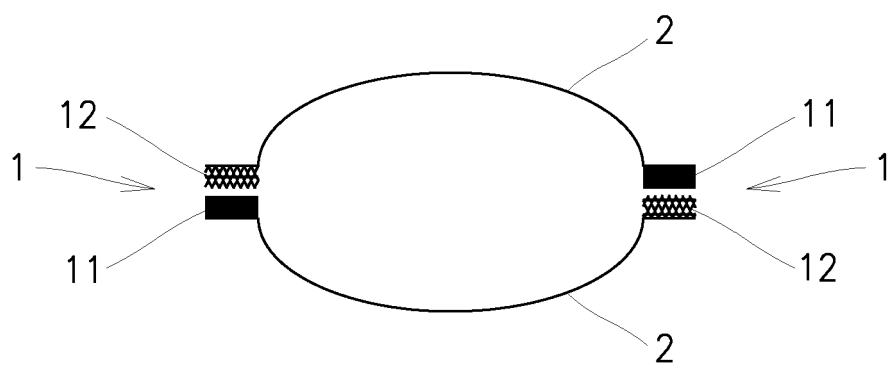


Fig. 2

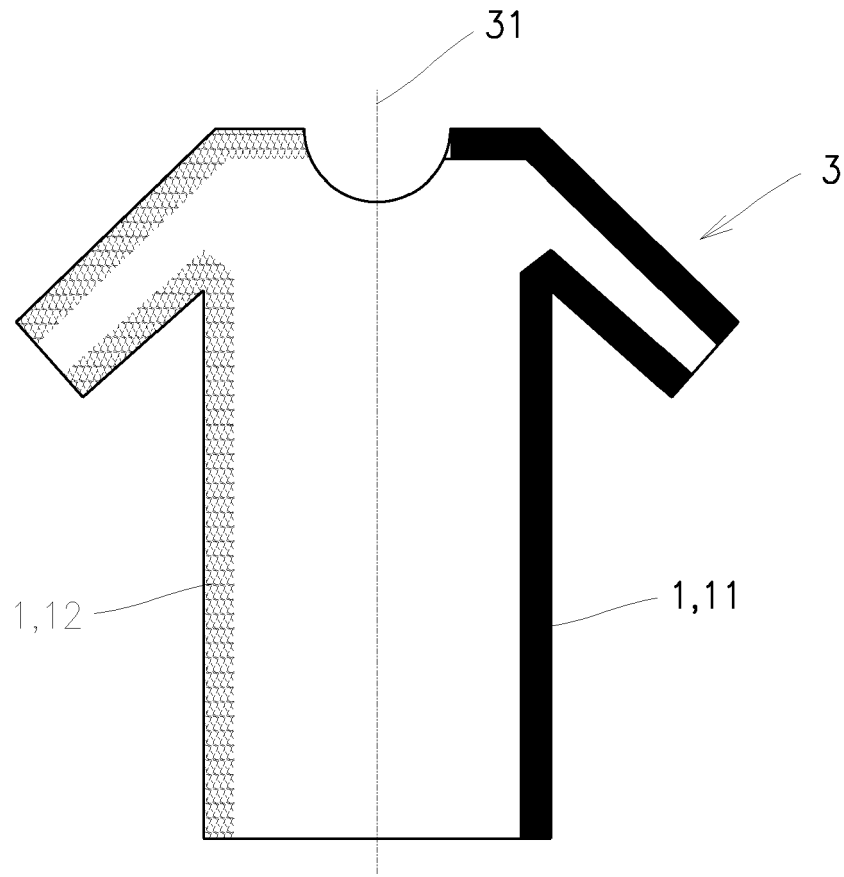


Fig. 3

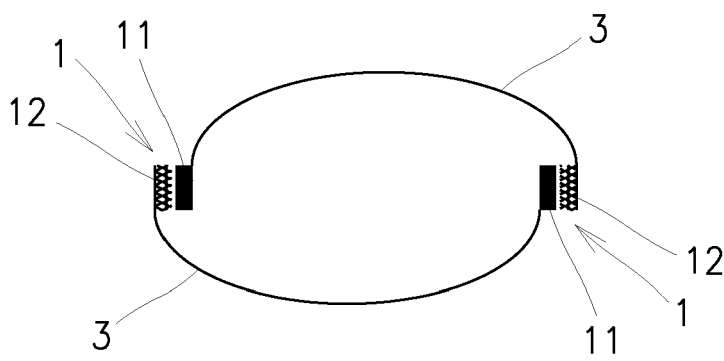


Fig. 4

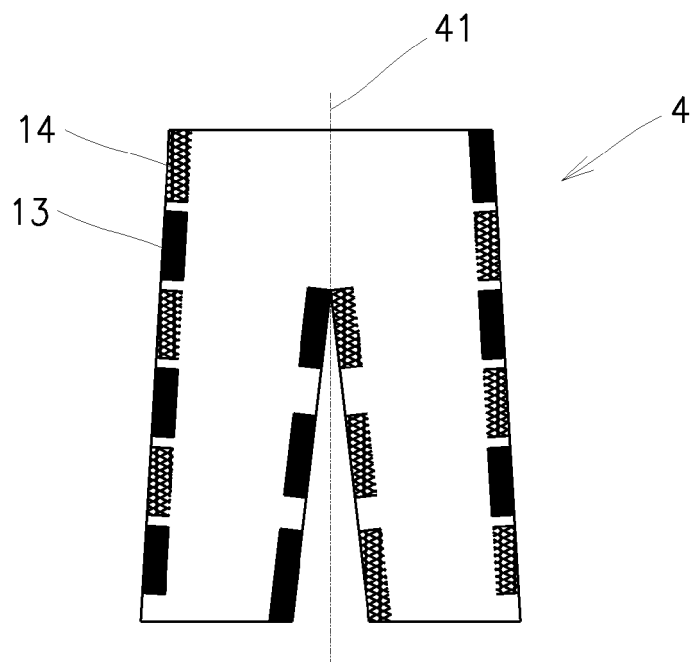


Fig. 5

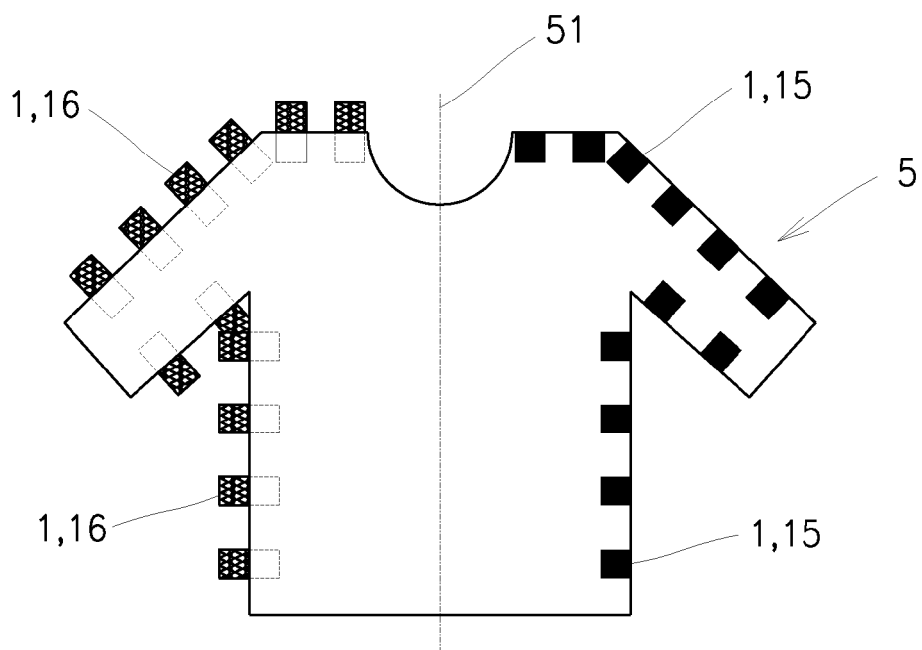


Fig. 6

REFERENCES CITED IN THE DESCRIPTION

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