



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
17.04.2019 Bulletin 2019/16

(51) Int Cl.:
A62B 17/00 (2006.01) A41D 31/00 (2019.01)

(21) Application number: **17196146.9**

(22) Date of filing: **12.10.2017**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME
Designated Validation States:
MA MD

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(54) **FIREFIGHTER PROTECTIVE GARMENT HAVING A DETACHABLE WRISTLETS**

(57) The present invention relates to a protective suit being CE approved according to European Norm Standards EN 469 or according to US National Fire Protection Association Standard NFPA 1971 to be worn by a wearer having a torso, during firefighting or similar operations, comprising one or more opening(s), an outer layer which is at least made of a flame-resistant material, an inner layer having a proximal part being closest to the torso and a distal part being closest to the opening, wherein the distal part has a first part and a second part, the first part comprising a close-fitting member, the first part and the close-fitting member comprising a moisture barrier, and the first part is detachable from the second part by means of a connection unit. The present invention also relates to a protective suit system to be worn by a wearer during firefighting or similar operations.

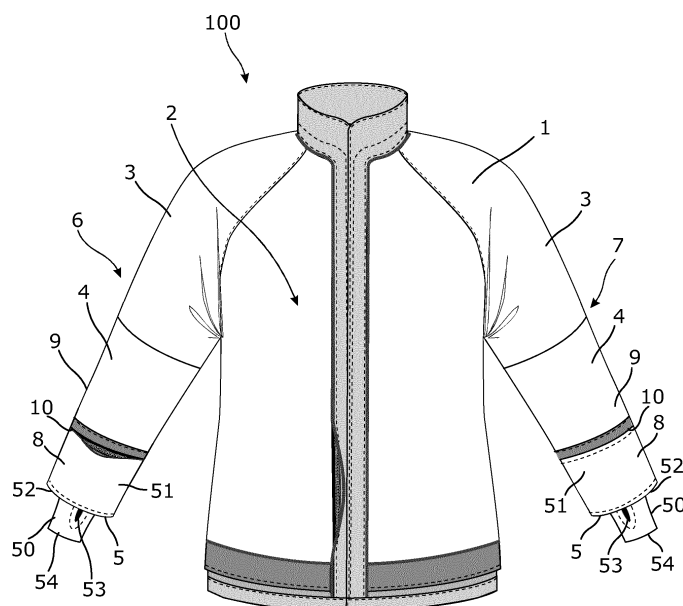


Fig. 1

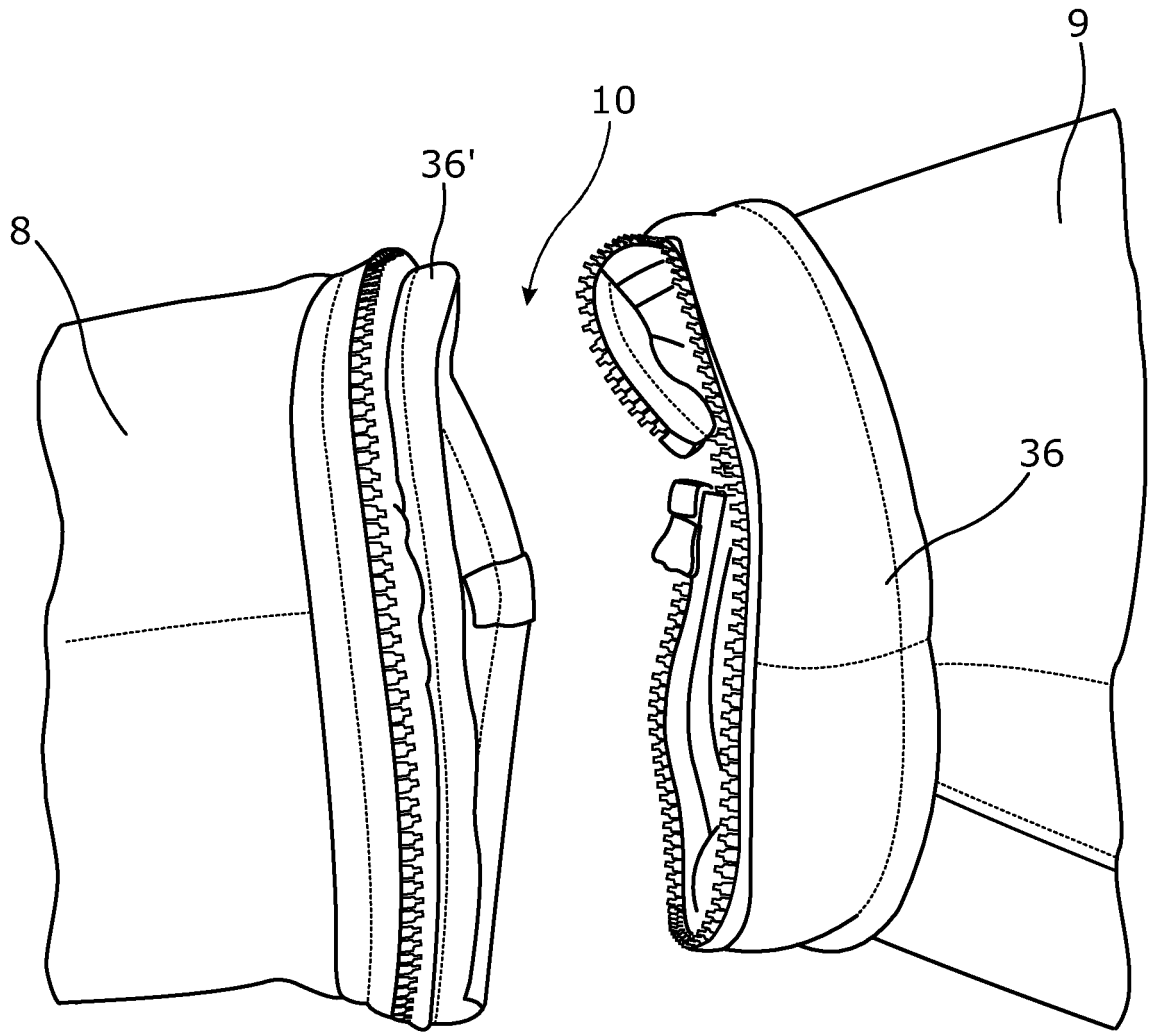


Fig. 9

Description

[0001] The present invention relates to a protective suit being CE approved according to European Norm Standards EN 469 or according to US National Fire Protection Association Standard NFPA 1971 to be worn by a wearer having a torso, during firefighting or similar operations. The present invention also relates to a protective suit system to be worn by a wearer during firefighting or similar operations.

[0002] Studies and research from the International Agency for Research on Cancer (IARC) indicate that the mortality among firefighters is higher than among the average population. The studies furthermore show that firefighters are more frequently struck by different types of cancer and the risk increases depending on years in duty of the firefighters.

[0003] Firefighters are obviously exposed to many different hazards, such as smoke, soot, flames, chemicals etc. during their work, and they and their protective suits will consequently be exposed to these hazards.

[0004] A protective suit is known from WO 2016/023897 A1, which in many ways overcomes the above-mentioned hazards. However, there is a need for further improving the protective suit in order to minimise the particle contamination risk for the firefighters.

[0005] It is an object of the present invention to wholly or partly overcome the above disadvantages and drawbacks of the prior art. More specifically, it is an object to provide an improved protective suit facilitating that a wearer is less exposed to contamination over a period of time.

[0006] The above objects, together with numerous other objects, advantages and features, which will become evident from the below description, are accomplished by a solution in accordance with the present invention by a protective suit being CE approved according to European Norm Standards EN 469 or according to US National Fire Protection Association Standard NFPA 1971 to be worn by a wearer having a torso, during firefighting or similar operations, comprising:

- one or more opening(s),
- an outer layer which is at least made of a flame-resistant material, and
- an inner layer having a proximal part being closest to the torso and a distal part being closest to the opening,

wherein the distal part has a first part and a second part, the first part comprising a close-fitting member, the first part and the close-fitting member comprising a moisture barrier, and the first part is detachable from the second part by means of a connection unit.

[0007] Hereby it is obtained that the wearer of the protective suit according to the invention is less exposed to skin contamination than when the prior art solutions are applied. The combination of the first part and the close-

fitting member has shown that the openings of the protective suit where particles etc. normally enter during firefighting operations are substantially closed, so that the potential entry of particles etc. is minimised to a level not seen before in protective suits.

[0008] The first part and the second part may have an overall tubular configuration, the connection unit being configured to attach the first part and the second part to each other substantially along an entire circumference of the first part and the second part.

[0009] Moreover, the connection unit may be zippers, press buttons, hook and loop or the like.

[0010] Also, a protection slip may be arranged for protecting the connection unit when the first part and the second part are attached.

[0011] Further, the protection slip may be connected with the second part and may be configured to be positioned opposite the connection unit.

[0012] In addition, the first part may have an outer face configured to face the outer layer and an inner face configured to face the wearer, the close-fitting member being connected with the inner face.

[0013] Furthermore, the close-fitting member may be connected with the inner face a distance from the opening.

[0014] A connection between the first part and the close-fitting member may be sealed so as to minimise any entry of particles and/or moisture through the connection.

[0015] Moreover, the close-fitting member may project from the first part past the opening.

[0016] Also, the close-fitting member may be made by a knitted or woven fabric.

[0017] Said close-fitting member may be partly or fully made of a flexible material.

[0018] Further, the close-fitting member may comprise a tightening member configured to tighten the close-fitting member to fit tightly around the wearer.

[0019] In addition, the close-fitting member may have a first member end and a second member end, the first member end being connected with the first part, the close-fitting member narrowing from the first member end towards the second member end.

[0020] The protective suit may comprise a jacket having a first sleeve and a second sleeve, each sleeve having an opening at a wrist of the wearer.

[0021] Moreover, the close-fitting member may be configured to fit around the wrist of the wearer.

[0022] Furthermore, the close-fitting member may have an aperture wherein a thumb of a wearer may be inserted so as to ensure that the close-fitting member is maintained in position.

[0023] In addition, the protective suit may comprise a pair of trousers having a first leg and a second leg, each leg having an opening at an ankle of the wearer.

[0024] Also, the close-fitting member may be configured to fit around the ankle of the wearer.

[0025] Further, the inner layer may comprise several

layers having different properties.

[0026] Moreover, the outer layer and the inner layer may be made of a fabric making the layers water-proof.

[0027] Further, the outer layer and the inner layer may be breathable.

[0028] The present invention also relates to a protective suit system to be worn by a wearer during firefighting or similar operations, comprising the protective suit according to the present invention, and the protective suit may comprise a plurality of first parts.

[0029] The invention and its many advantages will be described in more detail below with reference to the accompanying schematic drawings, which for the purpose of illustration show some non-limiting embodiments and in which

Fig. 1 shows an embodiment of an inner layer of a jacket of the protective suit according to the invention,

Figs. 2-3 show an embodiment of the jacket of the protective suit,

Figs. 4-5 show an embodiment of an inner layer of a pair of trousers of the protective suit according to the invention,

Figs. 6-7 show an embodiment of the pair of trousers of the protective suit,

Figs. 8-11 show the first part of the sleeve being attached to the second part of the sleeve,

Figs. 12-13 show an embodiment of the first part of a sleeve with the close-fitting member,

Figs. 14-15 show the outer layer being secured to the inner layer at an opening in the sleeve of the jacket,

Figs. 16-19 show the first part of the leg being attached to the second part of the leg,

Figs. 20-21 show another embodiment of the first part of a leg with the close-fitting member,

Figs. 22-24 show the outer layer being secured to the inner layer at an opening in the leg of the pair of trousers, and

Figs. 25-26 show photos of test results.

[0030] All the figures are highly schematic and not necessarily to scale, and they show only those parts which are necessary in order to elucidate the invention, other parts being omitted or merely suggested.

[0031] Fig. 1 shows an embodiment of an inner layer 1 of a jacket of a protective suit 100 according to the

invention.

[0032] The protective suit 100 is CE approved according to European Norm Standards EN 469 or according to US National Fire Protection Association Standard NF-PA 1971. This is *inter alia* obtained by incorporating different layers in the protective suit, each having different properties so that when worn together, all layers in the protective suit provide the intended overall protection for fulfilling the requirements outlined in the above mentioned European and US standards.

[0033] The entire protective suit 100 is configured to be worn by a wearer having a torso, during firefighting or similar operations. The wearer is not shown in Fig. 1 and thereby not the torso either. However, the area where the torso would be is numbered with reference number 2. The protective suit 100 comprises one or more opening(s) 5, an outer layer which is at least made of a flame-resistant material, and an inner layer 1 having a proximal part 3 being closest to the torso 2 and a distal part 4 being closest to the opening 5. In Fig. 1, the inner layer 1 is part of a jacket having a first sleeve 6 and a second sleeve 7, each sleeve 6, 7 having an opening 5 at a wrist of the wearer.

[0034] According to the invention, the distal part 4 has a first part 8 and a second part 9, the first part 8 comprising a close-fitting member 50. The first part 8 and the close-fitting member 50 both comprises a moisture barrier. By the incorporation of a moisture barrier in both the first part 8 and the close-fitting member 50, it is obtained that the wearer of the protective suit according to the invention is less exposed to skin contamination than when the prior art solutions are applied. In addition, the first part 8 being detachable from the second part 9 by means of a connection unit 10. Hereby it is obtained that the most exposed contamination areas of the protective suit, that is the areas where there are openings, such as at the wrists or at the ankles of the wearer, may easily be detached from the rest of the inner layer, so that the exposure to the harmful particles and soot of the wearer is minimised to a higher degree than what is the case for the previous, known protective suits. Since the first part is the most contaminated area of the inner layer, the possibility of detaching the first part 8 from the second part 9 allows the contaminated part to be removed from the wearer in an expedient manner.

[0035] The first part 8 has an outer face 51 configured to face the outer layer and an inner face 52 configured to face the wearer, the close-fitting member 50 being connected with the inner face 52. In the present embodiment, the close-fitting member 50 is configured to fit around the wrist of the wearer.

[0036] The close-fitting member 50 has an aperture 53 wherein a thumb of a wearer may be inserted so as to ensure that the close-fitting member 50 is maintained in position during the firefighting operation.

[0037] Furthermore, the close-fitting member 50 may project from the first part 8 past the opening 5 so that a larger area in connection with the openings may be less

exposed to particle contamination.

[0038] Moreover, the close-fitting member 50 may be connected with the inner face a distance from the opening, so that a part of the first part protects the connection between the close-fitting member 50 and the first part 8.

[0039] A connection between the first part 8 and the close-fitting member 50 may be sealed so as to minimise any entry of particles and/or moisture through the connection.

[0040] The close-fitting member 50 may be made by a knitted or woven fabric. In addition, the close-fitting member 50 may be partly or fully made of a flexible material. Hereby it is obtained that the close-fitting member conforms tightly to the wearer, and thereby the potential entry of particles onto the wearer's skin is minimised. The flexible property of the close-fitting member may be obtained by knitting or woven techniques, or the elastic properties of the material, or a combination thereof.

[0041] In addition, the close-fitting member may comprise a tightening member configured to tighten the close-fitting member to fit tightly around the wearer.

[0042] As shown in Fig. 1, the close-fitting member 50 has a first member end (not shown) and a second member end 54, the first member end being connected with the first part 8, the close-fitting member 50 narrowing from the first member end towards the second member end.

[0043] Fig. 2 shows an embodiment of a jacket 20 of the protective suit 100. In Fig. 2, the jacket 20 is shown from a front side. As mentioned above, the protective suit 100 has an outer layer 21 which is at least made of a flame-resistant material, and an inner layer (shown in Fig. 1). The inner layer and the outer layer may have different properties built-in, for instance a moisture barrier, heat-resistance and/or breathability. Advantageously, the inner layer comprises the moisture barrier. Both the inner layer and the outer layer may have different design configurations, i.e. colours, accessories, reflective trims etc. designed to the specific end user. Hence, the designs shown in the figures are merely illustrative for an embodiment of the present invention.

[0044] The jacket 20 furthermore comprises a reflective trim 22 arranged around the jacket, both on the torso 2 and the sleeves 6, 7. Moreover, the jacket 20 comprises several pockets 23 accessible from the outside. These pockets 23 may be reinforced with Kevlar twill in their lower parts. The jacket 20 may obviously comprise additional features, such as detachable snap hook straps, brass, Molle devices and reinforced elbow areas 24, as seen in Fig. 4 in which the jacket 20 is shown from the back.

[0045] The jacket 20 also comprises a long front flap 25 arranged to overlap and protect the closing means of the jacket 20.

[0046] In addition, the close-fitting member 50 may also project from the opening and therefore also from the outer layer 21 as seen in Figs. 2-3. The inner layer and the outer layer 21 are connected to each other at the

openings 5 by connection slips 38, which will be described further below.

[0047] Furthermore, the outer layer 21 may be detachably connected with the inner layer 1 by means of connection means, the connection means being arranged accessible from the outside of the protective suit 100, so that the wearer can easily separate the outer layer 21 from the inner layer 1, when the outer layer 21 has been contaminated during firefighting, without having to take off the inner layer 1. In this regard, it is important that access to the connection means is provided without the wearer having to take off the protective suit 100, so that the outer layer 21 can be detached from the inner layer 1 while the wearer is still wearing the inner layer 1. Furthermore, the jacket 20 may comprise a collar 31.

[0048] The protective suit 100 may also comprise a detachable hood (not shown). The hood may be attached to the jacket by zippers, press buttons, hook and loop or the like. Furthermore, the hood may comprise an opening.

[0049] According to the inventive idea, the first part and the second part are preferably of an overall tubular configuration, the connection unit being configured to attach the first part and the second part to each other substantially along an entire circumference of the first part and the second part. For instance, when the first part and the second part are comprised in a sleeve of a jacket or a leg of a pair of trousers, the first part and second part have a tubular configuration for receiving either an arm or a leg, respectively, of the wearer.

[0050] In addition, the connection unit connecting the first part and the second part may be zippers, press buttons, hook and loop or the like.

[0051] As shown in Figs. 4-5, the protective suit 100 may comprise a pair of trousers 33 having a first leg 34 and a second leg 35, each leg 34, 35 having an opening 5 at an ankle of the wearer. In Fig. 4, the inner layer 1 of the protective suit 100 is shown. The inner layer 1 has a proximal part 3 being closest to the torso 2 and a distal part 4 being closest to the opening 5. In Fig. 4, the inner layer 1 of the pair of trousers 33 is shown in a front view and the inner layer 1 of the pair of trousers 33 is shown in a back view in Fig. 5.

[0052] The distal part 4 has a first part 8 and a second part 9. In the same manner as described above, the first part 8 comprises a close-fitting member 50. The first part 8 and the close-fitting member 50 both comprises a moisture barrier. By the incorporation of a moisture barrier in both the first part 8 and the close-fitting member 50, it is obtained that the wearer of the protective suit according to the invention is less exposed to skin contamination than when the prior art solutions are applied. The first part 8 is detachable from the second part 9 by means of a connection unit 10. Hereby it is obtained that the most exposed contamination areas of the protective suit, that is the areas where there are openings, such as at the wrists or at the ankles of the wearer, may easily be detached from the rest of the inner layer, so that the expo-

sure to the harmful particles and soot of the wearer is minimised to a higher degree than what is the case for the previous, known protective suits.

[0053] The close-fitting member 50 is configured to fit around the ankle of the wearer.

[0054] In Figs. 6-7, trousers 33 of the protective suit 100 are shown, the trousers 33 being intended to be used in connection with the jacket 20 shown in Figs. 2-3. Fig. 6 shows the trousers 33 seen from the front, and Fig. 7 shows the trousers 33 seen from the back.

[0055] In the same manner as in connection with the jacket, the trousers 33 of the protective suit 100 has an outer layer 21 which is at least made of a flame-resistant material, and an inner layer (shown in Figs. 4-5). Furthermore, the outer layer 21 may be detachably connected with the inner layer 1.

[0056] Figs. 8-11 and 14-15 show a sequence of how to attach a first part 8 to a second part 9. In the present embodiment, the first part 8 and the second part 9 are part of a sleeve 6 of a jacket. In addition, the first part 8 comprises a close-fitting member 50.

[0057] In Fig. 8, the first part 8 is positioned correctly in relation to the second part of the distal part 4. Fig. 9 shows a larger view of the connection unit 10 which is configured to detachably connect the first part 8 to the second part 9. In the present embodiment, the connection unit 10 is a zipper 10. In addition, a protection slip 36, shown in Fig. 9, is arranged for protecting the connection unit 10 when the first part 8 and the second part 9 are attached. The protection slip 36 is, in the present embodiment, connected with the second part 9 and is configured to be positioned opposite the connection unit 10. In Fig. 9, the protection slip 36 is folded upwards against the proximal part for providing access to the zipper 10. In the same manner, the first part may comprise a protection slip 36' being arranged to protect the wearer against the zipper 10.

[0058] Fig. 10 shows how the wearer 37 zips the zipper 10, so that the first part 8 is being attached with the second part 9. When the zipper has been zipped around the entire circumference of the first part 8 and the second part 9, the protection slip 36 is folded back, so that it protects the zipper, which is shown in Fig. 11.

[0059] The inner layer is now ready to be connected with the outer layer 21. In Figs. 14-15, the inner layer is positioned inside the outer layer 21. The first part of the inner layer has, in this embodiment, two connection slips 38. Each connection slip 38 has a press button 39 which is configured to engage a similar press button 40 arranged on the outer layer 21, as shown in Fig. 15.

[0060] Figs. 12-13 show an embodiment of the first part 8 of a sleeve with the close-fitting member 50. In Fig. 12, the first part 8 has been partly cut up for showing the close-fitting member 50 provided within the first part 8. The close-fitting member 50 comprises, in this embodiment, an aperture 53 to receive the thumb of the wearer. In addition, the connection slip 38 is shown. In Fig. 13, the first part 8 is cut through so that the connection 61

between the first part 8 and the close-fitting member 50 is visible. In the present embodiment, the close-fitting member 50 extends in the entire length of the first part 8 and has been sewn to the first part. Hence, a closed cavity is provided between the inner face of the first part 8 and the close-fitting member 50, whereby it is ensured that particles, soot etc. will be stopped in the closed cavity and prevented from entering further up along the forearm of the wearer.

[0061] As seen in Figs. 12-13, the first part 8 may comprise several layers with different properties, one of these properties being a moisture barrier. The close-fitting member 50 also comprises a moisture barrier.

[0062] In similar manner, Figs. 16-19 and 22-24 show a sequence of how to attach a first part 8 to a second part 9. In this embodiment, the first part 8 and the second part 9 are part of a leg 34 of a pair of trousers.

[0063] In Fig. 16, the first part 8 is positioned correctly in relation to the second part 9 of the distal part 4. Fig. 17 shows a larger view of the connection unit 10 which is configured to detachably connect the first part 8 to the second part 9. Like the embodiment described above, the connection unit 10 is a zipper 10. In addition, a protection slip 36 is arranged for protecting the connection unit 10 when the first part 8 and the second part 9 are attached. The protection slip 36 is, in the present embodiment, connected with the second part 9 and is configured to be positioned opposite the connection unit 10. In Fig. 17, the protection slip 36 is folded upwards against the proximal part for providing access to the zipper 10. In the same manner as described above, the first part 8 may comprise a protection slip 36' being arranged to protect the wearer against the zipper 10.

[0064] Fig. 18 shows how the wearer 37 zips the zipper 10, so that the first part 8 is being attached with the second part 9. When the zipper has been zipped around the entire circumference of the first part 8 and the second part 9, the protection slip 36 is folded back, so that it protects the zipper, which is shown in Fig. 19.

[0065] The inner layer is now ready to be connected with the outer layer 21. In Figs. 22-24, the inner layer is positioned inside the outer layer 21. In this embodiment, the first part of the inner layer also has two connection slips 38. Each connection slip 38 has a press button 39 which is configured to engage a similar press button 40 arranged on the outer layer 21, as shown in Fig. 23. Furthermore, the connection slips 38 have the additional advantage that it is ensured that the layers of the protective suit are assembled correctly - since the connection slips function as a so-called "liner alert". In Fig. 24, the inner layer has been secured to the outer layer 21 by the press button of the inner layer having been pressed into engagement with the press button of the outer layer. Furthermore, the close-fitting member 50 of the first part projects from the opening 5 as seen in Figs. 22-24.

[0066] Figs. 20-21 show an embodiment of the first part 8 of a leg with the close-fitting member 50. In Fig. 20, the first part 8 has been partly cut up for showing the close-

fitting member 50 provided within the first part 8. In this embodiment, the close-fitting member 50 comprises a rib area 60 so that this section fits tightly to the wearer. In addition, the connection slip 38 is shown. In Fig. 21, the first part 8 is cut through so that the connection 61 between the first part 8 and the close-fitting member 50 is visible. In the present embodiment, the close-fitting member 50 extends in the entire length of the first part 8 and has been sewn to the first part. One part of the connecting unit 10 is shown. Also, the close-fitting member 50 is shown narrowing from the connection 61 towards the rib 60. Hence, a closed cavity is provided between the inner face of the first part 8 and the close-fitting member 50, whereby it is ensured that particles, soot etc. will be stopped in the closed cavity and prevented from entering further up along the leg of the wearer.

[0067] As seen in Figs. 20-21, the first part 8 may comprise several layers with different properties, one of these properties being a moisture barrier. The close-fitting member 50 also comprises a moisture barrier.

[0068] Two Aerosol Systems Tests have been performed. In the first test a wearer wearing a known protective suit was exposed to aerosols for a period of time. Subsequently a picture was taken of the wearer wherein the skin contamination of entered aerosols (the white areas shown in Fig. 21) is visible on the forearm of the wearer 37.

[0069] A second test was performed with the same wearer, now wearing a protective suit according to the present invention. After the wearer had been exposed to aerosols for the same period of time as in the first test, a picture of the wearer was taken. In Fig. 22, the picture is shown. From this picture it is easily deduced that the wearer has not been exposed to any substantial aerosol contamination on the forearm. Hence, by the incorporation of a moisture barrier in both the first part 8 and the close-fitting member 50, it is obtained that the wearer of the protective suit according to the invention is less exposed to skin contamination than when the prior art solutions are applied.

[0070] The protective suit may have different properties incorporated, for instance the outer layer and/or the inner layer may be water-proof, and they may be breathable.

[0071] The present invention also relates to a protective suit system to be worn by a wearer during firefighting or similar operations, comprising the protective suit, wherein the protective suit comprises a plurality of first parts. Hereby it is obtained that the first part of the inner layer may easily be removed when contaminated and exchanged by a new uncontaminated first part. The wearer is then less exposed to the harmful contamination, and the first parts being the most contaminated part may in an easy manner be cleaned and washed more frequently.

[0072] The protective suit system may comprise one or more storage bag(s) for storing the first parts when removed from the second parts and/or the outer layer when removed from the inner layer. Hereby it is obtained

that the wearer and his/her surroundings are not contaminated by the contaminated first part and/or outer layer as in the known solutions.

[0073] The invention also relates to a method for handling a protective suit after a wearer has worn it during firefighting or other operations. The method comprises:

- providing access to the connection unit,
- detaching the first part from the second part by opening the connection unit, and
- removing the first part from the second part.

[0074] Hereinafter the first part may be placed in a storage bag, so that the part will not contaminate the wearer or the surrounding environment.

[0075] The method further comprises:

- positioning a new uncontaminated first part in relation to the second part, and
- attaching the first part to the second part by means of the connection unit.

[0076] Although the invention has been described in the above in connection with preferred embodiments of the invention, it will be evident for a person skilled in the art that several modifications are conceivable without departing from the invention as defined by the following claims.

Claims

1. A protective suit (100) being CE approved according to European Norm Standards EN 469 or according to US National Fire Protection Association Standard NFPA 1971 to be worn by a wearer having a torso (2), during firefighting or similar operations, comprising:

- one or more opening(s) (5),
- an outer layer which (21) is at least made of a flame-resistant material, and
- an inner layer (1) having a proximal part (3) being closest to the torso and a distal part (4) being closest to the opening,

wherein the distal part has a first part (8) and a second part (9), the first part (8) comprising a close-fitting member (50), the first part (8) and the close-fitting member (50) comprising a moisture barrier, and the first part is detachable from the second part by means of a connection unit (10).

2. A protective suit according to claim 1, wherein the first part and the second part have an overall tubular configuration, the connection unit being configured to attach the first part and the second part to each

other substantially along an entire circumference of the first part and the second part.

3. A protective suit according to claim 1 or 2, wherein the connection unit is zippers, press buttons, hook and loop or the like. 5
4. A protective suit according to any of the preceding claims, wherein a protection slip (36) is arranged for protecting the connection unit when the first part and the second part are attached. 10
5. A protective suit according to claim 4, wherein the protection slip is connected with the second part and is configured to be positioned opposite the connection unit. 15
6. A protective suit according to any of the preceding claims, wherein the first part (8) has an outer face configured to face the outer layer and an inner face configured to face the wearer, the close-fitting member (50) being connected with the inner face. 20
7. A protective suit according to claim 6, wherein the close-fitting member (50) is connected with the inner face a distance from the opening. 25
8. A protective suit according to any of the preceding claims, wherein a connection between the first part and the close-fitting member is sealed so as to minimise any entry of particles and/or moisture through the connection. 30
9. A protective suit according to any of the preceding claims, wherein the close-fitting member projects from the first part past the opening. 35
10. A protective suit according to any of the preceding claims, wherein the close-fitting member is made by a knitted or woven fabric. 40
11. A protective suit according to any of the preceding claims, wherein the close-fitting member comprises a tightening member configured to tighten the close-fitting member to fit tightly around the wearer. 45
12. A protective suit according to any of the preceding claims, wherein the close-fitting member has a first member end and a second member end, the first member end being connected with the first part, the close-fitting member narrowing from the first member end towards the second member end. 50
13. A protective suit according to any of the preceding claims, wherein the protective suit comprises a jacket (20) having a first sleeve (6) and a second sleeve (7), each sleeve having an opening (5) at a wrist of the wearer. 55

14. A protective suit according to any of the preceding claims, wherein the protective suit comprises a pair of trousers (33) having a first leg (34) and a second leg (35), each leg having an opening at an ankle of the wearer.

15. A protective suit system to be worn by a wearer during firefighting or similar operations, comprising the protective suit according to any of the preceding claims, wherein the protective suit comprises a plurality of first parts.

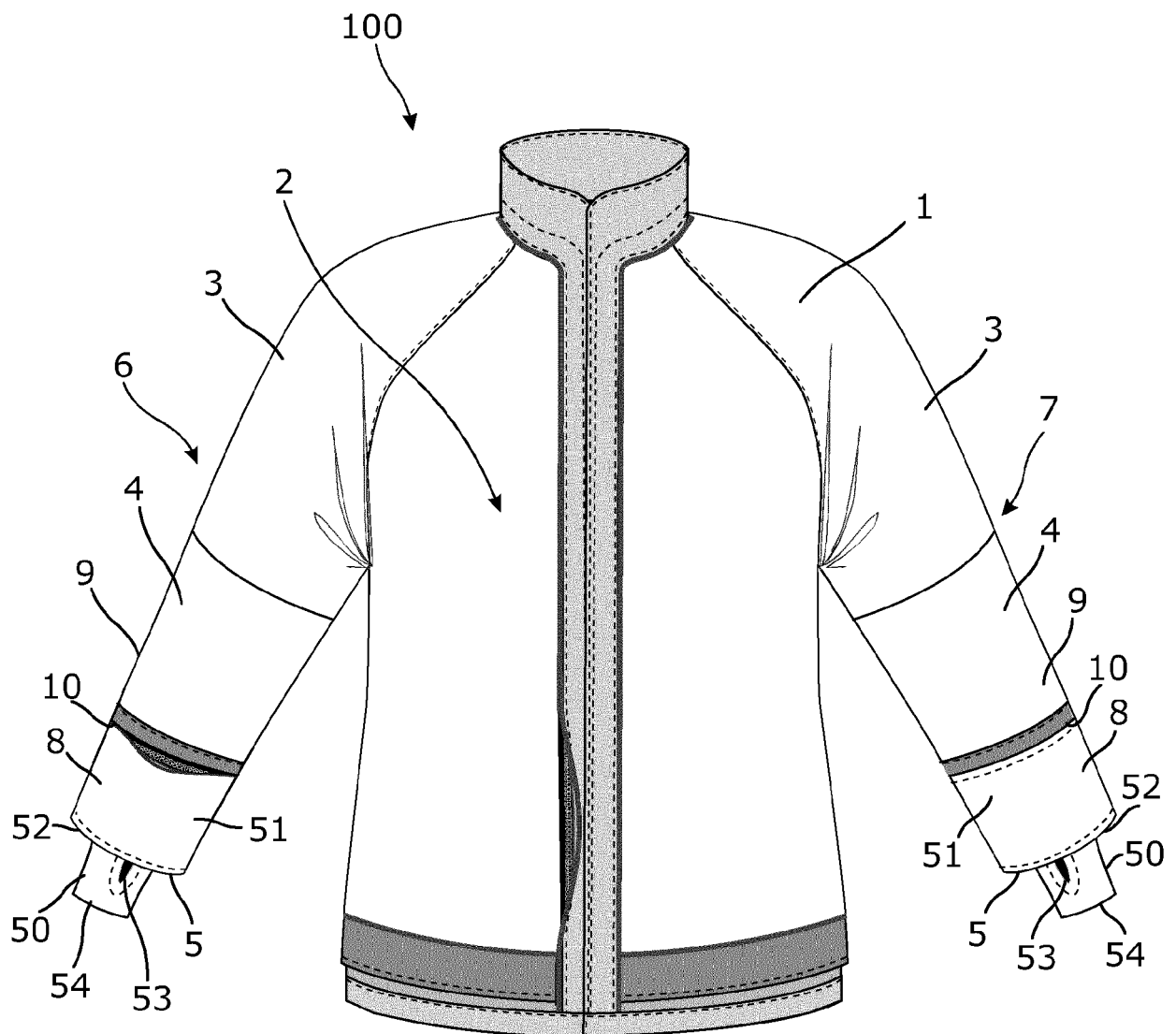


Fig. 1

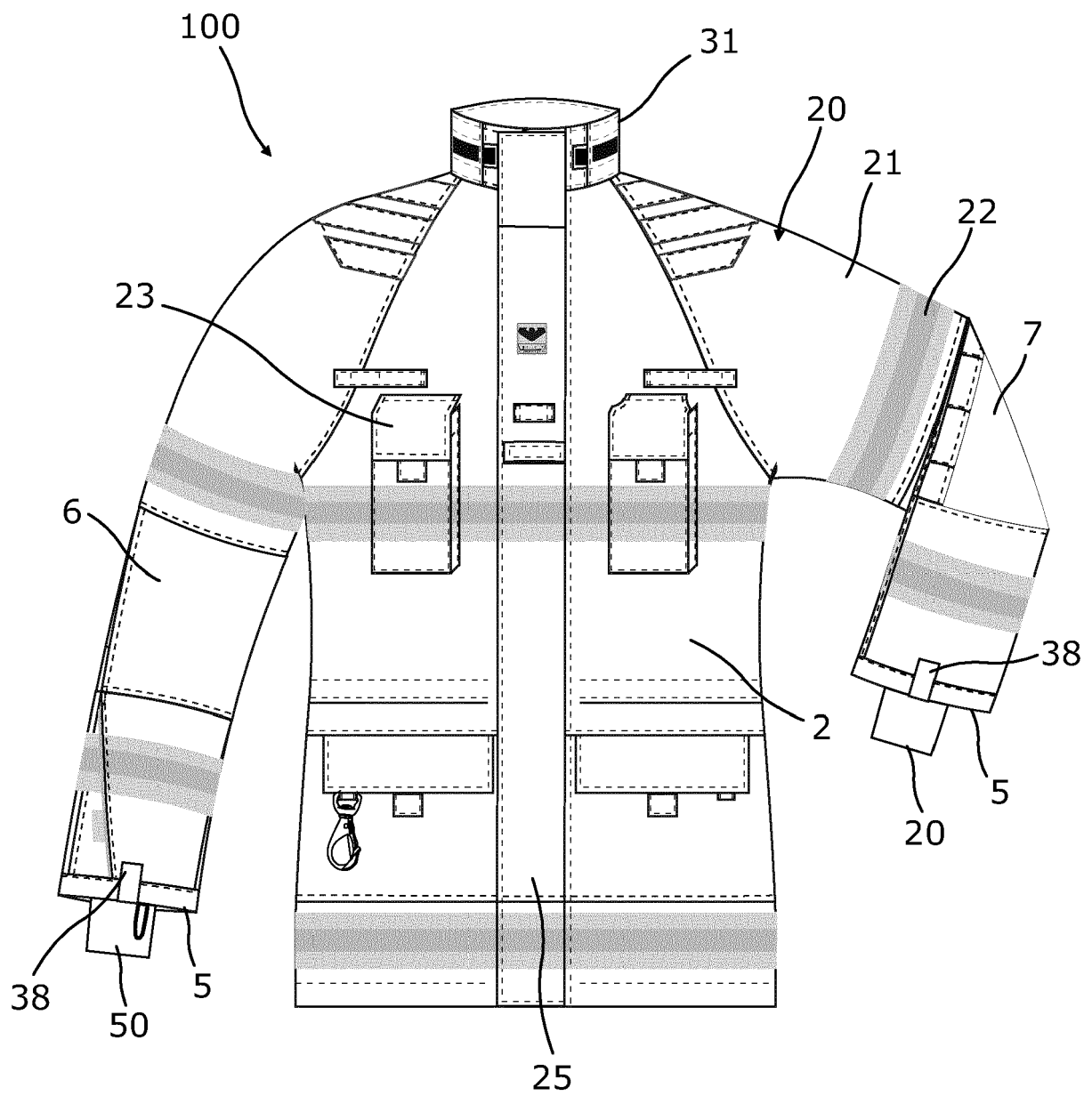


Fig. 2

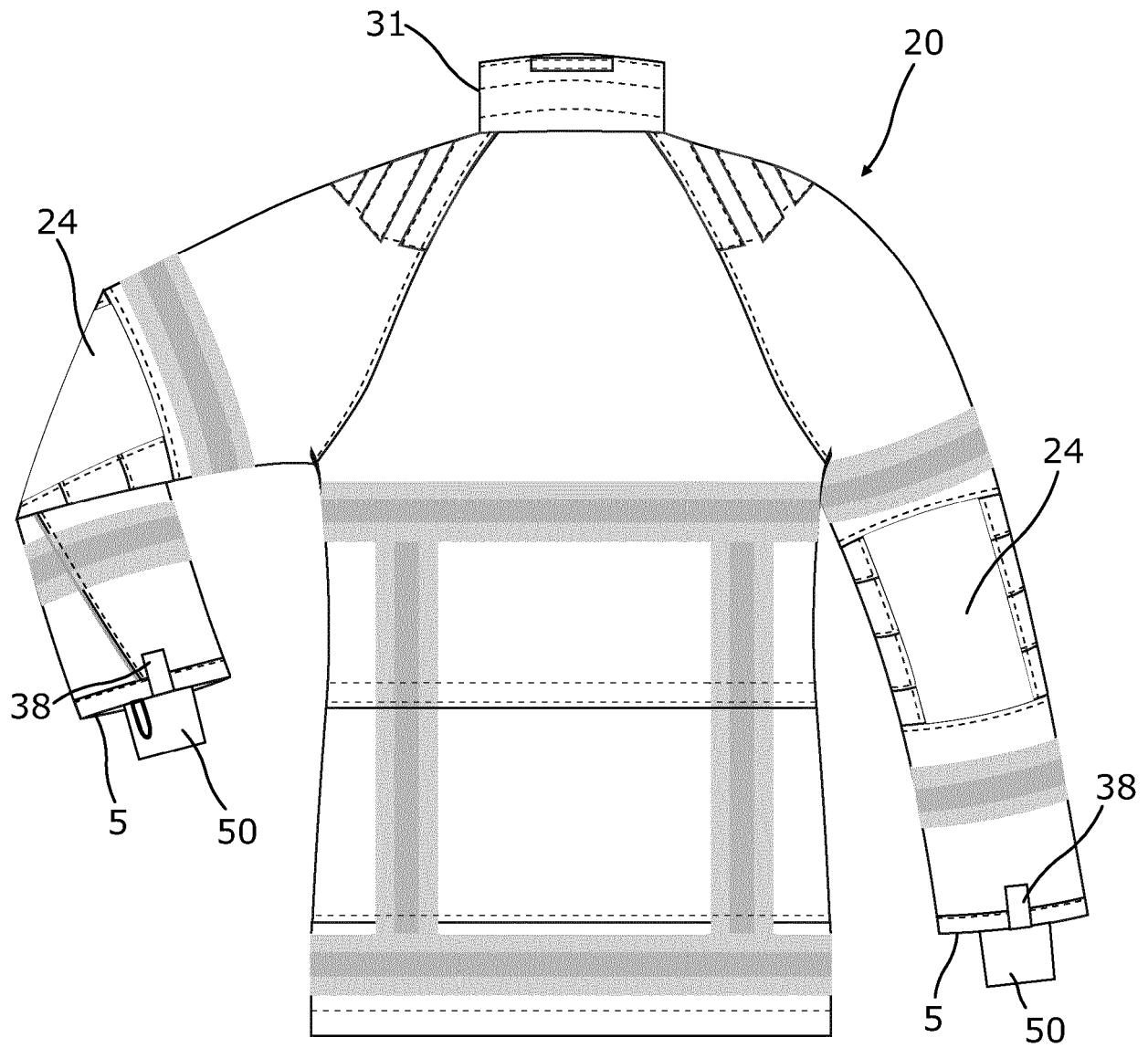


Fig. 3

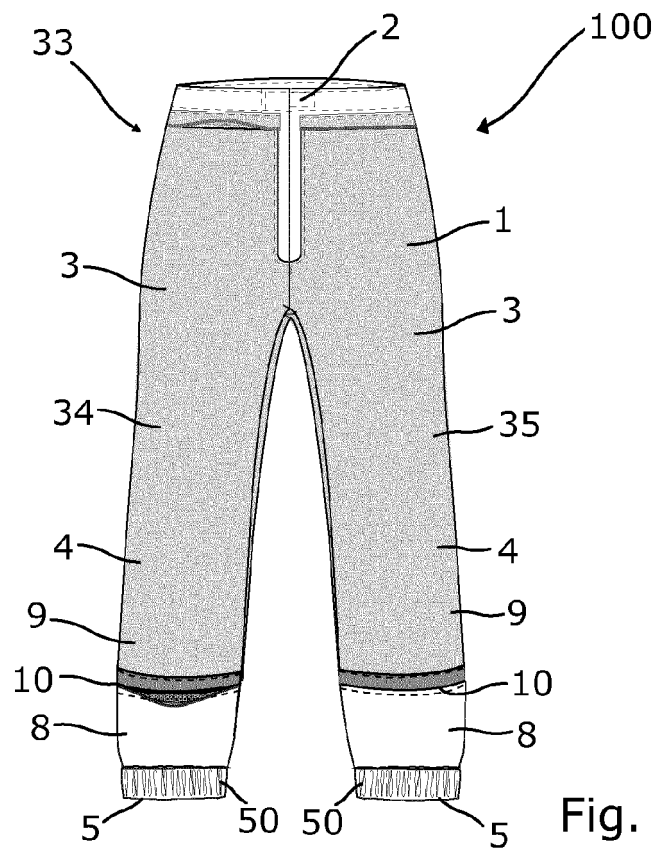


Fig. 4

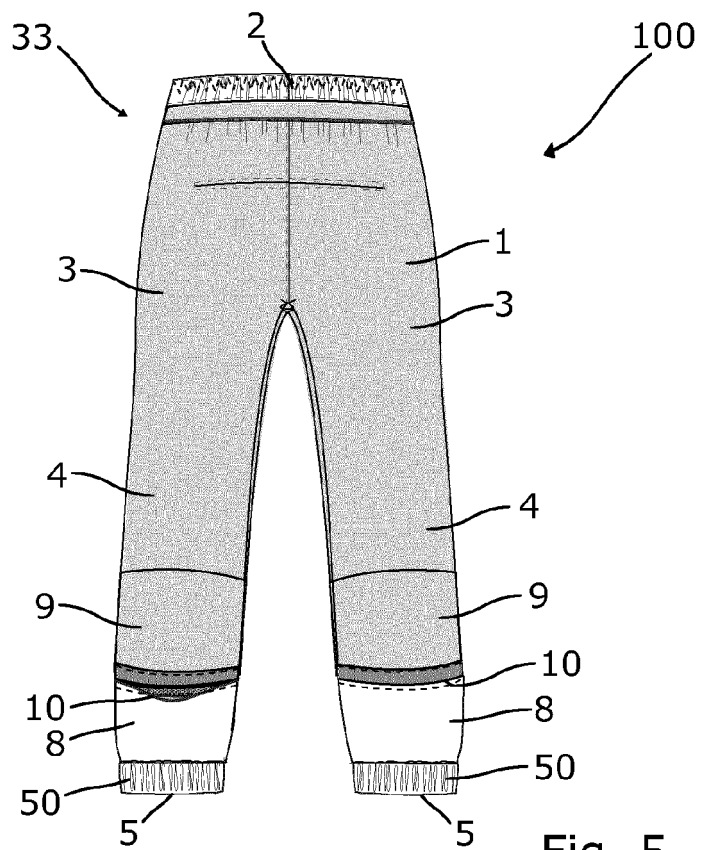


Fig. 5

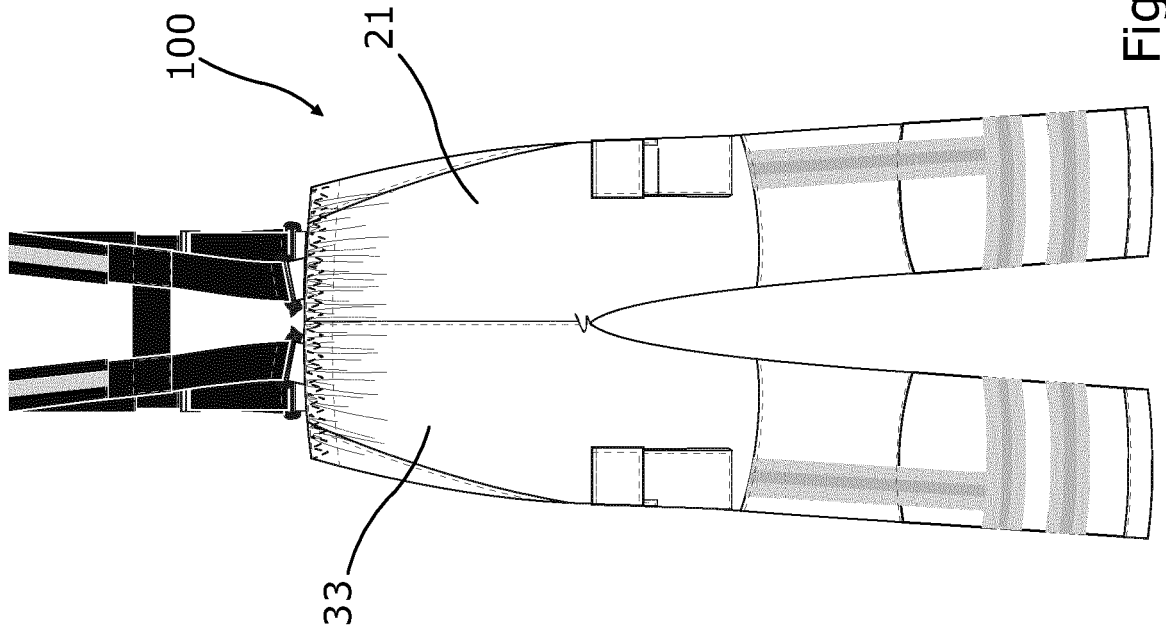


Fig. 7

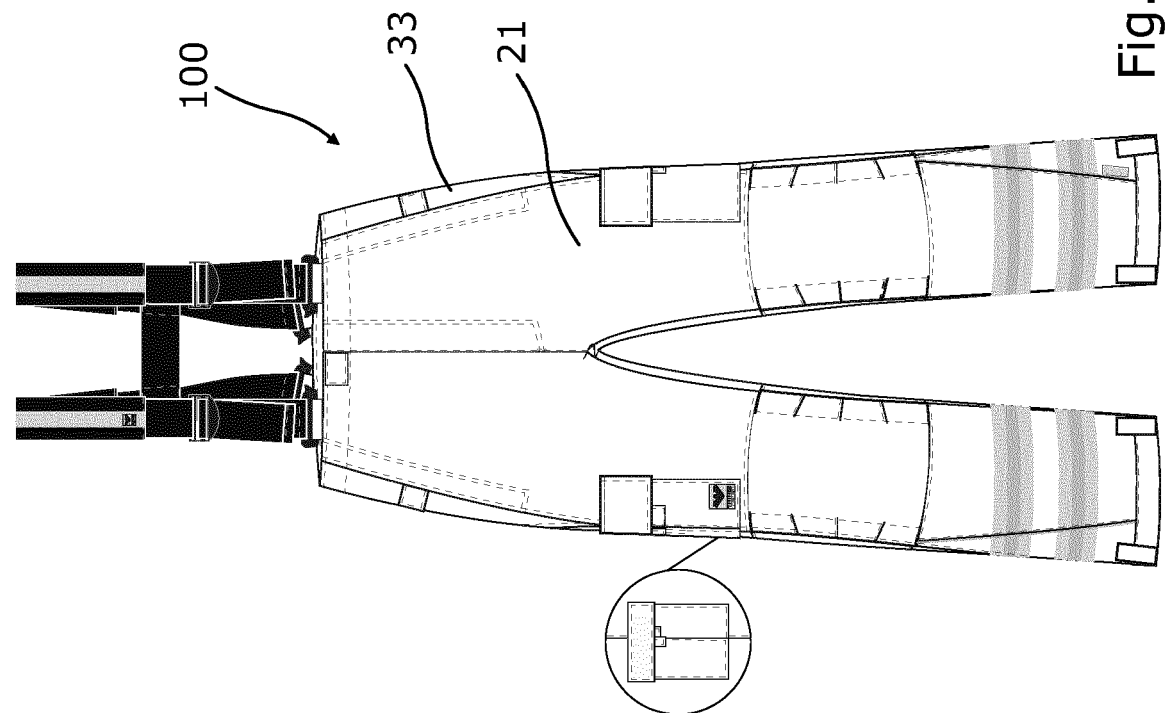


Fig. 6

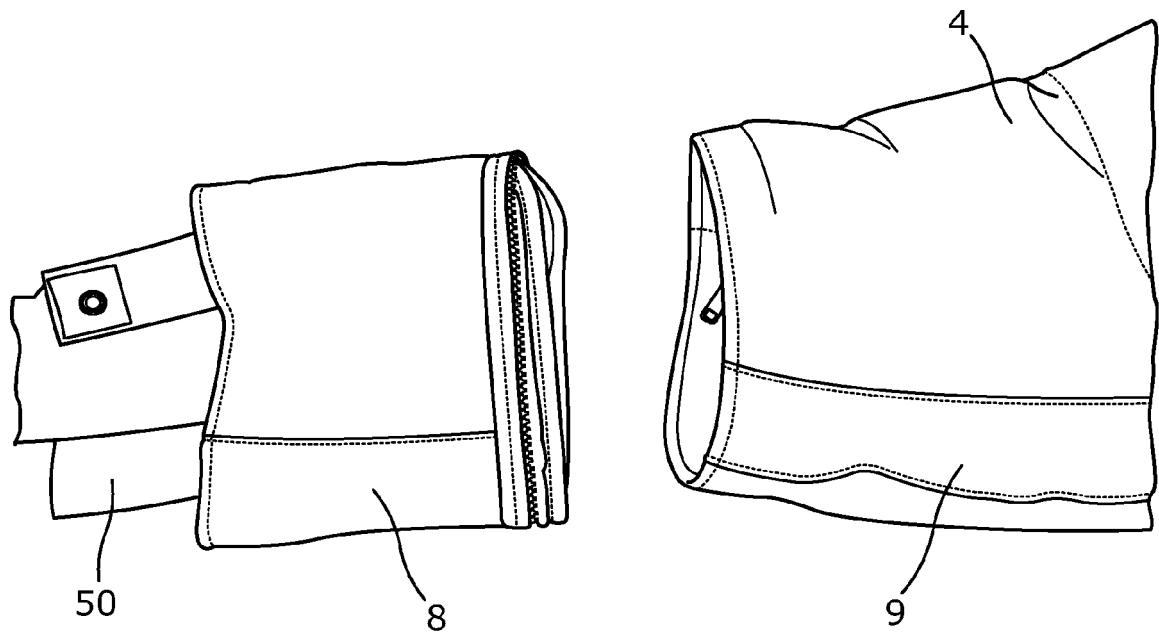


Fig. 8

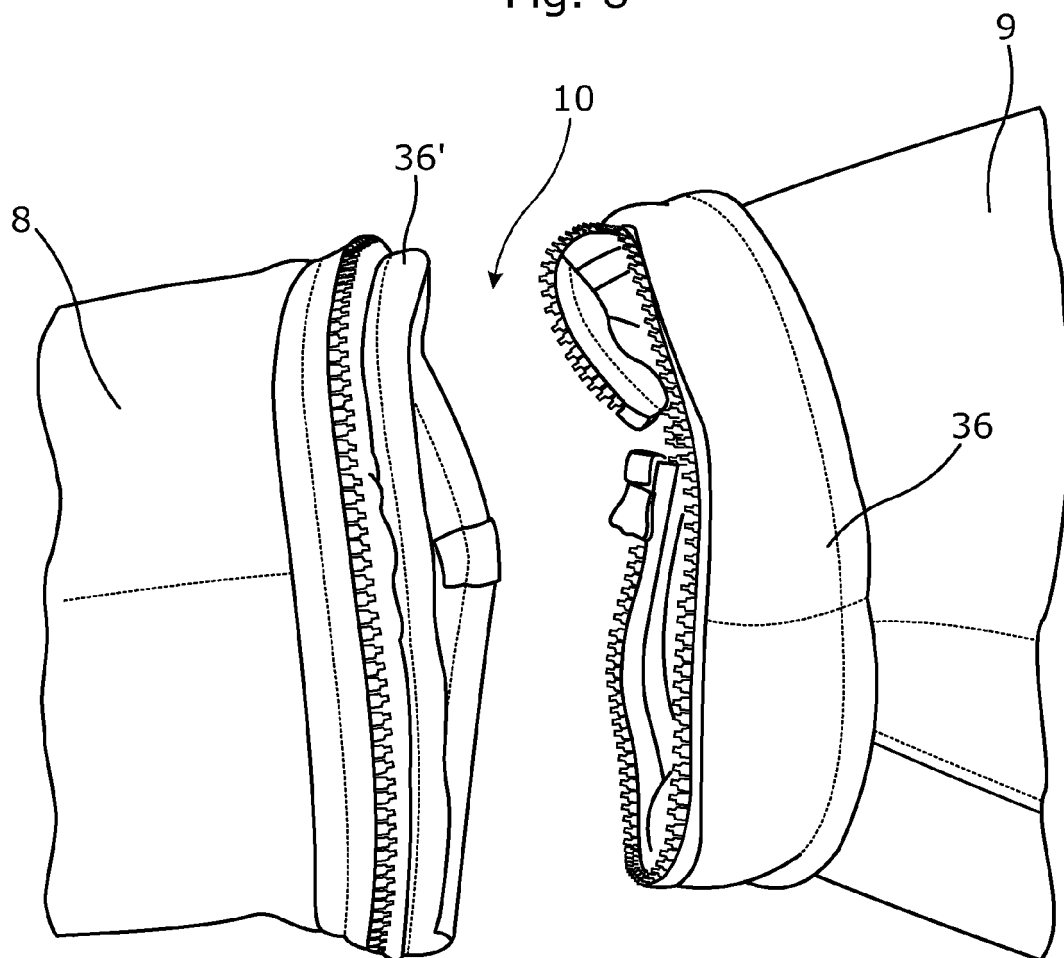


Fig. 9

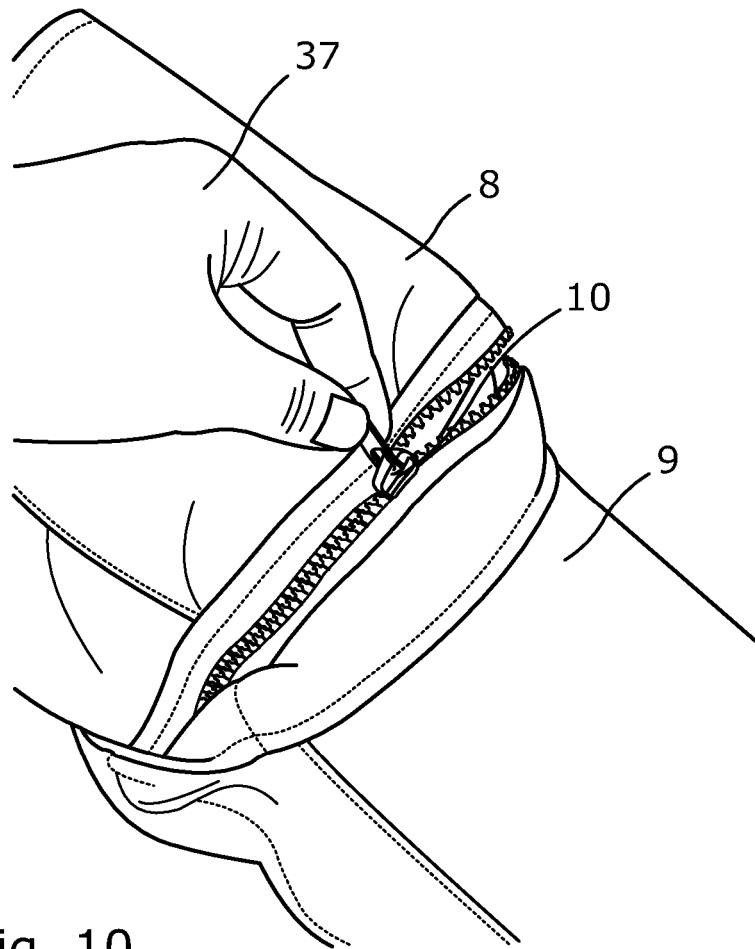


Fig. 10

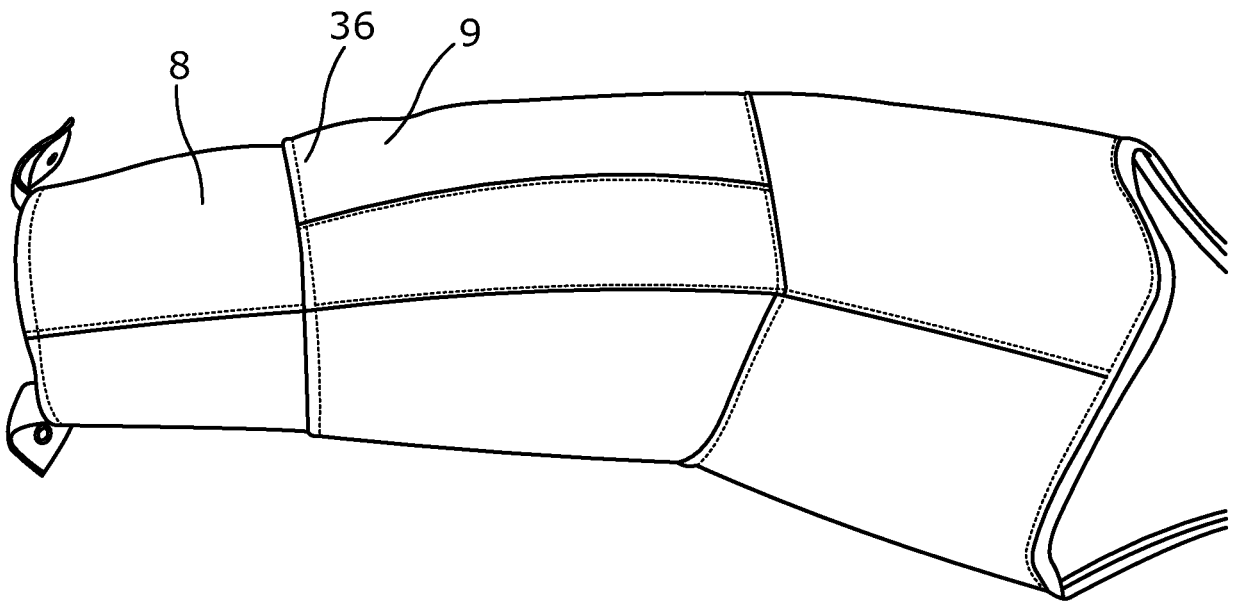
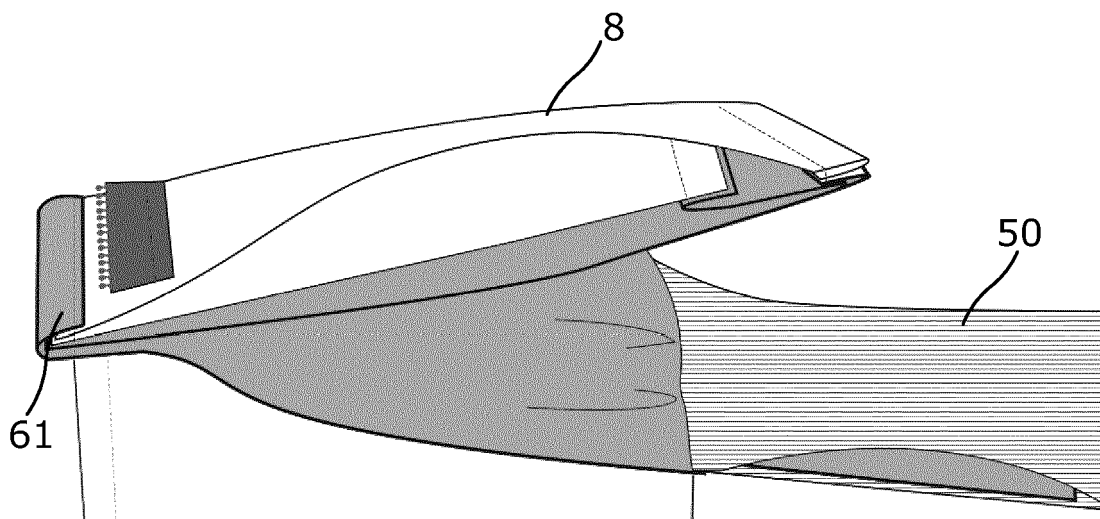
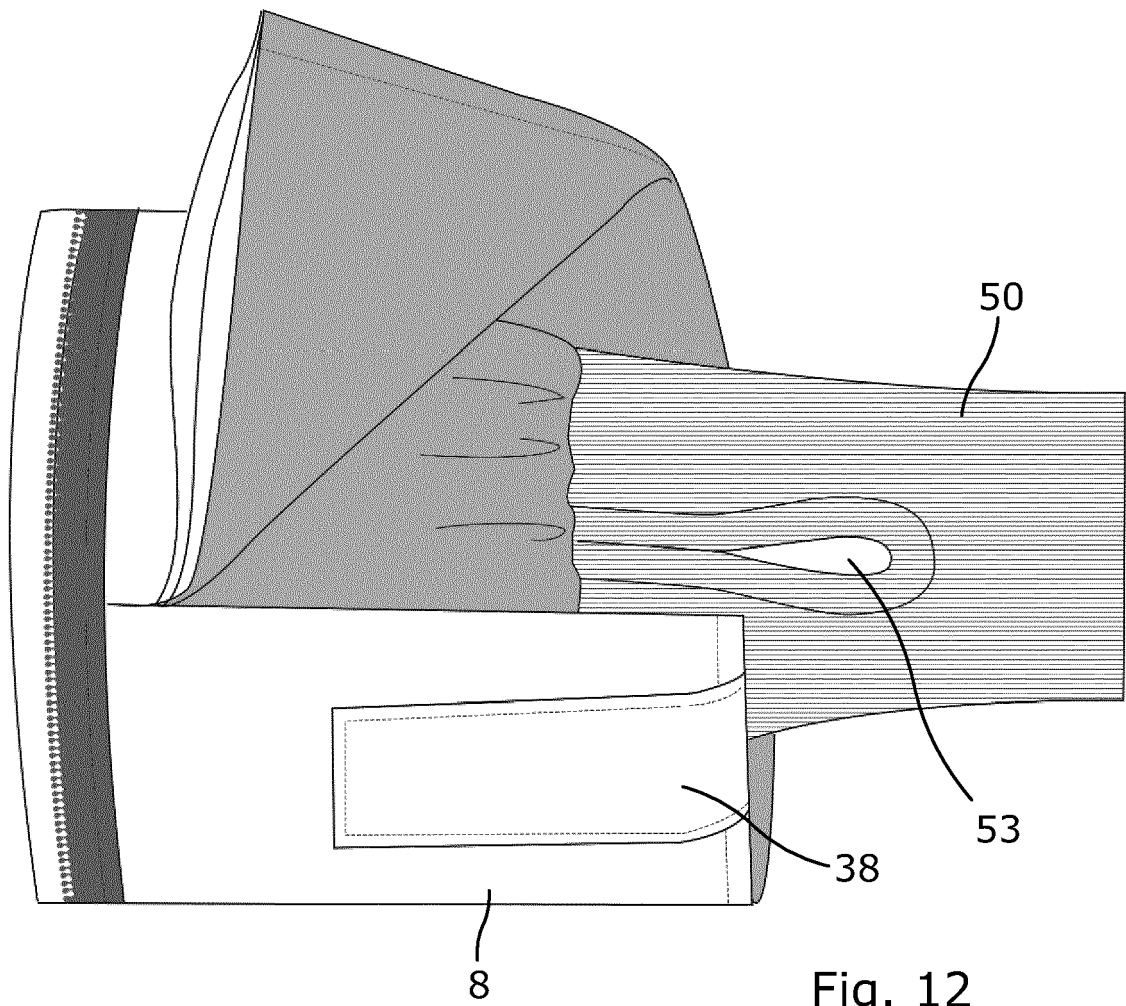


Fig. 11



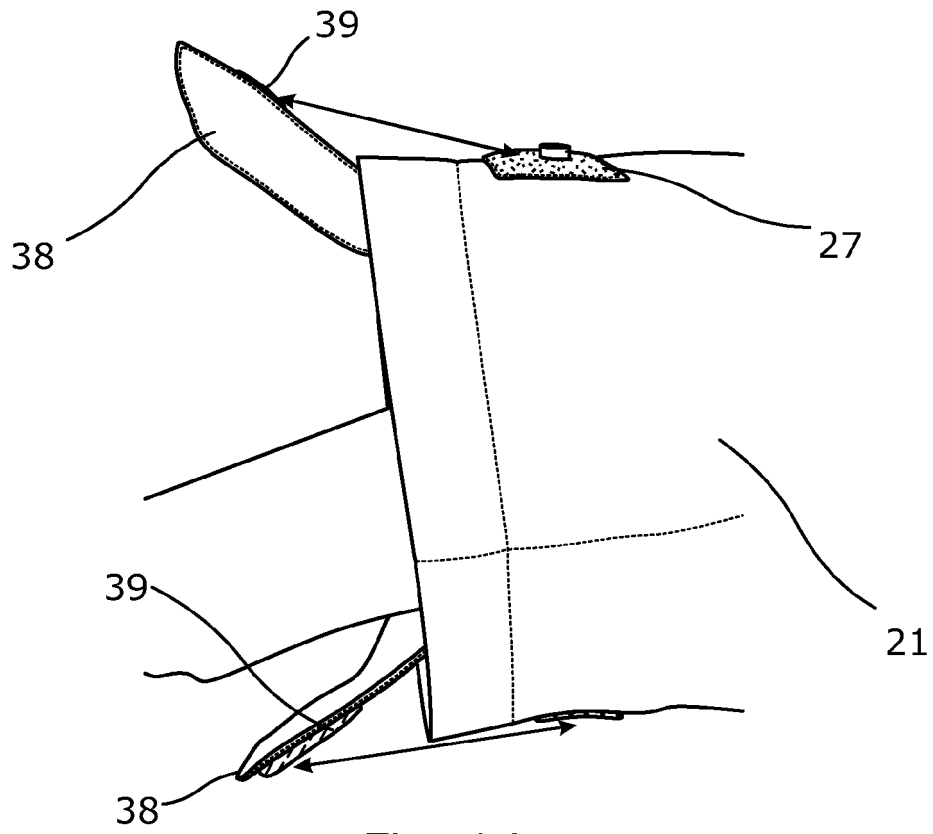


Fig. 14

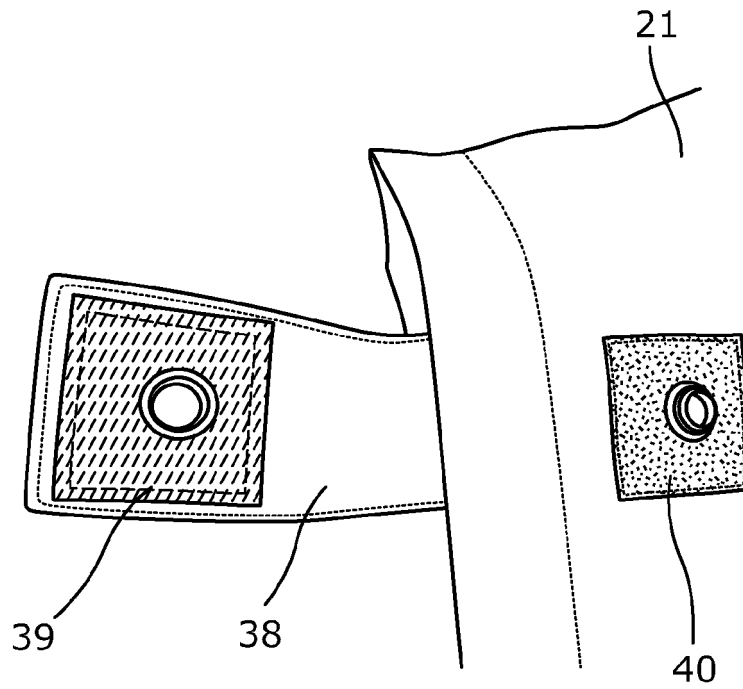


Fig. 15

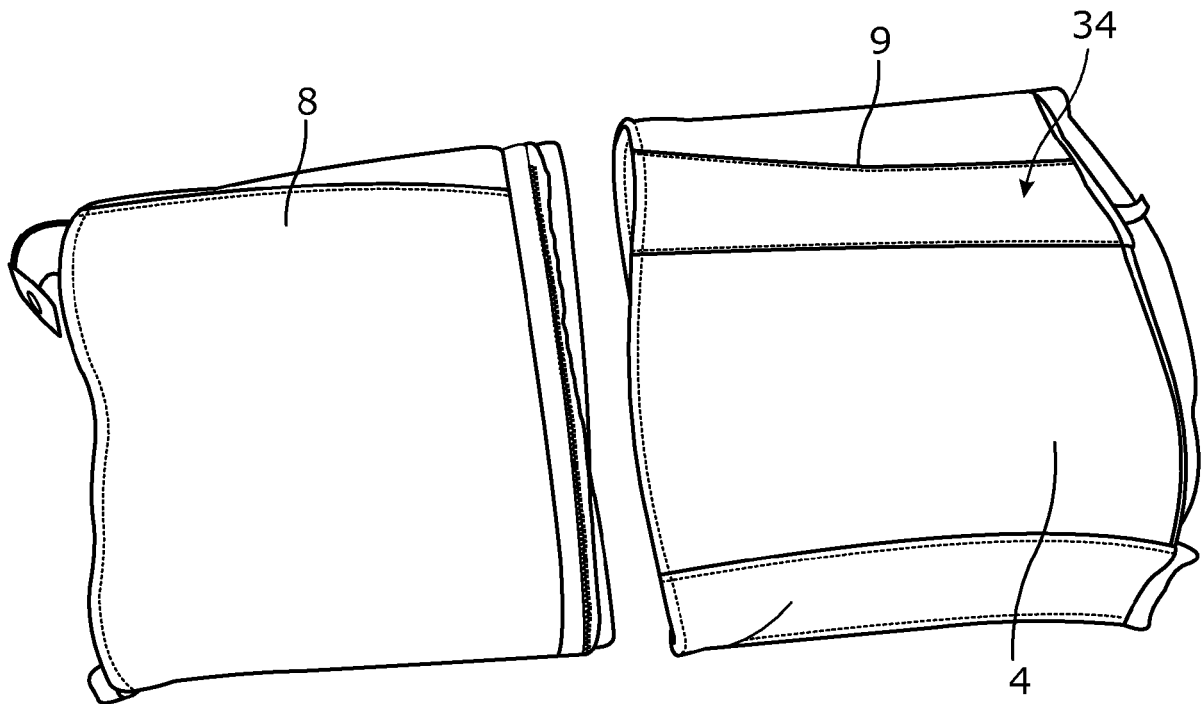


Fig. 16

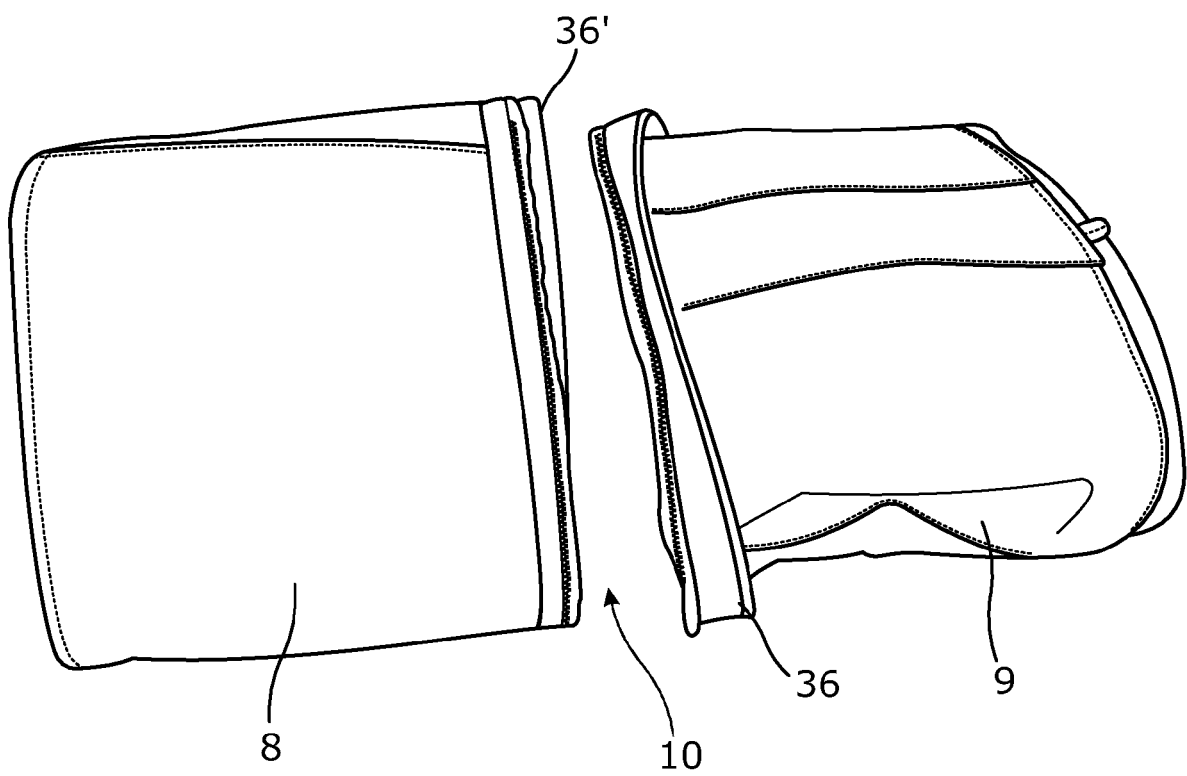


Fig. 17

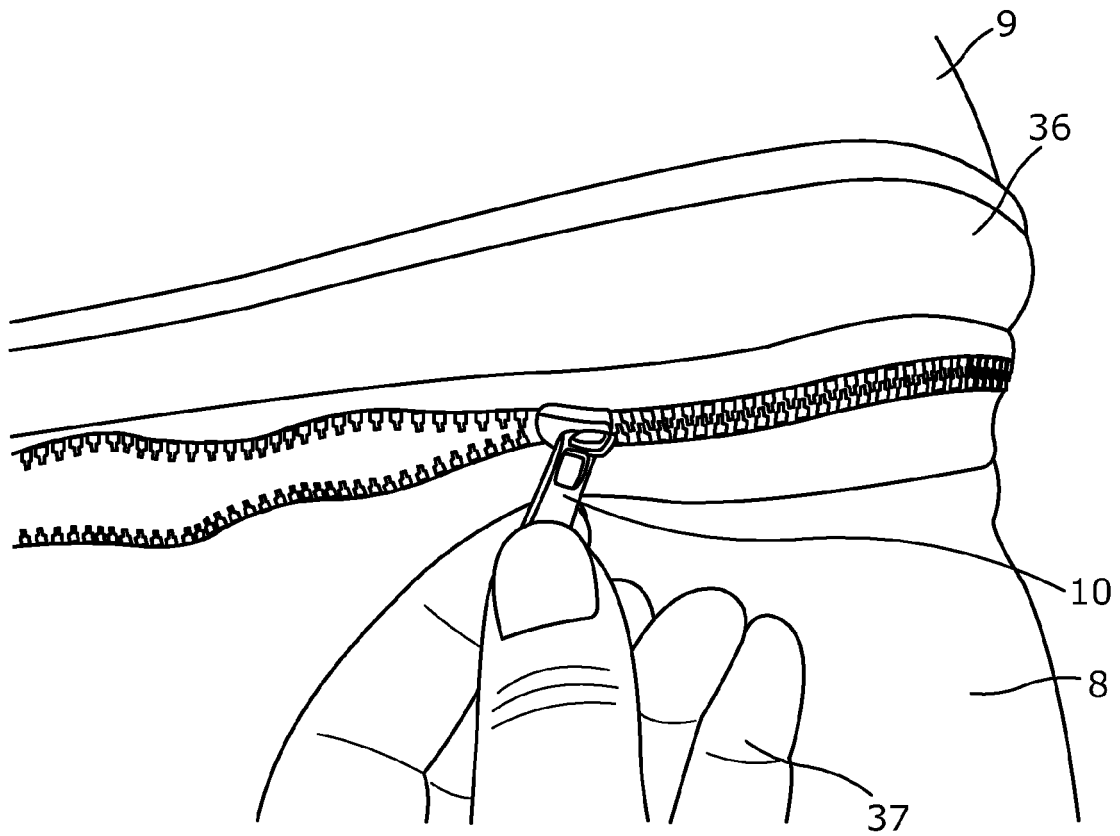


Fig. 18

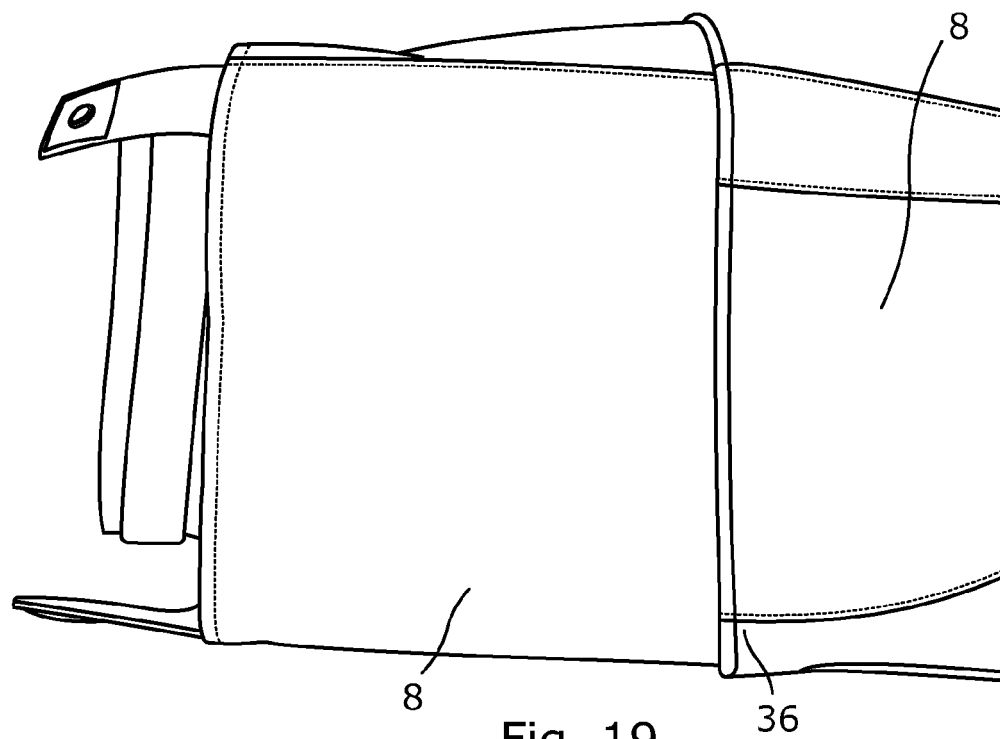
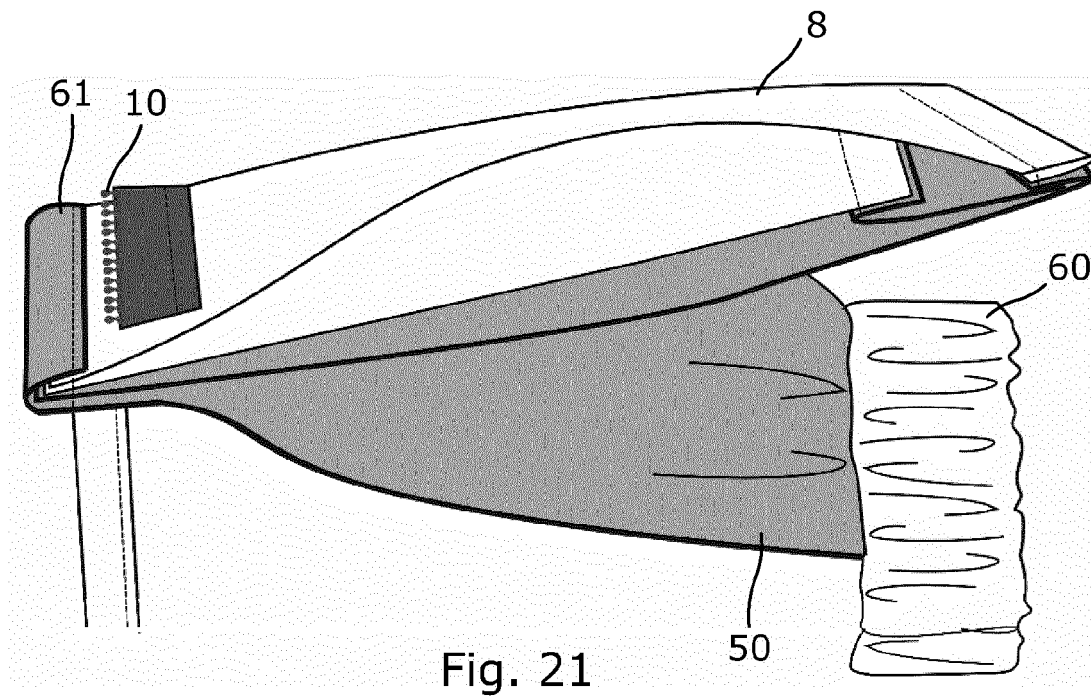
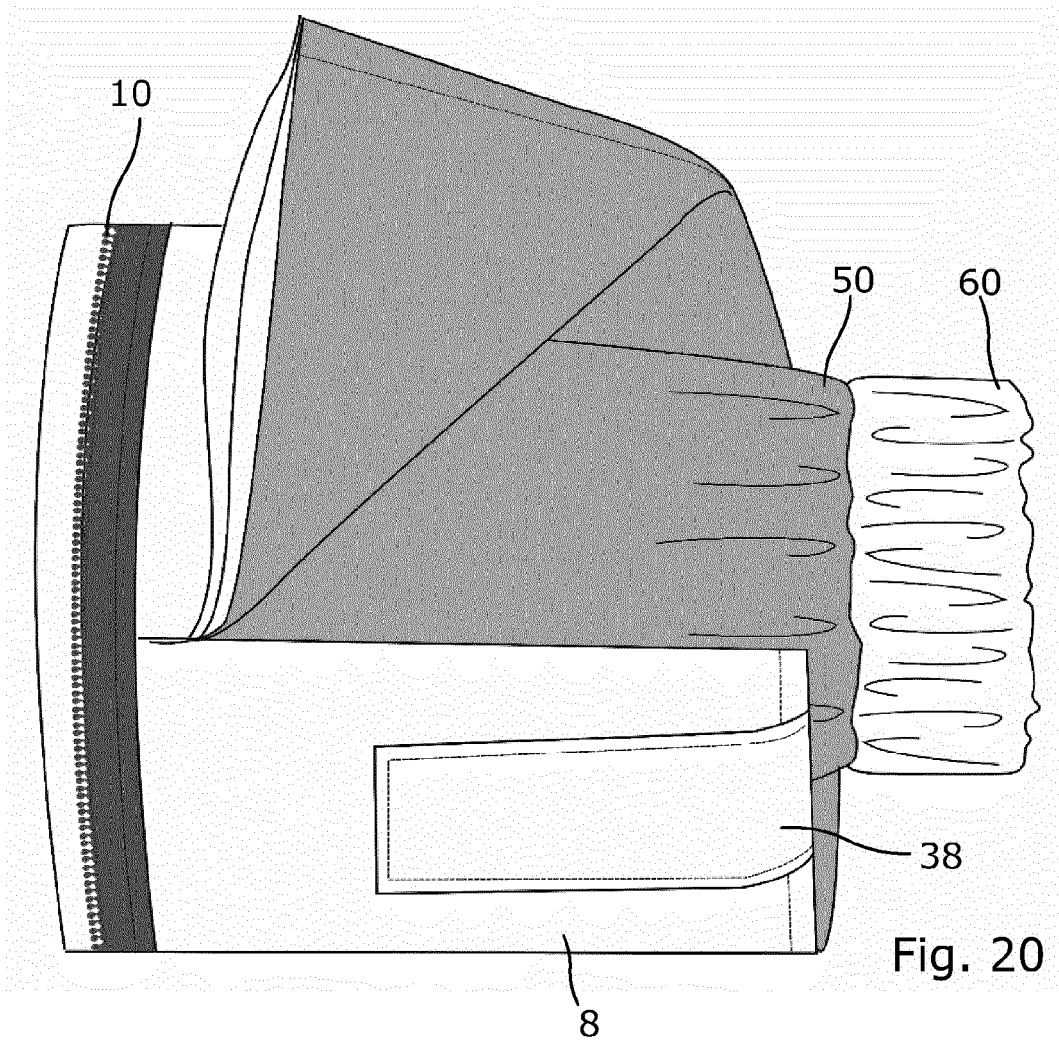
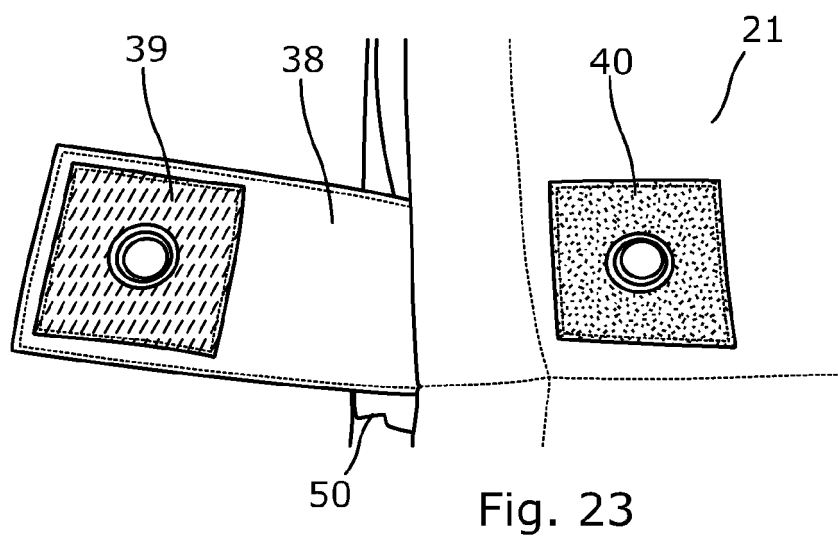
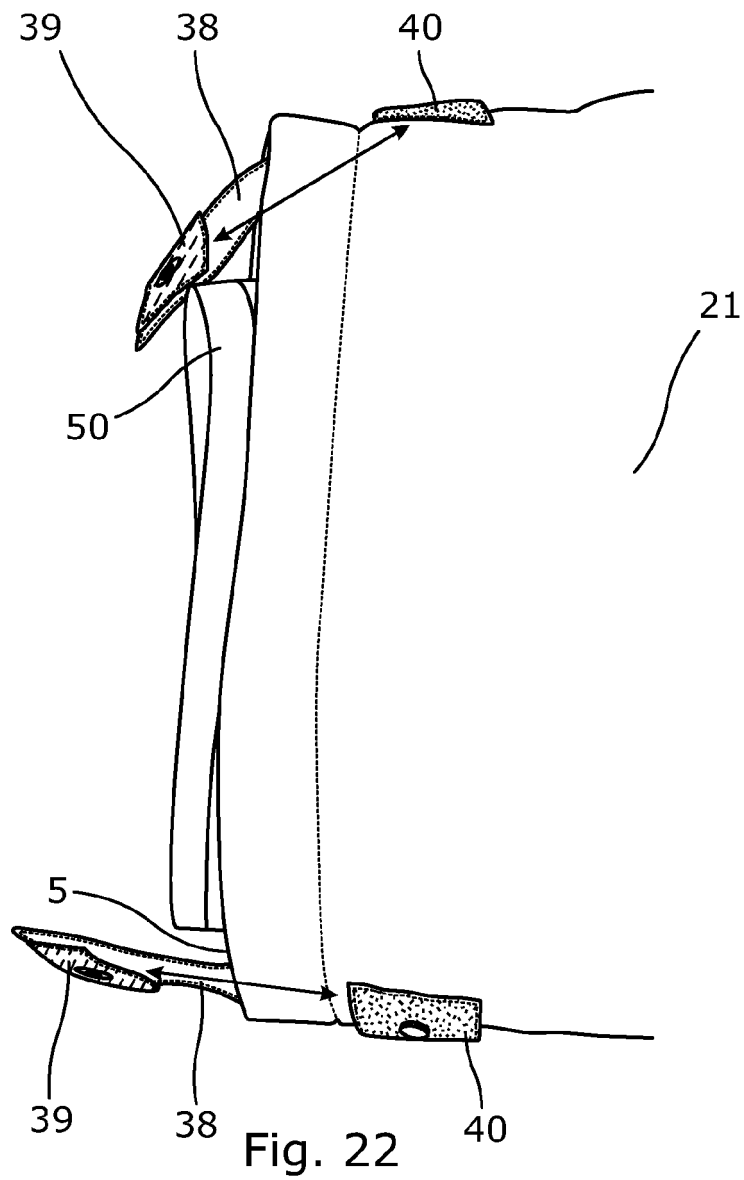


Fig. 19





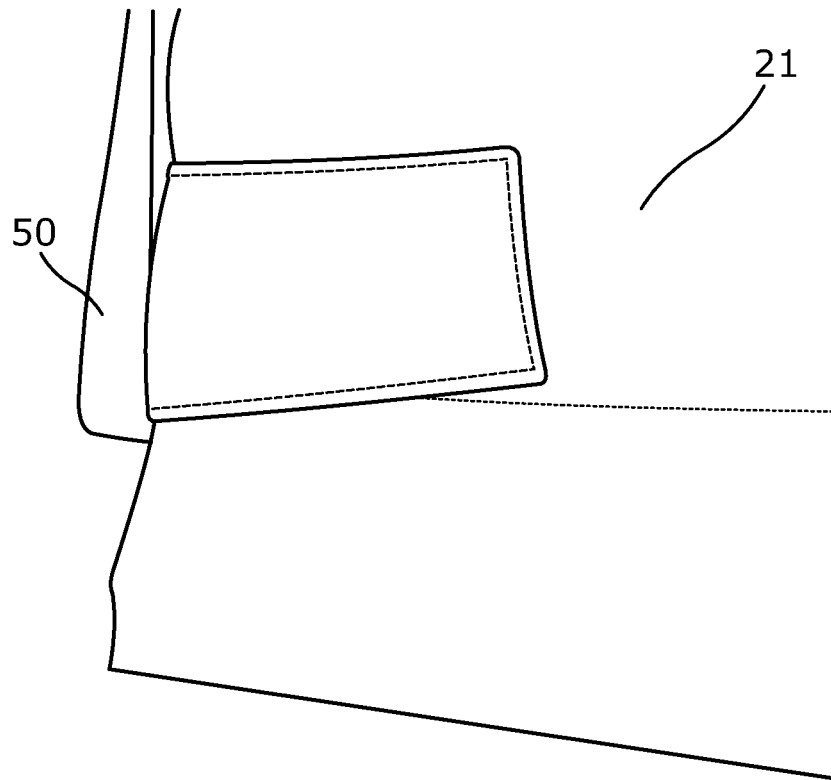


Fig. 24

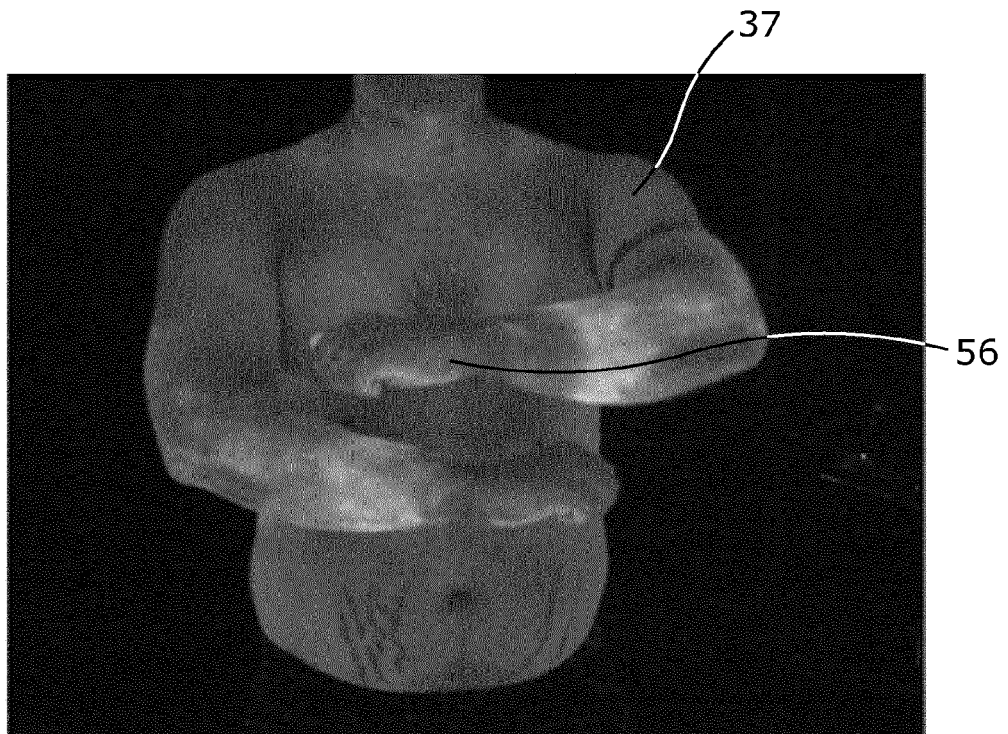


Fig. 25

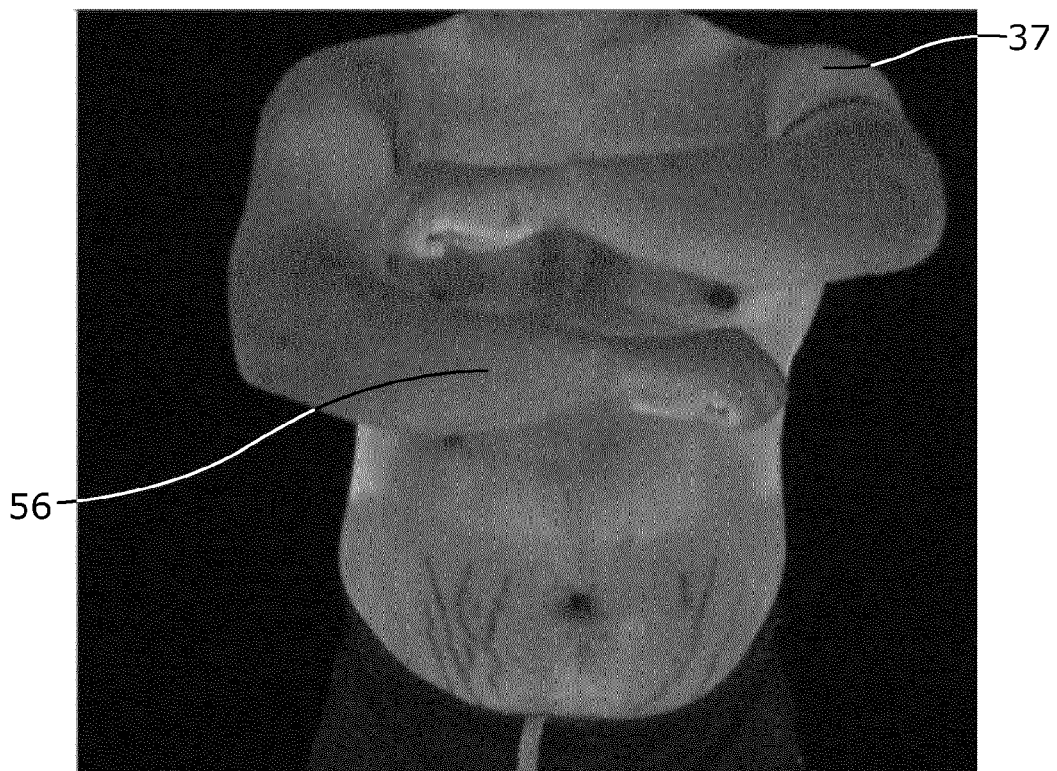


Fig. 26



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Place of search The Hague		Date of completion of the search 5 March 2018	Examiner Douskas, K
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