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(54) **Title:** RESTRAINT FREE GARMENT

(57) **Abstract:** A restraint-free garment comprising an upper body part having at least one hand shield that defines a space adapted to removably receive a portion of a wearer's hand. The present invention also relates to a restraint-free garment comprising an upper body part having at least one hand shield that defines a space adapted to removably receive a portion of a wearer's hand and a lower body part.

# RESTRAINT FREE GARMENT

## FIELD OF THE INVENTION

The present invention is directed to a restraint-free garment.

## BACKGROUND OF THE INVENTION

Restraints are often used in hospitals, nursing homes and other medical settings to prevent patients from dislodging tubes, IVs, or other therapeutic devices. Historically, restraints have included vests, wrist and ankle ties, waist belts, and hand mitts among others. The purpose of physical restraints are to restrict the movement of a patient in the medical setting. During the last two decades considerable research has shown that physical restraints contribute to patient deaths, delirium, decubitus, increased risk of falls, immobility, patient decline and serious emotional trauma. This research has persuaded the health care community to discourage the use of restraints and encourage the creation of alternatives to restraints which will promote patient independence and dignity yet keep needed medical devices secure..

More recently, there has been a focus on medical garments that provide access for tubes and IVs, some of which also have restraints, which are worn on the hands. However, there remains a need for a restraint-free garment having potential apertures for devices that access the wearer's body, features that camoflouge the devices and contribute to restraint free care as well as glove-like components that have the dual purpose of providing freedom of movement, independence, and comfort to the patient, while at the same time, limit the ability of a patient to dislodge devices.

## SUMMARY OF THE INVENTION

The present invention may relate to a restraint-free garment having an upper body part comprising a first side, a second side, a first arm having a first wrist region and a first cubital area, a second arm having a second wrist region and a second cubital area, a bottom portion, a top portion having a neck orifice, and at least one hand shield that is adapted to removably receive a portion of a wearer's hand. The hand shield has a first end attached to the first or second arm, and a second end that defines a space adapted to removably receive the wearer's fingertips. The garment may also have a lower body part with a first and second leg portion

adapted to removably receive the wearer's legs, and a hip portion with at least one openable hip portion seam.

Alternatively, the present invention may relate to a restraint-free garment having an upper body part with a first side, a second side, a first arm having a first wrist region and a first cubital area, a second arm having a second wrist region and a second cubital area, a bottom portion, a top portion having a neck orifice, and at least one hand shield that is adapted to removably receive a portion of a wearer's hand. The hand shield has a first end attached to the first or second arm and a second end that defines a space adapted to removably receive the wearer's fingertips.

## BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a front perspective of a preferred embodiment of the restraint-free garment;
Figure 2 is a cross sectional perspective of a preferred embodiment of the hand shield of the restraint-free garment;
Figure 3 is a back perspective of a preferred embodiment of the restraint-free garment with an exploded view of a preferred embodiment of the hand shield/wrist region;
Figure 4 is an elevated side view of a preferred embodiment of the restraint-free garment; and
Figure 5 is a front perspective of a preferred embodiment of the restraint-free garment.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

In its simplest form, the restraint-free garment has an upper body part with arms, at least one hand shield that preferably encompasses all of the digits of a wearer's hand, and more preferably encompasses the fingers of a wearer's hand. By the term "digits" it is meant to include fingers and thumb of a wearer's hand. By the term "fingers" it is intended to mean only the fingers of a wearer's hand, excluding the thumb. The hand shield maybe affixed to an arm of the upper body part at one end, and the second end of the hand shield may terminate before the finger tips of the wearer's hand.

Regarding the drawings, Figure 1 is a front perspective view of a preferred embodiment of a restraint-free garment 10. Figure 1 illustrates an restraint-free garment 10 having a first arm 12 and a second arm 14. The first arm 12 and the second arm 14 both have

a first wrist region 16 and second wrist region 18 respectively. In use, the wrist region is located at approximately the wrist of the wearer. The first and second wrist regions 16, 18 are adapted to removably receive a wrist. In use, a wearer's arms are threaded through the first and second arms 12, 14 and then the wearer's hand extended through the first and second wrist region 16, 18 respectively. Figure 1 illustrates the garment with an attached finger hand shield 13, which is preferably detachable. The finger hand shield 13 has a first end that may be attached to the wrist region 16 of the arm 12 and a second end adapted to removably receive and encompass a portion of a hand. By the term "removably receive a portion of a hand," and similar terms, it is intended that the present invention, in use, provides that a portion of a wearer's hand is place inside the hand shield 13, 15.

All the digits of the wearer's hand may preferably be removably received in the digit hand shield 15 wherein the digit hand shield 15 is configured so that all the digits of the wearer's hand are removably received into one aperture. The hand shield 15, 13 can preferably comprise a padded lip for the comfort of the wearer. In a preferred embodiment of the digit hand shield 15, the digit hand shield 15 is configured so that, in use, it can be extended, preferably unrolled, from the wrist regions 16, 18 of the arms 12, 14, to cover and substantially immobilize the digits of the wearers hand, and when desired retracted, preferably rolled back to the wrist regions 16, 18 (not shown).

In another preferred embodiment of the hand shield, the fingers of the wearer's hand may be removably received into at least one aperture while the thumb is separated from the fingers and removably received into a single thumb aperture, as depicted in the embodiment of the finger hand shield 13. The finger hand shield 13 may preferably be configured to provide at least two finger apertures so that, in use, each finger aperture removably receives two fingers (not shown). The finger shield 13 may also preferably be configured to have four finger apertures so that, in use, each finger aperture removably receives a finger, for instance as a glove would.

In use, a portion of the wearer's hand may be placed in the hand shield 13, 15 first and then threaded through the arms 12, 14. In such an embodiment, the hand shield 13, 15 is preferably removably attached to the arm. The hand shield 13, 15 of the present invention may preferably be substantially flexible, or preferably substantially inflexible. The hand shield 13, 15 may also be removably attached to an arm 12, 14 by any detachable attachment

means known to one of skill in the art including, but not limited to, snaps, ties, hook and loop type fasteners, zippers, and compatible groove and ridge features.

Figure 2 is a cross-sectional perspective of a hand shield 48 of the restraint-free garment. The hand shield 48 of the present invention may comprise an outer shell 50 and an inner shell 52. Preferably the outer shell 50 of the hand shield 48 is substantially water resistant. The outer shell 50 of the hand shield 48 may also preferably be substantially inflexible. The inner shell 52 of the hand shield 48 may preferably be made of a material that is substantially soft, flexible, and protective so that, in use, the outer shell 50 provides limited movement and the inner shell 52 prevents the wearer's hand from acquiring sores. Moreover, the inner shell 52 may be provided with a moisturizing lubricant so that, when in use, the inner shell 52 keeps the wearer's hand from discomfort as a result of, for instance, becoming dry and chafed. The inner shell 52 and outer shell 50 may preferably be removable and replaceable, and may preferably be disposable or reusable. Without being bound by theory, a reusable hand shield could be ecofriendly and could be washed and reused. The hand shield may further comprise a padded lip 54 for the comfort of the wearer's hand, so that, in use, when the wearer's hand strains to grasp an object, any pressure of the wearer's digits and/or fingers against the hand shield is applied to the padded lip 54. The padded lip 54 may preferably be made of, but is not limited to, gel, water, fabric, silicone, rubber, and plastic. The inner 52 shell and outer shell 50 of the hand shield 48 may preferably be resiliently affixed to one another or preferably removably affixed.

By providing a removably attached hand shield, a kit may be used for creating a restraint-free garment wherein the kit has multiple hand shields of different sizes so that the restraint-free garment may be fit for the correct size for the patient. The sizes may, of example, include extra small, small, medium, large, and extra large. In addition, the hand shields of the kit may comprise an outer and an inner shell wherein the inner shell may be removably affixed to the outer shell and preferably have a moisturizing lubricant and may be changed as necessary. Furthermore, the hand shield of the kit of the present invention may preferably comprise a padded lip for the protection of the wearer's fingers and/or digits. The restraint-free garment of the kit may be provided in a sterilized package. The restraint-free garment and the package of the kit may be disposable. Both the package and the restraint-free garment may be reusable and preferably provide ease in reassembly between uses and may be

sterilized between uses. The package for a reusable restraint-free garment may, for example, be in any shape adapted to enclose a restraint-free garment including an openable envelope, a bag, or any other package that can be re-sterilized between uses and reassembled with the restraint-free garment.

Turning back to Figure 1, the first and second arms 12,14 have a cubital area. By the term "cubital area" it is intended that the part of the arms 12, 14 have an area that, in use, is approximately located at or about a wearer's elbow. The first and second arms 12, 14 may have at least one access port 20, for instance, in the cubital area. The access port 20 may have an access port flap 22, which is adapted to be removably received by a releasable seal 24. In use, the access port flap 22 may be opened and closed as needed. The releasable seal 24 may be a hook and loop type closure, or other type of closure. Furthermore, the access port flap 22 may be positioned such that it is opened at the releasable seal 24 in a direction away from the inner margin of the arm. By using a hook and loop type closure for the releasable seal 24 of the access port flap, in use, any device accessing the body may be substantially immobilized, camouflaged, and still accessible to medical personnel. Such devices may include intravenous lines, electrical leads, and tubes. Furthermore, by positioning the access port flap 22 so that it is released away from the inner margin, in use, the wearer of the garment 10 is not as able to open the flap by reaching across the wearer's body which could potentially dislodge any device accessing the wearer's body.

Also illustrated in Figure 1 is a neck orifice 26 in the top portion of the upper body part of the restraint-free garment 10 having at least one openable seam 28. The openable seam 28 has an openable seam flap 30. The openable flap 30 is removably secured by an openable flap seal 29. In use, the openable seam flap 30 can be securely closed or opened, and may have an openable flap seal 29, which may be secured by a closure such as a hook and loop type fastener, ties, or any other type of known closure, as needed. When using a hook and loop openable flap seal 29, the direction for opening the openable seam is preferably from the front to back direction of the garment 10. In use, a hook and loop type openable flap seal 29 substantially immobilizes any device accessing the body, camouflages the device, and also provides medical personnel with access to the device. The front to back opening direction of the openable seam 28, also reduces the ability of a wearer from opening the openable seam and potentially dislodging any device accessing the body and immobilized therein. Such

devices accessing the body through an openable seam may include, but are not limited to, IVs, tubes, central lines, port-a-caths, and EKG leads.

Figure 3 is a perspective back view of a preferred embodiment of the restraint-free garment 10 of the present invention. At the neck orifice 33 is shown a second side openable seam 32 and a second side openable seal 34. The second side openable seal 34 can be, but is not limited to, a hook and loop type closure, a tie, a zipper, a latch, and a compatible groove and ridge feature. The second side of the garment 10 may preferably comprises a first 36 and second half 38 each having at least one fastening device (not shown) that is adapted to be removably received through an aperture in the first side (not shown) and the second side is removably fastened to the first side through the aperture and by the fastening device. The fastening device may comprise, but is not limited to, a hook and loop type closure, a tie, a clasp, and a latch. In use, therefore, the second side may be secured to the first side by a second side openable seam 32, such as that shown in Figure 3, and/or by at least one fastening device. In addition, the second side may have at least one aperture through which a fastening device retained on the first side may be removably received. In this way, the wearer is provided with additional privacy, and at the same time, medical personnel are provided with access to the wearer's body.

Figure 4 is an elevated side view of a preferred embodiment of the restraint-free garment 10 comprising a first side 202 and a second side 204, an arm 206, a hand shield 208 that is adapted to removably receive all the digits of a wearer's hand and wherein the hand shield 208 is attached to the arm 206 at the wrist region 210. Also shown in Figure 4 is an aperture 212 in the first side 202 of the garment 10, through which a fastening device 214 may be removably received. In use, therefore, the fastening device 214 may be removably received through the aperture 212 and may removably secure the second side 202 to the first side 204.

Figure 5 is a front perspective of another preferred embodiment of the restraint-free garment 10 comprising an upper body part 301 having a first arm 312 and a second arm 314 wherein the first arm may have a first arm access port 320 with a first arm access port flap 322 which may be adapted to removably receive a resealable seal 324. The reseable seal 324 may be buttons and buttonholes, or any other type of commonly known and used seal. The second arm 314 illustrates a second arm access port 311 in the closed position. In use, a

device accessing the body may be threaded through the buttons so that it is immobilized, camouflaged, and yet remains accessible to medical personnel. The first arm 312 may terminate in a finger hand shield 313 that may be adapted to removably receive the fingers of a wearer's hand and the second arm 314 may terminate in a hand shield digit 315 that is adapted to removably receive the digits of a wearer's hand. The upper body part 301 also has a neck orifice 326. The first side of the upper body part 301 may have at least one aperture. In this embodiment of the garment 10, the first side of the upper body part 301 has two apertures 332 through which a fastening device 334 may be removably received. The fastening device 334 may be a male and female engagement device, or any other type of fastening device 334. In use, the fastening device 334 may removably secure the second side of the upper body part 301 to the first side of the upper body part 301.

Also illustrated in Figure 5 is a lower body part 303. The lower body part 303 has a first 340 and second leg portion 342, and a hip portion comprising a first openable hip portion seam 344 and a second openable hip portion seam 346. The first and second openable hip portion seams 344, 346 comprise compatible sides and an openable hip portion seal that, in use, engages the compatible sides. The openable hip portion seal may be, but is not limited to, a hook and loop type fastener, a button and button hole, snaps, a male and female engagement device, a buckle, a zipper, and any other openable hip portion seal known in the art. In use, the openable hip portion seam may provide support for any device accessing the body because the device is preferably substantially immobilized, camouflaged, and still accessible to medical personnel. Such devices include, but are not limited to, for instance, Foley catheters. The first and second openable hip portion seams 344, 346 of this invention may run the entire length of the first and second legs, respectively, or may run only a portion of the length of the first and second legs 340, 342, respectively. By the term "run the entire length" it is meant that the openable hip portion seam 344, 346 extends from the hip portion of the present invention to the termination of the legs 340, 342 at the outside margin of the legs 340, 342. For instance, the first and/or second openable hip portion seam 344, 346 may preferably run from the hip portion to a wearer's thigh. The lower body part 303 may also have at least one lower body part access port 348. The lower body access port 348 may be located at the inner margin of the second leg portion 342. There may be more than one lower body part access port 348 at different locations on the legs 340, 342 including, but not limited

to, for instance the groin region of the wearer. In this way, in use, the wearer may easily urinate, defecate, and/or be examined as needed. The hip portion of the lower body part 303, may be fitted with a first elastic waistband 350 in the first side and/or a second elastic waistband 354 in the second side. The first elastic waistband 350 may have a tie midsection fastener 352, which may be a tie or other any other means for cinching known in the art, connected to the first elastic waistband 350 so that, in use, once the midsection fastener 352 is correctly fitted to the wearer, it may not need to be readjusted. Without being bound by theory, the lower body part 303 could provide the wearer with privacy and comfort.

The restrain free garment including the upper and lower body parts, and the hand shield may, in part or whole, be preferably disposable or may preferably be reusable, as desired.

While preferred embodiments have been herein described, those skilled in the art will understand the present invention to include various changes and modifications. The scope of the invention is not intended to be limited to the above-described embodiments.

Claims

I claim:

1. A restraint-free garment comprising:
   - an upper body part comprising
     a first side,
     a second side,
     a first arm having a first wrist region and a first cubital area,
     a second arm having a second wrist region and a second cubital area,
     a bottom portion,
     a top portion having a neck orifice, and
     at least one hand shield that is adapted to removably receive a portion of a wearer's hand and wherein the hand shield has a first end attached to the first or second arm and a second end that defines a space adapted to removably receive the wearer's fingertips; and
   - a lower body part comprising
     a first and second leg portion adapted to removably receive the wearer's legs, and
     a hip portion having at least one openable hip portion seam.

2. The restraint-free garment as in Claim 1 wherein the first arm has at least one access port.
3. The restraint-free garment as in Claim 1 wherein the second arm has at least one access port.
4. The restraint-free garment as in Claim 1 wherein the first and the second arms have at least one access port.
5. The restraint-free garment as in Claim 1 wherein the first side has at least one aperture through which the second side is removably received and secured by at least one fastening device.
6. The restraint-free garment as in Claim 1 wherein the hand shield is made of a substantially flexible material.
7. The restraint-free garment device as in Claim 1 wherein the hand shield is reuseable.

8. The restraint-free garment as in Claim 1 wherein the hand shield further comprises an outer shell and an inner shell.
9. The restraint-free garment as in Claim 1 wherein the hand shield is removably attached to the first and/or second arms.
10. The restraint-free garment as in Claim 1 wherein the hand shield is adapted to removably receive the digits of the wearer's hand.
11. The restraint-free garment as in Claim 1 wherein the hand shield is adapted to removably receive the fingers of the wearer's hand.
12. The restraint-free garment as in Claim 1 wherein the hand shield has a padded lip.
13. The restraint-free garment as in Claim 1 wherein the neck orifice of the top portion has at least one openable seam.
14. The restraint-free garment as in Claim 1 wherein the lower body part has at least one lower body access port.
15. The restraint-free garment as in Claim 1 wherein the hip portion of the lower body part has at least one elastic waistband.
16. The restraint-free garment device as in Claim 1 wherein the garment is reusable.
17. A restraint-free garment comprising:
    - an upper body part comprising
        a first side,
        a second side,
        a first arm having a first wrist region and a first cubital area,
        a second arm having a second wrist region and a second cubital area,
        a bottom portion,
        a top portion having a neck orifice, and
        at least one hand shield that is adapted to removably receive a portion of a wearer's hand and wherein the hand shield has a first end attached to the first or second arm and a second end that defines a space adapted to removably receive the wearer's fingertips.
18. The restraint-free garment as in Claim 17 wherein the first arm has at least one access port.

19. The restraint-free garment as in Claim 17 wherein the second arm has at least one access port.
20. The restraint-free garment as in Claim 17 wherein the first and the second arms have at least one access port.
21. The restraint-free garment as in Claim 17 wherein the first side has at least one aperture through which the second side is removably received and secured by at least one fastening device.
22. The restraint-free garment as in Claim 17 wherein the hand shield is made of a substantially flexible material.
23. The restraint-free garment as in Claim 17 wherein the hand shield is reuseable.
24. The restraint-free garment as in Claim 17 wherein the hand shield further comprises an outer shell and an inner shell.
25. The restraint-free garment as in Claim 24 wherein the inner shell is affixed to the outer shell.
26. The restraint-free garment as in Claim 25 wherein the inner shell is removably affixed to the outer shell.
27. The restraint-free garment as in Claim 17 wherein the hand shield is removably attached to the first and second arms.
28. The restraint-free garment as in Claim 17 wherein the hand shield is adapted to removably receive the digits of the wearer's hand.
29. The restraint-free garment as in Claim 17 wherein the hand shield is adapted to removably receive the fingers of the wearer's hand.
30. The restraint-free garment as in Claim 17 wherein the hand shield has a padded lip.
31. The restraint-free garment as in Claim 17 wherein the garment is reusable.
32. The restraint-free garment as in Claim 17 wherein the neck orifice of the top portion has at least one openable seam.
33. The restraint-free garment as in Claim 17 further comprising a lower body part having a first and second leg portion adapted to receive the wearer's legs, and a hip portion having at least one openable hip portion seam.
34. The restraint-free garment as in Claim 33 wherein the lower body part has at least one lower body access port.

35. The restraint-free garment as in Claim 33 wherein the hip portion of the lower body part has at least one elastic waistband.
36. The restraint-free garment as in Claim 34 wherein the hip portion of the lower body part has an elastic waistline.

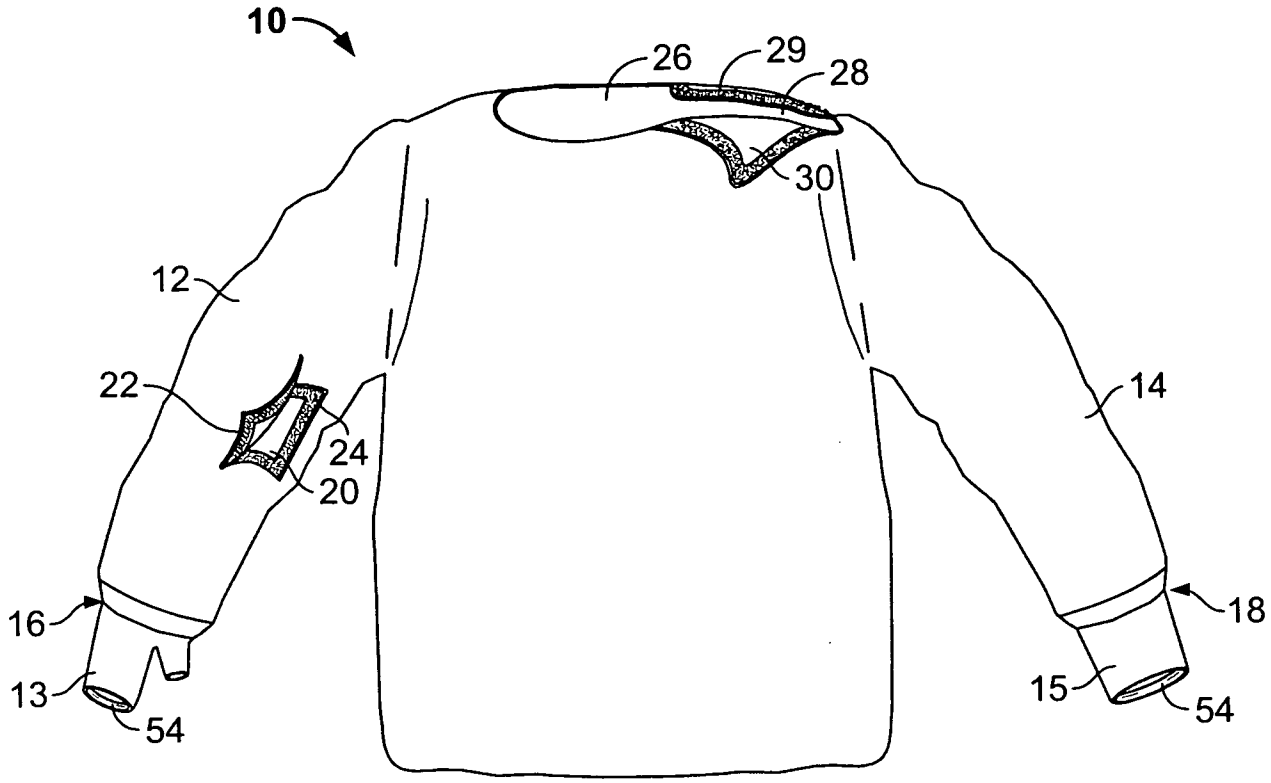



FIG. 1

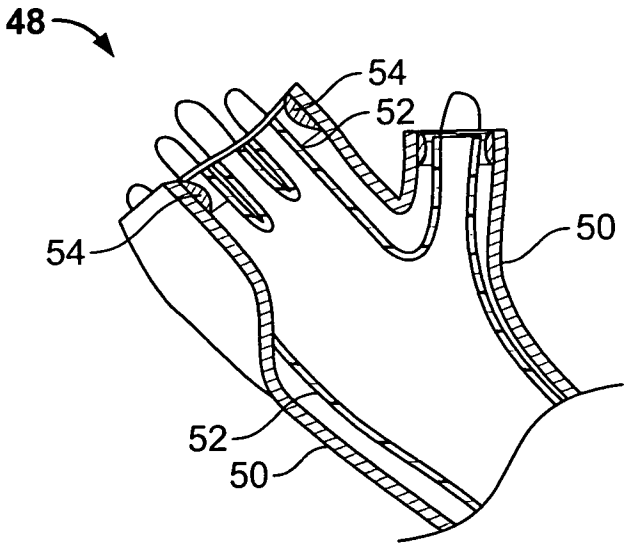



FIG. 2

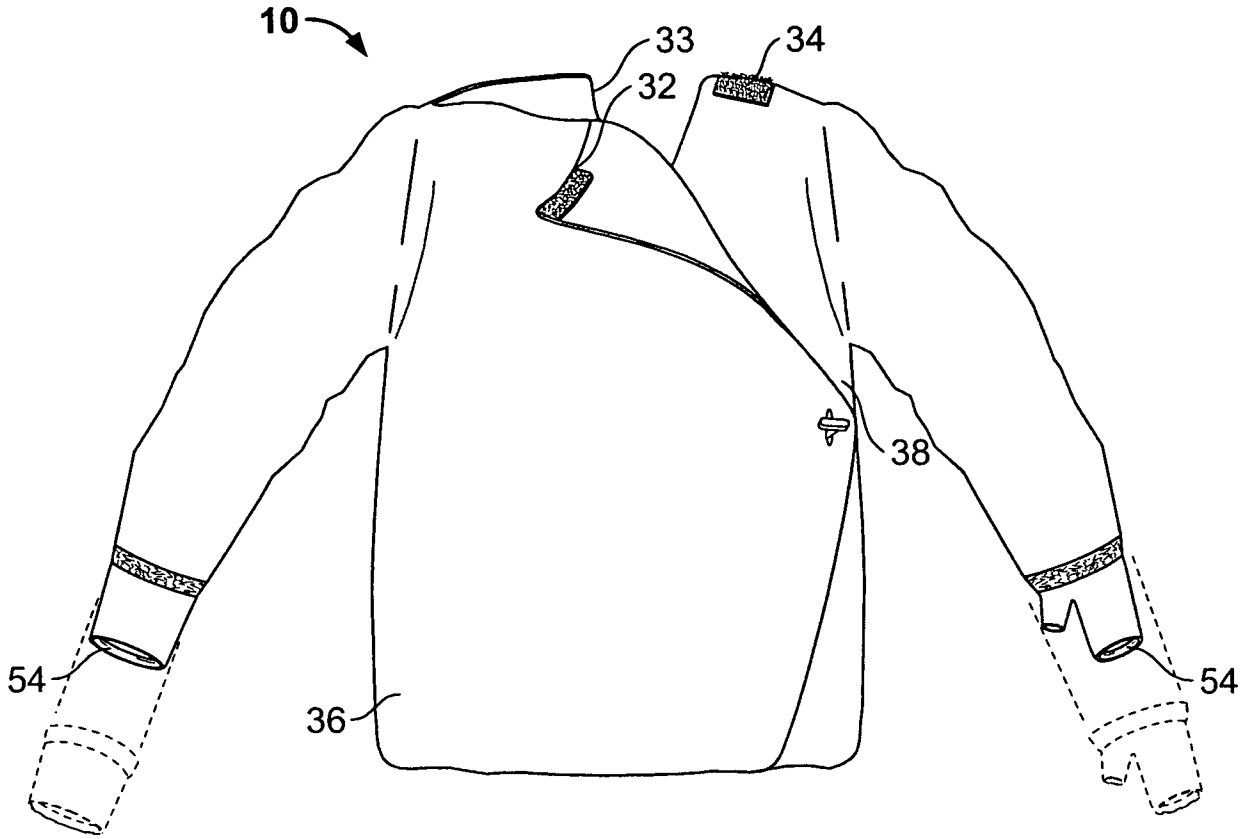



FIG. 3

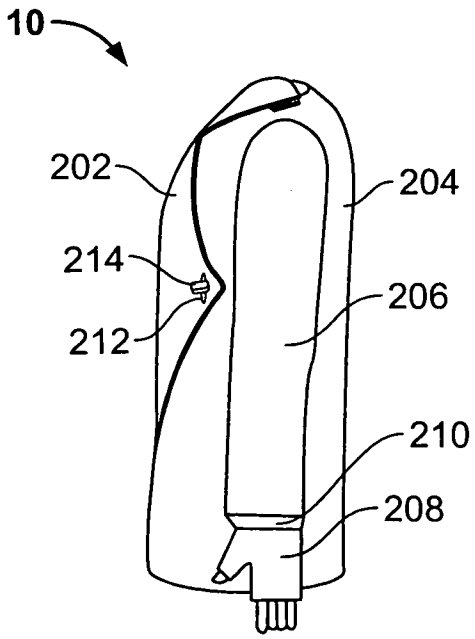



FIG. 4

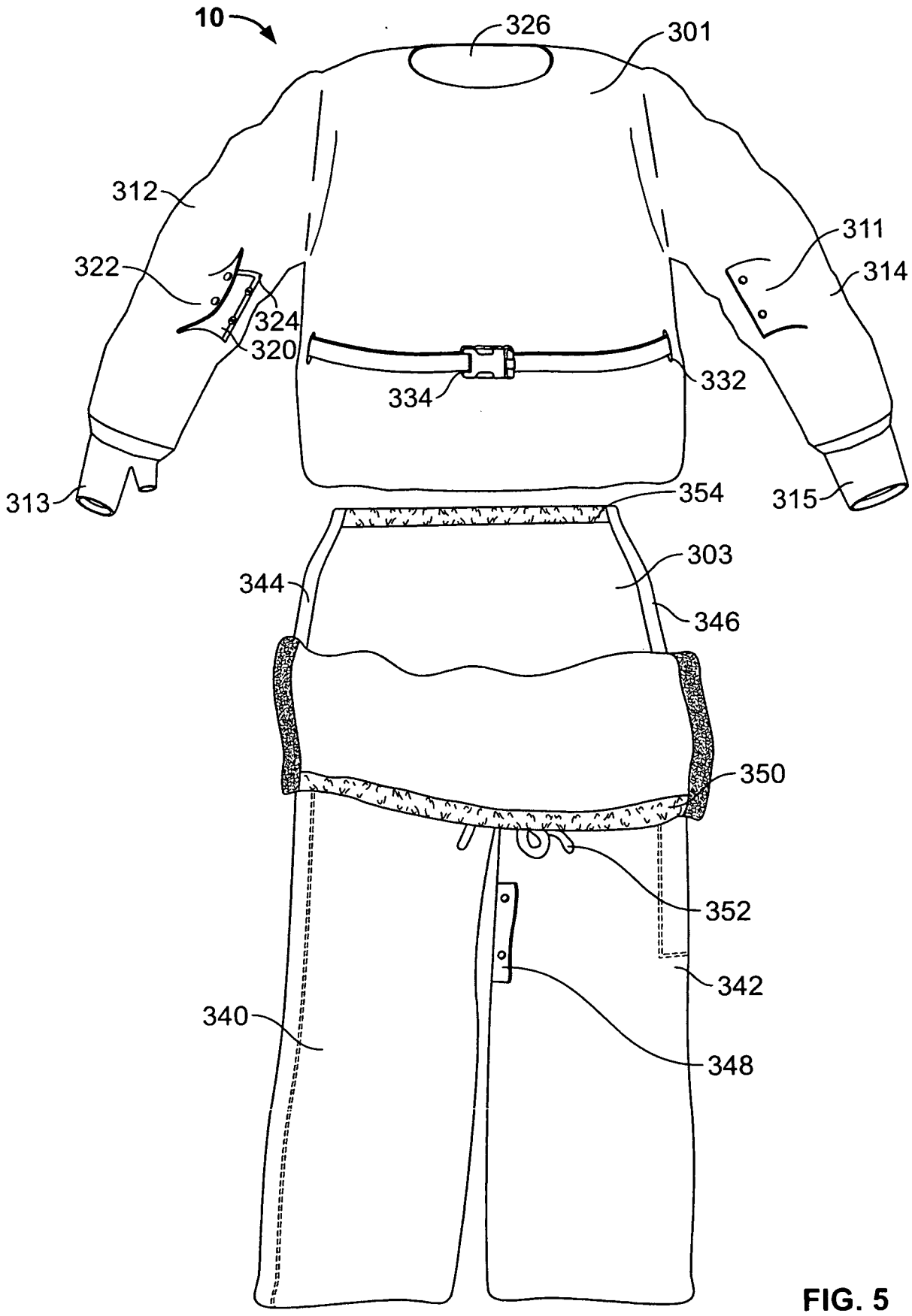

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FIG. 5