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(54) **GARMENT WITH DEFINED OPENINGS FOR CLINICAL INSPECTION**

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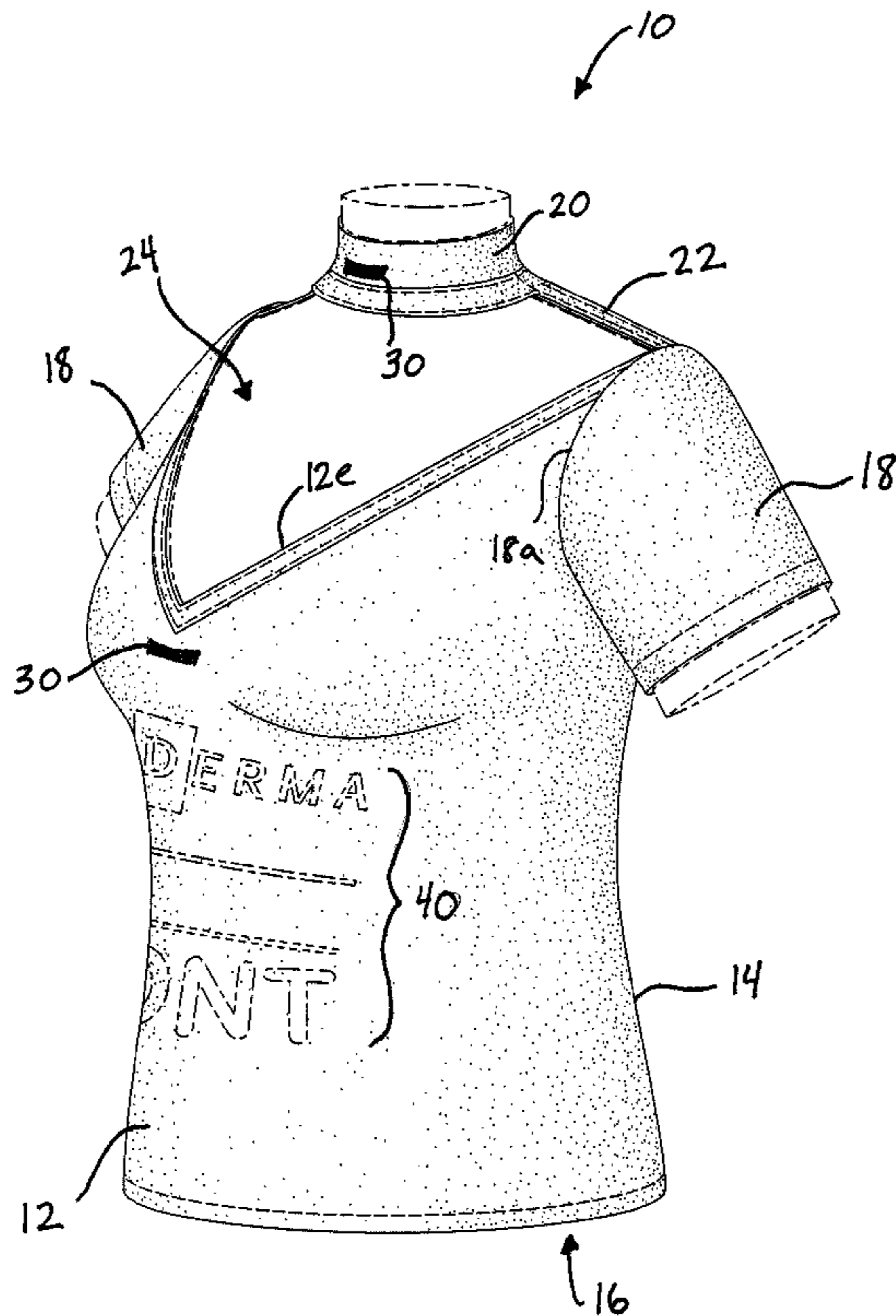
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(57) **ABSTRACT**

A garment includes a connected front and back panels forming a cavity for an upper body of a subject. Each of a pair of sleeves is connected to at least one of the front or back panel and is in communication with the cavity. A collar is configured to surround a neck of the subject. Each of a pair of shoulder straps is connected at one end to the collar and at an opposing end to at least one of the front or back panels or a sleeve. A first opening is formed by at least the straps, a top edge of the front panel, and the collar to expose a top portion of the subject's chest. A second opening is formed by at least the straps, a top edge of the back panel, and the collar to expose a top portion of the subject's back.



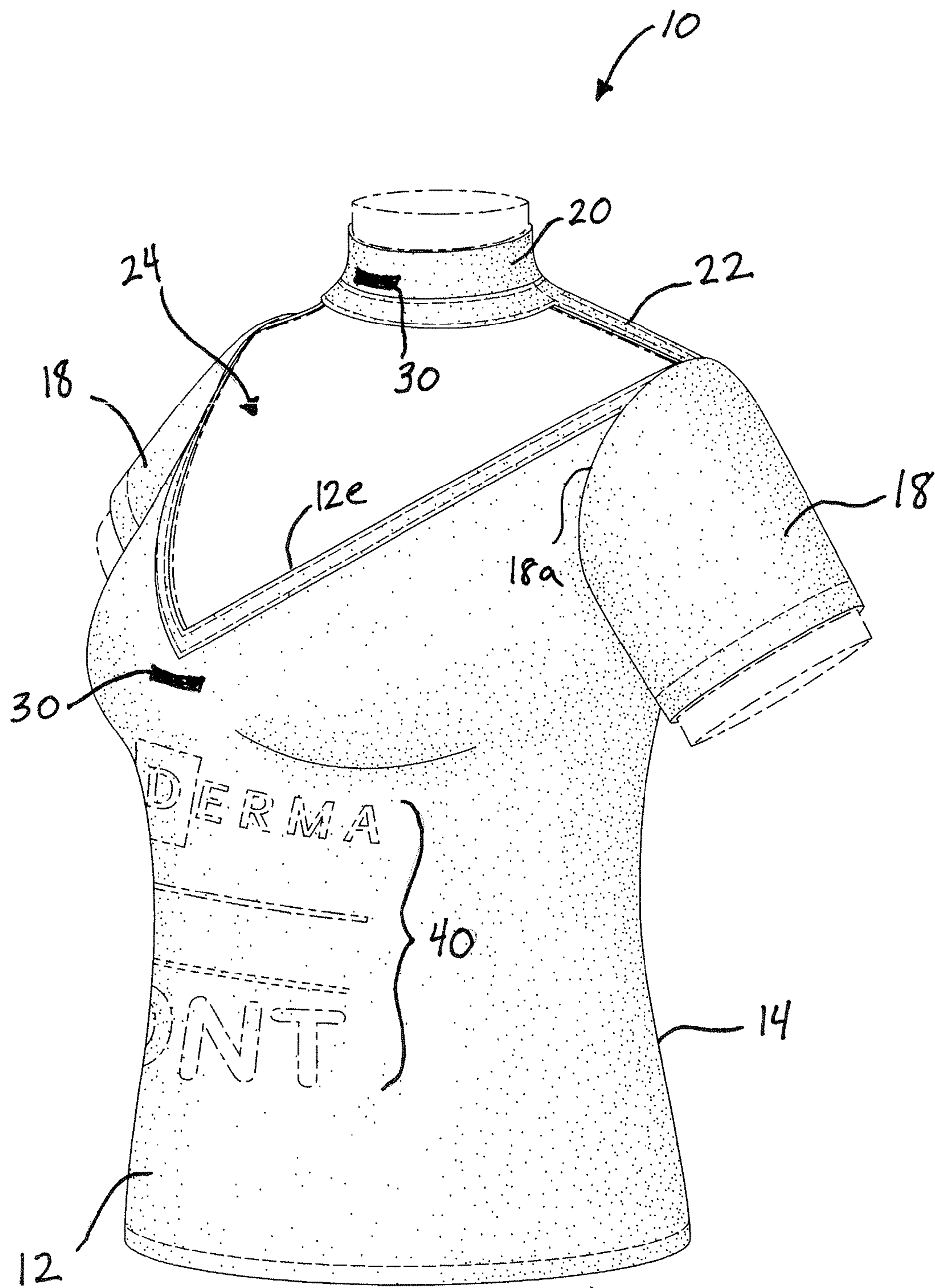
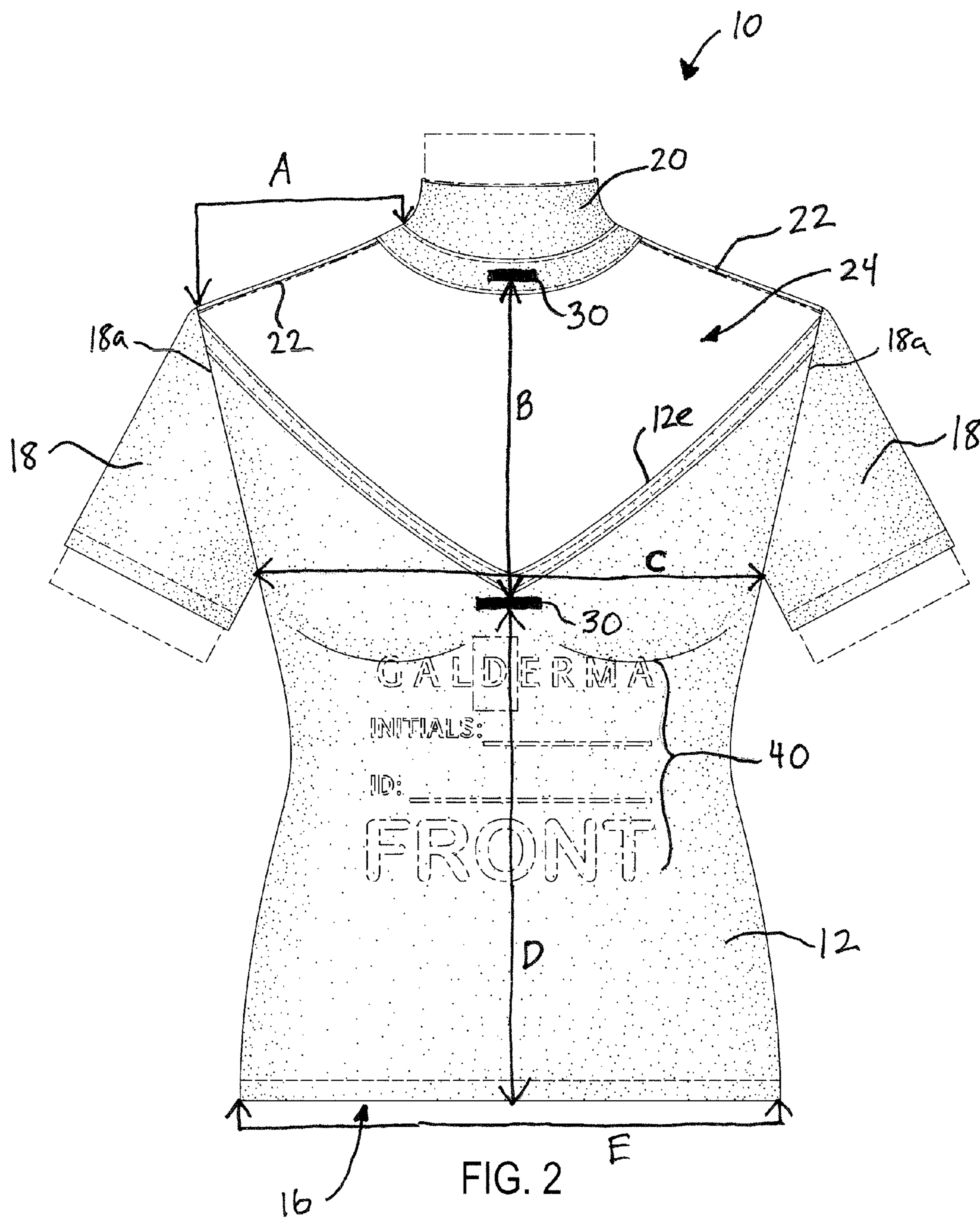


FIG. 1



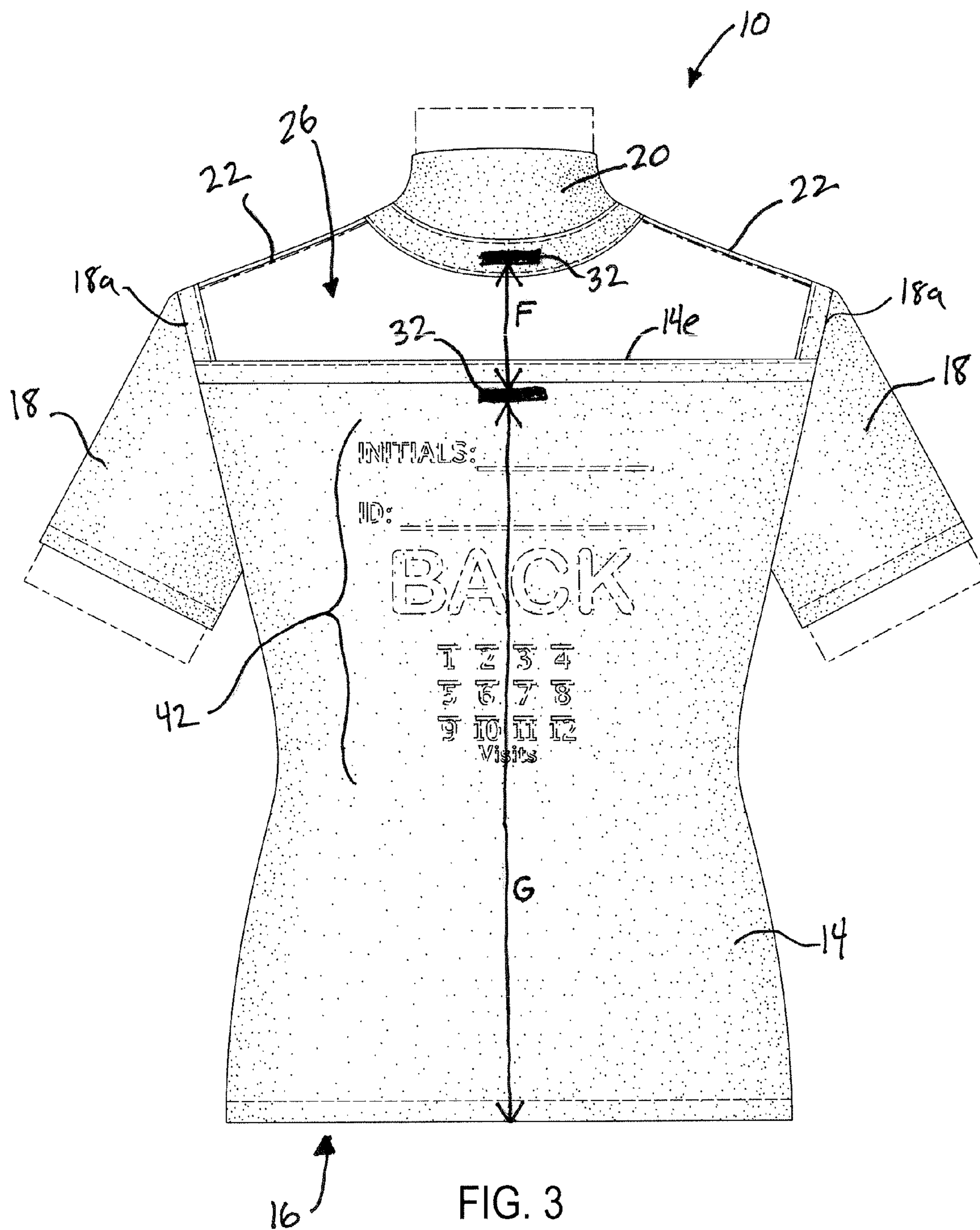


FIG. 3

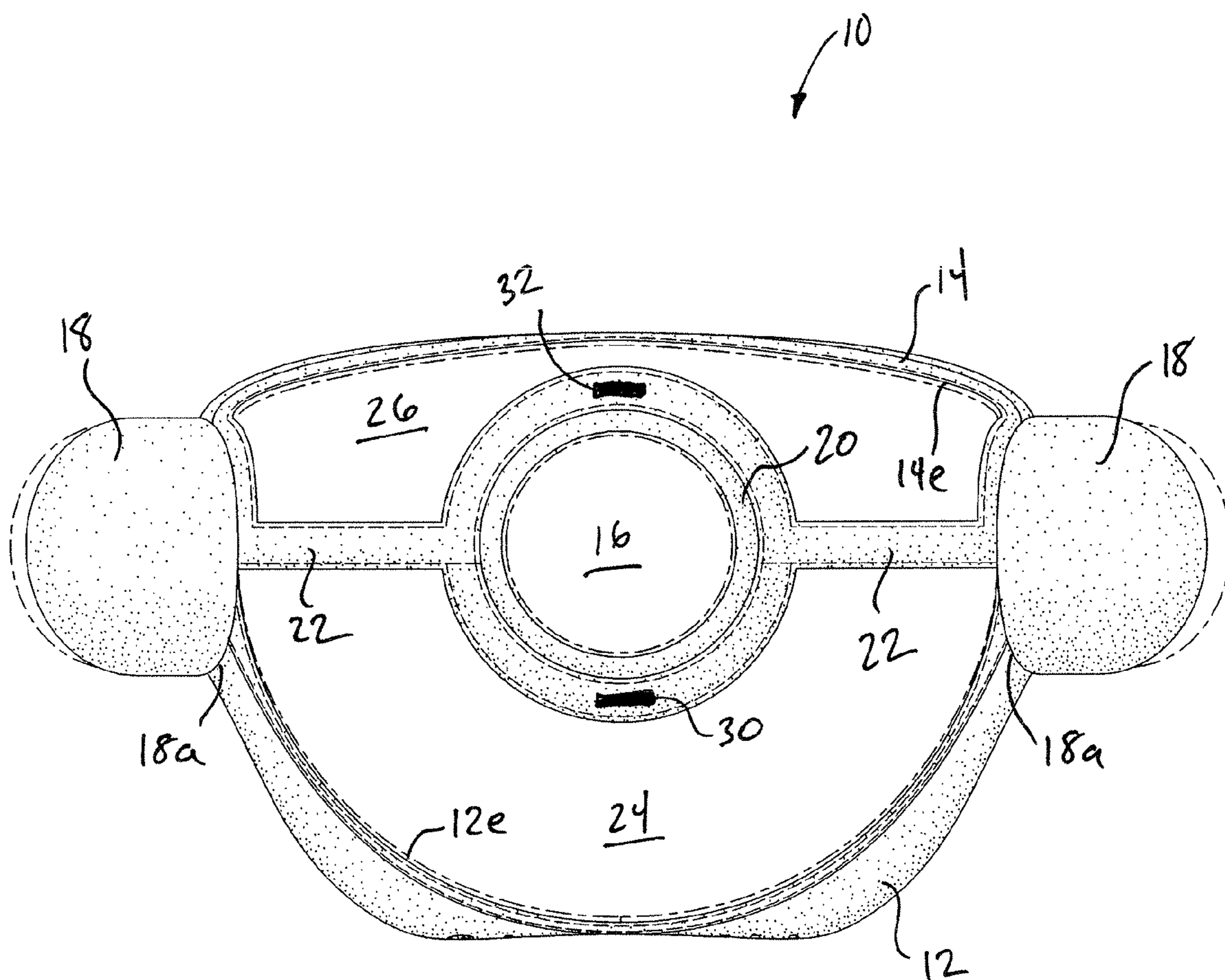


FIG. 4

GARMENT WITH DEFINED OPENINGS FOR CLINICAL INSPECTION

BACKGROUND OF THE INVENTION

[0001] An embodiment of the present invention relates generally to a garment, and more particularly, to a garment having defined openings for clinical inspection.

[0002] During testing and evaluation of products for the treatment of dermal conditions, such as for example, truncal acne, careful observation of the same area of skin of the subject over an extended period of time is required. This is an important aspect of the study to accurately assess whether the treatment is having the desired effect. While a subject's body may be marked directly, using an ink pen or the like, the marking is prone to fading away over time as a result of the subject bathing, sweating, or other like activities. Further, marking of the subject's skin is often undesirable to the subject.

[0003] It is therefore desirable to provide a garment with defined openings that can be repeatedly worn by the subject to expose the same area of skin for each examination during the study.

BRIEF SUMMARY OF THE CLAIMED INVENTION

[0004] Briefly stated, an embodiment of the present invention comprises a garment for use in clinical inspection. The garment includes a front panel having a top edge, an opposing back panel having a top edge and being connected with the front panel along a lateral edge so as to form a cavity in which an upper body of a subject is received when the garment is worn, and a pair of opposing hollow sleeves. Each of the sleeves is connected to at least one of the front or back panel and is in communication with the cavity so as to receive an arm of the subject when the garment is worn. A collar is configured to surround a neck of the subject when the garment is worn. The garment further includes a pair of shoulder straps, with each of the straps being connected at one end to the collar and at an opposing end to at least one of the front panel, the back panel, or one of the sleeves. A first opening is formed by at least the shoulder straps, the top edge of the front panel, and the collar, and is configured to expose a top portion of a chest of the subject when the garment is worn. A second opening is formed by at least the shoulder straps, the top edge of the back panel, and the collar, and is configured to expose a top portion of a back of the subject when the garment is worn.

[0005] Another embodiment of the present invention comprises a garment for use in clinical inspection. The garment includes a front panel having a top edge, an opposing back panel having a top edge and being connected with the front panel along a lateral edge so as to form a cavity in which an upper body of a subject is received when the garment is worn, a collar configured to surround a neck of the subject when the garment is worn, and a pair of shoulder straps. Each of the straps is connected at one end to the collar and at an opposing end to at least one of the front panel or the back panel. A first opening is formed by at least the shoulder straps, the top edge of the front panel, and the collar, and is configured to expose a top portion of a chest of the subject when the garment is worn. A second opening is formed by at least the shoulder straps, the top edge of the back panel,

and the collar, and is configured to expose a top portion of a back of the subject when the garment is worn.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0006] The following detailed description of preferred embodiments of the invention will be better understood when read in conjunction with the appended drawings. For the purpose of illustration, there are shown in the drawings embodiments which are presently preferred. It should be understood, however, that the invention is not limited to the precise arrangements and instrumentalities shown.

[0007] FIG. 1 is a front perspective view of a garment in accordance with a preferred embodiment of the present invention;

[0008] FIG. 2 is a front elevational view of the garment of FIG. 1;

[0009] FIG. 3 is a rear elevational view of the garment of FIG. 1; and

[0010] FIG. 4 is a top plan view of the garment of FIG. 1.

DETAILED DESCRIPTION OF THE INVENTION

[0011] Certain terminology is used in the following description for convenience only and is not limiting. The words "right", "left", "lower", and "upper" designate directions in the drawings to which reference is made. The words "inwardly" and "outwardly" refer to directions toward and away from, respectively, the geometric center of the garment and designated parts thereof. The terminology includes the above-listed words, derivatives thereof, and words of similar import. Additionally, the words "a" and "an", as used in the claims and in the corresponding portions of the specification, mean "at least one."

[0012] Referring to the drawings in detail there is shown in FIGS. 1-4 a preferred embodiment of a garment 10 in accordance with the present invention. The garment 10 is preferably in the form of a shirt, blouse, or like covering for the upper body of a subject (partially shown in phantom in the drawings using alternating long and short dashes). The garment 10 preferably includes opposing front and back panels 12, 14 which may be connected to one another via one or more seams (not shown). For example, a seam may be provided on each of left and right sides of the garment 10 to connect the front and back panels 12, 14. In another embodiment, the front and back panels 12, 14 may be integrally connected on one side and attached by a seam at the opposing side. However, other embodiments, such as those where a seam is not required, may be used as well.

[0013] The front and back panels 12, 14 together form a cavity 16 in which the upper body of the subject is received when the garment 10 is worn. The garment 10 further includes hollow sleeves 18, each attached to one or both of the front and back panels 12, 14 and in communication with the cavity 16 for receiving corresponding arms of the subject. The sleeves 18 are preferably attached by additional seams 18a. Alternatively, the sleeves 18 may be integrally formed with one or both of the front and back panels 12, 14, or the like.

[0014] The garment 10 further includes a cylindrical collar 20 configured to surround the neck of the subject when the garment 10 is worn. An interior of the collar 20 is therefore in communication with the cavity 16 formed by the front and

back panels **12**, **14**. The garment **10** also includes at least two shoulder straps **22**. Each shoulder strap **22** is coupled to the collar **20**, either integrally or via a thread or like attachment, and extends in a direction generally parallel to a shoulder of the subject toward one of the sleeves **18**. The shoulder strap **22** is attached to at least one of the sleeve **18**, the front panel **12**, or the back panel **14**. The shoulder strap **22** may be integrally formed with one or more of the sleeve **18**, front panel **12**, or back panel **14**, connected thereto via thread or like attachment, or a combination thereof

[0015] A first opening **24** is formed in the garment **10** by the shoulder straps **22**, a top edge **12e** of the front panel **12**, and the collar **20**. The first opening **24**, when the garment **10** is placed on the subject, is configured to expose a top portion of the chest of the subject for clinical examination. In a preferred embodiment, the top edge **12e** of the front panel **12** has a V-shape. It is preferred that a nadir of the “V” formed by the top edge **12e** extends at a maximum to the xiphoid process of the subject, although this may be complicated by the particular anatomy of the subject or other factors.

[0016] A second opening **26** is formed in the garment by the shoulder straps **22**, a top edge **14e** of the back panel **14**, and the collar **20**. The second opening **26**, when the garment **10** is placed on the subject, is configured to expose a top portion of the back of the subject for clinical examination. In a preferred embodiment, the top edge **14e** of the back panel **14** extends generally horizontally between the two sleeves **18**. The size of the second opening **26**, particularly the location of the top edge **14e** of the back panel **14**, is preferably designed to represent the area of the back that the subject can reach with his or her own hand to apply medicament for treatment.

[0017] It should be noted that the sizes and shapes of the first and second openings **24**, **26** can vary according to the examination to be conducted, specific needs of the subject, and the like while still keeping within the scope of the present invention. The portions of the garment **10** bordering on the first and second openings **24**, **26**, such as the top edges **12e**, **14e**, the collar **22**, and the like, are preferably reinforced with threading or extra material to prevent tearing or deformation of the garment **10** in the areas of the first and second openings **24**, **26**.

[0018] An important aspect in maintaining consistency of the locations of the examination areas on the subject is the fit of the garment **10**. For example, if the garment **10** hangs too loosely on the subject, the first and second openings **24**, **26** may not overlap with the same examination areas each time the garment **10** is worn. Thus, it is preferred that the garment **10** be tight-fitting to the subject, i.e., that the garment **10** generally takes to the outline of and is in contact with much of the subject’s body without significant portions hanging loose or being folded or wrinkled.

[0019] The type of material used to make the garment **10** also plays a role in maintaining the consistency of the examination area location. In testing, it was found that an entirely cotton material tends to deform over time. An entirely spandex material also did not perform satisfactorily as it failed to retain sufficient structure for proper use of the garment **10**. A preferred material is a blend of cotton and spandex, wherein the cotton provides the necessary structure to the garment **10** and the spandex allows the appropriate fit to the subject. A preferred percentage ratio of cotton to spandex is between about 86/14 to about 95/5. Of course,

other blends or like materials may be used as well to provide a structured, well-fitting garment **10**.

[0020] In order to better gauge consistency between examinations, the garment **10** may be provided with front and back fitting guide lines **30**, **32** that are printed, sewn, adhered, or otherwise applied to the garment **10**. For example, a pair of front fitting guide lines **30** may be provided spaced apart from one another along a vertical midline of the front panel **12**. One of the front fitting guide lines **30** is preferably provided on the collar **20** just above the front opening **24** and the other front fitting guide line **30** is provided on the front panel **12** just below the top edge **12e**. Similarly, a pair of back fitting guide lines **32** may be spaced apart from one another along a vertical midline of the back panel **14**, with one back fitting guide line **32** being provided on the collar **20** just above the back opening **26** and the other back fitting guide line **32** being provided just below the top edge **14e** of the back panel **14**. Each time the garment **10** is worn by the subject or an examination is conducted, a distance between the respective front and/or back fitting guide lines **30**, **32** may be performed. If the distances can be consistently maintained, the first and second openings **24**, **26** can be more readily assumed to be in the same location on the subject. The guide lines **30**, **32** need not be centered and can be placed in any locations on the garment which can generate a reproducible measurement for aligning the first and second openings **24**, **26**.

[0021] Given the variation in body types and sizes between each individual subject, more than one size of the garment **10** must typically be provided. However, it is often impractical to supply each individual subject with a completely customized and fitted garment **10**. It has been found that seven size variations, with relevant measurements shown below in Table 1, provide sufficient coverage for most subject body types and sizes during clinical inspection. Dimensions A-G are illustrated in FIGS. 2-3. The appropriate size garment **10** for the subject may be selected by measuring the distance between the axillae of the subject and matching that distance with the closest appropriate values below in Table 1, although other measurements may be used to select the proper size of the garment **10**. Of course, other sizes and dimensions other than those shown in Table 1 may also be used in keeping with the invention.

TABLE 1

Dimension	Size 1	2	3	4	5	6	7
Neck circumference (cm)	41.5	42	44.5	47	48.5	49.5	51.5
A (cm)	11.5	12.5	13.5	14.5	15.5	15.5	15.5
B (cm)	17.5	20	18.5	17.5	17.5	18.5	20
C (cm) (while flat)	35	40.5	42.5	47	50	53.5	57.5
D (cm)	22.5	26.5	25.5	29.5	31	33	36
E (cm) (while flat)	24.5	32	32	35	39.5	42.5	45.5
F (cm)	10	13	14	12	12	13.5	13
G (cm)	33.5	36.5	37.5	41	44.5	45	48
Chest (cm)	80	89.5	94.5	99.5	102.5	124.5	142
Chest (inches)	31.5	35	37	39	40	49	56

[0022] In certain embodiments, the sizes of the first and second openings **24**, **26**, certain other components of the garment **10**, and even the size of the garment **10** itself may be adjustable. For example, mechanical clips (not shown) may be provided to shorten the shoulder straps **22**, reduce the circumference of the cavity **16**, or make other like adjustments to provide a better fit of the garment **10**. Other

types of mechanisms for making such adjustments, such as integrated hook-and-loop fasteners, adhesive strips, or the like, may be used as well. In addition, the garment **10** may include flaps (not shown) for covering all or a portion of the first and/or second openings **24**, **26**. The flaps can allow for privacy, focus on specific examination locations of the subject, or the like. As an example, the flaps may be secured by threading at one end to the garment **10** and may include hook-and-loop fasteners at the other end to allow for opening and closing of the flaps. The flaps may also be completely removable.

[0023] The garment **10** may also include writings **40**, **42** on the front and/or back panels **12**, **14** or other portions of the garment **10**. Aside from logos or aesthetic designs, the writings **40**, **42** may also be used for informative purposes, such as labeling the garment **10** for the correct orientation on the subject, instructions, names or other identifications (e.g., subject number, initials, or the like), information regarding the current examination, the number of examinations, other like information, or combinations thereof

[0024] The garment **10** may also be initially formed as a full and ordinary shirt, and may be provided with cut-out lines (not shown) indicating locations of the garment **10** which may be cut with scissors or other cutting instruments to form the first and second openings **24**, **26**.

[0025] Other openings in other locations of the garment **10**, for example to expose the stomach, lower back, arm, or other areas of the subject, may also be utilized in keeping with the invention. The goal is to ensure that the same area of the subject is evaluated during each examination.

[0026] In use, the subject preferably dons the garment **10** prior to each examination. Although it is presumed that the subject will wear the same garment **10** for each examination, a new same-sized garment **10** may alternatively be provided each time. The subject or an administrator may measure the appropriate distances between the front and/or back fitting guide lines **30**, **32** to establish base-line values representing the position of the front and back openings **24**, **26**, or for subsequent examinations, to align the garment **10** to match the original base-line values. The subject is then examined through the first and/or second openings **24**, **26**. After examination, notations may be made on the garment **10**, as necessary. Notations may also be made before or during examination, if necessary.

[0027] The garment **10** may also be used for purposes other than clinical evaluation, such as other medical examinations, and non-medical uses.

[0028] It will be appreciated by those skilled in the art that changes could be made to the embodiments described above without departing from the broad inventive concept thereof. It is understood, therefore, that this invention is not limited to the particular embodiments disclosed, but it is intended to cover modifications within the spirit and scope of the present invention as described above.

We claim:

1. A garment for use in clinical inspection, the garment comprising:

- a front panel having a top edge;
- an opposing back panel having a top edge and being connected with the front panel along a lateral edge so as to form a cavity in which an upper body of a subject is received when the garment is worn;
- a pair of opposing hollow sleeves, each of the sleeves being connected to at least one of the front or back

- panel and in communication with the cavity so as to receive an arm of the subject when the garment is worn;
- a collar configured to surround a neck of the subject when the garment is worn;

- a pair of shoulder straps, each of the straps being connected at one end to the collar and at an opposing end to at least one of the front panel, the back panel, or one of the sleeves;

- a first opening formed by at least the shoulder straps, the top edge of the front panel, and the collar, and configured to expose a top portion of a chest of the subject when the garment is worn; and

- a second opening formed by at least the shoulder straps, the top edge of the back panel, and the collar, and configured to expose a top portion of a back of the subject when the garment is worn.

2. The garment of claim **1**, further comprising:

- a first guide line located on the collar; and
- a second guide line located on the front panel, the first and second guide lines being configured to be spaced apart from one another by a predetermined distance when the garment is worn by the subject.

3. The garment of claim **2**, further comprising:

- a third guide line located on the collar; and
- a fourth guide line located on the back panel, the third and fourth guide lines being configured to be spaced apart from one another by a predetermined distance when the garment is worn by the subject.

4. The garment of claim **2**, wherein the second guide line is located proximate the top edge of the front panel.

5. The garment of claim **1**, wherein the top edge of the front panel has a V-shape.

6. The garment of claim **5**, wherein a nadir of the top edge is configured to extend to a xiphoid process of the subject when the garment is worn.

7. The garment of claim **1**, wherein the front and back panels, the sleeves, the collar, and the shoulder straps are made from a blend of cotton and spandex.

8. The garment of claim **7**, wherein a ratio of cotton to spandex is between about 86/14 to about 95/5.

9. The garment of claim **1**, wherein the top edge of the front panel and portions of the collar and the shoulder straps bordering on the first opening are reinforced with one of threading or additional material.

10. The garment of claim **9**, wherein the top edge of the back panel and portions of the collar and the shoulder straps bordering on the second opening are reinforced with one of threading or additional material.

11. The garment of claim **1**, wherein the top edge of the back panel extends generally horizontally between the sleeves.

12. The garment of claim **1**, wherein when the garment is worn by the subject, the second opening is configured to be positioned over an area of the back of the subject that the subject is able to reach by hand.

13. The garment of claim **1**, further comprising at least one writing located on at least one of the front or back panel.

14. The garment of claim **1**, wherein the collar is cylindrical.

15. A garment for use in clinical inspection, the garment comprising:

- a front panel having a top edge;
- an opposing back panel having a top edge and being connected with the front panel along a lateral edge so

as to form a cavity in which an upper body of a subject is received when the garment is worn;

a collar configured to surround a neck of the subject when the garment is worn;

a pair of shoulder straps, each of the straps being connected at one end to the collar and at an opposing end to at least one of the front panel or the back panel;

a first opening formed by at least the shoulder straps, the top edge of the front panel, and the collar, and configured to expose a top portion of a chest of the subject when the garment is worn; and

a second opening formed by at least the shoulder straps, the top edge of the back panel, and the collar, and configured to expose a top portion of a back of the subject when the garment is worn.

* * * * *