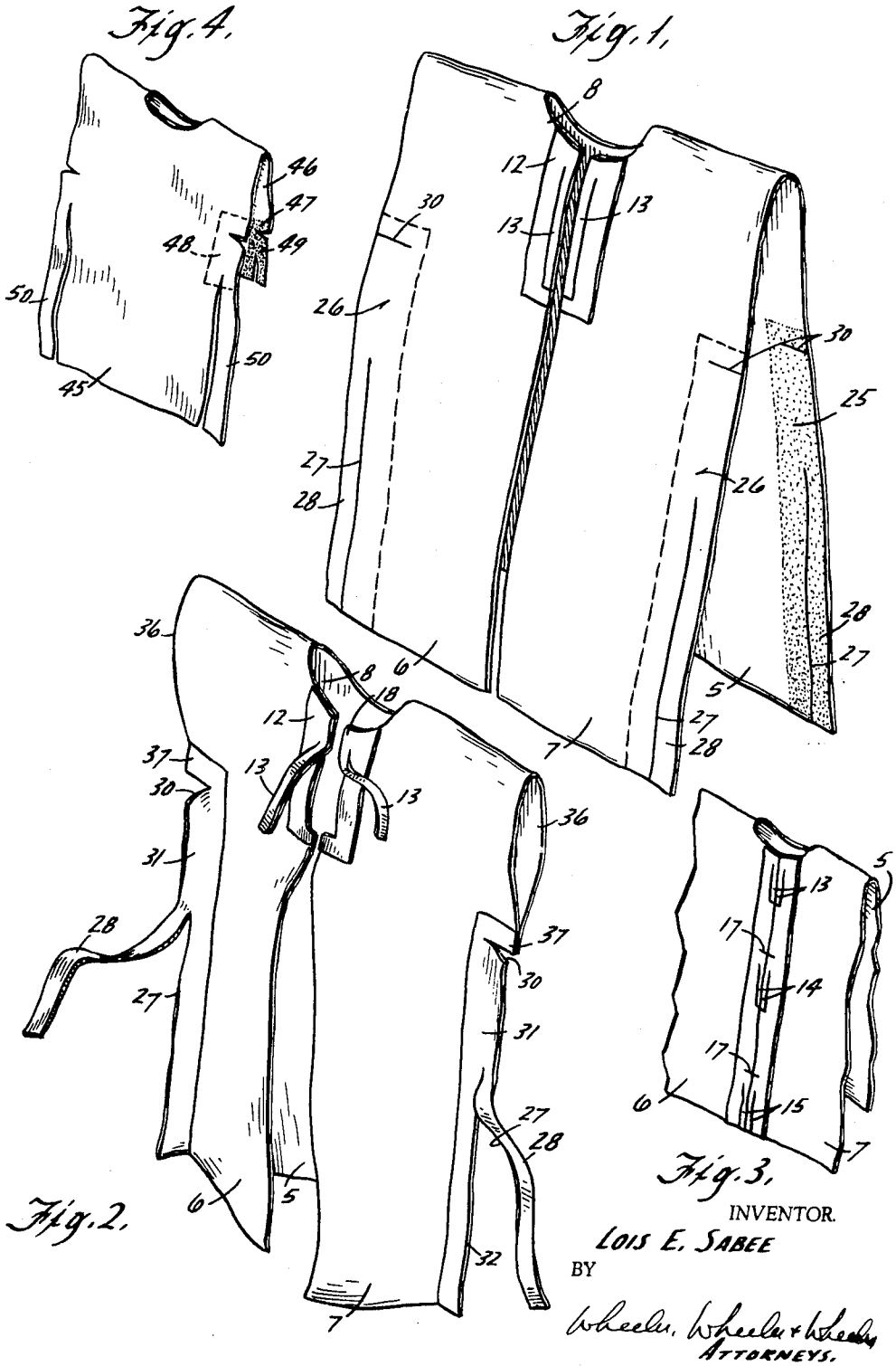
Jan. 25, 1966 L. E. SABEE 3,230,546

DISPOSABLE GARMENT

Filed Oct. 10, 1962



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United States Patent Office 3,230,546 Patented Jan. 25, 1966

3,230,546

DISPOSABLE GARMENT

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Filed Oct. 10, 1962, Ser. No. 229,529
4 Claims. (Cl. 2—114)

This invention relates to improvements in disposable short sleeved garments of the type resembling a smock or a gown for medical examination, and which may open either down the back or the front, or an apron with a shoulder yoke extending part way down the back, all of such garments having ties or holding strips to be tied around the user at the waist.

In making such disposable garments of paper, non-woven fabric or the like, it is desirable to use a substantially rectangular length of material without cutting the same to shape the garment in any way. It is also desirable to provide strips of extra thicknesses of the material to serve as holding strips or ties for keeping the garment snug at the waist line of the user and for keeping the opening down the back or front closed, when such opening is provided. The side edges of a substantially rectangular sheet are adhesively joined for a portion of the length of the garment from the skirt end toward the shoulder portion and excepting for those areas needed for emergence of the user's arms. Such joining is done by overlapping and gluing portions of the side or longitudinal edges of the sheet to provide double thicknesses of material for a width greater than the width of strips to be cut therefrom for tying at the waist line.

The garment may also have a double layer of material in an area where an opening is to be held closed as when the garment is to be open partially or completely down the back or front panel. The double layer is preferably of a length greater than the length of holding strips or ties to be cut therefrom along the edges of the back or front panel opening. The double layer may be extended from the neck opening and only partially down the back or the front toward the waist line or may be extended entirely to the skirt end of the garment. The back or front may be slit for the full length of the garment and as many pairs of ties may be cut in spaced relation along the slit and from the double thickness portions as desired. In reinforcement of an entire area from which back or front slit ties are to be cut, the desired reinforcement can be obtained from placing a second layer of material only on the tie and the extension thereof. When the back panel is only a yoke about the shoulders and upper back of user as when the garment is an apron, the head-neck opening can be made sufficiently large but no ties are needed to keep the yoke of the apron in place.

In use, tension on each pair of waist line or panel opening ties pulls on an extension of the double thickness of material which is approximately the width of the holding strips or ties, and pulls such extension toward alignment with the tied strips so that the tension acts through the material and does not act on the adhesive joints.

In the drawings:

FIG. 1 is a perspective view of a blank of paper or the like which has been formed with the neck opening, has a partial double thickness area on the back downward from the neck opening, has been slit down the back, has been marked for cutting therefrom of holding strips or ties, and is provided with adhesive on facing surfaces of portions of the side or longitudinal edges of the garment.

FIG. 2 is a perspective view of the completed garment of FIG. 1, with side edge portions adhesively joined and with ties, cut from the several double thickness portions of the blank, at the waist line and at the neck opening.

FIG. 3 is a fragment of a view similar to FIG. 1, but showing a modified form of back panel with plural holding strips to be cut from the back and in spaced relation along the slit in the back, and,

FIG. 4 is a fragmentary view similar to FIG. 1, of an apron having the back panel reduced to a shoulder yoke and without neck ties, but otherwise embodying the invention.

Referring particularly to the drawings, a sheet of disposable material such as paper or non-woven fabric, of substantially rectangular shape is folded across its length and for the garments of FIGS. 1–3, approximately centrally, of its length to form a front panel **5** and a rear panel which is eventually divided into two panels **6** and **7**. An opening **8** is cut across the fold of the material and into both the front and back panels for receiving the head and neck of the user, the opening being preferably cut as is usual so that the back edge of the opening lies higher on the neck of the user than the front edge of such opening.

If either the back or the front panel is to be slit either partially or completely and is then to be provided with ties, a second layer of material **12** may be adhesively attached, for example, to the back panels **6** and **7** from the neck downward and for at least a distance greater than the length of a pair of ties **13** at the neck opening, or the second layer may be attached for the full length of the rear panel if a number of pairs of ties are desired as is shown in FIG. 3. Additional pairs of holding strips or ties **14** and **15** may then be provided at intervals along the edges of the back panel slit whereby the edges may be drawn into and held in temporary overlapping relation throughout the full length of the garment. If the material is reinforced or otherwise has sufficient strength to serve as ties at the neck opening, no second layer is required and that expense is avoided.

L-shaped cuts are made along the edges of the slit dividing the two rear panels **6** and **7** and form the pairs of ties **13**, **14** and **15** from the double layer back panel material. Cuts **17** are made transversely of the ties **14** and **15** above the attached end of such ties to form the end of tie extensions **18** as shown in FIG. 2, which are pulled toward alignment with the ties when in use under tension. The pulling force thus acts on the double layer material and no strain is put on the adhesive of the joint. Obviously, the reinforcement of ties may also be by means of a second layer placed only on the tie and its extension rather than having a second layer over an entire area and would be the equivalent of the latter construction.

The folding of the sheet across the length thereof brings adjacent the two inner or inside surfaces of the garment. The inside surfaces of the two panels are then coated as shown in FIG. 1, at **25**, over matching and facing areas which are to be brought together. Joints are thus made which extend laterally from the body of the garment and which are exceptionally strong. Such coatings extend substantial distances inwardly from the side edges of the front and back panels and provide substantial widths of double thickness material at **26** along the side or longitudinal edges of the garment. Cuts are made at **27** and substantially parallel with the side edges of the garment from the skirt end of the garment to approximately the waist line of the average user of the garment for producing a pair of holding strips or ties **28**, for use at the waist line of the garment. Cuts are also made as shown at **30** for approximately the entire width of the strips **28**, and at substantially a right angle to the side edges of the garment and at a substantial distance from the attached end of the ties, to provide waist line tie extensions **31** capable of assuming a position comparable to the position shown for tie extension **18**, when ties **28** are put under tension, to bring each tie and its extension approximately into alignment when the ties are in use.

When the garment is in use, the side joint portions **32** are in a position determined by the size of the user, and by the degree to which the garment front panel **5** is drawn taut by tension on ties **28**. The waist line tie extensions **31** are drawn into alignment with the ties **28** and tension on the ties is transmitted through the material rather than through the adhesive material of the joint **32**. The joined side edge portions of the garment above the transverse cuts **30** extend sideways when the garment is in use and co-act with unjoined side edge portions to form partial sleeves **36**. The sleeves **36** are a single thickness excepting at the portion **37** thereof and are therefore so flexible as not to interfere with arm movement even though the sleeves might be relatively close fitting. The garments are however preferably of such width that the sleeves drape downward somewhat toward the elbow of the user. Obviously, the sheet could be cut to form extensions of the portions forming the sleeves and which would add to the sleeve length formed when the waist ties are cut.

The apron shown in FIG. 4, is formed with a front panel **45** and a back panel **46** forming only a portion of a shoulder yoke for the garment. A head-neck opening is formed at the fold between panels **45** and **46** and is large enough to use without ties as stress on the yoke is reduced as compared to the garment of FIGS. 1–3. Side edge portions **47** are coated with adhesive to attach severally to side edge portions **48** so that double thickness material provides extensions **49** for ties **50**. In this case, ties **50** are single thickness material for most of their lengths but the tie extensions **49** are again of double thickness material. Thus stress on the extensions at an angle to the length of the tie, is resisted by double material and not by the adhesive of the joint. Hence even material having relatively little strength transversely of the blank, is adequate to stand the tension put on the ties **50** and their extensions **49**.

The present construction accordingly provides a disposable garment requiring a minimum of operations during manufacture. Cutting of the neck opening and slitting of the back panel and making of cuts for the various holding strips or ties, are the only cutting operations required. The garment is reinforced for a portion of the side edges and may be reinforced at the neck opening and along the back or front slits by double thicknesses of material. The free portions of the ties are preferably of double thickness material and the extensions from the ties are all of double thickness material and are free to assume a position such that any tension on the ties act through the material and not through the adhesive of the joints. Hence there is no danger that the adhesive joint may be opened by pulling on the ties as the single thickness material elsewhere in the garment automatically limits the tension possible. Obviously, the joints may also be made by use of staples, stitching or any other practical means for joining the particular material used. Obviously also, the waist ties may be cut from along the slit in the back. Even though the ties are cut from the joints along the side edges of the garment to provide ties at the waist, sufficient of the joint is left to provide a good closure along the sides as shown in FIG. 2.

Summarizing the disclosure, a substantially rectangular sheet of a length approaching double the height and of a width four to six inches wider than one-half the girth of a person, is folded midway of its length to form front and back panels and has a neck opening cut at the fold. The side edges are over-lapped a width of several inches for part of the folded length and are joined from the skirt end to at least midway of the length to the fold. A strip is cut approximately parallel to each edge in the double thickness joint portion upwardly from the skirt end to form ties for co-action in drawing the garment together. The strips extend to approximately the waist line and a cut is made from the side edge of the

joint portion transversely of the strip length and at a substantial distance above the attached end of the strip to form an extension which tends to aline with the strip when two strips are tied. Thus no stress is put on the joint itself but only on the double thickness material. The transverse cut forming the end of the strip extension frees a tubular portion from edges of the garment to act as sleeves.

For ease in use, one panel may be partially or wholly slit longitudinally. Such a slit is preferably made in a double thickness of material and strips are also cut from the edges of the slit to serve as ties. Each strip is thus made by two cuts as above described and the strip extensions act as above described. Obviously, a second layer of material laid on and joined only with a strip is the equivalent of a second layer over a portion of the panel greater than the strip width only.

I claim:

1. A disposable garment comprising a sheet folded transversely of its length to provide front and back panels and having an opening at the fold for the head and neck of the user and having a skirt end, longitudinal edges on the panels being continuously joined for a substantial portion of their length from the skirt end of the garment toward the fold thereof, a strip cut longitudinally along each joint portion from the skirt end of the garment to approximately the waist line thereof to form ties at the waist line of the garment, and an extension of each strip formed by a slit transversely of the strip length and into the joint portion at a distance from the attached end of the strip whereby the extension tends to align with the strip upon applying tension thereto and tension on the joint is avoided.

2. A disposable garment comprising a sheet folded to provide front and back panels of approximately equal lengths and having an opening at the fold for the head and neck of the user and having a skirt end, the side edges of the front and back panels being overlapped and continuously joined for a substantial portion of their length from approximately the skirt end, to approximately midway between the waist line and the fold of the garment for providing openings for the arms of the user above the juncture of the front and back panels, a strip cut from along the edge of each side from the skirt end of the garment to approximately the waist line thereof, each strip being formed by a cut approximately parallel to the longitudinal edge of the garment, and a strip extension formed by a slit transverse of the joined panel edges having greater tensile strength than the panels of the garment, the transverse slit defining partial sleeves for the arm openings.

3. A disposable garment comprising a substantially rectangular sheet folded transversely and approximately midway of its length to provide front and back panels and having an opening at the fold and extending into the front and back panels for accommodating the neck of the user, the side edges of the panels being joined from the skirt end of the garment toward the fold and to approximately chest height of the user and being unjoined adjacent the fold, the unjoined side portions of the garment forming sleeves of a length up to the width of the joint portion, a strip formed by a cut in each joint portion from the skirt end of the garment to approximately the waist line thereof, the cut being along the longitudinal edge of the joint portion in a double thickness of material and inwardly from the edge by width for co-acting with another strip in drawing the garment together, and an extension of each strip formed by a cut transversely of the strip length and into the joint portion at a distance from the attached end of the strips whereby the extension tends to align with the strip upon applying tension to the material and tension on the joint itself is avoided.

4. A disposable garment comprising a substantially rectangular sheet folded transversely and approximately mid-

way of its length to provide front and back panels and having an opening at the fold and extending into the front and back panels for accommodating the neck of the user, the side edges of the panels being joined from the skirt end of the garment toward the fold to approximately chest height of the user and being unjoined adjacent the fold, the unjoined side portions of the garment forming sleeves of a length equal to the width of the joint portion, a strip formed by a cut in each joint portion from the skirt end of the garment to approximately the waist line thereof, the cut being substantially parallel with and inwardly from a longitudinal edge of the joint portion to form a tie of a width co-acting with another tie in drawing the garment together an extension of each strip and of substantially the width of the strip and formed by a cut transversely of the strip length and into the joint portion at a distance from the attached end of the strip and at a substantial distance above the waist line of the

garment for alignment with the strip upon applying tension thereto and thereby avoiding tension on the joint itself.

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