

July 10, 1962

W. J. DORSEY

3,043,312

DEPOSITED LATEX ARTICLES

Filed Nov. 13, 1959

2 Sheets-Sheet 1

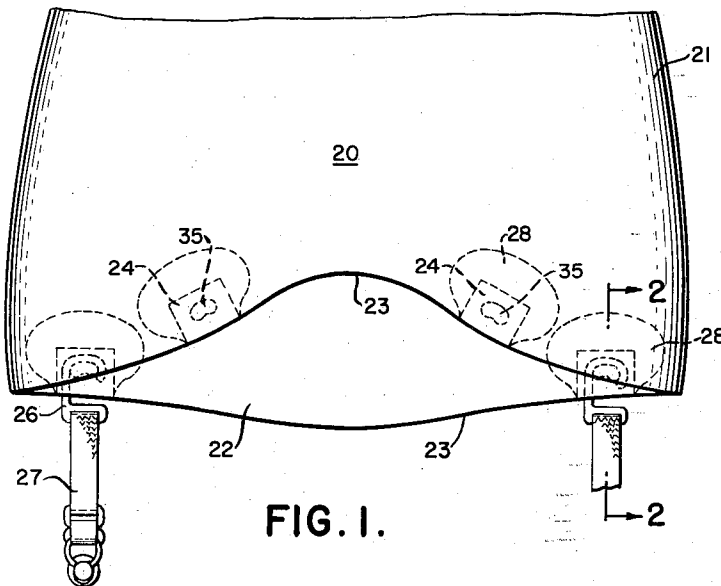


FIG. 1.

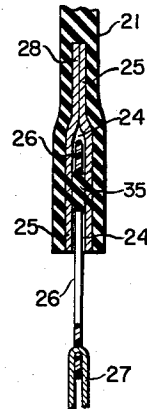


FIG. 2.

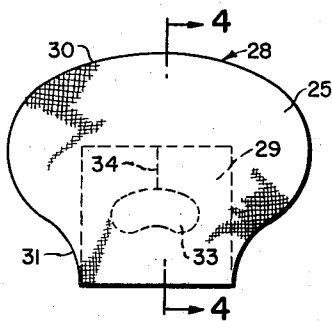


FIG. 3.

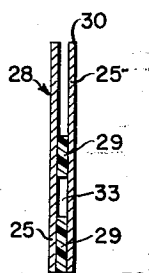


FIG. 4.

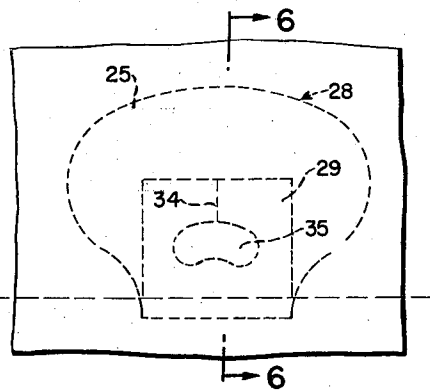


FIG. 5.

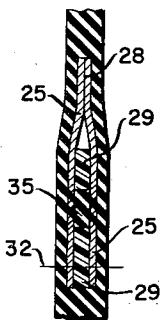


FIG. 6.

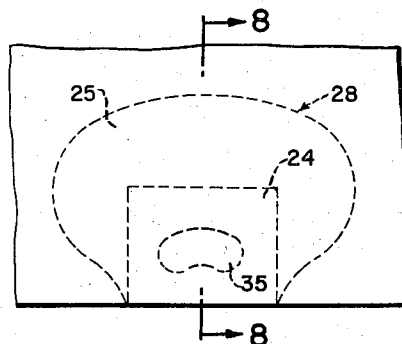


FIG. 7.

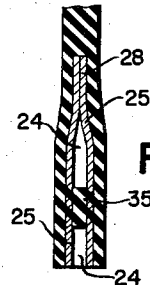


FIG. 8.

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2 Sheets-Sheet 2

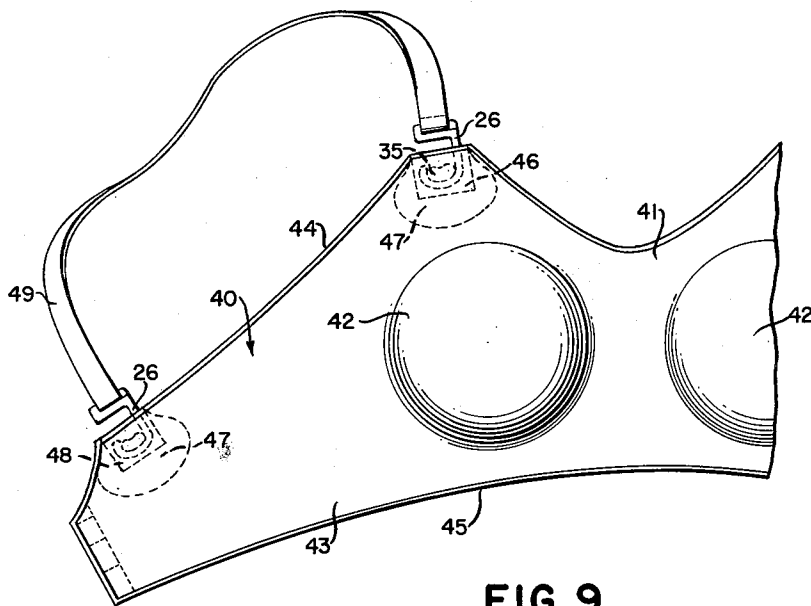


FIG. 9.

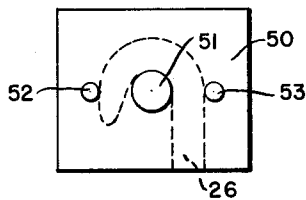


FIG. 10.

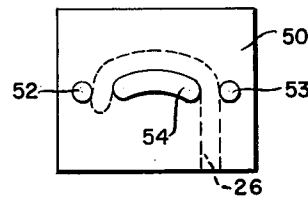


FIG. 11.

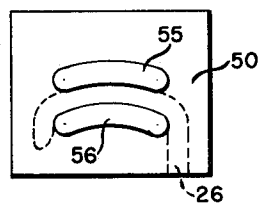


FIG. 12.

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3,043,312

DEPOSITED LATEX ARTICLES

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6 Claims. (Cl. 128—521)

This invention concerns deposited latex articles, for example latex girdles, and methods of forming them. It provides integrally formed pockets in the wall of the article, which pockets may be used for anchoring garters, straps and the like therein.

Deposited latex articles such as girdles and brassieres usually have accessories such as garter straps, shoulder straps, or other attachments affixed to the marginal portions thereof. A major problem encountered in producing such articles has been the limited ability of the portions of the deposited latex articles to which the attachments are joined, to withstand the repeated flexing and pulling to which they are subjected during the wearing of the articles. Many expedients have previously been used to join such attachments and straps to the latex article but they have suffered from various drawbacks, such as requiring a complicated method of manufacture and attachment, or requiring the use of exposed ends and buttons. Other drawbacks are that the attachment straps are permanently secured to the latex article so that replacement of worn and broken straps is difficult. Conversely, other prior methods attach the straps in such a way that they often work themselves loose and become detached from the latex article.

The present invention provides a special type of pocket within the confines of the wall of a deposited latex article which pocket is so constructed that a hook, which carries a garter strap or other attachment, may be quickly and easily inserted and locked into position with no possibility of its working loose. At the same time, it may be quickly and easily removed from the pocket at the desire of the wearer.

The special pocket of this invention comprises an open pocket formed integrally in the wall of the deposited latex article, said pocket having an integral stanchion of solid latex which joins facing surfaces of the pocket and acts as a core around which a garter strap-bearing hook may be locked. There is thus provided a method of attaching garter straps and other attachments which is secure and completely foolproof, and which at the same time allows the hook to be instantly removable. The integral pockets of this invention may be spaced in the wall away from the edge of the deposited latex article, or located at the edge of the article. The pockets are formed so that an integral stanchion of solid latex unites opposite, or facing, walls of the pocket at a position which is spaced from the closed sides of the pocket. The stanchion of latex is preferably positioned in the middle of the pocket, may be of any desired height and thickness, and may be cylindrical in shape, or kidney-shaped, or any other shape so long as it connects two opposite walls of the pocket and is sufficiently strong to act as a support for a hook which may be inserted into the pocket. The stanchion may also be described as a solid bridge, or island, connecting two opposite walls of the pocket.

By making the stanchion of such size and shape as to fit the contour of the inserted hook very closely, a strong, positive locking action is obtained, particularly where the inserted hook, together with the stanchion, practically completely fill the pocket so that no room is left for any play by the hook. As shown in FIGURES 1, 5, 7, and 9-12, the stanchion has an inwardly facing convex surface, i.e., that surface or boundary of the stanchion

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which faces the closed side of the pocket, is convex. This is possible because the rubbery latex material stretches to admit the hook and then contracts to its original dimensions whereby the hook is held securely and tightly. More than one stanchion may be provided, spaced in such a way that one stanchion acts as the core around which the hook is engaged and another stanchion acts as a guiding and restraining member to further eliminate the possibility of any motion of the hook. Articles having such integral pockets have superior serviceability under the stresses occurring during use. The straps and attachments are securely and tightly held to the girdle by this invention without any bulky protruding areas, without the danger of working loose, and yet at the same time are instantly and easily removable at the wish of the wearer.

In accordance with the present invention, the integral pocket containing the integral stanchion is formed through the use of a latex-separating material which prevents adhesion between successive depositions of the latex so as to form a closed pocket containing the integral stanchion, and by subsequently cutting the article to open the pocket. After the pocket has been opened, the latex on either side of the latex-separating film is separated, and the latex-separating film removed to form the final open pocket.

When an integral pocket is positioned as described above with respect to the wall of the deposited article, the plane of stress resulting from tension on the attachment is positioned somewhat centrally with respect to the wall thickness of the article, since the pocket has approximately equal wall thicknesses on both sides, and any pull on it tends to be transmitted to both adjacent walls with resulting uniform distribution of the stress. This avoids undesirable concentrations of stress at any point in the region of attachment of a strap to the article so that it is capable of withstanding more intense flexing and straining without tearing.

The invention is described in greater detail in connection with the drawings in which embodiments of the invention, as exemplified in girdles and brassieres, are illustrated, it being understood that these embodiments are shown as examples of various forms that the invention may take and not by way of limitation thereof.

In the drawings:

FIGURE 1 is a front view in elevation showing a deposited latex girdle having integral reinforced pockets for the attachment of garter straps;

FIGURE 2 is a cross-sectional view taken along the line 2—2 of FIGURE 1 showing an integral reinforced pocket and attached garter strap;

FIGURE 3 is a plan view of an assembly used to form a reinforced garter attaching pocket;

FIGURE 4 is a cross-sectional view taken along the line 4—4 of FIGURE 3 showing the position of the film in the assembly;

FIGURE 5 is a view in elevation of a portion of the girdle before trimming showing a potential pocket in the wall of the girdle and the line along which it will be trimmed;

FIGURE 6 is a cross-sectional view taken along the line 6—6 of FIGURE 5 showing the assembly embedded in the wall of the girdle;

FIGURE 7 is a view in elevation showing the portion of the girdle of FIGURE 5 cut along its trim line;

FIGURE 8 is a cross-sectional view taken along the line 8—8 of FIGURE 7 showing the reinforced pocket produced in the wall of the girdle by cutting along the trim line and removal of the non-adhering film;

FIGURE 9 is a fragmentary view of back and front portions of a deposited latex brassiere having integral pockets

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in the wall of the brassiere with the ends of a shoulder strap mounted therein; and

FIGURES 10, 11, and 12 show various positions and configurations of the stanchions which may be formed in the pocket to assure close, snug fit of the hook.

In the drawings, FIGURE 1 illustrates in general a deposited latex girdle 20 having a front wall 21 and a back wall 22 which form a continuous body-encircling elastic garment. Positioned in both the front and back walls of the girdle at the bottom edge 23 thereof are spaced garter tab, strap or ribbon receiving pockets 24 which extend from the edge of the girdle vertically upwardly within the confines of the wall thereof. Each side of pocket 24 has embedded therein a fabric reinforcement 25 which forms a reinforced wall defining a wall of the pocket (see FIGURE 2.) The pocket is formed so that the vertical opening therein lies in the plane passing through approximately the median of the wall of the girdle.

Within pocket 24 is positioned the free end of a hook 26 which is attached to a garter strap 27 or other attachment. The free end of the hook 26 is held in fixed position by virtue of its being hooked around the solid stanchion, bridge, or island, 35. Although the wall having the fabric embedded therein is less resilient, the remainder of the wall of the girdle is of such an elastic character and thickness as to be stretchable and to provide form-fitting control for contouring the human form.

The support pockets 24 are formed within the wall of the deposited latex girdle during a dipping operation, conducted in a manner similar to the methods described in U.S. Patent No. 2,360,736, issued to A. N. Spanel October 17, 1944. When the deposited latex girdle has, by successive dipping, acquired a wall thickness of about 0.005" to about 0.015", the dipping operation is interrupted and a reinforcing patch 28 placed on the partially formed girdle. Reinforcing patch 28 (see FIGURES 3 and 4) is formed from two layers of an impregnable fabric 25, such as nylon tricot, rayon, silk, cotton net and the like, with a rectangular piece of latex-separating film 29 therebetween, which film has a cut-out portion 33 therein. It will be understood that in the subsequent dipping process, the latex will be deposited onto the wall of the article, into the impregnable fabric, and will flow through the opening 33 to form the integral stanchion 35 which is continuous with and connects the two opposite walls of the article. The film 29 also has a cut 34 therein which extends from the opening 33 to one edge of the film, as indicated. This cut 34 facilitates the removal, if desired, of the film 29 from the pocket at the end of the trimming operation. The fabric portion 25 of the patch 28 has an oval body 30 terminating in a downwardly projecting section 31. Sandwiched between the two fabric layers 25 is the rectangular shaped film 29 having surface characteristics such that it does not adhere to either the wet latex or the latex film after curing thereof.

Film 29 is positioned between the sheets of tricot so that a portion of the rectangle extends into the downwardly projecting section 31 and may be held in place by spot cementing which aids in holding the patch together and facilitates ease of handling of the patch when it is applied to the wet partially formed latex girdle (see FIGURES 3 and 4.) The patch is positioned on the partially formed wet latex girdle in appropriate positions where the garter straps are to be located. When the patch is pressed against the wet latex, the latex is embedded in the interstices of the fabric on the surface of the patch. The surface of the film due to its non-adherent characteristics, resists surface adhesion and a wall of the potential pocket is created. Subsequent dipping of the girdle in the bath of latex completes the impregnation of the fabric so that the patch assembly is confined within the wall of the deposited latex girdle as an integral part, while the presence of the opening 33 in the film 29 allows free passage of the latex therethrough to form a stanchion connecting two opposite walls of the article. This forms, within the wall of the girdle, a closed reinforced pouch of the size and shape

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of the film (see FIGURE 6), with the integrally formed stanchion 35 therein.

Upon completion of the dipping operation, the girdle is passed through a further processing step to effect curing of the latex to give it rubber-like quality. After curing of the girdle, it is stripped from the form and the top and bottom of the girdle are finish-trimmed along their trim lines. Trim line 32 in FIGURES 5 and 6 correspond to the bottom edge 23 of the girdle. The trimming operation removes the excess latex which has been used to assure complete coverage of the girdle-generating surface of the dipping form. Since the patch 28 is positioned so that section 31 extends past the trim line, it is simple and easy to open the closed pocket along a locus positioned on the bottom edge of the girdle. Such trimming converts the closed pocket into a rectangular, vertically extending open pocket 24, reinforced on each side by fabric embedded in the adjacent deposited latex (see FIGURE 8.) This construction provides reinforced pockets, or slots, within the wall of the girdle so that support straps, ribbons, and other attachments may be associated with the girdle by the simple expedient of inserting the hook, to which the straps, etc. are attached, into the open pocket and hooking it over and around the solid stanchion of latex 35. The hook may be removed when desired, simply by pulling and disengaging it from the solid stanchion of latex.

The latex-separating material may be a single sheet of film or a plurality of sheets, depending on the desired size of the stanchion. When more than one sheet of film is used, they are superimposed on each other so that the openings 33 therein are aligned.

As heretofore described, the support pockets of this invention may be formed in a deposited latex brassiere, such as the brassiere described in the patents to L. A. Spanel, et al., Nos. 2,721,323 and 2,797,415. FIGURE 9 illustrates a fragmentary section of a typical deposited latex brassiere 40 having a frontal section 41, spaced breast receiving cups 42 and back portions 43, only one back portion being shown, to form a body-encircling band. Positioned along the top and bottom edges of the brassiere are bands 44 and 45, respectively, which define the edges of the garment and act as reinforcements. Above each breast cup in the edge of the garment, is a rectangularly shaped pocket 46. Each side of the pocket is faced with a fabric section 47 embedded in the walls in the manner heretofore described. The pocket extends downwardly from the top edge of the brassiere and is substantially centralized with respect to the median of the wall thickness of the brassiere. Each back section of the brassiere has a similar rectangular pocket 48 formed in the same manner as heretofore described. Pocket 48 together with pocket 46 provide means for anchoring the ends of a shoulder strap 49 to the brassiere, one end of the shoulder strap 49 being positioned in pocket 46 and the other end in pocket 48. The ends are affixed in the support pockets in the wall of the brassiere by inserting the garter strap hooks 26 into the pockets and engaging the solid stanchions 35. In this manner both shoulder straps are attached to the brassiere in a way which results in a strong and durable attachment to a relatively thin rubber article. It will be appreciated that many types of support attachments may be anchored in support pockets in brassieres and the like, such as zippers, hook and eye fastening strips and the like which must be attached to facilitate assembly on the body of the wearer or for comfort of the wearer.

As previously indicated, the solid stanchion may be cylindrical, or kidney-shaped, or any other shape, depending on the particular configuration of the hook which is to be used. A stanchion having a kidney shape will be positioned so that the broad curvature of the kidney shape will be facing the interior of the pocket and the lesser curvature facing the open side of the pocket. The lesser curvature of the hook will thus engage the broader curvature of the kidney-shaped stanchion and will result

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in a snug, tight fit. By using a hook of such size that it practically fills the pocket completely, in combination with the stanchion, the snug fit of the hook is further enhanced. Thus, the hook and the stanchion may be so proportioned that the stanchion tends to squeeze the hook tightly against the walls of the pocket. The hook may be of such size also, that it is completely hidden within the pocket.

As previously indicated also, more than one solid stanchion may be formed within the pocket. This may be accomplished by having plural openings in the film 29 which may be arranged in any desired manner. FIGURES 10, 11, and 12 show pockets 50, having integral stanchions therein arranged in various ways. FIGURE 10 shows a pocket 50 with a main stanchion 51 and smaller stanchions 52 and 53 on each side whereby the hook 26, shown in outline, is held in a firm, unmovable position, yet is quickly and easily removable. FIGURE 11 shows three stanchions with the main stanchion 54 being kidney-shaped. FIGURE 12 shows two stanchions 55 and 56 so arranged that they form a channel into which the hook is inserted and kept snugly in the pocket. As shown in FIGURE 12, stanchion means 55 and 56 provide a convexly-curved passageway adapted to mate with the convexly-curved hook 26. Other arrangements using three, four or more stanchions may be made.

Any material which will produce an area of separation and non-adherence within the wall of the deposited latex garment may be used. Exemplary of latex-separating materials are plastic films such as cellophane and polyethylene, etc. and metal foils such as aluminum foil or tin foil, etc. A film thickness of from a few thousandths of an inch to $\frac{1}{32}$ " provides good results and facilitates ease of handling of the patch assembly but the thickness can be varied in accordance with design requirements.

The reinforcing fabric advantageously is tricot-type fabric woven of nylon, rayon, silk or other fibers but other woven, knitted or foraminous material, such as marisettes, bobinettes, "Helanca" types and the like which will become impregnated and provide strength to the wall of the article may be used.

The position and size of the pockets for attachments and accessories depend on the particular use of the attachment and the article. If the pocket is located in the wall of the article in such a fashion that it is not close to an edge, the pocket may be formed by slitting one wall of the article so that a hook may be inserted into the pocket. Both inside and outside attachments can be made at the same location on the article by slitting through both walls of the pocket so as to form an opening available from both sides of the article. Although the latex-separating film used to form the pocket may be removed from the pocket after the pocket has been opened, under some conditions it may be allowed to remain in the pocket to add additional strength.

The wall thickness of the deposited article depends upon its intended use and, in the case of a girdle, a wall thickness of about 0.015" to 0.030" is an effective range. It has been found that each wall of the pocket may vary in thickness, an effective range being 0.003" to about 0.025", depending upon the thickness of the garment, the stress to be applied thereto, and the amount and type of reinforcement. Generally, thickness, size and shape of the pockets will depend upon the nature of the attachment made thereto and the stress and strain to be transmitted through the wall of the garment.

Although the present invention has been described with particularity with reference to preferred embodi-

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ments, it will be obvious to those skilled in the art, after understanding the invention, that various changes and modifications may be made therein without departing from the spirit and scope of the invention, and the appended claims should therefore be interpreted to cover such changes and modifications.

I claim:

1. A deposited latex garment comprising a deposited latex wall with at least one open pocket integrally formed and positioned within the confines of said wall, said pocket having closed sides, an open side and an integral stanchion of latex uniting opposite sides thereof and defining a passageway in said pocket, the region of the wall containing said pocket comprising reinforcing means embedded in said wall for resisting stress placed upon the stanchion by an accessory adapted to be attached thereto.

2. The deposited latex garment of claim 1 in which the reinforcing means extends into the wall immediately away from the pocket.

3. The deposited latex garment of claim 1 in which the garment has an edge and an open pocket positioned in said edge.

4. The deposited latex garment of claim 1 in which a stanchion has an upwardly facing convex surface adapted to engage an accessory-bearing hook.

5. A deposited latex girdle adapted to encircle and elastically shape the torso which comprises a deposited latex body-encircling garment having a wall with a bottom-edge, said wall having an area adjacent the bottom edge thereof that is internally reinforced with fabric, a pocket-like opening positioned in said edge in said reinforced area and extending upwardly within the wall, said pocket having an open side, closed sides and an integrally formed stanchion of latex uniting opposite walls thereof and spaced apart from the closed sides of the pocket, whereby an attachment-bearing hook having a free end when inserted into said pocket is locked therein by said integral stanchion.

6. A deposited latex brassiere adapted to encircle and shape the female body which comprises a pair of breast cups, shoulder straps and a deposited latex body-encircling band wherein each shoulder strap connects the top of a breast cup with the rear of the body-encircling band; the body-encircling band having a wall and a top edge, the wall being internally reinforced with fabric in areas adjacent the top edge; open pockets positioned in said top edge in said reinforced areas and extending into the wall; each pocket being integrally formed within the confines of the said wall and containing an integral solid stanchion of latex uniting opposite sides of the pocket; said shoulder straps being attached to hooks the free ends of which on being inserted in said pockets become locked in position by the said stanchions.

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