

June 12, 1956

P. E. AMBROSE

2,749,549

DEPOSITED RUBBER UNDERGARMENT

Filed Feb. 9, 1953

Fig. 1.

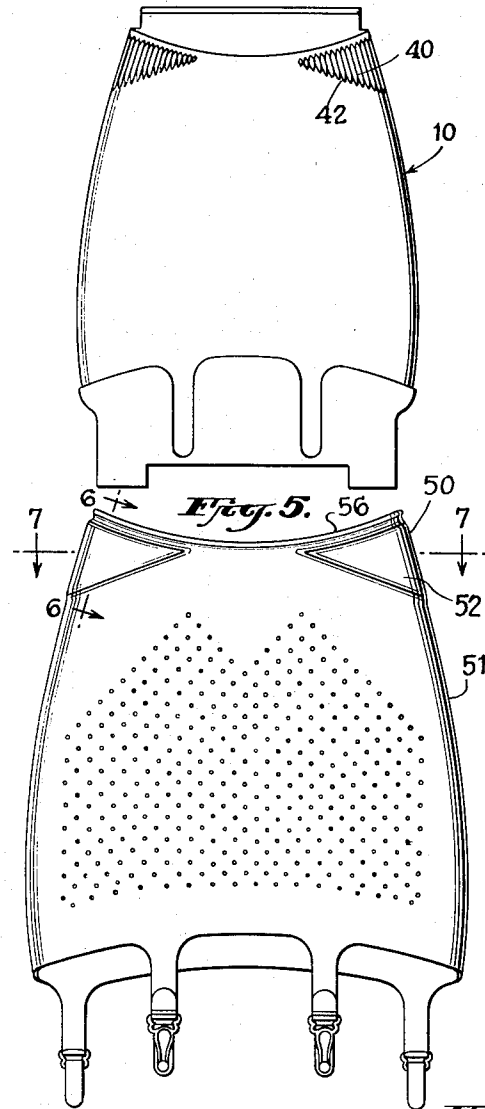


Fig. 2.

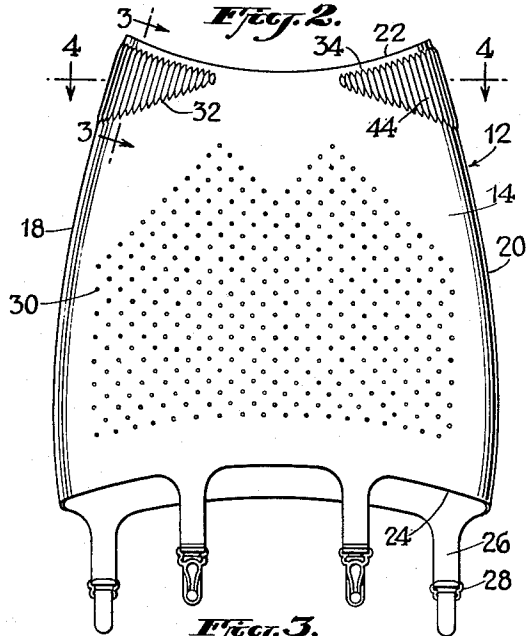


Fig. 3.

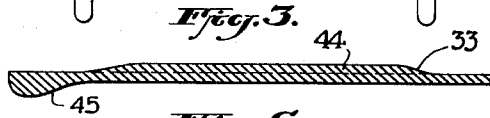


Fig. 6.



Fig. 8.



Fig. 9.



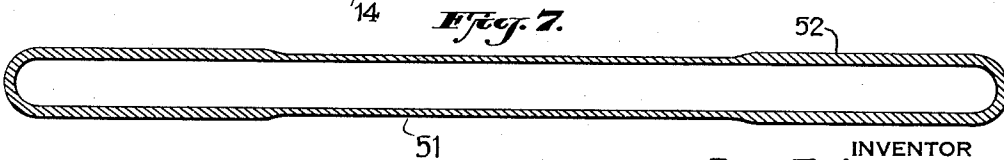
Fig. 10.



Fig. 4.



Fig. 7.



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DEPOSITED RUBBER UNDERGARMENT

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Application February 9, 1953, Serial No. 335,851

2 Claims. (Cl. 2—36)

My invention relates to undergarments made of rubber, and more particularly to rubber latex girdles deposited on a form having a particular shape.

Such a girdle was first disclosed in the Spanel Patent 2,360,736 and a similar girdle provided with a shape-retaining reinforcement adjacent the hips is disclosed in the co-pending application of Fred W. Andrews, filed July 28, 1952, Serial No. 300,319.

The shape-retaining rubber reinforcement adjacent the hips was devised in an effort to counteract the tendency to collapse of the relatively thin-walled deposited rubber girdle in the area adjacent the hips which area normally bulges or droops in some types of female figures. In such instances, the slimming effect of the elastic latex band is marred by an unsightly roll at the hip.

In the co-pending application, it was found that stiffened, shape-retaining hip portions would counteract the tendency to roll at the hips. I have found that, when these hip portions are stiffened by dipping, they are accompanied by an increased thickening of the unthickened edge, or of the bead, if provided as an edge reinforcement.

Accordingly, it is a prime object of my invention to deposit a stiffened shape-retaining hip portion simultaneously with the formation of the girdle wall itself, which deposited hip portion will not change the character of the edge of the girdle.

These and other objects are accomplished and my results obtained as will be apparent from the device described in the following description, particularly pointed out in the claims, and illustrated in the accompanying drawing in which:

Fig. 1 is a front elevational view of a girdle form capable of generating the stiffened hip portions;

Fig. 2 is a front elevation of a girdle made entirely of deposited rubber as produced by the form shown in Fig. 1;

Fig. 3 is a longitudinal section of the stiffened hip portion of the girdle of Fig. 2, taken in the plane 3—3;

Fig. 4 is a transverse sectional view taken in the plane 4—4 of Fig. 2;

Fig. 5 is a front elevation of another embodiment;

Fig. 6 is a longitudinal section of the stiffened hip portion of the embodiment of Fig. 5, taken in the plane 6—6;

Fig. 7 is a transverse sectional view taken in the plane 7—7 of Fig. 5;

Figs. 8, 9 and 10 are partial longitudinal sectional views of other girdle embodiments with stiffened hip portions.

Liquid latex deposits uniformly over an even surface, but accumulates in grooves or small recesses to form ribs or projections. I have employed this phenomenon in the manufacture of girdles by simultaneously forming ribs, ridges or other reinforcing shapes in the hip portions. Such reinforcements are substantially stiffer than the remainder of the girdle wall, while providing a desirably continuous elasticity.

More particularly in the drawing, Fig. 1 represents,

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as an example, a form 10 of a type shown in the Spanel Patent No. 2,360,736, dated October 17, 1944, which will generate a hollow rubber latex seamless girdle 12 shown in Fig. 2, for elastically embracing the torso of the female body. The girdle comprises oppositely positioned front and rear flat portions 14 and 16, respectively, interconnected at their respective lateral sides by curved portions 18 and 20, so as to form a continuous thin sheet-like seamless restricting band for elastically encircling and embracing the lower portion of the body. The side portions are gently curved longitudinally from upper edge 22 to lower edge 24 to conform to the general shape of the hips. The girdle may be provided with integral garter tabs 26 having fasteners 28, or other useful elements not shown, such as a zipper at the waist opening. Perforations 30 are usually employed for ventilation purposes.

The form 10 may be provided with grooves or other recesses 30 in the region corresponding to the hip area 42, which are capable of forming a projecting reinforcement 44, one of which is shown in cross-section in Fig. 3. This type of reinforcement may be in the form of parallel extending ribs, as illustrated, or intersecting ribs, continuously curved ribs, or any formation which permits the accumulation of the reinforcing rubber latex in the corresponding recesses on the form.

In general, the form is dipped into the rubber latex one or more times to produce an overall girdle wall thickness of about .025 inch while the thickness at the ribs or other reinforced portion may be several times the wall thickness, such as about 0.080 inch. These dimensions may vary depending on the size of the girdle and the degree of stiffness desired. A suitable hip portion 32 employing ribs is illustrated in the drawing Fig. 2. The upper boundary 34 of the hip portion is spaced a fraction of an inch, such as from about one to three eighths of an inch, below the upper edge 22 of the girdle and below any thickened edge reinforcement, if such edge reinforcement is generated. The sizes and shapes of the stiffened hip portions may vary with the girdle size and degree of control desired. Further description of these stiffened hip portions may be found in the co-pending Andrews application above referred to.

The rib reinforcements shown as extending longitudinally and below the upper edge of the girdle will permit a satisfactory circumferential stretch in the stiffened area, without contact with the stiffened area, as for example in the edge 45 shown in Fig. 3, or the edge 46 as shown in Fig. 9.

In Fig. 5, I have illustrated a stiffened hip reinforcement 50 caused by coagulating the rubber in the desired hip region of the girdle 51, to form the thickened areas 52. This is accomplished by spraying coagulants such as acid or salt solutions, or other known equivalents, onto the area of the form corresponding to hip portions, for instance by employing a properly cut out mask. Care should be taken to prevent the coagulant from seeping underneath the edge of the mask into the edge region, so as to maintain the integrity of the edge, as shown in Fig. 10, for the edge 55, and in Figs. 6 and 8, for the different types of reinforced edges 56 and 57, respectively.

A latex of rubber stiffer than natural rubber may be used as the initial depositing layer under conditions that deposit a thin layer, such as .004 inch, on the flat portions of the form. This latex will enter the recesses 42 shown in Fig. 1 and form ribs 32 that are composed principally or wholly of stiffened rubber. Stiffened rubber may be deposited by coagulation in the hip area to form a stiffer portion than can be obtained by the use of only regular rubber latex. The regular rubber latex is then deposited over the initial deposited layer until the desired wall strength is obtained.

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One composition which may be employed for reducing the thickness of the stiffened hip portion of the girdle is as follows:

Centrifuged latex	100 parts by weight of dry solids.
"Kralac" ¹ latex	25 parts by weight of dry solids.
Potassium hydroxide	0.5 part by weight of dry solids.
Sulfur	1.0 part by weight of dry solids.
Zinc oxide	1.0 part by weight of dry solids.
Tetramethyl thiuram disulfide	1.0 part by weight of dry solids.

¹ Trade name for synthetic latex comprising about 85% styrene and 15% butadiene.

The hip area is preferably formed so as to provide a gradual change in thickness at the boundary region 33. Thus, if the stiffer hip portions project towards the body, they will not cause a discomfort to the wearer that might result with abrupt margins. In addition, forces which otherwise might cause the rubber to tear under strain are distributed at the junction of the hip portion with the remainder of the girdle wall. The invention may be applied so as to cause the hip portions to project from the outer surface of the girdle, as worn, as shown in Fig. 2.

It is thus possible to obtain areas in the hip portions stiffened to any needed degree. For example, these areas may be 0.45 inch thicker than the wall thickness of the remainder of the girdle body, which may be .024 inch, both dimensions depending upon the size or type of figure which it is desired to control.

From the foregoing description it will be apparent that I have devised a girdle having stiffened hip portions all made of seamless deposited rubber. Such stiffened hip portions are produced without any thickening of the upper edge of the opening of the girdle as must necessarily result from the process of thickening these areas by a localized dip of the form into the coagulant or into the rubber latex. The stiffened hip portions are simultaneously deposited with the girdle on the form, a production advantage that will lower the costs substantially. The stiffened hip portions being made of stretchable rubber, retain the desired continuous circumferential elasticity needed around the waist to facilitate application of the girdle to the body.

I have thus described my invention, but I desire it to be understood that it is not confined to the particular forms or uses shown and desired, the same being merely

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illustrative, and that the invention may be carried out in other ways without departing from the spirit of my invention, and, therefore, I claim broadly the right to employ all equivalent instrumentalities coming within the scope of the appended claims, and by means of which objects of my invention are attained and new results accomplished, as it is obvious that the particular embodiments herein shown and described are only some of the many that can be employed to attain these objects and accomplish these results.

I claim:

1. A deposited rubber latex foundation garment for use on the human body, comprising a pre-formed, readily collapsible, relatively thin elastic wall, provided with a waist opening having a peripheral edge, and shape-retaining areas stiffened against compression in a direction normal to the waist opening and positioned on the wall in areas corresponding to each of the hip regions of the wearer so as to resist rolling over of the garment in said hip regions, said shape-retaining areas extending less than the periphery of said edge with the adjacent lateral boundaries of said stiffened areas being spaced substantial distances apart from each other to minimize interference with the elastic stretch of the thin elastic walls at the waist opening, said shape-retaining areas being made of deposited latex, rib-like in cross section, the longitudinal axes of said ribs extending angularly away from the periphery of said edge.

2. The deposited rubber latex garment of claim 1, wherein the rib-like areas extend at right angles to the periphery of said edge to permit the latex wall between the rib-like areas to be stretched to a greater degree than the rib-like areas.

References Cited in the file of this patent

UNITED STATES PATENTS

1,516,380	Eaton	Nov. 18, 1924
2,017,604	Mountford et al.	Oct. 15, 1935
2,119,499	Spanel	May 31, 1938
2,158,206	Spanel	May 16, 1939
2,196,492	Clark et al.	Apr. 9, 1940
2,213,150	Spanel	Aug. 27, 1940
2,288,840	Raiche	July 7, 1942
2,295,659	Howland	Sept. 15, 1942
2,428,127	Sidnell	Sept. 30, 1947
2,528,980	Spanel	Nov. 7, 1950