

April 15, 1958

A. N. SPANEL ET AL

2,830,591

GIRDLE

Filed Feb. 4, 1953

3 Sheets-Sheet 1

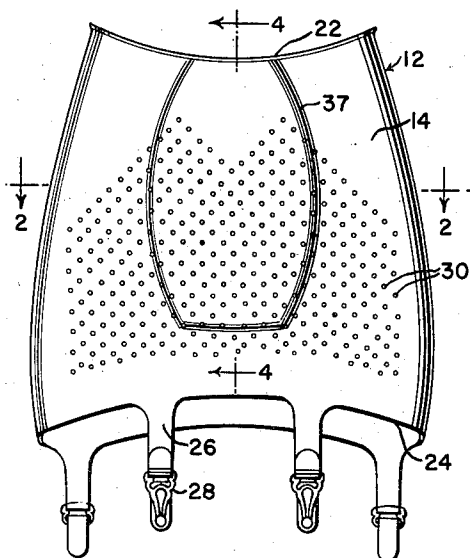


FIG. 1

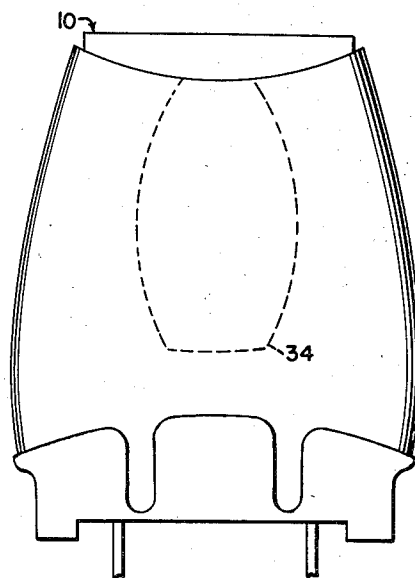


FIG. 3

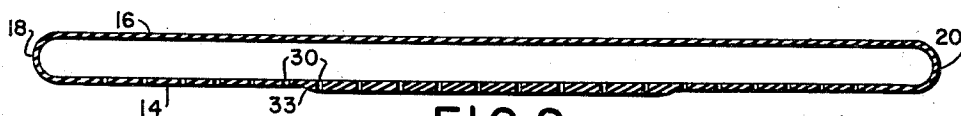


FIG. 2

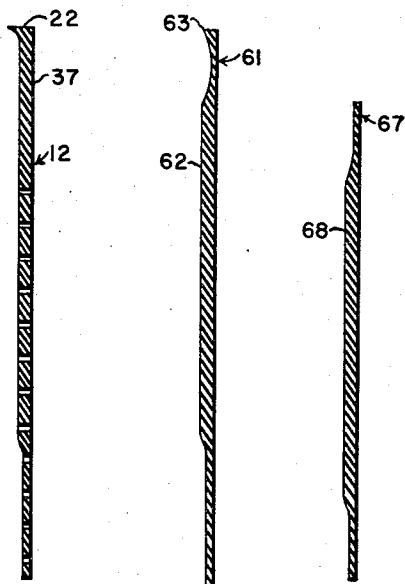


FIG. 4 FIG. 5 FIG. 6

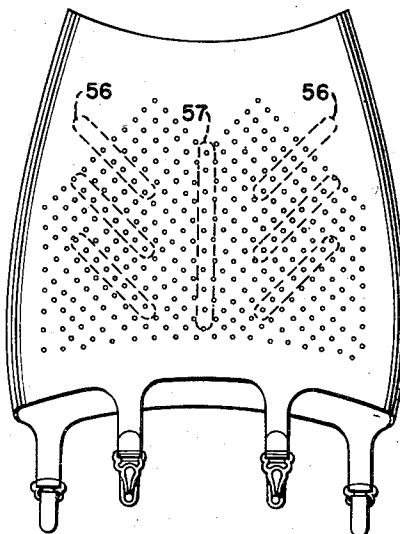


FIG. 7

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Fig. 8.

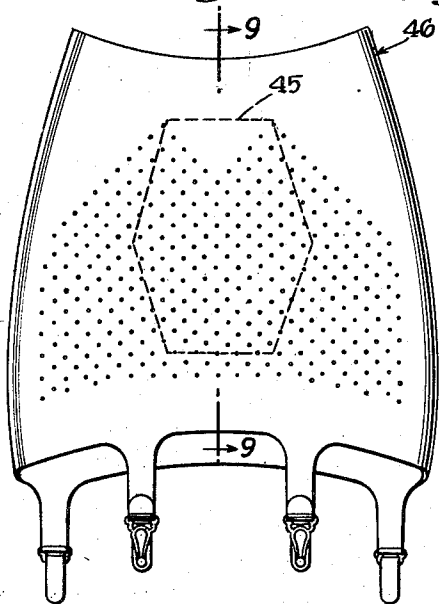


Fig. 9.

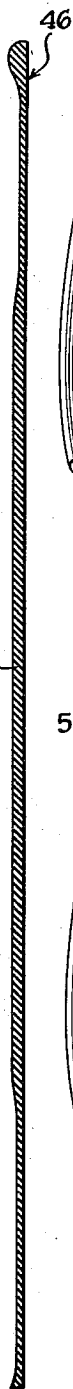


Fig. 10.

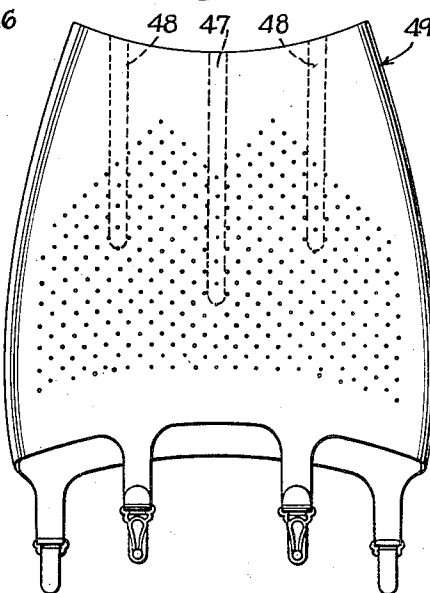


Fig. 11.

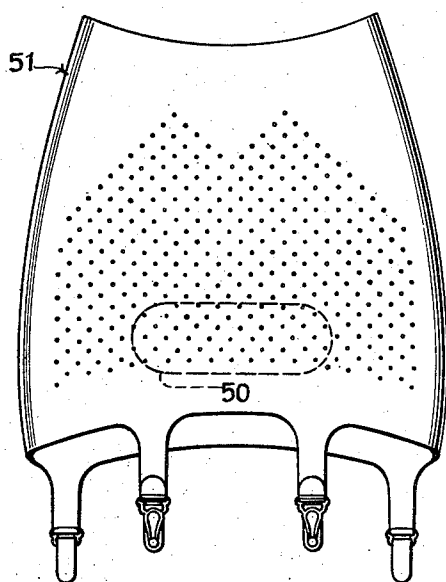
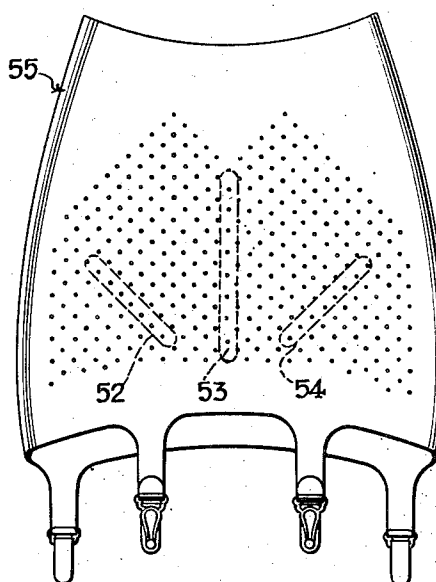


Fig. 12.



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Fig. 13.

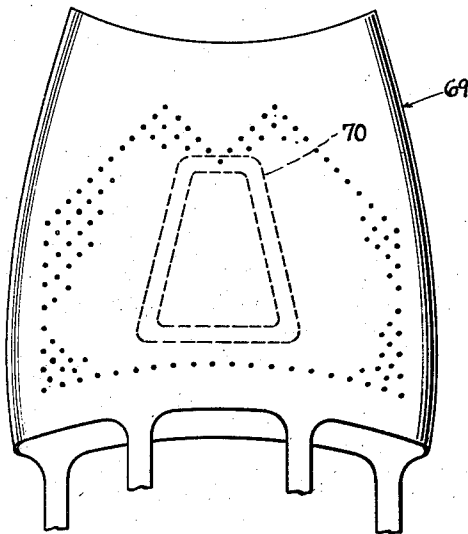


Fig. 14.

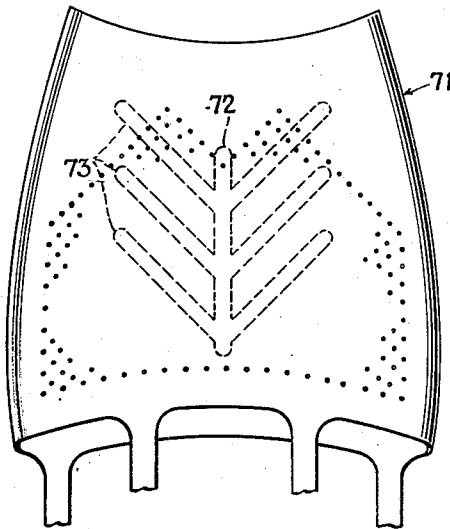


Fig. 15.

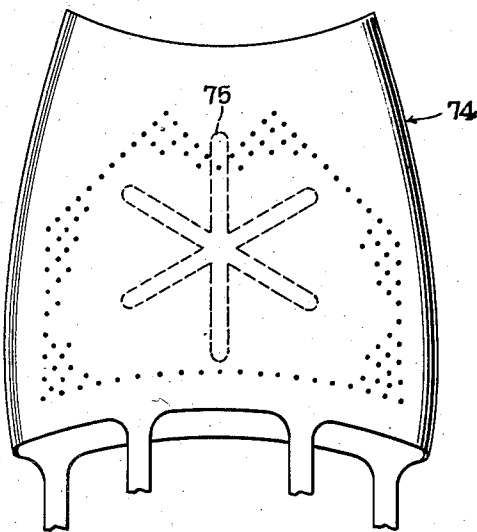
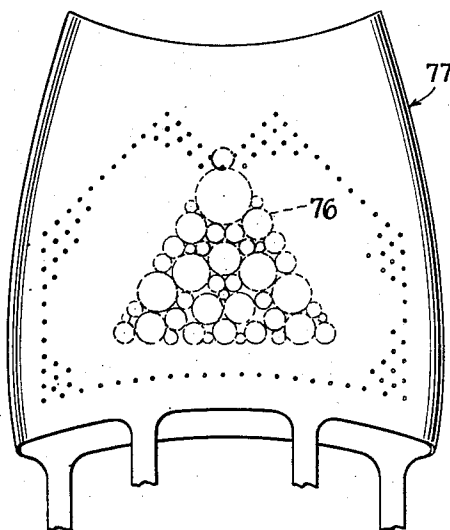


Fig. 16.



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GIRDLE

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Application February 4, 1953, Serial No. 335,086

1 Claim. (Cl. 128—521)

Our invention relates to improvements in foundation garments such as girdles, panties, and the like, and more particularly to undergarments provided with means for restraining a bulging abdomen.

Hitherto, the abdominal areas of such garments were reinforced by stays made of metal or other rigid materials arranged in pockets extending longitudinally of the garment. Such stays are too stiff for use on the body and cause a discomfort to the wearer when the body is bent.

Attempts have been made to eliminate these devices from abdominal supporting garments and such efforts involved the use of laminated sections of textile materials, or the attachment of prepared sheet material to a textile garment. The resulting foundation garments employed non-stretching sections which were prone to tear at the boundary between dissimilar materials attached together; they were more difficult and more expensive to manufacture and they were generally non-uniform in quality in production quantities.

Moreover, the many advantages of the seamless deposited article made of natural rubber latex were not obtained in such a garment. Undergarments that employ textile materials are apt to be less hygienic than rubber latex garments and are not continuously elastic. Further, a deposited article has the advantage of being produced in a shape ready for use by simply dipping one or more times a suitably designed form into the liquid rubber latex and curing the film so produced.

Accordingly, the principal object of our invention is to provide a girdle or other foundation garment with a homogeneous bulge-resisting abdominal portion free of stays of metal or other rigid reinforcing materials, all entirely made of stretchable rubber.

Other objects are to provide such an abdominal portion in a seamless latex deposited girdle; to provide such a girdle wherein the abdominal portion is characteristically stiffer than the remainder of the girdle body while providing a continuous circumferential stretch to enable the girdle to elastically embrace the entire body circumference of the wearer; to provide a girdle with an abdominal control portion which may extend to the upper edge of the garment while retaining the desired continuous circumferential elasticity; and to provide a girdle in which the abdominal control is obtained simultaneously with the deposition of the latex on the form.

These and other objects are accomplished and our new results obtained as will be apparent from the device described in the following description, particularly pointed out in the claim, and illustrated in the accompanying drawings, in which:

Fig. 1 is a front elevation of a girdle made entirely of deposited rubber latex, showing an embodiment of the invention;

Fig. 2 is a transverse sectional view taken in the plane 2—2 of Fig. 1;

Fig. 3 is a front elevation of a girdle form;

Fig. 4 is a partial longitudinal section of the abdominal portion of the girdle of Fig. 1, taken in the plane 4—4;

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Figs. 5 and 6 are similar sections of other embodiments showing various forms of waist margin formations;

Figs. 7 and 8 are front elevations of other modifications;

Fig. 9 is a partial longitudinal section of the abdominal portion of the girdle shown in Fig. 8, taken in the plane 9—9;

Figs. 10 to 16 are front elevational views of still further embodiments.

More particularly in the drawings, Fig. 3 represents, 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 Figs. 1 and 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.

Various means for reinforcing the abdominal area of the girdle with rubber having the same elastic modulus as the remainder of the girdle are possible and may be used. Coagulants such as acid or salt solution, or known equivalents, among them heat, may be supplied to the flat region 34 on a girdle form, shown in dotted lines in Fig. 3, corresponding to the configuration of the reinforcement desired in the abdominal area so as to deposit an overall increased thickness of rubber latex in this area.

A layer of rubber stiffer than natural rubber may be used as the initial depositing layer of, say, .004 inch which layer may be deposited by coagulation in the abdominal 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. The initial deposited thin layer will not undesirably change the overall circumferential elasticity of the girdle.

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

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

¹ Trade name for synthetic latex comprising about 58% styrene and 15% butadiene.

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

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 reinforced portion is about twice the wall thickness, or about .050 inch. These dimensions may vary by several thousandths of an inch or more, depending on the size of the girdle and the degree of bulge it is desired to restrain. The dimensions and shapes of the abdominal portion may vary with the size and the degree of bulge restraint desired. The abdominal portion 37 may advantageously extend to the upper edge 22 of the girdle 12, as is shown in Fig. 1 for some types of figures.

In Fig. 5, we have illustrated a longitudinal section of a girdle embodiment 61 with an abdominal reinforcement 62 on the same side as is the edge reinforcement 63, while in Fig. 6, the girdle 67 without edge reinforcement, is shown with abdominal reinforcement 68.

In Fig. 7, the obliquely positioned lateral supporting finger-like reinforcements 56 are positioned herringbone-like about the center reinforcement 57 in the girdle 58. Such design provides added abdominal support, if needed.

In Fig. 8, we have illustrated a hexagonal shaped reinforcement 45 in a girdle 46 which is useful where circumferential stretch is not as much of a problem as it is with the shorter stout woman. With this type in some instances, the abdominal control may force excess flesh upwards above the girdle edge. In such case, we may use narrower longitudinally extending abdominal reinforcing portions 47, 48 in the girdle 49, such as is illustrated in Fig. 10, wherein the circumferential stretch of the girdle at the hips is least affected.

The abdominal reinforcing portions may be positioned well below the top edge of the girdle and extend transversely in the area of maximum protrusion and in the form of a flattened and oval-shaped reinforcement 50, as is illustrated in the girdle 51 of Fig. 11.

In Fig. 12, the narrowed abdominal reinforcing portions 52, 53, and 54 are positioned fan-shaped about the abdominal region of girdle 55, which we have found is adequate for most of the short stout types.

These narrowed elongated abdominal reinforcements are applied like fingers to the weakened muscles of the protruding abdomen to supplement the support and to act like auxiliary muscles. The supporting area includes the area corresponding to the lower region of the abdomen where the greatest reinforcement may be needed.

In Fig. 13, we have illustrated the girdle 69 provided with a picture frame type of abdominal reinforcement 70 which combines the individual finger-like abdominal support with the over-all area support, like that shown in Fig. 8. In the embodiment of Fig. 13, the finger-like picture frame control is within the abdominal area.

In Fig. 14, the girdle 71 is shown with a central longitudinally extending finger-like reinforcement 72 and obliquely positioned finger-like reinforcements 73 following the embodiment of Fig. 7, but with the finger-like reinforcements joined to each other.

In Fig. 15, the girdle 74 is provided with a spoke-like arrangement of finger-like reinforcements 75 which provide maximum control at the area of maximum protrusion.

Fig. 16 illustrates a random type of abdominal reinforcement 76 of any shape, but illustrated as circular in the drawing, positioned in the abdominal area of the girdle 77.

It will be seen that finger-like reinforcements of varying width and length and in varying positions may be embodied in the invention to give the results sought for.

The reinforcement being so-deposited simultaneously with the main body of the girdle, the cost of manufacture of a girdle with such an abdominal portion is less than

all other types of abdominal reinforced girdles. Moreover, in the present invention the abdominal portion will stretch with the girdle body providing a continuous circumferential elasticity which makes the garment more comfortable to the wearer while providing the necessary control.

From the foregoing description it will be apparent that we have devised a girdle having a bulge-controlling portion, all made of seamless rubber. Such a girdle is more hygienic than a girdle made of knitted material or one containing a textile fabric.

The bulge-controlling portion may be simultaneously deposited with the girdle on the form, a production advantage that will lower the costs substantially.

The stiffened abdominal portion, being made of stretchable rubber, retains the desired continuous circumferential elasticity needed for wearer comfort. Even if the abdominal reinforcing portion is extended to the upper edge of the girdle, sufficient circumferential elasticity is retained so that application of the girdle to the body of the wearer is relatively easy.

We have thus described our invention, but we desire it to be understood that it is not confined to the particular forms or uses shown and described, the same being merely illustrative, and that the invention may be carried out in other ways without departing from the spirit of our invention, and, therefore, we claim broadly the right to employ all equivalent instrumentalities coming within the scope of the appended claim, and by means of which objects of our 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.

We claim:

A corrective girdle for use on the female body, comprising a preformed, readily collapsible, relatively thin elastic wall of deposited latex provided with a waist opening having a circumference less than the circumference of the body to thereby cause the girdle to embrace the body restrictively, and an elastic muscle-supplementing and supporting homogeneous area made solely of co-deposited latex having a thickness greater than the thickness of the remainder of the girdle wall and unitarily formed with and positioned on said wall in the front of the girdle and above and outside the crotch area, said thickened area acting restrictively on the abdominal muscles of the wearer and elastically supplementing the action of weakened abdominal muscles to correct the same, said thickened latex area provided with a smooth, flat surface projecting beyond the thin elastic wall of deposited latex comprising the body of the girdle and gently merging with the thin elastic wall to provide a supporting area relatively free of skin marking characteristics.

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