July 25, 1933. J. FIELD 1,919,292

ELASTIC GARMENT

Filed Jan. 21, 1932 2 Sheets-Sheet 1

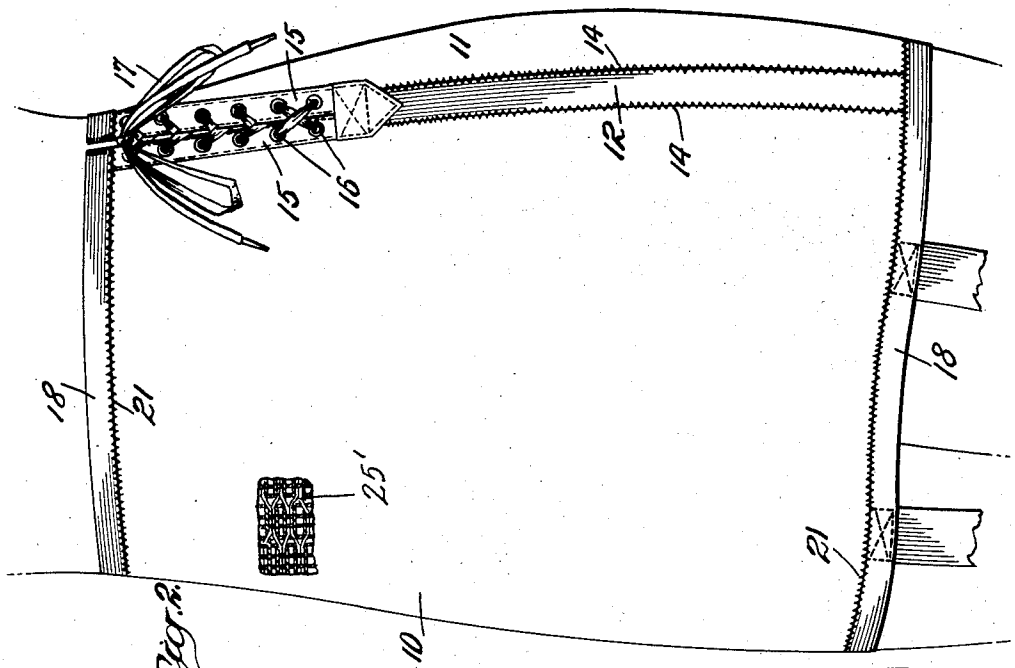


Fig. 2.

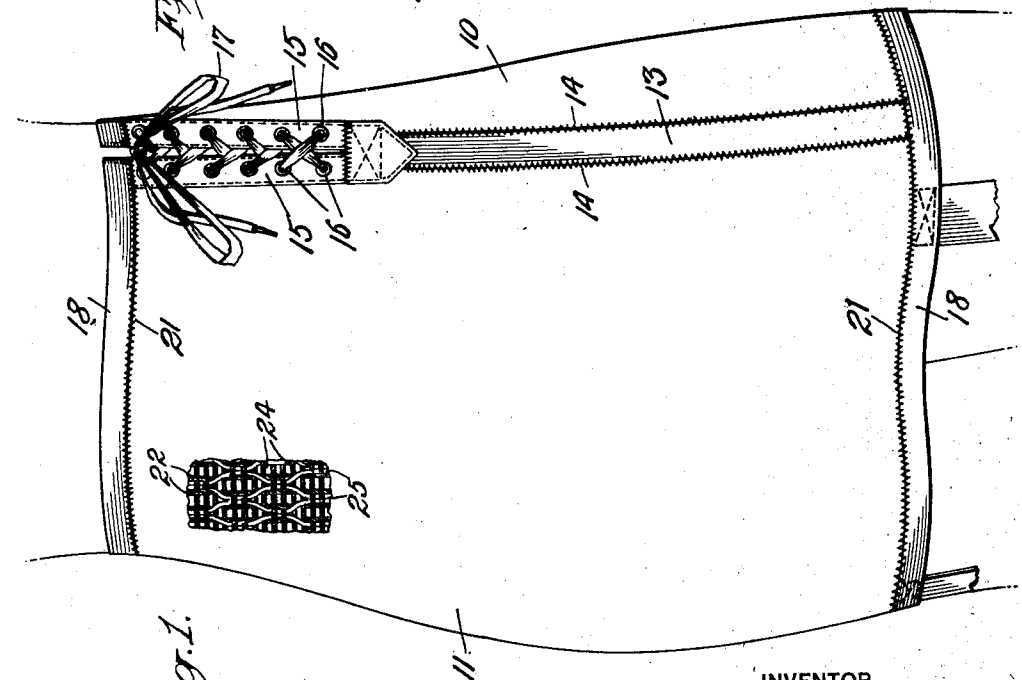


Fig. 1.

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Fig. 6.

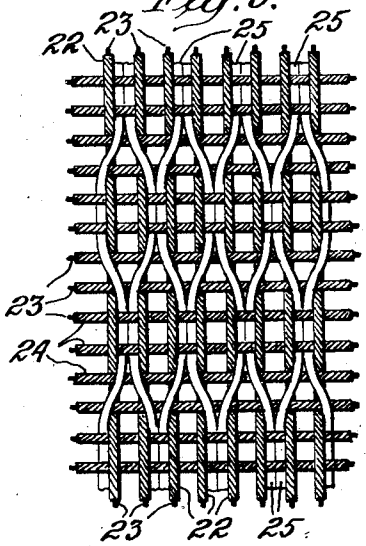



Fig. 7.

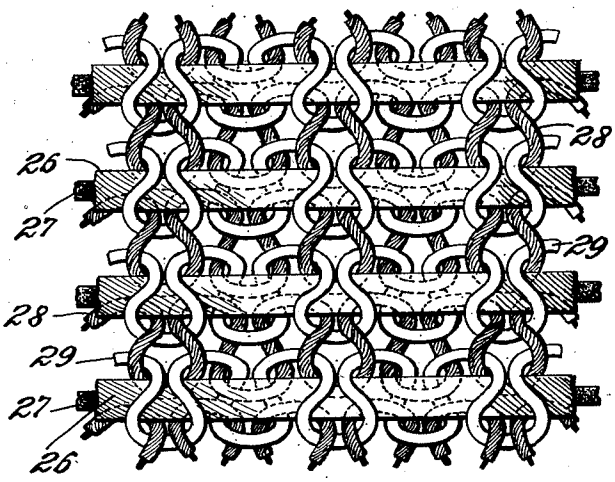



Fig. 3.

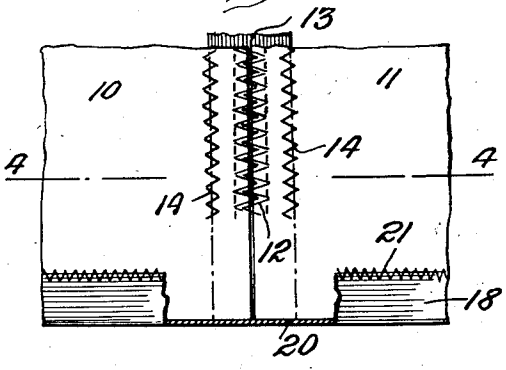



Fig. 5.

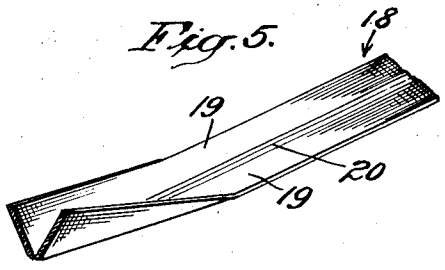
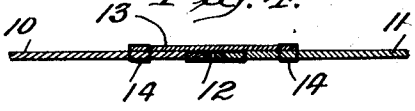



Fig. 4.

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Patented July 25, 1933 1,919,292

# UNITED STATES PATENT OFFICE

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## ELASTIC GARMENT

Application filed January 21, 1932. Serial No. 587,869.

This invention relates to corsets, girdles and the like, and more particularly to improved garments of this character capable of molding the hips and especially the posterior portions of the wearer's body in superior fashion.

Manufacturers have long been confronted with the problem of making such a garment at the same time comfortable and capable not only of confining or molding these parts of the wearer's body but also of conforming to the same under all conditions of bending or other motion, without producing folds or unsightly protrusions, and without the garment sliding or riding upward on the figure. With this problem in mind, it has been proposed to make garments, adapted to be worn about the hips, of sheet rubber, but these are unsatisfactory for ordinary use on account of obvious reasons, principally lack of porousness. On the other hand, suggestions have been made to the effect that pieces of material which are elastic in one direction could be sewed or otherwise secured together so that parts of the garment are able to stretch in one direction and parts in other directions. However, for one reason or another, none of the proposals in the art has proven satisfactory.

The desired result has been achieved according to the present invention by constructing that portion of the hip encircling garment which is adapted to mold or confine the posterior or rear hip portions of the wearer, substantially entirely of material, preferably of woven character, in which elastic strands are so embodied that the material is capable of stretching in directions at right angles to each other. Preferably this portion of the garment consists of a single piece of such material in which generally continuous elastic strands extend along one dimension of the material and are interengaged by elastic strands adapted to provide stretchability in the direction of the other dimension. In this manner provision may be made for stretching in every direction at all desired points, and at the same time the desired firmness secured.

Other objects and advantages of the invention will be in part apparent and in part pointed out in connection with the following detailed description of a preferred embodiment, reference being had to the accompanying drawings, wherein:

Fig. 1 is a three-quarters rear view of a garment in accordance with the present invention, showing the same as worn, the insert illustrating one advantageous type of material, enlarged and stretched.

Fig. 2 is a three-quarters front view of garment shown in Fig. 1, the insert or broken away portion of the garment illustrating an advantageous type of material enlarged and stretched, wherein non-elastic strands run crosswise of the wearer.

Fig. 3 is a detail, diagrammatic view of a preferred seam and binding employed in the garment, looking at the inside thereof.

Fig. 4 is a section taken on the line 4—4 of Fig. 3.

Fig. 5 is a perspective view of a preferred type of binding.

Figs. 6 and 7 are enlarged views of two types of material, shown stretched, which may be advantageously employed in garments according to the invention.

Referring to the drawings, there is shown in Figs. 1 and 2 a garment of the character described consisting principally of a front panel 10 and a rear panel 11, the latter being composed of material in which elastic threads are interwoven to permit the material to stretch in two directions, and preferably in all directions. The preferred character of this material will be described in more detail below. While the principal feature of the invention involves constructing the rear portion of the garment as indicated, it will be understood that the front portion may be constructed of similar material. In fact, while the garment is preferably made of two connected panels, it will be understood that it may be made of a single piece of material adapted to stretch up and down as well as across. The number of panels or sections may be varied. The rear panel may advantageously be made somewhat larger than the front panel. For instance, it may extend forward on either side of the body of the wearer, or even further to the front of the wearer. In

this manner, the confining action of the garment is especially effective, whether the front panel be made of the same material as the rear panel, or from material which stretches in but one direction, or from non-elastic material.

As indicated, the panel 11, as well as the panel 10, if desired, is made of material composed principally of elastic threads of woven character, or in other words, comprising some threads which extend generally parallel to one another and are adapted to stretch lengthwise, and other threads which interengage the parallel threads and provide the material with ability to stretch in a direction at right angles to said parallel threads. Relatively non-elastic threads may cooperate with at least one of said groups of threads to limit the stretch of the material in one of said directions, or possibly in both. Two examples of such material are shown in Figs. 6 and 7, and will be described below in more detail.

For joining the panels, seams of the following character are preferred. As best shown in Fig. 3 the panels may have their edges in juxtaposition and be sewed together through stitches 12 preferably of the diagonal type shown. At the outer side of the garment a stripping 13 may be employed, which binding is composed of elastic material capable of stretching along its length. This stripping may be stitched to the panels 10 and 11 as shown at 14, these stitches also preferably being of the diagonal type to aid in permitting uniform stretch at all points. A similar stripping (not shown) could, of course, be applied at the inner side of the panels if the garment is to be made reversible.

It will be noted that the stripping 13 does not extend clear to the top of the garment, but that provision is made for separation of the panels at their more narrow portions, or in other words, at the portion of the garment of smallest girth. For instance, as shown in Figs. 1 and 2, adjacent edges of the upper portions of the panels may be provided with stripping 15 stitched thereto and with eyelets 16 for receiving lacings 17. This stripping 15 may, if desired, be non-elastic. In this manner, provision is made for putting on and adjusting the garment without undue stretching of the upper part and at the same time without need for lacing the entire length of the garment. However, especially for slim figures, the two panels may be permanently united along their entire adjacent edges. Where the garment is made substantially of a single piece of material, this may be slit to provide for lacings, when desired.

The upper and lower edges of panels 10 and 11 may have bindings 18 composed of material adapted to stretch along its length and preferably comprising portions 19 adapted to lie at inner and outer sides of the panels and a center portion 20, of relatively thin material, to lie along the edges of the panels. Diagonal stitching 21 is shown securing the binding to the material of the panels.

As indicated, the material of which the principal portions of the garment, particularly the back, are made is preferably of woven character since such material has been found to be especially suited to garments of this character on account of its firmness. While the invention is not restricted to any special weave, a fairly tight weave is desirable and one good type is shown in detail in Fig. 6, where warp strands 22 and weft strands 24 are each composed of fine rubber or other elastic material 23 wound with suitable yarn. A suitable number of relatively non-elastic warp strands 25 may preferably be interwoven with the elastic strands in the manner shown or otherwise. The arrangement of the warp and weft strands is shown in the patent to George C. Moore and Thomas F. Moore, No. 1,459,547 issued June 19, 1923, though the character of the strands therein disclosed is quite different from those employed in the present fabric. The latter, insofar as the elastic strands are concerned, are preferably formed from rubber latex which is held in partly stretched condition by being wound with relatively non-elastic yarn. The winding is preferably helical and may be of any suitable gauge, and of any desired number of turns per inch. The gauge of the rubber may preferably be in the neighborhood of one one-hundredth of an inch in unstretched condition, but may vary considerably. In fact, it may be desirable to make the warp strands with cores of larger or smaller size than the weft strands. Actually, good results may be secured by employing a material having, say, 20 elastic strands per inch. However, this figure is merely exemplar, and may vary considerably, especially if some of the strands are formed as knitted loops.

When material of the character shown in Fig. 6 is employed for the main panels of the garment, it is preferable to have the non-elastic strands, which limit the stretching of the material in the direction of their length, extend up and down in the panels, to control their stretching in this direction. However, these strands may run crosswise, or even diagonally. Thus, for example, there are shown in Figure 2 non-elastic strands 25′ running crosswise of the wearer, said non-elastic strands limiting the stretch around the body of the wearer.

Turning to Fig. 7, there is shown a material which may be said to be of woven character in that knitted stitches are interwoven with warp (or weft) strands. In this construction the warp (or weft) strands shown are considerably larger than the knit strands

with which they are combined to constitute the material. Warp (or weft) strands 26 are shown as having cores 27 of rubber wound with yarn, and as inter-engaged with knitted strands, alternate rows of the knitted strands being elastic as at 28, while the other rows are of relatively non-elastic material as at 29. The warp (or weft) strands may extend alternately in front of and in back of successive loops in the non-elastic material in each row, while the elastic loops may pass through the non-elastic loops as shown. This type of material may be utilized with the strands 26 extending up and down in the garment, or the other way, depending on the relative capacity to stretch and force required to cause a given stretch, in the several strands. The term warp (or weft) as used in this connection simply intends to convey the idea that the knitted strands may be interengaged with either warp or weft strands, according to the manner of making the material.

The terms and expressions which I have employed are used as terms of description and not of limitation, and I have no intention, in the use of such terms and expressions, of excluding any equivalents of the features shown and described, or portions thereof, but recognize that various modifications are possible within the scope of the invention claimed.

I claim:

1. A garment of the character described adapted to encircle the hips of the wearer, confine the posterior portions and be worn next to the body, said garment comprising porous material having elastic strands extending in one direction and elastic strands interengaged with said first-named strands and adapted to permit the material to stretch simultaneously in another direction, whereby said material is capable of stretching up and down as well as across, said material being positioned at the rear of the wearer and extending between points above and below the plane of maximum girth of the posterior portions of the wearer; said garment being thereby constructed and arranged to permit freedom of movement of the wearer while exerting a distinct confining action on the parts within the garment and being also prevented from riding up on the wearer.

2. A garment of the character described adapted to encircle the hips of the wearer, confine the posterior portions and be worn next to the body, said garment including a rear portion of porous material having elastic strands extending in one direction and elastic strands interengaged with the first-named strands and adapted to permit the material to stretch simultaneously in another direction, whereby said material is capable of stretching up and down as well as across, said rear portion of material extending between points above and below the plane of maximum girth of the posterior portions of the wearer; said garment being thereby constructed and arranged to permit freedom of movement of the wearer while exerting a distinct and confining action on the parts within the garment and being also prevented from riding up on the wearer; and a front portion of material non-elastic along at least one dimension secured to said rear portion.

3. A garment of the character described adapted to encircle the hips of the wearer, confine the posterior portions and be worn next to the body, said garment comprising porous material having elastic strands extending in one direction, elastic strands interengaged with said first-named strands and adapted to permit the material to stretch simultaneously in another direction, whereby said material is capable of stretching up and down as well as across, and non-elastic strands interengaged with said elastic strands and adapted to limit the stretch of the material at least in one direction, said material being positioned at the rear of the wearer and extending between points on the posterior portions of the wearer above and below a point of greater posterior projection than either of said points; said garment being thereby constructed and arranged to permit freedom of movement of the wearer while exerting a distinct confining action on the parts within the garment and being also prevented from riding up on the wearer.

4. A garment of the character described adapted to encircle the hips of the wearer, confine the posterior portions and be worn next to the body, said garment comprising porous material having elastic warp strands and elastic weft strands interengaged with said warp strands and adapted to permit the material to stretch simultaneously in both directions, whereby said material is capable of stretching up and down as well as across, said material extending across the back and between points above and below the plane of maximum girth of the posterior portions of the wearer; said garment being thereby constructed and arranged to permit freedom of movement of the wearer while exerting a distinct confining action on the parts within the garment and being also prevented from riding up on the wearer.

5. A garment of the character described adapted to encircle the hips of the wearer, confine the posterior portions and be worn next to the body, said garment comprising porous material having elastic warp strands, elastic weft strands interengaged with said warp strands, and non-elastic strands interengaged with at least some of said elastic strands and adapted to limit the stretch around the body of the wearer, said elastic strands being arranged to provide for simultaneous stretch of the material both up and

down and across the material, said material extending across the back and between points on the posterior portions of the wearer above and below a point of greater posterior projection than either of said points; said garment being thereby constructed and arranged to permit freedom of movement of the wearer while exerting a distinct confining action on the parts within the garment and being also prevented from riding up on the wearer.

6. A garment of the character described adapted to encircle the hips of the wearer, confine the posterior portions and be worn next to the body, said garment comprising a panel of porous material of fine, woven character, including elastic strands extending in one direction and elastic strands interengaged with said first-named strands and adapted to permit the material to stretch simultaneously in another direction, said panel comprising substantially a single piece of porous material of one thickness adapted to extend across the back of the wearer from one side to the other and to points above and below the plane of maximum girth of the posterior portions of the wearer, and capable of stretching both up and down and across; said garment being inherently capable of permitting freedom of movement of the wearer while exerting a distinct confining action and being prevented from riding up on the body.

7. A garment of the character described adapted to encircle the hips of the wearer, confine the posterior portions and be worn next to the body, said garment comprising porous material having elastic strands extending in one direction and elastic strands interengaged with said first-named strands, said material being positioned at the rear of the wearer between points above and below the plane of maximum posterior projection of the posterior portions and being capable of stretching up and down at substantially all points overlying said portions and capable of stretching across at least at some portions at the rear of the wearer, said garment being thereby constructed and arranged to permit freedom of movement of the wearer while exerting a distinct confining action on the parts within the garment and being also prevented from riding up on the wearer.

8. A garment of the character described adapted to encircle the hips of the wearer, confine the posterior portions and be worn next to the body, said garment comprising porous material having elastic strands extending in one direction and elastic strands interengaged with said first-named strands, and strands of non-elastic material interengaged with at least some of said elastic strands and adapted to limit the stretch of the material across the wearer, said material being located at the rear of the wearer between points above and below the plane of maximum girth of the posterior portions and being capable of stretching up and down at substantially all points overlying said portions and capable of stretching across at least at some portions at the rear of the wearer, said garment being thereby constructed and arranged to permit freedom of movement of the wearer while exerting a distinct confining action on the parts within the garment and being also prevented from riding up on the wearer.

9. A garment of the character described adapted to encircle the hips of the wearer and be worn next to the body, said garment including porous material comprising knitted strands at least some rows of which are of elastic material in combination with other strands of elastic material interwoven with said knitted strands, said material being positioned at the rear of the wearer and extending between points on the posterior portions of the wearer above and below a point of greater posterior projection than either of said points.

JOHN FIELD.

## DISCLAIMER

1,919,292.—*John Field*, Fairfield, Conn. ELASTIC GARMENT. Patent dated July 25, 1933. Disclaimer filed December 27, 1937, by the assignee, *United States Rubber Products, Inc.; The Warner Brothers Company*, former assignee, consenting.

Hereby disclaims claim 9 of said patent, and also disclaims from the scope of claims 1, 3, 6, 7, and 8, a garment wherein the material positioned at the rear of the wearer and extending over the posterior portions is formed of a knitted elastic fabric employing knitted elastic yarn in its construction and having laid-in elastic yarn extending along some of the knitted courses.

[*Official Gazette January 25, 1938.*]