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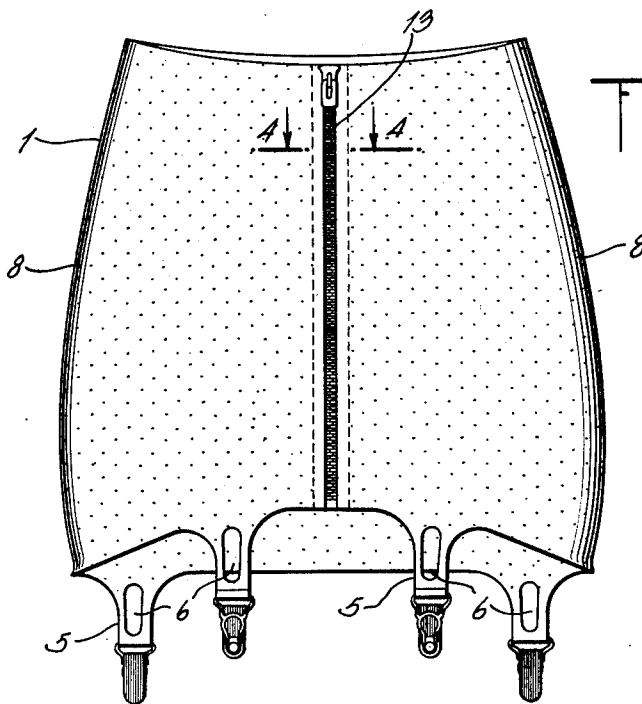
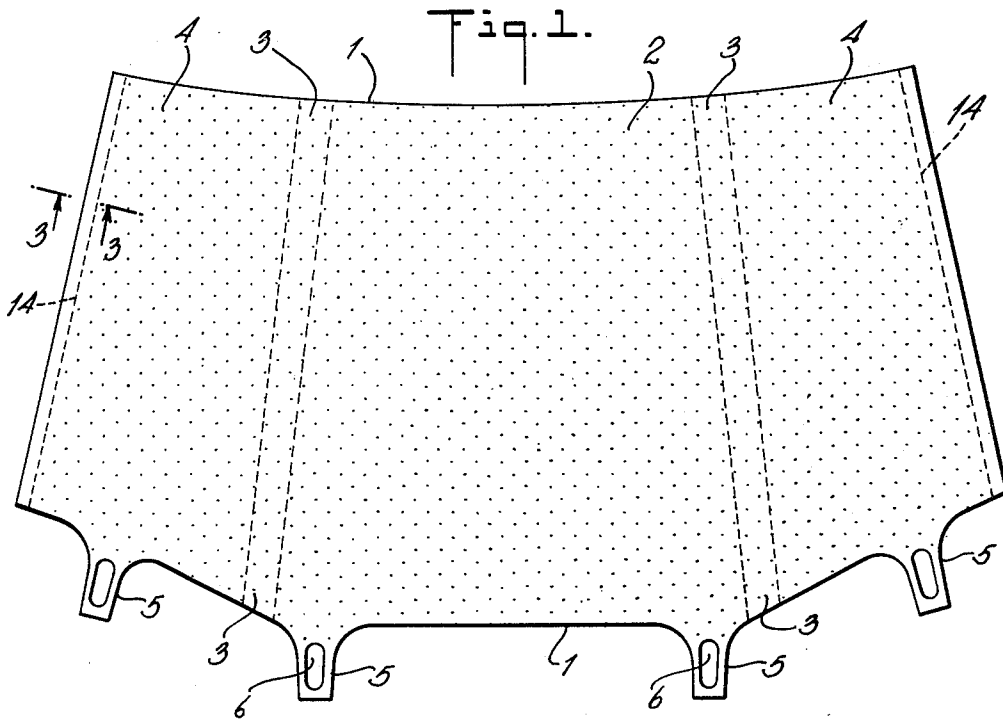
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2,365,016

GIRDLE OR THE LIKE

Filed March 28, 1942

3 Sheets-Sheet 1



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3 Sheets-Sheet 2

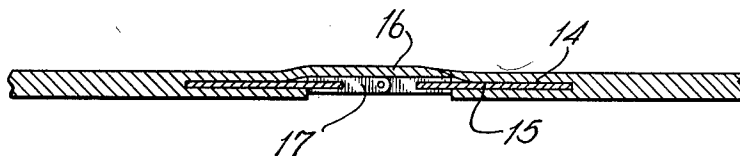


Fig. 4.

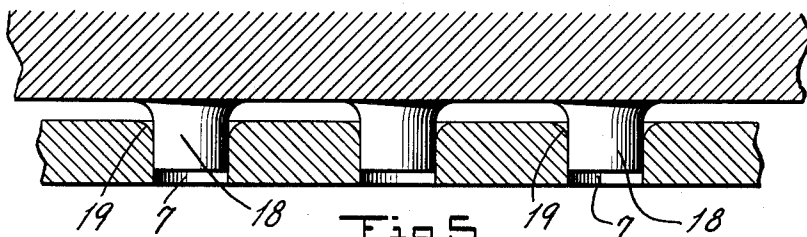


Fig. 5.

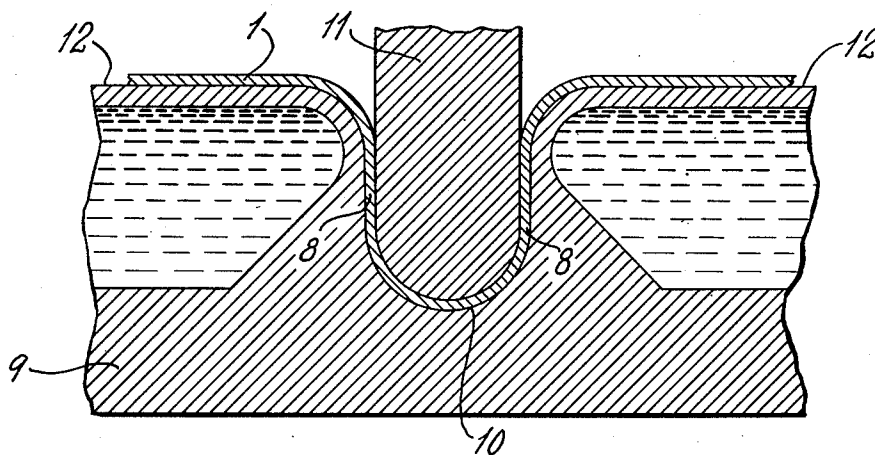


Fig. 6.

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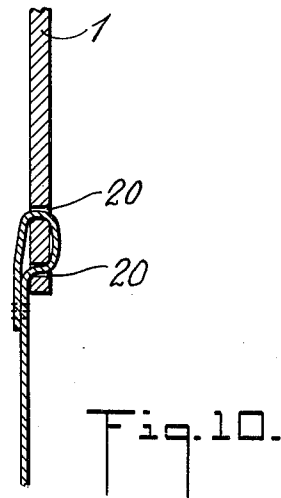
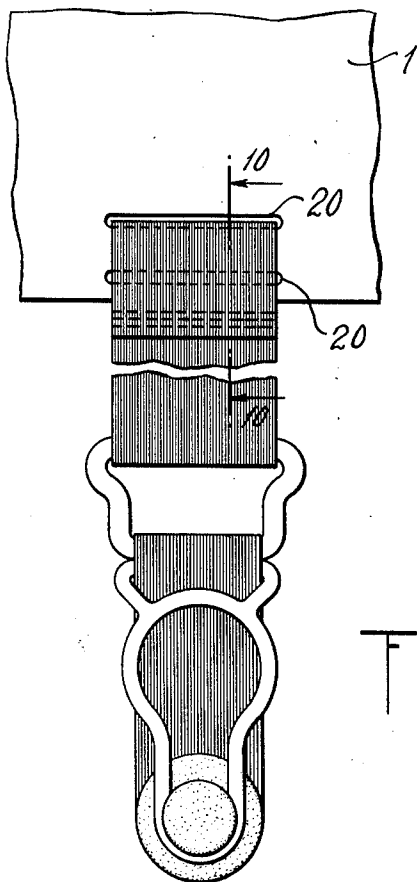
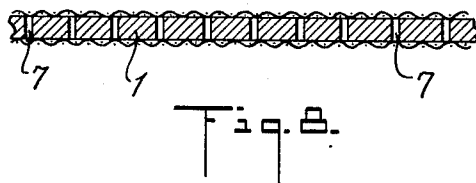
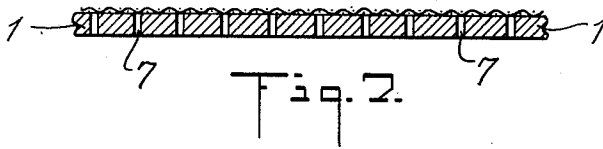
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3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

2,365,016

GIRDLE OR THE LIKE

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Application March 28, 1942, Serial No. 436,553

6 Claims. (Cl. 2-43)

This invention relates to improvements in girdles or foundation garments, and relates more particularly to a novel garment constructed from plastics of the thermosetting or thermoplastic type.

An object of the present invention is to provide a garment which will be sufficiently strong or tough in texture to confine and support those portions of the human body enveloped therein; elastic enough so as to conform to said portions, and which will be yielding and pliable, and will have a pleasant feel or handle.

Heretofore it has been customary to produce garments which are intended to serve as supporting girdles, either from rubber, latex, or from a suitable fabric such as jersey cloth or knitted rubberized thread.

According to my invention an entirely novel product may be manufactured by employing, in place of the customary materials, a synthetic plastic such for instance as vinyl acetate, vinyl chloride or other thermoplastics from the acetyl groups. The supporting structure may be composed entirely from a film of such a plastic, or it may be composed of a plastic film in conjunction with one or more of the materials heretofore used, such as jersey cloth. For instance a fabric facing may be laminated to either one or both sides of a film of vinyl acetate to form a plastic sandwich. Suitable fabric facings may be of cotton, silk, nylon, rayon or the like and may be either cemented to the plastic film or thermoplastically bonded thereto, or the plastic material in a viscous state may be spread on or calendered thereto.

The invention also contemplates that in the preferred form the girdle will consist of smooth surfaces with substantially no obstructions thereon, whereby there is permitted not only a smooth surface contact with the skin of the wearer, but also a smooth sliding contact between the outer surface of this girdle and whatever garment may be worn immediately over it.

In order that the invention may be more clearly understood reference is now made to the accompanying drawings in which various embodiments of the invention are illustrated, it being understood that these embodiments are shown by way of illustration to indicate that the invention may be embodied in many different forms.

Referring to the drawings—

Fig. 1 represents a plan view of a garter girdle blank.

Fig. 2 illustrates the finished girdle of Fig. 1 after the garment has been completed.

Fig. 3 is an enlarged detail of a section taken along the line 3—3 of Fig. 1 looking in the direction of the arrows.

Fig. 4 is a sectional view, taken along the line 4—4 of Fig. 2, representing in detail one manner of arranging the closure means for the front of the girdle.

Fig. 5 is a greatly enlarged detail representing the manner in which the girdle blank may be perforated.

Fig. 6 illustrates a means by which the thermoplastic side portions of the girdle may be shaped by heating.

Fig. 7 is a sectional view showing a modification in which a fabric facing is attached to one side of the plastic film.

Fig. 8 represents still another modification in which both sides of the plastic are faced with a fabric material.

Fig. 9 represents a means for detachably connecting a garter strap, and

Fig. 10 is a sectional view taken along the line 10—10 of Fig. 9.

Referring to Fig. 1 the supporting girdle there shown comprises a sheet or film 1 of plastic material cut out in the outline of a girdle. This sheet is formed of one integral piece comprising a back portion 2, side portions 3—3 and front portions 4—4. The garter tabs 5 here shown are an integral part of the plastic sheet 1. It will be noted that there is a central longitudinal cut-out portion 6 of each tab, the purpose for which is to increase their longitudinal elasticity and make them more readily extendable to the downward pull of the stockings. The girdle blank of Fig. 1 may be cut or died out from sheet stock in one operation. For instance, a sheet of vinyl acetate, having a thickness in the neighborhood of one-eighth of an inch, may be laid out upon a suitable flat surface and a cutting die may simultaneously punch out the entire blank, including the cut-out portions 6 of the tabs. The perforations 7 may also be formed during this operation, but they are preferably punched out in a subsequent operation to be described hereafter. If desired, a number of girdle blanks may be died out in one operation by superimposing a plurality of blanks.

In order to provide a form-fitting garment, it is desirable to provide a greater amount of material for constituting the wider or hip portion of the girdle; this is especially true when the plastic employed has a rather limited degree of elas-

ticity. Referring to Fig. 2 it will be noted that at both sides of the girdle a curved bulging side portion 8 has been formed from the flat elongated region 3 (Fig. 1), between the back and front portions of the blank. One way of creating this additional area in the thermoplastic material is to stretch or distort the side areas into the desired shape and dimensions while applying sufficient heat to that area to effect a permanent set after cooling. This may be illustrated by reference to Fig. 6 wherein a heated female die member 9, having an annular elongated and curved groove 10 of sufficient depth, is associated with a complementary movable male die member 11. In order to permanently form the side bulges 8 of the garment, the blank 1 of Fig. 1 is suitably positioned and clamped upon the flat surface portions 12 of the die 9 so that the side portion 3, or that elongated area between the dotted lines, will coincide in overlying relation with the elongated groove 10. Downward pressure is then applied to the male die 11 which stretches and downwardly extends the plastic until it uniformly contacts the heated bottom and side walls of the female die. Upon removal from the die and after cooling, these curved side portions will maintain their enlarged shape.

The closure means employed for uniting the two front portions of the garment may be a slide fastener 13, as shown, or any other suitable arrangement such as hooks and eyes. It is important however that whatever means are employed, care should be taken to so construct the closure as not to pinch or irritate the skin of the wearer when in use. A suitable manner of attaching the closure means is shown in Figs. 1 through 4, whereby plastic sheet is slit or divided in half by cutting lengthwise along both opposing front edges of the girdle. This may be accomplished by a sharp or heated blade, and the slit 14 should be deep enough to accommodate the fabric securing tape 15 of the slide fastener. The tape 15 is then sandwiched in between the slit portions of the plastic and it may be secured there either by stitching, cementing or by thermoplastically bonding together. To prevent the metal fasteners 17 from contacting with the wearer's skin it is preferable to provide an inside overlying flap 16 extending from one of the front portions a sufficient distance to span the space required for the metal fastener means. This protecting flap may be gradually tapered at its outer extremity and may be arranged as in Fig. 4, so as to fit into an undercut edge of the opposite front portion.

Wherever the plastic material of the girdle is of too thin a gauge for practical splitting, the closure means may be secured in a conventional manner as by stitching, after which a thin strip of thermoplastic may be applied over the cloth material by heat or chemical.

The perforations 7 (Fig. 5), may be punched out by spreading the girdle out flat upon a suitable backing and employing punching dies such as shown. It will be noted that each die 18 has an outward flare towards its base. When pressed into the plastic this flare will form a smoothly rounded circumferential lip 19 about each opening upon the surface intended to be worn in contact with the body. This will obviate any irritation to the wearer's skin caused by contacting sharp edges about the perforations. It is also desirable to round off all marginal edges of the girdle wherever they will contact the body. This may be done with a heated pressure roller. In finishing the girdle the garter clips may be

attached to the tabs 5 in any suitable manner as by clamping or stitching. If it is desirable to employ a conventional garter strap of elastic material in order to provide a greater degree of stretch, the straps may be attached to the body of the girdle as shown in Figs. 9 and 10, in which two slits 20—20 are positioned near the lower edge of the girdle and the elastic strap is passed through these slits and then stitched upon itself as shown.

While the invention described so far has only referred to the construction of a girdle the body of which is formed entirely from a plastic material, it is to be understood that the same procedure may be followed in constructing a garment from laminated material such as shown in Figs. 7 and 8. The fabric and plastic sheets are preferably united together before the cutting and perforating operations. Where the girdle is to be formed with a fabric facing on its inner side it will not be necessary to round the inner edges of the perforations, because in such a construction the soft fabric may serve to prevent injury to the wearer's skin.

Wherever it is advisable to shape such a laminated girdle, so as to provide extra material about the hip portions, it will be necessary to employ a fabric which may be readily stretched or distorted so that it can be made to conform by pressure to the shaping operation described in connection with Fig. 5. A type of fabric which is suitable for this purpose is a knit material which is customarily known as jersey cloth. From Figs. 7 and 8 it will be apparent that the perforations communicate with the interstices of the fabric areas so that the escape of moisture and ventilation from all parts of the surface area of the wearer's skin is afforded. If the surface of the thermoplastic material directly contacts with the skin instead of being spaced therefrom slightly by the fabric, then the inner ends of the perforations may in some cases tend to be sealed by the skin.

It is to be understood that girdles may be constructed directly from such flat or sheet-like blanks as shown in Fig. 1. That is to say, it is within the contemplation of this invention to eliminate the step of curving the side portions of the garment such as at 8 of Fig. 2. A garment which has been formed in this simplified manner would normally, when not in use, have substantially straight side portions. However, when such a girdle is in use, the heat from the body of the wearer renders the plastic sufficiently elastic or stretchable so that while supporting the flesh in the proper constricted manner, it will nevertheless thermoplastically yield to maintain the desired tension and shape even when the body of the wearer assumes an angular position as when seated.

While the invention has been described with respect to certain particular preferred examples which give satisfactory results, it will be understood by those skilled in the art after understanding the invention, that various changes and modifications may be made without departing from the spirit and scope of the invention and it is intended therefore in the appended claims to cover all such changes and modifications.

What I claim is:

1. In a garment adapted to be so worn as to substantially conform to a portion of the wearer's body, a body portion consisting of pliable and somewhat elastic thermoplastic film material formed with small perforations distributed there-

over, and an inner layer of stretchable fabric material extending over the body areas and securely bonded to said film material, the interstices of the fabric areas communicating with said perforations and thus affording ventilation and the fabric covering the inner edges of the perforations, thereby preventing such edges from marring the wearer's skin.

2. A girdle comprising a body portion formed of pliable and somewhat elastic thermoplastic film material, and integral garter tabs of the same material depending from the lower edge of said body portion, said tabs being formed with central longitudinal cut-out portions for increasing the longitudinal elasticity thereof.

3. A girdle comprising a body portion formed of pliable and somewhat elastic thermoplastic film material, closure means for detachably uniting adjoining vertical edges of said body portion to form an envelope sheath, said portion being so shaped and dimensioned as to then substantially conform to the lower torso, the thermoplastic material at narrow areas extending generally vertically along each side of the girdle, although pliable like the remaining areas, being substantially permanently set with a normally smooth outwardly curved convex cross section and with outward bulging to substantially conform to the sides of the outline of the lower torso as viewed from the front or back, the front and back areas being formed of normally substantially flat material.

4. In a garment adapted to be so worn as to sub-

stantially conform to a portion of the wearer's body, a body portion comprising pliable and somewhat elastic thermoplastic film material, slide fastener means for detachably uniting adjoining edges of said body portion to form an envelope sheath, the said edges of the film material being each divided by a longitudinal slit, and securing tapes for said fastener means secured to the film material within said slits.

5. In a garment adapted to be so worn as to substantially conform to a portion of the wearer's body, a body portion comprising pliable and somewhat elastic thermoplastic film material, slide fastener means for detachably uniting adjoining edges of said body portion to form an envelope sheath, edges of the film material being attached to securing tapes for the fastener means, and said film material being also formed with thin integral flap extension means overlying said fastener means on the inner side of the garment.

6. In a garment adapted to be so worn as to substantially conform to a portion of the wearer's body, a body portion consisting of pliable and somewhat elastic thermoplastic film material, and an inner layer of stretchable fabric material extending over such integral body portion and thermoplastically bonded to said film of material, the thermoplastic film acting to somewhat restrict the stretching of said fabric material, and the fabric serving to prevent the thermoplastic material from adhering to the wearer's skin.

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