

July 6, 1943.

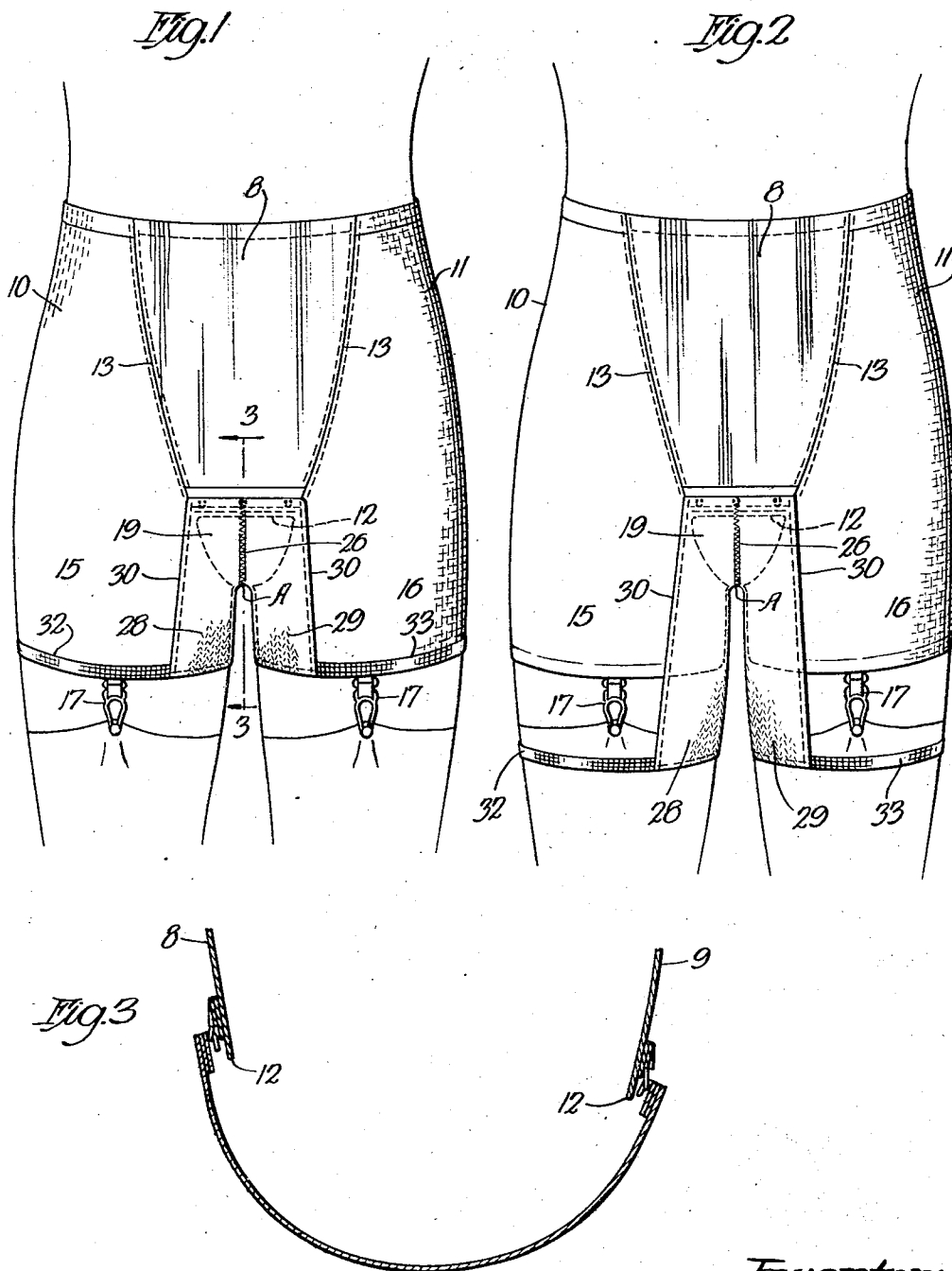
C. BULLINGER

2,323,451

UNDERGARMENT

Filed Dec. 3, 1941

4 Sheets-Sheet 1



Inventor:
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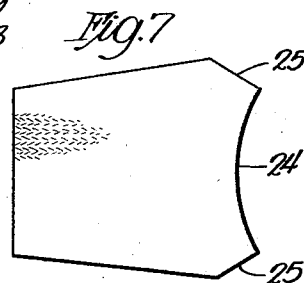
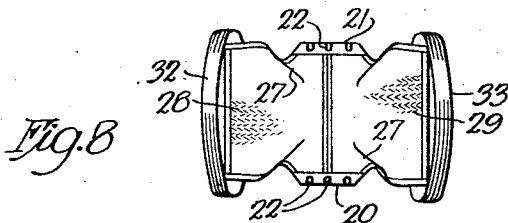
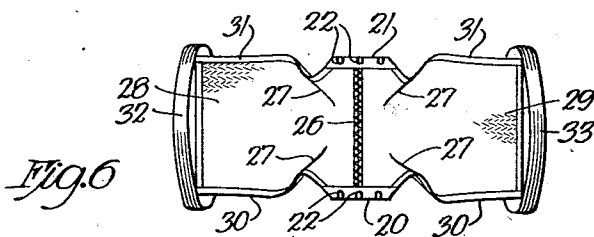
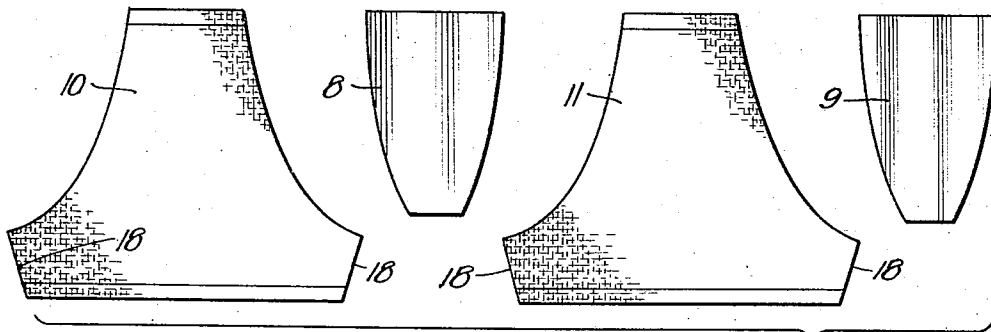
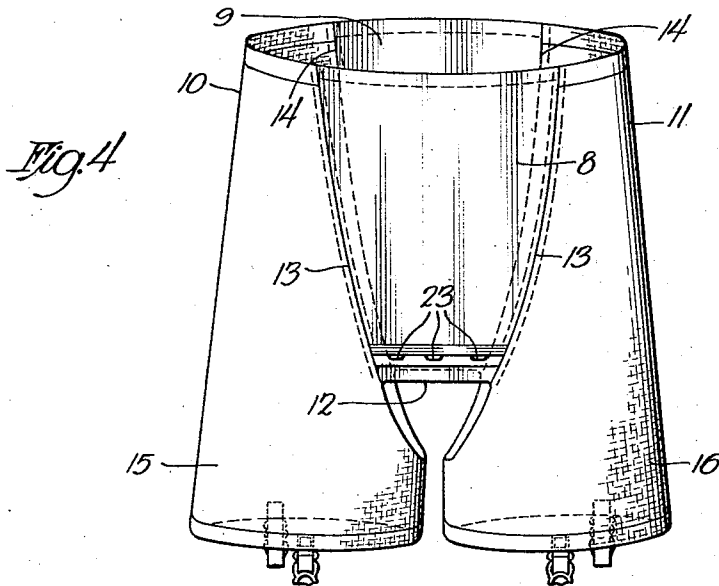
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4 Sheets-Sheet 2



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4 Sheets-Sheet 3

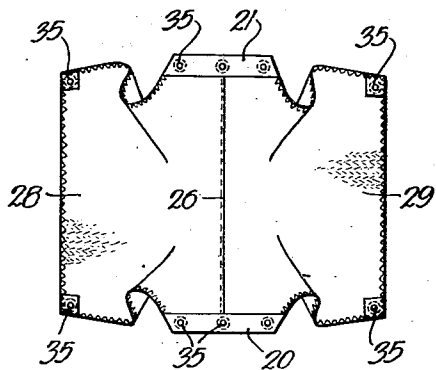
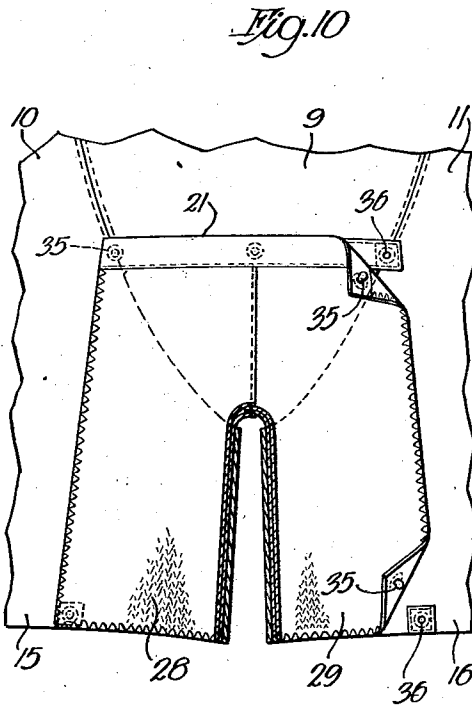
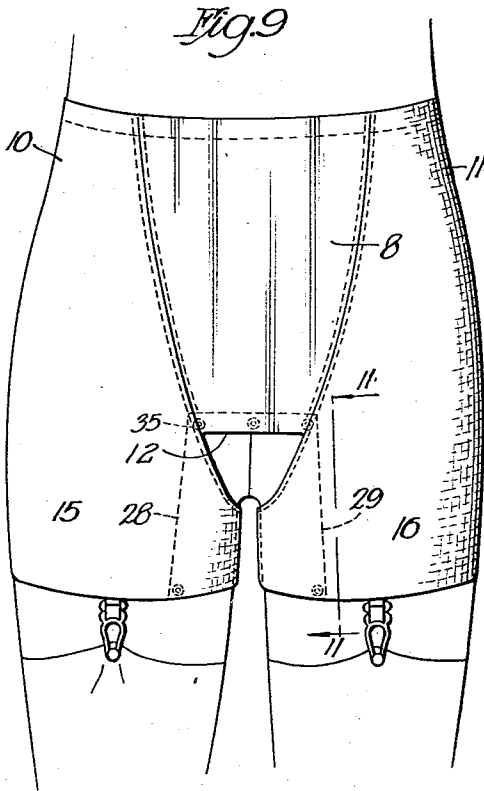
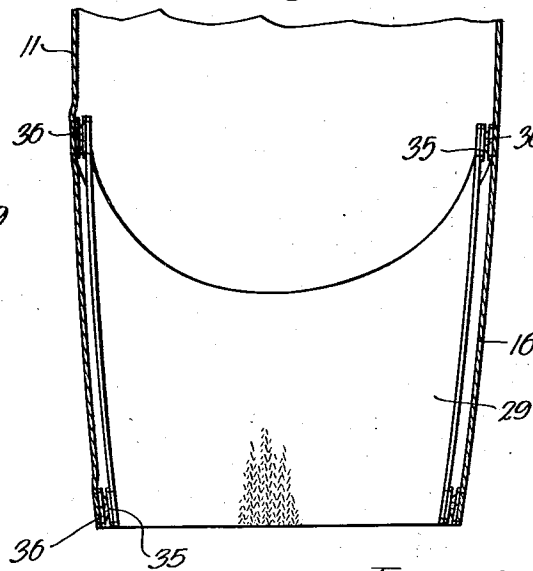


Fig. 12



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Fig. 13

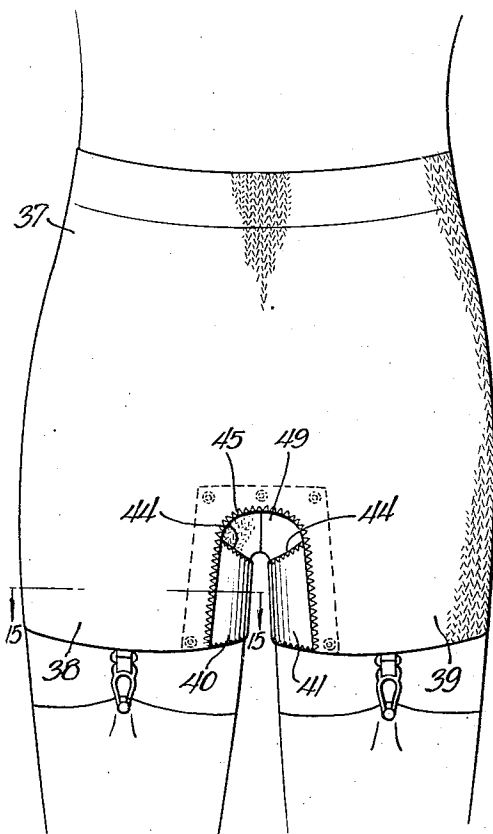


Fig. 14

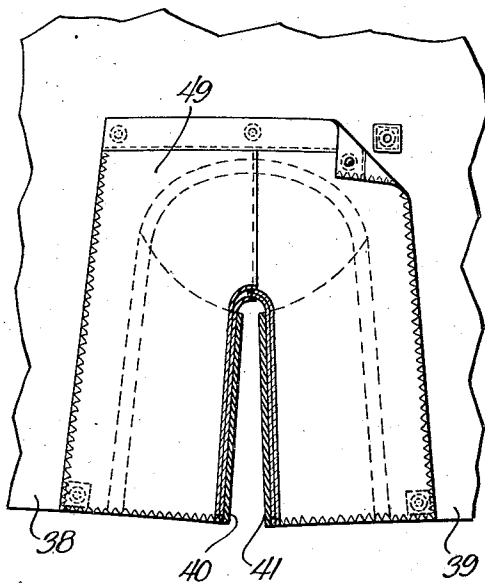


Fig. 16

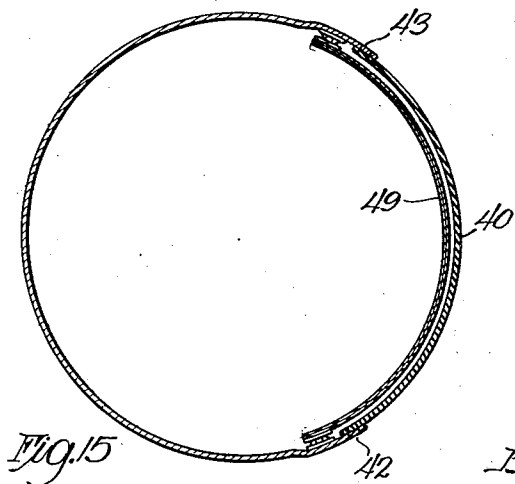
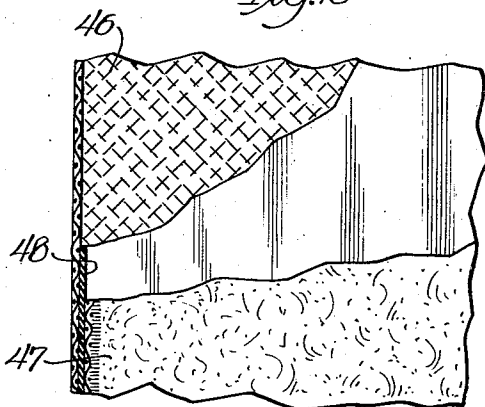


Fig. 15

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UNITED STATES PATENT OFFICE

2,323,451

UNDERGARMENT

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Application December 3, 1941, Serial No. 421,430

5 Claims. (Cl. 128—149)

This invention relates to undergarments and more particularly to a girdle-like garment, especially intended for women's wear and this application is, in part, a continuation of my co-pending application, Ser. No. 341,246.

The main objects of the invention are to provide a garment of the character indicated which may be worn selectively as an open or closed crotch garment; to provide such a garment with which crotch members of different forms may be interchangeably employed; to provide a garment of the character indicated in which a detachable crotch element is effectively held in operative position but wherein it may be very easily removed and replaced; and to provide a garment of the character indicated which will be effectively held against a normal tendency to be displaced upwardly incident to normal body movement.

Other objects and advantages of the invention will be understood by reference to the following specification and accompanying drawings (four sheets) wherein there is illustrated a women's undergarment embodying a selected form of the invention.

In the drawings:

Figs. 1 and 2 are front elevations of the selected garment showing the same garment having associated therewith different styles of crotch member;

Fig. 3 is a section on the line 3—3 of Fig. 1;

Fig. 4 is a front elevation corresponding to Figs. 1 and 2 but showing the garment with the crotch member removed;

Fig. 5 is an exploded view of the patterns or blanks which are employed in forming the garment as shown in Fig. 4;

Fig. 6 is an inside plan of one style of crotch member;

Fig. 7 is a plan of one of two like elements which are employed in forming the crotch member illustrated in Fig. 6;

Fig. 8 is a view similar to Fig. 6 but showing another style of crotch member.

Fig. 9 is a front elevation showing another form of construction.

Fig. 10 is a cross-section in a plane extending from side to side of the garment approximately midway between the front and back thereof and looking toward the back of the garment.

Fig. 11 is a cross-section on the line 11—11 of Fig. 9.

Fig. 12 is a plan of a removable crotch element employed in the construction shown in Figs. 9—11 inclusive.

Fig. 13 is a front elevation of another form of garment embodying the invention.

Fig. 14 is a cross-section of a vertical plane extending from side to side of the garment approximately midway between the front and back thereof and looking toward the back of the garment.

Fig. 15 is a cross-section on the line 15—15 of Fig. 13 and Fig. 16 is a more or less diagrammatic representation of a fabric element employed in the construction of the garment shown in Figs. 13—15 inclusive.

Referring now to the drawings, the improved garment therein shown comprises front and back central panels 8 and 9, respectively, and side sections 10 and 11, respectively. The panels and sections 8, 9, 10 and 11 have upper end edges aligned and such edges and the adjacent marginal portion of the garment constitute, in effect, the waistband of the garment.

The front and back sections or panels 8 and 9 are wider at their upper ends than at their lower ends, the same gradually being reduced in width as clearly shown, and they terminate as indicated at 12 at a point considerably above the normal crotch line of the garment designated A in Figs. 1 and 2.

The side sections 10 and 11 have front and rear side edges suitably seamed as indicated at 13 and 14 to the adjacent side edges of the front and rear panels 8 and 9, respectively, and said front and rear side edges of said sections 10 and 11 continue downwardly from the lower ends of said front and rear central panels in such curved or other form as to be adapted to substantially coincide with the groins of the wearer of the garment. As shown, the side sections 10 and 11 have portions depending below the lower ends of the central panels and forming legs 15 and 16 which are adapted to completely encircle the thighs of the wearer immediately below the crotch. Suitable hose supporters 17 may be attached to the lower ends of the legs as indicated.

The garment structure as shown in Figure 4 constitutes a complete, open crotch garment which may be designated a "pantie girdle." The material employed in the various sections may be of any suitable kind but it is preferred that the front and back central panels be formed of suitable textile material which is elastic in a vertical direction but relatively inelastic horizontally. The side sections 10 and 11 are preferably formed of textile material which is elastic both vertically and horizontally.

In constructing the open crotch garment,

blanks or patterns of the selected material shaped substantially as illustrated in Figure 5 are employed. It will be observed that the side forming sections have their lower ends substantially widened, the lateral extensions thereof serving to form the legs 15 and 16. The vertical ends 18 of the leg forming portions of said side sections are suitably seamed together, and, in the patterns shown, the seams so formed are located on the inside of the leg substantially mid-way between the front and back thereof. This relationship may, of course, be substantially varied.

In the foregoing description of the garment body, a selected construction embodying separate front, back and side sections has been explained. However, it should be understood that the garment body may be constructed of other panel or section arrangements and also that it may be constructed in one piece in the form of a tubular knitted elastic or one-piece, all elastic fabric or sheeting. The construction of pantie girdles in such various forms is well known to those skilled in the art, wherefore detailed description of such other forms is not herein given.

For the purpose of converting the open crotch garment into a closed crotch garment, there is provided a crotch member 19 formed of suitable fabric, a suitable grade of knitted material being desirable for this purpose because of its softness and anti-chafing character. The crotch member is provided with front and rear ends 20 and 21, respectively, which substantially correspond in width to the width of the lower ends of the front and back central portions. Said front and rear ends 20 and 21 are provided with hooks 22 suitably secured thereto and adapted for inter-engagement with eyes 23 which are suitably secured to said front and back central panels, respectively. It will be seen that the said hooks and eyes provide for the detachable connection of the front and rear ends of the crotch member to the lower ends of the front and back central panels, respectively, of the garment. It will be apparent, of course, that other forms of detachable connecting means may be employed instead of hooks and eyes if preferred.

The crotch member is formed from two sections of the form illustrated in Fig. 7. The sections are in general keystone-shaped form except that their wide ends are cut concavely as indicated at 24 and the corners at the wide ends are cut at angles to form edge portions indicated at 25.

Two elements such as illustrated in Fig. 7 are joined together by uniting their concave ends 24 in a seam indicated at 26 in Fig. 6, the result being that the edges 25 form the front and rear ends of the crotch member and that fullness is provided as indicated at 27 on opposite sides of the seam 26 and adjacent both front and rear ends 20 and 21. Such fullness permits the crotch member to assume the position illustrated in Fig. 2, wherein the opposite end portions 28 and 29 thereof extend downwardly in snugly fitting and overlapping relation to the legs 15 and 16 of the garment. The crotch member illustrated in Figs. 2 and 6 is formed with leg portions 28 and 29 of such length that they extend downwardly beyond the lower ends of the legs 15 and 16 of the garment so as to cover the inside portions of the legs of the wearer, thereby to protect the wearer against chafing for a considerable distance below the crotch.

The front and rear side edges 30 and 31, respectively, of the leg covering portions 28 and

29 are free of attachment to the legs of the garment but at their lower ends said leg portions 28 and 29 are provided with elastic bands 32 and 33, respectively, which are adapted to encircle the limbs of the wearer and to maintain said leg portions 28 and 29 in distended, smoothly fitting condition on the wearer.

The length of the leg portions 28 and 29 may be varied considerably. As shown in Fig. 1, the leg portions 28 and 29 of the crotch member are of such length that their lower ends coincide with the lower ends of the legs 15 and 16 of the garment, and the elastic bands 32 and 33 may be disposed on the outside of the garment legs as indicated.

A crotch member having longer leg portions, as shown in Fig. 2, may be employed instead of the short leg length illustrated in Fig. 1. As there shown, the length of the leg portions 28 and 29 is such that their lower ends are adapted to overlap the tops of the stockings, the elastic bands 32 and 33 extending around the legs outside of the stocking tops. The lengths of the legs of the crotch part may, obviously, be varied considerably and it should be observed that it is not necessary that the elastic bands 32 and 33 be disposed on top of the stockings or any other wearing apparel.

The longer leg crotch member provides greater protection to the wearer from leg chafing. Also, by constructing the garment so as to permit the use of a long leg crotch member, the garment, when so equipped, is adapted to serve the purpose of an ordinary pantie-girdle garment plus an ordinary, supplemental chafe guard. Hence, the extra weight and warmth of the conventional combination of pantie girdle and chafe guard may be eliminated by the improved structure.

The lower ends of the front and back panel sections are preferably provided with suitable binding tapes for facilitating anchorage of the fastening eyes 23, such provision for anchorage of fastening elements being well understood by those skilled in the art, wherefore detailed description of the same is not herein given. Similarly, suitable binding or reinforcing tapes are preferably employed for receiving the fastening hooks in the crotch members, and as is also well understood in the art, the various free edges of the garment may be suitably bound or finished.

The garment illustrated in Figs. 9-11 inclusive is of substantially the same construction as that described in connection with Figs. 1-4 inclusive and the crotch member is of substantially the same construction as shown in Fig. 8. However, in the arrangement shown in Figs. 9-11 inclusive, the crotch member is disposed on the inside of the garment legs instead of on the outside thereof as in Figs. 1-4. As shown in Figs. 9-12, the front and rear ends 20 and 21 of the crotch member are provided with separable fastening elements in the form of the post or ball elements indicated at 35 for engagement with cooperative socket elements 36 carried by the lower ends of the front and rear central panel sections 8 and 9 of the garment body. The leg forming side extensions 28 and 29 of the crotch member are similarly provided at their lower ends and adjacent the front and rear sides thereof with post members 35 of suitable ball and socket connectors, for cooperation with suitable socket elements 36 which are secured to the inside of the lower ends of the legs 15 and 16 of the garment. It will be apparent that

the ball and socket separable fastener connections thus provided will serve to hold the crotch member in proper position in the garment with the leg forming side extensions of the crotch member properly distended so as to fit smoothly against the legs of the wearer.

In the arrangement of the crotch member as shown in Figs. 9-11, any tendency for the elastic material of the legs 15 and 16 of the garment to chafe or irritate is effectively overcome by the presence of the crotch member which may be made of suitable knitted or woven textile material having such characteristics of softness and smoothness as may be desired. Also the crotch member may be of single, double or multi-ply construction if preferred. In one desirable construction the crotch member is made of two plies of silk or rayon suitably united at their edges and in the center of the member where the component elements are stitched together as at the seam 26. The fastener elements 35 are perfectly enclosed between the folds of a tape finishing element which embraces the front and rear ends 20 and 21 of the member and between the folds of a tape element stitched in its entirety on the outside of the member at the lower corner of the leg forming extensions. The ball or post parts of the fastener members 35 extend through suitable openings provided in the tape members so as to be exposed for engagement with the socket members. The socket members may similarly be attached to the garment body, i. e., between the folds of suitable tape strips which are in turn anchored by stitching or otherwise at appropriate points on the body and legs of the garment, such tape strips being also provided with suitable openings to permit the post parts to be engaged with the socket members.

In the construction shown in Figs. 13-16 inclusive, the garment body and legs are represented as being in the form of a one-piece tubular knit construction, the body part being designated 37 and the legs 38 and 39.

To form the legs, the tubular body has its lower end slitted for a short distance and straps designated 40 and 41 are secured to the front and rear edges as indicated at 42 and 43 (Fig. 15) to rejoin the slitted edges and to cooperate with the outer leg forming portions of the knit tubular member to complete the legs of the garment. The straps 40 and 41 are cut to such shape that their lower edges will be aligned with the lower ends of the outer leg forming portions of the garment and so that the upper edges 44 of said straps will be disposed somewhat below the top of the crotch opening 45 thus formed. The edge of the garment body which forms the top of the crotch opening 45 is of course suitably finished by stitching or taping, or otherwise, as may be desired.

The inner leg forming strap portions 40 and 41 are preferably formed of textile fabric material having a substantial tendency to resist wrinkling or folding, whereby the leg portions of the garment are given a definite tendency to remain in smooth fitting condition on the wearer. One type of textile fabric material such as mentioned is represented in Fig. 16 where outer and inner layers of woven textile material are indicated at 46 and 47 and an intermediate layer or ply of rubber is indicated at 48. The textile plies 46 and 47 are united in face to face relation by the intervening layer of rubber which acts as an adhesive or bonding agent and which serves to impart to the composite fabric element the nor-

mal resistance of rubber sheeting to creasing, wrinkling or folding. Other forms of material may be substituted but the material mentioned has been found to be eminently satisfactory.

5 The inner ply 47 of fabric is preferably finished at least on its inside face with a flannel-like nap which will add softness to that side of the fabric which engages the legs of the wearer.

The crotch member designated in its entirety 10 at 49 may be of the same character and construction as that shown in either Figs. 6, 8 or 12, the construction of Fig. 12 being herein illustrated as applied on the inside of the garment as described in connection with Figs. 9-11 inclusive.

15 Changes in the described construction may be made without departing from the spirit of the invention as set forth in the accompanying claims, which should be construed as broadly as possible consistent with the state of the art.

20 I claim:

1. An undergarment comprising a body part and legs of such form as to be adapted to snugly fit the body and legs of the wearer, said body part of the garment having its crotch portion cut away to provide a crotch opening, and said 25 legs of the garment being adapted to encircle the legs of the wearer below the crotch, the inner portions of said legs having free upper edges, and a crotch member detachably connected at its upper ends to the front and back of said body part above said crotch opening and having leg portions depending into overlapping relation to said inner portions of the garment legs, said depending leg portions being provided with means 30 for maintaining the same distended.

2. An undergarment comprising a body part and legs embodying transversely stretchable material and of such size and form as to be adapted to snugly fit the body and legs of the wearer, 35 said body part having its crotch portion cut away to provide a crotch opening, and said legs being adapted to encircle the legs of the wearer below the crotch, the inner portions of said legs having free upper edges, a crotch member having front and rear ends detachably connected to 40 said body part above said crotch opening and having depending side extensions lapping said inner leg portions, and means for maintaining said depending side extensions forwardly and rearwardly distended.

3. A women's undergarment comprising vertically elongated front and back panels, said panels being reduced in width from top to bottom and terminating above the normal crotch line of the 45 garment, side sections stretchable horizontally and having front and back side edges seamed to the adjacent side edges of said front and back panels so as to cooperate therewith to form a girde structure adapted to constrictively fit the 50 wearer, said side sections having leg-forming parts depending therefrom and adapted to completely encircle and snugly fit the legs of the wearer below the crotch, the inner portions of said legs having free upper edges extending between the lower ends of said front and back 55 panels and adapted to approximately coincide with the groins of the wearer, and a crotch member having front and rear ends detachably connected to said front and back panels adjacent their lower ends, and having side extensions depending into lapping relation to the inner portions of said legs, and means for maintaining said side extensions forwardly and rearwardly distended in smooth-fitting position over said 60 inner leg portions.

4. An undergarment comprising a body part and legs embodying transversely stretchable material and of such size and form as to be adapted to snugly fit the body and legs of the wearer, said body part having its crotch portion cut away to provide a crotch opening, and said legs being adapted to encircle the legs of the wearer below the crotch, the inner portions of said legs having free upper edges, a crotch member on the inside of said body part and legs and having front and rear ends detachably connected to said body part above said crotch opening and depending side extensions lapping said inner leg portions, and means for maintaining said depending side extensions forwardly and rearwardly distended.

5. An undergarment comprising a body part and legs embodying transversely stretchable ma-

terial and of such size and form as to be adapted to snugly fit the body and legs of the wearer, said body part having its crotch portion cut away to provide a crotch opening, and said legs being adapted to encircle the legs of the wearer below the crotch, the inner portions of said legs having free upper edges, a crotch member on the inside of said body part and legs and having front and rear ends detachably connected to said body part above said crotch opening and depending side extensions lapping said inner leg portions, and means for maintaining said depending side extensions forwardly and rearwardly distended, said last mentioned means comprising separable fastener connections between the front and rear side edges of said depending extensions and the legs of the garment.

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