

Sept. 12, 1950

B. WOHLMAN

2,522,009

FOUNDATION GARMENT WITH CROTCH THEREFOR

Filed June 21, 1947

FIG. 1.

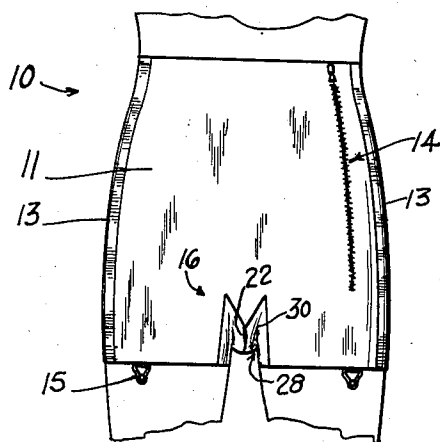


FIG. 2.

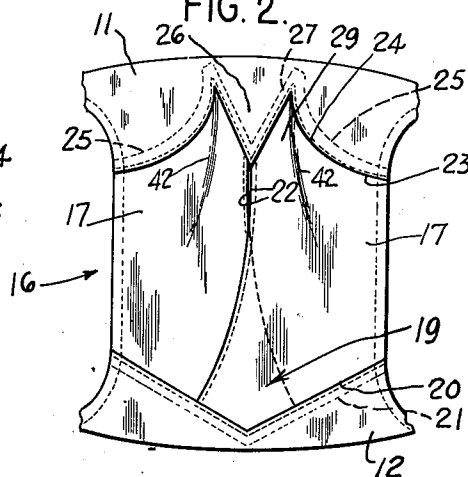


FIG. 3.

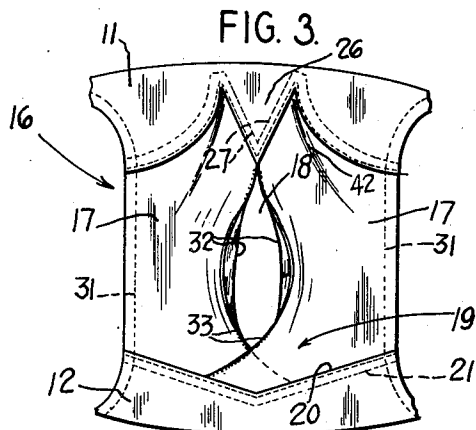


FIG. 4.

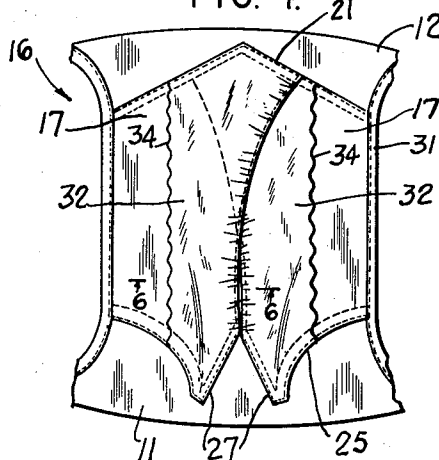


FIG. 5.

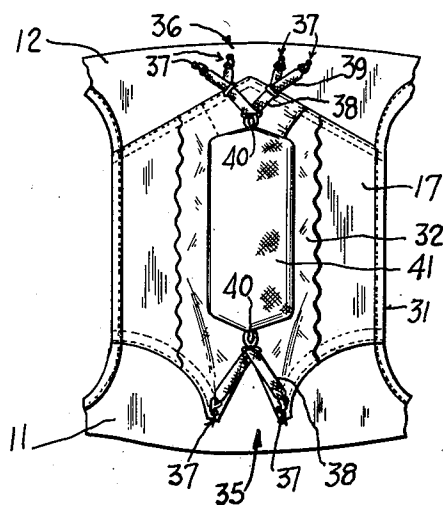
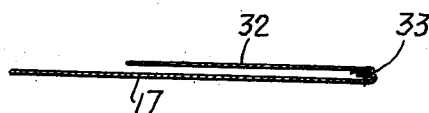


FIG. 6.



INVENTOR.
Beatrice Wohlman
BY
Luis Schumacher
ATTORNEY.

UNITED STATES PATENT OFFICE

2,522,009

FOUNDATION GARMENT WITH CROTCH THEREFOR

Beatrice Wohlman, Forest Hills, N. Y.

Application June 21, 1947, Serial No. 756,226

8 Claims. (Cl. 128—288)

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This invention relates to foundation garments and crotches therefor.

One object of the invention is to provide a foundation garment having an improved permanently attached, normally closed, neat and comfortable crotch.

Many women require crotches for convenience and protection, and those heretofore used have been detachable, but untidy in appearance, and afforded only reasonable comfort. They were adapted to be easily washed, but were never adapted for a snug fit to the wearer. They had to be removed when urinating was necessary, and their reattachment was always a source of difficulty.

It is therefore an object of the invention to provide an improved crotch forming a part of a foundation garment and having an opening, the edges whereof would not cause cutting in, the crotch being self closing and nevertheless adapted to be easily and adequately opened.

Another object of the invention is to furnish a garment of the type mentioned having an improved elastic crotch combined with a plastic, non-stretching, moisture-proof material which shall eliminate the necessity of frequent washing of the crotch, garment, or both, due to soiling by natural moisture and perspiration.

Another object of the invention is to eliminate the highly objectionable chafing in a crotch by the use of film-like plastic surfaces.

Another object of the invention is the provision of a form-fitting garment and crotch of improved construction to avoid binding or cutting in at the groin as well as opening by movement of the wearer's legs.

Another object of the invention is to provide an improved close-fitting garment which facilitates ventilation at the crotch.

Another object of the invention is to construct a garment having an improved form-fitting crotch adapted to readily accommodate a sanitary napkin, with the latter being easily accessible and reliably mounted on the garment.

Another object of the invention is to so connect or seam the crotch to the body of the garment that the seams shall be strong and reinforced, without producing bulkiness causing discomfort at the groin or showing at the front of the wearer's outer garment.

This invention represents an improvement over that of my patent application Serial No. 707,907 filed Nov. 6, 1946 for a Foundation Garment Crotch.

Other objects and advantages of the invention

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will become apparent as the specification proceeds.

With the aforesaid objects in view, the invention comprises the novel features, combinations and arrangements of parts hereinafter described in their preferred embodiments, pointed out in the subjoined claims, and illustrated in the annexed drawing, wherein like parts are designated by the same reference characters throughout the several views.

In the drawing:

Figure 1 is a view in front elevation showing a garment embodying the invention.

Fig. 2 is a fragmentary exterior bottom plan view of the garment as worn, with the crotch in closed position.

Fig. 3 is a similar view with the crotch in opened position.

Fig. 4 is a similar view but taken interiorly of the garment.

Fig. 5 is a view corresponding to that of Fig. 4 but showing the device modified to mount a sanitary pad.

Fig. 6 is an enlarged fragmentary view in transverse section taken approximately on line 6—6 of Fig. 4.

The advantages of the invention as here outlined are best realized when all of its features and instrumentalities are combined, but useful embodiments may be produced involving less than the whole.

It will be obvious to those skilled in the art to which the invention appertains, that the same may be incorporated in several different constructions. The accompanying drawing, therefore, is submitted merely as showing a preferred exemplification of the invention.

Generally described, the invention provides a foundation garment having a permanent crotch. The garment and crotch are both preferably elastic along vertical planes to realize in a high degree the form-fitting and yet comfortable character of the garment. The crotch consists of two band-like or elongated members of highly flexible or limp material providing therebetween an opening of considerable length at the center of the crotch. This opening desirably extends from the front to the rear wall, and the members are connected at their opposite ends to these walls. At their inner edges these members are preferably in abutment relation with each other to be in a common plane adjacent to the front of the garment to avoid a protuberance which might show through the wearer's dress, and to facilitate opening of the crotch for urination, to

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permit easy manipulation of a sanitary pad, and to avoid cutting-in at the adjacent delicate tissues of the wearer. Further, this free abutment relation permits of some ventilation at the crotch. In fact the members are seamed to the front wall in their abutment relation. At the rear, the members are of sufficient width to overlap each other to tend to close the opening and to maintain the same closed in course of walking and exercising, and to safely enclose a sanitary pad; the members are secured to the rear wall in this condition. On the inner faces of the members there are elongated elements of waterproof, plastic, limp or film material which is perfectly smooth and easy to wipe clean of moisture. These elements being non-stretchable are secured with a slight gather to the members, preferably at their extreme inner edges to protect the members from soiling. The elements participate in the overlap and are free at their outer edges for aeration and quick drying, particularly after washing of the garment. The members are of considerable width to be folded downward at the groin by the legs of the wearer, but the plastic elements are relatively narrow and extend only to the groin and hence are not subjected to the folding. In the front wall is a cut-out which tapers upwardly, and affords desirably convex edges following the groin but spaced above or outwardly thereof whereby the seams with the members will not have to fold or otherwise cause discomfort at the groin. At the center of this cut-out is a projection extending downwardly to the top end of the crotch opening and forming a strong lap joint or seam with the members, and serving to maintain the crotch centered. The portions of the members on opposite sides of the protection and intermediate of the seams are adapted to, and have fullness to easily fold or break as continuations of the groin folds for a comfortable and snug fit and to avoid accidental opening of the crotch upon spreading of the wearer's legs. The crotch is adapted to readily belly outward to accommodate a sanitary pad. The crotch can be readily and sufficiently opened by insertion of the wearer's fingers for safe urination, for mounting and detachment of a sanitary napkin and for wiping the plastic elements clean of any soiling. These several functions are assisted by the elasticity of the crotch and girdle, and the crotch may open slightly near the front, or belly downward as shown, to afford increased room for the sanitary pad.

Referring in detail to the drawing, 10 denotes a foundation garment such as a girdle embodying the invention. The same may include front and rear walls 11 and 12 which are preferably vertically elastic, and side walls 13 which are horizontally elastic. These walls provide a body member of tubular form which can be opened only part way down by the provision of a slide fastener 14. Hose supporters 15 may be conventionally connected to the front and rear walls, preferably at their inner faces so as to be inconspicuous. A crotch 16 embodying the invention comprises a pair of identical elongated or band-like members 17 consisting of a flexible or limp material which is preferably longitudinally elastic. In normal practice these members 17 are proportionately longer than shown. These members are disposed at opposite sides of the center of the crotch to form therebetween an elongated central crotch opening 18. At the rear, the members 17 are of sufficient width to overlap each other as shown at 19. The rear

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wall is provided with a cut-out 20 to the edges of which are seamed at 21 the adjacent ends of the members 17 in such a manner as to maintain the overlap at 19. This overlap diminishes toward the front of the crotch, and at the front or adjacent thereto, the members 17 have their inner edges 22 in substantial abutment relation with each other, this abutment being so close that the crotch is substantially closed at this region, and tends to be thus maintained by tension exerted by the overlapped portions at 19. Formed in the front wall 11 is a cut-out 23, the same preferably providing convex upwardly extending edges 24 to which the adjacent ends of the members 17 are connected by seams 25. Desirably there is formed a downward extending projection 26 in the cut-out centrally thereof. This projection 26 tapers downwardly in contradistinction to the upwardly tapered opening 23. Adjacent end portions of the member 17 are connected to the edges of this projection by seams 27, the seams being so constructed that the abutment relationship mentioned is maintained therein. Thus the members 17 form a single thickness of material adjacent to the edges 22, and the projection 26 provides a reinforcing lap joint therewith.

The members 17 are preferably sufficiently wide so as to be downwardly folded at 28 at the groin, such folding being caused by the legs of the wearer, the downwardly folded portions cooperating with the body member of the girdle to form snug fitting tubular leg openings. The effect of the legs is also to tend to hold the crotch closed. Because the seams 25 are located above or beyond the groin, the seam 25 is not subjected to folding, and does not cause discomfort at the groin. Because of the curved form of the seams 25, there result the triangular portions 29 between seams 25 and 27, whereby the folds at 28 may continue upward at 30 along the groin without interference by the relatively stiff seams; the folds at 30 extending into the triangular portions 29 whereby a smooth, comfortable, and snug-fitting effect is produced, and the crotch is permitted to snugly hug the body of the wearer. The location of the groin indicates the maximum desired elevation of the front of the crotch opening, and it is noted that the projection 26 defines the upper end of this opening. Along the outer edges of the members 17 there may be any suitable finishing hem or portion 31 which may continue upward into the front and rear walls.

Upon the inner faces of the members 17 are the identical elements 32 which are of elongated form and consist of a waterproof material such as a plastic filmlike or limp material. These elements are disposed on opposite sides of the center of the crotch and are seamed at 33 to the extreme edges of the members 17 continuously along such edges. These seams 33 are made extremely fine and hence do not appear in Fig. 3. The structure is such that the elements 32 cover the inner faces of the members 17 up to their free inner edges, but without appearing on the outer face of the crotch. The elements 17 consequently participate in the overlap at 19 and at their ends they are connected into the seams 20, 25 and 27. These elements 32 are preferably substantially narrower than the members 17 so that their pinked edges 34 are spaced from the edging or hems 31. Accordingly, the elements 32 will not be subjected to the folding at 28 and 30 along the groin. These edges 34 are free to facilitate rapid drying of the crotch after a wash-

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ing, by permitting aeration. To facilitate longitudinal stretch of the crotch, the seams at 33 are constructed to form a slight gather in the plastic elements 32. It will now be perceived that should any soiling occur, the same could be readily cleaned by wiping the plastic elements 32 without requiring that the garment be removed or washed. The crotch also permits of a desirable ventilation by reason of the merely abutting edges 22, and this fact will not be interfered with by the elements 32.

In Fig. 5 is shown a modification which involves the identical structure of the device 10, except that means is provided for central mounting a sanitary pad along the crotch opening. At the front wall, a fastening means 35 is mounted on the front wall 11 and a plurality of fastening devices 36 are mounted on the rear wall, these different fastening means being at or adjacent to the ends of the crotch. This fastening device may be of the conventional type, adjustable in character and comprising tapes or ribbons together with suitable hooks and eyes. The latter are indicated at 37 and different ribbons are indicated at 38, 39, the ribbons 38 may consist of elastic material and may have slidable connection with loops 40 which are fixed to the ends of a sanitary pad 41. The overlap region 19 assists in maintaining and supporting the sanitary pad in position, with the front section of the crotch adjacent the openings 22 facilitating a downward concaving of the crotch as clearly shown in Fig. 1 to accommodate the sanitary pad, the crotch also yielding elastically, and permitting free access for removal and mounting of the sanitary pad.

Certain features of the invention may now be more clearly described. The members 17 are provided with a longitudinal central fullness at 42, existing on opposite sides of the abutting edges at 22 and somewhat beyond, and diminishing toward the bottom or rear of the crotch. This fullness is provided by an excess of material in the members 17 and 32 and by appropriate seaming at 25 and 27. This fullness is of particular assistance in accommodating the sanitary pad, but its special function is to avoid crotch opening tension at the edges 22 upon spreading of the wearer's legs. Incidentally the fullness at 42 assists in the shaping of the crotch at 28, 30, at the groin of the wearer to afford a snug fit without discomfort at the groin. As crotches are often used to avoid upward creeping of the girdle, the fullness at 42 is vital to assist in a comfortable distribution of that tension. These effects are rendered possible by the triangular upward crotch projections 29 into which the fullness extends, while the intervening downward extending girdle projection 29 serves as a fullness separator and tension distributor, at the same time that it tends to center the crotch to maintain a balance of the stresses. By reason of the girdle overlap at 26, the wearer may spread her legs without unduly straining the members 17 or ripping the seams at 27.

The plastic elements 32 are so perfectly smooth that they eliminate chafing, which is a source of a great deal of discomfort to women. In fact a garment is often discarded because it causes chafing. In the instant invention the plastic elements permit instant cleaning of natural perspiration and moisture by a mere wiping action with a piece of tissue while the garment is worn. Heretofore the crotch or the entire garment had to be removed and washed, and this was a source

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of considerable annoyance. The plastic elements are relatively non-stretching and hence are seam-gathered to open up smooth as the crotch is elastically tensioned.

I claim:

1. A foundation garment having a tubular body member comprising front and rear walls fitting the torso of a wearer, a crotch having two elongated members of limp material on opposite sides of the crotch center to form an elongated normally closed central crotch opening, the members being of sufficient width to be adapted to be downwardly folded along the groin by the legs of the wearer, the members being connected at their ends to said walls, an inner edge of each of said members being in abutment relation with each other at the front of the garment, the front wall having upwardly tapered cut-out interrupted by a central downwardly tapered projection, edges of the latter and of the cut-out being seamed to front ends of the members, said seams being located above the groin of the wearer, and the said inner edges being connected in the said abutting interrelation to the said projection with the latter overlapping the adjacent end portions of the members.

2. A foundation garment having a tubular body comprising front and rear walls for fitting the torso of a wearer, a crotch formed of two elongated members extending between said front and rear walls, front and rear permanent seam joints connecting front ends of each of said members to said body front wall and rear ends of each of said members to said body rear wall, respectively, said members having adjacent edges thereof positioned to overlap a maximum extent at said rear seam joint and to a diminishing extent toward the front seam joint where said edges are in abutment, said adjacent edges defining a central opening retained normally in closed position by said overlap during substantially all movement positions of the legs of the wearer and being brought into an open position on manual separation of said adjacent edges.

3. The foundation garment defined in claim 2 in which said front seam is formed with a pair of spaced apart upwardly extending portions converging toward each other interrupted by a central downwardly extending V-shaped portion terminating said adjacent edges at the front end thereof.

4. The foundation garment defined in claim 2 in which said elongated members are longitudinally elastic, an element of moisture proof, plastic, limp material overlying each of said elongated members next to the wearer's body, each of said moisture proof elements having a first edge continuously connected to said adjacent edge of its respective member and having a second edge opposite said first edge entirely free from its respective member to facilitate rapid drying of the crotch.

5. The foundation garment defined in claim 2 in which said elongated members are longitudinally elastic, and means on the tubular body adjacent front and rear ends of the crotch for detachably mounting a sanitary pad to extend centrally along the crotch, the rear overlap enclosing the sanitary pad and said abutment adjacent the front wall being constructed and arranged to permit easy access to the sanitary pad and to facilitate snug accommodation thereof by yielding of the elastic members.

6. The foundation garment defined in claim 2 in which said elongated members are longi-

itudinally elastic, an element of moisture proof, plastic, limp material overlying each of said elongated members next to the wearer's body, each of said moisture proof elements having a first edge continuously connected to said adjacent edge of its respective member bordering the central opening and having a second edge opposite said first edge entirely free from its respective member to facilitate rapid drying of the crotch, and means on the tubular body adjacent front and rear ends of the crotch for detachably mounting a sanitary pad to extend centrally along the crotch, the rear overlap enclosing the sanitary pad and said abutment adjacent the front wall being constructed and arranged to permit easy access to the sanitary pad and to facilitate snug accommodation thereof by yielding of the elastic members.

7. A foundation garment having a tubular body comprising front and rear walls for fitting the torso of a wearer, a crotch formed with two elongated members extending between said front and rear walls forming therewith leg openings, front and rear permanent seam joints connecting front ends of each of said members to said body front wall and rear ends of each of said members to said body rear wall, respectively, said members each having adjacent edges thereof positioned to overlap a maximum extent at said rear seam joint and to a diminishing extent toward the front seam joint where said edges are in abutment, said adjacent edges defining a central opening retained normally in closed position by said overlap, said front wall being provided with an upwardly tapered cut-out formed with

a downwardly extending central projection terminating the front ends of said adjacent edges, said members having portions extending upwardly and beyond front ends of said adjacent edges into said tapered cut-out providing excess material as a longitudinal fullness at opposite sides of said adjacent edges to prevent opening of the crotch upon spreading of the wearer's legs.

8. A garment as defined in claim 7 in which said crotch members consist of elastic material, and a facing element of a limp, smooth, moisture proof plastic material lining the inside surface of each of said crotch members and being connected thereto along its edge bordering said opening with a slight gather to permit stretching of said crotch wall sections when spreading the opening.

BEATRICE WOHLMAN.

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