

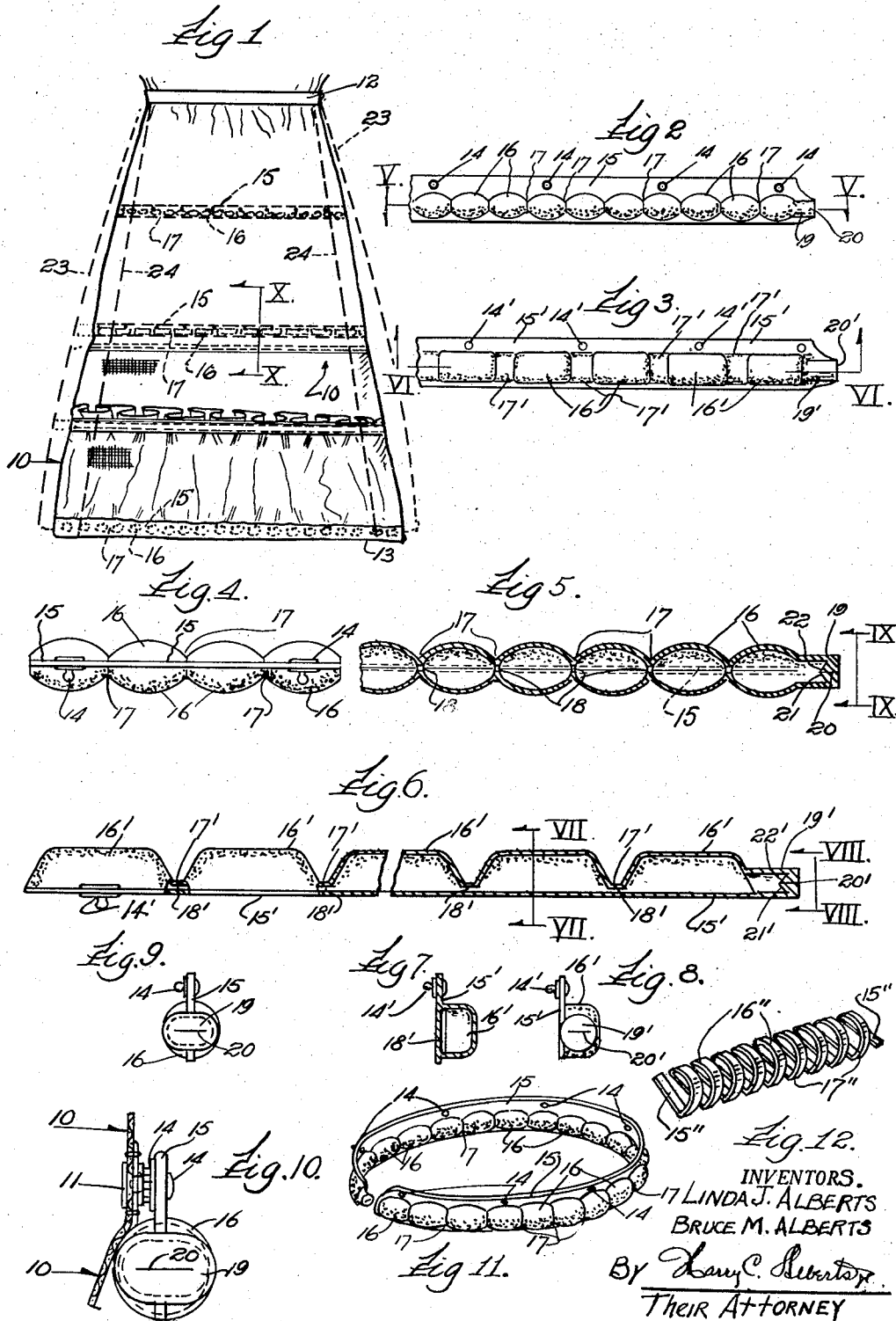
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FLEXIBLE SKIRT DISTENDER ATTACHMENTS

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## FLEXIBLE SKIRT DISTENDER ATTACHMENTS

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This invention relates to skirt distenders and more particularly to flexible band or hoop distenders for petticoats, crinolines, and skirts, although such may be used with equal advantage for many other purposes.

It contemplates more especially the provision of pneumatically filled tubes having a plurality of hinged sections therein to render such flexible and yielding to obstructions when used in conjunction with skirts, petticoats, crinolines and the like to impart a flare thereto without rendering such objectionally rigid and hoop-like.

Numerous types of rigid and even pneumatic hoops or rings have heretofore been proposed for skirts and petticoats to maintain a permanent flare or full bell-shape form that was the vogue in Early American periods; however, these were objectionable because the wearer could not conveniently seat herself without displacing the form upwardly into a very awkward and revealing position.

Then, too, the space requirements of modern vehicles, escalators, and public carriers do not lend themselves to such rigid dress forms, even though young girls on occasion still use more or less rigid bottom hoops in their petticoats and crinolines with almost the same disastrous or awkward effects in walking up or down crowded public stairways, sitting in automobiles and public carriers, and even in the usual activities around the home.

Young ladies and pre-teen girls without noticeable hip development that insure full hanging skirts, usually resort to flaring petticoats and crinolines that are made with reinforced and starched distending circumferential ruffles and seams. These soon flatten down with one or two washings, and thereafter are ineffectual as distenders giving a full bell fashion skirt form.

The advantage of these circumferential ruffles and seams is that these yield upon obstruction and impact, and do not produce the awkwardness of rigid and non-collapsing hoops or pneumatic tubes. The full fashion form collapses or flattens-in at the position of obstruction without tipping or displacing the dress form in an opposite direction. Consequently, the wearer can walk along restricted areas, in crowds, and be seated without awkwardly tipping her dress in the direction opposite to the impact or the obstruction having a collapsing effect such as but not limited to side-by-side walking, dancing, sitting, or even standing in restricted or crowded spaces.

With the teachings of the present invention, the advantages of reinforced circumferential ruffles and/or seams providing a flaring petticoat or crinoline are acquired by resort to air confining textiles or plastics or similar material which can be formed into pneumatic tubes provided with a plurality of closely associated transverse crease lines defining hinged air-filled sections that have the tendency of distending its overall form into a circle, but will collapse or flatten-in upon impact or obstruction contact therewith, and still not oppositely displace or tip the remaining portion of the pneumatic ring or rings. This is accomplished by providing hinged pneumatic sections that normally have the tendency to distend themselves into a straight line or a circumferential ring

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which the ends thereof are positioned to meet or encircle the garment to assume their intended shape upon being inflated.

These pneumatic distender rings are preferably though not essentially detachably associated with the petticoat or crinoline by resort to snap fasteners, and are of varying circumferential length to enable any number of rings to be spaced along the length of the garment depending upon the extent of flare and the degree of bell-shaped effect that is desired by any particular wearer. This would also depend upon the cut or fashion for which the outer skirt or dress, was designed or cut, and the pneumatic distenders embodying the teachings of the present invention would be made available as attachments so that each wearer could apply them in any number or position on their own petticoats or crinolines or vary them from time to time to meet the needs and desired effect for any particular dress design or cut or fashion that may become a part of their wardrobe.

One object of the present invention is to provide an elongated pneumatic ring length of material provided with hinged sections to render such flexible and yieldable upon impact or obstruction to serve as a skirt distender.

Another object is to provide elongated tubular lengths of flexible material impervious to air and having a series of hinge sections over the length thereof that are in inflatable connection with each other to serve as detachable skirt distenders.

Still another object is to provide elongated circumferential skirt distenders of inflatable materials having intercommunicating hinge sections to render such yieldable in shape to impact and obstruction.

A further object is to provide a series of intercommunicating hinge sections of inflatable shape and material to comprise readily attachable skirt distenders that yield to impact and obstruction without substantially deforming the remainder thereof.

A still further object is to provide an elongated pneumatic tube creased into intercommunicating hinge sections along the length thereof to provide flexible and yieldable skirt distenders.

Still a further object is to provide elongated tubular air confining lengths of material impervious to air and deformable along crease lines having air intercommunicating passages which define hinge sections in a skirt distender.

Other objects and advantages will appear from the following description of an illustrated embodiment of the present invention.

In the drawing:

Figure 1 is a front view in elevation of a petticoat, crinoline or skirt comprising feminine attire to which is detachably associated two circumferential pneumatic distenders embodying features of the present invention.

Figure 2 is a fragmentary enlarged front view in elevation of a garment distender embodying features of the present invention.

Figure 3 is a fragmentary enlarged front view in elevation of a modified garment distender embodying features of the present invention.

Figure 4 is a top edge plan view of the garment distender shown in Figure 2.

Figure 5 is a plan sectional view taken substantially along line V—V of Figure 2.

Figure 6 is an enlarged fragmentary sectional view taken along line VI—VI of Figure 3.

Figure 7 is a sectional view taken substantially along line VII—VII of Figure 6.

Figure 8 is an edge view in elevation viewed from line VIII—VIII of Figure 6.

Figure 9 is an edge view in elevation viewed from line IX—IX of Figure 5.

Figure 10 is an enlarged sectional view in elevation taken substantially along line X—X of Figure 1.

Figure 11 is a perspective view of a circumferential garment distender strip as it would appear on a garment similar to the application shown in Figure 1.

Figure 12 is a fragmentary perspective view of a further modification of a garment distender embodying features of the present invention.

The structure selected for illustration is not intended to serve as a limitation upon the scope of teachings of the invention, but is merely illustrative thereof. There may be considerable variations and adaptations of all or part of the teachings depending upon the dictates of commercial practice. The present embodiment comprises a petticoat, crinoline or skirt 10 of more than the usual flare or expanse, and having pleats or whatever is necessary to define a full bell-shaped body fashion when distended. The female portion 11 of a snap fastener of standard construction (Figure 10) can be sewed or otherwise anchored to the petticoat or crinoline 10 at predetermined spaced positions along a horizontal circumferential line or lines on the petticoat 10, and the positions thereof from the waist 12 or bottom edge 13 of the garment 10 may vary depending upon the dictates of each wearer's height and selection.

Correspondingly spaced male elements 14 of standard snap fasteners are provided along the top solid portion 15 of elongated lengths of suitable material such as the commonly popular plastic materials now on the market which are impervious to air. These are preferably doubled on each other and electronically welded together to define a series of closely spaced air chambers 16 that have crease lines 17 therebetween to serve as hinges or define hinge sections 16—17. The crease lines 17 are electronically formed by welding the double thickness of material together along the extent thereof save for leaving small openings or ports 18 therein along the mid-front thereof to provide for intercommunication therebetween so that all the pneumatic air chambers 16 may be inflated from one solid end 19 having a self-closing valve slit to therein.

The vane slit 20 has convergent surfaces 21—22 on the inner end of the solid terminus 19 so that the air pressure within will tend to close the slit 20 and prevent the escape of air therethrough. When inflated by blowing air through the slit 20, the air chambers 16 will be filled and the elongated strip 15 with its air chambers 16 will distend and define a more or less rigid hoop or circle and carry with it the garment 10 to which the elongated strips 15—16—17 are attached by means of the complementary snap fasteners 11—14.

One, two or more circumferential strips 15—16—17 may be applied to the garment 10 to render such fully expansive such as shown by the dotted outline 23 (Figure 1) or if the air chambers 16 are inflated to a lesser degree to assume the solid outline of the garment 10 (Figure 1) or if completely deflated except at atmospheric pressure, then the diminished dotted outline 24 (Figure 1) will be the normal drape of the petticoat with the pleats taking up the slack. This varied expanse is made possible by the hinge section lines 17 in the garment distender strips 15—16—17 and will permit full deflation with ready yielding thereof to follow the natural pleats of the garment 10.

The greater the inflation of air under pressure in the chambers 16, the greater will be the expanse of the strip 15 as the air chambers 16 tend to line-up along a full circumferential line defining the largest diameter. This will still permit yielding or folding of the strip 15 along the crease or solid lines 17 between the air chambers 16 as the wearer brushes up against an obstruction, and this will be accomplished without any appreciable deflection of the opposite section of the circumferential strip 15, since the crease lines 17 serve as hinges and permit ready folding under impact from without.

In a modified form shown in Figures 3 and 6, the air chambers 16' are of truncated shape rather than elliptical as shown at 16 in Figures 2 and 4. The crease or fold lines 17' are, in this instance, formed by the convergent ends of the modified truncated shaped air chambers 16' to provide air communicating passage 18' therebetween and restricted fold areas along which the strip 15' will readily yield or bend to follow the normal collapse of the garment 10 along its pleats when the wearer brushes against an obstruction or is confined to a space narrower than the largest expanse of the lowermost edge 13 of the garment 10.

The amount of flexibility or yield along the intermediate fold lines 17 or restricted fold areas 17' depends upon the construction of these hinge sections 16—17 or 16'—17'. With a sharp fold line 17 and a very small communicating port 18, the resistance to yield is small and the distender strips 15 will flex very readily and permit the garment 10 to collapse in the region of impact or obstruction therewith without objectionally tilting the remainder of or any other part of the distender strip 15. This is unlike the action of a uniformly continuous pneumatic and comparatively rigid skirt ring or hoop or a metallic skirt hoop for that matter.

With the modified structure shown and described in connection with Figures 3 and 6, the intervening fold areas 17' are somewhat more rigid and less hinge effect is available; therefore, this form will not yield as readily and collapse upon the slightest impact. This structure will, however, distend the garment 10 more rigidly and yet will yield upon substantial impact or obstruction such as but not limited to the wearers manual collapsing of her dress with both hands moved inwardly from opposite sides of the dress hem 13. Different degrees of resistance to collapsing can be acquired by interrupting the air chambers 18—18' with hinge or fold lines or areas of varying width and depth between the limits of the structures illustrated and described in connection with the specie of Figures 2 and 3, but not limited thereto.

It will be apparent from the foregoing that with the hinge interrupted pneumatic tubes such as but not limited to the specie illustrated and described herein, the desirable full fashioned bell-shaped skirt can be provided without the undesirable discomfort and inconvenience of the more or less permanently rigid metallic and uniformly continuous pneumatic hoops or distenders. Moreover, the interrupted and hinge sectioned distenders comprising the subject matter of the instant invention, may be used with any petticoat in one's wardrobe by utilizing snap fasteners for that purpose.

These members 15—16—17 (Figure 2) or their counterparts 15'—16'—17' (Figure 3) and 15''—16''—17'' (Figure 12) can be furnished of different lengths to enable any number of them to be in superposed spaced relation from the waist 12 to the hem 13 to impart the desired garment outline and to accommodate wearers of different girth. The flexible skirt distenders 15—16—17 or 15'—16'—17' or 15''—16''—17'' may be machined or hand sewed to the inner or outer surface of the garment 10 or even attached to the underside of outer garments along their flat strip 15, 15' or 15'' depending upon the dictates of commercial practice. This would be the case with manufacturers of petticoats, crinolines, or outer garments. In the use of skirt distenders with outer garments, the skirt distenders could be sewn along a ruffle line to conceal the stitches should commercial practice so dictate. In any event when the garment distenders are sewn to the garment, the clasps 11—14 or other suitable fasteners are dispensed with, and the latter used by wearers who wish to adapt the garment distenders to their existing garments or where the distenders are sold as accessories for optional use.

The skirt distenders 15—16—17, 15'—16'—17' and 15''—16''—17'' may also be spirally sewn to the skirt body for defining the desired outline or form with much

more preciseness and with more accentuated predetermined fashion shape than the illustrated circular arrangement affords (Figure 1). The circular normally flexible rigid form-sustaining and form-retaining hinged distenders 15-16-17 or 15'-16'-17' or 15''-16''-17'' may be supplemented with a plurality of circumferentially spaced, vertically inclined, and downwardly divergent (relative to the vertical axis of the skirt body) rib distenders. These may be termed longérons and when of inflatable construction, are in tubular communication and physical connection with the horizontal circular distenders 15-16-17 or their counterparts so that all of them can be inflated through a single valve 20 on any one of the distenders 15-16-17 or 15'-16'-17'. It should be noted that the valve 20 may be opened with a standard drinking straw or any suitable air blowing tube and inflated therethrough. Upon removal of the drinking straw or tube, the valve 20 is pressed together with the fingers and becomes self-sealing. It should be noted, however, that the valve 20 may also be dispensed with, and the elongated interrupted tubular member 16 formed with air permanently entrapped therein.

The longérons (not shown) and/or circular distenders may within the dictates of commercial practice be composed of a still further modified embodiment (Figure 12) of solid plastic connected spring-type convolutions 16'' defining yieldable normally rigid and form-sustaining and form-retaining cylindrical or preferably semi-cylindrical distenders 15''-16'' of such thinness and with the convolutions so spaced as to readily yield upon impact or obstruction in the region of physical contact therewith, and yet sufficiently self-restoring to be form-sustaining and form-retaining when unobstructed and free from external confinement other than the body of the garment to which it is attached for imparting a flaring outline thereto. The plastic spring-type distender 15''-16'' (Figure 12) is a much cheaper equivalent of the inflatable plastic hinged construction, and will function substantially the same and possess the desirable characteristics described in connection therewith. The plastic solid convolutions 16'' preferably have flat connectors 15'' comprising part of the semi-cylindrical convolutions, and these may be utilized for fastening in any suitable manner with special clip fasteners or sewing attachment to the skirt or garment body 10 in circumferential or other relation therewith as described in connection with the preceding embodiments.

With the teachings of the normally yieldable but form-sustaining and form-retaining construction of the present invention, the distenders 15-16-17, 15'-16'-17' or 15''-16''-17'' or their counterparts which are normally yieldable and sufficiently firm to be form-sustaining and form-retaining when attached to a skirt body, provide a flaring outline to the garment and those worn thereover will conform thereto without the attendant disadvantage of the rigid solid or rigid inflated distender hoops or tubes defining forms heretofore in use.

While we have illustrated and described a preferred embodiment of this invention, it must be understood that the invention is capable of considerable variation and modification without departing from the spirit of the invention. We, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail ourselves of such variations and modifications as come within the scope of the appended claims.

We claim:

1. A garment including a non-rigid skirt having an interiorly associated and horizontally suspended laterally flexible garment distender to impart flaring fullness thereto without any appreciable lateral support therefrom, said garment distender comprising an elongated member of material impervious to air and formed with a linear series of closely associated air chambers, said air chambers being interrupted by fold lines serving as transverse hinges for the entire width of said elongated member to

provide unrestrained flexibility responsive to lateral impact against the exterior of the associated dress, air passages in said fold lines to establish communication between said chambers for inflation and deflation, and a self-closing air valve associated with said member to enable the inflation thereof over its entire length.

2. A garment including a non-rigid skirt having an interiorly associated and horizontally suspended laterally flexible garment distender to impart flaring fullness thereto without any appreciable lateral support therefrom, said garment distender comprising an elongated member of material impervious to air and formed with a linear series of closely associated air chambers, said air chambers being interrupted by fold lines serving as transverse hinges for the entire width of said elongated member to provide unrestrained flexibility responsive to lateral impact against the exterior of the associated dress, air passages in said fold lines to establish communication between said chambers for inflation and deflation, and means including fasteners associated with said member for the circumferential detachable association thereof with a garment of the skirt type.

3. A garment including a non-rigid skirt having an interiorly associated and horizontally suspended laterally flexible garment distender to impart flaring fullness thereto without any appreciable lateral support therefrom, said garment distender comprising an elongated tubular member of material impervious to air, a linear series of air chambers in said elongated tubular member, fold lines disposed between said air chambers, said fold lines serving as transverse hinges for the entire width of said elongated member to provide flexibility responsive to lateral impact against the exterior of the associated dress, said fold lines being interrupted by air passages therein to establish communication between said air chambers, and snap fasteners spaced along said elongated tubular member to enable the circumferential attachment thereof to a garment of the skirt-type.

4. A garment including a non-rigid skirt having an interiorly associated and horizontally suspended laterally flexible garment distender to impart flaring fullness thereto without any appreciable lateral support therefrom, said garment distender comprising an elongated tubular member of material impervious to air, a linear series of air chambers in said elongated tubular member, fold lines disposed between said air chambers, said fold lines serving as transverse hinges for the entire width of said elongated member to provide flexibility responsive to lateral impact against the exterior of the associated dress, said fold lines being interrupted by air passages therein to establish communication between said air chambers, a solid strip portion along one side of said air chambers, and snap fasteners spaced along said solid strip portion of said elongated tubular member to enable the circumferential attachment thereof to a garment of the skirt-type.

5. A garment including a non-rigid skirt having an interiorly associated and horizontally suspended laterally flexible garment distender to impart flaring fullness thereto without any appreciable lateral support therefrom, said garment distender comprising an elongated tubular member of material impervious to air, a linear series of air chambers in said elongated tubular member, fold lines disposed between said air chambers, said fold lines serving as transverse hinges for the entire width of said elongated member to provide flexibility responsive to lateral impact against the exterior of the associated dress, said fold lines being interrupted by air passages therein to establish communication between said air chambers, a solid strip portion along one side of said air chambers, snap fasteners spaced along said solid strip portion of said elongated tubular member to enable the circumferential attachment thereof to a garment of the skirt-type, and a self-closing valve associated with one end of said elongated tubular member to enable the inflation and deflation thereof.

6. A garment including a non-rigid skirt having an interiorly associated and horizontally suspended laterally flexible garment distender for use with said skirt to impart flaring fullness thereto without any appreciable lateral support therefrom, said garment distender comprising normally yieldable circumferential tubular rings for association with said flared skirt in vertical spaced relation with each other, sharp line interruptions in said tubular rings to define tubular hinge sections extending over the entire width and over the length thereof to laterally yield in the region of impact against said skirt body, there being air passages in said hinge interruptions to establish communication between said hinge sections over the length of said tubular rings, and means for inflating the said hinge sections for shaping the tubular rings to serve as yieldable skirt body distenders.

7. A garment including a non-rigid skirt having an interiorly associated and horizontally suspended and laterally flexible garment distender to impart a flaring fullness thereto without any appreciable lateral support therefrom, said garment distender comprising a normally form-sustaining and form-retaining unrestrained and unsprung flexible elongated member of connected plastic sections defining a readily distorsionable and self-restoring plastic ring member to normally impart a non-rigid flaring outline to the skirt, said plastic ring member being regionally yieldable upon impact or obstruction thereto and yet self-restoring without shifting said skirt as a unit for the convenience of the wearer, said connected plastic sections being uniformly spaced from each other throughout the length thereof, said ring member sections providing hinge-like self-restoring flexibility normal to the length thereof to insure regional deformation without transmission of the latter to remaining portions of said ring member responsive to regional impact therewith, whereby said skirt can be comfortably maintained in a state of vertical equilibrium on a wearer under conditions of encountering restricted freedom therewith.

8. A garment including a non-rigid skirt having an interiorly associated and horizontally suspended and laterally flexible garment distender to impart a flaring fullness thereto without any appreciable lateral support therefrom beyond the shaping thereof, said garment distender comprising a yieldable normally form-sustaining and form-retaining unrestrained and unsprung flexible plastic elongated member of connected sections defining a readily distorsionable and self-restoring circular plastic ring member, means for attaching said circular flexible plastic ring member proximate and parallel to the hem of said skirt for normally imparting a non-rigid symmetrically circular flaring outline thereto, said plastic ring member being regionally yieldable upon impact or obstruction thereto and yet self-restoring without shifting said skirt as a unit for the convenience of the wearer, said connected plastic ring member sections being uniformly spaced from each other throughout the length thereof to provide self-restoring flexibility normal to the length thereof to insure regional deformation without transmission of the latter to remaining portions of said plastic ring member responsive to regional impact therewith, whereby said flared skirt can be comfortably maintained in a state of vertical equilibrium on a wearer thereof under conditions of encountering restricted freedom therewith.

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