Nov. 30, 1943. W. FRIEDMAN 2,335,751

WOMAN'S SLIP OR SIMILAR GARMENT

Filed April 2, 1942 2 Sheets-Sheet 1

Fig. 1.

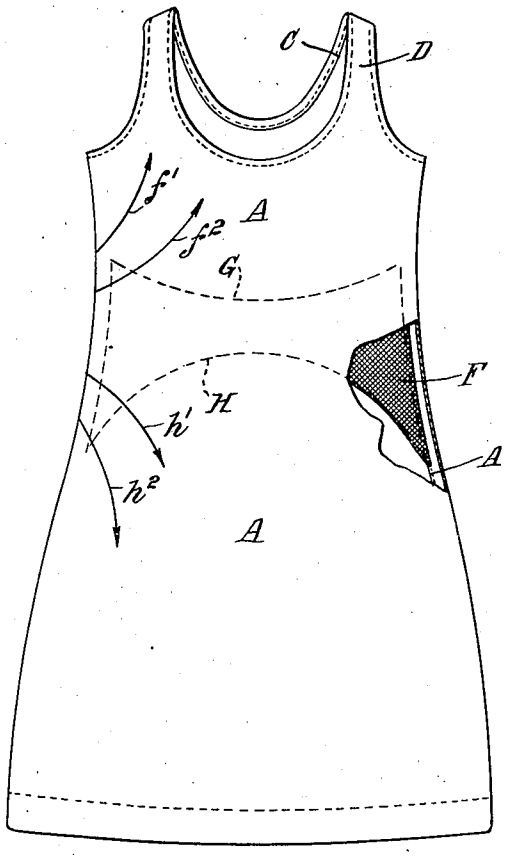


Fig. 2.

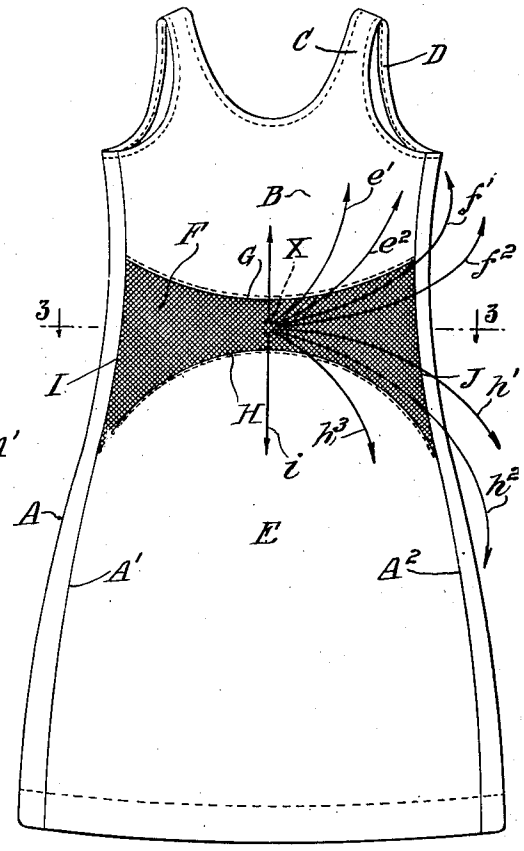


Fig. 3.

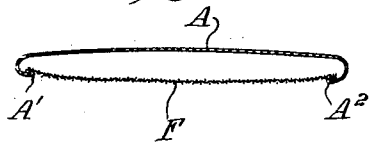
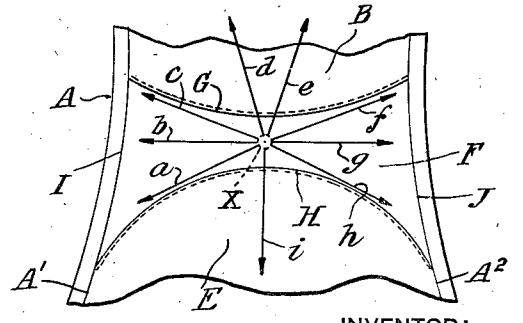


Fig. 4.



INVENTOR:
Werther Friedman

BY
Morrison, Kennedy & Campbell
ATTORNEYS.

Nov. 30, 1943. W. FRIEDMAN 2,335,751

WOMAN'S SLIP OR SIMILAR GARMENT

Filed April 2, 1942 2 Sheets-Sheet 2

Fig. 5.

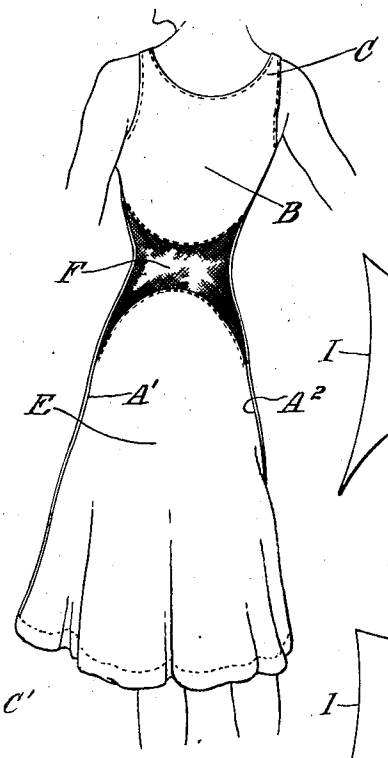


Fig. 6.

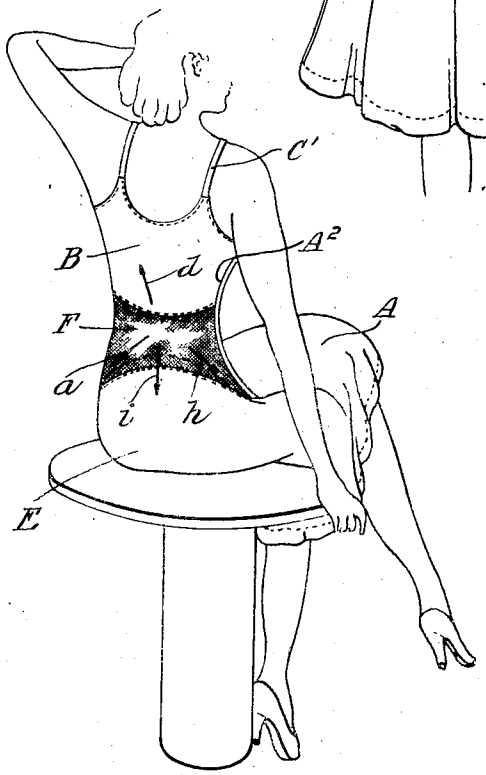


Fig. 7.

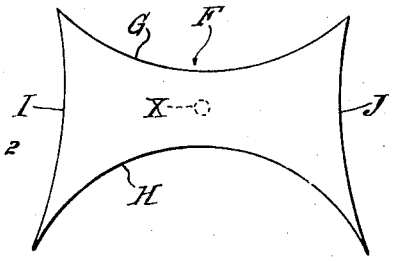


Fig. 8.

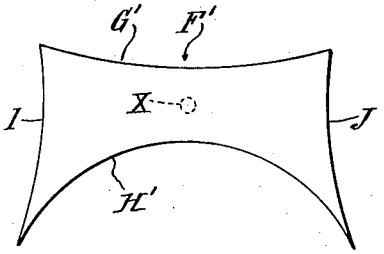
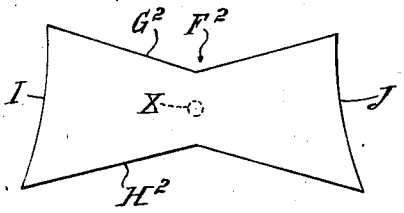


Fig. 9.



INVENTOR:
Werther Friedman

BY
Morrison, Kennedy & Campbell
ATTORNEYS.

Patented Nov. 30, 1943 2,335,751

UNITED STATES PATENT OFFICE

2,335,751

WOMAN'S SLIP OR SIMILAR GARMENT

Werther Friedman, New York, N. Y., assignor to I. Schneierson & Sons, Inc., New York, N. Y., a corporation of New York

Application April 2, 1942, Serial No. 437,390

6 Claims. (Cl. 2—73)

This invention is a novel woman's slip or similar body garment, such as is adapted to fit or conform closely to the figure, and can be pulled on or off over the head, and receives support from extensions passing over the shoulders.

The conventional or prevailing type of woman's slip is at best a compromise between the requirement to have it fit quite closely and conform to the shape of the body and the desire to have it sufficiently free or loose not to create discomfort by unduly resisting or restricting body movements, or riding up on the body. A slip worn under a tailored outer garment if too loose tends to distort the contour lines or show wrinkles, whereas a too closely fitting slip of the usual character has a tendency not merely to ride up but to bind and pull, this being particularly true of the so-called built-up-shoulder type of slip, in the use of which binding occurs at the neckline, and at the armholes, causing considerable discomfort to the wearer there, and as well around the bust, hips and elsewhere.

The improved slip of this invention eliminates the necessity for such objectionable compromise and provides a satisfactory garment which will conform closely and snugly to the body contour, substantially without wrinkling or bunching or riding up, and yet will provide the needed freedom of movement even when the wearer may engage in sports or other activites involving extensive body movements.

The invention is based upon a scientific fact or discovery believed to be newly utilized in the garment art, namely, that all body movements, bending, stretching and twisting, and combinations thereof, resulting in an extension or contraction of the body muscles, stem substantially from a fixed or focal point or small area of the body, which point is located approximately at the small of the back, that is, at an axial or spinal point or region slightly above the hips, about where a belt would cross the back axis of symmetry. For instance, if a person reaches one arm upwardly, keeping the heels on the ground, the shoulder is raised with the result that there is an increase in the distance between the small of the back or focus and that shoulder, although with this activity there is no increase in the body dimensions below the wast. When a person assumes a sitting posture there is an increase in the body dimensions from the small of the back to a point back of the knee, measured of course around the body surface or skin. This effect is also accompanied by a distension and increase in the pheripheral dimensions of the body around the hips and around the thighs, and also around the waist unless, indeed, as regards the waist dimension, a perfect sitting posture is maintained. Other active motions cause other effects of similar character.

The improved slip of this invention has been constructed with these scientific considerations as a basis. The garment may have the usual front portion, but a special back portion, the two united or vertically seamed together at the opposite sides, preferably near the extreme right and left parts of the garment. The front portion may be the same as that used in any of the well-known types of slips such as those with "built-up" shoulder extensions, whether flat-busted or fitted, and those with attached shoulder straps, whether or not gussetted.

The back portion of the slip, however, is composite, comprising three sections, i. e., a top section above the waist, a bottom or skirt section and intermediate these a special waist or middle section or insert connecting the top and bottom sections, and preferably seamed to them before the front and back portions are united. In the preferred embodiment of the invention, the upper seam line of the waist section curves, dips or bows downwardly from its right and left terminal points, for example where said seam transversely intersects the vertical side seams of the garment; whereas the lower transverse seam of the insert section curves, arches or bows upwardly from its right and left terminal points. In other words, the middle section is of a quadrilateral shape which is vertically narrowest at its center or axis and widest at its side edges; in other words flares rightward and leftward from its central portion. The relative locations of the three back sections and the dimensions of the middle section are such that the center area or focal point of the latter corresponds substantially with the small of the back as above defined.

Referring to the materials or fabrics used, the front portion may be made of any suitable or usual woven fabric or cloth which is substantially or relatively unstretchable and is preferably cut upon the length or square, as is usually the case. The upper back section and the lower back section may also be formed of the same woven material as the front, the upper section being cut upon the length, and the lower or skirt section upon the length or bias, the latter being sometimes desired for greater freedom in striding. On the contrary however the inserted intermediate section at the back is relatively quite stretchable, in an elastic sense, that is, to return to shape

on relaxing the strain; and this insert is preferably cut upon the bias.

While the advantages of the invention may be had to inferior degree if the intermediate insert section is properly made out of certain woven materials, the full value is only realized when this back insert is composed of some material such as a tightly constructed ribbed or knitted fabric which, especially when cut upon the bias, will permit ample stretching in four directions, that is, along vertical and horizontal lines of stress, and the two diagonals. The matter of fabrics will be further explained in the more detailed description to follow.

A slip constructed as thus generally described, and properly dimensioned to the wearer, will initially adapt itself to the body contours and thereafter will permit the desired freedom of stretching, bending and other movements of the body, since from the center area or focus of the middle back section, which spot can be termed a center of stretch, the material of said section can stretch in any direction as may be demanded by the body action. In a sense, this focus of stretch is a point of remote control from which the needed yield is provided and corresponding elastic tension is maintained, thus causing the slip to conform smoothly to the body lines, with the exception, of course, of the lower part of the garment skirt which must have the necessary fullness to permit freedom for walking, running, etc.

The invention is of especial advantage for a slip or chemise of the built-up-shoulder kind, which is of large demand and which, due to lack of shoulder adjustment, presents a more acute problem as to automatic adaptation and satisfactory comfort, minimizing ride-up and easing body and limb motions, including the stride in walking and running.

A better understanding of the invention may be had from the following description of an illustrative embodiment, read in conjunction with the drawings, in which Fig. 1 is a front elevation of a woman's slip of the built-up-shoulder type incorporating the present improvements, the figure partially broken away to show part of the construction of the back.

Fig. 2 is a back elevation view of the slip shown in Fig. 1.

Fig. 3 is a horizontal sectional view taken on line 3—3 of Fig. 2, but flattened fore-and-aft rather than being of the full body proportions.

Fig. 4 is a partial rear view of the slip showing diagrammatically the manner in which lines of stretch and yield may pass near or radiate from the center or focus of stretch.

Fig. 5 is a rear view of the slip as it appears when in use by a wearer standing at ease.

Fig. 6 is a rear view of the slip in use when the wearer is in a particular illustrative posture, namely a sitting posture, with left arm raised, and left knee crossed over; this figure also illustrating the shoulder-strap style of garment.

Fig. 7 is an elevational view of the rear intermediate section or insert per se in its preferred form; while Figs. 8 and 9 are modifications showing other but less advantageous examples of the different forms the rear middle section may take.

The slip may include a conventional front portion or panel A which may be plain as in certain styles or may be fitted to the bust. The slip may be with shoulder straps as in Fig. 6 or of the popular built-up style as in Figs. 1, 2 and 5. The garment further includes a back portion B F E, which is continuous with front portion and shown connected by vertical left and right side seams A^1 and A^2. The back comprises firstly a top section B above the waist, terminating upwardly in shoulder pieces or straps C which are connected to complementary shoulder extensions D at the front of the slip, the pieces C and D, or the equivalent attached straps C^1 Fig. 6, being the means by which the slip is positioned and supported from the shoulders. The back portion also includes a lower or skirt section E as already described, and an intermediate section F which is seamed at its top and bottom edges G and H, respectively to the upper and lower back sections B and E.

The composite back portion BFE is suitably united with the front portion in the complete slip. The longitudinal left and right side seams A^1, A^2 serve this purpose, and may extend from under the arm pits down to the lower hem of the slip. These long vertical seams are shown located further to the rear than to the front so that the horizontal width of the front portion or panel, at any point or girth, is preferably slightly greater than the width of the back portion or panel at the same level, the purpose of which will be made apparent as the description of the invention proceeds. Preferably the left and right longitudinal edges I and J of the middle section or yoke F coincide with and are included in the seams A^1 and A^2 respectively, so that the section F extends the full width of the slip back portion BFE, its horizontal dimension being somewhat less than half of the full girth of the slip.

With regard to the location of the intermediate rear section or insert F, it will be observed that the lower bowed edge or seam H thereof, at the center of such edge, is located approximately at the top of the buttocks, and that the seam arches upwardly to that point from its lower right and left corners where the edge H meets the vertical seams A^1, A^2. The upper edge or seam G, on the other hand, arches downwardly from its termini at the upper right and left corners where the edge G meets the seams A^1, A^2; so that the vertical width of the insert F is much greater along its side edges I and J than at or near its center; from the center its shape flares substantially both rightward and leftward. By these features the slip, which may be shaped for usual fulness, provides the advantages recited.

As stated earlier, the slip front portion A may be of any suitable woven material, cut upon the length, as may also the top section B at the rear. The skirt section E at the rear may likewise be of woven material and it may be cut upon the length or upon the bias, as desired. For these parts cloths may be used made from yarns of cottons, linens, rayons, silks, mercerized threads or even wools; and nainsooks, batistes or other fabrics employed.

The intermediate section is to be of elastically stretchable fabric as contrasted with usual woven cloth and it preferably is cut upon the bias. For better functioning this section or insert is preferably formed of a tightly constructed ribbed or knitted fabric since, with a fabric of that character, a substantial four-way stretch is obtained, giving universal elastic yield and superior performance. Both woven and knitted fabrics are available on the market which present good elastic stretch longitudinally, transversely and on both diagonals, but since the present invention does not include the particular structures there-

of, nor the yarns used, the same are not herein further described. Examples are knitted hosiery fabrics of cotton, silk, or the other yarns mentioned, wherein there are no straight wefts or warps that would suppress yield; but with yarns that possess stretch and fabrics may be woven or have straight threads.

The manner in which the insert or yoke section F functions to cause the slip to conform snugly to the body of the wearer, free from wrinkles and bunching, while at the same time giving the user the full freedom desired when actively engaged in sports or other strenuous occupation, will be apparent by referring to Figs. 4, 5 and 6. In Fig. 4, there is indicated a point or small area X at the approximate center of the back insert section F and which is located axially approximately at the small of the back. From this point, marked X, which is herein termed a center or focus of stretch, there radiate all of the lines of force, strain or yield that are set up in the garment when under various uses. For discussion, diagram arrows marked *a* to *i* are shown issuing from the yield focus X.

With the slip properly fitting the wearer, shown in a standing position in Fig. 5, and bearing in mind that the back portion of the slip, between seams, is narrower than the front portion, so that the stretch or strain is thrown into the insert section F, the lines of force or stretch, *a, b, c, d, e, f, g* and *h* (but not *i*) will be active. The opposed horizontal forces *b* and *g* tend to hold the garment snugly around the waist, whereas the forces or tension along lines *c* and *d* cooperate to conform the slip to the bust of the wearer at the left side of the body, there being a force acting in the line *c* at a low point of the bust left side and a force acting in the line *d* at a higher point thereabove, the latter force acting through the shoulder extension. At the right side forces in the lines *e* and *f* act in the same manner as forces *c* and *d*, to conform the garment to the bust of the wearer at that side. The forces acting along the lines of *a* and *h* serve to conform and hold the garment to the body of the wearer around the hips and thighs, as will be understood by viewing Fig. 5.

When the wearer is in postures other than standing at ease, other forces, strains and tensions, are brought into play, but regardless of the wearer's position, all forces will act and all stretches occur approximately in lines that radiate from or near the center X. Thus, assume that the wearer is in the seated posture shown in Fig. 6. As previously mentioned, under these conditions, the distance from the small of the back to a given point, such as the back of the knee, increases several inches beyond normal or original distance. The slip, of course, has to accommodate itself to this increase in length, and in doing so there is a tension stress exerted along the force line *i*, see Figs. 4 and 6. This condition would usually cause uncomfortable pulling and binding, but here it merely results in stretching the rear insert in a vertical direction through a distance of yield according with the increase in the body dimension previously referred to; this distortion being for example from the dotted to the solid line positions in Fig. 6. Mention was above made that the rear lower or skirt section E may be of cloth cut either upon the bias or upon the length. If cut upon the bias, it will appropriate to itself, a portion of the increase in length just alluded to, whereas if it is cut upon the length, substantially all the increase in dimension will be found in the insert section F itself. The vertical width of the insert section, and its total area, are shown as being substantial, and thus are such that the insert by its elastic yield can absorb whatever increase in dimension is required or expected in any given garment, so that there is no undue pull along the radial lines *d* and *e* such as would cause a binding action upon the wearer near the armholes or neck.

Further, when the wearer takes a sitting position, the peripheral dimension around the hips increases, as from one to two inches or an average of about one and one-half inches, whereas the peripheral dimension around the waist will increase slightly less or on the average of about one inch, assuming that the person is relaxed and does not have a perfect sitting posture. The first dimension increase will be taken care of by an increase in the dimensions in the insert section F along the yield lines *a* and *h* and also by that portion of the section which is defined by the acute angle between its left edge I and bottom edge H, near the side seam. The increase in dimension around the waist will be accommodated by a stretch of the section F along the horizontal yield lines *b* and *g*.

Fig. 6 illustrates also a third position wherein the wearer has raised the left arm. This results in an increase in the body dimension from the waist or small of the back to the left shoulder. The pull in that case is approximately along the line *d*, and it will be accommodated by a corresponding stretch in the insert F from the normal or dotted line position to the solid line position of edge H shown in Fig. 6. Of course, if the wearer raises also the other arm, the stress will be applied symmetrically also along the line *e* with a corresponding stretch in the insert section at the right side, in other words along both lines *d* and *e*, the arrangement being preferably symmetrical.

Still other conditions prevail where the wearer is walking or running or climbing or the like. In such cases, there will be a force exerted on the slip at the front of the thigh. This force will result in stretching the rear insert F along the yield lines *a* or *h*, as the case may be, or the two alternately, thereby relieving any binding effect such as would otherwise occur if the slip were form-fitting but devoid of effective means for accommodating increases in body dimensions.

From what has been said, it will be apparent that a slip incorporating the features of the present invention can be made which will be form-fitting and at the same time yieldable elastically along lines radiating outwardly from a center of stretch X near the small of the back so that all binding effect upon the body of the wearer is substantially eliminated.

Practical tests of the described slip have demonstrated the scientific and practical correctness of its principles and resulting ease and comfort. The insert piece, double-flared from the small of the back, by having ample elastic stretch along the horizontal and vertical directions, and as well the two main diagonals, is universally yieldable, with actions radiating in every needed direction from the yield focus F. When the yarn itself is not elastically stretchable the fabric should be bias-cut for best results, as stated. The reason for this is to favor a yield along radiating directions adjacent to the vertically upward and downward and horizontally rightward and leftward directions over the 45° diagonal yield directions, since this is found to meet the most

prevalent needs. Preferably however the fabric, as with plain knit hosiery, has good stretch also along its width and length, which become the 45° diagonals in the bias-cut insert.

The manner in which the radial lines of strain and yield benefit all parts of the garment is further indicated by the diagrams, Fig. 4, considered with the direction arrows applied to Figs. 2 and 1. In Fig. 2 the arrow *e* is represented by *e'* and e^2 reaching toward the rear shoulder and armpit area and there relieving strain. Arrow *f* is represented by *f'* and f^2 which are extended beyond the seam A^2, indicating an effect reaching around to the front; and on Fig. 1 these may be traced as reaching the fornt shoulder region and right bust. So with arrows *h'* and h^2 reaching around and down at the front and arrow h^3 furnishing yield to the lower rear, at the right side. At the left side symmetrical actions take place.

The invention may be embodied in various modifications that attain the principles and results described, for example, variations in the shape or material of the middle back section, but the preferred form for this section is substantially as shown in Figs. 1 to 6, and separately in Fig. 7, wherein the vertical dimensions are seen to be much smaller at the center than at the vertical edges I and J, and wherein the upper and lower edges or seams G and H are arched, or notably bowed, respectively, downwardly and upwardly, toward each other. Fig. 8 shows a variation F^1 wherein one transverse edge G^1 is less bowed and the other edge H^1 more bowed than in Fig. 7; while in both cases these edges are smoothly curved into an outline readily attachable by stitching to the upper and lower sections of the garment back. In the modification shown in Fig. 9 the insert F^2 has straight or angular, rather than curved, transverse edges G^2 or H^2. Such a structure while providing the elastic yield functions described, presents difficulties from the standpoint of sewing the sections B and E to the insert. Of the three, Fig. 7 is preferred.

To sum up, in one aspect, the invention is a body garment of close-fitting character, especially a woman's slip, and may be described in its preferred aspect as consisting of the unitary front and back portions extending longitudinally downwardly from the shoulders and terminating in a skirt, the garment composed generally of relatively unstretchable or woven fabric such as ordinary cotton cloth; the back portion consisting of first, an upper section B of such woven fabric or cloth, and second, a skirt section E, which might be cut on the bias, and third, inserted between these a middle section or insert F of substantial area and composed, by contrast, of an elastically expansible fabric adapted to undergo substantial stretch not only transversely or horizontally, and longitudinally or vertically but also diagonally; said insert having a shape generally quadrilateral, located with its center X within the area of the small of the back, and with its right and left side longitudinal edges J and I of notably greater vertical dimension than its central part due to one or both of its transverse edges, upper G and lower H, being notably inwardly bowed, reentrant or arched toward each other, giving a total outline of insert which may be described as a double flare, or hour-glass shape. Whatever be the line of the waist or hips of the wearer, such a garment is self-adjusting to each body action or movement, as described. Preferably the garment front and back portions are united by longitudinal seams A^2 and A^1 at the right and left sides, and preferably the back portion is narrower than the front, between seams, the stretchable insert extending from seam to seam, this arrangement assisting to throw all strains around to the back, whereat the insert affords release of strain, while the slip front remains tight-fitting. As described, the insert is located at a critical position, furnishing universal stretch, in all directions, so that the garment can yield for all movements of the wearer; the central part or small area X of the insert acting as a center or focus of stretch, from which is afforded remote control, delivering comfort to all points, from shoulders to hips. The insert, being elastically stretchable, returns always to its original outline on removal of strain, and it may consist of known stretchable knitted fabrics, or even woven of special yarns affording stretch, and is preferably cut on the bias for greater yield, unless containing rubber or rubberized threads.

In the drawings, the invention has been shown in certain preferred forms and by way of examples, but other variations and modifications in structure or design may be made therein which will still be comprised within the principles involved. It is to be understood, therefore, that the invention is not limited to any specific form or embodiment, except insofar as such limitations are specified in the appended claims.

What is claimed is:

1. A close-fitting sleeveless body garment of the character of a woman's slip adapted to be pulled over the head, consisting of the peripherally uninterrupted and unitary front and back portions extending longitudinally downwardly below and supported from the shoulders and terminating in a skirt and composed generally of relatively unstretchable woven fabric or cloth; the garment at its back portion only consisting of an upper section of such unstretchable woven fabric and a lower skirt section, and inserted transversely between them a middle section or insert of substantial vertical and horizontal dimension composed by contrast of an elastically expansible fabric adapted to undergo substantial stretch horizontally, vertically and diagonally; and said back insert being generally quadrilateral, with its middle point located within the area of the small of the back and constituting a focus of stretch, and with its right and left side longitudinal edges of notably greater vertical dimension than its middle part due to its upper and lower transverse edges being inwardly bowed toward each other to a notable extent.

2. A woman's slip as in claim 1 and wherein the vertical width of the elastic back insert at its side edges exceeds its half length from focus to side edge, while the vertical width at the middle of the insert is substantially not more than about half of that at the side edges.

3. A woman's slip as in claim 1 and wherein the back insert section is composed of knitted fabric having its courses and wales set diagonally to the length and width of the garment.

4. A close-fitting sleeveless body garment of the character of a slip adapted to be pulled on and off over the head, consisting of the peripherally continuous combined front and back portions extending longitudinally downwardly below and suspended from the shoulders and terminating in a skirt, the front portion being composed generally of relatively unstretchable woven fabric; and the back portion consisting of an upper section of such unstretchable fabric and a lower or skirt

section, and inserted transversely between them a middle insert composed by contrast of an elastically expansible fabric adapted to undergo substantial elastic stretch horizontally, vertically and diagonally; said back insert having its middle point or focus of stretch located within the area of the small of the back and being at its middle of substantial vertical width, and being from its middle toward both its right and left side edges notably flared, by reason of its upper and lower transverse edges being oppositely curvedly bowed; thereby providing strain-relieving lines of stretch from the focus reaching substantially all front and back portions of the garment, and affording yield and comfort in various bodily movements and repose.

5. A woman's slip as in claim 4 and wherein the back portion is of less of the girth than the front portion and the two are vertically seamed together longitudinally at the right and left sides; and the elastic back insert extends from side seam to seam with its lower transverse edge highly arched and disposed around above the top of the wearer's buttocks and near the right and left sides thereof.

6. A close-fitting and sleeveless undergarment or slip adapted to be pulled on and off over the head, consisting of the peripherally uninterrupted combined front and back portions extending longitudinally downwardly below and suspended from the shoulders and terminating in a skirt; the front portion being composed of relatively unstretchable woven fabric without stretchable insert between its upper and skirt sections; and the back portion consisting of an upper section of such unstretchable fabric and a lower or skirt section, and inserted transversely between them a middle insert composed by contrast of an elastically expansible knitted fabric having its courses and wales set diagonally to the length and width of the garment and thereby adapted to undergo substantial elastic stretch horizontally, vertically and diagonally; said back insert having its middle point located within the area of the small of the back and being at its middle of substantial vertical width, and being from its middle toward both its right and left side edges notably flared, by reason of its upper and lower transverse edges being oppositely curvedly bowed toward each other; thereby providing strain-relieving lines of stretch from the middle part of the back insert and reaching toward all front and back portions of the garment subject to strain.

WERTHER FRIEDMAN.