Aug. 20, 1940. R. H. LAWSON 2,212,027

WOMAN'S UNDERGARMENT

Filed July 7, 1938 2 Sheets-Sheet 1

Fig. 1.

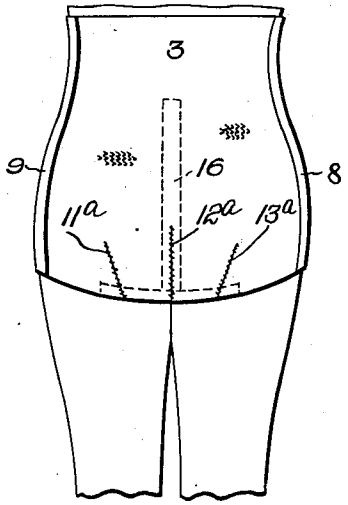



Fig. 2.

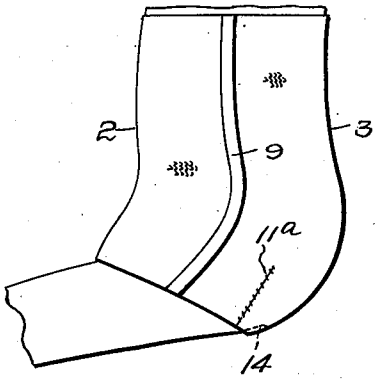



Fig. 15

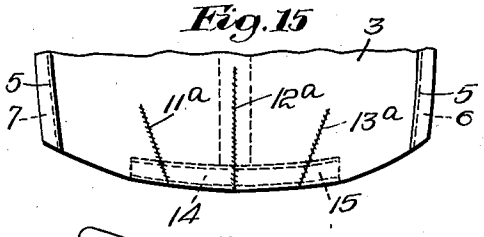



Fig. 3.

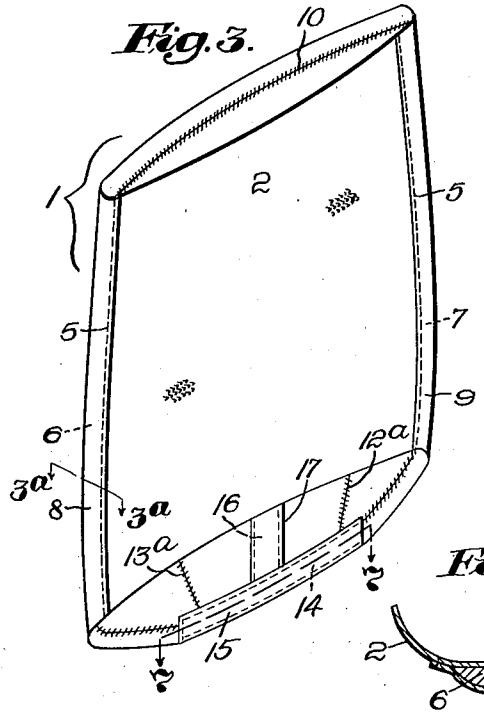



Fig. 4.

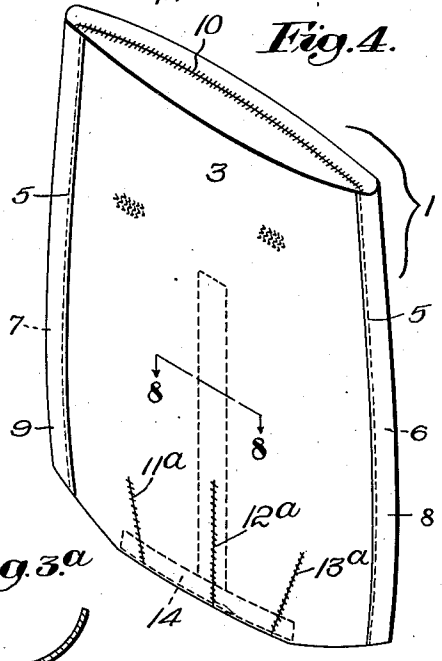
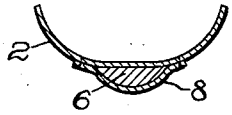



Fig. 3a




Inventor:
Robert H. Lawson,
by Emery, Booth, Townsend, Miller and Vreidenburgh
Attys

Aug. 20, 1940. R. H. LAWSON 2,212,027

WOMAN'S UNDERGARMENT

Filed July 7, 1938 2 Sheets-Sheet 2

Fig. 5.

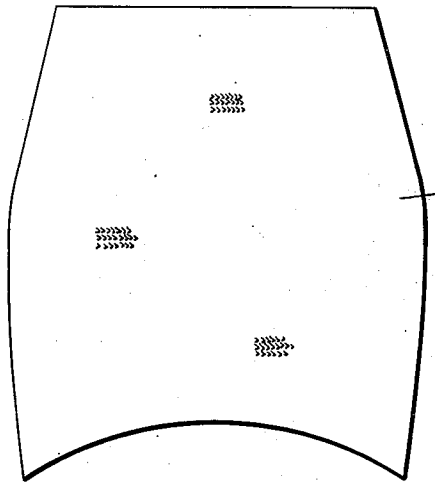



Fig. 6.

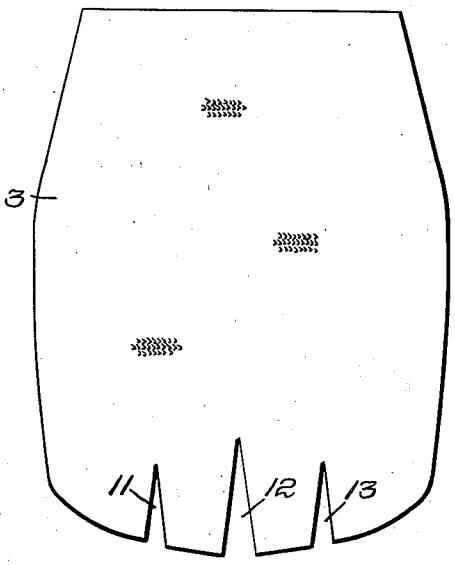



Fig. 7.




Fig. 8.




Fig. 11.

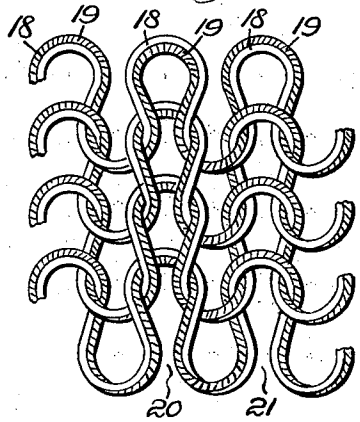



Fig. 12

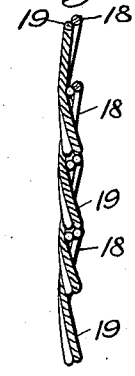



Fig. 13.

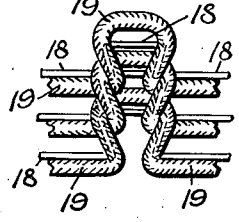



Fig. 9.




Fig. 10

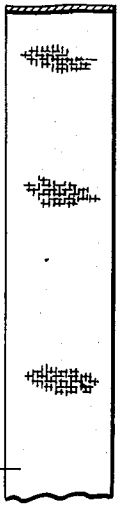
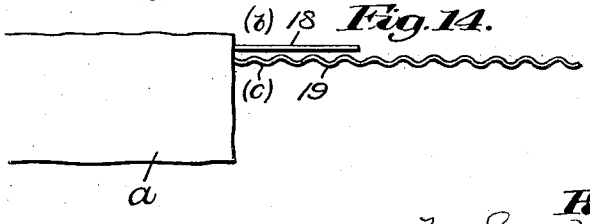



Fig. 14.




Inventor:
Robert H. Lawson,
by Emery, Booth, Townsend, Miller & Strickler
Attys

Patented Aug. 20, 1940 2,212,027

# UNITED STATES PATENT OFFICE

2,212,027

## WOMAN'S UNDERGARMENT

Robert H. Lawson, Pawtucket, R. I., assignor to Scott & Williams, Incorporated, New York, N. Y., a corporation of Massachusetts

Application July 7, 1938, Serial No. 217,898

6 Claims. (Cl. 2—43)

This invention relates to women's undergarments and more particularly to a foundation garment which in this disclosure of the invention is of a girdle type, but which within the scope thereof may be of a corset or corselette type.

In order that the principle of the invention may be readily understood, I have disclosed a single embodiment thereof in the accompanying drawings.

In the said drawings illustrating one embodiment only of the invention, by way of example—

Fig. 1 is substantially a rear or back view or elevation of the garment as worn, the wearer being in standing position;

Fig. 2 is a similar but more nearly a side view, the wearer of the garment occupying a seated position;

Fig. 3 is substantially a front view of the completed garment sufficiently in perspective to illustrate the side construction;

Fig. 3*a* is a sectional detail on the dotted line 3*a*—3*a* of Fig. 3;

Fig. 4 is a rear and somewhat perspective view of the garment;

Fig. 5 is a plan view of the front piece or portion of the garment;

Fig. 6 is a similar view of the back piece or portion thereof;

Fig. 7 is an enlarged detail in transverse section on the line 7—7 of Fig. 3;

Fig. 8 is a detail in transverse section upon the line 8—8 of Fig. 4;

Fig. 9 is a plan view of one of the highly flexible but non-stretchable members employed in certain portions of the garment;

Fig. 10 is a similar view of the overlying textile strip;

Fig. 11 is an enlarged detail showing the preferred knitted structure of the fabric of the garment;

Fig. 12 is a vertical section or edge view of the fabric shown in Fig. 10;

Fig. 13 is a detail showing a few stitches of the fabric and illustrating the distortion of the textile thread or yarn by the contraction of the companion rubber strand;

Fig. 14 is a diagrammatic representation of a small portion of the fabric, an edge whereof has been unraveled to indicate the relative amounts of rubber strand and textile thread desirably employed in making the fabric; and

Fig. 15 is a detail in elevation of the lower part of the back of the garment.

The garment 1 as a whole is of a knitted structure as hereinafter more fully explained. Within the scope of the invention, the garment may be made of one unitary piece; that is to say, it may be composed of one tubularly knit piece formed upon some suitable knitting machine of sufficient diameter to knit a tube of sufficient size for the purpose. Preferably, however, the garment as a whole comprises a knitted front portion or member 2 and a knitted rear portion or back member 3 suitably connected together along their edges, preferably by elastic stitching as indicated generally at 5. The said front and back portions or members are desirably each cut from a suitable knitted fabric, such as the product of a so-called body knitting machine having a plurality of feeds or feeding stations, but equipped as hereinafter more fully stated to make the fabric shown in Figs. 11 and 12. Desirably and for reasons to be explained more fully hereinafter, I provide at substantially the meeting edges of the front and back portions or members 2 and 3, semi-rigid non-expansible but very flexible strip-like members 6 and 7 which desirably are respectively confined in position by means of overlying textile strips 8, 9. Desirably the said textile strips are of woven material, and therefore having little or no expansibility but other material may be employed if desired. The said members 6, 7 desirably are of a so-called rubber bone structure, as, for example, of the structure shown in the patent to John V. Moore, No. 2,105,257, January 11, 1938, but my invention is not limited to the use of such material as other material performing substantially the same purpose may be employed.

The embodiment of the invention herein selected for purposes of description is as stated of the so-called girdle type; that is to say, it is one the front whereof terminates at its upper end below the bust and at the same or substantially the same height at the back. If the garment is of a corset or corselette type, the top, both at front and at the back, extends considerably higher. In either case shoulder straps may be provided, but I have not shown such in the present embodiment of the invention and desirably they are not employed with the girdle type of garment. If desired, garters or supporters may be provided, though I have not herein shown the same. If employed the garters may be worn substantially looser than usual because of the peculiar characteristics of the garment, as will be more fully set forth.

The front portion or member 2 of the garment is of a general rectangular shape but outwardly flaring toward a median transverse line substantially as indicated, and with a slightly reentrant

curve at its lower end, and is preferably of a uniformly knitted structure throughout and is provided with a suitable hem both at top and bottom, the edges thereof being desirably secured in place by suitable elastic stitching indicated generally at **10**. The back portion **3** of the garment is so shaped as to conform to the contour of the back and is slightly prolonged at its lower edge in a preferably slightly outwardly curved line so as to extend to the lower termination of the gluteal region (that is, to the bottom of the buttocks but desirably not beyond), and as will now be described the garment is so constructed and shaped that the lower part of the back thereof forms or provides for a pocket-like area or zone conforming to and receiving the buttocks of the wearer both when the wearer of the garment is in a standing position and in a sitting position. The pocket-like character of the said area or zone becomes accentuated and pronounced when the wearer stoops or sits, mainly because of the character of the knitted fabric, but other structural features of the garment cooperate in creating and maintaining the said pocket-like zone or area. This is in part and initially effected by cutting substantially triangularly shaped pieces from the lower portion of the back, desirably at the three points **11**, **12**, **13**. The edges at the said cutout portions are then elastically seamed or stitched together as indicated in Fig. 4 at *11a*, *12a*, *13a* to form darts.

I also provide means to render the extreme lower edge of the garment at the rear laterally non-stretchable. This I preferably do by inserting or applying a semi-rigid non-stretchable but very flexible holding or positioning stiffener member such as the rubber bone member **14**. The said member **14** is confined in immovable position in any suitable manner but preferably in a manner similar to that in which the two strip-like members **6**, **7** are positioned. That is to say, I apply the said member **14** to the inner face at the lower edge of the back **2**, as clearly shown in Figs. 3, 7 and 15, and then secure thereover a suitable non-elastic binding **15** which is here shown as of a woven character desirably the same as that employed to confine in position the longitudinally extending strip-like members **6**, **7**, but to which binding **15** my invention is not limited. The member **14** is of sufficient bulk in cross section to fit into the part of the body at the extreme lower end of the buttocks and efficiently aid in holding the lower edge of the back of the garment in the position shown and described.

Desirably also I provide at the median line of the back **3**, beginning at a point substantially below the top edge of the back **3**, as indicated, a very flexible but semi-rigid and non-expansible member **16** desirably similar in construction to the members **6**, **7** and **14**, and secure the same in place at the inner face of the garment by a binding **17** preferably of the same woven character as the strips **8**, **9** and **15**. The said member **16** desirably extends down to or substantially to the tranversely extending member **14**, but desirably it is not connected therewith in any way. The placing of the member **16** on the inside of the garment is preferable as it assists in giving a flatter appearance at the back of the garment.

In addition to and supplementing and coacting with the said pocket-like area or zone and in order to cause the said portion of the back of the garment to retain at all times during wear of the garment its position upon and enclosing the buttocks, I form at least the said pocket-like area or zone of the garment, and desirably the entire garment, of a knitted material which is very highly and easily expansible in a direction lengthwise the garment, but which is nevertheless of such character that when the wearer resumes a standing position the texture of the garment contracts lengthwise and to a much lesser degree transversely and resumes its normal non-stretched condition, but continues to enclose or completely overlies the buttocks.

In order to carry out the purpose of my invention, it is highly important that I use, particularly for the said pocket-like zone, a cloth that will stretch in a direction lengthwise of the garment at least substantially as much as the skin or flesh of the wearer stretches in changing from a standing to a sitting or like position. Preferably the cloth herein described stretches more than the skin or flesh of the wearer stretches in changing from a standing to a sitting position. It is important that the garment shall stretch easily in a lengthwise direction and that it shall stretch much less and not easily in a transverse direction (that is, in a direction around the body).

A comparison of Figs. 1 and 2 will show that when the wearer is standing, the lower edge of the back part of the garment extends to the very bottom of the gluteal region or the buttocks and there terminates, and that when the wearer is seated the said lower edge of the back retains the same position or location, so that actually the wearer sits on the said transversely extending member **14** which is at all times just at the very bottom of the buttocks and hence it is hardly or not at all felt by the wearer when seated, because positioned just at the bottom of the buttocks.

The fabric employed by me has a longitudinal stretch to four times its normal length, such stretch being an easy stretch, this being transverse to the direction of the wales. The said fabric has a transverse stretch to twice its normal extent, and such stretch is a substantially tough stretch. Both of these stretches therefore are precisely what are needed in order to cause the said pocket-like buttocks-receiving portion of the garment to keep its position when the wearer stoops or sits, since in such act the longitudinal stretch or strain on the garment is far greater than the lateral stretch. That is, such result is secured if, in making the garment, the fabric is turned from the position in which it is knitted into a position in which the wale extend circumferentially of the body, as indicated in the drawings and as elsewhere herein explained.

In order to impart to the knitted fabric the desired qualities of stretch that I have described, it is necessary to knit a rubber thread or strand and desirably a plurality of rubber threads or strands into the structure of the fabric. This I best accomplish by employing a very fine rubber thread or strand which is supplied at the knitting feed, or, if the knitting machine is of a character employing a plurality of feeds, then at each of the feeding stations. At the same time there is introduced at the feed or at each of the feeding stations a suitable non-elastic or textile thread or yarn which may be of silk, cotton, rayon or of any other suitable character. Each rubber thread or strand and the companion textile thread or yarn are introduced in a plating relation in the manner fully described in the patent to John Lawson, No. 2,009,361, July 23, 1935.

I have, in Figs. 11, 12 and 13, shown in en-

larged detail the knitted structure of such fabric. Referring to the said figures, one of the rubber strands or threads is indicated at 18 and the companion textile thread is indicated at 19. An examination of the said figures, and particularly of Figs. 11 and 12, will show that the said textile thread 19 which I refer to as the substantially non-elastic thread or strand, is plated over the elastic or rubber thread or strand 18 at both faces of the fabric so that throughout the fabric or in such portions of the fabric as this construction is employed, the textile or inelastic threads cover the rubber threads or strands on both faces of the fabric.

While I refer to a rubber strand or thread 18, it is to be understood that I mean to include within that term any uncovered material having characteristics similar or substantially similar to the rubber thread or strand, and hence as an equivalent thereof, and all references herein to a rubber thread or strand are to be so understood and as including an uncovered material having rubber-like characteristics.

While the knitted structure of the fabric may be varied and while I may employ what I term a plain fabric, namely, one knitted upon a single bank or series of needles, I preferably employ a ribbed fabric such as that represented in Fig. 11, where a one and one rib structure is shown, what may be termed the plain wales thereof being represented at 20 and the rib wales at 21.

It is to be understood that the uncovered rubber thread which I employ as indicated at 18 is much more elastic than a "covered rubber," certain types of which are upon the market, and therefore the uncovered rubber is perfectly adapted to and peculiarly cooperates in forming the buttocks-receiving pocket portion, area or zone of the garment. So far as I am aware no other rubber containing knitted fabric would permit or provide for the formation of a pocket-like zone or area in the garment which would in all positions of the wearer retain its position about the buttocks, and does not work or slide upward in any change of position of the wearer. The semi-rigid members at the sides of the garment constitute means to hold the bottom of the garment down from the top thereof, or, in other words, contribute to constitute means extending downward from the waist region to hold or maintain the lower edge of the garment at the rear thereof in its position substantially at the bottom of the buttocks irrespective of changes in position of the wearer's body.

I have in Fig. 14 represented a small piece *a* of the fabric as partially unraveled at one end, and have shown at *b* and *c* respectively the unraveled portion of rubber strand or thread or uncovered material of similar or equivalent characteristics and the unraveled but kinked portion of the inelastic or textile thread. It will be observed that there is much more of the textile strand knitted into a given length of fabric than of the rubber strand, thread or its equivalent. In fact, there are two and a half times as much in length of the textile thread as of the rubber strand, thread or equivalent. The structure of the fabric is such that the rubber strands, threads or equivalents are not observable even when the fabric is stretched to its utmost extent in either or both directions. Moreover, the fabric has a perfectly smooth feeling at both surfaces. The fabric can be washed without any injury whatever.

While I have referred to the garment 1 as of a knitted structure, I desire it to be understood that this is the preferred embodiment thereof. Within the broad scope and purpose of my invention, it is possible to employ at least some woven material in the formation of the garment, particularly if the back portion or member, or at least the lower part thereof, be of the knitted character herein described. In such case, I may make the front portion or member of some suitable woven elastic material, and desirably of woven-in elastic material, inasmuch as it is possible to weave a two-way stretch fabric. I prefer, however, to employ knitted material throughout, as herein specifically disclosed.

Referring further to the shape and structure of the pocket-like area or zone, it is to be noted that the knitted fabric comprising the back portion or member 3 (as well as the front portion or member 2) is so positioned and arranged that the direction of the needle and sinker wales of the fabric is transverse to the length of the garment, or in other words is about the body. This permits the very great stretch of the garment to be in an up and down direction, thereby equalizing the stretch of the wearer's skin in stooping or sitting. The transverse stretch (that is, in the direction of the length of the wales) is a quite strongly resisted stretch. The darts 11*a*, 12*a*, 13*a* together with the inwardly sloping edges of the lower part of the back member 3, as shown in Fig. 6, cooperating with the inwardly sloping edges of the lower part of the front member 2 when stitched thereto as shown in Figs. 3, 4 and 15, cause the pocket-like zone or area to conform precisely to the shape of the buttocks, which, as stated, are covered thereby at all times. While the garment herein disclosed is particularly intended and adapted for wear next the flesh as a foundation garment, and is more conveniently worn next the flesh, it may, within the use and practice of my invention, be worn over a very thin vest or shirt of some suitable material.

Having thus described one illustrative embodiment of the invention, it is to be understood that although specific terms are employed, they are used in a generic and descriptive sense and not for purposes of limitation, the scope of the invention being set forth in the following claims.

I claim:

1. A knitted foundation garment for women particularly intended and applicable for wear next the flesh, the lower edge whereof at the rear terminates at the bottom of the buttocks or gluteal region and provides by its wholly knitted structure at that point a pocket-like area or zone for the buttocks, said knitted stitches being composed of a textile thread and a rubber strand so that the garment is capable of stretch in a direction lengthwise the wearer to an extent sufficient to permit the lower extremity of the garment to remain at the lower extremity of the buttocks, whether the wearer be standing or seated, the lower edge of the said garment at the rear having a transversely extending, non-stretchable, flexible positioning or holding member of substantial bulk in cross section, thereby rendering the extreme lower edge of the garment at the rear non-stretchable transversely which flexible member, when the wearer is seated, remains positioned at the lower extremity of the buttocks.

2. A knitted foundation garment for women particularly intended and applicable for wear next the flesh, the lower edge whereof at the rear terminates at the bottom of the buttocks or gluteal region and provides by its wholly knitted

structure at that point a pocket-like area or zone for the buttocks, said knitted stitches being each composed at least at the said buttocks region of a textile thread and an uncovered rubber thread which is therefore permitted to expand unrestrainedly, the extreme lower edge of the garment at the rear having a transversely extending, non-stretchable but flexible positioning or holding member 14 of substantial bulk in cross section and upon which the wearer sits in the use of the garment, and an upright reinforcing member 16 at substantially the middle of the back unconnected with the member 14 but extending into proximity thereto at its lower end.

3. A foundation garment for women particularly intended and applicable for wear next the flesh, made of front and rear parts elastically stitched together, the said front part being of elastic textile material having a two-way stretch, the lower edge of which garment at the rear terminates at the bottom of the buttocks or gluteal region and provides by its wholly knitted structure at that point a pocket-like area or zone for the buttocks, the said garment throughout at least the buttocks region being composed in all the stitches of an uncovered rubber strand and a single textile thread, which latter is of materially greater length in each of its existent courses than is the said rubber strand, the said garment having at its extreme lower edge at the rear a non-stretchable flexible holding or positioning stiffener member of substantial bulk in cross section and that, in the use of the garment, is positioned at the lower edge of the buttocks region whether the user is standing or seated.

4. A uniformly knitted foundation garment of the girdle type for women, the front whereof terminates below the bust, formed throughout of ribbed knitting with the wales all extending in a direction about the body of the wearer, the lower edge of the garment at the rear terminating at the bottom of the buttocks or gluteal region and providing, because of its said knitted structure, a pocket-like area or zone for the buttocks, the said garment being uniformly and markedly more easily stretchable in a direction lengthwise the body of the wearer than about the body, so that the lower edge of the garment at the rear normally remains at the bottom of the buttocks of the wearer, whether the wearer is standing or seated, all of the knitted stitches of the garment uniformly consisting of a knitted, textile, plating thread and a rubber strand knitted in all the stitches with the said textile thread, the said lower edge of the garment at the rear having secured thereto non-stretchable but flexible means of non-textile character to fit into the part of the body at the extreme lower end of the buttocks to aid in holding the lower edge of the back of the garment in the described position.

5. A foundation garment of the girdle type for women, made of front and rear parts elastically stitched together, the said front part being of elastic textile material having a two-way stretch, the said front part of which garment terminates below the bust, formed throughout the said rear part of ribbed knitting with the wales of said rear part all extending in a direction about the body of the wearer, the lower edge of the garment at the rear terminating at the bottom of the buttocks or gluteal region and providing, because of its said knitted structure of the rear part, a pocket-like area or zone for the buttocks, the said garment being uniformly and markedly more easily stretchable in a direction lengthwise the body of the wearer than about the body, so that the lower edge of the garment at the rear normally remains at the bottom of the buttocks of the wearer, whether the wearer is standing or seated, the lower edge of said garment at the rear having a transversely extending, non-stretchable, flexible, holding or positioning member of substantial bulk in cross section, upon which the wearer sits in the use of the garment, and which clings to such position when the wearer is standing.

6. A foundation garment for women particularly intended and applicable for wear next the flesh, said garment being composed of front and rear parts stitched together, said front part being composed of textile material and said rear part, at least at the portion thereof that receives the buttocks or gluteal region of the wearer, being of a wholly knitted structure providing a pocket-like area or zone for the buttocks, the lower edge of said garment at the rear terminating, when worn, at the bottom of the buttocks, the knitted stitches of the said rear part being composed of a textile thread and a rubber strand, so that the said rear part of the garment is capable of stretch in a direction lengthwise the wearer to an extent sufficient to permit the lower extremity of the garment, when worn, to remain at the lower extremity of the buttocks, whether the wearer be standing or seated, the lower edge of the said garment at the said rear part having a transversely extending, non-stretchable, flexible positioning or holding member of substantial bulk in cross section, thereby rendering the extreme lower edge of the garment at the rear non-stretchable transversely, which flexible member, when the wearer is seated, remains positioned at the lower extremity of the buttocks.

ROBERT H. LAWSON.