

Aug. 13, 1968

C. M. SACHS ET AL

3,396,728

LONG-LINE BRASSIERE

Filed April 11, 1966

2 Sheets-Sheet 1

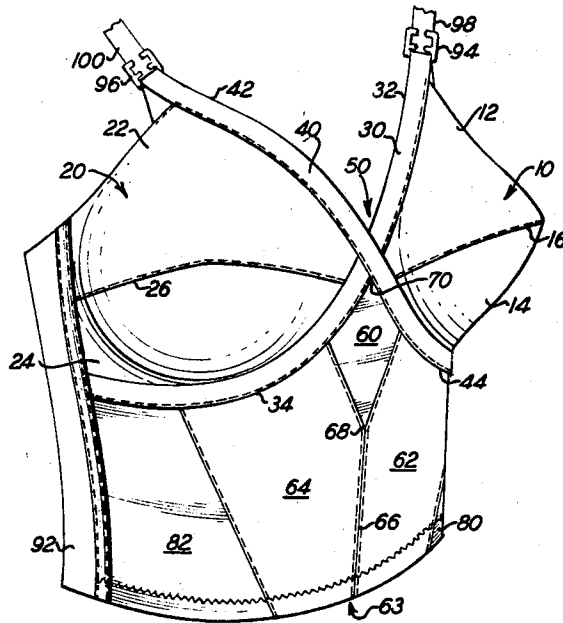


Fig. 1

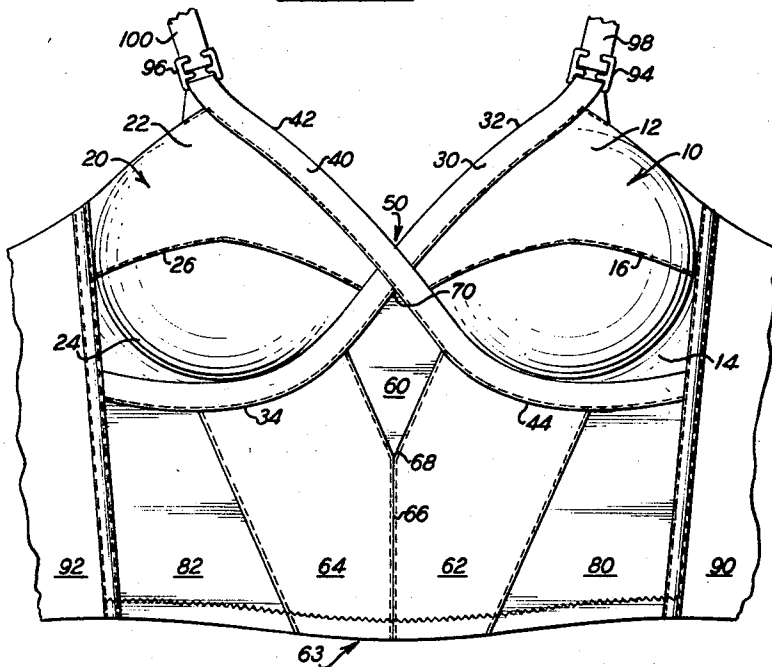


Fig. 2

INVENTORS

Edward E. Astor
Charles M. Sachs

BY

Michael A. Sileps

ATTORNEY

Aug. 13, 1968

C. M. SACHS ET AL

3,396,728

LONG-LINE BRASSIERE

Filed April 11, 1966

2 Sheets-Sheet 2

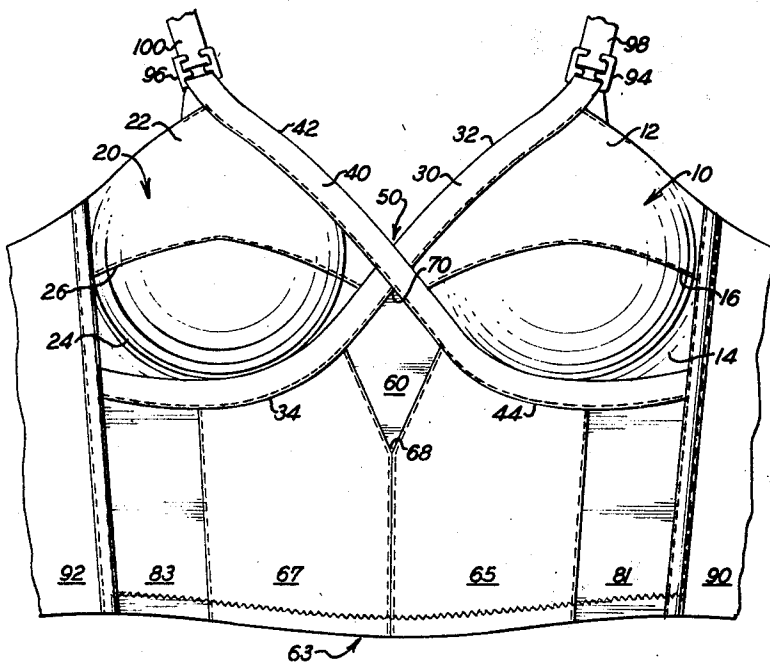
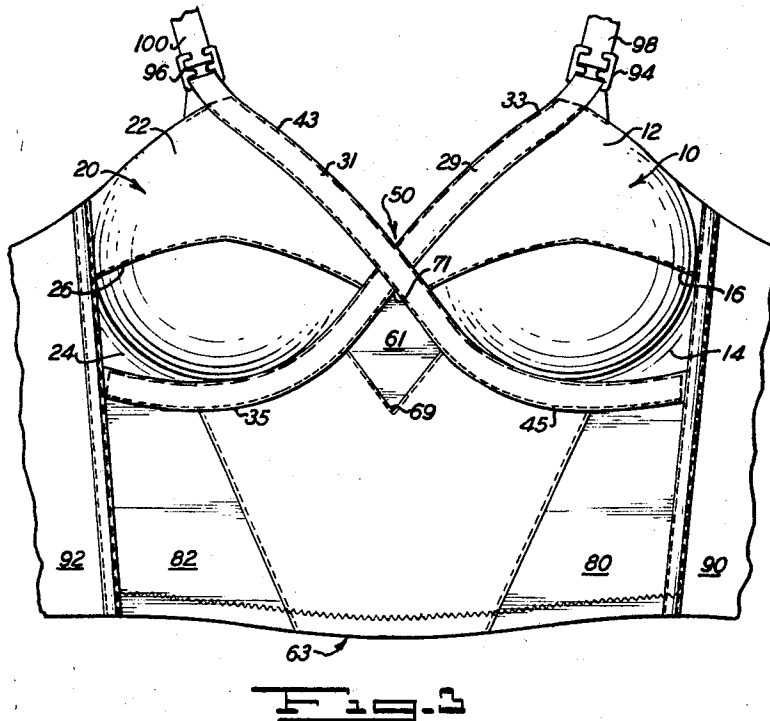


Fig. 4

INVENTORS
Edward E. Astor
Charles M. Sachs
BY *Michael A. Sills*
ATTORNEYS

1

2

3,396,728

LONG-LINE BRASSIERE

Charles M. Sachs, Teaneck, and Edward E. Astor, Fort Lee, N.J., assignors to International Latex Corporation, Playtex Park, Dover, Del., a corporation of Delaware
Filed Apr. 11, 1966, Ser. No. 541,668
11 Claims. (Cl. 128-427)

This invention is a long-line brassiere designed and constructed to expand with the upper torso when the wearer breathes and moves about, yet provides the medium to heavy abdominal control characteristics required of long-line brassieres.

Basically, a long-line brassiere must adequately support and shape the upper torso, yet it must also be comfortable.

It is difficult in designing a long-line brassiere to achieve both comfort and control by virtue of the common fact that (1) a woman's chest and abdomen are constantly expanding and contracting as she breathes, moves her arms and indulges in other body motions, and (2) long-line brassieres are generally worn by abdominal women. Each change in upper torso size and shape requires an accommodating change in brassiere size and shape, particularly with respect to the size and shape of the sternum and outer abdominal regions of the upper torso. The more nearly perfect the long-line brassiere accommodates to changes in size and shape of the upper torso, the more comfortable is the long-line brassiere.

The prior art has solved in many respects some of the more common brassiere disadvantages, such as upward creeping of the brassiere, roll-over of the underbust bands, shoulder strap adjustability, girthwise adjustability, underbust distribution of pressures and independent support of each breast. Two highly desirable characteristics that have yet to be simultaneously provided in long-line brassieres are (1) maximum support and control at the center region of the wearer's abdomen, and (2) minimum discomfort due to excessive pressures against the sternum and outer abdominal regions of the wearer.

A brassiere constructed in accordance with our invention surprisingly accommodates to each change in upper torso size and shape as the wearer breathes and moves about, thus unequivocally alleviating excessive pressures against the sternum and outer abdominal regions of the wearer, yet adequately supports and controls the center abdominal region of the wearer.

According to our invention a long-line brassiere is provided with a novel underbust section having a geometrically shaped stretchable center gusset, a non-stretchable center panel and a pair of stretchable side sections. Preferably the center gusset is generally diamond shaped and the center panel has downwardly converging outer sides and a generally V-shaped indentation at the upper-center thereof, with the converging sides of the center panel being substantially parallel to the sides of the lower portion of the center gusset.

It is an object of this invention to design a long-line brassiere which eliminates excessive pressures against the sternum and outer abdominal regions of the wearer, yet advantageously provides proper support to and control of the center abdominal region of the wearer.

Proceeding now to a more detailed description of the invention, reference will be had to the accompanying drawings which are to be understood as being illustrative and not limitative of the invention.

FIGURE 1 is a perspective view of our long-line brassiere as seen on the wearer;

FIGURE 2 is a front elevation of the long-line brassiere of FIG. 1;

FIGURE 3 is a front elevation of another embodiment of our long-line brassiere as seen on the wearer; and

FIGURE 4 is a front elevation of still another embodiment of our long-line brassiere as seen on the wearer.

It is to be understood that our long-line brassiere may have any known suitable dorsal band or rear panel arrangement and any well known shoulder strap construction; these are not the subject of our invention, and as they are conventional they are merely indicated here.

Referring first to FIGS. 1 and 2, our long-line brassiere has cups 10 and 20 of a conical to hemispherical shape, each cup having an upper half 12 and 22, a lower half 14 and 24, and a generally horizontal mid-seam 16 and 26. The members making up the cups are, as is usual, cut with convex edges that are pulled to each other, overlapped and sewn together to form the mid-seam, thus providing outwardly peaked cups.

Extending from the top of the cups 10 and 20 and along the upper-inner edges thereof are narrow elastic tapes 30 and 40. These tapes preferably cross each other at midpoint 50 and extend along at least a major portion of the lower edges of the cups. It is to be understood that the narrow tapes 30 and 40 may be secured to each other and to the cups 10 and 20 without crossing at the midpoint 50, such structural variations being contemplated and within the spirit and scope of this invention as set forth in the appended claims.

Tape 30 comprises an upper branch 32, which is secured to the upper-inner edge of upper cup portion 12, and a lower branch 34, which is secured to the lower edge of lower cup portion 24. Tape 40 comprises an upper branch 42, which is secured to the upper-inner edge of upper cup portion 22, and a lower branch 44, which is secured to the lower edge of lower cup portion 14. These tapes are secured to each other at the crossing point 50.

Above midpoint 50, approximately half the width of the upper branches 32 and 42 overlap the upper-inner edges of the upper cup portions 12 and 22 and are secured thereto, for example, by a continuous line of stitching.

It is preferable when securing tapes 30 and 40 to the cups 10 and 20 to slightly extend the tapes as they are sewn to the cups. This results in a finished product which at rest is slightly gathered along the sewn edge, thus providing a small degree of stretchability along that edge. The remaining width or free edge of upper branches 32 and 42, that extends away from the upper cup portions 12 and 22, more readily adapts or accommodates to the body in that region, and lies lightly but snugly against the body of the wearer.

Below the midpoint 50, the lower branches 34 and 44 overlap the lower edges of the lower cup portions 24 and 14, but only approximately one-half their width is secured to the lower cup edges, again for example, by a continuous line of stitching. The remaining width or free edge of the lower branches 34 and 44, that overlaps and extends toward the lower cup portions 24 and 14, also more readily adapts or accommodates to the body in that region, and lies lightly and snugly against the breasts of the wearer.

It is noted here that when a continuous run of stitching is made, it is the lower edge of the tapes 30 and 40 which is sewn to the cups. In the upper branches 32 and 42, the free edges of the tapes extend away from the upper cup portions 12 and 22, while in the lower branches 34 and 44, the free edges overlap and extend towards the lower cup portions 24 and 14. By this arrangement the continuous line of stitches also securely fasten the tapes together at the point where they cross, i.e., crossing point 50.

Although tapes 30 and 40 are inherently straight, the lower branches 34 and 44 are bent outwardly when sewn to the cups 20 and 10, so as to follow the contour and shape of the lower edges of the lower cup portions 24

and 14. This construction of lower branches of tapes 30 and 40 provides support for and slight lifting of the wearers breasts.

Tapes 30 and 40 may be secured to the edges of the cups by a double line, continuous run of stitching, and may be constructed as described in copending application, Ser. No. 434,292, filed Feb. 23, 1965, in the name of Charles M. Sachs, now U.S. Patent No. 3,322,127, issued May 30, 1967, which patent is assigned to the assignee of this invention.

The underbust portion of our long-line brassiere includes a non-stretchable center panel 63, a diamond shaped stretchable gusset 60, and a pair of stretchable side sections 80, 82.

Center panel 63 has converging outer edges extending from the lower cup portions 14 and 24 to the bottom of the underbust section, and a centrally located V-shaped indentation, which has a low point 68 and converging edges substantially parallel to the converging outer edges. Center panel 63 in this embodiment of our invention is constructed with a mid-seam 66, which extends down from point 68 to the bottom of the brassiere in a substantially vertical direction, thus forming a two-piece center panel having left and right sections 62 and 64. A center panel having a mid-seam is preferable since it greatly facilitates sizing and shaping of the underbust portion to the contour of the wearers upper torso. A one piece center panel is shown in FIG. 3 and will be described in detail below.

Diamond shaped gusset 60 has a lower and upper apex, coinciding with points 68 and 70, with substantially equal upper sides and substantially equal lower sides, with the upper sides being somewhat shorter than the lower sides. Sewn respectively to the lower branches 34 and 44 are the sides of the upper portion of gusset 60; while the sides of the lower portion of gusset 60 are sewn to the converging edges of the V-shaped indentation of the center panel 63. Gusset 60 therefore extends from point 68, along one edge of the V-shaped indentation, along lower branch 34, to point 70, along lower branch 44, along the other edge of the V-shaped indentation, and back to point 68, thus filling the space between lower branches 34 and 44 and the V-shaped indentation.

Side sections 80 and 82 each have an inner edge slanting downwardly and inwardly, an outer substantially vertical edge and substantially horizontal upper and lower edges. The slanting inner edges of side sections 80 and 82 are respectively secured, for example, by stitches, to the converging outer edges of center panel 63, while the vertical outer edges of side sections 80 and 82 are respectively secured by stitches, for example, to the inner edges of rear panels 90 and 92. The horizontal upper edges of side sections 80 and 82 are respectively secured by stitches to the outer ends of lower branches 44 and 34, while the lower edges of side sections 80 and 82 form the outer lower edge of the underbust section.

Crossed tapes 30 and 40 have their upper ends respectively secured to conventional shoulder strap buckles 94 and 96, which in turn are respectively secured by conventional means to shoulder straps 98 and 100. It is to be understood, however, that other well known constructions may be utilized to connect the upper ends of tapes 30 and 40 to conventional shoulder straps or shoulder strap buckles.

In this embodiment of my invention the upper edges of side sections 80 and 82 are respectively secured to approximately the outer one-fourth of the length of lower branches 44 and 34, while the upper edges of center panel sections 62 and 64 are respectively secured to the center-one-half of the length of lower branches 44 and 34, and finally, the sides of the upper portion of gusset 60 are respectively secured to the inner one-fourth of the lower branches 44 and 34. At the bottom of the brassiere, however, the lower edges of the side sections 80 and 82 respectively make up approximately the outer one-third

of the lower edge of the underbust portion, while the lower edges of center panel sections 62 and 64 combine to form approximately the center one-third of the lower edge of the underbust portion. Furthermore, the underbust portion, outer ends of crossed tapes 30 and 40, and cups 10 and 20 are coterminous, and all are joined to the rear panels 90 and 92, which are of any desired construction.

Although it is not shown in the drawings, it is desirable to attach a strip of elastic edging along the lower rear edge of the brassiere in conventional manner. The zig-zag stitches extending parallel to but slightly spaced upward from the lower edge of the underbust section are included to graphically represent the inclusion of conventional elastic edging at the bottom of the brassiere. Zig-zag stitches are preferably used so as to preserve girth-wise stretch in the side sections 80 and 82.

Another well known feature that is readily includable in our brassiere is the use of vertical stays or stiffeners of the well known metal or plastic type. For example, vertical stiffeners may be provided in a vertical pocket extending along the inner edge of the back panels 80 and 82. By this construction, desirable positioning of and support for the brassiere may be achieved.

In FIG. 3, we show an alternate embodiment of our invention, which in most respects is similar to the long-line brassiere of FIGS. 1 and 2 and for this reason like parts have been referenced with the same numerals used in the description of FIGS. 1 and 2.

The basic differences between the brassieres of FIGS. 1 and 3 are (1) the securing of the crossed tapes to the cups, (2) the shape of the center gusset, and (3) the construction and shape of the center panel.

In this embodiment of our invention, crossed tapes 29 and 31 completely overlap cups 10 and are secured thereto, for example, by a double, continuous line of stitching. Upper branches 33 and 43 are respectively secured to upper cup portions 12 and 22, while lower branches 35 and 45 are respectively secured to lower cup portions 24 and 14. Crossed tapes 29 and 31 are desirably constructed of non-stretch material, although the use of stretchable tapes are contemplated, particularly when a slight degree of stretchability is desired or when stretchable cups are used.

Diamond shaped gusset 61 also has a lower and upper apex, coinciding with points 69 and 71, however, the sides of the gusset are all equal.

Center panel 63 also has a V-shaped indentation at the upper center thereof with the edges of the indentation coinciding with the sides of the lower portion of gusset 61. This center panel does not have a center seam and is, therefore, a one-piece center panel. Desirable fitting and contouring of the underbust section to the shape of the wearer's upper torso would be achieved along either the outer edges of center panel 63 or along the inner edges of rear panels 90 and 92.

It should be noted here that the edges of the V-shaped indentation are not parallel to the outer edges of center panel 63 as is the case in the embodiment of FIGS. 1 and 2.

The remaining elements of the long-line brassiere of FIG. 3 are substantially identical to corresponding elements of the brassiere of FIGS. 1 and 2, and are secured in the same manner as above described.

In FIG. 4, we show another embodiment of our invention which again is quite similar to the long-line brassiere of FIGS. 1 and 2, and again we have referenced like parts with the same numerals used in the description of FIGS. 1 and 2.

The differences between the brassieres of FIGS. 1 and 4 are (1) the shape of the center panel, and (2) the shape of the side sections of the underbust portion.

In this embodiment of our invention, the outer edges of the center panel 63 and the inner edges of the side sections 81 and 83 are substantially vertical.

5

The remaining elements of the long-line brassiere of FIG. 3 are substantially identical to corresponding elements of the brassiere of FIGS. 1 and 2, and are secured in the same manner as above described.

It is to be understood at this point that the structural modifications and differences above described regarding the embodiments of FIGS. 3 and 4 may be permuted within a single long-line brassiere, such construction being contemplated and within the scope of our invention.

It will be apparent from the foregoing description of the various embodiments, and permutations thereof, that our invention provides a long-line brassiere that eliminates excessive pressures against the sternum and outer abdominal regions of the wearer, yet advantageously provides proper support to and control of the center abdominal region of the wearer.

Heretofore, we have not specified the nature, type or quality of materials to be used in constructing our novel long-line brassiere. For exemplary purposes only, it is desirable to (1) construct the cups 10 and 20, center panel 63, and crossed tapes 29 and 31 of non-stretch materials, such as cotton, (2) construct the center gussets 60 and 61 and the side sections 80, 81, 82 and 83 of all-way stretch materials, such as elastic power net, and (3) construct the crossed tapes 30 and 40 of one-way stretch tape, such as elastic with the direction of stretch being parallel to the side edges of the tapes.

The terms and expressions which have been employed herein are used as terms of description and not of limitation and it is not intended, in the use of such terms and expressions, to exclude any equivalents of the features shown and described, or portions thereof, but it is recognized that various modifications are possible within the scope of the present invention.

Without further elaboration, the foregoing is considered to explain the character of the present invention so that others may, by applying current knowledge, readily adapt the same for use under varying conditions of service while still retaining certain features which may properly be said to constitute the essential items of novelty involved, which items are intended to be defined and secured by the appended claims.

We claim:

1. In a long-line brassiere of the type having a front section, rear panels, and rear closure means with a dorsal band arrangement and shoulder straps each respectively secured thereto for permitting brassiere accommodation to chest cavity expansion and contraction and for supporting and controlling the center abdominal region of the wearer, said front section comprising:

- (a) two cups;
- (b) an underbust section including a generally, diamond-shaped, center gusset, a center panel and a pair of side panels; wherein
- (c) said center panel has a generally, V-shaped indentation at the upper center thereof; and wherein
- (d) said gusset is secured along its upper edges to the lower-inner edges of said cups and along its lower edges to the edges of said indentation; and wherein
- (e) said cups are respectively secured along their inner edges to the upper edges of said center panel and to the upper edge of their corresponding side panel; and wherein
- (f) said side sections are respectively secured along their outer edges to the inner edges of said rear panels and respectively secured along their inner edges to the outer edges of said center panel; and wherein
- (g) the lower edges of said center panel, rear panels, and side sections form the lower edge of the brassiere; and whereby
- (h) girthwise expansion of the chest cavity of the wearer produces a girthwise stretch within the brassiere and permits said brassiere to accommodate to

6

said expansions and to maintain its proper position on the body during use; and whereby

- (i) said center gusset, center panel and side panels of said front section provide support and control of the center abdominal region of the wearer.

2. Brassiere of claim 1 in which the outer edges of said center panel converge downwardly.

3. Brassiere of claim 1 in which the outer edges of said center panel extend downwardly along a line generally parallel to the vertical center line of the brassiere.

4. Brassiere of claim 1 in which the sides of the upper portion of said gusset are shorter than the sides of its lower portion.

5. Brassiere of claim 1 in which the sides of said gusset are all equal in length.

6. Brassiere of claim 1 in which:

(a) the outer edges of said center panel converge downwardly; and

(b) the sides of the lower portion of said gusset are respectively parallel to the outer edges of said center panel.

7. Brassiere of claim 1 in which said center panel has a centrally located vertical seam extending from the lowest point of said gusset to the bottom of the brassiere.

8. The invention in accordance with claim 1 and further including:

(a) a pair of tapes secured to the inner edges of said cups and secured to each other at the center of the brassiere, said tapes defining upper diverging branches above their point of securement and lower diverging branches below it.

9. The invention in accordance with claim 8 in which:

(a) said tapes cross each other at the center of the brassiere and are secured together at their crossing point; and in which

(b) each of said crossed tapes extend along the upper-inner edge of one cup and then along at least a major portion of the lower edge of the other cup.

10. The invention in accordance with claim 8 in which:

(a) approximately one-half of the width of the upper branches of each tape both overlaps and is secured to the upper-inner edge of their respective cup with the remaining width thereof extending away from the upper half of said cup; and in which

(b) approximately one-half of the width of the lower branches of each tape both overlaps and is secured to the lower-inner edge of their respective cup with the remaining width thereof extending freely over the lower half of said cup; and in which

(c) said lower branches of said tapes extend from said point of securement along at least a major portion of the lower edge of their respective cup.

11. The invention in accordance with claim 8 in which:

(a) substantially the full width of the upper branches of said tapes both overlaps and is secured to the upper-inner edge of their respective cup; and in which

(b) substantially the full width of the lower branches of said tapes both overlaps and is secured to the lower edge of their respective cup; and in which

(c) said lower branches of said tapes extend from said point of securement along at least a major portion of the lower edge of their respective cup.

References Cited

UNITED STATES PATENTS

2,372,265	3/1945	Fletcher	128—556
2,437,655	3/1948	Rosner	128—489
2,888,930	6/1959	Coleman et al.	128—498
3,173,421	3/1965	Steiner	128—485
3,186,412	6/1965	Kurland	128—483
3,304,940	2/1967	Holscher	128—483
3,322,127	5/1967	Sachs	128—483

ADELE M. EAGER, *Primary Examiner.*