

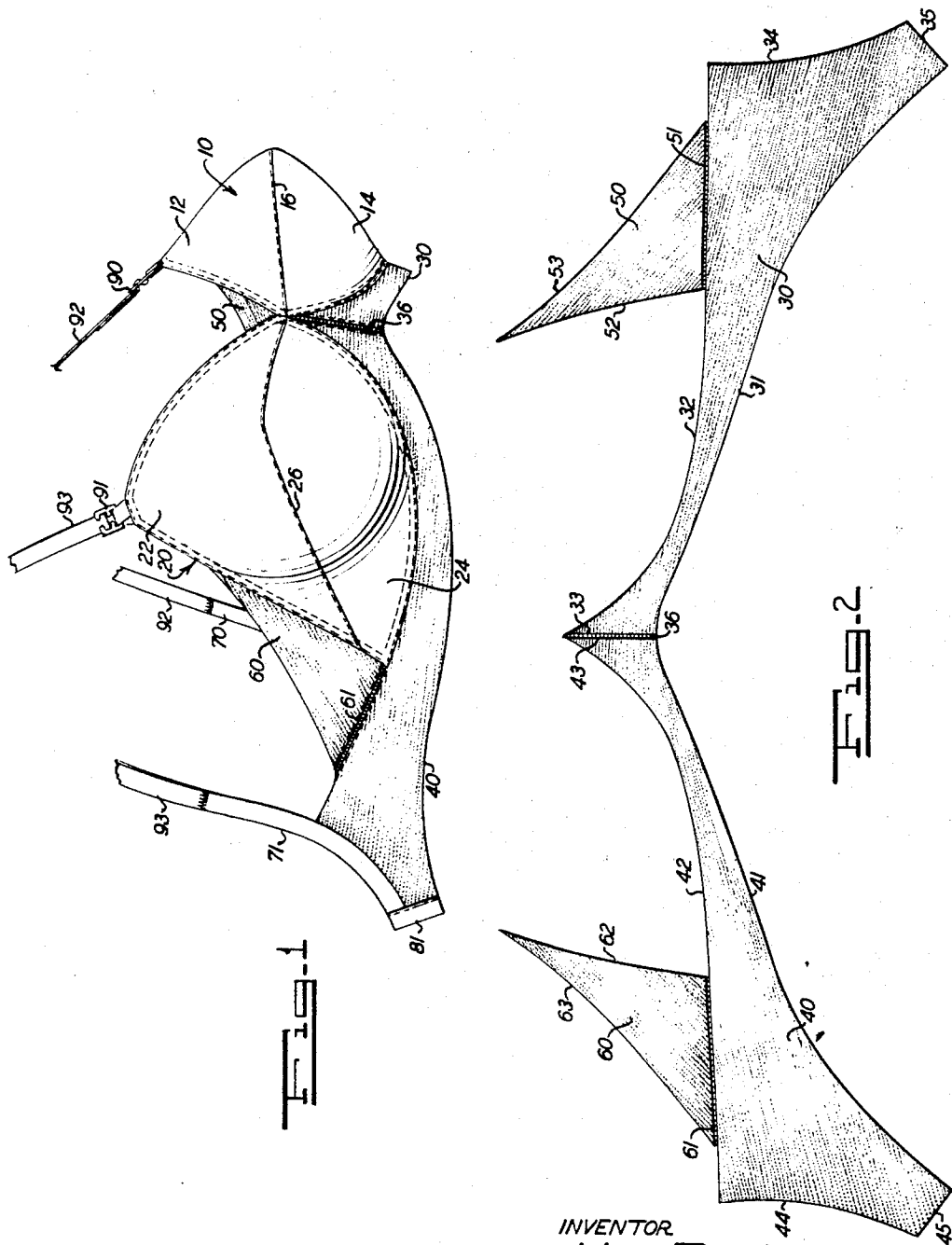
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BRASSIERE

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BRASSIERE

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ABSTRACT OF THE DISCLOSURE

A brassiere constructed to expand and contract in the underarm region of the wearer, the brassiere having a pair of breast cups, a body encircling band, and a rear closure means for holding the brassiere on the body of the wearer, the body encircling band having stretchable left and right halves, each half extending from the front center of the brassiere under its respective cup to said closure means, with each half of the body encircling band having a lower edge, a curved upper edge the inner portion of which is secured to the lower edge of its respective cup and its outer portion is upwardly inclined, a rear edge a portion of which is secured to said rear closure means, and a front edge secured in the central area of the front of the brassiere; and a pair of stretchable triangular-shaped underarm gussets, each gusset including a lower edge secured to the inclined outer portion of the upper edge of its respective half of said body encircling band, an inner edge secured to the outer edge of its respective cup, and a free outer edge.

This invention is a brassiere designed and constructed to expand and contract with the underarm region of the wearer without exerting excessive pressures or uncomfortably restricting the pectoral muscles of the body.

One primary requirement of any brassiere is that it must adequately support and shape the breasts, yet at the same time it must be comfortable and conform to the chest of the wearer, particularly in the underarm region.

In fashioning a comfortable and effective brassiere, many problems are encountered in achieving both comfort and control. This is so because a woman's chest and upper torso muscles experience constant expansion and contraction as she breathes, moves her arms and indulges in other body movements. This constant changing of chest size and shape requires an accommodating change in brassiere size and shape, particularly with respect to the size and shape of the pectoral muscles in the underarm region of the body. The more closely the brassiere accommodates to changes in size and shape of the underarm region, the more comfortable the brassiere.

Although the brassiere designer is faced with numerous problems in fashioning a comfortable yet satisfactory brassiere, one common problem has yet to be adequately resolved, namely, providing a brassiere which is capable of comfortably accommodating women having greater or less developed pectoral muscles. Basically, the underarm region of a brassiere must not only accommodate to the expanding and contracting underarm muscles, but it must also comfortably fit women within each standard brassiere size. Determining the size and shape of the brassiere elements between the breast cups and rear closure is a difficult design problem, which has yet to be adequately resolved. An ideally designed brassiere is therefore one which is capable of properly supporting the breasts and comfortably fitting, within each standard brassiere size, women having differently developed pectoral muscles.

The brassiere of the present invention is designed to both accommodate to each change in chest size and shape

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as the wearer breathes and moves about, and to comfortably fit women within each standard brassiere size who have greater or lesser developed pectoral muscles. My brassiere thus prevents excessive pressures in the underarm region of the wearer, yet advantageously supports and shapes the breasts and comfortably and properly fits the wearer. Because of the improved body movement accommodating feature of the present invention, my brassiere also tends to resist displacement or creep-up in the underarm region of the wearer.

According to my invention, a brassiere is provided with a pair of cups, a body encircling band having left and right halves, and rear closure means secured to the rear ends of the body encircling band. Each half of the body encircling band extends from the center of the brassiere under and is at least in part secured to its corresponding cup, terminating at the rear closure means, with the bands being connected to each other at the rear center of the brassiere by the rear closure means. A pair of triangular shaped underarm gussets are provided, each having one edge secured to its corresponding half of body encircling band, one edge secured to a corresponding cup and one edge free. When the brassiere is on the wearer, the body encircling band is at least horizontally stretchable, while the triangular gussets are at least stretchable in a downwardly and rearwardly direction.

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

FIGURE 1 is a perspective view of my brassiere as seen on the wearer with the right portion rearward of the right cup moved away from the wearer's body to the plane of the drawing, and

FIGURE 2 is a front plan view of the body encircling bands 30, 40 and triangular shaped underarm gussets 50, 60 of FIGURE 1.

It is to be understood that my brassiere may have any known suitable rear closure means and shoulder strap construction; these are not the subject of my invention, and as they are conventional they are merely indicated here.

Referring to the drawings, my brassiere has cups 10, 20 of a "tear-drop" or "spinnaker sail" shape each cup having an upper portion 12, 22 and a lower portion 14, 24, and a generally horizontal seam line 16, 26. The portions 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. The cups may be of non-stretch material, stretch material or a combination of the two. The two cups are connected to each other at the junction of the horizontal midseam thereof, and the vertical midline of the brassiere.

My brassiere includes a pair of body encircling bands 30, 40, a pair of triangular shaped underarm gussets 50, 60, elastic tapes 70, 71, rear closure members 80 (not shown) and 81, a pair of shoulder straps 92, 93, and shoulder strap buckles 90, 91.

Body encircling bands 30, 40 each have a lower edge 31, 41, an upper edge 32, 42, a front edge 33, 43, and a rear edge having an upper portion 34, 44 and a lower portion 35, 45.

The body encircling bands have their front edges 33, 43 secured to each other at the center of the brassiere for example, by conventional ladder stitching 36.

Lower edges 31, 41 are free edges which combine to form an arch that in many respects appears similar to the well-known three-centered or "basket-handled" arch. Lower edges 31, 41 start at the center of the brassiere approximately at the vertical midline thereof, curve down-

wardly under their respective cup 10, 20 and extend rearwardly terminating at their respective rear edge 35, 45. When the brassiere is on the wearer, the lower edges 31, 41 rearward of the cups 10, 20 extend rearwardly in an approximately horizontal line, whereas when the brassiere is laid flat these same edges curve downwardly and rearwardly, as shown in FIG. 2.

Upper edges 32, 42 start at the center of the brassiere approximately at the horizontal midline of the cups, extend along and are secured to the lower edge of their respective cup 10, 20 extend rearwardly terminating at their respective rear edge 34, 44. When the brassiere is on the wearer, the upper edges 32, 42 rearward of the cups 10, 20 slope rearwardly and upwardly at approximately a 30° angle, whereas when the brassiere is laid flat, these same edges extend rearwardly in an approximately horizontal line, as shown in FIG. 2.

Upper rear portions 34, 44 of the rear edges preferably curve downwardly and rearwardly and have conventional stretchable straps 70, 71 secured thereto, thus smoothly edging the upper portions 34, 44 and providing desirable stretch characteristics in this region of the bands. Lower rear portions 35, 45 of the rear edges are substantially straight and when on the body extend in a generally vertical direction, whereas when the brassiere is laid flat edges 35, 45 extend downwardly and forwardly at approximately a 45° angle, as shown in FIG. 2.

Connected to the lower rear portions 35, 45, for example, are conventional rear closure means 80 (not shown) and 81, such as eye tape and hook tape, respectively.

Triangular shaped gussets 50, 60 each have a lower edge 51, 61, which are secured for example, to their respective upper edge 32, 42 of bands 30, 40 by ladder stitching 51 61, an inner edge 52, 62, which are secured for example to their respective cup 10, 20 by conventional continuous line stitching, and a free outer edge 53, 63.

Stretchable tapes 70, 71 extend along and are respectively secured to the upper rear edges 34, 44 of bands 30, 40, and extend slightly beyond the junction of upper edges 32, 42 and upper rear edges 34, 44 in the neighborhood, for example of 3 inches.

Shoulder straps 92 93 are preferably non-stretchable and have one of their ends secured to a corresponding upper end of tapes 70, 71 while their other ends are respectively connected in conventional manner to a corresponding shoulder strap buckle 90, 91.

In a preferred embodiment of my brassiere, cups 10, 20 and shoulder straps 92, 93 are non-stretchable, while the body encircling bands 30, 40 and triangular gussets 50, 60 are stretchable at least in one major direction.

Body encircling bands 30, 40 when on the body have their major stretch direction in a substantially horizontal or girthwise direction. However, when the brassiere is in a flat position, i.e., in the plane of the drawing, the major stretch direction of the front portion of bands 30, 40 is still substantially horizontal but the major stretch direction of the rear portion of band 30, 40 extends downwardly and rearwardly at a small angle to the horizontal, as shown in FIG. 2.

By this construction of the body encircling bands 30, 40, my brassiere advantageously accommodates to changes in chest size and shape as the wearer breathes and moves about. Additionally, a slight amount of independent movement of one band with respect to the other band is provided by virtue of the use of ladder stitching 36 to secure the bands together at the front center, particularly in the area below the breast cups. This independent relative movement feature between the bands is most needed when the wearer raises or moves one arm and not the other, thus causing a corresponding breast and front chest size change.

Triangular-shaped underarm gussets 50, 60 when on the body have their major stretch direction in a downward and rearward direction at an angle slightly dis-

placed from the horizontal, whereas when the brassiere is in a flat position, the major stretch direction although still downwardly and rearwardly is now more displaced from the horizontal.

By this construction of the triangular gussets 50, 60, my brassiere advantageously accommodates to the constantly expanding and contracting pectoral muscles of the wearer. Further, a slight amount of independent movement of the gussets with respect to its corresponding band is provided by virtue of the use of ladder stitching 51, 61 to secure these members together. This independent relative movement feature between the gussets and bands is most needed when the wearer raises and moves her arms, bends and stoops, thus causing the pectoral muscles to expand and contract.

The above described independent relative movements of elements, and the use of elements stretchable in the directions above described combine to provide a brassiere that comfortably and properly fits women within each standard brassiere size who have greater or lesser developed pectoral muscles, and who have longer or shorter side upper torso dimensions.

Heretofore, the nature, type or quality of materials preferably used in constructing my brassiere have not been specified. For exemplary purposes only, it is desirable to (1) construct cups 10, 20 and straps 92, 93 of non-stretch materials, such as cotton, (2) construct bands 30, 40 and gussets 50, 60 of all-way stretch materials, such as elastic power net and (3) construct tapes 70, 71 of one-way stretch tape, such as elastic tapes with the direction of stretch being parallel to the side edges of the tapes.

It will be apparent from the foregoing description of a preferred embodiment of my invention that a novel brassiere is provided which both accommodates to each change in chest size and shape as the wearer breathes and moves about, and comfortably fits women within each standard brassiere size, notwithstanding under or over developed pectoral muscles and larger or smaller side upper torso dimensions, yet my brassiere prevents excessive pressures in the underarm region of the wearer and advantageously supports and shapes the breasts and comfortably and properly fits the wearer. Resistance to brassiere displacement or creep-up in the underarm region of the wearer is a bonus feature provided by my invention.

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.

I claim:

1. A brassiere including a pair of cups; a body encircling band and a rear closure means in which:

(a) said body encircling band comprises stretchable left and right halves, each half thereof extending from the front center of the brassiere under its respective cup to said rear closure means;

(b) each half of said body encircling band includes,

- (1) a lower edge,
- (2) a curved upper edge, the inner portion of which is secured to the lower edge of its respective cup and its outer portion is upwardly inclined,
- (3) a rear edge, a portion of which is secured to said rear closure means, and

- (4) a front edge secured in the central area of the front of the brassiere; and
- (c) a pair of stretchable triangular-shaped underarm gussets each including,
- (1) a lower edge secured to the inclined outer portion of the upper edge of its respective half of said body encircling band,
 - (2) an inner edge secured to the outer edge of its respective cup, and
 - (3) a free outer edge.
2. Brassiere of claim 1 in which:
- (a) the halves of said body encircling band are independent elements; and
 - (b) said independent halves being secured to each other at the front center of the brassiere in a manner permitting independent relative movement therebetween.
3. Brassiere of claim 1 in which:
- (a) the halves of said body encircling band are independent elements;
 - (b) said independent halves being secured to each other at the front center of the brassiere by ladder stitching so as to permit independent relative movement therebetween; and
 - (c) said independent halves being releasably secured to each other at the rear center of the brassiere by said rear closure means.
4. Brassiere of claim 1 in which:
- (a) said body encircling band is stretchable in at least one direction; and
 - (b) when the brassiere is on the body, the direction of stretch is substantially horizontal.
5. Brassiere of claim 1 in which:
- (a) said triangular gussets are stretchable in at least one direction; and
 - (b) when the brassiere is on the body, the direction of stretch extends downwardly and rearwardly.
6. Brassiere of claim 1 in which:
- (a) said body encircling band is stretchable in at least one direction; and
 - (b) when the brassiere is in a flat position, the direction of stretch of its center portion is substantially horizontal while the direction of stretch of its outer portions extend downwardly and outwardly.
7. Brassiere of claim 1 in which:
- (a) said triangular gussets are secured to their respective half of said body encircling band in a manner permitting independent relative movement therebetween.
8. Brassiere of claim 1 in which:
- (a) said triangular gussets are secured to their respective half of said body encircling band by ladder

- stitching so as to permit independent relative movement therebetween.
9. Brassiere of claim 1 in which:
- (a) the upper edge of each half of said body encircling band when on the body, starts at the center of the brassiere approximately at the horizontal midline of the cups, extends along the lower edge of its respective cup, and then extends upwardly and rearwardly terminating at its respective rear edge.
10. Brassiere of claim 1 in which:
- (a) the lower edge of each half of said body encircling band when on the body, starts at the center of the brassiere at approximately the vertical midline thereof, curves downwardly under its respective cup, and then extends rearwardly terminating at its respective rear edge.
11. Brassiere of claim 1 in which:
- (a) the free outer edge of said triangular gusset starts at a point on the upper half of its respective cup and extends downwardly and rearwardly terminating at the upper edge of its respective half of said body encircling band.
12. Brassiere of claim 1 in which:
- (a) said cups are generally tear-drop or triangular in shape.
13. Brassiere of claim 1 in which:
- (a) said body encircling band is constructed of two-way stretch material with the major stretch direction extending in a substantially horizontal direction when the brassiere is on the body; and
 - (b) said triangular gussets are constructed of two-way stretch material with the major stretch direction extending downwardly and rearwardly when the brassiere is on the body.
14. Brassiere of claim 1 in which:
- (a) the lower edge of said body encircling band when the brassiere is in a flat position, forms an arch substantially similar to a three-centered or basket-handled arch.

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ADELE M. EAGER, *Primary Example*

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