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3,164,155

BRASSIERE

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2 Sheets-Sheet 1

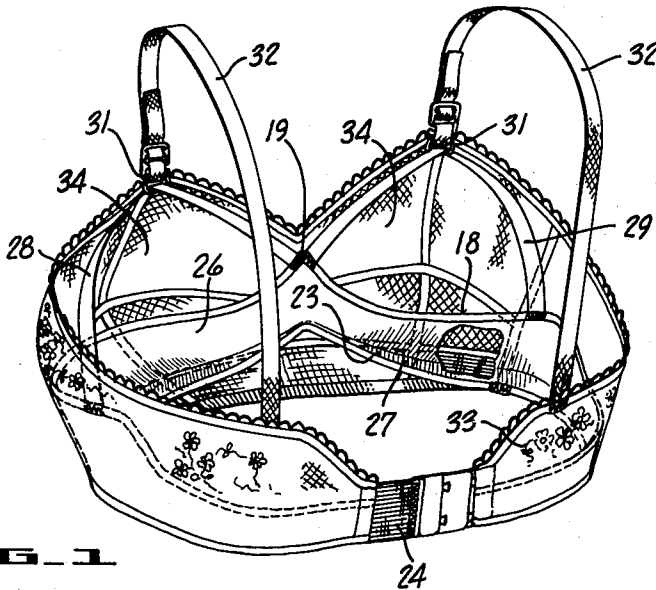


FIG. 1

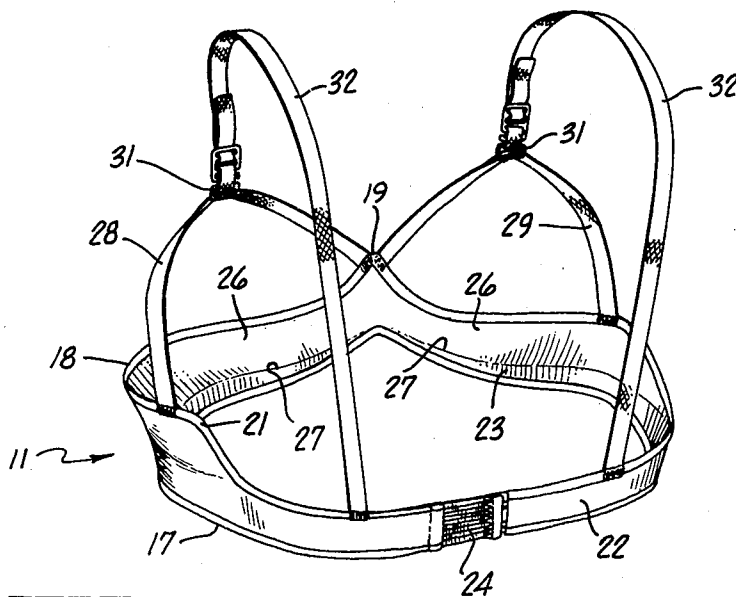


FIG. 2

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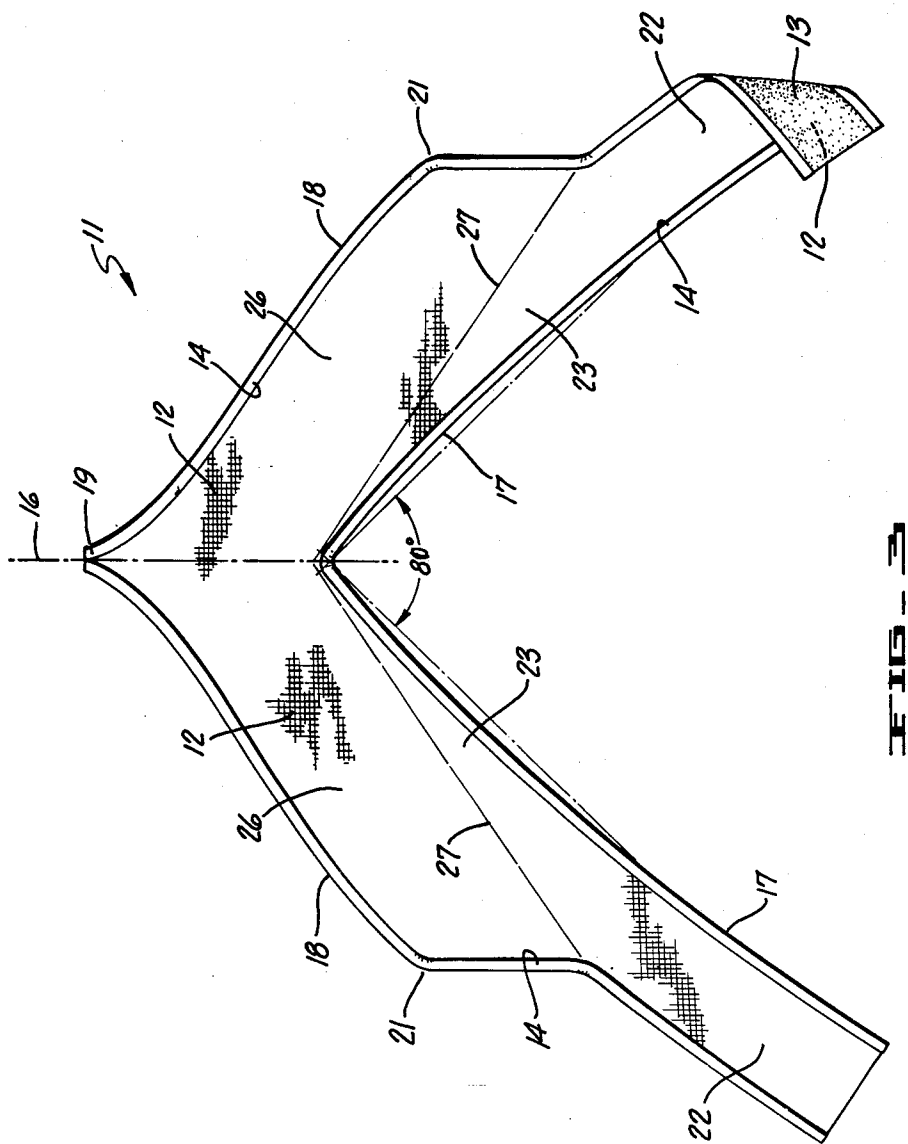
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6 Claims. (Cl. 128-486)

The present invention relates to a brassiere having two main parts, a breast covering part which is incidental to the present invention and a breast support part wherein lies the principal part of the herein disclosed invention.

There are in the art patents in which the overall purpose and operation of a brassiere has been divided into the two parts and functions of covering and supporting of the breasts. Such patents are those to Brady 2,516,749, July 25, 1950; Dombek, 2,698,940, January 11, 1955, and Ramsell, 3,033,206, May 8, 1962.

In the prior devices there has been a lack of appreciation of the breast and mammary structures, on the one hand, and, on the other, a lack of understanding of the construction, functioning, and use of fabrics. The constricting of the breasts by means of a band or web tensioned around the chest may have serious effects from reduced circulation and displacement of the mammary glands. Attempts to support the breasts in a natural manner have resulted in complicated and ill-fitting structures.

Having in mind the above mentioned and other defects of the prior art devices, it is an object of the present invention to devise a two part brassiere in which one of the parts is designed to support the breasts of a wearer in a natural manner, in a manner so as to eliminate the weight of the breasts stretching the skin and muscles covering the top surfaces thereof, and generally to prevent the weight of the breasts from effecting elongation thereof, and in a manner so as, also, to give side support to the breasts not only in the sternal region but in the lateral pectoral region so that there will be no tendency for the mammary glands to retreat to under the arms or for the glands under the arms to sag from a lack of support. In the sense that the mammary glands of a wearer of a brassiere of the present invention, have been unnaturally or improperly displaced in the past by improper support, the present brassiere may be considered to be a therapeutic device in that it allows and aids in the return of the breasts to their natural and intended position and shape.

Another object of the invention is the construction of a brassiere having a breast support part made in and from one continuous piece of fabric, aside from the accessories needed therewith.

A further object is that of constructing a brassiere that will give support under the arms so that there will be no tendency for the mammary glands to enlarge in such regions, and so that if there are enlargements under the arms there will be a factor acting for reduction thereof.

The above mentioned defects of the prior art are remedied and these objects achieved by the use of a brassiere breast support part that, describing the part as worn by a woman, has a portion thereof that covers and lies against the rib cage just below the breasts, the inframammary region, and around the rib cage under the arms to the scapular region where the ends of the part are joined together across the back by an elastic web and fasteners; and by portions that conform to the lower surfaces of the breasts from the juncture thereof with the inframammary region to adjacent the nipples, and from the sternal region between the breasts to the lateral pectoral region, about directly below the middle of the arm pits. Such part is cut in a single piece in V-shaped form from a relatively stiff piece of fabric. The juncture of the wide legs of the V-shaped part may be called the sternal line of the part, or juncture, and this line is in the direction of the warp or weft yarns of the fabric. Thus, the

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elongation of each of the legs is at a salient angle to the threads of the fabric. Or, as the garment trade would say, the part is cut on the bias. This means that when the part is positioned and tensioned on and around the wearer as above described, the legs of the V-shaped part will stretch to allow the breast contacting portions to conform thereto while the other portion conforms to the rib cage. Straps attached to the upper edges of the part provide the upward support.

Most of the breast support part of the brassiere and the upper portions of the breasts are covered by the breast covering part which is, principally, in the form of a cup for each of the breasts. The cups are sternally joined together, secured to the support part at the lower pectoral edge thereof, fastened to the straps which are attached to the upper edges of the breast support portions. These cups are not to function as breast supports, only as coverings.

A brassiere such as briefly described above is herein-after described in detail and illustrated in the accompanying drawings, in which:

FIGURE 1 is a perspective view of a brassiere embodying the present invention with the brassiere positioned as if on a woman, the view being from the back of such woman, and with some of the back portion of the covering part and straps broken away.

FIGURE 2 is a perspective view of the breast support part shown in FIGURE 1 without the covering part but with back tie and support straps to make it a complete breast supporting brassiere, and with the view taken from and with the same aspect as FIGURE 1.

FIGURE 3 is a plain view of the breast support part with edge binding tape applied thereto, and with the part in planar position.

The breast support part 11, illustrated in the various views, has been cut as a single V-shaped piece from a material that weighs from one to two ounces per square foot. The cloth is a double cloth with one side 12 plain woven and tight, about eighty threads per inch, and the other side 13 a loose plain weave, about thirty-six threads per inch, with a nap giving a soft flannel like surface. The brassiere is fashioned so that the nap side is worn against the body. The support part 11 is cut in the V-shaped form shown in FIGURE 3, when flat, and the long edges are bound with a bias tape 14 so that the edges of the fabric of the part 11 do not fray or chafe the wearer. The support part 11 is cut from the cloth so that one set of the yarns thereof, warp or weft, is parallel to the sternal line 16, the juncture of the legs of the V-shaped piece 11. This means that the length, or longitude, of each of the legs of the V-shape is on the bias with respect to all the yarns used in weaving the cloth thereof. In this respect, the double cloth is taken as a single cloth. In the double cloth, each set of yarns of a cloth making the double cloth is parallel to a set of yarns in the other cloth of the double cloth. In the terms of the garment industry, the legs of the V-shaped support part 11 are cut on the bias. The interior, or lower, edges 17 of the support part 11 form an angle substantially between seventy and ninety degrees, and each edge is slightly concave inward of the part. Each of the upper, or exterior, edges 18 of the support part is in the form of an ogree, being concave for about two inches adjacent the sternal point 19 and slightly convex away from the point 19. From the sternal point to the inflection of the curve, the width of each leg, from lower to upper edge, decreases. This variation in width may be measured as the shortest distance between interior and exterior edges or it may be measured parallel to the sternal line. Beyond the inflection, the width increases to a point 21 about two-thirds of the length of each leg of the V-shape. This later point 21 comes substantially under the center of the arm-

pit, the axilla, of the wearer. From this armpit point, the width of each leg decreases rapidly to what may be called the pectoral web 22, an extension of the triangular chestcloth portions 23 of the support part 11 of the brassiere. This rapid decrease in width is had by cutting substantially parallel to the sternal line. This pectoral web 22 is of short length, and the ends thereof are secured to the elastic and fastening means 24 which secure and draw the ends of the support part across the back of a wearer. The pectoral webs 22 and the elastic 24 constitute a back tie for the brassiere. The angle mentioned above and formed by the general outline of the lower edges 17 of the chestcloth 23 is formed by the sternal juncture of the edges and the beginning of the pectoral web 22 at the termination of the width decrease of each leg of the support part.

As may be seen from FIGURES 1 and 2, the support part of the brassiere may be divided into two portions from the location and functionality thereof. The pectoral webs 22 lie flat against the rib cage of the wearer, and this is true of the lower portion of the part 11 as it fits to the inframammary region below the breasts in a tapering web 23 under each breast, which web 23 is a continuation of the pectoral web 22 that is about an inch and a quarter wide at its juncture with the inframammary web 23 that tapers to a point at the sternal line 16 where the inframammary webs 23 join together. Above these inframammary webs 23, or chestcloth portions, the support part 11 may be designated as a breastcloth as its function is to contact the breasts. As the chestcloth portions 22, 23, 24, when worn, are tensioned in a web against and around the chest, the breastcloth portions 26 must, and do, flare outwardly from the chest to conform to the breasts. This is possible because the legs of the V-shaped part are cut on the bias, because of the V-shape of the part, and because of the concave lower edge. This curving of the lower edge allows the chestcloth portion of the support part 11 to flare outward and upward a little as most rib cages do below the mammary. This flare, also, comes from the V-shape of the part as, when the part is tensioned around a wearer, the lower edge loses much of the V-shape of FIGURE 3, more so away from the sternal line, to approximate the form of FIGURES 1 and 2. This flare allows the breastcloth portions to accommodate the breasts. Further, the bias cut of the legs of the support part allows the chestcloth portions 23 to conform snugly to the chest and for the breastcloth portions 26 to flare outwardly sharply from the juncture 27 of the chest 23 and breastcloth 26 portions. Also, the bias cut and the curve of the lower edge 17 allow the juncture 27 of the chestcloth and the breastcloth to follow the lower curve of the breasts of the wearer. This following of the lower curve of the breasts results in the lower end of the sternal line 16 of the support part being well above the lowest portions of the breasts, and the peak, or point 19, being above the nipples with its adjacent concave upper edges giving sufficient material adjacent the sternal line for the adjacent breastcloth material to curve in between the breasts for contact with the breasts and contact with or close adjacency to the sternalis of the wearer. Thus, the opposed portions of the breasts receive lateral support and the lower surfaces receive upward support. The divergence between the upper and lower edges of each leg from the sternal line 16 to the under arm point 21 gives sufficient width for lateral support of the breasts from the outer sides. When worn, the sternal juncture of the lower edge 17 is at or above the upper edges of the pectoral webs 22. The spread of the breasts from the sternal line may be varied in proportion to the length of the concave curve of the upper edge 18 adjacent the sternal line 16. Further, variations in chest and breast size are accommodated by variations in the length and width of the legs and the angle of the V-shape of the support part 11. With an appreciation of the above concepts, the support 11 may be cut so as to mold

and fit many sizes and shapes of breasts so that they will take their intended shape and form, and the support will perform its function without the application of uncomfortable pressure and binding to the chest and breasts.

Straps are provided for holding the breast support part 11 in upward position. Two breast support straps 28, 29 have an end of each secured to the sternal point 19 and from the sternal point the straps diverge to at or inward of the armpit points 21. These straps may be adjustable in length to achieve good fitting of the brassiere. Each of the breast support straps should lie above but near a breast, and is held up by passing loosely over a bar of a keeper 31 in a manner that allows the keeper to slide smoothly along its strap as may be required by movement of the wearer. The keepers are held by shoulder straps 32, one for each keeper. One end of a shoulder strap is adjustably secured to a keeper and the other end is secured directly to the pectoral web 22 or thereto by way of a back cover 33 that is outside of the support part 11. If a back cover is used, it is secured along its lower edge to the lower edge 17 of the support part 11 only along and adjacent the pectoral web 22. These back covers 33 are sewn to the lateral edges of breast cups 34, or covers. These covers 34 are joined together sternally but are not secured to the support part 11. The middle top edge of each cup is adjustably secured to one of the keepers 31.

The above described construction provides a breast support structure made in a single piece so that there are no seamed joints to chafe the wearer, and in a single piece which will conform to the chest and to the breasts because of its V-shape and its bias cut. Further, the breast support part gives lateral support and form to the breasts as well as upward form and support, and all this without constriction thereof.

Having thus described my invention, its construction and use, I claim:

1. A brassiere having a breast support part formed as a continuous piece of woven yarn fabric, said part, when in a planar condition, having: legs which give it a V-shaped form with interior and exterior edges with the general form of the interior edge of said part being an angle of between seventy and ninety degrees, the legs of said V-shaped part joining together at what may be called the sternal line of said support part, such sternal line bisecting such interior angle and being parallel to a yarn direction of weave of said fabric, the interior edge of each leg of said support part being concave, the exterior edge of each such leg being concave adjacent the sternal line to an adjacent ogee point and convex remote from such point, said interior and exterior edges being divergent with respect to each other from the ogee point, said support part divergent portions being of a length and width to encompass areas of the inframammary and mammary regions of a wearer from the sternalis to below the armpits, and each leg formed with a web which is narrow with respect to the widest width of said part, each web having an edge which is a continuation of the interior edge of a such leg.

2. A brassiere having a breast support part formed as a continuous piece of woven fabric, said part, when in a planar condition, having: legs which give it a V-shaped form with interior and exterior edges, the legs of said V-shaped part joining together at what may be called the sternal line of said support part, such sternal line bisecting the angle of such V-shape and being parallel to a yarn direction of weave of said fabric, said support part being of a length and width to have portions that are adapted to encompass areas of the inframammary and mammary regions of a wearer from the sternalis to below the armpit portions of such wearer, and each of said legs formed with a web having a width that is narrow with respect to the widest width of said part, each said web being an extension of the outer end of one of said legs remote from such sternal line, and each web having an edge which is substantially a continuation of the in-

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terior edge of the leg of which it is an extension whereby said support part and webs will encompass the chest of a wearer of such brassiere and such support part, due to its V-shape and direction of weave, will conform to and support the mammae of the wearer.

3. The combination of claim 2 in which said webs are extended to be of a length to meet across the back of such a wearer and in which such support part width is substantially that of the width of a said web plus substantially half the length of the longitudinal curve of the breast form of such wearer.

4. The combination of claim 3 in which each of said legs of said support part increases in width substantially from such sternal line.

5. The combination of claim 4 to which is added a support strap for each leg of said support part, both straps having an end secured to said exterior edge at the joining of said legs, each strap joined to said exterior edge adja-

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cent the end of a said leg of said support part, and each of said straps being of a length substantially greater than the length of the exterior edge between the ends of such strap.

6. The combination of claim 5 to which is added a pair of joined together breast cups and said cups being secured to said webs and substantially free of direct connection with said support part.

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