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1,948,670

KNITTED SHAPED BUST SECTION

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*Fig. 1.*

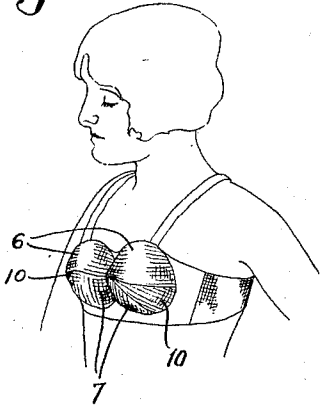


*Fig. 2.*

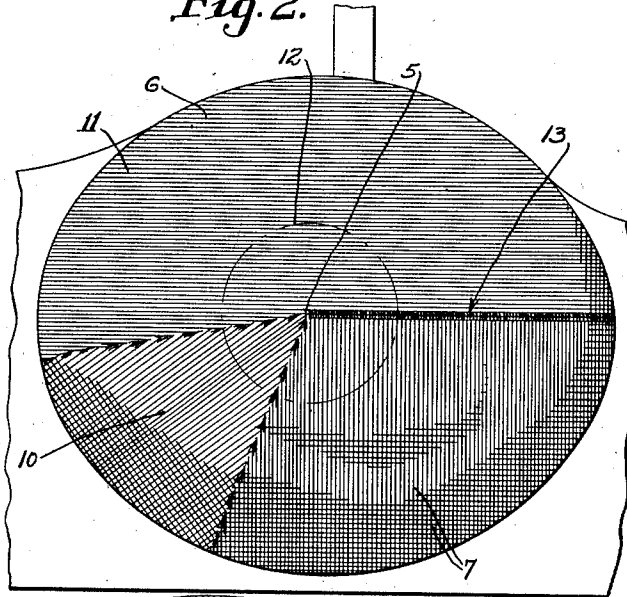


*Fig. 4.*

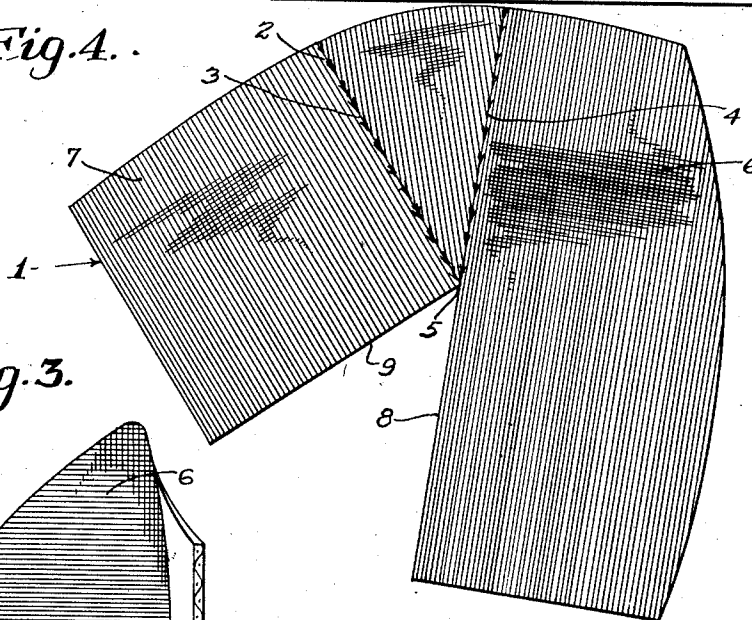
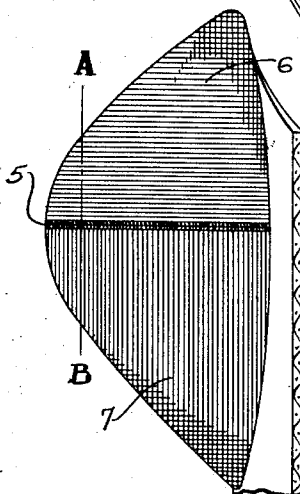


*Fig. 3.*



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## UNITED STATES PATENT OFFICE

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## KNITTED SHAPED BUST SECTION

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3 Claims. (Cl. 66—176)

This invention relates to knitted shaped bust sections adapted to be incorporated in brassières, slips, corsets, foundation garments or any other garments designed to conform to the natural figure of women or to remold or modify the figures of women.

The general object of the invention is to provide a bust section adapted to be knit in the flat on a full fashion hosiery machine having areas differentiated by convergence in the direction of the wales, contiguous areas being delineated by rows of "fashion" formations which determine the convergence of the wales, the tensioning of the knitting in the several areas and in that area which will be the apical region of the section when shaped, being so regulated that when the adjacent edges of the flat knit blank are brought together and united from apex to periphery, the tensioning will be scientifically distributed to produce uniform convexity in the resulting cup or section, while the disposition of the wales is such as to impart a supporting up-lift to the under part of the breast, at the same time yielding substantially freely to the natural contour of the upper portion of the breast, and being maintained relatively firm in the circumferential region of the apex or nipple, all of which attributes have the co-ordinate effect of giving the breasts the firm, up-lifted and yet unrestrained contour of youth.

Another object of the invention is the provision of knit shaped bust sections for garments which will always reassume their original shape after repeated launderings.

Other objects of the invention will appear as the following description of a preferred and practical embodiment thereof proceeds.

In the drawing which accompanies and forms a part of the following specification and throughout the several figures of which the same characters of reference have been employed to denote identical parts:

Figure 1 is a perspective view showing the invention applied to a brassière;

Figure 2 is a front elevation of one of the completed bust sections;

Figure 3 is a side elevation; and

Figure 4 is a plan view of the knitted blank.

Referring now in detail to the several figures, the numeral 1 represents a blank which is knit flat on a full fashion hosiery machine, the fashion formations 2 being so arranged as to delineate two rows 3 and 4 of fashion marks which converge to a common point 5 which will be the apex or nipple region in the finished bust section. The

rows of fashion marks define three areas in the blank in which due to the fashioning, the wales run in different directions. The area 6 constitutes the top half of the bust section as is clearly shown in Figure 2 and in which the wales extend horizontally. In the area 7, the wales extend vertically in the finished bust section while in the intermediate area 10 the wales extend toward the apex 5. In forming the bust section the edges 8 and 9 are brought together and united in a seam 13 in any suitable manner as by a regular full fashion steady dial looping machine. The closure may also be effected by sewing by hand or by machine. In order to effect a satisfactory closure of these edges, the fabric may be knit so that it will not unravel along the edges to be united.

A blank constructed as shown in Figure 4, lends itself to the scientific solution of those problems which arise in the production of a shaped bust cup or section. This is accomplished through two factors, namely, the direction of the wales in the finished bust section, determined by the convergence of the rows of fashion marks and the regulation of the tensioning of the knitting in the several areas. It is well understood by those skilled in the art of knitting fabrics, that the wales are substantially inelastic in the direction of their length, but freely elastic transversely of their length. It will be obvious then from an inspection of Figure 2 in which the completed bust section is illustrated, that the wales in the area 7 which underlies the breast are inelastic in a vertical direction, that is to say, from the base of the breast to the nipple and that therefore they will not yield in a vertical direction to the weight of the breast, but on the contrary, will exert a supporting and up-lifting function. On the other hand, the transverse or horizontal run of the wales in the large area 6 which covers the upper half of the bust, permits a substantially free stretching of this part of the bust section from the nipple upward under the pressure of the upper half of the breast so that this part is free to assume its natural contour. These are the conditions under which the breast assumes its optimum appearance of youthful fullness, namely, that it be up-lifted at its lower portion only, and free elsewhere to assume its natural shape.

With this end in view, the fashioning is done by starting the bust section on a full fashion machine at the top line of the blank shown in Figure 4. The courses run in the same direction as this top line and move downwardly as the knitting proceeds. In making a right bust section

the narrowing fingers of the machine are set to come in two needles from the left of the machine toward the area 7 and one needle from the right of the machine toward the area 6. When making left bust sections, this operation is reversed and the narrowing fingers are set to come in two needles toward the area 6 and one needle in toward the area 7.

This operation continues for as many narrowings as are desired, but is governed directly by the length of the fabric or the shape desired from the top line of the blank down to the bottom line of the area 6.

One can only reduce the width of the triangular area 10 by narrowing fingers coming in over needles from right and left until these narrowing fingers reach the apex 5. This leaves the bust section open between the lines 8 and 9. Accurate coincidence of the lines 8 and 9 when the blank is brought together is accomplished by counting the courses and setting them accurately. A predetermined number of courses is set and then the portion represented by the line 9 is pressed off and the portion representing the width of the area 6, measured widthwise from the apex is continued down until the number of courses in the area 6 below the apex 5 correspond to the number of loops in a course measured along the line 9. The lines 8 and 9 are brought together and joined in any suitable manner as on a steady dial looping machine. To give a curved or rounded shape to the lower outside of the bust section and to draw the nipple toward the center of the chest, the loop formations are regulated to produce a tight knitting on both the right and left sides in the upper left portion 11 of the area 6 and in the lower right area 7 of the individual bust section and loose knitting in the intermediate area 10.

These relative tension values of the knitting are carried in the several areas for about two-thirds the distance from the outer edge toward the apex, but in that region bounded by the circle 12 in Figure 2, and to the left of the plane A—B in Figure 3, the tensioning is regulated as to produce tight knitting in the angle of the intermediate section as well as in the other sections surrounding the apex. This creates a relatively firm area in the region of the nipple.

A bust section manufactured according to the principles of the present invention has the advantage that it will coincide in every portion of its surface with the breast without fullness or wrinkling, and that it will retain its shape regardless of repeated laundering. Due to the controlled tensioning, it presents a smooth continuous convex surface and in view of the disposition of its wales, it lends up-lifting support to the underside of the breast while leaving the upper portion of the breast unrestrained.

It may be made of any suitable material adapted for use in knitting, such for example as cotton,

wool, silk, covered or uncovered rubber, rayon, etc. It is designed not only for brassières, but for any garment in which it may be desired to provide conformation to the natural figure or in which it may be desired to conform or modify the figure to an æsthetic physical standard.

From the manufacturing standpoint, it is simple to make and adapted to be manufactured upon known types of full fashion hosiery machine.

While I have in the above description disclosed what I believe to be a preferred and practical embodiment of my invention, it is to be understood that the specific details as illustrated and described are merely by way of example and that the invention is to be construed with a breadth commensurate to the terms of the appended claims.

What I claim is:

1. Knitted shaped bust section comprising an integrally knit fabric unit including a plurality of courses, and rows of narrowing intersecting said courses and converging toward an apex, defining a triangular area intermediate the ends of said courses, the courses defining an area on one side of said triangular area terminating in that course which embraces the apex of said triangular area, and the area defined by the courses on the opposite side of said triangular area being continued to form an extension beyond that course which embraces said apex, to a length substantially equal to the length of the terminal course of the area on the first mentioned side of said triangular area, the side of said extension and the terminal course of the area on the first mentioned side of said triangular area being united.

2. Blank for a knitted shaped bust section comprising an integrally knit fabric unit having the direction of its courses diverted by rows of narrowing intersecting said courses and converging toward an apex, defining an intermediate triangular area, the courses defining an area on one side of said triangular area terminating in that course which embraces the apex of said triangular area, and the area defined by the courses on the opposite side of said triangular area being continued to form an extension beyond that course which embraces said apex to a length substantially equal to the length of the terminal course of the area on the first mentioned side of said triangular area.

3. Knitted shaped bust section as claimed in claim 1, the tension of the knitting being so regulated as to determine relative tightness of the fabric in the lower outside portion and the upper left side portion of the bust section and relative looseness in said triangular area up to within a relatively short distance of said apex, and uniform tightness circumferentially about the apex of said bust section.

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