

Sept. 3, 1935.

W. ROSENTHAL

2,013,110

BRASSIÈRE

Original Filed Jan. 10, 1933 2 Sheets-Sheet 1

Fig. 1

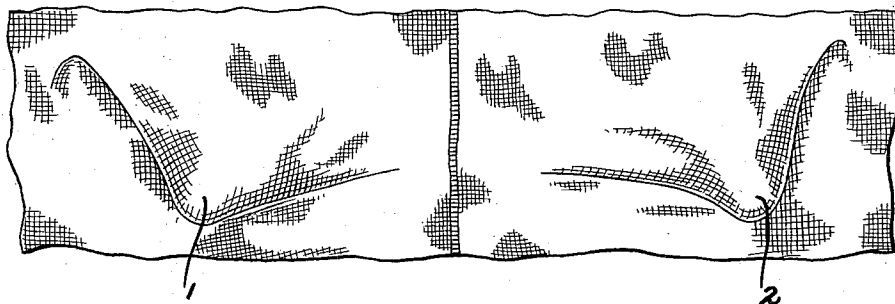


Fig. 2

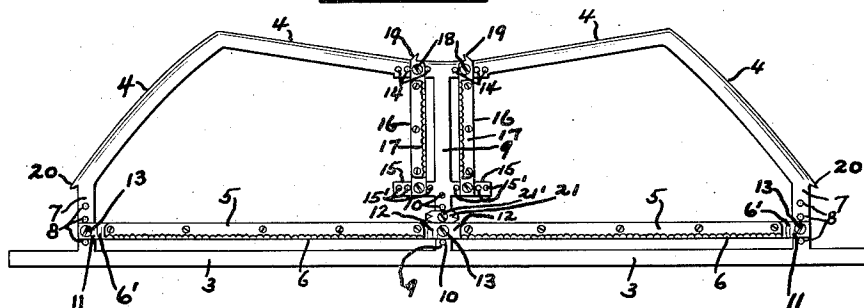


Fig. 3

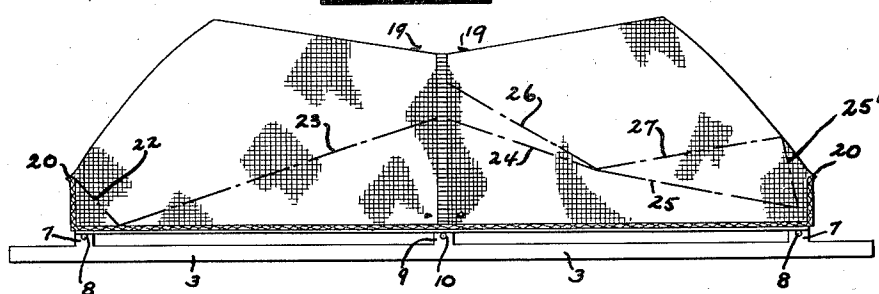
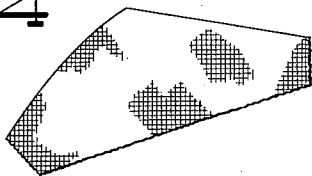


Fig. 4



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Fig. 5

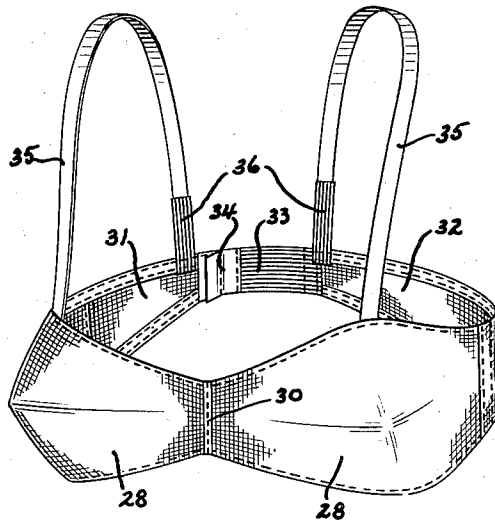
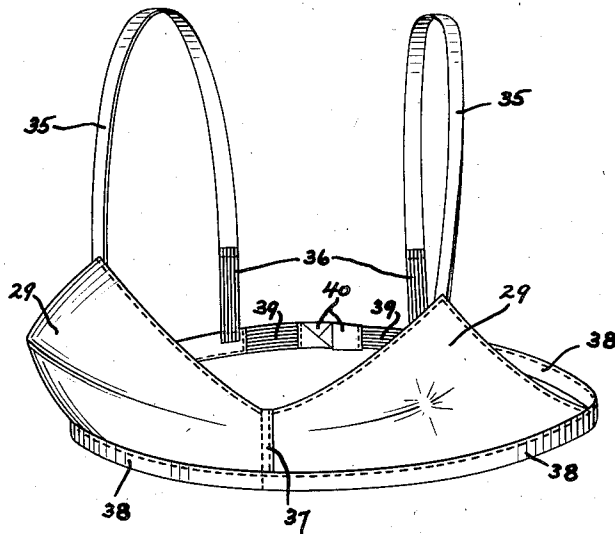


Fig. 6



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UNITED STATES PATENT OFFICE

2,013,110

BRASSIÈRE

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Original applications January 10, 1933, Serial No.
650,966 and March 17, 1933, Serial No. 661,421.
Divided and this application June 3, 1933, Serial
No. 674,128

8 Claims. (Cl. 66—176)

This invention relates to a brassière of knitted fabric in which the pockets for the bust are free of seams, as well as to breast receiving pockets.

This application is a division of my copending applications Serial No. 650,966, filed January 10, 1933, Pat. No. 1,988,516, and No. 661,421, filed March 17, 1933, Pat. No. 1,988,517, and the brassières thereof are made by the improved methods of making such brassières disclosed in said copending applications.

As disclosed by such applications, the methods contemplated are such that the brassière may be made of pockets which may be shaped as desired, irrespective of their original shape as knit, and of course so shaped as to give to said pockets desired form and characteristics not found in the original knitted fabric.

The fabric from which the brassière of this invention may be made can be knitted on a circular knitting machine of the type which produces what is known as "gussets", that is to say pockets which are knit into the fabric during the knitting operation without any seams such as would be required in order to form pockets in flat knitted fabric.

Accordingly, one of the objects of this invention is the creation of a novel seamless breast supporting pocket.

Another object of this invention is the creation of a novel brassière having seamless pockets.

Another object of this invention is the creation of a novel brassière having seamless pockets made of a knitted fabric formed to give the desired breast receiving and supporting configuration.

These and many other objects are secured by the invention hereinafter disclosed.

This invention resides substantially in the combination, construction, arrangement and relative location of parts, all as will appear more fully hereinafter.

Referring to the drawings in which the same reference numerals will be used throughout the several views to indicate the same or similar parts,

Fig. 1 is a diagrammatic illustration of a piece of fabric knit on a circular knitting machine showing the pockets in their original, irregular conical shape;

Fig. 2 is a view of one form of my novel stretching frame over which the fabric is stretched during the process whereby it is given its final shape and characteristics;

Fig. 3 illustrates diagrammatically two pock-

ets cut from the original knitted material and stretched upon the frame of Fig. 2;

Fig. 4 illustrates diagrammatically one manner in which the stretched fabric may be cut to separate the portions which are used to form the respective pockets of the brassière;

Fig. 5 shows one form of a completed brassière and the manner in which the pocket pieces are combined with the rest of the brassière construction; and

Fig. 6 shows another form of completed brassière and the manner in which the pockets may be combined with the rest of the brassière construction.

As pointed out in my copending applications for United States Letters Patent, Serial No. 650,966, filed January 10, 1933, and No. 661,421 filed March 17, 1933, knitted fabric produced by circular knitting up to the time of my invention had never been practical for brassières for the reason that the knit seamless pockets could not be given the proper shape and the elasticity and the other characteristics of the fabric in its original knitted form, allowed the pockets to stretch and to lose whatever shape they had.

By the invention of my applications above mentioned I pointed out how I overcame these defects and produced methods and apparatus whereby I can procure a brassière of knitted fabric with seamless pockets of the size and shape desired, irrespective of their original shape, and which would retain their shape thereafter. Such pockets being seamless all possibility of irritation of the wearer's skin was accordingly obviated.

By the present application which is a division of each of my above mentioned copending applications I intend to disclose the brassière produced as a result of practising the method of said applications on the apparatus therein disclosed.

Turning to Fig. 1, it will be noted that a piece of knit unprocessed material is shown which has two pockets 1 and 2 which consist of excess seamless material formed during the knitting. This fabric produced, as described above, with the integral seamless pockets of irregular conical form is first dyed and then cut to separate from the body of the material the desired part including the two similar pockets. Then the cut edges are sewn to prevent ravelling and the fabric is stretched over the frame 3 as shown in Fig. 3, which frame may be made of any suitable material, and which has the outline desired for the pockets of the finished brassière found in its upper edge 4. For this purpose I have found it desirable to construct and form my

frames as shown in my above identified copending applications, such for example as the frame shown in Fig. 2 hereof which is one of the forms disclosed in said copending applications. I provide the frame employed with serrated strips 5 running longitudinally of and parallel to the base thereof. The serrations on these strips are outwardly projecting and are adapted to engage with the fabric that is stretched on the frame and to hold said fabric in stretched condition.

In Fig. 2 these serrated strips 5 are secured to an adjustable cross rod 6 which is secured to the vertical sides 7 of the frame 3 at different heights by means of screws 13. Each of the vertical sides 7 is provided with a plurality of threaded holes 8 disposed over one another into a given set of which the screws 13 may be screwed. To insure firm contact between the flat surfaces of sides 7 and the flat surface of rod 6 the flat ends of cross rod 6 are slightly joggled as shown at 6' to provide feet 11. The frame 3 is also provided as shown at its midlength with an integral vertical cross member 9 which also has adjacent the end thereof which joins the base of frame 3 a plurality of threaded holes 10 disposed over one another. So that cross rod 6 may be maintained in alignment with the base of frame 3 it is besides the joggling at each end thereof also joggled at its midlength as shown at 12, and may at this point be secured by another one of the screws 13 to the appropriate hole 10 in member 9. The cross rod 6 is, of course, provided with the necessary holes at each foot 11, and in the center to permit of the passage of the necessary screws 13 therethrough and into the appropriate holes 8 in sides 7 and hole 10 in member 9. Thus by securing screws 13 into a selected set of holes 8, 10, the height of cross rod 6 may within the limits of the holes, be adjusted as desired in a vertical direction.

In a like manner frame 3 is provided at upper edge 4, adjacent to and on each side of cross member 9, with a plurality of holes 14, horizontally disposed one next to the other. Cross member 9 is also provided near its lower end and just above the uppermost hole 10 therein with the longitudinally extending horizontal arms 15, each of which is also provided with a plurality of holes 15', horizontally disposed one next to the other. Secured by screws 18 to frame 3 and to each of arms 15 are vertical rods 16 which run parallel to member 9, are adjustable horizontally and also carry serrated strips 17. As is apparent these vertical rods 16, by selectively screwing screws 18 into selected holes 14, 15' may be horizontally adjusted so that said rods within the limits of the holes may be disposed in any pre-desired relation with respect to each other and/or with respect to cross member 9.

Carried by the uppermost end of each of rods 16 are the pin like hooks 19 which are adapted to engage and hold the material in stretched condition. Similarly the frame 3 at the ends of upper edge 4 is provided with the hooks 20 for receiving and holding the material when stretched on the frame. By providing the serrated strips 5 and 17 on the respective rods 6 and 16, which rods are adjustable as just pointed out, I am able to adjustably arrange for predetermined amount of stretching at one time of either both pockets or a single pocket.

To insure a firm holding of the material I also provide adjacent to and secured by screw 21' at the hole immediately above that to which cross rod 6 is secured on cross member 9, the element

21 which is provided with a plurality of prongs. This member will aid in receiving and holding opposed portions of the pocket material in stretched condition under tension at the mid-length point along and just above the base of frame 3. In place of this construction, which may be observed in Fig. 2, I may substitute and use with equal effect any other suitable holding member for this purpose. Thus, as disclosed in my copending application Serial No. 661,421, filed March 17, 1933, I may employ, instead of a single element 21 disposed on one side of cross member 9, an arrangement of two elements disposed on opposed sides of member 9 and secured thereto by any suitable securing means. This two element construction would of course be provided with holding prongs similar to those of the single element construction shown in Fig. 2, so that the same desired effect may be procured thereby without the necessity of having the prongs of different lengths depending on whether they are to be bent backward or forward.

The circular knit fabric comprising either two unformed pockets as shown in Fig. 1, or a single unformed pocket as the case may be, is stretched over the frame 3, as shown in Fig. 3, and the material at the front and back of the frame caught on the serrations, prongs, etc. Screws 13 are unscrewed and cross rod 6 is pulled down until the fabric is firmly stretched over the frame 3 to the desired degree with the pockets or pocket taking the outline of the upper edge 4 thereof. Cross rod 6 is then secured with the fabric in this stretched condition by screwing screws 13 into the appropriate set of holes 8, 10.

In doing this, of course, the fabric is caught on the pins 19, 20, as well as on the prongs of the member 21 or other central holding means, as the case may be, as well as by the appropriate serrated strips 5 and 17. In the event that two unformed pockets are being stretched all of these holding devices are brought into play. In the event, however, that but one pocket is being stretched, then but one-half of the frame either right or left need be used. It will, of course, be understood that after the rods 6 and 16 have once been adjusted as desired the frame may be repeatedly used without further adjustment for other pieces of fabric to be successively treated. When the fabric is stretched, as above pointed out, the desired outline is given to the pockets and they are flattened as required so that the material may thereafter, when subsequently removed from the frame, be conveniently cut and otherwise practically commercially treated and handled. The fabric thus stretched is steamed or otherwise heat treated and then permitted to cool and dry upon the frame.

It will also be understood that due to the fact that the material after blocking is flattened that a number of pockets after removal from the frame can be stacked and simultaneously and uniformly cut as desired, thus reducing manufacturing time and expense. When it is removed it will be found the pockets have lost their original shape and outline and have permanently taken the outline of edge 4 of the frame and also, before being spread apart, instead of being generally conical in shape, are exceedingly flat, as shown in Fig. 3. It will be found that the pockets will retain this outline and flatness throughout the life of the brassière and will not revert to the original shape.

After the fabric has been steamed, set and removed from the frame the individual pockets

are cut therefrom as shown in Fig. 6, by either cutting along the lines of cut 22 and 23 for both sides or 24, 25 and 25' for one side and 26 and 27 for the other side, to produce pockets either of the type 28 or 29 (see Figs. 5 and 6) as the case may be. Thus, by changing the manner of cutting the material after treatment on the frame, the final outline of the pocket may be selectively arranged for. When cut the sides of the pockets are spread apart, and if the pockets are not already secured together, they may be sewn together and connected to the rest of the brassière to form the completed article as shown in Fig. 5 or 6. If desired the pockets after being spread apart may be joined together and attached to the body of a complete woman's undergarment, chemise, or foundation garment, or may be as stated made up into a brassière which in turn may be secured to other garments for the lower limbs of the wearer to form combination garments.

It will, of course, be understood at this point that in many instances it may be found desirable to use, instead of a skeleton framework a stretching form of solid material provided with a multiplicity of holes, which will permit of steam treatment of the material stretched on that form, and through which steam or hot air used for drying purposes may be readily passed transversely thereof to permit of the appropriate treatment of the material stretched thereover. A frame of this type, as well as a frame comprised of two partially curved sheets joined together along the upper edge 4 have been shown in my copending application Serial No. 661,421 filed March 17, 1933.

It may also be found desirable to use in place of the skeleton framework shown in Fig. 2 hereof a frame such as that shown in my copending application Serial No. 650,966, filed January 10, 1933. Such being the case it is of course to be understood that the pockets for the brassière of the present application may be satisfactorily made on any one of these different types of frames, and accordingly I do not intend the present application to be limited to brassières having pockets made only on the frame shown in Fig. 2. Employing however either the frame of Fig. 2 or any one of those shown in my above identified copending applications, I am able to convert a fabric which is utterly useless for brassières into a very useful type of fabric for that purpose and obtain a brassière having seamless pockets of any desired outline by appropriate treatment and cutting, irrespective of their shape and outline in the fabric as originally cut.

Since the original size and shape of the pockets have no effect within wide limits upon the size and shape of the finished pockets, I am able to produce a large variety of pocket sizes and shapes from the identical fabric, thus greatly simplifying and reducing the cost of manufacture.

The pockets thus shown, shaped and appropriately cut, may after blocking have the flat sides thereof separated to give depth thereto as above stated, and be incorporated in any desired brassière construction such as that shown in Fig. 5 or 6. In Fig. 5 the brassière consists of two pockets 28 attached to each other as shown at 30. The free ends of the pockets are attached to additional fabric back bands 31 and 32. One of these back bands, to wit 32, terminates in a piece of elastic 33, the free end of which is se-

cured to the free end of back band 31 by cooperating hooks and eyes as at 34.

The usual shoulder straps 35 may of course also be provided. As shown, these shoulder straps if desired may also be provided with elastic elements 36 interposed in the length thereof near the end thereof so as to lend to said shoulder straps a certain degree of adjustability. In Fig. 6 the pockets 29 are obtained by cutting the fabric on the front of the frames along the lines 24, 25 and 25', and that on the back of the frames along the lines 26 and 27. The pockets formed, if not already secured together may be secured along the line 37. Secured to these pockets along the bottom edges thereof is a strip 38 which extends past the pocket around the wearer's body and replaces the usual back bands. Secured to each free end of the strips are elastic elements 39 which are adapted to be joined together at the free ends thereof by tabs 40 carrying the necessary hook and eye. The embodiment also is provided with shoulder straps 35 and the elastic elements 36 so as to give a certain degree of adjustability to the shoulder straps. In the embodiment shown in Fig. 6 the elimination of the usual back bands presents a brassière of lighter, more dainty and fragile construction. The proportions of the respective brassière will, of course, be determined by the dimensions of the different elements, as well as by the shapes and sizes to be produced, whereas the size, shape and outline of the pockets themselves are determined by the outline and dimensions of the particular stretching frame described above.

It will be understood, of course, that the desired pockets may be produced either individually or in pairs, as well as in numerous other ways within the scope of the invention.

It will also be understood that variations in the construction of the different stretching frames may be made in a number of possible directions so that the same general desired results may be obtained, and that the frames may with equal success possibly be used for purposes other than those herein described. Moreover, I am of course aware that many changes in the details of construction and relative arrangement of parts, as well as in the steps, sequence or combination of steps may readily suggest themselves to those skilled in the art, and I do not, therefore desire to be limited to the exact details disclosed by way of illustration, but rather to the scope and spirit of the invention as I define it in the appended claims.

What I seek to secure by United States Letters Patent is:

1. A flat blocked seamless breast receiving pocket adapted to have the sides thereof spread apart for breast reception.
2. A brassière provided with flat blocked seamless pockets adapted to be spread apart to receive the breasts.
3. A brassière provided with flat blocked seamless pockets.
4. A brassière comprising a pair of flat blocked joined seamless breast receiving pockets formed from a knitted fabric having pockets therein of a shape other than that of the finished pockets, said pockets being adapted to be spread apart for breast reception, back bands secured to the free ends of said pockets, means for joining the free ends of said back bands together, and means for supporting the brassière on the wearer's shoulders.
5. A brassière comprising a pair of flat blocked

joined seamless breast receiving pockets formed from a knitted fabric having pockets therein of a shape other than that of the finished pockets, said pockets being adapted to be spread apart
5 for breast reception, a waist band secured to said pockets along their lower edge and encircling the body of the wearer, means for securing the free ends of the waist bands together, and means for supporting the brassière on the wearer's shoulders.
10 6. The brassière recited in claim 4, characterized in that the pockets are formed from the knitted fabric after processing thereof by cutting each pocket of said knitted fabric along two lines

of cut and separating the sides of the knitted fabric.

7. The brassière recited in claim 5, characterized in that the pockets are formed from the knitted fabric after processing thereof by cutting
5 each pocket of said knitted fabric along five lines of cut and separating the sides of the knitted fabric.

8. A flat blocked seamless breast receiving pocket adapted to have the sides thereof spread
10 apart for breast reception, said pocket being adapted to incorporation into an undergarment.

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