Aug. 25, 1959 M. LÓPEZ-HENRIQUEZ 2,900,982

BRASSIERE CONSTRUCTION

Filed July 13, 1956

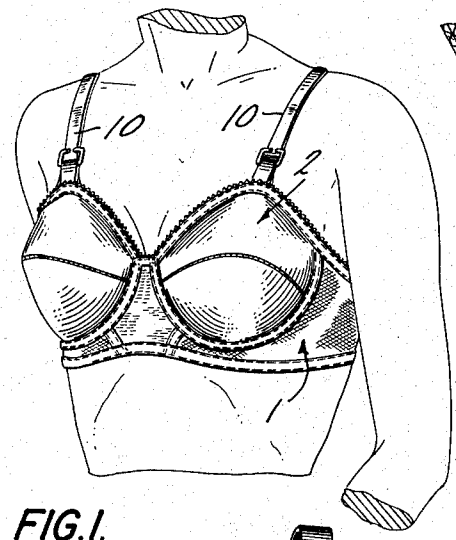



FIG. 1.

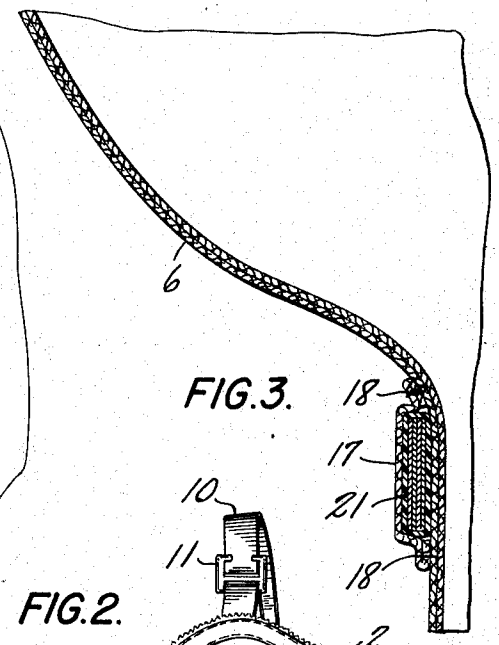



FIG. 3.

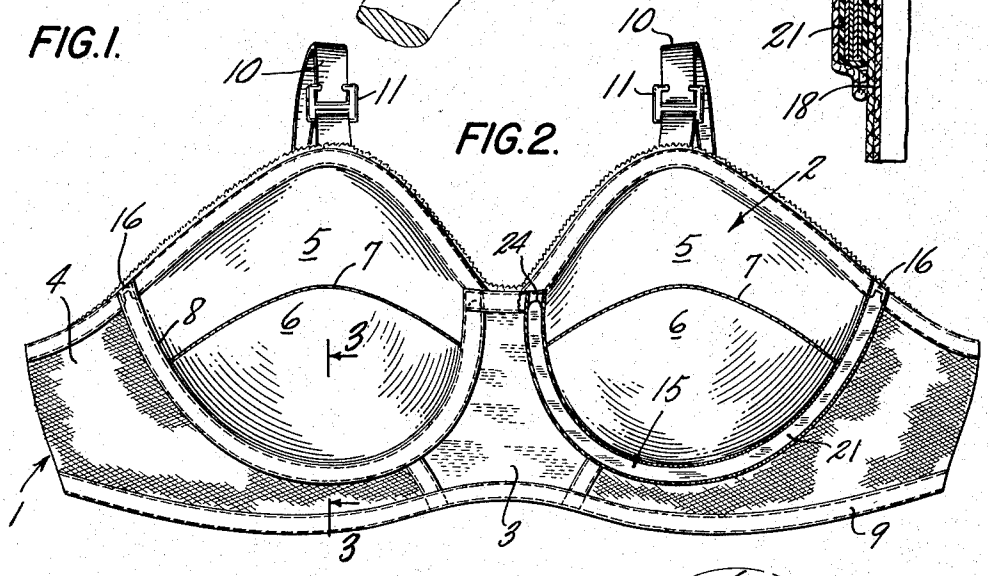



FIG. 2.

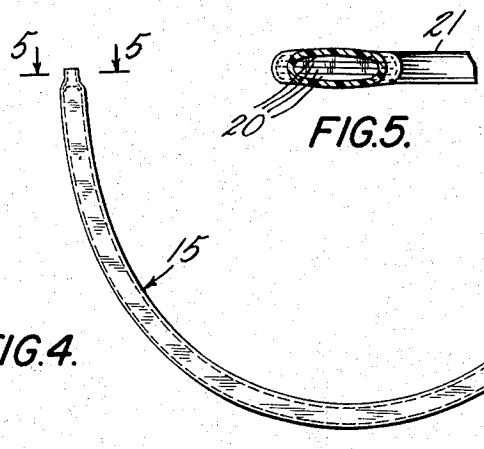



FIG. 4.




FIG. 5.

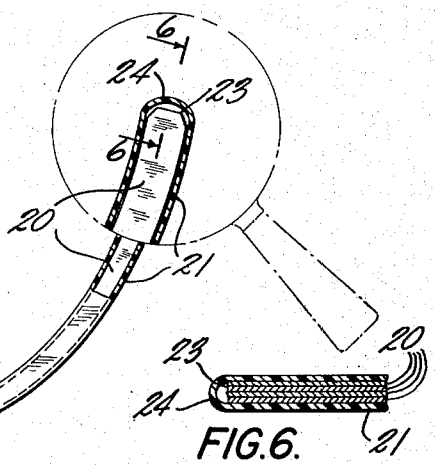



FIG. 6.

United States Patent Office 2,900,982 Patented Aug. 25, 1959



2,900,982

# BRASSIERE CONSTRUCTION

Miguel López-Henriquez, Bronx, N.Y.

Application July 13, 1956, Serial No. 597,744

4 Claims. (Cl. 128—476)

The present invention relates to a lady's garment of the bust covering type which will, for convenience, hereinafter be referred to as a "brassiere," the term "brassiere" being used to designate an undergarment or outer garment having a bust covering portion.

It is an object of the invention to provide a brassiere of improved construction. In particular, the invention is directed to providing improved means for defining and supporting the breast pockets of a brassiere so as to provide maximum flexibility in selected directions in order to afford maximum comfort to the wearer, while at the same time providing rigidity and strength in other directions to retain the correct shape and relationship of the breast pockets and associated portions of the garment when it is being worn.

The objects and advantages of the invention will appear more fully from the following description and claims in conjunction with the accompanying drawings which illustrate by way of example a preferred embodiment of the invention and in which:

Fig. 1 is a front perspective view of a brassiere in accordance with the invention shown on a model.

Fig. 2 is a partial front view on a larger scale.

Fig. 3 is an enlarged fragmentary cross section taken approximately on the line 3—3 in Fig. 2 and showing a spring member for defining and supporting each breast pocket.

Fig. 4 is a front view of one of the spring members, one end being magnified and having portions broken away to show the construction in greater detail.

Fig. 5 is a fragmentary section taken approximately on the line 5—5 in Fig. 4, and

Fig. 6 is a fragmentary section taken approximately on the line 6—6 in Fig. 4.

The brassiere shown by way of example in the drawings to illustrate the novel construction in accordance with the invention comprises a body portion 1 and two breast pockets 2. The body portion 1 is adapted to engaged the body of the wearer adjacent the breasts and in particular between, under and at the sides of the breasts. It is shown as comprising a central panel 3 and two side panels 4 which extend around the sides of the wearer and continue into a back portion which can be of conventional construction and is hence not shown in the drawings. In accordance with common practice, the back portion is provided with suitable fastening means for securing the brassiere in place so that the body portion 1 closely embraces and conforms to the body of the wearer.

The breast pockets 2 are of general circular or avoid shape and are convex to conform to the shape of the breasts. The breast pockets are shown as comprising upper portions 5 and lower portions 6 joined to one another along a line 7 in such a way as to obtain the desired configuration. The lower edge portions of the breast pockets are joined to the body portion 1 along a line 8 that is approximately semi-circular. The upper portions of the breast pockets project upwardly above



the body portion. The edges of the brassiere are suitably finished for example by hemming or binding as indicated at 9. The brassiere may be of the strap or strapless type. In the embodiment shown in the drawing, detachable straps 10 extend over the shoulders of the wearer from the upper portions of the breast pockets 2 to the back portion of the brassiere, being provided with suitable adjustable fastening means 11.

In accordance with the invention, a spring member 15 of particular construction as hereinafter described is associated with each of the breast pockets 2 in order to cooperate with the associated portions of the brassiere in defining and supporting the breast pockets. Each of the spring members 15 is of arcuate shape the term "arcuate" being herein used in the sense of being curved without necessarily being the exact arc of the circle. As shown in the drawings, the spring members 15 are approximately semi-circular and extend along the lower peripheries of the breast pockets where the pockets join the body portion 1, but if desired, the spring members may be disposed above the breast pockets and the peripheral extent of the spring members may be varied according to the desired structure of the brassiere. The spring members 15 are suitably incorporated in the brassiere so as to form an integral part of it. To facilitate insertion of the spring members, the brassiere is shown provided with a tunnel 16 that extends along the junction of the body portion 1 with each of the breast pockets 2. The spring members slip into and fit snugly in the tunnels 16. Each of the spring members 15 is shown as extending approximately half way around the breast pocket. As illustrated more particularly in Fig. 3, the tunnel 16 is formed by a strip or tape of material 17 stitched to the fabric of the brassiere by lines of stitching 18.

Each of the spring members 15 comprises a plurality of like leaves 20 superposed on one another and enclosed in a sheath 21. The leaves 20 are formed of thin spring sheet material, for example spring steel. They are sufficiently thin to be highly flexible, having for example a thickness of the order of .003 to .006 inches, a preferred thickness being .005 inch. The width of each of the leaves is of the order of ⅛ inch to ¼ inch. The leaves thus have a high width to thickness ratio. The spring leaves 20 are formed in any suitable manner for example by bending a thin ribbon of steel edgewise before tempering, the ribbon being confined to a plane during bending to prevent buckling. Preferably, however, the leaves are stamped or otherwise cut in arcuate form from suitable sheet material. This avoids any residual internal stresses that might result from bending. In the construction shown in the drawings, the leaves 20 are unattached to one another except for being held together by the sheath 21. However, if desired, they may be tacked lightly together at two or three spaced points, for example at the ends and middle by spot welding or spots of adhesive to facilitate assembling the leaves and keeping them together while the sheath 21 is applied. As shown in the drawings, all of the leaves are alike and are of the same length. The ends are preferably rounded as indicated at 23 (Fig. 1).

While the number of leaves in the spring members 15 may be varied within reasonable limits according to the desired characteristics of the brassiere and the thickness and width of the leaves, it is preferred to have at least three and not more than six leaves. A preferred construction uses five blades each of which is about .005 inch thick and one eighth inch wide.

The sheath 21 is formed of fabric, plastic or other suitable material that is sufficiently flexible to permit the flexing of the spring as described below. As shown in the drawings, the sheath 21 is in the form of a flattened

plastic tube which closely embraces the leaves **20** and holds them together. Alternatively, the sheath may be applied as a fluid coating which subsequently "sets" to form a plastic covering, or a film or strip of plastic material may be wrapped around the assembled spring leaves. At least one end of the sheath **21** is preferably rounded and smooth as indicated at **24** to facilitate insertion of the assembled spring member **15** into the tunnel **16**. By reason of its multi-leaf construction, the spring member **15** is highly flexible in a direction perpendicular to its plane, i.e. a direction perpendicular to the plane of the paper in Fig. 4, so that the spring member bends readily to conform to the curvature of the body. However, the spring member **15** strongly resists bending in an edgewise direction as long as it is held against twisting or buckling. When the spring member is incorporated in the brassiere, it is firmly held flat against the body of the wearer and is thereby prevented from twisting or buckling when an edgewise force is applied. The spring member is thus highly resistant to the forces applied by the tension of the side portions **4** when the brassiere is fastened tightly around the body of the wearer. If it were not for the spring members **15**, such forces would tend to flatten out the breast pockets. However, because of their relative rigidity with respect to edgewise bending, the spring members **15** are effective in retaining the shape of the breast pockets and prevent their being flattened out.

It will be understood that the construction in accordance with the invention is in no way limited to the particular embodiment shown by way of example in the drawings but may be modified as desired within the scope of the appended claims.

What I claim and desire to secure by Letters Patent is:

1. A brassiere comprising a fabric body portion adapted to embrace closely the body of the wearer below and at the sides of the breasts, a pair of breast pockets positioned to receive the breasts and joined at their peripheries to said body portion and an arcuate spring member extending peripherally of each breast pocket, said spring member comprising a plurality of substantially coextensive arcuate leaves of thin spring sheet material superposed on one another face-to-face and slidable on one another, and a single sheath of flexible material closely embracing all of said leaves and holding them together in a single unit, said spring members being highly flexible to bending transversely to the plane of said spring member and highly resistant to bending in an edgewise direction so as to resist distortion of the breast pockets, the body portion of said brassiere holding said spring members against the body and cooperating with said spring members from twisting or buckling when subjected to edgewise forces.

2. A brassiere according to claim 1, in which each of said spring members comprises at least three and not more than six metallic leaves each having a thickness of the order of .003 to .006 inch.

3. A brassiere according to claim 1, in which said sheath comprises flat plastic tubing.

4. A brassiere according to claim 1, in which each of said spring members is approximately semicircular and is incorporated in said brassiere so as to extend below the respective breast pocket.

**References Cited** in the file of this patent

UNITED STATES PATENTS

| | | |
|---|---|---|
| 1,581,962 | Kispert | Apr. 20, 1926 |
| 2,230,788 | Ullendahl | Feb. 4, 1941 |
| 2,506,639 | Gordon | May 9, 1950 |
| 2,702,907 | Berniker et al. | Mar. 1, 1955 |
| 2,705,800 | Schwartz | Apr. 12, 1955 |