Feb. 10, 1970 N. BEALS 3,494,365

BREAST PAD

Filed Feb. 2, 1967

FIG. 1

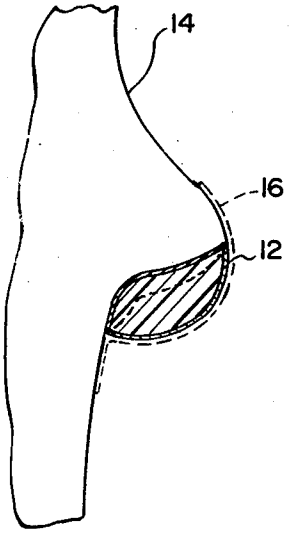


FIG. 2

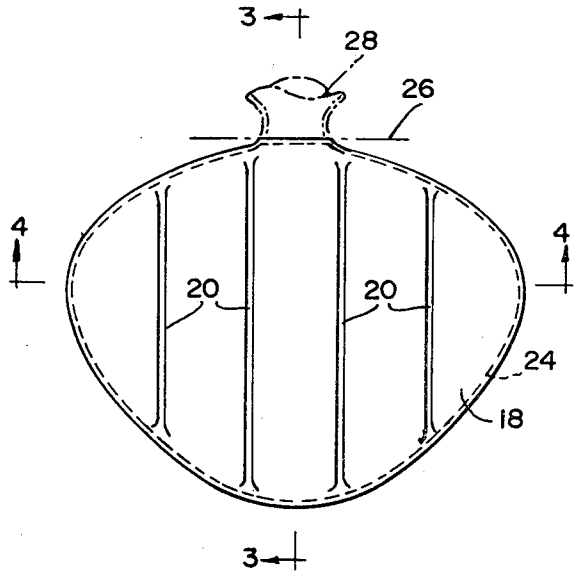


FIG. 3

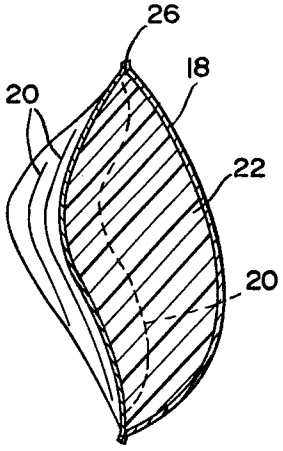
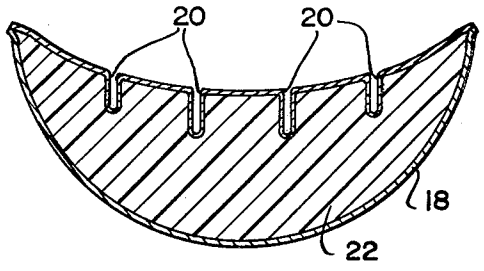


FIG. 4



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BREAST PAD

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U.S. Cl. 128—479 15 Claims

ABSTRACT OF THE DISCLOSURE

A breast pad including a filled flexible envelope having pleats in the back wall projecting into the filling material and decreasing the efficiency of the envelope. The filling material is an amorphous, thermoplastic, pressure displaceable gel-like solid such as a plastisol and has substantially complete memory for the envelope form. The pad has the consistency, feel properties and pressure displaceability properties of a human bosom.

This invention relates to breast pads of the type which are worn for the purpose of improving the appearance of the figure of the wearer.

Breast pads of many types have previously been provided. These include stuffed pads which may contain reinforcing members, pads containing particulate cellular materials and sacs or envelopes containing air and liquids. Such pads have been designed for the purpose of filling out a figure after surgical removal of a breast and also for the purpose of increasing or changing the size and shape of the bosom of the wearer. However, these pads have had various disadvantages. Often the pads are difficult to fit properly in stock sizes. These pads which contain solid padding materials sometimes become misshaped because of the arrangement of the padding material. Often the padding material has no memory for its original shape. Where sacs containing liquid or air are used, leakage problems can result. Additionally, liquid filled sacs have required air spaces and the liqnids can cause sloshing sounds during movement of the wearer. Additionally, although some of the previously provided breast pads may have the proper appearance, the feel of the pad to another differs from the feel of an actual bosom, e.g. when the wearer is dancing with the other person. Much development has been directed to overcoming these problems with breast pads.

It is an object of this invention to provide a new and useful breast pad structure.

Still another object of the invention is to provide a breast pad which does not have the above mentioned disadvantages.

A further object of the invention is to provide a breast pad which has the proper memory and feel corresponding generally to that of a human bosom.

It is a further object of this invention to provide such a breast pad having good feel properties while at the same time having proper resiliency and flexibility.

Other objects of this invention will be apparent from the following description and the drawings in which:

FIG. 1 shows a form of breast pad of this invention, in section and in proper position on the bosom of a wearer;

FIG. 2 is an enlarged plan of the breast pad of FIG. 1 from the back surface thereof;

FIG. 3 is a vertical section through the breast pad taken along line 3—3 of FIG. 2; and

FIG. 4 is a horizontal section through the breast pad taken along line 4—4 of FIG. 2.

While this invention is susceptible of embodiment in many different forms, there is shown in the drawings and will be described in detail herein a specific embodiment of the invention with the understanding that the present disclosure is to be considered as an exemplification of the principles of the invention and is not intended to limit the invention to the specific embodiment described and illustrated.

Turning first to FIG. 1, there is illustrated a breast pad 12 which can be worn on the bosom 14 of a wearer and can be held in place by a brassiere, illustrated in phantom at 16. As best seen in FIGS. 3 and 4, the pad comprises an impervious plastic envelope 18 forming a convex front wall and a generally concave back wall. Means conforming the pressure displacement properties of the pad more closely to those of a human bosom are provided in the form of a plurality of pleats 20 in the back wall. Pleats 20 comprise a generally horizontal array of vertically extending pleats which protrude a substantial distance into the interior of the envelope 18. Filling the envelope 18 is a soft mass of material 22 having generally the consistency of a human bosom. The pleats 20 extend into the material 22, for example a distance of at least a quarter of the thickness of envelope 18 from the back to the front walls.

The purpose of the pleats is to increase the surface area of the mass and the envelope enclosing the mass, relative to the volume of the mass. This results in decreased efficiency of the containing envelope and imparts greater displacement to the contained mass under low pressure, conforming the displacement properties of the pad more closely to the soft feel of a human bosom. Although pleats are shown for providing proper displacement properties of a human bosom, other means such as a spiral groove formed in the wall of the envelope can be used. Preferably the pleats, spiral groove or the like, are sufficient to also permit the pad to conform the concave rear wall of the pad to a variety of bosom sizes, such as results from the pleats in the illustrated embodiment.

The envelope 18 can be made by first forming the front and rear walls separately using conventional plastic sheet forming techniques. The material used for envelope 18 is a tough, flexible, plastic material. The material is preferably air impermeable. The pleats 20 are formed in the rear wall during the forming operation.

The formed front and rear walls are then hermetically bonded to each other about most of their periphery. As seen in FIG. 2, the front and rear walls include spout portions, as shown in phantom at 28, and the hermetic seal extends up the side walls of the spout portions to form a spout opening at the top of the envelope. After the spout, shown in phantom at 28, has been used for the purpose of filling the envelope with the material 22, the spout portion is cut off along cut line 26 and the opening is sealed along line 26. During the filling operation, the envelope 18 is retained in a mold which includes fin-like members extending into and holding pleats 20 in their proper position so that they will extend toward the front wall of envelope 18.

The material 22 is a gel-like material which has substantially complete memory for the form of the envelope 18. This material may advantageously be a pressure displaceable, amorphous, normally solid, i.e. non-liquid, thermoplastic material which is heated to a melt for introducing into the envelope 18 through spout 28. The thermoplastic material solidifies to a gel-like consistency at room temperature, to form the soft mass of material 22. The melting point of the thermoplastic material should be significantly above human body temperature so that the material does not melt during use of the breast pad. It will be noted that the mass of material 22 is a unitary homogenous mass which completely fills the envelope 18, leaving no air space. The mass also has the conformability, memory, resilience and flexibility properties of a

human bosom. Since the mass is poured in as a melt and solidified in situ, it may adhere to the inner walls of envelope **18**, and in the unit the outer surface of mass **22** is relatively immovable with respect to the envelope **18**.

The mass **22** can be, for example, a non-cellular non-liquid plastic such as a plastisol of a thermoplastic material in a suitable plasticizer. The thermoplastic material and plasticizer are included in such a composition in proper proportions with respect to each other to give the desired memory, resilience and flexibility properties and the feel of a human bosom. Alternatively, the thermoplastic material can be formed by polymerization in situ in the plasticizer, and the polymerization can be killed once it has progressed to the proper degree to give the proper properties.

I claim:

1. A breast pad comprising an envelope having a convex front wall and a rear wall for engaging the outer surface of a human breast, said walls being of tough, flexible material and forming the envelope, and a mass of soft material enclosed within said envelope and substantially completely filling said envelope, said walls including wall portions projecting into said soft material and decreasing the efficiency of said envelope to a level imparting the general pressure displacement properties of a human bosom to the filled envelope whereby the pad is provided with generally the consistency of a human bosom.

2. The pad of claim **1** wherein said efficiency decreasing means comprises means in the rear wall increasing the surface area of the envelope relative to the volume of said mass.

3. A breast pad comprising an envelope having a convex front wall and a concave rear wall, said walls being of tough, flexible material and being hermetically bonded to each other about their periphery forming the envelope, and a mass of soft material enclosed within said envelope and substantially completely filling said envelope, said rear wall including a plurality of deep pleats in said rear wall projecting inwardly into said envelope with said pleats projecting into said soft material for decreasing the efficiency of said envelope to a level imparting the general pressure displacement properties of a human bosom to the filled envelope whereby the pad is provided with generally the consistency of a human bosom [said efficiency decreasing means comprising a plurality of deep pleats in said rear wall projecting inwardly into said envelope with said pleats projecting into said soft material].

4. The pad of claim **3** wherein said plurality of pleats is a laterally aligned array of vertically extending pleats in said rear wall projecting into said mass.

5. The pad of claim **4** wherein each of said pleats projects at least approximately one-quarter the thickness of said mass.

6. The pad of claim **3** wherein said pleats are sufficient in number and size to conform the concave rear wall of the pad to a variety of bosom sizes.

7. The pad of claim **1** wherein said filled envelope has substantially complete memory for its form.

8. The pad of claim **1** wherein said walls are of a flexible, air impermeable thermoplastic material.

9. The pad of claim **1** wherein said soft material is a unitary resilient and flexible mass of conformable amorphous solid material and said projecting wall portion comprises pleats projecting into said mass for increasing the surface area of the envelope in relation to its volume to decrease the efficiency of the envelope the proper degree to impart the pressure displaceability properties of a human bosom thereto.

10. A breast pad consisting essentially of a filled envelope having a convex front wall and a rear wall for engaging the outer surface of a breast, said walls being of tough, flexible material, and a mass of amorphous, thermoplastic, pressure displaceable, solidified plastisol material filling said envelope to bring said envelope up to breast pad shape, said filled envelope having substantially complete memory for its form.

11. The pad of claim **10** wherein said mass is a unitary homogenous mass.

12. The pad of claim **10** wherein said mass has the conformability, resiliency and flexibility properties of a human bosom.

13. The pad of claim **10** wherein said envelope is air impermeable and said plastisol material surface hardens upon exposure to air, whereby said pad is self-sealing.

14. A breast pad comprising a filled envelope having a convex front wall and a rear wall for engaging the outer surface of a breast, said walls being of tough, flexible material and being secured to each other about their periphery in the form of said envelope, and a mass of non-cellular, non-liquid, plastic, pressure displaceable, solidified thermoplastic plastisol material filling said envelope to bring said envelope up to breast pad shape, said filled envelope having substantially complete memory for its form.

15. The pad of claim **14** wherein said plastisol material is a self sealing gel.

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U.S. Cl. X.R.

3—36; 128—481