

Jan. 4, 1955

E. H. BERNHARDT

2,698,436

BUST FORM

Filed June 29, 1951

Fig. 1.

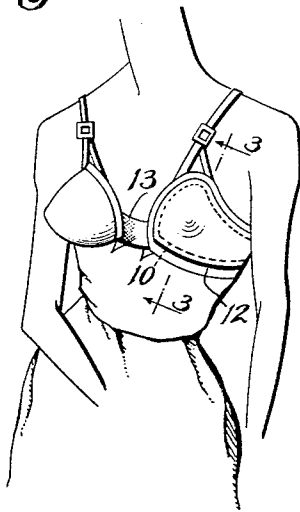


Fig. 2.

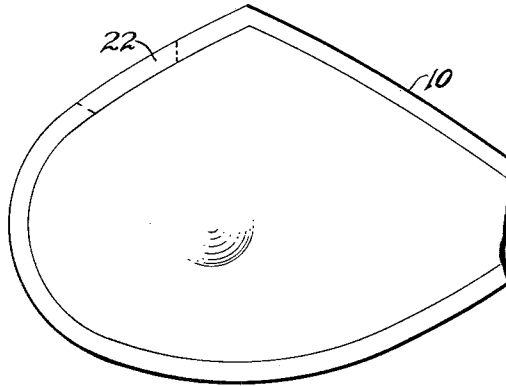


Fig. 3.

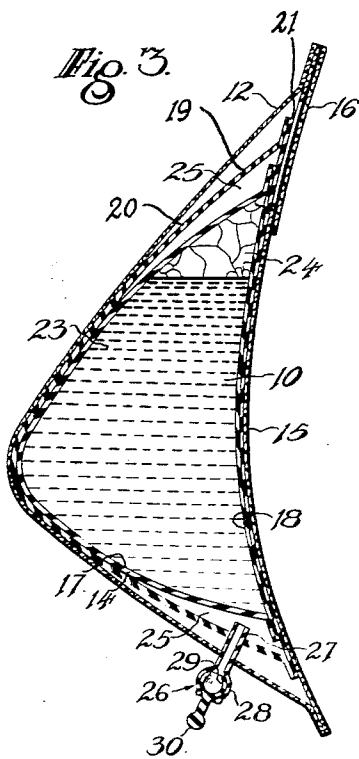


Fig. 5.

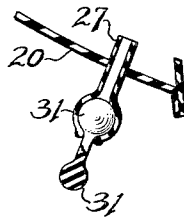


Fig. 4.

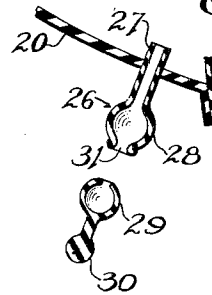
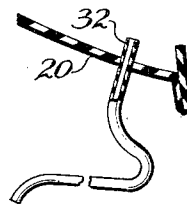


Fig. 6.



INVENTOR.
Ella H. Bernhardt
BY
Konyon & Konyon
ATTORNEYS

1

2,698,436

BUST FORM

Ella H. Bernhardt, New York, N. Y.

Application June 29, 1951, Serial No. 234,335

4 Claims. (Cl. 2—267)

It is the general object of the present invention to overcome the effects of air leakage in bust forms, particularly those of the kind disclosed in my copending application Serial No. 192,389, filed October 27, 1950, now U. S. Patent 2,593,002, issued April 15, 1952 or in my U. S. Patent 2,542,619, issued February 20, 1951. To that end it contemplates a coating treatment for the walls of the bust form to minimize air leakage or vapor transmission as well as the provision of means for replenishing air which normally leaks out of a form during its life, the latter feature making it possible to revive forms which have become reduced in size during a long life. The invention is equally applicable to forms used for cosmetic or prosthetic purposes.

The full nature of the invention, together with further objects and advantages thereof will best be understood from the illustrative embodiment hereinafter described with reference to the accompanying drawings in which:

Fig. 1 is a perspective view of a breast form worn with a brassiere and shown in position on a female figure, the form being positioned in a pocket in the brassiere and outlined in dotted lines;

Fig. 2 is a partial plan view of the form;

Fig. 3 is a cross-sectional view along the lines 3—3 of Fig. 1;

Fig. 4 illustrates the valve means of Fig. 3 in open position;

Figs. 5 and 6 illustrate arrangements alternative to that shown in Fig. 3 for controlling the influx and efflux of air into and from the form.

Referring to the drawings, the bust form 10 (indicated in dotted lines in Fig. 1) is located in the brassiere cup 12 of brassiere 13 adapted to support and conform inner liquid retaining cell 14 (Fig. 3) of form 10 to the human breast as explained in the aforementioned application and patent. As shown in Fig. 3, the brassiere cup 12 is provided with a form retainer 15 which may be a piece of soft textile material sewn along the sides and bottom of the inside of the brassiere cup. A flap 16 is provided to cover the opening at the top of the brassiere cup.

As shown in Fig. 2, an unsealed portion 22 of the form 10 is provided as a means of placing the contents in the form. After this operation, this portion 22 is sealed.

As seen in Fig. 3, the form 10 is double walled so as to form the inner cell 14 having front wall 17 and back wall 18, as well as the outer envelope 19 having front wall 20 and rear wall 21. The walls of both inner cell 14 and outer envelope 19 are formed of water-imperious flexible sheet material suitably joined and sealed along the edges, for example, the flexible sheet material known as "Vinylite" as in my mentioned patent. This material is a plasticized copolymer of vinyl chloride and vinyl acetate resin. The whole structure may be constructed such that the portion in fitting contact with the human breast normally assumes a concave shape as Fig. 3 indicates. The concavity is desirable for forms used for cosmetic purposes; forms for surgical purposes may be shaped as in my aforementioned patent and application.

Within the inner cell 14 there is provided a conformable liquid-filling means 23 such as shown and claimed in my aforesaid application and patent. Preferably, the filling means is of such character as to minimize sounds of its own movement and includes a sealing agent which,

2

upon leakage of the filling means, tends to seal punctures and ruptures. Water with the addition of a foaming agent to produce sound minimizing foam 24 or an agent giving it a surface tension sufficiently reduced to minimize sound will perform the former of these two functions. However, an aqueous solution of methylcellulose, the material described hereinafter will tend to perform both the functions of sound minimizing and sealing; if its concentration be made high it may be given a more flesh-like consistency and a surface tension sufficiently reduced to minimize sound, if its concentration be low, it will produce foam 24 when agitated.

The space 25 between inner cell 14 and outer envelope 19 will ordinarily contain a quantity of air. It may also contain a leakage-proofing material such as shown and claimed in my mentioned application.

As previously indicated, it has been found that bust forms constructed in the foregoing manner may change size during their useful life by virtue of air leakage through the walls of both inner cell 14 and outer envelope 19. In accordance with the present invention, this leakage may be minimized by coating the walls with methylcellulose, a material sold under the trademark "Methocel" by the Dow Chemical Company. This material has been described as a water soluble cellulose ether which may form aqueous solutions varying in viscosity from that of water itself to that of a thick gluey paste, although I believe it more accurate to term it a dispersion in water.

For making the Vinylite walls of both the inner cell and outer envelope leakproof against air leakage, they may be dipped in a solution of methylcellulose and dried, one or more times, until they have acquired a sufficient coating which will adhere tenaciously to the Vinylite and because of its flexibility will not crack and fall off. It may be preferable to coat only the outside of the walls of the cell and outer envelope since inside coatings may tend to interfere with the sealing at the edges.

A suitable germicide may be added to the coating solution although it may be preferable to confine this to wall portions other than those to come in contact with the human skin in order to avoid skin irritation. A suitable germicide is orthophenylphenol, a sodium salt sold by the Dow Chemical Company as "Dowicide."

In order to permit the user to replenish what air does escape from the bust form, there is provided in the front wall 20 of the outer envelope 19 a suitable valve means 26 which permits the introduction of air into envelope 19 through the valve means but prevents its escape through the valve means when closed. Such a means is shown in Fig. 3 in its closed position in which it seals the air within envelope 19 by virtue of the air pressure therein; it is shown in its open position in Fig. 4. The valve means shown is believed to be novel and inventive in and of itself as well as in combination with a breast form. It comprises a somewhat flexible tubing 27 having a bulbous portion 28 adapted to receive there-within the cup-like stopper 29 of similar flexible material. The material for tubing 27 and stopper 29, may, for example, be the same as the walls of envelope 19 or cell 14, e. g. Vinylite. Alternatively the material may be rubber. In any event, the material should have sufficient flexibility and rigidity to permit the operation now to be explained.

In use, the user may insert an amount of air into envelope 19 sufficient to give the form the desired size, the insertion being accomplished by any suitable means, such as by blowing with the mouth. Thereafter, the stopper 29 is inserted into bulbous portion 28 in the position shown in Fig. 3; the handle 30 may be used for the purpose. After insertion, the air pressure within envelope 19 will expand the walls of stopper 29 to bring them into air-sealing frictional contact with the walls of portion 28. Insertion in this manner will be accomplished by temporary stretching of the walls surrounding the opening 31 leading into portion 28. Insertion may be facilitated by manually collapsing tube 27 during insertion at a point near wall 20 so as to remove air pressure from walls of stopper 29 during insertion.

In Fig. 5, the means 26 are modified to the extent

3

that stopper 29 takes the form of a solid ball-like member 31, the materials and structure being otherwise the same as in Figs. 3 and 4.

In Fig. 6, the valve means is simplified by the elimination of a stopper and to the extent that tube 27 takes the form of a tube 32 extending a sufficient distance outside of wall 20 to permit its being tied in a knot for valve closure purposes. Otherwise, the materials and structure are the same as in Figs. 3 and 4. As in Figs. 3 and 4, tube 32 is sealed through wall 20.

What is claimed is:

1. A breast form for simulating the breasts of women and the adjacent muscular tissues comprising flexible walls defining a flexible retaining cell having a filler therein, flexible walls defining a flexible envelope enclosing said cell and having a gas therein, the walls of said cell and envelope having thereon a coating of methylcellulose, and valve means in said walls defining said envelope for replenishing the gas in said envelope.

2. A breast form for simulating the breasts of women and the adjacent muscular tissues comprising flexible walls of Vinylite defining a flexible retaining cell of Vinylite having a filler therein, flexible walls of Vinylite defining a flexible envelope of Vinylite enclosing said cell and having a gas therein, the walls of said cell and envelope having thereon a coating of methylcellulose, and valve means in said walls defining said envelope for replenishing the gas in said envelope.

3. A breast form for simulating the breast of a woman and including flexible walls defining a flexible gas retain-

4

ing cell, a flexible air inlet tube affixed to the said walls and defining a passage for influx and efflux of air to and from the cell, and valve means in the tube comprising a bulbous portion in the tube and a tube closing plug receivable in said bulbous portion.

4. A form as in claim 3 in which the plug is flexible and cup-shaped and the open end thereof is directed toward the interior of the cell whereby the pressure in the cell presses the walls of the plug against the walls of the bulbous portion.

References Cited in the file of this patent

UNITED STATES PATENTS

15	4,419	Clarke	Mar. 14, 1846
	974,580	Lockwood	Nov. 1, 1910
	1,706,295	Jacobsohn	Mar. 29, 1929
	2,071,910	Whitmore	Feb. 23, 1937
	2,282,181	Guinzburg	May 5, 1942
	2,350,366	Mitchell	June 6, 1944
	2,354,855	Emanuel	Aug. 1, 1944
	2,516,129	Leo et al.	July 25, 1950
	2,542,619	Bernhardt	Feb. 20, 1951
25	2,543,499	Kausch	Feb. 27, 1951
	2,593,002	Bernhardt	Apr. 15, 1952

FOREIGN PATENTS

	11,611	Great Britain	May 21, 1903
	474,045	Great Britain	Oct. 22, 1937
30	625,421	Great Britain	June 28, 1949