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(54) **Title:** POST-MASTECTOMY BRASSIERE

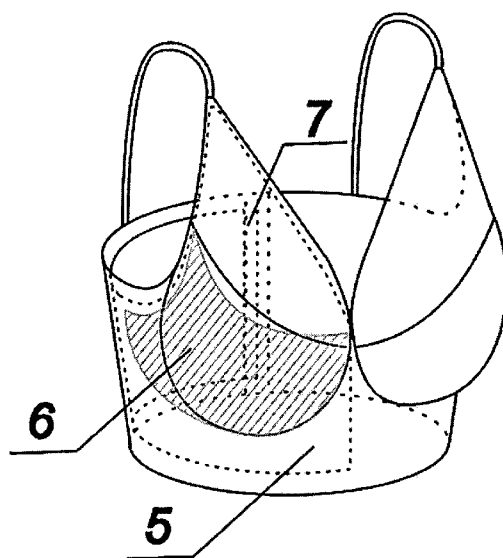


Fig. 2

(57) **Abstract:** The disclosure relates to construction of special clothing, namely brassieres for women who had mastectomy (breast removal). The construction of the said brassiere is designed to be used with any type of breast prosthesis daily or can be used as a part of rehabilitation measures. The post-mastectomy brassiere has two cups (1), each of them attached by its lower part to a belt (3) designed to fix the cups' (1) positioning in the horizontal plane. On both ends of the belt (3) there are fasteners (4) to fix it on the body; the upper part of each cup (1) is attached to a strap (2) of adjustable length; the other end of the strap (2) is attached to one of the belt (3) halves; there is a pocket (6) for placing a breast prosthesis (9) in. The construction comprises a brace (5); the abovementioned pocket (6) is located on the brace (5) surface oriented towards the cup (1); the brace (5) is located from the side of brassiere's internal surface on one of the symmetrical halves and attached to the internal side of the brassiere in at least three places: one lower end of the



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brace (5) is connected to the belt (3) along the symmetry line of brassiere halves; the other lower end of the brace (5) is attached to one of the belt (3) ends in the area of fastener (4); and the upper part of the brace (5) is attached in the area of strap (2) connection to the upper part of one of the cups (1).

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1. A post-mastectomy brassiere comprising:

two breast cups (1);

the lower part of each cup (1) is attached to a belt (3) designed to fix the cups' positioning in the horizontal plane;

fasteners (4) located on both ends of the belt (3) for its fixing on the body;

upper part of each cup (1) is attached to a strap (2) with adjustable length;

the other end of the adjustable strap (2) is attached to one of halves of the belt (3);

a pocket (6) for placing breast prosthesis (9) **differing** by

the brassiere additionally contains a brace (5) located from the side of brassiere internal surface on one of the symmetrical halves;

the said pocket (6) is located on the brace surface oriented towards the cup (1);

the brace (5) is connected to the internal side of the brassiere in at least three

places: one lower part of the brace (5) is connected to the belt (3) along the

symmetry line (8) of brassiere halves; the other lower end of the brace (5) is connected to one of the belt ends in the area of fastener (7); and the upper part

of the brace (5) is attached in the area of strap connection to the upper part of one of the cups (1);

the brace (5) contains at least one part replicating the shape of prosthesis internal surface and made of material with lower heat conductivity than the material of the brassiere.

2. The brassiere according to Claim 1, **differing** by the use of more elastic material for the brace (5) than the material for the brassiere.

3. The brassiere according to Claim 1, **differing** by the brace (5) with the pocket (6) made as a removable element attached to the internal surface of the brassiere along the symmetry line (8) located between the cups (1).

4. The brassiere according to Claim 1, **differing** by the brace (5) with the pocket (6) as a universal element attached permanently to the brassiere along the symmetry line (8) so that the same brace (5) with the pocket (6) can be used for the left or the right side depending on the woman's needs.

Statement under Article 19 (1)

In response to the International Search Report dated 24 September 2021, regarding the above referenced PCT Patent Application, Applicant submit the following arguments for inventive step of said invention.

D1 (US3701168 (A), BALOW ZELLA J.) describes a post-mastectomy brassiere, which contains a pocket (special double ply) to set up a breast prosthesis through a hole of the pocket. The pocket is attached to a back of a cup of the brassiere. According to the invention, the pocket is located on an additional element - the brace fastened to a belt of the brassiere, not to the cup of the brassiere. Such brace takes up a load from weight of the prosthesis and distribute the load to the body. D1 does not describe the brace fastened to the belt or an analogue element.

D2 (US4261366 (A), LAMBORN SALLY) describes a post-mastectomy brassiere, in which a prosthesis pocket is formed by a cup of the brassiere on the outside and a liner member on the inside. The cup receives a load from the prosthesis and performs a load-bearing function. Therefore, the weight of the prosthesis is unevenly distributed, which leads to skew of a woman's body. D2 does not describe the placement the prosthesis by the pocket on the brace. The brace according to the invention forms a more distribute load.

D3 (US3950792 (A), WILLIAMS MARGUERITE R.) describes a post-mastectomy brassiere, which further comprises an underlay attached to an inner surface of a wall of the brassiere. The underlay is sewn to the wall by means of a seam with a formation of a pocket for the prosthesis. As is the case D2, the wall of brassiere receives a weight from the prosthesis, which leads to uneven load distribution.

D4 (US2015044943 (A1), MARSHALL VICKY; TROTTER VIRGINIA ANN) describes clothing, in particular a brassiere, on the surface of which is made a pocket. The

pocket covers an intimate place on a human body, for example, a silicone implant. The pocket is intended for placement inside heat-insulating inserts. The heat-insulating inserts retains heat at the place of the silicone implant.

D5 (US5158541 (A), MCCURLEY ARLENE B.) describes a brassiere that is used only in postoperative period. The brassiere should be used under medical supervision and has compression pads that fix the position of the bandages during transportation and prevent swelling after surgery. This brassiere is not intended for permanent use and is not used with a prosthesis.

In according to D1-D3, the walls or cups of the brassiere fully or partially take up the load (weight) from the prosthesis. In that case, the load distribution from the prosthesis is uneven, which leads to skew of the woman's body. None of the documents D1-D3 describes the brace that take up the load from the prosthesis. Moreover, the brace is connected to the belt in at least three places. Due to such fastening the brace carries out bearing function, instead of walls or cup of the brassiere. Therefore, the forces acting on the chest are balanced during wearing the prosthesis (the scheme of distribution of active forces is shown in Fig. 7-9 of the drawings) and the probable problem of the woman's body is reduced.

D4 and D5 are not intended for use with a prosthesis. Also, D4 does not solve the problem of minimizing the thermal impact on the postoperative part of the body, which can occur under a silicone prosthesis. On the contrary, D4 solves the problem of heat retention in the body, for example, where the silicone implant is located. Increased body heat is unacceptable for women after mastectomy. Therefore, D4 and D5 are not prior art documents for the claimed invention.

As defined above, the claimed invention differs from the prior art according to D1-D3 by the presence of the brace and placement on it of the pocket for prosthesis as well as a special attachment of the brace to the belt. It is evidence that said invention has novelty and inventive step.