DEVICE FOR WASHING WOMEN'S BRASHERIE

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Appl. No.: 11/402,558
Filed: Apr. 12, 2006

Publication Classification

Int. Cl.
B65D 6/28 (2006.01)

U.S. Cl. 220/4.22

ABSTRACT

The novel support device is generally formed from two main members. They are the right frame assembly and the left frame assembly. The right frame and the left frame are connected with a center hinge mechanism that allows the right frame and the left frame to fold towards each other. When folded together, these frames are secured to each other using one or more latching means located on the outer boundary of each frame. The latching means are positioned on each frame so as to engage the corresponding latch engages each other. In the folded configuration, the brassiere and its straps are enclosed within the folded and secured frames. In this folded configuration, the support device protects the brassiere from mechanical and physical damage while simultaneously allowing the surfaces of the brassiere to be exposed to the washing process. The two frame members are each integrally formed of polymeric material or other similar material that does not rust or corrode.
DEVICE FOR WASHING WOMEN’S BRASSIERE

FIELD OF THE INVENTION

[0001] The invention relates to woman’s bra and more specifically to a novel device within which a brassiere is placed so that it can be washed in a manner that minimizes damage. The device is then placed inside a conventional dishwasher or washing machine and the machine is run through a washing cycle.

BACKGROUND OF THE INVENTION

[0002] Using a brassiere and other such undergarments to support women’s breasts is a common practice. The use of the term brassiere includes the common word “bra” is meant to identify those undergarments used by women to support their breasts. Since the brassiere is an undergarment, it is subject to body secretions and stains that render the undergarment dirty. Many brassieres are of a specialized nature and can be costly to replace. Trying to wash a brassiere in a clothes washer or dishwasher without any support structure commonly subjects the brassiere to premature damage.

[0003] Most of the structures that have been invented in the past that relate to cleaning general hats and caps. The Sawyer U.S. Pat. No. 1,128,530 is directed to an adjustable hat block to maintain the shape of the hat. The Wolkenhauser U.S. Pat. No. 2,038,698 is directed to a hat cleaning device that is again used after the hat has been cleaned and for the purpose of forming the hat to its proper shape.

[0004] Other devices have been invented for drying ball caps. The Smith U.S. Pat. No. 2,704,176 is directed to such a device. It has a frame work that is inserted into the interior of the crown portion of the ball cap to stretch it tight. The Payne et al. U.S. Pat. No. 4,491,256 is directed to a ball cap drying insert for ball caps. The Grommes U.S. Pat. No. 4,708,271 is directed to a hat drying form. The Thomas et al. U.S. Pat. No. 4,941,601 is directed to a cap dryer and shaper. The Finney et al. U.S. Pat. No. 5,172,837 is a device for washing a ball cap in a dishwasher formed from a male top frame assembly and a female bottom frame assembly that nest together in a stacked formation.

[0005] None of the prior art devices have been designed to be placed into a dishwasher or washing machine for the purpose of washing a brassiere encapsulated or enclosed within the supporting device.

[0006] It is an object of the invention to provide a novel device into which a brassiere may be placed and then put into the interior of a conventional dishwasher or washing machine for the purpose of washing the same.

[0007] It is another object of the invention to provide a novel device that is economical to manufacture and market.

[0008] It is also an object of the invention to provide a novel device that is made of material that will not rust or corrode.

[0009] It is an additional object of the invention to provide a novel device that can be easily used by either a teenager or adult.

SUMMARY OF THE INVENTION

[0010] The novel support device is generally formed from two main members. They are the right frame assembly and the left frame assembly. The right frame and the left frame are connected with a center hinge mechanism that allows the right frame and the left frame to fold towards each other. When folded together, these frames are secured to each other using one or more latching means located on the outer boundary of each frame. The latching means are positioned on each frame so as to engage the corresponding latch engages each other. In the folded configuration, the brassiere and its straps are enclosed within the folded and secured frames. In this folded configuration, the support device protects the brassiere from mechanical and physical damage while simultaneously allowing the surfaces of the brassiere to be exposed to the washing process. The two frame members are each integrally formed of polymeric material or other similar material that does not rust or corrode.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] FIG. 1 is a front perspective view illustrating the typical brassiere position behind the supporting device.

[0012] FIG. 2 is a front perspective view illustrating of a typical brassiere.

[0013] FIG. 3 is a front perspective view illustrating the right and left frames and the hinge mechanism of the present invention supporting device.

[0014] FIG. 4 is another front perspective view of a typical brassier being shown to demonstrate the first step in positioning the brassiere behind the supporting device.

[0015] FIG. 5 is a side perspective view illustrating the left frame and right frame in a folded configuration and enclosing the brassiere.

[0016] FIG. 6 is a perspective view illustrating the typical brassiere enclosed within the support device in a folded configuration, ready for washing in a dishwasher or washing machine.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0017] The novel brassiere supporting device will now be described by referring to FIGS. 1-6 of the drawings. Referring to FIG. 1, the brassiere supporting device is generally designated as numeral 10. The brassiere supporting device 10 is generally composed of a right frame assembly 12, a left frame assembly 14, a hinge mechanism 36, and with one or more right 16 and left 18 latching means. Each frame assembly is composed of a centrally located right apex 20 and a centrally located left apex 22, with each apex connected to the end of a plurality of ribs (24a and 24b), with the opposite end of the plurality of ribs connected to an outer circular member 16 (right) and 18 (left). This structure results in a plurality of right openings 26 and left openings 28 for the ingress and egress of the cleansing agents. Attached to the outer circular members are a plurality of latching means 34a, attached to right outer circular member 16 and 34b, attached to left outer circular member 18. Between the right outer circular member 16 and the left outer circular member 18 is a hinge mechanism 36 which foldably connects right frame assembly 12 to left frame assembly 14. The latching means 34a and 34b are positioned such that when the right frame assembly 12 and left frame assembly 14 are folded together using the hinge mechanism 36, the plurality of right latching means 34a are correspond-
ingly aligned and designed to engage the matching left latching means 34b. While the present invention demonstrated in FIGS. 1-6 is the preferred embodiments, the Applicant anticipates that the overall design and configuration of the components may be modified from the examples shown within deviating from the function of the present invention. For example, the centrally located right apex 20 and centrally located left apex 22 may have shapes other than circular, for example, they may be oval, triangular, square or another configuration. In addition, the number of ribs 24a and 24b, shown in the demonstrated example is six within each frame assembly. It is not essential that the present invention have six ribs 24a and 24b on each frame, as fewer or more ribs can be used, so long as the number of ribs connecting the centrally located apexes 12, 14 to the outer circular members 16, 18 provide sufficient strength and integrity to support the components for its intended purpose in its intended environment. In addition, the outer circular members 16 and 18 may be substantially circular, oval or another configuration which, in cooperation with the other components, encloses a typical brassiere 5. Furthermore, since brassieres come in various shapes and sizes, the present invention and its components can be modified (e.g., ribs 24a and 24b extended to a shorter or longer length, outer circular members 16 and 18 having a smaller or larger radius) to accommodate the variety of brassieres without deviating from the present invention.

The various components of the present invention can be fabricated from a variety of polymeric materials including polyimide, polyethylene, polypropylene, polynyl chloride, polyurethane, polycarbonate, acrylic, polysulphone, ABS, nylon, delrin, polyethylene terephthalate (PET), fluorinated ethylene-propylene (FEP) or polytetrafluoro-ethylene (PTFE). In addition, other materials, such as polymer coated metallic materials might be used to fabricate the components of the present invention. It is also contemplated that an assortment of materials might be used for the components. For example, the latching mechanisms 34a and 34b and the hinge mechanism 36 could be fabricated from a polymer coated metallic material whereby the outer circular members 16 and 18, ribs 24a and 24b and centrally located apexes 20 and 22 could be fabricated from a polymeric material. One design characteristic that is important to the present invention is that the components materials must withstand exposure to water and heating conditions without swelling or deteriorating in typical washing operations.

The hinge mechanism 36 can consist of a number of designs employing technology already known to those skilled in the art. For example, the hinge mechanism 36 could be an indented polymer joint that is designed to withstand multiple folding operations. As another example, the hinge mechanism 36 could consist of a pin assembly centrally located within the lumen of one or more tubular structures extending from the right and left frame assemblies 12 and 14, connecting the frames frame assemblies together in a foldable design.

The latching means 34a and 34b can consist of a number of designs employing technology already known to those skilled in the art. For example, the right latching means 34a can be press fitting into corresponding left latching means 34b, or vice versa. As another example, right latching means 34a might have a shaft with a rotateable or expandable structure that when inserted through the lumen of left latching means 34b, the structure is deployed such that the right latching means 34a shaft can not be pull-out without re-deploying the structure.

[0021] Referring to FIG. 2, the typical brassiere to be used the present invention is generally composed of a right cup 7 and a left cup 8 connected together with a connecting strap 9. A plurality or back securing straps 6 generally extend from the side of each cup and a plurality of should straps extend from the top of each cup. A center connector piece 9 joins the right cup 7 and the left cup 8. There are other designs of brassieres that deviate from the example brassiere, such as strapless designs, that will still work with the present invention. To optimize the function of the present invention for various brassiere designs, minor deviations from the present invention design are anticipated.

[0022] Now referring to FIGS. 3-6, the preparation and operational steps are presented. In FIG. 3, which illustrates a front perspective view of the present invention 10, shows the general components; a right 12 and left 14 frame assembly, whereby each frame assembly is composed of a centrally located right apex 20 and left apex 22 which are connected to a right 16 and left 18 outer circular member with a series of ribs 24a and 24b. The hinge mechanism 36 connects the right frame assembly 16 to the left frame assembly 19. Also shown is the latching means 34a and 34b located attached to the outer circular members 16 and 18, respectively.

[0023] In FIG. 4, a typical brassiere is positioned to the back side of the present invention 10 such that the right cup 7 of the brassiere is substantially aligned and loosely contained within the right frame assembly 16 and the left cup 8 is substantially aligned and loosely contained within the left frame assembly 18. The straps 6 of the brassiere can then be tucked within the corresponding cup (not shown).

[0024] As shown in the side perspective view of FIG. 5, the left frame assembly 16 and right frame assembly 18 are now folded towards each other for a substantially spherical shape whereby the hinge mechanism 36 is situated along a portion of the circumference of the folded configuration 42 and the corresponding latching means 34a and 34b are engaged along another portion of the circumference of the folded configuration 42. The brassiere 5 is enclosed within the folded configuration 42 which is substantially secured in this configuration by the cooperation of the hinge mechanism 36 and the latching means 34a and 34b. In this folded configuration 42, the brassiere 5 is enclosed within the present invention 10 and protected from mechanical and physical damage that can occur during washing operations. Also, in this folder confirmation, the design (rib structure) of the present invention 10 has a plurality of openings 26 and 28 which allow water and detergent materials to penetrate the openings and gain exposure to the brassiere 5. The openings 26 and 28 are large enough to allow an exchange of washing materials, facilitating the cleansing of the brassiere 5.

[0025] FIG. 6 is a perspective view illustrating the typical brassiere 5 enclosed within the support device 10 in a folded configuration 42 and ready for washing in a dishwasher or washing machine 44.
Various modifications can be made with the scope of the present invention which herein is being disclosed or claimed. Accordingly, it is intended that what is set forth should be regarded as illustrative of such concept and not for the purposes of limiting protection of any particular embodiment thereof, and that only such limitation should be placed upon the scope of protection to which the inventor hereof is entitled as justice dictates.

1. A device for washing a brassiere in a dishwasher or washing machine comprising:

   an structure having a right frame assembly and a left frame assembly, said right frame assembly comprised of a substantially centrally located apex, said apex connected to one end of a plurality of ribs, an second end of said plurality of ribs connected to a substantially circular outer member, said left frame assembly comprised of a substantially centrally located apex, said apex connected to one end of a plurality of ribs, an second end of said plurality of ribs connected to a substantially circular outer member, said right frame assembly and said left frame assembly joined together with an hinge mechanism; and

   said right frame assembly having a plurality of first latching means attached to the periphery of the right circular outer member, said left frame assembly having a plurality of second latching means attached to the periphery of the left circular outer member, said first plurality of latching means designed to engage said second plurality of latching means when said structure is in a folded configuration.

2. A device for washing a brassiere as recited in claim 1 wherein said structure is fabricated from a polymeric material.

3. A device for washing a brassiere as recited in claim 1 wherein said structure is fabricated from a polymer coated metallic material.

4. A device for washing a brassiere as recited in claim 1 wherein said structure is fabricated from an assortment of polymeric materials and polymer coated metallic materials.

5. A device for washing a brassiere as recited in claim 1 wherein said structure is designed to have an open configuration and a folded configuration.

6. A device for washing a brassiere as recited in claim 5, wherein said structure is designed to contain a brassiere when said structure is in a folded configuration.