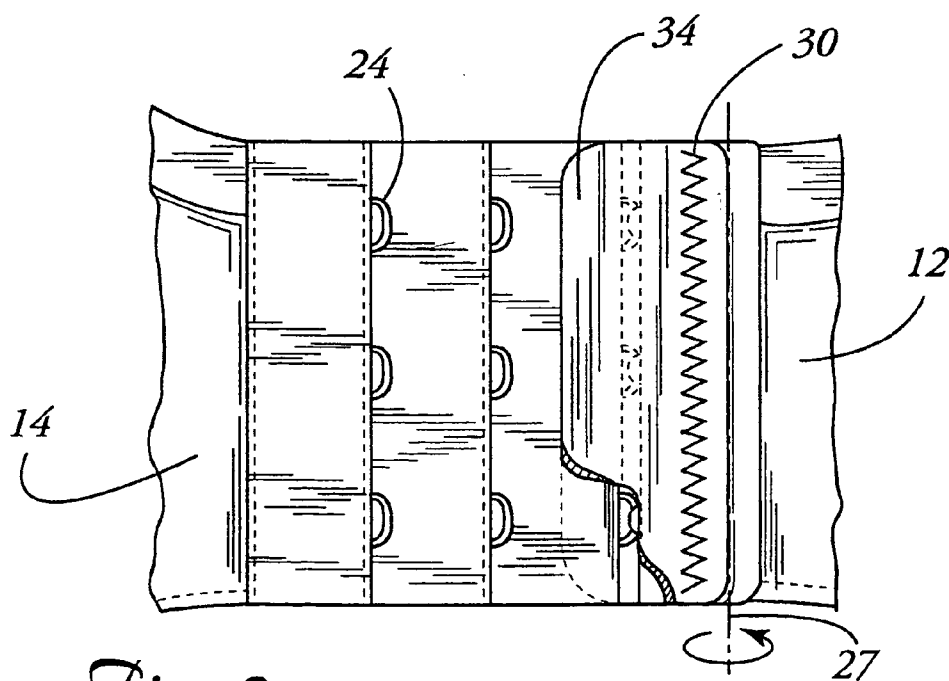
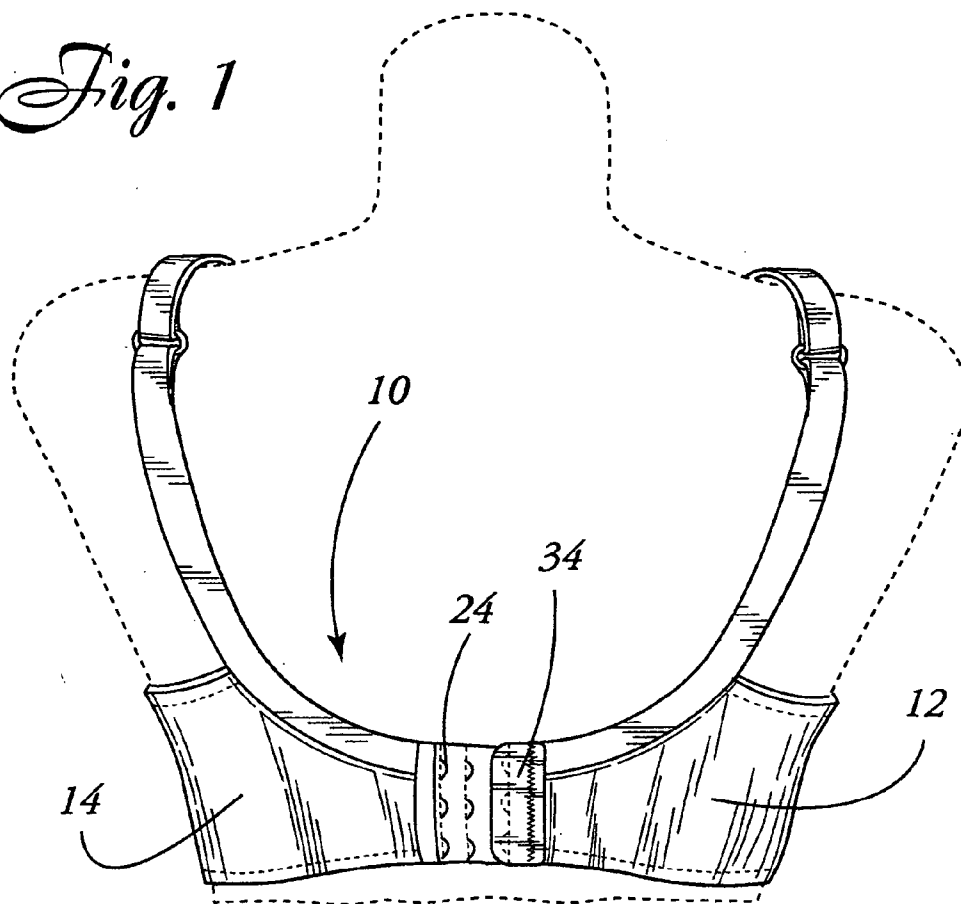
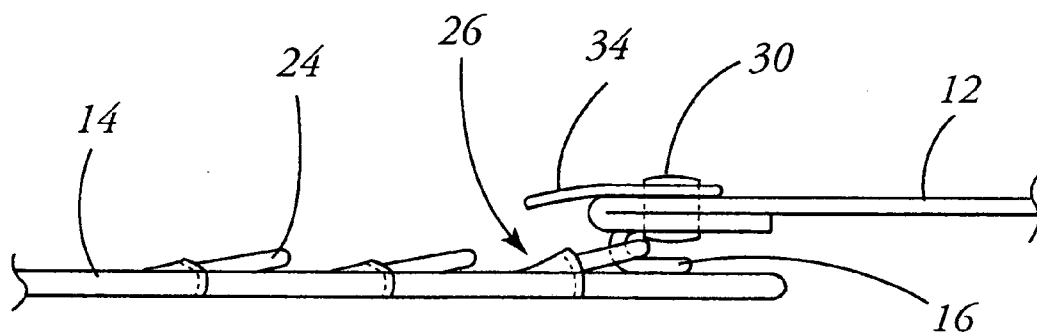


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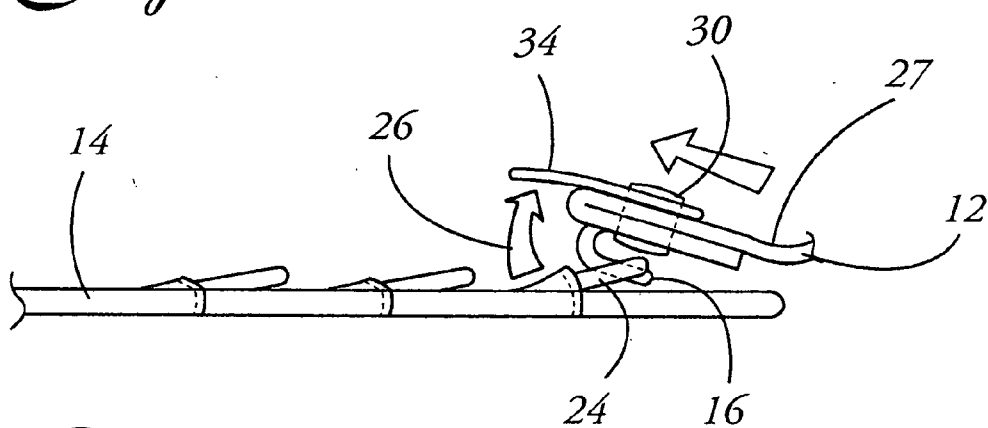
*Fig. 1*



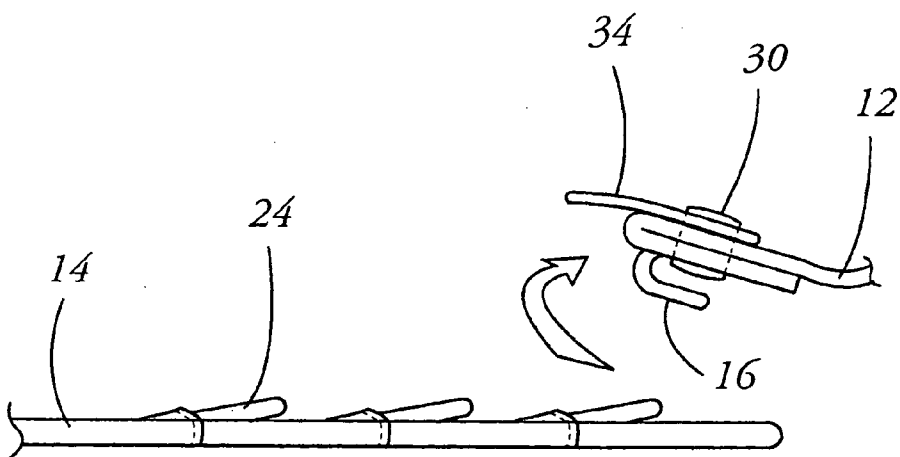
*Fig. 2*



*Fig. 3a*



*Fig. 3b*



*Fig. 3c*

## RELEASING DEVICE FOR GARMENT FASTENERS

**[0001]** This application claims priority from U.S. Provisional Patent Application No. 61/207,838 filed on Feb. 18, 2009 which is incorporated by reference herein in its entirety.

### TECHNICAL FIELD

**[0002]** This present invention relates to a releasing device for items of apparel and other articles. More specifically, the present invention relates to a simplified releasing device for bras that facilitates the easy, quick and simultaneous separation of mating hook and loop fasteners.

### DESCRIPTION OF THE RELATED ART

**[0003]** Bras, sometimes called brassieres, are garments worn by women to cover, support, and give contour to their breasts. Bras include a front portion to cover and support the breasts and side straps that extend laterally around to the back. Shoulder straps connect the front and rear portions so that the front portion can support the breasts. Either the rear portions or front portions are usually joined in the center by hook and loop fasteners made of wound wires. This type of fastener has been used for many years. (DooLittle, August 1900, 655586) However, bras using these fasteners are difficult to take off for many wearers.

**[0004]** With rear fastening bras, wearers attempt to sequentially disengage their hook and loop fasteners in a blind operation with both arms twisted behind their back. For women with limited arm movement or those with arthritis in wrists or fingers this removal process can be both difficult and painful. Disengagement is particularly more difficult when the fasteners are under tension due to incorporated elastic elements or elasticized-fabric construction.

**[0005]** David Grunwald, U.S. Pat. No. 6,443,804 September 2002 “Garment with quick-release fastener” and Carey Portzline, U.S. Pat. No. 6,513,209 Oct. 13, 2000, “Fastening system for a bra” have created and patented new fasteners with easy-release features for the above listed reasons. While the aforementioned fasteners have been found to be highly effective they are somewhat thicker and more expensive than is desirable for many bras and thus are subject to improvement.

### BACKGROUND OF THE INVENTION

**[0006]** Fasteners are of two classes. One class is designed to be affixed together permanently (rivets and nails); a second class is designed to be fixed together temporarily (i.e., zippers, buckles, screws, VELCRO hook and loop fasteners and shoelaces). Inherent in the design of temporary fasteners is a method of release. Multiple methods of release are not inherent in a design of fasteners nor are fasteners generally released simultaneously (i.e., three zippers, two belt buckles, or two shoelaces).

**[0007]** However, a bra commonly has a plurality of hook and loop fasteners which are sequentially separated with both arms twisted behind when the wearer wishes to remove it. This can be difficult and painful for some.

**[0008]** Therefore, an improved easy, quick and convenient releasing device for simultaneously disengaging hook and loop fasteners on bras is needed. The releasing device has been developed to accomplish this and other objectives.

### SUMMARY OF THE INVENTION

**[0009]** The invention is an easy, quick and convenient release device for bras and other garments which use hook and loop fasteners. The releasing device will typically be of tab-like form (i.e., small, thin, and essentially flat), affixed to a hook end portion of a bra strap and affixed adjacent and to its hooks. This union at the affixed end of the releasing member and the end portion of a bra strap will have a substantially linear edge portion providing an axis of rotation. The releasing member is affixed to the hooks so that when the releasing member is rotated about its axis of rotation, the orientation of the hooks will be reversed and expose their open ends to the loops with simultaneous disengagement of hooks from their mating loops.

**[0010]** It is a broad object of the present invention to provide an easy and convenient releasing device for quick simultaneous garment fastener disengagement when the garment portions are to be separated from one another.

**[0011]** More specific objects of the invention are to provide such an easy and convenient releasing device, and in particular a device for the quick simultaneous disengagement of hook and loop fasteners of a bra.

**[0012]** Additional specific objects of the invention are to provide an easy releasing device having the foregoing features and advantages in which the releasing device disengages a bra with one hook and loop fastener or simultaneously disengages a plurality of hook and loop fasteners upon operation of the releasing member.

**[0013]** Further objects and advantages of my releasing device will become apparent from a consideration of the drawings and ensuing description.

### BRIEF DESCRIPTION OF THE DRAWINGS

**[0014]** A better understanding of the present invention will be had upon reference to the following description in conjunction with the accompanying drawings in which like numerals refer to like parts throughout the views wherein:

**[0015]** FIG. 1 is an isometric view of a bra with releasing member and conventional hook and loop fasteners.

**[0016]** FIG. 2 is a detailed drawing of releasing member affixed to a hook end of bra strap with cut away section of releasing member.

**[0017]** FIG. 3a is side view of releasing member affixed to a hook end of a bra strap and a hook engaged in a loop.

**[0018]** FIG. 3b is a side view of a bra strap with affixed releasing member being rotated about its axis of rotation.

**[0019]** FIG. 3c is a side view of affixed releasing member and bra straps 12 and 14 fully separated.

### DESCRIPTION OF THE PREFERRED EMBODIMENTS

**[0020]** The present invention is an easy, quick and convenient releasing device for bras that employ hook and loop fasteners. Bras are garments worn by women to cover, support and contour the breasts. In the present preferred embodiment the releasing device consists of a releasing member affixed by stitching to the end portion of a side strap and adjacent to single or multiple hooks. Bras are comprised primarily of fabric and its hooks are substantially covered and incorporated into the bra by fabric and stitching. Only the superior curved portion of the hooks are exposed while their wider lateral and medial aspects are covered by fabric. Thus the embodiment in which the releasing member is affixed to a

bra strap end portion by the simultaneous affixing of the fabric and the lateral aspects of the bra's single or multiple hooks to the releasing member is preferred. Affixing the releasing member to the lateral aspects of the hooks also positions the releasing member in proximity to the wearer's back to conceal it and prevent protrusion of the releasing member through outer clothing. This union of the bra and the stitched end of the releasing member will have a substantially linear edge portion to provide an axis of rotation. The presently preferred releasing member will typically be of tab-like form (i.e., small, thin, rectangular and essentially flat or have a slight curve). Rotating the releasing member with its unfixed end about its axis of rotation will reverse the orientation of the bra hooks to expose the open end of the hooks to their mating loops with subsequent simultaneous disengagement of hooks and loops.

**[0021]** In FIG. 1 illustrated is a bra, generally designated by the numeral 10, which includes releasing member 34, two side strap portions 12 and 14 secured to one another in an adjacent relationship by conventional hook and loop 24 fasteners; the strap portions are fabricated, at least in part, from an elasticized fabric which maintains pressure on hook and loop fasteners.

**[0022]** In FIG. 2, releasing member 34 is formed into a thin, generally rectangular, tab-like body affixed to bra strap 12 with stitching 30 creating a substantially linear axis of rotation 27.

**[0023]** FIG. 3a shows releasing member 34 affixed to side strap 12, hook 16 fully engaged in loop 24, axis of rotation 27 and a handle element 26 at the free end of the releasing member. Releasing member 34 has a slight curve to allow it to inconspicuously conform to wearers back and not protrude into outer garments.

**[0024]** FIG. 3b shows partial release of hooks 16 from loops 24 by pivoting releasing member 34 with handle element 26 about axis of rotation 27. This pivoting of the releasing member 34 about its axis of rotation 27 reverses the orientation of engaged hooks 16 with subsequent simultaneous disengagement of hooks 16 and loops 24. Separation of side straps 12 and 14 results from the tension of elastic side straps.

**[0025]** FIG. 3c shows side straps 12 and 14 fully separated after release of hook 16 and loop 24 fasteners. Separation is facilitated by the tension of elastic side straps.

**[0026]** Although the description is directed primarily to a brassiere, other kinds of garments, including both outer garments and underwear, may embody the present invention. While the releasing device is located at the back of a bra, it could also be used as a front releasing device for a front closing bra. The releasing member itself may of course take many different shapes and forms. The releasing member may be of stamped metal or molded plastic construction; indeed it may be a composite having discrete portions made from different natural and synthetic materials. The method of affixing the releasing member may take many different shapes and forms. The affixing method may be of stitching (as described), staples, adhesive bonding, or other means.

**[0027]** The releasing device provides an easy, quick, convenient, and simultaneous release of hook and loop fasteners. The preferred embodiment affixes the lateral aspects of hook fasteners to the releasing member. An alternative embodiment affixes the superior curved portion of the fastener or fasteners to the releasing member. Indeed, any part of the hook fasteners could be affixed to the releasing member.

Another embodiment consists of a single row of holes in the releasing member or a plurality of rows of holes for affixing the releasing member to a bra strap end portion and its hooks. Another embodiment consists of a releasing member without preconstructed holes. Alternative embodiments consist of various methods of affixing the releasing member to a bra strap and its hooks.

**[0028]** In another embodiment, the releasing member is affixed to the bra strap end portion adjacent to its hooks on the inside of the bra strap (i.e., adjacent to the wearer's back). Another contemplated embodiment affixes the releasing member on the end portion of a bra strap adjacent to its hooks on the outside of the bra strap. Another embodiment affixes the releasing member to a bra strap while encased in fabric.

**[0029]** While particular embodiments of the releasing device have been described by way of illustration, it will be understood that the releasing device may be implemented with many variations, modifications and adaptations, such as being suitable for a releasing device for different types of apparel or implements, without departing from its spirit or exceeding the scope of the claims.

**[0030]** The foregoing detailed description is given primarily for clearness of understanding and no unnecessary limitations are to be understood there from, for modification will become obvious to those skilled in the art upon reading this disclosure and may be made upon departing from the spirit of the invention and scope of the appended claims. Accordingly, this invention is not intended to be limited by the specific exemplification presented herein above. Rather, what is intended to be covered is within the spirit and scope of the appended claims.

1. A support garment comprising:

support structure;

at least two straps affixed to said support structure, said at least two straps to be secured to each other to hold said support garment onto a user;

at least one loop affixed to the end of a first of said at least two straps;

a releasing member being affixed to the end of a second of said at least two straps; and

at least one hook affixed to said release member.

2. The support garment of claim 1 wherein said support garment is a bra.

3. The releasing device of claim 1 wherein said releasing member comprises a sheet of substantially rigid construction having affixed and free end portions and of sufficient size and shape to accommodate use by hand.

4. (canceled)

5. The bra of claim 2 wherein said bra comprises first and second straps constructed to secure one to the other in an adjacent relationship.

6. The bra of claim 5 wherein said first strap has at least one hook element with a distal open end and a proximal curved superior element.

7. The bra of claim 5 wherein said second strap has at least one loop element fastener.

8. The support garment of claim 1 whereby the affixing of said releasing member to said second strap provides a substantially linear edge element creating an axis of rotation.

9. The support garment of claim 1 wherein said releasing member includes a free outer edge providing a handle element by which rotation of said releasing member about said axis of rotation can be effected, whereby said at least one hook will be disengaged from said at least one loop.

10. (canceled)

11. A releasing device comprising:

a releasing member being affixed to a garment, said garment including at least one hook and at least one loop to be used for closure of said garment, said release member also being affixed to at least one hook element of said

garment whereby rotation of said releasing member substantially simultaneously disengages said at least one hook from said at least one loop when rotated.

12. (canceled)

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