A breast restraint apparatus encircling an upper torso during vigorous activities such as jogging is made up of a flexible, stretchable and compressible elongated panel having a porous neoprene inner layer bonded to a synthetic fiber layer on one or both sides thereby forming a multi-layer integral assembly. A hook type fastener material layer is joined to the panel at one end and a loop type fastener material layer is bonded to the opposing end of the panel. The two ends of the panel are formed as semicircles and may be joined for encircling the torso of an exerciser.
GAS PERMEABLE ATHLETIC BREAST RESTRAINT

CROSS-REFERENCE TO RELATED APPLICATIONS

Not applicable.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

Not applicable.

THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT

Not applicable.

INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC

Not applicable.

REFERENCE TO A “MICROFICHE APPENDIX”

Not applicable.

BACKGROUND OF THE INVENTION

1. Field of the Present Disclosure

This disclosure relates generally to breast restraining devices for support during vigorous activities and more particularly to such a device that is able to be more conveniently used and which provides a high level of comfort during wear.

2. Description of Related Art Including Information Disclosed Under 37 CFR 1.97 and 1.98

Negron, U.S. D426308, discloses an ornamental design for a breast wrap.

Hanson, U.S. 2003/0166376, discloses a brassiere designed to accommodate women who have breasts of different sizes. The brassiere comprises a left half including a left cup adapted to receive a user's breast, a front left closure, and a rear left closure. The brassiere further includes a right half including a right cup adapted to receive a user's breast, a front right closure, and a rear right closure. The left cup has a different size than the right cup, the front left closure is detachably connected to the front right closure, and the rear left closure is detachably connected to the rear right closure. In this manner, the brassiere is dimensioned to properly fit a user having breasts of different sizes.

Lorenzo, U.S. 2005/0004501, discloses a band for use for breast stabilization from lateral gravitational shifting. The band comprises a strip to encircle the body, a first section comprising a semi-cylindrical component of a sponge-like material at one end and a nap material patch on its outer surface with a cylindrical side placed over the sternum, and a second section for connecting an end of the body strip to encircle a user's body. The band comprises at least one fenestration to enable breast exposure. The object of this invention is to provide a band centrally placed over the sternum and wrapped under the arms around the chest preventing lateral breast shifting when the patient is in the side-lying position. The invention comprises a body strip to accommodate breast coverage achieved with a fenestrated band. Variations of the band are also useful in dressing bodily wounds, such as on the face or knee.

Zecher, U.S. 2006/0046615, discloses an invention that relates to devices and methods for restraining excessive breast movement while a user engages in vigorous activity. In one embodiment, a method generally includes substantially entirely covering the user's breasts by wrapping a strapless breast restraint around the user's torso. The method also includes engaging first and second end portions of the strapless breast restraint to one another to thereby fasten the strapless breast restraint about the user's torso, whereby the strapless breast restraint compresses the user's breasts firmly against the user.

T. Zecher, U.S. Pat. No. 1,948,076, discloses a supporter for lactating breasts consisting of an oblong shaped band of material having a high elasticity in the longitudinal direction and relatively inelastic in the transverse direction, the longitudinal elasticity being substantially uniform across the width of the band, and an adjustable connector of the slidably type and arranged to connect the ends of the band along the entire width thereof and converting the same into a circular band, and having means for permanently connecting the lower corners of the ends of the band, the connector being so disposed that it is operable upwards to close the band and downward to open the same whereby the band offers positive support and lift for the breast without undue compression.

Stack, U.S. Pat. No. 2,723,396, discloses a muscle supporter for the torso of a wearer comprising an elongated rectangular shaped member of highly elastic material for stretching longitudinally and transversely, the member having parallel free ends and parallel upper and lower edges for encircling a portion of the torso of the wearer thereby forming a vertical and horizontal elasticized muscle supporter, a pair of concave members attached to the upper edge of the member adjacent the ends thereof and adapted to receive the breasts of a female wearer, the concave members having free ends in alignment with the free ends of the member, continuous slideable type fastening means detachably connecting the free ends of the rectangular member and the concave members, and a shield flap attached to the rectangular member and one concave member adjacent a free end thereof for underlying the fastening means when the free ends are connected.

Hurwitz, U.S. Pat. No. 3,040,750, discloses a brassiere comprising, in combination, a chest encircling band, releasable fastening means carried by the band, a pair of breast receiving cups carried upon the band, each one of the cups being of substantially hollow truncated conical configuration, the fastening means comprising a pair of settings of cooperating hook and eye fastening elements mounted upon the band for selective releasable engagement with each other to define a substantially annular band for encircling the chest of the wearer, a pair of substantially trapezoidal shaped panels one at the front and one at the back side of the chest encircling band, the panel at the front side of the band being interposed between the breast receiving cups, the trapezoidal panels being constructed of a selected one of elastic and non-elastic materials, and the remaining portion of the band being constructed from the other one of the elastic and inelastic materials.

Dormire, U.S. Pat. No. 3,189,028, discloses a breast support and binder, comprising a band for reaching around the body of a wearer, the band being constructed of longitudinally stretchable material and having a rectangular opening therein near the center, a single pocket of elastic material secured to the band at the opening and constructed of longitudinally stretchable material for receiving the breasts, verti-
cal slots on opposite sides of the pocket, resilient ribs disposed in the slots, a strip of material secured to one end and on one side of the band and having numerous small securing means thereon in closely spaced relation, and a strip of material secured to the other end and on the other side of the band and having numerous small securing means thereon in closely spaced relation for adhering to the first mentioned strip.

[0017] Hoppus, U.S. Pat. No. 4,957,466, discloses a sleeveless bodice type athletic support garment structured of a multi-layered rectangular front and back panel, two length adjustable shoulder straps, a neck opening, two arm apertures, and two open abd side seams attachable with hook and loop fasteners to allow size adjustability. The garment is made of a resilient material capable of dissipating heat and perspiration. The interior of the front panel is affixed with a flat rectangular elastic panel to support and stabilize a woman's breasts against her chest. The athletic support garment is especially directed for use by large breasted women who require additional support during strenuous or active sports. The support garment can be worn in place of a bra, over existing clothing or even as an outer garment.

[0018] Farino, U.S. Pat. No. 5,037,348, discloses a therapeutic brassiere for supporting breast implants that includes breast receiving cups. Each of the cups is formed from a section of body engaging fabric joined together at a common seam. A chest encircling band is joined to the lower marginal edges of the cups for affixing the brassiere to the chest of a wearer. An elastic strip of material, attached to both the upper marginal edges of the cups and to the chest encircling band prevents movement or distortion of the breast implants.

[0019] Zarkesh, U.S. Pat. No. 5,060,648, discloses a breast binder for supporting the breast during breast engorgement. It would be worn after child delivery, basically by mothers who do not intend to breast feed their babies, to help treat the pain caused by breast engorgement.

[0020] Corrado, U.S. Pat. No. 5,098,331, discloses a therapeutic chest dressing for breasts having implants including a chest encircling, flexible band provided with front flaps whereby the band is disposed against the back of a person and the front flaps overlap and fasten to each other. A chest encircling strip is attached to the flexible band for preventing movement or distortion of the implants for breasts received in the flexible band.

[0021] Manning, U.S. Pat. No. 5,427,563, discloses a breast wrap that has two rectangular non-stretching panels of cotton flannel material joined over a user's back by short elastic strips, and joined in overlapping relationship across the breasts by upper and lower complementary hook-and-loop fasteners running marginally along upper and lower longitudinal edges. The panels run lengthwise in opposite directions from the user's back, under one arm, across both breasts, and terminate at a point located under the other arm; the panels run widthwise from above the breasts to below the breasts; and the fasteners are located so they will not be pressed into the breasts. Two rectangular open-ended pouches having pockets for crushed ice, are held between the overlapping panels by additional hook-and-loop fasteners that mate with fasteners.

[0022] akim, U.S. Pat. No. 6,015,331, discloses a nighttime nursing tube bra that comprises a front central portion having a first constant width and first and second side portions coupled to the left and right of the front central portion. The top and bottom portions of the front central portion and the first and second side portions have coupled there along elastomerie band members which resiliently collapse around the wearer's body immediately above and below the breasts of the wearer. The free ends of first and second side portions, preferably, are secured via Velcro® to form a tube bra around the chest of a nursing mother. The front central portion includes first and second releasable panels which permits easy access to the wearer's breast. In the preferred embodiment, the tube bra is made of an absorbent material such as terry cloth.

[0023] The related art described above discloses a wide range of body wraps and breast supports for inhibiting excessive breast movement. However, the prior art fails to disclose a body wrap with the construction and ultimate performance of the present invention. The present disclosure distinguishes over the prior art providing heretofore unknown advantages as described in the following summary.

BRIEF SUMMARY OF THE INVENTION

[0024] This disclosure teaches certain benefits in construction and use which give rise to the objectives described below.

[0025] It is well known that breast injury can occur due to aggressive activity and especially frequent and long cardio workouts such as running and jogging. The breasts are composed of mainly fatty tissue with the mammary glands and some muscle. The muscle is deep so it cannot help much in supporting the breast. Cooper's ligaments hold the breasts up. They are thin bands interwoven into the breast and are not very strong. If the breasts are not supported properly, with, for instance, a sports bra, then repetitive bouncing of the breasts from running can stretch the Cooper's ligaments permanently. An additional problem is called "jogger's nipple." This is a soreness in the nipple structure that results from rubbing between the nipple and cover garments, including bras, during vigorous activity. Clearly a solution to these problems is needed.

[0026] Sports bras are well known and are available commercially. However, such bras are relatively complex devices with straps, attachment hardware, and adjustment hardware. Manufacturers tend to provide such devices with complexity in an attempt to fit a wide range of persons well, secure the breasts from movement during activity, and to make the product appear to be worth the relatively high selling price. The device disclosed in Zecher, US 2006/0046615 is a relatively simple approach and an alternative to the common sports bra. This device firmly presses the user's breasts against the torso in order to limit their movement in a manner similar to that of the presently described invention. However, this device, although similar to the present invention in form and function, falls short of the benefits of the present apparatus as will be shown. One drawback is the generally rectangular end portions which leave square corners free to get in the way of arm and hand motion as they tend to bend outwardly.

[0027] The present invention is a breast restricting body wrap apparatus adapted for encircling the body in support of a woman's breasts during vigorous activities such as jogging, and which is made up of a flexible, stretchable and compressible elongated panel having a porous neoprene inner layer bonded to a synthetic fiber layer on one or both sides thereby forming a multi-layer integral assembly. A hook type fastener material layer is joined to the panel at one end and a loop type fastener material layer is bonded to the synthetic fiber outer layer at an opposing second end of the panel. The two ends of the panel are formed as semicircles and are typically joined after stretching the apparatus and encircling the chest area of
the body so as to achieve a tight binding result. If the result is too loose or too tight, the apparatus may be reapplied to make small adjustments due to the longitudinal extent of the loop attachment material. The circular ends of the restraint prevent corners or edges of the apparatus from bending into path of arm or hand movements while exercising. A key feature of the apparatus is that vapors are able to pass through the neoprene layer thereby allowing for evaporative cooling.

[0028] A primary objective inherent in the above described apparatus and method of use is to provide advantages not taught by the prior art.

[0029] Another objective is to provide a body wrap that is able to comfortably secure the breast mass of a woman while exercising.

[0030] A further objective is provide such a wrap that is able to adapt to a wide range of body sizes and shapes.

[0031] A yet further objective is to provide such a wrap that is highly flexible, strong, elastically extensive and enables vapor to pass easily therethrough.

[0032] A further objective is to provide such a wrap that does not have protruding square corners that can be obtrusive during exercise.

[0033] A still further objective is to provide such a wrap that has an elastic core covered by stretchable fabric on both sides for fabric-skin comfort and for abrasion resistance to the core material.

[0034] A yet further objective is to provide such a wrap that is able to be rolled into a compact form for convenient portability.

[0035] Other features and advantages of the present invention will become apparent from the following more detailed description, taken in conjunction with the accompanying drawings, which illustrate, by way of example, the principles of the presently described apparatus and method of its use.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S)

[0036] Illustrated in the accompanying drawing(s) is at least one of the best mode embodiments of the present invention. In such drawing(s):

[0037] FIG. 1 is a plan view of the outside surface of the presently described apparatus;

[0038] FIG. 2 is a plan view of the inside surface thereof;

[0039] FIGS. 3 and 4 are sectional views taken from FIG. 2;

[0040] FIG. 5 is a sectional view taken from FIG. 1; and

[0041] FIG. 6 is a perspective view showing an application of the apparatus.

DETAILED DESCRIPTION OF THE INVENTION

[0042] The above described drawing figures illustrate the described apparatus and its method of use in at least one of its preferred, best mode embodiment, which is further defined in detail in the following description. Those having ordinary skill in the art may be able to make alterations and modifications to what is described herein without departing from its spirit and scope. Therefore, it must be understood that what is illustrated is set forth only for the purposes of example and that it should not be taken as a limitation in the scope of the present apparatus and method of use.

[0043] Described now in detail is a breast restraint panel 10 which is beneficially used for securing the upper torso of a person's body mainly in support of breasts during vigorous activities such as running and jogging. The panel 10 is flexible so as to enable it to be placed around the torso; stretchable so as to provide a tight and tensioned fit; and compressible so that it provides comfort to the wearer. The panel 10 is formed, as shown in FIGS. 1 and 2 with a relatively narrow medial portion 12 and relatively wider end portions 14 and 16. Preferably, the end portions 14 and 16 terminate with circular or near circular edges 14a and 16a so as to avoid loose square corners which get in the way of arm and hand movement during exercising. The panel 10 is relatively thin in cross section as shown in FIGS. 3-5 having a porous layer 11 of a polychloroprene based rubber, such as Neoprene®, bonded to inner and outer layers 13 of a synthetic fiber such as Nylon®. Of course layers 11 and 13 may be made of alternate substances having similar characteristics to Neoprene and Nylon. The porous character of the neoprene layer 11 is achieved by flocculating or foaming the Neoprene base material during the fabricating process. This material therefore is porous to gases and vapors providing evaporative cooling to the athlete. The Neylon layers 13 are of a weave that allows this fabric to breathe and stretch with the Neoprene layer 11. The Neylon layers 13 provide protection against wear and abrasion to the Neoprene layer 11. Along the peripheral edges of the panel 10 all of the layers are preferably joined by overlapping stitching technique. Therefore, panel 10 is able to be manually stretched providing elastic forces that cause the panel 10 to provide a tight fitting fit on the torso. Layers 11 and 13 are bonded together by either a heat process or a bonding agent, both techniques being well known in the art, and which provide a unitary composite structure that moves, flexes and stretches. The Neylon layer 13 provides a soft fabric surface against the skin when the panel 10 is used without an undergarment.

[0044] Overlaying and joined to the inner layer 13 at a first longitudinal end of the panel 10 is a hook type fastener material layer 20 as shown in FIGS. 1, 5 and 6; and bonded to the outer layer 13, at an opposing second longitudinal end of the panel 10, is a loop type fastener material layer 22 as shown in FIGS. 2, 3 and 6. As shown in FIG. 2, layer 22 may be also placed along the first longitudinal end (left side in FIG. 2) of panel 10 to provide a symmetrical appearance.

[0045] FIG. 2 shows that the loop type fastener material layer 22 is of such longitudinal extent as to enable the hook type fastener material 20 layer to be joined thereto in establishing the panel 10 as a closed loop with selective diameter having a range of sizes for tightly fitting about a wide range of body sizes and conformations. The panel 10 is donned as shown in FIG. 6 where the panel 10 is placed around the upper back and then the two terminal ends are pulled forward and closed about the chest engaging the loop 22 and hook 20 surface fastener materials at a position that is tight, yet comfortable to the user.

[0046] The enablements described in detail above are considered novel over the prior art of record and are considered critical to the operation of at least one aspect of the apparatus and its method of use and to the achievement of the above described objectives. The words used in this specification to describe the instant embodiments are to be understood not only in the sense of their commonly defined meanings, but to include by special definition in this specification: structure, material or acts beyond the scope of the commonly defined meanings. Thus if an element can be understood in the context of this specification as including more than one meaning, then
its use must be understood as being generic to all possible meanings supported by the specification and by the word or words describing the element.

[0047] The definitions of the words or drawing elements described herein are meant to include not only the combination of elements which are literally set forth, but all equivalent structure, material or acts for performing substantially the same function in substantially the same way to obtain substantially the same result. In this sense it is therefore contemplated that an equivalent substitution of two or more elements may be made for any one of the elements described and its various embodiments or that a single element may be substituted for two or more elements in a claim.

[0048] Changes from the claimed subject matter as viewed by a person with ordinary skill in the art, now known or later devised, are expressly contemplated as being equivalents within the scope intended and its various embodiments. Therefore, obvious substitutions now or later known to one with ordinary skill in the art are defined to be within the scope of the defined elements. This disclosure is thus meant to be understood what is specifically illustrated and described above, what is conceptually equivalent, what can be obviously substituted, and also what incorporates the essential ideas.

[0049] The scope of this description is to be interpreted only in conjunction with the appended claims and it is made clear, here, that each named inventor believes that the claimed subject matter is what is intended to be patented.

1. A breast restraint apparatus for use during vigorous activities, the apparatus comprising: a flexible, stretchable and compressible elongated panel having a porous layer of a polychloroprene based rubber bonded to a synthetic fiber cloth layer, the cloth layer positioned on at least one side of the porous layer, thereby forming an integral assembly of layers; the porous layer of the polychloroprene based rubber is flocculated or foamed so that it is porous to gases and vapors, for providing evaporative cooling to an athlete; a hook type fastener material layer joined to, and overlaying, the integral assembly of layers at one longitudinal end thereof; and a loop type fastener material layer joined to and overlaying the integral assembly of layers at an opposing longitudinal end thereof, whereby the apparatus may be formed into a closed loop secured about an upper portion of a torso.

2. The apparatus of claim 1 wherein the layers are joined peripherally by a serger closed loop stitching.

3. The apparatus of claim 1 wherein a medial portion of the apparatus has a reduced width.

4. The apparatus of claim 1 wherein the longitudinal ends of the apparatus are configured as continuous curves.

5. The apparatus of claim 4 wherein the continuous curves approximate half circles.

6. The apparatus of claim 1 wherein the loop type fastener material layer is of such longitudinal extent as to enable engagement with the hook type fastener material layer to form a selected loop size for fitting about a selected human body.

7. A breast restraint apparatus for use during vigorous activities, the apparatus comprising: a flexible, stretchable and compressible elongated panel having a gas permeable layer of resilient and elastic material bonded to a cloth layer positioned on at least one side thereof, thereby forming an integral assembly; a hook type fastener material layer overlaying the integral assembly at one longitudinal end thereof; and a longitudinally elongate loop type fastener material layer overlaying the integral assembly at an opposing longitudinal end thereof enabling mutual fastening of the longitudinal ends of the integral assembly forming a loop of a size adjusted to fit about a selected torso.

* * * * *