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Casillas et al.

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(54) **GARMENT ADJUSTING SYSTEM**

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(51) **Int. Cl.**
A41C 3/00 (2006.01)
A41C 3/04 (2006.01)

(52) **U.S. Cl.**
CPC ***A41C 3/0028*** (2013.01); ***A41C 3/04*** (2013.01)

(58) **Field of Classification Search**
CPC A41C 3/04
See application file for complete search history.

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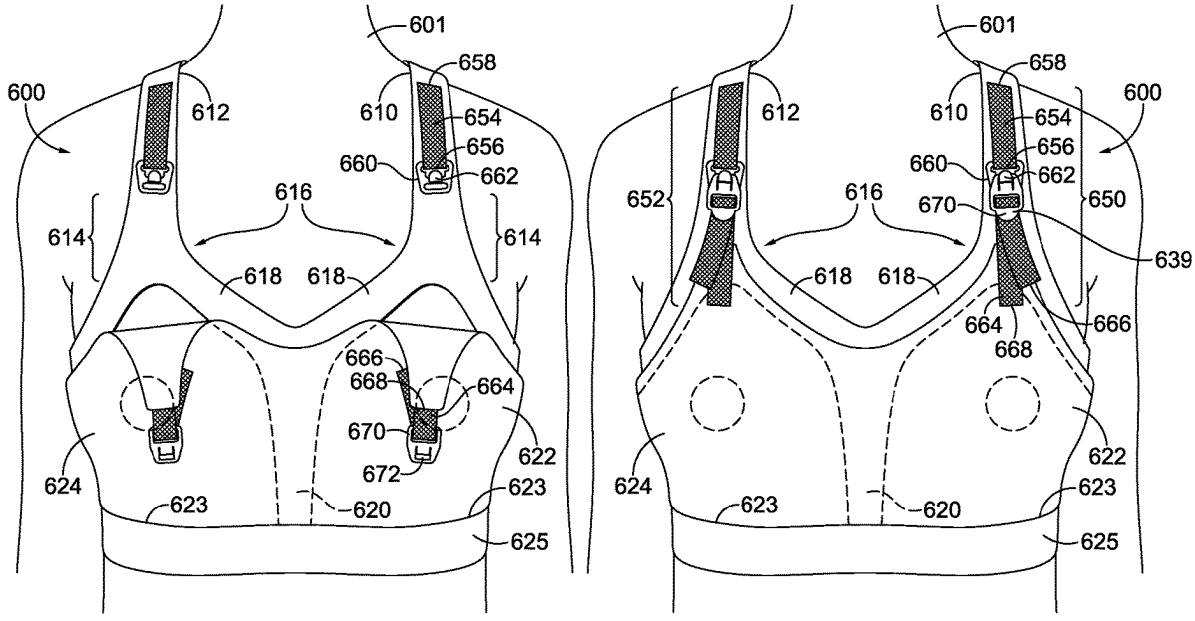
(57) **ABSTRACT**

This application describes a garment adjusting system that utilizes straps connected to textile elements. A male coupling component with a hook is secured to a first textile element using a first strap, and a female coupling component with a receiving hole is secured to a second textile element using a second strap. The male and female coupling components can be releasably mated by inserting the hook into the receiving hole. Once mated, a level of support provided by the first and/or second textile elements may be adjusted by adjustably sliding the second strap through the female coupling component to adjust a length of the second strap.

17 Claims, 6 Drawing Sheets



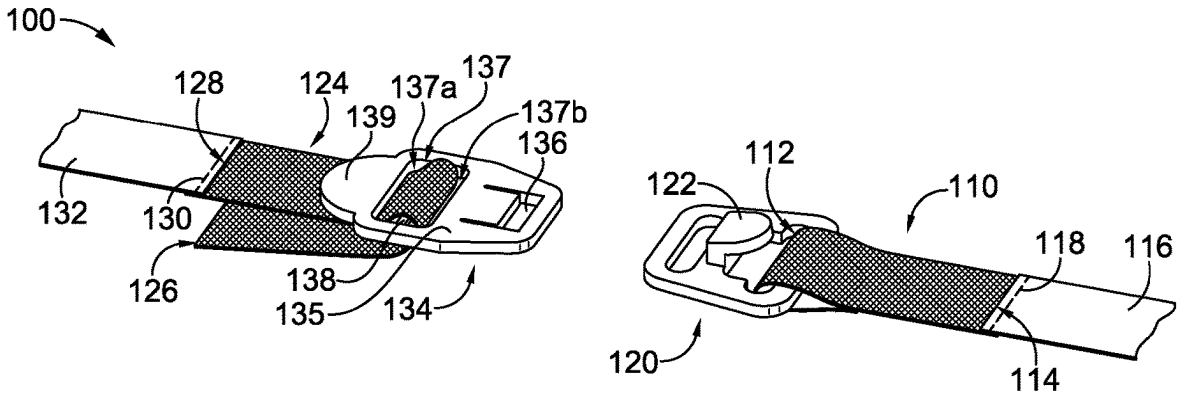


FIG. 1

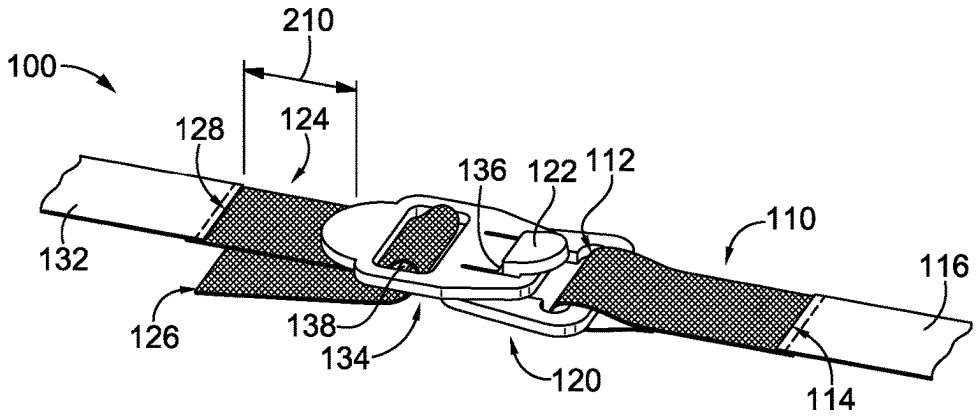


FIG. 2

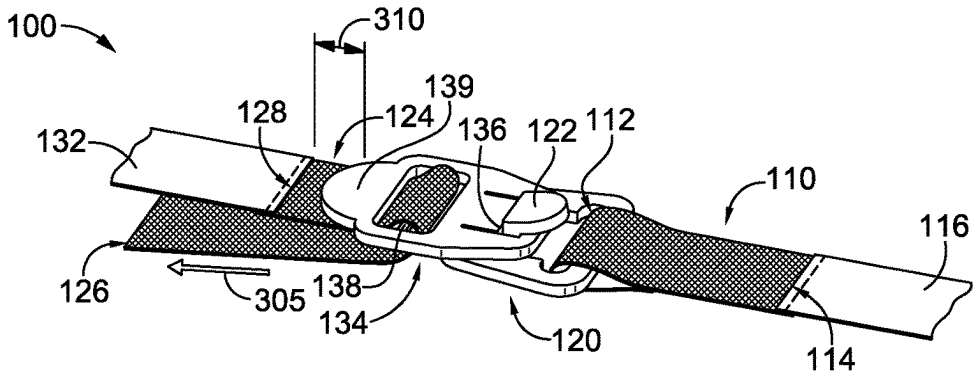


FIG. 3

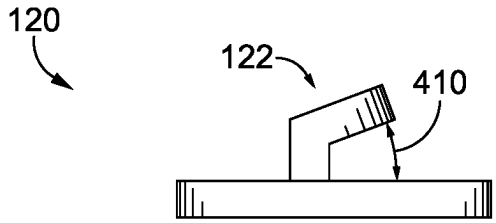


FIG. 4

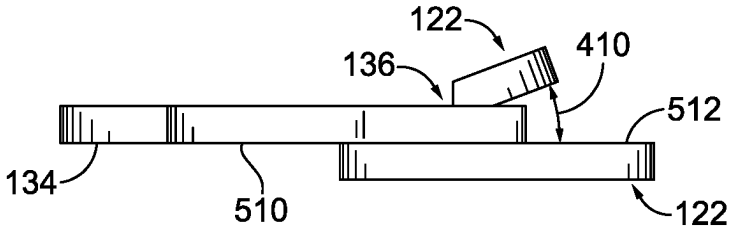


FIG. 5

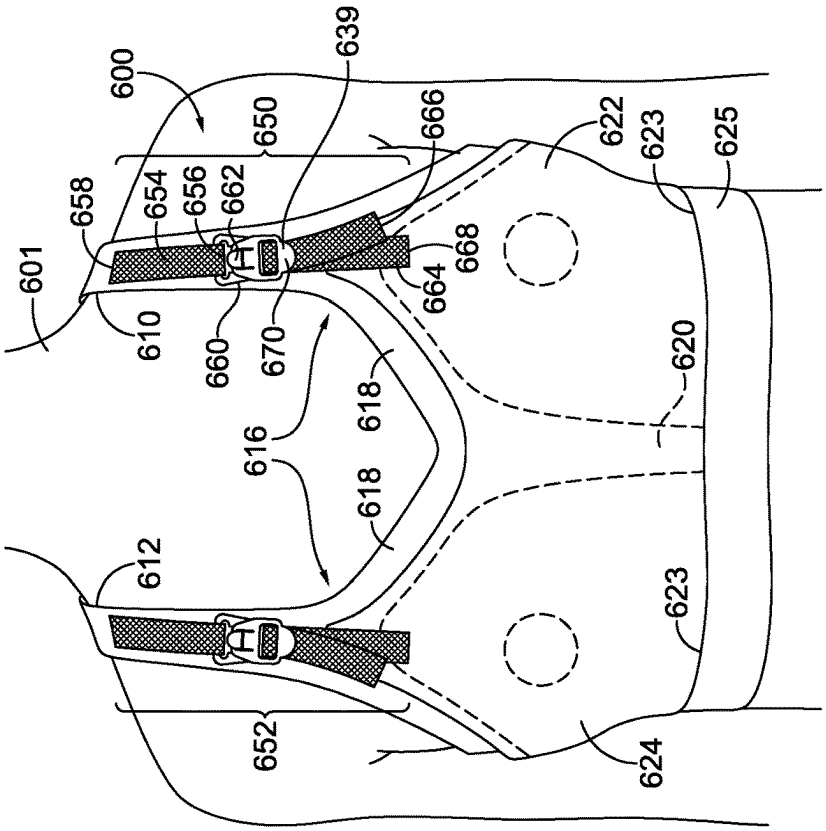

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FIG. 7

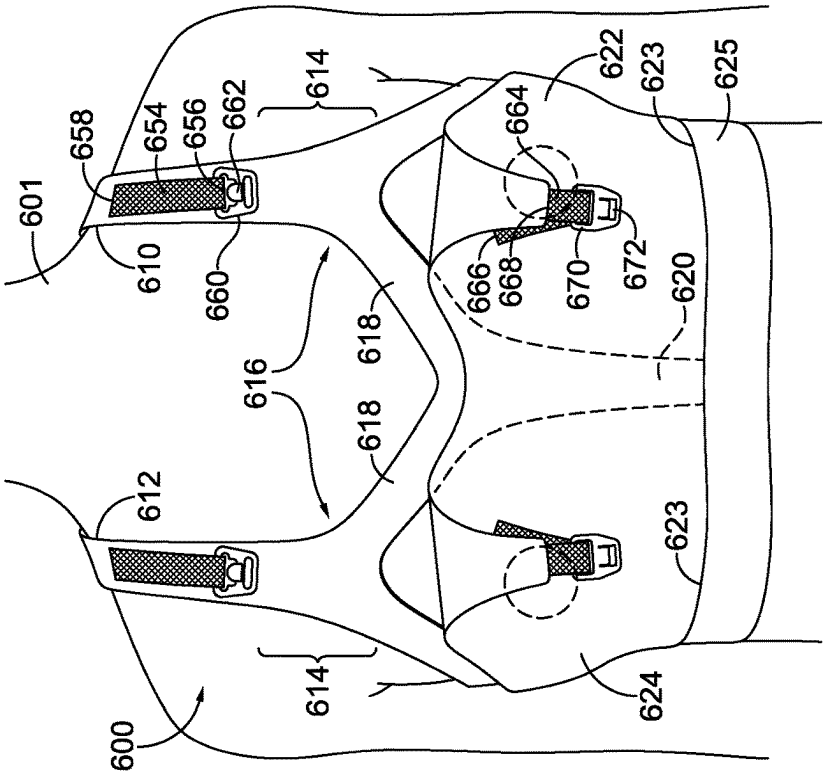
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FIG. 6

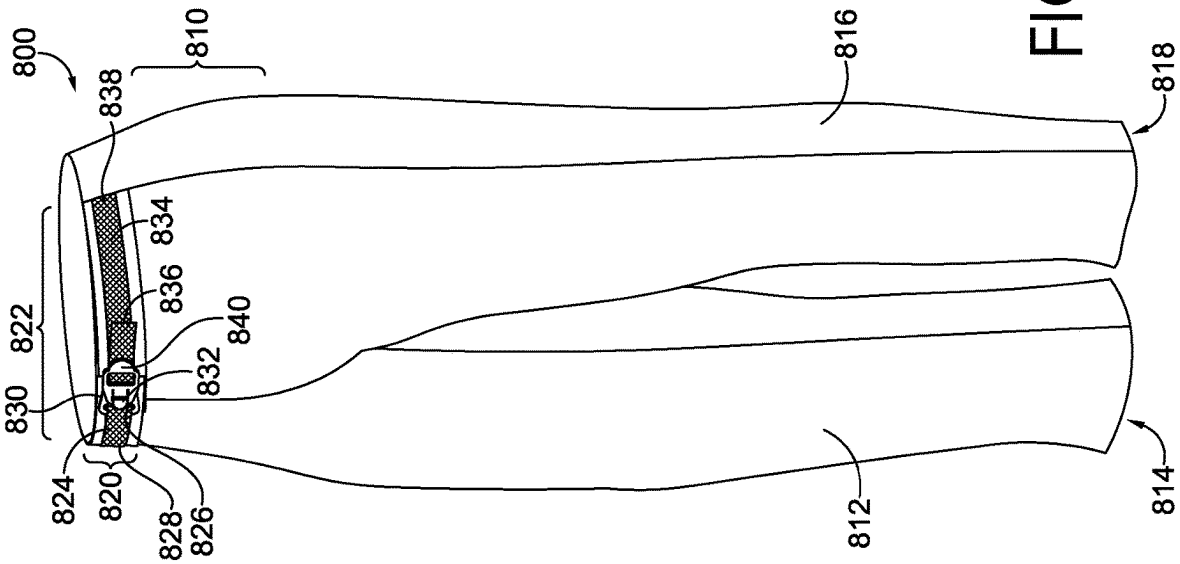
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FIG. 9

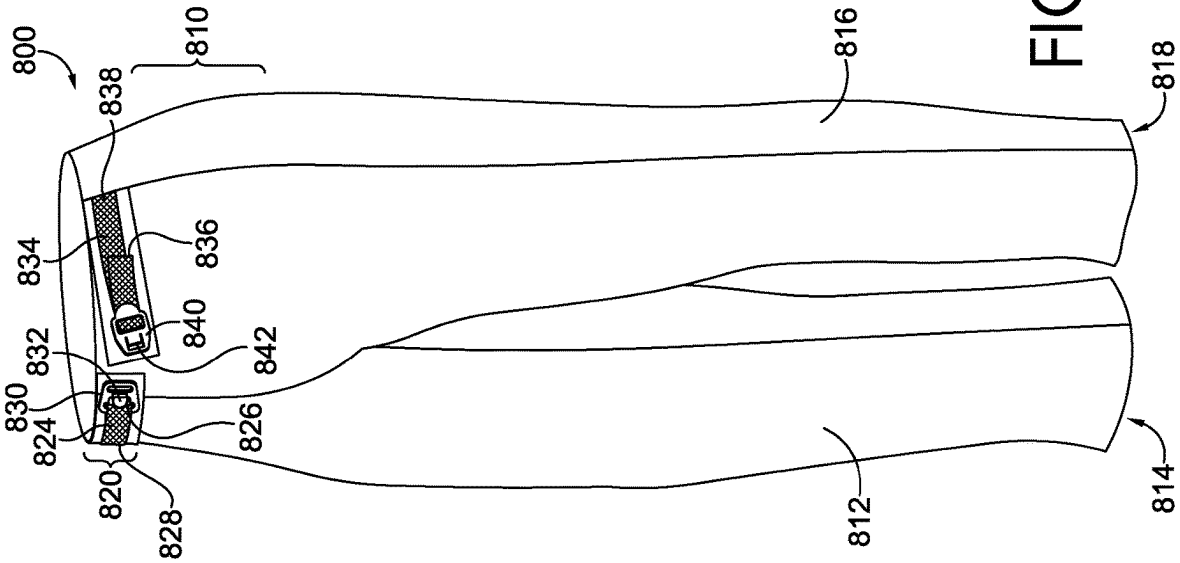
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FIG. 8

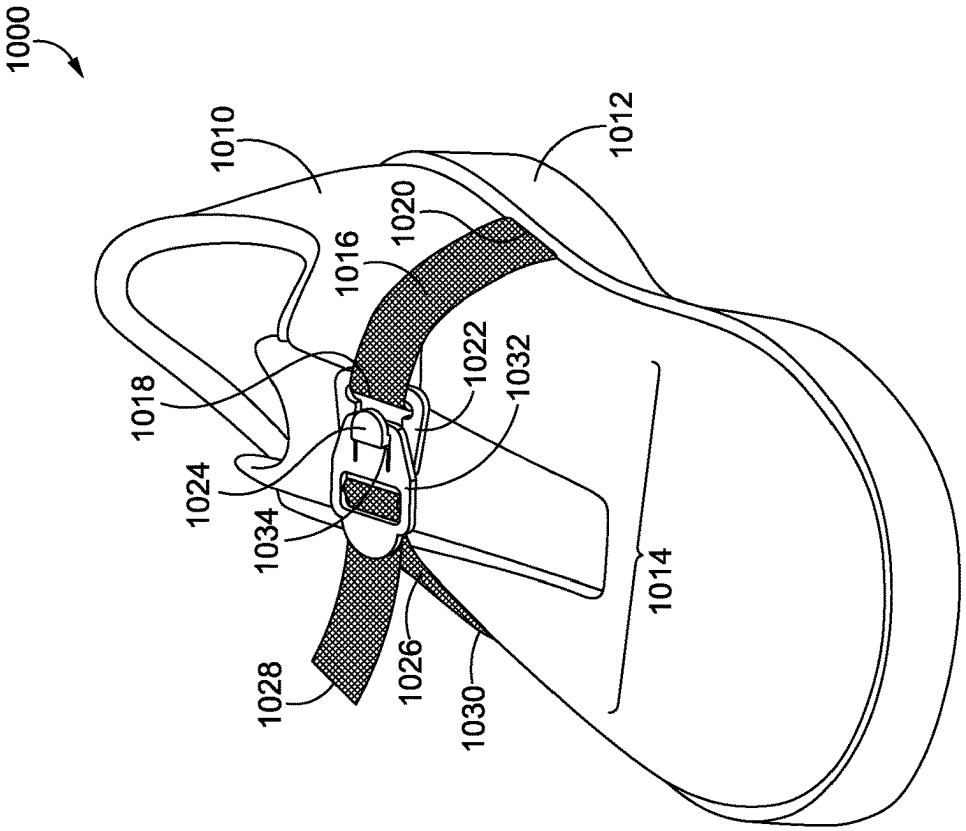
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FIG. 11

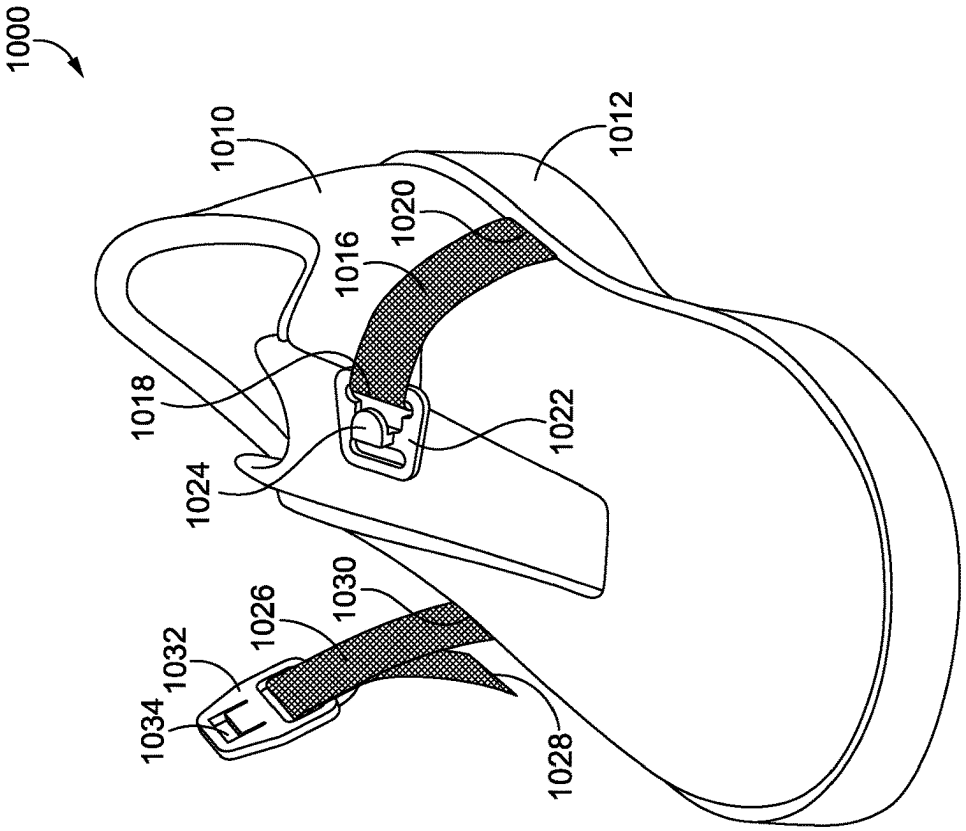
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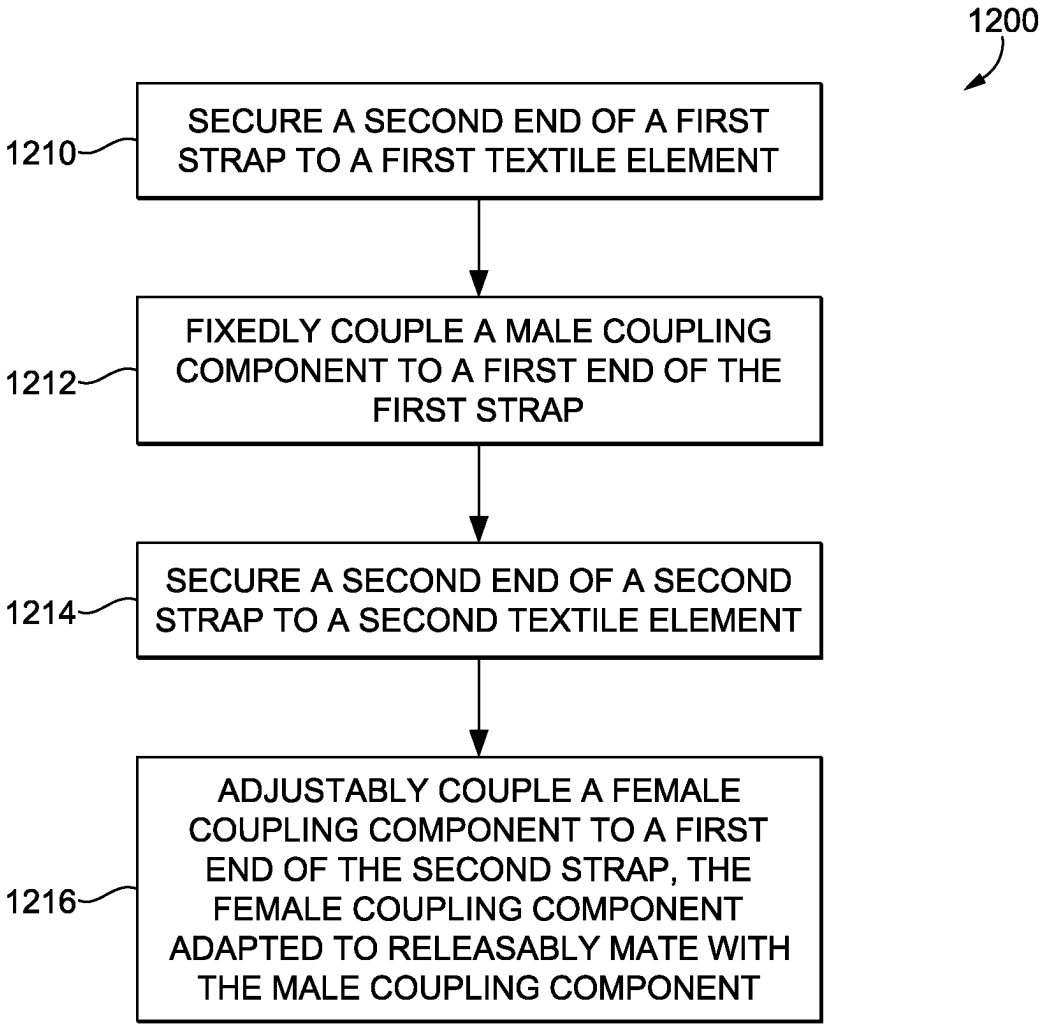
FIG. 10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SECURE A SECOND END OF A FIRST STRAP TO A FIRST TEXTILE ELEMENT
1212
FIXEDLY COUPLE A MALE COUPLING COMPONENT TO A FIRST END OF THE FIRST STRAP
1214
SECURE A SECOND END OF A SECOND STRAP TO A SECOND TEXTILE ELEMENT
1216
ADJUSTABLY COUPLE A FEMALE COUPLING COMPONENT TO A FIRST END OF THE SECOND STRAP, THE FEMALE COUPLING COMPONENT ADAPTED TO RELEASABLY MATE WITH THE MALE COUPLING COMPONENT

FIG. 12

GARMENT ADJUSTING SYSTEM

CROSS REFERENCE TO RELATED APPLICATIONS

This application claims priority to U.S. 63/270,838 (filed Oct. 22, 2021), which is incorporated herein by reference in its entirety.

TECHNICAL FIELD

Aspects herein are directed to a garment adjusting system that utilizes straps to which male and female coupling components are coupled.

BACKGROUND

Traditional garments such as nursing bras may utilize various types of clips or attachment means to couple, for example, an outer layer of the nursing bra to a shoulder strap or areas near the shoulder strap when the wearer is not nursing or pumping. However, these clips or attachment means may be difficult to manipulate often requiring two hands to effectively couple the outer layer to the shoulder strap. Moreover, traditional nursing bras typically lack a way to adjust the level of tension or support of the outer layer, which is important when the nursing bra is worn during, for example, athletic activities.

SUMMARY

The following clauses represent example aspects of concepts contemplated herein. Any one of the following clauses may be combined in a multiple dependent manner to depend from one or more other clauses. Further, any combination of dependent clauses (clauses that explicitly depend from a previous clause) may be combined while staying within the scope of aspects contemplated herein. The following clauses are examples and are not limiting.

Clause 1. A garment adjusting system comprising: a first strap having a first end and an opposite second end, the second end of the first strap secured to a first textile element; a male coupling component fixedly coupled to the first end of the first strap; a second strap having a first end and an opposite second end, the second end of the second strap secured to a second textile element; and a female coupling component slidably coupled to the second strap, the female coupling component adapted to releasably mate with the male coupling component, wherein the female coupling component is slidable along a length of the second strap such that movement of the female coupling component in a first direction increases a level of support provided by the garment adjusting system and movement of the female coupling component in an opposite second direction decreases the level of support provided by the garment adjusting system.

Clause 2. The garment adjusting system according to clause 1, wherein the first textile element and the second textile element form, at least in part, the garment.

Clause 3. The garment adjusting system according to any of clauses 1 through 2, wherein the first end of the first strap is unaffixed from the first textile element and the second textile element.

Clause 4. The garment adjusting system according to any of clauses 1 through 3, wherein the first end of the second strap is unaffixed from the first textile element and the second textile element.

Clause 5. The garment adjusting system according to any of clauses 1 through 4, wherein the male coupling component includes a hook.

Clause 6. The garment adjusting system according to any of clauses 1 through 5, wherein the female coupling component includes a body having a receiving hole at one end, a release tab at an opposing end, and a through hole between the receiving hole and the release tab, and wherein the second strap is slidably threaded through the through hole.

Clause 7. The garment adjusting system according to any of clauses 1 through 6, wherein the garment is a bra.

Clause 8. A support garment having an adjusting system, the support garment comprising: a first strap having a first end and an opposite second end, the second end of the first strap secured to a first shoulder strap; a male coupling component coupled to the first end of the first strap; a second strap having a first end and an opposite second end, the second end of the second strap secured to an upper aspect of the a breast-covering portion; and a female coupling component adjustably coupled to the second strap, the female coupling component adapted to releasably mate with the male coupling component, wherein when tension is applied to the first end of the second strap, a length of the second strap as measured between the second end of the second strap and the female coupling component is adjusted.

Clause 9. The support garment according to clause 8, wherein the support garment is a bra.

Clause 10. The support garment according to clause 9, wherein the first breast-covering portion is an outermost layer of the bra.

Clause 11. The support garment according to any of clauses 9 through 10, wherein the bra further includes an inner layer positioned interior to the first breast-covering portion.

Clause 12. The support garment according to any of clauses 9 through 11, wherein a lower aspect of the first breast-covering portion is secured to a lower margin of the bra.

Clause 13. The support garment according to any of clauses 8 through 12, wherein the male coupling component includes a hook.

Clause 14. The support garment according to any of clauses 8 through 13, wherein the female coupling component includes a body having a receiving hole at one end, a release tab at an opposing end, and a through hole between the receiving hole and the release tab, and wherein the second strap is slidably threaded through the through hole.

Clause 15. The support garment according to any of clauses 8 through 14, wherein the first end of the first strap is unaffixed from the first shoulder strap and the first breast-covering portion.

Clause 16. The support garment according to any of clauses 8 through 15, wherein the first end of the second strap is unaffixed from the first shoulder strap and the first breast-covering portion.

Clause 17. A method of manufacturing a garment adjusting system, the method comprising: securing a second end of a first strap to a first textile element; fixedly coupling a male coupling component to a first end of the first strap; securing a second end of a second strap to a second textile element; and adjustably coupling a female coupling component to a first end of the second strap, the female coupling component adapted to releasably mate with the male coupling component, wherein when tension is applied to the first end of the second strap, a length of the second strap as measured between the second end of the second strap and the female coupling component is adjusted.

Clause 18. The method of manufacturing the garment adjusting system according to clause 17, wherein the first strap and the second strap are formed from a low-stretch material.

Clause 19. The method of manufacturing the garment adjusting system according to any of clauses 17 through 18, wherein the male coupling component includes a hook.

Clause 20. The method of manufacturing the garment adjusting system according to clause 19, wherein the female coupling component includes a receiving hole, and wherein when the male coupling component and the female coupling component are releasably mated, the receiving hole of the female coupling component receives the hook of the male coupling component.

BRIEF DESCRIPTION OF THE DRAWINGS

Examples of aspects herein are described in detail below with reference to the attached drawing figures, wherein:

FIG. **1** depicts a side perspective view of a garment adjusting system in an uncoupled state in accordance with aspects herein;

FIG. **2** depicts a side perspective view of the garment adjusting system of FIG. **1** in a coupled state in accordance with aspects herein;

FIG. **3** depicts a side perspective view of the garment adjusting system of FIG. **1** wherein a length of a second strap as measured between a second end of the second strap and a female coupling component is adjusted in accordance with aspects herein;

FIG. **4** depicts a side view of a male coupling component of the garment adjusting system described herein in accordance with aspects herein;

FIG. **5** depicts a side view of a female coupling component of the garment adjusting system described herein releasably mated with the male coupling component of FIG. **4** in accordance with aspects herein;

FIG. **6** depicts a front view of an example nursing bra that incorporates the garment adjusting system described herein wherein the garment adjusting system is in an uncoupled state in accordance with aspects herein;

FIG. **7** depicts a front view of the example nursing bra of FIG. **6** wherein the garment adjusting system is in a coupled state in accordance with aspects herein;

FIGS. **8** and **9** depict an example lower-body garment that utilizes the garment adjusting system described herein in accordance with aspects herein;

FIGS. **10** and **11** depict an example article of footwear that utilizes the garment adjusting system described herein in accordance with aspects herein; and

FIG. **12** depicts a flow diagram of an example method of manufacturing a garment adjusting system in accordance with aspects herein.

DETAILED DESCRIPTION

The subject matter of the present invention is described with specificity herein to meet statutory requirements. However, the description itself is not intended to limit the scope of this disclosure. Rather, the inventors have contemplated that the claimed or disclosed subject matter might also be embodied in other ways, to include different steps or combinations of steps similar to the ones described in this document, in conjunction with other present or future technologies. Moreover, although the terms "step" and/or "block" might be used herein to connote different elements of methods employed, the terms should not be interpreted as implying any particular order among or between various steps herein disclosed unless and except when the order of individual steps is explicitly stated.

Traditional garments such as nursing bras may utilize various types of clips or attachment means to couple, for example, an outer layer of the nursing bra to a shoulder strap when the wearer is not nursing or pumping. However, traditional nursing bras typically lack an ability to adjust the level of tension or support of the outer layer, which is important when the nursing bra is worn during, for example, athletic activities. Moreover, the clips or attachment means associated with the garment may be difficult to manipulate, often requiring the use of two hands.

Aspects herein are directed to a garment adjusting system that includes a first strap with a first end and a second end. The second end of the first strap is secured to a first textile element, and a male coupling component is fixedly coupled to the first end of the first strap. The garment adjusting system further includes a second strap having a first end and a second end. The second end of the second strap is secured to a second textile element, and a female coupling component is slidably coupled to the second strap. In example aspects, the first and second textile elements are part of a single garment or article such as, for example, a bra (including a nursing bra), an upper-body garment, a lower-body garment, an article of footwear, and article of headwear, and the like.

In example aspects, the male coupling component includes a hook, and the female coupling component includes a receiving hole through which the hook of the male coupling component is received. To couple the first and second textile elements, the female coupling component is releasably mated with the male coupling component by positioning the receiving hole of the female coupling component over the hook of the male coupling component. The hook and receiving hole combination is easy to use and enables a wearer to releasably mate the two components using, for example, one hand making the garment adjusting system useable by people with disabilities and/or people whose other hand may be engaged in other activities such as, for example, supporting a baby or a nursing pump.

Once the male and female coupling components are releasably mated, the amount of support provided by the first and/or second textile elements can be increased by pulling on the free first end of the second strap, which decreases the length of the second strap as measured between the second end of the second strap and the female coupling component. This operation may also be carried out using, for example, one hand. The ability to provide an increased level of support when the garment is in the form of, for example, a nursing bra enables the bra to be used for athletic activities eliminating the need for a wearer to change from a nursing bra to an athletic bra when exercising. When the increased level of support is no longer needed, the second strap can be manipulated to increase the length of the second strap as measured between the second end of the second strap and the female coupling component.

Although examples described herein have been in the context of bras, including a nursing bra, aspects herein further contemplate using the garment adjusting system for other types of garments. For example, the garment adjusting system may be used at the waistband of a lower-body garment to quickly couple textile elements together and to quickly adjust the circumferential diameter of the waistband. When incorporated into an article of footwear such as an upper of a shoe, the garment adjusting system may be used to adjust the level of support across, for example, an instep

region of the upper. The garment adjusting system may also be used as part of an underband of a bra to join two portions of the underband together and adjust the circumferential tension of the underband. These are just a few examples, and it is contemplated herein that the garment adjusting system may be incorporated into any type of garment for which a quick and easy coupling and adjustment of support is desired.

As used herein, the term "garment" means any article that may be worn by a wearer. Example articles include support garments including bras and nursing bras, upper-body garments such as tops, pullovers, hoodies, jacket/coats, and the like, lower-body garments such as shorts, capris, leggings, pants, and the like, articles of headwear such as hats, caps, sweatbands, and the like, and articles of footwear including athletic shoes. The adjusting system may also be used in equipment such as backpacks, luggage, duffle bags, and the like.

Positional terms may be used when describing the garment with the assumption that the garment is being worn as intended by a wearer standing upright. For example, the term "inner" means a layer or structure that is positioned closer to a body surface of a wearer as compared to other layers or structures of the garment. The term "outer" means a layer or structure that is positioned external to other layers or structures of the garment. In example aspects, an inner layer may be an innermost layer and an outer layer may be an outermost layer of the garment. An upper part of the garment would be located closer to a head area of a wearer compared to a lower part of the garment.

The term "support garment" when used herein refers to an upper-body garment primarily configured to provide support to a wearer's breasts. As such, the support garment may be in the form of a bra, including a nursing bra and/or athletic bra, a tank top, an athletic top, a swimsuit top, and the like. When the garment is in the form of a support garment or bra, the term "breast-covering portion" means the portion of the support garment configured to cover a wearer's breast. As such, the breast-covering portion generally extends from a top part (e.g., near the wearer's clavicle) to a lower part (e.g., the wearer's inframammary fold) of each of the wearer's breasts and from a medial edge (e.g., near the wearer's sternum) to a lateral edge (e.g., near the wearer's axilla) of each of the wearer's breasts. The term "apex region" when referring to the support garment generally means the area where a shoulder strap extends from or is joined to the breast-covering portion or other portions of the support garment. The term "underband" when used in relation to, for instance, a bra refers to the portion of the bra that forms a lower margin of at least the front portion of the bra. The underband is configured to encircle the torso area of a wearer and may include a separate pattern piece or may include an integral extension of the front portion.

The term "strap" generally means an element having a greater length than width with generally parallel longitudinal side edges. The strap may be formed of textile elements (knit, woven, braided, nonwoven, and the like) or non-textile elements. In example aspects, the strap may be formed of a no-stretch or low-stretch material. A no-stretch or low-stretch material generally does not have inherent stretch properties (mechanical or elastic) in response to a tensioning force and thus the length and/or width of the material remains substantially unchanged when subject to the tensioning forces below the material's breaking/tearing point. For example, the strap may undergo a change of length from about 0% of resting length to about 20% of resting length in response to a tensioning force. The no-stretch or low-stretch material may include tightly knit, woven, or braided constructions that do not utilize elastic yarns; non-elastomeric films; knit, woven, nonwoven, or braided constructions that include a surface treatment to limit stretch, and the like.

The term "fixedly coupled" or "fixedly secured" generally means some type of permanent attachment through use of stitching, bonding, adhesives, welding, and the like. The term "slidably coupled" when referring to, for example, the female coupling component and the second strap, means that the female coupling component can be moved (e.g., slid) along a length of the second strap while maintaining the integrity of both the female coupling component and the second strap. The term "releasably mated" when referring to the relationship between the male and female coupling components means that the components can be repeatedly mated (i.e., joined together) and unmated without damaging either of the components.

FIG. **1** depicts a side perspective view of a garment adjusting system **100** in an un-coupled state. The garment adjusting system **100** includes a first strap **110** (indicated with cross-hatching) having a first end **112** and an opposite second end **114**. The second end **114** of the first strap **110** is secured to a first textile element **116** by way of, for example, stitching **118** although other permanent affixing technologies are contemplated herein. In example aspects, the first textile element **116** may include a knit construction, a braid construction, a woven construction, a nonwoven construction, and the like.

A male coupling component **120** is fixedly coupled to the first end **112** of the first strap **110**. For example, a loop formed at the first end **112** of the first strap **110** may extend around the frame of the male coupling component **120** and be secured to itself using, for example, stitching, adhesives, bonding, and the like. Other ways of fixedly coupling the first end **112** to the male coupling component **120** are contemplated and within the scope herein. The male coupling component **120** may be formed of a number of different materials including plastics, metals, ceramics, composites, and the like.

The male coupling component **120** includes an extension or hook **122** that extends at an angle with respect to a plane defined by the surface of the first strap **110** and/or the first textile element **116**. In example aspects, the angle may be less than about 90 degrees, less than about 80 degrees, less than about 70 degrees, less than about 60 degrees, less than about 50 degrees, less than about 40 degrees, less than about 30 degrees, less than about 20 degrees, or from about 5 degrees to about 40 degrees. As used herein, the term "about" means within ±5% of a given value. Having an angle in this range helps to reduce the profile of the hook **122** and make it less likely to catch on other structures.

The garment adjusting system **100** further includes a second strap **124** (shown with cross-hatching) having a first end **126** and an opposite second end **128**. The second end **128** of the second strap **124** is secured to a second textile element **132** by way of, for example, stitching **130** although other permanent affixing technologies are contemplated herein. In example aspects, the second textile element **132** may include a knit construction, a braid construction, a woven construction, a nonwoven construction, and the like. In example aspects, the first textile element **116** and the second textile element **132** are part of a single garment as described and depicted herein. The first and second textile elements **116** and **132** may include separate elements or they may represent different portions of the same element.

A female coupling component **134** is removably and slidably coupled to the second strap **124**. In some examples,

the female coupling component **134** includes a body **135**, having a receiving hole **136** at one end and a tab **139** at the opposing end. In addition, the body **135** can include a through hole **137** extending through the body **139**. In at least some examples, the through hole **137** can include a bar **138** (e.g., cross bar) that extends across the through hole **137** and divides the through hole **137** into a first slot **137***a* and a second slot **137***b*. In some examples, the first end **126** of the second strap **124** can be threaded through the first slot **137***a*, around the bar **138**, and through the second slot **137***b*, such that the second strap **124** and the female coupling component **134** are slidable relative to one another. Although the first end **126** of the second strap **124** is shown positioned below the second textile element **132**, aspects herein contemplate that the second strap **124** may be threaded around the bar in the opposite direction such that the first end **126** of the second strap **124** may be positioned above the second textile element **132** with respect to the perspective view shown in FIG. **1**.

The female coupling component **134** includes a receiving hole **136** positioned at a distal end of the female coupling component **134**. As further described herein, the receiving hole **136** is sized to receive the hook **122** of the male coupling component **120**. As depicted in FIG. **1**, the female coupling component **134** and the male coupling component **120** are not mated together such that the first textile element **116** is not coupled or secured to the second textile element **132**. The female coupling component **134** may be formed of a number of different materials including plastics, metals, ceramics, composites, and the like.

As depicted, the first end **112** of the first strap **110** is not directly affixed to the first textile element **116** and is not directly affixed to the second textile element **132**. Similarly, the first end **126** of the second strap **124** is not directly affixed to the second textile element **132** and is not directly affixed to the first textile element **116**. In some instances and as described above, the first end **112** of the first strap **110** is looped through the male coupling component **120** and affixed to itself, though it is also contemplated that the first end **112** of the first strap **110** could be looped through the male coupling component **120** and affixed to the first textile element **116**.

FIG. **2** depicts the garment adjusting system **100** in a coupled state. In the coupled state, the hook **122** of the male coupling component **120** is received into the receiving hole **136** of the female coupling component **134**. This is an easy one-handed action for the wearer who simply positions the receiving hole **136** over the hook **122** and then lowers it onto the hook **122**. The angular orientation of the hook **122** is great enough that the wearer can easily slide the receiving hole **136** over the hook **122** and small enough that once the hook **122** is received through the receiving hole **136**, the male and female coupling components **120** and **134** are maintained in a coupled state.

The garment adjusting system **100** may be used to adjust the level of support provided by the second textile element **132** and/or the first textile element **116**. As depicted in FIG. **2**, the second strap **124** is positioned such that it has a first length **210** as measured between the second end **128** of the second strap **124** and a proximal end of the female coupling component **134**. The term "proximal" when referring to the female coupling component **134** means the portion of the female coupling component that is located closest to the second textile element **132**, and the term "distal" when referring to the female coupling component **134** means located farther away from the second textile element **132**.

As shown in FIG. **3**, to increase the level of support provided by the second textile element **132** and/or the first textile element **116**, the first end **126** of the second strap **124** may be moved in a first direction **305**. In example aspects, the first direction **305** is toward the second textile element **132**. Because the second strap **124** is slidably coupled to the female coupling component **134**, movement of the first end **126** in the first direction **305** causes the distance between the second end **128** of the second strap **124** and the proximal end of the female coupling component **134** to decrease to a second length **310**, where the second length **310** is less than the first length **210**. This places the second textile element **132** under tension and increases the level of support provided by the second textile element **132**. Because the second textile element **132** is indirectly coupled to the first textile element **116** by way of the first and second straps **110** and **124** and the male and female coupling components **120** and **134**, movement of the first end **126** of the second strap **124** in the first direction **305** also places the first textile element **116** under tension and increases the level of support provided by the first textile element **116**.

Movement of the first end **126** of the second strap **124** in a second direction opposite the first direction **305** would increase the distance between the second end **128** of the second strap **124** and the proximal end of the female coupling component **134** and decrease the level of support provided by the second textile element **132** and/or the first textile element **116**. For example, in at least some instance, the tab **139** can be lifted (e.g., by simply inserting one or more fingers beneath the tab **139**), which in turn can lift or bias the bar **138** upwards (in the orientation depicted in FIG. **3**) and cause the strap **124** to be pulled in a direction opposite **305**. In at least some examples, the tab **139** can be referred to as a "release tab" or "support-release tab," based on the operations associated with the tab **139** that can allow for the level of support to be quickly and efficiently (e.g., with one hand) decreased.

FIG. **4** depicts a side view of the male coupling component **120** including the hook **122** that extends at an angle **410** with respect to the surface plane of the male coupling component **120**. As described, the angle **410** may be less than about 90 degrees, less than about 80 degrees, less than about 70 degrees, less than about 60 degrees, less than about 50 degrees, less than about 40 degrees, less than about 30 degrees, less than about 20 degrees, or from about 5 degrees to about 40 degrees.

FIG. **5** depicts a side view of the female coupling component **134** releasably mated with the male coupling component **120**. As shown, the hook **122** of the male coupling component **120** extends through the receiving hole **136** of the female coupling component **134**. After mating, a surface **510** of the female coupling component **134** is positioned overtop, and is flush with, a surface **512** of the male coupling component **120** to provide a low-profile aesthetic. The angle **410** of the hook **122** helps to prevent the female coupling component **134** from inadvertently disengaging from the male coupling component **120**. Stated differently, in example aspects, an affirmative action by the wearer may be needed to disengage the female coupling component **134** from the male coupling component **120**.

FIGS. **6** and **7** depict a first example use of the garment adjusting system described herein in the form of a support garment and particularly a nursing bra **600** being worn by a wearer **601**. FIG. **6** depicts the garment adjusting system in an un-coupled state, and FIG. **7** depicts the garment adjusting system in a coupled state. In general, nursing bras typically include an outer layer that can be raised and

lowered as needed to respectively conceal and expose the breast, particularly the nipple area so that the wearer can nurse or pump. With this as a background, the nursing bra **600** includes a first shoulder strap **610** and a second shoulder strap **612** that extend respectively over the shoulders of the wearer **601**. The first and second shoulder straps **610** and **612** extend from apex regions **614** of an inner layer **616**. The inner layer **616** has an "M-shape" or an inverted "W-shape" with a central leg **620** connected to an upper framework **618**. The central leg **620** is configured to extend between the wearer's breasts (i.e., over the wearer's sternum), and the upper framework **618** is configured to be located at the top part of the wearer's breasts. A lower portion of the central leg **620** is shown in dashed line to indicate that the lower portion is positioned internal to one or more additional layers as described below. In example aspects, the lower portion of the central leg **620** may be anchored to an underband **625**. The upper framework **618** and the central leg **620** define right and left openings through which the wearer's breasts, and particularly the wearer's nipples extend. The configuration of the inner layer **616** is illustrative only, and it is contemplated herein that other configurations may be used.

The nursing bra **600** further includes a first breast-covering portion **622** and a second breast-covering portion **624** where the first and second breast-covering portions **622** and **624** are positioned external to at least a portion of the inner layer **616**. Lower edges **623** of the first and second breast-covering portions **622** and **624** may be affixed to the underband **625** in order to secure or anchor the first and second breast-covering portions **622** and **624** when tension is applied to the first and second breast-covering portions **622** and **624** through use of the garment adjusting system. Alternatively, the lower edges **623** of the first and second breast-covering portions **622** and **624** may form a lower margin of the nursing bra **600** when an underband is not used. With respect to FIG. **6**, the upper part of the first and second breast-covering portions **622** and **624** are shown lowered or folded downward to expose or partially expose the wearer's breasts. The first and second breast-covering portions **622** and **624** may be lowered in order to, for example, nurse or pump. In FIG. **7**, the first and second breast-covering portions **622** and **624** are raised such that they generally fully cover the wearer's breasts.

A first garment adjusting system **650** is located on the first shoulder strap **610** and the first breast-covering portion **622**, and a second garment adjusting system **652** is located on the second shoulder strap **612** and the second breast-covering portion **624** (shown in FIG. **7**). A description is provided herein with respect to the first garment adjusting system **650** located on the first shoulder strap **610** and the first breast-covering portion **622**. The description is equally applicable to the second garment adjusting system **652** located on the second shoulder strap **612** and the second breast-covering portion **624**. The garment adjusting systems described with respect to the nursing bra **600** may be the garment adjusting system **100**.

The first garment adjusting system **650** includes a first strap **654** having a first end **656** and an opposite second end **658**, where the second end **658** is fixedly secured to the first shoulder strap **610** at or around a location corresponding to where the first shoulder strap **610** curves over the wearer's shoulder. This location is illustrative and other securement locations for the second end **658** are contemplated herein. In this aspect, the first shoulder strap **610** corresponds to the first textile element **116** of the garment adjusting system **100**. In example aspects, the first end **656** of the first strap **654** may be maintained adjacent to the first shoulder strap **610** using, for example, a strip of material (not shown) that extends over the first end **656** and has opposing ends that are fixedly coupled to the first shoulder strap **610**. This may prevent the first end **656** of the first strap **654** from hanging loose or flapping which may be a distraction to the wearer. A male coupling component **660**, which may be the male coupling component **120** is fixedly secured to the first end **656** of the first strap **654**. The male coupling component **660** includes a hook **662**.

The first garment adjusting system **650** further includes a second strap **664** having a first end **666** and an opposite second end **668**, where the second end **668** is fixedly secured to the first breast-covering portion **622** at or near the apex region **614** of the nursing bra **600** with respect to when the first breast-covering portion **622** is fully covering the wearer's breast (e.g., is not folded over). In example aspects, the first breast-covering portion **622** corresponds to the second textile element **132** of the garment adjusting system **100**. A female coupling component **670**, which may be the female coupling component **134** is slidably coupled to the second strap **664** and includes a receiving hole **672**. The first end **666** of the second strap **664** hangs freely.

In FIG. **6**, the male coupling component **660** is not releasably mated with the female coupling component **670** such that the first shoulder strap **610** is uncoupled from the first breast-covering portion **622**. In this configuration, the first breast-covering portion **622** may be lowered to expose the wearer's breast and nipple area to allow for example, nursing or pumping. In FIG. **7**, the male coupling component **660** and the female coupling component **670** are releasably mated by, for example, inserting the hook **662** of the male coupling component **660** into the receiving hole **672** of the female coupling component **670**. In this configuration, the first breast-covering portion **622** is coupled to the first shoulder strap **610** such that the first breast-covering portion covers the wearer's breast. To adjust the level of support provided by the first breast-covering portion **622** and/or the first shoulder strap **610**, the wearer **601** may grasp the first end **666** of the second strap **664** and pull in a downward direction to decrease the length of the second strap **664** as measured between the second end **668** and the female coupling component **670**. This may easily be accomplished using, for example, one hand. An increased level of support may be desirable when the wearer **601** is engaged in, for example, athletic activities. In at least some examples, the level of support can be easily decreased, such as by lifting the tab **639** away from the strap that is threaded through the female coupling component **670**.

By utilizing both the first garment adjusting system **650** and the second garment adjusting system **652**, the first and second breast-covering portions **622** and **624** can independently be raised and lowered. Additionally, the level of tension of the first and second breast-covering portions **622** and **624** and/or the first and second shoulder straps **610** and **612** can be independently adjusted to account for differences in breast morphology between the two breasts and/or support needs of the wearer **601**.

FIGS. **8** and **9** depict the garment adjusting system described herein incorporated into a waistband of a lower-body garment **800**. The lower-body garment **800** is shown in the form of a pant, but other configurations such as shorts, leggings, capris, and the like are contemplated herein. The lower-body garment **800** includes a torso portion **810** configured to cover a lower torso of a wearer, a first leg portion **812** terminating in a first leg opening **814**, and a second leg portion **816** terminating in a second leg opening **818**. The

lower-body garment **800** further includes a waistband area **820** configured to encircle a waist area of the wearer. In example aspects, a garment adjusting system **822** (indicated in FIG. **9**) may be associated with the waistband area **820**. The garment adjusting system **822** includes a first strap **824** having a first end **826** and an opposite second end **828** where the second end **828** is fixedly attached to a first side of the waistband area **820**. The first end **826** of the first strap **824** is fixedly attached to a male coupling component **830** having a hook **832**.

The garment adjusting system **822** further includes a second strap **834** having a free first end **836** and an opposite second end **838** where the second end **838** is fixedly attached to an opposite second side of the waistband area **820**. The second strap **834** is slidably coupled to a female coupling component **840** having a receiving hole **842**.

FIG. **8** depicts the garment adjusting system **822** in an un-coupled state where the female coupling component **840** is not releasably mated with the male coupling component **830**. This configuration may be useful when a wearer is donning the lower-body garment **800**. FIG. **9** depicts the garment adjusting system **822** in a coupled state where the female coupling component **840** is releasably mated with the male coupling component **830** such that the hook **832** is received within the receiving hole **842**. The configuration shown in FIG. **9** effectively couples the first side of the waistband area **820** with the opposite second side of the waistband area **820**. To tighten the waistband area **820**, a wearer may grasp the first end **836** of the second strap **834** and pull to decrease the length of the second strap **834** as measured between the second end **838** of the second strap **834** and the female coupling component **840**.

FIGS. **10** and **11** depict yet another example use of the garment adjusting system described herein where the garment adjusting system is incorporated into an article of footwear **1000** in the form of an upper for a shoe. The article of footwear **1000** includes an upper **1010** and a sole structure **1012** secured to a bottom aspect of the upper **1010**. The upper **1010** may be formed from a variety of materials including leather, synthetic leather, knit materials, woven materials, braided materials, polymer sheets, rubber, and the like.

In example aspects, the article of footwear **1000** includes a garment adjusting system (indicated by reference numeral **1014** in FIG. **11**). The garment adjusting system **1014** extends across an instep area of the upper **1010** when in a coupled state. The garment adjusting system **1014** includes a first strap **1016** having a first end **1018** and an opposite second end **1020** fixedly secured to the article of footwear **1000**. A male coupling component **1022** is fixedly secured to the first end **1018** and includes a hook **1024**.

The garment adjusting system **1014** further includes a second strap **1026** having a free first end **1028** and an opposite second end **1030** that is fixedly secured to the article of footwear **1000**. A female coupling component **1032** is slidably coupled to the second strap **1026** where the female coupling component **1032** includes a receiving hole **1034**.

FIG. **10** depicts the garment adjusting system **1014** in an uncoupled state. Having the garment adjusting system **1014** in an uncoupled state may facilitate a wearer inserting their foot into the article of footwear **1000**. FIG. **11** depicts the garment adjusting system **1014** in a coupled state where the female coupling component **1032** is releasably mated with the male coupling component **1022** by positioning the hook **1024** within the receiving hole **1034**. This action may be accomplished using one hand. To increase the amount of tension across the instep area of the article of footwear **1000**, a wearer may grasp the first end **1028** of the second strap **1026** and pull to decrease the length of the second strap **1026** as measured between the second end **1030** and the female coupling component **1032**. This step may also be accomplished using one hand. Use of the garment adjusting system **1014** in an article of footwear, such as the article of footwear **1000** may be ideal for people with disabilities and/or for young children.

FIG. **12** depicts a flow diagram of an example method of manufacturing (labeled as **1200**) a garment adjusting system such as the garment adjusting system **100**. At a step **1210**, a second end of a first strap, such as the first strap **110** is secured to a first textile element, such as the first textile element **116**. At a step **1212**, a male coupling component, such as the male coupling component **120**, is fixedly coupled to a first end of the first strap. At a step **1214**, a second end of a second strap, such as the second strap **124**, is secured to a second textile element, such as the second textile element **132**. At a step **1216**, a female coupling component, such as the female coupling component **134**, is slidably coupled to a first end of the second strap. The female coupling component is adapted to releasably mate with the male coupling component by, for example, positioning a receiving hole of the female coupling component over a hook of the male coupling component. Once coupled, an amount of tension or support provided by the first and second textile elements may be adjusted by manipulating the first end of the second strap to either increase or decrease the length between the second end of the second strap and the female coupling component.

Aspects of the present disclosure have been described with the intent to be illustrative rather than restrictive. Alternative aspects will become apparent to those skilled in the art that do not depart from its scope. A skilled artisan may develop alternative means of implementing the aforementioned improvements without departing from the scope of the present disclosure.

It will be understood that certain features and subcombinations are of utility and may be employed without reference to other features and subcombinations and are contemplated within the scope of the claims. Not all steps listed in the various figures need be carried out in the specific order described

What is claimed is:

1. A garment adjusting system comprising:

a first strap having a first end and an opposite second end, the second end of the first strap secured to a first textile element;

a male coupling component fixedly coupled to the first end of the first strap;

a second strap having a first end and an opposite second end, the second end of the second strap secured to a second textile element; and

a female coupling component slidably coupled to the second strap, the female coupling component adapted to releasably mate with the male coupling component, wherein the female coupling component is slidable along a length of the second strap such that movement of the female coupling component in a first direction increases a level of support provided by the garment adjusting system and movement of the female coupling component in an opposite second direction decreases the level of support provided by the garment adjusting system,

wherein the female coupling component includes a body having a receiving hole at one end, a release tab at an

opposing end, and a through hole between the receiving hole and the release tab, and wherein the second strap is slidably threaded through the through hole.

2. The garment adjusting system of claim **1**, wherein the first textile element and the second textile element form, at least in part, the garment.

3. The garment adjusting system of claim **1**, wherein the first end of the first strap is unaffixed from the first textile element and the second textile element.

4. The garment adjusting system of claim **1**, wherein the first end of the second strap is unaffixed from the first textile element and the second textile element.

5. The garment adjusting system of claim **1**, wherein the male coupling component includes a hook.

6. The garment adjusting system of claim **1**, wherein the garment is a bra.

7. A support garment having an adjusting system, the support garment comprising:

a first strap having a first end and an opposite second end, the second end of the first strap secured to a first shoulder strap;

a male coupling component coupled to the first end of the first strap, wherein the male coupling component includes a hook;

a second strap having a first end and an opposite second end, the second end of the second strap secured to an upper aspect of a breast-covering portion; and

a female coupling component adjustably coupled to the second strap, the female coupling component adapted to releasably mate with the male coupling component, wherein when tension is applied to the first end of the second strap, a length of the second strap as measured between the second end of the second strap and the female coupling component is adjusted.

8. The support garment of claim **7**, wherein the support garment is a bra.

9. The support garment of claim **8**, wherein the first breast-covering portion is an outermost layer of the bra.

10. The support garment of claim **9**, wherein the bra further includes an inner layer positioned interior to the first breast-covering portion.

11. The support garment of claim **10**, wherein a lower aspect of the first breast-covering portion is secured to a lower margin of the bra.

12. The support garment of claim **7**, wherein the female coupling component includes a body having a receiving hole at one end, a release tab at an opposing end, and a through hole between the receiving hole and the release tab, and wherein the second strap is slidably threaded through the through hole.

13. The support garment of claim **7**, wherein the first end of the first strap is unaffixed from the first shoulder strap and the first breast-covering portion.

14. The support garment of claim **7**, wherein the first end of the second strap is unaffixed from the first shoulder strap and the first breast-covering portion.

15. A bra comprising:

a first strap having a first end and an opposite second end, the second end of the first strap secured to a first textile element;

a male coupling component fixedly coupled to the first end of the first strap;

a second strap having a first end and an opposite second end, the second end of the second strap secured to a second textile element; and

a female coupling component slidably coupled to the second strap, the female coupling component adapted to releasably mate with the male coupling component, wherein the female coupling component is slidable along a length of the second strap such that movement of the female coupling component in a first direction increases a level of support provided by the bra and movement of the female coupling component in an opposite second direction decreases the level of support provided by the bra.

16. The bra of claim **15**, wherein the female coupling component includes a body having a receiving hole at one end, a release tab at an opposing end, and a through hole between the receiving hole and the release tab, and wherein the second strap is slidably threaded through the through hole.

17. The bra of claim **15**, wherein the male coupling component includes a hook.

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