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(54) **POSTURE IMPROVING DEVICE**

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(57) **ABSTRACT**

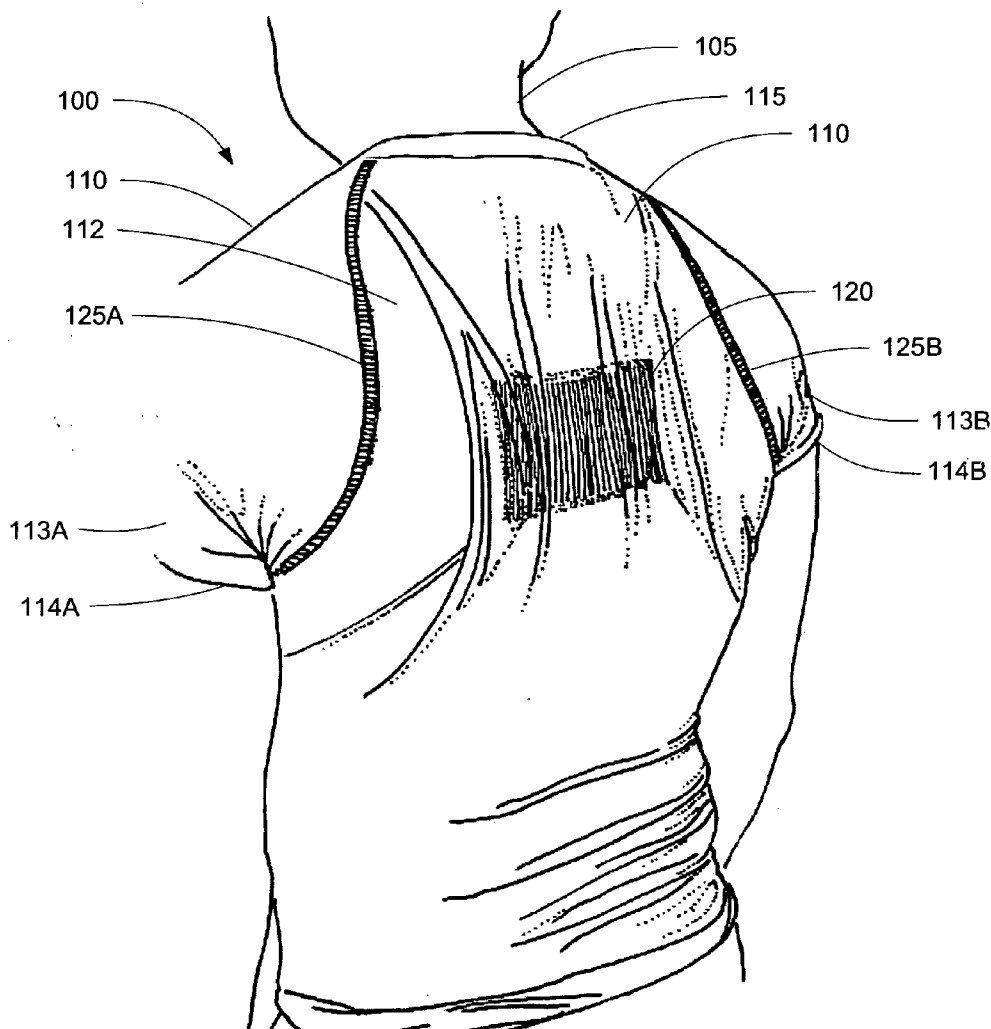
Garments that provide a stimulant to maintain desirable proper posture and poise of a person wearing the garments. The garment, which can take the form of a shirt or blouse, provides a stimulant to elevate the wearer's thoracic cavity and retract the wearer's scapulas to support a more up-right posture through the combination of a stretch fabric and a control band. The body of the garment is typically made from stretch-type fabric that is adapted to fit snugly to the body shape of the wearer. The stretch-type fabric can include a reduced level of elasticity along the front of the garment to promote a lifting of the thoracic cavity. The control band typically comprises and elastic material and can be positioned on the rear of the garment proximal to the wearer's scapulas to produce a slight retraction of the wearer's upper arms.

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Related U.S. Application Data

(60) Provisional application No. 61/190,169, filed on Aug. 26, 2008, provisional application No. 61/198,324, filed on Nov. 5, 2008.



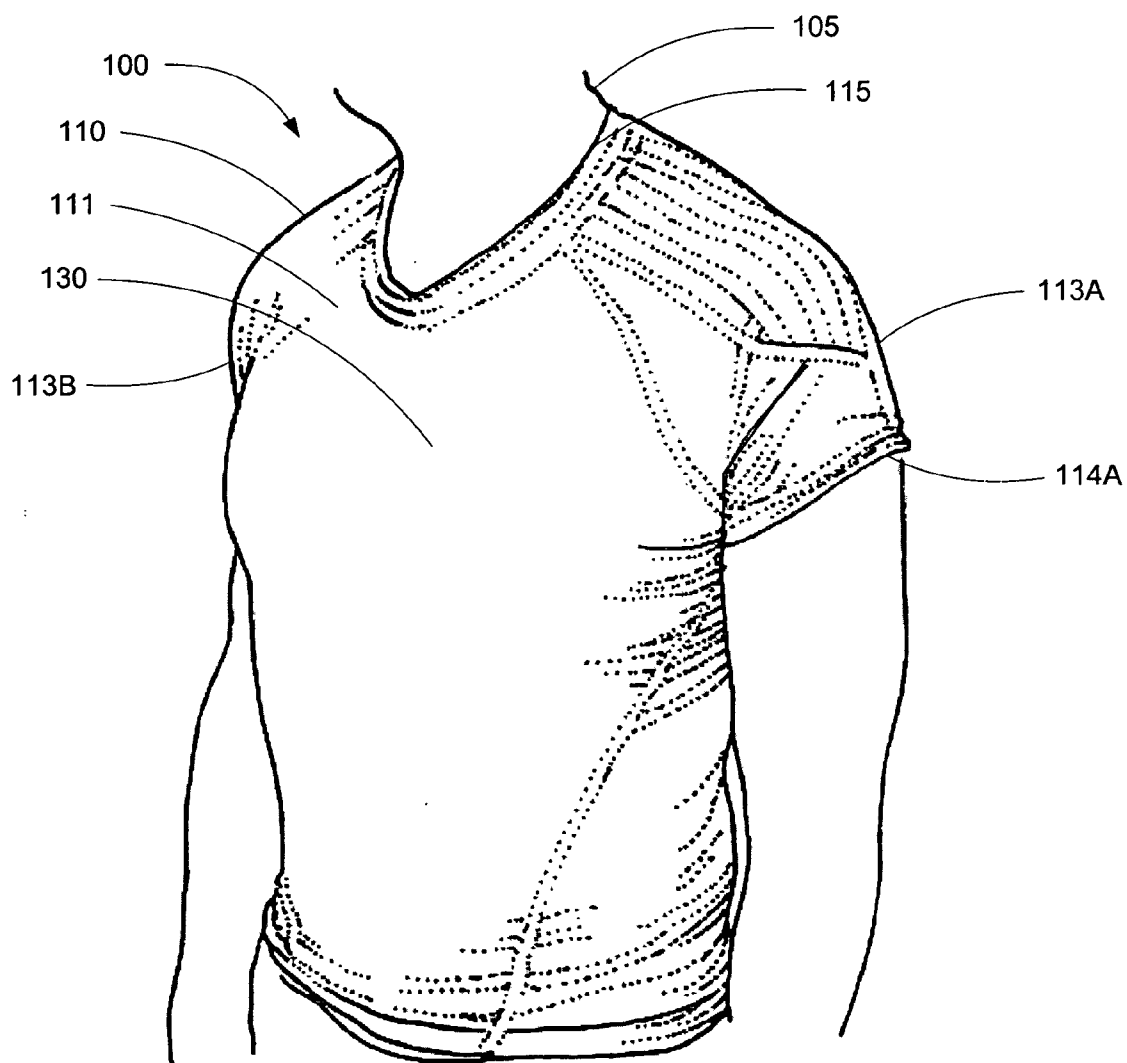


Figure 1

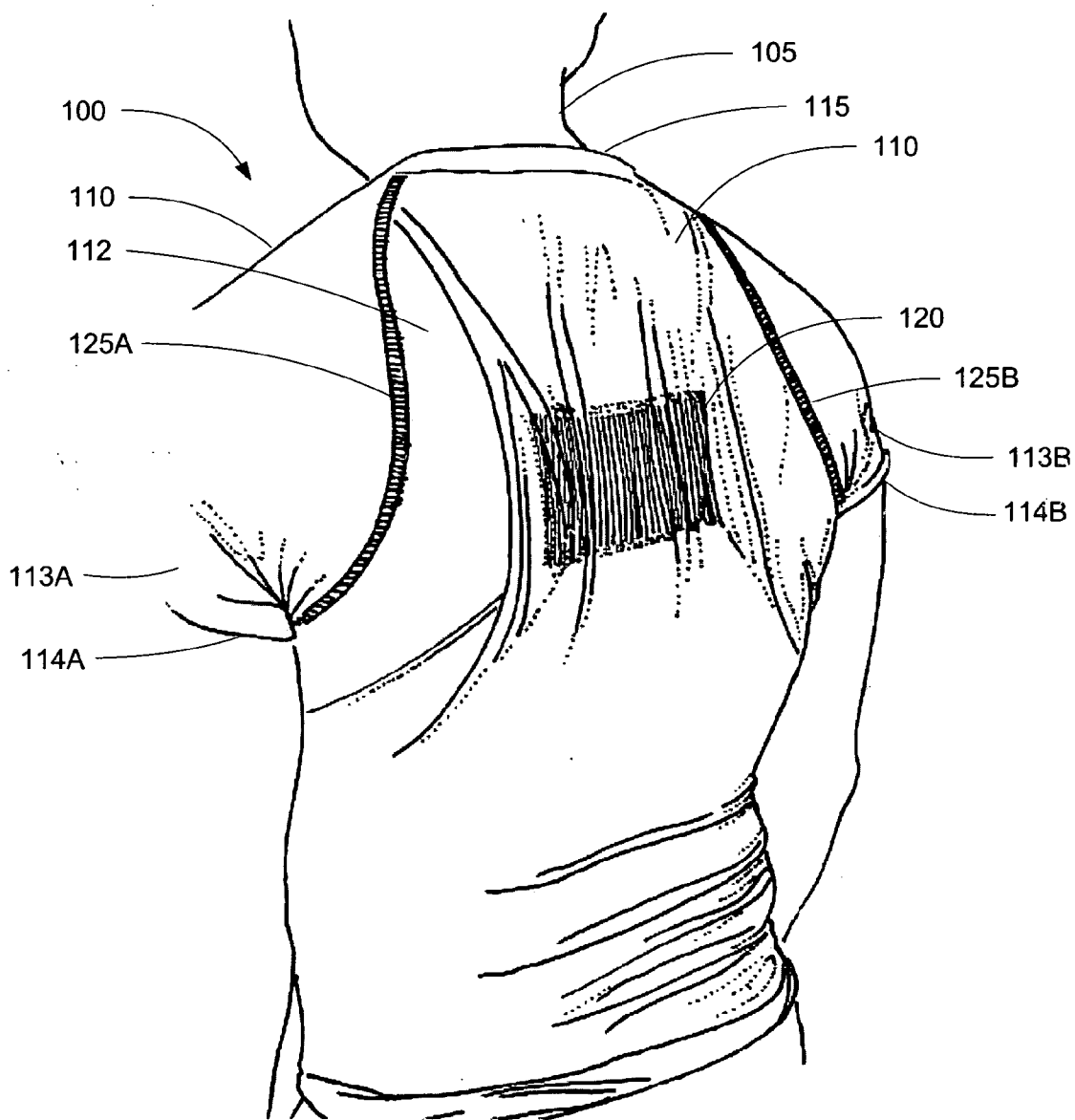


Figure 2

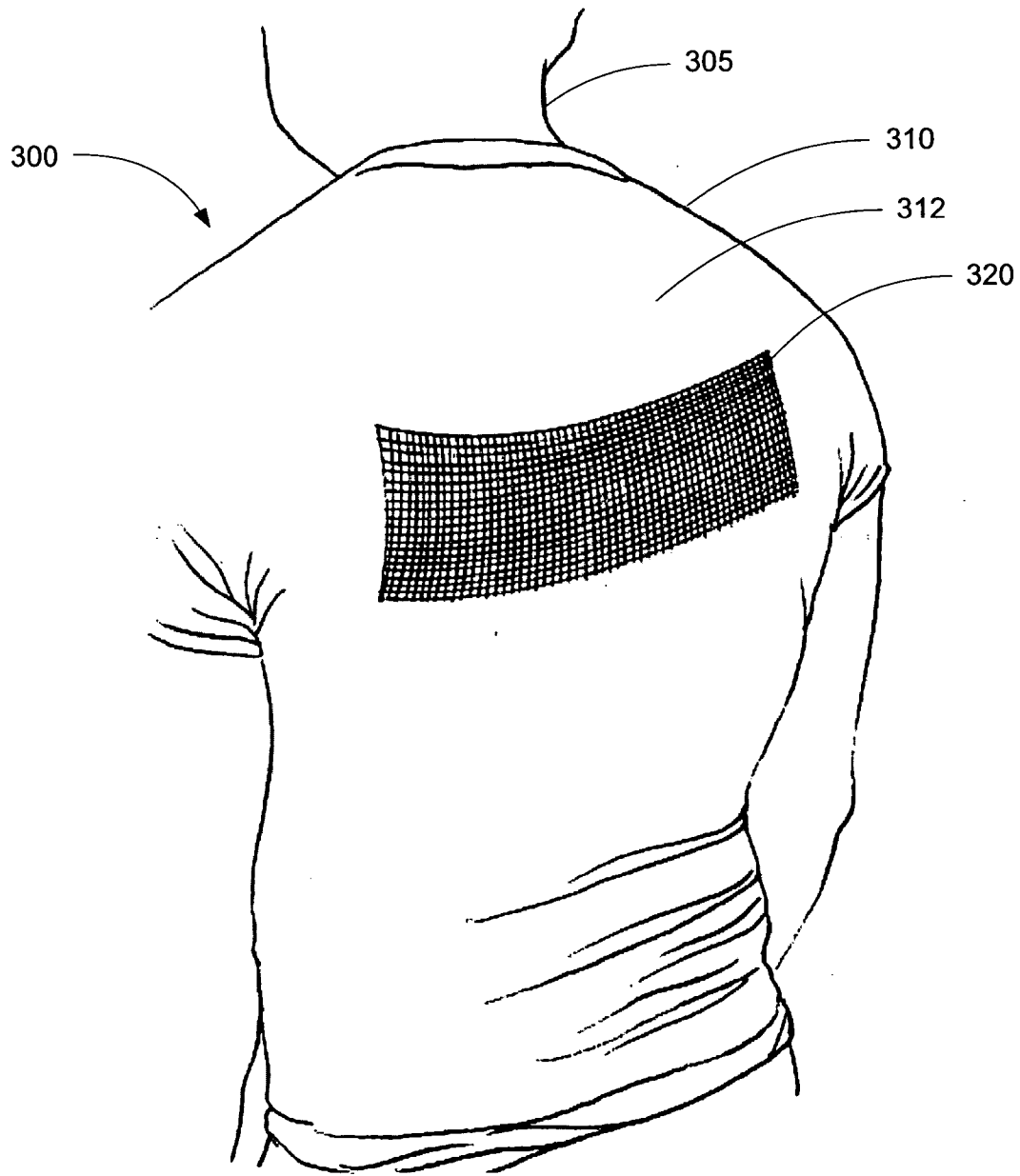


Figure 3

POSTURE IMPROVING DEVICE

RELATED PATENT APPLICATIONS

[0001] This non-provisional patent application claims priority under 35 U.S.C. § 119 to U.S. Provisional Patent Application No. 61/190,169, entitled, "Posture Improving Device," filed Aug. 26, 2008 and U.S. Provisional Patent Application No. 61/198,324, entitled, "Posture Improving Device," filed Nov. 5, 2008, the complete disclosures of which are hereby fully incorporated herein by reference.

TECHNICAL FIELD

[0002] The invention relates generally to articles of clothing, and more particularly to garments that provide a stimulant to maintain desirable proper posture and poise of a person wearing the garments.

BACKGROUND

[0003] It is generally well-known that poor posture can have a negative effect on the health and well-being of a person. Simply spending a prolonged amount of time slouching or being "hunched over" can strain the muscles around the vertebrae and also stress the spine, neck, and shoulders. In time, the curvature of the spine can even be changed from its natural "S" shape to an unnatural "C" shape. Many undesirable health conditions have been linked to poor posture, including fatigue, back pain, neck pain, tightness between the shoulders, and breathing problems. Poor posture has also been linked to long term health conditions, such as intervertebral disc damage, neck and back problems, high blood pressure, and abnormal wear and tear on joints that can lead to arthritis.

[0004] One conventional solution to poor posture includes educating people on proper posture. However, this solution suffers as people generally do not consciously think about maintaining proper posture and therefore allow themselves to sit or stand improperly even when armed with the knowledge of proper posture. Another conventional solution involves a person performing certain stretches or exercises. However, even if the stretches or exercises improve a person's posture, this solution requires that the person perform these stretches or exercises regularly to maintain the improved posture.

[0005] Accordingly, a need exists in the art for a device that can provide a subconscious stimulant to a person to maintain desirable proper posture.

SUMMARY

[0006] The invention provides a garment that, when wore by a person, provides a stimulant to maintain desirable proper posture of the person wearing the garment ("wearer"). The garment can be configured in the form of a shirt or blouse that provides a stimulant to elevate the wearer's thoracic cavity and retract the wearer's scapulas to support a more up-right posture through a combination of a stretch-type garment fabric and a control band. The garment is easily concealable under clothing or can be attached to another garment or worn as stand-alone clothing that is visible to others.

[0007] The body of the garment is typically made of stretch-type fabric that snugly fits the body shape of the wearer. The stretch-type fabric can include a reduced level of elasticity along an area on the front of the garment to promote a lifting or superior tilt of the thoracic cavity. The control band typically comprises an elastic material and is disposed on the

rear of garment proximal to the wearer's scapulas to produce a slight retraction of the wearer's upper arms. The combination of the stretch-type fabric of the body of the garment and the control band at the scapulas causes the wearer to hold his or her shoulders in an erect position.

[0008] One aspect of the present invention provides a posture improving garment. The posture improving garment includes a front panel attached to a rear panel, the front panel for wear over at least a portion of the anterior torso of a person and the rear panel for wear over at least a portion of the posterior torso of the person. The front and rear panels include at least a portion of elastic material and are joined to form a continuous garment having a neck opening and two sleeve openings. A control band is disposed on the rear panel of the garment. The control band typically comprises an elastic material and exhibits a reduced level of elasticity than that of the rear panel. The control band extends laterally across the rear panel so that when the garment is installed on the person, the control band is proximal to the scapulas of the person. The front panel includes an area having a reduced level of elasticity than that of the remainder of the front panel. When the garment is installed on the person, a combination of the elastic material of the front and rear panels and the control band provides a stimulant to the person to maintain proper posture.

[0009] These and other aspects, objects, features, and embodiments of the invention will become apparent to a person of ordinary skill in the art upon consideration of the following detailed description of illustrative embodiments exemplifying the best mode for carrying out the invention as presently perceived.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] For a more complete understanding of the exemplary embodiments of the present invention and the advantages thereof, reference is now made to the following description, in conjunction with the accompanying figures briefly described as follows.

[0011] FIG. 1 is a front perspective view of a posture improving garment when wore by a person in accordance with certain exemplary embodiments.

[0012] FIG. 2 is a rear perspective view the posture improving garment of FIG. 1 when wore by a person in accordance with certain exemplary embodiments.

[0013] FIG. 3 is a rear perspective view of a second posture improving garment when wore by a person in accordance with certain exemplary embodiments.

DETAILED DESCRIPTION OF EXEMPLARY EMBODIMENTS

[0014] Exemplary embodiments of the present invention are provided. These embodiments include garments that provide a stimulant to maintain desirable proper posture and poise of a person wearing the garment. The garment, which can take the form of a shirt or blouse, provides a stimulant to elevate the wearer's thoracic cavity and retract the wearer's scapulas to support a more up-right posture through the combination of a stretch fabric and a control band. The body of the garment is typically made from stretch-type fabric that is adapted to fit snugly to the body shape of the wearer. The stretch-type fabric can include a reduced level of elasticity along the front of the garment to promote a lifting of the thoracic cavity. The control band typically comprises an elas-

tic material and can be positioned on the rear of the garment proximal to the wearer's scapulas to produce a slight retraction of the wearer's upper arms.

[0015] Turning now to the drawings, in which like numerals indicate like elements throughout the figures, exemplary embodiments of the invention are described in detail. FIG. 1 is a front perspective view of a posture improving garment 100 when wore by a person ("wearer") 105 in accordance with certain exemplary embodiments. Referring to FIG. 1, the exemplary garment 100 is in the form of a shirt having a body portion generally designated by reference number 110. The body 110 of the garment 100 includes a front panel 111 that covers the wearer's 105 stomach and chest areas and a rear panel 112 (See FIG. 2) that covers the wearer's 105 back. The body 110 of the garment 100 typically includes a neck opening 115 and two sleeves 113A, B having corresponding sleeve openings 114A, B (See FIG. 2) that allow the wearer 105 to easily install the garment 100 over his torso by pulling the garment 100 over his head and extending his arms through the sleeve openings 114A, B. The front panel 111, rear panel 112, and sleeves 113A, B may be of a continuous piece of material or can be connected independent panels. In alternative embodiments, the garment 100 can take the form of a blouse or a long-sleeve pull-over.

[0016] Those skilled in that art will appreciate that the garment 100 does not have to have sleeves and instead can have sleeve openings only. For example, the garment 100 can be embodied in the form of a muscle shirt or tank top having openings for the wearer's 105 arms without sleeves. Additionally, the garment 100 can also be embodied in the form of a wrap that fits the wearer's 105 torso without having a neck opening or sleeve openings.

[0017] The body 110 of the garment 100 is made from an elastic or stretch-type fabric that is adapted to fit snugly and conform to the body shape of the wearer 105 when wore on the body of the wearer 105. The stretch-type fabric is advantageously a four-way stretch-type fabric made of a resilient material having a tendency to return to its original shape after being stretched. Non-limiting examples of stretch-type fabrics that can be used to form the body 110 include lycra, spandex, and spandex blends. The stretch-type fabric of the body 110 applies and maintains a constant compression of the postural muscle tissues that helps provide a stimulant to the wearer 105 to maintain an up-right proper posture.

[0018] The body 110 of the garment 100 can include an area, designated generally by reference number 130, on the front panel 111 of the garment 100 that has a reduced level of elasticity and thus a reduced level of stretching than that of other parts of the front panel 111. This area 130 is located in the upper portion of the front panel 111 to promote a lifting or superior tilt of the wearer's 105 thoracic cavity. The area 130 can extend laterally across substantially the entire width of the front panel 111 having a lower vertical boundary extending laterally from the wearer's 105 mid-sternal area to each side of the front panel 111 and an upper vertical boundary extending along the top of the front panel 111 from one of the wearer's 105 shoulders to the other shoulder of the wearer 105 around the front of the neck opening 115. In certain exemplary embodiments of the garment 100 having sleeves 113A, B, the area 130 can also extend onto the sleeves 113A, B to cover the front of the wearer's 105 shoulders and mid-deltoid region. In certain exemplary embodiments, the area 130 is bordered at the lower end by the wearer's 105 mid-sternal

region and covers the wearer's 105 chest area and the front of the wearer's 105 shoulders and mid-deltoid regions

[0019] The area 130 works in combination with the other parts of the body 110 of the garment 100 to provide an overpressure to the wearer's 105 chest and shoulder areas whenever the wearer 105 allows his body to slouch or hunch over. This overpressure acts as a conscious stimulant to remind the wearer 105 to correct his posture. After the wearer 105 corrects his posture, the area 130 relaxes to provide a subconscious stimulant to the wearer 105 to maintain an up-right proper position.

[0020] FIG. 2 is a rear perspective view of the posture improving garment 100 of FIG. 1 when wore by the wearer 105 in accordance with certain exemplary embodiments. Referring to FIG. 2, the garment 100 includes a control band 120 attached or applied to the rear panel 112 of the body 110 of the garment 100. The control band 120 is configured with the garment 100 to produce a slight retraction (external rotation) of the wearer's 105 upper arms when the garment 100 is wore by the wearer 105.

[0021] The exemplary control band 120 is made from an elastic material, typically having less elasticity than that of other portions of the body 110 of the garment 100. The dimensions of the control band 120 can vary based on the size of the garment 100. For example, the length and width of the control band 120 may be greater for a garment 100 intended for a larger man than the length and width of a control band 120 used in a garment 100 intended for a smaller woman. For example, with reference to FIGS. 1 and 2, certain exemplary garments 100 include shoulder seams 125A, B connecting the front panel 111 and rear panel 112 to the sleeves 113A, B. In this example, the control band 120 can be sized and positioned relative to these shoulder seams 113A, B. The control band 120 can extend laterally across the rear panel 112 from approximately one inch from the shoulder seam 125A to approximately one inch from the shoulder seam 125B. Alternatively, the length or width of the control band 120 can be constant for each size of the garment 100. For example, the control band 120 for each size garment 100 may be approximately 7" long and 3" wide.

[0022] The control band 120 is positioned on the rear panel 112 of the body 110 of the garment 100 so that when the garment 100 is wore by the wearer 105, the control band 120 is positioned over the wearer's 105 scapulas. The difference in elasticity between the control band 120 and the body 110 of the garment 100 provides a pulling force on the portions of the body 110 adjacent to the control band 120. Because the garment 100 is fit snugly to the body of the wearer 105, when the control band 120 is positioned over the wearer's 105 scapulas, the control band 120 provides a lateral pulling force to the wearer's 105 upper arms resulting in a slight retraction of the wearer's 105 upper arms. In certain exemplary embodiments, the control band 120 is located on the rear panel 112 of the body 110 so that the control band 120 is positioned just inside the superior medial one-third of the wearer's 105 scapulas when the garment 100 is wore by the wearer 105. In certain exemplary embodiments, the control band 120 is located on the rear panel 112 of the body 110 approximately four inches below the neck opening 115.

[0023] The control band 120 can be attached taut to the rear panel 112 of the body 110 of the garment 100 using various methods, including sewing and stitching or via an adhesive. Mechanical fasteners, such as Velcro or snap fasteners, can also be used to attach the control band 120 to the rear panel

112. The control band **120** can be attached to either an interior side of the rear panel **112** facing the wearer **105** or to an exterior side of the rear panel **112** facing away from the wearer **105**. Attaching the control band **120** to the exterior side of the rear panel **112** can result in better comfort for the wearer **105**. In certain exemplary embodiments, the control band **120** is encased in a cloth pocket and attached to the rear panel **112** via sewing or stitching. In certain exemplary embodiments, the control band **120** can be disposed between two layers of stretch-type fabric that is used to make the body **110**.

[0024] Referring to FIGS. **1** and **2**, the combination of the stretch-type fabric of the body **110** of the garment **100**, the area **130** having a reduced level of elasticity along the front panel **111** of the garment **100**, and the control band **120** disposed over the scapulas of the wearer **105**, provides a continuous stimulant to the wearer **105** to maintain desirable proper posture. If the wearer **105** slouches or lowers his head into a position of poor posture whereby the wearer's **105** scapulas migrate away from the wearer's **105** spine, the control band **120** stretches and becomes more tense. This tension on the control band **120**, in conjunction with the stretch-type fabric of the body **110**, provides an overpressure to the upper back area and to the upper arms of the wearer **105** to provide a conscious stimulation to the wearer **105** to retract his upper arms to return to a more up-right proper position whereby the wearer's shoulders are in an erect position. Additionally, the area **130**, in conjunction with the stretch-type fabric of the body **110**, provides an overpressure to the wearer's **105** chest and shoulder areas to provide a conscious stimulation to the wearer **105** to tilt his thoracic cavity upward into more up-right proper position. After the wearer **105** corrects his posture, the control band **120** and the area **130** having a reduced level of elasticity relaxes and provides a more-relaxed feel to the wearer **105**. Thus, the garment **100** provides a subconscious stimulant for the wearer **105** to maintain this up-right proper position.

[0025] FIG. **3** is a rear perspective view of a second posture improving garment **300** when wore by a person **305** in accordance with certain exemplary embodiments. This exemplary garment **300** is an alternative embodiment to the exemplary garment **100** of FIG. **1**. Referring to FIG. **3**, the garment **300** includes a body **310** having a front panel (not shown) and a rear panel **312** similar to that of the body **110** of the garment **100**. The body **310** of the garment **300** is likewise made from an elastic or stretch-type fabric that is adapted to fit snugly and conform to the body shape of the wearer **305**.

[0026] In this exemplary embodiment, the rear panel **312** of the body **310** includes a control band **320** that is interwoven with the stretch-type fabric of the body **310**. The control band **320** typically comprises an elastic material and is placed within the fabric of the back panel **312** by weaving elastic threading in a desired shape and location on the back panel **312**. The elastic threading is woven taut into the back panel **312** so that the area of the control band **320** along the back panel **312** exhibits less elasticity than that of the remainder of the back panel **312**. In this exemplary embodiment, the control band **320** is woven into the fabric of the back panel **312** as a rectangular-shaped band that spans a portion of the back panel **312** to place the control band **315** directly over the scapulas of the wearer **305** when installed on the wearer **305**. The control band **320** acts similarly to that of the control band **120** of FIG. **2** to provide a retraction (external rotation) of the wearer's **305** upper arms. The combination of the stretch-type

fabric of the body **310** and the control band **320** coupled with the placement of the control band **320** along the rear panel **312** of the garment **300** and proximate to the wearer's **305** scapulas provides a stimulant for the wearer **305** to maintain proper posture by holding his shoulders in an erect position and tilting his thoracic cavity upward.

[0027] One of ordinary skill in the art would appreciate that the present invention provides a garment that operates as a stimulant to maintain desirable proper posture and poise of a person wearing the garment. The garment, which can take the form of a shirt or blouse, provides a stimulant to elevate the wearer's thoracic cavity and retract the wearer's scapula to support a more up-right posture through the combination of a stretch fabric and a control band. The body of the garment is typically made from stretch-type fabric that is adapted to fit snugly to the body shape of the wearer. The stretch-type fabric can include a reduced level of elasticity along the front of the garment to promote a lifting of the thoracic cavity. The control band typically comprises an elastic material and can be positioned on the rear of the garment proximal to the wearer's scapulas to produce a slight retraction of the wearer's upper arms.

[0028] The garment of the present invention provides many advantages when wore by a person, including an overall improvement of posture and poise, less muscle fatigue due to poor posture, improved comfort, better respiration, and a decrease in stress to the person's musculoskeletal system. The garment can be worn throughout a person's many daily activities, such as, for example, walking, working, sitting at a desk, exercising, driving an automobile, and sleeping. In each activity, the garment provides the person with a continuous stimulant to maintain proper posture, which aids the person in performing at a higher level than without the garment. The garment also provides the person the opportunity to become more aware of faulty muscle memory and kyphosis, thus, helping to prevent common premature degenerative arthritic conditions.

[0029] Although specific embodiments of the invention have been described above in detail, the description is merely for purposes of illustration. It should be appreciated, therefore, that many aspects of the invention were described above by way of example only and are not intended as required or essential elements of the invention unless explicitly stated otherwise. Various modifications of, and equivalent steps corresponding to, the disclosed aspects of the exemplary embodiments, in addition to those described above, can be made by a person of ordinary skill in the art, having the benefit of this disclosure, without departing from the spirit and scope of the invention defined in the following claims, the scope of which is to be accorded the broadest interpretation so as to encompass such modifications and equivalent structures.

What is claimed is:

1. A posture improving garment, comprising:
 - a front panel attached to a rear panel, the front panel for wear over at least a portion of a person's anterior torso, the rear panel for wear over at least a portion of the person's posterior torso, the front and rear panels both comprising at least a portion of elastic material and joined to form a continuous garment having a neck opening and two sleeve openings, the front panel comprising an area having a reduced level of stretching than that of the remainder of the front panel; and
 - a control band disposed on the rear panel of the garment, the control band comprising an elastic material having a

reduced level of stretching than that of the rear panel and extending laterally across the rear panel so that when the garment is installed on the person, the control band is proximal to the person's scapulas,

whereby, when the garment is installed on the person, a combination of the elastic material of the front and rear panels and the control band provides a stimulant to the person to maintain proper posture.

2. The posture improving garment of claim 1, wherein the control band is disposed on the rear panel such that when the posture improving garment is installed on the person, the control band is positioned along the superior-medial area of each scapula of the person.

3. The posture improving garment of claim 1, wherein the area of the front panel having a reduced level of stretching is positioned proximal to the mid-sternal area of the person and extends to the front of the shoulders of the person when installed on the person.

4. The posture improving garment of claim 1, wherein the difference in levels of stretching between the area of the front panel having a reduced level of stretching and the remainder of the front panel promotes a superior tilt of the thoracic cavity of the person when the garment is installed on the person.

5. The posture improving garment of claim 1, wherein the difference in levels of stretching between the area of the front panel having a reduced level of stretching and the remainder of the front panel promotes a lifting of the thoracic cavity of the person when the garment is installed on the person.

6. The posture improving garment of claim 1, wherein a combination of the elastic material of the rear panel and the control band produces a retraction of the upper arms of the person when the garment is installed on the person.

7. The posture improving garment of claim 1, wherein a combination of the elastic material of the rear panel and the control band produces an external rotation of the upper arms of the person when the garment is installed on the person.

8. The posture improving garment of claim 1, wherein the control band is encased in a cloth attached to the rear panel.

9. The posture improving garment of claim 1, wherein the control band is stitched taut to the rear panel.

10. The posture improving garment of claim 1, wherein the control band is positioned on the rear panel such that when the person wears the posture improving garment, the control band extends across the scapulas of the person from approximately one inch from one shoulder seam of the posture improving garment to approximately one inch from a second shoulder seam of the posture improving garment.

11. The posture improving garment of claim 1, wherein the control band is interwoven into fabric of the rear panel by weaving an elastic threading into the rear panel.

12. The posture improving garment of claim 11, wherein the elastic threading comprises a different material than that of the rear panel and the material of the elastic threading has a reduced level of stretch than that of the rear panel.

13. The posture improving garment of claim 1, whereby the combination of the elastic material of the front and rear panels and the control band provides a subconscious stimulant to the person to maintain proper posture when the person is in a position of proper posture and provides a conscious stimulant in the form of a pressure to the upper back region of the person when the person is in a position of improper posture.

14. A posture improving garment, comprising:

a front panel attached to a rear panel, the front panel for wear over at least a portion of a person's anterior torso, the rear panel for wear over at least a portion of the person's posterior torso, the front and rear panels both comprising at least a portion of fabric having an elastic characteristic and joined to form a continuous garment, the front panel comprising an area having a reduced level of elasticity than that of the remainder of the front panel; and

a control band stitched taut to the rear panel of the garment, the control band comprising an elastic material having a reduced level of elasticity than that of the rear panel and extending laterally across the rear panel and positioned on the rear panel to be proximal to the person's scapulas, whereby, when the garment is installed on the person, a combination of the elastic material of the front and rear panels and the control band provides a stimulant to the person to maintain proper posture and a difference in elasticity between the area of the front panel having a reduced level of elasticity and the remainder of the front panel promotes a superior tilt of the thoracic cavity of the person.

15. A posture improving garment, comprising:

a front panel attached to a rear panel, the front panel for wear over at least a portion of a person's anterior torso, the rear panel for wear over at least a portion of the person's posterior torso, the front and rear panels both comprising at least a portion of fabric having an elastic characteristic and joined to form a continuous garment, the front panel comprising an area having a reduced level of elasticity than that of the remainder of the front panel; and

a control band disposed on the rear panel of the garment, the control band comprising an elastic material having a reduced level of elasticity than that of the rear panel and extending laterally across the rear panel, the control band interwoven into the fabric of the rear panel and positioned on the rear panel to be proximal to the person's scapulas,

whereby, when the garment is installed on the person, a combination of the elastic material of the front and rear panels and the control band provides a stimulant to the person to maintain proper posture and a difference in levels of elasticity between the area of the front panel having a reduced level of elasticity and the remainder of the front panel promotes a lifting of the thoracic cavity of the person.

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