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(54) **METHOD OF EXERCISE AND EXERCISE GARMENT**

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(57) **ABSTRACT**

A supplemental garment which includes a main body **(10)** intended to cover the user's chest, side, and abdomen. The main body **(10)** emanates from a collar **(40)** which wraps around the user's neck. The collar fastens to either the opposing appendage or the neck of the collar. This garment is for athletes, "physically impaired" persons and others who desire a supplemental cold weather garment which provides: insulation from the cold, wind protection, temperature control, retention of body heat, and absorption of perspiration in the chest and core body region. It is desirable for these populations to have a supplemental garment that is easily attached and removed and does not interfere with the user's activity, require the removal of "outer apparel" or require the assistance of others. It is further desirable that this garment be easily stored in a pocket once removed by the user.

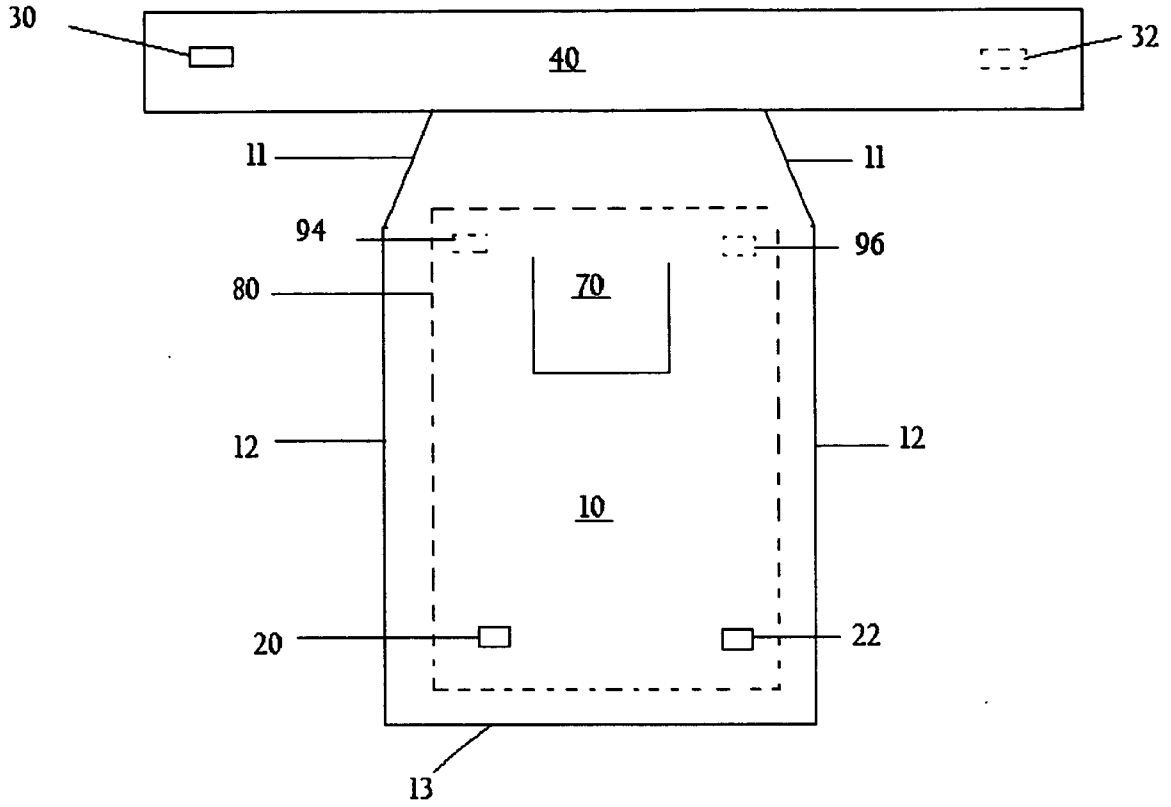


Figure 1A

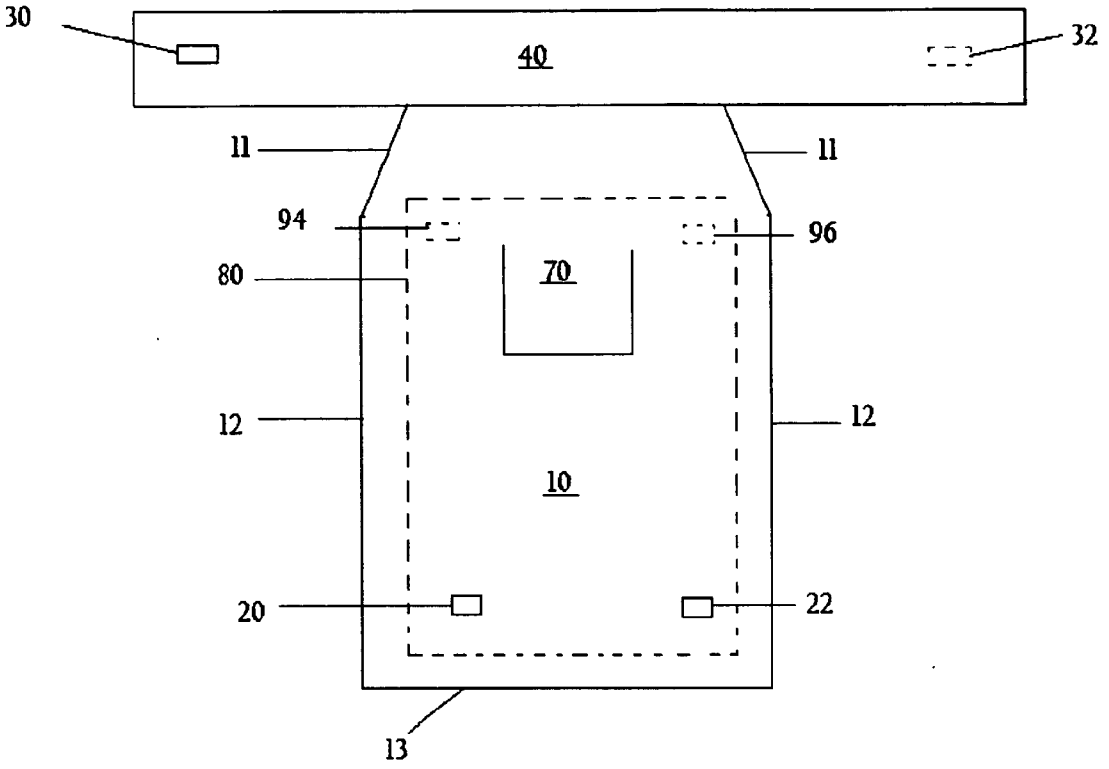


Figure 1B

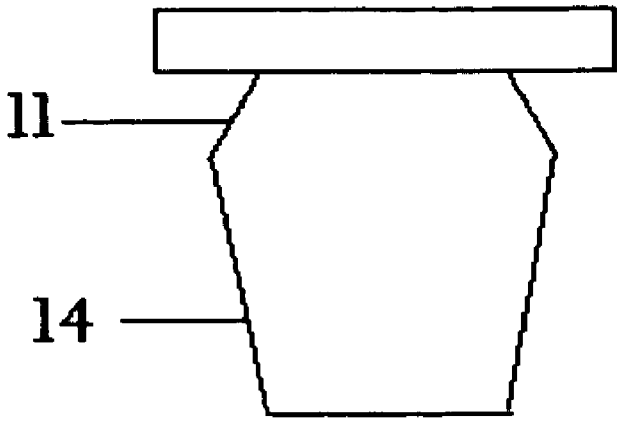


Figure 1C

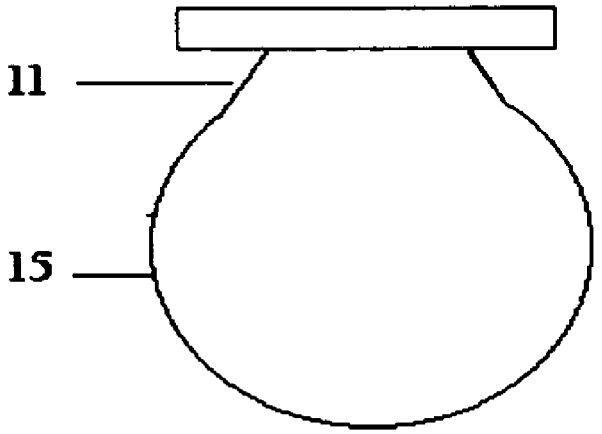


Figure 1D

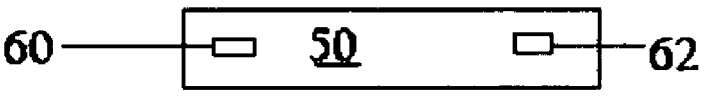


Figure 2

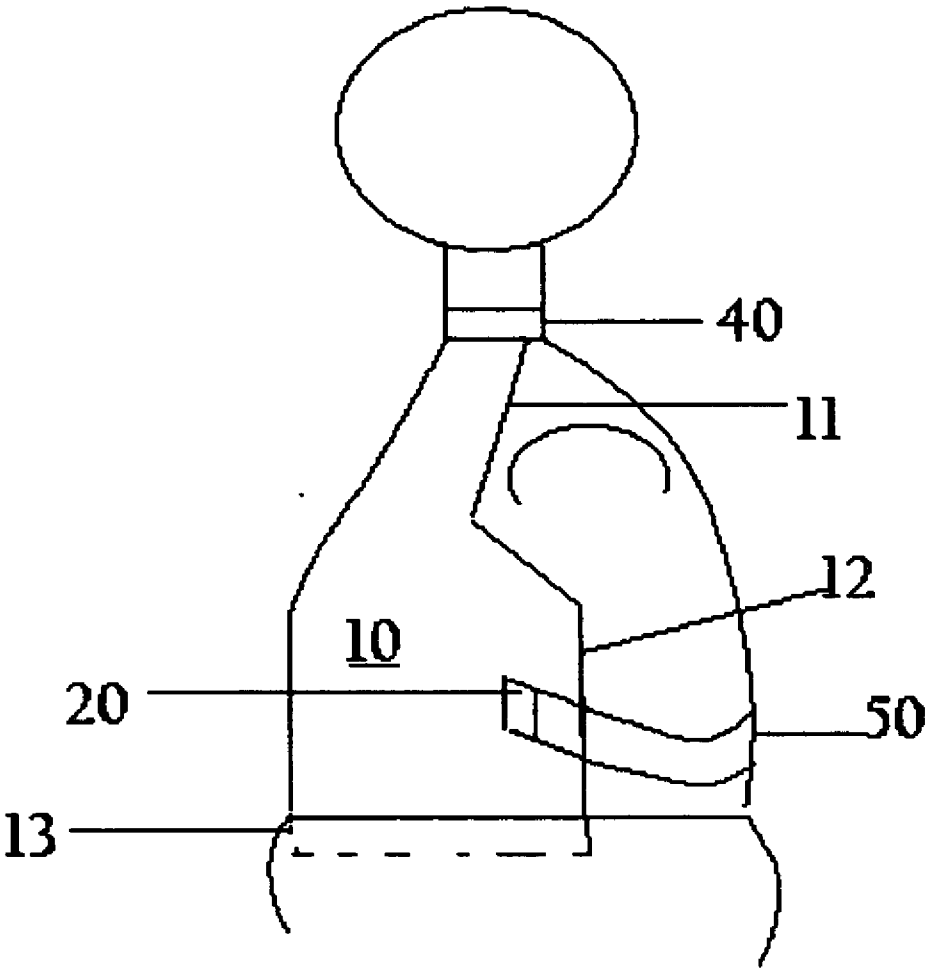


Figure 3

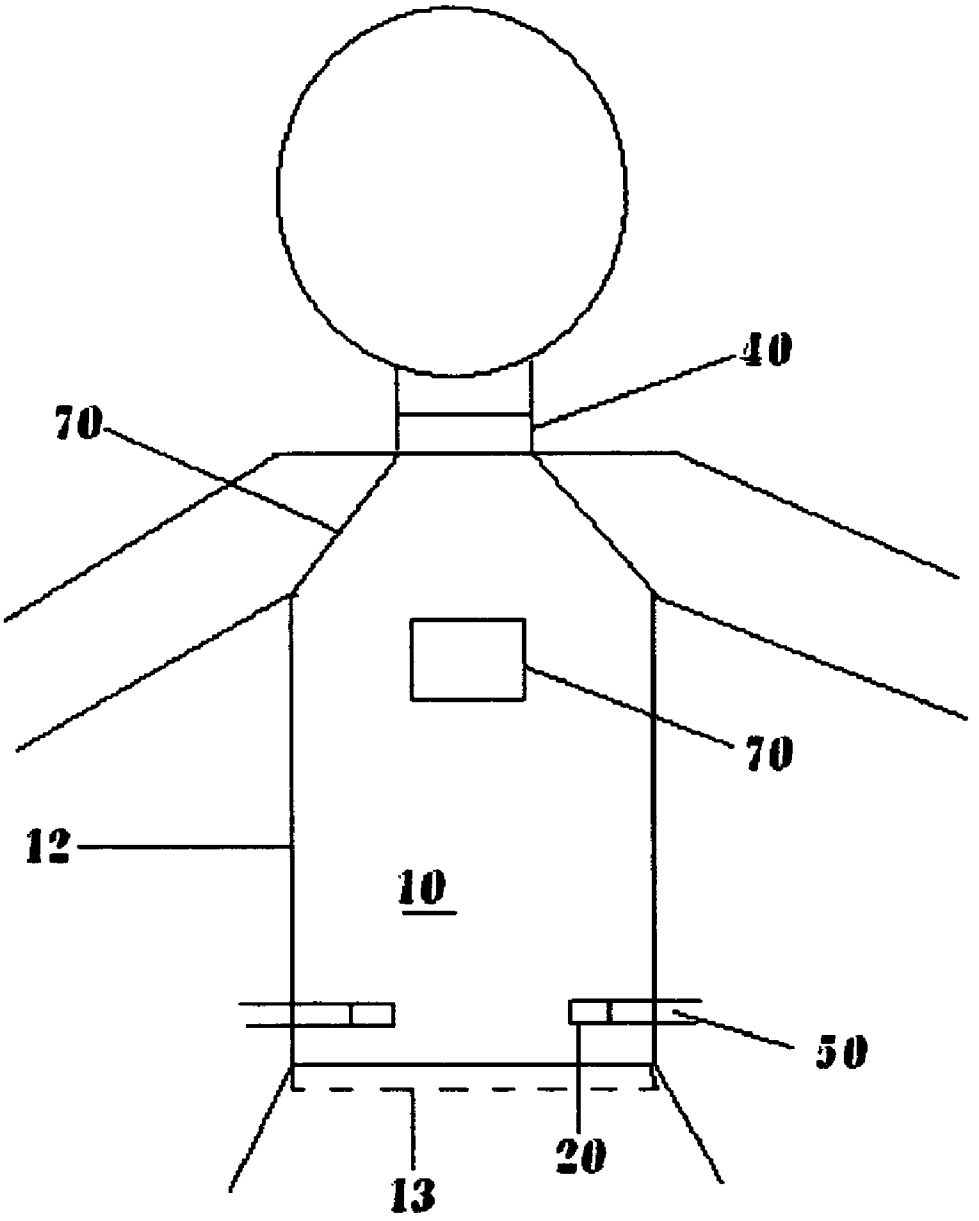


Figure 4

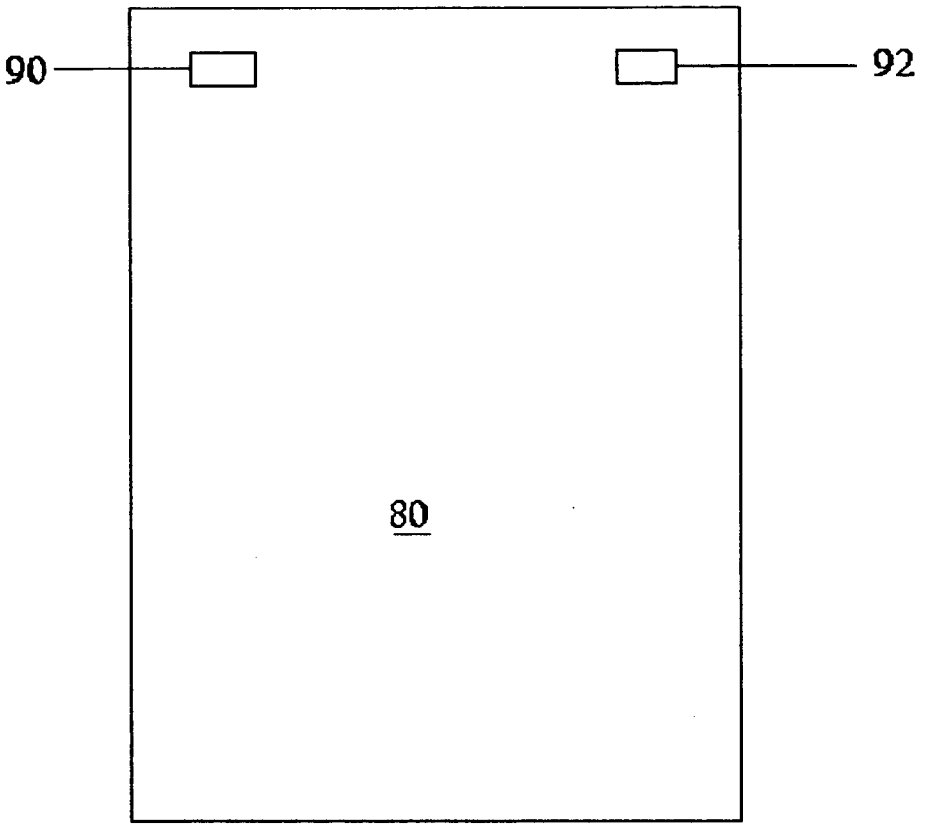
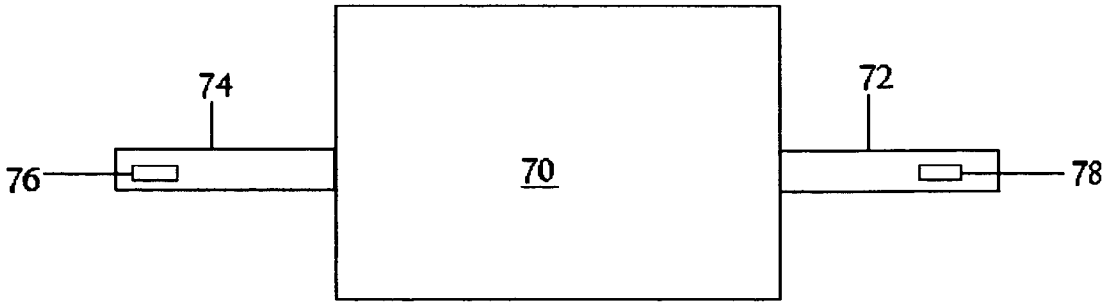


Figure 5



METHOD OF EXERCISE AND EXERCISE GARMENT

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of PPA Ser. No. 60/535,098 for a base layer bib (filing date Jan. 9, 2004).

BACKGROUND OF INVENTION

[0002] 1. Field of Invention

[0003] This invention relates to a method of exercise and a garment that helps maintain the user's core body temperature by providing insulation, absorption of perspiration, and protection from the outside environment. This garment is easily removed and stored without disrupting the exercise activity, requiring the removal of "outer garments," (head wear, back packs, etc.) or requiring the assistance of others.

[0004] 2. Background

[0005] The inventor, being an athlete and Exercise Physiologist has long known of the need to "layer" clothing to maintain an ideal body temperature when exercising in cold weather. Without adequate protection from the cold, the following physiological responses can occur: cutaneous vasoconstriction, increased heart rate, and increased blood pressure. These physiological responses can be both detrimental to performance and uncomfortable.

[0006] During vigorous exercise, there is a potential for a 20-fold increase in the body's heat production. Because of this, body temperature can be easily maintained even in subzero conditions as long as one is adequately dressed and continues to exercise. Thus, as long as one dresses warmly before and after exercise in the cold, the body should maintain a near normal body temperature.

[0007] Conversely, because of the body's ability to generate heat while exercising, individuals who dress too warmly for exercise in the cold may find they become intolerably warm within minutes of initiating the exercise. This is especially true if the clothing is such that release of body heat and evaporation of perspiration are hindered. Therefore, it has long been recognized that it is best to wear several layers of light clothing that can be removed or replaced separately as body heat rises and falls during work and rest periods or as changes in the external environment occur.

[0008] The typical "base layer" supplemental garment is normally an undershirt-type garment which is worn underneath the user's "outer garment" (shirt or jersey). This garment provides protection to the user's neck, shoulders, arms, abdomen, chest, back, and side. This undershirt-type garment necessitates removal of an "outer garment" before gaining access to the "base layer." In addition, access to the typical base-layer garment may require removal of the user's back or head wear (i.e.: backpack, hydration system, glasses, helmet, visor, etc.) because these garments are typically pulled over the user's head. Therefore, while the user has dressed in "layers" he/she now faces the problem of how to remove the layer without stopping the activity and first removing his/her outer garments.

[0009] Additionally, even when these base layer garments are worn on top of an outer garment (for example, a jacket or vest), they typically cannot be removed and stored without stopping the user's activity. When base layer garments have been designed using releasable fasteners, the arrangement or type of fastener typically requires two hands to un-fasten them. This poses a serious problem to physically impaired individuals, bicyclist, motorcycle drivers, and others whose hands are otherwise occupied by their activity. Furthermore, once removed, the typical garment is too cumbersome to store easily in a pocket. Therefore, the problem becomes, "What do I with it now that it's off?"

[0010] Thus, the need exists for a base layer garment that helps maintain the user's core body temperature by providing insulation, absorption of perspiration, and protection from the outside environment. This garment needs to be easily removed and stored without disrupting the exercise activity, requiring the removal of "outer garments," (head wear, back packs, etc.) or requiring the assistance of others.

[0011] Provide temperature control. A primary purpose of supplemental exercise garments is to provide body temperature control for the user. Many garments function as a barrier to wind and cold environmental temperatures, but offer little in the way of insulation. In addition, they do not have the ability to adjust their coverage when the environmental temperature raises or falls or the user's body temperature changes.

[0012] Insufficient Insulation. Some supplemental garments are designed primarily to stop wind or rain and provide little additional insulation. Other garments are designed to keep specific body areas protected rather than to maintain the user's core body temperature as a whole.

[0013] Poor perspiration absorption and an inability to move perspiration away from the user's skin ("wicking"). Some garments are designed to be worn next to the user's skin, but do not anticipate the need to absorb and move perspiration away from the skin. In addition, these garments are not secured around the user's torso to ensure they remain in contact with the user's skin. If the garment does not contact the user's skin, it will not be able to absorb perspiration. Furthermore, these garments are formed from a single layer of material which does not anticipate the need to move the perspiration away from the user's body ("wicking") to better control the user's body temperature and comfort.

[0014] Inability to release body heat ("venting"). The typical supplemental garment does not address the user's need to adjust the insulating ability of the garment when body temperature or weather conditions change. Garments of this type cannot be loosened or tightened when being worn.

[0015] Can only be worn over or under clothing. Supplemental garments are typically designed to be worn either under or over the user's garment, but cannot be worn in both situations. Some garments that claim to be designed to be worn both over and under clothing contain no method of securing the garment around the user's torso. It is therefore likely that air movement and the user's upper body movement will cause these types of garments to move out-of-place if worn on the outside of clothing.

[0016] Disruptive to the user's activity. The problem of designing a supplemental garment which does not disrupt the user's activity has not been adequately addressed in the

past. In general, most previously patented garments are not designed to be used by athletes during their actual exercise session.

[0017] Disrupts neck and head movement and vision. A number of garments are designed to cover the user's face and neck. Garments of this type have the potential to hinder the user's neck movement and peripheral vision.

[0018] Hinders upper body movement. Many garments do not adjust to accommodate a variety of user sizes. If a "one size fits all" garment covers the user's entire torso, arms, back, neck, and head, there is the potential to limit the user's upper body movement. Some garments contain back panels or back coverage which can hinder movement if the user carries a backpack, fanny-pack, hydration system, or is wheelchair bound.

[0019] Difficult to remove and put on. Many garments are limited in that they must be pulled-on and taken-off over the user's head. To remove these garments, the user must stop his/her activity and remove any headwear prior to putting-on or removing the garment. Garments with back panels or coverage to the user's back are difficult to remove if the user carries anything on his/her back or is wheelchair bound. In some cases, the neck of the garment contains multiple releasable fasteners which requires excessive "unfastening" time and two hands to remove the garment.

[0020] Difficult to store once removed. Some garments by design contain extra material which increases the garment's bulk. This bulk makes it difficult to store the garment in a pocket once it is removed. In some cases, the material itself is of a bulky nature (for example, fur) which increases the bulk of the garment and makes it difficult to fit the garment into a pocket when not in use.

[0021] The garment does not fit securely during movement. Many garments contain no method of securing them around the user's neck or torso. In other cases, the garment can be secured around the neck but not around the torso.

[0022] Hinders the user's breathing. Certain garments by design can hinder the breathing of a user during strenuous exercise and limit the user's ability to take deep breaths. This problem can be further exaggerated of the material specified for these garments does not stretch or is not permeable to air flow.

[0023] The garments are bulky and hinder arrow dynamics. Some garments will move and "flap" like a flag in the wind especially if being worn by a cyclist riding down hill or an exerciser in windy conditions. Some garments are unnecessarily bulky and heavy because they provide coverage to the face or other unnecessary body areas. This extra mass and weight increases the user's wind resistance.

BACKGROUND OF INVENTION—OBJECTS AND ADVANTAGES

[0024] Accordingly, several objects and advantages of my supplemental garment are:

[0025] Superior Insulation. The inventive garment provides significant insulation because it is designed to cover the user's neck, chest, abdomen, and side while leaving the user's back (which does not have a great deal of exposure to enviromnental air movement) open. In addition, the inventive garment can be constructed from more than one layer of material which provides even greater insulation to the user. Furthermore, the inventive garment can be constructed to accept an additional removable insulating layer which provides the user with extra protection under extreme weather conditions.

[0026] Perspiration absorption and wicking ability. The inventive garment can be worn in direct contact with the user's skin. The garment can be secured by releasable fasteners at the neck and abdomen and by "tucking-in" to keep it in contact with the skin and available for perspiration absorption. Furthermore, the garment, if constructed from two or more layers of fabric, allows the transfer of perspiration from the layer nearest the user to the garment's outer layer which helps the user maintain his/her body temperature and comfort.

[0027] Ability to release and maintain body heat ("venting"). The inventive garment can be loosened and tightened by releasable fasteners at the neck and abdomen or by un-tucking. The inventive garment therefore accommodates changes in the user's body temperature and changes in the outside environment. Loosening the garment has a cooling affect because it allows more cool outside air next to the user's skin. Conversely, tightening the garment helps the user maintain his/her body heat by restricting outside airflow against the user's skin and thus has a warming affect.

[0028] Can be worn both over or under clothing. While it is expected that the inventive garment will most often be worn under clothing, it's design also enables the user to wear it over clothing. The garment's neck and belt fasteners along with the tuck-in feature ensure that the garment will remain in-place under windy conditions and when the user's activity requires extensive upper body movement.

[0029] Does not interfere with neck and head movement or vision. My supplemental garment is tapered at the neck and leaves the user's face free so it does not interfere with head or neck movement. The garment's neck fasteners are adjustable to allow unimpeded movement of the head and neck.

[0030] Does not hinder upper body movement. My supplemental garment is light-weight, tapered along the user's arm region and only covers a portion of the user's side. Thus, it will not interfere with upper body movement.

[0031] Easy to remove and put on. My supplemental garment has the advantage of being put on and taken off by a single releasable fastener at the neck. It does not need to be taken over the user's head or require multiple unfastening in a given area. Since the inventive garment lacks a back panel, it will not interfere with backpacks or hydration systems. Because it is not pulled over the user's head, it does not require the removal of head wear. My garment can be removed and stored using only one hand. Removal of the inventive garment will not interfere with the user's activity.

[0032] Easy to store once removed. The subject garment is compact and easy to compress once it is removed. In addition, the neck and belt fasteners serve the dual purpose of helping keep the garment "wrapped" once it is removed. Furthermore, the front pocket of the inventive garment can be constructed to accept and hold the garment once it is removed.

[0033] Fits securely and remains in-place during movement. The inventive garment is secured around the neck by

the use of a releasable fastener. In addition, the garment can be secured around the torso by the use of an optional removable belt. The inventive garment can also be secured by tucking it into the user's lower body garment (for example, exercise shorts). This ability to secure the garment around the user's torso is critical when the user's activity requires a great deal of upper body movement (for example, hiking) or when the garment is worn over the user's clothing in windy conditions.

[0034] Compact, light weight and arrow dynamic. The inventive garment which provides coverage only to the user's front and side is compact and does not add substantial mass, weight, or wind resistance to the user. In addition, with multiple securing methods, it fits close to the user's body without loosening and will remain in place even in windy conditions.

[0035] Other objects and advantages are:

[0036] My supplemental garment when worn underneath the user's shirt will not cover "team sponsors, ""team logos," or other advertising that might appear on the user's shirt.

[0037] My supplemental garment can be constructed to be completely reversible.

[0038] My supplemental garment can be constructed to be so lightweight that it can be worn even in warm environments to absorb perspiration.

[0039] Further objects and advantages of my supplemental garment will become apparent from a consideration of the drawings and ensuing description.

SUMMARY

[0040] The present invention consists of a supplemental garment that helps control the user's core body temperature by providing insulation, retention and release of body heat, absorption and removal of perspiration, and protection from the outside environment. This garment is easy to remove and store and does not disrupt the user's activity, require the removal of "outer garments," or the assistance of others.

DRAWINGS—FIGURES

[0041] Several ways of carrying out the subject invention are described in detail below with reference to the drawings which illustrate in detail only the preferred embodiment of the invention in which:

[0042] **FIG. 1A** is a front view (or back view if the garment is designed to be reversible) of the garment. This view shows the inclusion of an optional pocket, removable belt, and placement of an internal insulating panel.

[0043] **FIG. 1B** is a front view (or back view if the garment is designed to be reversible) of the garment. In this view, the main body is tapered along its lower side edge. This view depicts no pocket, belt, or interior panel.

[0044] **FIG. 1C** is a front (or back view if the garment is designed to be reversible) of the garment. In this view, the main body is rounded along its lower and bottom edges. This view depicts no pocket, belt, or insulating panel.

[0045] **FIG. 1D** is a front view of the optional belt.

[0046] **FIG. 2** is a side view of the inventive garment in use. This view includes use of the optional removable belt.

[0047] **FIG. 3** is a front view of the inventive garment in use. This view includes the optional removable belt and the optional pocket.

[0048] **FIG. 4** is a front view of the insulating panel.

[0049] **FIG. 5** in an "inside-out" view of the pocket.

DETAILED DESCRIPTION OF THE PREFERRED EMBODYMENT

[0050] As shown in **FIG. 1A**, the inventive garment includes a collar **40** and a main body **10**. Collar **40** includes two opposing appendages, **33** and **34**, which are used to secure the garment around the user's neck by releasable fasteners **30** and **32**. Main body **10** emanates from collar **40** and is tapered at the top side edge **11**. A lower edge **12** of main body **10** is straight and is congruous with tapered portion **11**. A pocket **70** is located on main body **10**. Releasable fasteners **20** and **22** are located within the lower section of main body **10** and are designed to be paired with other releasable fasteners. Main body **10** can be of sufficient length to enable bottom edge **13** to tuck into the user's shorts or pants.

[0051] Main body **10** can be constructed from a single, double, or triple layer of virtually any type of fabric. The layers can be attached to each other by a sewn seam, tacking, or similar form of attachment. If main body **10** is constructed from more than one layer of material, a portion of the connecting seam can be left "open" to accommodate insertion of an internal insulating panel **80**. **FIG. 1A** shows the internal location of insulating panel **80** which is attached to the interior of main body **10** by releasable internal main body fasteners **94** and **96**. Thus a third layer of material can be placed between the front and back layers of main body **10** and remain "hidden" from view.

[0052] Releasable fasteners can consist of Velcro, trademark for nylon fabric configured to fasten to itself, or any other type of releasable fastener, i.e., snaps, buttons, etc. One or a number of the releasable pairs can be of a dimension to allow for being selectively positional relative to the mating fastener to provide adjustability to the closed locations. For example, if a Velcro strip is used for releasable fastener **30** when securing the garment around the user's neck, the mating fastener **32** could be placed so as to exactly "match" in its mating. On the other hand, fastener **32** could be positioned so that only a portion "over-laps" fastener **30**. This would allow for an increase or decrease in the size of the collar. As an alternative, releasable fastener **32** can consist of multiple snaps placed in line along appendage **33**. These multiple snaps (fastener **30**) can be paired with a single fastener **32**. In this instance, variable positioning can be accomplished by mating fastener **32** with any one of the snaps comprising fastener **30**. This variable positioning of the releasable fasteners allows the collar to accommodate a range of different neck sizes. It also allows the user to loosen the collar to allow for additional venting of outside air against the user's neck and upper chest.

[0053] **FIGS. 1B and 1C** show the inventive garment with two variations on the shape of the lower portion of main body **10**. **FIG. 1B** shows a tapered lower edge **14** of main body **10**. **FIG. 1C** shows a rounded lower edge **15** of main body **10**.

[0054] **FIG. 1D** shows a belt **50** which can be used to secure the garment around the user's torso. Releasable fasteners **60** and **62** on belt **50** mate with releasable fasteners **20** and **22** on main body **10** (shown in **FIG. 1A**).

[0055] **FIG. 2** shows a side view of the inventive garment in use. This view shows collar **40** wrapped around the user's neck to secure the garment. Tapered upper main body side edge **11** emanates from collar **40**. The lower straight portion **12** of main body **10** flares from the tapered section at an angle until reaching it's maximum width along the side. Belt **50** is used to secure main body **10** around the user's torso. Use of belt releasable fastener **22** paired with main body releasable fastener **62** is depicted (also shown on **FIG. 1D**). In addition, bottom main body edge **13** is tucked into the user's shorts.

[0056] **FIG. 3** shows a front view of the inventive garment in use. Collar **40** is wrapped around the user's neck to secure the garment. Tapered upper side edge **11** of main body **10** emanates from collar **40**. Pocket **70** is shown on the front of main body **10**. Releasable fasteners **60** and **62** on belt **50** are paired with releasable fasteners **20** and **22** on main body **10** to secure the garment around the user's torso. In addition, bottom edge **13** is tucked into the user's shorts.

[0057] **FIG. 4** shows insulating panel **80** along with releasable fasteners **90** and **92**.

[0058] **FIG. 5** shows pocket **70** which has been turned inside-out with the garment tucked inside. If the user's jersey or shirt does not contain pockets, he/she may desire to tuck the garment inside pocket **70** and then secure the garment around his/her torso for storage while exercising. Internal pocket straps **72** and **74** which were not visible in **FIGS. 1A and 3** are now exposed. Releasable fasteners **76** and **78** are shown as lying along the ends of pocket straps **74** and **72**, respectively.

DESCRIPTION OF OPERATION

[0059] My supplemental garment is designed for use by athletes, physically impaired persons and others for maintenance of body heat, absorption and removal of perspiration, and protection from the outside environment. More particularly, it relates to a supplemental garment which is worn either underneath a shirt or jersey or over outerwear. The garment covers the user's neck, chest, abdomen, side and portions of the shoulder. The garments is designed to be removed with one hand without the need to stop the user's activity, remove outer clothing (i.e. jackets, head wear or backpacks), or require the assistance of others. The garment is compact and can be stored in a pocket once removed.

[0060] My inventive garment can be worn three different ways:

[0061] Next-to the user's skin and underneath the user's shirt or jersey,

[0062] On top of a traditional insulating undergarment (for example, a thermal shirt) and underneath the user's shirt or jersey, or

[0063] On top of the user's jersey or jacket.

[0064] If the garment is worn underneath the user's jersey, he/she will likely put-on the inventive garment before putting-on his/her jersey. He/she will secure the garment around his/her neck by attaching the releasable fasteners along the ends of the collar appendages. Next, the user will tuck the lower end of the garment's main body into his/her exercise shorts/pants, thus securing the lower portion of the garment to the user's front torso. If the optional belt is used, it can be wrapped around the back of the user and attached to the main body of the garment with the releasable fasteners.

[0065] If the user waits to put-on the inventive garment until after his/her jersey is in place, the garment can be put-on either by placing the user's arm and hand underneath the jersey and pulling the inventive garment down through the jersey's collar or up under the jersey's lower edge. Once the inventive garment is in place, it can be secured around the user's neck and torso with the appropriate releasable fastener.

[0066] After the user begins exercising, it is likely that his/her body temperature will increase. The user may then desire to cool himself/herself by "venting" the garment to allow more cool airflow against his/her skin. However, if the user is actively participating in some form of exercise activity, he/she will desire to accomplish this venting without disrupting the activity. The inventive garment permits venting in a number of ways, requires only one hand to adjust the garment, and permits the user to exercise without interruption.

[0067] If the user is wearing a jersey or shirt that has a zipper along the top, he/she will first want to un-zip this outer garment to allow more airflow to the user's skin and the inventive garment. If additional cooling is desired, the user can then use one hand to loosen the inventive garment at the neck by repositioning the releasable fasteners. This "collar loosening" allows the release of body heat and permits more external airflow against the user's skin. If additional venting is desired, the user can un-tuck the inventive garment. This allows the release of body heat and permits more external airflow against the user's skin. The belt can also be loosened by repositioning the releasable fasteners or it may be removed in its entirety and stored in a jersey pocket. Finally, once the garment has been untucked and the fasteners have been released, the inventive garment can be removed completely by pulling it up through the user's jersey or shirt collar or down underneath the lower edge of the jersey.

[0068] When the garment is removed, it can then be "wadded" or "bunched-up" with a single hand and tucked into ajersey pocket for storage until the user's exercise session is complete.

[0069] Thus the reader will see that the invention provides a garment which can be made of virtually any fabric. The garment includes a main body **10** which is intended to cover the chest, side, abdomen, portions of the shoulder, and upper torso of the user. At the top of the garment is a collar **40** which connects with the main body **10** and wraps around the user's neck. The collar provides coverage to the user's neck and helps secure the garment.

[0070] This garment is for use by athletes, "physically impaired" persons and others who desire an easily removable, lightweight, and compact supplemental under or outerwear garment which provides: insulation from environmental temperature, protection from wind, retention of body heat, and absorption and removal of perspiration. This

garment can be removed and stored without disrupting the user's activity, requiring the assistance of others, or requiring the removal of "outer garments," head wear or backpacks.

[0071] While my above description contains many specificities, these should not be construed as limitations on the scope of the invention, but rather as an exemplification of one preferred embodiment thereof Many other variations are possible. For example,

[0072] The garment could contain a zipper that runs through the center of the collar and down the main body portion which could be used for "venting" the garment.

[0073] The length of the main body portion could be greatly reduced.

[0074] A fabric piece could be attached to the main body portion at either side of the neck which could run over the shoulder and back of the user.

[0075] The belt **80** could be eliminated.

[0076] The pocket **70** could be eliminated.

[0077] The pocket **70** could be placed in a number of different locations.

[0078] The garment could contain more than one pocket.

[0079] The main body **10** could be of virtually any shape.

[0080] The collar **40** need not be linear in appearance.

[0081] The releasable fasteners on the collar **30** and **32** and internal pocket **76** and **78** could be eliminated and the straps tied to secure the garment.

[0082] The garment could be attached to a head piece worn by the user, thus eliminating the need for a collar fastener.

[0083] The garment could be designed to accept permanent or removable weights.

[0084] The garment could be attached to the user's shirt or jersey directly by means of a clip or other fastener, thus eliminating the need for a collar fastener.

[0085] The garment could be attached to the user's jersey by use of an electromagnetic charge, thus eliminating the need for a collar fastener.

[0086] Accordingly, the scope of the invention should be determined not by the embodiment(s) illustrated, but by the appended claims and their legal equivalents.

1. A method of exercising a person comprising the following steps,

the person having an upper torso with a front,

placing a garment over a portion of the front of the upper torso, the

garment having a portion holding the garment to the person,

exercising with the garment in place, and

removing the garment with one hand while continuing to exercise once the person reaches an elevated body temperature.

2. The method of claim 1 wherein,

the person has clothing having a waist portion and

the garment is tucked into the waist portion of the clothing.

3. The method of claim 1 wherein,

the person has a neck and

the garment has straps that extend around the neck and a fastener to hold the straps together.

* * * * *