

UTILITY GARMENT

FIELD OF THE INVENTION

The present invention relates to a utility garment incorporating a utility waist belt or a utility belt and particularly although not solely to a utility waist belt for use to support various devices to be carried by a wearer of the utility waist belt.

BACKGROUND OF THE INVENTION

Waist belts for use in military, expedition, camping, police activities used for supporting or carrying loads are known. Some of the waist belts are used in conjunction with a backpack or a load bearing vest, others are used independently for supporting loads that are detachably secured to the belts.

When a backpack is carried by a wearer or a load bearing vest is worn by a wearer, the greater part of the load from the backpack or load bearing vest is borne by the shoulders of the wearer. The use of the waist belt in conjunction with the backpack or load bearing vest is intended to transfer a portion of the load from the shoulders to the hip of the wearer of the backpack or the load bearing vest so as to lessen the strain on the shoulder muscles of the wearer carrying the load but primarily to keep the pack or jacket close to the body.

One problem associated with the traditional waist belt for use for the above purposes is that the weight of the load tends to concentrate at one point/portion of the waist belt. The construction of the traditional waist belt does not allow a body contouring weight distribution of the load to the waist belt. Concentration of the weight of the load often causes discomfort to the wearer and over times, may cause injury to the wearer. In addition, the concentration of the weight of the load at one point/portion may also cause deformation of the waist belt when use over time especially if the waist belt is made of material that lacks sufficient torsional stiffness or thickness.

The waist belt may also slip downwards if it is not tightly secured to the waist of the wearer. For tight securing of the waist belt to the waist of the wearer, some waist belts are designed to wrap round the waist of the wearer including

wrapping round the front portion of the body. However, this arrangement does not provide sufficient ventilation to the waist of the wearer and may cause discomfort to the wearer.

In some cases, in order to prevent the belt from slipping downwards, especially in the case where the waist belt is used independently, the waist belt is used in conjunction with suspenders or straps wore over the shoulders of the wearer to secure the waist belt in place. However, using suspenders and straps can be cumbersome.

Hence, in order for the waist belt to be able to bear a substantial load and provide comfort to the wearer, it is desirable to have a waist belt that is able to provide a snug tight fitting and preferably body contouring sections onto the waist of a wearer.

It is accordingly an object of the present invention to provide an utility waist belt which addresses the abovementioned disadvantages or which will at least provide the public with a useful choice.

It is accordingly a second object of the present invention to provide a carrier garment which addresses the abovementioned disadvantages or which will at least provide the public with a useful choice.

BRIEF DESCRIPTION OF THE INVENTION

Accordingly in a first aspect the present invention consists a utility belt to be worn by a wearer and to receive vertical support by its engagement with the waist of said wearer, said utility belt comprising:-

an elongate panel having two opposite distal ends, each distal end engaged to a means to couple, each means to couple mutually engageable with each other to define an endless configuration capable of encompassing the waist region of a wearer, each said means to couple in a variable disposition connected relationship to a respective end of said elongate panel by a webbing to allow the size of said belt to be adjusted;

two flange panels each provided at or proximate each distal end of said elongate panel, each flange panel extending along part of one side of said elongate

panel to or towards the middle of said elongate panel, each said flange panel providing a region upstanding (in a direction lateral to the elongate direction) from said one side at or proximate said respective distal end and at which a secondary webbing is engaged and from which said secondary webbing extends to a respective said means to couple, said means to couple being in a variable disposition to said region upstanding by said secondary webbing adjustability,

wherein said flange panel is disposed from said elongate panel in a manner to allow it to in use flex inwardly upon a length reducing adjustment of said secondary webbing to become supported at least in part on the hips of said wearer.

Preferably said flange panels taper from said region upstanding towards the middle of said elongate panel.

Preferably said elongate panel is of a flexible construction.

Preferably said elongate panel includes a flexible panel of a padded construction.

Preferably said elongate panel has a height within a range of 10 to 25 cm.

Preferably said means to couple includes a receiving element and a pin element which when in use, said receiving element is disengageably secured to the said pin element.

Preferably said flange panel is made of a flexible panel or panels of material.

Preferably said flange panel is of a construction which is padded.

Preferably said elongate panel further includes at least two means to engage each extending from an outer surface of said elongate panel, each means to engage including a buckle disposed to allow detachable engagement of other utility features.

Preferably said elongate panel further includes a sheet of material disposed on a substantial portion of the inner surface of said elongate panel, said sheet of material of a configuration providing frictional resistance to said utility belt for additional support of said utility belt to the waist of said wearer.

Preferably said secondary webbing of each flange panel includes at least one buckle to allow adjustment of length of said secondary webbing for pulling of the flange panels together to tighten said utility belt to the waist of said wearer.

Preferably an upper body garment is engaged to said belt to define a carrier assembly, said engagement being via adjustable webbing provided anterior and posterior side of said then carrier assembly.

Preferably said upper body garment is a vest.

Preferably said upper body garment is engaged by said webbing extending from or at a lower peripheral edge of said garment with said elongate panel.

Preferably said adjustable webbing is provided at to anterior regions and one posterior region.

Preferably a thigh rig is disposed from said elongate panel and suspended there from by a webbing.

Preferably said thigh rig comprises of a panel engagable end to end to define an opening therethrough and through which in use a thigh of a person can extend.

Preferably said thigh rig is adjustable in opening size by means of adjustable webbing.

In a second aspect the present invention consists a carrier garment to allow a wearer thereof to carry utility providing means disposed from the body of the wearer said carrier garment including:-

- a. a belt to be worn by said wearer to receive vertical support by its engagement with the waist of said wearer, said belt including an elongate panel having two opposite distal ends, each distal end engaged to a means to couple, each means to couple mutually engageable with each other to define an endless configuration capable of encompassing the waist region of a wearer, each said means to couple in a variable disposition connected relationship to a respective end of said elongate panel by a webbing to allow the size of said belt to be adjusted,
- b. at least one of
 - i. an upper body garment with means to allow load support thereby, said garment including an over the shoulder support region,

apertures for arms and the head of a wearer, and engaged to said belt via a plurality of spaced apart adjustable webbing to control the disposition of the belt with said upper body garment to in use allow the distribution of load of load carried by said garment and said belt

- ii. at least one thigh rig defined at least in part by an end to end engageable panel capable of encompassing part of the thigh of a wearer, said thigh rig coupled to said belt via at least one webbing.

Preferably said at least one thigh rig is engaged to said belt by a length adjustable webbing.

Preferably two thigh rigs are provided one for each thigh of said wearer.

Preferably said upper body garment is a vest.

Preferably said vest is adjustable in torso size by the provision of at least one strap extending between a posterior panel and an anterior panel of said vest at least on one side of said upper body garment, said at least one strap providing an adjustable disposition between said anterior and posterior panel.

Preferably said belt further includes two flange panels each provided at or proximate each distal end of said elongate panel, each flange panel extending along part of one side of said elongate panel to or towards middle of said elongate panel, each said flange panel providing a region upstanding (in a direction lateral to the elongate direction) from said one side at or proximate said respective distal end and at which a secondary webbing is engaged and from which said secondary webbing extends to said means to couple, said means to couple being in a variable disposition to said region upstanding by said secondary webbing adjustability, wherein said flange panel is disposed from said elongate panel in a manner to allow it to in use flex inwardly upon an adjustment of said secondary webbing to become supported at least in part on the hips of said wearer.

This invention may also be said broadly to consist in the parts, elements and features referred to or indicated in the specification of the application, individually or collectively, and any or all combinations of any two or more of said parts,

elements or features, and where specific integers are mentioned herein which have known equivalents in the art to which this invention relates, such known equivalents are deemed to be incorporated herein as if individually set forth.

BRIEF DESCRIPTION OF THE DRAWINGS

A preferred form of the present invention will now be described with reference to the accompanying drawings in which:-

Figure 1 is a perspective view of a utility waist belt in a condition for use,

Figure 2 is a plan view of the waist belt of Figure 1 in a lay flat condition,

Figure 3 is a plan view of the waist belt of Figure 1 in a condition where the flange panels have been removed or tucked away,

Figure 4 is a plan view in a lay flat condition of a vest associable with the waist belt of Figures 1-3,

Figure 5 is a plan view in a lay flat condition of a thigh rig capable of associating with the belt of Figures 1-3 and engageable about the thigh of a wearer,

Figure 6 is a plan view of a pouch directly engageable to the belts of Figures 1-3 and/or to the thigh rig of Figure 4,

Figure 7 is a rear view of the pouch of Figure 6,

Figure 8 is a front view of the belt including the thigh rigs and the vest engaged with the belt,

Figure 9 is a perspective view of the vest, and

Figure 10 is a plan view of the vest in engagement with the belt.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to the drawings and more specifically to Figure 1, there is provided a utility waist belt 1 releasably securable to a wearer's waist, the utility waist belt comprises a flexible elongate panel 2 having an upper 3 and a lower 4 longitudinal edges, an inner 5 and outer 6 surfaces and a first and second distal ends 8, 9. When in use, the inner surface of the elongate panel is in contact with the back and side portions of the wearer's waist.

The flexible elongate panel 2 is of a length which will provide a significant encompassing of the waist of the wearer of the belt. The elongate panel 2 is

preferably of a height (between the upper and lower edges 3 and 4) which will encourage the spreading of the load as a result of the tightening of the belt about the hips of a wearer. For example the height is (over a significant length of the elongate panel 2), greater than 10 cm and preferably between 10 and 25 cm. The belt is engageable to a wearer by being encompassed about the wearer in a manner which can be selectively fastened and enclosed to define a loop. Coupling features such as a buckle consisting of a receiving element 10 and a pin element 11 will allow for the belt to assume an endless configuration. The element 10 can engage with the element 11 in a secure manner but are yet disengageable from each other to allow for the belt to open up and to for example assume the lay flat conditions as shown in Figures 2 and 3. The coupling elements are each respectively engaged to the elongate panel by webbing 13. The webbing is engaged to the elongate panel 2 at or towards the respective distal ends 8, 9. The securement is for example by ultrasonic welding and/or stitching or similar. The webbing extends between the elongate panel 2 and the respective coupling elements 10 and 11 in a manner so that the coupling elements can move away and/or towards the elongate panel in a manner to thereby allow for the adjustment of the size of the belt to occur to allow for the belt to be used about different sized waists. In the most preferred form, the belt encompasses back and side portions of the waist of the wearer save for the front portion where only the webbing 13 and the coupling elements 10, 11 are disposed. This configuration provides comfort to the wearer when the wearer bends over his waist to carry out any activities since the front portion of the waist of the wearer is free from any obstruction. The elongate panel 2 is preferably made from a construction which may include an assembly of components but which defines a complete coverage of paneling material within its boundaries defined by the upper and lower edges and its distal ends.

The utility waist belt 1 further includes two resilient flange-like members 16. Each are disposed from end portions 8, 9 at the upper longitudinal edge 3. The flange-like members 16 extend from their first distal end at or proximate a respective distal end 8, 9 towards the middle of the flexible elongate panel 2. Such extension is preferably in a manner which is tapered wherein the narrower end of

the flange-like members 16 is at or towards the middle regions of the elongate panel 2. The flange-like members present at or towards the respective distal ends 8, 9 an edge upstanding substantially in a direction lateral to the elongate direction of the belt when in its lay flat condition as for example shown in Figure 2. The flange-like members 16 are panels of material which may for example be padded like the construction of the flexible elongate panel 2 may be. The flange-like members 16 have engaged therewith and at a region remote from the upper edge 3 of the flexible elongate panel 2, webbing which is connected to the same connection elements 10, 11 with which the webbing 13 of the flexible elongate panel is connected. Such secondary webbing 19 is preferably of an adjustable nature so that the distance between the flange panels 16 and the connection elements 10 along the webbing 19 can be adjusted. The securement of the webbing 19 to the flange panels 16 away from the upper edge 3 allows for the flange-like panels 16 to be manipulated in their position relative to the elongate panel 2. The resilient flange-like members are tapered and disposed relative to the flexible elongate panel in such a manner that each inner surface of the end portion of the elongate panel and each inner surface of the flange-like member defines a pocket for receiving a portion of the wearer's hip. This configuration allows a snug fitting of the utility waist belt onto the wearer's waist and henceforth, provide sufficient tight fitting of the utility waist belt to the wearer's waist / hips.

The interface between the flange panels 16 and the elongate panel 2 along the upper edge 3 of the elongate panel 2 is such as to allow for the flange panels 16 to be flexible and for example pivot about the upper edge 3 of the elongate panel 2. In use, the belt of the present invention is placed about the waist area of a wearer and is adjusted by adjustment of the length between the coupling elements 10 and/or 11 relative to the elongate panel 2 so that the coupling elements can be connected together thereby enclosing the belt about the waist of the wearer. The main panel 2 of the belt will sit about the hips of a wearer and provide the upper edge 3 proximate to the hip bones of the wearer. Adjustment of the secondary webbing 19 can occur by reducing its effective length (length between the connector and the flange panel 16) thereby drawing the distal end 20 at or proximate which the

secondary webbing 19 engages to the flange panel 16 in a manner so that it pivots about the upper edge 3 of the elongate panel 2. Such pivoting as for example shown in Figure 1 brings the upper edge 21 of the flange panel 16 to a condition which is of a smaller effective diameter than the diameter of the flexible elongate panel 2. In such a condition the flange panels 16 angle upwardly and inwardly towards the body and can provide a downwardly directed surface which can locate at least in part over the hip bones of the wearer. Such therefore provides additional vertical support to the belt during use.

The flange panels 16 are preferably engaged with the elongate panel 2 along their entire length. Their length however is less than half of the length of the elongate panel 2 such that their inner distal ends 22 are provided not midway between the distal ends 8 and 9 of the elongate panel 2.

Standard and industry known adjustment buckles 23 may be utilized for the adjustment purposes of the present invention.

In use the elongate panel 2 will remain substantially in a cylindrical configuration about the hips of a wearer whereas the flange panels 16 will assume a condition which may be described as part conical.

With reference to Figure 3, it can be seen that the flange-like members 16 can be removed or folded to a condition to become inoperative. The flange-like members may be folded inwardly or outwardly to lie within the perimeter of the elongate member 2 or may be entirely removed from the elongate member 2. The secondary webbing 16 may also be disconnected or become redundant in such a condition.

With the provision of the additional flange members 16 which will allow for enhanced comfort and increased load carrying capacity for the person wearing such a belt, the belt can be subjected to additional loading. Whilst belts of this kind may for example be used in defence force applications and will normally carry standard utility features such as a pouch 30 as for example shown in Figures 6 and 7, additional attachments such as a thigh rig can be engaged to be suspended from the belt 1. A thigh rig 31 as for example shown in Figure 5 includes a thigh encompassing section 32 which may consist of a panel 33 and webbing 34 engaged

with buckles 36 to be utilized for securing about the thigh of a wearer. The thigh rig includes a webbing 35 which can be selectively engaged to the belt 1 to become suspended from the belt. In the most preferred form, the engagement between the webbing 35 of the thigh rigs and the belt 1 is provided at each side of the body of the wearer. This allows for the best degree of freedom of movement of the legs of a person since no webbing is positioned where it may become taught when the legs or thighs bend relative to the waist. With reference to Figure 8, a person may be wearing a belt 1 from which two thigh rigs 31 are suspended, one for each thigh of the wearer. The thigh rigs may themselves include securement features 38 with which knife or tool belts or pouches can be connected. The weight of any articles attached to the thigh rig 31 helps to pull the belt 1 downwards and in turn, helps to secure the belt 1 to sit on the hips of the wearer. This prevents the belt 1 from displacing from its secured position when the wearer engages in any activities. The webbing 35 of the thigh rigs 31 may be of a kind which are adjustable in length so as to allow for the thigh encompassing portions of the thigh rigs 31 to be adjusted in disposition relative to the waist of a wearer and hence relative to the thighs of a wearer.

In Figure 4 the vest or jacket is shown in a lay flat condition anterior and posterior sides 51, 52. The anterior side 51 is provided with webbing 54 and the posterior 52 is provided with buckles 55. The anterior and posterior sides are fastened by engagement of the webbing 54 and the buckle 55. The vest or jacket is adjusted to fit different sizes of the wearers by pulling the webbing 54 towards the anterior side 51 (as shown in Figure 9) after the webbing 54 engages with the buckle 55 and by adjusting the length of the webbing 54. The vest or jacket is preferably of a size that allows it to be worn over a bullet vest or jacket worn by the wearer. In the most preferred form both the interior and posterior sides include webbing 53 which can engage with the belt as for example shown in Figure 8. The engagement between the vest or jacket and the belt is tightened by pulling the webbing 53 downwards towards the ground (as shown in Figure 10). This downwards tightening encourages the securement of the belt 1 on the hips of the wearer. The webbing 53 can be engaged so as to be adjustable in length to allow for

the appropriate positioning of the jacket to occur with the belt 1. The interengagement of the jacket 50 with the belt 1 allows for a single load carrying unit to be defined wherein the jacket, the belt and the optional thigh rigs can be utilized for suspending load carrying modules such as pouches and for the entire assembly to be adjustable so as to allow for the distribution of the load to occur relative to the body of the wearer. For example should there be a significant load provided to the belt 1 and to the thigh rigs 31, the tension in the webbing 53 between the jacket 50 and the belt 1 can be increased to allow for a greater load to be carried on the shoulders of the wearer and thereby reducing the load supported by the belt and by the hips of the wearer. With the provision of such flexibility, a total assembly of a load carrying unit can be provided which has the adjustability to allow for the comfort of the wearer to be maintained to the best possible degree.

In an alternative form, the vest or jacket may also include camel back pouch for use to contain water. The inner surfaces of the interior and posterior sides 51, 52 of the vest or jacket may also be made of non heat trapping material such as mesh material that is able to provide ventilation to the wearer when vest or jacket is worn.

Claims:-

1. A utility belt to be worn by a wearer and to receive vertical support by its engagement with the waist of said wearer, said utility belt comprising:-

an elongate panel having two opposite distal ends, each distal end engaged to a means to couple, each means to couple mutually engageable with each other to define an endless configuration capable of encompassing the waist region of a wearer, each said means to couple in a variable disposition connected relationship to a respective end of said elongate panel by a webbing to allow the size of said belt to be adjusted;

two flange panels each provided at or proximate each distal end of said elongate panel, each flange panel extending along part of one side of said elongate panel to or towards the middle of said elongate panel, each said flange panel providing a region upstanding (in a direction lateral to the elongate direction) from said one side at or proximate said respective distal end and at which a secondary webbing is engaged and from which said secondary webbing extends to a respective said means to couple, said means to couple being in a variable disposition to said region upstanding by said secondary webbing adjustability,

wherein said flange panel is disposed from said elongate panel in a manner to allow it to in use flex inwardly upon a length reducing adjustment of said secondary webbing to become supported at least in part on the hips of said wearer.

2. A utility belt as claimed in claim 1, wherein said flange panels taper from said region upstanding towards the middle of said elongate panel.

3. A utility belt as claimed in claims 1 or 2, wherein said elongate panel is of a flexible construction.

4. A utility belt as claimed in any one of claims 1 to 3, wherein said elongate panel includes a flexible panel of a padded construction.

5. A utility belt as claimed in any one of claims 1 to 4, wherein said elongate panel has a height within a range of 10 to 25 cm.
6. A utility belt as claimed in claim 1, wherein said means to couple includes a receiving element and a pin element which when in use, said receiving element is disengageably secured to the said pin element.
7. A utility belt as claimed in any one of claims 1 to 6, wherein said flange panel is made of a flexible panel or panels of material.
8. A utility belt as claimed in claim 7, wherein said flange panel is of a construction which is padded.
9. A utility belt as claimed in any one of claims 1 to 8, wherein said elongate panel further includes at least two means to engage each extending from an outer surface of said elongate panel, each means to engage including a buckle disposed to allow detachable engagement of other utility features.
10. A utility belt as claimed in any one of claims 1 to 9, wherein said elongate panel further includes a sheet of material disposed on a substantial portion of the inner surface of said elongate panel, said sheet of material of a configuration providing frictional resistance to said utility belt for additional support of said utility belt to the waist of said wearer.
11. A utility belt as claimed in any one of claims 1 to 10, wherein said secondary webbing of each flange panel includes at least one buckle to allow adjustment of length of said secondary webbing for pulling of the flange panels together to tighten said utility belt to the waist of said wearer.
12. A utility belt as claimed in any one of claims 1 to 11 wherein an upper body garment is engaged to said belt to define a carrier assembly, said engagement being

via adjustable webbing provided anterior and posterior side of said then carrier assembly.

13. A utility belt as claimed in claim 12 wherein said upper body garment is a vest.

15. A utility belt as claimed in claim 12 or 13 wherein said upper body garment is engaged by said webbing extending from or at a lower peripheral edge of said garment with said elongate panel.

16. A utility belt as claimed in any one of claims 12 to 14 wherein said adjustable webbing is provided at to anterior regions and one posterior region.

17. A utility belt as claimed in any one of claims 1 to 15 wherein a thigh rig is disposed from said elongate panel and suspended there from by a webbing.

18. A utility belt as claimed in claim 16 wherein said thigh rig comprises of a panel engageable end to end to define an opening therethrough and through which in use a thigh of a person can extend.

19. A utility belt as claimed in any one of claim 16 or 17 wherein said thigh rig is adjustable in opening size by means of adjustable webbing.

20. A carrier garment to allow a wearer thereof to carry utility providing means disposed from the body of the wearer said carrier garment including:-

- a. a belt to be worn by said wearer to receive vertical support by its engagement with the waist of said wearer, said belt including an elongate panel having two opposite distal ends, each distal end engaged to a means to couple, each means to couple mutually engageable with each other to define an endless configuration capable of encompassing the waist region of a wearer, each said means to couple in a variable disposition connected

relationship to a respective end of said elongate panel by a webbing to allow the size of said belt to be adjusted,

b. at least one of

- i. an upper body garment with means to allow load support thereby, said garment including an over the shoulder support region, apertures for arms and the head of a wearer, and engaged to said belt via a plurality of spaced apart adjustable webbing to control the disposition of the belt with said upper body garment to in use allow the distribution of load of load carried by said garment and said belt
- ii. at least one thigh rig defined at least in part by an end to end engageable panel capable of encompassing part of the thigh of a wearer, said thigh rig coupled to said belt via at least one webbing.

21. A carrier garment as claimed in claim 19 wherein said at least one thigh rig is engaged to said belt by a length adjustable webbing.

22. A carrier garment as claimed in claim 19 or 20 wherein two thigh rigs are provided one for each thigh of said wearer.

23. A carrier garment as claimed in any one of claims 19 to 21 wherein said upper body garment is a vest.

24. A carrier garment as claimed in claim 22 wherein said vest is adjustable in torso size by the provision of at least one strap extending between a posterior panel and an anterior panel of said vest at least on one side of said upper body garment, said at least one strap providing an adjustable disposition between said anterior and posterior panel.

25. A carrier garment as claimed in any one of claims 19 to 23 wherein said belt further includes two flange panels each provided at or proximate each distal end of

said elongate panel, each flange panel extending along part of one side of said elongate panel to or towards middle of said elongate panel, each said flange panel providing a region upstanding (in a direction lateral to the elongate direction) from said one side at or proximate said respective distal end and at which a secondary webbing is engaged and from which said secondary webbing extends to said means to couple, said means to couple being in a variable disposition to said region upstanding by said secondary webbing adjustability, wherein said flange panel is disposed from said elongate panel in a manner to allow it to in use flex inwardly upon an adjustment of said secondary webbing to become supported at least in part on the hips of said wearer.