

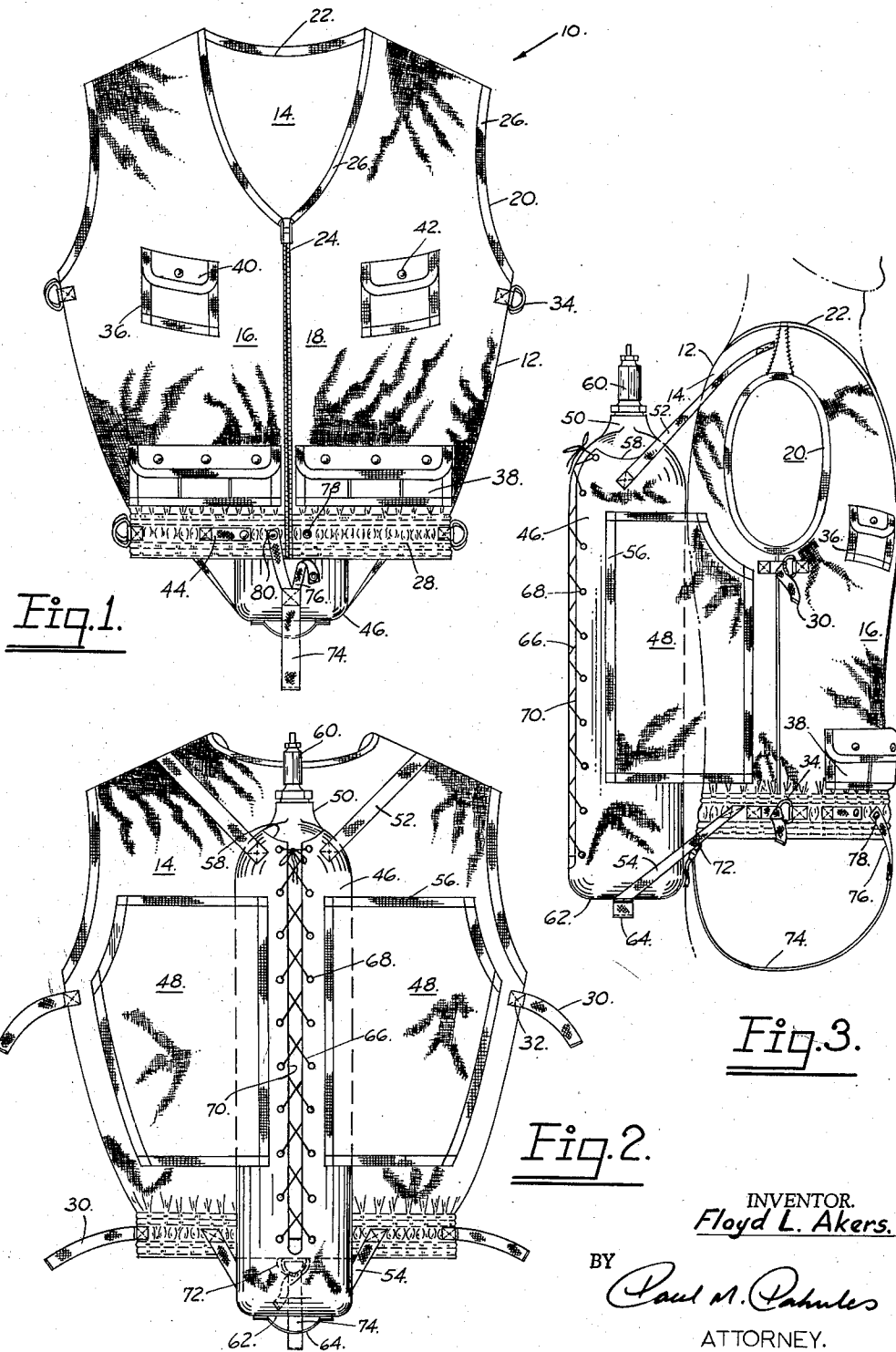
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VEST PACK FOR TANKS OF UNDERWATER BREATHING APPARATUS

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VEST PACK FOR TANKS OF UNDERWATER BREATHING APPARATUS

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This invention relates to a vest pack for carrying containers of relatively heavy weight, and more particularly, to a vest pack of the type employed for human transportation of cylinders or tanks of compressed gas or fluid of underwater breathing apparatus.

Tanks of underwater breathing equipment containing a compressed fluid, such as air or oxygen, heretofore, have been carried on the back of a person for skin diving by various types of pack harnesses which are made of a plurality of straps of fabric material and of metal parts. Such harnesses, however, do not provide maximum comfort to the wearer, are difficult to put on and to remove, especially in case of emergency underwater, and fail to distribute the relatively heavy weight of the tank evenly over the body of the wearer for providing maximum freedom of movement underwater and out of the water.

It is therefore the purpose of the present invention to provide a vest pack for carrying compressed fluid tanks of underwater breathing apparatus which is adapted to be worn as a vest or jacket by a person, which vest pack provides complete comfort by its full body coverage, its snug fit, and by its distribution of the tank weight evenly over the body of the wearer, and which allows the wearer to put on or take off the entire breathing equipment in one single operation.

It is further the purpose of the present invention to provide a compressed fluid tank vest pack on which the tank is securely held in place thereby preventing the tank from swaying in any direction, ride up or slip sideways, or float around, and which vest pack has many features of maximum comfort and safety.

It is still further the purpose of the present invention to provide a vest pack of the type described which permits easy removal of the tank; is of simple and durable construction, and which is very effective and efficient in use.

A vest pack for carrying compressed fluid tanks of underwater breathing apparatus constructed in accordance with the present invention comprises a vest of pliable material adapted to be worn over the upper part of the body of a person, and tank holding means secured to said vest on the back thereof for carrying a tank of compressed fluid.

These and other features of the present invention are described in detail below in connection with the accompanying drawing, in which like numerals designate like parts, and in which:

Figure 1 is a front elevation of a vest pack embodying the present invention;

Figure 2 is a rear elevation of the vest pack of Figure 1; and

Figure 3 is a side elevation of the vest pack of Figure 1.

Referring in detail to the drawing, the vest pack for carrying compressed fluid tanks of underwater breathing apparatus illustrated in the drawing as an embodiment of the present invention is indicated generally by the reference numeral 10, and as shown, comprises a vest or

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jacket 12 of body-fitting form having a back or rear section 14 and a pair of front sections 16 and 18 each connected to the back section 14 at the shoulders and at the sides so as to form arm openings 20 and a neck opening 22. The vest 12 is constructed of any pliable or flexible material, such as fabric, and preferably of Navy type heavy duck canvas for strength and durability. The front sections 16 and 18 of the vest are adapted to be separably connected to each other at the front of the garment by suitable means, such as a slide fastener 24 secured to the front marginal edges thereof for permitting putting the vest on and off. The vest 12 may be quickly and very easily taken off by simply pulling the slide fastener 24 downwardly and thereby disconnecting the front sections 16 and 18. At the free edges, as around the neck and arm openings 22 and 20, the vest may be reinforced by strips 26 of fabric sewn or secured thereto for preventing tearing of the material. At the lower edge of the waist portion of the vest 12, an elastic band 28 may be provided for snugly fitting on the body of the wearer thereby preventing upward pulling of the vest. The back section 14 and the front sections 16 and 18 are tailored to a body fitting form and are thus adapted to be worn over the upper part of the body of a person.

The vest 12 may also be provided with a pair of side straps or bands 30 on each side thereof, each of which straps 30 is connected at one end, as at 32, to the back section 14 and at the other end is adapted to be passed through a pair of loops or D-rings 34 on the sides of the front sections 16 and 18 in a conventional manner. The vest 12 may thus be adjusted to the size or dimension of the body of the wearer by simply pulling the free end of the straps 30 passed through and around the D-rings 34. Preferably, the front sections 16 and 18 are each provided with upper and lower pockets 36 and 38, respectively, which may include downturned flaps 40 provided with snap fasteners as at 42, so that the contents of the pockets are prevented from falling therefrom. The lower pockets 38 are each preferably divided into three sections for carrying weights necessary for diving. The upper pockets 36, however, may be used for carrying miscellaneous items and a holder strap 44 may be provided below the right side pocket 38 for carrying a knife attachment.

As shown in Figures 2 and 3, a cylindrical container, cover or holder 46, also of the same material as the vest 12, is connected to the back section 14 by a pair of substantially rectangular panels 48 of fabric extending rearwardly therefrom. The panels 48 are each connected at one end along a longitudinal edge and part of transverse edges to the back section 14 adjacent to the sides thereof and similarly at the other end to the sides of the container 46. The panels 48 are the main supports and are arranged to hold the container 46 firmly against the back section 14 when the vest 12 is worn on the body of the wearer and a tank, as indicated at 50, is carried therein, thereby preventing rolling of the tank 50 side to side. Also, a pair of upper straps 52 running from the shoulder portions of the back section 14 the top of each side of the tank container 46 and a pair of lower straps 54 connected to the waist portion of the back section 14 and to each side of the bottom of the container 46 prevent the tank from moving longitudinally of the back section 14 especially downwardly, and further reinforce the support of the tank container on the vest 12. The panels 48 may also be reinforced at the edges by strips of fabric, as indicated at 56, sewn thereto.

The cylindrical container 46 is arranged to completely enclose the cylinder or tank of compressed air 50, except at the upper end in which the container 46 is formed with an opening 58 of a lesser diameter than the remaining portion of the container for permitting the upper end

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of the tank 50 to extend above the container 46 and the valve 60 on the upper end of the tank 50 to be disposed above and entirely clear of the container 46. The gas cylinder 50 is supported on the bottom end 62 of the container 46 which may be provided with a webbing handle 64 for facilitating holding of the bottom 62 of the container 46 when the tank 50 is removed therefrom. The container 46 is adapted to fit snugly over the tank 50 and to be closed by a lacing 66 passing through grommets or eyelets 68 provided on either side along the edges on centrally split back portion of the container 46, as indicated at 70 in Figures 2 and 3. The split 70 extends from the upper circular edge for substantially the full length of the container 46 and terminates in a few inches above the container bottom 62 for facilitating insertion or removal of the tank 50 from the container 46.

Attached at the lower back edge of the vest 12, there is a pair of D-rings for engaging a crotch strap 74 of fabric formed with a Y-shaped front end 76 which is provided with outer snap fastener 78 adapted to engage inner snap fasteners 80 adjacent to the lower edge of the front vest sections 16 and 18. The crotch strap 74 may be adjusted in length by pulling the free end of the strap 74 passed around the D-rings 72 for accommodating the wearers of different sizes. The vest 12 may thus be prevented from moving upwardly by the crotch strap 74 in addition to the action of the elastic waist band 28.

From the above description of the vest pack of the present invention it is readily seen that this vest pack is extremely compact, light in weight, very strongly constructed with no parts that may corrode upon exposure to salt water and which distributes the tank weight evenly over the whole chest and stomach areas of the wearer making it exceptionally comfortable.

The present invention has been described in detail above for purposes of illustration only and is not intended to be limited by this description or otherwise, except as defined in the appended claims.

What I claim is:

1. A vest pack for carrying a compressed fluid cylindrical tank of underwater breathing apparatus, comprising a vest of flexible material adapted to be worn over the upper part of the body of a person, said vest having a back section and a front section, said front section having fastening means extending centrally longitudinally thereof, a substantially cylindrical container of flexible material for carrying a cylindrical tank therein, panels of flexible material each connected to said back section and to said container for suspending said container therefrom, upper and lower straps each connected at one end to said vest and at the other end to said container for restricting longitudinal movement of said container with respect to said vest, and adjustable straps connected to the sides of said vest for adjusting said vest to the dimensions of the body of the wearer.

2. A vest pack for carrying a compressed fluid cylindrical tank of underwater breathing apparatus, comprising a vest of flexible material adapted to be worn over

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the upper part of the body of a person, said vest having a back section and a front section, a substantially cylindrical container of flexible material for carrying a cylindrical tank therein, panels of flexible material each connected to said back section and to said container for suspending said container therefrom, upper and lower straps each connected at one end to said vest and at the other end to said container for restricting longitudinal movement of said container with respect to said vest, adjustable straps connected to the sides of said vest for adjusting said vest to the dimensions of the body of the wearer, and an adjustable lower strap adjustably connected at one end to said back section and at the other end adapted to be separably connected to said front section for preventing upward movement of said vest on the body of the wearer.

3. A vest pack for carrying a compressed fluid cylinder of underwater breathing apparatus, comprising a vest of fabric material having a back section and a pair of front sections for covering the upper part of the body of a person, said front sections having means for fastening together, a tank container of fabric material extending longitudinally on said back section, a pair of panels of fabric material one on each side of said vest extending rearwardly and secured to said back section and to said container for supporting said container thereon, a pair of upper straps connected each at one end to the top portion of said container and at the other end to a shoulder portion of said vest for preventing said container from dropping downwardly, a pair of lower straps connected each at one end to the bottom portion of said container and at the other end to said back section for preventing downward movement of said container, a pair of side straps on each side of said vest connected each at one end to said back section, means on the sides of said front sections for engagement with said side straps for adjusting said vest to the size of the wearer, pockets on said front sections for carrying weight therein, an adjustable length lower center strap connected at one end to the lower portion of said back section, fastening means on said front section and on the other end of said lower center strap for fastening therewith for preventing upward movement of said vest, an elastic band on the waist portion of said vest for fitting snugly on the body of the wearer, and a handle strap on the bottom of said container for facilitating removal of a cylinder therefrom.

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