Oct. 1, 1963 C. J. ELLIS 3,105,359

VEST

Filed Dec. 9, 1959 2 Sheets-Sheet 1

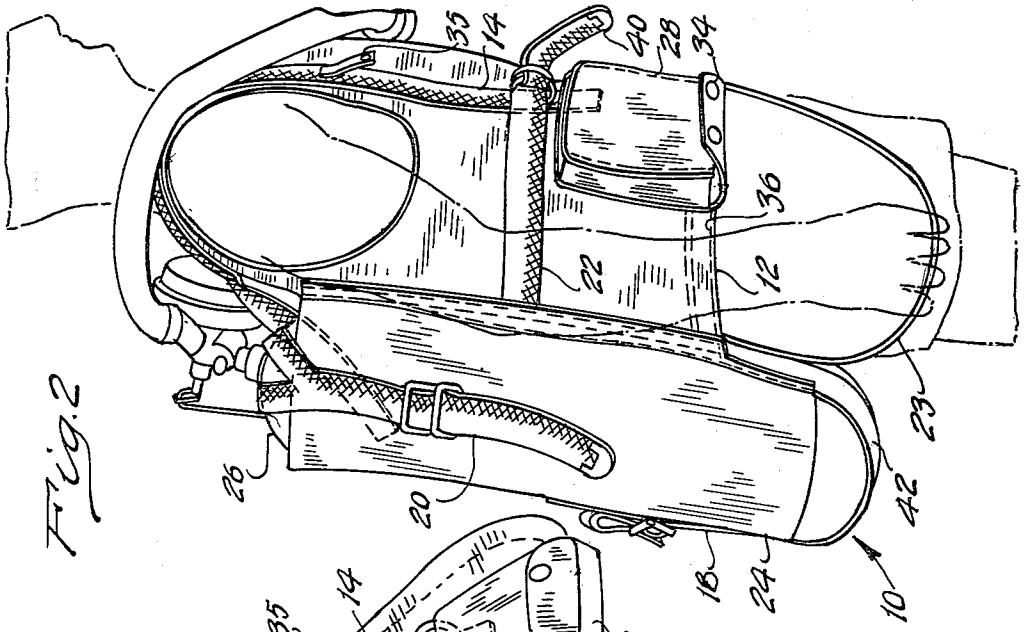

Fig. 2

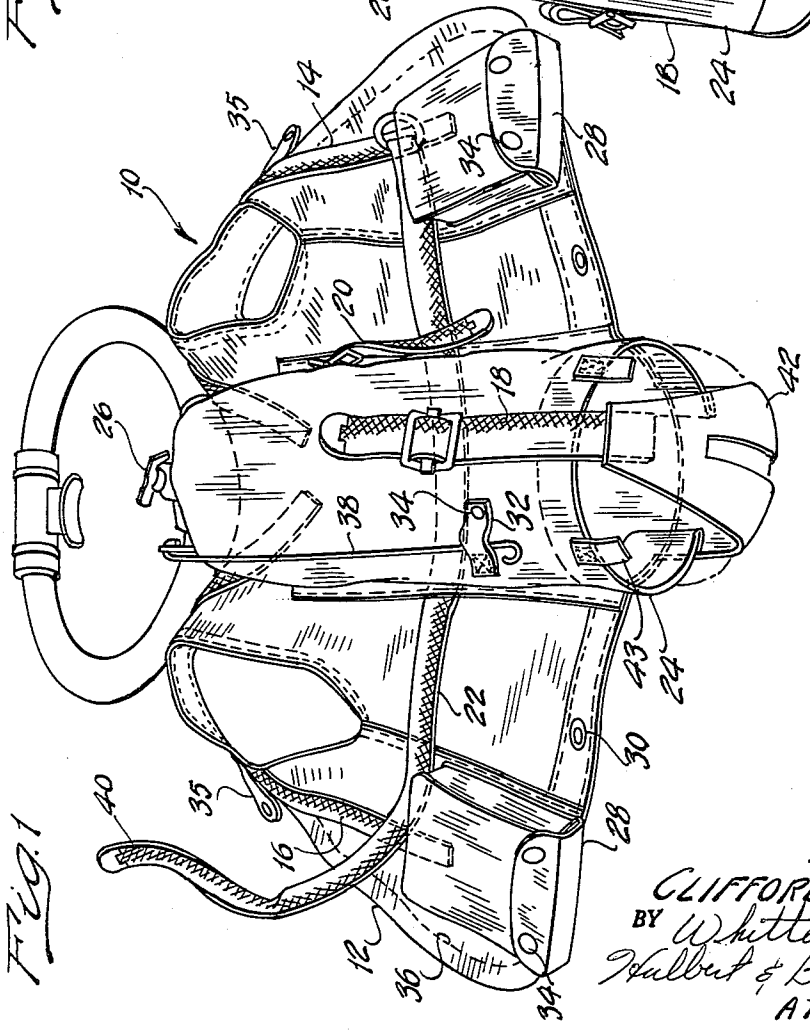

Fig. 1

INVENTOR.
CLIFFORD J. ELLIS
BY Whittemore Hulbert & Belknap
ATTORNEYS.

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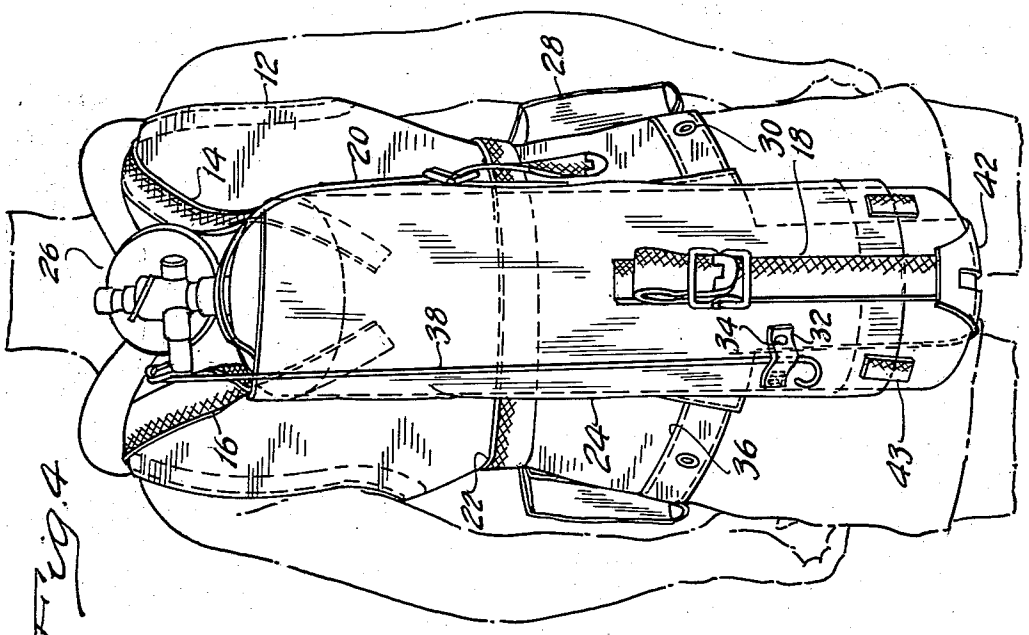

Fig. 4

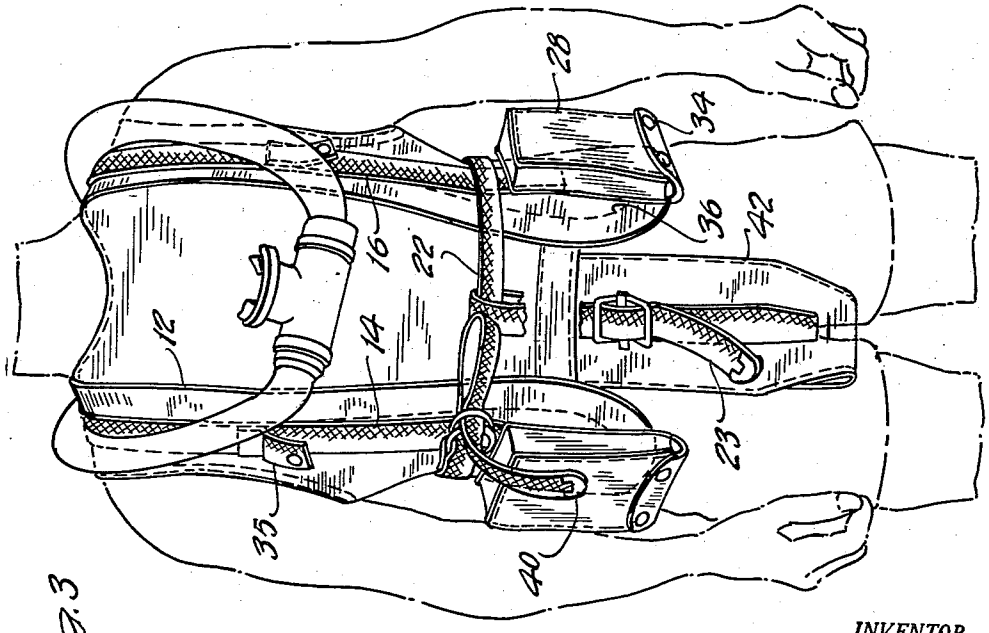

Fig. 3

INVENTOR.
CLIFFORD J. ELLIS
BY Whittemore Hulbert & Belknap
ATTORNEYS

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VEST

Clifford J. Ellis, 1424 Woodbine, Lansing, Mich.

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5 Claims. (Cl. 61—70)

The present invention relates to a vest and refers more particularly to a diving vest for skin divers adapted to more efficiently support the apparatus necessary for skin diving and to be quickly removed including adjustable means to support an air lung therein and also including inverted weight pockets.

In the past skin divers have used complicated harnesses for support of air lungs in conjunction with extra belts and other means for carrying the necessary weights and accessories of a skin diver. Such apparatus is often uncomfortable to the skin diver, particularly if he is walking out of the water with his equipment in place as is sometimes necessary. The harness, belts and the like supporting the heavy lung and weights cut into the body of the diver. More important, however, with a number of harnesses and belts attached to his body the skin diver often finds it difficult to quickly remove his equipment when it is necessary to do so in order to surface quickly. Furthermore loose straps and belts may cut off the diver's air or catch on under-water objects in use.

It is therefore one of the purposes of the present invention to provide a diving vest which is capable of containing all of the accessories needed by skin divers and which may be quickly removed.

It is a further object of the present invention to provide a diving vest for skin divers comprising a sleeveless fabric jocket having a pouch securely attached thereto in which an air lung may be supported and which includes reinforcing straps positioned thereon to distribute the weight carried by the diver and which is arranged to be quickly removed.

Another object is to provide a diving vest as indicated above wherein means are provided in conjunction with the air lung pouch for adjustably supporting the air lung therein.

Another object is to provide a diving vest as described above including inverted weight pockets to permit rapid dropping or removal of weights therefrom.

Another object is to provide a diving vest as described above including snaps and grommets thereon to facilitate the attachment thereto of apparatus such as emergency buoyant equipment, knives, etc.

Another object of the invention is to provide a diving vest for skin divers which is simple in construction, economical to produce and efficient in use.

Other objects and features of the invention will become apparent as the description proceeds, especially when taken in conjunction with the accompanying drawings, illustrating a preferred embodiment of the invention, wherein:

FIGURE 1 is a view of a diving vest according to the invention having a diving lung mounted therein and spread relatively flat.

FIGURE 2 is a side view of the diving vest shown in FIGURE 1 as it would appear in use.

FIGURE 3 is a front view of the diving vest shown in FIGURE 1 as it would appear in use.

FIGURE 4 is a rear view of the diving vest shown in FIGURE 1 as it would appear in use.

With reference to the drawings a particular embodiment of the invention will now be described.

A diving vest, generally indicated 10 according to the invention is illustrated in FIGURE 1. The diving vest 10 as shown is constructed in the form of a sleeveless jacket 12 having straps or belts 14, 16, 18, 20, 22 and 23 secured thereto as shown in the figures. Vest 10

also includes a pouch 24 attached to the rear of jacket 12 adapted to adjustably receive an air lung 26 such as used by skin divers therein. Inverted pockets 28 are likewise attached to jacket 12 as illustrated for holding diving weights. In addition jacket 12 is provided with grommets 30, tabs 32 and snaps 34 for the attachment of diving apparatus.

In use as shown in FIGURES 2, 3 and 4 the diving vest 10 is adapted to adjustably support the air lung 26 in a manner such that the diver is not encumbered or made uncomfortable by a plurality of harnesses and belts. Further vest 10 is particularly constructed to permit ready removal thereof by means of pulling the end 40 of the single belt 22 and removing belt 22 from the loop of belt 23. In addition the vest 10 is particularly constructed to permit ready release of diving weights from the inverted pockets 28.

More specifically, vest 10 is constructed of light canvas or duck type material in the form shown. The vest is reinforced around each edge thereof by reinforcing strips and stitching as indicated at 36. Further it will be noted that the sleeveless jacket 12 is constructed in three pieces joined along the sides and shoulders thereof by multiple lines of stitching.

In addition it will be noted that the jacket 12 is provided with relatively large shoulder openings through which the arms of the diver extend to provide full movement for the diver and to permit divers of greatly varying size to use the same diving vest 10 without particular adjustment thereof by merely increasing or decreasing the gap at the front of the jacket 12 as shown in FIGURE 3.

Thus a diving vest such as that disclosed by applicant is suitable for use by divers of various size in contrast to harness and belt constructions which must be adjusted to fit each particular diver.

Grommets 30 as shown best in FIGURES 1 and 4 may be provided where desired in the vest 10 to permit tying or hooking diving accessories, such as lights, knives and the like to the diving vest without the necessity of wearing a separate belt therefor. Grommets 30 may be the well known annular rings set in the reinforced material at the edge of vest 10.

Similarly tabs 32 sewn to the vest where desired may be used in conjunction with grommets 30 or snaps 34 to provide means for retaining diving equipment such as the rod 38 or emergency buoyant equipment (not shown). Similar snaps 34 may be used as closure means for pockets 28 as shown.

Belts 14 and 16 are secured to the jacket 12 by means of stitching and extend from the pockets 28 over different shoulders as shown and are secured to the upper portion of the pouch 24. Thus the weight of the air lung 26 is offset by the weights carried in pockets 28 whereby the diving vest is substantially balanced to give equal bearing across the shoulders of the jacket. Further as will be understood since the shoulders of the jacket 12 are substantially wider than the usual harness that the weight in the pockets 28 and the weight of the air lung will be distributed over a greater body area providing less discomfort for the diver.

Strap 18 is secured to the lower part of the pouch 24 and strap 20 is secured to the upper part of pouch 24 as illustrated. The air lung 26 may be adjusted vertically through adjustment of the straps 18 and 20 as will be readily evident. Belt 20 is split longitudinally as shown best in FIGURE 2 to permit passage of the valve of the air lung 26 therethrough and allow for vertical adjustment of the air lung as indicated. Belt 18 is provided with an enlarged portion 42 adapted to form a seat for the air lung 26 supported in the pouch 24 as illustrated.

Belt 22 laterally ties belts 14 and 16 together and also provides a horizontal member over which belt 23 may be looped as shown best in FIGURE 3. Belt 23 in use extends from the lower part of the back of the jacket 12 between the crotch of the user as shown in FIGURE 2. Thus with belt 22 properly secured as illustrated best in FIGURE 3 it is only necessary to pull end 40 thereof and remove belt 22 from the loop of belt 23 to permit releasing the diving vest, weights and air lung should it become necessary to do so while diving.

Pouch 24 as illustrated is sewn at each side to the back of the jacket 12 with reinforced stitching and is of sufficient cylindrical dimension to receive an air lung 26 as shown. As previously indicated the air lung 26 is adjustable vertically within the pouch 24 by means of straps 18 or 20.

Tabs 43 are provided attached to the bottom edge of pouch 24 as shown best in FIGURES 1 and 4. Tabs 43 aid in inserting air lung 26 in pouch 24. The tabs 43 are particularly useful when the pouch 24 is wet and therefore tends to cling to air lung 26. In use tabs 43 are gripped to hold the bottom of the pouch 24 stationary during insertion of an air lung therein.

Pockets 28 as shown are substantially rectangular and are particularly adapted to hold therein a series of flat rectangular weights which may be removed therefrom quickly and efficiently by means of unsnapping snaps 34 and letting the weights drop into the hand.

In use an air lung is placed in pouch 24 of the diving vest 10 as shown in FIGURE 1 and the vertical position thereof in the pouch 24 is adjusted. Rod 38 is secured between tabs 32 and pouch 24 by means of snap 34, weights are placed in pockets 28 as desired and if desired emergency buoyant equipment may be placed across tabs 35 on belts 14 and 16 which have either grommets or snaps on the end thereof to permit attachment or detachment of the emergency buoyant equipment. Additionally tabs 35 may be snapped or stitched to jacket 12.

The vest may then be picked up and put on in the manner of a sleeveless jacket, the belt 23 looped and passed over the belt 22 as shown in FIGURE 3, and the belt 22 fastened so that it may be unfastened by pulling of the end 40. Other diving accessories as desired may be hooked to grommets 30 or tabs 32 and 35 and diving may be commenced.

Should it become necessary to walk about out of the water applicant's construction is such that there are no thin straps or undistributed weight to make the diver uncomfortable. Further as has been previously pointed out the construction disclosed is such that all of the diving apparatus including the air lung, weights, and accessories may be dropped from the diver by the simple motion of pulling the end 40 of belt 22, thus giving added safety to the diver should it become necessary to surface quickly.

The drawings and the foregoing specification constitute a description of the improved vest in such full, clear, concise and exact terms as to enable any person skilled in the art to practice the invention, the scope of which is indicated by the appended claims.

What I claim as my invention is:

1. A diving vest for use in skin diving, comprising a jacket, a pouch secured to the rear of said jacket for supporting an air lung therein, means for adjusting the vertical position of an air lung positioned within said pouch comprising a first strap extending across the bottom of the pouch and having a wide portion immediately beneath the pouch, means for adjusting the effective length of said first strap, a second strap extending across the top of the pouch and having an elongated slot therethrough for receiving the valve of the air lung, means for adjusting the effective length of said second strap, inverted pockets including closing flaps and quick opening fastening means secured to the front of said jacket for supporting diving weights, third and fourth straps extending vertically over and secured to the front of the jacket each having one end secured to the weight pockets and passing over one of the shoulders of the jacket, the other ends of the third and fourth straps being secured to the top of the pouch, a fifth strap secured to the jacket around the waist thereof and a sixth strap secured to the lower portion of the back of the jacket for extending between the legs of a diver and releasably engaging the fifth strap so that the jacket is comfortably secured to a diver and may be quickly removed from a diver should the need arise.

2. A diving vest, comprising a jacket, a pouch secured to the rear of said jacket for supporting an air lung therein, means for adjusting the vertical position of an air lung positioned within said pouch comprising a first strap extending across the bottom of the pouch and a second strap extending across the top of the pouch, means for adjusting the effective length of said first and second straps, inverted pockets including closing flaps and quick opening fastening means secured to the front of said jacket for supporting diving weights, third and fourth straps secured to the front of the jacket each having one end secured to one of the weight pockets and the other end secured to the pouch, a fifth strap secured to the jacket around the waist thereof and a sixth strap secured to the lower portion of the back of the jacket for extending between the legs of a diver and releasably engaging the fifth strap in use.

3. A diving vest for use in skin diving comprising a jacket having integrally constructed total front and back portions, a flexible pouch secured to the rear of said jacket substantially centrally thereof for supporting an air lung therein, a first strap fixedly secured to the bottom of the jacket and pouch in the rear of the jacket for supporting the bottom of an air lung within the pouch, a second and third strap fixedly secured to the shoulders of the vest and fixedly secured to the top of the pouch for supporting an air lung within the pouch in a predetermined position, pockets fixedly secured to the front of the jacket for supporting diving weights, a reinforcing band fixedly secured to said jacket around the waist thereof and a fourth strap fixedly secured to the lower portion of the back of the jacket for extending between the legs of a diver and releasably engaging the reinforcing band for securing the jacket to a diver.

4. A diving vest for use in skin diving, comprising a flexible jacket having integrally constructed total back and front portions, a flexible pouch located substantially centrally of and secured to the back portion of said jacket for supporting an air lung, said pouch having an open top and bottom, and means secured to said vest for adjusting the vertical position of an air lung positioned within said pouch whereby the air lung may be conveniently transported both in and out of water by divers having different body structure comprising a strap extending across the bottom of the pouch and having a wide portion immediately beneath the pouch, means for adjusting the effective length of said strap, a second strap extending across the top of the pouch and having an elongated slot therethrough for receiving the valve of the air lung and means for adjusting the effective length of said strap.

5. A diving vest for use in skin diving, comprising a flexible jacket open in the front and having integrally constructed total back and front portions, a flexible pouch located substantially centrally of and secured to the back portion of said jacket for supporting an air lung, said pouch having an open top and bottom, and means secured to said vest for adjusting the vertical position of an air lung positioned within said pouch whereby the air lung may be conveniently transported both in and out of water by divers having different body structure, straps extending vertically along the front of the jacket and passing over the shoulders thereof and secured to the jacket, the ends of the straps passing over the shoulders of the jacket being secured to the top of the pouch, another strap secured to the jacket around the waist thereof, and a further strap

secured to the lower portion of the back of the jacket for extending between the legs of a diver and releasably engaging the waist strap so that the vest is comfortably secured to a diver and may be quickly removed by the diver should the need arise.

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