April 26, 1966 E. G. BAKER 3,247,531

BUOYANT VEST

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Fig 5

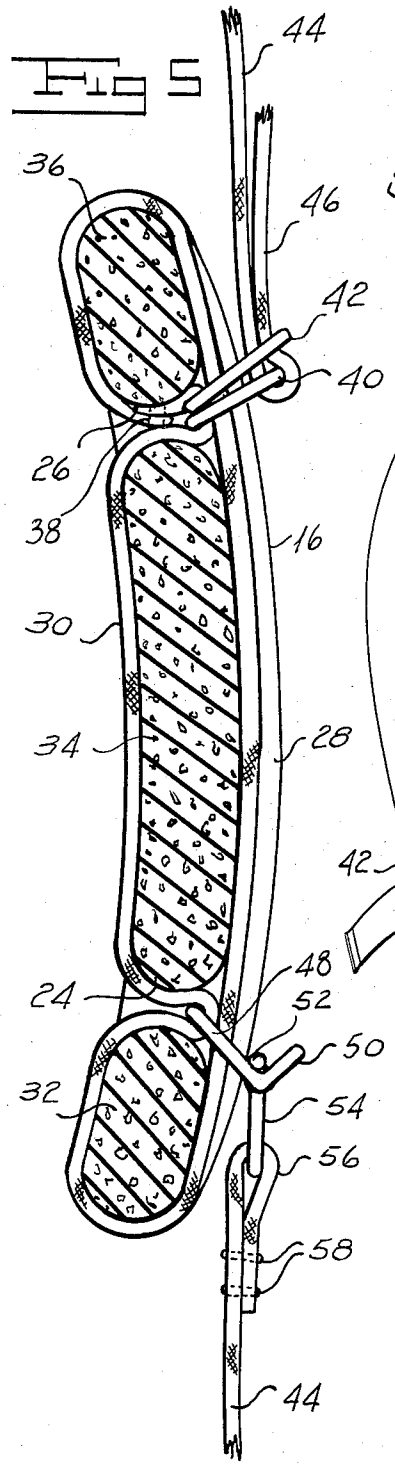
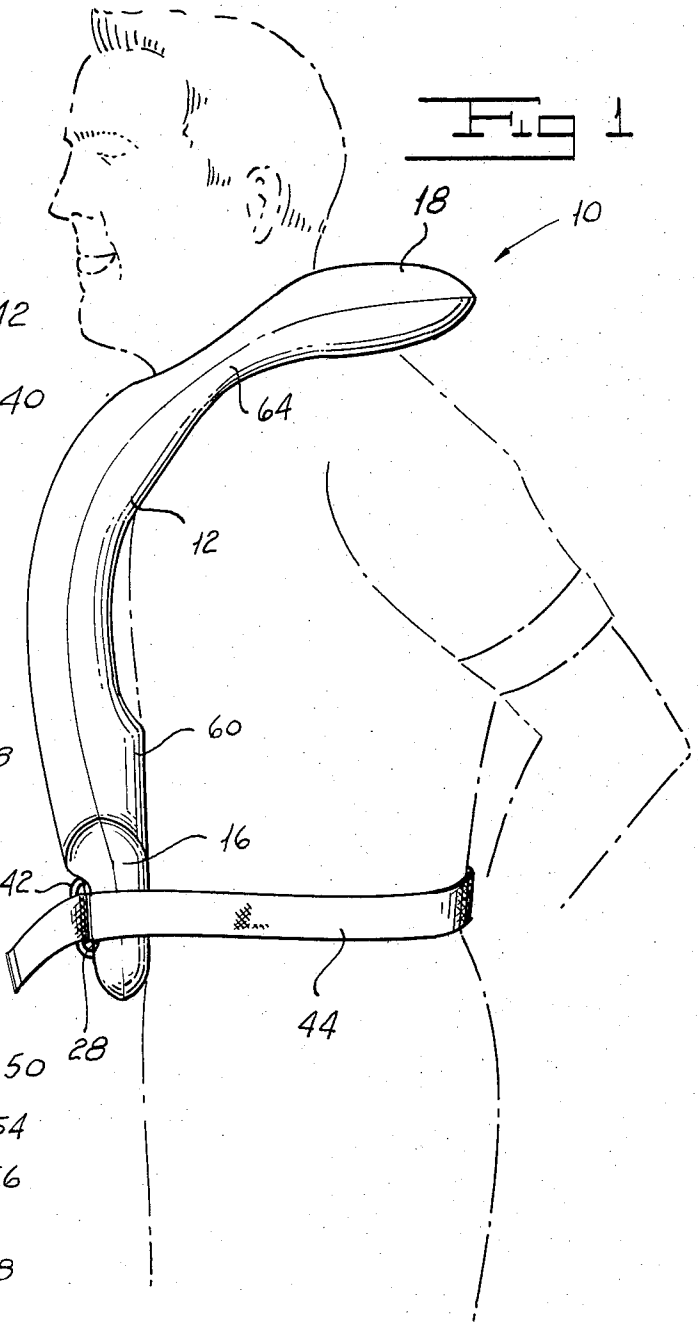


Fig 1

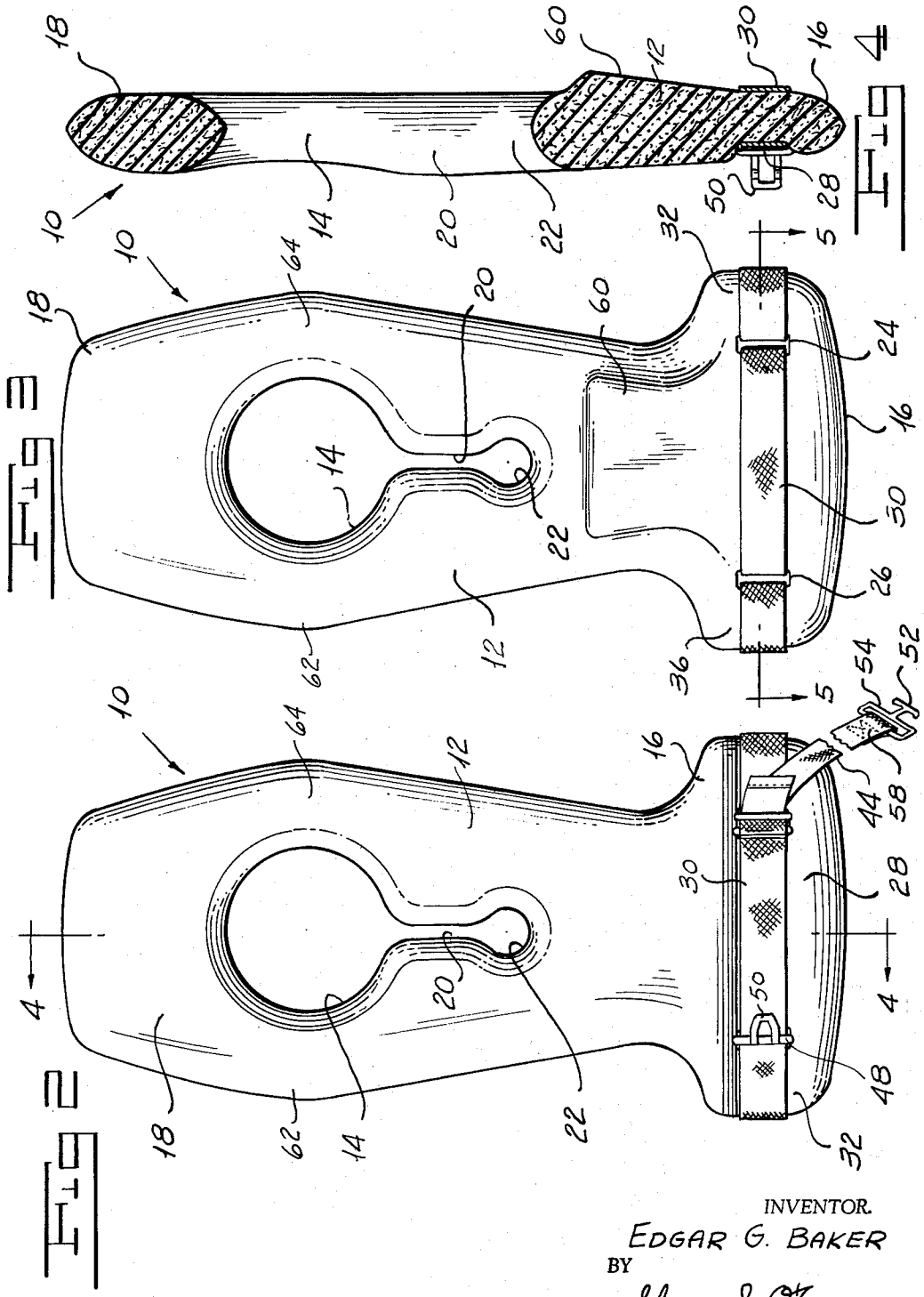


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3,247,531

BUOYANT VEST

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My invention relates to a buoyant vest and more particularly to an improved buoyant vest which is more comfortable than are vests of the prior art.

There are known in the prior art many forms of jackets and the like adapted to support the wearer's body in the water. One form of this device known in the prior art is a buoyant vest of resilient molded material provided with a neck opening by means of which it can be slipped over the wearer's head. The body of the vest below the neck opening carries a belt which is secured around the wearer's body to hold the front of the vest against the body.

While vests of the type described above do perform the function of buoyantly supporting the wearer's body in the water, generally they are not as comfortable as is desirable. After the vest has been slipped over the wearer's head and the belt secured around the middle of the wearer's body, a portion of the vest body engages the wearer's chest and the back of the vest behind the neck opening is forced into engagement with the back of the neck. This is owing to the relatively sharp curve formed in the vest body as the front of the vest is drawn into engagement with the body.

Moreover, in constructions of the prior art, owing to the manner in which the belt is secured to the body of the vest, as tension is applied to the belt, the vast body tends to remain straight in the transverse direction so that it must be forcibly drawn against the body to conform to the shape of the body. For the foregoing reasons, buoyant vests of the prior art are not as comfortable as is desirable. Since the material of the vest is drawn tightly against the wearer's body over most of the extent of the vest, it is extremely hot.

I have invented a buoyant vest which overcomes the defects of buoyant vests of the prior art pointed out hereinabove. When my vest is secured to the wearer's body, it forms a gentle curve over substantially the entire front of its body while preventing the back from being thrown into engagement with the back of the neck. Moreover, the body of the vest is not forced tightly into engagement with the wearer's chest so that ventilation is provided. I secure the belt to the body of the vest in such a manner that the latter naturally conforms to the wearer's body as tension is applied to the belt.

One object of my invention is to provide a buoyant vest which is more comfortable than are buoyant vests of the prior art.

Another object of my invention is to provide a buoyant vest which permits ventilation.

Still another object of my invention is to provide a buoyant vest which conforms naturally to the wearer's body as the vest belt is tightened.

Other and further objects of my invention will appear from the following description.

In general my invention contemplates the provision of a buoyant vest of resilient molded material in which a boss formed on the underside of the vest front adjacent the bottom of the vest engages the middle of the wearer's body as the belt is tightened to cause the vest to curve over substantially the entire length of its front so that the wearer's chest is not tightly engaged and the portion behind the neck opening is not forcibly engaged with the back of the neck. I provide my vest with belt securing means which causes the base of the vest to curve naturally to conform to the wearer's body as tension is applied to the belt.

In the accompanying drawings which form part of the instant specification and which are to be read in conjunction therewith and in which like reference numerals are used to indicate like parts in the various views:

FIGURE 1 is a side elevation of my improved buoyant vest illustrating the manner in which the vest curves over substantially its entire length as the belt is tightened.

FIGURE 2 is a front elevation of my improved buoyant vest.

FIGURE 3 is a rear elevation of my improved buoyant vest.

FIGURE 4 is a sectional view of my improved buoyant vest taken along the line 4—4 of FIGURE 2.

FIGURE 5 is a sectional view of my improved buoyant vest illustrating the manner in which the vest body curves as tension is applied to the vest belt, taken along the line 5—5 of FIGURE 3.

Referring now to the drawings, my improved buoyant vest, indicated generally by the reference character 10, comprises a body 12 which is molded from a suitable buoyant material. For example, I may mold the body 12 from expanded polyvinyl chloride. After molding the body 12 may be painted or it may be covered with a suitable fabric, if desired.

In the course of molding, I provide the body 12 with a generally circular neck opening 14 and with a base 16 at the front of the vest. The jacket has a small back 18. The distribution of buoyant material is about 70 percent in the front 12 to about 30 percent in the rear or back 18. Owing to this distribution, if the wearer falls in the water, he tends to assume a face-up position. Thus, if the wearer is unconscious, my vest 10 ensures that he will float with his face up and with his head out of the water.

A short passage 20 in the body 12 leads from the neck opening 14 to a generally circular opening 22 of relatively large radius. This opening 22 permits the vest to flex without tearing so that it can be slipped over the wearer's head.

I form the base 16 of the body 12 with a pair of transversely spaced openings 24 and 26 and with a shallow channel 28 extending across the front of the base 16. I train a length of webbing 30 through the openings 24 and 26 around the portions 32, 34 and 36 of the base 16 formed by the openings 24 and 26. I employ any suitable means such, for example, as stitching 38 to hold the ends of the length 30 together.

In applying the webbing 30 to the base 16, I pass the length through a pair of cinch rings 40 and 42 disposed at the front of the base 16 adjacent the opening 26. These cinch rings 40 and 42 receive an end of the vest belt 44 in such a way as permits the length of the belt to be adjusted by pulling on the free end 46. The portion of the length 30 extending into the opening 24 receives a belt buckle member 48 provided with an upstanding loop 50 adapted to receive a T-head 52 carried by another buckle frame member 54 held at the end of the belt 44 remote from the end 46 in the loop 56 held in the belt by stitching 58. As will be explained hereinafter, when the wearer dons the vest 10 after having inserted his head through the opening 14, he passes the belt around his waist and engages the head 52 with the loop 50 securely to hold the vest on his body.

I form the underside of the front 12 of the vest 10 with a pad or base 60 so positioned as to engage the upper middle of the wearer's body when the vest is donned. It is to be noted that each of the portions 62 and 64 adapted to overlie the wearer's shoulders are

formed of reduced cross-sectional area. As will be apparent from the description of the operation of my vest advanced hereinbelow, this feature adds to the comfort of the vest.

The operation of my buoyant vest can best be understood by reference to FIGURES 4 and 5 of the drawings. When the wearer wishes to don the vest, he spreads the body along the channel **20** to enlarge the opening **14** sufficiently to permit him to pass his head through the opening. When the vest is released, opening **14** assumes its original size to prevent the vest from readily slipping over the wearer's head. It will readily be appreciated that the opening **22** permits the body to be spread to enlarge opening **14** without the danger of tearing the body material.

After the vest has been placed over the wearer's head, he passes the belt **44** around his back and then engages the T-head **52** with the loop **50**. If necessary, he can pull on the end **46** to adjust the length of the belt **44**. As the buckle members **52** and **50** are engaged, the boss **60** contacts the upper middle part of the body and the vest is caused to assume a relatively gentle curve over its front portion so that no excessive force is exerted on the back of the wearer's neck. At the same time it tends to come away from the chest area somewhat to permit ventilation in hot weather. Owing to the reduced cross-sectional area of the two shoulder portions **62** and **64**, these two parts form flexing points to ensure that the vest exerts no excessive pressure at points on the wearer's body. That is, this feature of construction, together with the pad **60**, ensures a gentle curve over the front of the wearer's body and that the portion in back of the neck opening will not be forced into engagement with the back of the wearer's head. When tension is applied to the belt **44**, it naturally tends to assume the shape shown in FIGURE 5 in which it is bowed in a direction transversely of the base **16** so that it readily conforms to the shape of the body. This results from the compressive forces exerted by the loops of the webbing **30** which pass around the sections **32** and **34**. The tension exerted on the portion of the webbing adjacent the wearer's body enhances this effect. These forces act together to cause the body **12** to assume the shape shown. The curvature of the vest in the direction of its length, as well as the curvature transversely of the vest provide the wearer with a comfortable fit and with a maximum degree of freedom of movement without discomfort. The vest is ventilated for hot weather.

It will be seen that I have accomplished the objects of my invention. I have provided an improved buoyant vest which is more comfortable than are vests of the prior art. My vest ensures that localized excessive forces are not exerted on the wearer's body. It provides ventilation for use in hot weather.

It will be understood that certain features and subcombinations are of utility and may be employed without reference to other features and subcombinations. This is contemplated by and is within the scope of my claims. It is further obvious that various changes may be made in details within the scope of my claims without departing from the spirit of my invention. It is, therefore, to be understood that my invention is not to be limited to the specific details shown and described.

Having thus described my invention, what I claim is:

1. A buoyant vest including in combination a mass of resilient material formed with a neck opening and provided with vest front and vest shoulder portions and a vest portion defining the back of the neck opening, said front having a pair of transversely spaced openings adjacent the bottom thereof to form a central body portion between said openings and portions outboard of said openings, a length of material extending across the underside of said front between said openings, a belt for securing said mass to a wearer's body, means for securing said belt to said length and to said mass to compress said outboard portions and to tension said length in response to tension on said belt and a pad on one side of said front above said openings for engaging the wearer's body, said mass having a smaller generally circular opening below said neck opening and a narrow passage connecting said openings.

2. A buoyant vest including in combination a mass of resilient material formed with a neck opening and provided with vest front and vest shoulder portions and a vest portion defining the back of the neck opening, said front having a pair of transversely spaced openings adjacent the bottom thereof to form a central body portion between said openings and portions outboard of said openings, a length of material extending across the underside of said front between said openings, a belt for securing said mass to a wearer's body, means for securing said belt to said length and to said mass to compress said outboard portions and to tension said length in response to tension on said belt and a pad of resilient material protruding from the rear surface of said front above said openings for engaging the front of the wearer's body.

3. In a buoyant vest a buoyant mass having a pair of laterally spaced openings therein forming a central mass portion between said openings and mass portions outboard of said openings, a length of material surrounding said central portion and said outboard portion, said length of material having loops extending into said openings from back to front of said mass, a belt and means for connecting said belt directly to said loops, said belt being free of said length at the outermost portions thereof whereby tension on said belt is applied to said length at said loop to compress said outboard mass portions and to tension a portion of said length extending between said openings at the back of said mass to bow said mass to conform to a wearer's body.

4. A buoyant vest including in combination a unitary body of resilient floatation material provided with a neck opening and formed with vest front and vest shoulder portions and a vest portion defining the rear of the neck opening, means for securing the lower part of said vest front to the wearer's body, said shoulder portions being provided with reduced cross-sectional areas forming flexure regions and a pad of said resilient floatation material protruding from the rear surface of said front above said securing means for engaging the front of the wearer's body.

5. In a buoyant vest a buoyant mass adapted to be secured to a wearer's body, a belt being under tension when said vest is secured to the wearer's body and connecting means for applying the tension of said belt directly to said mass at spaced points across its width to cause said tension on said belt to bow said mass to conform to a wearer's body, and a pad extending outwardly from the rear surface of the mass above the belt for engaging the front of the wearer's body.

6. In a buoyant vest a buoyant mass of resilient material provided with a pair of laterally spaced openings forming a central mass portion between said openings and mass portions outboard of said openings, a length of material extending across the back of said mass and comprising a portion extending between said openings at the back of said mass, a belt and means for securing said belt to said length portion at said openings, said belt being free of said length over the outboard portions thereof to compress said outboard portions of said mass and to tension said length to bow said mass in response to tension on said belt.

7. A buoyant vest including in combination a unitary-molded body of resilient buoyant material formed with a neck opening, a portion of said body forming a smaller generally circular opening below said neck opening and a narrow passage having extended generally straight and parallel sides connecting said neck opening and said generally circular opening, said passage having a length of

the same order of magnitude as the diameter of said smaller opening and having a width appreciably less than the diameter of said smaller opening, said openings and said passage forming a closed perimeter and means for securing said mass to a wearer's body.

8. A buoyant vest including in combination a body of flexible floatation material formed with a neck opening, said body formed with front and shoulder portions and a portion defining the rear of the neck opening, means for securing said vest to the wearer's body and a pad protruding from the rear surface of the front portion adjacent the wearer for engaging the front of the wearer's body to promote a comfortable fit of said vest.

9. A buoyant vest including in combination a body of resilient buoyant material formed with a neck opening, said body being formed with front and shoulder portions and a portion defining the rear of the neck opening, means for securing the lower part of said front portion to the wearer's body and a pad protruding from the rear surface of the front portion adjacent the wearer above said securing means for engaging the front of the wearer's body to promote a comfortable fit of said vest.

10. A buoyant vest including in combination a unitary body of resilient buoyant material provided with a neck opening and formed with a vest front and vest shoulder portions and a vest portion defining the rear of the neck opening, means for securing the lower part of said vest front to the wearer's body and a pad extending outwardly from the rear surface of said vest front above said securing means for engaging the front of the wearer's body to promote a comfortable fit of said vest.

References Cited by the Examiner

UNITED STATES PATENTS

3,037,220	6/1962	Jantzen	9—338 X
3,125,771	3/1964	Coolidge	9—338 X
3,152,343	10/1964	Brown	9—338 X

FOREIGN PATENTS

889,158	2/1962	Great Britain.

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