

May 4, 1965

M. R. ALLEN

3,181,183

LIFE JACKET

Filed Sept. 24, 1963

2 Sheets-Sheet 1

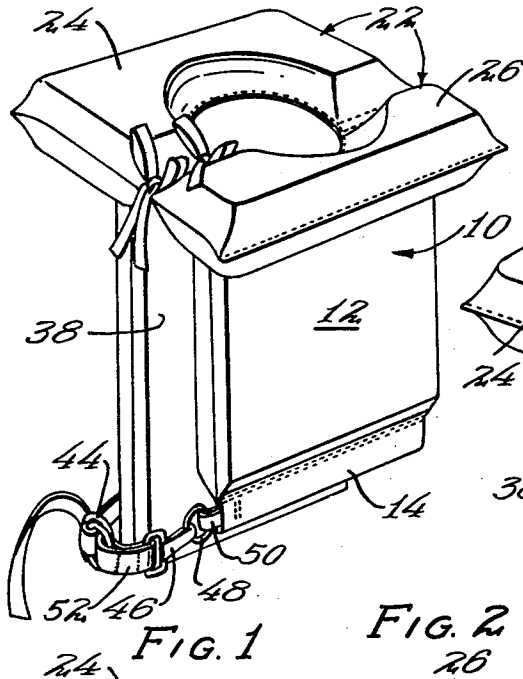


FIG. 1

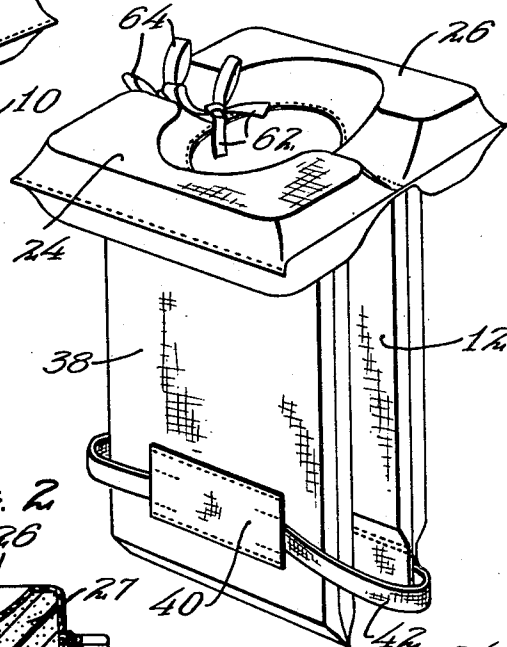


FIG. 2

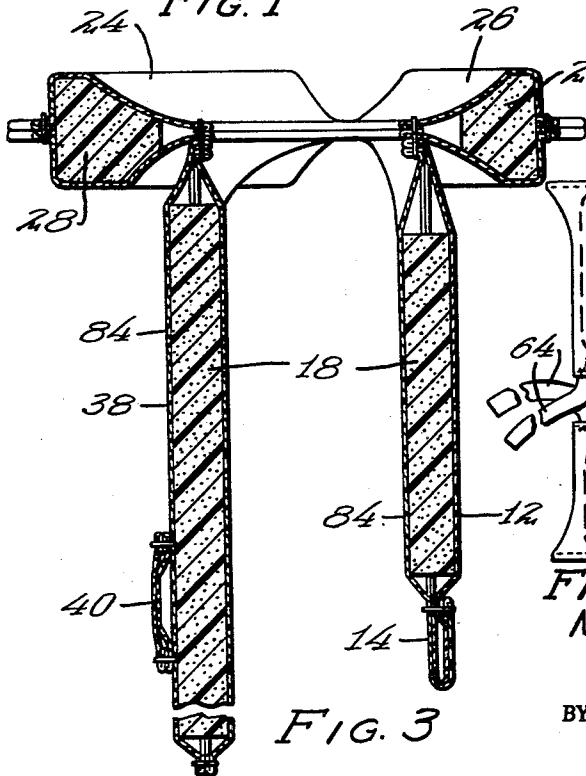


FIG. 3

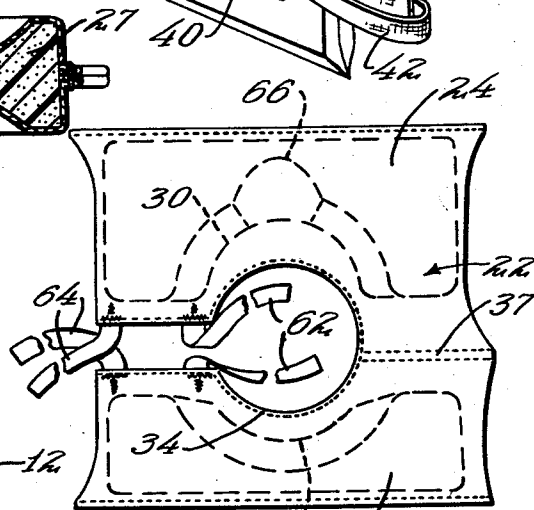


FIG. 4

INVENTOR
MYRTLE R. ALLEN

BY *Robert M. Dunning*
ATTORNEY

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2 Sheets-Sheet 2

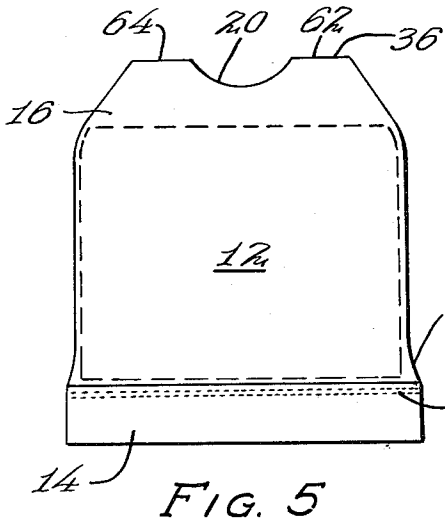


FIG. 5

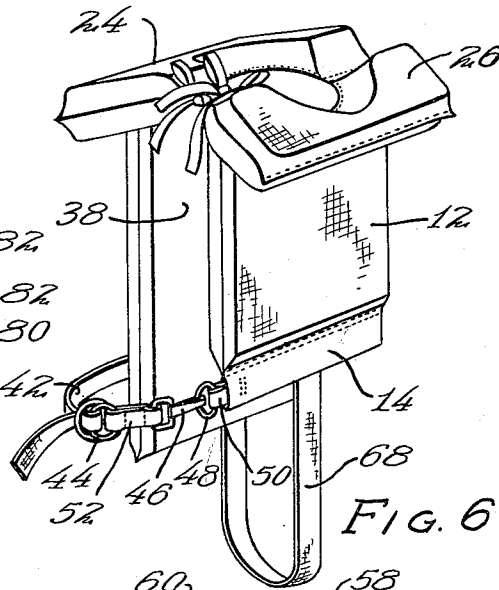


FIG. 6

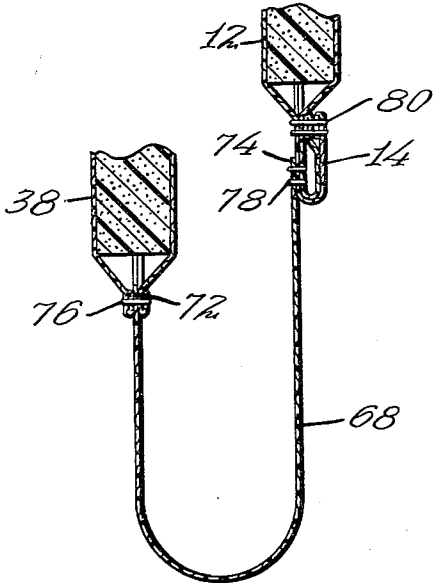


FIG. 7

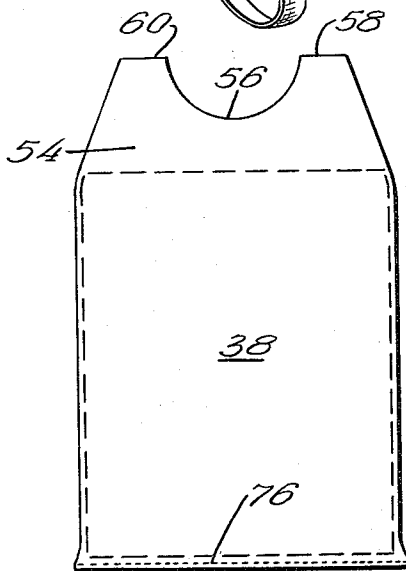


FIG. 8

INVENTOR

MYRTLE R. ALLEN

BY

Robert M. Dunning

ATTORNEY

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3,181,183

LIFE JACKET

Myrtle R. Allen, 345 7th Ave. S., South St. Paul, Minn.

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5 Claims. (Cl. 9—333)

This invention relates to a life jacket adapted to be made in a variety of sizes so as to be used by persons ranging from infants to adults and particularly adapted to keep the head of the person above water regardless of the state of consciousness.

A number of life saving devices have been provided throughout the years designed to be used by persons in the water in order to prevent them from being drowned. Most of the devices have various features which serve to buoy the body of the person in the water, and in addition in some instances, provide neck pieces or collars designed to aid in keeping the head of the person above water. However, in spite of the wide variety of garments, many difficulties arise in procuring a lifesaving garment which will be satisfactory for various age groups.

It is an object of the present invention to provide a life saving garment adapted to be manufactured in a variety of sizes so as to be usable for persons ranging in age from infants to adults.

It is a further object of the present invention to provide a lifesaving garment designed to keep the head of the swimmer above water regardless of the state of consciousness of the person.

It is a further object of the present invention to provide a lifesaving jacket or garment designed to be readily fastened about the body of the swimmer so as to provide a device which will not inadvertently come off the swimmer's body.

It is a further object of the present invention to provide a lifesaving garment designed to be worn by a person likely to be in the water having front and back band portions and means whereby the front and back portions may be held in relative position on the upper body of the person without upward or downward movement to interfere with the movements of the person going in the water.

It is a further object of the present invention to provide a collar piece designed to be secured to the top of the jacket in such a manner as to hold the head of the swimmer above water regardless of the state of consciousness or unconsciousness of the person.

It is a further object of the present invention to provide a lifesaving garment having a collar piece in which the collar piece is of a particular shape so as to conform to the neck of the person wearing the jacket and further having the front collar portion having the chin receiving recess designed to accommodate the chin of the person wearing the jacket.

It is a further object of the present invention to provide a lifesaving garment designed to accommodate a crotch strap preventing the possibility of the body of the person wearing the garment from slipping out of the garment.

It is a further object of the present invention to provide a lifesaving garment having quickly attachable and detachable means for securing the garment to the body of a person.

It is a further object of the present invention to provide a lifesaving garment having buoyant members of a flexibility designed to conform to the upper trunk of the person so as to provide a snug and comfortable fit.

I have provided a life jacket or garment having a front body portion designed to overlie the chest of a person and a back body portion designed to overlie the back of a person. These portions are designed to provide generally rectangular buoyant pads of particular characteristics.

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The front and back body portions are secured along one side such as the right side and are secured along the same side at the shoulders so as to provide an arm opening. The upper portion of the front and back body portion is designed to conform to the general shape of a person's body so as not to interfere with arm movements, and to this top portion a collar piece is secured adapted to encircle the neck of the person wearing the garment. The collar piece is secured along the shoulder line of the fastened side of the garment and is separate on the other side so as to enable the person to easily get into the garment. In use the person places an arm such as the right arm through the armhole on the secured side of the garment and secures the garment on the other side at the shoulder line by a suitable fastening means which will be further described. The front and back portions are of different lengths in order that securing means such as a belt may be provided which will prevent the front and back portions from sliding upwardly about the trunk of the person wearing the device. The belt or other securing device used to retain the front and back portions in place on the body of the person have quick opening and securing means so that the jacket may be readily donned or taken off. The collar which encloses the neck of the person is designed to be movable in relation to the front and back body portions so as to buoyantly hold the head of the swimmer above water regardless of consciousness. In addition, the collar has been cut to conform to the neck of the persons, and in addition includes a recessed portion to accept the chin of the person whereby it becomes extremely difficult if not impossible for the person to depress his face into the water. A crotch strap, which may be detachable, is provided so that the body of the person cannot inadvertently slip down and out of the lifesaving garment.

It is a further object of the present invention to provide a lifesaving garment which may be manufactured at a reasonable cost so as to be readily available to any one who might be in need of such a garment.

I have found that my device is suitable for infants who are completely unable to swim at all, and in addition is equally suitable for children and adults requiring the use of a lifesaving garment. I have subjected the device to tests of various kinds and find the device to be markedly superior, in my opinion, for the purpose for which it is intended.

It is a further object of the present invention to provide a lifesaving garment which may be made at the relatively low cost, and which may be covered by a variety of colored materials which may be readily seen, such as yellow, orange, and scarlet, and which will withstand prolonged usage satisfactorily. It is a further object of the present invention to provide a lifesaving garment which may be made in such a manner that it can be readily worn by a person who is active, such as a fisherman in a boat, and which will not unduly interfere with the activities of the wearer.

These and other objects and particular advantages will be more fully described in detail in the accompanying specifications taken in connection with the drawings herewith, in which:

FIGURE 1 is a perspective view of the life jacket, particularly showing the relation of the front of the garment to the rear of the garment.

FIGURE 2 is a perspective view showing the relation of the back of the garment to the front of the life jacket, and the relation of the securing belt designed to hold the front and back portions in place on the body of a swimmer.

FIGURE 3 is a vertical section through the garment showing the relationship of the various parts of the device.

FIGURE 4 is a top plan view of the collar.

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FIGURE 5 is a view in elevation of the back of the garment illustrating particularly the belt enclosure.

FIGURE 6 is a perspective view of the lifesaving garment having a crotch strap secured to the front and back portion of the garment.

FIGURE 7 is a view in section taken through the crotch strap and showing the preferred method of securing the strap to the front end body portions.

FIGURE 8 is a view in elevation of the front of the garment.

The lifesaving device disclosed in the accompanying drawings was particularly designed with the purpose in mind that the garment would be usable for various age groups ranging from infants to adults. The garment is designed to be manufactured in a variety of sizes to accommodate the purpose of the inventor.

The drawings disclose, as in FIGURE 1, a lifesaving jacket generally numbered 10. The jacket 10 in general comprises a back member 12 generally rectangular in outline having an elongated loop extending the width of the bottom of the back member which is generally numbered 14 as may be clearly seen in FIGURE 5. The back member 12 of the life jacket 10 is tapered inwardly at a point roughly conforming to the plane of the armpits of the wearer to the top of the shoulders. The tapered upper portion of the back member has been given the number 16 and may be clearly seen in FIGURE 5.

While a variety of members of particular buoyancy are possible, in the preferred construction, I provide a front member 38 in the form of a generally rectangular envelope designed to accommodate a buoyant insert piece preferably of a foam plastic material 18 as may be seen in FIGURE 3. The upper neckline of the back of the life jacket is recessed as shown at 20 to accommodate the neck of the wearer and to provide a closer fitting of the collar which will be clearly described. A collar generally numbered 22 having a front portion 24 and a rear portion 26 is designed to provide a buoyant support for the head of the person wearing the life jacket. The collar 22 in general provides a pair of hollow envelopes designed to accommodate the buoyant member contained within the envelopes. The buoyant portions 27 are preferably of the same buoyant material as provided in the front and back of the life jacket. The collar 22 is recessed along the interior of the collar as generally indicated at 30 and 32 so as to conform to the neck of a person. The covering material overlying the collar portions 24 and 26 provides a sufficiency of material adjacent to the neck of a generally soft, flexible construction as indicated at 34 to be secured to comparable portions of the back member 12 along the neckline 20 and preferably along one shoulder 36 to provide the seam 37 illustrated in FIGURE 4.

A front member 38 generally of similar outline to the back member is provided as illustrated in the various figures such as 1, 2, and 6. The front member 38 is preferably of greater length than the back member 12 for a purpose which will be described.

As may be clearly seen in FIGURE 2, a belt securing and positioning loop 40 is provided through which a belt generally numbered 42 extends. The belt 42 is of a length designed to accommodate the waist of the wearer and is accordingly of sufficient length so as to be adjustable to wearers of different girth. The belt 41 is adjustable by any convenient means such as a D-ring construction as indicated generally at 44 of the usual type. From the D-ring construction 44 a snap 46 is connected to a ring 48 secured to the other end of the belt 50. An intermediate portion 52 may be provided between the snap 46 and the ring construction 44 if desired. It will be understood that the belt is secured to the various rings such as 48 by usual means such as stitching, riveting and the like. It has been found that belts of the usual web construction such as cotton, nylon, and other materials are satisfactory for the purpose, although when modification of the

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jacket uses a belt of elastic construction which may be procured in any length desired for use by the person wearing the life jacket.

As may be seen in the view of FIGURE 8 the front portion 38 of the jacket is of a similar construction to the back 12 being in general, however, of greater size. As in the case of the back 12, the front 38 is flexible so as to snugly fit the front of the wearer thereby providing warmth and in addition preventing the jacket from moving upwardly or in other directions on the body of the wearer. The upper portion of the front member 38 is tapered as indicated at 54 with the intermediate portion of the upper front being recessed as indicated at 56 to accommodate the neck of the wearer. Should caps 58 and 60 designed to cooperate with somewhat shorter tabs 62 and 64 enclose the neck recesses 56 and 20 and are designed to meet along their ends such as the seam line 37 as was previously indicated.

It will be understood that the flotation material enclosed within the envelope construction of the front member 38 will have the same characteristics of softness, flexibility, and floatativeness as the material in the collar 22 and the back member 12 and accordingly is numbered 18 to indicate the similarity to the front member floatative material.

As may be seen in the view of FIGURE 4, the front and back collar members 24 and 26 are secured to the front and back body portions 38 and 12 along a connecting seam line such as 37.

Tie straps cooperatively spaced such as 62, 62 and 64, 64 are provided to secure the open edges of the collar together as may be clearly seen in FIGURES 1 and 2. It will be understood that the ties may be secured in any preferred method such as by knotting them together, or that convenient types of fasteners such as snaps and rings may be provided similar to those provided for the belt 42.

As was most clearly seen in FIGURES 1 and 2, the portions of the collar which surround the neck of the wearer are curved so as to conform to the back of the head and the chin of the person and in addition provide a concave shape enabling the collar to be secured more tightly about the neck of the wearer so as to accommodate the back of the head and the chin. Turning to FIGURE 4, it would be seen that a recess is provided generally numbered 66 as shown in dotted outline in the flotation material of the front portion of the collar to accommodate the chin of the wearer.

For each of manufacturing and to reduce the cost, I have found that flotation material may be purchased in large amounts in generally rectangular block form which will accommodate the purposes of my life jacket. It will be understood, however, that should the need arise for an increase in the floatative ability of the jacket 10 that the entire envelope enclosure of the front and back members could be filled with floatative material. However, I have found that a smoother fit is obtained by the type of block floatative material 18, 18 shown in the front and back body portions of FIGURE 3 enabling the upper portions of the container to lie flat on the chest and back of the wearer adjacent to their point of fastening with the collar.

As may be clearly seen in FIGURES 6 and 7 a crotch strap generally numbered 68 is provided which may be of any desired length to accommodate the body size of the wearer. The crotch strap 68 may be adjustable if desired.

The ends of the crotch strap 68 are secured to the bottom of the front member 38 and the bottom of the rear member 12 as is indicated at points 72 and 74 along the seam lines 76 and 78 shown in FIGURE 7. In the preferred construction of the garment, the crotch 68 is of a length to accommodate particular body weights. I have found this to be most satisfactory since while there may be a slight variance in the tightness of the strap from

one user to another, the strap in any event will prevent the user from sliding out of the jacket. It is, of course, realized that the advantage of the crotch strap is most desirable when used with youngsters particularly those of tender age.

The jacket is placed on the wearer by having the wearer insert his right arm through the armhole provided between the fastened upper portion of the garment 37 and the belt which is in place in the loops 14 and 40. It will be understood that side material may be provided between the front and back along the side of the garment having the fastened shoulder line. Addition of such side material would serve to enclose the side of the person wearing the garment and provide additional warmth. Inasmuch as such addition would prove to be obvious, it has not been felt necessary to illustrate this.

It may be clearly seen in FIGURE 7 the belt enclosure 14 is secured along the bottom of the back member by stitching or other suitable means as indicated at 80. It will be obvious that formation of the belt enclosing loop may be accomplished by providing an additional front piece of material which may be folded back to be secured as indicated at 80. Since it is felt that this would be obvious to a skilled seamstress or tailor, further description is not believed necessary.

It will be noticed in FIGURE 5 that the bottom portion of the back panel member 12 flares outwardly at the bottom as indicated at 82. This outward flaring 82 is designed to insure that the front panel does not tend to ride upwardly on the wearer. In addition the outward flaring serves to secure the garment along the lines generally beneath the rib cage so as to further effect its position holding advantage.

In general the garments are designed to be worn by people of various body weights and in general have been broken into three rough categories ranging in weight from up to thirty pounds, from thirty to ninety pounds, and for those over ninety pounds. Where an unusually large size would be required, it is felt that a lifesaving garment along the lines of the one which has been disclosed could easily be made by an ordinary craftsman.

As can be clearly seen in the FIGURES 1 and 2 the collar 22 is of sufficient length to extend generally to the edges of the front and back panels 38 and 12. The flotation blocks 27 and 28 of the collar are of generally greater thickness than the flotation pads 18, 18 of the front and rear panel members. The collar 22 is adapted to move upwardly and downwardly in secured relation to the front and rear panel members when not in the water to enable the wearer to remain active. However, as will be evident when the wearer is in the water flotation blocks 27 and 28 will buoy up the head of the wearer above the water. The increased thickness of the tabs 27 and 28 serve not only to provide increased buoyancy, but as well, serve to keep the head of the wearer away from the water in case of unconsciousness.

In general it might be added that the garment is designed to be reinforced by suitable double stitching and to accommodate belts and tie straps of at least a width and thickness conformable to United States Coast Guard Regulations.

The fabric generally numbered 84 overlying the flotation pads may be of any suitable material such as cotton, nylon, and the like having sufficient strength to withstand the type of wear and service to which the lifesaving garment will be subjected.

As is apparent, a particular advantage of the jacket 10 is that the wearer may readily slip into the jacket and secure himself therein and may as readily remove the jacket 10 as well. The garment has a reduced bulk in comparison to other garments for lifesaving purposes, the thickness of the panels for swimmers of less than ninety pounds being of the nature of approximately one inch for the front and back panels and two inches for the collar flotation blocks. In experimentation, it has been

found that wrap-around pads are unnecessary unless the intention is to provide increased warmth for the wearer when exposed to the water.

Repeated testing has shown that the particular construction described by the inventor provides a lifesaving garment which will retain its position on the wearer when in use in the water due to the greater surface area provided by the longer front panel. In addition, the particular construction enables the front panel to hold the front portion of the collar in a better position to keep the head of the wearer out of the water. Further, the resiliency and softness of the flotation material permit the garment 10 to adjust to the body shape of the wearer and in addition eliminate the danger of damage to the body from the garment itself when the wearer is forced to jump from some height. This is, of course, a tremendous advantage since all too frequently persons have been injured when forced to jump while wearing a life jacket. The softly flexible pad which serves to keep the person afloat serves as well to protect the body from injury and to cushion the head and neck when striking the water as well. Where the concavity of the neck and head in closing portions of the collar may be clearly seen in FIGURES 1 and 2. As the purpose of the concavity has been previously described, further description is not believed necessary.

In accordance with the patent statutes, the principles of construction and operation of this improvement in a life jacket have been described, and while an endeavor has been made to set forth the best embodiment thereof, it should be understood that changes may be made within the scope of the following claims without departing from the spirit of the invention.

The claims:

1. A life saving device to be worn by a person comprising:

- (a) a pair of generally rectangular, buoyant, flexible panels secured together in spacedly opposed relation, adapted to overlie the front and back of a person's body,
- (b) each said panel having an upper end portion of a width adapted to be accommodated between the armpits of a wearer,
- (c) a buoyant, flexible, generally flat collar of substantial size including a front collar portion and a rear collar portion in separately movable relation about a normally horizontal axis,
- (d) said collar portions defining a neck enclosing aperture, the edge of which is secured in movable engagement along the upper marginal edges of said panels,
- (e) said collar being separable along one side,
- (f) said collar adapted to move between a position whereby said collar is in generally parallel relation to said panels to a position whereby said collar is generally perpendicular to said panels,
- (g) means whereby said separable portions of said collar may be secured together,
- (h) the other ends of said panels having fastening means to hold said front and back panels in secured relation about the body of a person.

2. The structure of claim 1 and in which marginal edges of said upper end portions define a generally semi-circular neck receiving recess whereby when said marginal edges of said upper end portions are secured to the edges of said collar portions defining said neck enclosing aperture, said upper end portions of said panels substantially encircle the neck of a person wearing the device in overlying relation to the shoulders of the wearer.

3. The structure of claim 1 and in which one of said panels is a front panel of greater length than said other panel whereby when said other ends of said panels are drawn toward each other on the body of a person, movement of said ends is generally diagonal whereby increased resistance to movement upwardly on the body of the wearer is obtained.

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4. The structure of claim 3 and in which the lower end of said front panel is flared outwardly whereby said fastening means is adapted to hold said panels in secured relation beneath the rib cage of a person.

5. The structure of claim 1 and in which said collar portions have upper surfaces of concave outline adjacent said neck aperture definition whereby the chin and back of the head are cradled by the collar.

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FERGUS S. MIDDLETON, *Primary Examiner.*