March 24, 1964 J. K. COOLIDGE 3,125,771

LIFE PRESERVER AND METHOD OF MAKING SAME

Filed March 2, 1962 2 Sheets-Sheet 1

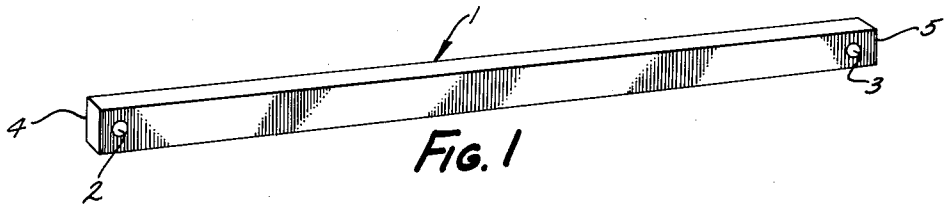


FIG. 1

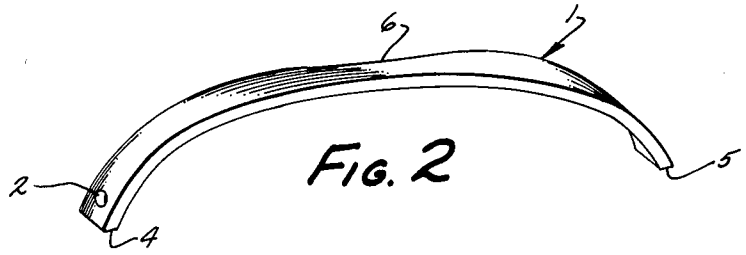


FIG. 2

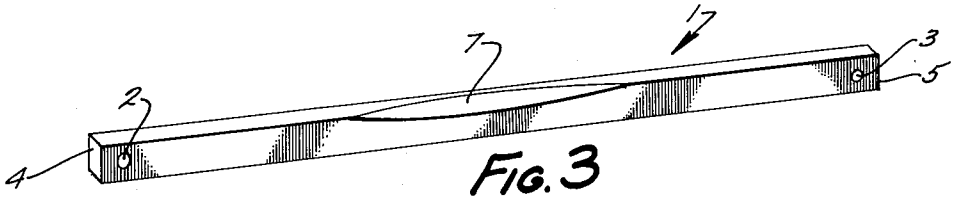


FIG. 3

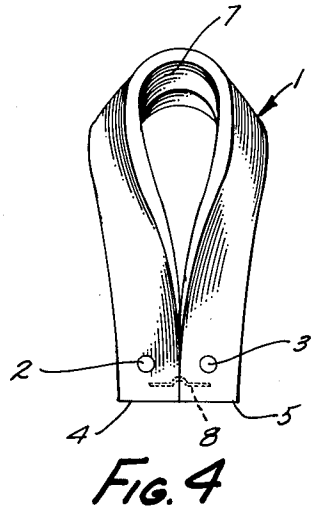


FIG. 4

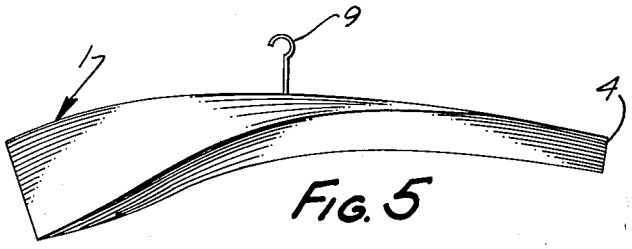


FIG. 5

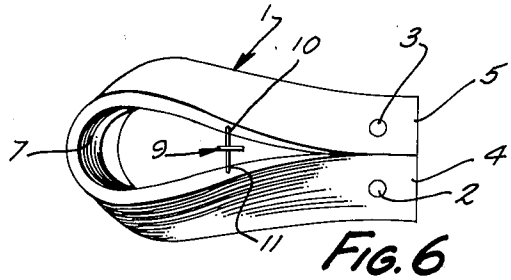


FIG. 6

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LIFE PRESERVER AND METHOD OF MAKING SAME

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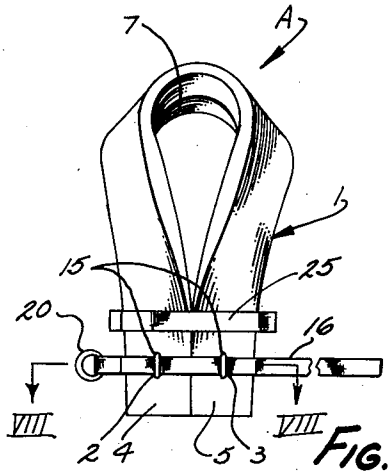


FIG. 7

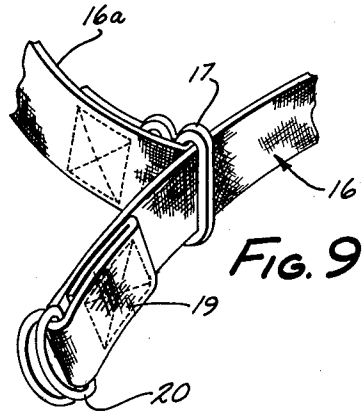


FIG. 9

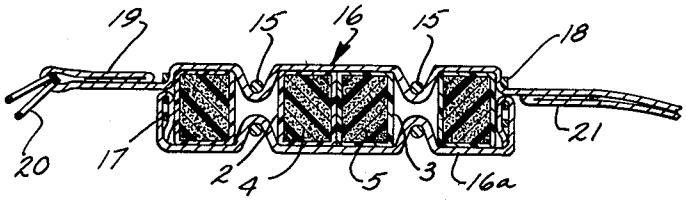


FIG. 8

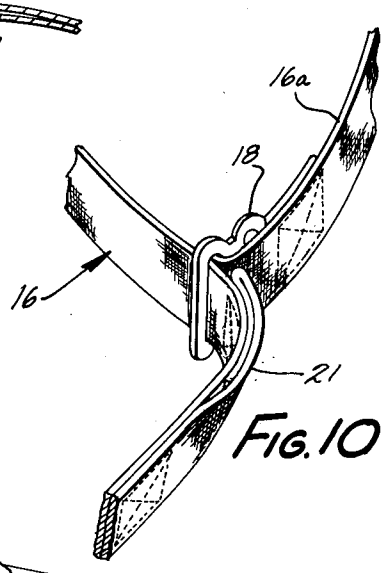


FIG. 10

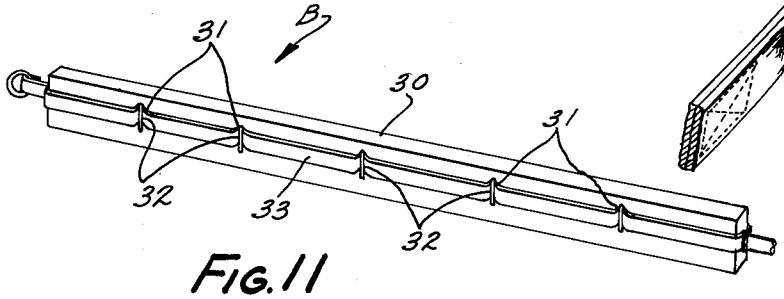


FIG. 11

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3,125,771

LIFE PRESERVER AND METHOD OF MAKING SAME

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Filed Mar. 2, 1962, Ser. No. 177,083
15 Claims. (Cl. 9—337)

This invention relates to a life preserver and a method of making a life preserver. More particularly, this invention relates to both a unique type of life preserver and a unique method for attaching a strap thereto for securing the life preserver to a person's body.

Many types of life preserver are presently in existence, both of the variety which straps around the user's waist and the variety that fits around the user's neck which is usually in the form of a vest. Many of these life preservers are excessively cumbersome and bulky, causing discomfort and loss of freedom to maneuver when skiing and the like. This being the case, life preservers are often not worn when necessary.

Further, the straps with which one secures these life preservers to his body are sewn or stitched on the preserver itself, or some sort of means is sewn or stitched on the preserver to retain the strap. This is an added step in the fabrication of life preservers and consequently raises their cost. Further, such securing of straps often results in tearing of material, the life preserver being either less efficient or completely useless when the strap for holding it on does not function properly.

It is an object of this invention to provide an improved life preserver which is less bulky and therefore less cumbersome in use. The principles of this invention may be embodied in either a life preserver to be worn about one's waist or about one's neck.

Another object of this invention is to provide such a life preserver with an improved strap for connecting the preserver to the user's body, the strap at all times being tightly associated with the life preserver.

Another object of this invention is the provision of such a life preserver having a strap as described, the connection between the strap and the life preserver being such that relative movement at connection points is provided, thereby eliminating excess tension on the connection points when the life preserver is bent or moved.

A further object of this invention is the provision of such a life preserver which more naturally conforms to the user's body, thus giving greater comfort and freedom of movement.

A still further object of this invention is the teaching of a method of making such a life preserver including the advantages noted.

An additional object of this invention is the teaching of a method of securing a strap to a life preserver for securing it to a user's body.

These and further objects of this invention will become obvious to those skilled in the relative arts upon reading the following specification, in conjunction with the accompanying drawings, wherein:

FIG. 1 is a perspective view of a strip of material providing buoyancy to a life preserver embodying the principles of this invention;

FIG. 2 is a perspective view showing the manner in which one of the initial steps of fabricating one embodiment of this life preserver is performed;

FIG. 3 is a perspective view showing the results after the step of the method described in FIG. 2 is performed;

FIG. 4 is a front view, showing the next step of said method;

FIG. 5 is a side view showing the following step of said method;

FIG. 6 is a front view similar to FIG. 5;

FIG. 7 is a front view showing the completed life preserver made in accordance with said method;

FIG. 8 is a cross-sectional view taken along the plane VIII—VIII of FIG. 7;

FIG. 9 is an enlarged, perspective view of the strap connection at the left side of the preserver as shown in FIG. 8;

FIG. 10 is an enlarged, perspective view of the strap connection at the right side of the preserver as shown in FIG. 8; and

FIG. 11 is a perspective view of an alternative embodiment of a life preserver utilizing the principles of this invention.

Briefly, this invention relates to a method of fabricating a life preserver consisting of the steps of providing an elongated strip of flexible foam material and forming at least two openings therethrough. An alongated strap for securing the life preserver to a person's body is provided and a ring is positioned in each of the openings formed in the strip. The strap is positioned around the strip, and passed through the rings. The strap is then drawn tight and affixed in position with a means on the strap which is characterized by allowing the strap to be drawn through a buckle from only one direction.

Referring more specifically to the drawings, the reference numeral 1 designates an elongated strip of foam material which comprises the core of a life preserver made in accordance with this invention. This core may be formed of foam polyvinyl chloride which has been found to exhibit excellent durability characteristics. However, a less expensive core formed of polyurethane could also be utilized without departing from the scope of this invention. FIG. 7 shows a life preserver A made in accordance with this invention which fits around the neck of the user and FIG. 11 shows a life preserver B made in accordance with this invention which is adapted to be positioned about the user's waist. The life preserver A shown in FIG. 7 and the method of forming it will now the first described in detail.

Openings 2 and 3 are first formed through the strip 1, generally adjacent the ends 4 and 5 thereof. The foam strip 1 is then positioned to form an arc of a circle as shown in FIG. 2, and a portion thereof sliced away along a plane surface from generally the center of one of its edges, as shown by the reference numeral 6. By thus positioning the strip 1, and slicing the material along a plane, a depressed neck pocket 7 is formed as shown in FIG. 3. The ends 4 and 5 are next positioned adjacent one another as shown in FIG. 4, a small pin 8 being forced into the ends 4 and 5 to hold them in the position shown. A hanger element 9, including barbs 10 and 11 (FIGS. 5 and 6) is then positioned at what is generally the center of gravity of the strip when bent as shown in FIG. 4. One of the barbs 10 and 11 of the hanger element 9 is inserted in each side of the bent strip as shown in FIG. 6. This causes the bent strip to be formed as shown in FIG. 5 because of its own weight. Next, being suspended by the hanger element 9, the bent strip is dipped into a suitable solution for coating it. It has been found that dipping the strip three times into a white vinyl solution produces an excellent coating. Upon being so dipped and left to hang in generally the position shown in FIG. 5, the strip assumes the shape shown as the vinyl solution dries and sets. Further, with the ends 4 and 5 positioned adjacent one another when the dipping occurs, the coating when setting actually causes these ends to adhere to one another in the position shown.

An elongated strap for securing this preserver to a person's body is then attached to the preserver. This is accomplished without the use of sewing or stitching of any

kind. A ring 15 is first positioned in each of the openings 2 and 3 (FIGS. 7 and 8). The strap, designated as a whole by the reference numeral 16, is positioned about the ends 4 and 5 of the formed strip 1. A section 16*a* of the strap 16 is threaded through each of the rings 15 within the openings 2 and 3, and is secured to a pair of buckles 17 and 18 positioned at the sides of the formed life preserver. One end of the strap 16 is folded upon itself and sewn together at 19, forming a plural thickness and additionally holding attachment rings 20 thereto. The strap 16 includes a second portion 21 folded upon itself and secured together to form a plural thickness, the purpose of which will now be explained. The strap 16 is threaded through the buckle 17 and pulled through the buckle until further movement is prevented because of the plural thickness of the strap at 19. The strap 16 is then threaded through each of the rings 15 as shown. Next, the strap 16 is threaded through the buckle 18, and due to the positioning of the folds at 21 this is possible. However, once the area 21 is through the buckle 18, the folds are positioned such that retraction of the strap is impossible. It will now be understood that the spacing of the areas of plural thickness are predetermined so that the strap fits snugly about the preserver. Thus, in securing the strap to the life preserver A, one merely threads the strap 16 through the buckles 17 and 18 as described.

It should be noted that the rings 15 may be positioned on the small section of the strap 16*a*, and the buckles secured thereto as shown, in a prior operation. Thus, it will be obvious that mere positioning of the small strap 16*a* against the ends 4 and 5 of the formed life preserver as shown, the rings 15 lying within the openings 2 and 3, the strap 16 may be secured thereto by merely threading it through the buckles 17 and 18. It should further be specifically noted that the strap 16*a* may be eliminated by securing one end of a single strap to the buckle 18 as described, then threading it through the rings 15 along the top side of the life preserver as shown in FIG. 8. The strap can then be threaded through one side of the buckle 17, the attachment rings 20 slipped thereon, and the strap then threaded through the bottom side of the buckle 17 and the bottom of rings 15 as viewed in FIG. 8. In this instance, only the folded over portion or area 21 would be necessary to hold the strap in position after it has been threaded through the buckle 18.

It will be noted that by using this method, the strap is attached to the life preserver A without the use of actual stitching through the life preserver or without the use of any rigid attachment to the life preserver itself. This greatly simplifies the actual assembly and fabrication of the life preserver. However, and still more important, is the fact that the strap is provided with a completely even distribution of tension with respect to the preserver itself. Since the rings 15 can move freely within the openings 2 and 3, the life preserver may be bent or moved and adjustment is made of the pull on the strap because of movement of the rings. Further, actual assembly is accomplished by merely threading the strap as described, no other securing operation being necessary.

It will be noted that the life preserver A is slim and tapered to the user's body. Further, complete comfort is given to the neck due to the recess 7. In order to draw the life preserver A tightly about the user's neck, a second strap 25 is slipped about the life preserver, to be drawn upwardly when on the user's body, making a secure fit about the neck.

In FIG. 11, an alternative embodiment of a life preserver assembled in accordance with the teachings of this invention is shown and designated by the letter B. The life preserver B is adapted to be secured about its user's waist and again includes a strip of foam material, preferably vinyl covered, designated by the reference numeral 30. A plurality of openings 31 are foamed along the length of this strip of material and a ring 32 is positioned within each of the openings 31. A strap 33 is secured about the strip 30 in the same manner as described hereinbefore, either by means of an elongated strap threaded through the rings 15 together with a smaller auxiliary strap, or by means of a single strap as described. It will be noted that the even distribution of pull on the strap provided by this assembly is especially advantageous in this embodiment since the preserver is bent to envelop its user's waist. Due to the freedom of movement of the rings 32 within the openings 31, bending this life preserver into a circle does not increase tension at fixed points of attachment. Consequently, not only is such a life preserver easier to fabricate, it also functions better to produce a longer-lasting, more positively operating preserver.

While only certain embodiments of this invention have been shown and described in detail, it may be possible to practice this invention through the utilization of certain other embodiments without departing from the spirit and scope thereof. Such other embodiments are to be included as part of this invention unless the following claims specifically state otherwise.

I claim:

1. A method of fabricating a life preserver, consisting in the steps of providing an elongated strip of flexible foam material; forming at least two openings therethrough; providing an elongated strap for securing the life preserver to a person's body; positioning rings in said openings; next positioning said strap around said strip, passing said strap through said rings; and then drawing said strap tight and affixing said strap in said position.

2. A method of fabricating a life preserver, consisting in the steps of providing an elongated strip of flexible foam materials; forming at least two openings therethrough; providing an elongated strap for securing the life preserver to a person's body, said strap including a buckle; positioning rings in said openings; next positioning said strap around said strip, passing said strap through said rings; and then drawing said strap tight and affixing said strap in said position with means on said strap which is characterized by allowing said strap to be drawn through said buckle from only one direction.

3. A method of fabricating a life preserver, consisting in the steps of providing an elongated strip of flexible foam material; forming a plurality of spaced openings therethrough along the length of said strip; providing an elongated strap for securing the life preserver to a person's body; positioning rings in said openings; next positioning said strap around said strip, passing said strap through said rings; and then drawing said strap tight and affixing said strap in said position.

4. A method of fabricating a life preserver, consisting in the steps of providing an elongated strip of flexible foam material; forming a plurality of spaced openings therethrough along the length of said strip; providing an elongated strap for securing the life preserver to a person's body, said strap including a buckle; positioning rings in said openings; next positioning said strap around said strip, passing said strap through said rings; and then drawing said strap tight and affixing said strap in said position with means on said strap which is characterized by allowing said strap to be drawn through said buckle from only one direction.

5. A method of fabricating a life preserver, consisting in the steps of providing an elongated strip of flexible foam material; forming an opening through said strip generally adjacent each of its ends; positioning said ends of said strip together; providing an elongated strap for securing the life preserver to a person's body; positioning rings in said openings; next positioning said strap around said ends of said strip, passing said strap through said rings; and then drawing said strap tight and affixing said strap in said position.

6. A method fabricating a life preserver, consisting in the steps of providing an elongated strip of flexible foam material; forming an opening through said strip generally adjacent each of its ends; positioning said ends of said strip together; providing an elongated strap for securing the life preserver to a person's body, said strap including a buckle; positioning rings in said openings; next positioning said strap around said ends of said strip, passing said strap through said rings; and then drawing said strap tight and affixing said strap in said position with means on said strap which is characterized by allowing said strap to be drawn through said buckle from only one direction.

7. A life preserver, comprising: an elongated strip of flexible foam material; at least two openings extending through said strip; an elongated strap for securing the life preserver to a person's body; a ring positioned in each of said openings; said strap extending around said strip and passing through said rings; and said strap tightly affixed in said position.

8. A life preserver, comprising: an elongated strip of flexible foam material; at least two openings extending through said strip; an elongated strap for securing the life preserver to a person's body; a ring positioned in each of said openings; said strap extending around said strip and passing through said rings; a buckle associated with one end of said strap; and means provided on said strap for holding said strap tightly in said position, said means capable of passing through said buckle from only one direction.

9. A life preserver as defined in claim 8, said means comprising a folding and securing of said strap upon itself thus providing an area of plural thickness.

10. A life preserver, comprising: an elongated strip of flexible foam material; openings extending through said strip along its length; an elongated strap for securing the life preserver to a person's body; a ring positioned in each of said openings; said strap extending around the length of said strip and passing through said rings; and said strap tightly affixed in said position.

11. A life preserver, comprising: an elongated strip of flexible foam material; openings extending through said strip along its length; an elongated strap for securing the life preserver to a person's body; a ring positioned in each of said openings; said strap extending around the length of said strip and passing through said rings; a buckle associated with one end of said strap; and means provided on said strap for holding said strap tightly in said position, said means capable of passing through said buckle from only one direction.

12. A life preserver as defined in claim 11, said means comprising a folding and securing of said strap upon itself thus providing an area of plural thickness.

13. A life preserver, comprising: an elongated strip of flexible foam material having the ends thereof positioned adjacent one another; an opening extending through each of said ends of said strip; an elongated strap for securing the lift preserver to a person's body; a ring positioned in each of said openings; said strap extending around said ends of said strip and passing through said rings; and said strap tightly affixed in said position.

14. A life preserver, comprising: an elongated strip of flexible foam material having the ends thereof positioned adjacent one another; an opening extending through each of said ends of said strip; an elongated strap for securing the life preserver to a person's body; a ring positioned in each of said openings; said strap extending around said ends of said strip and passing through said rings; a buckle associated with one end of said strap; and means provided on said strap for holding said strap tightly in said position, said means capable of passing through said buckle from only one direction.

15. A life preserver as defined in claim 14, said means comprising a folding and securing of said strap upon itself thus providing an area of plural thickness.

References Cited in the file of this patent

UNITED STATES PATENTS

1,625,971	Adams	Apr. 26, 1927
1,850,660	Coppel	Mar. 22, 1932
1,931,406	Denton	Oct. 17, 1933
2,210,809	Gray	Aug. 6, 1940
2,377,865	Coombs	June 12, 1945
2,606,398	Miller	Aug. 12, 1952
2,621,342	Boyle	Dec. 16, 1952
2,803,023	Rosenberg	Aug. 20, 1957
2,935,751	Emmick	May 10, 1960
3,037,220	Jantzen	June 5, 1962
3,042,947	Bashore	July 10, 1962

FOREIGN PATENTS

6,174	Great Britain	1893