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WATER SKI SAFETY BELT

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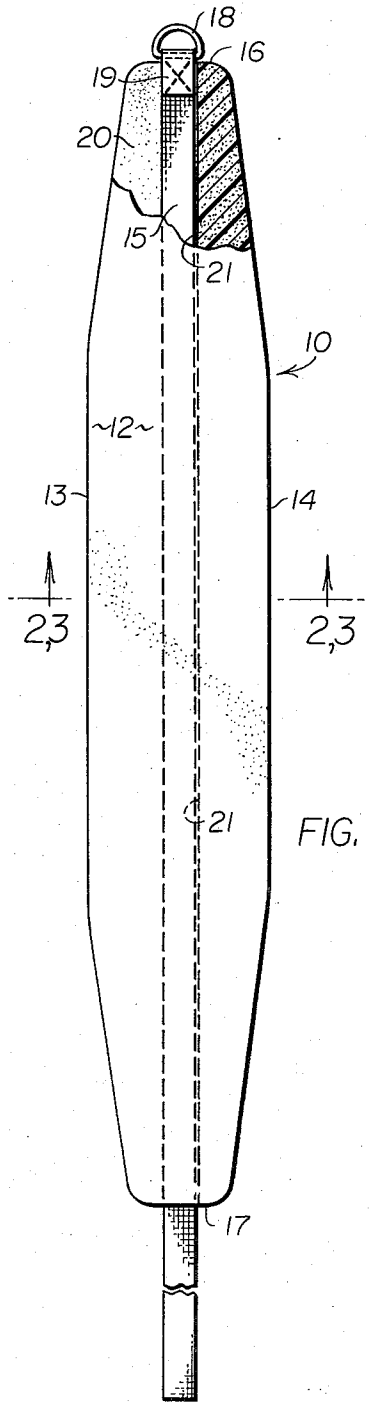


FIG. 1

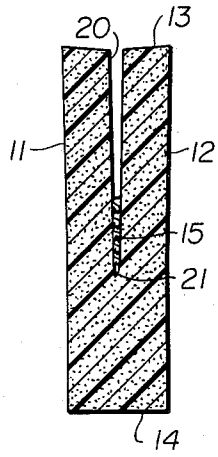


FIG. 2

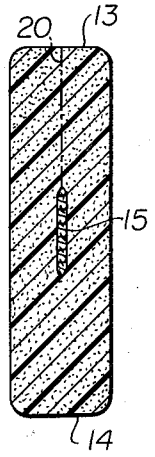


FIG. 3

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WATER SKI SAFETY BELT

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This invention pertains to life belts and more particularly to belts which are especially suited for use by water skiers and the like.

In recent years, water skiing has become an exceedingly popular sport. While popular, the sport is also somewhat dangerous. Prudence and normal safety precautions suggest that the water skier should be equipped with a life jacket or belt to hold him on the surface of the water should he be injured in a fall. Further, a properly designed and constituted jacket or belt can be of material assistance to the water skier at the time when he is in the water and preparing to water ski.

In spite of the fact that manufacturers of life jackets and belts and proponents of water safety have enjoyed a substantial degree of success in persuading large numbers of water skiers that they should be equipped with jackets or belts, their adoption has not been unanimous. Prior known jackets inhibit, to one degree or another, the movements of the skiers. There is some recognized psychological repulsion to a full life jacket that does not apply to this belt developed specifically for the purpose.

Prior known belts have not always been comfortable. Further, previous belts have often been constructed in a manner which may cause injury to the wearer if the belt shifts from the impact of a fall. This is true because belts, if not of an inflatable type, usually include a hard portion which could cause injury in a fall. Inflatable belts have not been satisfactory because of their relatively short life and because they usually require frequent attention to replenish the inflating air.

The life belt of this invention overcomes these disadvantages of previous devices. It is a light-weight, simple, and dependable life belt, which in no way hinders the movement of a skier. Further, unlike most prior art belts, there is no possibility of injury to the skier in a fall or of discomfort if the belt tends to slide up on the wearer when he is in the water or during his fall. It is a small and attractive belt and experience has shown that it is a belt which many skiers who refuse to wear prior known jackets and belts will readily accept and wear.

Accordingly, one of the objects of the invention is to provide a novel and improved ski belt which will not interfere with skiers' motions.

An additional object of the invention is to provide a novel and improved method of manufacture of a life belt.

One of the principal objects of this invention is to provide a continuous belt from end to end, without splices, with the buoyant material enveloping a portion of the belt between the ends thereof.

A further object of this invention is to asemble such continuous belt and buoyant material neatly, accurately positioned with respect to one another, and completely united in order that separation will not take place under stress.

Foamed plastics having individual cells which do not communicate with one another are widely employed for water environment service. These materials are directly opposed to the types employed for the purposes of making sponges. In view of the fact that the cells do not communicate, there can be no absorption of water into the material.

However, attaching fastening harnesses and belts to such material is a difficult proposition. Particularly is it difficult to secure such a union that may be trusted when

human life is involved. According to this invention a continuous belt of webbing material is quite conveniently provided with a resilient body section, rather than to provide attachment belts onto a body of the buoyant material.

Cutting and shaping plastic material of this nature is not as simple as it might appear. The material will deform somewhat under cutting operations, and molding operations are too expensive in most instances for low cost items such as the one illustrated in drawings herein. This invention solves very nicely the safety feature of a continuous belt, together with eliminating the problem of positioning two halves in order to make a conventional sandwich-type structure.

Other objects and a fuller understanding of the invention may be had by referring to the following description and claims taken in conjunction with the accompanying drawing in which:

FIGURE 1 is a top plan view of one of the novel and improved belts with parts broken away and removed for clarity of detail;

FIGURE 2 is a sectional view of the device on an enlarged scale with respect to FIGURE 1 and as seen from a plane of cross section indicated by the line **2, 3—2, 3** of FIGURE 1 and showing one step in the manufacture of the belt; and,

FIGURE 3 is a sectional view in the plane and scale of FIGURE 2 of the completed belt.

The improved life belt of this invention has an elongated resilient and pliable buoyant body **10**. The body **10** has first and second faces **11, 12** and spaced side edges **13, 14**. The faces **11, 12** and the side edges **13, 14** together define a body which is of generally rectangular cross sectional configuration.

An elongated fiber belt **15** is provided. The fiber belt **15** has a length which is greater than the body **10**. The belt projects from spaced ends **16, 17** of the body. A pair of crescent shaped rings **18** are fixed at one end of the belt, the upper end as seen in FIGURE 1. The fiber belt **15** is folded on itself and secured to itself in the usual manner at **19** to connect the rings **18** to the belt. These rings **18** are of the familiar type utilized to secure a flexible belt. In the usual manner, the fiber belt feeds through the rings, wraps around one, and is fed back through the other to provide an adjustable frictional holding for the belt. The fiber belt **15** is, of course, longer than the buoyant body **10** to accommodate wearers of a variety of waist measurements.

The body **10** is formed of a foamed plastic material of the type in which the interstices or pores are not in communication with one another, thus making it permanently buoyant.

In manufacture, the body **10** is first cut from a large sheet of the foamed material. It is round cut to approximately the finished silhouette shown in plan view in FIGURE 1 and to the rectangular section shown in FIGURE 2. Next, the body **10** is cut longitudinally to provide an elongated slit **20** which extends from one end **16** of the body **10** to the other end **17**. The slit **20** is formed in a longitudinal plane of cross section midway between the faces **11, 12** in the illustration. The slit **20** extends from the side edge **13**, in the embodiment shown, toward the other edge **14**. The slit extends in depth to an elongated line termination, designated by reference **21**. This line termination is spaced from the side edge **13** is a distance equal to one-half the width between side edges **13, 14** plus one-half the dimension of the belt **15**. In other words, the slit is located such that when the fiber belt **15** is abutted against the termination **21**, the fiber belt and the body **10** will have longitudinal center lines which are coincident.

The next step in the manufacture of this device is to locate the fiber belt **15** in the slit **20** and against the line termination **21**. The loop of belting at **19** goes back into the slot **20** in order to conceal the raw end and provide further reinforcement. With the fiber belt so positioned, bonding material is applied to the faces of the slit **20** and to the fiber belt **15**. The body is then compressed to press the faces of the slit together and against the belt **15** and thereby firmly bond the belt in its selected position as well as to firmly and permanently close the slit **20**.

The formation of the slit in the manner described has the outstanding advantage that no jigs or other mechanisms are required to position two halves of the body **10** relative to one another when the bonding operation is undertaken. Further, because of the softness and flexibility of the material employed, it is extremely difficult to obtain an acceptable alignment of two halves if the body is slit completely in half, the belt is inserted and one then attempts to bond the halves back together. Further, because of the inherent strength and adhesion of the material itself as compared with two pieces bonded together a stronger belt is obtained with this method. In addition, a simplified manufacture is obtained with a great decrease in scrap loss.

After the slit **20** has been bonded closed, the edges of the belt are burnished to provide a smooth, rounded-off appearance as shown best in FIGURES 1 and 3. The side edge **13** is also burnished to remove any revealing indication of the presence of the slit.

Finally, the entire assembly is dipped in a suitable protective and decorative coating. A resin plastisol solution is preferred for this purpose. This provides a thorough, firmly bonded and flexible decorative and protective layer that resists attach of salt water, rust, mildew or the like.

While the invention has been described with a great deal of detail, it is believed that it comprises a novel and improved life belt having an elongated pliable and flexible buoyant body, a longitudinally extending slit formed therein and extending from one end to the other and from one side edge toward the other, a flexible belt disposed in the slit and projecting from the ends of the body, and a bonding material bonding the faces of the slit together and the belt to the body. However, it is understood that numerous changes in detail and construction may be employed without departing from the spirit and scope of the invention as hereinafter claimed.

What is claimed is:

1. A life belt comprising an integral elongated body of pliable and flexible material having a specific gravity substantially less than that of water, said body having an elongated slit extending from one end to the other and extending inwardly from one side edge of said body toward the other side edge, said slit terminating at a location defined by a line spaced from said other side edge and leaving an unslit portion of said body such that said body remains in an integral state, an elongated flexible belt disposed in said slit to lie along the termination line of said slit, said flexible belt having its ends projecting outwardly from the opposite ends of said body, fastening means at at least one end of said flexible belt to interconnect the ends of said belt and hold the body by means of said flexible belt around the body of the wearer, and bonding material interposed between the abutting faces of said slit bonding said faces together and bonding said flexible belt to said faces.

2. The device of claim 1 wherein the depth of said slit is equal to one-half the distance between said side edges plus one-half the width of the flexible belt such that the longitudinal center line of the belt and the body are coincident.

3. The device of claim 1 wherein said flexible belt and body are covered by a water-impervious protective and decorative coating.

4. The method of forming a life belt comprising shaping a quantity of flexible foamed plastic material into an elongated integral body, forming an elongated slit from one end to the other of said body, said slit extending inwardly from one side edge toward the other side edge and terminating at a line spaced from said other side edge to leave an unslit portion of said body such that said body remains in an integral state, positioning a flexible belt of a greater length than said body in said slit to lie along the termination line of said slit with the ends of said flexible belt projecting outwardly from the opposite ends of said body, and bonding the flexible belt to the abutting faces of said slit and the remainder of said abutting faces to one another to close said slit and permanently connect said flexible belt to said body.

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