United States Patent [19]

Cohn

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[54] REINFORCED STRAP HOLDER

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[52] **U.S. Cl.**.....**9/340,** 24/198

[51] **Int. Cl.**.....**B63c 9/10**

[58] **Field of Search**.....9/340, 329, 336, 9/337; 24/198, 203, DIG. 11; 2/87, 265, 271, 275, 311, 107, 108, 266; 150/33; 190/60; 156/66, 70; 161/48

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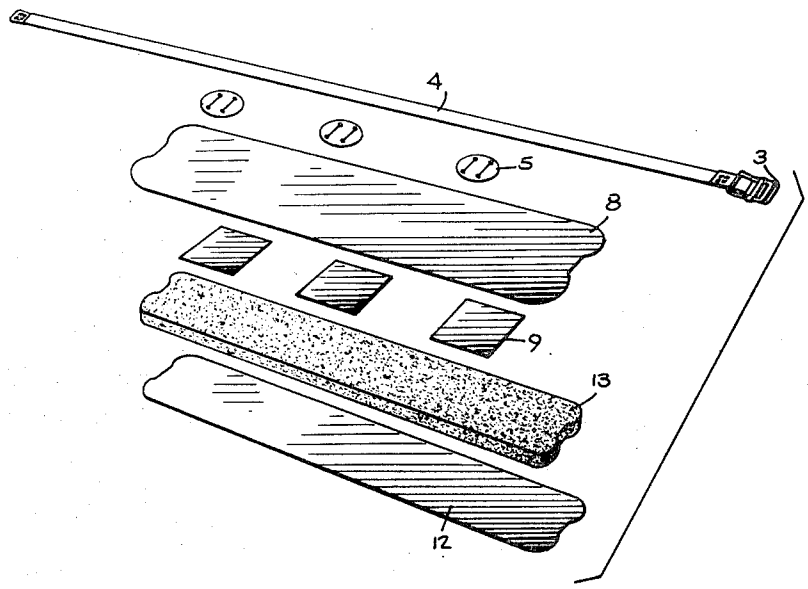
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Assistant Examiner—Gregory W. O'Connor
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[57] **ABSTRACT**

A reinforced water ski belt strap holder comprised of heat sealed nylon impregnated material on two sides of the protective covering of the ski belt provides an economical and sturdy means for securing a strap to a ski belt. Other forms of life preservers such as life jackets or bouyant seat cushions having a heat sealable material coating can be adapted to utilize the improved strap holder.

10 Claims, 9 Drawing Figures



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SHEET 1 OF 2

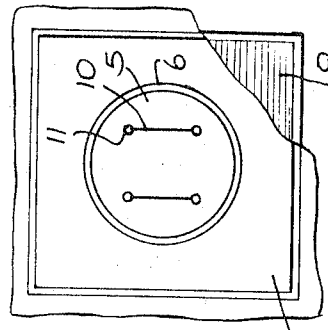


Fig. 3.

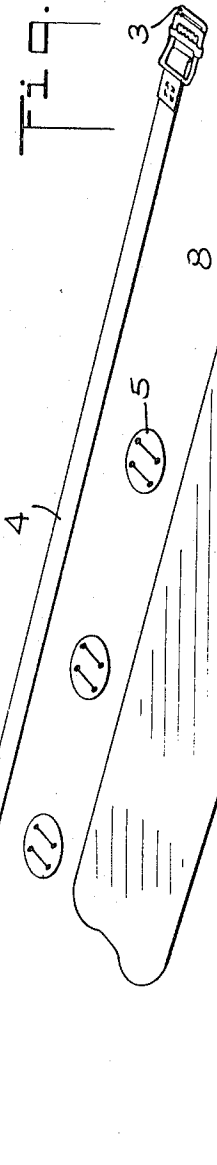


Fig. 4.

Fig. 2.

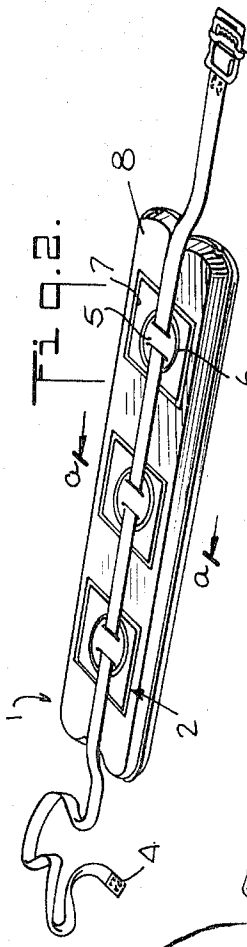


Fig. 1.

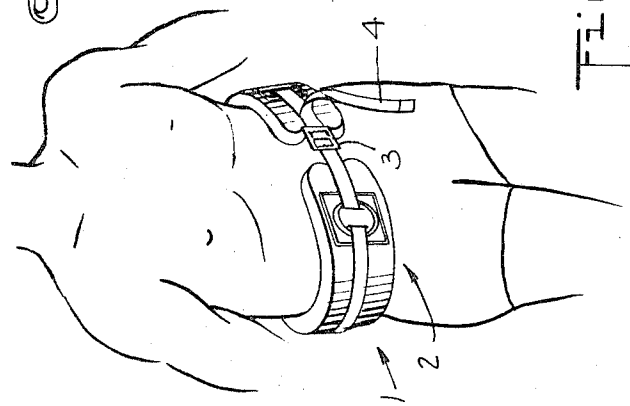
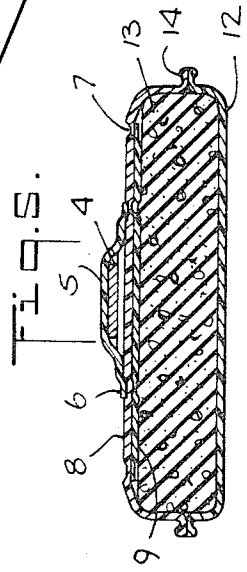


Fig. 5.



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Fig. 7.

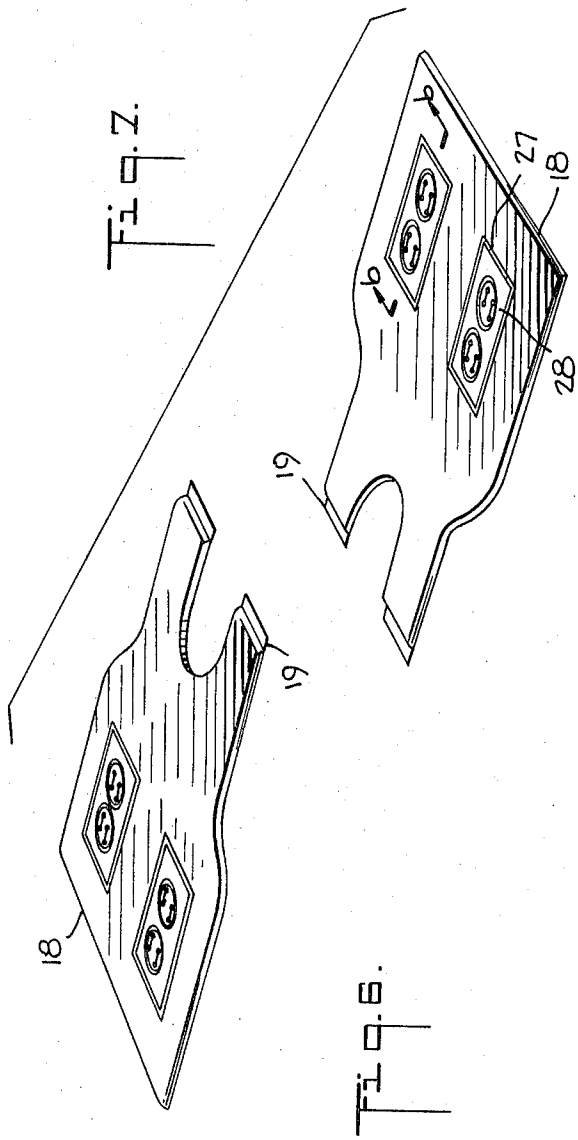


Fig. 8.

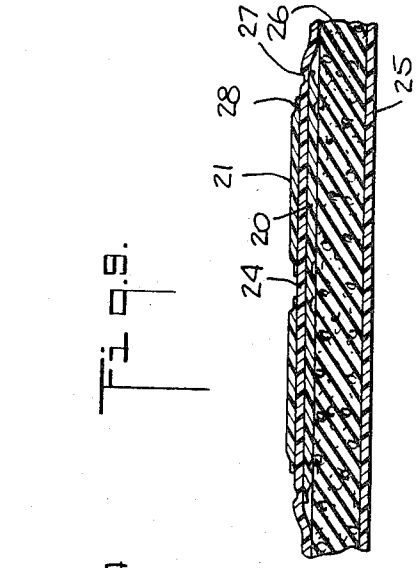


Fig. 9.

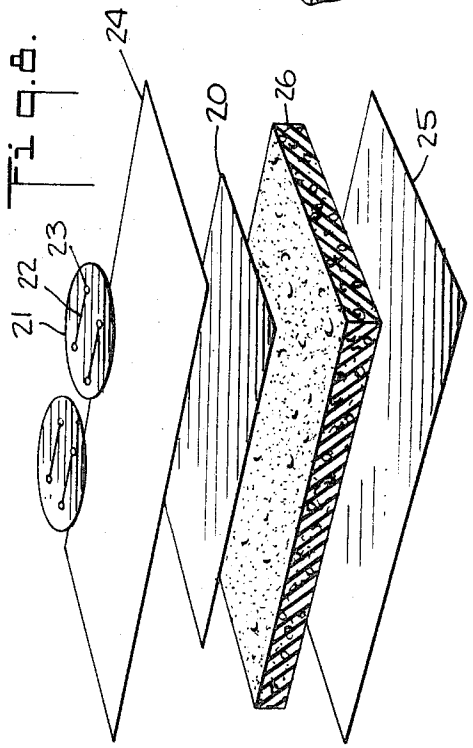
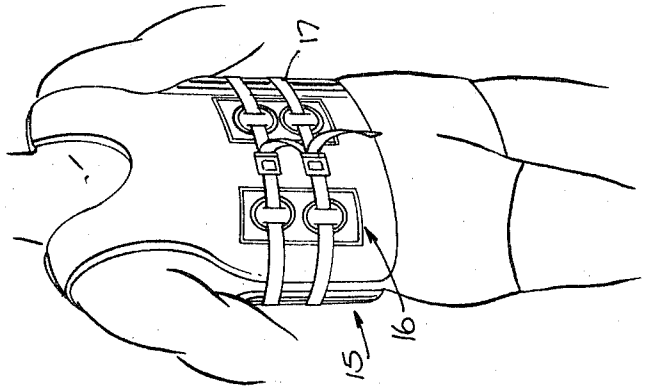


Fig. 6.



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REINFORCED STRAP HOLDER

DESCRIPTION

The use of a water ski belt and other such life preservers requires a strap for attaching the device to the person using it. In the prior art, strap holders for life preservers have been made of plastic and have been attached either by heat seal or stitching. The strap holders lack durability so that before the useful life of the preserver has ended, the strap holders become torn and broken. Where a more durable material other than plastic is used for the strap holders, stitching is used. The stitching process is slower than heat sealing and is far more costly.

The present invention provides a strap holder having durability and amenable to attachment by the economical heat seal process.

The present invention is directed to a reinforced strap holder adapted for attachment to heat sealable material. The strap holder is comprised of two pieces of vinyl impregnated nylon. One piece is used on each side of the heat sealable material. The outer piece is circular with two parallel slots. The ends of each of the slots has an aperture which serves to reduce the tendency for the slot ends to tear. The inner piece is rectangular and is placed so that heat sealing the outside piece also heat seals the inside piece in correspondence.

A plurality of reinforced strap holders are ordinarily used together in a similar pattern to the use of loops for a belt.

For certain applications, more than one strap is used. If two straps are to be used in a proximal distance, the outside vinyl impregnated nylon piece can be prepared with two sets of parallel slots or two outside pieces can be used for accommodating the two straps. The inner piece would be made large enough to permit heat sealing in correspondence to each of the sets of parallel slots.

An object of the present invention is an improved reinforced strap holder.

Another object of the present invention is an improved reinforced strap holder which can be attached by a heat sealing process.

Another object of the present invention is a low cost, improved reinforced strap holder which can be attached through heat sealing and which resists tearing at points of high stress.

Other and further objects of the invention will be obvious upon an understanding of the illustrative embodiment about to be described, or will be indicated in the appended claims, and various advantages not referred to herein will occur to one skilled in the art upon employment of the invention in practice.

A preferred embodiment of the invention has been chosen for purposes of illustration and description and is shown in the accompanying drawings forming a part of the specification, wherein:

FIG. 1 is a perspective view indicating how a water ski belt employing the present invention would be worn.

FIG. 2 is a perspective view of a water ski belt employing the present invention.

FIG. 3 is an elevation view of a portion of a water ski belt showing the present invention with a portion thereof broken away to show the inner piece.

FIG. 4 is an exploded perspective view of the components used to form the water ski belt shown in FIG. 2.

FIG. 5 is a sectional view of the ski belt taken along line *a—a* of FIG. 2.

FIG. 6 is a perspective view indicating how a water ski jacket employing the present invention would be worn.

FIG. 7 is a perspective view of two pieces which comprise the water ski jacket before they have been joined.

FIG. 8 is an exploded perspective sectional view of the components used to form the water ski jacket shown in FIG. 6.

FIG. 9 is a fragmentary sectional view of the water ski jacket taken along line *b—b* of FIG. 7.

FIG. 1 is a perspective view indicating the manner in which a person would wear water ski belt 1 which employs a preferred embodiment of the invention improved reinforced ski belt strap holder 2. Buckle 3 permits strap 4 to be tightened for a fit or to remove belt 1.

FIG. 2 is a perspective view of belt 1 showing the use of three holders 2. The outside piece 5 of holder 2 is heat sealed to material 8 along the closed curved 6 shown as a circle. The closed curve 5, shown as a rectangle, is the path along which the heat seal is made between material 8 and the inner piece 9 shown in FIG. 4.

FIG. 3 is an elevational view of a portion of the ski belt 1 in the vicinity of holder 2. A portion of material 8 has broken away to show the inner piece 9. The outer piece 5 has slots 10 in order to accommodate strap 4. The ends of slots 10 are apertures 11 which serve to distribute the stresses which may occur at the ends of slot 10 so that piece 5 does not tear and to allow enlargement of slots 10 so as to simplify the threading of strap 4.

FIG. 4 shows the components which comprise ski belt 1. The materials 8 and 12 are vinyl material which is heat sealable. The inner buoyant material 13 is a unicellular foamed plastic material, the amount of which is sufficient to provide the desired bouyancy.

Inner and outer pieces 5 and 9, which are preferably vinyl impregnated nylon are heat sealed to material 8 in one operation along curves 6 and 7, shown in FIG. 3. Then, materials 8 and 12 are heat sealed together so as to enclose material 13. The use of vinyl impregnated nylon for pieces 5 and 9 provides durability and strength to the holder 2.

The sectional view of FIG. 5 shows the heat seal 6 which joins pieces 5 and 9 to material 8 and heat seals 7 which joins piece 9 to material 8. Strap 4 appears between piece 5 and material 8. The heat seal 14 retains material 13.

An alternate preferred embodiment of the invention is shown in FIG. 6 which illustrates the manner in which a person would wear a water ski jacket 15 employing the alternate holder 16. In this embodiment, two straps 17 are used.

FIG. 7 is a perspective view of two halves 18 of jacket 15 prior to the heat sealing of flanges 19.

FIG. 8 is an exploded perspective view of the various components which comprise the alternate holder 16. Inner piece 20 and outer pieces 21 are preferably vinyl impregnated nylon so as to provide durability and strength to holder 16.

Outer pieces 21 are circular and each has a pair of slots 22. The slots 22 have apertures at the ends 23 so as to minimize the possibility of tearing at the ends 23

and to permit enlargement of slots **21** for threading strap **17**. Material **24** and **25** are vinyl material which can be heat sealed. The inner material **26** is a unicellular foam plastic material for providing floatation to the jacket **16** user.

The inner and outer pieces **20** and **21** are heat sealed to material **24** along the curves **27** and **28** shown in FIG. **7**. Then, materials **24** and **25** are heat sealed together so as to enclose material **26.**

The sectional view of FIG. **9** shows the heat seal **28** which joins pieces **20** and **21** to material **24** and heat seal **27** which joins piece **20** to material **24.**

Thus, the present invention provides an economical and durable strap holder. The use of heat sealable vinyl impregnated nylon pieces on opposite sides of a heat sealable material provides an improved strap holder for water ski belts, life preservers, and the like.

As various changes may be made in the form, construction and arrangement of the parts herein without departing from the spirit and scope of the invention and without sacrificing any of its advantages, it is to be understood that all matter herein is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim:

1. A buoyant device comprising interior buoyant material interposed between outer layers of heat sealable material, each of said outer layers of heat sealable material having an inner face and an outer face, outer and inner reinforcement pieces of material comprising heat sealable material, the said outer reinforcement piece having a strap-receiving means thereon and being heat sealed to the outer face of at least one of said outer layers, the said inner reinforcement piece being heat sealed to the inner face of the same outer layer.

2. A device as claimed in claim **1** wherein said outer and inner reinforcement pieces comprise material impregnated with heat sealable material.

3. A device as claimed in claim **2** wherein said heat sealable material is a vinyl plastic.

4. A device as claimed in claim **2** wherein said outer reinforcement piece comprises at least one strap receiving slot.

5. A device as claimed in claim **2** wherein said outer reinforcement piece comprises two strap receiving slots.

6. A device as claimed in claim **5** wherein the slot in said reinforcement piece has enlarged openings at its ends.

7. A device as claimed in claim **2** wherein said two reinforcement pieces are superimposed over each other on opposite sides of the outer layer.

8. A device as claimed in claim **2** wherein the outer reinforcement piece is smaller than said inner reinforcement piece.

9. A device as claimed in claim **2** wherein said device is a water belt and a plurality of reinforcement pieces are provided thereon.

10. A device as claimed in claim **2** wherein said device is a water jacket comprising front and rear panels and wherein said reinforcement pieces are on both panels.

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