United States Patent [19]

Schuler

[11] **3,851,488**

[45] **Dec. 3, 1974**

[54] **DIVERS WEIGHT**

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[22] Filed: **Feb. 22, 1973**

[21] Appl. No.: **334,696**

[52] **U.S. Cl.** **61/70**

[51] **Int. Cl.** **B63c 11/30**

[58] **Field of Search**..... 114/16 E; 9/329, 337, 336; 61/69 R, 70; 224/26 R, 26 B, 26 D, 26 E

[56] **References Cited**

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Assistant Examiner—Charles E. Frankfort

[57] **ABSTRACT**

The specification relates to a divers weight which is secured to the belt in a manner which enables quick and easy weight changes. The weights are retained by a case having protruding ribs which grab the belt so as to prevent the weights from sliding or shifting on the belt.

4 Claims, 6 Drawing Figures

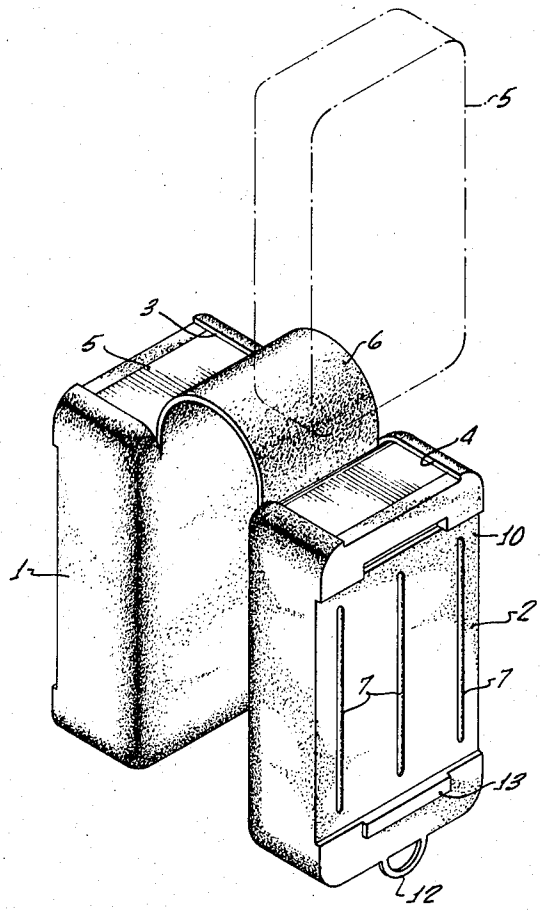


FIG. 1.

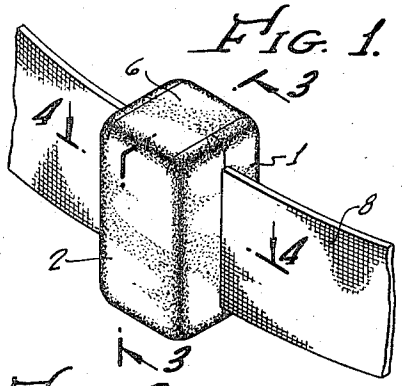


FIG. 2.

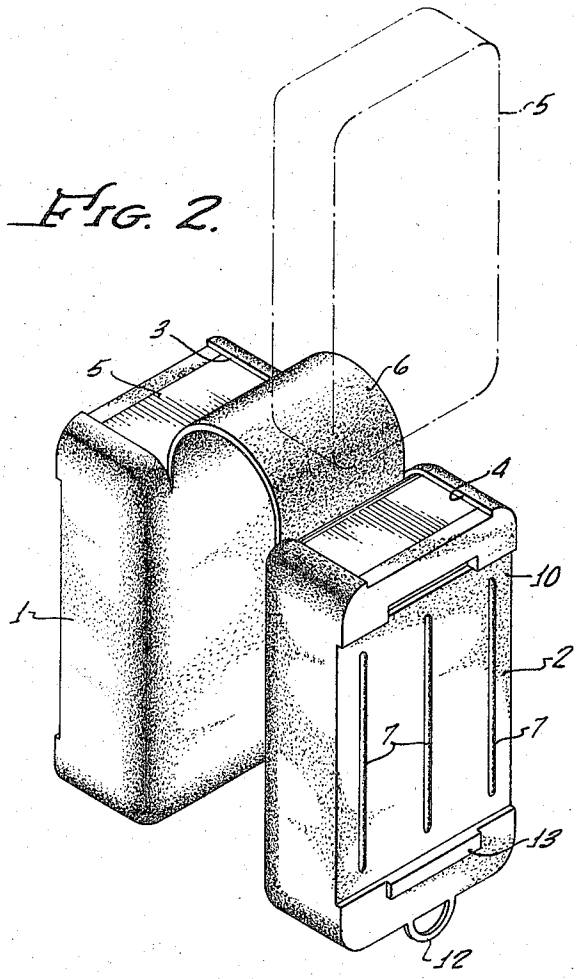


FIG. 3.

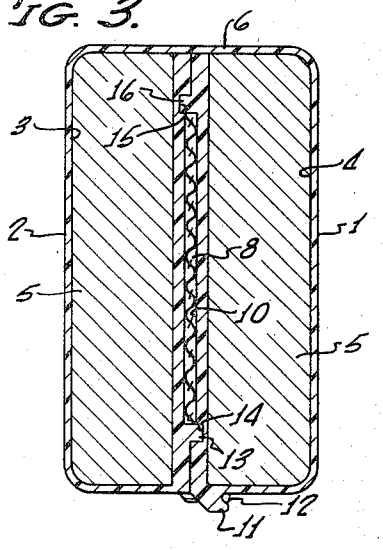


FIG. 6.

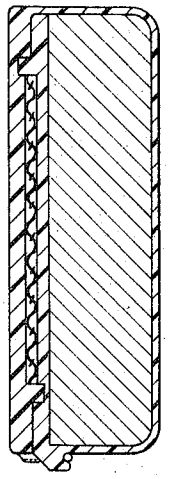
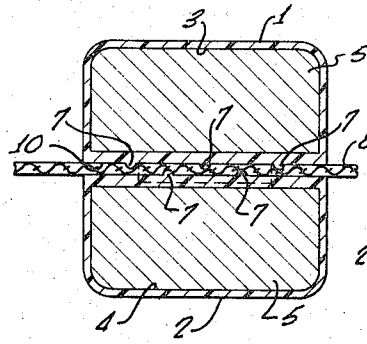


FIG. 4.



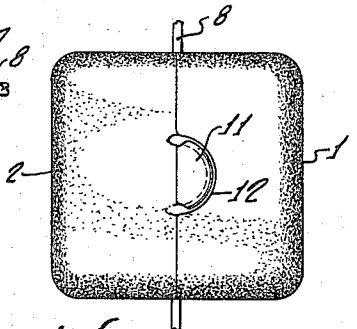


FIG. 5.

DIVERS WEIGHT

BACKGROUND OF THE INVENTION

Scuba divers normally utilize additional weights to control buoyancy in making the underwater descent or assist them in staying down and moving around once they have reached the ocean floor. Such weights must be attached to the belt to facilitate instanteous removal of the entire belt should the diver have to make an emergency assent. Furthermore, they should be inexpensive since they will normally not be recovered if once discarded. From a functional standpoint, the weights should be retained so that they do not shift or slide when the diver changes his orientation with respect to the vertical. It is also desirable that the individual weights be secured in a manner which permits them to be exchanged quickly, without having to remove the entire belt as is the case with prior art devices.

Accordingly, a primary object of the present invention is to provide an inexpensive divers weight which can be secured to a standard divers belt.

Another object of the invention is to provide a weight which can be exchanged without removing the belt or the other weights.

It is a further object of the invention to provide a weight which can be quickly and easily exchanged in cold water when the divers dexterity may be impaired by gloves or stiff fingers.

Other objects and advantages of the invention will be obvious from the detailed description of a preferred embodiment given herein below.

SUMMARY OF THE INVENTION

The invention comprises a pair of ribbed cases which can be opened apart to receive a pair of lead weights, and then closed together about a diving belt and secured thereto. Protruding ribs on the cases function to grasp the belt so as to prevent movement with respect thereto. An alternative embodiment comprises a single case which attaches to the belt with the weight on the outside.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view showing how the dual case assembly would appear when attached to the diving belt.

FIG. 2 shows in perspective how the two halves of assembly shown in FIG. 1 are "opened up" to receive the lead weights.

FIG. 3 shows a cross-section taken through *a—a* of FIG. 1, of how the case assembly is cloased about the belt.

FIG. 4 shows a cross-section taken through *b—b* of FIG. 1.

FIG. 5 shows the details of the tab arrangement for securing the dual case assembly about the belt.

FIG. 6 shows a cross-section of the single case embodiment.

DESCRIPTION OF A PREFERRED EMBODIMENT

Adverting to the drawings, and particularly FIG. 2, a preferred embodiment of the invention comprises first and second cases 1 and 2 respectively, each having openings 3 and 4 adapted to receive a lead bar (such as 5). The two cases are connected together by a flexible hinge element 6, which may be an integral part of the cases themselves (as discussed below). Each case is formed to include a plurality of protruding ribs 7, the function of which is best seen with reference to FIG. 3.

To load the weights, the case is removed from the belt 8 and opened up to the position shown in FIG. 2. The weights 5 are dropped into the openings 3 and 4 and the case 2 positioned so that the belt 8 fits within the recessed portion 10. The case 1 is then folded over the loop 12 snapped over tab 11 to secure the case assembly to the belt. When this is done, the assembly will appear as shown in FIG. 1.

FIG. 3 shows how the protruding ribs 7 dig into the belt 8. The protruding section 13 of case 2 fits into the accordant recess 14 of case 1 and the protruding section 15 of case 1 fits into the accordant recess 16 of case 2; the two cases and belt being interlocked with each other to preclude movement in any direction. FIG. 4 shows in more detail how the ribs 7 function to restrain movement between the case assembly and the belt. FIG. 5 illustrates the details of the loop and tab arrangement for locking the bottom portion of the cases together.

The case assembly is preferrably made of an inexpensive plastic such as vinyl, polypropolene or the like — i.e., one which can be bent without fatigue. The entire assembly (less weights) can be manufactured in a single injection molding operation. The weights as previously mentioned, are lead bars. The bars themselves are preferrably coated to avoid marking of a pool during teaching and instruction.

In practice, the scuba diver will utilize a number of weights which are spaced apart about the belt. The diver may remove one or more weights during his dive to regulate buoyancy. If an emergency arises, he can quickly free himself from the entire belt thru a quick release mechanism and rise to the surface.

Although the invention has been described with reference to a particular embodiment, it will be evident that various alternatives are possible. Thus, as shown in FIG. 6, one may wish to fabricate a case for holding a single weight. The part on the inside of the belt can simply be a ribbed flap which carries no weight. In such an arrangement, all weights would be on the outside of the belt 8, effecting a somewhat different fit from the divers standpoint. Nor is the case restricted to a configuration for securing rectangular bar weights only. Bars could also be round. Thus, although a preferred embodiment has been shown and described, it will be understood that the invention is not limited thereto, and that numerous changes, modifications, and substitutions may be made without departing from the spirit of the invention.

I claim:

1. A diving weight apparatus comprising:

a first case having an opening adapted to receive a first weight;

means for securing said first case to a diving belt;

a second case having an opening adapted to receive a second weight;

means for securing said first and second cases together;

means for securing the first weight within said first case and the second weight within said second case, and wherein said means for securing the first and second weights within said first and second

cases and said means for securing said cases together comprise:

a flexible hinge connecting said first and second cases together at a point adjacent to the weight receiving openings, said hinge to have a strap length commensurate with the total width of both cases.

2. The apparatus recited in claim **1** wherein said means for securing said first and second cases together further includes:

fastening means located on said cases at a point opposite the weight receiving openings for attaching said first and second cases together to enclose about a section of a diver's belt.

3. The apparatus recited in claim **2** wherein said cases include recessed portions to accomodate a diving belt when positioned to enclose a section of said diving belt.

4. The apparatus recited in claim **3** wherein there is included:

a plurality of projecting ribs within the recessed portions of said first and second cases.

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