June 19, 1962 G. O. SWINDELL 3,039,273

DIVER'S WEIGHT

Filed March 17, 1959

Fig. 1

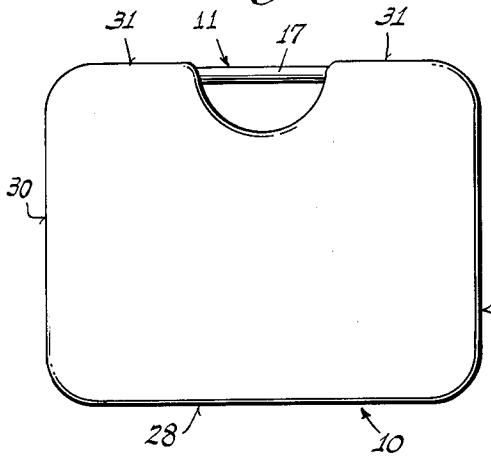


Fig. 2

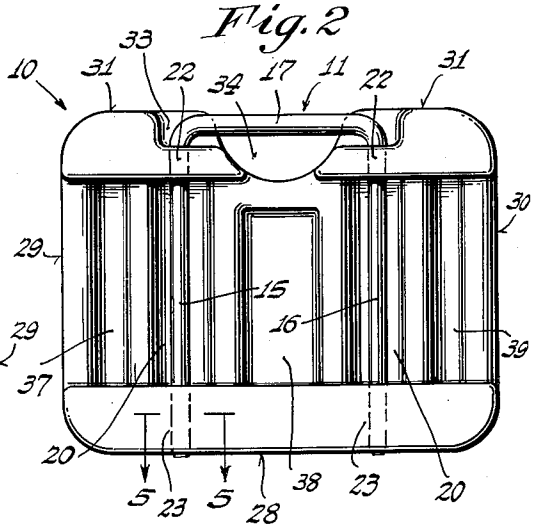


Fig. 3

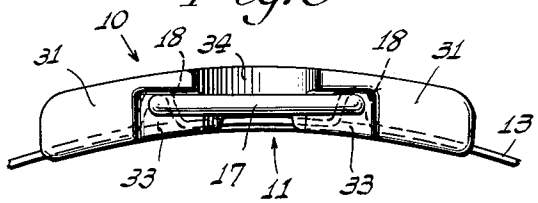


Fig. 5

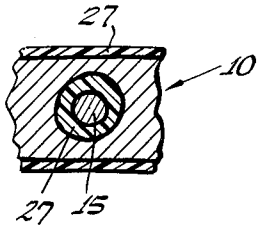
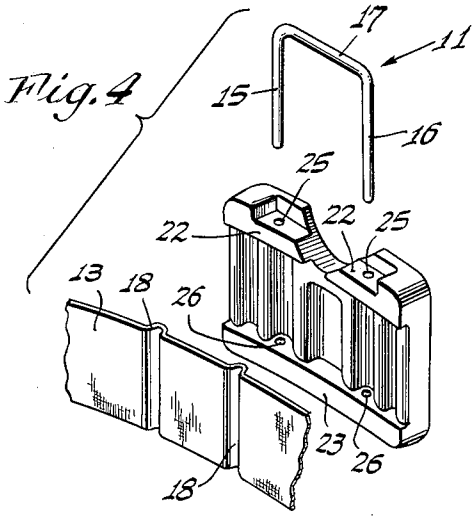


Fig. 4



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DIVER'S WEIGHT

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13 Claims. (Cl. 61—70)

This invention relates to weights of the type used in diving, and more particularly to weights adapted to be secured to belts as used in skin-diving, etc.

An object of the invention is to provide a novel and improved weight structure which may be readily secured to a belt of the type used in diving and may further be readily removed from such belt, all without requiring loosening or removal of the belt from the wearer.

Another object of the invention is to provide an improved diver's weight structure as above characterized, which may be easily and quickly operated either to attach the weight to a belt or to remove the weight from the belt.

A further object of the invention is to provide an improved diving-belt weight in accordance with the foregoing, which will at all times remain securely in place on the belt until intentionally removed therefrom.

Still another object of the invention is to provide an improved diving-belt weight as above set forth, which will readily fit various types of belts without modification and without requiring special fittings on the said belts.

A feature of the invention resides in the provision of an improved weight structure for diving belts, which is smooth and relatively warm to the touch as distinguished from the feel of bare metal.

Still another object of the invention is to provide an improved diving-belt weight having the above features and advantages and which is nevertheless extremely simple in its construction and inexpensive to manufacture and fabricate.

Other features and advantages will hereinafter appear.

In the drawings accompanying this specification similar characters of reference have been used to designate like components and portions throughout the several views, in which:

FIGURE 1 is a front elevational view of the improved weight structure as provided by the invention.

FIG. 2 is an inside or rear elevational view of the weight structure shown in FIG. 1.

FIG. 3 is a top plan view of the weight structure, shown mounted on a belt.

FIG. 4 is an exploded perspective view of the weight structure and belt shown in FIG. 3, illustrating the method of attaching the weight structure to the belt.

FIG. 5 is a fragmentary horizontal sectional view, taken on the line 5—5 of FIG. 2.

Referring first to FIGS. 1 and 2, the weight structure as provided by the present invention is shown as comprising essentially two relatively movable parts, a heavy body member designated generally by the numeral **10** and a manually operable locking member or piece (hereinafter also referred to as a "locking slide means") indicated generally by the numeral **11**. As seen in FIGS. 3 and 4 the heavy member **10** in accordance with the invention is so arranged that it may be readily detachably secured to a flexible belt **13** of the type commonly used in skin diving without requiring removal of the belt, such belt being generally of woven fabric as nylon or the like.

The novel attaching means as provided by the invention, constituting the locking slide means, member or piece **11**, may be advantageously formed of heavy wire in the form of the letter U, such piece having spaced elongate parallel legs **15** and **16** rigidly secured together by a connector or yoke portion **17**. The legs **15** and **16**

of the locking means or member **11** may each constitute a complete "locking slide means," with the yoke **17** functioning as a connector and handle for the same, as may be readily understood. The legs are arranged to engage spaced transverse portions **18** of the belt **13**, such portions being shaped and having the form of transverse ribs by virtue of their being inserted in a pair of narrow, vertically extending, spaced parallel recesses **20** having inner or bottom walls of appreciable expanse, said recesses being provided in the inside of the body member **10**.

At the upper and lower, opposite ends of the recesses **20** the member **10** has guide means comprising bearing portions **22** and **23**, provided respectively with through guide holes or openings **25** and **26** to accommodate or receive and pass the legs or pins **15** and **16** of the locking means or member **11**.

As may be seen from an inspection of FIGS. 2 and 4 the locking piece **11** may be inserted in the holes **25** and **26** from the top of the member **10**, and when so inserted a space exists in the recesses **20** surrounding the legs or pins **15**, **16**. Such space may thus be occupied by the belt **13** whereby the latter will be held captive in the recesses **20** by the locking piece **11**. In effecting this, the following procedure may be advantageously employed: The locking piece **11** may be inserted in the upper holes **25** and made to project partly into the recesses **20**. The belt **13** may then be folded or bent to start the shaping of the ribs **18** shown in FIG. 4, and slid edgewise into the recesses **20** behind the portions of the pins **15**, **16** disposed in the said recesses. With the fingers, the belt **13** may now be pressed fully into the recesses **20** and the locking piece **11** may then be shifted fully downward to the locking position shown in FIG. 2, with the belt portions **18** retained behind the pins or legs **15** and **16**. When this has been done, the member **10** will be securely mounted on the belt **13** and held thereto against inadvertent removal.

Preferably the entire heavy body member **10** is coated with a yieldable resilient coating material such as a soft plastic composition, thereby making the member smooth to the touch and eliminating the cold feeling which is had when cold bare metal is touched, because of the efficient heat conduction which results when the skin comes in contact with bare metal. The member **10** may be cast of any suitable material, as for example lead, lead alloy or the like.

The coating on the member **10**, indicated at **27** in FIG. 5, not only covers the exterior of the member but also coats the inside of the openings **25** and **26**, and thereby provides an advantageous yieldable resilient frictional lining for the holes, which tends to prevent looseness of the locking member **11** and securely holds the said member in its locking position shown in FIGS. 2 and 3. Yet, the nature of the plastic coating is such that the member **11** may be readily withdrawn from the member **10** so as to release the belt **13** when this should be desired.

As illustrated in FIGS. 1, 2 and 4, the heavy body member **10** may be advantageously cast to have a generally rectangular shape with rounded corners, said member having a bottom edge **28**, side edges **29** and **30**, and a top edge **31**. Also, the member **10** may be advantageously formed with a slight curvature, so that it is convex at its front face and concave at its rear face, as illustrated in FIG. 3.

For the purpose of enabling the locking member **11** to be nested in the upper edge **31** of the body member **10** whereby it does not appreciably protrude therefrom, an elongate cavity **33** may be provided in the said upper edge **31**, said cavity opening at the back of the member **10** and being preferably not visible or seen at the front of the member. Thus, as seen in FIG. 2, the yoke portion **17** of

the locking piece may occupy the cavity 33 to enable it to nest in the upper edge 31 of the body member.

Also, in accordance with the invention, for the purpose of enabling the locking piece 11 to be readily grasped when it is desired to remove the same, a depression 34 may be provided in the upper edge 31 of the body member, such depression being preferably sufficiently enlarged to enable at least one finger to be slipped into it below the yoke 17 so as to enable the said yoke to be grasped.

For the purpose of fabricating the body member 10 so that it may have different weights, and in order to lighten the said member when this should be desired, it may be cast with additional recesses 37, 38 and 39 in its rear side, said recesses having interposed between them the locking recesses 20. Thus, by the provision of the recesses 37, 38 and 39 appreciable metal may be eliminated from the body member 10, or additional metal may be incorporated in such body member by elimination of the said recesses.

It will now be understood from the foregoing that the weight structure constituted of the body member 10 and the locking piece 11 may be readily, quickly attached to a belt without requiring removal of the same, and may be as readily detached from the belt under the same conditions, the latter being quickly and easily accomplished by merely grasping and removing the locking piece 11.

The present improved weight structure is seen to be extremely simple in its construction and economical to fabricate, while at the same time providing the utmost reliability in its operation or action. The locking piece 11 will be securely retained at all times in its locking position not only by the pressure applied by the belt 13 but also by the frictional lining 27 which is provided in the holes 25 and 26, yet the locking piece may be quickly removed when this should be desired.

By the provision of the overall coating 27 on the member 10 it is soft and relatively warm to the touch as distinguished from the cold feeling which is had when cold bare metal is touched.

Variations and modifications may be made within the scope of the claims, and portions of the improvements may be used without others.

I claim:

1. A weight structure adapted to be detachably secured to a belt of the type used in diving, comprising a heavy, generally flat member having disposed in one side a shallow recess as long in one dimension as the belt is wide and having a bottom wall of appreciable expanse, in which recess the belt may be placed so as to extend alongside the member and also alongside opposite end walls of said recess; and a manually-operable, elongate, locking slide means carried by the member, said member having a pair of guide means for and engaged by the slide means and located respectively at opposite ends of the recess whereby the slide means is movably carried by the member and is longitudinally movable between a locking position spanning and extending across the recess in spaced relation to the bottom wall thereof wherein it may hold the belt captive in the recess and a releasing position not spanning the recess wherein it releases the belt for removal from the recess, thereby to effect releasable attachment of the said member to the belt.

2. The invention as defined in claim 1, in which the said member has an additional shallow recess in its side, which is also as long in one dimension as the belt is wide and which is similar to the first recess, said additional recess being disposed alongside of and spaced from the first-mentioned recess, and in which there is an additional elongate, locking slide means carried by the member, said member having another pair of guide means for and engaged by the additional slide means and located respectively at opposite ends of said additional recess whereby said additional slide means is movably carried by the member and longitudinally movable between locking and releasing positions respectively spanning and spaced from the bottom of, and not spanning the additional recess so that the belt may be secured to the member by the said two locking slide means at two spaced points for the purpose of positioning the member on the belt against turning.

3. The invention as defined in claim 2, in which there is a connecting means joining the said two locking means for effecting simultaneous movement thereof.

4. The invention as defined in claim 2, in which the said member has pairs of aligned holes comprising respectively the said two pairs of guide means, the pairs of holes opening respectively into the said two recesses, and in which the locking means are slidably carried respectively in the said pairs of holes.

5. The invention as defined in claim 4, in which the said recesses are elongate and parallel, and disposed in one side of the member, the lengths of the recesses constituting the said dimensions which are as large as the belt is wide, and in which there are additional shallow elongate recesses in the said side of the member, arranged parallel to the first-mentioned recesses, thereby to reduce the weight of the said member.

6. The invention as defined in claim 4, in which there is a connecting yoke joining together the said locking means, to effect simultaneous movement of the same.

7. The invention as defined in claim 6, in which the member is covered with a yieldable, resilient non-metallic coating having frictional properties, said coating extending inside the said four holes of the member and effecting a more secure frictional retention of the locking means in the said holes.

8. The invention as defined in claim 6, in which the connecting yoke is disposed at one edge of the said member, and in which the member has a depression at the said edge to provide clearance about the yoke and to enable it to be readily gripped for effecting withdrawal of the locking means from the said holes.

9. The invention as defined in claim 6, in which the connecting yoke is disposed at one edge of the said member, in which the member has a cavity at the said edge to accommodate the connecting yoke whereby the latter need not protrude appreciably beyond the edge of the member.

10. The invention as defined in claim 9, in which the said edge of the member has a depression adjoining the cavity, to enable the connecting yoke to be readily gripped for effecting withdrawal of the locking means from the said holes.

11. The invention as defined in claim 1, in which the said member has a pair of aligned holes constituting the said guide means and opening into the said recess, and in which the locking means is slidably carried in the said holes.

12. The invention as defined in claim 11, in which the locking means and holes are so arranged as to enable the means to be withdrawn from an edge of the said member, and in which the member has a depression in the said edge, to enable one end of the locking means to be grasped for withdrawing the same.

13. The invention as defined in claim 11, in which the said member is provided with a yieldable and resilient frictional coating within the two aligned holes, thereby to effect a more secure frictional retention of the locking means in the said holes.

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