

Oct. 1, 1963

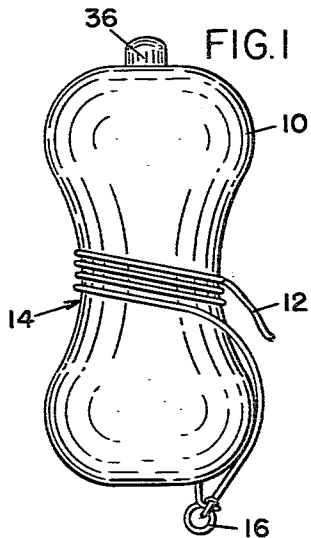
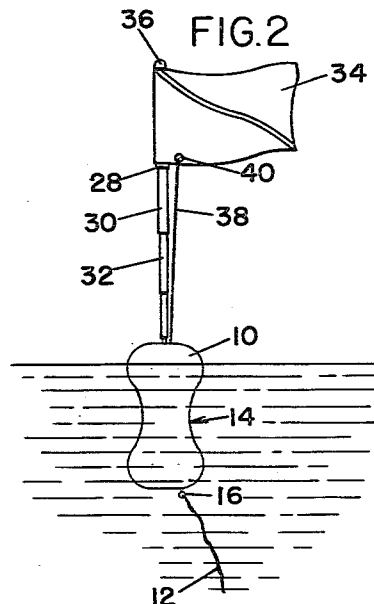
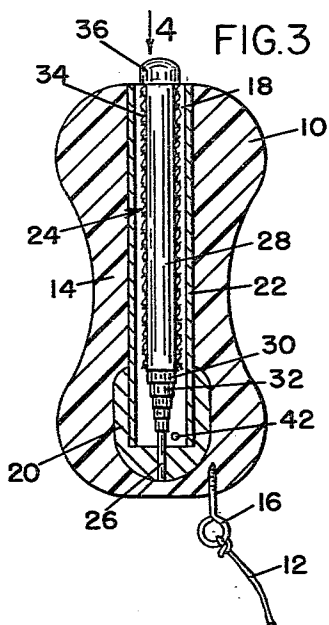
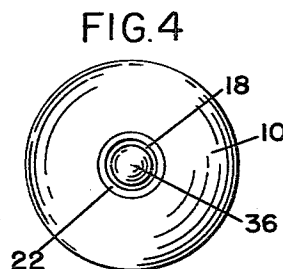
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3,105,459

SAFETY FLOAT FOR SKIN DIVERS

Filed June 21, 1961

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

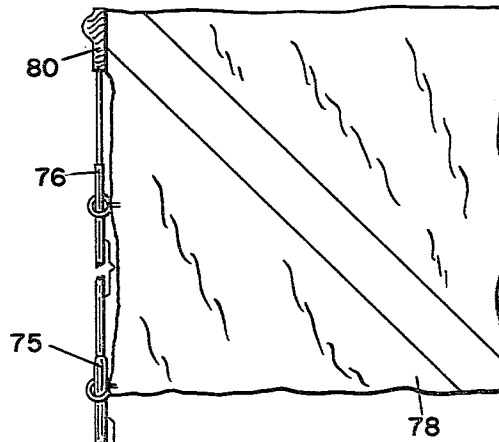


FIG. 5

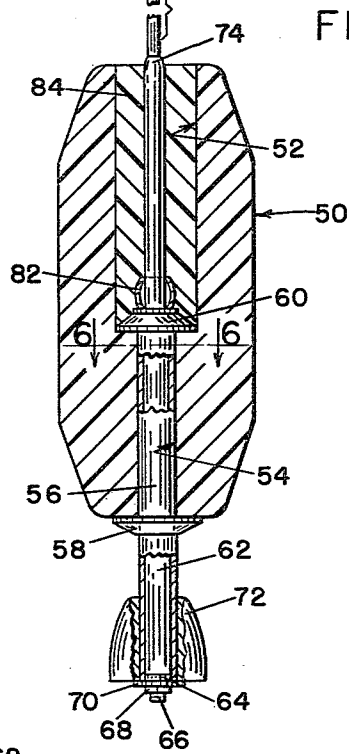
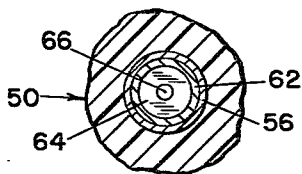


FIG. 6



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SAFETY FLOAT FOR SKIN DIVERS

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4 Claims. (Cl. 116-124)

This application is a continuation-in-part of my application Serial No. 790,494 filed by me February 2, 1959, now abandoned.

This invention relates to a new and improved safety float for skin divers, and the principal object of the invention resides in the provision of a device of the class described which may be easily applied to the skin diver's costume or worn on a strap about the waist or at any other convenient location, so that when the diver is about to ascend to the surface, he may manipulate the float in such a way as to cause it to rise to the surface, together with a signal device thereon in upright position on the float, thus warning all boats in the vicinity that a skin diver is about to come up, whereby the diver is provided with a safety device against possible injury, etc. by boats in the neighborhood, the operators of which would otherwise be unaware that the diver was about to surface.

Other objects of the invention include the provision of a float as above described including a buoyant body having a weight at one end and an extensible mast at the other end thereof, said mast having a flag applied thereto, the mast when collapsed being containable within the float body, together with the flag for easy portability; and the provision of a skin diver's safety float as above described which is provided with a slight positive buoyancy whereby the float rises to the surface at the same rate as the skin diver's air bubbles, so that the diver is able to rise at the proper rate with the float or just below the same, keeping it in sight; and the provision of a skin diver's safety float as aforesaid including a cord applied thereto, so that the diver may, if desired, retain a connection to the float, or he may release it completely and let it go to the surface, following it later.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings, in which

FIG. 1 is a view in elevation illustrating the float in condition ready for use;

FIG. 2 is a view illustrating the float at the surface of the water in use;

FIG. 3 is a vertical sectional view through the float showing the details thereof;

FIG. 4 is a top plan view of the float, looking in the direction of arrow 4 in FIG. 3;

FIG. 5 is a vertical section through a modification, and FIG. 6 is a section on line 6-6 of FIG. 5.

One of the hazards of skin diving is the fact that there are more and more skin divers and more and more boats in the skin-diving areas, and when a skin diver is about to rise to the surface, he is never sure that some boat, particularly a speed boat, may not be nearby and unaware of the fact that a diver is surfacing. The present invention provides a relatively inexpensive, small and easily carried safety float which may be used by the skin diver to indicate his position.

In the preferred embodiment of the invention, the safety float comprises in the first place a main body portion 10 of buoyant material such as cork, cellular plastic material, etc. Preferably it is formed in a kind of dumb-bell shape so that a cord 12 may be wrapped around the waist portion 14 thereof, this cord being conveniently connected to an eye or the like at 16. This portion of the device is at the bottom and a weight is applied to the float at this area thereof to cause the same to float erect in the water as shown in FIG. 2. However, any

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other shape of float body will carry out the purposes of the present invention also.

The float body 10 is provided with a central cylindrical hollow portion extending axially thereof from the top end portion at 18 to the bottom end thereof as clearly shown in FIG. 3. However, preferably, this cylindrical hollow portion stops short of the lower end of the float body which may be closed at that end. In the lower end of the cylindrical body portion, a relatively heavy weight 20 is secured, so as to make the float float upright as stated above.

In addition, the body portion 10 may be provided with an open-ended cylindrical member 22 of appreciable diameter for a purpose to be described, and this cylinder is conveniently attached in any way to the weight 20. In the cylinder 22, there is provided a multi-sectioned telescoping tubular flagstaff or mast generally indicated at 24. It is particularly pointed out that the smallest section 26 of this mast is lowermost and may be conveniently affixed to the weight 20 or cylinder 22 to hold the entire mast in the position as shown in FIGS. 2 and 3. There may be as many telescoping sections as desired, but it has been found that a mast about two feet long is easily provided by means of four to six or more gradually increasing telescoping sections. For instance, looking at FIG. 2, the topmost section 28 contains and is larger than the next section 30 which in turn is larger than and contains the next lower section 32, etc.

A flag, which is indicated at 34, is attached to the topmost section 28, and it will be seen that by reason of the construction of the mast with its smallest section down and its biggest section uppermost, the flag will not become entangled in the sections as they are collapsed to be housed completely in the cylinder 22.

In FIG. 3, the flag is wrapped around the largest section 28 to which it is attached and the entire flag is completely housed within the cylinder 22 which is provided with a considerable inner diameter for this purpose. Also, the cylinder 22 being open-ended, provides easy access to the flag and when the mast is pulled out, as for instance by the knob forming a handle at 36, the flag is in position for immediate use.

Also, preferably, an elastic or other cord 38 is attached to the flag at 40 and this cord extends down to an eye 42 at the lower end of the mast. This is for the purpose of holding the flag at its lower edge downwards so that it will always be extended in the breeze when the mast is extended and will not become bunched, etc. at the top of the mast in the handle knob 36. This flag is conveniently provided with the insignia of the skin diver, or it may be made in any other way found convenient. In the modification shown in FIGS. 5 and 6, the buoyant plastic body is generally indicated at 50 and is relatively elongated, having a relatively large bore 52 extending inwardly from one end and joining a smaller bore 54 which extends through the other end of the body 50. In the bore 54 there is a sleeve 56 which is permanently fastened in position by means of a washer 58 externally of the body at the lower part thereof and a similar washer 60 in the large bore. These washers surround and are attached to the sleeve 56 and grip the material of the body between the larger bore 52 and the end of the body at the lower end thereof.

A collapsible mast is mounted in sleeve 56. This mast has a sleeve 62 which is closed by an apertured member 64 and it will be seen that it extends outwardly from the body 50 coextensively with sleeve 56. The mast is provided with a screw 66 having a nut 68 which secures the assembly together. The character 70 indicates a washer and surrounding the sleeve 56 in spaced relation relative to washer 58 is a weight 72 which is held by any desired means onto the end of the sleeve as shown in FIG. 6.

The flagstaff is made of telescoping sections which are indicated as for instance at 74, 75, 76, etc. and there may be as many of these as desired. The topmost section is provided with a flag 78 which may be secured to the staff by means of a hem or the like 80 into which the staff extends having an enlargement therein (not shown) to hold the flag onto the staff.

In order to aid in holding washer 60 in the position shown in FIG. 5, an enlargement at 82 may be provided on the sleeve 56 forming a part thereof, it being noted that this will hold the washer 60 in position, so that the sleeve cannot move in either direction and therefore the flagstaff base part 62 cannot move in either direction but is held fixed in position. A cylindrical plastic member 84 may be used to fill up the remainder of the bore 52 and this may be adhesively or mechanically secured in position as desired.

In the use of the device, a strap or the like is applied to the waist portion thereof, and then the strap may be hooked to the belt of the skin diver. Of course any other means may be used to temporarily and detachably connect the float to the skin diver's costume. When the diver is ready to surface, he merely detaches the float from his person, extends the mast to the full extent thereof, and releases the float which then slowly and steadily rises to the surface at approximately the rate of the diver's bubbles. The diver may, if he wishes, hold on to the float by means of the cord which runs rapidly off from the float as though from a fixed reel spool, but if desired, he does not need to hold onto the float but may merely watch it ascend.

When the float reaches the surfaces, it floats in the upright position as shown in FIG. 2 and about the level illustrated, and the mast extends upwardly, say for instance approximately two feet with flag extended, thus warning all in the vicinity that a diver is about to rise. It will thus be apparent that a very simple, inexpensive and efficient device is provided for the safety of skin divers, and it will be appreciated by those skilled in the art that this is an extremely necessary device at the present time and in view of the expanding nature of both skin-diving and boating.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:

1. A safety float for skin divers comprising a buoyant body, a collapsible flagstaff applied thereto, a part of the flagstaff being attached to the body, a flag on the flagstaff, a weight on the body, said flagstaff being capable of extension manually by the diver from the top of the body at any level, and the float with weight having a positive buoyancy providing for ascendance thereof from substantially any depth under the surface to the surface, the weight being located on the body oppositely to the flagstaff when extended, so that the flagstaff extends vertically upwardly generally when floating with the weight being in the lower part of the body, said weight extending outwardly from the body at the lower part thereof.

2. The safety float for skin divers as recited in claim 1 wherein said weight is permanently secured in position relative to the body.

3. A safety float for skin divers comprising a relatively elongated plastic body, said body having a bore therethrough from end-to-end, said bore being larger in diameter in one portion of the body than in the rest of the body, a sleeve mounted in said smaller part of the bore and extending outwardly from said body at one end, means holding said sleeve in position relative to said body, a weight attached to said extended sleeve in spaced relation to said body, a collapsible mast mounted in said sleeve, means attaching the mast to the sleeve, said mast extending through the larger bore of said buoyant body and outwardly thereof at the end thereof opposite the weight.

4. The safety float for skin divers as recited in claim 3 including a plastic insertion surrounding the flagstaff and filling the larger portion of said bore.

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