

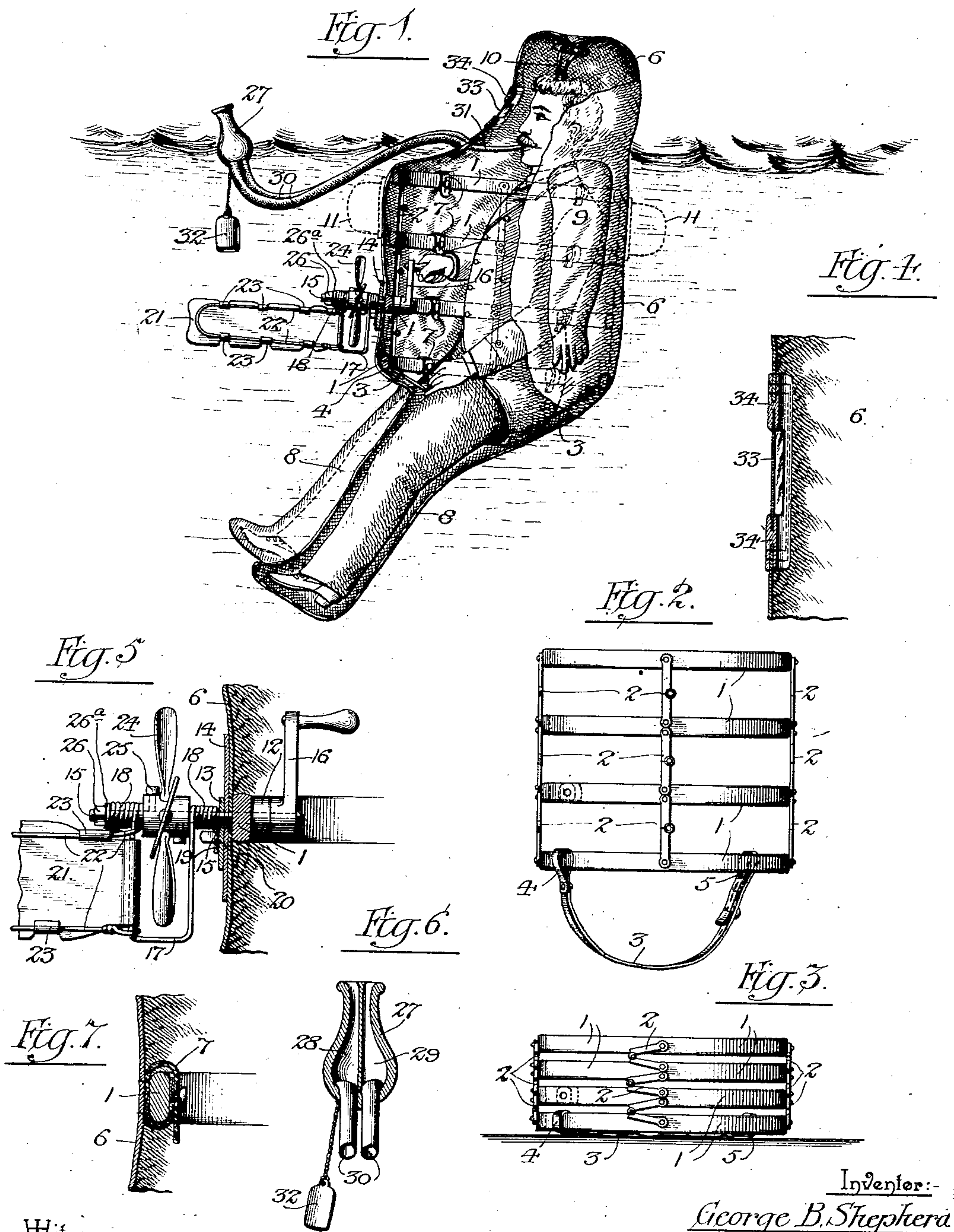
No. 616,439.

Patented Dec. 20, 1898.

G. B. SHEPHERD.
LIFE PRESERVER.

(Application filed Nov. 29, 1897.)

(No Model.)



Witnesses:-
Louis M. Whithead
Edwin Cruise.

By his Attorneys,

C. A. Snow & Co.

Inventor:-
George B. Shepherd

UNITED STATES PATENT OFFICE.

GEORGE B. SHEPHERD, OF GRAYSON, KENTUCKY.

LIFE-PRESERVER.

SPECIFICATION forming part of Letters Patent No. 616,439, dated December 20, 1898.

Application filed November 29, 1897. Serial No. 660,109. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. SHEPHERD, a citizen of the United States, residing at Grayson, in the county of Carter and State of Kentucky, have invented a new and useful Life-Preserver, of which the following is a specification.

This invention relates to life-preservers, its object being to provide a casing of flexible waterproof material supported on a suitable frame and adapted to entirely incase the wearer and exclude water under all ordinary circumstances. The frame and casing when used as a life-preserver will be non-collapsible and will contain enough air to give it sufficient buoyancy to float and support the wearer.

The invention also contemplates providing a propelling device to be operated by the wearer from the inside of the casing and also devices for the admission of fresh air to and the discharge of vitiated air from the casing.

With these and other objects in view the invention consists of the several details of construction and combination of parts, as will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view, partly broken away, of a life-preserver made in accordance with my invention, showing the occupant in position therein. Fig. 2 is a side elevation of the frame in its extended position. Fig. 3 is a similar view showing the frame in its collapsed position. Fig. 4 is a sectional detail showing the manner of securing the glass or other transparent material in position. Fig. 5 is an enlarged view, partly in section, of the propelling device. Fig. 6 is a sectional view of the float to which the air-tubes are connected. Fig. 7 is a sectional detail showing the manner of connecting the casing to the frame.

Similar reference-numerals indicate similar parts in the several figures.

The frame of the device consists of a series of hoops, (indicated by 1,) preferably four in number, and connected to each other by a series of folding and locking braces 2, so constructed that when the braces are straightened out they will automatically lock the frame in its extended position, as shown in Fig. 2, and when bent at their joints will per-

mit the frame to collapse and bring the hoops in close proximity to each other in parallel planes, as shown in Fig. 3. The hoops will preferably be of wood, as will also the braces, with the exception of their hinges; but I do not limit my invention to the use of any special material for this purpose.

3 indicates a strap which may be of any suitable material, such as webbing or leather, secured at one end to the lower hoop, as indicated at 4, and detachably and adjustably connected at its other end to the hoop at a point directly opposite, as indicated at 5. As shown in the drawings, a button is secured to the free end of the strap, which is adapted to be engaged with any one of a series of buttonholes formed in the strap. It is obvious, however, that other means for detachably connecting this end of the strap to the hoop may be employed, if desired.

6 indicates the casing, made of any suitable flexible waterproof material, and this casing has a body portion of sufficient size to fit over the frame and to which it is connected by a series of straps 7, which are secured to the casing and buttoned or buckled over the respective hoops.

8 indicates two extensions to receive the feet and legs of the wearer, and thus permit the wearer to walk freely when necessary. The hoops are arranged at intervals at the body portion of the casing above the leg extensions, which are flexible, while the body portion is held rigid and prevented from collapsing. The casing is also provided with a sleeve 9 on each side to receive the arms of the wearer, and these sleeves will preferably be glove-shaped at their ends in order to permit greater freedom in the use of the fingers. The upper end of the casing may be somewhat contracted, if desired, and will be open to permit the wearer to put the preserver on, and in order to close the open end I provide a draw-string 10, which can be operated from inside the casing, so that the occupant can open or close the upper end of the casing at pleasure. The frame and casing will be so connected that when the frame is expanded the upper hoop will be just above the shoulder of the occupant and the sleeves extend out between the upper hoop and the one immediately below it. The sleeves will

be of sufficient size to permit the occupant of the preserver to easily insert or withdraw his arms.

11 indicates a pocket formed circumferentially around the casing, exterior thereof, and is adapted to receive buoyant material of any description in order to prevent the device from sinking. Preferably this pocket will be arranged about opposite the shoulders of the occupant, and instead of filling it with buoyant material it may be an inflated tube. The casing may be otherwise padded with buoyant material, if desired.

12 indicates a block secured, preferably, to the inner face of the third hoop from the top of the frame, and 13 is a metal plate secured on the outer face of the casing, with a strip of rubber or similar material (indicated by 14) interposed between it and the casing. Alining openings are formed through the block 12, the hoop to which it is attached, the casing, the strip of rubber 14, and the metal plate 13, and a shaft 15 is journaled in the opening thus formed and projects outwardly beyond the casing. This shaft is intended to be a permanent attachment to the preserver and is designed to revolve water-tight in its bearing.

16 indicates a crank-handle which can be detachably connected to the inner end of the shaft in order that the occupant of the preserver can rotate the shaft when desired.

17 indicates a U-shaped frame formed of a piece of stiff wire and is provided with laterally-extending coils 18 at the upper ends of its arms and with a downwardly-extending arm 19, which is adapted to fit between the lugs 20 on the plate 13 when the frame is in position.

21 indicates a rudder consisting of a piece of sheet metal, and in order to secure this rudder to the frame I preferably form a horizontally-extending loop 22 from one of the end portions of the wire of which the frame is formed and secure the rudder to the loop by folding a series of spurs 23, which are formed on the edges of the rudder, over onto the sides of the loop. I also fold one end of the rudder around the outer arm of the frame 17. The rudder may, however, be attached to the frame in any other suitable manner.

24 indicates a propeller which is mounted upon the shaft 15 between the arms of the frame 17 and secured thereon by set-screws 25.

26 indicates a nut on the outer end of the shaft, by means of which the frame 17 can be clamped in position on the shaft, and preferably a washer 26^a will be inserted between the nut and the end of the coil. By removing the nut the frame and the propeller can be easily removed from the shaft when not required for use.

27 indicates a float preferably provided with two chambers, (indicated by 28 and 29,) which open out at the top of the float. A pair of rubber tubes 30 lead from the lower ends of the respective chambers and are se-

cured to the casing with which they communicate just above the top hoop. One of these tubes is provided with an extension 31 to be held in the mouth of the occupant of the preserver, and fresh air can thus be drawn in through the tube, while the other tube will serve as a conduit for the escape of vitiated air. In order to maintain the float in proper position, I preferably attach a small weight 32 to its lower end, and it is of course to be understood that the float can be of any length desired in order that its upper end will be above the water under all ordinary circumstances.

33 indicates a pane of glass or other suitable transparent material supported in the frame 34, which is secured in the casing in any suitable manner to make a water-tight joint between them.

In order to put the preserver on, the case will be opened at its upper end and the frame collapsed, as shown in Fig. 3, and the occupant can then insert his legs into the sections 8, after which he can by grasping the upper hoop extend the frame to the position shown in Fig. 2, and then, if necessary, close the open top of the casing by pulling on the drawstring 10. When the occupant is in the casing, he will straddle the strap 3, and the latter will transfer the weight of his body to the frame and practically form a seat, leaving him free to use his legs for any purpose when in the water. The frame will be of sufficient size to afford arm-room to turn the crank 16, and the occupant will thus be enabled to propel himself, and the propeller will be so constructed that the occupant will move backwardly. The rudder 21 is designed simply to keep the preserver in a predetermined course, and when it is desired to change the course the occupant will operate his legs to steer the device.

From the foregoing description it is obvious that I have produced an exceedingly efficient life-preserver, which will effectually protect the occupant from the water and in which he will be enabled to float for a considerable time without much discomfort; also, that the occupant will be enabled to walk with considerable freedom when incased by the preserver.

While especially designed for use as a life-preserver, the apparatus may also be used as a pleasure device.

As the inner frame is collapsible, the device can be folded up to occupy a very small space, and by detaching the crank and the propeller and frame 17 the whole device can be packed away in a convenient manner. If the water is not rough, the upper part of the casing can be opened, so as to permit the occupant's head to project through it, and it is obvious that instead of using the propeller the occupant can by inserting his arms into the sleeves of the preserver use his arms and feet for the purpose of propelling and steering.

It will be understood that changes in the

form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

5 Having thus described the invention, what I claim is—

1. In a life-preserver, the combination of a flexible waterproof casing provided with legs, a series of hoops arranged at intervals at the
10 body portion of the casing above the legs, and a series of folding braces connecting the hoops and adapted to space the same apart and lock them in such position, whereby the body portion of the casing is rendered rigid and pre-
15 vented from collapsing, substantially as described.

2. In a life-preserver, the combination of a frame formed of a series of hoops connected together by a series of folding and locking
20 braces, a waterproof casing fitted over the frame and provided with sleeves and legs closed at their outer ends, and a series of straps secured to the casing and detachably connected to the hoops, substantially as described.

25 3. In a life-preserver, the combination of a frame formed of a series of hoops connected together by a series of folding and locking braces, and a waterproof casing fitted over the frame and connected thereto, said casing being provided with sleeves and legs closed at
30 their outer ends, and a strap secured to the lower hoop at opposite points to be straddled by and forming a support for the occupant, substantially as described.

35 4. In a life-preserver, the combination of a casing, a float open at the top and provided with two separate compartments, a pair of air-tubes connected at their outer ends to the bottom of the float and communicating with

the compartments thereof, the inner ends of 40 the tubes being connected with the casing and one of the tubes having an extension located within the casing, and a weight connected with the float, substantially as described.

5. In a life-preserver, the combination of a 45 frame substantially as described, a waterproof casing fitted over the frame, a shaft supported to work water-tight in the casing and frame, a propeller on the shaft exterior of the casing, and a crank-handle on the shaft in- 50 side the casing, substantially as specified.

6. In a life-preserver, the combination of a frame substantially as described, a water-
proof casing fitted over the frame, a shaft supported to work water-tight in the casing and 55 frame, a propeller on the shaft exterior of the casing, a rudder projecting in front of the propeller, and a crank-handle inside the casing, substantially as specified.

7. In a life-preserver, the combination of a 60 frame substantially as described, a waterproof casing fitted over the frame, a shaft supported to work water-tight in the casing and frame, a U-shaped frame loosely mounted on the shaft exterior of the casing, a propeller 65 secured on the shaft, to turn therewith, between the arms of the U-shaped frame, a rudder secured to the U-shaped frame and projecting in advance thereof, and a crank-handle on the shaft inside the casing, substan- 70 tially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

GEORGE B. SHEPHERD.

Witnesses:

J. W. STROTHER,

L. W. WOODS.