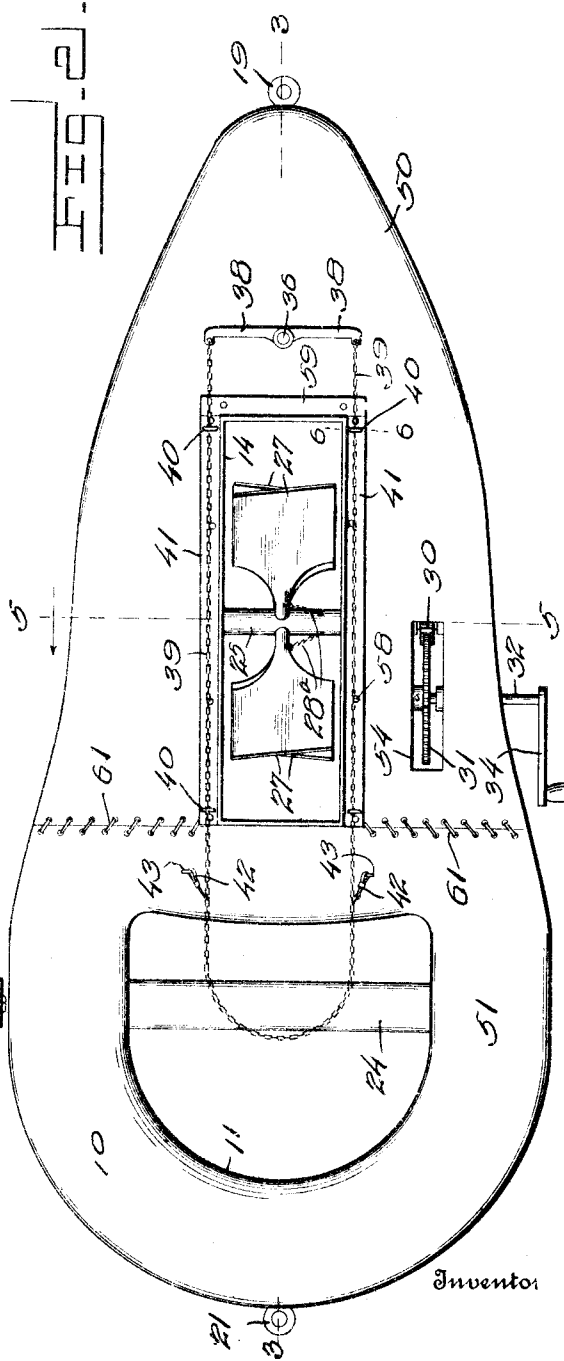
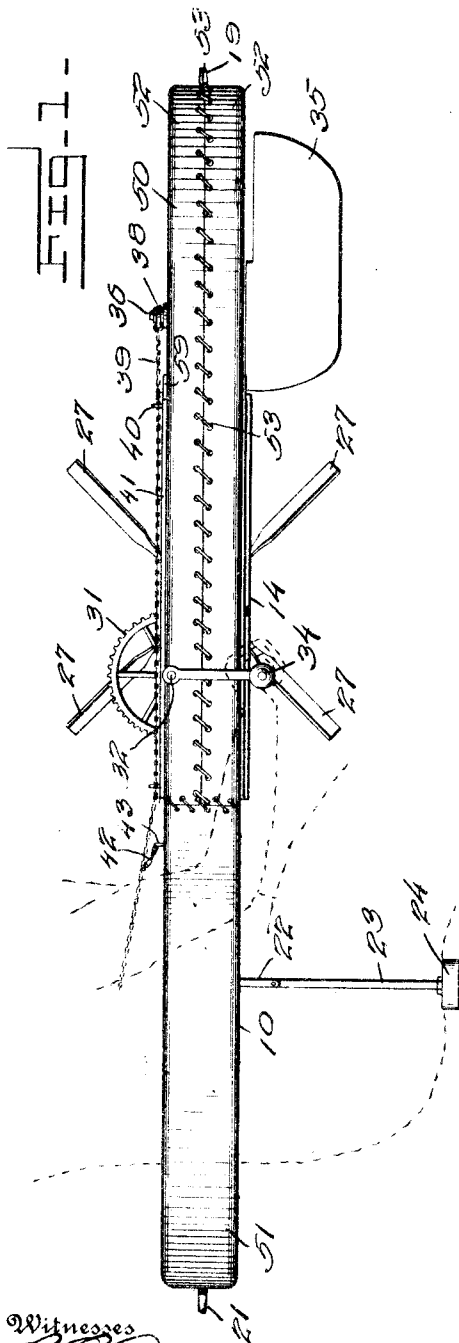


D. J. DEMAS.
LIFE PRESERVER.
APPLICATION FILED DEC. 11, 1912.

1,060,434.

Patented Apr. 29, 1913.

3 SHEETS—SHEET 1.



Witnesses
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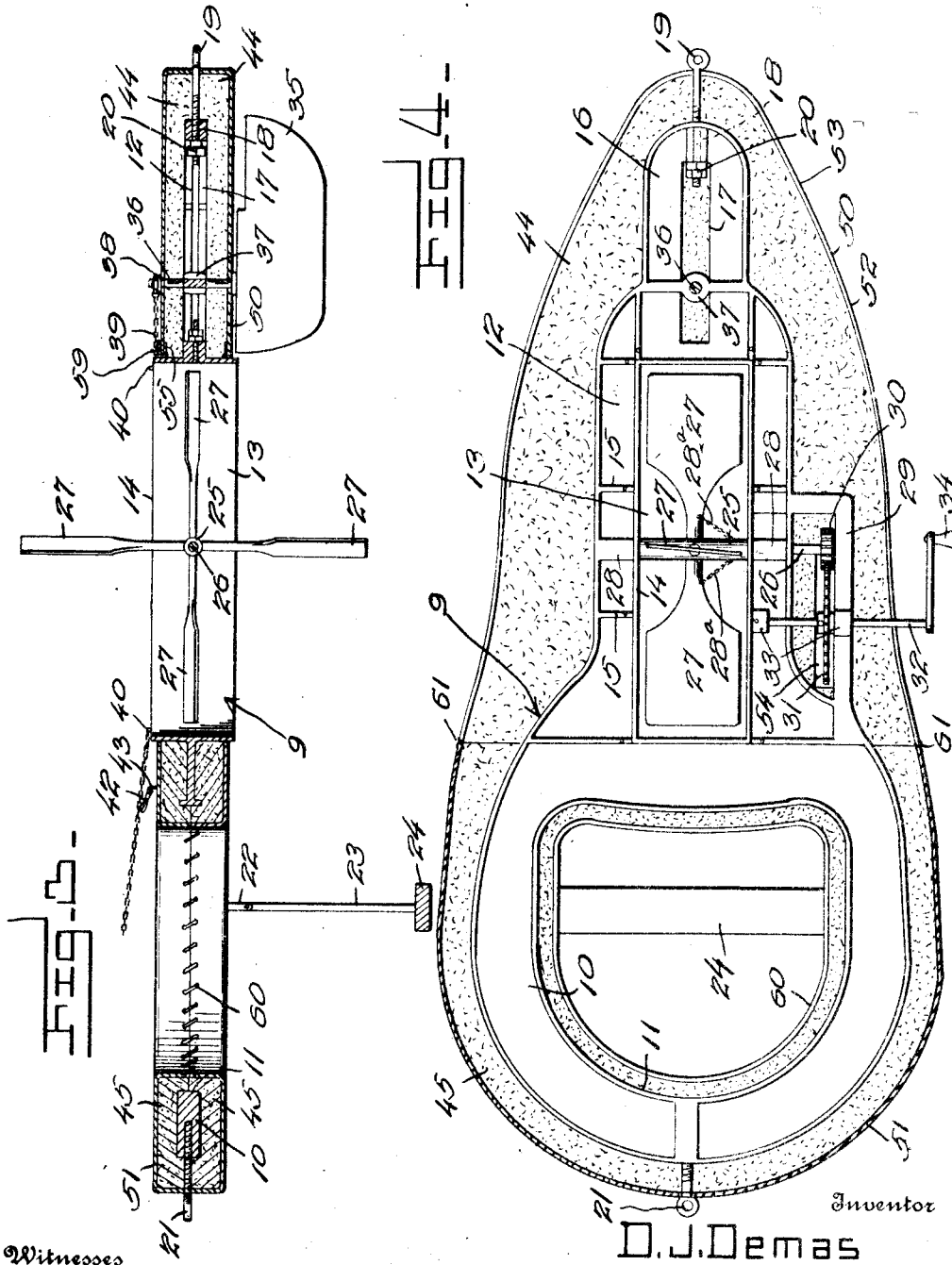
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3 SHEETS-SHEET 2.



Witnesses
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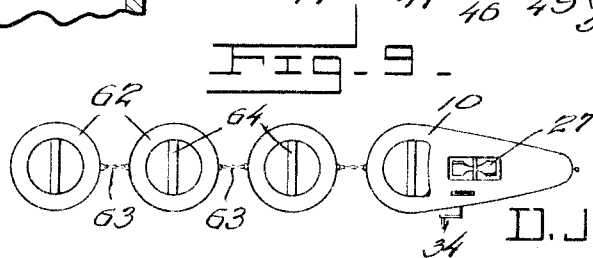
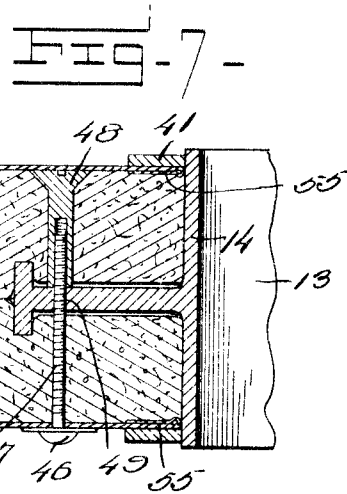
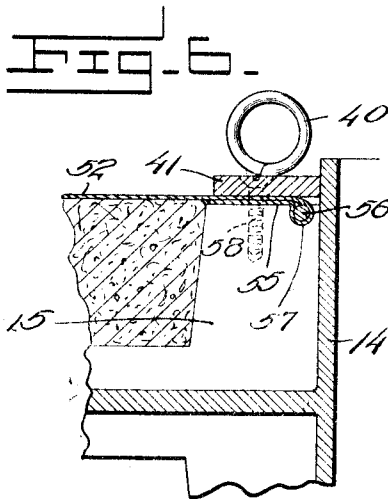
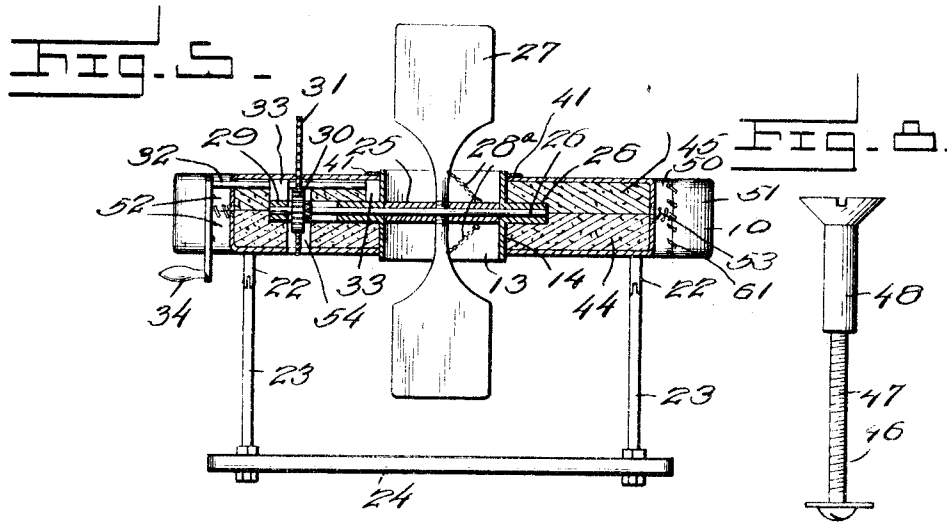
384

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3 SHEETS-SHEET 3.



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UNITED STATES PATENT OFFICE.

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LIFE-PRESERVER.

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To all whom it may concern:

Be it known that I, DEMETRIOS J. DEMAS, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Life-Preservers, of which the following is a specification.

My invention relates to life preservers and has particular reference to a device of this character provided with novel means whereby the operator may readily travel through the water in desired directions.

An important object of this invention is to provide a life preserver of the above mentioned character, which is so constructed that a person may securely attach himself to the same whereby he will not become separated or disconnected therefrom in case he should fall asleep, faint or otherwise become unconscious.

A further object of my invention is to provide a life preserver of the above mentioned character, which will support the operator in the most comfortable manner so that he will not become unduly fatigued.

A further object of my invention is to provide a life preserver of the above mentioned character, which is strong, durable and cheap to manufacture.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings forming a part of this application and in which like numerals are employed to designate like parts throughout the same, Figure 1 is a side view of the life preserver complete, showing the operator in place within the same, Fig. 2 is a plan view of the complete life preserver, Fig. 3 is a longitudinal sectional view taken on line 3--3 of Fig. 2, Fig. 4 is a plan view of the life preserver, the upper section or sections of cork being removed, Fig. 5 is a vertical transverse sectional view taken on line 5--5 of Fig. 2 and looking in the direction of the arrows, Fig. 6 is a detail sectional view through the sheathing securing means, Fig. 7 is a similar view through the means for attaching the sections of cork to the main frame, Fig. 8 is a side view of the improved form of screw, and, Fig. 9 is a diagrammatic view showing a plurality of life preservers connected with my improved life preserver.

In the drawings, wherein for the sake of

illustration, I have shown a preferred embodiment of my invention, the numeral 9 designates a main longitudinal reinforcing frame, which is preferably formed of aluminum, although other suitable material may be employed. This reinforcing frame comprises an enlarged body portion 10, having a central opening 11 formed therethrough for receiving the passenger or operator. The reinforcing frame 9 has portions thereof formed I-shaped in cross-section, as shown. The reinforcing frame 9 comprises a laterally reduced forwardly extending portion 12, provided with a longitudinally extending propeller opening 13, as shown. This opening 13 is preferably rectangular and has upstanding walls 14, as shown. The longitudinal walls 14 are reinforced by upstanding ribs or lugs 15. The reinforcing frame 9 further comprises a forward nose or reduced portion 16, provided with a longitudinally extending opening 17, as shown. The forward end of the nose 16 is provided with a longitudinal opening 18, which lead into the opening 17. An eye bolt 19 or the like passes through the opening 18 and carries a nut or nuts 20, disposed within the opening 17. The function of this eye bolt is to provide attaching means whereby the life preserver may be coupled or connected with another life preserver or to a boat or the like. Connected with the rear end of the enlarged body portion 10, is a second eye bolt 21 or the like, forming means whereby any suitable number of life preservers may be connected with my improved life preserver.

Rigidly connected with the enlarged body portion 10 are depending rods 22, to the lower end of which are hinged or pivoted vertically swinging rods 23. These rods 23 carry at their lower ends a seat 24. The seat 24 is disposed directly beneath the opening 11, to support the operator therein. It is thus seen that the seat 24 by supporting the operator or passenger will prevent him from being subjected to undue fatigue while the body portion 10 will securely hold him in place upon the seat and prevent him from slipping off of the same should he fall asleep or otherwise become unconscious.

In order that the passenger or operator may travel through the water, I provide propelling means for the life preserver, such propelling means comprising a rotatable propeller including a hub 25, which is rig-

idly mounted upon a rotatable transverse shaft 26. Connected with the hub 25 are propeller blades 27. I preferably have two of the propeller blades 27 which lie in the same plane detachably connected with the hub 25. By this means these propeller blades may be removed and secured to the other two propeller blades which may now occupy a substantially horizontal position within the opening 13. This is done for the purpose of protecting the propeller blades against being broken when the life preserver is being shipped or is not in use. Instead of having only two of the propeller blades detachably connected with the hub all of them may be detachably connected therewith, if desired. Each of the propeller blades 27 is detachably connected with a chain or other flexible element 28, having its opposite end permanently connected with the hub 25. The function of this chain 28 is to prevent the propeller blade from turning upon its longitudinal axis, and prevent the same from being lost in case it should break or otherwise be disconnected from the hub. The shaft 26 is journaled through bearings 28, formed upon the side walls 14, as shown. One end of the shaft 26 is journaled through a bracket 29, which is an extension of the main reinforcing frame and is preferably cast integral therewith, as shown. Rigidly connected with the outer end of the shaft 26 is a small pinion 30, mounted within the bracket 29 and driven by a large gear wheel 31, as shown. This large gear wheel is rigidly mounted upon a second transverse rotatable shaft 32, as shown. The shaft 32 is journaled through upstanding lugs or bearings 33, which are preferably cast integral with the reinforcing frame and bracket 29. The shaft 32 is rotated by a manually operated crank or handle 34. Disposed at the forward end of the life preserver and near and below the nose 16 is a direction rudder 35, which is rigidly connected with an upstanding shaft 36, which is journaled through a bearing 37, as shown. Rigidly connected with the upper end of the shaft 36 is a lever 38, having connection at its ends with a flexible element 39. This flexible element may be a section of chain, cord, or the like. The flexible element 39 passes through guide eyes or loops 40, mounted upon removable strips 41. Connected with the rear portion of the flexible element 39 are snap hooks 42 to have detachable connection with fixed eye bolts 43 or the like. It is thus seen that by proper manipulation of the flexible element 39 the operator or passenger may steer the life preserver in the desired direction.

Disposed upon the upper and lower sides of the main reinforcing frame 9 are separate forward and rear sections 44 and 45 of cork or other suitable material that will

cause the device to float. These sections of cork conform generally to the shape of the main reinforcing frame 9, as shown. The upper and lower sections of cork 44 are properly secured to the main reinforcing frame 9 by means of improved screws 46, as shown in Fig. 7. Each screw comprises a screw element 47 and an anchor or socket element 48, as shown. The socket element 48 is embedded within one of the sections 44 of cork while the screw element 47 passes through the other sections 44 and into the socket or anchor element 48, the same also passing through an opening 49 formed through the extension 12 of the main frame. There may be any suitable number of these screws to hold the sections 44 together and they may be suitably arranged as is found to be advantageous. The rear sections 45 of cork are connected together or secured to the main reinforcing frame by any suitable number of the screws 46.

The sections of cork 44 and 45 are covered by a casing or sheathing. This casing is preferably formed of canvas although any other suitably tough and flexible material may be employed. The casing is preferably constructed in two parts, 50 and 51. The forward part 50 is formed in two sections 52, which are laced together at their outer adjacent edges, as shown at 53. Each of these sections 52 is provided with an opening 54 to receive the large gear wheel 31, as shown. Each of the sections 52 is also provided with a large central opening surrounding the walls 14 of the propeller opening 13. Each section 52 (formed of canvas or the like) has its material adjacent the opening 13 folded back upon itself for providing pockets or hems 55 (see Fig. 6), within which are disposed sections of wire 56. The inner edges of the hems 55 which hold the wires 56, as more clearly shown in Fig. 6, are disposed within grooves or recesses 57, as shown. The longitudinal strips 41 hold these sections of wire 56 within the grooves, thus securely attaching the sections 52 with the main reinforcing frame. The strips 41 are held in place by screws 58 or the like. At the forward ends of the strips 41 is a transverse strip 59, and it is to be understood that the section 52 is provided with the same construction below the strip 29, as set forth in connection with strips 41. The rear part 51 of the casing is formed of a single section of canvas or the like, having its inner adjacent edges suitably laced together, as shown at 60. The forward and rear parts 50 and 51 are laced together, as shown at 61.

In Fig. 9, which is a diagrammatic view, I have shown my improved life preserver connected with a suitable number of life preservers 62, by means of flexible elements 63. These life preservers may be of any

well known or preferred type but are preferably constructed somewhat similar to my improved life preserver. They are to be provided with a reinforcing metallic frame and carry seats 64.

The operation of the device is as follows:—The operator or passenger inserts himself within the opening 11 and is supported by the seat 24, as clearly illustrated in Fig. 1. He now turns the handle or crank 34, thus rotating the propeller in either direction, depending upon the direction in which he desires to travel. By manipulating the flexible element 39 the device may be steered in either direction with respect to its longitudinal travel.

It is to be understood that the form of my invention, herewith shown and described, is to be taken as a preferred example of the same, and that certain changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, I claim:—

1. In a life preserver of the character described, a main reinforcing metallic frame provided with an enlarged opening to receive the body of the operator or passenger and a propeller opening disposed forwardly of the enlarged opening, section or sections of cork mounted upon the frame, a propeller mounted within the propeller opening, manually operated means to rotate the propeller, and a seat suspended from the reinforcing frame and arranged below the enlarged opening to properly support the operator or passenger.

2. In a life preserver of the character described, a main reinforcing metallic frame having an enlarged rear portion provided with an enlarged opening to receive the body of the operator or passenger and having a forwardly extending contracted portion provided with a propeller opening, a transverse shaft journaled through the forward contracted portion and adjacent the propeller opening, a propeller mounted within the propeller opening and connected with the transverse shaft, a pinion carried by the transverse shaft, a laterally extending bracket carried by the forward contracted portion, a second transverse shaft journaled

through the laterally extending bracket, a large gear wheel carried by the second transverse shaft and engaging the pinion, an upstanding shaft journaled through the forward portion of the forward contracted portion, a rudder connected with the upstanding shaft, a lever connected with the upper end of the upstanding shaft, a flexible element connected with the lever and extending rearwardly adjacent the enlarged opening which receives the body of the operator or passenger, light floating material carried by the reinforcing frame to cause the entire device to float, and means to rotate the second named shaft.

3. In a life preserver of the character described, a main reinforcing metallic frame, section or sections of cork disposed upon opposite sides of the frame, a casing surrounding the section or sections of cork and the metallic frame, said metallic frame being provided with grooves, the casing being provided with pockets, rods disposed within the pockets and adapted to fit within the grooves, plates disposed upon the rods to retain them within the grooves, and means connecting the plates with the metallic frame.

4. In a life preserver of the character described, a long rigid floating structure provided near its rear end with an opening to receive the body of the operator and provided forwardly thereof with a propeller opening extending longitudinally of the floating structure, a seat connected with the body portion directly below the opening for receiving the operator and disposed a suitable distance therebelow so that the operator will be held in an upright position and prevented from slipping from the apparatus, a rotatable propeller mounted within the propeller opening, a crank disposed near one longitudinal side of the floating structure and in convenient reach of the operator when assuming the upright position, and speed increasing driving connection means between the crank and the rotatable propeller.

In testimony whereof I affix my signature in presence of two witnesses.

DEMETRIOS J. DEMAS.

Witnesses:

CALVIN T. MILANS,
C. W. PARKER.