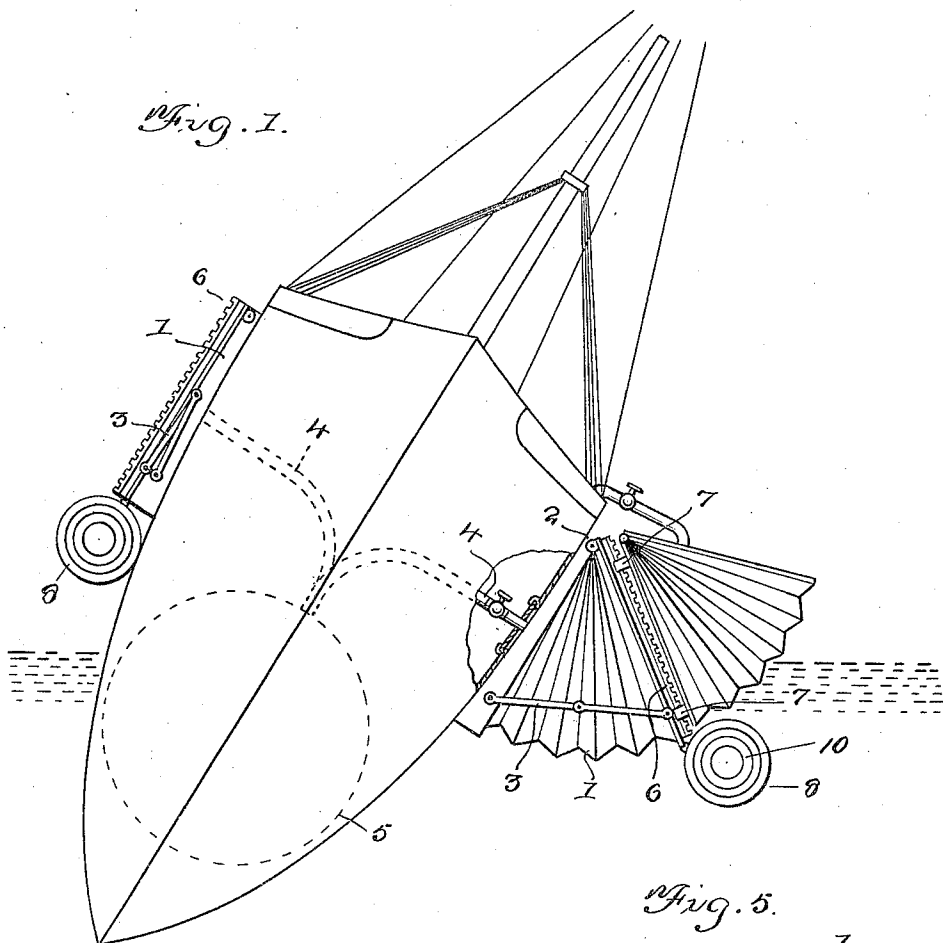
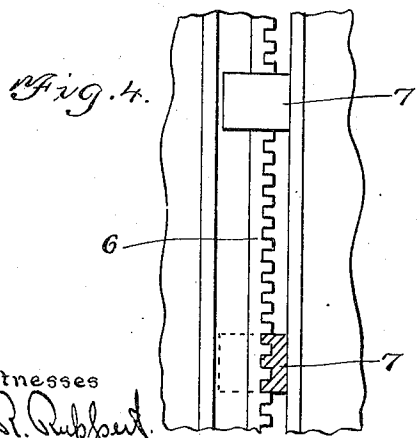
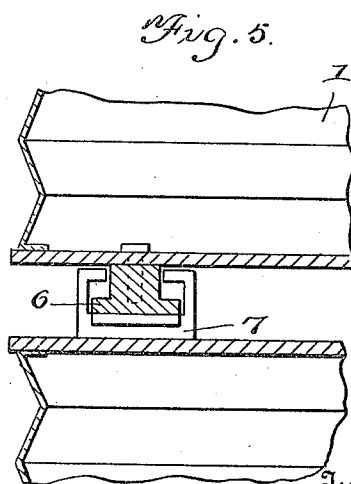


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 APPLICATION FILED JULY 6, 1918.

1,312,355.

Patented Aug. 5, 1919.

2 SHEETS—SHEET 1.



Witnesses
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Fig. 2.

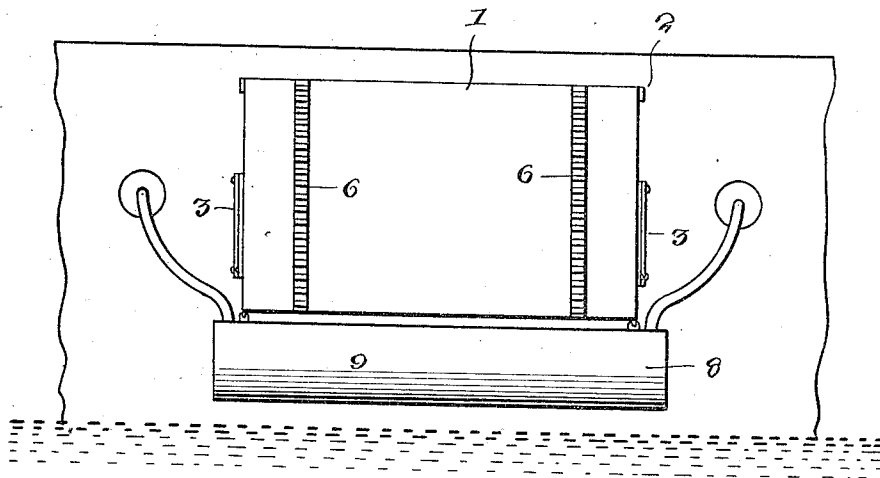


Fig. 3.

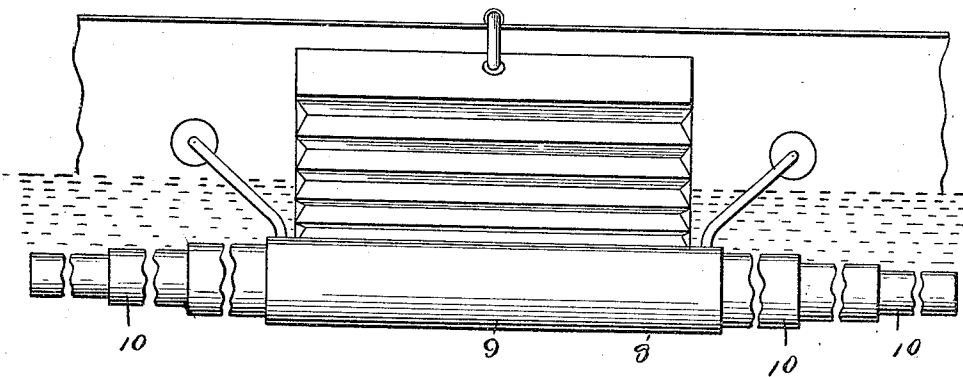
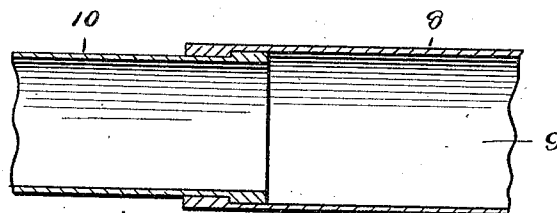


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN T. REID, OF LOVELOCK, NEVADA.

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1,312,355.

Specification of Letters Patent.

Patented Aug. 5, 1919.

Application filed July 6, 1918. Serial No. 243,596.

To all whom it may concern:

Be it known that I, JOHN T. REID, a citizen of the United States, residing at Lovelock, in the county of Humboldt and State of Nevada, have invented new and useful Improvements in Pneumatic Folding Attachments for Keeping Damaged Vessels Afloat, of which the following is a specification.

This invention relates to pneumatic folding attachments for keeping damaged vessels afloat and it consists in the novel features hereinafter described and claimed.

An object of the invention is to provide an attachment of the character stated which is adapted to operate when the vessel is torpedoed to prevent the vessel from turning over and sinking.

With this object in view the attachment comprises one or more bellows members adapted to be mounted at the side of the vessel in a usual manner, there being means for inflating the bellows members with air, the said means being connected with the bellows members by means of hose which pass through the port holes of the vessel. Means are provided for holding the bellows members in extended or inflated position. The bellows members which are attached to the sides of the vessel are provided at their outer portions with rack bars to which additional bellows members may be applied in the event that additional bellows members are required. A telescopic airtank is adapted to be connected with the lower portions of the bellows members and may be extended by inflating the same thus adding to the buoyancy of the attachment. Under normal conditions the bellows members are located at the sides of the vessel above the waterline. In the event that the vessel is struck by a torpedo at or below the waterline and begins to sink and tilt, the bellows members at the lower sides of the vessel are brought in contact with the water and when the bellows members are inflated they serve as buoys for the lower side portion of the vessel and will tend to prevent further tilting of the same and sinking thereof.

In the accompanying drawing:—

Figure 1 is a front view of a vessel with the attachment applied.

Fig. 2 is a fragmentary elevation looking at the side of the hull of the vessel and showing the invention in an inoperative position.

Fig. 3 is a similar view with the bellows inflated and the tank extended.

Fig. 4 is a fragmentary view showing the connection between two of the bellows.

Fig. 5 is a transverse sectional view of the same and

Fig. 6 is a detail longitudinal sectional view through the tank.

The attachment comprises bellows members 1 adapted to be applied to the sides of a vessel as best shown in Fig. 1 of the drawing. These bellows members comprise inner and outer sides which are hingedly connected together as at 2 at their upper edges. Links 3 are pivotally connected at their inner ends together and pivotally connected at their outer ends with the sides of the bellows members. When the bellows members are collapsed or folded the links are folded against each other and when the sides of the bellows members are extended the links are substantially in alinement with each other whereby the sides of the bellows members are held in spread position. Hose 4 may be connected with the bellows members 1 and pass through port holes in the side of the vessel and connected with an air supply tank 5 which is located within the vessel. Any suitable means may be provided for forcing air into the tank 5 and any suitable valve mechanism may be provided for controlling the passage of the air through the hose 4 from the tank to the bellows members. Rack bars 6 are provided at the outer sides of the bellows members which are attached directly to the sides of the vessel and other bellows members may be provided with clips 7 adapted to slide over the bars 6 whereby the assemblage of bellows members may be built up in the event that the bellows members which are located directly at the sides of the vessel are not sufficient to add the proper amount of buoyancy to the vessel. The bellows members 1 may be divided into compartments by suitable partitions of folded material and these partitions may be provided with valves whereby air may pass from one compartment to an adjacent compartment. A collapsible tank 8 is adapted to be connected with those bellows members which are attached directly to the side of the vessel and the tank 8 comprises an intermediate pliable section 9 having suitable means for supplying air to the same. Cylindrical metallic and telescopic sections 10 are connected with the ends of

the intermediate section 9 and when the section 9 is inflated the air will extend the section 10 longitudinally with relation to each other whereby an additional buoying means 5 is provided at the lower portion of the bellows members.

When the vessel is in upright position at the surface of the water the lower ends of the bellows members are above the surface 10 of the water and the bellows members are in collapsed position at the sides of the vessel. In the event that the vessel is struck by a torpedo at or below the waterline the vessel will begin to fill with water through 15 the opening made by the explosion, consequently the vessel will tilt and while it is tilting the air may be admitted to the bellows members which are at the lower side of the vessel, consequently the said bellows mem- 20 bers are expanded and when they come in contact with the surface of the water they will act as buoys for preventing further tilting of the vessel and for preventing sinking of the same. At the same time air may be 25 admitted into the tank sections 9 and 10 and the tank 8 will thus further assist the bellows members in maintaining the vessel at the surface of the water.

When the vessel is not in a danger zone 30 the apparatus may be carried or stored upon the deck but when the vessel enters the dan-

ger zone it may be applied to the side of the vessel as hereinbefore indicated.

From the foregoing description taken in conjunction with the accompanying draw- 35 ing it will be seen that a pneumatic attachment of simple and durable structure is provided and that the same may be easily and quickly applied to the sides of a vessel to prevent the same from turning over and 40 from sinking in the event that the vessel is struck by a torpedo or similar projectile.

Having described the invention what is claimed is:—

1. A pneumatic vessel attachment com- 45 prising a bellows member adapted to be applied to the side of the vessel, means for inflating the bellows member, means for holding the bellows member in extended position, a bar attached to the side of the bel- 50 lows member and a second bellows member having a clip adapted to receive said bar.

2. A vessel attachment comprising bellows members adapted to be applied to the side of the vessel, an interlocking connection 55 between said members whereby one member is supported upon the other member, means for inflating the bellows members and means for holding the bellows members in extended position after inflation. 60

In testimony whereof I affix my signature.
JOHN T. REID.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."