

J. GRANT & J. GRANT, JR.
 APPARATUS FOR RAISING SUNKEN VESSELS.
 APPLICATION FILED JULY 11, 1911.

1,041,995.

Patented Oct. 22, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

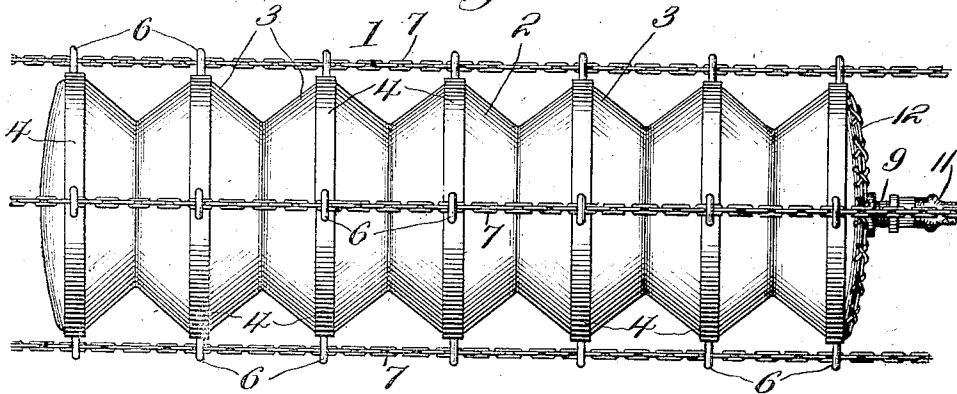


Fig. 2.

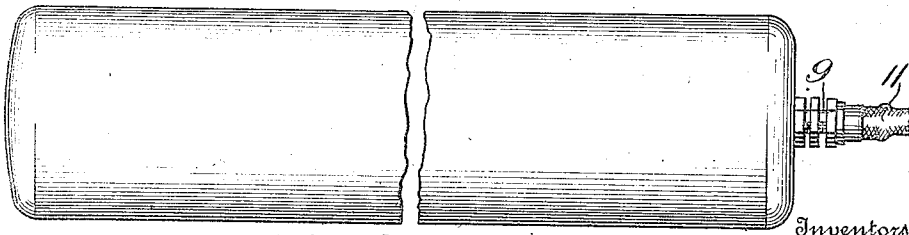
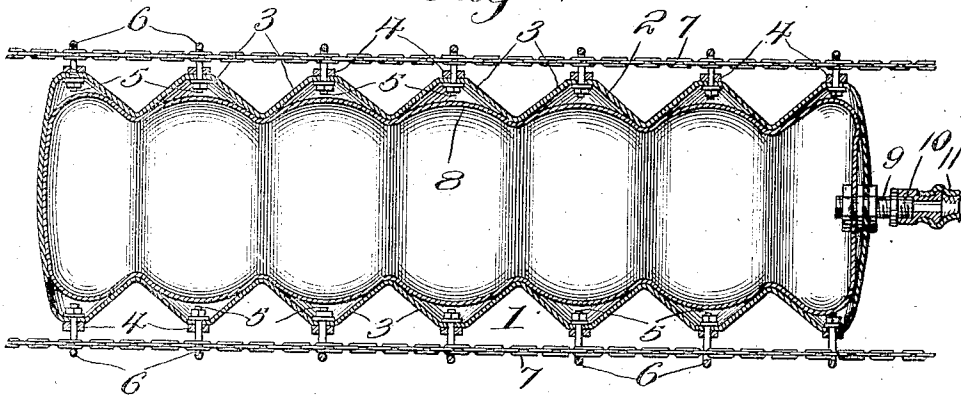


Fig. 3.

Witnesses

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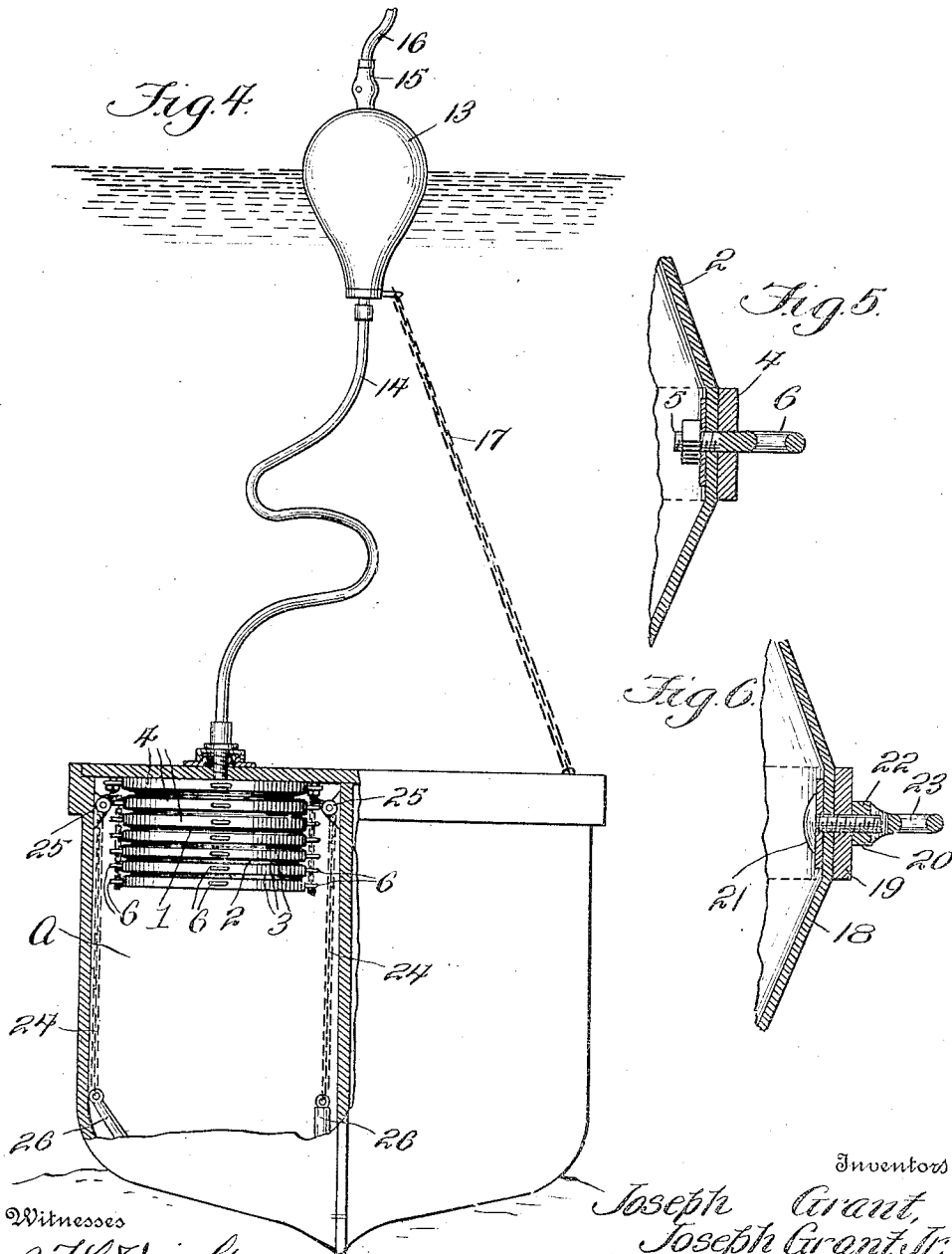
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2 SHEETS—SHEET 2.



Witnesses

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UNITED STATES PATENT OFFICE.

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APPARATUS FOR RAISING SUNKEN VESSELS.

1,041,995.

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To all whom it may concern:

Be it known that we, JOSEPH GRANT and JOSEPH GRANT, Jr., citizens of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Apparatus for Raising Sunkken Vessels, of which the following is a specification.

This invention relates to apparatus for raising sunken vessels and for keeping the vessel afloat, and has for an object to provide means for preventing the vessel from sinking should the same spring a leak, and it consists preferably of one or any suitable number of pontoons or buoyant bodies which are collapsible and adapted to be inflated with a buoyant fluid such as compressed air, gas, or the like.

Another object of the invention is to provide a pontoon which may be readily folded and which will comprise separable sections or members, whereby the pontoon can be conveniently dried and repaired.

Another object of the invention is to provide a pontoon that can either be applied to vessels exteriorly or interiorly thereof as the occasion may warrant.

In the drawings, forming a portion of this specification and in which like numerals of reference indicate similar parts in the several views: Figure 1 is a side view of the pontoon. Fig. 2 is a longitudinal section therethrough. Fig. 3 is a side view of the inner sack or casing. Fig. 4 is a section through a portion of a vessel showing the pontoon applied thereto and located in an air tight compartment therein and connected with the buoy. Fig. 5 is a section through a portion of the outer casing showing the manner of attaching the band thereto. Fig. 6 is a view similar to Fig. 5 showing a slightly modified form of the invention.

The pontoon 1 shown herein comprises an outer casing 2 of substantially accordion construction, being preferably formed of heavy duck which may be treated in any suitable well known manner so as to be rendered water proof. By constructing the casing as described, the same is provided with a plurality of peripheral bulges 3, each of which being embraced by a metal band 4 which is secured to the casing by eye bolts 5, the eyes 6 thereof being presented exteriorly of the casing and receiving therethrough

the attaching chains or like flexible connections 7. The chains provide means whereby the pontoons can be disposed around the vessel in a battery-like manner, or, if desired, they may be arranged singly in the air tight compartments of the vessel, such as illustrated in Fig. 4 of the drawings, the compartment A therein being formed in the hull of the vessel.

The outer casing has removably mounted therein a casing 8 which may be also formed of suitable duck or material which is capable of retaining a fluid buoyant element. The inner casing has mounted thereon preferably at one end, an inlet valve 9 which has a nipple portion 10 thereon for receiving one end of the flexible fluid introducing hose 11. The outer casing has one of its head portions laced or otherwise suitably secured to the main body of the casing at 12 to permit of the convenient removal of the inner casing.

As illustrated in Fig. 4, the pontoon 1 is suspended in a collapsed state or condition in the compartment A. Should the compartment be stove in, a buoyant fluid from any suitable source is conveyed by way of the hose 11 to the pontoon, the expansive force of the fluid serving to distend the pontoon so as to cause the same to substantially wholly occupy the compartment A and thereby effectively seal the break and keep the vessel afloat. The vessel may be provided with any suitable well known form of air compressor or the like for supplying the pontoon with the required buoyant fluid.

The buoy 13 shown in Fig. 4 is connected with the pontoon by the air hose 14. This buoy is provided at one end with a check valve 15 to which the air supply tube 16 may be attached, the latter receiving its air from any suitable source (not shown). A chain or the like 17 connects the buoy with the deck of the vessel. From this construction, it is obvious that the vessel can be readily recovered from deep water.

In the form of the invention shown in Fig. 6, the outer casing 18 of the pontoon is embraced by a band 19, the same being secured in place by the fastening device 20 which includes a bolt 21 and a nut 22, the latter having formed therein one eye 23 for the passage of the supporting chain therethrough. The pontoon supporting chains 24 shown in Fig. 4 of the drawings are passed over suitable guide pulleys 25 in the compartment A, the chains being provided at

their lower ends with weights 26 which operate to hold the pontoon in a collapsed state.

We claim:

- 5 1. A pontoon including a buoyant casing, a series of bands embracing the casing, eye bolts connecting the bands with the casing, and fastening devices extending through the eyes of the bolts and adapted for engage-
10 ment to a vessel.
2. A vessel having an air tight compartment therein, a flexible pontoon located in the compartment and provided with a series of guide eyes, flexible elements extending
15 through the guide eyes and connected with the pontoon, pulleys located in the compartments, the said flexible elements having portions extended over the said pulleys, and means carried by the flexible elements
20 wherein the pontoon will be normally held collapsed in the compartments.
3. A pontoon including a buoyant casing provided with a plurality of peripheral bulges, a band embracing each of said
25 bulges, eye bolts connecting the bands with the peripheral bulges and fastening devices extending through the eyes of the bolts and adapted for engagement with a vessel.

4. A pontoon of inner and outer members, the inner member being constructed of rubber, the outer member being constructed of duck and provided with peripheral bulges, whose concaved surfaces are disposed in spaced relation with the walls of the inner member, an eye bolt having portions dis-
30 posed in the space between the inner and outer members and secured to the outer member and extending laterally thereof.

5. A pontoon including inner and outer members, said outer member being provided with a plurality of peripheral bulges and having one of its head portions laced per-
40 mitting of convenient removal of said inner member, a band embracing each of said bulges, eye bolts connecting the bands with the peripheral bulges, and fastening devices
45 extending through the eyes of the bolts and adapted for engagement with a vessel.

In testimony whereof we affix our signatures in presence of two witnesses.

JOSEPH GRANT.
JOSEPH GRANT, JR.

Witnesses:

H. L. PARK,
SIMON SCHULMAN.