

No. 836,892.

PATENTED NOV. 27, 1906.

O. S. PULLIAM.
VESSEL CONSTRUCTION.
APPLICATION FILED SEPT. 23, 1905.

2 SHEETS—SHEET 1.

FIG. 1.

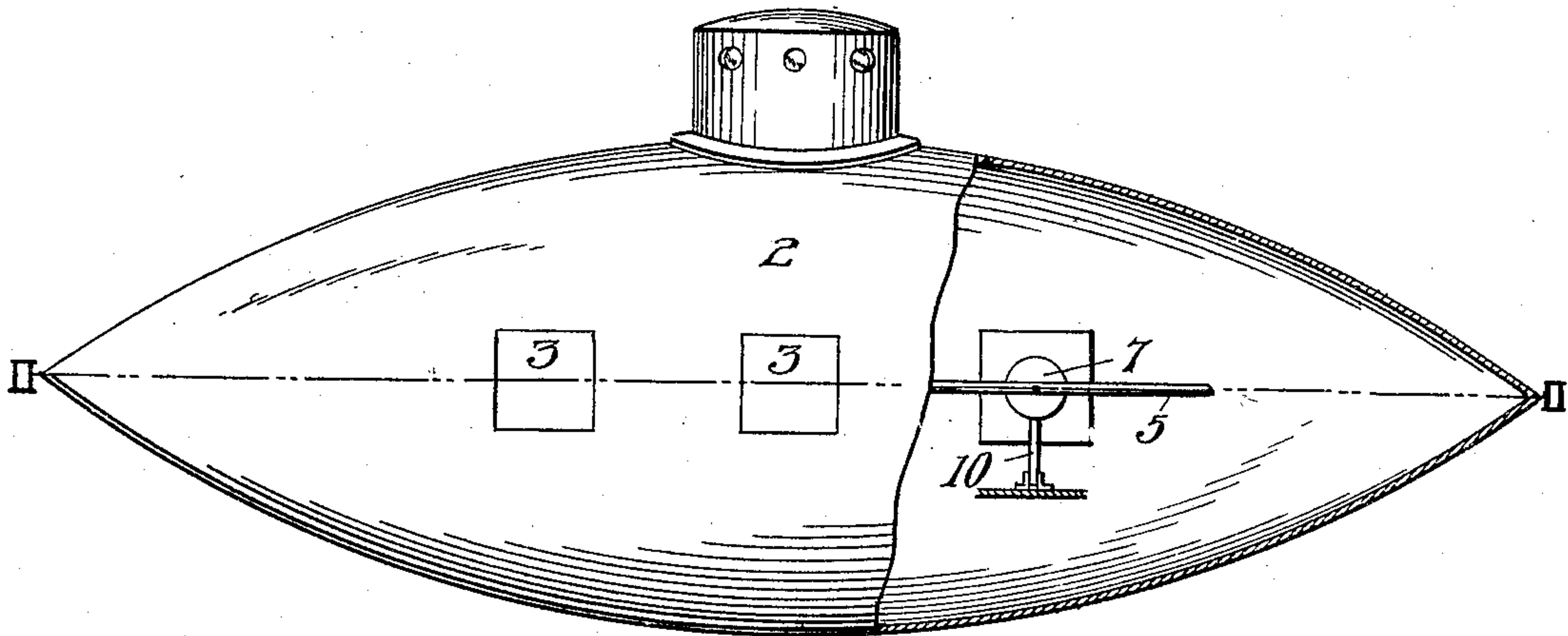
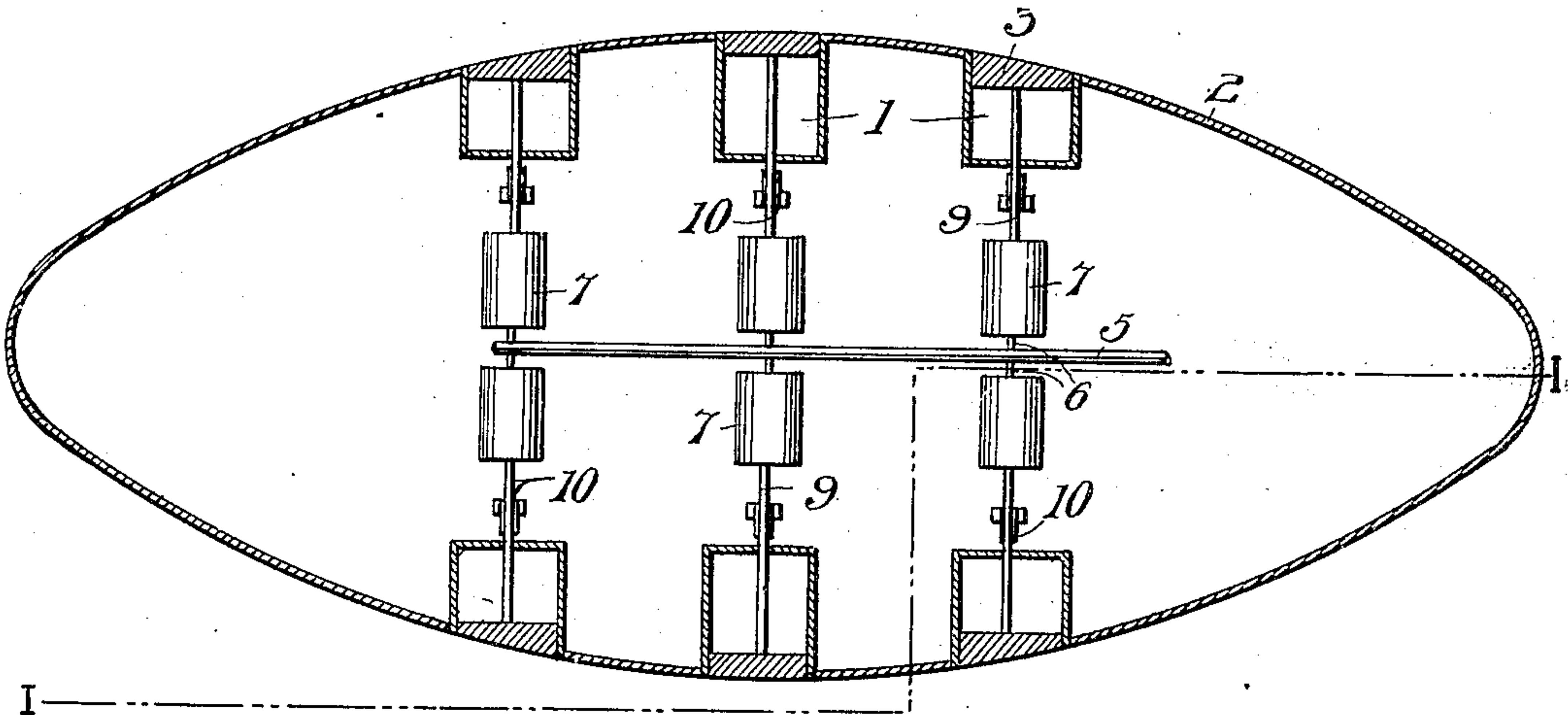


FIG. 2.



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2 SHEETS—SHEET 2.

FIG. 3.

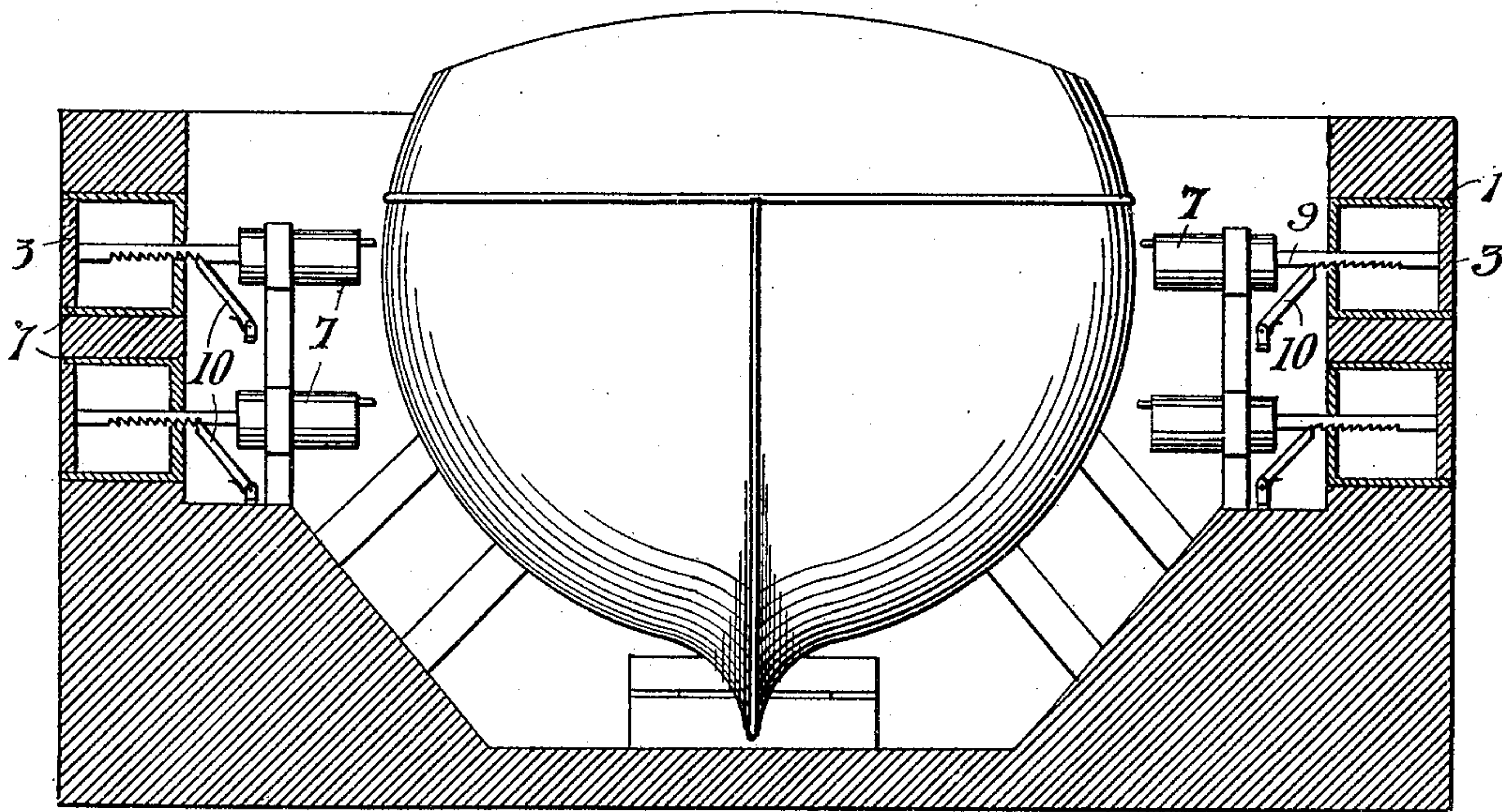


FIG. 4.

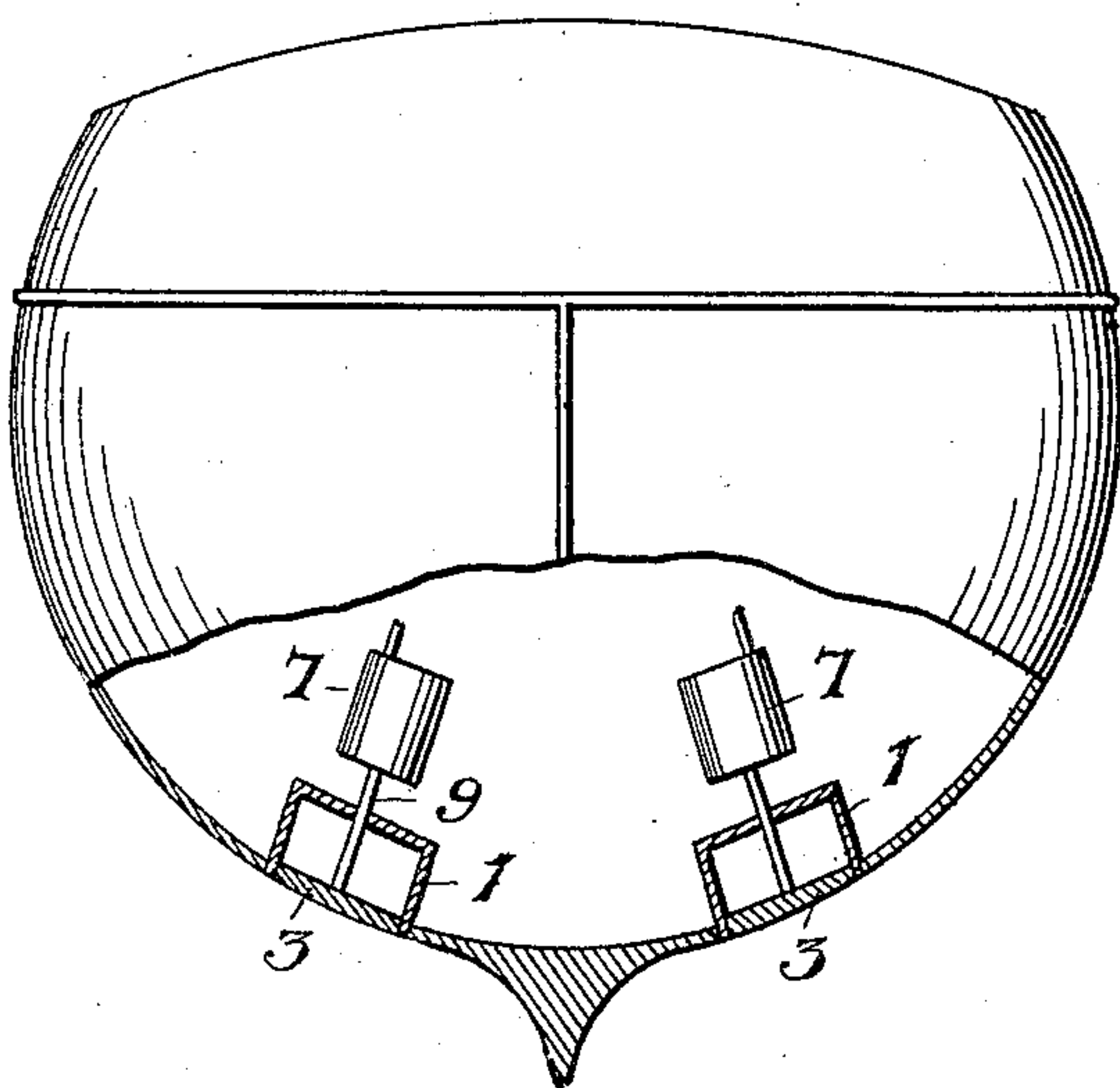
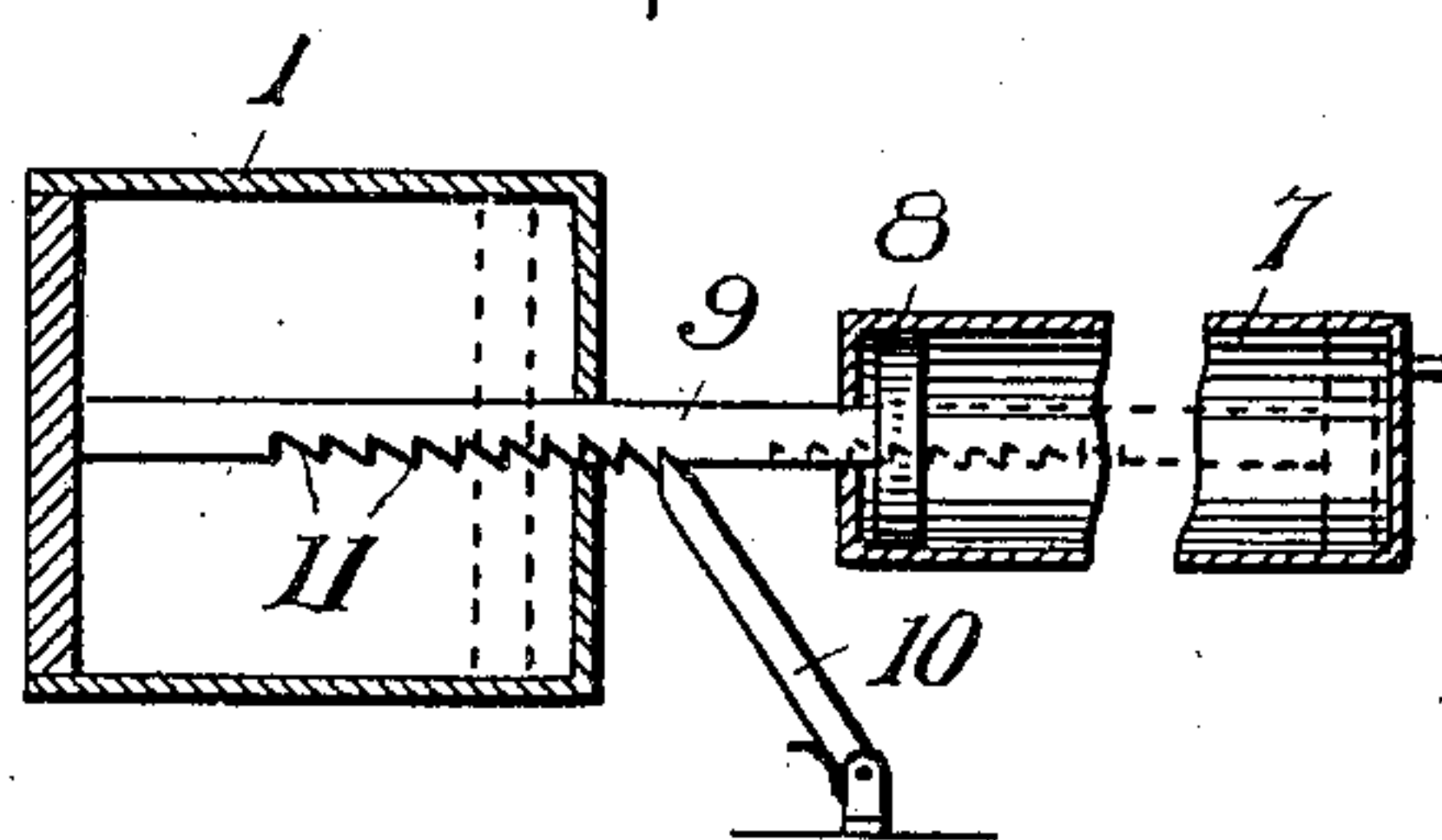


FIG. 5.



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VESSEL CONSTRUCTION.

No. 836,892.

Specification of Letters Patent.

Patented Nov. 27, 1906.

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To all whom it may concern:

Be it known that I, OSWALD S. PULLIAM, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented new and useful Improvements in Vessel Construction, of which the following is a specification.

My invention relates to the construction of vessels.

The primary object of my invention is the provision of efficient and simple means for submerging or partly submerging and raising vessels.

To this end my invention consists of a new and improved vessel construction, in a series of water compartments or chambers and means for effecting an admission of water to any or all of the compartments and the displacement of water from the compartments, and in the construction and combination of parts, all as hereinafter described and claimed.

In the accompanying drawings, which illustrate applications of my invention, Figure 1 is a part-elevational view and a part-sectional view of a submarine boat embodying my invention; Fig. 2, a sectional view of the boat, the section being taken on line II II of Fig. 1. Fig. 3 is a cross-sectional view showing the application of my invention in the form of a floating dry-dock; Fig. 4, an end view of a vessel embodying my invention, showing the water-compartments differently located; and Fig. 5, a detail view of a water-compartment and locking mechanism.

While I have shown the embodiment of my invention in the form of a submarine boat and a floating dry-dock and while my invention is particularly designed for vessels of these forms, my construction may be employed in connection with other forms of vessels designed to be submerged or partly submerged.

As illustrated and as preferred, I employ a plurality of water chambers or compartments 1, extending inwardly for a suitable distance from the outer surface 2 of the vessel. The form of the compartments 1 may be varied to suit different conditions. In connection with the said compartments I employ means for effecting an admission of water to any or all compartments at will for the purpose of lowering the vessel to cause it to assume various degrees of submergence or partial sub-

mergence. As shown, the same means are employed for raising the vessel to its normal position.

Arranged to be operated within each water-chamber 1 is a movable wall 3. These walls 3 may be in the form of piston-heads or plungers and are designed to be normally flush with and constitute parts of the outer wall or shell of the vessel. The movements of the walls 3 of the compartments 1 are preferably accomplished by means of an operative fluid which travels from a suitable source of supply through main pipe 5 and branch pipes 6 to a series of cylinders 7. The piston-head 8 of each cylinder 7 is connected with a rod 9, which latter projects through cylinder 7 and into each water-compartment 1, where it is secured to the movable wall 3. In connection with this operative mechanism for moving the walls 3 outwardly I have shown means for maintaining the movable walls flush with the outer shell. These means, as particularly shown by Fig. 5, comprise a pivoted arm 10, adapted to be placed into engagement with teeth 11, formed on rod 9.

What I claim is—

1. In a vessel of the class described, a plurality of water-compartments extending inwardly from the outer wall or shell of the vessel, a movable wall in each compartment normally substantially flush with and constituting a portion of the outer wall or shell, and means for moving the movable wall inwardly to admit water to the compartment.

2. A vessel having a series of water-compartments extending inwardly from the outer surface of the vessel, and means comprising a series of movable walls normally flush with and constituting portions of the outer surface of the vessel, for effecting an admission of and a displacement of water to and from the said compartments.

3. A vessel having a series of compartments extending to the outer skin of vessel and means in said compartments normally flush with and constituting a portion of the outer skin of the vessel for admitting and ejecting water to and from the compartments.

4. In a vessel of the character described, a series of cylindrical water-compartments extending inwardly from the outer wall of the vessel, a piston in each compartment nor-

mally flush with and constituting a portion of the outer wall of the vessel, and means for moving the piston inwardly to admit water and outwardly to eject water.

- 5 5. In a vessel of the character described, a series of cylindrical water-compartments extending inwardly from the outer wall of the vessel, a piston in each compartment normally flush with and constituting a portion of

the outer wall of the vessel, and means for 10 moving the piston horizontally to admit and eject water to and from the compartments.

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

OSWALD S. PULLIAM.

Witnesses:

W. G. DOOLITTLE,
E. M. FERGUSON.