E. G. BARTLETT.

APPARATUS FOR RAISING SUNKEN SHIPS.

APPLICATION FILED MAY 6, 1908.

907,952.

Patented Dec. 29, 1908.

3 SHEETS—SHEET 1.

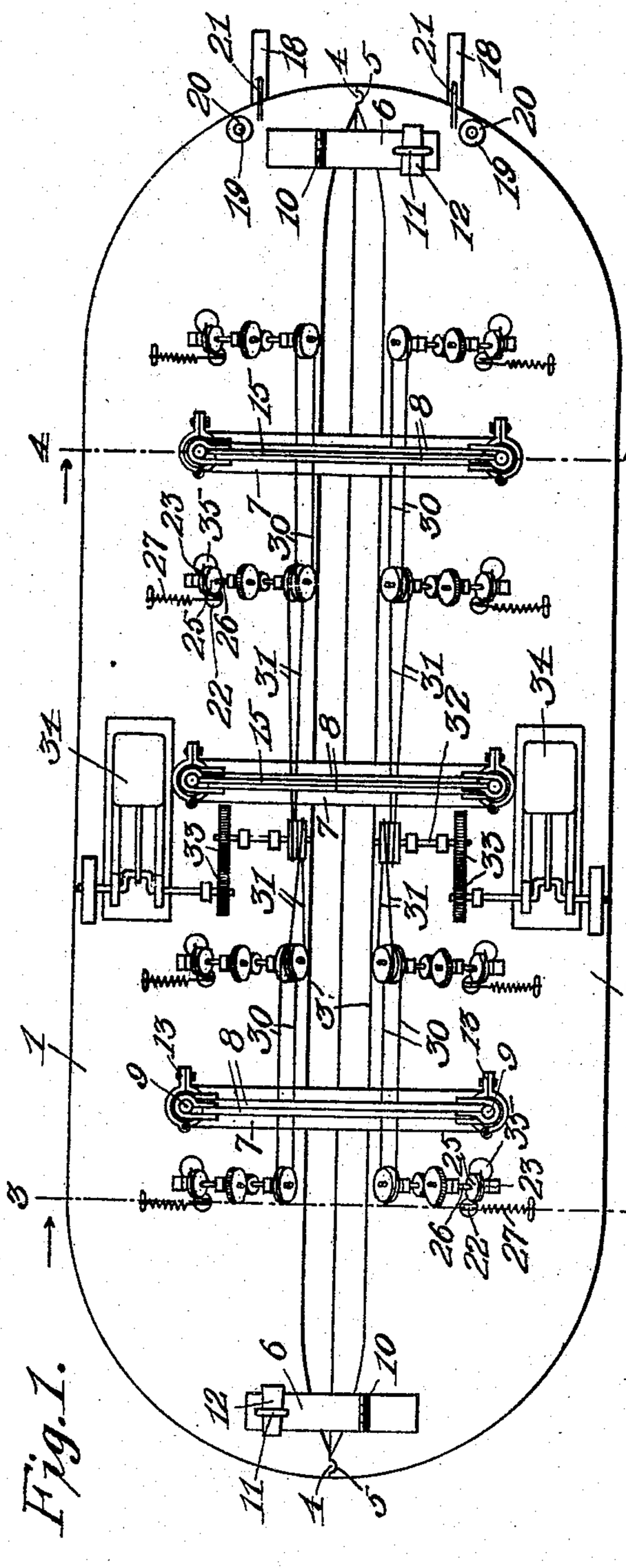

Fig. 1.

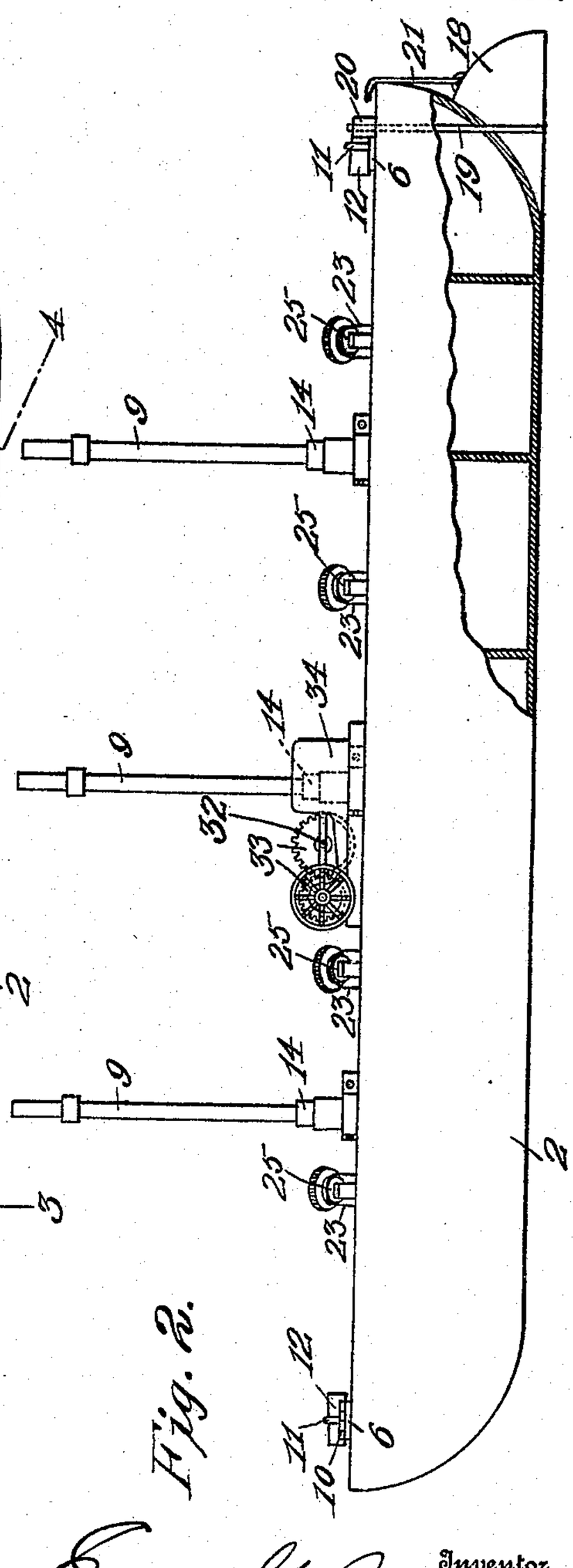

Fig. 2.

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Fig. 3.

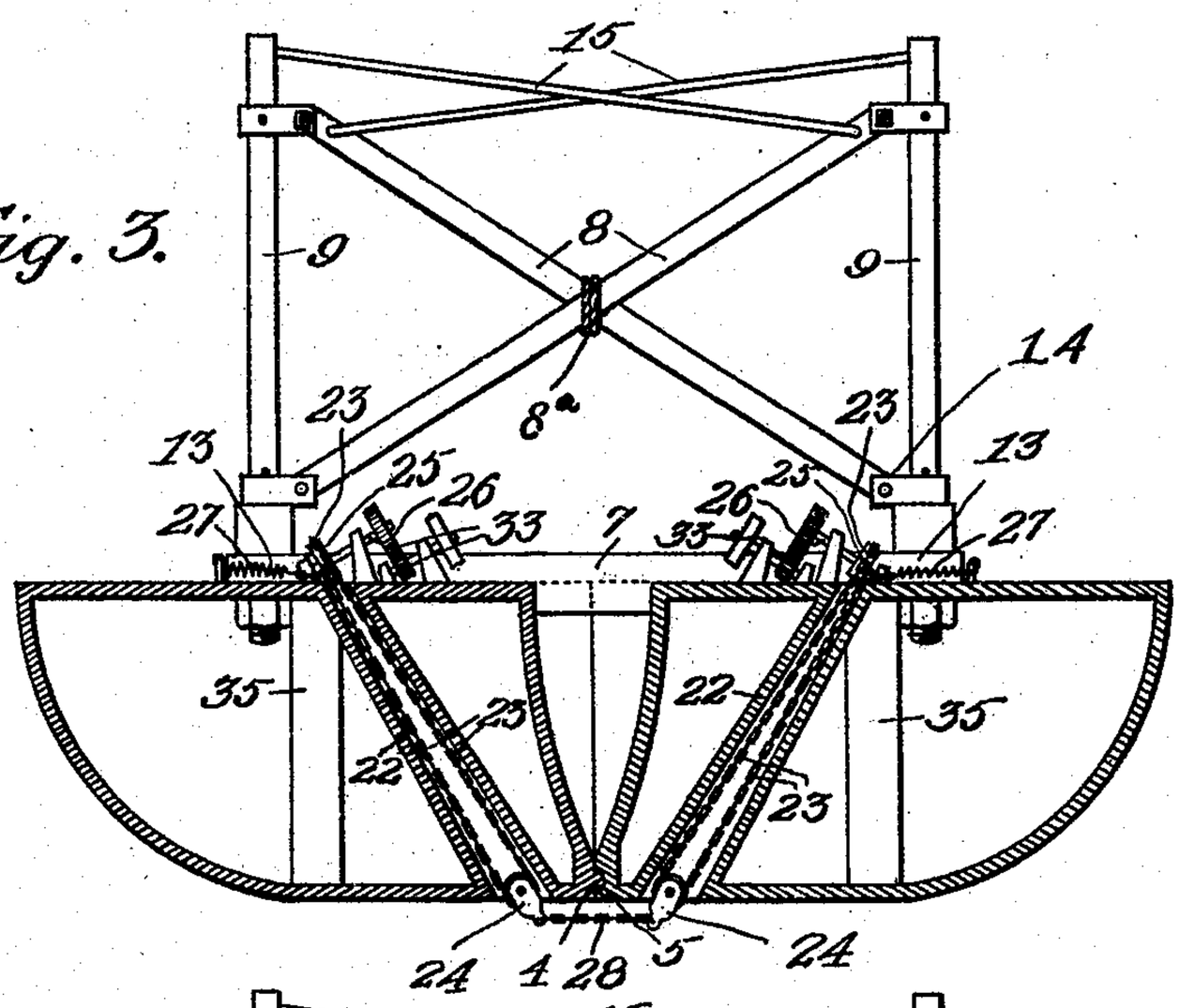
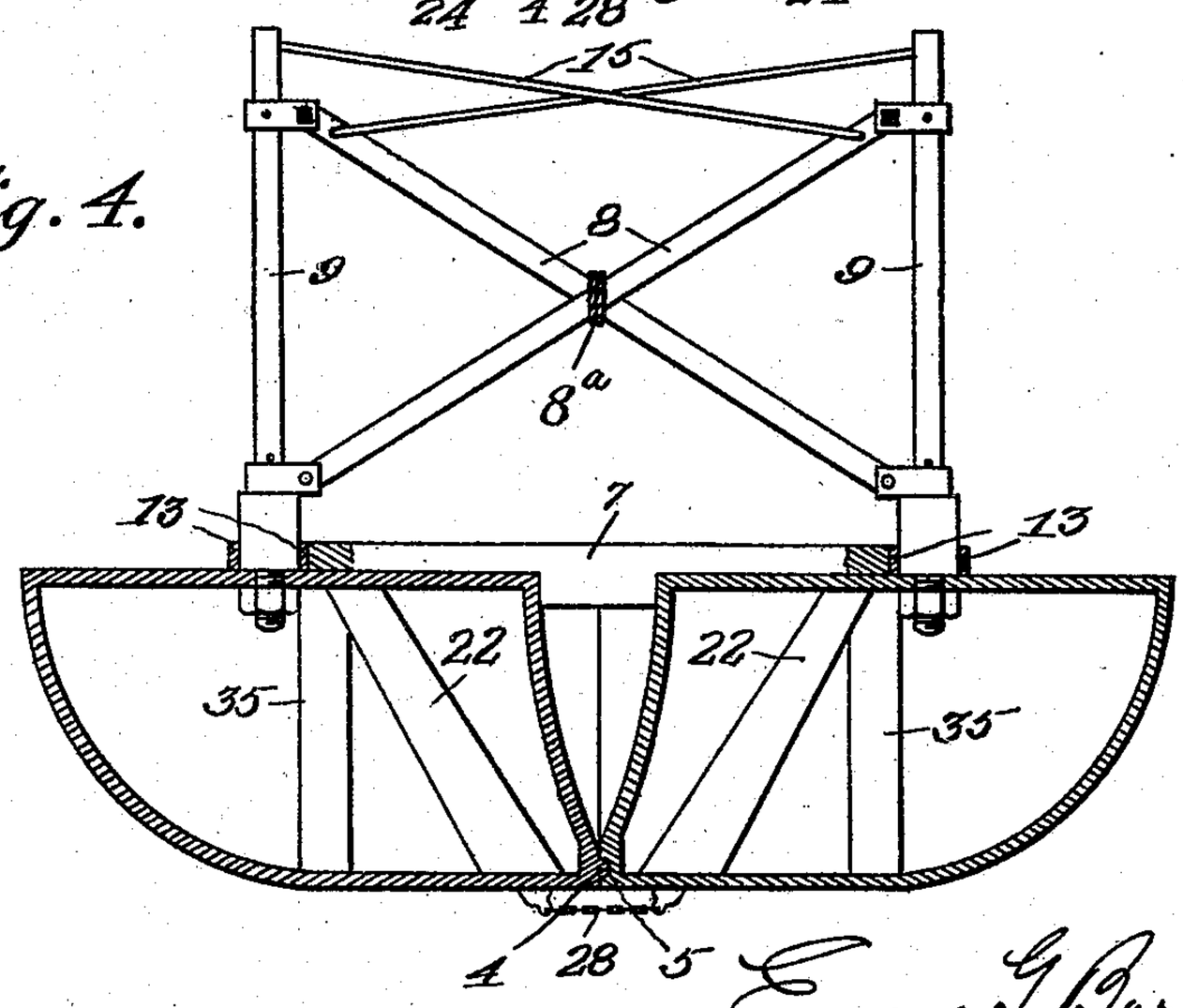


Fig. 4.



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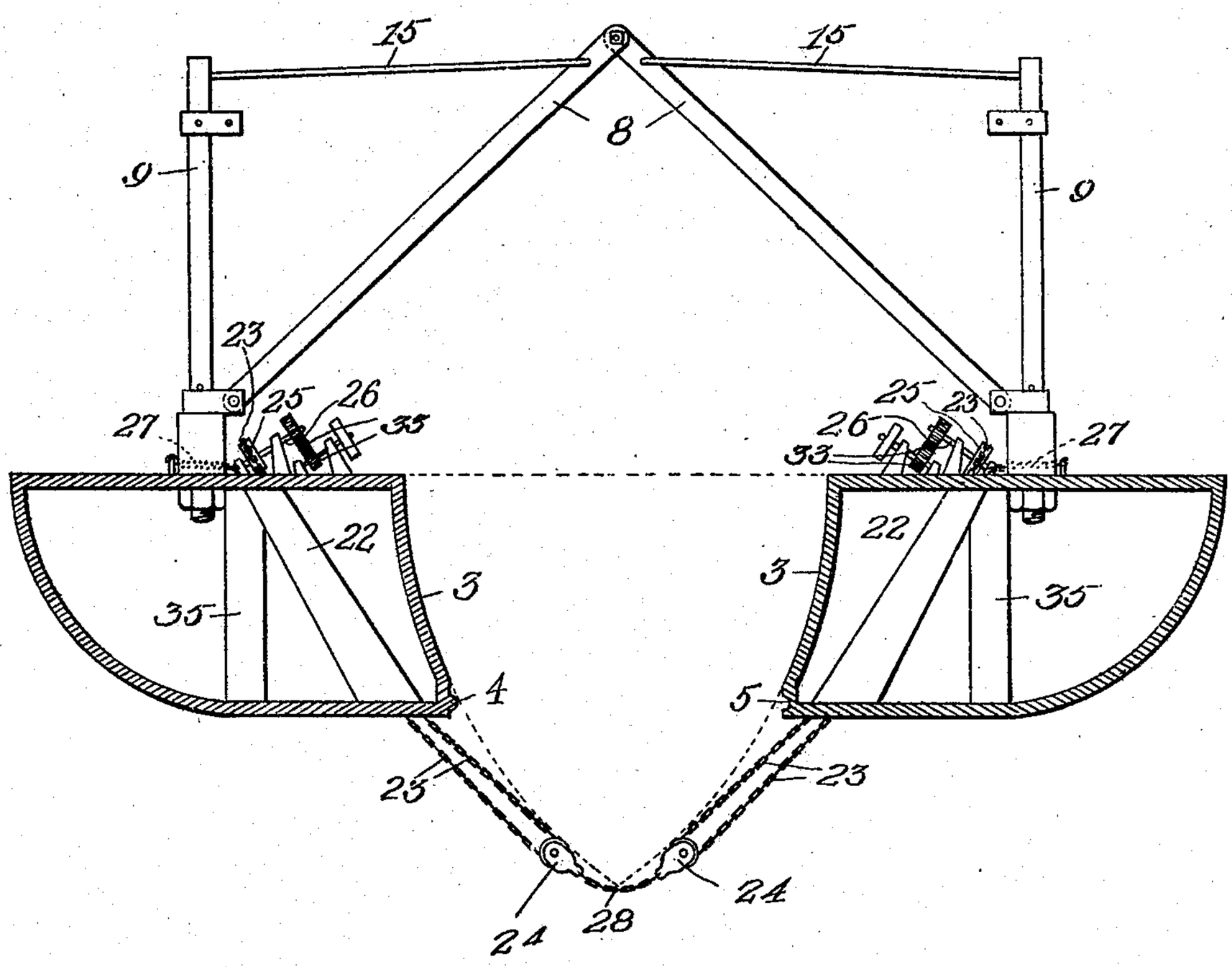
3 SHEETS—SHEET 3.

Fig. 5.



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR RAISING SUNKEN SHIPS.

No. 907,952. Specification of Letters Patent. Patented Dec. 29, 1908.

Application filed May 6, 1908. Serial No. 431,220.

To all whom it may concern:

Be it known that I, EUGENE GRANT BARTLETT, a citizen of the United States, residing at Eureka, in the county of Humboldt and State of California, have invented certain new and useful Improvements in Apparatus for Raising Sunken Ships, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to improvements in apparatus for raising sunken or wrecked ships or other heavy bodies submerged in deep water.

The principal object of the invention is to provide a simple and practical apparatus of this character which may also be used as a floating dry dock and as a barge or scow for transportation by sea.

Further objects and advantages of the invention as well as the structural features by means of which these objects are attained will be made clear by an examination of the following specification taken in connection with the accompanying drawings, in which—

Figure 1 is a plan view of my improved apparatus showing its two bodies or caissons united to adapt the apparatus for use in transportation as a barge or scow; Fig. 2 is a side elevation of the same; Figs. 3 and 4 are vertical transverse sectional views taken respectively on the planes indicated by the lines 3—3 and 4—4 in Fig. 1; and Fig. 5 is a transverse section similar to Fig. 4 showing the bodies or caissons separated for receiving a submerged ship between them.

My improved apparatus comprises two floating bodies or caissons 1, 2 which together resemble in form the hull of a ship. These bodies are preferably constructed of metal and they are divided by partitions into air tight compartments, but it will be understood that they may be otherwise constructed and of other form than that illustrated. The inner opposing faces of the two bodies are depressed or built in, as shown at 3, between their ends and above their bottom edges so as to fit the curved sides of a ship. For the purpose of holding the two bodies in transverse alinement and preventing them from shifting longitudinally with respect to each other when they are fastened together as shown in Figs. 3 and 4 to produce a barge or scow, I provide, adjacent to the edges of the ends of one of the bodies ribs or tongues 4 to enter similar grooves 5 formed in the corresponding portions of the other body, as more clearly shown in Figs. 1 and 3.

The two bodies are adapted to be secured together to permit the apparatus to be readily transported and to be used as a barge or scow, by two hasp-like fasteners 6 arranged adjacent to their ends, by cross beams 7 and by the booms 8 on masts 9. The fasteners 6 are in the form of metal bars each of which is hinged at 10 to one of the bodies and has its free end slotted to receive a keeper lug 11 on the other body, said free end being retained on the keeper by a wedge 12 passed through an opening in the keeper or by any other suitable means.

The connecting and bracing beams 7 are preferably short timbers arranged across the opening or space formed by the depressed or curved inner sides 3 of the bodies and secured to the masts of the latter by hinged clamps 13 or other removable fastenings. Said beams or timbers 7 are disposed between the masts 9 and serve to effectively brace the bodies.

I preferably employ three of the masts 9 on each of the bodies and arrange them at corresponding points on each body so that they will be disposed opposite each other when the latter are connected. Each mast has one of the booms 8 swiveled at 14 to its lower portion and supported at its upper end by a brace rope, or cable 15 which is connected to the top of the mast. When the bodies of the wrecker are united the booms of the oppositely disposed masts are crossed and may be suitably connected to the masts, as shown in Fig. 4 or in any other, manner to assist in uniting the bodies. The masts may also be lashed to each other as shown at 8^a in Fig. 3. When the bodies are separated to receive a sunken ship or submerged body between them, the outer ends of the booms are loosely connected, as shown in Fig. 5, to prevent the bodies from tilting outwardly. It will be understood that, if desired, I may dispense with the hasp fasteners 6 and the cross beams 7 and use only the crossed and lashed booms for holding the bodies together and by providing three of the masts I may use simply the booms on the endmost ones to hold the bodies together while I employ the booms on the central masts for use in hoisting a load upon the apparatus when the latter is to be used as a barge or scow for transportation by sea.

To permit the apparatus to be steered I provide upon one end of each of the bodies a rudder 18 which is detachably mounted to enable it to be removed when desired. As shown, each of said rudders is fixed upon the lower end of an upright shaft 19 arranged in a vertical opening in one of the bodies and removably secured thereon by a collar 20 detachably secured upon the upper projecting end of said shaft. Also connected to the body of the rudder and extending outside of the body is a cord or cable 21 by means of which the rudder may be raised and lowered to permit it to be removed from and applied to the body.

For the purpose of raising a submerged ship or body I form in the bodies, at suitable points, downwardly and inwardly inclined chain tubes or passages 22 which are of gradually increasing width or diameter from their upper ends to their lower ends, which latter are disposed close to the inner edges of the bottoms of the bodies, as shown more clearly in Fig. 3. Arranged in each of the passages 2 is a hoisting chain 23 which is passed over a pulley in a block or sheave 24 and has its two ends projecting through the top of said passage, one being engaged with a winding spool or element 25 of a windlass or winch 26 and the other attached to one end of a coil spring 27 which has its other end suitably fixed to the body. The coil springs 27 are provided to allow the two bodies to yield slightly when the connections are put under great strain by reason of heavy winds or unusually large waves. The chain passages or tubes 22 in the bodies are preferably disposed slightly out of transverse alinement with each other, for the purpose of assisting in preventing the two bodies from shifting longitudinally with respect to each other when fastened together but the same number of the passages 22 are provided in each body and the pulley blocks 24 on the chains 23 in the corresponding passages are united by a bottom or connecting chain 28 which is adapted to be placed under the keel of the sunken ship that is to be raised by the apparatus, as shown more clearly in Fig. 5. I preferably provide four of the winches 26 on each body and connect the outermost ones to the inner ones by sprocket chains 30 and connect said inner ones by sprocket chains 31 to a transverse shaft 32 which is connected by gears 33 to a suitable motor preferably in the form of a steam donkey engine 34. I preferably employ four of the hoisting chains 23 and the tubes or passages 22 and I also arrange adjacent to the latter vertical wells 35 to receive the ends of the chains 23 as they leave the winding spool or element 25 of the winches.

When the apparatus is to be used for raising a sunken ship or other submerged body it is anchored over the same, its bodies are separated and spaced apart by the booms on the masts, the chains 23 are paid out so that divers may place the connecting or bottom chains 28 beneath the vessel or body that is to be raised. The winches may be then operated to wind up the chains 23 and raise the ship or body between the bodies of the apparatus. When the latter is to be transported or to be used as a scow the parts above described are arranged as shown in Figs. 3 and 4 and the fastening devices 6 and 7 are preferably applied to rigidly unite the bodies.

Having thus described my invention what I claim is:

1. An apparatus of the character described comprising two bodies, a tongue and groove connection between the bodies to prevent them from shifting with respect to each other, hasp fasteners adjacent to the opposite ends of the bodies and each consisting of a keeper loop fixed upon one body, a hinged member secured to the other body and slotted to receive the keeper loop and a fastening key passed through the keeper loop to retain the hinged member thereon, and hoisting mechanism carried by said bodies.

2. An apparatus of the character described comprising two bodies, means for uniting the bodies, a tongue and groove connection between the bodies to prevent them from shifting with respect to each other and hoisting mechanism carried by the bodies.

3. An apparatus of the character described comprising two bodies, hoisting mechanism arranged on said bodies, masts rising from said bodies, booms swiveled to the lower portions of said masts, said booms being adapted to be crossed and connected, and connections between the free ends of said booms and the upper portions of the masts on the opposing body.

4. An apparatus of the character described comprising two bodies, the latter having downwardly and inwardly inclined chain tubes, a bottom connecting chain, pulleys at the ends of the latter, hoisting chains passed around said pulleys and arranged in said tubes or passages, a spring connection for one end of each of the chains and means for drawing upon the other end of each of the chains.

5. An apparatus of the character described comprising two bodies, each of the latter having downwardly and inwardly inclined chain passages and chain wells, hoisting chains in said passages, means uniting the hoisting chains, a spring connection for one end of each of said hoisting chains, and a winding element for the other end of each of said chains, the last mentioned ends of the latter being adapted to drop into said wells.

6. An apparatus of the character described comprising two bodies, masts upon said bodies, and booms carried by said masts

and adapted to be united to connect the bodies.

7. An apparatus of the character described comprising two bodies, masts upon said bodies, booms carried by said masts and adapted to be connected to unite the bodies, hoisting apparatus carried by said bodies, and connecting members extending across and secured to the two bodies to fasten them together.

8. An apparatus of the character described comprising two bodies, masts upon said bodies, booms carried by said masts and adapted to be connected to unite the bodies, hoisting apparatus carried by said bodies, and hasp fasteners between the bodies for securing them together.

9. An apparatus of the character described comprising two bodies, each of the latter having downwardly and inwardly inclined chain passages, an interlocking tongue and groove connection between said bodies, means for fastening said bodies together when engaged with each other, masts upon the bodies, booms carried by said masts and adapted to be connected, and connected hoisting chains arranged in said passages.

10. An apparatus of the character described comprising two bodies, each of the latter having downwardly and inwardly inclined chain passages, an interlocking tongue and groove connection between said bodies means for fastening said bodies together when engaged with each other, masts upon the bodies, booms carried by said masts, and adapted to be connected, connected hoisting chains arranged in said passages, spring connections for the fixed ends of said chains, winches for drawing upon the free ends of said chains, a motor upon each and means for driving the winches from said motors.

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

EUGENE GRANT BARTLETT.

Witnesses:
W. ERNEST DICKSON,
W. S. PAYFAIRE.