

No. 748,484.

PATENTED DEC. 29, 1903.

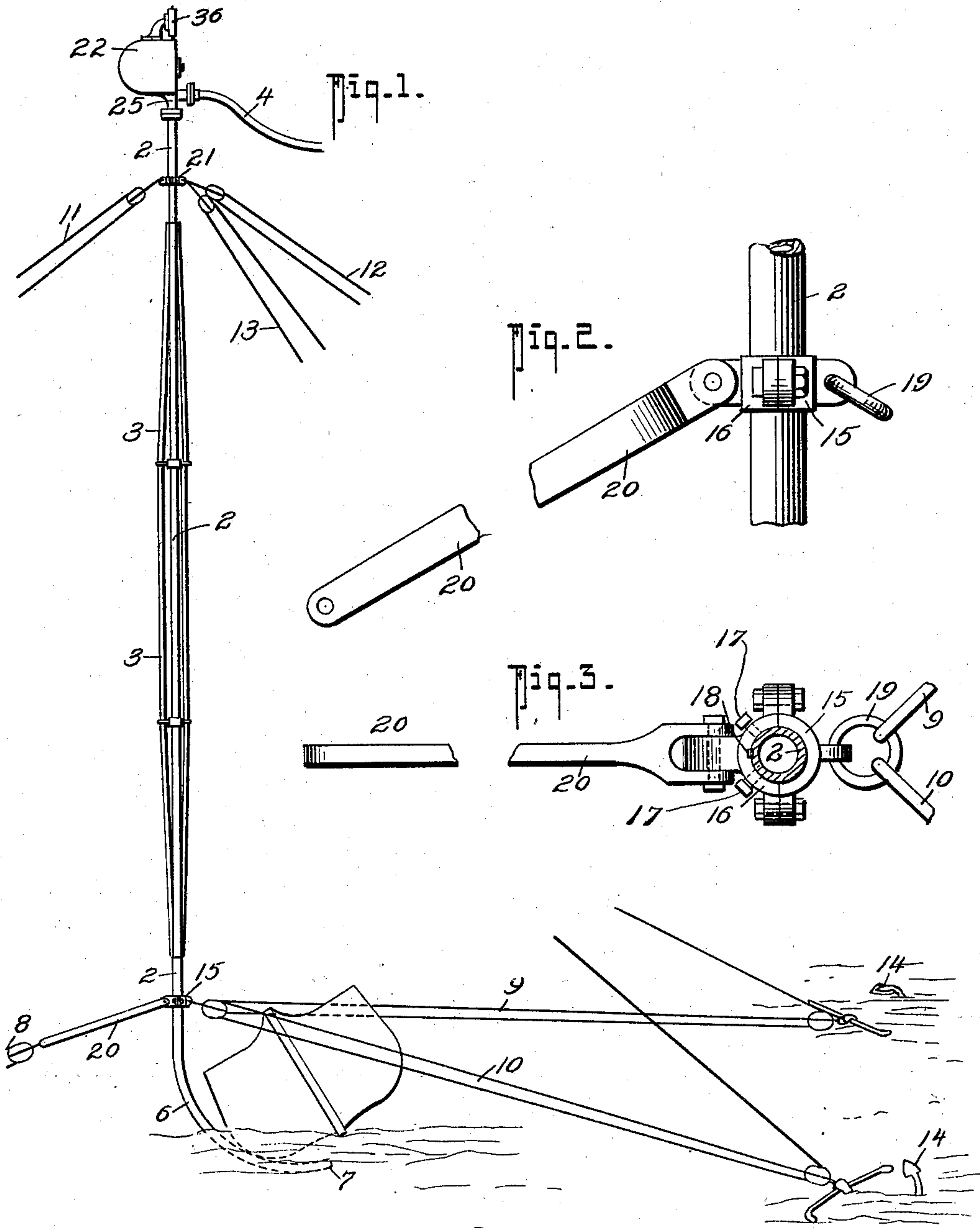
W. J. & H. G. CUMMINGS & R. CHAMBERLAIN.

WRECKING DEVICE.

APPLICATION FILED JUNE 19, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:

*F. C. Gibson.*  
*John T. Schrott.*

INVENTORS

*William J. Cummings.*  
*Herbert G. Cummings.*  
*Robert Chamberlain.*

*per Fred G. Dietrich*  
ATTORNEY

No. 748,484.

PATENTED DEC. 29, 1903.

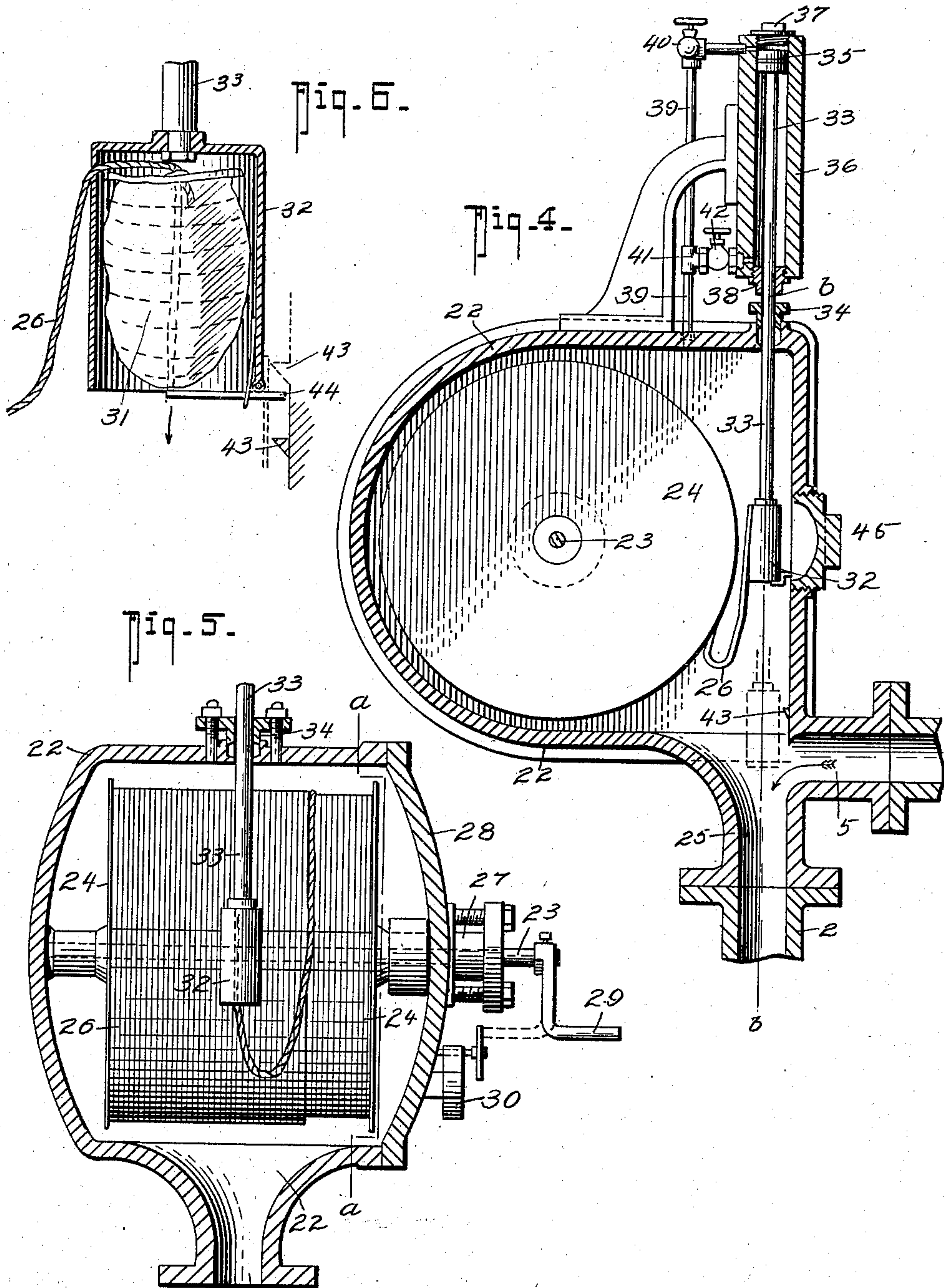
W. J. & H. G. CUMMINGS & R. CHAMBERLAIN.

WRECKING DEVICE.

APPLICATION FILED JUNE 19, 1903.

NO MODEL.

2 SHEETS—SHEET 2.



WITNESSES: 25  
*F. b. Gibson.*  
*John T. Schwett*

INVENTORS  
*William J. Cummings.*  
*Herbert G. Cummings.*  
*Robert Chamberlain.*  
per *Fred G. Dietrich*  
ATTORNEY



# UNITED STATES PATENT OFFICE.

WILLIAM J. CUMMINGS, HERBERT G. CUMMINGS, AND ROBERT CHAMBERLAIN, OF VANCOUVER, CANADA.

## WRECKING DEVICE.

SPECIFICATION forming part of Letters Patent No. 748,484, dated December 29, 1903.

Application filed June 19, 1903. Serial No. 162,230. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM J. CUMMINGS, HERBERT G. CUMMINGS, and ROBERT CHAMBERLAIN, citizens of the Dominion of Canada, residing at the city of Vancouver, in the Province of British Columbia, Canada, have invented a new and useful Improvement in Wrecking Devices, of which the following is a specification.

Our invention relates to an improved wrecking device especially designed to facilitate the salving of ships sunk in water too deep for the operation of divers, though its use need not be limited to such, as it may be applied to recover vessels under any circumstances which require its peculiar advantages.

Generally described, it consists in means whereby a line may be conveyed from the surface of the water and passed under the hull of a submerged vessel as a method for conveying stronger lines, wire ropes, or cables around the hull sufficient to effect the lifting of the vessel.

It almost invariably happens that before salving operations can be commenced the wrecked vessel has settled in the mud of the bottom to such an extent as to considerably hamper any attempt to pass slings round her hull. It is to overcome this difficulty and facilitate such work that our invention has been designed.

The details of the invention consist of, first, a braced pipe or tube by which a fluid under pressure may be directed into the mud adjacent to the hull of the submerged vessel to clear a passage for the further advance of the tube; secondly, of means for supporting such pipe and for holding the lower end up to its work under the reaction of the fluid-pressure discharge, and, thirdly, of the means provided for introducing a float and attached line into the fluid current in the tube and releasing the float from its holder. The construction of the mechanism whereby these operations are performed is fully set forth in the following specification and illustrated in the drawings which accompany it, in which—

Figure 1 shows the application of the device to a submerged wreck. Fig. 2 is a side elevation of the lower tackle-securing band, showing the tiller-bar; Fig. 3, a plan of the

same; Fig. 4, a vertical section on the line *a a* in Fig. 5 through the line-reel casing and its attached mechanism; Fig. 5, a vertical section of the same on the line *b b* in Fig. 4, showing the line-reel in front elevation; and Fig. 6, a vertical section through the float-holding case.

The particular part of our invention which is the subject of this application consists of a pipe 2, strengthened against flexure by the rod-stays 3 and forming a conduit for compressed air or other convenient fluid, connection for which is made by a flexible hose 4 to the inlet branch 5, situated just below the line-reel chamber 22, to be described later, from a reservoir on an adjacent barge or the wrecking vessel. The lower or outlet end of the pipe is bent to a curve 6, suited to the cross-section of the ship being operated on, and the outlet or discharge nozzle 7 is slightly contracted to increase the velocity of discharge.

The wreck having been located, the lower end 7 of the pipe 2 is directed, with the aid of an illuminated marine telescope, to the position where it is desired to pass a sling round the hull. The pipe 2 is secured in position by tackle 8, 9, and 10 at the lower end and 11, 12, and 13 toward the upper end of the pipe, the tackle being secured to the pipe by bolted straps, from which they are led to anchors 14, placed at suitable angles from one another to hold the pipe end in the desired position and resist the reaction of discharge. Each anchor connection has a separate hauling-tackle, the fall in each case being taken from the block toward the anchor, so that the pull on it may not exercise an undesired disturbing influence on the stability of the pipe.

The band to which the lower tackle connections are made is illustrated in detail in Figs. 2 and 3 and is made in two halves 15 and 16, bolted together to inclose the pipe, to which it is further secured in place against rotation by set-screws 17 and a key 18. The front half 15, that toward the bend of discharge, is provided with a ring 19, to which the two front tackles are connected, and to the back half 16 a tiller-bar 20 of suitable length is pivotally connected, so as to be susceptible of movement in a vertical plane.



One of the anchoring-tackles is connected to the free end of this tiller, the strain on which thus maintains the direction of the bend. The band 21, by which the anchored tackles 5 11, 12, and 13 are connected to the upper end of the pipe 2, is merely clasped on the pipe, as it is not required to direct the bend 6, but merely to enable the pipe 2 to be moved to any desired angle and maintained there. The 10 tackle is connected to eyes or rings similar to 19 of the lower band. In this manner the pipe is maintained in any desired position and braced against the recoil, while the bend 6 at the lower end permits the pipe to be intro- 15 duced right under the vessel by sluing over to the right the upper end of the pipe 2.

At the head of the pipe 2 and just above the inlet 5, to which is connected the flexible hose 4, is an inclosed chamber 22, (see Figs. 20 4 and 5,) within which is rotatably mounted on the shaft 23 a light reel 24, the delivery side of which is over the passage 25, connecting the chamber 22 to the head of the pipe 2, so that the line 26 may run freely off the reel 25 and be carried down the pipe 2 in the manner to be described. The shaft 23 of the reel 24 is carried through a packed gland 27 in the end cover 28 of the chamber and is provided outside with a crank-handle 29, secured 30 by a set-screw and so designed that it may be reversed when desired to the position shown in dot-and-dash lines in Fig. 5, in which position the handle will operate the star-wheel of a counter 30 of suitable design se- 35 cured to the cover. Access to the reel can be had by removal of the end cover 28, which is secured by studs or screws, and a hand-hole, closable with a plug 45 or cover, is provided to afford ready access to the interior of the 40 chamber 22 when necessary. To the free end of the line on the reel is attached a float 31, which is inclosed in a casing or holder 32, secured to a piston-rod 33, passing through a packed gland 34 in the top of the chamber. 45 The upper end of the rod 33 is provided with a piston 35, slidable in a cylinder 36 exterior to the chamber 22 and in axial alinement with the connection 25 of the pipe 2. The upper end of this cylinder 36 is provided with a cap or plug 37, and the rod 33 is slidable freely 50 through a bushing 38 at the lower end, which is not packed, so that a slight leakage past the rod is permitted when air or other fluid is turned in. The fluid-pressure is admitted 55 to the upper end of this cylinder 36 and above the piston 35 by a pipe 39 from the chamber 22, such pipe being closable with a valve or stop-cock 40, and a branch 41 from the pipe 39 admits air to the lower end of the cylinder, 60 which branch is closable with a valve or stop-cock 42. While the air or other fluid is washing away the silt under the hull of the wreck the valve 40 is closed and 42 is opened, so that the fluid-pressure on the under side of the piston 35 presses it to the upper end of the cyl- 65 inder and sustains the casing 32, with its inclosed float; but when the bend 6 of the tube

2 has passed under the hull and it is desired to send a line through, the valve 42 is closed and 40 is opened, admitting the fluid-pres- 70 sure to above the piston, whereby it is forced down, and a projection 43 on the wall of the chamber toward the lower extreme of the movement of the casing 32 engages the pro- 75 jecting end of a spring-controlled latch and turns it into the position shown by dot-and-dash lines in Fig. 6. The float 31 is thus per- mitted to escape from the casing 32 and is drawn into the current of the flow down the 80 tube 2 to escape from the lower end 7 and rise to the surface, with the free end of the line 26 unwound from the reel 24. A stronger line may then be drawn through and subse- 85 quently a steel-wire rope strong enough to form one of a series of slings, with which the vessel may ultimately be lifted.

The construction of the float-casing and the means for releasing the float may also be slightly varied without departing from the 90 scope of the appended claims.

We are aware that prior to our invention a flexible pipe and fluid-pressure has been used to wash a passage under the hull of a submerged wreck; but such has always re- 95 quired the coöperation of divers to direct the pipe and brace it to its work. A float has also been proposed as a coöperative means with the fluid-pressure pipe for the convey- 100 ance of a line beneath the hull; but no definite and practical scheme of working has been set forth.

What we therefore claim as new, and desire to be protected in by Letters Patent, is—

1. In a wrecking device of the class de- 105 scribed; a rigid fluid-conveying tube having a curved lower end, a series of independent block-tackles connecting the upper and lower ends of the tube to anchors suitably located around the tube, means for connecting such 110 tackle to the tube comprising at the upper end a segmental band bolted on the tube and having eyes or rings to which the tackle is connected, and at the lower end a similar band keyed or otherwise secured against ro- 115 tation and having a tiller-arm hinged opposite to the band so as to be susceptible of movement in a vertical plane and to which tackle may be connected, and a ring or rings toward the other side for a similar purpose.

2. As a device for the conveyance of a line 120 under a submerged vessel; the combination with a fluid-conveying tube, of a light reel rotatable in a chamber surmounting the same and in connection with it, a light line wound on the reel and having a float at the free end, 125 means for sustaining the float out of the fluid current through the pipe, and means for releasing the same.

3. In a device of the class described; a rigid tube having a curved lower end and provided 130 with means for supporting and moving it, an inclosed chamber surmounting the tube, means for conveying a fluid under pressure to within the tube and chamber from a reser-



voir adjacent, a light reel rotatable within  
the chamber and having means exterior to  
the chamber for rotating the reel, a light line  
coiled on the reel and having a float on its  
5 free end, means for sustaining the float out  
of the fluid current comprising a cylinder ex-  
terior to the chamber and in axial alinement  
with the tube, a piston slidable therein and  
having a rod passing through a gland into the  
10 chamber, a holder at the end of the rod within  
the chamber adapted to retain the float,  
means for admitting fluid under pressure from  
the chamber to either end of the cylinder as

desired, and a means for automatically re-  
leasing the float from the casing when such is 15  
pressed down by the piston and rod into the  
current of the fluid down the tube.

In testimony whereof we have signed our  
names to this specification in the presence of  
two subscribing witnesses.

WILLIAM J. CUMMINGS.

HERBERT G. CUMMINGS.

ROBERT CHAMBERLAIN.

In presence of—

ROWLAND BRITTAIN,

JOHN DEMERTRI.