No. 775,370. PATENTED NOV. 22, 1904.

M. LACEY.

APPARATUS FOR RAISING SUNKEN VESSELS.

APPLICATION FILED SEPT. 16, 1903.

NO MODEL.

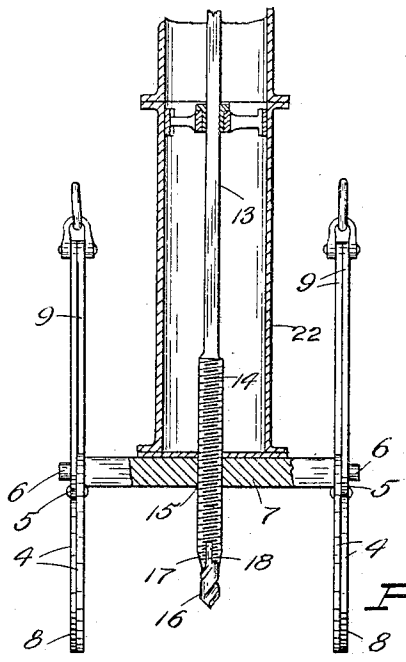

Fig. 3.

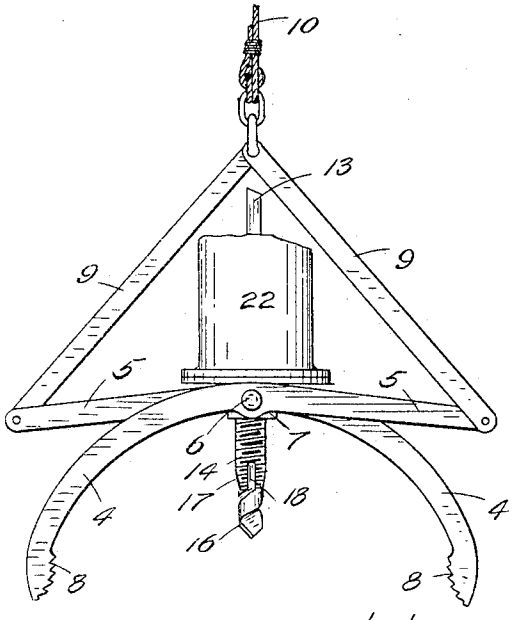

Fig. 2.

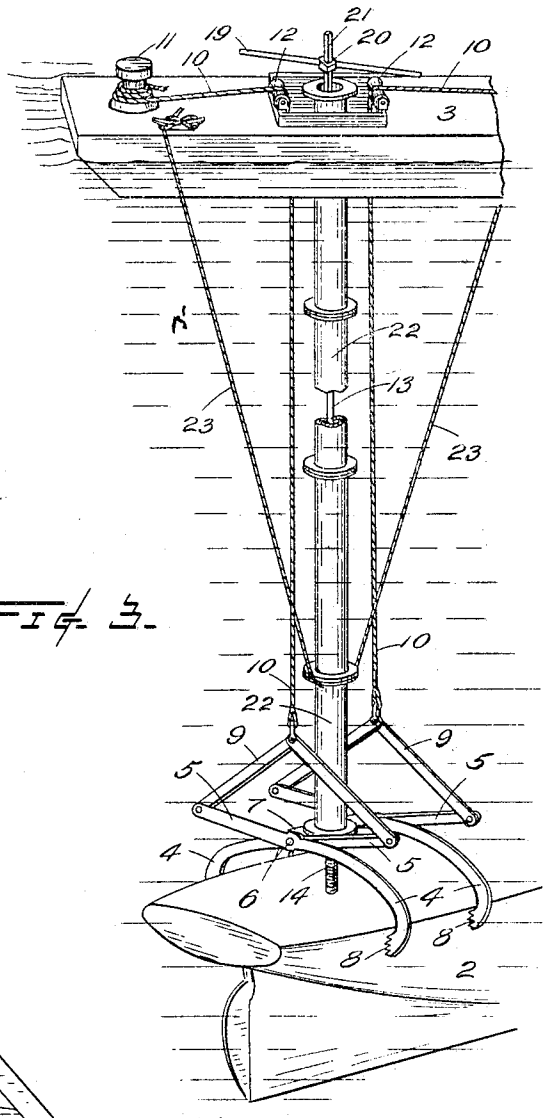

Fig. 1.

WITNESSES:

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No. 775,370. Patented November 22, 1904.

UNITED STATES PATENT OFFICE.

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APPARATUS FOR RAISING SUNKEN VESSELS.

SPECIFICATION forming part of Letters Patent No. 775,370, dated November 22, 1904.

Application filed September 16, 1903. Serial No. 173,370. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL LACEY, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Means and Apparatus for Raising Sunken Vessels, of which the following is a specification, reference being had therein to the accompanying drawings.

The object of my invention is to provide an improved system or means for raising sunken vessels.

The invention consists in novel construction and arrangement of parts hereinafter described, and pointed out in the claims.

In the accompanying drawings, in which similar numbers of reference designate corresponding parts in the several views, Figure 1 is a perspective view of a sunken vessel being raised by my improved appliances. Fig. 2 is an enlarged fragmentary front elevation of the grappling end of the device; and Fig. 3 is a side elevation, partly in section, of the same.

In the drawings the numeral 2 indicates a sunken vessel, and 3 a scow or the like, from which my apparatus is suspended and operated. Two pairs of grappling-tongs comprising jaws 4 and lever-arms 5 are pivotally connected at 6 intermediate their lengths to a cross-bar 7. The outer ends of the said jaws are provided with opposing serrations or teeth 8, whereby the hull of the vessel to be raised is directly engaged. The outer extremities of the arms 5 are connected by link-bars 9 to lines 10, which upon being drawn upward close the normally distended jaws to grapple the vessel, and further drawing upward of the lines raises the vessel. Any suitable means may be adopted for operating these lines, as capstans, such as 11, to which the lines are led over fair leaders or spools 12.

To prevent the grappling-jaws from sliding and not biting sufficiently deep into and be reliably engaged with the vessel's hull, I provide a device for holding the aforesaid jaws down to their work. This device consists of a vertical shaft 13, extending from the vessel's hull to above the surface of the water in which it is submerged, and may be of one piece or of a number of pieces integrally coupled together. This shaft is provided adjacent of its lower end with a cylindrical part 14, which is screw-threaded to register with internal screw-threads of an aperture 15 of the cross-bar 7, through which it projects. The extreme lower end of this shaft is provided with a drill of less diameter than the above-mentioned cylindrical part of the shaft, such as 16, capable of boring into wood or metal, as the case may be, when the shaft is rotated. The said screw-thread in proximity of the drill is tapered down, as at 17, to correspond in diameter with the diameter of the hole which would be bored by the drill and is mutilated by longitudinal grooves 18 to provide a tap for cutting a screw-thread in the bored hole, whereby the following full threads of the screw will enter and engage therewith and obviously tie the grappling-tongs, through the cross-bar to which they are pivoted, to the structure of the vessel, and hence the jaws are held down to their work. Any suitable means may be employed to rotate the shaft; but I prefer to use a handle 19, having a rectangular-shaped socket 20 to engage with shank 21 of the shaft having similar shape.

In limited depths of water a cylindrical water-tight casing 22, surrounding the said shaft, may advantageously be used and extends from the said cross-bar 7 to some distance above the surface of the water. The object of the casing is to permit the descent of an operator to actuate the drill from a point adjacent thereto. Suitable guy-lines 23 connect the casing with the operating vessel, and other lines may be connected with the tongs to swerve the same into operative position.

The operation of the invention will be understood from the foregoing specification and needs no further description here.

The advantages of the invention reside in the fact that it furnishes positive means to grapple and reliably hold while raising a vessel, whether it be of wood or metal construction.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In apparatus of the class described, the

combination with a grapple and means to actuate the same, of screw devices for engaging the grapple with a vessel being raised.

2. In an apparatus of the class described, in combination, two pairs of tongs pivotally connected to the ends of a cross-bar, said cross-bar, operative lines connected to said tongs, a screw-threaded shaft extending through an aperture of said cross-bar and registering therewith said shaft being provided upon its extremity with a boring-drill and a screw tapping device intermediate the said screw-thread and the said drill, and means to rotate said shaft.

3. In an apparatus of the class described, the combination, with a cross-bar, a pair of tongs pivotally connected to the cross-bar at each of its opposite ends, the gripping-jaws of said tongs being provided with serrations upon their outer extremities and means for actuating said tongs, of a water-tight casing extending upwardly from the said cross-bar to a plane above the surface of the water.

4. In apparatus of the class described, in combination, a cross-bar, a pair of tongs having serrated jaws pivotally connected to each end of the said cross-bar, means to actuate the said tongs, and means for engaging the said cross-bar to a vessel being raised independently of the said tongs.

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

MICHAEL LACEY.

Witnesses:

PIERRE BARNES,

HENRY S. NOON.