

L. FINK.
SUBMERSIBLE DESTROYING OR SALVAGING VESSEL.
APPLICATION FILED NOV. 4, 1918.

1,346,743.

Patented July 13, 1920.

2 SHEETS—SHEET 1.

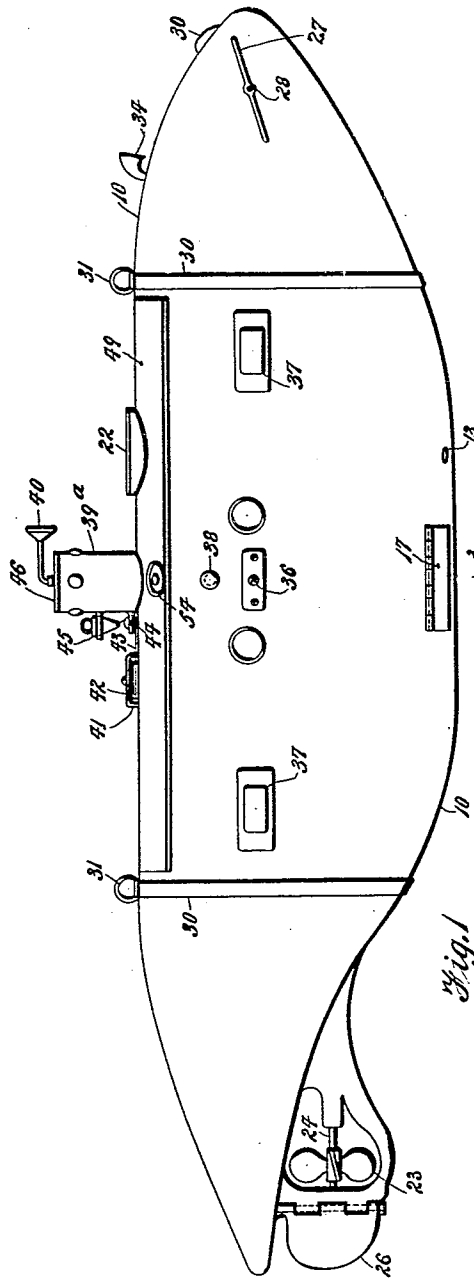


Fig. 1

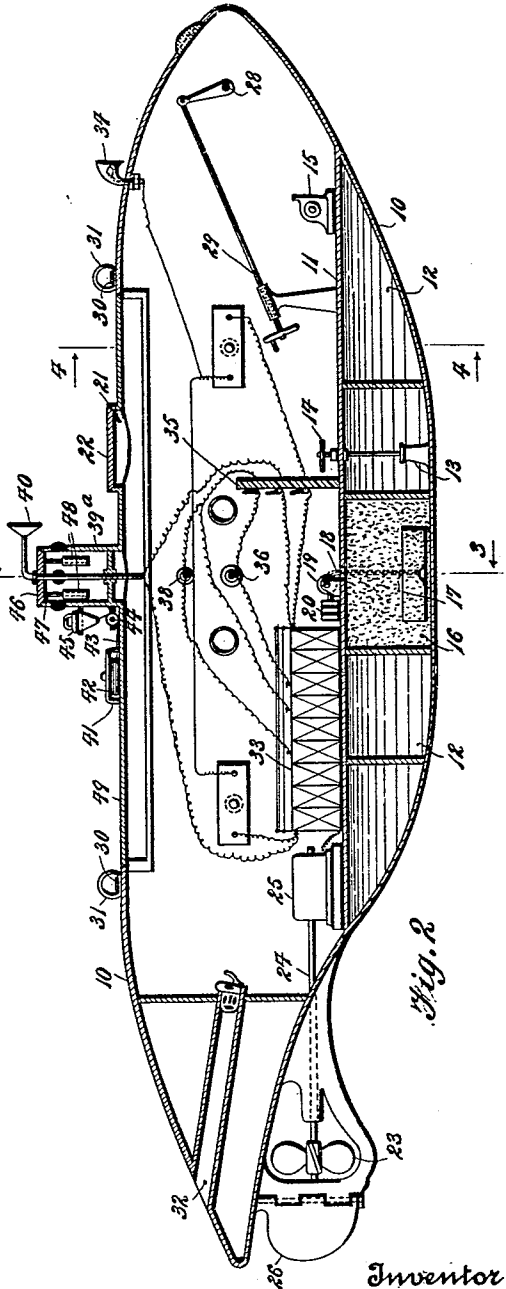


Fig. 2

Witness

Alfred J. Bratton

Inventor
Louis Fink

Victor J. Evans

Attorney.

L. FINK.
SUBMERSIBLE DESTROYING OR SALVAGING VESSEL.
APPLICATION FILED NOV. 4, 1918.

1,346,743.

Patented July 13, 1920.

2 SHEETS—SHEET 2.

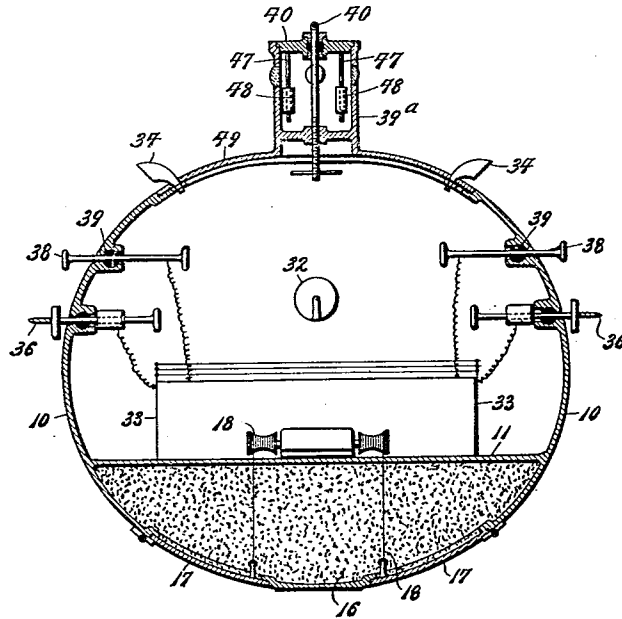


Fig. 3

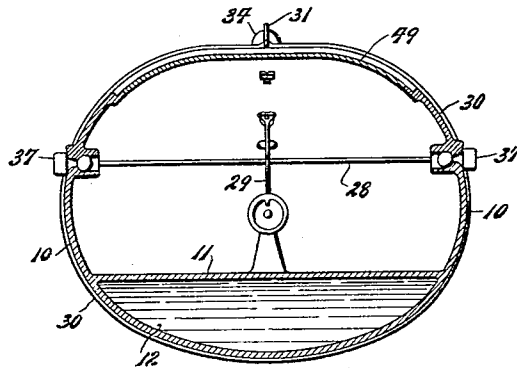


Fig. 7

Witness

Alfred H. Bratton

Inventor
Louis Fink

Victor J. Evans
Attorney

UNITED STATES PATENT OFFICE.

LOUIS FINK, OF PHILADELPHIA, PENNSYLVANIA.

SUBMERSIBLE DESTROYING OR SALVAGING VESSEL.

1,346,743.

Specification of Letters Patent.

Patented July 13, 1920.

Application filed November 4, 1918. Serial No. 261,072.

To all whom it may concern:

Be it known that I, LOUIS FINK, a citizen of United States, residing at 2918 Westmont street, Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Submersible Destroying or Salvaging Vessels, of which the following is a specification.

The invention relates to submersible vessels, and has for an object to provide a submersible vessels for use in destroying or salvaging other submerged vessels or receptacles.

Among other features, the invention comprehends a vessel that is made sufficiently large to accommodate two or more men, and is supplied with suitable equipment whereby it can be readily submerged to the desired depth, for the purpose of operating upon another submerged vessel or body, or part of another vessel or body which may be floating on the surface but have the parts submerged, upon which it is desired to operate. To this end the vessel includes various mechanism, operated by self-contained storage batteries and motors, whereby the vessel can be arranged in suitable operating position relative to another vessel or body, for the purpose of so operating upon the other vessel or body, to destroy the latter, or salvage the same from the bed of the sea.

In the further disclosure of the invention, reference is to be had to the accompanying drawing, constituting a part of this specification, in which similar characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a side elevation of my vessel.

Fig. 2 is a vertical longitudinal sectional view of the structure shown in Fig. 1.

Fig. 3 is a vertical transverse sectional view taken on the line 3—3 in Fig. 2, and

Fig. 4 is a vertical transverse sectional view taken on the line 4—4 in Fig. 2.

Referring more particularly to the views, the numeral 10 indicates the submersible body, which is made of some suitable form of metal and sufficiently strong to effectively withstand the pressure of water when submerged. The body 10 has a floor 11 beneath which is provided a compartment 12, termed a water ballast compartment, the latter being provided to properly ballast the vessel or body, a suitable valve or cock 13 being provided to be operated through an operating mechanism 14, whereby the water con-

tained in the ballast compartment can be let out of the same to lighten the body, or a quantity of water pumped into the compartment through the medium of a suitable pump 15. An additional ballast compartment 16 is provided beneath the floor 11, said compartment being normally filled with a heavy dead ballast which, when it is desired to lighten the vessel, can be removed therefrom by providing suitable closures or trap doors 17, connected to chains 18 passing around a suitable winch 19, operated by a motor 20, whereby the doors 17 can be opened and the dead heavy ballast 16 allowed to gravitate through the openings in the bottom or sides of the body.

The body is provided at its top with an entrance 21, normally closed by a man-hole cover 22, the latter when removed permitting the parties connected with the vessel to enter or leave the same. The vessel is adapted to be propelled through the water by a suitable propeller 23 on a propeller shaft 24 operated by a suitable electric motor 25, and a tail rudder 26 is provided for the guidance of the vessel, with a suitable forward plane or rudder 27, also employed for guiding the vessel upwardly or downwardly, or at an angle in the water; one of these planes 27 being provided on each side of the body and carried on a common shaft 28 having connection with suitable mechanism 29 for the operation of the planes 27, and which mechanism may be operated in any suitable manner, or by hand, as shown. Suitable encircling bands 30 are provided to rigidly encircle the body 10, and these bands have rings or loops 31 thereon in order that proper attachment can be made to the body for the purpose of lowering the same from the deck of a mother vessel or to raise the body to the mother vessel.

In order to destroy a derelict or some other vessel contained in the water or upon the bottom of the sea, the body is provided with suitable destroying apparatus. To this end a torpedo tube 32 is provided at the rear of the body, in order that a torpedo or other destroying projectile can be projected against the side of the derelict or body to be destroyed.

The body 10 contains a storage battery 33 which is the main source of power for the entire mechanism and operates, as will be seen, the motor 25 which drives the propeller 23, said storage battery also having

connection with the motor 20 for the winch 19. For the purpose of examining the sunken vessels, derelicts or other bodies that are floating upon the sea and have parts submerged, or which are entirely submerged, my vessel is equipped with various electric lights, as indicated by the numeral 34, which may be disposed at the front of the body or at the sides, or, in fact wherever convenient and useful, these lights deriving their source of power for incandescence from the storage battery 33. It will be noted that a switch board 35 is arranged in the vessel and has connection with the storage battery, and the various electrical fixtures and lighting paraphernalia, so that they can be readily controlled.

Extending from each side of the body to the exterior thereof is a suitable drill 36, which is operated by power from the storage battery, and which can be used for drilling holes in the side of the vessel or sunken body; and the sides of the vessel also carry magnets 37 which are energized by electricity from the storage battery 33, and are adapted for securing a hold upon some other surface of a sunken vessel subject to the action of magnetism. If the magnets are sufficiently powerful, they can be employed partially to draw my destroying and salvaging vessel toward the sunken body, or aid in holding my vessel to the side of the sunken body. The sides of the vessel are also equipped with magnetic holding devices 38 energized from the storage battery 33, and which are mounted in ball and sockets 39, and are slidable therein, the holding devices being employed for magnetic gripping engagement with hooks or grappling irons that are let down for the convenience of the operators of the mother vessel in securing the same to the sides or bottoms of the sunken bodies; and my vessel is also provided with what may be termed a conning tower 39, and which carries a revolvably extended magnetic holding device 40, also adapted for securing a hook or grappling iron or other form of some paraphernalia that may be let down from the mother ship on the surface, for the purpose of securing a grip upon the sunken body. Adjacent the conning tower there is provided a housing 41, containing a reel 42 on which is wound a cable 43, passing exteriorly of the housing and over a pulley 44 to be secured to a float 45 which, when the reel is released, will float to the surface so that a grappling iron or hook can be attached thereto and drawn down to my vessel when it rests at the bottom of the sea, or adjacent to the submerged body upon which it is desired to operate, and by having the magnet 40 conveniently located adjacent to the normal or lowered position of the float 45, the drawn down hook or

grappling iron is attracted to and held by said magnet. When this magnet 40 has taken hold of the hook or grappling iron it will be obvious that by manipulating said magnet from the inside of the vessel the hook or grappling iron can readily be moved into position to be taken hold of by one of the more powerful magnets 38 whereupon it can be easily swung or moved into position for engagement with the sunken body, or be inserted in one of the holes made by one of the drills 36. The cable 43, together with the float 45 may of course be of any desired form and construction, and may be in the nature of a telephone cable so that suitable talking connection can be had with the mother ship on the surface, it being understood that various forms of electric devices can be employed in connection with the vessel described, in order to facilitate as much as possible the work of the men in the vessel as they operate upon the submerged body to destroy or salvage the same.

It will of course be understood that the vessel described is ordinarily carried along on the deck of a ship, such as any large salvaging ship, and that when the ship reaches the place where a body is located upon which it is desired to operate, my vessel can be readily lowered, and can either submerge immediately to reach the required spot, or proceed upon the surface of the sea to the spot, and then submerge. In proceeding upon the surface of the sea, the occupants of the vessel can, if they desire, supply themselves with fresh air by means of a cover 46 normally closing the conning tower 39, and which cover is held on suitable uprights 47 in guides 48, and can be raised slightly to permit of the admission of fresh air to the interior of the vessel.

In order that the various mechanisms described can be lowered into the vessel in the building and equipping of the same, the upper central part of the vessel termed the top, and indicated by the numeral 49, when removed provides sufficient space to enable the builders and equippers to locate the various mechanisms in the vessel, after which the top 49 can be bolted, screwed or otherwise clamped rigidly into place in such a manner that the water cannot enter.

From the foregoing description it will be seen that the device described is primarily employed for use in salvaging sunken bodies or ships, or for destroying the same, although the device may be used for various other purposes in connection with the destruction of vessels, or the repairing of submerged parts thereof, and it will be clear that although I have shown a specific form of construction, various slight changes may be made from what is shown in the drawing, without departing from the spirit of the

invention, the scope of which is defined in the appended claim.

I claim:

5 In a self-contained electrically operable submersible for wrecking sunken vessels and having means for controlling the depth of submergence, the combination of an electromagnet mounted on a rotatable arm, means for hauling down a grappling implement

into engagement by the said electromag- 10
net, cutting tools projecting from the hull of the submersible and juxtaposed electromagnets rigidly mounted adjacent the said cutting tools for holding the submersible vessel against the sides of a sunken vessel. 15

In testimony whereof I affix my signature.

LOUIS FINK.