J. T. COWLES.

SHIP RAISING MECHANISM.

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1,323,249.

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Fig. 1.

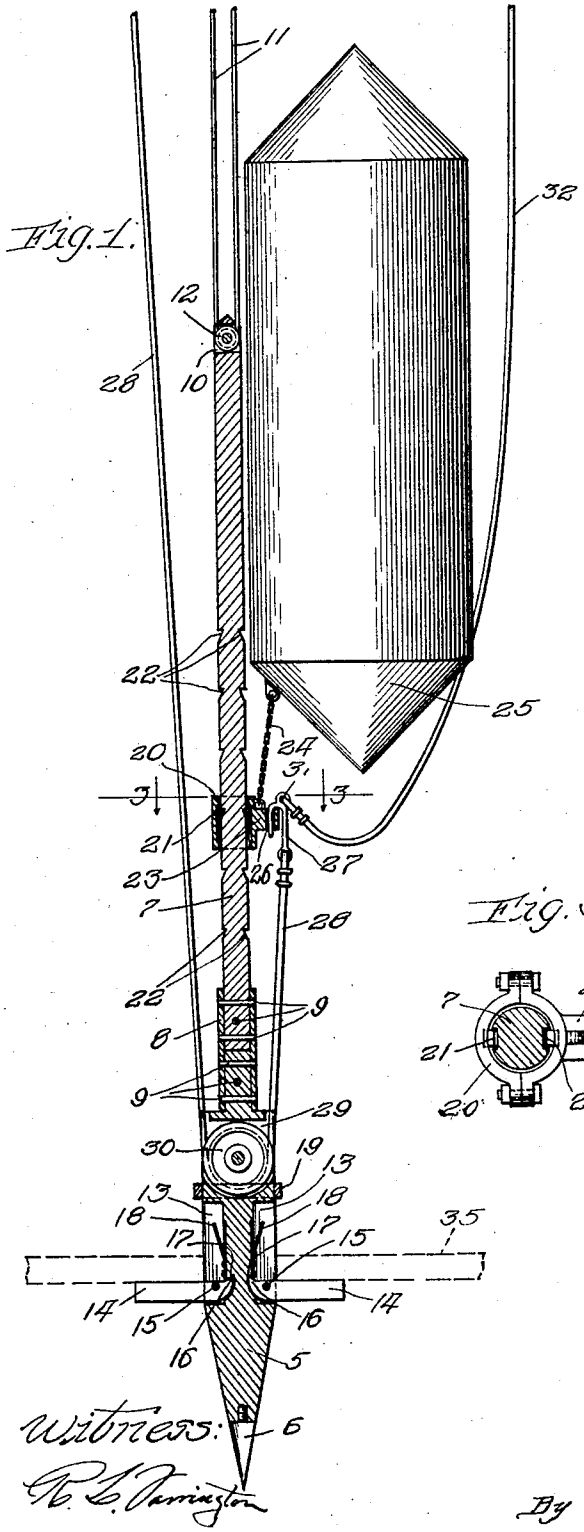
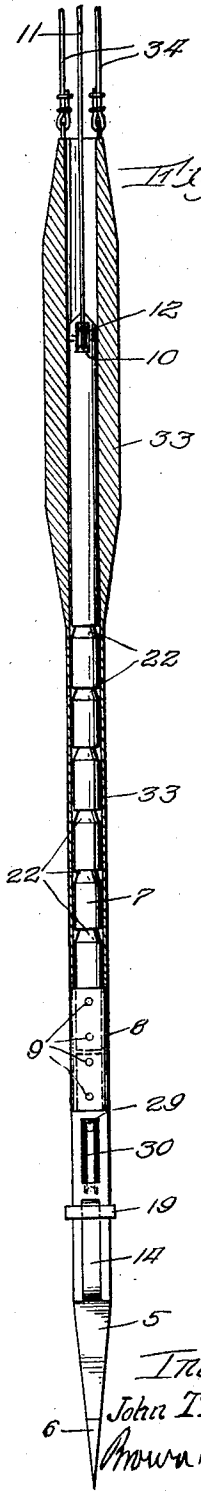


Fig. 3.

Fig. 2.



Witness:

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SHIP-RAISING MECHANISM.

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To all whom it may concern:

Be it known that I, JOHN T. COWLES, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Ship-Raising Mechanism, of which the following is a specification.

My invention relates to mechanism for raising sunken ships, and the like, and has for its object the provision of simple and efficient means of the character mentioned adapted to be operable from the surface of water in which a ship is sunk for raising such ship.

Other objects will appear hereinafter.

An embodiment of my invention is illustrated in the accompanying drawing, forming a part of this specification, and in which—

Figure 1 is a vertical section taken through a device embodying my invention.

Fig. 2 is a side elevation of my device showing portions cut away to disclose underlying parts; and

Fig. 3 is an enlarged section taken on line 3—3 of Fig. 1.

Referring more particularly to the drawing, I have indicated an elongated harpoon or piercing member which may be formed of a single integral part or made up, as indicated, of a number of parts. In the form shown a body member 5 has a hardened point 6 secured thereto at its bottom end and a shank 7 secured to its upper end by means of a sleeve 8 and rivets 9. By making the piercing member up of a number of parts, as indicated, the point can be made of harder material than is necessary for the remainder of the piercing member. Also, making the shank separate and securing it to the body portion 5 enables the shank to be renewed without renewing the body portion, and also makes the shank more cheaply manufactured than if it were made integral with the body 5.

At the top of the shank 7 I provide an opening 10 through which a cable 11, or its equivalent, passes. The cable 11 serves to suspend and lift the piercing member. A pulley 12 may be provided in the opening 10 to reduce friction on the cable 11.

The body portion 5 of the piercing member is preferably provided with grooves 13 in which are pivoted prongs 14, as at 15. Each of the prongs 14 is provided with a point 16 which engages a shoulder 17 on the body 5 at the inner side of one of said grooves 13. In the bottom of each groove is a spring member 18 which is adapted to swing the prong 14 laterally from the slot when such prong has been released. The prongs 14 are normally held in the grooves 13 by a ring 19 which is slidably mounted on the body 5.

A sliding member 20 is provided with an opening and mounted on the cable 11 and slidable over the shank 7 of the piercing member. The member 20 is provided with locking members 21 which are adapted to engage recesses or roughened places 22 on the shank 7. Any form of locking means 21 may be provided, the form shown being resilient springs which are adapted to spring into the notches 22 as the member 20 passes over such notches.

At one side of the member 20 is a lug 23 having a chain or cable 24 connected thereto. The chain 24 is connected to a pontoon 25. The arrangement is such that the chain 24 is connected near one edge of the pontoon 25 so that when the member 20 is locked on the shank 7, the pontoon 25 will lie substantially vertically close to the shank 7 and cable 11. This arrangement also permits the use of a number of pontoons 25 and locking members 20 on the shank 7 when such a thing is desirable. The lug 23 is also provided with a vertically extending opening 26, and in this opening is a hook 27. The hook has a cable 28 connected thereto and said cable passes through a slot 29 in the body 5 and from thence upwardly to the top of the water in which the device is immersed. In the slot 29 I preferably provide a pulley 30 to reduce friction on the cable 28 as it passes through the body 5. The device, however, is operable without the pulley 30.

The hook 27 is provided with an eye 31, and a cable 32 is connected to the eye 31 so that an upward movement of the cable 32 will draw the hook 27 out of the opening 26.

In operation, the cable 11 is attached to an operating device, not shown, and the cable 11 allowed to pass over the pulley 12 to lower the piercing member into the water in which a boat, or the like, is to be raised. When the device is being lowered the prongs 14 are disposed in the slots 13 and held therein by the ring 19, see Fig. 2. When the piercing member has been lowered un-

til it contacts a boat to be raised; a fragment being indicated at 35, Fig. 1, a weighted member 33 is lowered by means of cables 34 around the cable 11 until the lower edge of the member 33 engages the top of the collar 8. The member 33 is then raised and lowered to give it driving blows to force the point 6 and a part of the body 5 through the side of the boat to be raised. As the body 5 passes through the side of such boat, the ring 19 is moved on the body 5 which releases the prongs 14. The latter are moved to the position shown in Fig. 1 by the springs 18 and gravity. When the piercing member is brought into engagement with the boat side 35 substantially as indicated in Fig. 1, the weighted member 33 is raised by means of the cables 34 up to the top of the water and taken off of cable 11.

Before the piercing member has been lowered into the water at all, the cable 28 must be threaded through the opening 29 and the hook 27 held at the top of the water. Then after the piercing member is affixed to the boat side, the member 20 is placed around the cable 11 and the hook 27 engaged in the opening 26. The cable 28 is then tightened drawing the member 20 and pontoon 25, which is connected to the member 20 by the chain 24, down over the cable 11 and onto the shank 7. The spring members 21 snap into the notches 22 as the member 20 passes over them, and when the member 20 is brought down as low as it is desired on the shank 7, the locking springs 21 engage the notches 22 and prevent upward movement of the pontoon and member 20. The cable 32 is then tightened which raises the hook 27 out of the opening 26, and upon loosening the cable 28 sufficiently, the cable 32 will bring the hook 27 back up to the top of the water where it can be engaged in another similar member 20 to pull down another pontoon 25. It will thus be seen that as many pontoons may be brought down and secured to the shank 7 as there are sets of notches 22 in the shank. The pontoon 25 is preferably formed conical at its top and bottom ends so that there is no danger of one pontoon locking against another.

When the desired pontoons have been secured to the shank 7, the cable 28 is loosened and by means of the cable 32 pulled through the opening 29 and brought up to the top of the water where it can be attached to another piercing member, not shown, similar to the one shown. The cable 11 may also be removed from the shank 7 by loosening one end and drawing it by the other end. It will therefore be seen that the piercing member is secured to the boat side and a number of pontoons affixed on the shank of the piercing member and all of the cables used in engaging the pontoon in the boat side removed. When enough piercing members and pontoons are fastened to a boat which has been sunk, the buoyancy of the pontoons will raise the boat.

I claim:—

1. In combination, an elongated piercing member having a recess therein; a prong pivoted in said recess and adapted to swing out of the latter; a member slidably mounted on the piercing member; a cable attached to said slidable member and passing laterally through the piercing member adjacent said prong for moving the slidable member toward said prong; means for detaching the cable from the slidable member; and means for holding said slidable member against movement away from said prong.

2. In combination, an elongated piercing member; a member slidably mounted on the piercing member; a cable attached to the slidable member and engaging the piercing member adapted to move the slidable member downwardly on the piercing member; and means for detaching the cable from said sliding member.

3. In combination, an elongated piercing member; a member slidably mounted on said piercing member; a pulley in the lower portion of the piercing member; a hook engaging the slidable member; a cable extending over the pulley and connected with the hook for moving the slidable member toward said pulley; and a cable attached to said hook for withdrawing the latter from the slidable member.

4. In combination, an elongated piercing member; a member slidably mounted on said piercing member; a pulley in the lower portion of the piercing member; a cable extending over the pulley and adapted to move the slidable member over the piercing member toward said pulley; and means for disengaging the cable from said slidable member.

5. In combination, an elongated piercing member; a member slidably mounted on the piercing member; a cable attached to the slidable member and engaging the piercing member adapted to move the slidable member downwardly on the piercing member; means for detaching the cable from said sliding member; and a pontoon attached to the slidable member.

6. In combination, a piercing member; a cable attached to the piercing member; a member slidable on the cable and a portion of the piercing member; a pontoon secured to said slidable member; locking means adapted to lock the slidable member on said piercing member; and means for moving the movable member over said cable and piercing member.

7. In combination, a piercing member; a member slidably mounted on the piercing

member; locking means locking the slidable member against upward movement on the piercing member; a hook engaging the slidable member; and a cable attached to the hook and adapted to draw the slidable member downwardly on the piercing member.

8. In combination, a piercing member; a member slidably mounted on the piercing member; locking means locking the slidable member against upward movement on the piercing member; a hook engaging the slidable member; a cable attached to the hook and adapted to draw the slidable member downwardly on the piercing member; and a cable attached to said hook adapted to disengage the latter from said slidable member.

9. In combination, a piercing member; a cable attached to the top of the piercing member; a member slidable on the cable and piercing member; means on the slidable member adapted to engage the piercing member for locking the slidable member against upward movement; a pontoon attached to the slidable member; a hook engaging the slidable member; a cable attached to the hook, passing through the lower portion of the piercing member and adapted to move the slidable member downwardly on the piercing member; and a cable attached to said hook adapted to disengage the hook from the slidable member.

10. In combination, a piercing member having an upwardly extending shank with a notch therein; a member slidably mounted on the shank; a spring-pressed locking member adapted to engage said notch for locking the slidable member against upward movement; and means for moving the slidable member downwardly on the shank.

11. In combination, a piercing member having an upwardly extending shank with notches in the latter; a member slidably mounted on the shank; locks on the slidable member engaging certain of the notches holding the slidable member against upward movement on the shank; a cable connected with the slidable member for moving the latter downwardly on said shank; and means for disconnecting the cable from the slidable member when the latter is locked against upward movement on said shank.

12. In combination, a piercing member having an upwardly extending shank with notches in the latter; a member slidably mounted on the shank; locks on the slidable member engaging certain of the notches holding the slidable member against upward movement on the shank; a pulley journaled in the lower portion of said piercing member; a hook engaging the slidable member; a cable attached to the hook and passing over said pulley adapted to move the slidable member downwardly on said shank; and a cable attached to said hook adapted to disengage the latter from said slidable member.

In testimony whereof I have signed my name to this specification on this 14th day of February, A. D. 1919.

JOHN T. COWLES.