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DEVICE FOR RAISING SUNKEN VESSELS.

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To all whom it may concern:

Be it known that we, OLIVER GUYOR and FRANK E. BANKER, citizens of the United States, residing at Sumas, in the county of Whatcom, State of Washington, have invented a new and useful Device for Raising Sunken Vessels, of which the following is a specification.

One object of the present invention is to provide novel means for operatively connecting the hoisting lines with each other and with the sunken vessel.

A further object of the invention is to provide novel means for operatively connecting the hoisting lines with the pontoon.

A further object of the invention is to provide a single element operative at once as a means for connecting the hoisting lines and as a means whereby the position of the sunken vessel may be shifted fore-and-aft.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings, Figure 1 shows the invention in sectional side elevation, parts being broken away; Fig. 2 is a side elevation of the cable lock, parts being broken away; Fig. 3 is a transverse section of the cable lock; Fig. 4 is a perspective of one of the dogs constituting a part of the cable lock; Fig. 5 is a top plan of the cable lock; Fig. 6 is a side elevation of the eye through which the hoisting lines are passed; and Fig. 7 is a top plan of the eye.

In the accompanying drawings, the numeral 1 indicates a pontoon provided with air compartments 2 and with a well 3.

The numeral 4 indicates the earlines which extend transversely of the pontoon and reinforce the same at the hatch 5 which is formed at the top of the well 3.

The numeral 6 indicates the sunken vessel.

Supported upon the deck of the pontoon 1 are a plurality of cable locks 7. Each cable lock 7 comprises a body 8 and an outstanding flange 9 which is preferably secured to the earlines 4. Through the body 8 of the cable lock and through the flange 9 thereof extends a slot 10 across which pro-

ject pivot elements 11 received within slots 12 in arcuate dogs 13 located in the slot 10, the dogs 13 having cooperating cam faces 15 in which there are cable-receiving grooves 16. The upper ends of the dogs 13 are provided with openings 17.

The numeral 18 denotes an eye having projecting flanges 19 at its ends, the flanges 19 protruding above and below the body of the eye 18 to form ears 20 in which there are openings 21.

The hoisting lines are denoted by the numerals 22 and 22^a. The hoisting line 22 is made fast at one end in one of the lower ears 20 of the eye 18 as indicated at 23. Thence the hoisting line 22 passes along the starboard side of the vessel 6, around the stem, along the port side of the vessel as shown at 24 and thence, as shown at 25, through the eye 18, the hoisting line passing thence as indicated at 26 between the dogs 14. The hoisting line 22^a is made fast to the other lower ear of the eye, and is extended as indicated at 27 along the port side of the vessel and beneath the fantail, the line being prolonged as shown at 28 along the starboard side of the vessel and thence as shown at 29 through the eye 18, the hoisting line 22^a being carried as shown at 30 between the dogs 14 of the other cable lock.

A pair of jerklines 31 are secured in the openings 17 of the dogs 14. To the upper ears 20 of the eye 19, the lower ends of fore-and-aft lines 32 are secured, the fore-and-aft lines 32 being carried upwardly through the well 3.

In practical operation, the extremities of the hoisting lines 22 and 22^a are secured to a winch upon a tug and the eye 18 is lowered into position so as to form loops in the hoisting lines 22 and 22^a adapted to engage over the stem and the stern of the sunken vessel as shown in Fig. 2. The air is let out of the compartments 2 in the pontoon 1 and the pontoon is allowed to sink, the pontoon being upheld by the lines 22 and 22^a which extend to the winch of the tug boat. The lines 22 and 22^a, the jerk lines 31 and the fore-and-aft lines 32 are slacked away, permitting the pontoon 1 to sink to the desired depth, whereupon the loops in the hoisting lines 22 and 22^a are engaged beneath the stem and stern of the vessel as indicated in Fig. 1. The portions 26 and 30 of the hoisting lines are, as will be understood readily, engaged between the

dogs 14 of the respective cable locks. Air is then pumped into the pontoon 1, whereupon the pontoon will rise, elevating the sunken vessel 6. When the sunken vessel 5 has been thus elevated by the action of the pontoon 1, the pontoon and the sunken vessel are towed into shallow water until the vessel 6 fouls with the bottom whereupon the pontoon 1 is sunk and the operation 10 above described is repeated. When the vessel 6 has been elevated to the desired extent, the vessel may be supported between a pair of pontoons and be towed to the dry-dock.

Attention is directed to the fact that the 15 loops in the hoisting lines 22 and 22^a extend in opposite directions around the stem and the stern of the vessel, respectively. Thus, the vessel is lifted off the bottom without shifting the position of the vessel. 20 By manipulating the fore-and-aft lines 32 the vessel may be elevated at the stem or at the stern. Should it be desired to slack away the hoisting lines 22 and 22^a after the pontoon 1 has been sunk, this operation may 25 be carried on by manipulating the jerk lines 31 from the tug boat so as to relieve the hold of the dogs 14 upon the hoisting lines 22 and 22^a.

It will be entirely obvious that if for any 30 reason, it is desired to release a sunken vessel after the same has been lifted off the bottom, this operation may be carried on without losing any part of the hoisting apparatus.

35 Having thus described the invention, what is claimed is:—

1. Mechanism for hoisting a sunken vessel, comprising an eye; separate, individually manipulable hoisting lines secured 40 at one end to the eye and having their other ends extended through the eye; and mutually independent means for raising and lowering each end of the eye with respect to the horizontal.

45 2. Mechanism for hoisting sunken vessels, comprising an eye; hoisting lines secured each at one end to the eye and having their other ends extended through the eye; and fore-and-aft lines connected to the eye adjacent 50 its ends and upwardly extended, the fore-and-aft lines being adapted to change the position of the eye with respect to the horizontal.

55 3. Mechanism for hoisting sunken vessels, comprising a pontoon; locks upon the pon-

toon; an eye; hoisting lines secured each at one end to the eye and having their other ends extended upwardly through the eye and engaged with the locks; and fore-and-aft lines secured to the eye and extended up- 60 wardly above the pontoon, the fore-and-aft lines being manipulable to alter the angle between the eye and the horizontal.

4. Mechanism for raising sunken vessels, comprising a pontoon provided with a well; 65 locks located in alinement with the well and supported by the pontoon; hoisting lines engaged with the locks and provided at their lower ends with loops adapted to engage the vessel; and means assembled with the 70 locks for releasing the hold of the locks upon the hoisting lines after the pontoon has been sunk.

5. Mechanism for hoisting sunken vessels, comprising a pontoon provided with a well; 75 locks supported by the pontoon and alined with the well; an eye; hoisting lines engaged by the locks and extended through the eye, the free ends of the hoisting lines being assembled with the eye thereby to 80 form loops adapted to engage the vessel; fore-and-aft lines connected with the eye and upwardly extended through the well; and operating members connected with the 85 locks and adapted to release the hold of the locks upon the hoisting lines after the pontoon has been sunk.

6. Mechanism for hoisting sunken vessels, comprising a pontoon; locks carried by the 90 pontoon and including movable cable gripping elements; hoisting lines engaged by the movable elements; an eye through which the hoisting lines are passed, the ends of the 95 hoisting lines being secured to the eye to form loops adapted to engage the vessel; fore-and-aft lines secured to the eye upon opposite sides of the hoisting lines and adapted to vary the position of the eye 100 with respect to the horizontal; and mechanism assembled with the movable elements of the locks for releasing the hold of the movable elements upon the hoisting lines.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

OLIVER GUYOR.
FRANK E. BANKER.

Witnesses:

B. F. DOYLE,
LULU JANE CREECH.