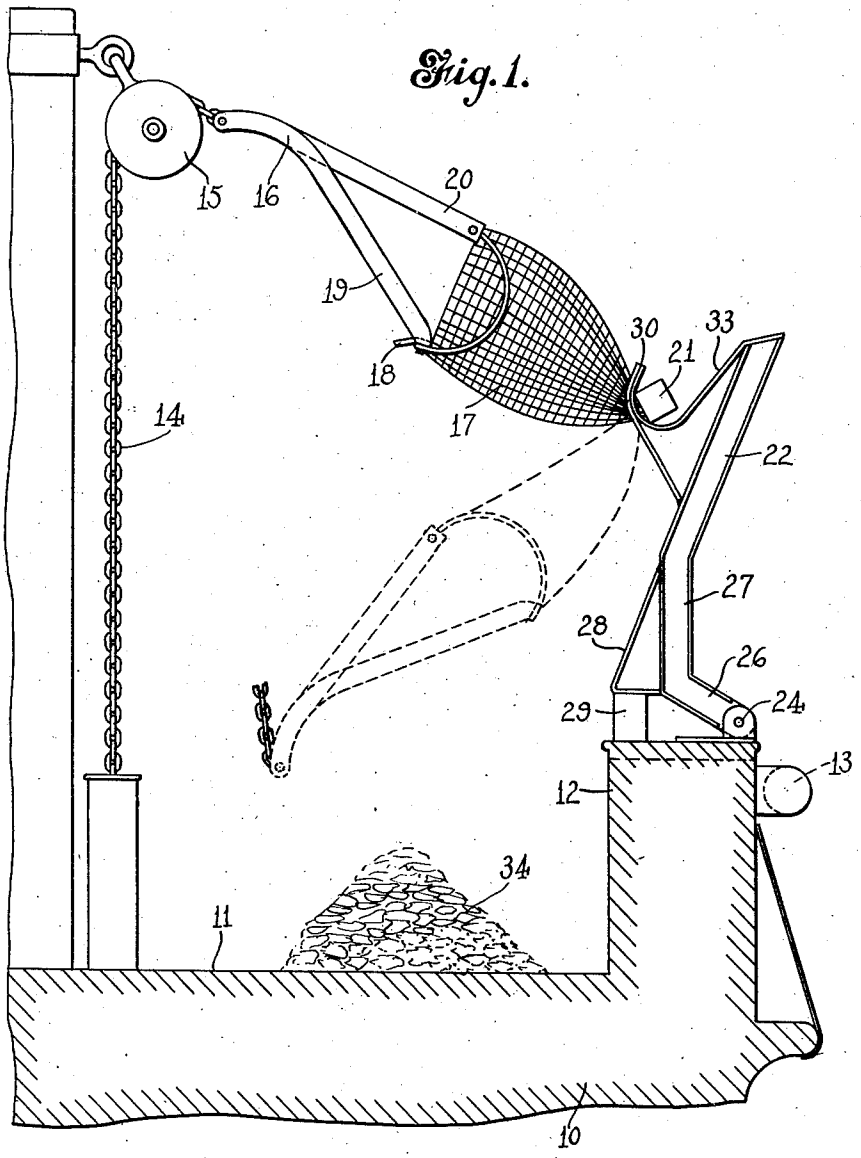
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DREDGE-HOISTING APPARATUS

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Fig. 1.



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Fig. 2.

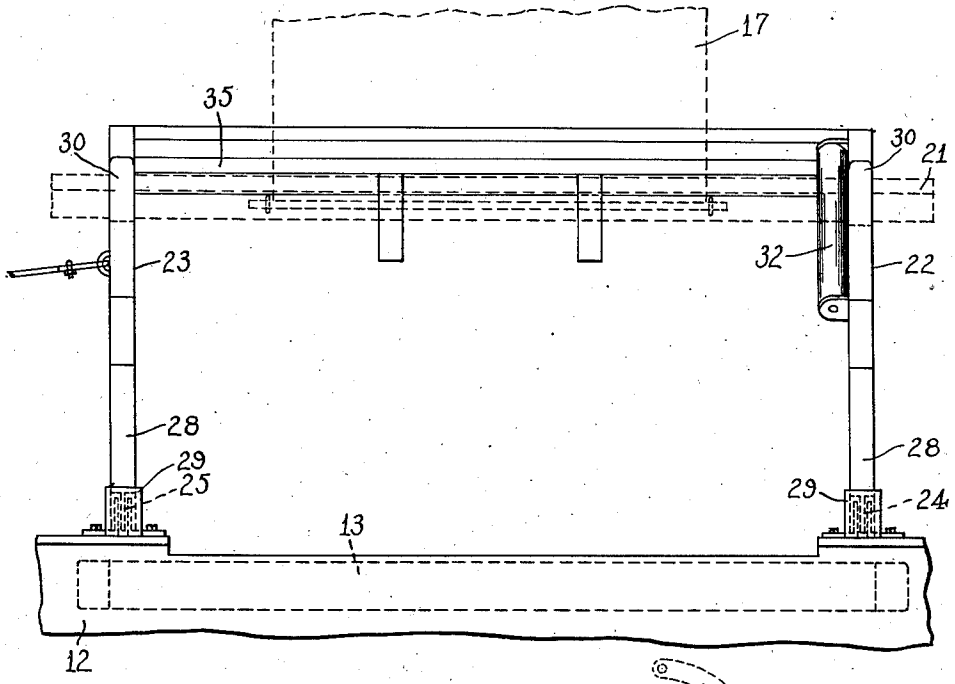


Fig. 3.

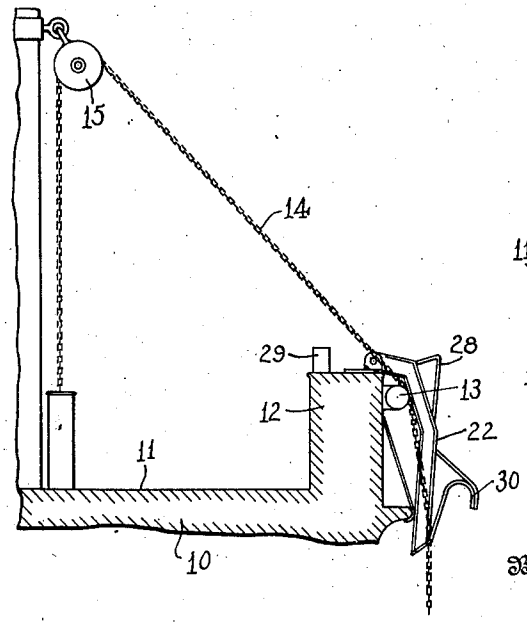
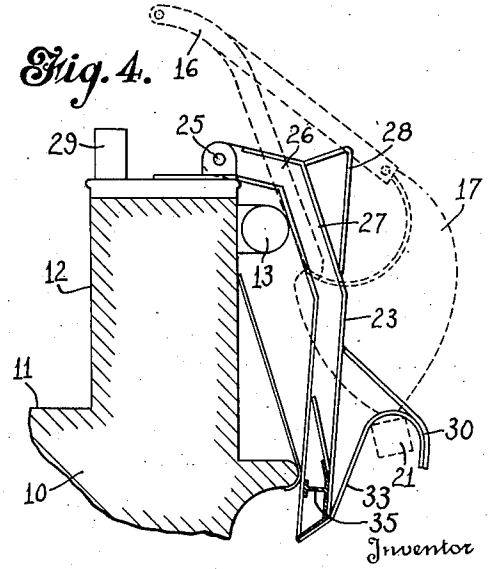


Fig. 4.



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UNITED STATES PATENT OFFICE

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DREDGE-HOISTING APPARATUS

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10 Claims. (Cl. 37—55)

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This invention relates to a dredge-hoisting apparatus, and more particularly to a device designed to be employed in the hoisting of an oyster dredge in order to effect the swinging of the dredge over the deck of the vessel and the emptying of its contents upon the deck with a minimum amount of effort and with a minimum number of men required for this work.

In harvesting oysters usually a dredge consisting of a frame with a bag attached to it is suspended from the side of an oyster boat by a cable of considerable length, and dragged along the oyster beds until the bag is full. It is then hoisted by a cable, and when it reaches a height substantially at the deck of the boat it is lifted bodily over the boat rail and deposited upon the deck, where it is emptied of its contents. This labor of lifting the dredge over the rail and emptying it upon the deck is difficult and tiring, and it usually requires a number of men to handle a large bag.

I contemplate by the present invention to provide a frame which is pivoted to the boat and adapted to be disposed normally in a depending position along the side of the vessel, so that it will be in position to engage the dredge, or a part provided on the dredge for this purpose, and swing the dredge, including the bag of oysters, to a position over the deck upon continued drawing in of the cable by which the dredge is raised, and so that the bag may be emptied by mere slacking off the cable. The bag or dredge will be so engaged by the frame when the latter is swung to its upper position that it will be suspended by this frame from a point adjacent the bottom of the bag, so that upon release of the cable the bag will automatically drop downwardly about this point of suspension and the oysters fall by gravity through the open mouth of the bag.

One object of the present invention is to provide a dredge-hoisting or handling apparatus which will greatly minimize the labor involved in hoisting a dredge and emptying its contents upon the deck of a vessel.

A still further object of the invention is to provide a dredge-hoisting apparatus by which the labor of hoisting and swinging the dredge to the deck of a vessel may be performed substantially entirely by the hoisting cable, without requiring hand labor.

A still further object of the invention is to provide a dredge-hoisting apparatus and a dredge so constructed that the dredge will be engaged by the hoisting apparatus when it has been hoisted to a position adjacent the deck of the vessel by the hoisting cable, and upon continued drawing in of the cable swung to a position over the deck of the vessel, where it is held suspended in order that its contents may fall by gravity upon the deck of the vessel.

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To these and other ends the invention consists in the novel features and combinations of parts to be hereinafter described and claimed.

In the accompanying drawings:

Fig. 1 is a fragmentary view of a portion of the deck of an oyster boat having my improved dredge-hoisting apparatus applied thereto, the latter being shown in side elevation;

Fig. 2 is a front elevational view of the dredge-hoisting apparatus;

Fig. 3 is a view similar to Fig. 1, showing the apparatus in the position which it occupies during the dredging operation; and

Fig. 4 is an enlarged view of the hoisting apparatus in the position shown in Fig. 3, with the dredge shown in dotted lines in the position in which it is engaged with the hoisting apparatus.

To illustrate a preferred embodiment of my invention, I have shown a portion of an oyster boat at 10, comprising the deck 11 and a side rail 12. Upon the outer side of this rail is provided a roller 13, which is usual practice in oyster boats at the present time, this roller being adapted to carry a hoisting cable or chain 14, the end of which may be connected to a winch or other hoisting device, not shown.

This cable may pass over a pulley 15 supported in an elevated position above the deck 11, and has its free end connected to the bail 16 of the oyster dredge. This dredge comprises a bag 17 having secured at one side of the upper portion or open mouth a toothed bar 18 which serves to gather the oysters from the beds when the dredge is dragged therealong. This bar 18 extends along one side of the mouth of the bag and gives rigidity thereto in a longitudinal direction. The bail 16 usually comprises a pair of members 19 which diverge from the cable 14 so that their lower ends are secured to the opposite ends of the bar 18, and one or more members 20 secured to the opposite side of the mouth of the bag. It will be understood that the parts thus far described may be of the usual or any preferred form.

To the lower portion of the bag I secure a rail or beam 21, which, as shown in Fig. 2, is longer than the bag 17, so that the ends of the beam project beyond the bag in order to provide free end portions for engagement by the hoisting apparatus, as will be hereinafter described. The

length of this bar is, of course, a matter of choice, and it will not necessarily project laterally beyond the bag, except that it should be provided with portions which may be readily engaged with the hoisting apparatus.

The hoisting apparatus comprises a pair of members 22 and 23, connected together by a transverse beam or strut 35 so as to provide a rigid frame, the members 22 and 23 being spaced apart, as shown in Fig. 2, and pivoted to the rail 12 of the vessel, as at 24 and 25, so that they may swing from the depending position, shown in Fig. 4, which is the position occupied during a dredging operation, to an upright position above the pivots 24 and 25, shown in Fig. 1, which is the position occupied at the end of the hoisting operation and during the emptying of the basket.

While the shape of the members 22 may be varied according to the structure of the boat upon which they are used, I have shown them as being provided with an angular portion 26 adjacent the pivot points, and a generally upright portion 27 above the portion 26. The shape or contour of the members 22 and 23 will, of course, depend upon the structure of the vessel with which they are employed, it being desirable to have them occupy a depending outboard position during the dredging operation, shown in Fig. 4, and a position over the rail of the vessel or over the deck of the vessel when at the rest position, shown in Fig. 1. Adjacent the lower end of the portion 27 of the members 22 and 23 are provided stops or abutments 28 of triangular shape, so positioned that the base thereof may rest upon a post or pedestal 29 on the rail 12 of the vessel, so that the movement of the hoisting apparatus about its pivots 24 and 25 will be limited, and the frame of the hoisting apparatus supported in the position shown in Fig. 1.

Adjacent the lower ends of the members 22 and 23 and upon the outer surfaces thereof, as the device is shown in Fig. 4, are provided hooks 30 adapted to engage the projecting portions of the beam 21 when the dredge is raised to the dotted-line position shown in Fig. 4, these hooks serving as abutments to be engaged by the beam, so that, as the bag is hoisted to a further extent, the frame of the hoisting apparatus, including the members 22 and 23, will be swung about its pivots 24 and 25 from the position shown in Fig. 2 to that shown in Fig. 1. Also, one (or both if desired) of the members 22 and 23 may be provided with a roller 32 adjacent the free end thereof, over which the cable 14 may run during dredging operations when, as is usual, the dredge will lie somewhat astern of the boat.

The operation of my device is as follows: During dredging operations the parts will occupy the position shown in Fig. 3 and in full lines in Fig. 4. The cable 14 will pass from the pulley 15 over the roller 13, and then downwardly and rearwardly over the roller 32 to the dredge which will be dragged over the beds. When the bag is full, it will be hoisted by the cable 14, the cable being wound over the roller 13 until the upper portion of the bail 16 reaches a position substantially opposite this roller. Thereupon the cable will pass off of the roller 13 and extend directly from the bail to the pulley 15. Further reeling-in of the cable will cause the ends of the beam 21 to be engaged in the abutment hooks 30, which engagement will, of course, take place automatically owing to the raising of the dredge and the fact that the hooks are so shaped that the beam 21 will be guided into engagement therewith,

the hooks being provided on their inner sides with cam portions 33 for this purpose.

Upon continued hoisting of the dredge by the cable 14, the hoisting apparatus or frame will be swung about its pivots from the position shown in Fig. 4 to the position shown in Fig. 1, until this movement will be checked by engagement of the stop 28 with the post 29, at which time the frame will be supported in upright position, in which it will tend to remain by gravity. At this time the dredge, including the bag, will be in the position shown in full lines in Fig. 1, where, as will be noted, the bag is held by the hooks 30 at its lower end, or by the engagement within the hooks of the beam 21. If, while the dredge is in this position, the cable 14 is slacked off, the bag will drop to the position shown in dotted lines in Fig. 1, at which time its contents will be emptied upon the deck of the vessel, as shown at 34. During this dumping operation the beam 21 remains engaged by and supported by the hooks 30.

In order to repeat the dredging operation it is only necessary to give the frame comprising the members 22 and 23 and the crossbeam or strut 35 a slight push outwardly about its pivots 24 and 25, and slack off on the cable 14. The dredge will then be carried over the side of the vessel and lowered into the water for a further operation.

While I have shown and described a preferred embodiment of my invention, it will be understood that it is not to be limited to all of the details shown, but is capable of modification and variation within the spirit of the invention and within the scope of the claims.

What I claim is:

1. A dredge-hoisting apparatus comprising a dredge, a pair of members, means pivoting said members to a boat adjacent the edge thereof with the members in depending position and spaced apart to lie adjacent the edges of the dredge, a lifting cable associated with said apparatus and connected to the dredge for hoisting the same, dredge-engaging means on each of said members, projecting members on the lower portion of the dredge to be engaged by said means and said pivot and means being so arranged that hoisting of the dredge by said cable effects engagement of the dredge with said means and continued pull on the cable swings said members about their pivots and thereby swings the dredge to a position above the deck of the boat.

2. A dredge-hoisting apparatus comprising a dredge, a pair of members, means pivoting said members to a boat adjacent the edge thereof, to swing about a horizontal axis, with the members in depending position and spaced apart to lie adjacent the edges of the dredge, a lifting cable associated with said apparatus and connected to the dredge for hoisting the same, dredge-engaging means on each of said members, projecting members on the lower portion of the dredge to be engaged by said means and said pivot and means being so arranged that hoisting of the dredge by said cable effects engagement of the dredge with said means and continued pull on the cable swings said members about their pivots and thereby swings the dredge to a position above the deck of the boat.

3. A dredge-hoisting apparatus comprising a dredge, a pair of members, means pivoting said members to a boat adjacent the edge thereof with the members in depending position and spaced apart to lie adjacent the edges of the dredge, a lifting cable associated with said apparatus and

connected to the dredge for hoisting the same, dredge-engaging means on each of said members, projecting members on the lower portion of the dredge to be engaged by said means and said pivot and means being so arranged that hoisting of the dredge by said cable effects engagement of the dredge with said means and continued pull on the cable swings said members about their pivots and thereby swings the dredge to a position above the deck of the boat, and means checking the movement of said members when the latter are in a substantially vertical position above the pivotal axis.

4. A dredge-hoisting apparatus comprising a pair of members, means pivoting said members in spaced relation to a boat adjacent the edge of the latter with the members depending from their pivot points, a dredge having a beam secured thereto adjacent the lower end thereof and the end of the beam projecting laterally from the dredge, abutment means on each of said members adapted to engage the projecting ends of the beam, the parts being so constructed and arranged that a pull upon the dredge when the beam is engaged with said abutments will swing the pivoted members to an upstanding position above their pivots and swing the dredge over the deck of the boat.

5. A dredge and a dredge-hoisting apparatus for use with a boat, said apparatus comprising a frame, means for pivoting said frame to a boat adjacent the edge thereof with the frame hanging downwardly from the pivotal axis along the side of the boat, abutment means on the outer side of said frame, means at the lower portion of the dredge to engage said abutment means as a dredge is drawn upwardly, and said means being arranged upon continued movement of the dredge to swing said frame to an upright position above its pivot point with the dredge on the inner side of the frame over the deck.

6. A dredge and a dredge-hoisting apparatus for use with a boat, said apparatus comprising a frame, means for pivoting said frame to a boat adjacent the edge thereof with the frame hanging downwardly from the pivotal axis along the side of the boat, said frame having an angular portion adjacent its pivot means downwardly facing hooks on the outer side of said frame to engage the dredge as it is drawn upwardly, means on the lower portion of the dredge to be engaged by said hooks and said parts being constructed and arranged, upon continued upward movement of the dredge, to swing said frame to an upright position above the pivot point with the dredge on the inner side thereof over the deck.

7. A dredge-hoisting apparatus for use with a boat, said apparatus comprising a frame, means for pivoting said frame to a boat adjacent the edge thereof with the frame hanging downwardly from the pivotal axis along the side of the boat, downwardly facing hooks on the outer side of said frame, a dredge and a cable for drawing the same upwardly, said hooks being adapted to engage the lower portion of the dredge when the latter is drawn thereunder and arranged, upon continued upward movement of the dredge, to swing said frame to an upright position above the pivot point thereof, with the dredge supported in a position over the deck between said hooks and cable whereby slacking off of the cable will effect the emptying of the dredge.

8. A dredge-hoisting apparatus for use with a boat, said apparatus comprising a frame, means for pivoting said frame to a boat adjacent the edge thereof with the frame hanging downwardly from the pivotal axis along the side of the boat, downwardly facing hooks on the outer side of said frame, a dredge and a cable for drawing said dredge upwardly, said cable being secured to the upper end of the dredge, and means secured adjacent the lower end of the dredge for engagement by said hooks as the dredge is drawn upwardly, said parts being constructed and arranged, upon continued upward movement of the dredge, to swing said frame to an upstanding position above its pivotal axis, with the dredge suspended over the deck between the cable and said hooks whereby slackening off of the cable will effect the emptying of the dredge upon the deck of the boat.

9. A dredge-hoisting apparatus for use with a boat, said apparatus comprising a frame, means for pivoting said frame to a boat adjacent the edge thereon with the frame hanging downwardly from its pivoted axis along the side of the boat, downwardly facing hooks on the outer side of said frame, a dredge and a cable for drawing the dredge upwardly, said cable being secured to the upper end of the dredge, means secured adjacent the lower end of the dredge for engagement by said hooks as the dredge is drawn upwardly, and said frame being provided with a vertically disposed roller thereon over which the cable may run when the dredge is lowered.

10. A dredge-hoisting apparatus for use with a boat, said apparatus comprising a frame, means for pivoting said frame to a boat adjacent the edge thereon with the frame hanging downwardly from its pivoted axis along the side of the boat, downwardly facing hooks on the outer side of said frame, a dredge and a cable for drawing the dredge upwardly, said cable being secured to the upper end of the dredge, means secured adjacent the lower end of the dredge for engagement by said hooks as the dredge is drawn upwardly, and said frame having portions adjacent its pivotal axis extending at an angle to the body of the frame.

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