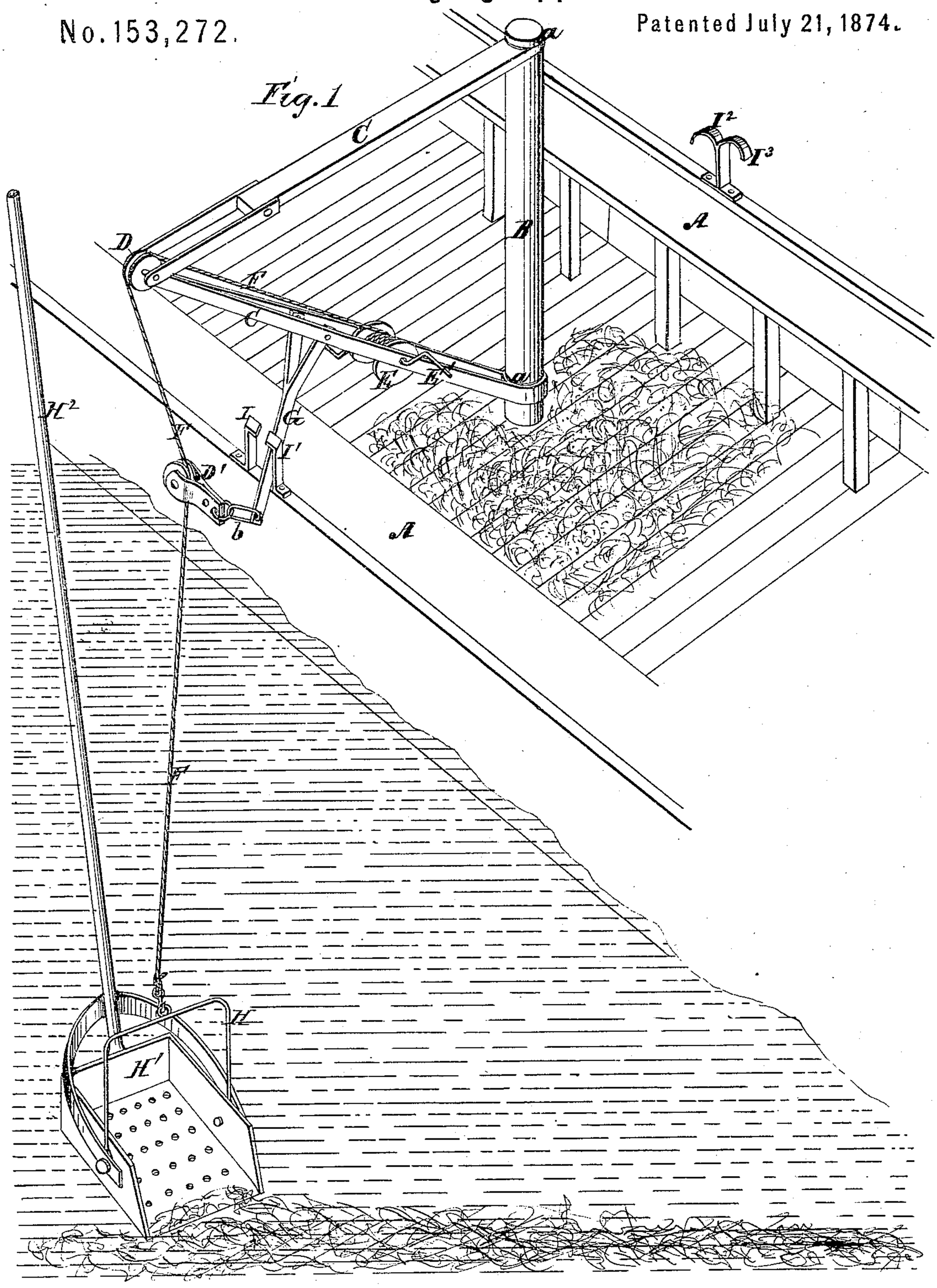
2 Sheets--Sheet 1.

# R. R. OSGOOD.

## Hand Dredging Apparatus.

No. 153,272. Patented July 21, 1874.

*Fig. 1*




*Witnesses.*
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THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

2 Sheets--Sheet 2.

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## Hand Dredging Apparatus.

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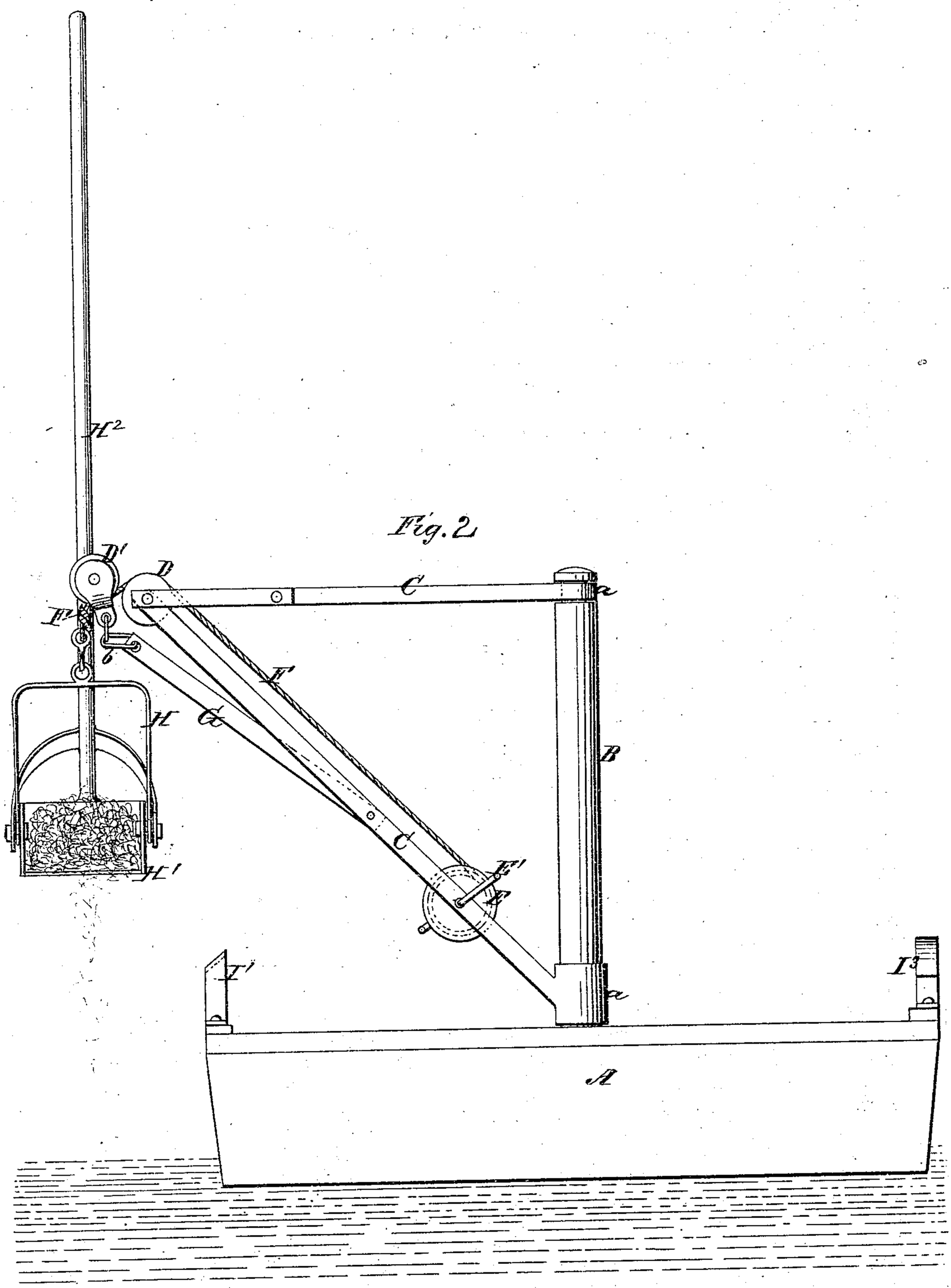


Fig. 2.

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# UNITED STATES PATENT OFFICE.

RALPH R. OSGOOD, OF TROY, NEW YORK.

## IMPROVEMENT IN HAND DREDGING APPARATUS.

Specification forming part of Letters Patent No. **153,272**, dated July 21, 1874; application filed July 1, 1874.

*To all whom it may concern:*

Be it known that I, RALPH R. OSGOOD, of Troy, in the county of Rensselaer and State of New York, have invented a new and useful Improvement in Hand-Power Dredging-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of my apparatus applied to a boat, and as in the operation of dredging under water. Fig. 2 is an end view of the boat and apparatus.

My apparatus is intended for dredging of any kind under water, and the improvement which I have made enables the operator to give the scoop a nearly horizontal movement over the bed of the water until it is filled, and then to raise the scoop and its controlling device together, and swing the same around horizontally and dump the contents of the scoop in or upon the boat, which supports the whole apparatus.

The nature of my invention consists, first, in the combination, with a laterally-swinging crane having an auxiliary pulley-bearing arm which swings vertically, of a loose joint-connection and a controlling-stop; second, in the combination, with the crane pulley-bearing, joint, and stop, of an additional controlling-stop, whereby the scoop of the apparatus can be worked either backward or forward.

To enable others skilled in the art to make and use my invention, I will proceed to describe it.

A represents any well-known boat used in dredging under water. B is a vertical crane-post; C, the swinging arm, attached by eyes or thimbles *a a* of straps or bars to the post, so as to swing around horizontally. D is the guide-pulley for a windlass-rope at the outer end of the arm. E is a windlass-drum, having a crank-arm, E′, and arranged between the side bars of the arm C. F is the windlass-rope, fastened to the drum and passed out over the pulley D. G is an auxiliary arm, hinged to the inclined bar of the arm C, so as to swing in a vertical plane. On the outer end of this arm a pulley and block, D′, is applied by means of a loose connection, *b*, which permits the block with pulley to have a universal movement independently of the arm, while the block and pulley and the arm swing around with the arm of the crane in a horizontal plane. The end of the windlass-rope F is passed down through the block against the grooved pulley and connected to the bail H of the scoop $H^1$, as shown. The scoop $H^1$ is provided with a long handle, $H^2$, say about sixteen feet in length, more or less, according to the depth of water, said handle being attached to the back of the scoop and braced, as represented. I $I^1$ are stops, arranged on the edge of the boat nearly in the same vertical plane with the transverse arm of the crane-post. Between these stops the auxiliary arm of the crane-arm descends, as shown in Fig. 1, and they, respectively, prevent the said arm from moving laterally during the time that the scoop is being either drawn back or forward over the bed of the river. One stop answers for the forward movement of the edge of the scoop, and the other for a back movement of the edge of the scoop against the bed of the river. The universal connection permits the dredging to be performed in either a back or forward movement of the scoop, for the scoop can be turned around on the back movement.

As a modification of the stops I $I^1$, the stops $I^2$ $I^3$ may be employed. In using this stop, the arm G passes under the curved stop or ledge $I^2$ on one side of the standard of the stops while the scoop is moving forward, and then under the ledge $I^3$ when the scoop is turned around.

The rope of the windlass is unwound, and the scoop, held by its handle by a man who walks on the edge of the boat, is lowered to the bed of the river. The act of lowering the scoop causes the arm G to descend between the stops I $I^1$, as shown in Fig. 1. The windlass-rope is thus provided with a fulcrum on the arm G far below the fulcrum at the outer end of the crane-arm, and, therefore, the angle formed by the rope between scoop and the fulcrum D′ during the act of drawing the scoop back to the point where it was first lowered is greatly lessened, and the upward canting of the scoop is prevented. In fact, the scoop can be kept with very little labor by the man who holds it by its handle in nearly a horizontal

position until it is filled with the substances being dredged from the bed of the river. In drawing the scoop along the bed of the river, the windlass is turned and the rope wound upon it. When the scoop comes in line with the crane-post, the arm G is released from its stop, and both the scoop and arm rise together, as shown in Fig. 2. The crane-arm is now swung round so as to bring the scoop over the boat; this done, the scoop is emptied by canting it with the hand or otherwise.

What I claim as new is—

1. In a dredging-machine, the combination, with a laterally-swinging crane-arm, C, having an auxiliary pulley-bearing arm, G, which swings vertically, of a loose joint-connection, *b*, and a stop, I, substantially as and for the purpose set forth.

2. The combination of the stop I$^1$ with the crane-arm C, pulley-bearing arm G, loose joint-connection *b*, and stop I, substantially as and for the purpose set forth.

RALPH R. OSGOOD.

Witnesses:

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