No. 648,007. Patented Apr. 24, 1900.

I. P. WASHINGTON.

DREDGING APPARATUS.

(Application filed Jan. 18, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

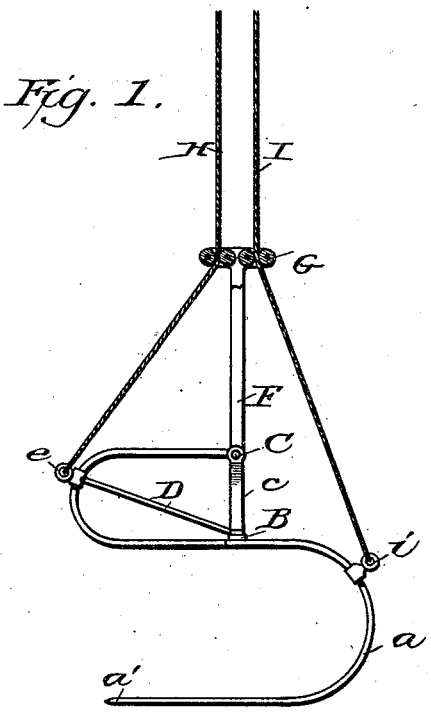


Fig. 2.

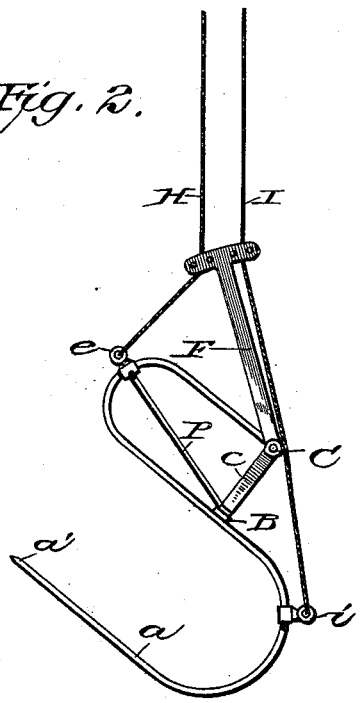


Fig. 3.

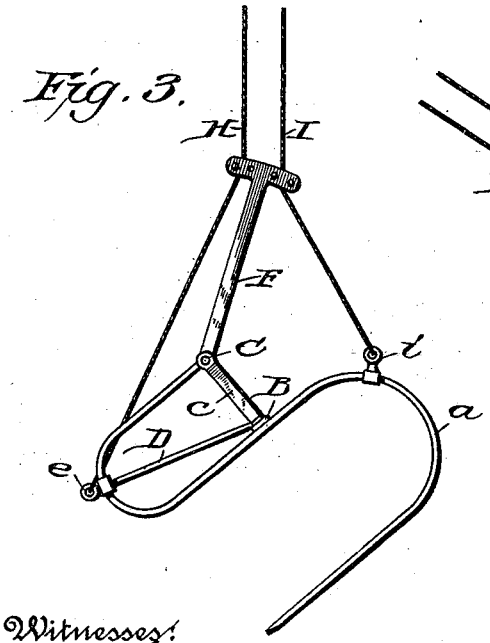
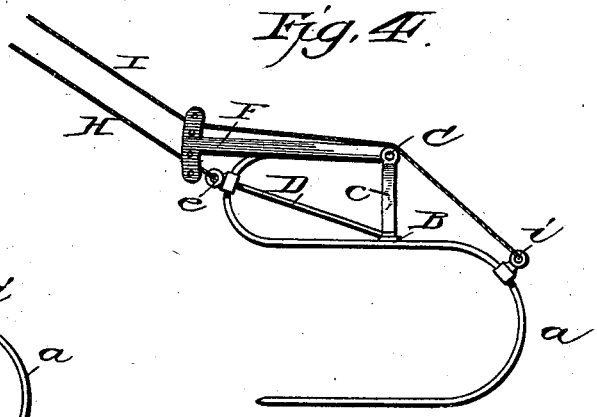


Fig. 4.



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(No Model.) 2 Sheets—Sheet 2.

Fig. 5.

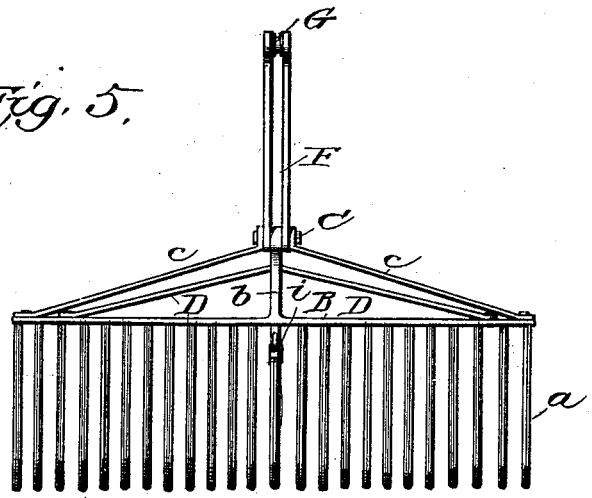


Fig. 6.

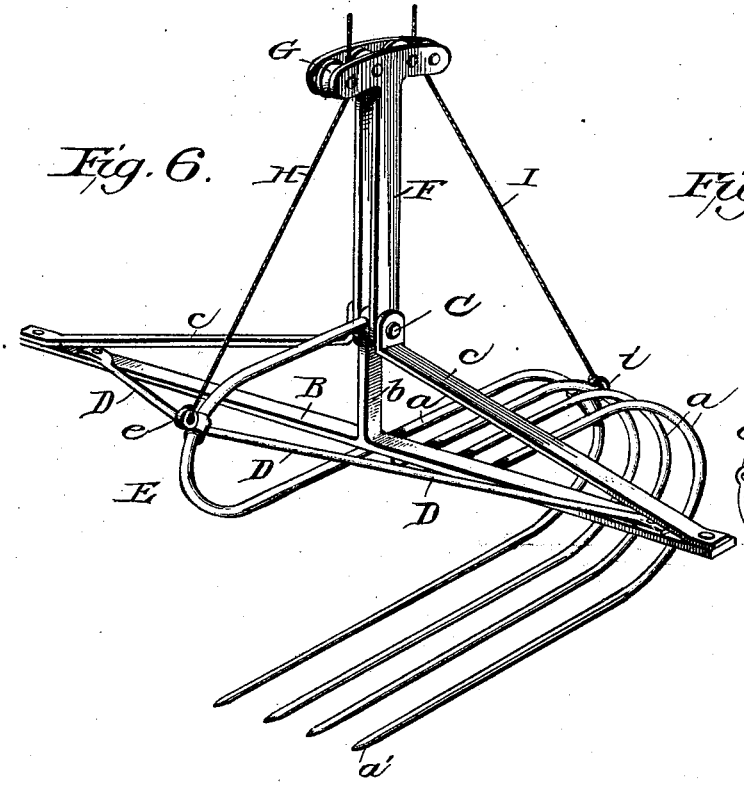
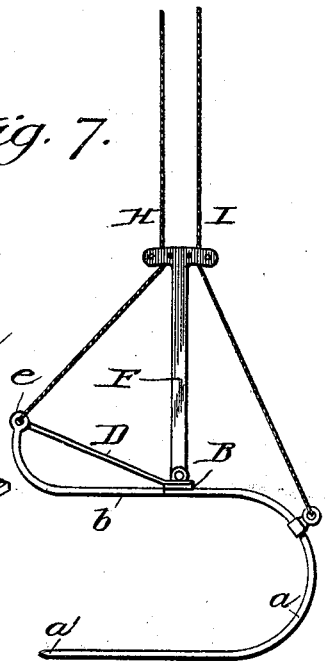


Fig. 7.



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UNITED STATES PATENT OFFICE.

IRA P. WASHINGTON, OF ST. PETERSBURG, FLORIDA.

DREDGING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 648,007, dated April 24, 1900.

Application filed January 18, 1900. Serial No. 1,860. (No model.)

To all whom it may concern:

Be it known that I, IRA P. WASHINGTON, a citizen of the United States, residing at St. Petersburg, in the county of Hillsborough and State of Florida, have invented certain new and useful Improvements in Dredging Apparatus, of which the following is a specification.

The object of my invention is to provide improved mechanism for handling, hoisting, conveying, and dumping dredging-buckets, oyster-dredges, sponge-hooks, &c.; and my invention consists in certain improvements in the construction of the dredging bucket, scoop, or cradle and in the devices for operating it.

My improvements are applicable to dredges, scoops, or cradles adapted for dredging various articles or substances, and they are applicable to buckets, scoops, &c., of any form and size, and some of my improvements may be applied to old buckets, &c., as well as new ones.

In the accompanying drawings, Figure 1 shows a side elevation, partly in section, of a dredging apparatus embodying my improvements, the parts being in the positions they assume when the bucket is descending. Fig. 2 is a side elevation of the apparatus, showing the position of the bucket, &c., when ascending. Fig. 3 is a view similar to Fig. 2, but showing the parts in the positions they occupy when dumping. Fig. 4 is a similar view showing the parts in the positions they occupy when dragging. Fig. 5 shows a rear elevation of a bucket or cradle embodying my improvements. Fig. 6 is a perspective view thereof, together with the devices for operating the bucket. Fig. 7 is a side elevation of a modification.

As before stated, my improvements are applicable to what are known as "buckets," "scoops," "cradles," "hooks," &c.; but in the drawings I have shown my improvements applied to a form of bucket called a "cradle," which is made up of a number of rods or fingers bent to form a bucket or receptacle for the dredged material. In the form shown in the drawings a number of rods *a* are bent into U form and secured to a horizontal cross-bar B. The lower portions of the rods *a* are, however, very much longer than the upper portions, and their front ends *a'* are pointed. The upper ends of the shorter portions of the bars are secured, as before stated, to the cross-bar B. The rods are arranged side by side in parallel lines across the bar at right angles thereto, as indicated in Fig. 5. The cross-bar is provided with an upwardly-projecting arm *b*, to which are attached by a bolt C two inclined brace-bars *c*, which are also attached to the opposite ends of the bar B, as clearly indicated in Fig. 6. The central one of the rods *a* is prolonged forwardly beyond the bar B, bent into U form, and attached to the bolt C, and diagonal brace-rods D are attached to the front end of the U-shaped frame E, formed out of the central rod *a* and carried to the outer ends of the bar B, to which they are firmly secured, as indicated in Fig. 6.

A guide-frame F is pivotally secured to the upper end of the arm *b* and to the inner ends of the brace-bars *c* by the bolt C. This frame is for the purpose of guiding the ropes H and I. Preferably the guide-frame is formed of two T-shaped metal pieces arranged on opposite sides of the upper end of the bar *b* and having between them at their upper headed ends four sheaves or pulleys G, between which the ropes, chains, or cables H and I extend. The rope H is attached to an eye *e* on the front end of the U-shaped frame E, and the rope I is attached to an eye *i*, secured to the rear end of the central U-shaped rod *a*.

The position of the bucket or cradle may be regulated from above by means of the ropes H and I. Fig. 1 shows the bucket in the position it occupies when descending. When it has reached bottom, the bolt to which the apparatus is attached may proceed forward, and the ropes H and I may be paid out or drawn in to cause the guide-frame F to turn on its pivot from its upright position to a nearly-horizontal position, as shown in Fig. 4, and it keeps this position as the bolt proceeds. When the bucket is filled, the boat stops, the rope H is drawn in, and the rope I paid out until the bucket assumes the position shown in Fig. 2, when the load may be raised. When the load is sufficiently raised, the rope H may be paid out and the rope I hauled in, thus causing the bucket to dump in the manner indicated in Fig. 3. It

will be observed that the frame F is adapted to turn either forward or backward relatively to the arm *b* when dragging, rising, or dumping.

The construction shown in Fig. 7 is similar in principle to that hereinbefore described, but is somewhat simpler, the brace-bars *c* being dispensed with. In this case the frame F is pivotally connected directly to the cross-bar B. The central rod *b* of the bucket or cradle is not bent into U form, but is prolonged forwardly and provided at its front end with an eye *e'*, to which the rope H is attached. Brace-rods D, similar to those shown in Fig. 6, are employed. In other respects the apparatus is similar to that shown in Fig. 6 and operates in substantially the same way. In Fig. 6 I have shown only four of the rods making up the bucket or cradle, the others being omitted for the sake of clearness.

I claim as my invention—

1. A dredging apparatus, comprising a receptacle for the dredged material, having a cross-frame and a forwardly-projecting frame, a guide-frame pivotally connected with the cross-frame, and ropes extending through guides in the guide-frame and attached to the dredging vessel in rear and also in front of the cross-frame.

2. A dredging apparatus, comprising a vessel or receptacle for the dredged material, a braced cross-frame, a forwardly-projecting braced frame, a guide-frame pivotally connected with the cross-frame, and ropes guided by the guide-frame and attached to the receptacle in rear of the cross-frame and also to the forwardly-projecting frame.

3. The combination of the cross-bar having the central upwardly-projecting arm, a receptacle or vessel attached to the cross-bar, diagonal braces attached to the opposite ends of the cross-bar and also to the upper end of the arm of the cross-bar, a frame projecting forwardly from the cross-bar and attached to the upper end of the central arm thereof, a T-shaped guide-frame pivotally connected to the upper end of the arm, ropes guided by the guide-frame and attached to the vessel or receptacle in rear of the cross-bar and also to the frame in front thereof.

In testimony whereof I have hereunto subscribed my name.

IRA P. WASHINGTON.

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