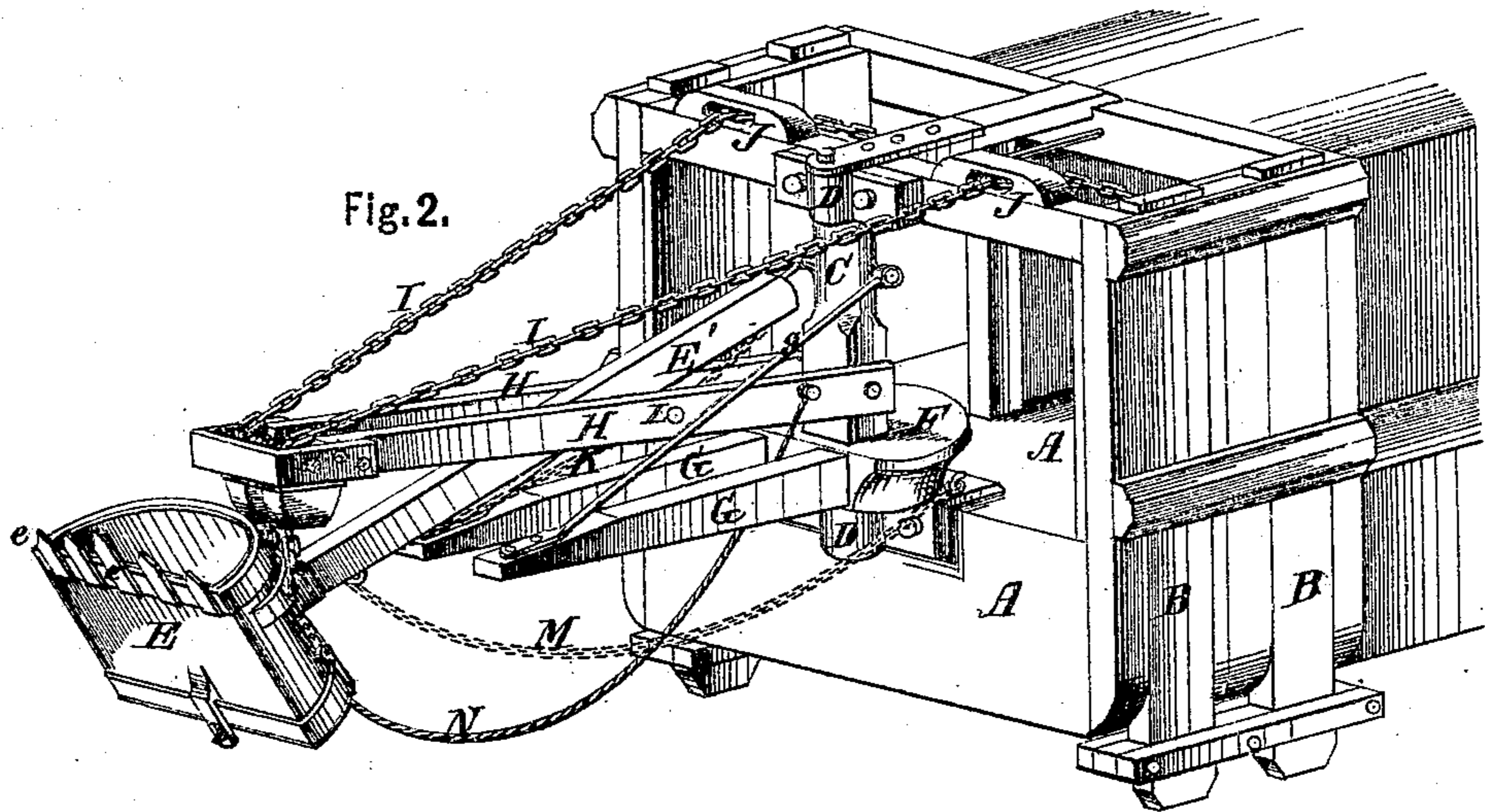
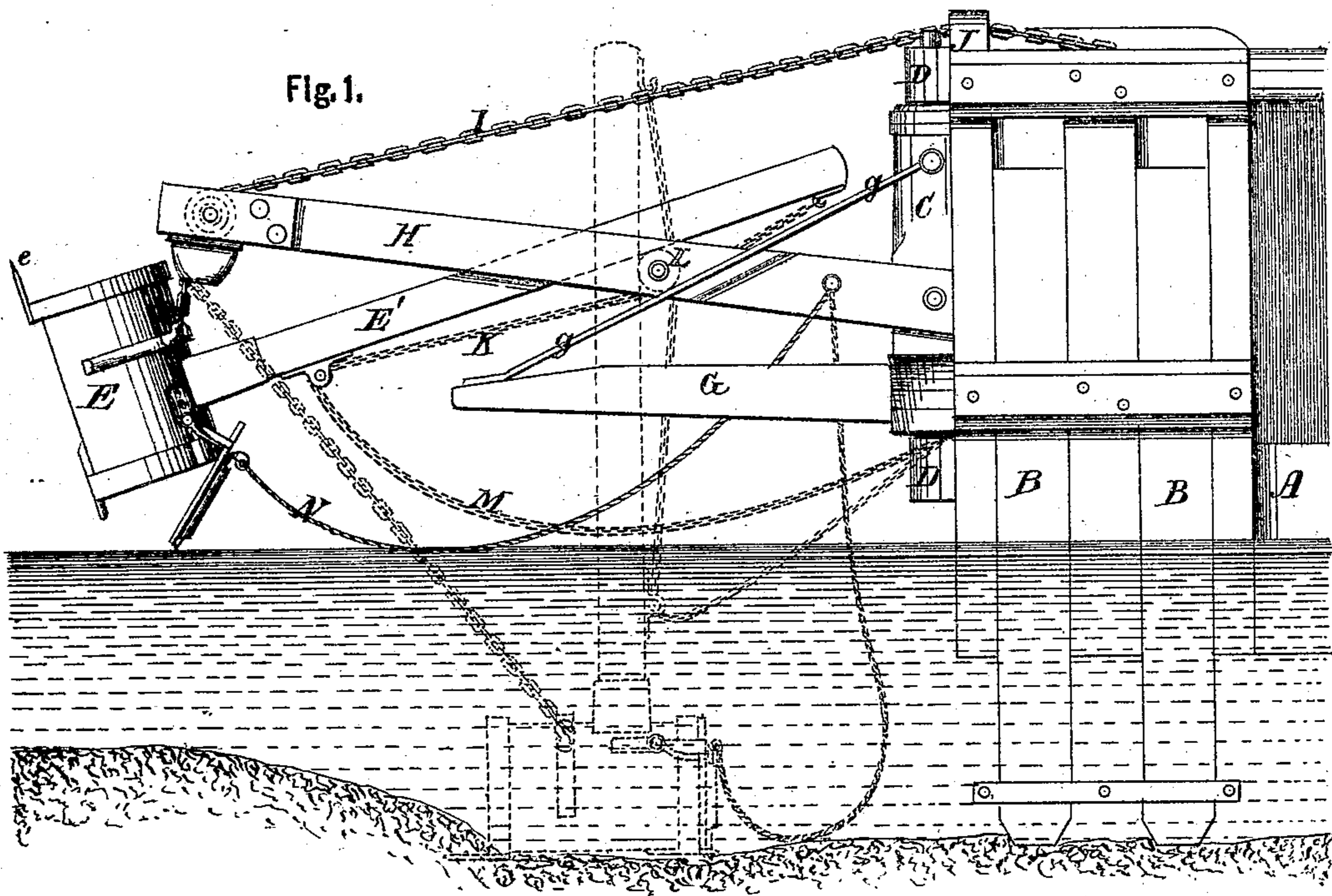


L. J. GONYO.

Improvement in Dredging-Machines.

No. 127,595.

Patented June 4, 1872.



WITNESSES,

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IMPROVEMENT IN DREDGING-MACHINES.

Specification forming part of Letters Patent No. 127,595, dated June 4, 1872.

Specification of an Improvement in Dredging-Machines, invented by LEWIS J. GONYO, of North Buffalo, in the county of Erie, State of New York.

This machine has a bucket on the end of a spar, which is suspended from a jib mounted on a movable pillar at the bow of a lighter or boat. There are three principal motions: First, the bucket-spar, which bears the same relation to the bucket that a handle does to a dipper, has a longitudinal motion to sink it to a greater or less depth, according to the depth of the surface of the mud below the surface of the water, and has also a motion in a vertical plane to bring up the loaded bucket. Second, the jib has also a motion in a vertical plane to give the lifted bucket further elevation when required. Third, the post of the jib has a movement on its vertical axis to swing the bucket laterally, so as to bring it above a mud-lighter, or over a bank, or to such other place within its radius as may be required, before emptying it of its contents. A vertical pile descends from the hull and moors the vessel while the dredging is in progress.

In the drawing, Figure 1 is a side elevation. Fig. 2 is a perspective view.

A is the hull of a dredger-boat, on whose forward end the apparatus is attached. B B are piles sliding in guides on the sides of the boat, and used, when lowered, to anchor the boat in position when the scoop is projected forward to gather a load, as shown in dotted lines in Fig. 1. C is a post fitted in bearings D D, in which it is rotated, to give a lateral throw to the dredge-scoop E when the contents of the latter are to be discharged. On the post C is a platform, F, and two extended beams, G G, between which the staff E' of the scoop works. The outer ends of the jaws G G are supported by brace-rods g g from the post C. The jib consists of two timbers, H H, which are pivoted at the foot to the post C, and, when lowered, rest upon the beams G G. At the outer end of the jib H H are sheaves, over which run the hoisting-chains I I, which are connected to the dredge-scoop E. The chains I I pass over sheaves on the top of the frame at J, and thence down into the hull of

the boat A, where they are wound upon a drum or drums, or operated by other suitable hoisting devices driven by a steam-engine, the parts being so constructed and connected by means of clutch movements or other suitable mechanical appliances that the chains may be drawn simultaneously for hoisting, or one left loose while the other is drawn to deflect the jib, staff, and bucket to either side. The dredge-bucket E is preferably of iron, and has teeth e to facilitate its entrance into the mud, earth, silt, or gravel which is to be raised. The bottom of the bucket is hinged, and is fastened, when shut, by a sliding bolt, which may be withdrawn by pulling on the cord N when the load is brought over the desired point of discharge. The beam or staff E' of the dredge-bucket has a certain freedom of motion, but is confined by a check-chain, K, which is fast at each end of the said staff, and has one turn around the roller L, which is journaled in boxes on the timbers H H of the jib. This permits the longitudinal extension of the staff, so as to permit the dredge-bucket to work in different depths of water. M is a rope to pull back the scoop, so as to take its load from a point as near as may be desired to the bow of a boat.

The operation is as follows: The bottom of the bucket is shut, and the chains I I, being slackened, allow the jib H and the dredger-bucket E to descend until the jib comes to its bearings on the jaws G G; the chains being further slackened, the dredger descends, the check-chain K retaining the staff E' against the roller L, while the dredger-bucket comes to its rearmost position, in assuming which it is assisted by the back rope M. The hoisting apparatus on board the boat is now set to work, and the chains I I being hauled in, cause the dredger-bucket to slide along the bottom, scooping up the mud, silt, or earth. As the scoop emerges from the water and continues to ascend it comes against the end of the jib, and then the latter commences its upward motion, accompanied by the bucket. This is continued until the bucket is hoisted sufficiently high to overtop the edge of the bank or the gunwale of the mud-lighter. The post C is next rotated on its axis to bring the dredge-

bucket over the place where its load is to be dropped; the rope N is pulled, withdrawing the latch of the bottom, the latter flies open, and the contents of the bucket are discharged. The slackening of the chains I I allows the bucket to descend, and the operation is repeated.

With this machine work can be readily done in canals beneath low bridges, in deep or shallow water; will cut a wide channel without moving, and dump further and quicker than can ordinary machines. The apparatus will work with dippers of different construction, and the head-gear can be attached to any boat. Pulling on the pair of chains elevates the bucket and jib; pulling on one chain swings the bucket over laterally.

Claims.

I claim as my invention—

1. The combination of the pivoted jib H H, bucket-staff E', and chains I I, when arranged as herein described, the upper end of the staff being free, and the chains serving both to elevate and to deflect the bucket and the jib, as explained.

2. The jaws G G supported by the post C and brace-rods g g, in combination with the jib H H, as and for the purposes described.

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Witnesses:

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