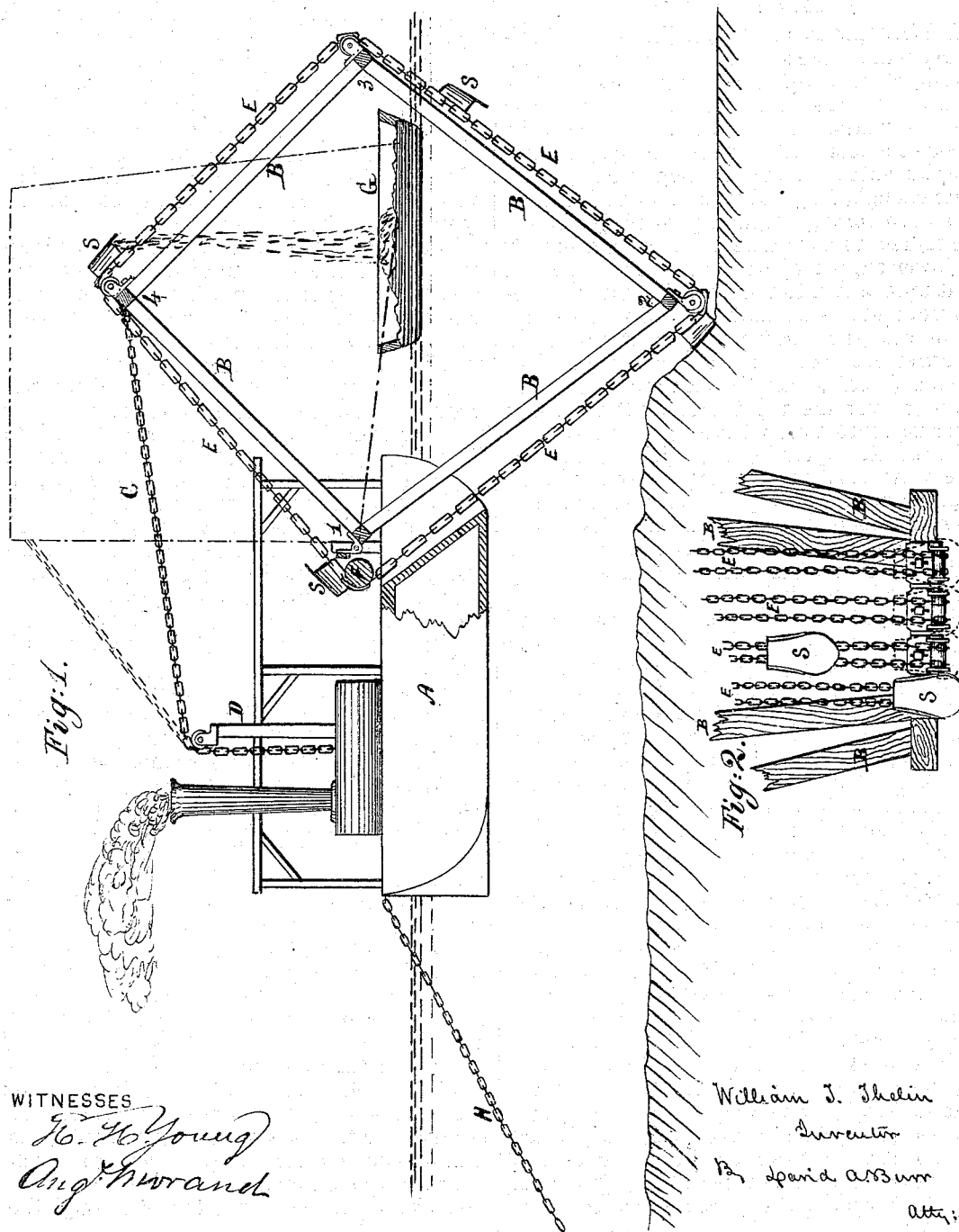


WILLIAM T. THELIN.

Improvement in Dredging Machines.

No. 125,351.

Patented April 2, 1872.



WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM T. THELIN, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN DREDGING-MACHINES.

Specification forming part of Letters Patent No. 125,351, dated April 2, 1872.

SPECIFICATION.

I, WILLIAM T. THELIN, of the city of Baltimore, in the State of Maryland, have invented an Improved Self-Discharging Dredging-Machine, of which the following is a specification:

My invention relates to the combination of scoop-buckets with endless chains moving over an extended quadrilateral frame, made wide enough, diagonally, to allow the passage of a scow through it, and pivoted at one angle thereof to a suitable boat or float, so that its lower angle may drop down in the rear of boat upon and into the mud or sand to be removed, and in such manner as that the buckets or scoops in traversing about the frame will first cut into and fill with the mud and sand, and, being then drawn upward, shall, in passing over the top thereof, automatically discharge into a scow floating within it.

In the accompanying drawing, Figure 1 is a side view, partly in section, of my improved apparatus, illustrating the construction and operation thereof. Fig. 2 is an end view of the lower angle of the frame, illustrating the form and operation of the scoop-buckets passing successively over it.

A is a boat or float, provided with a steam-engine or other suitable motive-power. B is the quadrilateral dredging-frame, constructed of stout timbers or beams of wood or iron, firmly united at their ends, the beams or timbers of two of the sides being longer than those of the remaining two sides. For use in deep water, the shorter sides are preferably united at a right angle with each other to form the upper angle of the frame, so that the longer sides united thereto and to each other shall form an acute angle with each other, as illustrated in the drawing; but for use in shallow water a rectangular frame may be used. The frame may be made narrower at its lower or acute angle than elsewhere, to facilitate its movement and operations—the width of the frame being proportioned to the number of chains and scoops to be used and the capacity for work desired in the machine. The frame B may be pivoted to the stern of any suitable boat A, but, by preference, in constructing a boat especially for use therewith, it is pivoted thereto at a point as near the center thereof as is possible (as illustrated in Fig. 1) without reducing too much the space between the stern

and the remote angle of the frame through which a scow is to be floated. In this latter case openings or ways are formed in the hull to permit the vertical swinging movement of the frame upon its pivotal axis in the operations of the machine. By thus removing the pivot-point of the frame as near to the center of the boat as possible, the strain in dredging is brought, with great advantage, more directly upon the center of the boat.

The frame is made to turn upon its pivot-angle 1, so as to elevate or depress its lower angle 2, by means of one or more chains or cables C, attached to its upper angle 4, and carried thence over suitable columns D on the boat A to a drum driven by the engine, or to a windlass to be operated by levers in the usual manner. When the machine is not in use, or is being carried from point to point, the frame is elevated, as illustrated by dotted lines in Fig. 1, so that its lower angle 2 is brought entirely above the water, and is thus upheld by the chains C; or said chains may be relieved from tension and the frame supported rearwardly by allowing its angle 2 to rest upon a second float or tender, following the first. E E are double endless chains, carried over rollers at the angles of the frame, and over a slotted drum or extended sprocket-wheel, F, secured upon the boat at the pivot-angle 1 of the frame, and driven by the engine, so as to produce a revolution of the double chains about the frame, from the boat over and back under the frame, as indicated by the arrows in Fig. 1. Two, three, four, or more pairs of chains are thus carried side by side over the frame, according to the width of the channel to be dredged, at one operation; and upon each pair of chains are secured two or more scoops or dredging-buckets, S, at equal distances apart. The buckets are of such a width as to overlap the chains, and are made wider in front than the rear. The chains are so approximated and the buckets are of such width as that the front cutting-edges of the buckets shall lap each other in passing around the frame and in cutting out a channel in the mud, as shown in Fig. 2. The buckets on the several chains are so placed as to follow each other in cutting, so that no two of them shall be cutting and filling at the same time.

The buckets are drawn into and through the

mud or sand with a regular even strain, and being filled are carried up over and around the drum F, and thence up over the topmost angle 4 of the frame; but so soon as they pass said angle they are at once tipped forward so as to discharge their contents into a scow, G, which has been floated and moored for the purpose between the boat A and the outer angle 3 of the frame, as illustrated in Fig. 1.

The dredging-boat A may be moored when at work by one or more anchors, H, thrown out at the bow, the cables attached thereto being carried over a drum or windlass at the bow, so that, by a revolution of said windlass, the boat may be gradually drawn forward as the dredging-buckets cut away the bank of mud or sand upon which they are working, as illustrated in the drawing, Fig. 1.

The rollers at the top angle 4 or outer angle 3 of the frame may be made to slide in and out in suitable ways or bearings to permit an adjustment of the tension of the chains about the frame.

I claim as my invention—

An open quadrilateral frame, B, combined with a boat or float, A, and with one or more endless chains, E, and dredging-buckets S, each carried and moving in a vertical plane around and upon said frame, substantially as and for the purpose herein set forth.

Witness my hand to said specification this 27th day of January, 1872.

WM. T. THELIN.

In the presence of—
DAVID A. BURR,
EWELL A. DICK.