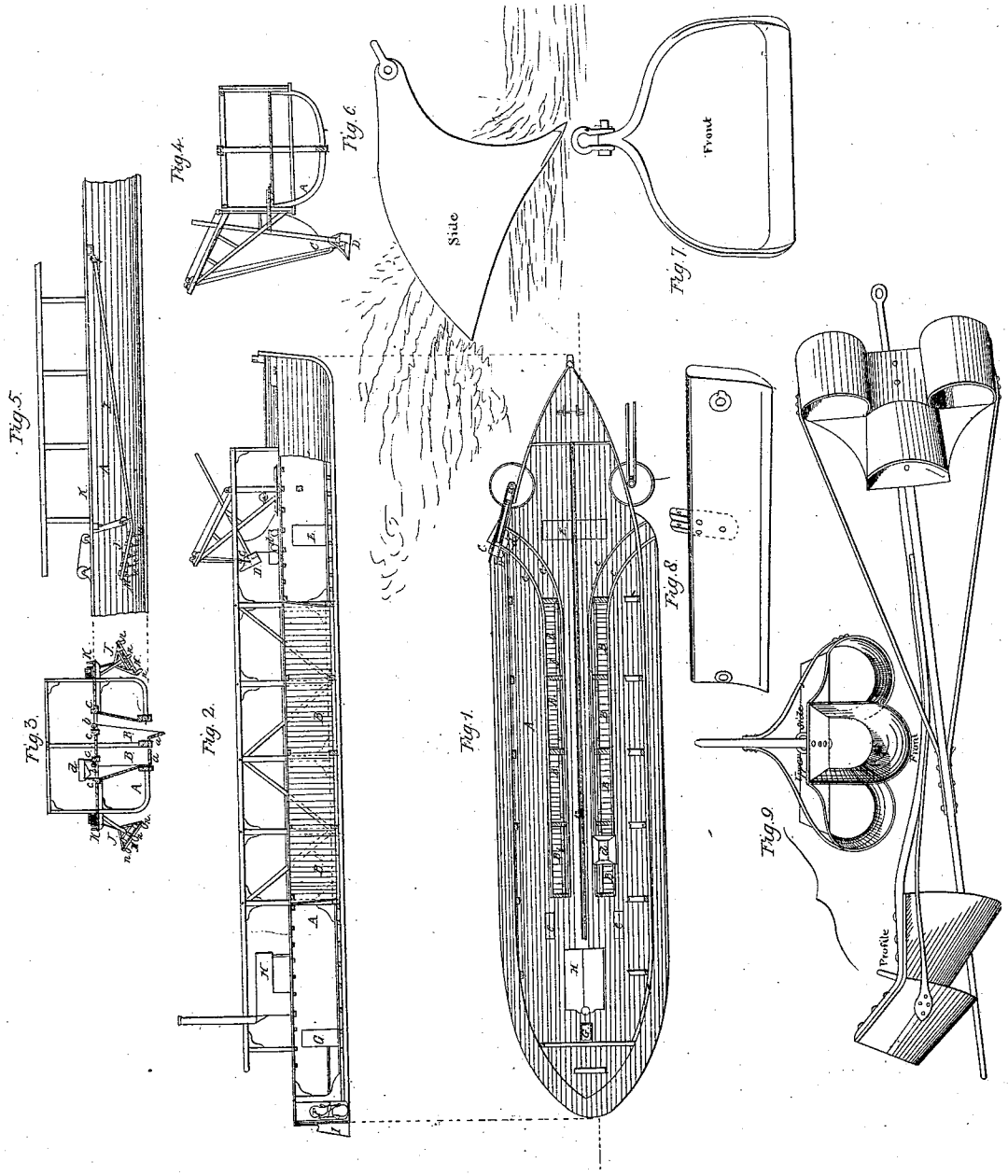
J. C. Osgood,

Dredger,

No. 12,919. Patented May 22, 1855.



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UNITED STATES PATENT OFFICE.

JASON C. OSGOOD, OF TROY, NEW YORK.

SUBMARINE EXCAVATING-MACHINE.

Specification of Letters Patent No. 12,919, dated May 22, 1855.

To all whom it may concern:

Be it known that I, JASON C. OSGOOD, of Troy, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Constructing Submarine Excavating Machinery; and I hereby declare that the folowing is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a deck or plan view; Fig. 2, a sectional elevation; Fig. 3, a cross section taken through the well-holes; Fig. 4, a cross section taken forward of the crane excavators; and Fig. 5 is a sectional side elevation, showing the mode of attaching and combining the drags to the vessel.

The same letters have reference to like parts in each of the figures.

The nature of my invention and that which distinguishes it from all other inventions and improvements heretofore made in dredging or submarine excavators, consists, first, in combining with submarine excavating machinery, well-hole deposits, which are built within the vessel or float supporting the excavating machinery, and also rail-way tracks, upon which run dumping cars, for the purpose of conveying the earth or mud from the excavators to the well-hole deposits; the combination being for the purpose of enabling a dredging or submarine excavating boat, when furnished with a screw or paddle-wheel propeller, to be self-tending, and to dispense with the mud-boat tenders; and also enables such a dredge boat to work in rough water, or where there is much swell or sea running, which would prevent the use of mud boat tenders, on account of their being very liable to be stove or swamped; secondly, in combining with a dredge-boat, furnished with a propelling apparatus, submarine drags; said drags being permanently affixed by hook and eye or swivel-joint at one end; to the side of the boat and at the drag end having a hoisting apparatus connected to it, for the purpose of hoisting the drag end quickly up to the boat when necessary to suspend temporarily, the use of the drag.

The description of my improved submarine dredge-boat is as follows, viz:

A is the vessel or float, constructed with well-holes B B, for the purpose of receiving the excavated earth or mud elevated by the excavating machinery C.

(*a a*) are drop doors or valves through which the mud is discharged.

(*b b*) are windlasses, by means of which the drop valve or doors are closed and held tight.

(*c c*) are railway tracks, laid down over the well-holes; upon these railway tracks run dumping cars (*d d*) for the purpose of conveying the mud and earth from the excavators to the well-hole; these cars are drawn back and forward, by a small engine, the location of which is shown at (*e e*) by red lines.

D D are submarine excavators, for the purpose of excavating and elevating the mud or earth in the operation of dredging or deepening a channel or harbor. The excavating machinery is driven by steam-power, the location of the engine being shown by the red lines at E.

F is a screw propeller for propelling the vessel, it is driven by an engine, the location of which is shown at G by red lines.

H is a steam-boiler.

I is a rudder for guiding the vessel.

J J are sub-marine drags; they are strongly and permanently attached to the sides of the vessel and under the guards, K, by a strong hook and eye or a swivel joint, so that the drag-shaft L, (see Fig. 5) may have some degree of rotating motion to the drag-frame M, to accommodate itself to the incline or level of the bottom upon which it is used. The drag-frame is strongly armed with colter-shaped teeth (*n*); attached to the drag-frame is a pulley-block and chain, which passing up over another pulley and on to a drum; or any suitable mechanical device can be used for the purpose of raising the drag-end quickly up to the boat or guard, and retain it there when it is required to suspend, temporarily, the use of the drag.

Figs. 6, 7, 8, 9 are also different varieties of sub-marine drags, to be used according to the substance requiring to be excavated, whether mud, sand, &c. The said drags are to be afflxed to the drag-shaft L, in place of the teeth, when occasion requires, and are to be placed, so that when used in a channel where there is a current, their cutting edge will be at an angle of about 30°, as represented in Figs. 6 and 9; by the back of the

drag or scraper, being raised higher than the cutting edge, and thus causing the deposits of mud or sand to pass off by the action of such current.

The drag, as represented in Fig. 9, may also be attached, in place of drags as represented in J, J, to arms or shafts, sixty feet in length—one on each side of the boat, to be used in deep water. Thus attached, they may be used as a rudder or means of steering the boat, by raising one up and leaving the other down. The same means may be used for hoisting or raising the said drags, as is last above described.

After having taken the proper position over the spot to be dredged, the machine is kept in position by anchors and hawsers, while the excavators take up mud or earth, and discharge into the cars, which when full, are run back on the railway track over the well-holes, and the mud dumped therein. When the well-holes are filled, the cables are slipped, and the dredge-boat, by means of its propelling apparatus, runs out into deep water, or in some place where it will not obstruct the channel or harbor, and drops its load, and returns and repeats the operation, &c. The drags are to be used in channels, when there is sufficient current to carry off the mud or sand, cut up or loosened by their use.

Having fully described my invention, I wish to be understood not to claim as new, the excavating machinery, the well-hole deposits, the railway track and dumping cars, or the drags, when taken separately; but

What I do consider as new, and desire to secure by Letters Patent, is,

1. I claim the combination of the excavating machinery, the railway track and car, and the well-hole deposits of the float or vessel, when combined in the manner substantially, and for the purposes of a self-tending sub-marine excavating boat, as herein described and set forth.

2. I claim the combination of the drags, with the vessel or float constructed as herein described; said combination being substantially in the manner and for the purposes as herein set forth.

JASON C. OSGOOD. [L. S.]

Witnesses:
JOHN FITCH,
N. FORSYTH,
J. A. GLASS.