

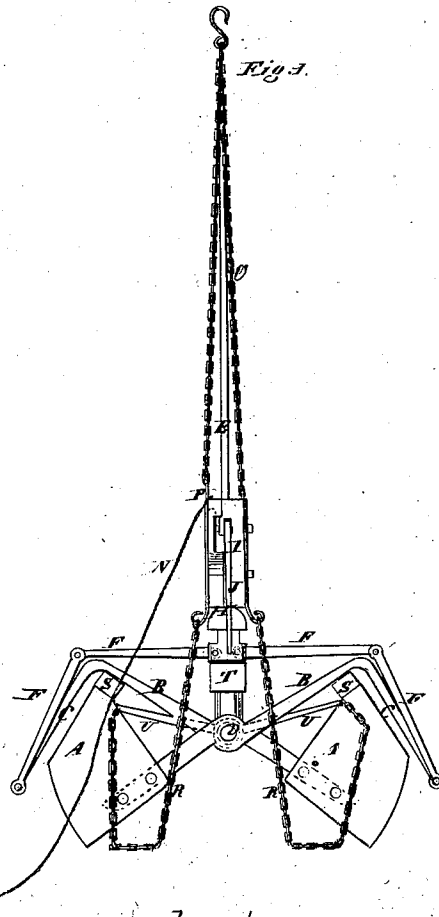
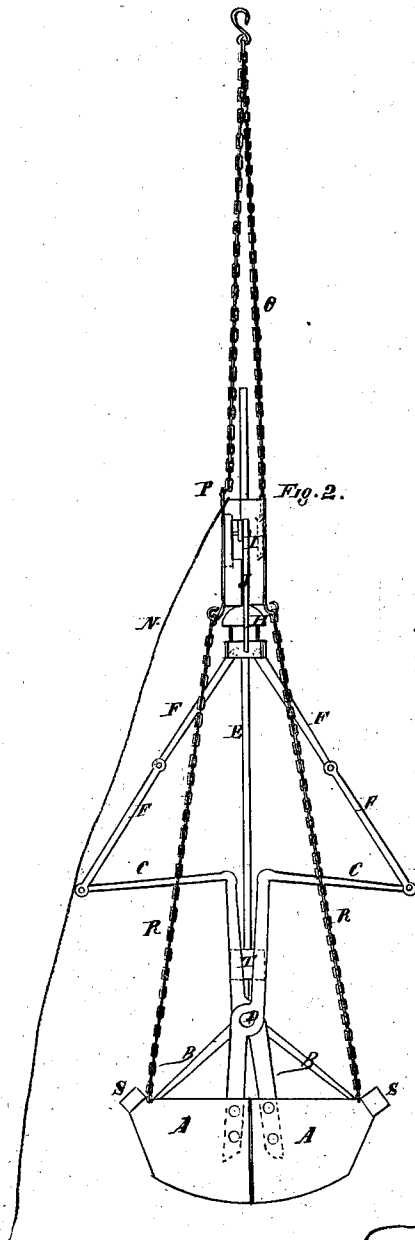
ISRAEL D. VANDECAR

2 Sheets--Sheet 1.

Imp^t m Dredging Machines.

No. 119,901.

Patented Oct. 10, 1871.



Witnesses:

F. F. Warner.
H. H. P. P. P.

Inventor:

Israel D. Vandecar

ISRAEL D. VANDECAR

Improvement in Dredging Machines.

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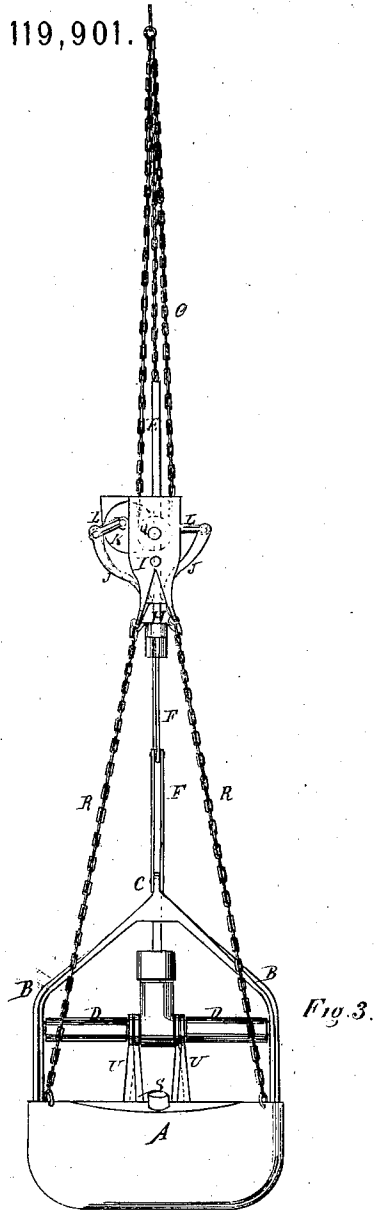


Fig. 3.

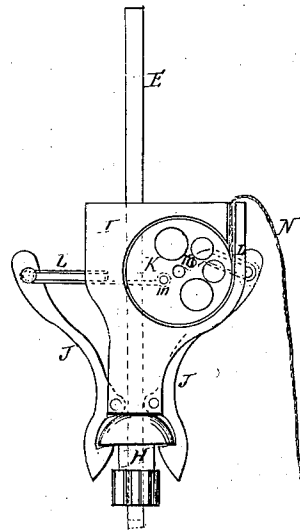


Fig. 4.

Witnesses
F. F. Warner.
Heint. P. Brown.

Inventor :
Israel D. Vandecar

UNITED STATES PATENT OFFICE.

ISRAEL D. VANDECAR, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN DREDGING-MACHINES.

Specification forming part of Letters Patent No. 119,901, dated October 10, 1871.

To all whom it may concern:

Be it known that I, ISRAEL D. VANDECAR, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Dredging-Machines, of which the following is a specification:

My invention relates to that class of dredging-machines which have hinged or pivoted scoops that are opened and closed by a series of jointed levers and chains or ropes; and it consists, first, in the special mechanism, hereinafter described, by which the said scoops are pivoted; and second, in the special construction and arrangement of the jointed levers and chains by which said scoops are operated; and third, in the combination, with the same, of rubber blocks or bearings, as hereafter described; and fourth, in the special device for operating the hooks attached to the sliding block, hereafter described, and the combination, with said block, of the hoisting-chain by which said dredging-machine is suspended.

Figure 1 represents an end view of my dredging-machine open in position ready to be filled. Fig. 2 represents the same closed in the position it assumes when filled. Fig. 3 represents a side view of the machine in the same closed position. Fig. 4 represents an enlarged view of the sliding block and hoisting-hooks, with one of the side plates of said block removed.

A in the drawing represents the hinged scoops; B, the bails of said scoops, with bent arms C attached thereto. D is a cross-shaft, to which said bails are pivoted, as shown; and E, a vertical rod, attached rigidly to said shaft. F F are jointed connecting-rods, connecting the outer ends of the arm C with the sliding head H. I is a sliding block, and J J are hooks pivoted to said sliding block, as shown. K is a pulley, hung on bearings within said block. L L are connecting-links or rods, attached loosely to pins M M on opposite sides of the pulley K and to the arms of the hooks J J, as shown. N is a cord, which passes in the groove of the pulley K and is attached to said pulley, as is shown by dotted lines in Fig. 4. O is a hoisting-chain, attached to the sliding block I by one strand thereof, being attached or hooked to said block at P and the other two strands by passing around a pulley, Q, in said block. R R are chairs, attaching the sliding block I to the back part of the scoops A. S S are rubber blocks, attached to the scoops A where

the bails B will strike against them, and thereby prevent a noise and jar, and injury to the machine when opened, as hereafter described. T is also a rubber block, placed on the rod E for the sliding head H to strike against when the machine is opened. U U are braces, rigidly attached to the back part of the scoops A and pivoted to the shaft D.

The operation of my machine is as follows: Fig. 1 represents the machine lowered to the bottom of the river or lake to be dredged, so that the scoops rest in the position shown in Fig. 1 on said bottom. The hoisting power being applied to the chain O, by means of tackle applied to a derrick or other well-known mechanism suitable for that purpose, it is communicated through the hooks J J, which are hooked to the head of the sliding head H and the jointed connecting-rods F, to the arms C of the bails B. These bails, being pivoted to the shaft D, serve as levers to force the scoops together, and at the same time cause them to scoop themselves full of the earth or material upon which they rest, the machine assuming the position in all its parts shown in Fig. 2, when, by continuation of the application of power, the machine is raised and swung around to the place where it is desired to deposit the contents of the scoops. By pulling the cord N the pulley K is revolved, and, through the connecting-links L, the hooks J are vibrated and released from the sliding head H, when the weight of the machine is taken by the chains R instead of being supported through the head H and bails of the scoops and their connections, and the scoops opened, as shown in Fig. 1, discharging their contents, the sliding head H falling down upon the rubber block T; but the block I remaining elevated. The machine is then swung back and lowered for a second load, and the block I lowered so as to slide down on the rod E till the hooks J engage on the sliding head H, when the machine is ready for the removal of a second load, as above described. The braces U brace the back part of the scoops and keep them from being thrown out of shape. By means of the bails B and arms C, and the shaft D, the power for closing the scoops is applied at each end of them, the bails serving as a lever in the application of the power, and by the bent arm C extending outward, as shown, the scoops are held pressed together until the hooks J are released from the sliding head H, as above

described. The draft-chain O passes from the drum of any hoisting apparatus over the hook shown at the top of Figs. 1 and 2, which hook may be regarded as suspended from the boom of a vessel; from thence it passes downward around the pulley Q, and then up over the said hook; and from thence down again to the sliding block I, to which it is attached at P. In practical operation a pulley-block and sheaves are substituted for the said hook to prevent too great friction, and to increase the draft power. As the free end of the draft-chain is wound around the drum of a hoisting apparatus the dredging-machine is raised, and as it is unwound it is lowered. The purpose and operation of the pulley Q is thus made clear.

Having described the construction and operation of my dredging-machine, what I claim and desire to secure by Letters Patent, is—

1. The combination of the scoops A, bails B,

arms C, shaft D, and braces U, when constructed and arranged substantially as shown and described.

2. In combination with the scoops A, bails B, arms C, and shaft D, the jointed connecting-rods FF and sliding head H, substantially as described.

3. In combination with the scoops A, bails B, arms C, and shaft D, the rubber blocks S and T, as and for the purpose shown and described.

4. The combination of the pulley K, connecting-links L, hooks J, sliding block I, and cord N, constructed and arranged as and for the purposes set forth.

5. The combination of the sliding block I, the pulley Q, and chain O, constructed and arranged as described.

ISRAEL D. VANDECAR.

Witnesses:

F. F. WARNER,

HEINR. F. BRUNS.