2 Sheets--Sheet 1.

W. H. NEWTON.

Dredging-Apparatus.

No. 168,278. Patented Sept. 28, 1875.

Fig. 1

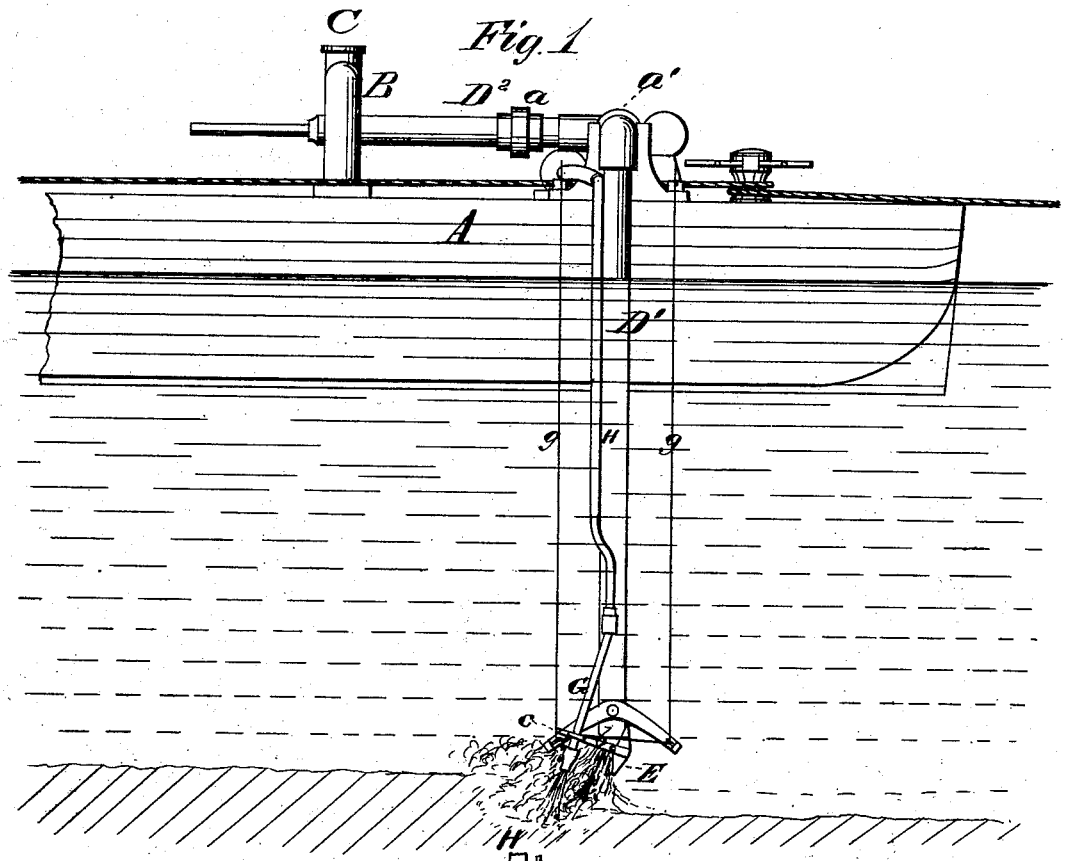
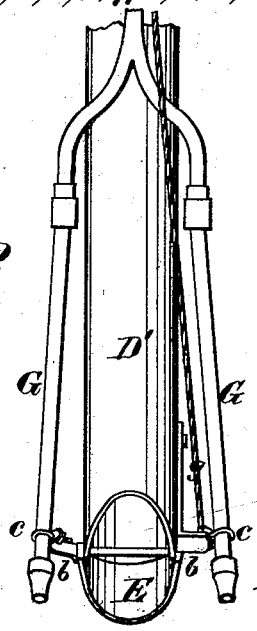


Fig. 2



WITNESSES.

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2 Sheets--Sheet 2.

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Dredging-Apparatus.

No. 168,278. Patented Sept. 28, 1875.

Fig. 3

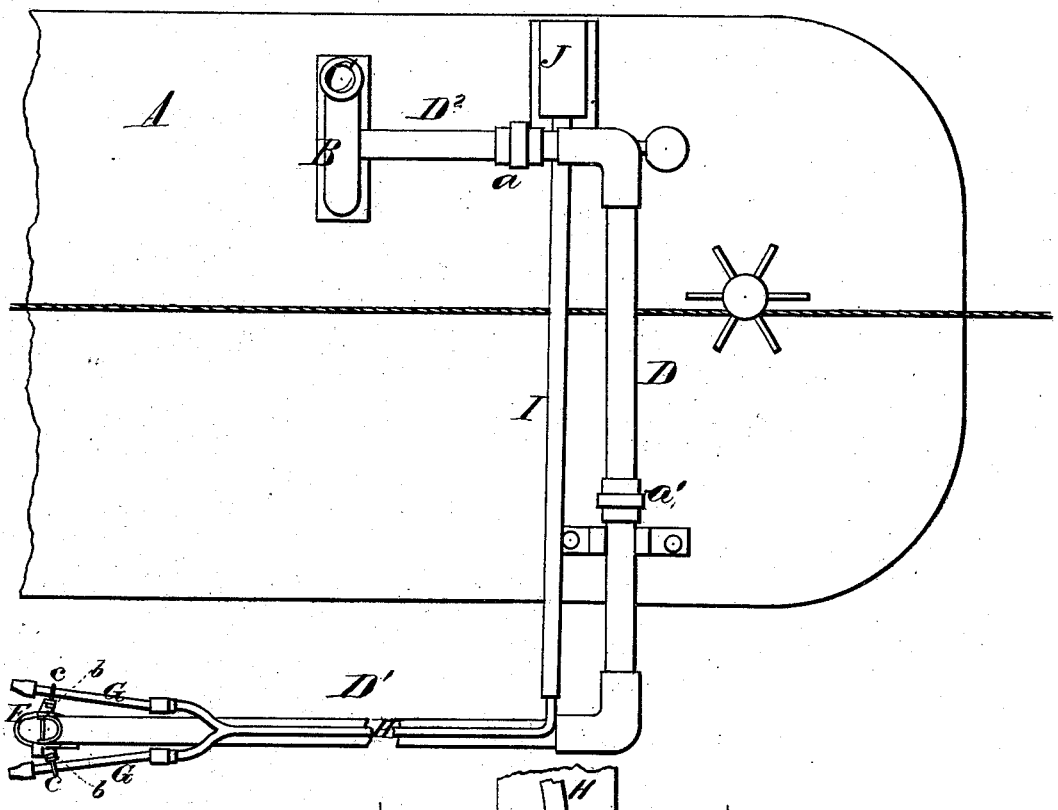
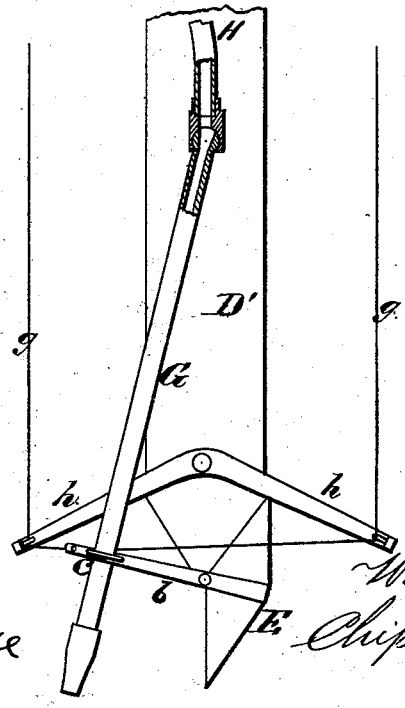


Fig. 4



WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM H. NEWTON, OF MADISON, WISCONSIN.

IMPROVEMENT IN DREDGING APPARATUS.

Specification forming part of Letters Patent No. **168,278**, dated September 28, 1875; application filed September 4, 1875.

To all whom it may concern:

Be it known that I, WILLIAM H. NEWTON, of Madison, in the county of Dane and State of Wisconsin, have invented a new and valuable Improvement in the Process of Dredging; and I do hereby declare that the following 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, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a side view of my device in operation. Fig. 2 is a view of the suction-mouth, and Fig. 3 is a plan view of the machine.

This invention has relation to hydraulic dredges for deepening rivers, estuaries, canals, and other water-ways; and the nature of my invention consists in a pivoted adjustable mouth-piece for the exhausting-pipe, in combination with adjustable nozzles applied to the pipe of the forcing-engine, as will be hereinafter explained.

In the annexed drawings, A designates part of the hull of a boat of any suitable capacity, on the deck of which my improved dredging apparatus is applied. B designates an exhausting-engine of the centrifugal kind, the case of which is constructed with a pipe, C, from which the material excavated is discharged. Another pipe or conduit will be attached to the pipe C, for the purpose of conveying the material to any convenient place of deposit. The exhausting-pipe consists of a horizontal portion, D, and a vertically-vibrating portion, D^1. The horizontal portion, which is at right angles to the portion D^1, is supported in suitable bearings on the deck of the boat, and connected to a pipe, D^2, and also to the vibrating section D^1, by means of joint-couplings $a\ a'$, which allow section D^1 to vibrate vertically, and also, when desired, to be adjusted on either side of the boat. The lower or free end of the section D^1 is double-beveled to form the suction-mouth, and to the angles of this mouth a hood, E, is pivoted, which can be adjusted in either of the two positions indicated in Fig. 3. To the sides of this adjustable hood arms $b\ b$ are secured, which are connected by swivel-rings $c\ c$ to nozzles G G. The nozzles are arranged on opposite sides of the section D^1, and extend beyond the hooded end thereof. These nozzles are connected to the bifurcated ends of a pipe, H, which extends along upon the section D^1, and is connected, by means of a flexible pipe, I, to a forcing-engine, J. The connection of nozzles G G to the ends of pipe H is effected by means of ball-and-socket joints, which allow the nozzles to be adjusted with the hood E. This adjustment is effected by means of ropes or chains $g\ g$, which pass through eyes on fixed arms h, and are carried to the deck of the boat.

The operation is as follows: The boat is moved over the place to be dredged, and the pipes are lowered to the proper depth and sustained by any suitable means. The engines are then started, when strong currents will be directed against the material to be elevated, which will loosen and disintegrate the same, and also stir it up in the water about the mouth of the exhausting-pipe. As rapidly as the material is thus loosened from its bed it will be drawn up through the pipe and discharged through the pipe D^1, from which latter the material can be conducted wherever desired.

What I claim as new, and desire to secure by Letters Patent, is—

1. The pivoted adjustable hood or mouth-piece E, combined with the swinging pipe D^1, substantially as described.

2. The adjustable nozzles G G, combined with the adjustable hood E and swinging pipe D^1, substantially as described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

WILLIAM HENRY NEWTON.

Witnesses:
OTHO H. ORTON,
H. W. CHYNOWETH.