No. 611,614. Patented Oct. 4, 1898.

J. EDWARDS.

DREDGING DRAG.

(Application filed Mar. 21, 1898.)

(No Model.)

FIG. 1.

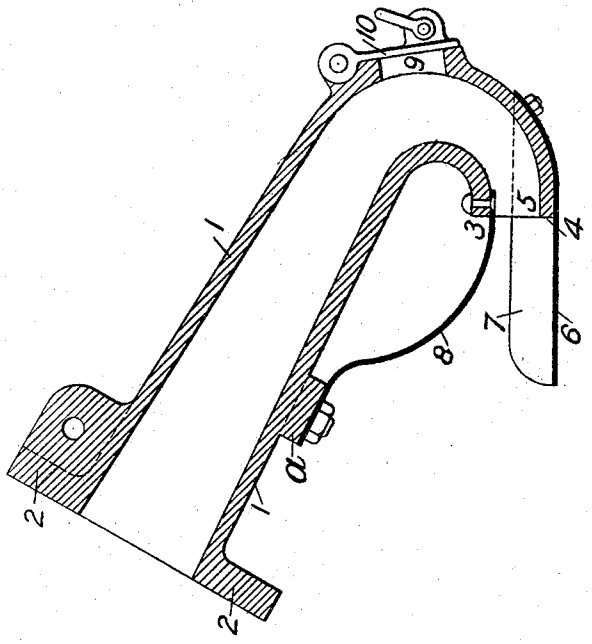
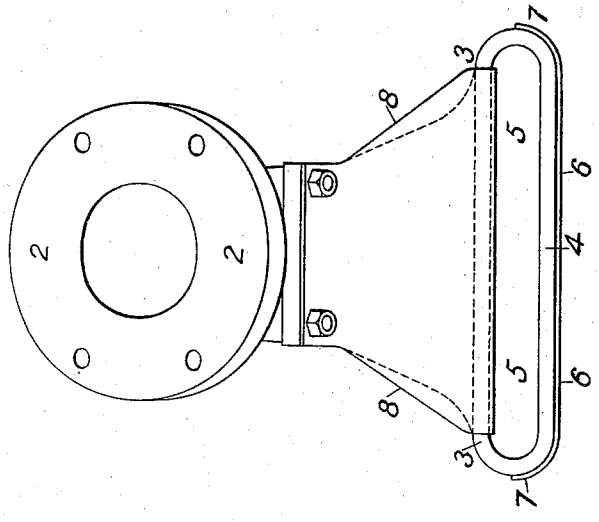


FIG. 2.



WITNESSES

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JOSEPH EDWARDS, OF NEW YORK, N. Y.

DREDGING-DRAG.

SPECIFICATION forming part of Letters Patent No. 611,614, dated October 4, 1898.

Application filed March 21, 1898. Serial No. 674,560. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH EDWARDS, a citizen of the United States, residing in the borough of Brooklyn, in the city of New York and State of New York, have invented a new and useful Improvement in Dredging-Drags, of which the following is a specification.

The object of my invention is to provide for rotary suction-pumps employed for dredging under water a mouthpiece, technically termed the "drag," of such form and construction as will make it possible to successfully pump free gold from beds of rivers.

Before describing my device it will be admissible as bearing upon its usefulness to state that it has heretofore been found by extensive experiments in pumping from the beds of rivers dirt, sand, &c., containing particles of free gold that the preliminary agitation of the various materials just prior to their entrance into the mouth of the drag causes or permits the particles of gold to settle below the reach of the suction power of the pump, even though the suction be superfluously intense to raise the gold provided it entered into the mouth of the drag.

While deepening the channels of the lower bay of New York harbor with my rotary pumps it was not an uncommon occurrence to draw up and pass through the pumps parts of anchors, anchor-chains, bars of pig-iron, &c., yet the force of these pumps with the same form of drags there used will not draw up particles of free gold deposited in sand, for the reason above given; but I find that even with less suction I can by the employment of my improved drag successfully collect and elevate gold mingled with other materials.

The nature of my device is such that it secures and prevents the particles of gold from settling or falling below the reach of the suction before the agitation caused by the suction disturbs their rest among the sand and other materials in which they are lodged. This I accomplish by the device illustrated by the accompanying drawings, in which—

Figure 1 is a vertical section through the center of the drag from front to back, and Fig. 2 a front view looking into the mouth of the drag.

Similar numerals of designation refer to similar parts in both views.

1 1 is the body of the drag, consisting of cast-iron, turned at the bottom so that its mouth 5 opens in front, the mouth being horizontally wide and vertically narrow. (Best shown in Fig. 2.) In ordinary drags for taking sand and mud the mouth is turned downward.

2 2 is a flange for coupling the drag to the suction-pipe, 3 the upper lip, and 4 the lower lip, of the mouth of the drag; 6 6 an advance under-thrust shovel, consisting of plate-steel, having turned-up sides 7 7. This shovel is as wide as the mouth of the drag and is rigidly fastened at its rear end by bolts or rivets to the lower lip of the mouth of the drag and projects forward from the same a distance equal to about four or five times the vertical width of the mouth of the drag. The function of this elongated shovel is to secure the materials to be elevated before they fall in range of the suction of the drag.

8 8 is a directing-shield, also made of plate-steel, fastened by bolts or rivets at the front end to the cross-bracket *a* and at its rear end to the upper lip of the mouth of the drag, being nearly as wide at this end as the under-thrust shovel. The object of this shield is to prevent the material that is being elevated from passing over and escaping the current of suction, and thereby directing and concentrating the material to the mouth of the drag.

9 is an opening in the back of the neck of the drag, covered with a flap-valve 10, for the purpose of letting in water in the event of the drag becoming choked.

Having pointed out the various parts of my device, its peculiar operation is briefly stated as follows: As the drag is drawn along the advance under-thrust shovel 6 is continually advancing sufficiently ahead of the mouth of the drag to underlie and hold a given quantity of material to be elevated before it becomes disturbed or agitated by the force of the suction at the mouth of the drag, which, together with the assistance of the directing-shield 8 8, causes all the material, including free gold, within and above the under-thrust shovel to be drawn into the mouth of the drag, and so on up to and through the pump.

Having described the construction and operation of my improvement, what I claim as new and useful, and desire to secure by Letters Patent, is—

On a suction dredging-drag the elongated under-thrust shovel 6 having its rear end attached to the lower lip of the mouth of the drag, whereby the materials to be elevated are secured before they come within range of the suction of the drag, as and for the purpose set forth.

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