Feb. 5, 1924. 1,482,851

L. E. KLINGON ET AL

DREDGE

Filed Nov. 2, 1921

Fig. 3.

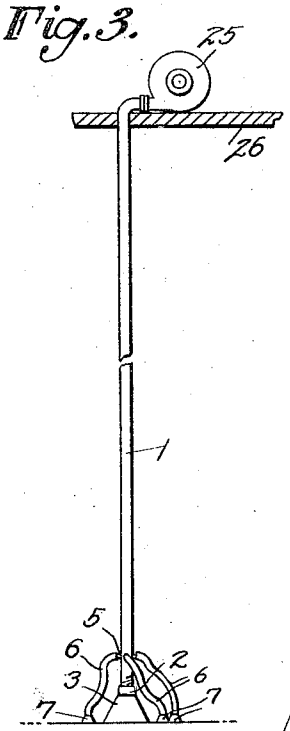


Fig. 1.

Fig. 2.

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UNITED STATES PATENT OFFICE.

LOUIS E. KLINGON AND ELDRIDGE M. GATHRIGHT, OF BRIDGEPORT, CONNECTICUT.

DREDGE.

Application filed November 2, 1921. Serial No. 512,288.

To all whom it may concern:

Be it known that we, LOUIS E. KLINGON and ELDRIDGE M. GATHRIGHT, citizens of the United States, residing at Bridgeport, in the county of Fairfield, State of Connecticut, have invented a new and useful Dredge, of which the following is a specification.

This invention aims to provide novel means for the recovery of gold (elementary or placer), platinum or other minerals or metals of high specific gravity, found under water in creeks, rivers, bays, or on the ocean bed, the material recovered being referred to hereinafter for the sake of brevity, merely as "metal."

We do not bind ourselves to the specific form depicted and described, since, within the scope of what is claimed, a mechanic may make changes in the form selected as a material embodiment, without departing from the spirit of the invention or avoiding the charge of infringement.

In the drawings:—Figure 1 shows in elevation, a device constructed in accordance with the invention, parts being in section; Figure 2 is a transverse section wherein the amalgamating receptacle appears in top plan; Figure 3 is a diagrammatic view, showing the device connected with a pump.

The numeral 1 marks a pipe forming part of a main suction conduit, the lower end of the pipe being mounted in the neck 2 of an amalgamating receptacle 3 which may be of conical shape or otherwise, a quantity of mercury or other suitable amalgamating substance being placed in the receptacle 3, as shown at 4, the receptacle forming part of the main conduit. The pipe 1 of the suction conduit has any desired number of lateral nipples 5 carrying auxiliary suction conduits 6, which, like the pipe 1, may be flexible, if desired, suction heads 7 being carried by the lower end of the auxiliary suction conduits 6, the said conduits 6 communicating with the pipe 1 above the amalgamating receptacle 3.

The pipe 1 of the main suction conduit 1 is connected to a pump 25, centrifugal or otherwise, located on a vessel 26, or on shore, the receptacle 3 and the auxiliary conduits 6 being placed on the ocean or river bed at the place where the recovery is to be effected. The amalgamating receptacle 3 is constructed of some material which will not be affected by the mercury or other amalgamating substance 4 contained therein, the receptacle being of the shape and size best adapted to the conditions under which the recovery is to be made. The auxiliary conduits 6 may be connected to the main conduit at a common elevation, or at different elevations. The capacity of the main suction conduit is greater than the displacement of the pump 25, the total capacity of the auxiliary conduits 6 being equal to the displacement of the pump. As a result, the velocity with which the material passes through the auxiliary conduits 6, is equal to the velocity at the pump, and both velocities are greater, in proportion to the size of the main suction conduit, than the velocity of the material in the main suction conduit. The water, sand, silt, gravel and metal are drawn through the auxiliary conduits 6 into the main suction conduit, the sand, gravel, silt and the like being carried to the pump 25, the metal falling into the amalgamating receptacle 3, and being subjected to the action of the amalgamating substance 4 therein. The receptacle 3 and its contents serve, in addition to the function ascribed to them hereinbefore, as an anchor, holding the lower end of the main conduit in place.

What is claimed is:—

1. In a device for collecting heavy metals from beneath the surface of a body of water, a main suction conduit and an auxiliary suction conduit branched from the main conduit, the main conduit being completely closed at its lower end to form a receptacle for the heavy metals collected, the main conduit being of greater cross sectional area than the auxiliary conduit, to provide for a reduction of the speed of flow in the main conduit, as compared with the speed of flow in the auxiliary conduit, and to provide for the depositing of all of the heavy metals in the receptacle.

2. In a device for collecting heavy metals from beneath the surface of a body of water, connected main and auxiliary conduits forming a continuous suction channel, the auxiliary conduit being of less cross sectional area than the main conduit, and means for applying suction to the upper end of the main conduit, the main conduit being extended below the point of juncture between the conduits to form a receptacle for the reception of the metals collected.

3. A device of the class described, constructed as set forth in claim 1, and further characterized by amalgamating material contained in the receptacle.

4. A device of the class described, constructed as set forth in claim 2, and further characterized by amalagamating material contained in the receptacle.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

LOUIS E. KLINGON.
ELDRIDGE M. GATHRIGHT.

Witnesses:
WILLIAM J. WHALEN,
N. M. MEYERS.