W. M. HUGHES.

Ore Washer.

No. 7,002. Patented Jan'y 8, 1850.

Fig. 1.

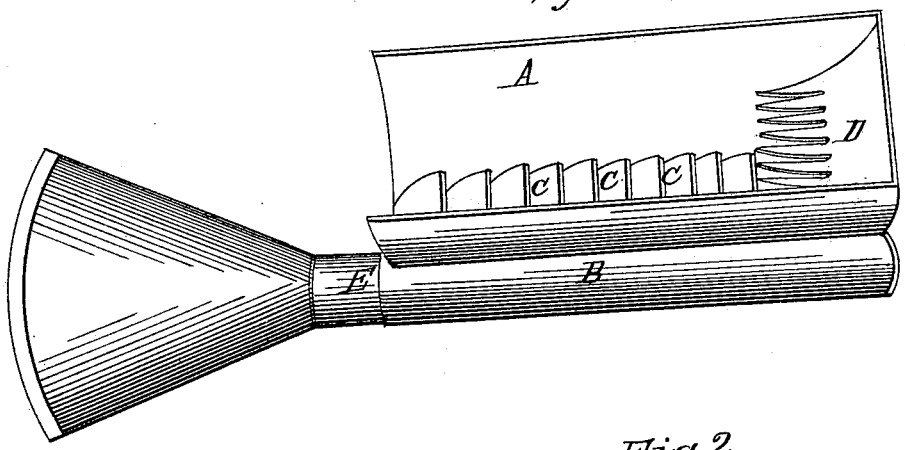


Fig. 2

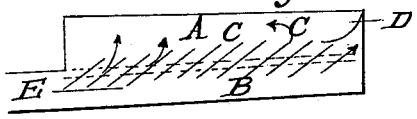
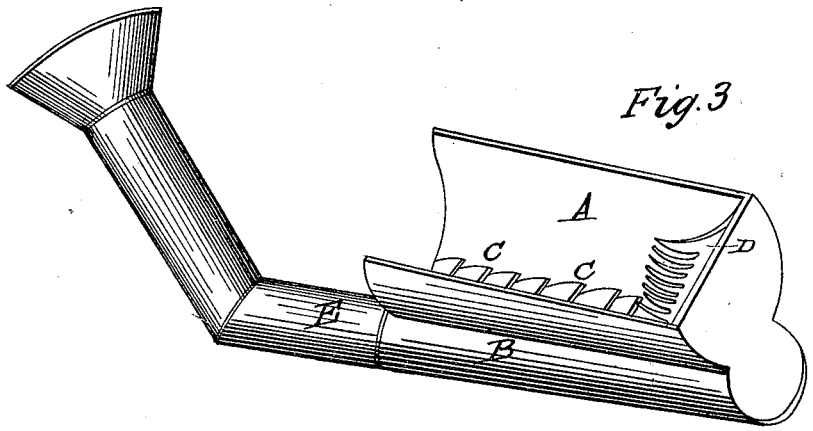


Fig. 3



UNITED STATES PATENT OFFICE.

WILLIAM M. HUGHES, OF FAYETTE, MISSOURI.

ORE-WASHER.

Specification of Letters Patent No. 7,002, dated January 8, 1850.

To all whom it may concern:

Be it known that I, WM. M. HUGHES, of Fayette, in the county of Howard and State of Missouri, have invented a new and Improved Machine for Separating Gold from Sand or other Foreign Matter; 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 drawings accompanying and forming a part of the specification, in which—

Figures 1 and 3 represent the machine in different positions. Fig. 2 is a longitudinal sectional view of a part of the same.

A represents a trough through which the water passes, and in which the material is cleansed or separated.

D is an apron upon which the material is placed.

C, C, C, are plates placed obliquely in the bottom of the trough.

B is a horizontal pipe conducting the water to the trough, supplied by means of a pump or otherwise.

Fig. 2 is a longitudinal sectional drawing of a part of the same, the arrows show the direction of the currents as they pass between the plates toward the apron D, then back in a reverse direction to the mouth of the trough.

The action of the machine is as follows: When placed in a running stream of water the mouth of the tube E Fig. 1, is placed in a position to admit the current, the machine is supported at such a depth as will bring the top of the plates *c*, *c*, *c*, on a level with the surface of the stream. The materials to be separated are placed on the apron D. The water enters the funnel shaped tube E Fig. 1 passing in an oblique direction between the plates, *c*, *c*, *c*, in the direction of the head of the trough A, dislodging the material placed on the apron D, greatly agitating and scattering it. And at the same time carrying all lighter particles in the upper or horizontal current to the mouth of the trough A, where they are discharged, while the heavier particles occupying a lower place in the vessel A, are met on their way to the mouth of the trough A, by the oblique current and are swept back toward the head of the same, thus the action continues until the heavier particles by the force of gravity sink to the bottom of the pipe B Fig. 1. The same effect may be produced by passing water through the tube E Fig. 3 when the head of water produces the action required.

I am aware that ores have been washed or dressed by means of vertical currents and a horizontal one passing over them, but by this method the metallic particles drop in the same spot they rise from or are carried toward or over the mouth of the trough thus producing waste, but by my method the heavy particles are continuously as they rise swept backward toward the head or feeding part of the machine and all chance of waste is prevented.

What I claim as my invention and desire to secure by Letters Patent is—

Separating substances differing in specific gravity or washing metallic ores by means of oblique currents of water and a horizontal one passing over the same in a reverse direction substantially in the manner herein described. The oblique currents being produced by inclined surfaces or their equivalents.

WM. M. HUGHES.

Witnesses:
CHAS. M. WILLARD,
I. SCOTT RICHMAN.