

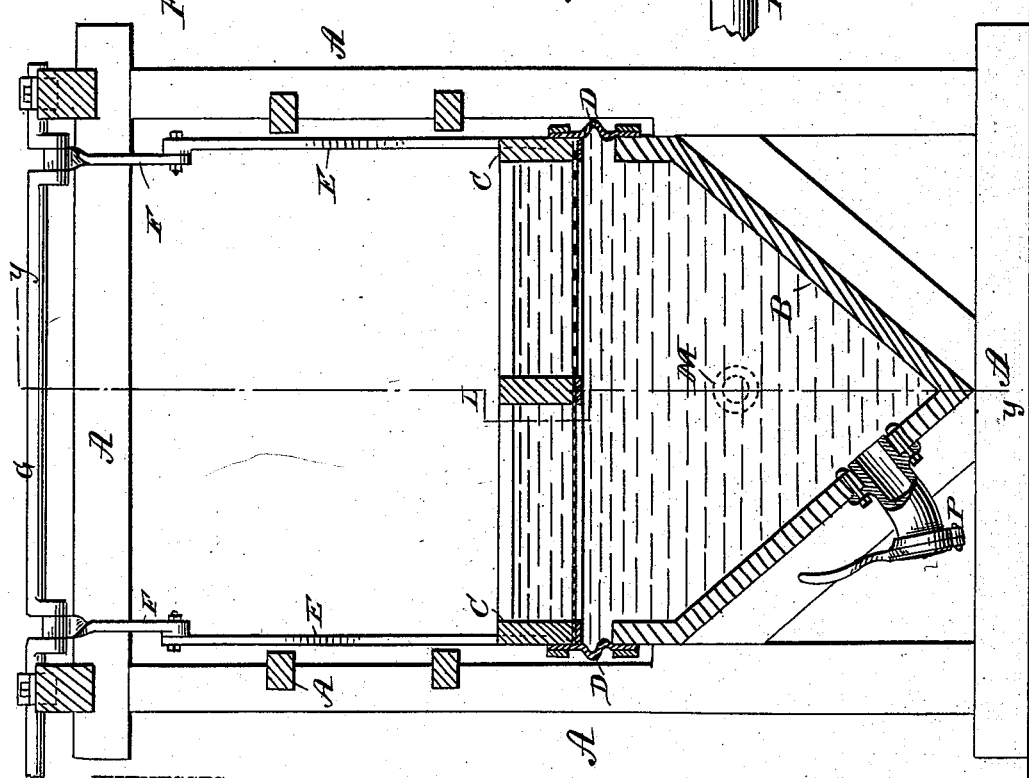
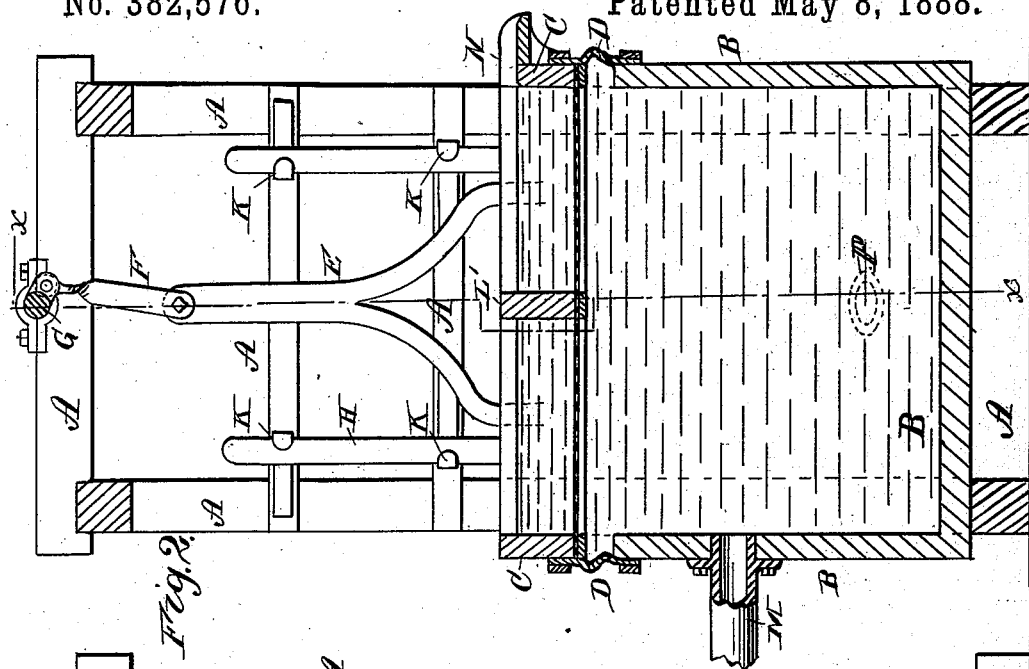
(No Model.)

2 Sheets—Sheet 1.

J. WHITE.  
ORE CONCENTRATOR.

No. 382,576.

Patented May 8, 1888.



WITNESSES:

*J. R. Lafford.*  
*to Sedgwick.*

*Fig. 1.*

INVENTOR:

*J. White.*

BY

*Munn & Co.*

ATTORNEYS.

(No Model.)

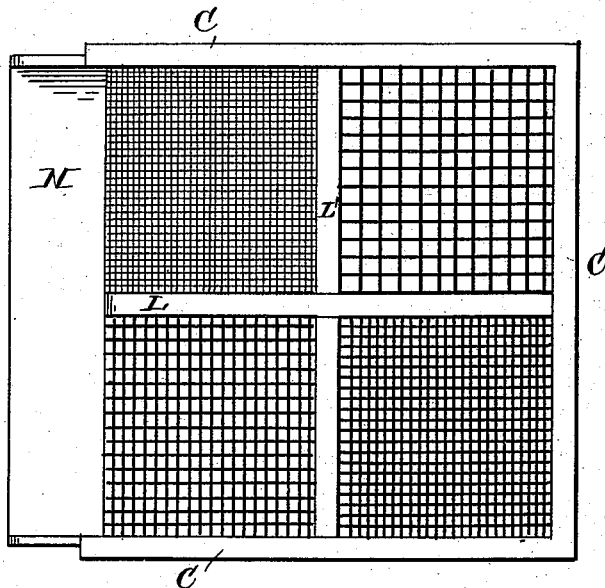
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J. WHITE.  
ORE CONCENTRATOR.

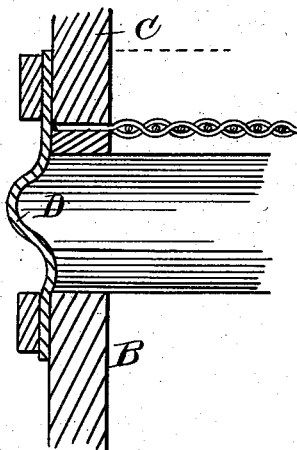
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*Fig. 3.*



*Fig. 4.*



WITNESSES:

*J. H. Garfield.*  
*W. Sedgwick.*

INVENTOR:

*J. White*  
*Munn & Co.*

BY

ATTORNEYS.

# UNITED STATES PATENT OFFICE.

JESSE WHITE, OF SILVER CLIFF, COLORADO.

## ORE-CONCENTRATOR.

SPECIFICATION forming part of Letters Patent No. 382,576, dated May 8, 1888.

Application filed February 1, 1887. Serial No. 226,163. (No model.)

*To all whom it may concern:*

Be it known that I, JESSE WHITE, of Silver Cliff, in the county of Custer and State of Colorado, have invented a new and Improved Ore-Concentrator, of which the following is a full, clear, and exact description.

In the separation of metalliferous ores, coal, and other material by machines of that class commonly known as "jiggers," in which a jig-box carrying the material is vertically reciprocated or vibrated in water contained in a tank, it has been found that the separation is not positive or certain, for the reason that the water is not sufficiently confined, but may and does escape up around the exterior of the jig-box and over the walls or chutes of the tank without having first passed through the screened bottom of the jig-box and the material thereon, the jig-box with the material thereon acting merely as a plunger to displace the water, so that it escapes without having first performed its work of separation. Thus where the supply of material to the box is continuous it is liable to pack and clog therein, and as the water has an avenue for escape it is not forced up through the same, as is necessary to effect a separation of the particles of the material under treatment.

Now it is the object of my invention to obviate the above-named objectionable feature in jiggers by so constructing the same that the water can have no escape excepting through the screened bottom of the jig-box and the material thereon, and at the same time keeping the box full of water at all times and the mass of material therein in a state of semi-suspension, whereby the particles of greater specific gravity will sink to the bottom of the same and through its meshes into the tank beneath, while the lighter waste material rises to the surface and is carried off with the outflowing water.

With this object in view my invention consists in connecting the bottom of a jig-box on all sides with the top of a stationary tank by a strip of flexible material, forming a watertight connection, as will be hereinafter more fully described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front sectional view of my improved ore-concentrator on the line *x x*, Fig. 2. Fig. 2 is a sectional view of the same on the line *y y*, Fig. 1. Fig. 3 is a plan view of the jig. Fig. 4 is a detailed sectional view illustrating the connection of the tank and jig by the flexible strip.

The frame A of the apparatus supports the V-shaped tank B rigidly or immovably in place, and the jig-box C is supported by the hangers E immediately above the same, so that it may receive a vertical vibration or reciprocation, as hereinafter described. The upper edge of the tank and the lower edge of the frame of the jig-box are connected by means of a strip of rubber or other flexible watertight material, D, on all sides, so as to permit of the vibration of the jig-box and yet prevent the escape of water from the tank at this point, thus confining the water so that it cannot escape otherwise than up through the screened bottom of the jig-box.

The vertical vibration is imparted to the jig by means of forked hangers E, rigidly attached to opposite sides of the jig-frame C, and connected by short rods F with cranks on a shaft, G, journaled across the top of the frame A of the apparatus and revolved by any suitable power.

Vertical guide rods H are attached to opposite sides of the jig-frame and slide in keepers K, attached to the frame of the apparatus, whereby the desired bodily movement of the jig is assured.

The jig is constructed with a screen-bottom, as usual, but may be divided by intersecting partitions L L' into a number of compartments, as shown in Fig. 3, the screens forming the bottoms of the several compartments being of different sizes of mesh and covered with a layer an inch or two in depth of clean ore larger than the size of the mesh of the screens, to form a bed for the material under treatment.

The tank B may be divided into corresponding compartments, if desired. A constant supply of water is led into the tank below the jig-bottom through the pipe M, and passes up through the perforated bottom of the jig and out over the waste-chute N. The jig being continually immersed in the water and vibrating equally at all points, the pulverized ore is quickly separated, the heavier particles col-

lecting at the bottom of the jig and falling thence into the tank, and the lighter particles rising to the top, whence they are carried over the waste-chute N by the constant flow of water.

5 The concentrated ore collected in the bottom of the tank B is removed from the same through the valved opening P in the usual way.

It will be understood from the above description that the jig-box and its flexible connection  
10 virtually forms a continuation of the walls of the tank, said walls being stationary or immovable, and does not, even when at its lowest point of reciprocation, extend into the same, and that the tank and box are always kept full  
15 of water while the machine is in operation by a stream through pipe M.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent--

The combination, with the stationary or 20 immovable tank of an ore-concentrator having a suitable water-inlet and an outlet for the concentrates, of a jig-box supported above said tank, a strip of a flexible water-tight material connecting the lower edge of said box with the 25 upper edge of said tank, and means for vibrating said box, substantially as described.

JESSE WHITE.

Witnesses:

T. B. STUART,  
JOHN H. WELLS.