H. Donnelly.

Ore-Concentrator.

No. 73306 Patented Jan. 14, 1868.

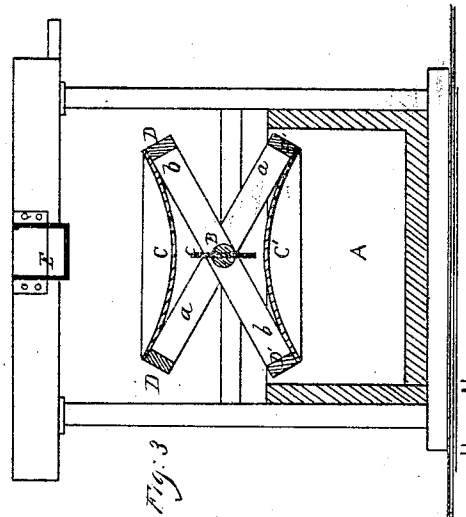


Fig. 3

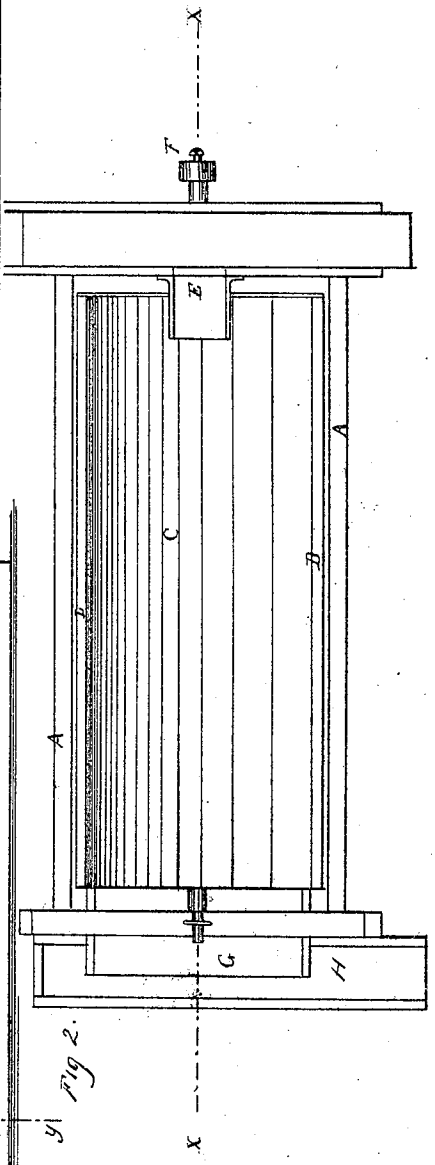


Fig. 2.

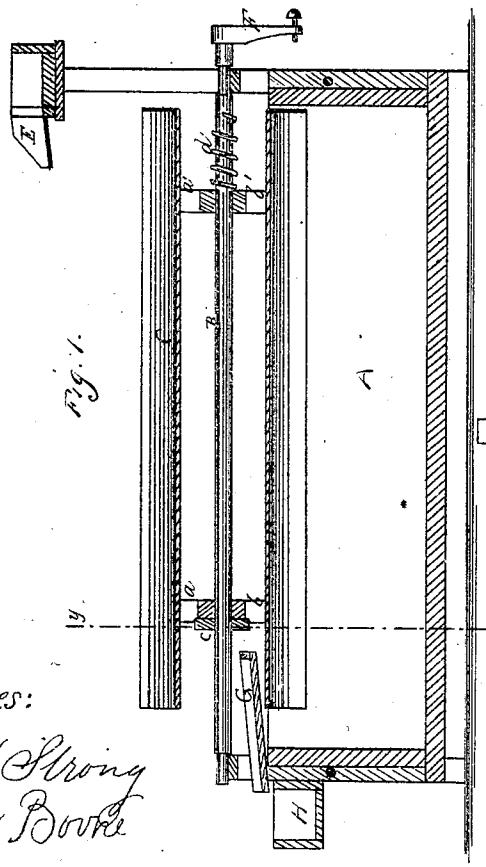


Fig. 1.

Witnesses:

Geo. N. Strong

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Inventor:

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By his Attys

Dewey & Co.

UNITED STATES PATENT OFFICE.

HENRY DONNELLY, OF VIRGINIA CITY, NEVADA.

IMPROVEMENT IN ORE-CONCENTRATORS.

Specification forming part of Letters Patent No. **73,306**, dated January 14, 1868.

To all whom it may concern:

Be it known that I, HENRY DONNELLY, of Virginia City, county of Storey, State of Nevada, have invented an Improved Concentrator; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvements without further invention or experiment.

The object of my invention is to provide an improved concentrator for saving gold and sulphurets, and separating them from the sand with which they are mixed. This end is accomplished by constructing two concave reversible tables, placed back to back on the same axis, and operated so as to have a shaking motion, which serves to concentrate the gold and sulphurets upon the upper concave blanket until it is full, when the tables are, by a simple device, reversed, the upper one going below with its load of sulphurets, which are then washed off in a tank of water, while the other table, being at the top, is filling, a sufficient amount of water being supplied to separate and wash off the sand, while the surface of the blank retains the gold and sulphurets until it is again reversed.

Reference being had to the accompanying drawings, forming a part of this specification, Figure 1 is a side sectional elevation of my concentrator, taken through *x x*, Fig. 2. Fig. 2 is a plan. Fig. 3 is an end sectional view, taken through *y y*, Fig. 1.

Similar letters in each of the figures indicate like parts.

A is a reservoir or tank, which is to be filled with water, and serves to hold the valuable portions when separated from the débris. From each end arise standards, which support the ends of the axis B. To this axis the cross-frames *a a'* and *b b'* are loosely attached in the form of a letter **X**. These frames support and extend the canvas or blanket tables C C', having for that purpose the longitudinal bars D D connecting their extremities, as shown. The tables C C' are so attached as to form a concave surface when either one is at the top, into which the tailings and water are poured from the feed-trough E. At one extremity of the axis B the crank F is attached, and is operated by a pitman from the engine or other motive power, so as to give the tables a shaking motion. This motion separates the gold, sulphurets, and heavier portions from the lighter sand, which is carried by the water to the lower end, and discharged upon the apron G, and thence to the discharge-spout H, from which it is carried off. The sulphurets are retained by the roughness and fibers of the blanket until it is well covered, when, without stopping the machine, the apparatus is reversed, so that the table C goes below into the water in the reservoir, where the adhering particles are washed off, and the table C' is brought above to receive the discharge from the spout E, and continue the operation.

The tables are confined to the shaft B in the following manner: A slot is made through B, into which the key *c* is driven, projecting above and below the shaft. A corresponding slot is made at the intersection of the arms *a* and *b*, which, when they are forced against the key, holds them securely in place. A spiral spring, *d*, is fastened to the opposite end of the shaft B, which, pressing against the arms *a' b'* at their intersection, keeps the arms *a* and *b* firmly against the key *c*, so that the oscillating motion of the shaft is communicated to the tables, and they are, at the same time, kept in place.

When it is necessary to reverse the tables by pressing against the lower end of the tables, or against *a b*, the spring *d* will be compressed, so as to free the arms from the key *c*, when the tables can be easily reversed, and allowed to press against the key, when they will be again locked to the shaft.

By this device the operation may be carried on an indefinite length of time without stopping to clean up, and the separation of the sulphurets economically carried on.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The concave reversible shaking tables

C C′, attached to, and operating upon, the opposite sides of the shaft B, together with the trough A, substantially as and for the purpose described.

2. The key *c* and the spring *d*, together with the arms *a a′ b b′*, loosely attached to the shaft B for the purpose of reversing and locking the tables, substantially as herein specified.

In witness whereof I have hereunto set my hand and seal.

HENRY DONNELLY. [L. S.]

Witnesses:
W. D. ROOT,
WM. H. WILLIAMS.