T. B. McCONAUGHEY.

Ore-Separator.

No. 161,697. Patented April 6, 1875.

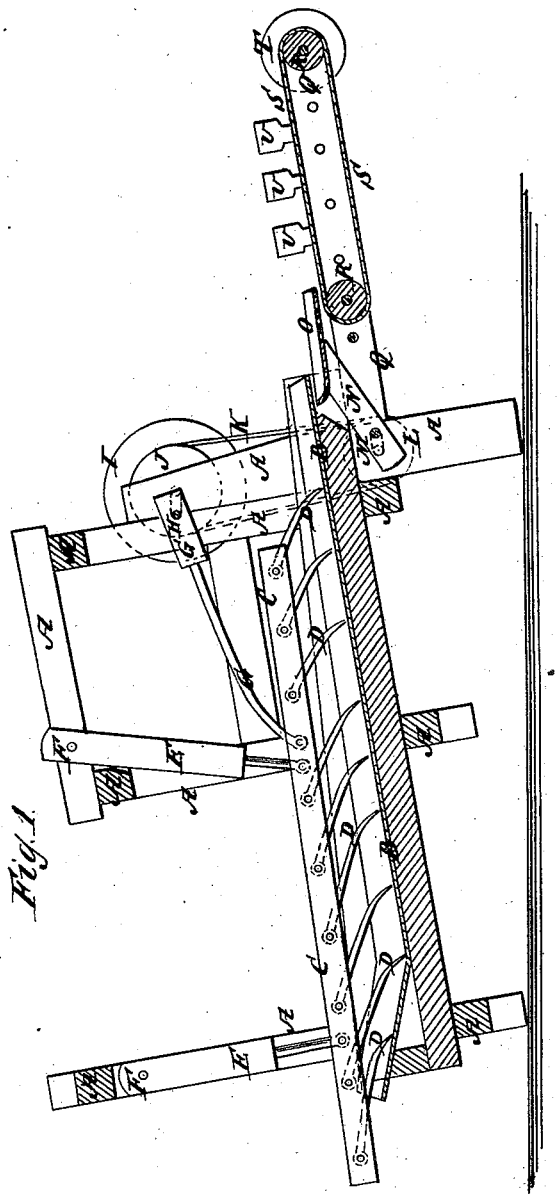

Fig. 1.

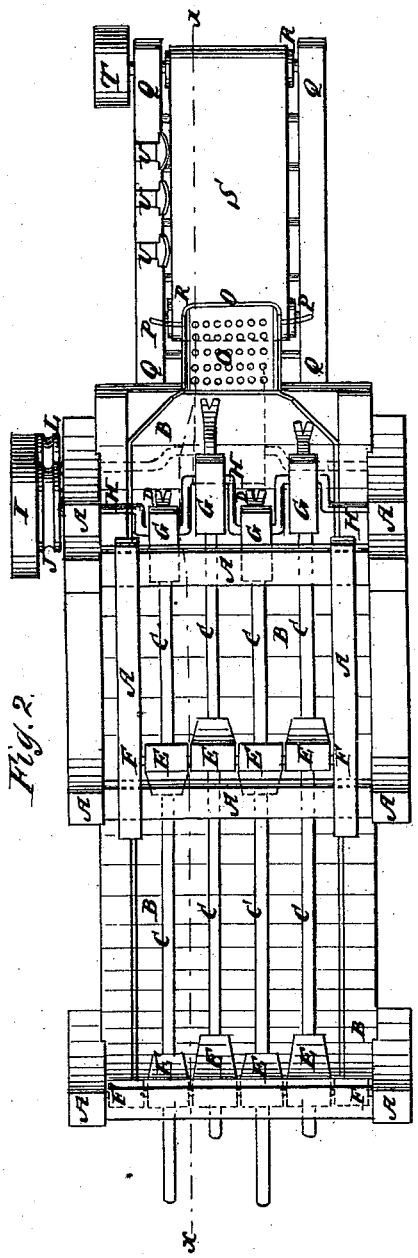

Fig. 2.

WITNESSES:

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UNITED STATES PATENT OFFICE.

THOMAS B. McCONAUGHEY, OF NEWARK, DELAWARE.

IMPROVEMENT IN ORE-SEPARATORS.

Specification forming part of Letters Patent No. **161,697**, dated April 6, 1875; application filed February 13, 1875.

To all whom it may concern:

Be it known that I, THOMAS B. McCONAUGHEY, of Newark, in the county of New Castle and State of Delaware, have invented a new and useful Improvement in Ore Washer and Separator, of which the following is a specification:

Figure 1 is a vertical longitudinal section of my improved machine, taken through the line *x x*, Fig. 2. Fig. 2 is a top view of the same.

Similar letters of reference indicate corresponding parts.

My invention has for its object to furnish an improved machine for washing and separating ore, which shall be so constructed as to wash the ore faster and cleaner than other machines, while requiring less power to run it, and, being simple in construction and inexpensive in manufacture, enabling ore-mines to be worked at a profit that had been abandoned on account of the large amount of stone and other worthless material found in them, and which could not be separated without such an expense as rendered the working of the mines unprofitable.

The invention will first be fully described, and then pointed out in the claim.

A is a frame, to which is attached a wash-trough, B, in such a position that its forward end may be the higher. Above the trough B are placed bars C, to the lower side of each of which is pivoted a number of shovels, D, which incline forward, and rest upon the bottom of said trough. The bars C are pivoted to the lower ends of arms E, by which they are supported, and the upper ends of which swing upon the shafts F, attached to the upper part of the frame A. To the shovel-bars C, a little in front of their centers, are pivoted the rear ends of the connecting-rods G, the forward ends of which are pivoted to cranks formed upon or attached to the shafts H. The cranks should all project at different angles, so that no two contiguous shovel-bars C may complete their stroke at exactly the same time. The crank-shaft H revolves in bearings attached to the upper forward part of the frame, and to one of its ends is attached a pulley, I, to receive the driving-belt. To the shaft H or pulley I is attached a small pulley, J, to receive a band, K, that also passes around a pulley, L, attached to the shaft M, placed beneath the forward end of the wash-trough B, and revolving in bearings attached to the frame A. Upon the middle part of the shaft M is formed a crank, to which is pivoted the end of a bar, N, the upper end of which is attached to the screen O, placed beneath the forward end of the wash-trough B, so as to receive the ore from said wash-trough. The screen O is pivoted to and supported by arms P, attached to the carrier-frame Q, which is attached to the forward end of the frame A. To the carrier-frame Q are pivoted two or more rollers, R, around which passes an endless apron, S, to which motion is given by a band passing around a pulley, T, attached to one of the rollers R. To one or both sides of the carrier-frame Q are attached one or more rests, U, for the person or persons to lean against to pick the large stones and other rubbish from the apron S as the arc is being carried along by said apron.

In using the machine, water is admitted at the upper forward end of the wash-trough B, and the ore is fed in at its lower rear end. The ore is moved forward through the channels of the trough B against the stream of water by the shovels D, and is pushed by said shovels from the forward end of the said trough B. The ore falls upon the screen O, and the fine ore passes through the holes of said screen. The coarser ore and the rubbish are carried across the screen O by its motion, and fall upon the apron S of the carrier, by which they are carried forward in a continuous stream. The coarser stones and rubbish are removed by hand from the carrier-apron as the stream of ore is being carried forward, and the remainder falls from the forward end of the carrier into a receiver.

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

The combination, with belt, screen, and trough, arranged substantially as described, of the reciprocating shovels D, whereby the ore is dragged up the inclined trough and discharged upon the screen and belt, in the manner set forth.

THOMAS B. McCONAUGHEY.

Witnesses:

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WM. H. KELLEY.