J. V. POMEROY.

ORE-CONCENTRATOR.

No. 170,642. Patented Nov. 30, 1875.

Fig: 1.

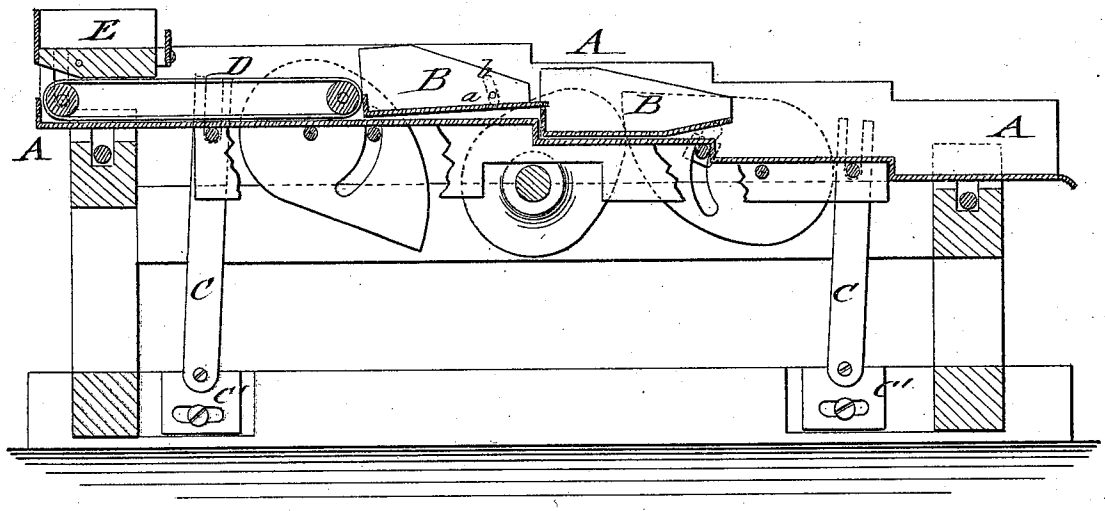
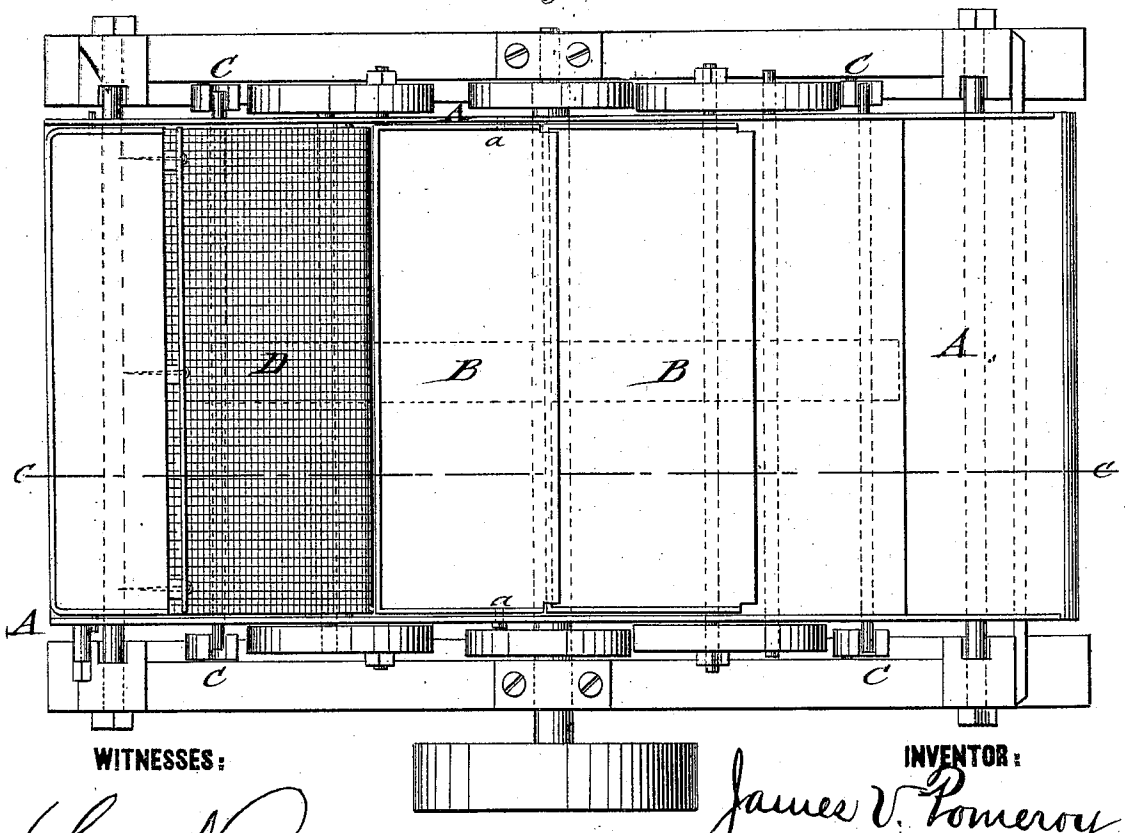


Fig: 2.



WITNESSES:

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JAMES V. POMEROY, OF BOULDER, COLORADO TERRITORY.

IMPROVEMENT IN ORE-CONCENTRATORS.

Specification forming part of Letters Patent No. **170,642**, dated November 30, 1875; application filed August 21, 1875.

To all whom it may concern:

Be it known that I, JAMES V. POMEROY, of Boulder, in the county of Boulder and Territory of Colorado, have invented a new and Improved Ore-Concentrator, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a vertical longitudinal section of my improved ore-concentrator on the line *c c*, Fig. 2; and Fig. 2, a top view of the same.

Similar letters of reference indicate corresponding parts.

My invention relates to improvements in the ore-concentrator which has been patented to me under date of May 11, 1875, and numbered 163,104, so that the operation of the same is more effective, and the same can be worked with or without the concentrating-pans.

The invention will first be described in connection with drawing, and then pointed out in claims.

A in the drawing represents the supporting-table, which is constructed with a step-shaped bottom, that forms a series of levels for the concentrating-pans B, the steps and head-walls producing a wave action of the water in each level or pan. The table A is supported on oscillating standards C, which are pivoted to adjustable slide-boxes C′ at the lower part of the table-supporting frame, so that the center of gravity of the table may be changed, and a heavier or lighter shock be imparted to the same, according to the quality of the material.

Reciprocating motion is imparted to the table by means of a revolving eccentric and adjustable cam-pieces of the table, which mechanism is so arranged that the motion and shock imparted to the table is quick and sudden when moving toward the feed end, and slower and less violent at the discharge end.

This variable motion and shock of the table produces vibrations and waves, which convey and discharge the light material, and precipitate the heavy parts.

The table A may be used with or without the pans, the steps serving as pans, and creating the waves at each stroke of the reciprocating mechanism.

The pans B are placed on the levels of the table, with the bottom of one lapping or extending over the head or wall of the one next below. They may be arranged level with the table or adjusted by side bolts and nuts *a* in slots *b* of the side walls of the table to any suitable inclination.

A level of greater length is arranged at the head of the table, and on the same placed an endless belt or canvas, D, onto which the pulp is fed through gate of hopper E, that is hinged at the head of the table, and seated water-tight on the belt D by suitable spring-clamps, so that it forms in this position a wall for producing a wave over the belt.

When the belt is charged with mineral, the hopper is raised for an instant, and the canvas moved forward to discharge its load, forming a new surface for the mineral to settle thereon.

I do not confine myself to any special construction of cams and levers by which the reciprocating motion is imparted; but I deem it a point of main importance for producing satisfactory results of concentration that the shocks at each end should be variable, and regulated at the head or feed end of the machine exactly in accordance with the gravity of the ore, and at the discharge end with the gravity of the rock, so as to hold the one and discharge the other. The mineral is thereby regulated and controlled on the levels and in the pans, and separated in a very satisfactory and rapid manner from the lighter materials.

As the table A is vibrated or reciprocated to and fro, the ore is caused to drop between the hopper and gate, that are separated by suitable spacing-blocks, while the hopper, being pivoted, rises and falls, so as to allow the ore to escape readily.

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

1. In reciprocating ore-concentrators, a step-shaped table, having a series of levels at different elevations, as and for the purpose described.

2. The combination in an ore-concentrator, with a series of levels at different elevations, of a head-level, made longer than the others, and provided with an endless belt, as and for the purpose set forth.

3. The combination of the pans, side bolts,

and nuts with the slotted side walls of the table, to adjust the pans to any inclination, substantially as set forth.

4. The standards pivoted to slide-boxes, as and for the purpose specified.

5. The combination, with concentrating-table and endless belt, of the hopper, pivoted and having gate, as and for the purpose specified.

JAMES V. POMEROY.

Witnesses:
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