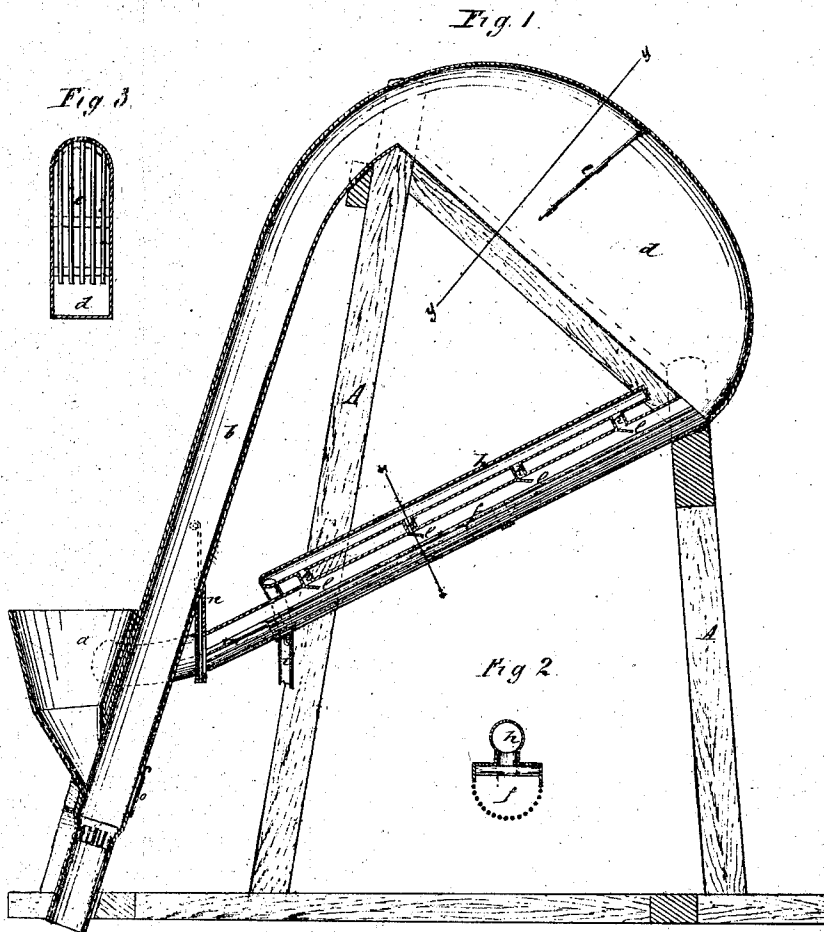


E. Platt,

Ore Washer.

No. 107,957,

Patented Oct. 4, 1870.



Witnesses:

H. J. Smith
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EDWIN PLATT, OF CHARLESTON, SOUTH CAROLINA.

Letters Patent No. 107,957, dated October 4, 1870.

IMPROVEMENT IN APPARATUS FOR WASHING ORES AND MINERALS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, EDWIN PLATT, of Charleston, in the district of Charleston and State of South Carolina, have invented a new and improved Ore-Washer; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a sectional elevation;

Figure 2 is a transverse section in the line $x x$, fig. 1; and

Figure 3 is a transverse section in the line $y y$, fig. 1.

This invention relates to an apparatus in which ore, thrown into a receiver, falls thence into an inclined pipe, where it is caught by jets of water forced into the pipe through nozzles, by a powerful steam-pump, by which jets the ore is carried upward into a chamber having an inclined bottom, there being in said chamber a perforated barrier, against which the current of ore and water is dashed, and beneath which it passes, a portion of the water, with some of the dirt, also rushing through the perforations of the barrier, and the whole mass flowing onward to an inclined trough, whose upper end opens into the lower corner of the chamber, which trough the ore and water enter, and from which the water escapes through perforations in its bottom, while the ore falls to its lower end, and is removed, if cleansed; if not, it is sent into the same or another receiver, for the purpose of undergoing a second washing process, similar to the first.

In the drawing—

a is the funnel-shaped receiver, into which the ore, after being sufficiently broken up, is thrown, and from which the ore falls into the inclined pipe b , in the side of which the receiver is set.

c are the nozzles, placed in a diaphragm that is set across the pipe b , near its lower end, through which nozzles the steam-pump forces water in jets, with sufficient force to carry the broken ore upward with them, through the pipe b into the chamber d .

The chamber d is supported at an elevation sufficient for the purpose in a frame-work, A , and is placed in an inclined position, so that, when the current of mingled ore and water enters it, said current is turned downward by its own weight.

The chamber d is also constructed with an arched roof, and from the same there projects downward, about midway of the chamber, an inclined perforated barrier, e , between whose lower end and the floor of the chamber there is left a sufficient space for the ore to pass under the barrier.

On striking the barrier, the ore is arrested mo-

mentarily, and falls to the floor, with part of the accompanying water, while the rest of the water flies through the interstices of the barrier e , carrying with it a portion of the dirt washed from the ore.

The ore and water flow down the inclined floor until they come to the open upper end of the inclined trough f , at the lower corner of the chamber d , which trough they enter, and through which they fall, the water on its way down escaping from the trough through interstices in its bottom.

Parallel with, and above the trough f , is a trunk, h , which receives a supply of water from the steam-pump, through a pipe, i , and which discharges its contents into the trough f , through apertures k , opening into the latter from the trunk, below which apertures inclined lips l , attached to the top of the trough, deflect the water so as to cause it to strike the ore in a direction contrary to the motion of the latter, and thus act most effectually in cleansing it.

When the ore has arrived at the lower end of the trough f , it is met and stopped by a vertical gate, n , placed across the trough.

A section, m , of the trough, at its lower end, is constructed as a gate, and arranged so as to slide upward within the trough when occasion calls.

On sliding the gate m upward a little way, a portion of the ore will fall through it, and this serves as a sample to show whether the whole mass is sufficiently cleansed to warrant its removal. If it is, the gate m is drawn wholly within the trough, and the ore removed through the aperture thus exposed. If not, the gate m is closed and the vertical gate l is drawn upward, so as to allow the ore to pass through a pipe, n , connecting the trough f with the receiver a , or through a similar pipe connecting the trough with a second washing apparatus.

The floor of the chamber may be reticulated, if preferred, so as to allow water to escape therefrom directly.

The pipe b is provided with a sliding gate, o , just above the nozzles, which may be opened for the purpose of removing clogged ore, or relieving the pipe from a surplus of water.

Having thus described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. The process of cleansing ore by subjecting it to the action of jets of water, which carry it upward through an inclined pipe into a chamber having a slanting bottom, and thence downward through a trough provided with a perforated bottom, through which water may escape, in which trough the ore passes through a second washing operation, substantially as described.

2. The inclined pipe b , provided with the nozzles

c; the inclined chamber *d*, provided with the perforated barrier *e*; the inclined trough *f*, provided with a perforated bottom and the lips *l*; and the trunk *h*, opening, by apertures *k*, into the trough, when all these parts are arranged with relation to each other, as described.

3. The arrangement of the trunk *h*, apertures *k*, lips *l*, and trough *f*, as set forth.

The above specification of my invention signed by me this 7th day of September, A. D. 1870.

EDWIN PLATT.

Witnesses:

R. S. CATHCART,

J. R. MOTTE.