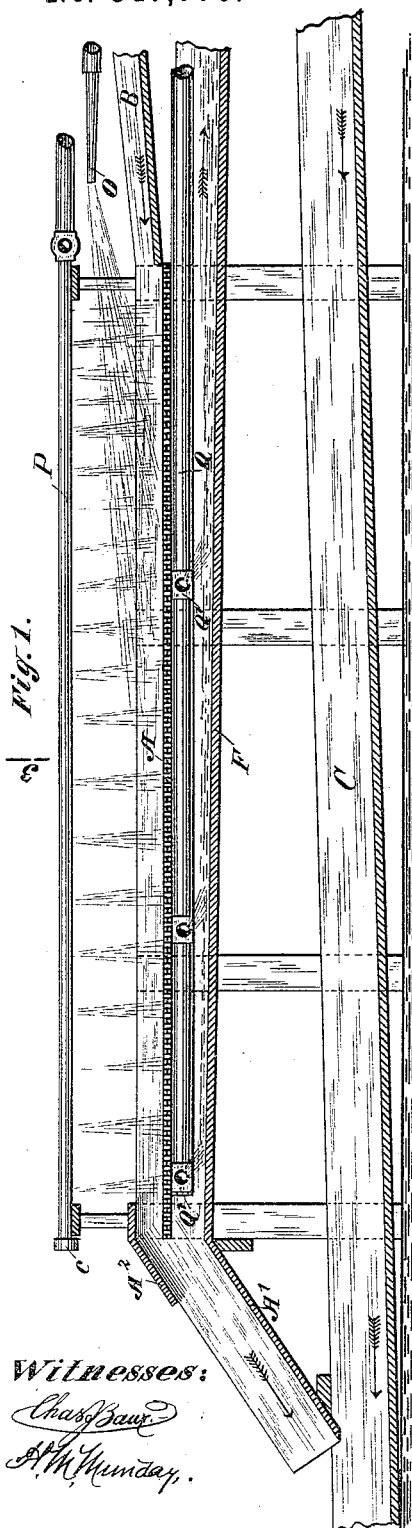


(No Model.)

A. D. CLARKE.  
ORE CONCENTRATOR.

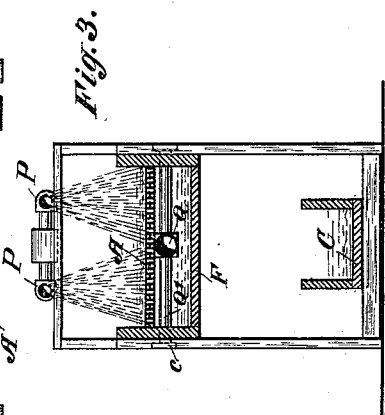
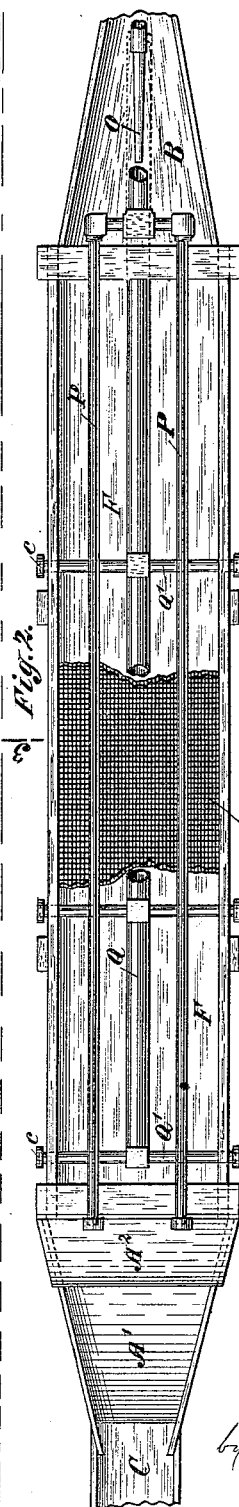
No. 347,770.

Patented Aug. 24, 1886.



Witnesses:

*Chas. J. Shaw*  
*A. M. Munday.*



Inventor:

*Alexander Clarke*  
by *Munday, Evans & Acock*  
his attys.

# UNITED STATES PATENT OFFICE.

ALEXANDER D. CLARKE, OF NEW YORK, N. Y.

## ORE-CONCENTRATOR.

SPECIFICATION forming part of Letters Patent No. 347,770, dated August 24, 1886.

Application filed September 22, 1885. Serial No. 177,779. (No model.)

*To all whom it may concern:*

Be it known that I, ALEXANDER D. CLARKE, a citizen of the United States, residing in New York, in the county of New York and State of New York, have invented a new and useful Improvement in Ore-Concentrators, of which the following is a specification.

This invention relates to improvements in washing concentrators of the kind set forth in the application filed by me November 10, 1884, Serial No. 147,558, (since patented in Patent No. 328,006, dated October 13, 1885;) and it consists in the novel features hereinafter set forth and claimed.

In the accompanying drawings, Figure 1 is a central vertical section of part of the concentrator, showing my improvements embodied. Fig. 2 is a plan of the same, the screen being mainly broken away to show the parts under it. Fig. 3 is a transverse vertical section upon the line 3 3 of Fig. 1.

In said drawings, B represents the general supply-sluiice, and A the screen whereon the stream of commingled water and ore-bearing earth or sand is delivered by sluice B. All the water and particles of sand, gold, &c., small enough to pass through the screen fall to the apron or sluice F immediately beneath the screen A.

In most placer-mines there are large pieces of clay, soil, &c., which are not dissolved in their passage through sluice B, and which consequently are carried along by the current to the dump, rolling over and over as they progress, and picking up in their course many particles of fine gold, which, together with such as may be embedded in the lumps of clay, &c., are consequently lost. In order to avoid this loss it is necessary to break up in some way these lumps, so that they will not possess sufficient size to insure their passing beyond the screen, and to so reduce them that by the time they reach the lower end of the screen they will be completely dissolved by the water. As this breaking or reduction cannot be effected by mechanical means, it must be done through the agency of water, and as the most effectual method I subject the lumps to the continuous action of numerous fine jets of water during their passage over the screen. These jets are supplied by per-

forated longitudinal pipes P, and are aided in their dissolving action by the water from nozzle O, as well as by such water as is in the stream from sluice B. Of course, the greater the force possessed by these jets the more powerful they are in their action. They are also efficient aids in preventing any choking of the screen. The screen is continuous from the supply-sluiice to the discharge, and as the jets from the pipes P extend throughout the whole of that distance, the clay is not only very thoroughly worked, but is subjected to such treatment without any interruptions or intermissions, and is at liberty to sink through the screen wherever it may be at the time it becomes sufficiently fluid to do so.

The chute A' leads from the end of screen A to the general discharge sluice C, and thereby any coarse gravel, &c., not sinking through screen A is conducted to the dump. To prevent the stones, &c., from jumping over the sides of chute A' and accumulating at that point, as they are apt to do, said chute is provided with a hood, A<sup>2</sup>, at its junction with screen A, so that the stones may be guided into the chute.

Beneath the screen A and above sluice F is another pipe, Q, supplied with water and provided with transverse branches Q', such branches being perforated with openings directed toward the sluice F. I am thus able to jet water into said sluice in such manner that any deposit of sediment therein is prevented, and said sluice is automatically kept clean.

The ends of pipes P and branches Q' may all be closed by removable caps c, so that obstructions getting into them may be removed.

I claim—

1. The combination, in an ore-concentrator, of the main supply-sluiice B, the continuous screen A, extending from the supply-sluiice to discharge-chute A', said discharge-chute, and perforated pipes P, running longitudinally along said screen and jetting water thereon, substantially as and for the purpose set forth.

2. The combination, in an ore-concentrator, of the supply-sluiice B, the continuous screen A, extending from sluice B to discharge-chute A', said discharge-chute, perforated pipes P, running longitudinally along said screen and

jetting water thereon, and the apron F, receiving the material passing through the screen, all constructed and arranged substantially as set forth.

- 5 3. The screen A and sluice F, receiving the material passing through said screen, in combination with water-pipes Q Q', located under the screen and over the sluice, and jetting water onto the latter, substantially as specified.

4. The combination, with screen A, supply- 10 sluice B, and nozzle O, of chute A', having a hood, A<sup>2</sup>, substantially as specified.

ALEXR. D. CLARKE.

Witnesses:

EDW. S. EVARTS,  
H. M. MUNDAY.