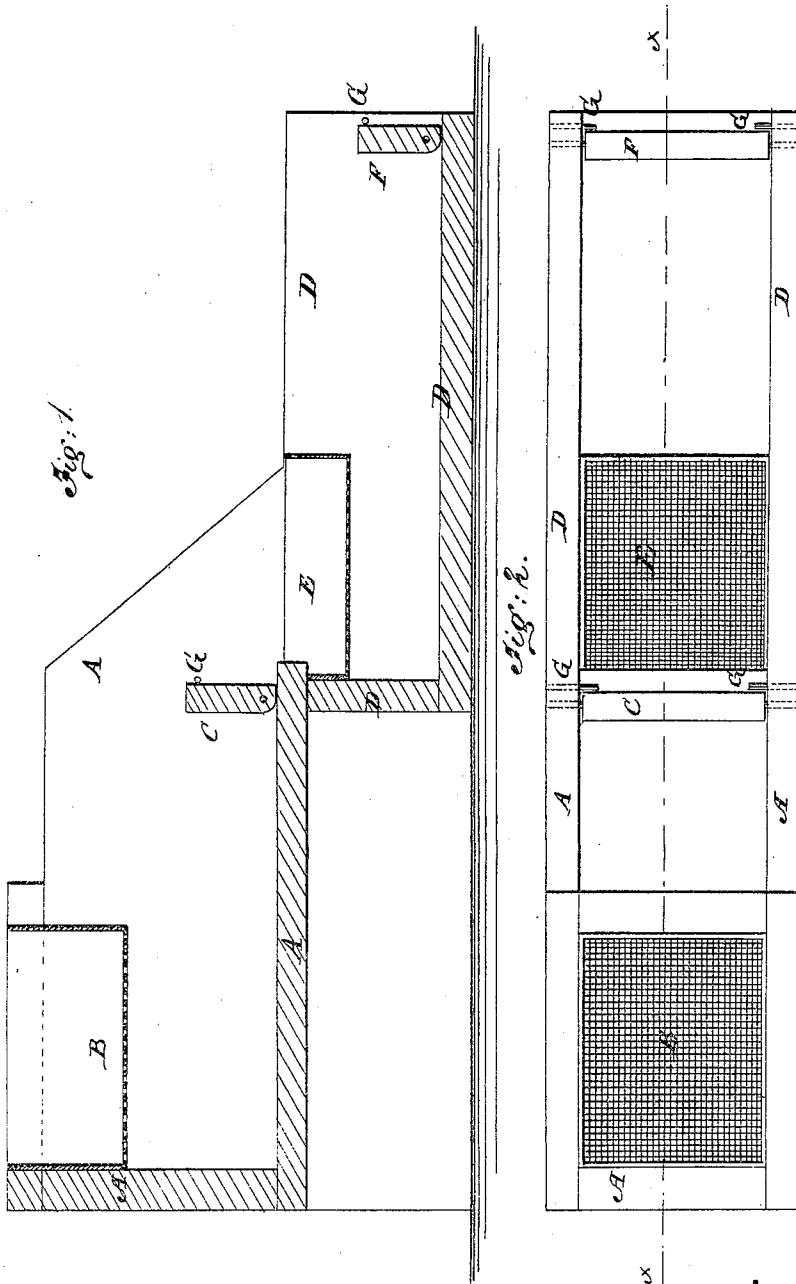


I. T. HALSTEAD.

Ore-Washers.

No. 142,848.

Patented September 16, 1873.



Witnesses:

Jas. Nida
Adquisito

Inventor:

Per

I. T. Halstead
Attorneys

UNITED STATES PATENT OFFICE.

IRA T. HALSTEAD, OF FREDONIA, NEW YORK.

IMPROVEMENT IN ORE-WASHERS.

Specification forming part of Letters Patent No. **142,848**, dated September 16, 1873; application filed July 26, 1873.

To all whom it may concern:

Be it known that I, IRA T. HALSTEAD, of Fredonia, in the county of Chautauqua and State of New York, have invented a new and useful Improvement in Apparatus for Removing Sulphurets, Gold, Silver, &c., from Ores, of which the following is a specification:

Figure 1 is a vertical longitudinal section of my improved apparatus 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 a simple, convenient, and effective apparatus for collecting sulphurets, gold, silver, &c., from ores. The invention consists in the employment of one or more sieves, in connection with one or more sluices and pivoted boards for separating the sulphurets and heavier particles of ore from the stream of water and pulverized ore passing through the apparatus, as hereinafter fully described.

A is a sluice-box, in the upper part of which is secured a sieve, B. At the lower end of the sluice A is placed a board, C, which is pivoted at the lower part of its end edges to the sides of the sluice A. D is a second sluice, which is placed at a lower level than the sluice A, and which has a sieve, E, secured in the upper part of its upper end. At the lower end of the sluice D is placed a board, F, which is pivoted at the lower part of its end edges to the sides of the sluice D, as shown in Figs. 1 and 2. The pivoted boards C F are pre-

vented from passing beyond a vertical position by stops G attached to the sides of the sluices A D, for the said boards to strike against. The apparatus should be slightly inclined to allow the water and sand to flow off freely.

The ore to be operated upon is pulverized as fine as is usual in quartz-mills, and a stream of water and pulverized ore is made to flow into the sieve B, through which they pass into the sluice A, where the sulphurets and the heavier particles of the ore settle. From the sluice A the water and lighter particles of ore flow over the board C into the lower sieve E, through which they flow into the lower sluice D, where the heavier particles of the ore settle, and from which the water and lighter particles of the ore flow over the board F. As the heavier particles of the ore accumulate in the sluices A D, the pivoted boards C F rise toward a vertical position.

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

The employment of the sieves B E, one or more, in connection with one or more sluices, A D, and pivoted boards C F, for separating the sulphurets and heavier particles of ore from the stream of water and pulverized ore passing through the apparatus, substantially as herein shown and described.

IRA T. HALSTEAD.

Witnesses:

ALONZO LEUES,
I. W. DAMON.