

L. STONER.

ORE-CONCENTRATOR.

No. 184,270.

Patented Nov. 14, 1876.

Fig. 1

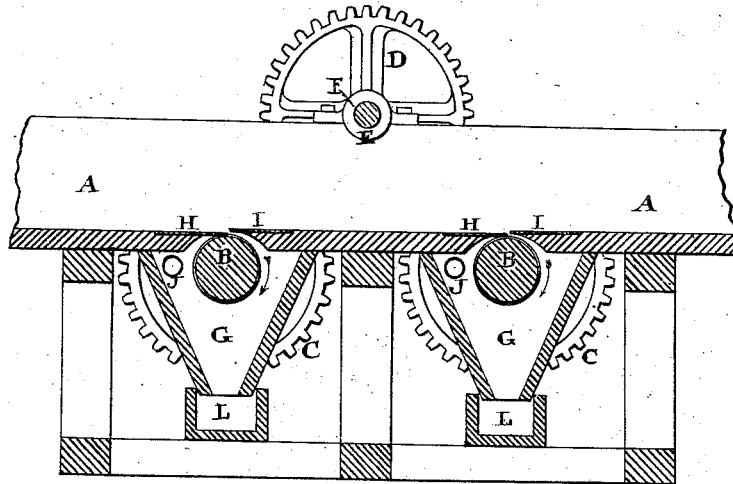
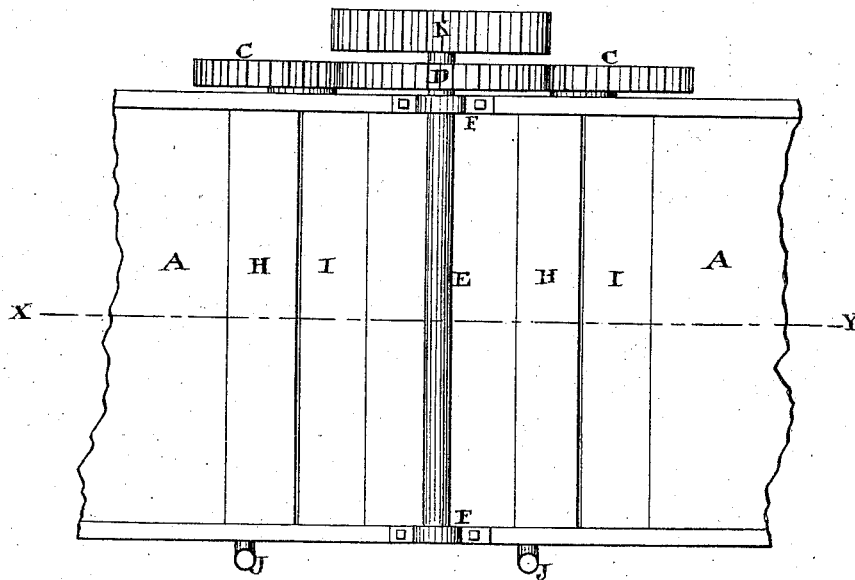


Fig. 2



Witnesses.

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LEWIS STONER, OF VIRGINIA CITY, NEVADA.

IMPROVEMENT IN ORE-CONCENTRATORS.

Specification forming part of Letters Patent No. 184,270, dated November 14, 1876; application filed February 1, 1876.

To all whom it may concern:

Be it known that I, LEWIS STONER, of Virginia City, in the county of Storey and the State of Nevada, have invented a new and useful Improvement in Ore-Concentrators, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing.

In the amalgamation of silver ores there are large quantities of sulphurets of silver which escape from the settlers in the discharge. Some of these are afterward saved by being run through long narrow sluices, on the bottoms of which are laid blankets, the nap of which catches and retains the sulphurets. This nap, however, soon becomes full, and then the blankets must be swept and washed off in order to render them fit for further service.

The object of my invention is to make a machine that shall be continuous in its action. This I accomplish in the following manner:

The machine is illustrated by the accompanying drawing, Figure 1 being a cross-section through X Y, and Fig. 2 being a plan.

A is a section of sluice. Directly below are two rollers, B B, the surfaces of which are covered by blanket. On the extreme ends of these rollers, and outside of the sluice, are gear-wheels C C, which are made to connect by the intermediate gear D, which is keyed on the shaft E, running in the journals F F, set on the top of the side of the sluice. Directly below the rollers are placed the boxes G G. These are closed on the ends, so as to afford journals for the rollers. H H are pieces of copper, which are fastened to the bottom of the sluice. One side of these pieces presses on the top of the rollers. I I are similar pieces of copper, with the exception that there is a small space left between the bottom of the plates and the tops of the rollers. There is a small space left between the edges of the two plates I and H, giving the sulphurets an opportunity to flow through onto the rollers. The tops of the plates I I are about one-eighth of an inch above the tops of the plates H H. I find that by this elevation the concentration is much improved.

J J are pipes containing water, with little holes on the side toward the rollers. These pipes throw a constant spray on the blanket surface of the rollers, and keep them washed clean.

The motive power proposed to run this machine is a water-wheel placed at the end of the sluice, and communicating, by a belt, with the pulley K.

My intention is to have a series of these machines following one another in the same sluice, each communicating power to the next.

The operation of the machine is very simple. The sulphurets in the discharge flowing through the sluice, being heavier than the sand, sink to the bottom first, and drop through the openings between the copper plates onto the blanket surface of the rollers, which are continually revolving in the direction of the arrow. Some of these sulphurets drop from the blanket naturally, and the balance are either washed off by the water from the spray-pipes, or scraped off by the copper plates H H, the nap of the blankets being entirely cleaned at each revolution. The sulphurets drop into the sluices L L below, and are carried off.

There is another object which I can accomplish by this machine, and that is the concentration of sulphurets before the ore is ground in the pans and amalgamated.

The greater portion of the ores of the Comstock lode contain three things—chlorides, sulphurets, and quartz. These three are of different specific gravities. The chlorides, being the lightest, float on the top, and may be taken off by a sluice introduced inside of the main sluice, the bottom of it being a little distance below the top of the water in the main sluice. This, then, will carry off the chlorides which are near the surface. The sulphurets can then be separated from the sand, in the manner before described.

By doing this I can take ten-dollar ore and concentrate it to one hundred dollars a ton by merely crushing in the battery, and then running through my sluice, thus making ore, which could not possibly, without this, be made to pay, available.

I claim as my invention—

The covered cylinders B B, operated by the gear-wheels C C and D, in combination with the sluice A, having the small openings and plates I I H H, and the spray-pipes J J, all constructed and arranged substantially as described, and for the purpose specified.

LEWIS STONER.

Witnesses:

JOHN W. PARKER,
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