S. KENDALL.
Ore-Stamp.

No. 209,896. Patented Nov. 12, 1878.

Fig. 1

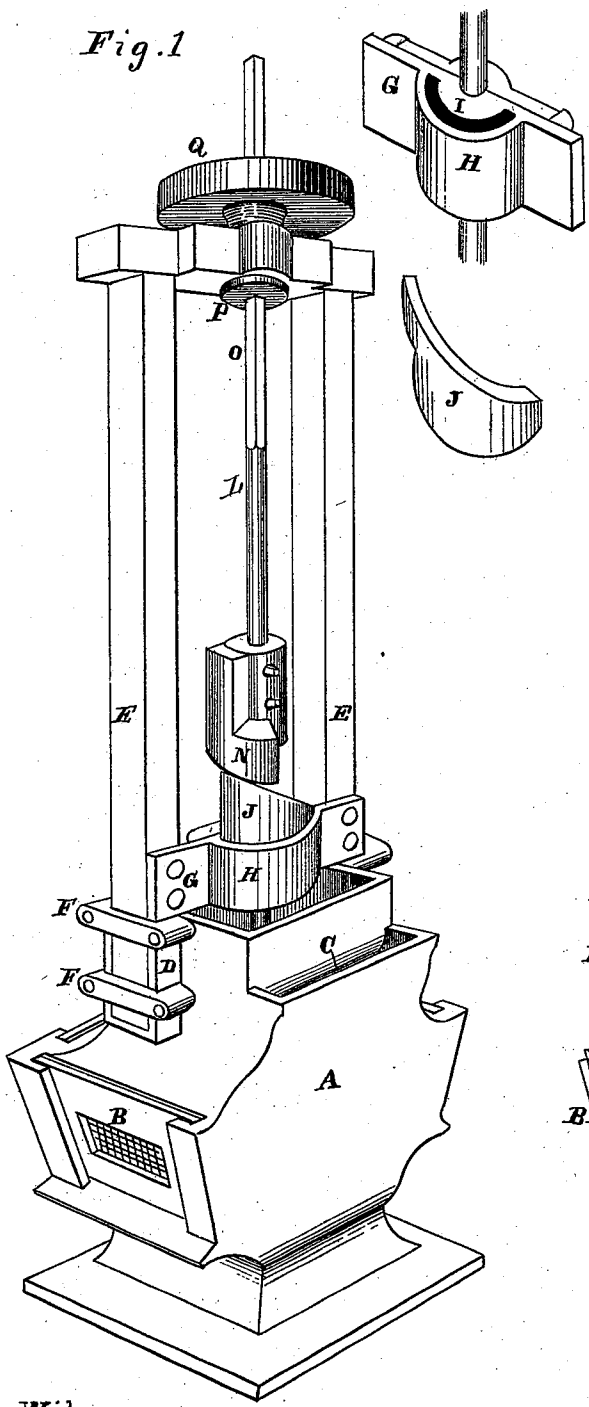
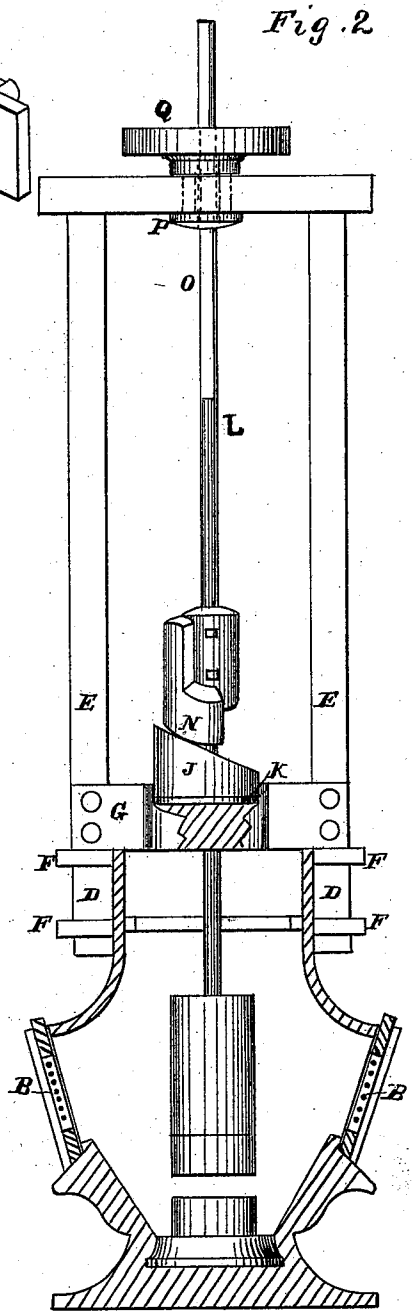



Fig. 2




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# UNITED STATES PATENT OFFICE.

STEPHEN KENDALL, OF JACKSON, CALIFORNIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO JOHN A. EAGON AND T. J. PHELPS.

## IMPROVEMENT IN ORE-STAMPS.

Specification forming part of Letters Patent No. **209,896**, dated November 12, 1878; application filed July 8, 1878.

*To all whom it may concern:*

Be it known that I, STEPHEN KENDALL, of Jackson, county of Amador and State of California, have invented an Improved Quartz-Mill; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings.

My invention relates to an improvement in mills for crushing and grinding quartz; and my improvement consists in providing the guide of the stamp-rod with a curved projection having a concentric curved slot, provided with a rubber cushion for holding the cam on which the tappet on the stamp-rod acts.

Figure 1 is a view of my mill, showing a battery and mortar having a single stamp. Fig. 2 is a section.

Let A represent a mortar, which in the present case is constructed in such a manner as to accommodate one stamp only, and having one or more discharge-openings, in which are the screens B. The upper portion of the mortar is curved inward, as shown, and in the rear upper portion is formed the feed-hole C, through which the ore is fed to the mortar.

Attached to or formed on the sides of the mortar are the sockets D, into which are stepped the lower ends of the vertical frame-posts E, which are held in place by the straps or bands F, secured by bolts, as shown. A timber across the top joins these frame-posts together, so that all the frame-work necessary to guide the stamp-stem and support it is attached to the mortar.

The stamp, shoe, and die are the same as in any ordinary battery.

Between the vertical timbers E and above the mortar is placed a guide or girt, G, which is of cast-iron, and through which the stamp-stem plays. On one side of this girt is formed a curved projection, H, which has a curved slot, I, formed in its upper surface, as shown. In this curved slot rests a horizontally-placed removable incline or cam, J. This cam has its lower end made on a horizontal plane, so that it will rest in the bottom of the slot I in the projection H. In the bottom of this slot, or in the bottom of the cam, is a rubber block or bed, K, which forms a cushion for the cam, so that, when the tappet strikes it in rapid revolution, no jar will be experienced. A spring may be used instead of the rubber, if desired.

Upon the stamp-stem L, at the proper point above the girt, with its cam or incline, is secured a tappet, having a beveled flange or cam-like projection, N, on its lower edge. When the stamp-stem is rotated, as hereinafter described, this beveled flange engages with the cam, and, by moving up the incline, raises the stamp. As soon as the highest point in the cam is reached the flange on the tappet leaves the cam and the stamp drops, which operation is repeated as the stamp-stem is revolved.

In order to allow the vertical motion to the stamp-stem necessary in this device, and at the same time admit of its rotary motion, the upper part of the stamp-stem, as shown at O, is made square, or has a feather formed on it. In the present instance I have shown it as square in shape, and passing through a collar, P, journaled in the upper cross-timber, as shown. Attached to this collar P is the horizontal pulley Q, through which the square or feathered end of the stem also passes, the hole through the collar and center of the pulley being formed to correspond with the shape of the stem. As the pulley is revolved by the belt the stamp-stem and stamp and shoe will be revolved, and at the same time a vertical motion of the stamp-stem is possible, so as to admit of the flange on the tappet rising up the incline of the cam on the girt-timbers, and raising the stamp.

By the method employed of placing a rubber band or spring under the tappet, a great deal of the jar is avoided, which it has been impossible to overcome by the old method.

The grinding action of the stamp is very advantageous in crushing the quartz, since, as soon as the blow is struck and the quartz crushed under the stamp, it is immediately ground finer, and any particles of gold under

the stamp are brightened or polished, so as to put them in proper condition for perfect amalgamation.

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

The girt G, having the curved slot I to receive the elastic cushion K, in combination with the curved encircling-cam J, tappet N, and stamp-stem L, substantially as and for the purpose herein described.

In witness whereof I hereunto set my hand and seal.

STEPHEN KENDALL. [L. S.]

Witnesses:
FRANK A. BROOKS,
CHAS. G. YALE.