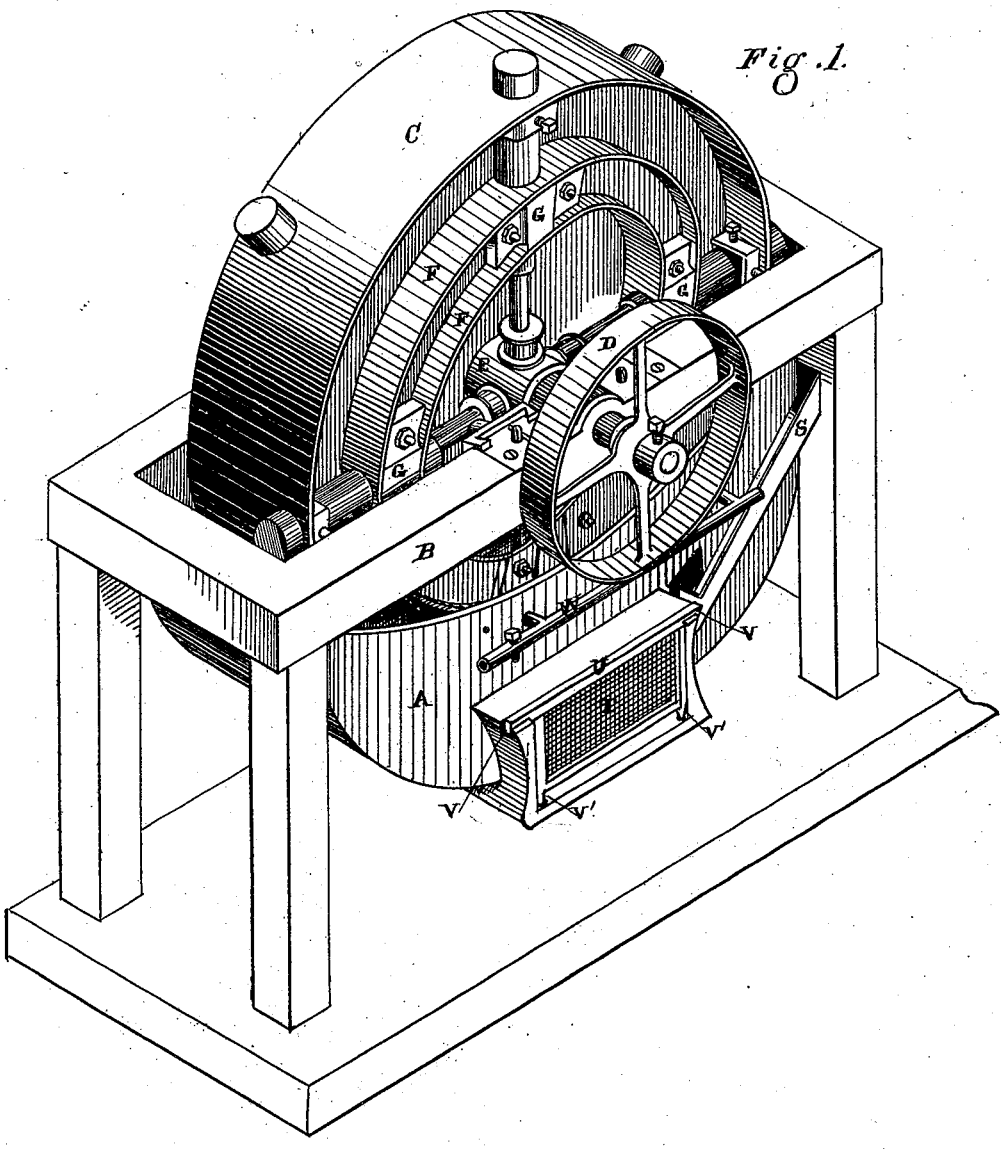
2 Sheets—Sheet 1.

D. E. W. TAYLOR.
Rotary Ore-Stamp.

No. 209,631. **Patented Nov. 5, 1878.**

Fig. 1.



Witnesses
Geo. H. Strong,
Francis A. Brooks

Inventor
Dock. E. W. Taylor
By his Atty's
Dewey & Co.

2 Sheets—Sheet 2.

D. E. W. TAYLOR.
Rotary Ore-Stamp.

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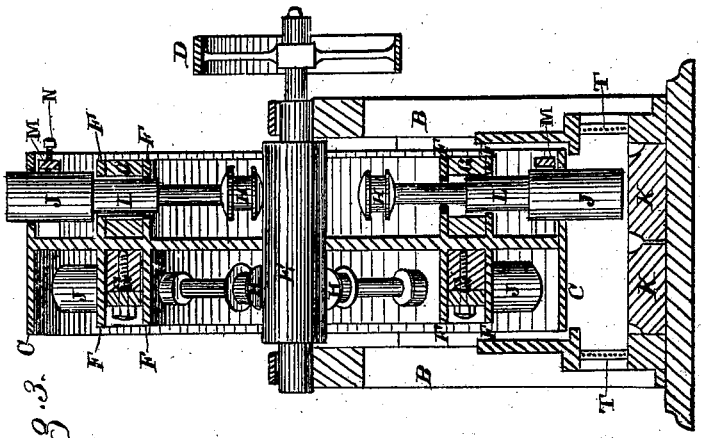

Fig. 3.

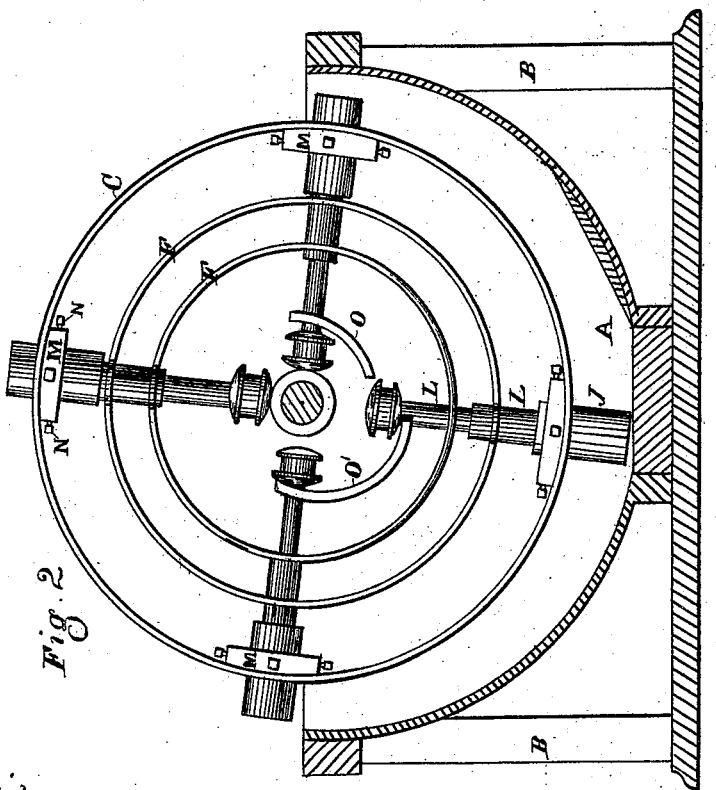

Fig. 2.

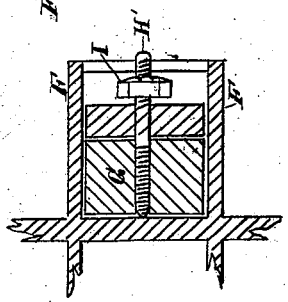

Fig. 5.

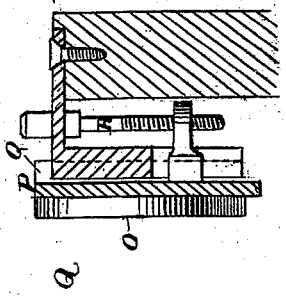

Fig. 4.

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UNITED STATES PATENT OFFICE.

DOCK E. W. TAYLOR, OF SAN BERNARDINO, CALIFORNIA.

IMPROVEMENT IN ROTARY ORE-STAMPS.

Specification forming part of Letters Patent No. **209,631**, dated November 5, 1878; application filed March 19, 1878.

To all whom it may concern:

Be it known that I, DOCK EDWARD WASHINGTON TAYLOR, of San Bernardino, county of San Bernardino, and State of California, have invented a Rotary Stamp-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 a novel construction for a stamp-mill or battery; and it consists in the employment of a series of stamps of peculiar construction, fitted so as to project radially from the perimeter of a drum or pulley of suitable size, which is mounted upon an axis, so as to be rotated by any power. Below this drum is placed the mortar, into which the stamps are allowed to drop.

The stamp-stems are provided at their inner ends with tappets, which move upon and are supported by a curved flange adjustably fixed to the frame, so that the stamps will be held up until the point is reached where they are required to drop. After the blow has been given the tappets are received upon a curved incline, which is in shape of a cam, and as the drum revolves this incline brings the stamps gradually toward the center again, so that when they have reached the top the tappet is ready to be transferred to the other flange without jar or noise.

My invention also contemplates an improved method of guiding and steadying the stamp-stems, and for adjusting the guides and boxes, and a means for regulating the parts to accommodate the wear of the stamps. It also relates to an improved method of securing the screens, and to other details, which will be more fully described by reference to the accompanying drawings, in which—

Figure 1 is a perspective view of my rotary stamp-mill. Fig. 2 is a longitudinal section of the same. Fig. 3 is a transverse section. Figs. 4 and 5 are details.

A is the mortar or battery, which is set upon a solid foundation, independent of the frame B, which supports the drum C. The drum C has a shaft turning in boxes upon the frame, and by means of a pulley, D, motion may be imparted to it from any source of power. At the bottom of the mortar A are two anvils, K K, upon which the ore rests when receiving the blow from the stamps.

In the present case my drum consists of a web, 2, extending outward from a hub, E, and having an outer rim, C, projecting upon each side of the web, so as to permit the stamp-heads to pass through it, one set upon each side of the web. Between the hub and this rim are the projecting flanges F, which serve to hold the boxes G, through which the stamp-stems pass, and by which they are guided. These boxes are preferably made of wood, as is usual for such guides in straight batteries, and they consist of an inner and outer part, secured together by means of screw-bolts H′. These bolts perform a double office: by having a thread which turns in the inner portion of the box, the point of the screw, by pressing against the web, will force the box outward, and thus adjust it at any time to accommodate the wear, while a nut, I, turning upon the outer part of the bolt itself, holds the cap or outer part of the box to its place. The head of the bolt is fitted to receive a wrench, by which it can be turned at any time to adjust the boxes. The stamp-heads J are formed in one piece with the stem, and are preferably made of wrought-iron. The stems L are made with an enlargement, L′, close to the head, to strengthen them also, and this enlargement extends through the boxes G, as shown. The tappets H form heads, which fit upon a taper made on the inner end of the stem. They are slotted just opposite the end of this stem, so as to admit a drift or inclined key, by which they may be driven off from the stem when desired, and these tappets may be reversed, when desired, if too much worn upon one side.

The outer guides for the stamps consist of an inclosing strap or plate, M, having steel screws N, which pass through it so as to stand radially to the axis of the head. These screws are set up so as to take the bearing of the head on all sides, and thus guide it without allowing it to touch the rim or flange C. These inner and outer guides, with the short stems used, insure great steadiness of motion to the stamps under high rates of speed.

The mechanism for operating the stamps consists of two curved flanges, O O′, which are secured so as to be vertically adjustable. In the present case they are secured to plates P, which move in guides, as shown at Q. By means of screws R, these plates and flanges

may be elevated or depressed, and this enables me to adjust them to any wear of the stamps.

The flange O forms an arc of a circle, and receives the tappet when the stamp has, by the rotation of the drum, reached a horizontal position, and it thus sustains the stamp by supporting the tappet until it has reached a point where the tappet leaves the flange, and the stamp is allowed to fall upon the dies in the bottom of the mortar. The length of this flange may easily be made adjustable, so that the point at which the stamp drops shall be sooner or later, as may be desired.

The flange O′ serves to retract the stamp again after the blow has been given. It is in the form of a spiral or cam, its outer end being sufficiently far from the center to pass under the tappet after the stamp has fallen by the rotation of the drum, and as its inner end approaches the hub it gradually draws the stamp inward until, at the point where the stamp-stem lies horizontal, or about that point, the tappet has been drawn in to the hub, and is again ready to be transferred to the other flange, O.

By this construction the tappets move noiselessly, making no jar or pounding as they are raised and transferred from one flange to the other.

My feeding device consists of two troughs, S, one upon each side of the mortar, and these troughs may unite at one end in a sort of double hopper, as shown, so that the material may be fed to either side without any difficulty or extra labor.

The screens T are shown as fitted to the sides of the mortar, or at other points, if desired.

I employ a novel means for securing the screens in place, consisting of a frame, U, of the proper shape, and having projecting lugs at the angles, as shown at V V′. Sockets are made at the bottom of the screen-opening to receive the posts V′, and slots at the top of the same to receive the lugs V. These lugs and the posts are made inclined on their outer faces, and the slots or openings into which they are received are also inclined, so that when pressed into place the frame binds the screen closely against the edge of the screen-opening, and thus holds them so firmly that there will be no need of any binding or rim of any kind around the edge of the screen. The effect of the jar and concussion of the stamps will be to force the inclined holding-lugs more firmly into their sockets and prevent any possibility of the screen becoming loosened.

A pipe, W, carries water alongside the mortar, and suitable passages and cocks allow it to be introduced into the rim C of the drum. This washes any pulp or dust off, and keeps the stamp-heads and the openings through which they pass from becoming clogged.

The whole mechanism is easily constructed, and is made portable, so that a crushing-mill can be set up in any comparatively inaccessible place.

By making the stamps of a smaller diameter, it causes them to penetrate the material within the mortar and to more thoroughly pulverize it.

By this construction I am enabled to deliver the blows of the stamps with much greater rapidity than in any battery using straight lifts and cams.

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

1. The drum having the rim C, perforated to receive and guide the stamp, as shown, and provided with the flanges F, to hold the boxes through which the stems pass, substantially as shown, and for the purpose herein described.

2. The boxes formed of the two parts G, held in place by the flanges F, in combination with the screws H′ and nuts, constructed as shown, to hold the boxes and adjust them, for the purpose herein described.

3. The strap M, provided with the radial steel screws N, in combination with the partition or web 2, to center the stems, substantially as described.

4. The rotary drum and radial stamps J, in combination with flanges O O′, one so constructed as to hold the tappets and allow the stamps to fall upon the dies at the proper time, while the other lifts and retracts them after a blow, substantially as shown, and for the purpose herein described.

5. The adjusting devices for the flanges O O′, consisting of the plates P, with their guides Q and screws R, for elevating and depressing the flanges, substantially as shown, and for the purpose herein described.

6. The screens T, secured in the mortar by means of the frames U, having the wedge-shaped or angular lugs V and posts V′, fitting into corresponding sockets, substantially as shown, and for the purpose herein described.

7. The drum C, with its stamps J, mounted upon an independent frame, B, and operated as shown, in combination with the semicircular mortar, A, with its dies, and the screens T, and securing frames U, substantially as shown, and for the purpose herein described.

In witness whereof I hereunto set my hand and seal.

DOCK EDWARD WASHINGTON TAYLOR. [L. S.]

Witnesses:
GEO. H. STRONG,
FRANK A. BROOKS.