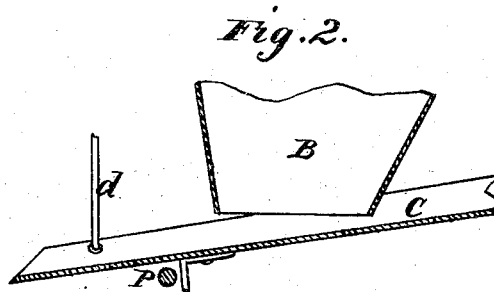
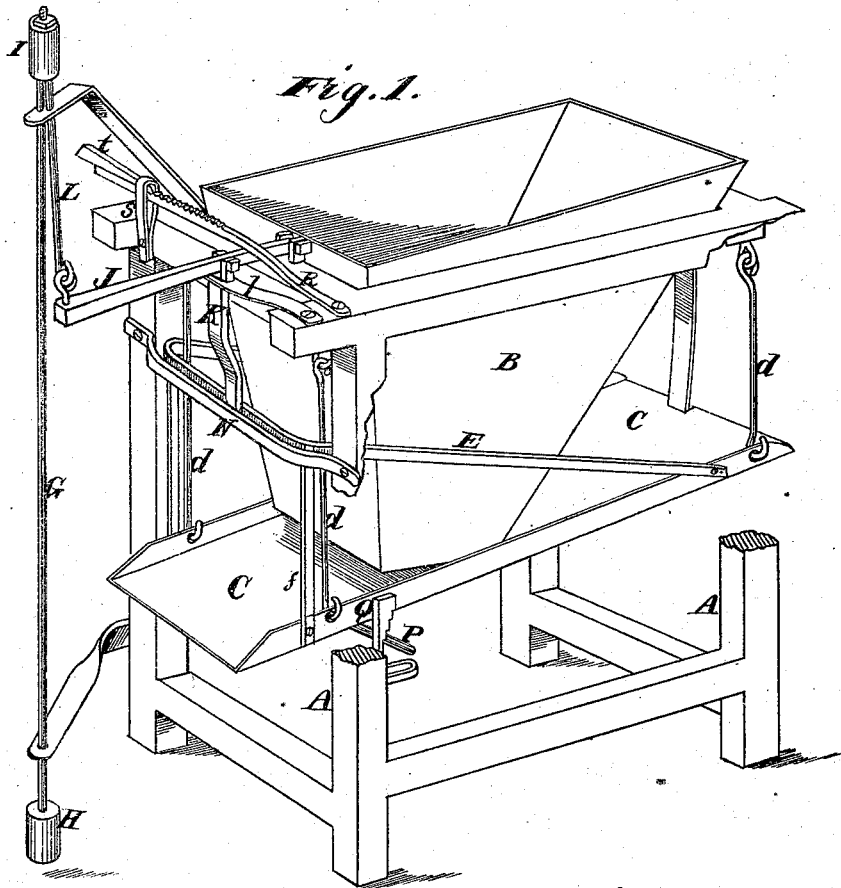


J. TULLOCK.

Ore-Feeder.

No. 160,628.

Patented March 9, 1875.



Witnesses

*Geo. L. Boone*  
*C. M. Richardson*

Inventor

*James Tullock*  
*by Dewey & Co.*  
*Attys*

# UNITED STATES PATENT OFFICE.

JAMES TULLOCK, OF SONORA, CALIFORNIA.

## IMPROVEMENT IN ORE-FEEDERS.

Specification forming part of Letters Patent No. **160,628**, dated March 9, 1875; application filed October 10, 1874.

*To all whom it may concern:*

Be it known that I, JAMES TULLOCK, of Sonora, Tuolumne county, State of California, have invented an Improved Ore-Feeder; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvement without further invention or experiment.

My invention relates to an improved machine for automatically feeding ore to stamps in quartz-mills, and is an improvement upon the machine for which Letters Patent No. 144,714 were granted to me on the 18th of November, 1873.

My improvement relates to a combination of devices for adjusting the feed, whereby the quantity of ore delivered to the stamp is regulated or entirely stopped at pleasure, and also to an improved arrangement for giving to the feeding pan or tray the necessary vibratory motion for causing it to deliver the ore, all of which is more fully described in the following specification, in which reference is had to the accompanying drawings.

Figure 1 is a perspective view of my machine. Fig. 2 is a sectional view of a portion.

A is the frame which supports the ore-hopper B and feeding-tray C. The tray C is suspended by means of hangers *d*, so that it stands at a slight angle just below the lower open end of the hopper, its inclination being toward the battery into which the ore is to be delivered. The tray C extends a short distance back of the hopper, and as the lower end of the hopper is horizontal, while the bottom of the tray is inclined, the rear edge of the opening of the hopper will be close to the bottom of the tray, while a sufficiently large opening will be left in front for the ore to pass out. A U-shaped bar, E, has its two extremities secured to the rear end of the pan upon opposite sides, while its connected end passes across in front of the hopper, and between the two front upright posts of the frame A. The forward or connected end of this bar is supported at the desired height by standards *f* from the sides of the tray. G is the stamp-stem, and H the stamper. I is a tappet, which is secured to the upper end of the stamp-stem.

A lever-bar, J, has one end secured by a bolt upon the top of the frame, so that its opposite end extends out to the stamp-stem. A bar, K, the lower end of which is formed into a wedge, has its upper end secured by a bolt to the middle of the lever J, and a rod, L, extends from the outer end of the lever-bar upward through a suitable guide, so that the tappet I, in descending, will strike against its end, and force it downward, thus depressing the outer end of the lever-bar. A spring, *l*, serves to lift the lever-bar against a transverse regulating-bar, R, which will be hereinafter described. A fixed horizontal bar, N, extends across the frame A directly in front of the connecting end of the U-shaped bar E, its opposite end being secured to the upright post of the frame. The depending bar K is just long enough to allow the point of its wedge to enter between these two horizontal bars when the lever J is raised. Thus it will be seen that when the tappet I descends, and forces the vertical rod L and the outer end of the lever J downward, the wedge-bar K will be forced down between the bar N and the end of the U-shaped bar E, and thus force the tray backward. As the tappet leaves the end of the rod L, the spring *l* raises the lever J and wedge-bar, so that the tray will swing forward again, being moved by a spring, which operates against its rear end in the usual way. A bar, P, passes across the forward end of the machine below the tray, against which a lug or projection on the under side of the tray strikes when the tray moves forward, so as to give a slight percussion, which will start the ore in the tray forward. This bar is loosely attached at one end, while the opposite end is free. A wedge, Q, is arranged to be inserted behind the free end of the bar P, for the purpose of regulating the feed by limiting the movement of the tray. When the point of the wedge is inserted between the bar and upright post, the tray will swing forward a greater distance than when the wedge is moved farther in, as it forces the bar toward the lug or projection, and by inserting the wedge far enough the entire motion can be stopped.

Another regulating device which I employ consists of a spring-bar, R, which extends across the frame above the lever J. One end

of this bar is secured to the frame, while the opposite end passes through a loop, S, on the opposite side of the machine. By inserting a wedge, *t*, between the upper end of the loop and the end of the spring-bar, its height above the lever-bar J can be regulated, so that it will serve as a stop to limit the movement of the lever-bar, and through it the movement of the tray. A permanent yoke or curved bar might be used, and a set-screw arranged to set down against the lever-bar through the yoke, so as to limit the movement of the lever.

By this arrangement I am able to provide a self-acting ore-feeder, which can be easily regulated to feed any quantity of ore to the stamps. The machine works easily, and the ore is fed freely, no difference whether it be dry or wet, and this desideratum I obtain by the peculiar manner of moving the tray—that is, a slow, easy, gradual movement backward, and a quick motion forward, combined with a slight jar. The rear edge of the lower opening in the hopper serves as a scraper to scrape any slimes or tailings that might pack in the tray as it moves close against the surface or bottom of the tray.

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

1. In combination with the suspended tray C, with its U-shaped bar E, supported at its front end by standards *f*, and the fixed horizontal bar N, the lever J, with its depending wedge-bar K, spring *l*, and tappet-rod L, all combined and arranged substantially as and for the purpose above described.

2. The spring-bar R, in combination with the loop S and wedge *t*, for regulating the lift of the lever J, substantially as above described.

3. In combination with the tray C, having a lug or projection on its under side, the bar P, having one end free and adjusted by the wedge Q, to regulate or stop the movement of the tray, substantially as described.

JAMES TULLOCK.

Witnesses:

JNO. L. BOONE,  
R. J. EVANS.