(No Model.)

E. COLEMAN.

Ore Feeder.

No. 239,449. Patented March 29, 1881.

Fig. 1.

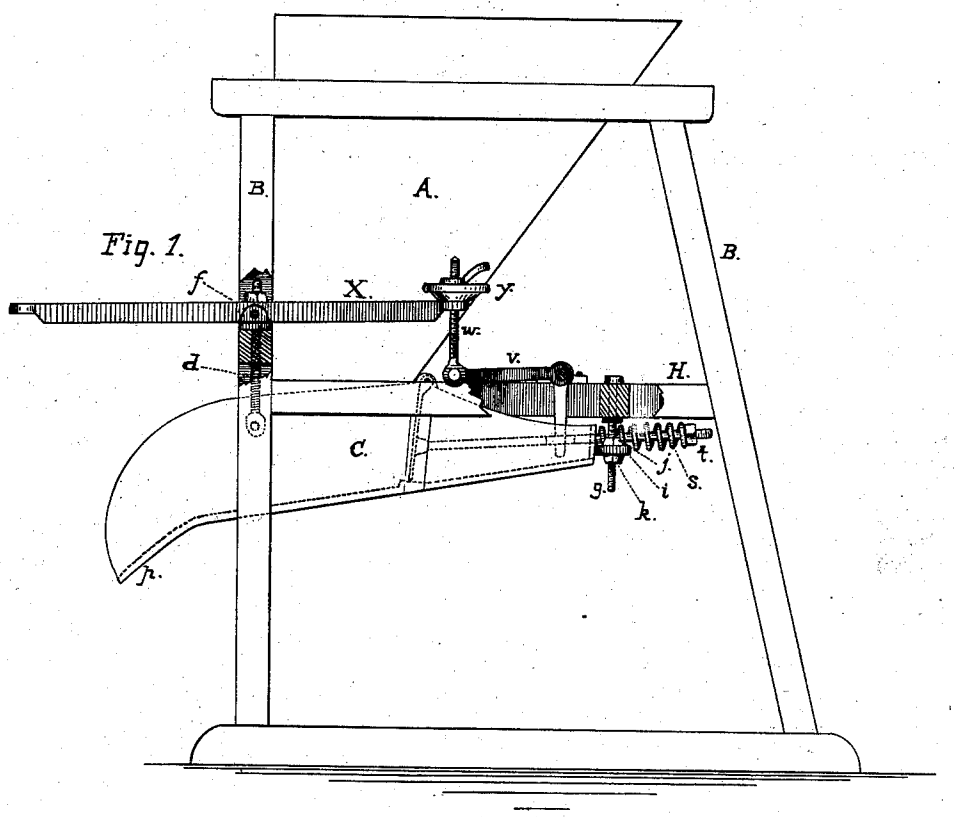


Fig. 2.

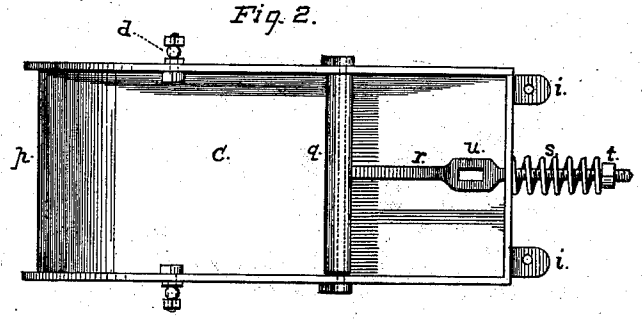
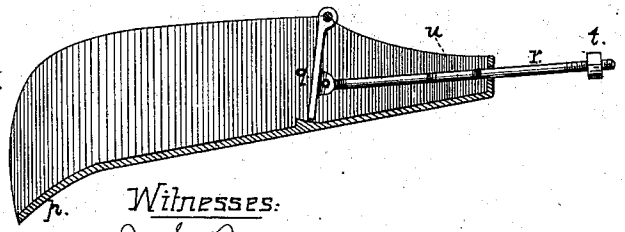


Fig. 3.



Witnesses:
J. L. Bome
Wm. F. Clarke

Inventor:
Eza Coleman
by his Attys.,
Bonnett & Bonnett

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EZRA COLEMAN, OF SAN FRANCISCO, CALIFORNIA.

ORE-FEEDER.

SPECIFICATION forming part of Letters Patent No. 239,449, dated March 29, 1881.

Application filed May 24, 1880. (No model.)

To all whom it may concern:

Be it known that I, EZRA COLEMAN, of the city and county of San Francisco, in the State of California, have invented an Improved Ore-Feeder; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings.

My invention relates to an improved machine for feeding ore and other substances to crushing and grinding mills; and it consists of a stationary hopper mounted above an adjustable tray, in combination with a swinging push-plate, which is operated by the drop of the stamp to press the ore forward through the tray, all as hereinafter more fully described.

Referring to the drawings, Figure 1 is a side sectional elevation of the feeder, showing the hopper, tray, push-plate, lever, and intervening mechanism. Fig. 2 is a plan view of the tray. Fig. 3 is a side sectional view of the tray.

A is a stationary hopper, which is mounted in a suitable frame, B.

C is the tray, which is mounted below the hopper, and upon which the ore or other substance contained in the hopper rests in the usual way. This tray is suspended at its front end by means of screw-bolts *d*, which pass through the front horizontal timbers of the frame, and upon which nuts *f* are turned. The rear end is supported in a like manner by screw-bolts *g*, which pass down through the horizontal timbers H of the frame and through eyes *i* on the rear corners of the tray. A nut, *j*, is turned on these screw-bolts above the eyes, and another, *k*, below them, so that the eyes can be clamped between them when it is desired to fix the rear end of the tray in place. By turning these nuts up or down the height of the rear end of the tray can be adjusted, while the nuts *f* enable me to adjust the height of the front end. I can thus set the tray at any desired angle or inclination, as may be found necessary. The front end of the tray I provide with an angular apron or lip, *p*, which directs the ore into the battery after it passes the bend or angle, and prevents it from scattering.

Just below the rear side of the hopper I hinge or hang a plate, *q*, from the upper edge of the sides of the tray, so that it will hang down across the tray, its lower end being free. To the middle of this plate I attach a rod, *r*, which extends back and passes through the rear end of the tray. On the rearwardly-projecting portion of this rod is a spring, *s*, which is confined by a nut, *t*, on the end of the rod. The rod *r* has a loop or hole, *u*, in it, in which the end of one arm of a bell-crank lever, *v*, enters. The angle of this lever is pivoted directly above, and its opposite arm extends forward horizontally. A screw-rod, *w*, is jointed to the front end of this horizontal rod, and on this screw-rod the rear end of the main operating-lever *x*, which receives the stroke of the tappet, is secured by set-nuts *y*, so that the height of the outer end of the lever can be adjusted by raising or lowering the rear end on the screw-rod, thus regulating the force of the blow on the lever. When the outer end of the lever is depressed by the stroke of the tappet the bell-crank lever forces the rod *r* forward, compressing the spring *s* and pressing the plate *q* forward at the same time. The ore, which rests upon the tray and against the plate, is thus pressed forward by the plate, so that a small portion in advance is forced over the angle and falls into the battery, and the quantity is regulated by the length of the movement of the plate. When the stamp lifts again the spring *s* draws the plate back again and sets the lever *x*, ready for the next drop.

A slight concavity is formed in the bottom of the tray under the moving edge of the push-plate *q*, so that no opening is presented under the edge of the plate for any particles of ore to get into as the plate moves back and forth.

The plate *q* can either be hung from the sides of the tray, or it can be hinged to the lower edge of the hopper, and it would work the same way in either case; but I prefer to hang it on the sides of the tray, as it can then be made of cast-iron and finished at the same time with the tray in the foundry. A very slight motion of the plate is all that is required to move the ore forward, and by increasing the angle of the tray by means of the screw-rods the feed can be made as sensitive as desired. In fact, the several adjustments which this machine is provided with renders it at once the simplest and most effective feeder in

use, while its extreme simplicity renders it the most economical and durable of any feeder that I am familiar with.

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

The hopper A and tray C, in combination with the suspended push-plate *q*, with its rod *r* and spring *s*, said push-plate being operated by the bell-crank lever *v* and tappet-lever *x*, substantially as specified.

In witness whereof I have hereunto set my hand and seal.

EZRA COLEMAN. [L. S.]

Witnesses:
CHAS. D. WHEAT,
WM. F. CLARK.