C. C. STEVENSON.

Feeders for Stamp-Mills.

No. 196,261. Patented Oct. 16, 1877.

Fig. 1.

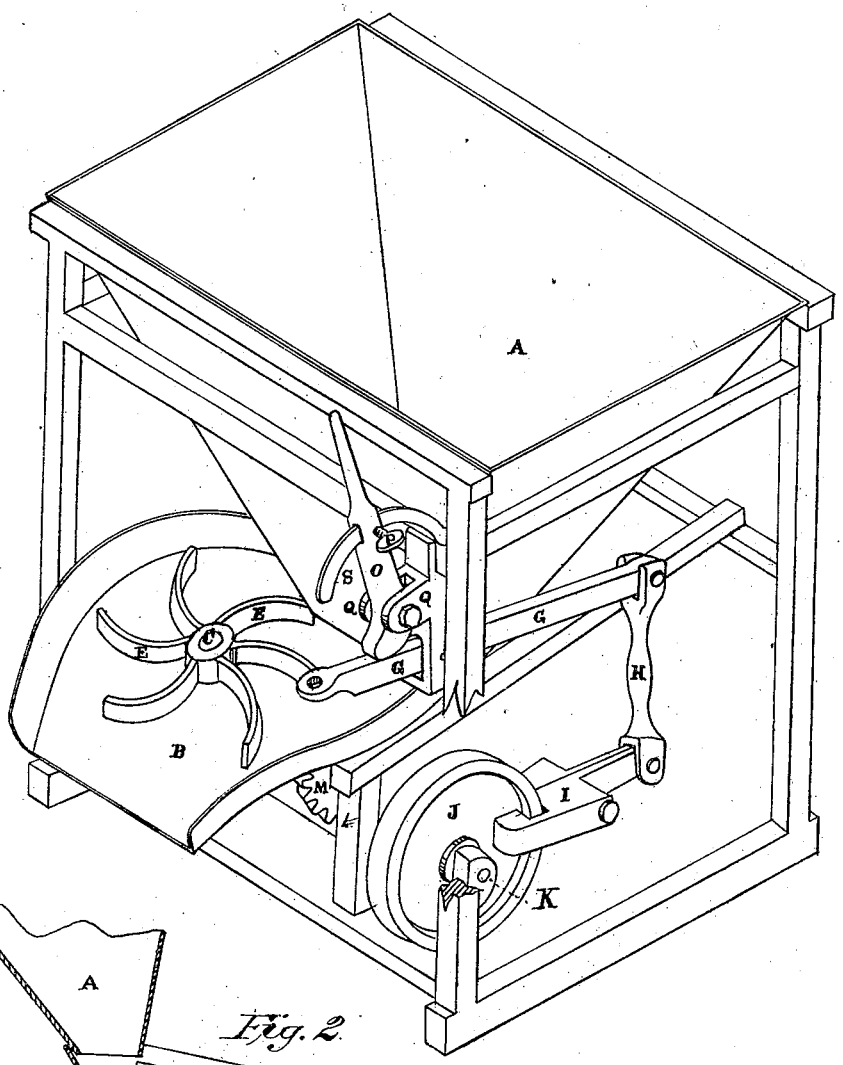
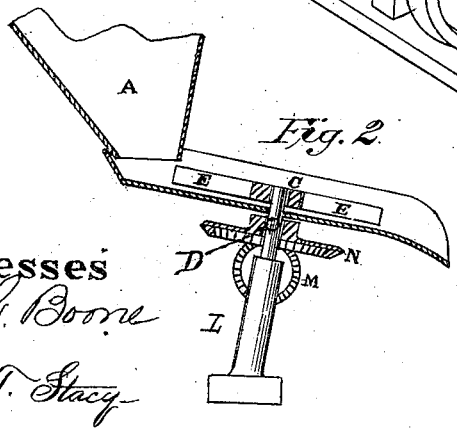


Fig. 2.



Witnesses

John L. Boone

Olwyn T. Stacy

Inventor

Chas C. Stevenson

By Dewey & Co

Attys

UNITED STATES PATENT OFFICE.

CHARLES C. STEVENSON, OF GOLD HILL, NEVADA.

IMPROVEMENT IN FEEDERS FOR STAMP-MILLS.

Specification forming part of Letters Patent No. **196,261**, dated October 16, 1877; application filed May 5, 1877.

To all whom it may concern:

Be it known that I, CHARLES C. STEVENSON, of Gold Hill, county of Storey, and State of Nevada, have invented an Improved Ore-Feeder for Stamp-Mills; 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 improved machine for feeding rock and other substances to crushing-mills.

Referring to the accompanying drawings, Figure 1 is a perspective view. Fig. 2 is a section.

The hopper A, into which the ore is dumped, is mounted upon a suitable frame, in the ordinary way of mounting the hopper of automatic feeders.

The shoe or tray B is made considerably wider than the lower open end of the hopper, and it is permanently secured below the hopper at a slight inclination, so that the ore which passes through the lower end of the hopper will be received upon it near one corner or side.

The shoe extends to a sufficient distance in front of the hopper to deliver the ore, which drops from the extremity into the battery; and this extremity I prefer to give a steeper pitch or inclination than the main length of the tray. This tray, as above stated, is immovably fixed in position below the hopper, so that it receives the ore from the hopper on one corner.

In order to move the ore forward from underneath the hopper and feed it over the front edge of the tray, I employ a horizontal rotary hub, C, which is provided with a number of radiating arms, E, which may be straight or curved, as desired. This hub is mounted on the upper end of an upright shaft, D, which steps in a bearing below the tray, while its upper end passes through the bottom of the tray near its center. As the tray is slightly inclined, this shaft will also be correspondingly inclined. The hub and arms lie close to the bottom of the tray, and the arms extend out as far as it is possible to allow them to move around in a circle, and sweep the bottom of the tray when the shaft is rotated.

The upright shaft D is rotated by power derived from the stamp, in the usual manner of operating automatic ore-feeders, so that each time the stamp drops it causes the hub C and its arms E to rotate slightly, and thus carry forward and drop a quantity of ore into the battery.

The arrangement which I represent in the present instance for rotating the shaft by the drop of the stamp consists of a lever, G, which is pivoted to the frame so that its short end extends out alongside of the stamp-stem, in position to receive the stroke of the tappet and be depressed when the stamp drops. The opposite extremity of this lever is connected, by a pitman, H, with friction-clutch I. This friction-clutch engages with a wheel, J, which is secured upon a horizontal shaft, K, so that each time the lever is depressed by the drop of the stamp the shaft K is partially rotated. This shaft extends horizontally beneath the tray, one end being supported in a suitable bearing, which is attached to the corner-timber of the feeder-frame, while its opposite end is supported by the hollow standard L, which surrounds the upright shaft D. A bevel-wheel, M, on the shaft K engages with a bevel-wheel, N, on the upright shaft D, thus transmitting the rotary motion of the shaft K to the upright shaft and its arms.

Instead of this arrangement, however, a system of levers could be used for connecting the motion of the lever G with the upright shaft D.

I have also devised a very simple and convenient device for adjusting the stroke of the lever for regulating the feed; and it consists of a lever, O, the lower end of which is bent so as to form a cam. This lever is pivoted between two arms, Q Q, which project out from the frame of the machine just above the projecting end of the lever G, so that the lever G will strike the cam or bent end when it is released from the tappet.

By moving the upper end of the lever O outward the point of the cam is depressed, so as to shorten the stroke of the lever G. I can thus, by simply moving the lever back and forth, lengthen or shorten the stroke of the lever, according to the required feed.

A segmental bar or rack, S, extends out from the frame and passes through a hole in the lever-arm, and a set-screw, P, passes through one side of the lever, so that the lever can be fixed at whatever point it is moved to by set-

ting the screw against the bar. I thus provide a very simple and easily-operated automatic ore-feeder.

The arms of the horizontal wheel will serve as moving scrapers to carry forward the ore and drop it into the battery. By this means the feeding of the ore is rendered positive, whether it be wet or dry.

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

1. The combination, with the lever G, of the adjusting device, consisting of the lever O, with its cam-shaped foot pivoted between the two arms Q Q, segmental bar or rack S, and set-screw P, substantially as and for the purpose described.

2. The combination, with the horizontal movable scraper or scrapers E, of the shaft D, gear-wheels M N, shaft K, wheel J, clutch I, connecting-rod H, and lever G, substantially as and for the purpose specified.

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

CHARLES C. STEVENSON. [L. S.]

Witnesses:

T. A. WASHBURN,

J. B. MARSHALL.