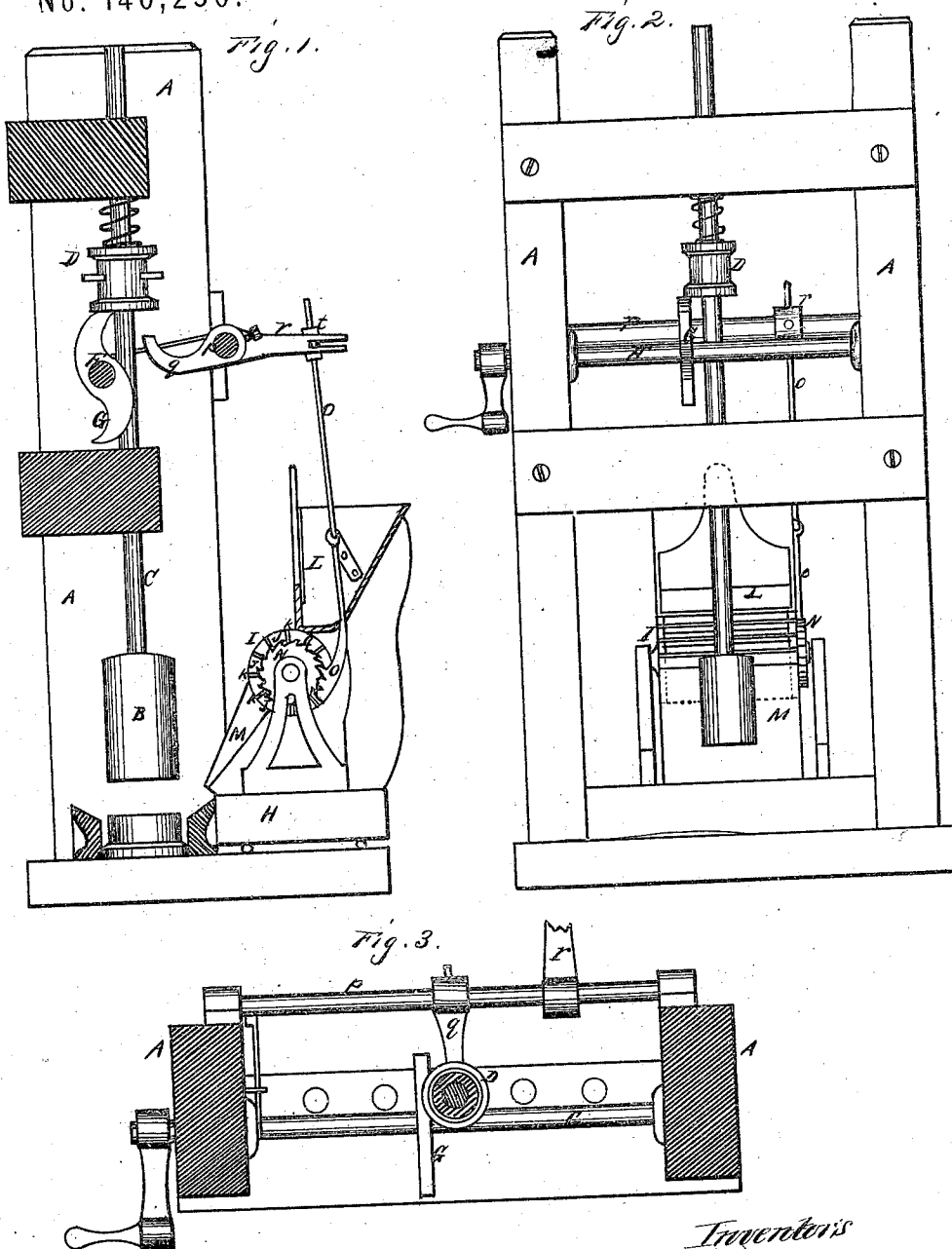


J. D. CUSENBARY & J. A. MARS.
Ore-Stamp Feeders.

No. 140,250.

Patented June 24, 1873.



Witnesses
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UNITED STATES PATENT OFFICE.

JAMES D. CUSENBARY AND JAMES A. MARS, OF SAN FRANCISCO, CAL.

IMPROVEMENT IN ORE-STAMP FEEDERS.

Specification forming part of Letters Patent No. 140,250, dated June 24, 1873; application filed April 21, 1873.

To all whom it may concern:

Be it known that we, JAMES D. CUSENBARY and JAMES A. MARS, of the city and county of San Francisco, State of California, have invented certain new and useful Improvements in Ore-Feeders for Quartz-Mills; and we 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 improvements without further invention or experiment.

Our invention relates to improvements in that class of ore-feeders for quartz-mills in which a pawl and ratchet are employed to operate the feeder automatically by the drop of the stamp. Our improvements consist, first, in mounting a feed-cylinder upon a movable frame or truck, so that it can be readily shifted from place to place when it is desired to repair the mill, and lastly, of an improved arrangement for operating the pawl-rod by the drop of the stamp without the use of springs.

In order to more fully illustrate and explain our invention, reference is had to the accompanying drawings forming a part of this specification, in which—

Figure 1 is a vertical section. Fig. 2 is a back view. Fig. 3 is a transverse section.

A represents the frame of a stamp-mill. B is the stamp. C is the stamp-stem with its tappet D. F is the cam-shaft, and G the cam which lifts the stamp, all of which are arranged in the ordinary manner of constructing a stamp-battery. H H are the foundation-timbers upon which the feeding-cylinder I is mounted. These timbers are mounted upon rollers so that the cylinder and frame can be moved about, as desired. The cylinder I is made of cast metal, and has its outer surface formed into chambers or depressions J J, which are separated from each other by longitudinal partitions K. The cylinder and its carriage, when in working position, are placed below the hopper L, so that the ore from the hopper will fall into the chambers, and, as the cylinder revolves, be carried around until it

falls by its own weight from the chambers upon an inclined apron, M, which directs it beneath the stamp.

This feeding-cylinder, being made of cast metal, will not wear out like the endless belts heretofore used in this class of machines, and as it turns upon journals like any common roller or cylinder, it cannot become clogged, as the endless belt is liable to do. To one end of the cylinder a ratchet-wheel, N, is secured, and this ratchet-wheel is operated by a pawl-bar, O, to revolve the cylinder.

In order to operate the pawl-bar from the tappet a horizontal shaft, P, has its opposite ends supported in boxes which are secured to the sides of the upright timbers of the frame, so that the shaft will pass across directly in front of the tappet transversely to the movement of the stamp-stem.

A fixed arm, Q, extends backward from the shaft P, so that its extremity will terminate below the tappet in position to receive a blow from it when the stamp falls. Another fixed arm, R, extends forward from the shaft directly over the ratchet-wheel, and to the extremity of this arm the upper end of the pawl-bar O is attached by means of a trunnion-block, T. This bar extends down to the middle of the periphery of the ratchet-wheel, and has one or more upward-projecting teeth on its lower end, which serve to engage with the teeth of the ratchet when the pawl is lifted by the rock-shaft, and thus rotate the feeding-cylinder.

It will, therefore, be evident that at each drop of the stamp the tappet will strike the arm Q and carry it downward, thus giving the shaft P a rocking motion, the weight of the pawl and its arm R serving to rotate the shaft in an opposite direction, thus feeding the ore automatically when it is needed.

When there is a sufficient quantity of ore beneath the stamp the drop will not be sufficient to operate the cylinder; but when the quantity of ore beneath the stamp is reduced the drop is greater, and consequently the tappet strikes the arm Q and operates the cylinder.

Having thus described our invention, what

we claim, and desire to secure by Letters Patent, is—

1. The feeding-cylinder I mounted upon the movable timbers H H, substantially as and for the purpose above described.

2. The rock-shaft *p* with its fixed arms *q r*, in combination with the pawl-bar *o*, ratchet-wheel N, and feeding-cylinder I, when arranged to be operated by the tappet D, substantially as and for the purpose described.

It witness whereof we have hereunto set our hands and seals.

JAMES D. CUSENBARY. [L. S.]
JAMES A. MARS. [L. S.]

Witnesses:

J. L. BOONE,
C. M. RICHARDSON.