

I. M. PHELPS.  
Ore-Pulverizer.

No. 215,967.

Patented May 27, 1879.

Fig. 1.

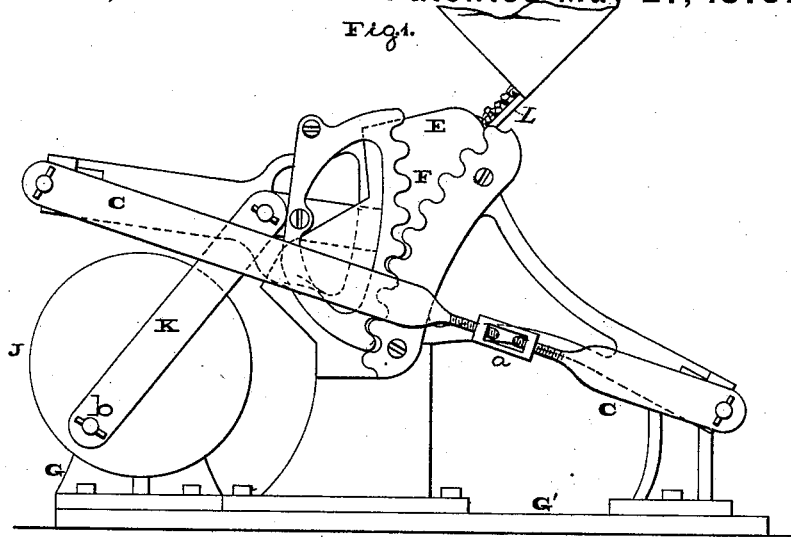


Fig. 2.

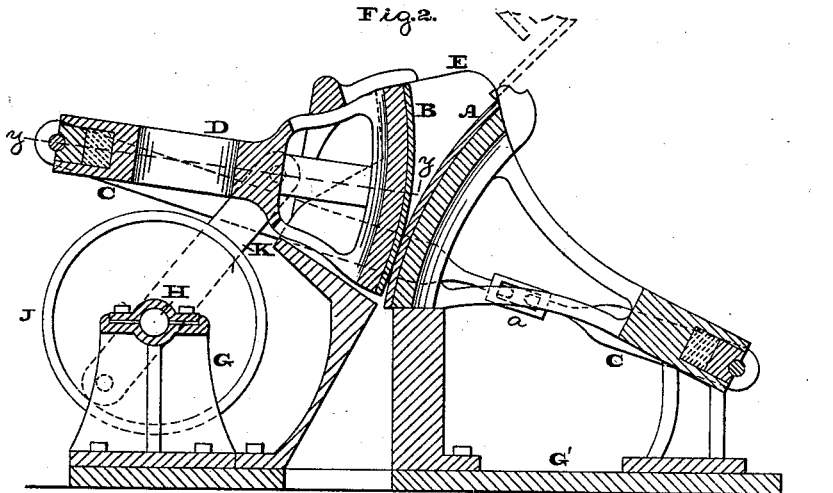
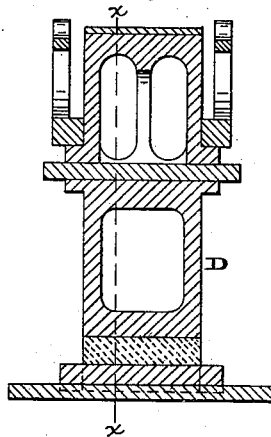


Fig. 3.



Witnesses:

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Inventor:

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# UNITED STATES PATENT OFFICE.

IRA M. PHELPS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO JOHN SHILLITO, JR., OF CINCINNATI, OHIO.

## IMPROVEMENT IN ORE-PULVERIZERS.

Specification forming part of Letters Patent No. **215,967**, dated May 27, 1879; application filed April 3, 1879.

*To all whom it may concern:*

Be it known that I, IRA M. PHELPS, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Pulverizers, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a side elevation of the pulverizer embodying my invention. Fig. 2 is a longitudinal vertical section thereof in line *x x*, Fig. 3. Fig. 3 is a horizontal section of a portion in line *y y*, Fig. 2.

Similar letters of reference indicate corresponding parts in the several figures.

My invention relates to that class of machines employed for pulverizing quartz and other gold and silver bearing ores preparatory to roasting or amalgamating; and consists of a stationary segment having its face curved from above downward, thereby presenting a constantly-increasing degree of inclination from the point of inlet to the discharge, and a rocker-segment having its face curved similar to that of the fixed segment, whereby, by the repeated pressure of the rocker-segment on the stationary segment, the ore is pulverized as it runs down the stationary segment by its own gravity.

Referring to the drawings, A represents a stationary segment, which is firmly supported in an inclined direction, and its face is curved from above downward.

B represents a rocker, having its face curved similar to that of the bed-plate, as clearly shown in Fig. 2.

To the support of the segment A are pivoted rods C, whose other ends are pivoted to a head or projection, D, at the back of the rocker B, whereby the rocker is bound to the segment.

In order to regulate the degree of pressure of the rocker upon the bed-plate, each connecting-rod C is made in two parts, connected by a threaded link or swivel, *a*.

E E represent side plates, which are securely bolted to the fixed segment on each side, and extend sufficiently above its face to inclose the rocker B during its entire sweep.

F F represent toothed segments, which are firmly bolted to the sides of the rocker B and segment A, respectively, and, meshing into each other, prevent any displacement of the rocker.

G represents a pedestal, which is bolted to the bed-plate G', and supports the shaft H of the band-wheels J, which are furnished with crank-pins *b* and connecting-rods K, by means of which motion is imparted to the rocker.

In operating this pulverizer the material should be well dried, and reduced to the condition of coarse sand or fine gravel, and evenly distributed over the feed-apron L, so as to cover the entire face of the fixed segment A and flow in an even and uniform stream down the curved incline. During its descent it is pressed upon several times by the rocker, and thus reduced to any degree of fineness required.

Ordinary sand runs freely down on an inclination of forty degrees, and the finer the powder the steeper must be the incline. To accommodate the machine to this law, it will be noticed that the degree of inclination of the fixed segment constantly increases from inlet to discharge, so that, as the ore becomes finer and finer after each passage of the rocker over it, it has a steeper and steeper inclined plane to run down.

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

In a quartz or ore pulverizer, a stationary inclined segment whose face is curved from above downward, and presents a gradually-increasing degree of inclination from top to bottom, and a rocker-segment having its face curved similar to that of the stationary segment, combined and operating substantially as described, whereby, by the repeated pressure of the rocker on the stationary segment, the ore is pulverized as it runs down the stationary segment by its own gravity, as stated.

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Witnesses:

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SAM'L. M. GRICE.