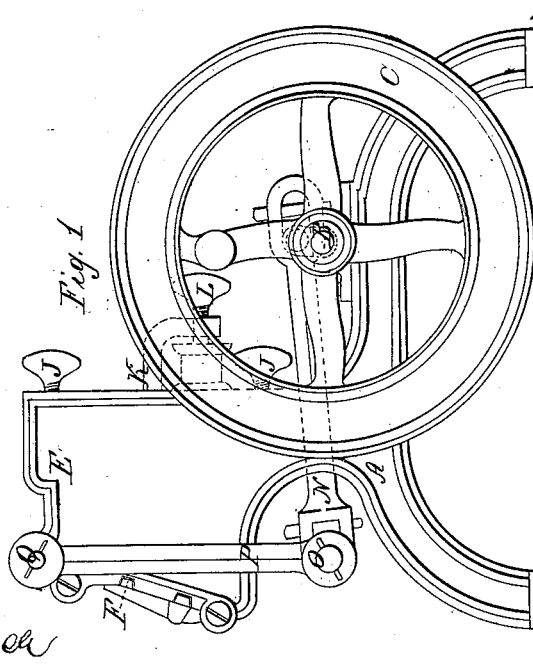
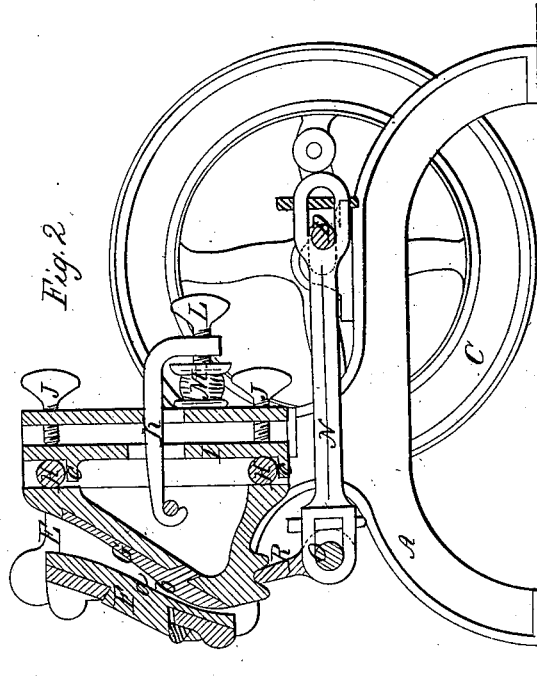


No. 51,586.

PATENTED DEC. 19, 1865.

W. W. HANSCOM.
QUARTZ CRUSHER.



Witnesses
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UNITED STATES PATENT OFFICE.

W. W. HANSCOM. OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN QUARTZ-CRUSHERS.

Specification forming part of Letters Patent No. 51,586, dated December 19, 1865.

To all whom it may concern:

Be it known that I, W. W. HANSCOM, of San Francisco, in the county of San Francisco and State of California, have invented a new and Improved Machine for Crushing Ore, Rocks, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a side view of my invention; Fig. 2, a longitudinal vertical section of the same.

Similar letters of reference indicate like parts.

This invention relates to a new and improved machine for crushing and pulverizing ores, rocks, &c.; and it consists in the employment or use of a stationary jaw and a movable one, both jaws having curved faces, and the movable one operated in a novel way, as hereinafter fully shown and described, whereby the ore or rock may be crushed in a much more efficient manner than hitherto and with a less expenditure of power.

A represents a framing, which may be constructed of cast-iron, and is provided with a shaft, B, having a fly-wheel, C, at each end of it and a crank, D, at the center. The framing A is provided with a box, E, in which a stationary inclined plate or jaw, F, is placed, having a curved inner surface or face side, *a*, as shown clearly in Fig. 2. The box E also contains a movable inclined jaw, G, which also has a curved face, *b*, (shown in Fig. 2.) This jaw G bears against friction-rollers H, which rest on horizontal ledges *c* on a plate, I, in the box E, said plate being so arranged as to be capable of being adjusted by set-screws J. The jaw G also has an arm, K, attached to it, which passes through the plate I and the rear of the box E, and has a screw, L, passing through it, which bears against a spring, M, (shown clearly in Fig. 2.)

N is a connecting-rod, one end of which is

attached to the crank D of shaft B, and the other end connected with a shaft, O, to the ends of which pendent swinging bars P P are attached, the upper ends of the latter being fitted loosely on a shaft, Q, on the top of box E. The shaft O has a toggle-plate, R, attached to or formed with it, and this toggle-plate acts against the lower edge of the movable jaw G.

From the above description it will be seen that as the shaft O is rotated the jaw G will be vibrated or moved in a vertical direction, and as the faces of the jaws F G are both inclined, the ore or rock which is fed down between them will be subjected to an oblique crushing action, the obliquity gradually diminishing to nearly a right-angular crushing action as the ore passes down between the jaws, on account of the curvature of the same. By this means the ore or rock is crushed with a moderate expenditure of power, and, instead of being reduced in small globular particles, will be flat or in small scaly or wafer-like particles, which are much the most desirable form for grinding or amalgamating pans for operating upon crushed ore, and said particles make the most desirable concrete, as they pack more readily and are more binding.

By the toggle arrangement for operating the vibrating jaw the latter is vibrated twice at every revolution of the crank, and a quick movement obtained by a moderate movement of the crank-shaft B. The spring M admits of a certain yielding of the jaw G, while the position of said jaw may be regulated by adjusting the screws J.

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

The arrangement of the friction-rollers H and the adjustable plate I, substantially as and for the purpose specified.

W. W. HANSCOM.

Witnesses:

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