(No Model.)

2 Sheets—Sheet 1

H. J. DYKES.

ROCK CRUSHER AND PULVERIZER.

No. 343,268. Patented June 8, 1886.

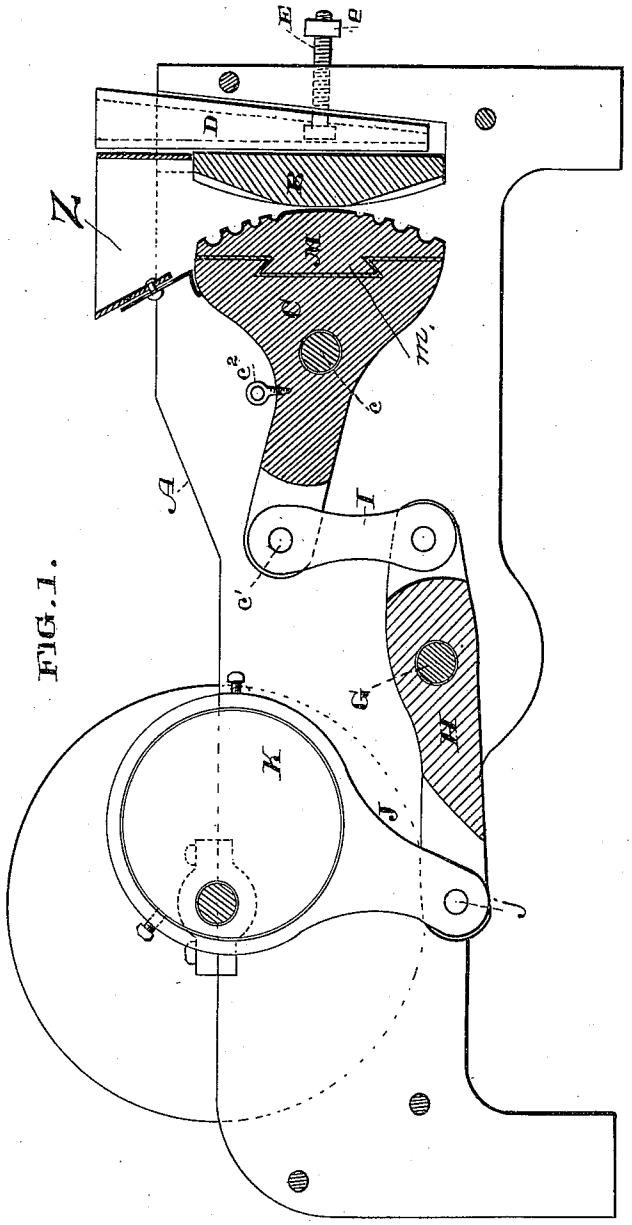


FIG. 1.

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(No Model.) 2 Sheets—Sheet 2.

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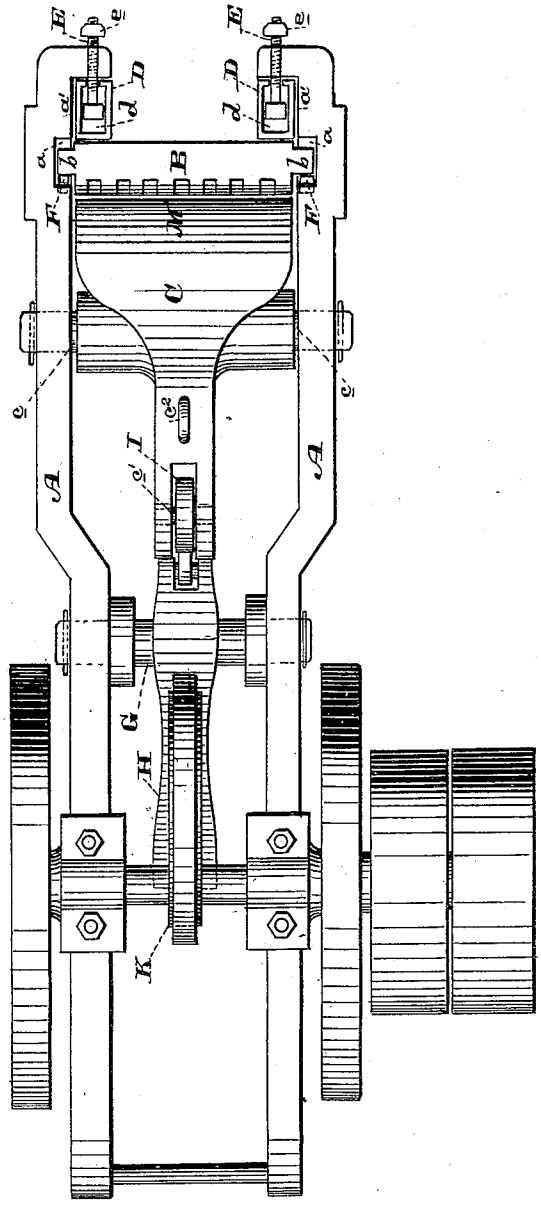


FIG. 2.

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UNITED STATES PATENT OFFICE.

HUGH J. DYKES, OF BERKELEY, ASSIGNOR, BY MESNE ASSIGNMENTS, OF ONE-HALF TO LEWIS PETERSON, OF SAN FRANCISCO, CALIFORNIA.

ROCK CRUSHER AND PULVERIZER.

SPECIFICATION forming part of Letters Patent No. 343,263, dated June 8, 1886.

Application filed September 4, 1885. Serial No. 176,209. (No model.)

To all whom it may concern:

Be it known that I, HUGH J. DYKES, of Berkeley, county of Alameda, and State of California, have invented an Improvement in Rock Crushers and Pulverizers; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to that class of rock crushers and pulverizers in which the rock is crushed and pulverized between a fixed jaw or bed and a movable vibrating jaw or head; and my invention consists in the various details of construction and combination of parts, as hereinafter described and claimed.

The object of my invention is to provide a simple and effective rock crusher and pulverizer.

Referring to the accompanying drawings, Figure 1 is a vertical longitudinal section of my rock crusher and pulverizer. Fig. 2 is a plan of same.

A is the frame of the machine, consisting of two parallel and separated side plates, which are held together by suitable bolts.

B is the fixed crushing jaw or bed, and C is the movable crushing jaw or head.

Z is a hopper, by which rock is fed to the jaws.

The fixed jaw is mounted in a vertical plane in one end of the frame, and is adapted to be removed therefrom and to be set up or adjusted by the following construction: The ends of the jaw have tongues *b*, which slide down within and are seated in grooves *a* in the frame, said grooves being wider than the tongues, as shown in Fig. 2. In angled seats *a'* in the rear of the frame are inserted wedges D, which are cored out and form grooves *d*, in which the heads of bolts E are fitted. These bolts are provided with nuts *e* on the outside, by which said bolts may be set up, so as to hold the wedges D against the back of the jaw or bed B. Gibs F are inserted in the grooves *a* of the frame and serve to tighten the tongues *b* of the jaw B. By dropping or raising the wedges D it is obvious that the jaw B may be adjusted closer to or drawn backward from the face of the movable jaw C, and may be held in the position to which it is adjusted by setting up the bolts E. By loosening said bolts the gibs F may be taken out, and the jaw B may be removed by raising it out of the grooves *a*. The jaw C is pivoted on a shaft, *c*, which passes through the frame A, and is provided with pins, by the removal of which said shaft may be taken out, so that the jaw may be thrown back out of the way, said jaw turning on its end pivot, *c'*, and resting when thrown back on a shaft in the frame behind. Pivoted on a cross shaft, G, is a lever, H, the forward end of which is connected by a link, I, with the rear of the jaw or head C at the point *c'*. The rear end of lever H is slotted, and receives the strap J, which is pivoted to said lever at *j*. The strap J is operated by an eccentric, K.

By means of the lever H and the link I it will be observed that I obtain a compound leverage, by which to vibrate or operate the jaw or head C.

Instead of the eccentric for operating the lever H, I may, when the machine is to be operated by hand, provide a screw-socket on the end of said lever and fit a handle to it. The top of the jaw or head C has a small ring-bolt, c^2, screwed into it, by which it may be grasped to throw it back out of the way when desired. The face of the jaw C is provided with a shoe, M, which has a dovetailed tenon, *m*, made transversely and horizontally upon its back and fitting within a correspondingly-beveled groove in the front of the jaw or head. The shoe may thus be slipped out of the jaw for cleaning purposes or for reversing it, or for the substitution of another shoe.

Though fitted in by a dovetailed connection, the shoe is held firmly in place by the sides of the frame A, and requires no other means to hold it to its seat. The corrugations on the faces of the two jaws are of a peculiar arrangement. They are made only upon the ends of the faces, the centers being left smooth, as shown in Fig. 1. The corrugated faces therefore serve for crushing the rock, while the smooth centers serve for the pulverizing. It will be observed also that the corrugations on each side are uniform as to the space they cover, which provides for the reversal of either jaw. Another feature is that the corrugations on the face of one jaw are vertically arranged,

while on the other they are arranged in horizontal lines. This gives a better grip and more effectively accomplishes the crushing.

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

1. In a rock crusher and pulverizer, the frame A, having grooves *a*, and a movable crushing jaw or head, in combination with the crushing-jaw B, having tongues *b*, and grooved wedges D, substantially as herein described.

2. In a rock crusher and pulverizer, the frame A, having grooves *a*, and a movable crushing jaw or head, in combination with the crushing-jaw B, having tongues *b*, fitting in the grooves, and the means for adjusting said jaw forward or backward, consisting of the grooved wedges D, seated in the frame behind the jaw, the adjusting-bolts E, seated in said wedges, whereby they are set up and may be raised or lowered, and the gibs F in the grooves *a* in front of the tongues *b*, substantially as herein described.

3. In a rock crusher and pulverizer, the removable crushing-jaws B and C, having the centers of their faces smooth and being corrugated on each side of said centers, whereby said jaws may be reversed when desired, substantially as herein described.

4. In a rock crusher and pulverizer, the crushing-jaws B and C, having smooth centers and corrugated on each side of the centers, the corrugations on one jaw being vertical and those on the other horizontal, substantially as herein described.

In witness whereof I have hereunto set my hand.

HUGH J. DYKES.

Witnesses:
J. H. MOLEN,
C. D. COLE.