

A. ALEXANDER.
Ore-Crushers.

No. 148,641.

Patented March 17, 1874.

Fig. 1.

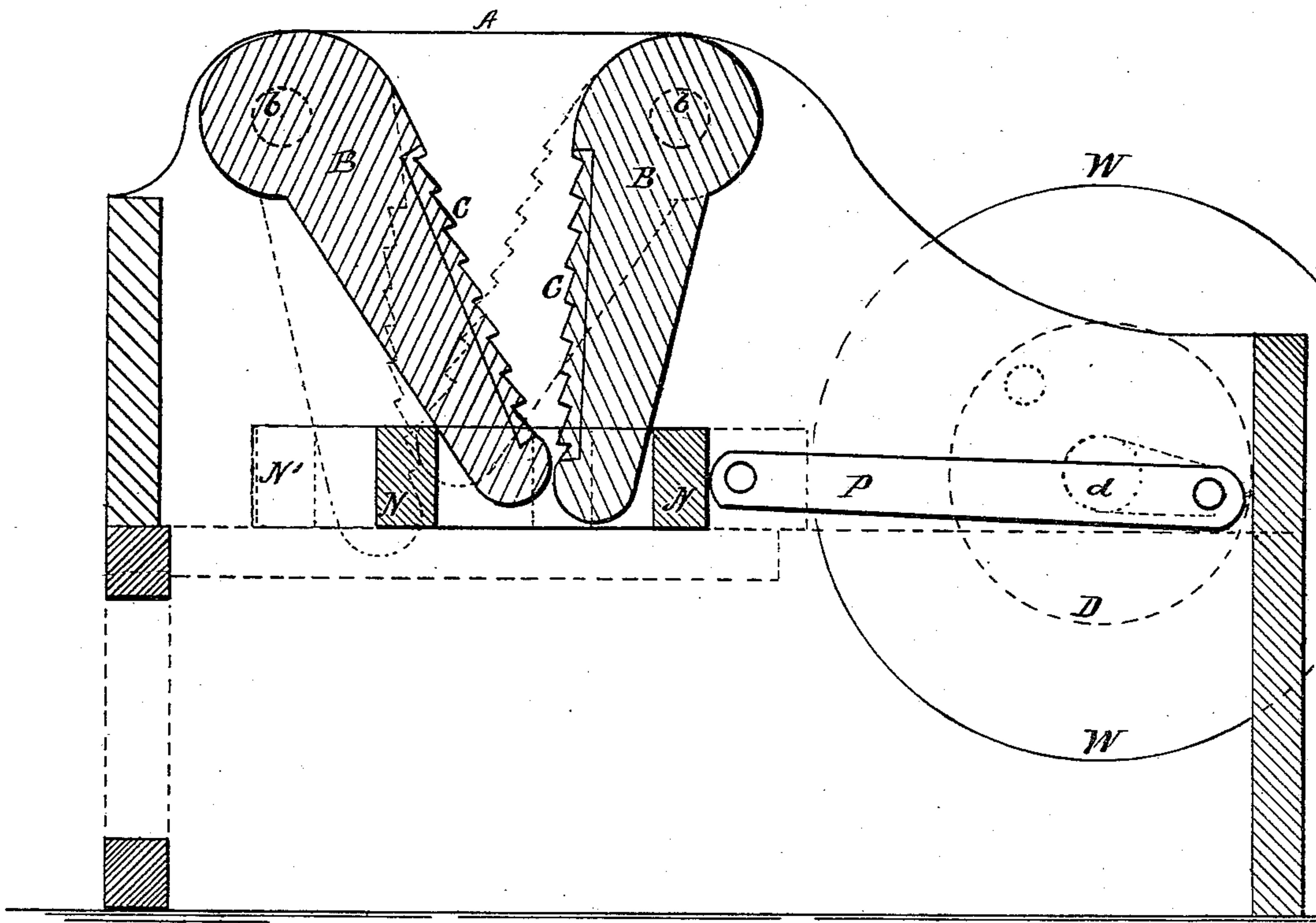
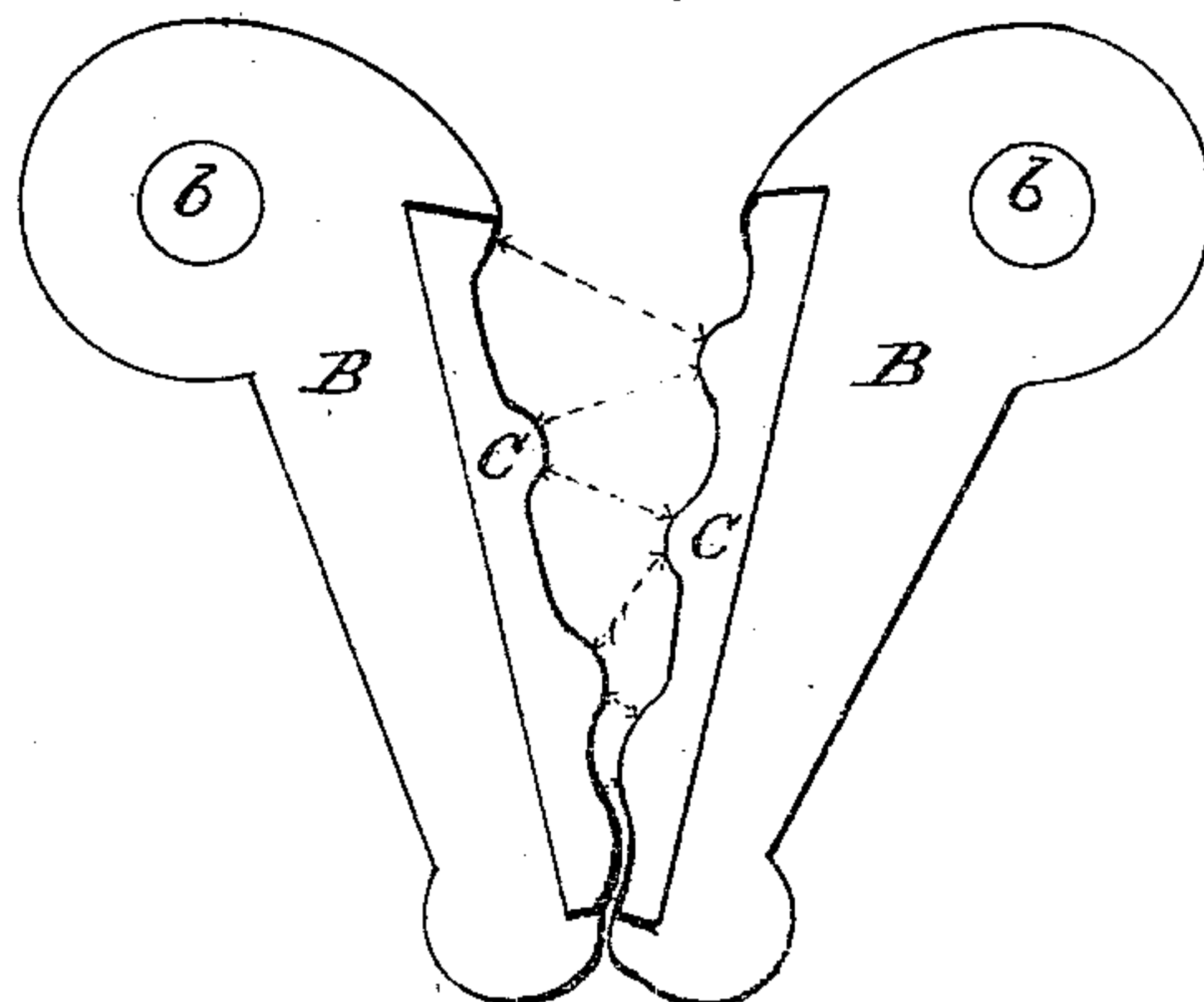


Fig. 2.



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UNITED STATES PATENT OFFICE.

ABRAM ALEXANDER, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO
FARRELLY ALDEN, OF SAME PLACE.

IMPROVEMENT IN ORE-CRUSHERS.

Specification forming part of Letters Patent No. **148,641**, dated March 17, 1874; application filed
March 2, 1874.

To all whom it may concern:

Be it known that I, ABRAM ALEXANDER, of Pittsburg, in the State of Pennsylvania, have invented a new and useful Improvement in Ore-Crushers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1 is a vertical longitudinal section of my improved crusher, and Fig. 2 is a modification referred to in the specification.

My invention relates to that class of crushers used for pulverizing ores by means of rubbing rather than by blows or simple pressure; and it consists in the combination of parts, as hereinafter described.

To enable others skilled in the art to make and use my invention, I will proceed to describe the manner in which I have carried it out.

In the drawings, A represents the side of the frame-work, in which are the bearings for the trunnions *b* of the rubbers B B. On the face of each of these rubbers I secure the die C, made of chilled steel or any other suitable metal, and provided with corrugations, as shown in Figs. 1 and 2. Experiments prove that the corrugations, as shown in Fig. 2, are very efficient. The lower ends of these rubbers swing loosely within the sliding yoke N, which has a reciprocating motion in the horizontal slot N' in the frame A. It is evident that these rubbers might be reversed in position—that is, be inverted—and the trunnions at the bottom and the loose ends upward with the yoke N at the top, without departing from the spirit of my invention. It is also evident that the loose ends of the rubbers may be adjusted by set-screws passing through the ends

of the yoke, or otherwise, so as to regulate the fineness to which the ore or rock is to be powdered. To the crank-shaft *d*, having its bearings also in the frame-work A, is attached the fly-wheel W and the driving-pulley D. The pitman P connects the crank-shaft *d* with the yoke N, and gives or communicates motion to the latter as the shaft is caused to revolve.

It is evident, from the above description, that whenever the yoke N is put in motion by means of the crank-shaft and the pitman P, sliding, as it must, in the slot N', the lower ends of the rubbers B will be made to oscillate within the frame A, the effect of which must necessarily be a double rubbing motion of the corrugated dies C, and the reducing and pulverizing of ore, rock, or clay fed between them, without the terrible noise and jarring incident to all crushing-machines having a stationary jaw and crushing by blows or pressure alone.

I am aware that crushers have been made with jaws having a double rubbing motion, and therefore I do not claim this broadly; but

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

1. The sliding yoke N, in combination with the rubbers B B, substantially as and for the purpose set forth.

2. The rubbers B B, provided with the corrugated dies C C, in combination with the yoke N and pitman P, substantially as and for the purpose set forth.

ABRAM ALEXANDER.

Witnesses:

WILLIAM C. BARR,
ROBERT GRAHAM.