

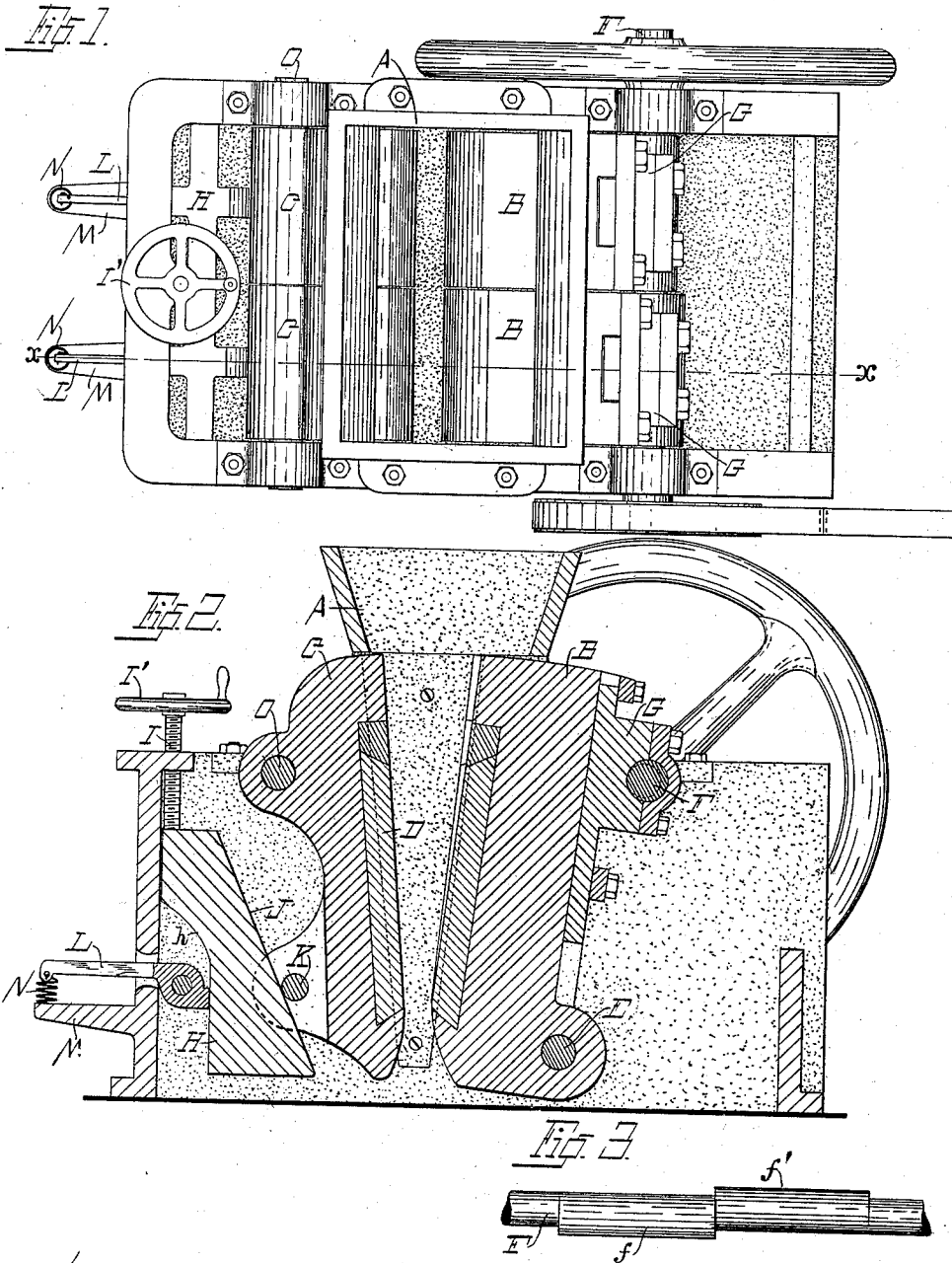
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Patented Aug. 23, 1898.

M. O'HARE.
ROCK AND ORE CRUSHER.

(Application filed Feb. 29, 1896.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

MICHAEL O'HARE, OF UTLEY, WISCONSIN.

ROCK AND ORE CRUSHER.

SPECIFICATION forming part of Letters Patent No. 609,458, dated August 23, 1898.

Application filed February 29, 1896. Serial No. 581,296. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL O'HARE, a citizen of the United States, residing at Utley, in the county of Green Lake and State of Wisconsin, have invented new and useful Improvements in Rock and Ore Crushers, of which the following is a specification.

My invention relates to improvements in that class of rock and ore crushers in which the material is fed between the converging sides of oscillating crushing-jaws.

The object of my invention is, first, to provide improved mechanism for actuating the jaws, and, second, to provide means for relieving the strain upon the jaws due to the presence of some peculiarly hard material and permitting the material to escape through the crusher without breaking the parts.

In the following description reference is had to the accompanying drawings, in which—

Figure 1 is a top view of my invention. Fig. 2 is a view of the main section, drawn on the line X X of Fig. 1. Fig. 3 is a detail view of the actuating-shaft, showing the eccentric construction of the same.

Like parts are identified by the same reference-letters throughout the several views.

The material is fed through the hopper A, between the converging sides of the oscillating jaws B B and the stationary jaws C C, the jaws being formed in pairs to lessen the resistance and provided with hardened-metal crushing-plates D.

The jaws B B are supported on the shaft E and actuated by an eccentric shaft F, the latter being provided with oppositely-disposed eccentric sections f f' in the rear of the jaws. Jaw-actuating blocks G G, movably engaged in vertical channels on the rear surface of the jaws and held therein by cross-bars screwed to the rear surface of the jaws, as shown in the drawings, are also provided with bearings in which the eccentric shaft-sections f and f' , respectively, engage. It is obvious that with this construction the blocks G G will be actuated by the eccentrics to oscillate the jaws upon the shaft E, the blocks being permitted to slide in the channels on the rear surface of the jaws to take up the vertical movement of the eccentrics. The material between the oscillating jaws B B and the stationary jaws C C is thus alternately crushed and permitted to drop into the narrower space below until sufficiently reduced to permit its escape from between the lower ends. The

lower ends of the movable jaw being supported by the shaft E near the discharge, it will be observed that the oscillation of the jaws exerts a grinding force at a short radius, which is very effective in reducing the mass of small stone which accumulates near the exit.

For adjusting the width of the space between the jaws I have provided a block H, suspended within the frame by a screw I and having an inclined surface J, against which the jaw-pin K is adapted to engage. The lower end of this block is cut out at h and the remaining portion is horizontally supported by the lever L, the long arm of which is connected with a bracket M by a spring N. It is obvious that as the jaws C C are supported on the shaft O they can be easily adjusted to vary the space between them and the jaws B B at the lower end of the crushing-space by lowering or raising the block H by means of the screw I and hand-wheel I'; also, that in case the material should be too hard for crushing the lever L will permit the block H and jaws C C to yield sufficiently to permit the escape of the uncrushed substance; but, if desired, the lever L may be omitted and the block H not cut out at h , as shown, for the jaw-pin K will break before any of the other parts give way, and this pin may easily be replaced.

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

The combination of one or more pairs of stationary and movable crushing-jaws, converging at their lower ends; a shaft supporting the lower ends of the movable jaws; an actuating-shaft located in the rear of said jaws above the supporting-shaft, and provided with eccentric jaw-actuating sections; and sliding blocks bearing upon the rear surface of the jaws and having supporting-bearings on the eccentric shaft-sections, said blocks being engaged in vertical channels on the rear surface of the jaws, and held therein by cross-bars secured to the jaws, whereby the movement of the shaft is communicated to the jaws to oscillate the latter, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

MICHAEL O'HARE.

Witnesses:

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