

(No Model.)

M. B. DODGE  
ORE AND ROCK CRUSHER.

No. 273,477.

Patented Mar. 6, 1883.

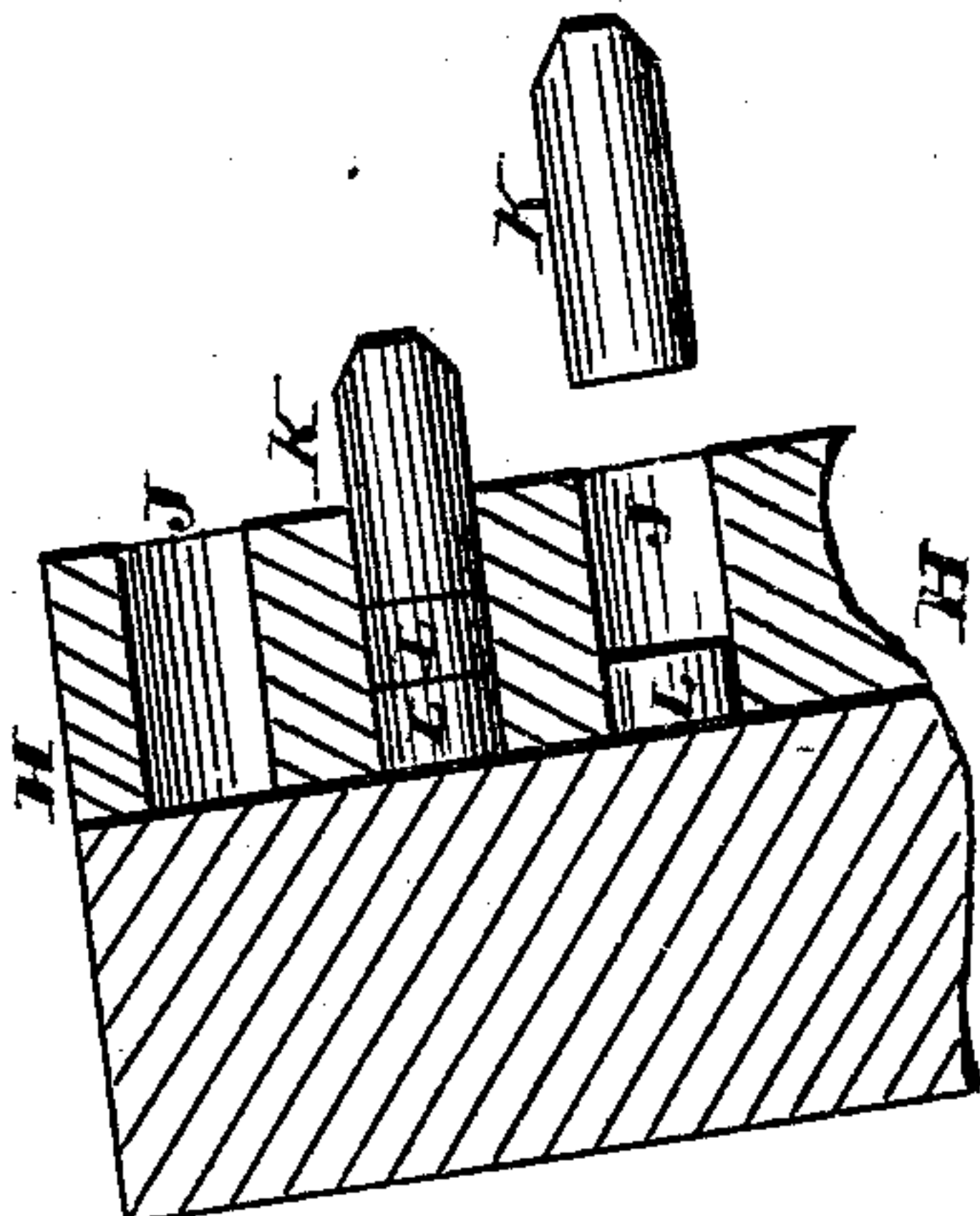


Fig. 3

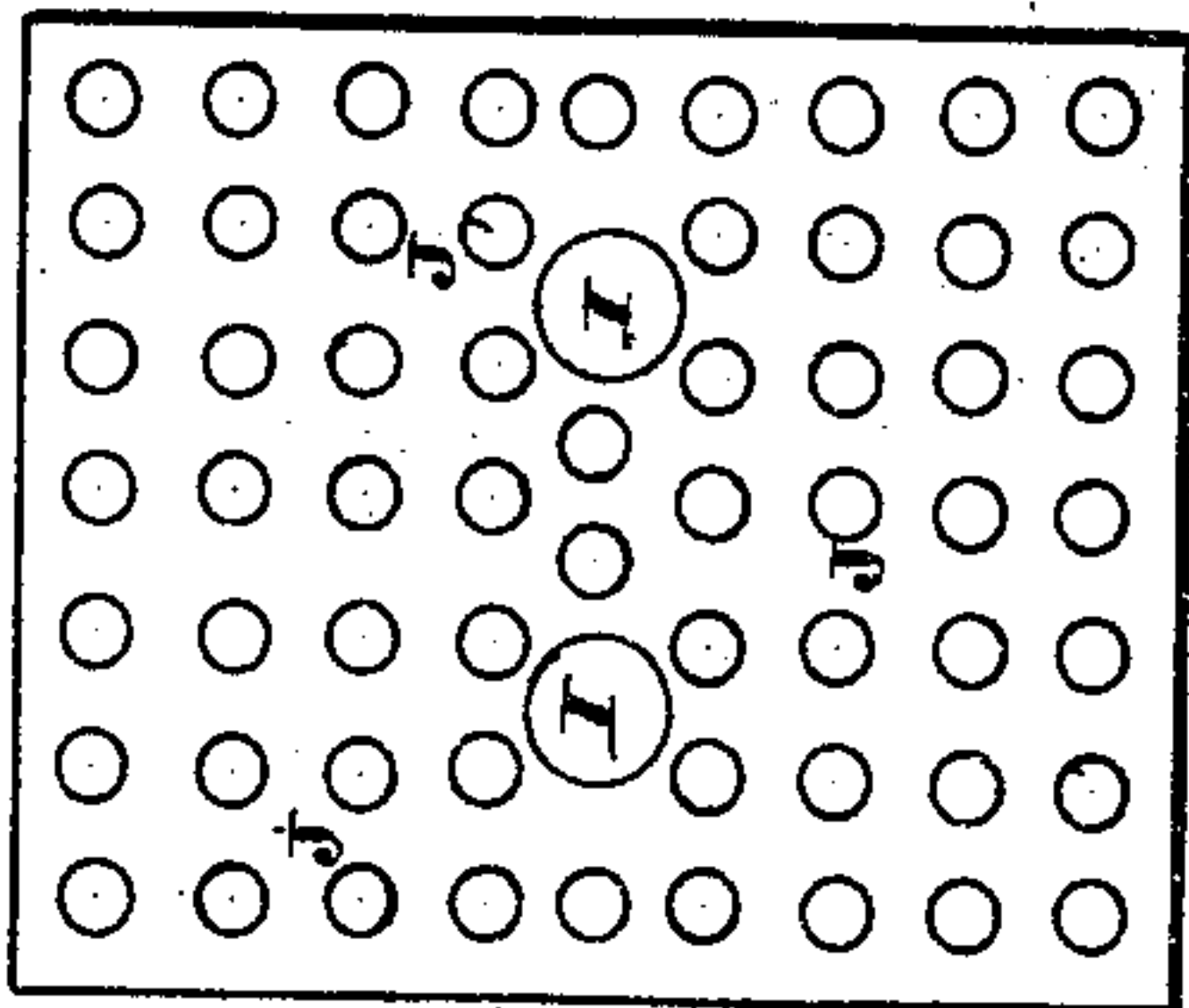
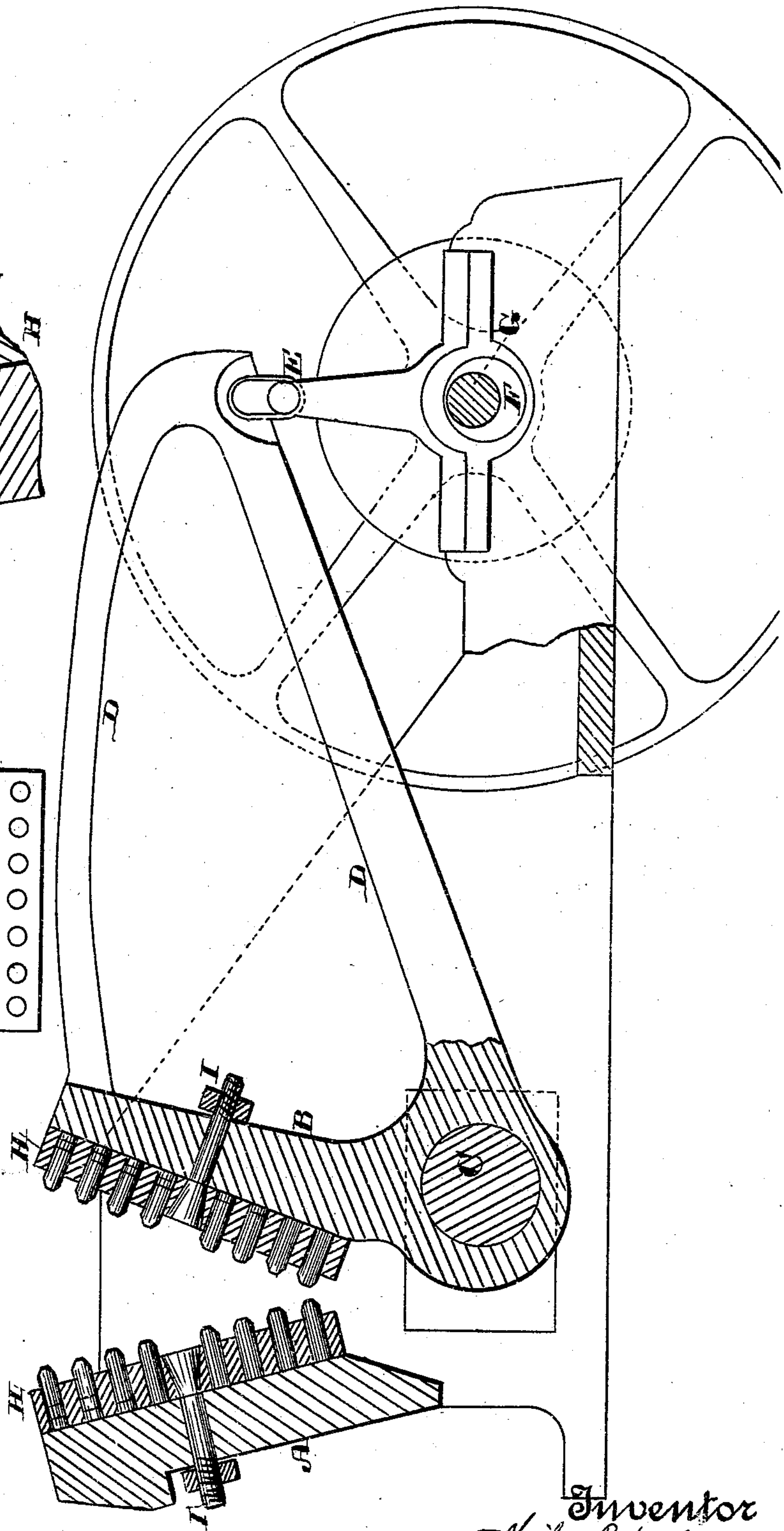


Fig. 2

Fig. 1.



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# UNITED STATES PATENT OFFICE.

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## ORE AND ROCK CRUSHER.

SPECIFICATION forming part of Letters Patent No. 273,477, dated March 6, 1883.

Application filed July 28, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, MILES B. DODGE, of the city and county of San Francisco, State of California, have invented an Improved Ore and Rock Crusher; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to certain improvements in machinery for crushing rock and other substances, which consists of independently removable and adjustable teeth, as herein set forth, in connection with adjustable dies, all as described. These dies are perforated with holes over the whole area of their surfaces, and hardened-steel pins are inserted into these holes, so as to project from the faces of the dies closely together. These pins receive all the wear from the rock, and may be extended as they are worn out, and replaced when necessary.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a longitudinal vertical section of my machine. Fig. 2 is a front view of one of the dies. Fig. 3 is an enlarged view of a section of a jaw and die with its pins.

A is the stationary and B the movable jaw of a rock-crusher, the latter having a strong shaft, C, below, about which it oscillates. A strong beam, D, extends back from this movable jaw, and a connecting rod or rods, E, unite it with the strap of an eccentric, F, or a short throw-crank upon the driving-shaft G, so that the rotation of the shaft imparts a reciprocating motion to the jaw B. The jaws A and B are provided with dies H, which are secured to their inner faces by bolts I, as shown. These dies are perforated with numerous holes, J, of a size sufficient to receive and hold the short steel plugs K. These plugs may be cut off from rods, and are preferably made slightly conical at the ends, although they would usually wear into that form. They are made as

hard as possible and fit snugly into the holes bored for them. They are placed sufficiently near together to render them effective in crushing, their distance apart depending somewhat upon the character of the rock. A good distance is from three-eighths to one-half of an inch. As these pins wear down they may be driven forward from the rear and disks L put in behind them, made of boiler-plate punchings, or of the shorter worn-out plugs, so as to keep the plugs projecting the proper distance from the faces of the dies. As the rock is crushed by the action of the jaws it will fill the spaces between the plugs, and thus protect the dies, while it will not interfere with the crushing action of the plugs. These movable and independent plugs present a small surface to the rock, and the power applied will thus be more effective in breaking and disintegrating it. They are constantly adjustable for wear without the expense of new dies, which, if the corrugations or projections were permanent, would also have to be removed when they were worn out.

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

1. Combined with the jaws of a rock-breaker, the removable dies H and the independently removable and adjustable teeth secured therein, substantially as described.

2. The combination, in a crusher, of solid jaws, removable dies H H, attached thereto, independent and adjustable teeth passing through the dies and bearing against the face of the jaws, and adapted to be adjusted by means of small disks or plugs, as set forth.

In witness whereof I hereunto set my hand.

MILES B. DODGE.

Witnesses:

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