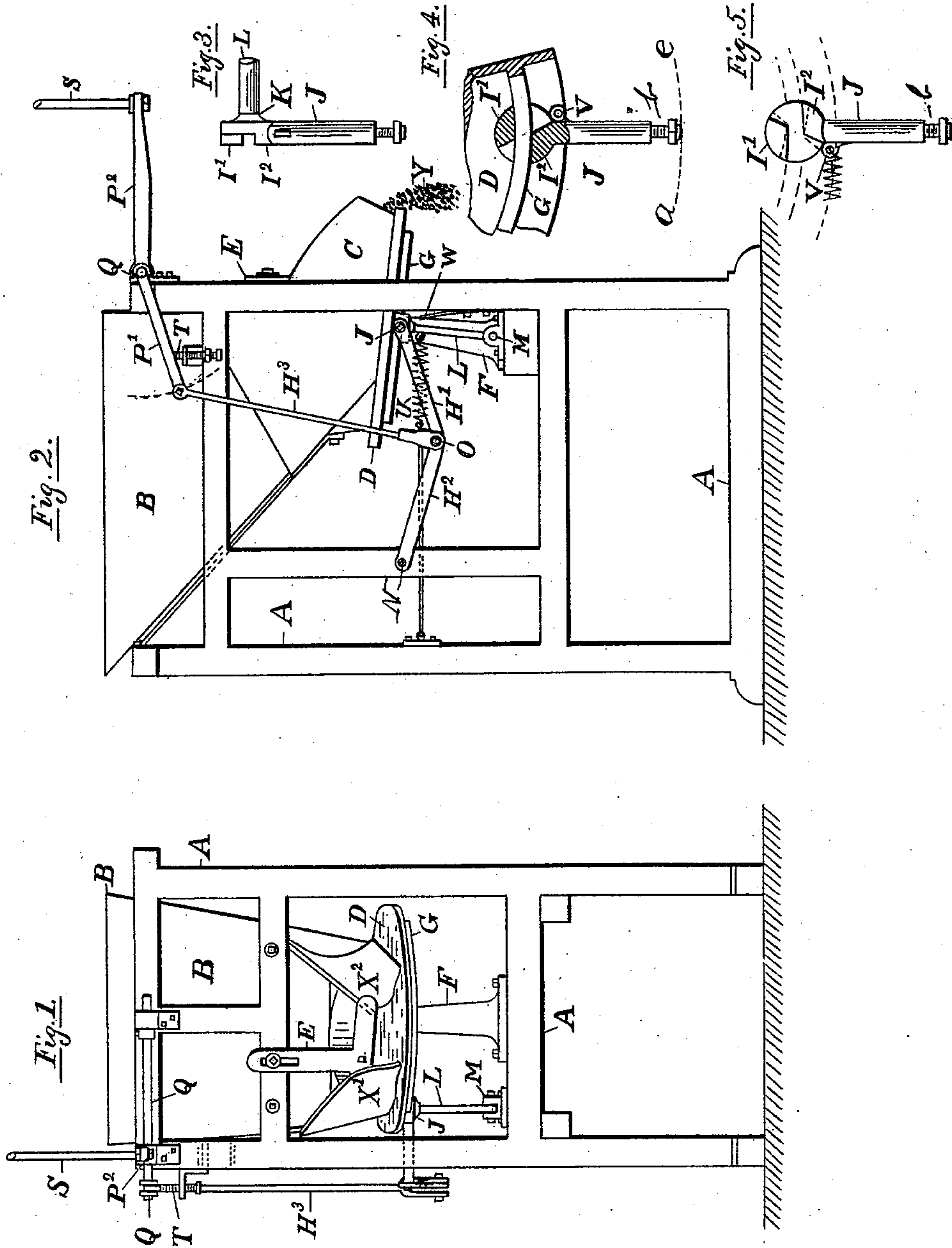


(No Model.)

M. DILLENBURG.  
ORE FEEDING MACHINE.

No. 574,788.

Patented Jan. 5, 1897.



Witnesses  
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# UNITED STATES PATENT OFFICE.

MICHEL DILLENBURG, OF SAN FRANCISCO, CALIFORNIA.

## ORE-FEEDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 574,788, dated January 5, 1897.

Application filed July 27, 1896. Serial No. 600,628. (No model.)

*To all whom it may concern:*

Be it known that I, MICHEL DILLENBURG, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented certain new and useful Improvements in Ore-Feeding Machines; and I hereby declare the following specification and the drawings therewith to be a full, clear, and exact description of my invention, with the mode of constructing and applying the same.

My invention relates to what are called "ore-feeding machines" employed to supply uniformly and at a predetermined rate crushed ore to stamp-mills or other crushing apparatus and to that class of ore-feeders wherein the supply of crushed ore is discharged and distributed by means of a revolving table or platen.

My invention consist in a means of communicating intermittent rotation to the table or platen by means of reciprocating gripping-jaws that act upon a circular ledge formed on the bottom of the table and in devices to operate these gripping-jaws.

The objects of my invention are simplicity of construction, a positive but adjustable rate of rotation and feed, and the protection of the actuating parts from grit and wear.

Referring to the drawings, these illustrate a common ore-feeding machine provided with my improvements.

Figure 1 is a front elevation; Fig. 2, a side elevation of the same machine; Fig. 3, an edge view of the gripping-jaws; Fig. 4, a flat view, partially in section, of Fig. 3; Fig. 5, a flat view on top of the gripping-jaws.

Similar letters of reference are employed to designate like parts in the different figures of the drawings.

The main frame A is preferably made of wood, with vertical and horizontal members to meet and support the various operating parts of the machine, as seen in Figs. 1 and 2.

B is a hopper to which ore is supplied after it has been partially crushed by breakers in the usual manner, and C a chute to confine and direct the ore on the revolving table D.

The supply of ore from the hopper B to the table D is regulated by an adjustable gate E, that is moved upward or downward as the

quantity of ore to be fed to the machinery may require.

The table D is circular in form, set obliquely sloping to the front or feeding side, and is mounted on a strong axis F. On the under side of this table D is a circular ledge G, gripped by the jaws I' I<sup>2</sup>. (Seen in Figs. 4 and 5.)

This jaw-piece J fits loosely and turns at K on the upper end of the stem L, which latter is pivoted universally at M, so as to move in a curved path conforming to that of the table D. To the outer end of this jaw-piece is attached a link H', which, with a second link H<sup>2</sup>, forms a toggle with a fixed pivot at N. In the middle of this toggle-joint at O is attached a link H<sup>3</sup>, connecting to a crank P' on the rocker-shaft Q, actuated by a second lever P<sup>2</sup> and a rod S. This rod S is engaged by a tappet on a stamp-stem or other reciprocating part of the crushing machinery, and is depressed at each stroke to a certain distance regulated by the adjusting-screw T under the lever P', which determines the height to which the lever P<sup>2</sup> may rise and consequently the range of movement.

Motion can be communicated from the shaft Q to the grip-piece J by direct levers or otherwise. The method shown has been found satisfactory in practice.

The operation is as follows: The hopper B being filled with broken ore and the crushing machinery in motion, the rod S imparts an oscillating motion to the shaft Q, lever P', link H<sup>3</sup>, and the toggle-bars or links H' H<sup>2</sup>, giving a reciprocating motion to the jaw-piece J at its outer extremity, which moves in the arc *a e*, as seen in Fig. 4, the toggle-bar H' being pivotally connected to said jaw-piece J at *b*, Figs. 4 and 5. When this jaw-piece J is moved forward or toward *a* in Fig. 4, the jaws I' I<sup>2</sup> grip the ledge G and turn the table D accordingly. When the jaw-piece J is moved backward or toward *e* in Fig. 4, the jaws I' I<sup>2</sup> are loosened by the jaw-piece turning slightly on the stem L and is drawn back in the direction *e* by means of a spring U, attached to the lug V and seen in the side view, Fig. 2. Besides the coil-spring U', I place at W a deflecting buffer-spring to cushion the reciprocating parts at the end of the working stroke. These movements produce



an intermittent rotation of the table D, corresponding to the stroke imparted by the toggle-bars II' II<sup>2</sup>, and as the table revolves the broken ore confined between the guides X' X<sup>2</sup> escapes and falls over the edge, as shown at Y in Fig. 2, and into a stamp-battery or other final crushing apparatus. It will be seen that in this manner I attain a positive intermittent feed-motion of the table D with a few simple devices not requiring finishing or machine-fitting, and that the wearing parts or such as would be injured by sand or grit are protected beneath the table D.

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

1. In an ore-feeding machine, the combination of a hopper, a revolving table slightly inclined from a horizontal plane, on which the ore is delivered, said table having on its under side a circular ledge, a reciprocating arm J having gripping-jaws I' I<sup>2</sup> which engage said circular ledge in one direction and slide free in the other direction, and connections between said arm J and the reciprocating parts of the machine whereby an intermittent rotation of the said table in one direction is obtained, substantially as and for the purpose specified.

2. In an ore-feeding machine, the combination of the hopper, the revolving table having a circular ledge on its under side, the reciprocating arm J provided with gripping-jaws I' I<sup>2</sup> engaging said circular ledge, stem L loosely pivoted at its lower extremity and carrying arm J pivotally mounted thereon at its upper extremity, and connections between the

said arm J and the reciprocating parts of the machine whereby the said arm J is caused to reciprocate and thus intermittently grasp the said circular ledge with its gripping-jaws and thereby intermittently rotate the said table, substantially as and for the purpose specified.

3. In an ore-feeding machine, the combination of the rotary table having the depending circular ledge, with the arm J having gripping-jaws I' I<sup>2</sup> engaging the said ledge, vibrating stem L supporting the said arm J, spring U, and connections between the said arm J and the reciprocating parts of the machine imparting a reciprocating motion to said arm whereby the said gripping-jaws intermittently operate the said ledge, and cause an intermittently forward rotation of the table, substantially as and for the purpose specified.

4. In an ore-feeding machine, the combination of the hopper, the rotary table, having the depending ledge, reciprocating arm J with gripping-jaws I' I<sup>2</sup>, vibrating stem L, spring U, and toggle-lever and link connections with rocker-shaft Q and reciprocating rod S whereby the said table is intermittently rotated in synchronism with the movements of the stamp-mill, substantially as and for the purpose specified.

In testimony whereof I have hereunto affixed my signature in the presence of two witnesses.

MICHEL DILLENBURG.

Witnesses:

KATE LOCKWOOD NEVINS,  
W. T. GROVER.