FIDÉLE MOTTE.

CRUSHING MACHINE.

No. 180,620. Patented Aug. 1, 1876.

*Fig. 1.*

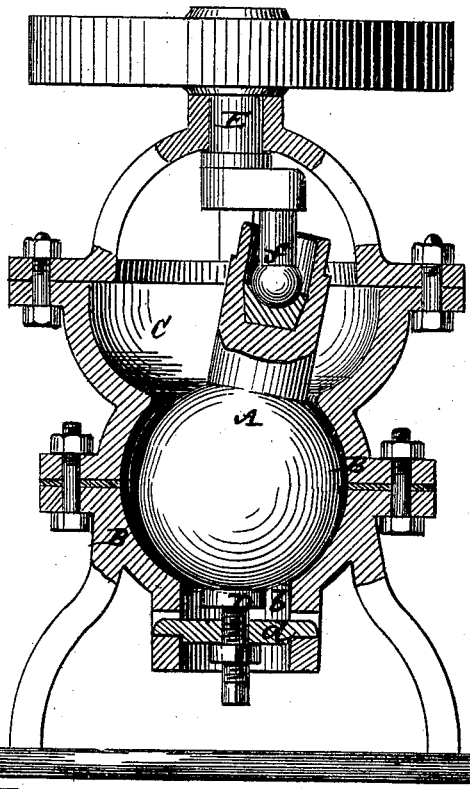



*Fig. 2*

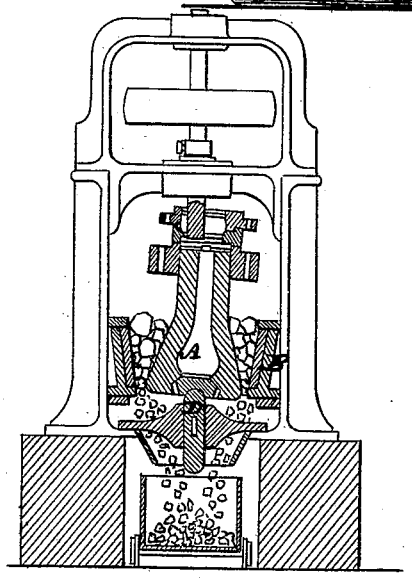
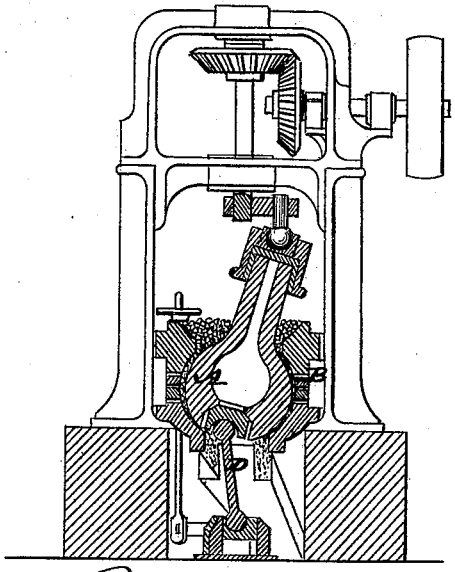



*Fig. 3.*




*Witnesses*
John Becker.
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*Fidèle Motte*
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# UNITED STATES PATENT OFFICE.

FIDÈLE MOTTE, OF DAMPREMY, BELGIUM.

## IMPROVEMENT IN CRUSHING-MACHINES.

Specification forming part of Letters Patent No. **180,620**, dated August 1, 1876; application filed May 15, 1876.

*To all whom it may concern:*

Be it known that I, FIDÈLE MOTTE, of Dampremy, Belgium, have invented a new and useful Improvement in Crushing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

This invention relates to an improved machine for crushing stone and other hard materials; and it consists in the combination of a hopper and pestle-shaped crusher of a revolving eccentric mechanism for imparting motion to the crusher, and an open-bottomed crushing-chamber, against the sides of which the material is crushed, the whole constructed and arranged as more fully hereinafter set forth.

Figure 1 represents a partly-sectional vertical view of a crushing-machine constructed in accordance with my invention, and Figs. 2 and 3 similar views of two different modifications thereof.

Referring, in the first instance to Fig. 1 of the drawing, A is the pestle-like crusher, and B the crushing chamber or vessel, in which it works. Either or both of these parts may be made of hard cast-iron, steel, stone, or any other suitable material. The pestle-like crusher A is of spherical form at its working portion or body, and has a cylindrical neck extending upward, the whole being more or less of pear shape; but I do not restrict myself to this precise form. The interior of the crushing-vessel B is of corresponding configuration with the body of the crusher, but larger than it, and occupying an eccentric relation therewith, so that the distance or space between the body of the crusher A and interior of the retort B gradually diminishes in a downward direction. Said vessel B is open at top and surmounted by a hopper, C, for introduction of the material to be crushed, and has an opening, *b*, at its bottom for escape of the crushed or broken substance. A frame of any suitable kind, resting upon a proper foundation, serves to support the whole machine. The crusher A is fitted to rest freely upon a central base support or pivot, D, within the lower opening *b* of the vessel B, leaving a sufficiently free escape for the crushed particles all around said plate or pivot, which latter is screwed into or through a cross-bar, *d*, in the outlet *b*, so as to be rigidly carried by the vessel B, but at the same time to be adjustable up or down to meet the exigencies of wear, and to provide for giving a varied adjustment of the body of the crusher A relatively to the interior of the vessel B, whereby the pulverizing action may be made coarser or finer, as desired. E is an upright shaft, mounted in an upper portion of the main frame, or of a frame erected on the hopper C. This shaft, to which rotary motion may be communicated by pulley, gearing, or in any other suitable manner, is eccentrically connected with the crusher A by means of a crank or eccentric pin, *f*, which is of a ball shape at its lower end, and fits in a correspondingly-shaped cup within the neck of the crusher A. Upon the rotation of the shaft E, the axial line of which is coincident with the center of contact of the crusher A on the pivot D, the axis of said crusher describes an inverted conical figure in its rotation, thereby causing the material passing down through the vessel A to be progressively acted upon or crushed, and finally to be delivered in a continuous manner through the outlet *b*.

Fig. 2 shows a modification, in which the crusher A is flattened at its lower end and supported on a fixed pivot, and the vessel B of tub form, wholly open at its bottom, and with ribs or projections on the inside. These ribs may be removed and renewed as required. The crusher A has the same axial motion as hereinbefore described.

Fig. 3 shows a modification, in which the vessel B is built up in sections to facilitate construction, and to provide for renewal of wearing parts. In this modification the crusher A has its pivot or support D fitted so as to have a rocking motion, and which pivot may be mounted on a lever to raise or lower it as required. This construction is best adapted for fine crushing or pulverizing.

Various other changes may be made in the construction of the machine, according to the work to be done or material to be worked,

without departing from the general principle of the invention.

I claim—

The circular crushing-machine herein described, composed of the hopper C, oscillating pestle-shaped crusher A, shaft E, driving-pin *f*, pivot or support D, and crushing-chamber B, with opening *b*, all arranged, constructed, and operating substantially as and for the purpose set forth.

Brussels, Belgium, March 2, 1876.

F. MOTTE.

Witnesses:
JNO. WILSON,
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