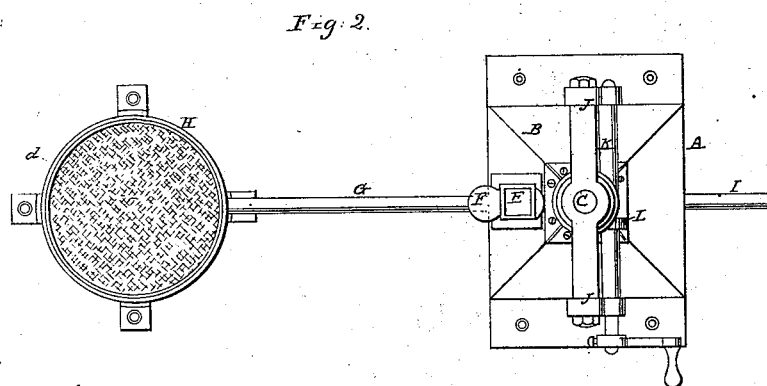
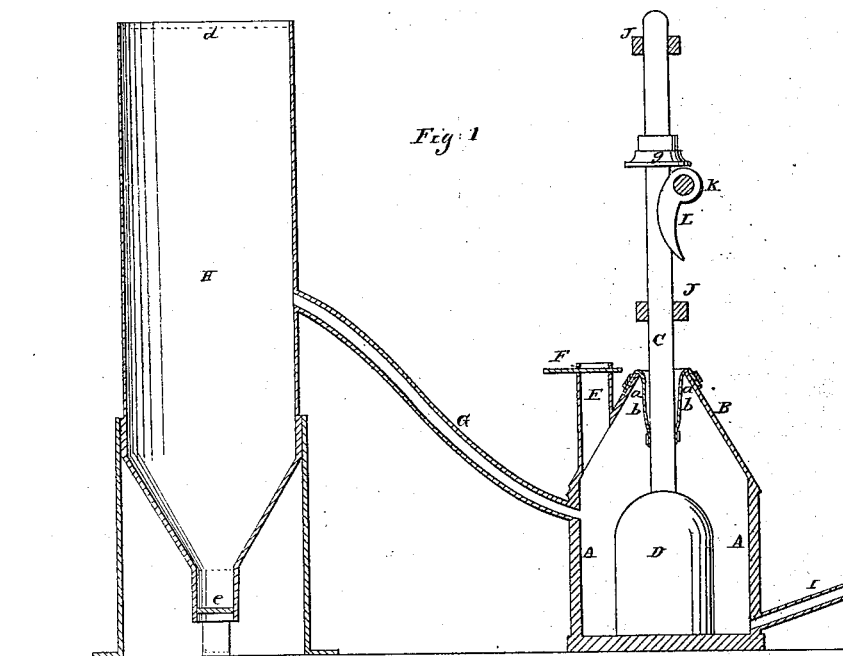


A. W. HALL.
ORE CRUSHER.

No. 50,703.

Patented Oct. 31, 1865.



Witnesses:

J. W. Corbly
H. M. Stever

Inventor:

A. W. Hall

UNITED STATES PATENT OFFICE.

ALEXANDER W. HALL, OF NEW YORK, N. Y.

IMPROVEMENT IN ORE-CRUSHERS.

Specification forming part of Letters Patent No. 50,703, dated October 31, 1865.

To all whom it may concern:

Be it known that I, ALEXANDER W. HALL, of the city, county, and State of New York, have invented a new and useful Improvement in Stamping-Mills for Crushing and Pulverizing Ores and other Substances; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical section of a stamping-mill with my improvement. Fig. 2 is a plan of the same.

Similar letters of reference indicate corresponding parts in both figures.

This invention consists in furnishing the battery of a stamping-mill with an air-tight cover, which converts it into an air-tight chamber, into which one or more blasts of air are forced by suitable means to blow out the fine particles as fast as pulverized through one or more outlets to a suitable receiver.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A is the battery, made with a close cover, B, of metal or other suitable material, in the center of which is an opening, *a*, considerably larger than the lifting-rod C of the stamp D, which passes through it. Around the margin of the opening *a* there is secured to this cover, in an air-tight manner, one edge of a tube or sheet, *b*, of india-rubber, india-rubber cloth, or other flexible material impervious to air, another edge of which is secured in an air-tight manner to the stamp-rod C, the said tube or piece *b* being of such length or size and so arranged as to permit the free movement of the stamp while keeping the air from escaping from the battery around the stamp-rod, and constituting, in effect, a flexible frictionless packing.

E is a hopper, through which the ore or material to be crushed and pulverized by the stamp or stamps is fed into the battery, provided with an air-tight sliding shutter, F. This hopper may be provided with two such shutters at short distances apart, one above the other, to permit the introduction of the material, without stopping the operation of the machine, by opening one shutter only at a time.

I is a blast-pipe, for the introduction into the lower part of the air-tight chamber of the battery of a blast of air from a blower or other blast apparatus.

G is an outlet-pipe, leading from the upper part of the air-tight chamber of the battery to the receiver H, which consists of a tall and capacious upright chamber having a bolting-cloth or other finely-reticulated diaphragm, *d*, at or near the top; and having a slide, *e*, at the bottom.

The stamp-rod C works through guides in a frame, J, which also supports the bearings of the wiper-shaft K, to which is attached the wiper L, which operates in the usual manner upon a collar, *g*, on the stamp-rod to lift and drop the stamp. The ore or other material to be crushed having been fed into the battery through the spout E, the shutter of the said spout is closed, and the wiper-shaft and blowing apparatus are set in operation. The stamp rises and falls and crushes the ore or other material, and the blast entering the pipe I blows out the finely-pulverized particles from the battery into the receiver H, leaving the lumps and larger crushed or broken particles to be again acted upon by the stamp. As the receiver H is of large capacity compared with the battery and of considerable height, and a free escape of the air is permitted through the bolting-cloth or reticulated cover *d*, the pressure of the air therein is so much reduced that the pulverized particles can subside to the lower part by gravitation, and on the stoppage of the blast the pulverized material can be drawn out into a suitable receptacle below by opening the slide *e*.

What I claim as my invention, and desire to secure by Letters Patent, is—

A stamping-mill having an air-tight battery, into which air is forced or drawn through one or more inlets, and from which the pulverized material is carried with the escaping air to a suitable receiver, substantially as and for the purpose herein specified.

A. W. HALL.

Witnesses:

J. W. COOMBS,
GEO. W. REED.