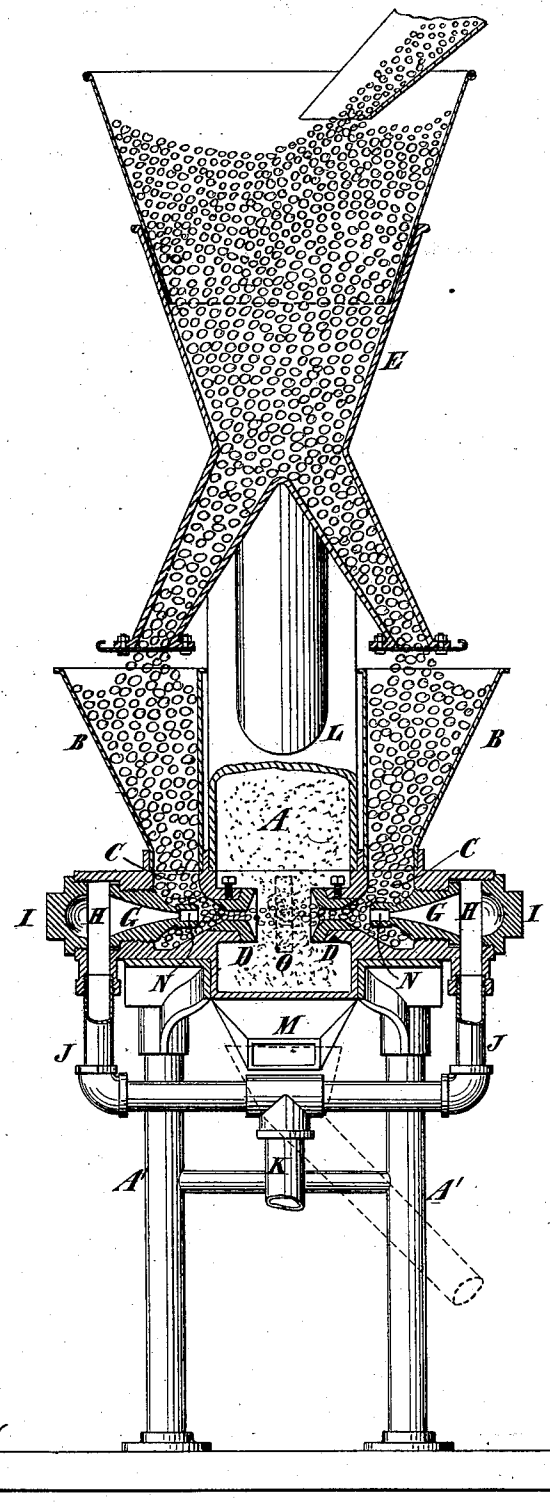
(No Model.)

H. BAILEY.

PULVERIZER.

No. 275,566. Patented Apr. 10, 1883.



Witnesses:
James R Bowen
J. J. Keane

Inventor:
H. Bailey
by his atty
Edwin H. Brown.

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

HENRY BAILEY, OF NEW YORK, N. Y.

PULVERIZER.

SPECIFICATION forming part of Letters Patent No. 275,566, dated April 10, 1883.

Application filed December 1, 1882. (No model.)

To all whom it may concern:

Be it known that I, HENRY BAILEY, of New York, in the county and State of New York, have invented a certain Improvement in Pulverizers, of which the following is a specification.

This improvement relates to pulverizers wherein the work is performed by opposing currents of air, steam, water, or other gas or fluid, or by one current acting in conjunction with a suitable abutment.

The improvement consists in a nozzle for the discharge of a gas or fluid, provided with a concentrator extending beyond its end, for preventing the effect of the current issuing at the nozzle from being dissipated before performing its work.

The improvement also consists in the combination, in a pulverizer, with two oppositely-arranged nozzles for the discharge of a gas or fluid, provided with concentrators extending beyond their ends, for preventing the effect of the currents issuing at the nozzles from being dissipated before performing their work, of two chambers receiving material to be pulverized, and into which the nozzles extend, two hoppers for supplying material to said chambers, and two chutes leading from said chambers into an intermediate pulverizing-chamber.

The accompanying drawing represents a central vertical section of a pulverizer embodying my improvement.

A designates a chamber wherein the pulverizing is performed. It may be made of cast-iron or other suitable strong material, and is supported upon standards or columns A'. The material to be pulverized is supplied to it by means of hoppers B, arranged one on each side of it. These hoppers communicate with chambers C, which may be formed integral with the chamber A in one casting. Then the hoppers B may be made separately from the chambers C and fitted into them.

The material to be pulverized passes from the hoppers B into the chambers C, and thence through chutes D into the chamber A. The chutes D are preferably made separate from the chambers C and detachably secured thereto. They may then be made of steel, and can be renewed when desirable. I have shown them as fitted into sockets and secured there by screws.

The hoppers B are supplied with the material to be pulverized by means of a hopper, E, which is bifurcated at the lower portion, so as to extend into both the hoppers B. Material may be fed into the hopper E by any suitable means.

G designates nozzles for the discharge of the gas or fluid whereby the pulverizing is performed. They extend close to those ends of the chutes D which communicate with the chambers C. As here shown, they are screwed into chambers H, which may be made integral with the chambers A and C in one casting, and have their outer ends closed by screw-plugs I. Pipes J lead to these chambers H from a main pipe, K. Steam, air, or water, or other gas or liquid under pressure is conducted to the pipe K, and passes thence through the pipes J to the chambers H, whence it issues through the nozzles G in two opposing currents. The material in the chambers C is carried through the chutes D in two opposing streams, and by forcible impact and the force of the currents is pulverized. The lighter particles pass up a flue, L, which communicates with the upper part of the chamber A, and the heavier particles fall through an aperture, M, in the lower part of the said chamber.

It will be observed that beyond the outlet ends of the nozzles G there are devices N, which internally are considerably larger than the outlet ends of the nozzles, and of cylindric form or of a slightly tapering form. These devices prevent the currents issuing from the nozzles from dispersing or expanding, as they would otherwise be liable to do, and hence concentrate their force. For this reason I term them "concentrators." These concentrators may be formed integral with the nozzles or made separate therefrom and attached in any suitable manner. By means of these devices the effect of the currents is greatly increased.

If desirable, one of the chambers C, with its hopper B and other appurtenances, and the corresponding nozzle, G, with its appurtenances, may be omitted, and then an abutment of metal, stone, or other suitable substance will be used opposite the remaining nozzle, against which

the material to be pulverized will be dashed. I have represented such an abutment by dotted lines at O.

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

1. In a pulverizer, a nozzle for the discharge of a gas or fluid, provided with a concentrator extending beyond its end, for preventing the effect of the current issuing at the nozzle from being dissipated before performing its work, substantially as specified.

2. In a pulverizer, the combination, with two oppositely-arranged nozzles for the discharge of a gas or fluid, provided with concentrators extending beyond their ends, for preventing the effect of the currents issuing at the nozzles from being dissipated before performing their work, of two chambers receiving material to be pulverized, and into which said nozzles extend, two hoppers for supplying material to said chambers, and two chutes leading from said chambers to an intermediate pulverizing-chamber, substantially as specified.

HENRY BAILEY.

Witnesses:
T. J. KEAN,
JAMES R. BOWEN.