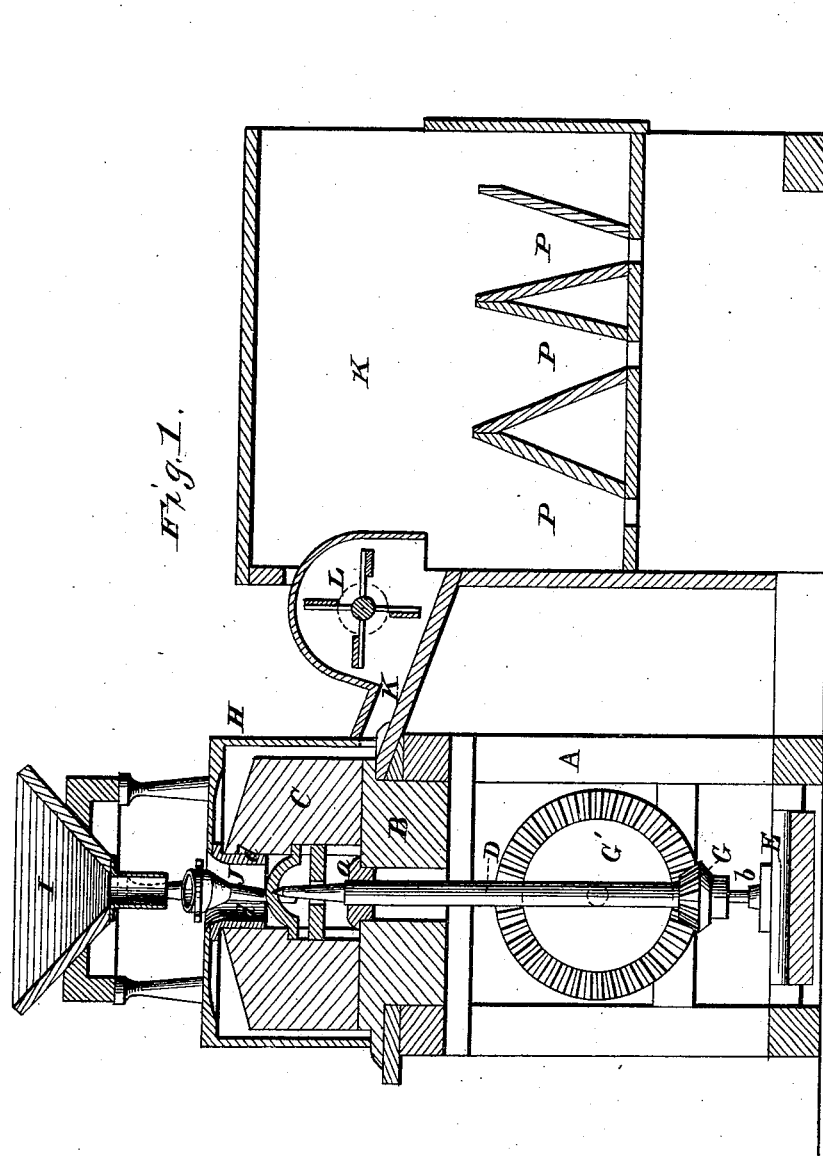


D. C. EBAUGH.  
GRINDING AND SEPARATING MILLS.  
No. 185,089. Patented Dec. 5, 1876.



WITNESSES  
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*C. L. Ewert*

INVENTOR  
*David C. Ebaugh*  
*J. H. Alexander*

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Fig. 2.

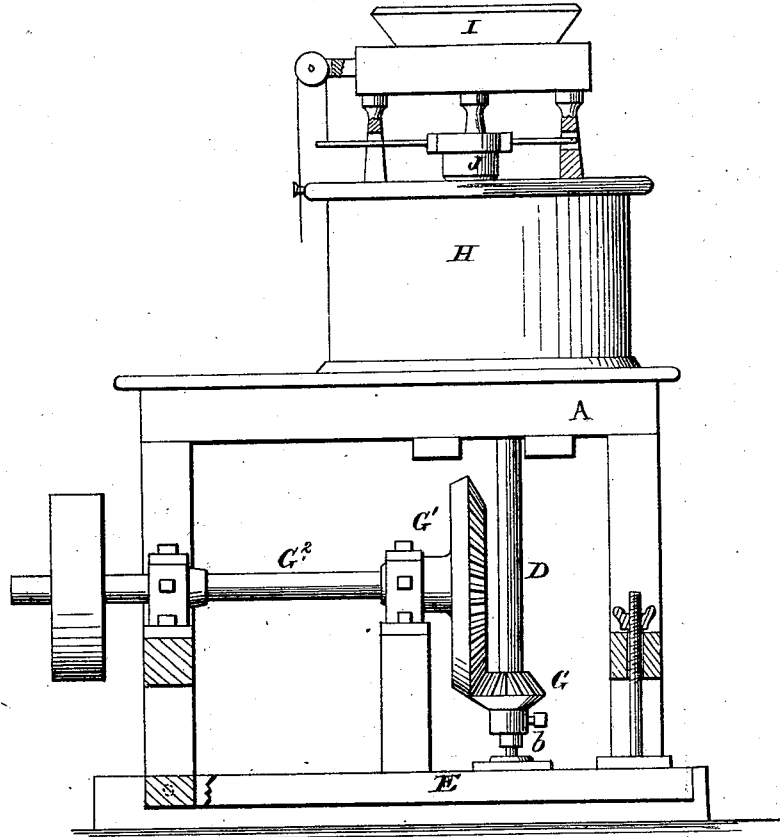
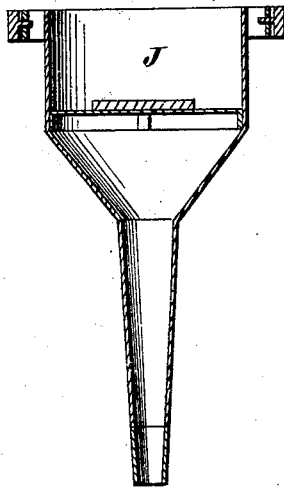


Fig. 3.



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# UNITED STATES PATENT OFFICE.

DAVID C. EBAUGH, OF CHARLESTON, SOUTH CAROLINA, ASSIGNOR TO HIMSELF AND ATLANTIC PHOSPHATE COMPANY, OF SAME PLACE.

## IMPROVEMENT IN GRINDING AND SEPARATING MILLS.

Specification forming part of Letters Patent No. 185,089, dated December 5, 1876; application filed September 23, 1876.

*To all whom it may concern:*

Be it known that I, DAVID C. EBAUGH, of Charleston, in the county of Charleston and State of South Carolina, have invented certain new and useful Improvements in Pulverizing and Separating Mills; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

The nature of my invention consists in the construction and arrangement of a combined pulverizing mill and separator, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a longitudinal vertical section of my machine. Fig. 2 is an end elevation of the same, and Fig. 3 is a section of a detached part thereof.

A represents a suitable frame-work, supporting the lower or bed stone B. C is the upper or running stone, supported upon the upper end of the shaft D, said shaft passing through a bushing, *a*, in the eye of the lower stone B, and the lower end supported in a step, *b*, on an adjustable bridge-tree, E. On the lower portion of the shaft D is secured a bevel-pinion, G, which meshes with a bevel-wheel, G<sup>1</sup>, on a shaft, G<sup>2</sup>, and this shaft is provided with a suitable band-pulley for receiving the power to run the mill. H is the millstone-hoop, on top of which is a frame supporting the hopper I. To the hoop H is attached a flexible sleeve, *d*, which extends down into the eye of the stone C, for the purpose of diminishing leakage of air between the top of the hoop and the top of the stone. Under the hopper is suspended a swiveled or pivoted conductor, J, for conveying and feeding the material to the stones. K represents a trough for conveying the material from the mill through a fan, L, into a series of boxes, P P, arranged in regular succession.

In operation, it will be seen that as the fan L puts the air in motion, a draft of air will be caused between the stones, which will blow the fine dust and small particles through the trough K over the boxes P, the larger or heavier particles falling into the first boxes and the finer grades being carried farther along, and thereby assorted. At the extreme end of the trough K I propose, in a full-sized machine, to use a dust-chamber made of canvas, to allow the air to pass, but retain the dust.

I thus supply an ordinary grinding-mill with an exhaust-fan or vacuum-pump to create a draft between the furrows of the stones, so as to aid the discharge of the material ground, and at the same time keep a current of air passing between the stones, which will tend to cool them, and enable them to be driven faster than they could be run without the draft.

The object of this invention is to facilitate the grinding and prevent the usual wear in a great measure, and also to utilize the air put in motion by the fan to convey and separate the pulverized material into different boxes, arranged so that the different grades of fineness can be obtained without passing it through sieves.

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

In a grinding and pulverizing mill, the combination of the trough K, provided with a series of open-top boxes, arranged one after the other, with the fan L interposed between the trough and the exit from the millstones, whereby the different grades of material are automatically carried into the boxes, substantially as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

D. C. EBAUGH.

Witnesses:

WILLIAM L. BRAMHALL,  
C. L. EVERT.