

(No Model.)

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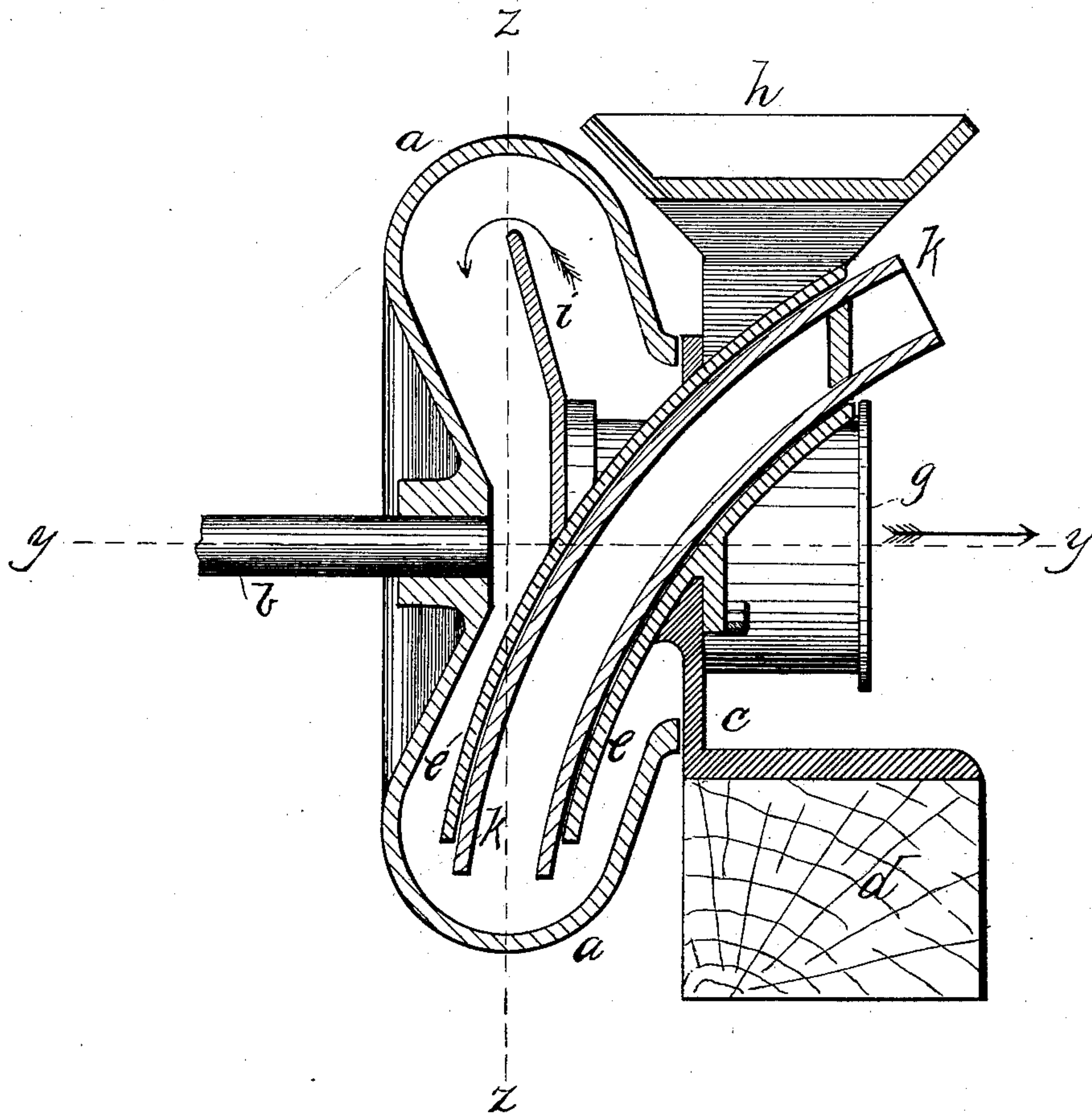
E. C. GRIFFIN.

ORE PULVERIZER.

No. 360,682.

Patented Apr. 5, 1887.

Fig. 1.



WITNESSES:

*J. P. Griffin.*  
*Charles S. Hyer.*

INVENTOR

*Edwin C. Griffin.*

BY

*Emmable*  
ATTORNEY

(No Model.)

4 Sheets—Sheet 2.

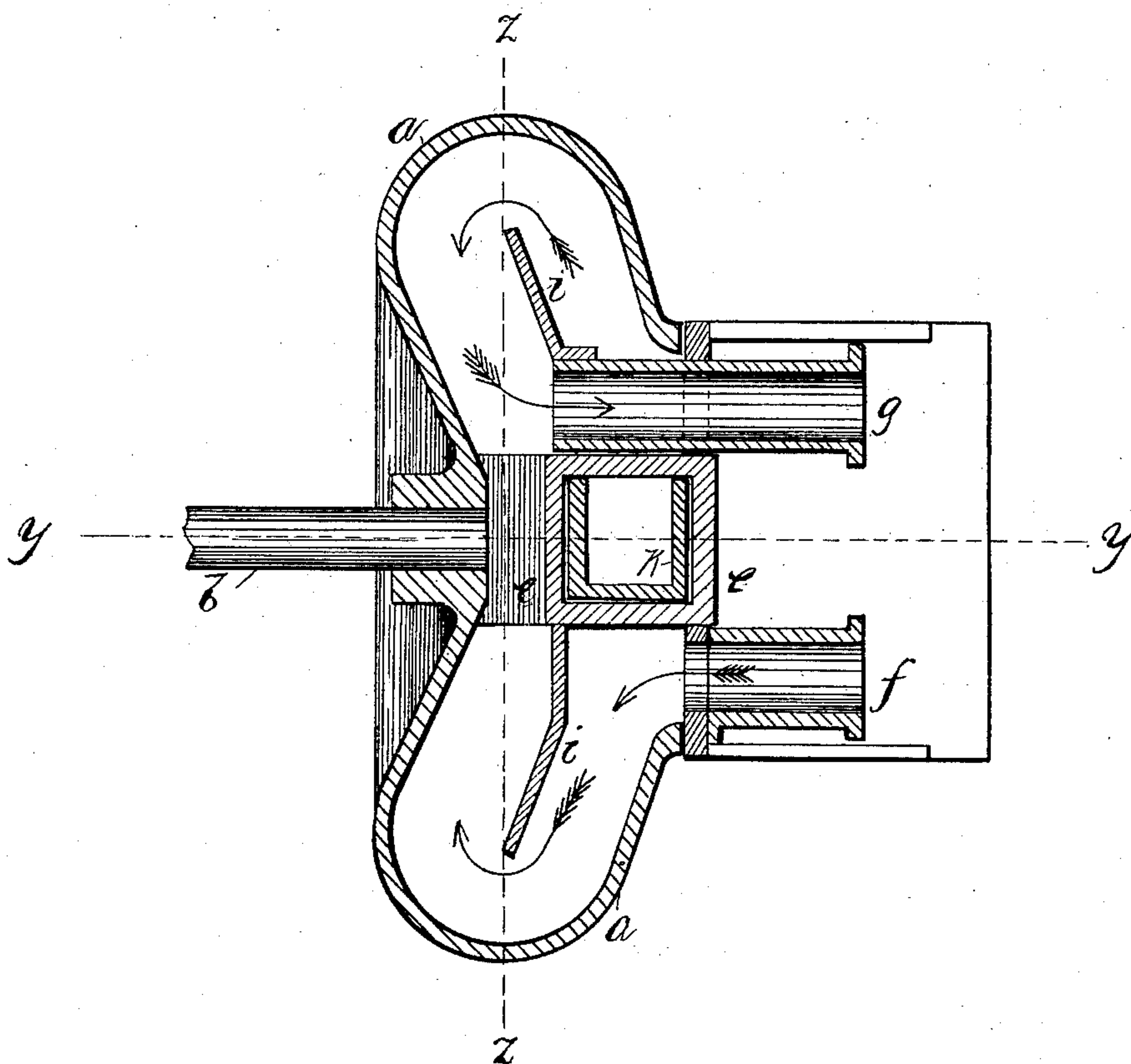
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Fig. 2.



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(No Model.)

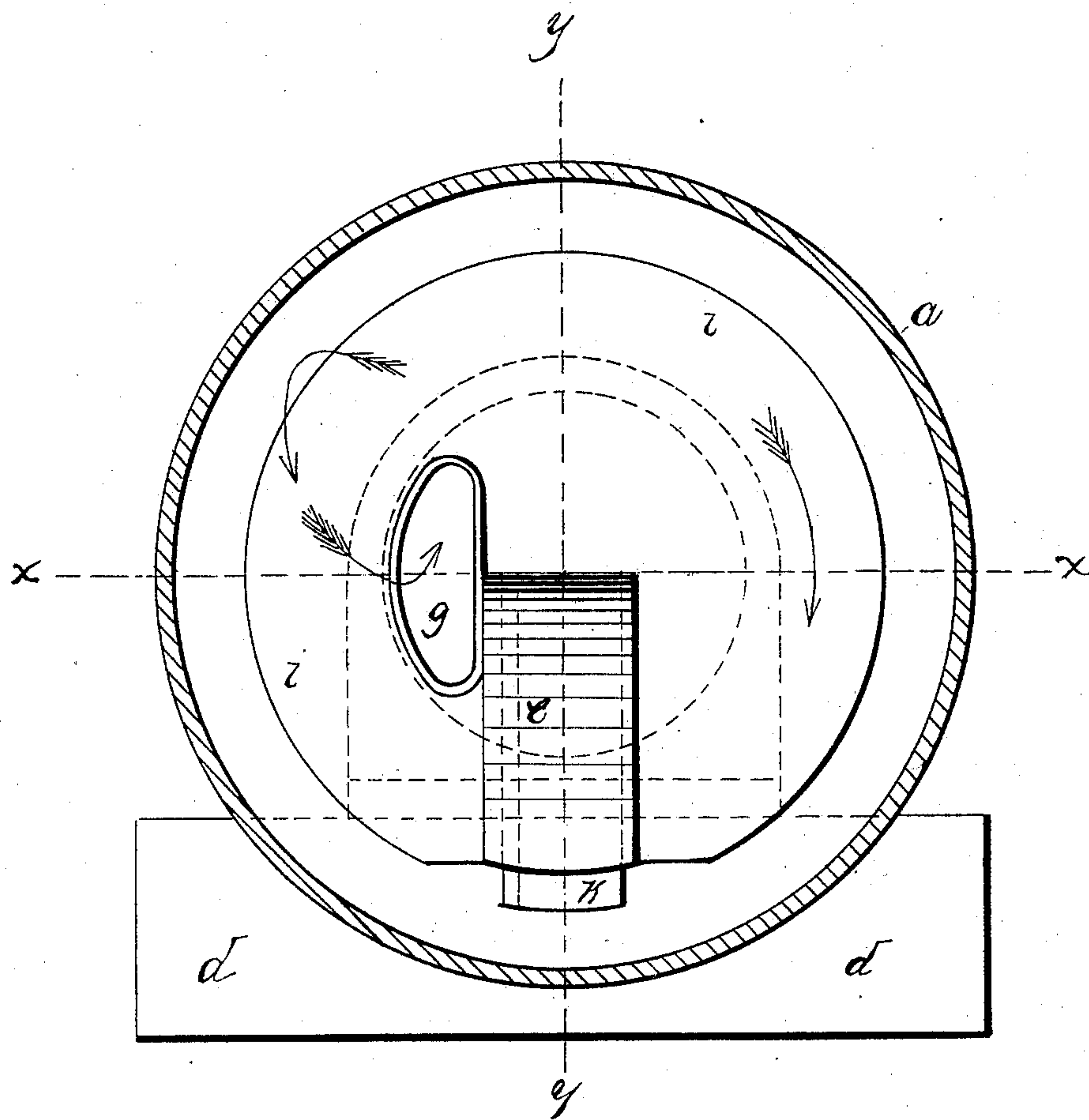
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E. C. GRIFFIN.  
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Fig. 3.



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(No Model.)

4 Sheets—Sheet 4.

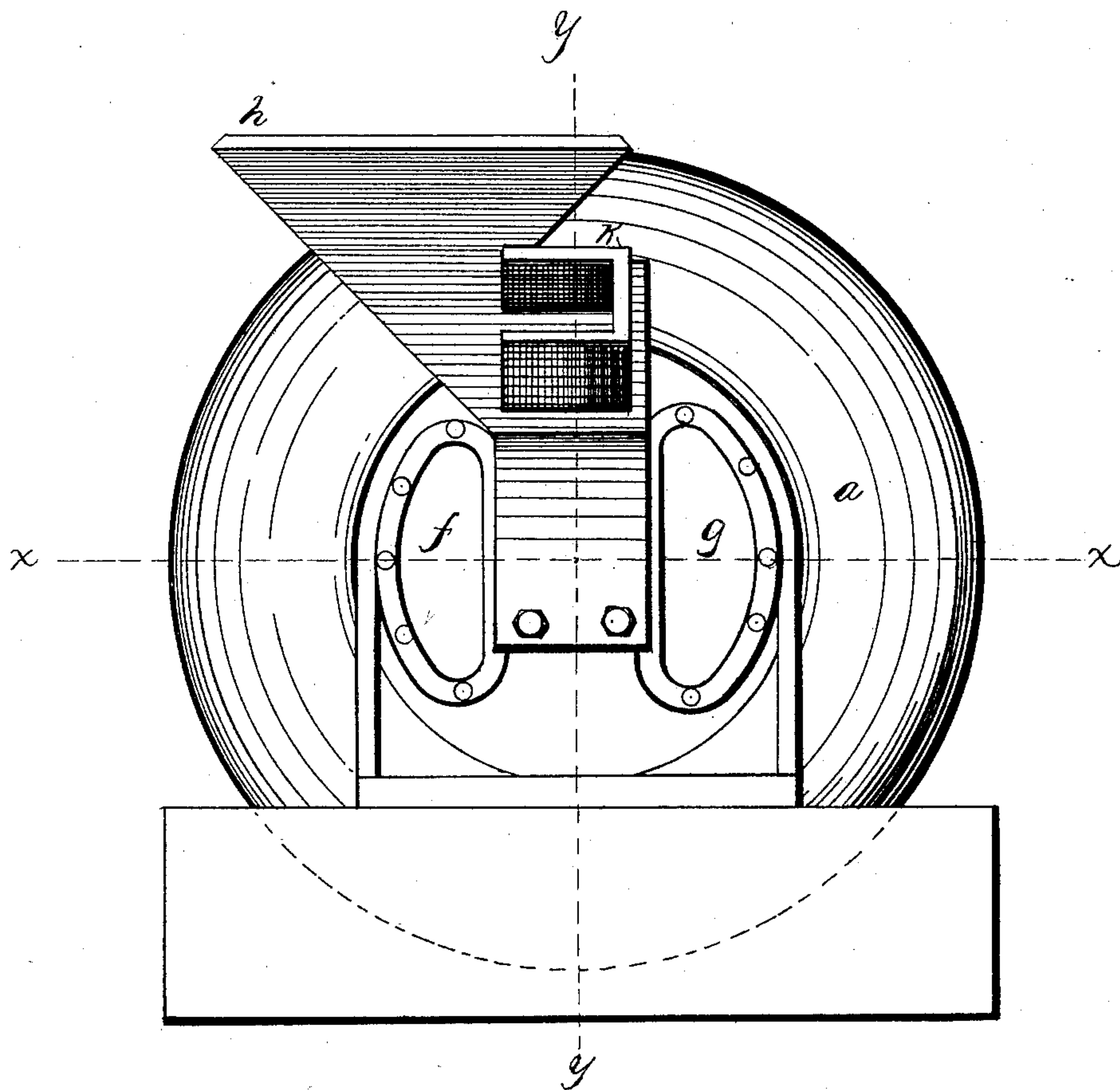
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Fig 4



WITNESSES:

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# UNITED STATES PATENT OFFICE.

EDWIN C. GRIFFIN, OF BROOKLYN, NEW YORK.

## ORE-PULVERIZER.

SPECIFICATION forming part of Letters Patent No. 360,682, dated April 5, 1887.

Application filed October 31, 1885. Serial No. 181,482. (No model.)

*To all whom it may concern:*

Be it known that I, EDWIN CULVER GRIFFIN, a citizen of the Dominion of Canada, residing at the city of Brooklyn, in the county of Kings, State of New York, have invented certain new and useful Improvements in Ore-Pulverizers, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

10 Figure 1 is a vertical cross-section of the machine on the line *yy* of Figs. 2, 3, and 4. Fig. 2 is a horizontal cross-section of the same on the line *xx* of Figs. 3 and 4. Fig. 3 is a vertical cross-section on the line *zz* in Figs. 1 and 2. Fig. 4 is a front view of the machine.

15 On the 27th day of December, 1881, and the 17th day of January, 1882, patents numbered, respectively, 251,535 and 252,361, were granted to Henry A. Duc, Jr., for certain improvements in ore-pulverizers, and on the 19th day of May, 1885, patents numbered, respectively, 318,181 and 318,245, were granted to James K. Griffin, for other improvements in ore-pulverizers.

20 My invention relates to the combination of certain elements and constructions described in the said several patents with certain other improvements of my own, not mentioned therein, but adapted thereto; and it consists of the construction and combinations of parts, hereinafter more fully described, and pointed out in the claims.

Referring to the drawings, *a* is a spheroidal shell secured to the end of the horizontal shaft *b*, with which it is rotated by any suitable power. This shell is open, and rotates close to the face-plate and standard *c*, which rests upon the base *d* and sustains the feed-passage *e*, air-passages *f* and *g*, hopper *h*, and diaphragm *i*.  
40 Within the feed-passage *e* is a close-fitting carrier, *k*, open at each end and on the side next the hopper for the admission therefrom of the material to be ground.

In operation the carrier is projected below the lower end of the feed-passage *e* to the point within the shell most desirable for the line of attrition between the annular wall of material that is formed by centrifugal force within the shell and the column of material resting  
50 from the hopper *h* within the carrier *k*.

The carrier may be secured at this point by any suitable device and lowered down as it is worn off by the friction of the material, or it may be left to rest on the said annular wall till it is so far worn away as to require renewal, for which extra carriers may be provided of suitable hard material to resist the wear to which they are exposed. 55

The hopper and carrier being filled with the substance to be reduced and the shell rotated at sufficient speed, there will first be formed within the said shell the annular wall before mentioned, when the column of material in the carrier and feed-passage resting upon the said annular wall while it is in rapid revolution causes such attrition or grinding between the surfaces of the material thus brought in contact as pulverizes the descending column of the substance to be reduced to a powder. 60 65 70

By any suitable force an air-current is made to pass inwardly through the passage *f*, over the front of the diaphragm *i*, adapted to confine the said air-current and force it against the wall of attrition, which thence passes around the periphery thereof against the face of the said annular wall, out behind the diaphragm, and through the exhaust-passage *g* to such chamber as may be provided therefor. By this means the pulverized material is constantly and cleanly removed from the line or surface of attrition as fast as it is sufficiently ground. 75 80

I do not claim any of the constructions and arrangements in the pulverizer which I have described that may have been heretofore claimed in the patents recited, if any such there be; but 85

I do claim—

1. In an ore-pulverizer, a vertical spheroidal rotating shell, in combination with an interior stationary diaphragm for directing the current of air upon the line or surface of attrition, so that the said current may carry off the pulverized material as fast as ground, substantially as described. 90 95

2. In an ore-pulverizer, a vertical spheroidal rotating shell, in combination with an interior stationary diaphragm for directing the current of air upon the line of attrition, and pas- 100

sages for introducing said air-current thereto and for carrying the air and powdered substance therefrom, substantially as described.

3. In an ore-pulverizer, a vertical spheroidal  
5 rotating shell, interior stationary diaphragm, air-passages to and from the same, and feed-passage, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

EDWIN C. GRIFFIN.

Witnesses:

JAMES K. GRIFFIN,  
W. B. MABEN.