

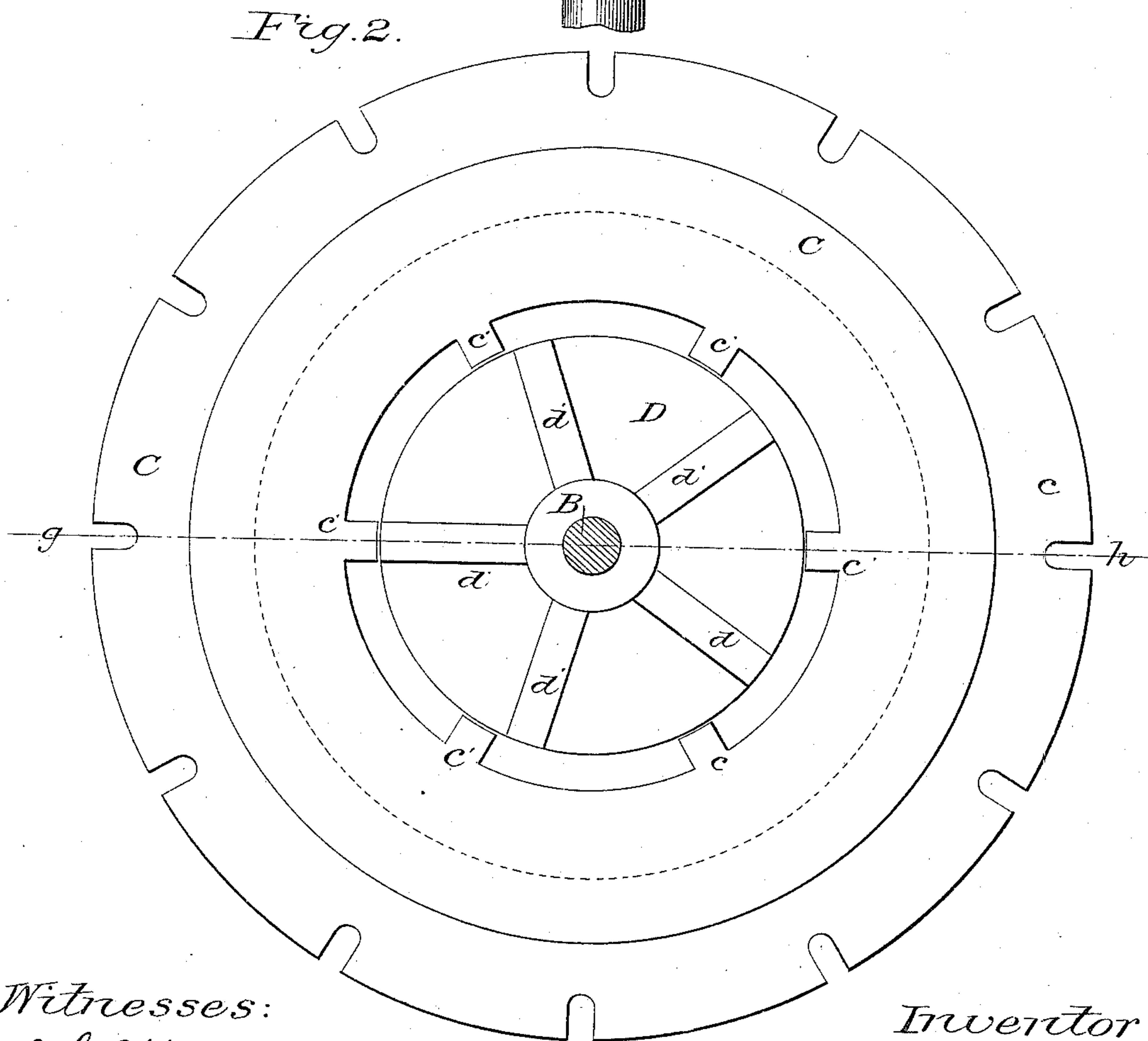
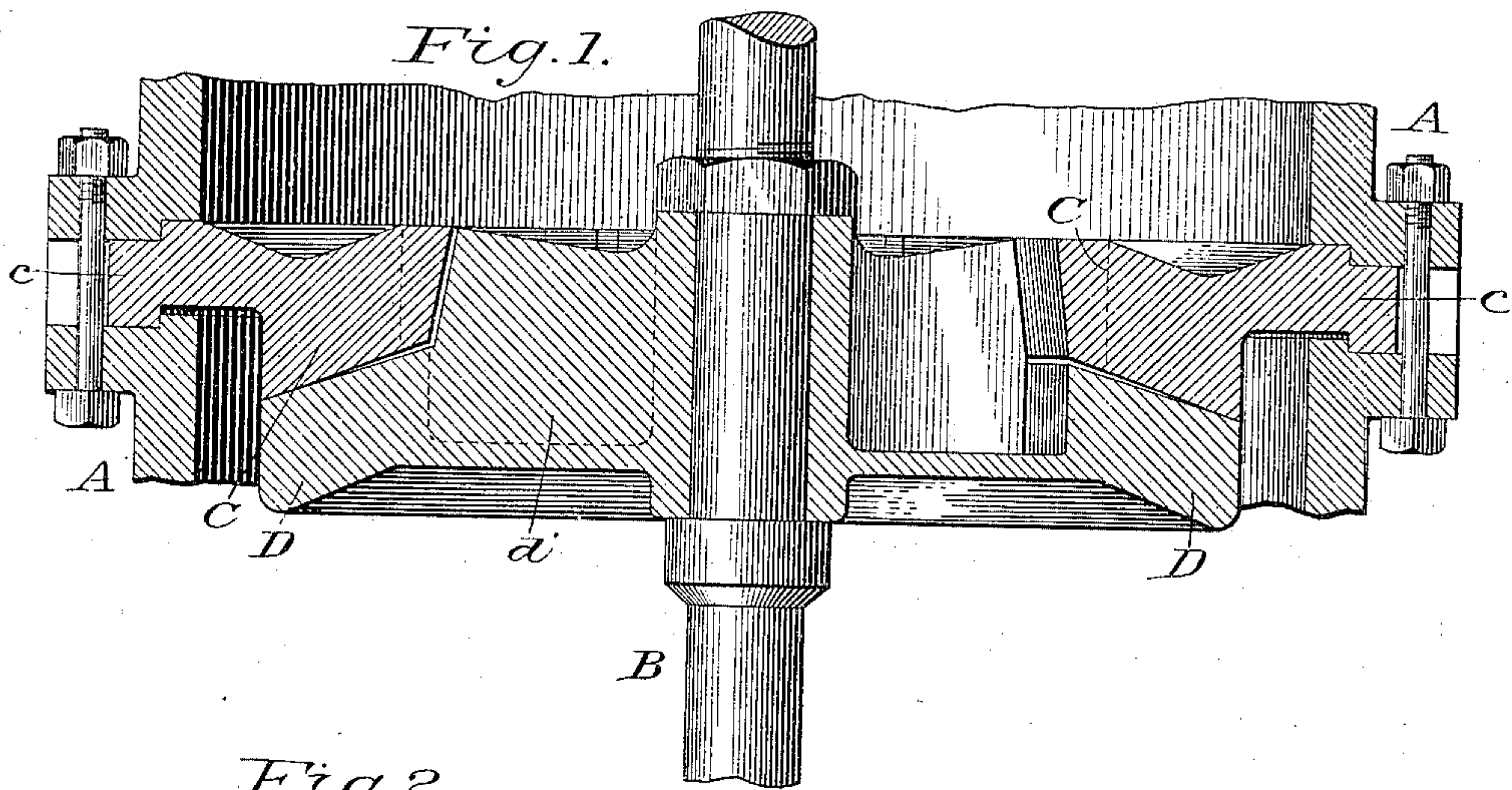
(No Model.)

J. C. BLEVNEY.

MACHINE FOR PULVERIZING ORES, &c.

No. 309,188.

Patented Dec. 16, 1884.



Witnesses:

J. S. Moor

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UNITED STATES PATENT OFFICE.

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MACHINE FOR PULVERIZING ORES, &c.

SPECIFICATION forming part of Letters Patent No. 309,188, dated December 16, 1884.

Application filed January 26, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. BLEVNEY, a citizen of the United States, and a resident of the city of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Machines for Pulverizing Ores, &c., of which the following is a specification.

The object of my invention is to provide a mill for pulverizing ores and other substances, in which the larger pieces will be reduced by breakers, and the mass of ore be partly pulverized by grinding-surfaces composed of the ores themselves, and finally ground between smooth metallic grinding-surfaces.

In the accompanying drawings, Figure 1 is a partial central sectional view on line *g h*, Fig. 2, of a mill embodying my invention; and Fig. 2, a plan view of the same.

A indicates the casing of my mill, and B the shaft thereof.

Between two sections of the casing A is secured the stationary grinding-ring C by a rabbeted flange, *c*. This ring C is provided with a series of inward-projecting ribs or breakers, *c'*.

D is the rotary grinding-ring, which is fixed to the shaft B. The adjacent or grinding faces of the rings C and D are smooth and inclined relative to each other, and, preferably, to a horizontal plane, as shown in Fig. 1, so that the space between them gradually decreases toward their peripheries. Instead of having both of these rings inclined relative to the horizontal plane, as shown, one of the faces might be horizontal and the other slightly inclined relative thereto, to form the tapering space between them; but the arrangement shown is deemed preferable for the reason that the centrifugal force which serves to expel the material outward between the grinding-faces will be assisted by gravity when such arrangement is employed. The ring D is formed with an annular recess, (for lightness in transportation,) and with a series of radial ribs or breakers, *d'*, which, with the disk *d*, form a series of pockets, open toward the periphery of the wheel. The grinding-rim of the said ring is extended inward as far as the insides of the ribs *c'* on the stationary ring C, so as to serve as a bottom for the inwardly-opening pockets formed by said ribs *c'*.

The material to be pulverized enters the mill from above, and, filling the pockets in the upper side of the ring D, is forced outward into the stationary pockets between the ribs *c'* and the ring C. Thus the material moving with the ring D will be rubbed against the stationary material in the pockets of the ring C, the two masses of material thus forming grinding-surfaces for its reduction. The larger pieces of material will be caught and broken between the stationary and rotating ribs *c'* *d'*, thus constantly supplying sharp grinding-particles to assist in the reduction. As the material becomes finer it works downward, and is forced outward between the smooth grinding-faces of the stationary and rotary rings, where it is finally reduced to an almost impalpable powder.

I do not claim in this application certain features herein shown for which I have made claims in my applications Nos. 118,837 and 118,840, filed simultaneously herewith; but,

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. The combination, with a stationary grinding-ring having a smooth grinding-surface and a series of inwardly-projecting ribs, of a rotary grinding-ring having a series of radial ribs within the ribs of the stationary ring, and a smooth grinding-surface adjacent to the grinding-surface of said stationary ring, substantially as set forth.

2. The combination, with a stationary grinding-ring having a grinding-surface and a series of inwardly-projecting ribs, of a rotary grinding-ring arranged partly within and partly below said stationary ring, and having a series of radial ribs within the ribs of the stationary ring, and a grinding-surface below the grinding-surface of the stationary ring, which extends inward below the inwardly-projecting ribs on the latter, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 24th day of January, 1884.

JOHN C. BLEVNEY.

Witnesses:

MARY H. BLEVNEY,
GEORGE H. VINCENT.