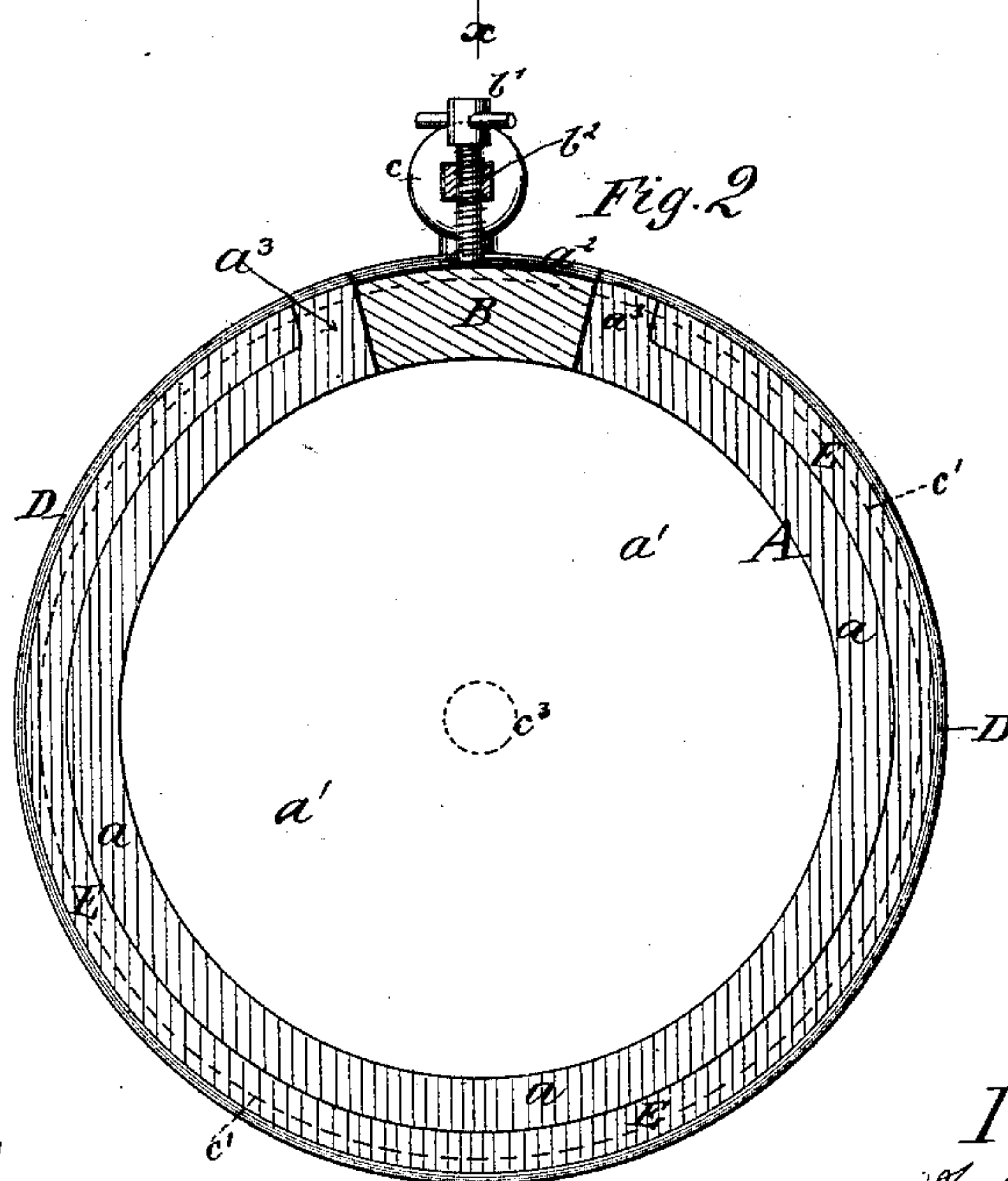
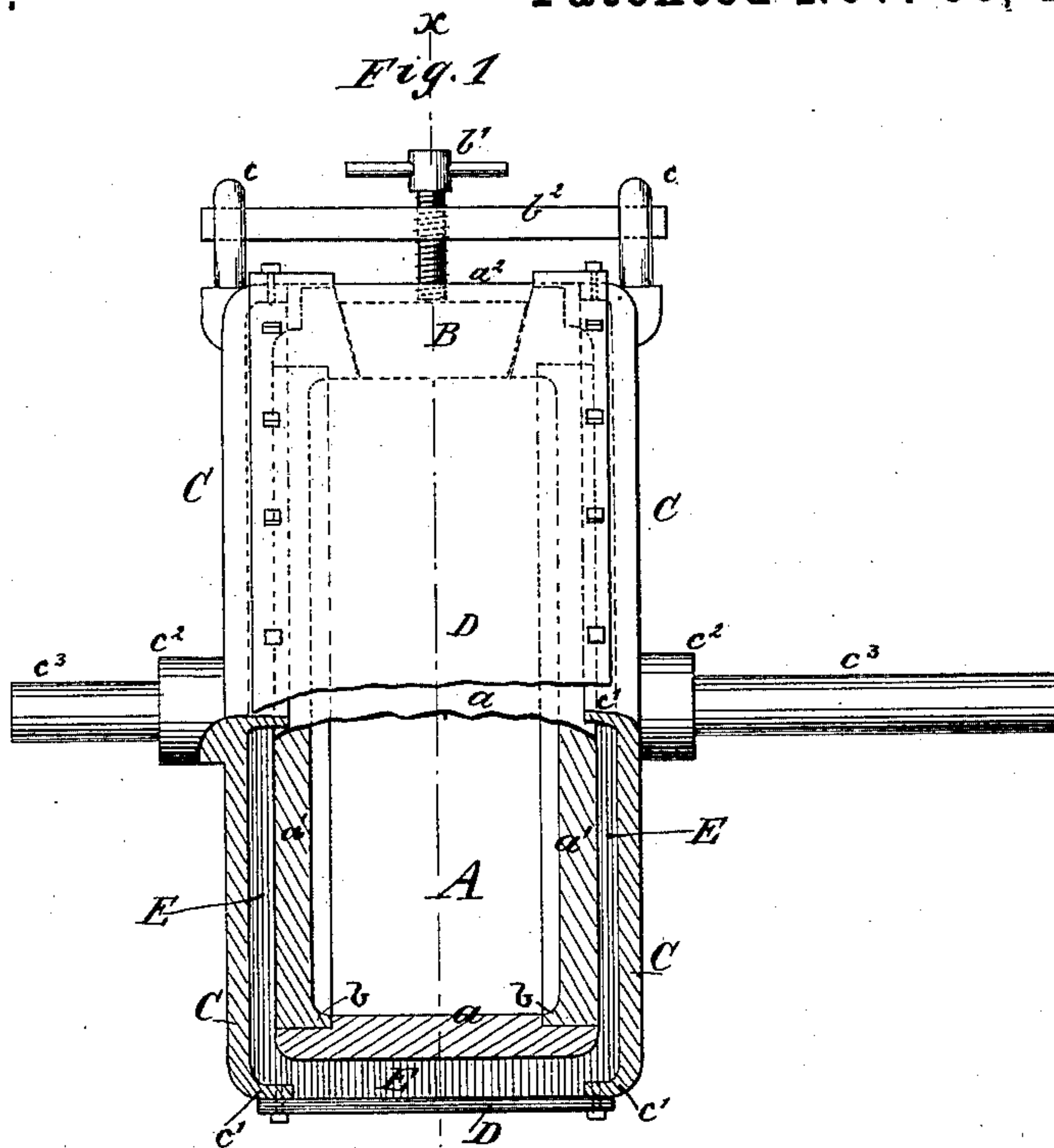


(No Model.)

J. R. ALSING.  
TRITURATING CYLINDER.

**No. 353,279.**

Patented Nov. 30, 1886.



Witnesses.  
A. Wahlberg  
C. M. Crossman

Inventor:  
J. R. Alsing  
by A. W. Almqvist.  
Attorney



# UNITED STATES PATENT OFFICE.

JOHAN ROBERT ALSING, OF NEW YORK, N. Y., ASSIGNOR TO THE J. R. ALSING COMPANY.

## TRITURATING-CYLINDER.

SPECIFICATION forming part of Letters Patent No. 353,279, dated November 30, 1886.

Application filed December 15, 1885. Serial No. 185,712. (No model.)

*To all whom it may concern:*

Be it known that I, JOHAN ROBERT ALSING, a citizen of Sweden, and a resident of New York, in the county and State of New York, have invented a new and useful Improvement in Triturating-Cylinders, of which the following is a specification.

My improvement relates to tritulating-mills in which granulated substances are introduced, together with a quantity of pebbles or balls, in a cylindrical drum, and are reduced to an impalpable powder by the grinding action of the said balls and of the material upon itself, due to the revolving of the said drum. My present improvement, although feasible for similar mills of all sizes, is more especially adapted and intended for medium or smaller sizes, in which a correspondingly smaller quantity of material is ground at a time.

The object of the invention is to provide a simple and compact construction whereby the desirable lining or inner cylinder of porcelain, or such vitreous material, may be made whole, or substantially in one piece, instead of being formed of small slabs or blocks built within an outer cylinder, in the manner of laying bricks for arches, as has heretofore been done, and also to obtain a strong and durable construction which will better stand concussion and wear, and of course be absolutely secure against the possibility of falling in of one or more slabs, as sometimes happens in the old constructions.

The invention will be hereinafter fully described, and specifically pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 represents a front elevation, partly in section, of my improvement in tritulating-mills. Fig. 2 is a vertical section of the same, taken on the line  $x x$  of Fig. 1.

A is the inner cylinder, of porcelain or other vitreous material, preferably porcelain, for the purpose of grinding porcelain material.

The cylinder A may be made whole, in one continuous piece of material, molded in the manner of making pottery-jars; but I prefer, because it facilitates the operation of manufacture, to make it out of three pieces—a cylindrical shell,  $a$ , and two circular end pieces,  $a'$ , the latter being fitted as shown in Fig. 1,

and kept in position relative to the shell  $a$  by means of rabbets  $b$ . Through the periphery of the cylindrical portion  $a$  is formed an opening,  $a^2$ , for charge and discharge of material, and around the said opening is formed or fastened a strengthening flange or rib,  $a^3$ , which also serves the purpose of retaining the cement or plaster, as will hereinafter appear.

B is the cover for the opening  $a^2$ , and is kept in place by a screw,  $b'$ , threaded through a cross-bar,  $b^2$ , whose ends are inserted in and retained by eye-screws or perforated lugs  $c$ , which are fastened or formed on the casing in the usual manner. This latter consists of metallic end disks, C, preferably of cast-iron, bent in at the peripheries toward each other, forming flanges  $c'$ , by which and a sheet-iron cylinder, D, they are united together by screws or rivets to form the casing of the tritulating-cylinder. The sheet-iron cylinder D is alike throughout, with the exception that it has an opening corresponding to the opening  $a^2$ , at the edge of which it closes tightly upon the aforesaid flange  $a^3$ . A space thus left around the cylinder A, between the same and the sheet-iron cylinder D. The distance apart of the end disks, C, is also greater than the length of the porcelain cylinder A, so as to leave a narrow continuous space between the cylinder and its casing, not only at the circumference, but also at the ends. This space E is filled with plaster-of-paris or other suitable cement, by which the porcelain cylinder is set in and firmly united to the metallic casing.

The end disks, C, are provided with hubs  $c^2$  and journals  $c^3$ , for supporting the mill in bearings, and for the attachment of pulleys to transmit motion to the same by belt or otherwise, as usual.

The aforesaid construction is compact, simple, and strong, and entails much less labor than by securing together small slabs in the manner of laying bricks, as has heretofore been done, and of course entirely obviates the danger of such slabs getting loose and falling in.

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

1. In a tritulating-mill, the combination of the inner cylinder, A, composed of the central shell,  $a$ , and the two end disks,  $a'$ , with an

outer casing having journals  $c^3$ , and cement interposed between the said cylinder and casing.

2. In a triturating mill, the combination of  
5 the inner cylinder, A, composed of the central shell,  $a$ , having opening  $a^2$ , surrounded by the flange  $a^3$ , and the two end disks,  $a'$ , rabbeted to the said cylinder  $a$ , with an outer casing having journals  $c^3$ , and cement interposed be-  
10 tween the said cylinder and casing.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 12th day of November, 1885.

JOHAN ROBERT ALSING.

Witnesses:

HENRY GELLMAN,  
J. EDW. SWANSTROM.