

(No Model.)

A. B. HALL.
TRITURATING AND POWDERING MACHINE.

No. 515,217.

Patented Feb. 20, 1894.

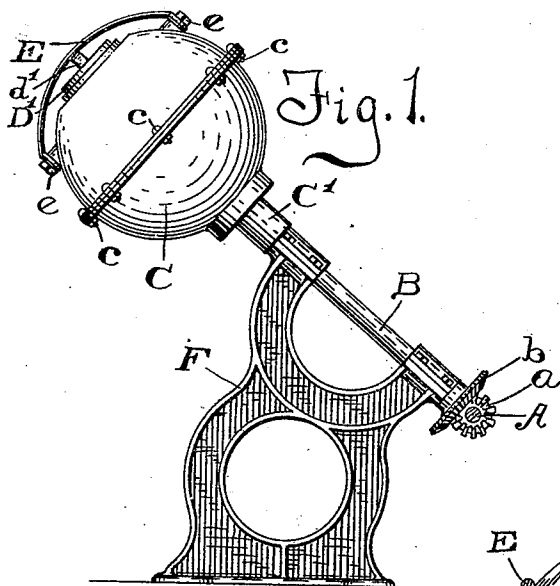


Fig. 2.

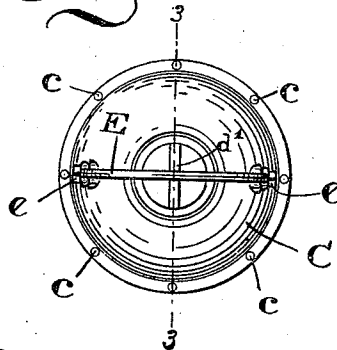
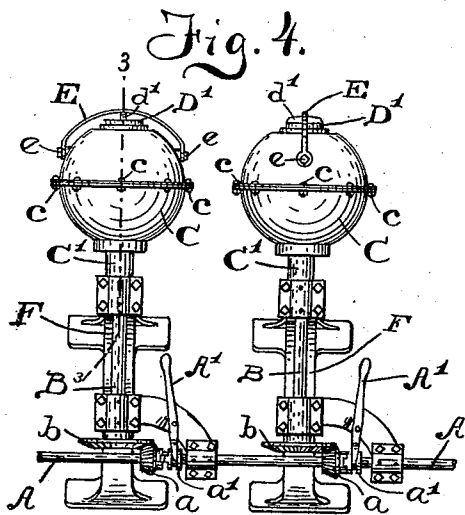
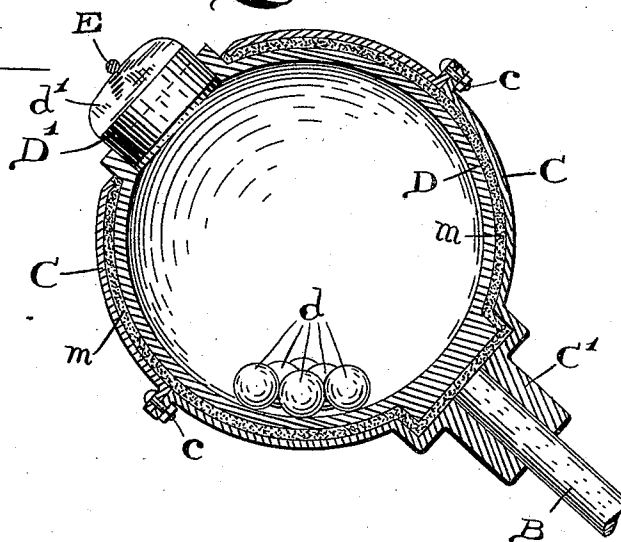


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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TRITURATING AND POWDERING MACHINE.

SPECIFICATION forming part of Letters Patent No. 515,217, dated February 20, 1894.

Application filed May 5, 1893. Serial No. 473,108. (No model.)

To all whom it may concern:

Be it known that I, ALBERT B. HALL, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Triturating and Powdering Machines, of which the following is a specification.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a side elevation of a machine or mill embodying my said invention; Fig. 2 an end view thereof; Fig. 3 a central sectional view of the same on an enlarged scale, on the dotted line 3 3 in Fig. 2, and Fig. 4 a plan view on a smaller scale showing how several mills may be driven from the same shaft.

In said drawings the portions marked A represent the driving shaft from which one or more of my improved mills are driven; B the shafts to said mills; C the outershell, and D the innershell of said mills. All of these parts are or may be of any usual or desired construction except the "mills" themselves. The shaft A is mounted in bearings in an appropriate frame F, and has pinions *a* thereon which mesh into corresponding gear wheels *b* on the shafts B, and drive the same, and clutches *a'* are provided, which may be thrown into or out of engagement by the handles A', and the mill-shafts and mills thus caused to revolve or permitted to remain still, all as shown most plainly in Fig. 4, where one clutch is shown in, and the other out of engagement.

The outer shell C of the mill is fixedly mounted upon the upper end of the shaft B. It consists of two half spheres secured together by bolts *c*, and surrounding the inner shell. The lower half sphere has a hub C', whereby it is immediately united to the shaft B. Upon the upper half sphere are ears *e* upon which a bail E is mounted for holding the cover or stopper in position, as will be presently more fully described. This upper half is also provided with an opening, preferably at a point opposite the shaft on which the shell is mounted, to receive the neck of the inner or vitreous shell, in which the grind-

ing is done. This outer shell is made of metal, preferably of iron, and has the usual strength and rigidity of such material.

The inner shell D of the mill is of some appropriate pottery or vitreous material, preferably of that variety known as "Wedgwood ware," and is placed between the two half spheres of the outer shell, and firmly secured thereto by an interposed layer of some plastic material *m*, such as cement, and thus for operating purposes becomes substantially integral with said outer shell. At one side, preferably that opposite the point to which the shaft B is attached, this inner shell is provided with a neck which extends out through the opening in the outer shell to the outside, through which the material to be treated is introduced, and this neck is provided with a stopper or cover D', which preferably has an arched wing *d'* thereon, over which the bail E is adapted to be moved, and said bail, as will be readily understood, when drawn up over said wing, clamps and holds said stopper or cover firmly and securely into place. Within the shell D are a number of balls *d*, as shown in Fig. 3, which may be more or less numerous, as may be desired, or according to the work to be done, and these balls operate upon the material placed within the mill, and reduce it to powder, or triturate it, according to its character.

An objection to previously produced mills is that if of iron they would not resist the chemical action of some of the materials to be operated upon; and if of pottery or vitreous ware, they are difficult to mount, and too easily broken.

By my invention I am enabled to secure the strength and durability of metal mills without any of the disadvantages consequent upon the objectionable character of that material for direct use.

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

The combination, in a triturating and powdering mill, of a two-part spherical metallic shell secured together, one part provided with a hub whereby it is mounted on its shaft, and the other with an opening, an interior

vitreous spherical shell or flask provided with
a neck extending out through said opening,
a layer of uniting material interposed be-
tween the two shells, a cover or stopper for
5 said neck, and suitable fastening devices
therefor, substantially as set forth.

In witness whereof I have hereunto set my

hand and seal, at Indianapolis, Indiana, this
2d day of May, A. D. 1893.

ALBERT B. HALL. [L. s.]

Witnesses:

CHESTER BRADFORD,
JAMES A. WALSH.