(No Model.)

E. A. WALL.

PULVERIZING MILL.

No. 337,901. Patented Mar. 16, 1886.

FIG. 1.

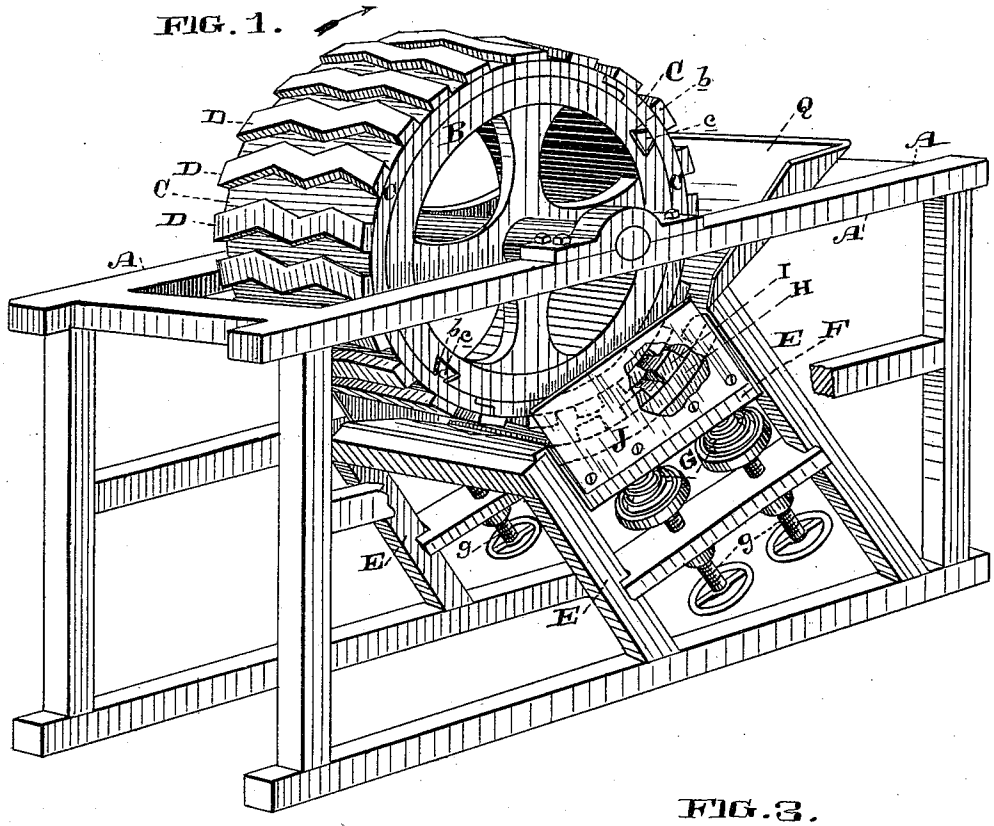


FIG. 2.

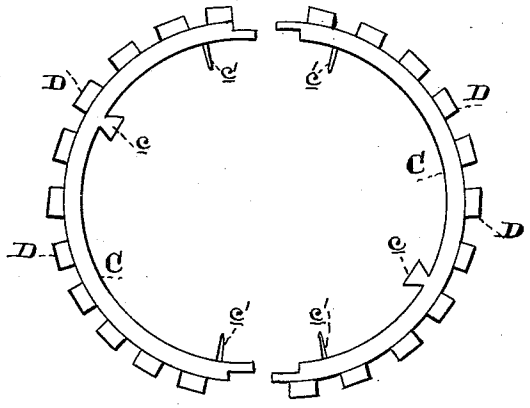


FIG. 3.

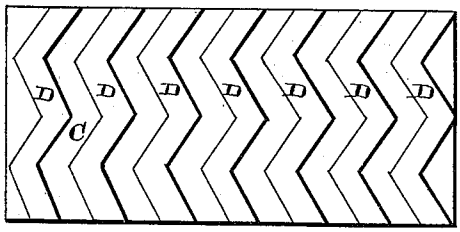
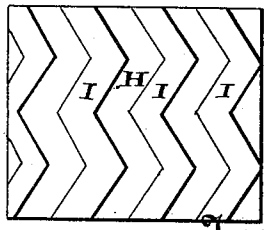


FIG. 4



Witnesses,
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J. St. Nourse.

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UNITED STATES PATENT OFFICE.

ENOS A. WALL, OF BULLION, IDAHO TERRITORY.

PULVERIZING-MILL.

SPECIFICATION forming part of Letters Patent No. 337,901, dated March 16, 1886.

Application filed November 12, 1885. Serial No. 182,639. (No model.)

To all whom it may concern:

Be it known that I, ENOS A. WALL, of Bullion, Alturas county, Idaho Territory, have invented an Improvement in Pulverizing-Mills; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the class of mills for pulverizing ores; and my invention consists in the peculiar construction of the mill hereinafter described and claimed.

The object of my invention is more especially to crush or pulverize ores after they have been subjected to some previous crushing operation and have been reduced to particles of a small size, and my machine is particularly adapted for gold ores by reason of preparing them more perfectly for amalgamation on account of the rubbing which the particles undergo in the mill.

Referring to the accompanying drawings, Figure 1 is a perspective view of my pulverizing-mill. Fig. 2 is a side elevation of the muller-shoe C, showing its two parts. Fig. 3 is a plan view of the muller-shoe. Fig. 4 is a plan of the concave shoe.

A is the frame, in the top of which is mounted the muller B, to which a rotary movement is imparted by any suitable mechanism. The muller B is of a pulley-like shape, preferably of plain cast metal, having such a diameter and width of peripheral surface as may be desired. On its periphery is secured the annular shoe C. This is made in two equal parts, halving into one another at their ends, as shown, and these parts are secured to the periphery of the muller by means of the dovetailed keys *c*, fitting into corresponding keyways, *b*, in the muller, and by bolts *c'* through the shoe and the rim of the muller. It will thus be seen that the shoe may be readily removed, when desired, and another substituted. Upon the face of the shoe are formed teeth D, which are zigzagged in outline.

The whole shoe with its teeth is preferably made of chilled iron, steel, or other hard substance. Mounted in inclined guides E is the concave bed F, which is supported and held to its position by means of elastic buffers behind it, or springs G, such as are here shown, adapted to be themselves adjusted by means of the screws *g*. To the face of the concave bed is secured the concave shoe H, provided with teeth I, which are of the same form as, but oppositely arranged to, the teeth of the muller-shoe. Secured to the sides of the concave bed are guard-flanges J, which extend upwardly and overlap the sides of the muller, thereby preventing any material fed to the machine from working out at the sides.

Q is a feed-spout arranged to direct the material between the shoes of the muller and the concave.

The operation of the machine is as follows: The material, after having been reduced to particles of about the size of wheat-grains or such as would pass a four or six mesh screen, is fed through the spout Q into the space between the concave and the muller. The muller is rotated in the direction indicated by the arrow, and the material is pulverized and rubbed up by the opposing teeth upon the same and the concave and is discharged below. The concave is placed below the horizontal plane of the center of the muller, so that the material which is fed to it cannot rise up to get into the space between the teeth on the muller, but must pass through between the points of the teeth on both the muller and the concave, the side flanges preventing its falling out at the sides. The material is carried downward by its own weight and the moving muller and discharged below.

This machine is especially adapted, as I have before indicated, for the pulverization of gold ores, amalgamation being greatly aided by the grinding or rubbing to which the ore is subjected.

I am aware that grinding or pulverizing mills have heretofore been provided with peculiarly-dressed removable plates upon the muller and concave, and that various elastic attachments have been used to hold the concave up against the muller, and hence I do not claim such features, broadly; but my mill is an improvement upon such previous mills in the peculiar assemblage of its parts, whereby a strong, compact, and efficient machine is produced and its durability enhanced.

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

The herein-described pulverizing-mill, comprising the frame A, having the inclined guides E, the muller B, having the dovetailed grooves *b*, the semi-annular plates C, having the dovetailed keys *c*, bolts *c'*, the zigzagged teeth D, the frame F, concave shoe H, having zigzagged teeth I, the side flanges, J, the springs G, adjusting-screws *g*, and feed-spout Q, all constructed and arranged as herein described

In witness whereof I have hereunto set my hand.

ENOS A. WALL.

Witnesses:
W. T. RILEY,
ISAAC WHISLER.