No. 809,687. PATENTED JAN. 9, 1906.

H. A. HOWARD.

MILL.

APPLICATION FILED JAN. 5, 1905.

Fig. 2.

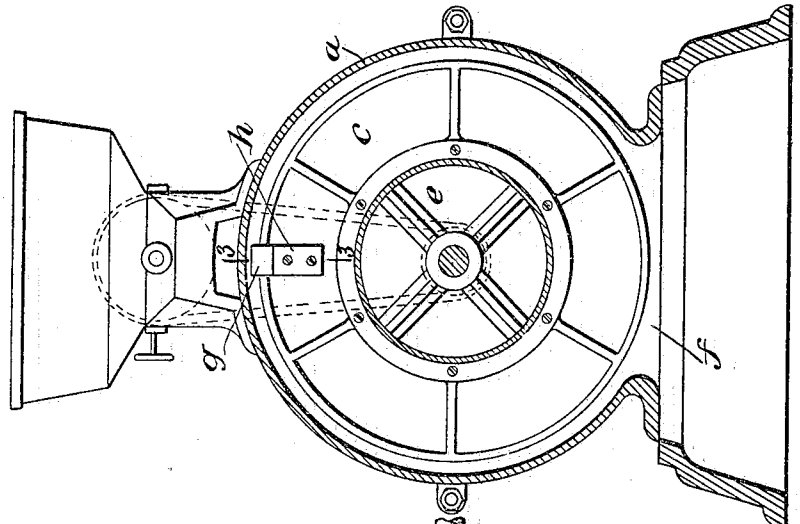


Fig. 1.

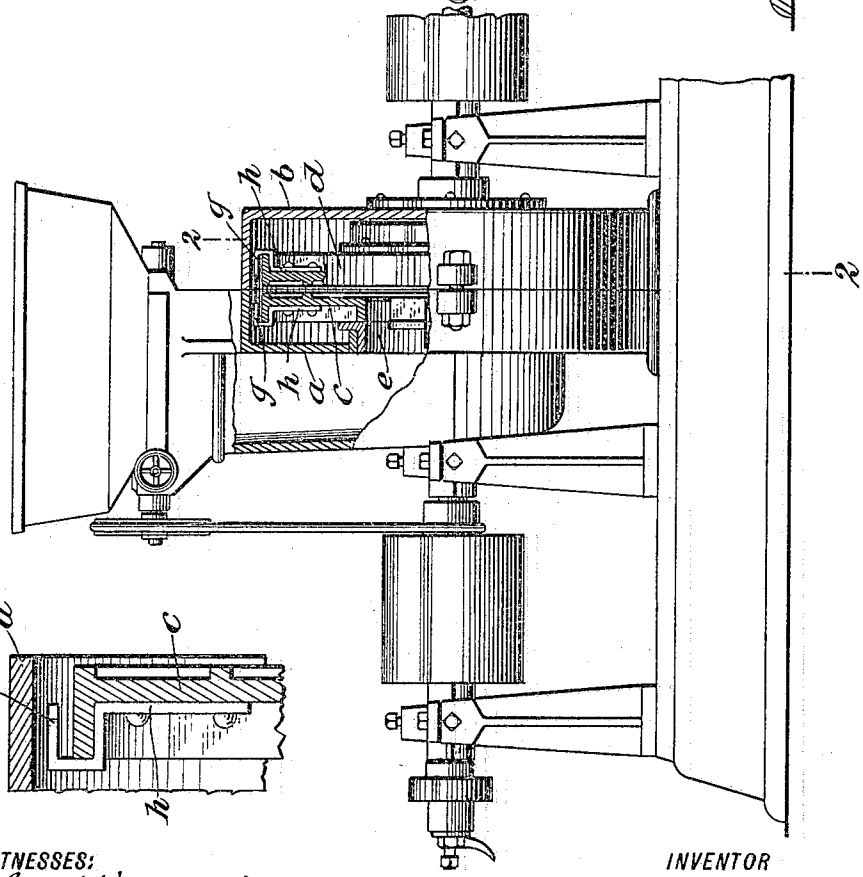
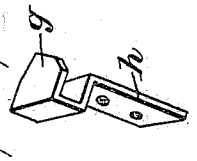


Fig. 3.

Fig. 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

HENRY A. HOWARD, OF SHERBURNE, NEW YORK.

MILL.

No. 809,687. Specification of Letters Patent. Patented Jan. 9, 1906.

Application filed January 5, 1905. Serial No. 239,754.

To all whom it may concern:

Be it known that I, HENRY A. HOWARD, a citizen of the United States, and a resident of Sherburne, in the county of Chenango and State of New York, have invented a new and Improved Mill, of which the following is a full, clear, and exact description.

This invention relates particularly to improvements in what are known as "attrition-mills," in which two opposed grinding-heads rotating in opposite directions receive and grind the material between them. In such mills it has heretofore been a common disadvantage that the ground material accumulates within the curb and directly outward of the peripheries of the grinding-heads, thus clogging the discharge from the mill and not only causing the mill to drive hard, but also to heat, and therefore injure, the material to be ground.

The object of my invention is to overcome this disadvantage. I attain this end by providing a peculiar clearing member or members attached to and rotating with the grinding-heads and located outward from their peripheries, by which means to produce peripheral air-currents, tending to dislodge the objectionable accumulations referred to and also tending to mechanically scrape or clear away said accumulations.

Hereinafter reference is to be had to the accompanying drawings, which illustrate, as an example, the preferred embodiment of my invention, in which drawings like characters of reference indicate like parts in the several views, and in which—

Figure 1 is a side elevation of the mill, having parts broken away to illustrate the application of my improvement thereto. Fig. 2 is a section on the line 2 2 of Fig. 1, also illustrating the improvement in position. Fig. 3 is an enlarged detail section on the line 3 3 of Fig. 2, and Fig. 4 is a detail perspective of one of the attachments.

a and *b* indicate the curb-sections, and *c* and *d* indicate the grinding-heads, which are located within the curb and are fed through the centrally-disposed feed-orifice *e*, these heads having flanged peripheries *c'* and *d'*, as shown. The cereal or other material to be ground passes between the oppositely-rotating grinding-heads and is discharged from the lower part of the curb at the point *f*, all of which will be understood from the prior art. In the ordinary operation of such a mill currents of air are created at the outer sides of the grinding-heads. These currents do not extend to that part of the mill lying between the peripheries of the grinding-heads and the inner walls of the curb. The fine-ground material therefore accumulates in the curb at this point and clogs and heats the material, as before explained. To overcome this, I provide U-shaped clearing-blades *g*, which embrace the flanged peripheries of the grinding heads or disks and have shanks *h* fastened by rivets or otherwise to the outer faces of said heads, so that one arm of the U-shaped clearing-blades lies between the periphery of the grinding-head and the facing of the curb.

As the grinding-heads rotate, the clearing-blades sweep around through the curb with the grinding-heads, and these blades serve the double purpose of setting up circular air-currents which sweep out from the curb or housing the light ground material which may accumulate therein. In addition to this, the clearing-blades exert a mechanical grinding effect on said accumulations, sweeping or clearing them from the curb. This keeps the mill free at all times and effectually avoids heating or clogging thereof.

Various changes in the form, proportions, and minor details of my invention may be resorted to at will without departing from the spirit and scope thereof. Hence I consider myself entitled to all such variations as may lie within the terms of my claim.

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

A grinding-mill having a curb or casing, opposed grinding disks or heads located therein and having their peripheries spaced from the facing of the curb, and clearing members comprising U-shaped blades embracing the flanged peripheries of the disks, and shanks projecting from the blades and fastened to the outer faces of the grinding-heads one arm of said U-shaped blade lying outward from the periphery of the grinding-head between the same and the facing of the curb, for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY A. HOWARD.

Witnesses:

JAMES FAGAN,

ANDREW GAHAN.