

M. J. WILLIAMS.
PULVERIZER.
APPLICATION FILED FEB. 16, 1909.

939,774.

Patented Nov. 9, 1909.

Fig. 1.

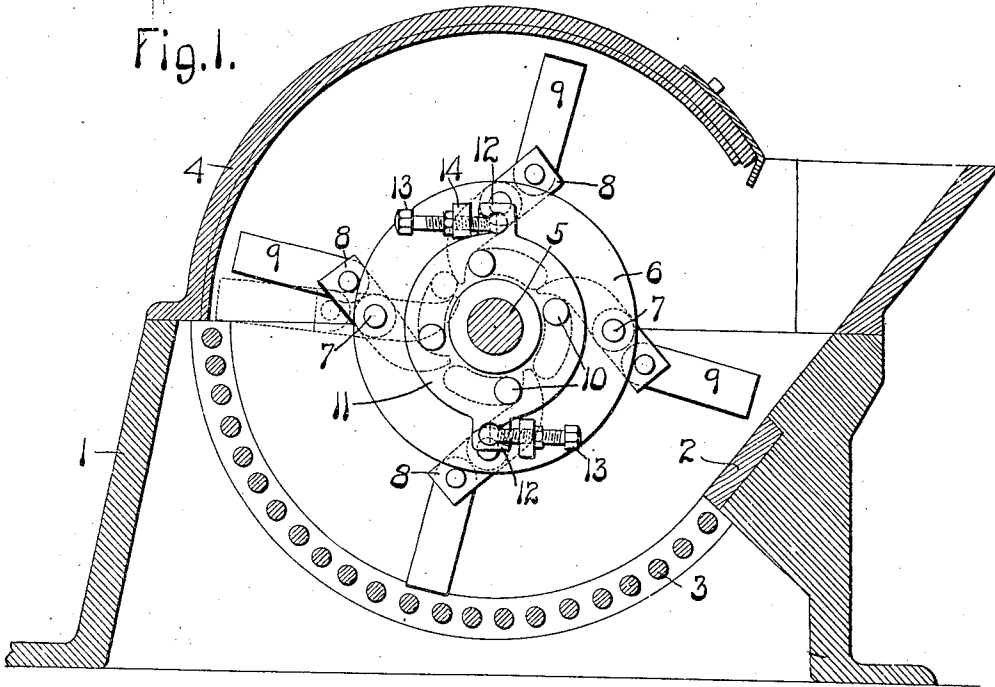


Fig. 2.

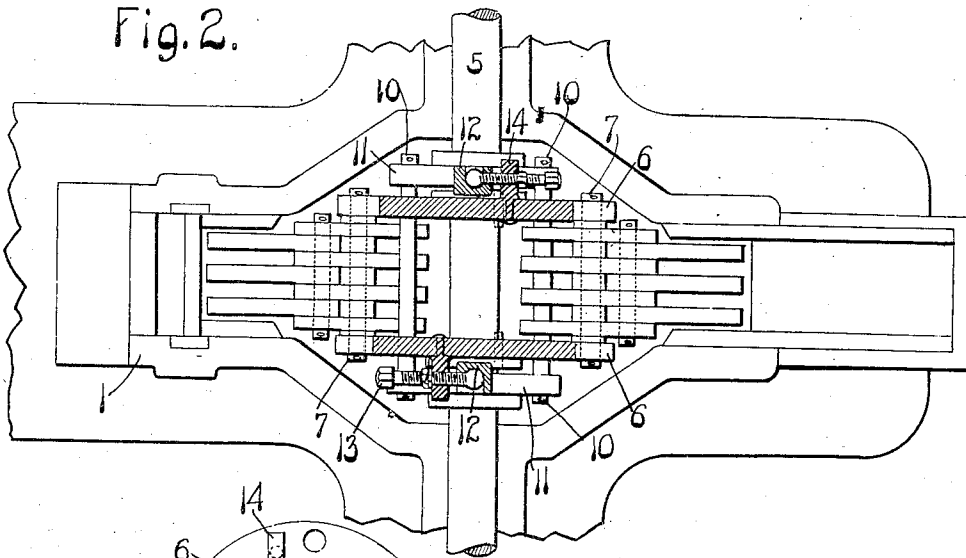
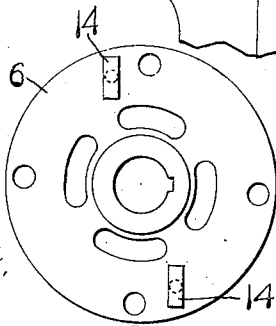


Fig. 3.



Witnesses
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by
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UNITED STATES PATENT OFFICE.

MILTON J. WILLIAMS, OF CHICAGO, ILLINOIS.

PULVERIZER.

939,774.

Specification of Letters Patent.

Patented Nov. 9, 1909.

Application filed February 16, 1909. Serial No. 478,216.

To all whom it may concern:

Be it known that I, MILTON J. WILLIAMS, a citizen of the United States, residing at Chicago, Illinois, have invented a certain new and useful Improvement in Pulverizers, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical sectional view through a pulverizer constructed according to my improvement. Fig. 2 is a horizontal fragmentary sectional view through the same. Fig. 3 is a detailed view of one of the disks which carry the hammer supports.

This invention relates to a new and useful improvement in pulverizers of that type commercially known as the "Williams mills", characterized by the pivoted revolving hammers which act upon the material as it enters the machine at the hopper or feed end thereof, crushing said material as it rests upon the bottom of the hopper, or breaker plate, as it is sometimes called, the material being further disintegrated or crushed by the hammers acting thereon as the material is carried over the cage or grinding surface. The crushed material falls through the openings in the cage or grinding surface into a suitable receptacle located beneath the machine. The hammers or beaters which revolve about the shaft, while made of a material whose resistance to wear is its essential quality, will, in time, wear away at their striking ends, and the farther these striking ends are removed from the breaker plate and grinding surface, the less becomes the capacity of the machine.

It is the purpose of my present invention to provide means whereby these revolving hammers or beaters may be adjusted outwardly to take up this wear (or inwardly, if occasion requires, as when a new cage is introduced to replace a worn one), said means consisting of hammer supports pivotally mounted upon disks arranged upon a shaft, the inner ends of said hammer supports being curved to cooperate with rods which are mounted in rotatable disks whereby the hammers may be simultaneously and uniformly adjusted, outwardly and inwardly, with respect to the shaft.

In the drawings, 1 indicates the casing, 2 the breaker plate, 3 the grinding surface or

cage, and 4 the cover of the machine, which may or may not be hung, as desired.

5 indicates a shaft and 6 disks fixed thereon.

7 are through-bolts mounted in disks 6 and on which are arranged hammer supports 8, said hammer supports being provided with curved inner ends. 9 are hammers pivotally mounted in the outer ends of said hammer supports.

10 are rods passing through circumferentially disposed slots in disks 6 for cooperating with the inner ends of the hammer supports. These rods are mounted upon adjustable disks 11 arranged on shaft 5. These disks 11 have projections 12 on each side in which are seated circular heads of adjusting bolts 13. These adjusting bolts pass through threaded ears 14 on the disks 6 and are provided with suitable heads by which they may be rotated to adjust the disks 11.

In operation, when the hammers are new, the hammer supports are tangentially disposed as shown in Fig. 1. As they wear, the disks 11 are circumferentially adjusted so as to bring the hammer supports nearer to a radial position, these adjustments being continued, from time to time, until the hammer supports are radial, when no further outward adjustment can be effected.

I am aware that minor changes in the construction, arrangement and combination of the several parts of my device can be made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention.

In using the expression "disks" in the foregoing specification, and in the following claims, I wish to be understood as not confining myself to circular disks, as the parts which perform the functions of the supporting disks described and claimed could be in the shape of spider-arms, or other forms, metal being cut away at various places where it was not needed, to lighten the machine.

Having thus described my invention, what I claim is:

1. In a pulverizer, the combination with a casing, of a shaft, disks mounted upon said shaft, hammer supports pivotally arranged between said disks, hammers carried by said supports, means cooperating with the inner ends of said hammer supports for adjusting the hammers outwardly, a rotatable disk in which said adjusting means is mounted, and

a threaded connection between said fixed and movable disks whereby the latter may be adjusted.

2. In a pulverizer, the combination with a casing, a shaft mounted therein, disks mounted on said shaft, hammers supported by said disks, and means for adjusting said hammers outwardly, said means comprising circumferentially adjustable rods, rotatable disks in which said rods are mounted and a threaded rod connecting the fixed and mov-

able disks whereby the latter may be partially rotated to circumferentially adjust said rods.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this 8th day of February, 1909.

MILTON J. WILLIAMS.

Witnesses:

WILLIS MELVILLE,
REINHOLD E. WINTER.