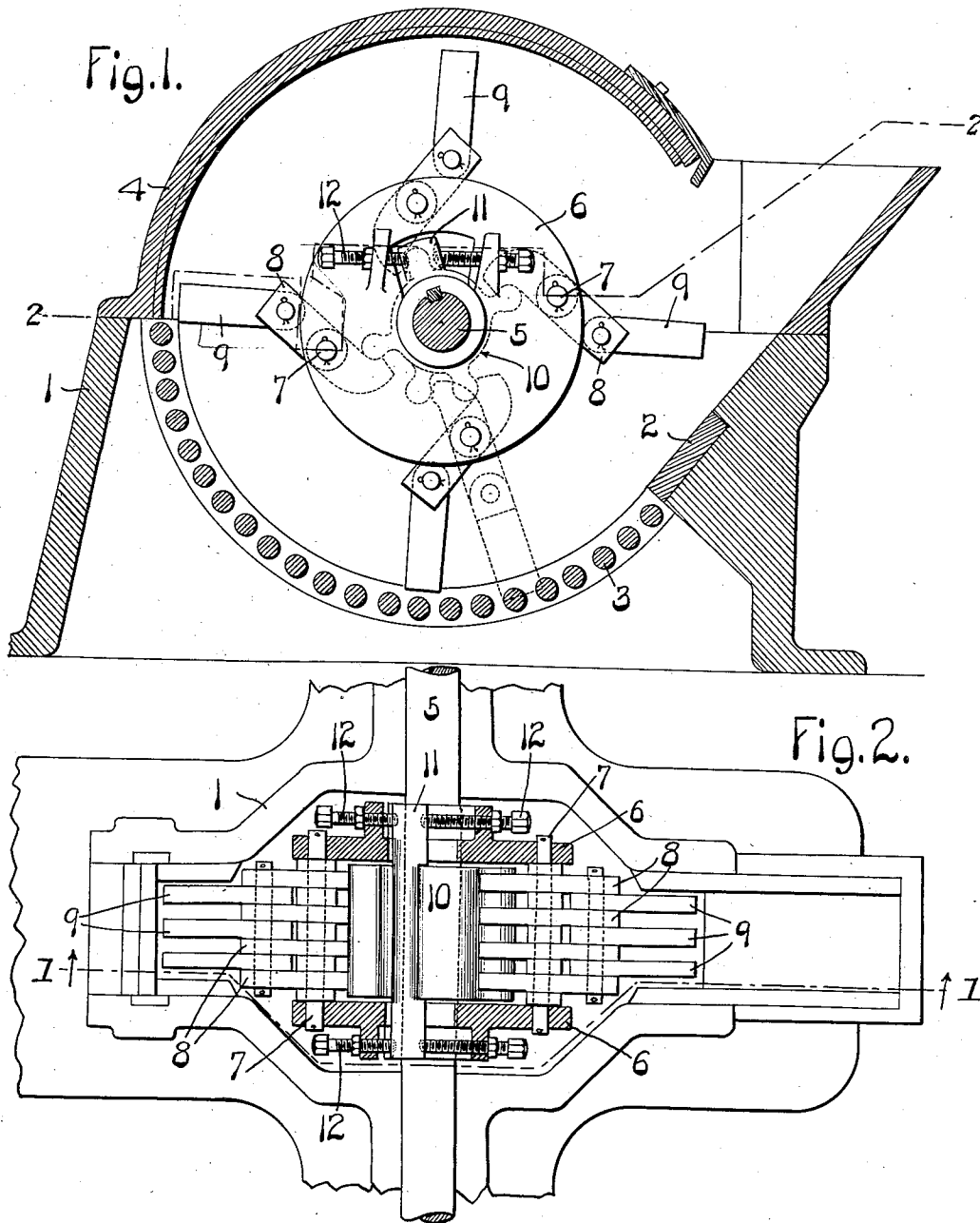


M. J. WILLIAMS.
PULVERIZER.
APPLICATION FILED FEB. 16, 1909.

939,772.

Patented Nov. 9, 1909.



Witnesses

A. J. McCauley
Lenore Clark.

Inventor:

Milton J. Williams

by
J. R. Cornwall Atty.

UNITED STATES PATENT OFFICE.

MILTON J. WILLIAMS, OF CHICAGO, ILLINOIS.

PULVERIZER.

939,772.

Specification of Letters Patent.

Patented Nov. 9, 1909.

Application filed February 16, 1909. Serial No. 478,214.

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 said view being taken on the line 1—1, Fig. 2, looking in the direction of the arrows; Fig. 2 is a horizontal, fragmentary sectional view through the same said view being taken on the line 2—2, Fig. 1, looking in the direction of the arrows.

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 a rotary sleeve having projections which coöperate with the hammer supports to adjust said hammers outwardly, whereby all of said hammers are adjusted simultaneously and uniformly.

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 is a shaft mounted in the casings on which are fixed two disks 6.

7 are screw bolts carried by the disks and on which are pivotally mounted levers 8, said levers being spaced apart in any suitable manner.

9 are hammers pivotally mounted in the outer ends of the levers.

10 is a sleeve rotatively mounted on shaft 5 between disks 6, said sleeve having longitudinal ribs or projections which coöperate with the inner ends of the levers 8. The inner ends of levers 8 are preferably curved, as shown, so that a considerable adjustment of the hammers may be effected with a slight rotary movement of the sleeve. One of the projections 11 extends through openings in the disks 6 and coöperates with adjusting screws 12. By the use of these screws, sleeve 10 may be circumferentially adjusted on shaft 5 to adjust the levers forming the hammer supports and take up the wear on the ends of the hammers.

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, a shaft mounted therein, disks on said shaft, hammer supports carried by said disks, a rotary element mounted on the shaft between the disks for coöperating with said hammer supports to adjust the hammers outwardly, and means for locking said rotary element in adjusted positions.

2. In a pulverizer, the combination with a casing, a shaft mounted therein, disks fixed on said shaft, hammer supports pivotally supported by said disks, hammers in the

outer ends of said supports, a rotary sleeve having projections for coöperating with the inner ends of said hammer supports, and means for locking said rotary sleeve in ad-
5 justed positions.

3. In a pulverizer, a casing, a shaft mounted for rotation therein, disks fixed on said shaft, hammer supports pivotally supported by said disks, hammers pivotally carried by
10 the outer ends of the supports, a rotary member arranged on the shaft between the disks and coöperating with said hammer supports to adjust the hammers outwardly, and adjustable means arranged on the disks and
15 engaging parts of the rotary sleeve for shifting the same.

4. In a pulverizer, a casing, a shaft mounted for rotation therein, disks fixed on said shaft, hammer supports carried by said disks, hammers pivotally carried by the hammer supports, and a rotary element mounted
20 on the shaft between the disks for coöperating with the hammer supports to simultaneously and uniformly adjust the hammers inwardly and outwardly.

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.