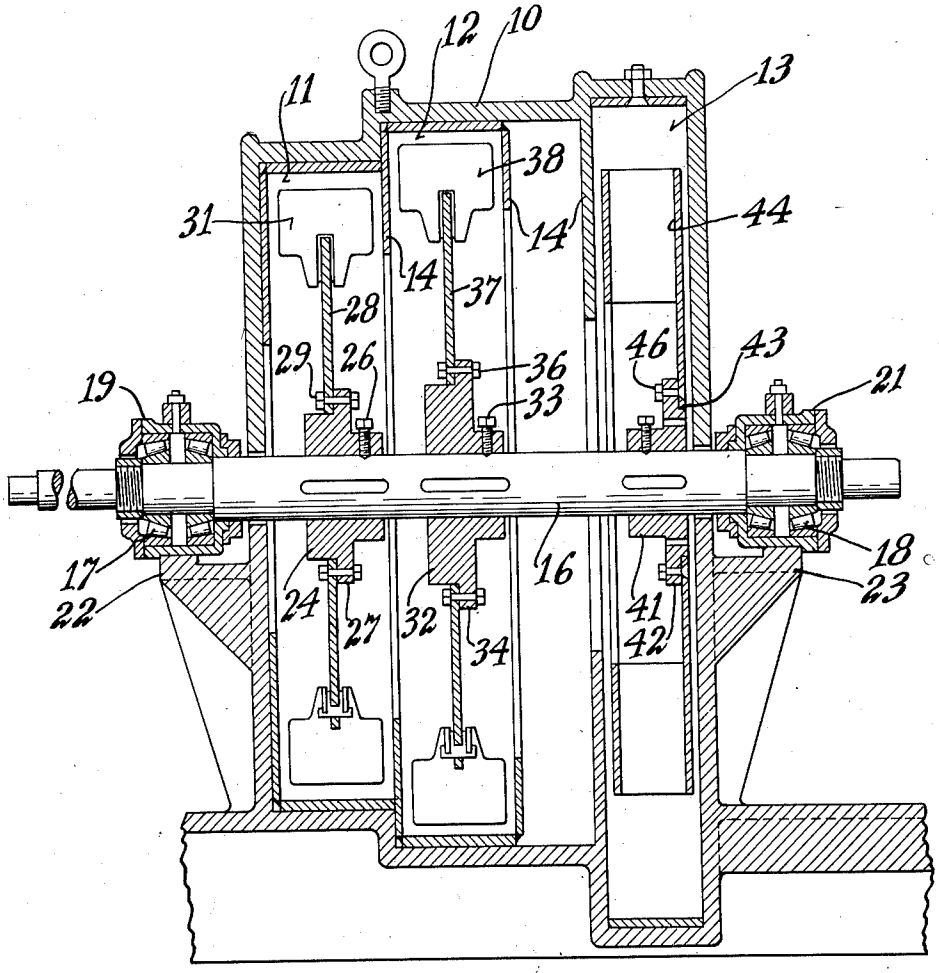
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PULVERIZER

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PULVERIZER

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2 Claims. (Cl. 83—11)

My invention relates to pulverizers, more particularly to that type of pulverizers employed in the comminution of coal, or the like, and has for its object the provision of apparatus of the character designated which shall be simple of design, sturdy of construction, and capable of being readily assembled and disassembled.

A further object of my invention is to provide in a multi-stage pulverizer embodying a plurality of rotary disks, a means for mounting the said disks whereby they may be readily disassembled whenever it becomes necessary for replacement or repair of the same.

In the operation of pulverizers employing high speed rotating hammers mounted on disks, it is well known in the art that there is considerable friction and attrition of the rotary parts of the pulverizer whereby it frequently becomes necessary to remove and replace the disks or equivalent apparatus upon which the hammers of the pulverizer are mounted. These disks, usually a plurality in number, are mounted upon a shaft having relatively large bearing housings at the ends thereof and it has heretofore been necessary, when removing and replacing the disks, to disassemble the shaft and bearing housings completely in order to remove the disks.

I have found in the operation of pulverizers, that by far the greater wear occurs in parts relatively remote from the shafts upon which the disks are mounted and I have accordingly provided a mounting for the disks whereby they may be removed and replaced over one of the bearing housings without the necessity of disassembling the bearing housing, and intermediate disks may be removed over the hubs of adjacent disks. I have thus provided a mechanism which greatly facilitates the repair and replacement of worn disks, avoids disturbing the bearing adjustment or hub position, and insures replacement of the disks in their original positions in the pulverizer with a minimum of labor and time.

Briefly, my invention comprises a pulverizer embodying a rotary shaft and with bearing housings at the ends thereof. Adjacent the bearing housing at one end of the shaft is a hub member which is larger in diameter than the said bearing housing and mounted thereon is a fan secured to the hub member and removable over the adjacent bearing housing. At the other end of the shaft is a similar bearing housing and adjacent this bearing housing is a first stage hub member larger in diameter than its adjacent bearing housing. Upon this hub member is mounted a disk carrying pulverizer hammers which disk is removable over the adjacent bearing housing. Adjacent the first stage hub member is a second stage hub member larger in diameter than the first stage hub member. Mounted upon this second stage hub member is a second stage disk carrying hammers, which said second disk member is removable over the first stage hub member and its adjacent bearing housing.

It will be apparent that the number of hub members and disks may be greater than here specified, within the spirit of my invention, so long as the remoter disk members may be removed over the hub members nearer the bearing housing and over the bearing housing.

In the accompanying drawing forming a part of this application, the single figure is a sectional view through a pulverizer embodying features of my invention.

Referring to the drawing for a better understanding of my invention, I show a pulverizer embodying a casing 10 divided into chambers 11, 12 and 13, by suitable partition members 14. Located in the casing 10 is a rotary shaft 16 mounted in bearings 17 and 18 carried by bearing housings 19 and 21. The bearing housings 19 and 21 are carried by suitable supports 22 and 23.

Mounted on the shaft 16 in the chamber 11 is a first stage hub member 24 slightly larger in diameter than the adjacent bearing housing 19. The hub member 24 is adjustable axially on the shaft 16 and is secured in its adjusted axial position by means of a set screw 26. The first stage hub member 24 is provided on its side remote from the bearing housing 19 with a radial flange 27. Mounted on the hub member 24 is a rotary disk member 28, which is secured to the flange 27 by means of bolts 29. The disk member 28 carries pulverizer hammers 31.

In the chamber 12 is mounted a second stage hub member 32 which is slightly larger in diameter than the hub member 24 and its radial flange 27. The hub member 32 is likewise adjustable axially of the shaft and is secured in its adjusted position by means of a set screw 33. On the side of the hub member 32 remote from the first stage hub member 24 is a radial flange 34. Secured to the radial flange 34 by means of bolts 36 is a disk member 37 carrying pulverizer hammers 38.

In the chamber 13 is a fan carrying hub member 41 mounted on the shaft 16 in a manner similar to the hub members 24 and 32 already described. The hub member 41 is provided with a radial flange 42 having an annular shoulder 43 thereon which is slightly larger in diameter than

the bearing housing 21. Mounted on the hub 41 and fitting over the annular shoulder 43 is a fan 44 which is secured to the flange 42 by means of bolts 46.

From the foregoing it will be apparent that in event it should become necessary to remove and replace the disk members 28 and/or 37, or the fan 44, it is only necessary to remove the shaft and bearing housing from the casing 10 and remove the parts to be replaced over appropriate bearing housing and/or intermediate hub assembly. The disk 28 may be removed over the bearing housing 19 by removing the bolts 29 without disturbing the adjustment of the hub member 24. In order to remove the disk member 37 is it necessary to remove first the disk member 28 and then remove the bolts 36, whereupon the disk member 37 may be removed over the hub member 24 and the bearing housing 19. To remove the fan 44, the bolts 46 are removed, whereupon it may be removed over the bearing housing 21. When the disks are replaced on the hub members, it will be apparent that the replaced disks will be in their original adjusted positions. It will also be apparent that the adjustment of the bearings will not have been disturbed and that the apparatus will again be ready for immediate operation.

From the foregoing it will be apparent that I have devised an improved means for mounting and assembly of pulverizer disks whereby their repair and replacement may be carried out with a minimum of labor and expense.

While I have shown my invention in but one form, it will be obvious to those skilled in the art that it is not so limited, but is susceptible of various changes and modifications without departing from the spirit thereof, and I desire, therefore, that only such limitations shall be placed thereupon as are imposed by the prior art or as are specifically set forth in the appended claims.

What I claim is:

1. In a pulverizer, a shaft, bearing housings for the shaft, a first stage hub member mounted on the shaft between the bearing housings adjacent one of the bearing housings and larger in diameter than said bearing housing, a disk member mounted on the first stage hub member and removable over the said bearings housing, a second stage hub member mounted on the shaft adjacent the first stage hub member and larger in diameter than said first stage hub member, a disk member mounted on said second stage hub member, and removable over the first stage hub member and the said bearing housing, and means for adjusting the position of the hub members axially on the shaft.

2. In a pulverizer, a shaft, bearing housings for the shaft, a first stage hub member mounted on the shaft between the bearing housings and adjacent one of the bearing housings and larger in diameter than said bearing housing, a radial flange on the side of the first stage hub member remote from the said bearing housing, a first stage disk member mounted on the first stage hub member and secured to the flange, said first stage disk member being removable over said bearing housing, a second stage hub member mounted on the shaft adjacent the first stage hub member, a radial flange on the side of the second stage hub member remote from the first stage hub member, and a second stage disk member mounted on the second stage hub member and secured to said radial flange, said second stage disk member being removable over the first stage hub member and the said bearing housing.

WALTER W. PETTIBONE.