March 23, 1943. H. J. MANKOFF 2,314,723

FEED GRINDING ROTOR

Filed Jan. 12, 1942

Fig. 1

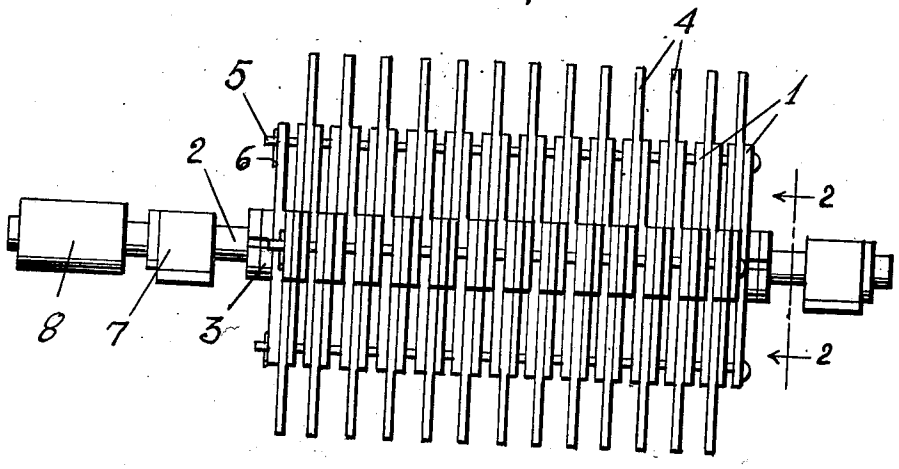


Fig. 2

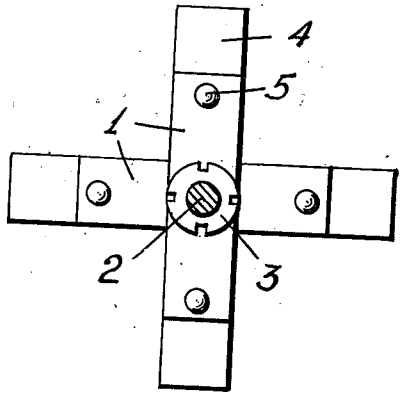
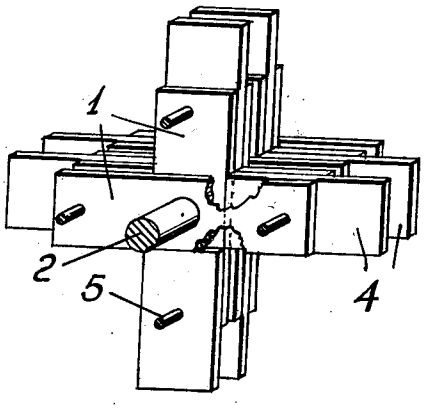


Fig. 3



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FEED GRINDING ROTOR

Henry J. Mankoff, Wichita, Kans.

Application January 12, 1942, Serial No. 426,442

1 Claim. (Cl. 83—11)

This invention relates to new and useful improvements in the construction of a feed grinding rotor, said improvements being to eliminate the triangular plate elements set out in my former patent issued January 7, 1936, and bearing Number 2,026,790, and substitute therefor bars that are rectangular in cross section and of equal length and being centrally bored to fit snugly on the shaft of the cylinder to function as supporting and separating means for the outwardly extending hammer bar elements; being so arranged, one class of material which is in stock on the market may be employed throughout the support bar and hammer bar elements.

A further object of this invention is to assemble the rotor in such a way that the hammers are reversible longitudinally and sidewise whereby a prolongation of cutting edges are maintained, and furthermore, the ends of the support bars and hammer bars have greater efficiency as a grinder as provided by the triangular plates in my former patent above mentioned, as the support bar and hammer bar elements extend radially from the shaft.

These and other objects will hereinafter be more fully explained, reference being had to the accompanying drawing forming a part of this specification, and in which like characters will apply to like parts in the different views.

Referring to the drawing:

Fig. 1 is a side view of the rotor.

Fig. 2 is an end view, the shaft being in section taken on line 2—2 in Fig. 11.

Fig. 3 is a fragmentary perspective view of a portion of the rotor assembly.

The structure of the rotor consists of a series of elongated support bars 1, rectangular in cross section, juxtapositioned at right angle to each other alternately in consecutive order, the outer portion of the alternate support bars being in straight alignment longitudinal of the rotor and spaced apart, said support bars being bored at their longitudinal center to engage on a shaft 2 and being secured in their juxtaposition by lock nuts 3 threadedly engaging on the shaft adjacent each end of the support bar assembly.

It will be seen that a hammer bar 4 will engage between the support bars with its inner end seating on the edge of a transverse support bar while the opposite support bar edge is disengaged by the end of a hammer bar, the outer end of the hammer bar extending well past the ends of its respective support bars, there being one hammer bar for each pair of alternate confronting support bars at one side of the shaft whereby said hammer bars are positioned in staggered relation with respect to the right angle position of the support bars to contact the entire area longitudinally of an enclosing concave in which it rotates.

It will also be seen that the support bars and hammer bars in assembled position are bored in registry the entire length of the rotor substantially on the crossed center lines of the side faces of the hammer bars and support bars to receive headed rods 5 secured by cotter pins 6, the rods extending there through to removably retain the hammer bars so that the hammer bars may be reversed longitudinally or turned on their longitudinal axis to renew the cutting capacity of the hammer bars when the same have become excessively worn, also to insert new hammer bars substituting the worn hammer bars.

It will be understood that the shaft may be trunnioned in suitable bearings 7 and possess a pulley 8 and power means to turn the shaft, and modifications may be made as lie within the scope of the appended claim.

Having fully described the invention what is claimed as new and desired to secure by Letters Patent is:

In a hammer mill rotor, a supporting shaft, a plurality of rectangular flat support bars, means for securing the support bars to the shaft for rotation therewith, the support bars being mounted on the shaft in consecutive alternate substantially rectangular crossed relation and the alternate bars being in aligned relation, apertures spaced inwardly from the ends of the support bars, a plurality of flat hammer bars symmetrical in side face shape arranged with their inner ends in bearing relation on inwardly adjacent support bars, the other ends projecting radially beyond said support bars, apertures substantially centrally of the length of said hammer bars between the ends, and means extending thru the apertures of both support and hammer bars to maintain them in assembled relation; whereby the hammer bars after a degree of wear may be reversed end for end and from side to side to present unworn corners at the periphery of the rotor.

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