Sept. 18, 1956 F. J. MANKOFF 2,763,439

ROTOR FOR HAMMERMILL

Filed Dec. 28, 1954

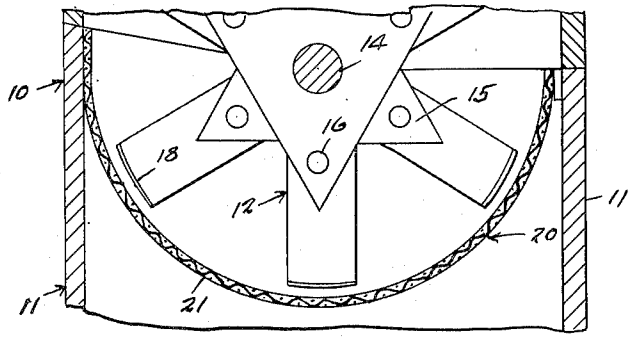


Fig. 1.

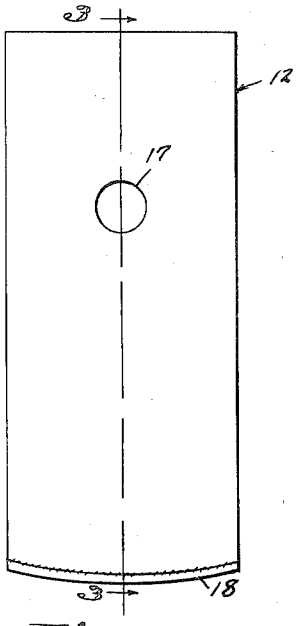


Fig. 2.

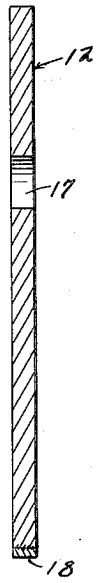


Fig. 3.

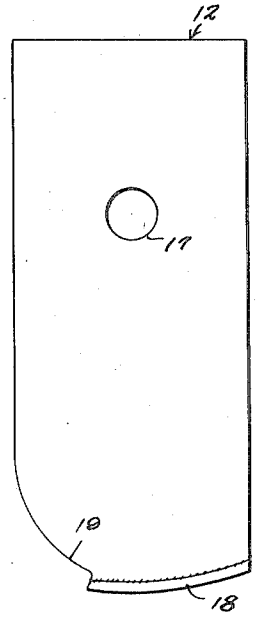


Fig. 4.

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ROTOR FOR HAMMERMILL

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1 Claim. (Cl. 241—197)

This invention relates to a hammermill and more particularly to a hammer head used in a hammermill, the head of the hammer being arcuate in configuration and formed with a hardened surface to be used for striking the material engaged thereby.

It is an object of this invention to provide an improved hammer for a hammer mill of the kind to be more particularly described hereinafter in which the hardened end of the striking surface is as close to the screen as possible whereby the rounded, hardened, striking surface of the hammer is formed concentric to the contour of the screen. The rounded, hardened, surface of the hammer head will preferably be formed of tungsten carbide, or some other equally hardened material, whereby during the use of such an improved hammer for a hammermill the rounded and hardened striking surface will wear longer and the worn head may be replaced.

Other and further objects and advantages of the invention will be hereinafter described and the novel features thereof defined in the appended claim.

In the drawings:

Fig. 1 is a fragmentary vertical section, partly broken away, of an improved hammer for a hammermill constructed according to an embodiment of my invention.

Fig. 2 is a side elevation of my improved hammer removed from the hammermill.

Fig. 3 is a longitudinal section of the hammer taken on the line 3—3 of Fig. 2.

Fig. 4 is a side elevation of my improved hammer head showing the wear offered by the striking surface after considerable use.

Observing the structure and use of hammermills presently in operation it has been determined that the striking surfaces of the hammer heads engaging the material to be split or crushed by the hammers in the mill wear down relatively fast. It is with this in mind that I have provided an improved hammer for a hammermill wherein the hammer head will last a considerable length of time longer than the hammer heads of hammers and hammermills presently in use. The hammermill will operate in substantially the same manner as hammermills presently in operation but the hammer head will be improved by the reinforcing, as by hardening, of the striking surface of the hammer.

Referring now more particularly to the drawings the numeral 10 designates generally a hammermill for use with a hammerhead constructed according to an embodiment of my invention. The hammermill **10**, being formed as usual, is provided with vertically extending side walls **11** having hammers **12** actuated from and by a rotatable shaft **14** in substantially the same manner as hammers of present day hammermills.

The shaft **14** is provided with a plurality of triangular hammer supporting plates **15** which are positioned longitudinally of the shaft **14** and extend transversely therefrom with the hammers **12** pivoted, by way of a pivot pin **16**, to the edges of the hammer supporting plates **15**

as clearly shown in Fig. 1 of the drawings. The pivot pin **16** is provided near the corners of the triangular hammer supporting plates **15** and each of the hammers **12** is provided with openings **17** for the pivot pin **16** when the hammers **12** are moved in their operative relation to the material to be engaged by the heads of the hammers **12**.

As usual, the hammers **12** are formed of an elongated flat strip of metal, which may be of steel or iron, and the outer end edge of the hammers **12** will constitute the head of the hammer spaced radially outwardly from the shaft **14** and from the pivot pin **16** and this hardened edge **18**, being preferably formed of tungsten carbide will engage the material to be crushed or cut in the hammermill **10**.

By the engagement of the head or hardened edge **18** of the hammer **12** with the material to be hammered thereby there will be eventually formed a cutout **19** at the corner of the hammer adjacent to the hardened edge **18** while the material to be hammered is supported on a screen **20**, of conventional configuration, having apertures **21** throughout the area of the screen.

This structure of the hammermill **10** is conventional in hammermills having hammers with an exceptionally hard edge **18** constructed and arranged according to an embodiment of this invention. The screen **20** may be in the form of a trough as in conventional configurations and structures of hammermills presently in operation. However, by a head on a hammer constructed according to an embodiment of my invention one may be quite sure that the striking surface and edge of the hammer will wear longer.

While the specific details of one embodiment of this invention have been herein shown and described, the invention is not confined thereto as changes and alterations may be made without departing from the spirit and scope thereof as defined in the appended claim.

I claim:

In a hammermill, a rotor including a shaft, a plurality of plates fixed to said shaft, a plurality of hammers carried by said plates, and means securing said hammers to said plates, each hammer being formed of a flat body having parallel opposite faces and parallel longitudinal edges disposed at right angles to said faces, each hammer having an opening at a point inwardly of the midpoint in the length thereof through which said securing means engages for pivotally mounting the hammer relative to said plates, the outer end of each hammer being of cylindrical conformation in an axial direction, the axis of which is coincident with the axis of said shaft, and a thin tungsten carbide strip fixed to the outer cylindrical end of each hammer and terminating at each end at the longitudinal edges of said hammer, each strip being of cylindrical conformation and having a width equal to the thickness of said body whereby upon wear a cutout is formed in the body inwardly of and adjacent the strip at the leading edge of the hammer.

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