

Nov. 21, 1933.

R. MAHAFFEY

1,936,025

GRINDING MILL

Filed April 11, 1932

2 Sheets-Sheet 1

Fig. 1.

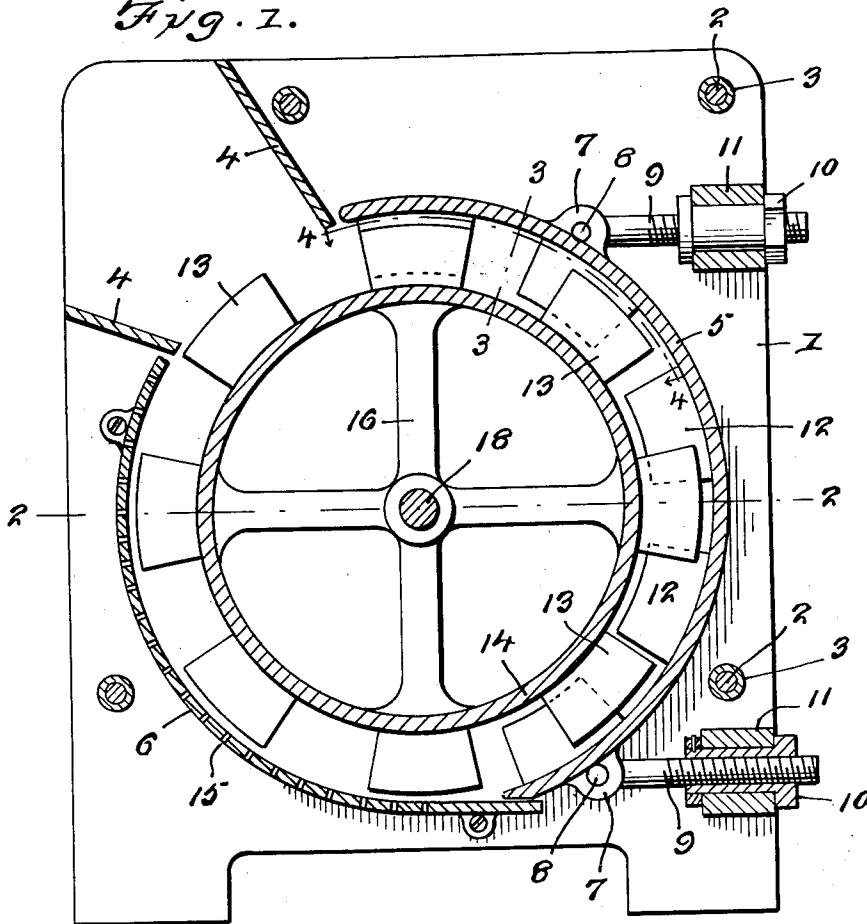
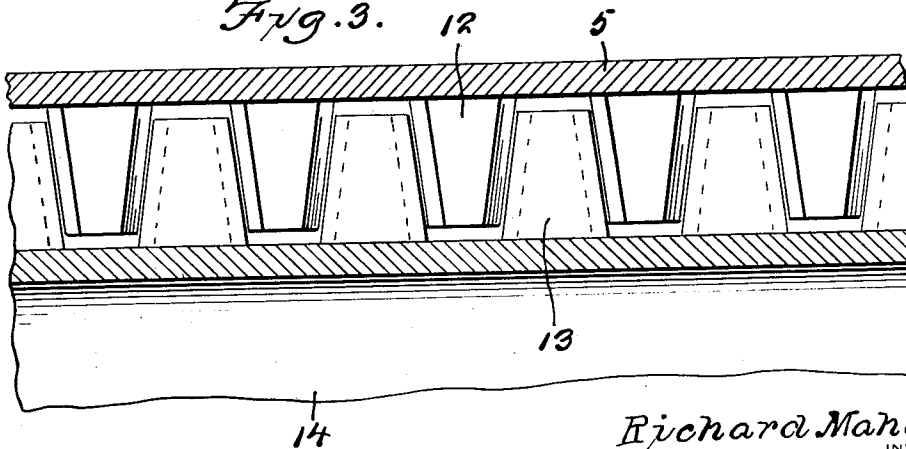


Fig. 3.



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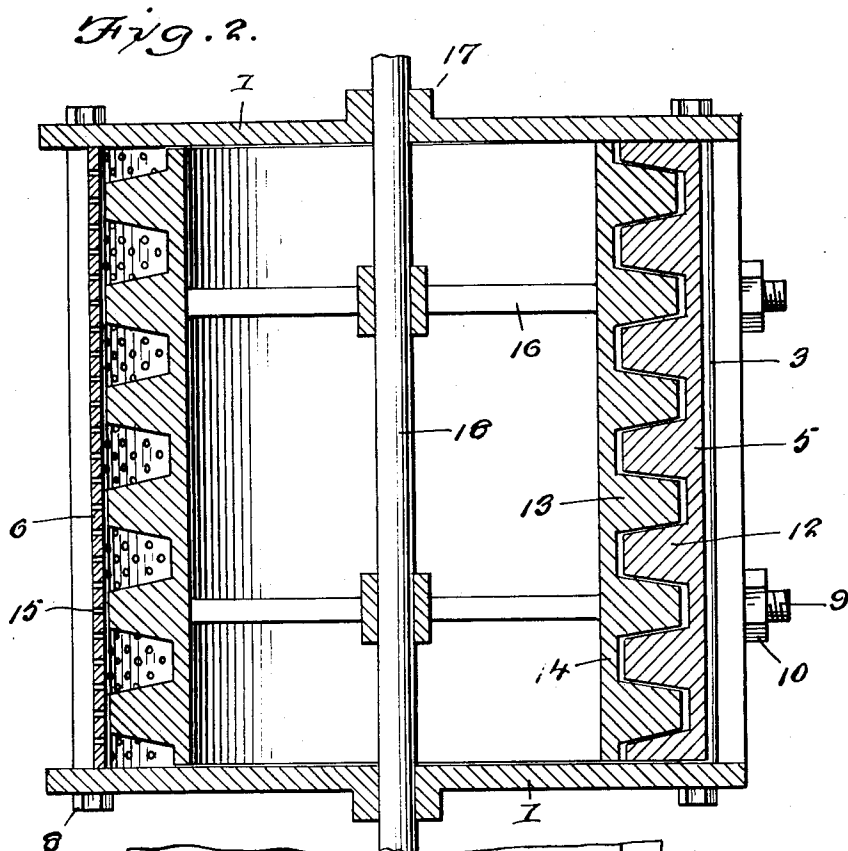
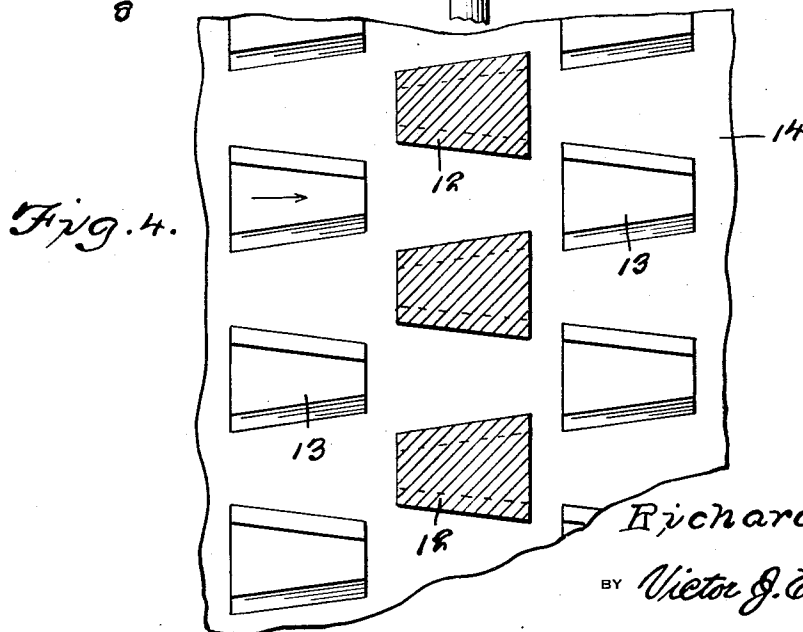
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UNITED STATES PATENT OFFICE

1,936,025

GRINDING MILL

Richard Mahaffey, Myerstown, Pa.

Application April 11, 1932. Serial No. 604,627

1 Claim. (Cl. 146—123)

This invention relates to grinding mills and its general object is to provide a mill primarily designed for crushing and grinding stock feed such as fodder, hay and straw in a complete and expeditious manner and with minimum power.

A further object of the invention is to provide a grinding mill of the character set forth, that is simple in construction, inexpensive to manufacture and extremely efficient in operation and service.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claim.

In describing my invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is a vertical sectional view taken through the mill which forms the subject matter of the present invention.

Figure 2 is a sectional view taken approximately on line 2—2 of Figure 1.

Figure 3 is a sectional view taken approximately on line 3—3 of Figure 1.

Figure 4 is a sectional view taken approximately on line 4—4 of Figure 1, looking in the direction of the arrows.

Referring to the drawings in detail, the reference numeral 1 indicates the side walls of the casing of my mill, and these side walls are in the form of substantially rectangular plates secured in spaced relation with respect to each other through the instrumentality of rods 2 having spacing sleeves 3 surrounding the same as best shown in Figure 1.

The side walls 1 have formed therewith or otherwise secured thereto in any well known manner strips 4 that are disposed in diverging relation with respect to each other to provide the hopper of my mill, through which the material to be ground is fed to the grinding elements which will be presently described.

Mounted for horizontal movement between the side walls 1 is an arcuate plate member 5 which cooperates with a substantially arcuate screen member 6 and side walls 1 to provide the casing of my mill and the arcuate plate member 5 has formed with the outer surface thereof apertured ears 7 within which are mounted pins 8 that are secured to the inner ends of screw bolts 9 as shown in Figure 1, and the screw bolts are threadedly secured in flanged sleeves 10 that are mounted for rotation in bearings 11, the latter being fixed in any well known manner, whereby rotation of the flanged sleeves 10 will move the arcuate plate member 5 horizontally to adjust

the latter for a purpose which will be presently apparent.

The arcuate shape plate 5 has extending inwardly therefrom a plurality of teeth 12 that are disposed in row formation and these teeth are in the form of tapered blocks that are provided with beveled side walls as clearly shown in Figures 3 and 4.

The teeth are all tapered in one direction and cooperating with the teeth 12 are teeth 13 that are likewise arranged in row formation on the outer surface of the cylinder 14 of my mill but it will be noted that the teeth 13 are tapered in a direction opposite from that of the taper of the teeth 12 and the teeth 13 are likewise provided with beveled side walls so that the teeth 12 and 13 are adapted for fitting relation with respect to each other upon rotation of the cylinder 14, it being obvious that the teeth 13 pass between the teeth 12, and the space between the cooperating teeth gradually decreases in width during the passage of the teeth 13 between the teeth 12, with the result the grinding and crushing action of the teeth is gradual, therefore the mill can be operated with minimum power and the chances of the mill becoming clogged is reduced to a minimum.

One end of the arcuate plate member 5 terminates adjacent the upper strip 4, while the opposite end of the plate member 5 is disposed in overlapping relation with the lower end of the screen member 6, and the upper end of the screen member 6 terminates adjacent the lower strip 4. The screen member 6 is secured to the side walls 1 through the medium of screws, and the screen member is likewise of arcuate shape and provided with a plurality of openings 15. By securing the screen member as shown, it can be readily removed and replaced should it be desired to change the same, with the result screen members having openings of various sizes may be utilized with my mill.

The cylinder 14 includes spider members 16 provided with collars that are secured to a shaft that is mounted for rotation in bearings 17, and the shaft which is indicated by the reference numeral 18 may have secured thereto a crank handle, if it is desired to operate the mill by hand but it is preferred that a pulley be secured to the shaft 18 to operate the mill by any suitable source of power.

From the above description and disclosure of the drawings, it will be obvious that I have provided a mill for grinding and crushing stock feed and the whole feed is fed to the teeth through the medium of the hopper. The teeth will act on the whole feed to crush and grind the same until it is fine enough to pass through the openings of the screen member. By employing the adjusting means for the arcuate plate member as shown,

the teeth 12 thereof can be adjusted with respect to the teeth 13 and cylinder and this adjustment is such that the plate in its entirety can be adjusted or the upper or lower portions thereof can be adjusted singly.

It is thought from the foregoing description that the advantages and novel features of my invention will be readily apparent.

I desire it to be understood that I may make changes in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claim.

What I claim is:

A mill comprising a casing including side walls, an arcuate plate between the side walls, an arcuate screening member cooperating with the side walls and arcuate plate to complete the casing, said arcuate plate and screening member having their lower ends overlapping and their upper ends

spaced from each other, diverging strips extending from the spaced ends to provide a hopper, a cylinder mounted for rotation between the plate and screening member, elongated teeth extending from said cylinder in row formation and all being tapered in one direction and provided with smooth beveled side walls, teeth extending from the arcuate plate in row formation and being of a shape similar to that of the teeth of the cylinder but tapered in an opposite direction for fitting association therewith, adjusting means for the arcuate plate and including ears formed thereon, screw bolts pivoted in said ears, sleeves mounted for rotation and threadedly receiving the screw bolts for moving the arcuate plate in its entirety for adjusting the teeth thereof with respect to the teeth in the cylinder, and said adjusting means being operable for adjusting either the upper or lower portions of said arcuate plate.

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