April 15, 1930. T. TAMEN 1,755,037

FEED GRINDER

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Fig. 1.

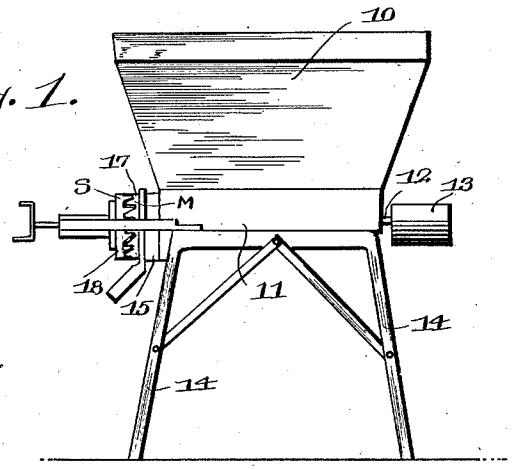


Fig. 3.

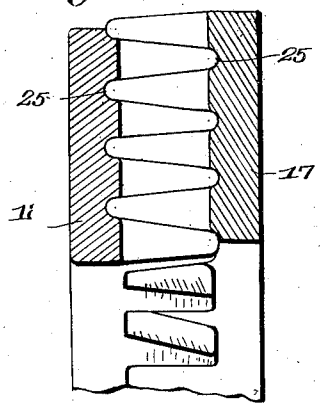


Fig. 2.

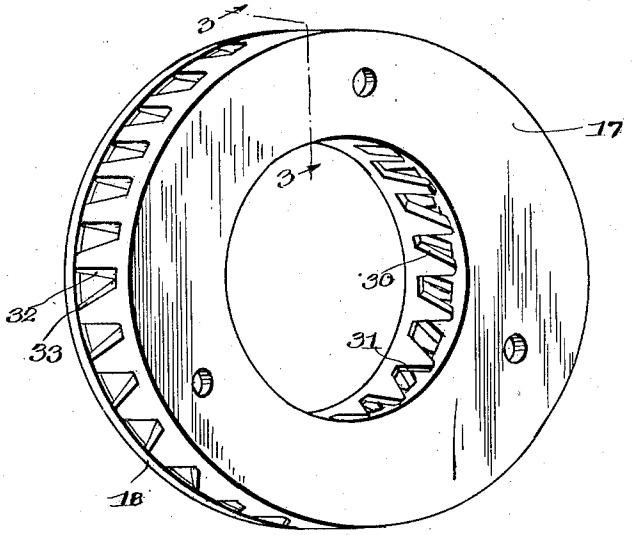
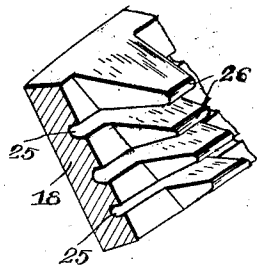


Fig. 4.



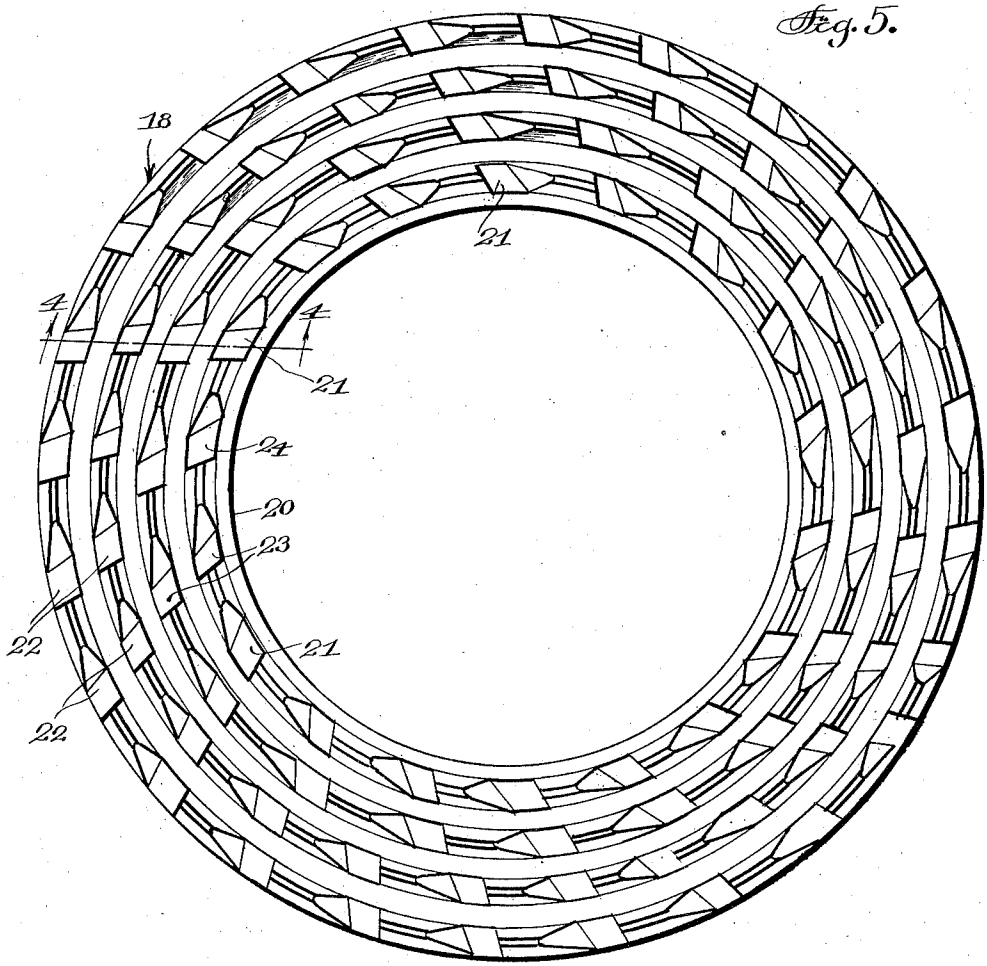
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FEED GRINDER

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Fig. 5.



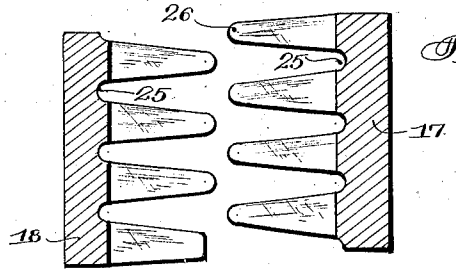


Fig. 6.

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UNITED STATES PATENT OFFICE

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FEED GRINDER

Application filed July 23, 1928. Serial No. 294,842.

This invention relates to feed grinders.

An object of the invention is the provision of a grinder having a plurality of concentric rows of teeth projecting from oppositely disposed plates, the teeth movable in an interfitted relation so that the feed passing through the interstices between the teeth will be thoroughly ground and ejected at the periphery of the disc.

A further object of the invention is the provision of a grinder for feed in which a pair of discs are mounted in spaced parallel relation with one disc moving relative to the other disc, each disc having a plurality of teeth projecting laterally from one face and moving in interfitted relation with each other, the edges of the teeth on one disc being inclined in a direction which is opposite to the direction of inclination of the teeth on the other disc, said teeth being arranged concentrically in sections which are grouped around each disc, with certain of the teeth in one section being located in staggered relation with the remaining teeth of the section.

This invention will be best understood from a consideration of the following detailed description in connection with the accompanying drawings; nevertheless, it is to be understood that the invention is not confined to the disclosure being susceptible of such changes and modifications as shall define no material departure from the salient features of the invention as expressed in the appended claim.

In the drawings:—

Figure 1 is a side view in elevation of a grinder showing my invention applied thereto,

Figure 2 is a view in perspective of the grinder shown in detached relation,

Figure 3 is a section taken along the line 3—3 of Fig. 2,

Figure 4 is a fragmentary view in perspective of a section of one of the grinders,

Figure 5 is a plan view of one of the sections of the grinder,

Figure 6 is a fragmentary vertical section of a pair of the grinders located in detached relation.

Referring more particularly to the drawings 10 designates a hopper which is adapted to receive the feed having a portion 11 in which a feeding device is adapted to be driven by a shaft 12, and which in turn is revolved by a pulley 13. The hopper is supported by means of legs 14. A discharge sleeve 15 is mounted on the end of the casing 11 and carries a discharge chute 16. A section 17 of the grinder is secured to the sleeve 15, while a rotatable section 18 is connected with the outer end of the shaft 12 and revolved thereby.

Each grinding element consists of a ring 20 formed of metal and divided into a plurality of sections (in this case six in number) and which is defined by the teeth 21. It will be noted that the outer concentric rows 22 of the teeth are arranged in a uniform manner around the circular plate 20, while teeth 23 and 24 are located in staggered relation with respect to the adjacent teeth 22.

Between each concentric row of teeth are provided grooves 25 which are adapted to receive the outer free ends 26 of the teeth on an adjacent plate.

It will be noted that the side edges 30 and 31 of the teeth of the plate 18 are inclined in an opposite direction to the side edges 32 and 33 respectively, of the plate 17, so that a plurality of cutting edges on the sets of teeth on both plates are presented towards each other in order to insure a maximum grinding of the feed passing through the teeth. Furthermore, the openings between the teeth at the inner periphery of each plate provides means for receiving the feed which is adapted to be ground, and this feed is carried around through the grinding portion of the circumference while being continuously ground.

It will be noted that the grooves 25 have greater depth than the transverse grooves between the successive rows of the teeth. The object of this arrangement is to prevent the feed which is being ground from passing through the burrs past the ends of the teeth when the burrs are spread apart for coarse grinding. When the burrs are placed in close contacting relation, the feed will be ground very fine but as the burrs are spread

apart, the size of the openings between the teeth permits the feed to pass through the same at a greater velocity. It will also be appreciated that the size of the opening between the teeth gradually increase as the burrs are spread apart, but this increase of the openings or spaces between the teeth rapidly becomes greater as the burrs are moved outwardly from each other, due to the tapering of the teeth.

I claim:—

A grinding device comprising a pair of spaced discs having laterally projecting teeth in an interfitted relation, each disc being divided uniformly into sections, said teeth being arranged in concentric circles with the teeth in each circle being uniformly spaced, each section having an initial series of teeth on each section being arranged in a straight line transversely of the concentric rows, the succeeding teeth in the innermost concentric rows being disposed in staggered relation with the teeth succeeding the initial series in the outer concentric rows, the leading edge of each tooth being sheared off at an angle.

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