L. AXTELL.

GRINDING MACHINE.

APPLICATION FILED SEPT. 26, 1912.

1,067,577.

Patented July 15, 1913.

Fig. 1.

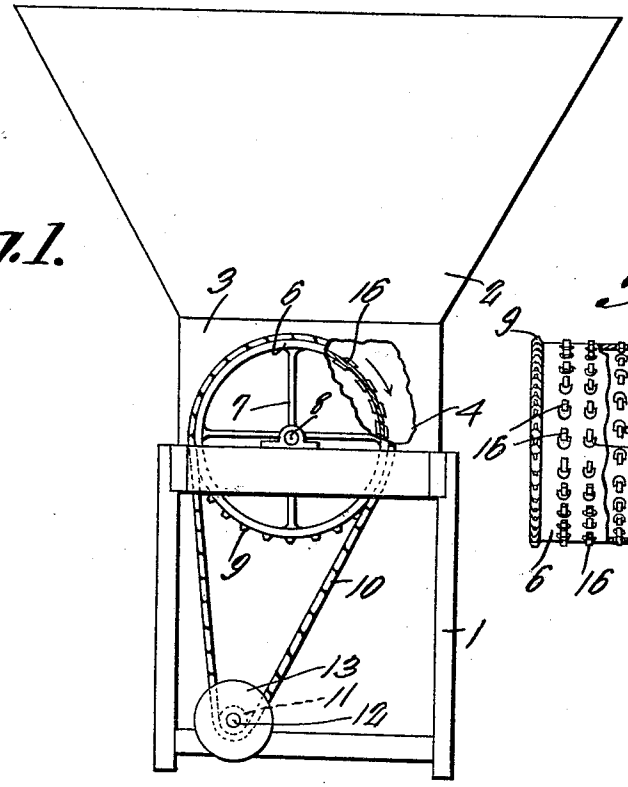


Fig. 2.

Fig. 4.

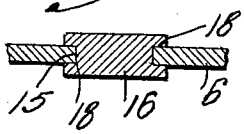


Fig. 3.

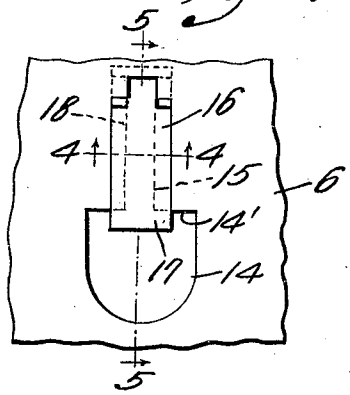


Fig. 5.

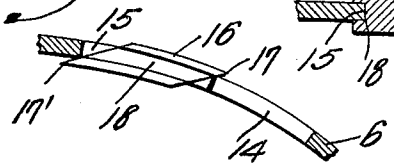
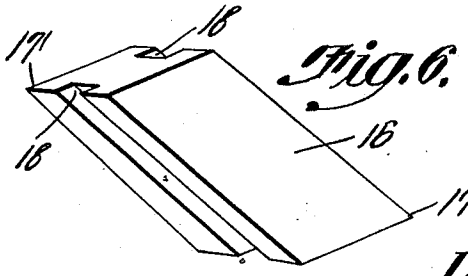


Fig. 6.



Witnesses

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GRINDING-MACHINE.

1,067,577. Specification of Letters Patent. Patented July 15, 1913.

Application filed September 25, 1912. Serial No. 722,307.

To all whom it may concern:

Be it known that I, LUCIUS AXTELL, a citizen of the United States, residing at Deposit, in the county of Broome and State of New York, have invented a new and useful Grinding-Machine, of which the following is a specification.

The present invention relates to improvements in grinding machines, the primary object of this invention being the provision of a machine especially adapted for grinding casein and in which the grinding cylinder is provided with a plurality of inlet perforations, there being a reversible cutting tooth for each perforation removably attached to the cylinder so that the same may be removed and reversed and sharpened when necessary.

The present machine is especially designed for reducing to a granular form green casein curd, a very hard and tough substance made from fermented skimmed milk.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings—Figure 1 is a side elevation of the complete grinder with a portion of the hopper broken away and the adjacent portion of the cylinder shown in section. Fig. 2 is a view of the cylinder *per se*, partly in section. Fig. 3 is an enlarged detail plan view of a portion of the cylinder adjacent one of the inlet apertures and teeth. Fig. 4 is a section taken on line 4—4 of Fig. 3. Fig. 5 is a section taken on line 5—5 of Fig. 3. Fig. 6 is a perspective view of one of the teeth.

Referring to the drawings, the numeral 1 designates the supporting structure of the machine, which has mounted thereupon the enlarged tapered hopper 2, which terminates in the confining hopper 3 which at one side as at 4 is enlarged to accommodate the greater bulk of the material at such point during the grinding or cutting operation.

The grinding cylinder 6 which is preferably made of a piece of sheet steel is made in the form of a cylindrical or frusto-conical member, the same being provided with open ends, so that the ground material will be led out of one of such open ends. In order to properly mount the grinding cylinder 6, a spider 7 is provided at each end and disposed concentrically of the spider and fast thereto is a shaft 8. In order to properly rotate the grinding cylinder 6, the peripheral sprocket teeth 9 are keyed upon the extreme outer end of the same beyond the confining hopper 3 and has disposed thereupon the sprocket chain 10 which receives its power from the small sprocket 11 mounted upon the power shaft 12, said power shaft 12, as clearly shown, being provided with the drive pulley 13. The body of the cylinder or drum 6 is provided with the peculiar shaped perforations 14 provided with the abrupt shouldered portions 14′ and with the reduced slotted portion 15. In each reduced slotted portion 15 throughout the drum, is inserted the removable cutting tooth 16.

Each cutting tooth 16 as clearly shown is provided with the two oppositely disposed cutting edges 17—17′, while upon the two sides of the teeth are provided the two grooves 18 which as shown provide an intermediate portion substantially the same width as the slot 15 so that each tooth may be inserted within its respective slot 15 so as to present either edge 17 or 17′ in the position as shown in Fig. 5, so that the material cut or ground from the exterior of the cylinder 6 will be directed through the aperture 14 into the cylinder while the cut or ground pieces due to the rotation of the cylinder are fed through one of the open ends of the cylinder.

By this construction, it will be seen that the teeth are readily removed for sharpening and repair, and by reason of the fact that the two cutting edges 17—17′ are provided, the tooth may be removed and reversed when necessary.

What is claimed is:

1. In a grinding medium for a grinding machine, a hollow sheet metal member having a plurality of slots therethrough, each slot being provided with an enlarged material directing inlet and a reduced tooth receiving portion, and a cutting tooth slidably mounted within the reduced tooth receiving portion and having the cutting edge thereof projected beyond the junction between the reduced and enlarged portion of the slot, said cutting portion being beyond the facial plane of the hollow sheet metal member.

2. In a grinding medium for a grinding

machine, a hollow sheet metal member having a plurality of slots therethrough, each slot being provided with an enlarged material directing inlet and a reduced tooth receiving portion, and a removable tooth having oppositely disposed recessed portions providing a reduced central portion for the introduction of the tooth within the reduced slot and with two oppositely inclined cutting edges one of which at a time is adapted to be disposed exteriorly of the surface of the grinding member and beyond the junction of the enlarged and reduced portions of the slot.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

LUCIUS AXTELL.

Witnesses:
WM. M. GREGORY,
PAULINE MONSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."