June 5, 1923.

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J. W. BARWELL ET AL

FEEDER FOR MILLS

Filed Jan. 18, 1922

Fig. 1.

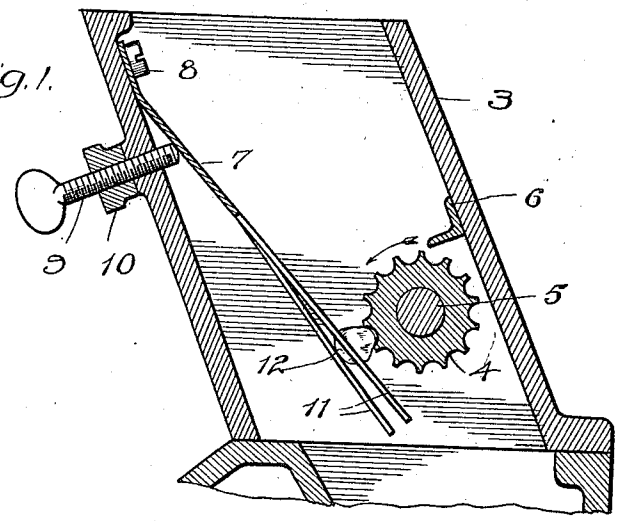
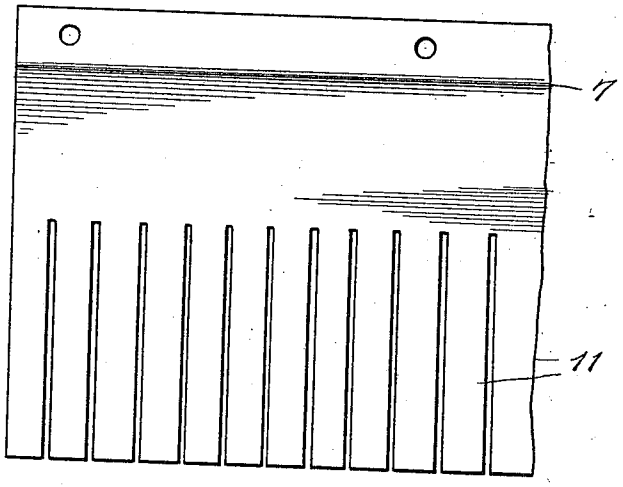


Fig. 2.



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UNITED STATES PATENT OFFICE.

JOHN W. BARWELL, JEROME WARD, NICOLAY NELSON, JOSEPH HINGHER, WALTER E. BOOTH, AND WILBUR L. BLOWS, OF WAUKEGAN, ILLINOIS, ASSIGNORS TO BLATCHFORD CALF MEAL COMPANY, OF WAUKEGAN, ILLINOIS, A CORPORATION OF ILLINOIS.

FEEDER FOR MILLS.

Original application filed April 17, 1919. Serial No. 290,273. Divided and this application filed January 18, 1922. Serial No. 530,030.

To all whom it may concern:

Be it known that we, JOHN W. BARWELL, JEROME WARD, NICOLAY NELSON, JOSEPH HINGHER, WALTER E. BOOTH, and WILBUR L. BLOWS, citizens of the United States, residing at Waukegan, in the county of Lake and State of Illinois, have invented certain new and useful Improvements in Feeders for Mills, of which the following is a specification, this being a division of our former application for feeding apparatus, filed April 17, 1919, Serial No. 290,723.

This invention relates to a device or apparatus for feeding grain or the like into mills, particularly such as centrifugal mills where the grain is drawn in by the suction produced by the mill.

It is particularly directed to means whereby the grain will be fed with a substantially constant flow regardless of stones, lumps or hard particles which may be in the grain and which otherwise would cause an uneven feeding or flow of the grain.

The objects of this invention are to provide a new and improved feeding device for stabilizing the flow of grain into a mill; to provide an adjustable feeding mechanism and in general to provide such improvements and novel features as will appear from the following description taken in connection with the accompanying drawings in which;

Figure 1 is a longitudinal sectional view of the feeding device; and

Figure 2 is a detail of the feed regulating plate.

In the particular form of the invention shown in these drawings, a chute or conduit 3 provides a passageway for the grain as it goes into the mill. In order that the feeding apparatus may function properly it is desirable that the chute 3 be kept full of grain so as to prevent any considerable amount of air from being drawn through the same except as it comes in with the grain. In order to properly regulate the feed, we provide a feed roller 4 which is mounted on a shaft 5 which passes through the side walls of the chute and which may be supported and driven in any suitable manner (not shown). The roller 4 is preferably provided with longitudinal grooves or pockets which assist in the feeding action. A guide or angle bar 6 directs the material in the upper part of the chute onto the roller 4 which is rotated in the direction indicated by the arrow. A guide or feed plate 7 extends across the chute 3 and coacts with the roller 4. This plate is rigidly fastened at its upper end to the back of the chute by means of screws or the like 8 and is preferably made of resilient material such as sheet metal or the like and bent so that it swings freely and tends to swing downward and away from the roller. The plate is adjusted toward the wheel by means of set screws 9 which pass through the back of the chute and may be held in adjusted position by lock nuts 10. The lower portion of the plate 7 is split or otherwise made to form fingers 11 as shown particularly in Figure 2. These fingers are preferably made somewhat narrow for the purposes which will be presently described.

The grain or other material to be fed into the mill is supplied to the chute 3 in any desired manner but preferably so that the chute is kept substantially full. The feed may be readily adjusted or regulated by turning the set screw 9 in order to adjust the fingers toward or away from the roller 4 and thereby decrease or increase the discharge passage. If any hard or unyielding object such as indicated at 12 enters with the grain or other material it will be pressed against one or more of the fingers 11 which will readily yield to permit it to pass by the roller so that the entire guide plate 7 is not swung or pressed away from the roller by such unyielding object. This will prevent the feed opening from being temporarily enlarged to any considerable extent and thereby permit an excess of material to pass through. This is a very desirable feature in connection with grain mills as the grain is very apt to have a considerable quantity of unyielding objects therein which tend to make the feed uneven and thereby interfere with the proper operation of the mill. It will be understood that these objects may be separated from the grain by our separating device which is shown in the co-pending application so that these objects do not pass into the mill.

The feeds for different mills are of course arranged in different ways and our feeding apparatus will be modified in order to accommodate it to different mills and therefore we do not wish to be limited to the exact con-

struction or arrangement herein shown and described except as pointed out in the following claims.

We claim:

1. A hopper having therein a rotatable feed roller with longitudinally extending pockets therein and a resilient plate rigidly secured at its upper end to an inner face of said hopper and having a body portion with spring fingers at its lower end and means for adjusting the said plate so as to regulate the distance of said fingers from said feed roller.

2. The combination with a chute, of means for regulating the passage of grain or the like therethrough and for maintaining a sufficient supply of grain therein to prevent the free passage of air through the chute, said means comprising a transverse rotatable feed member, means for preventing the grain from passing between said member and one side of the chute, a plate interposed between said member and the opposite side of the chute and securely fastened to the opposite side, said plate having resilient fingers arranged tangentially to the feed member and adapted to coact therewith to regulate the passage of the grain through the chute and means for regulating the position of the fingers with respect to the feed member.

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