

No. 800,073.

PATENTED SEPT. 19, 1905.

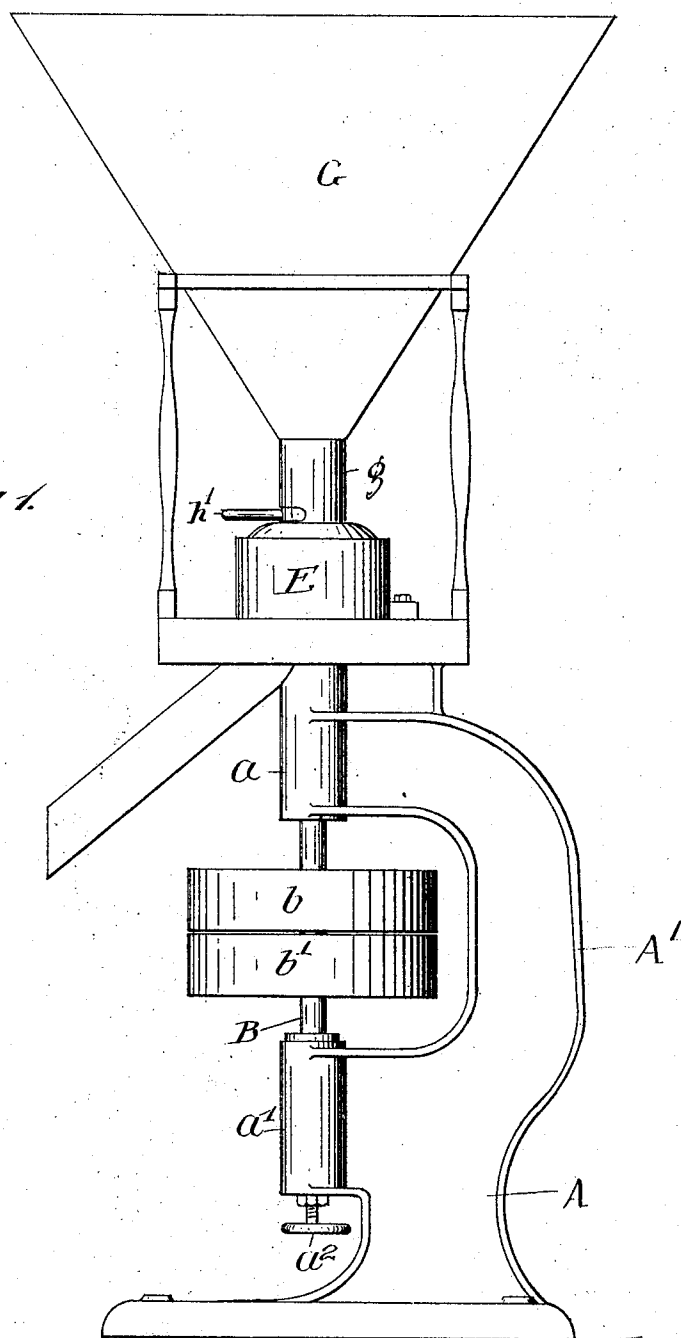
J. CIHALEWSKI.

MILL.

APPLICATION FILED JAN. 19, 1905.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses:
Jos. M. Mayer.
A. M. Connell

Inventor
Julijan Cihalewski
by Ritten, Miles & Shroyer
Attorneys

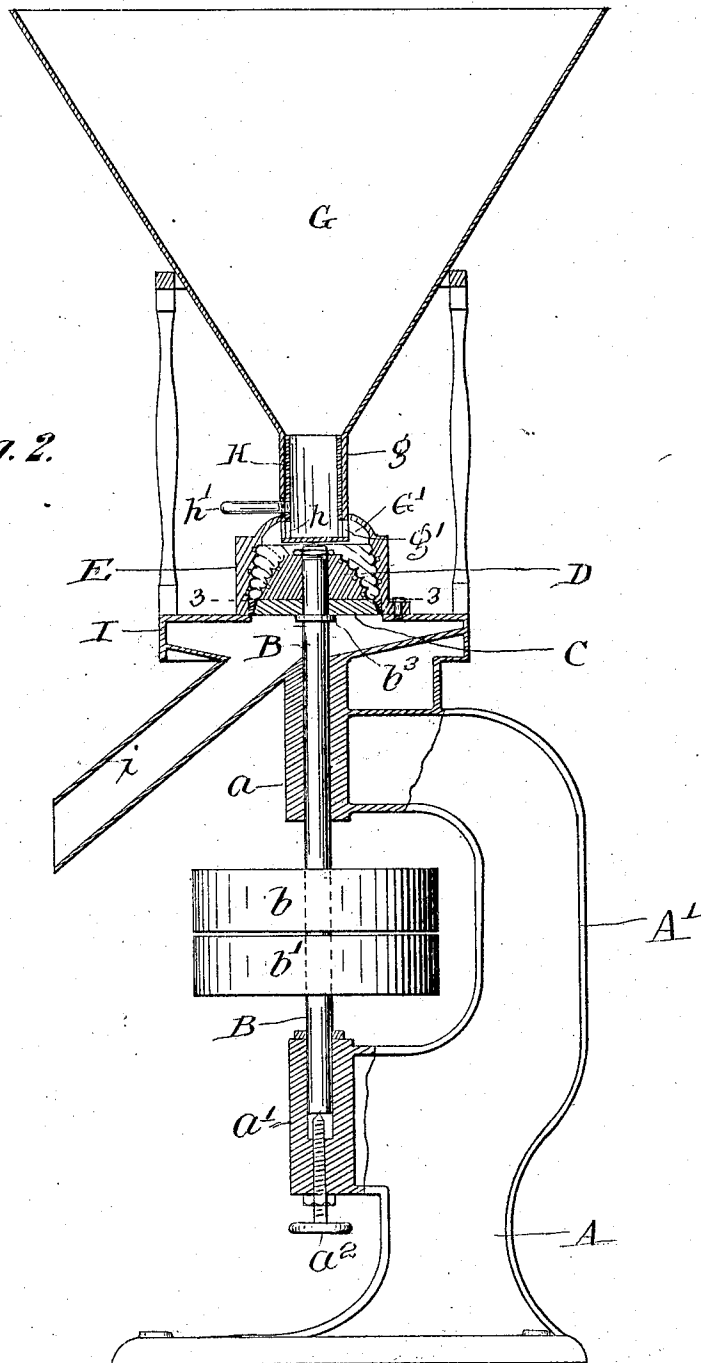
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MILL.
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3 SHEETS—SHEET 2.

Fig. 2.



Witnesses:

Geo. M. Mayer
H. M. Courmell

Inventor
Julian Cihalewski
By Arthur H. Shaw
Attorneys.

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MILL.

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3 SHEETS—SHEET 3.

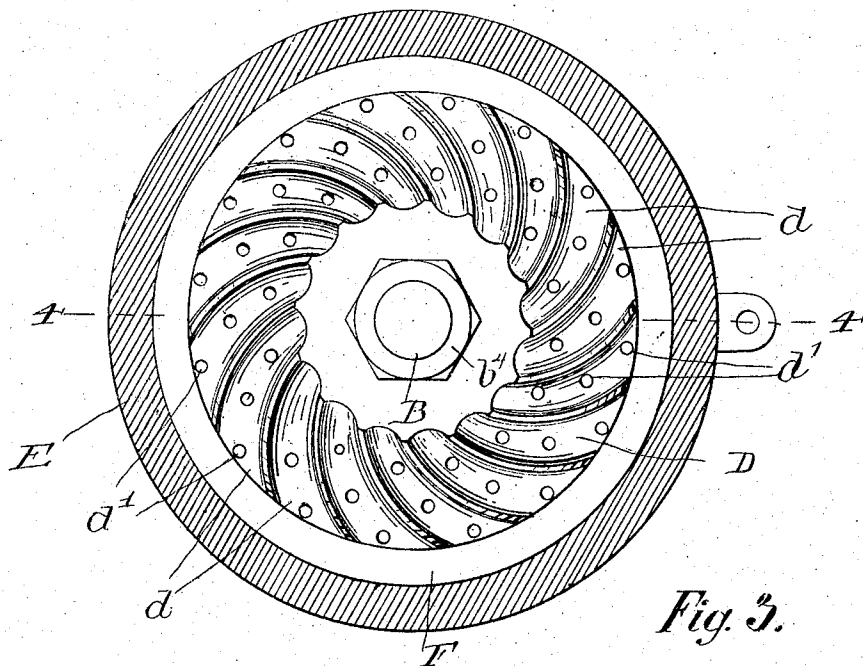


Fig. 3.

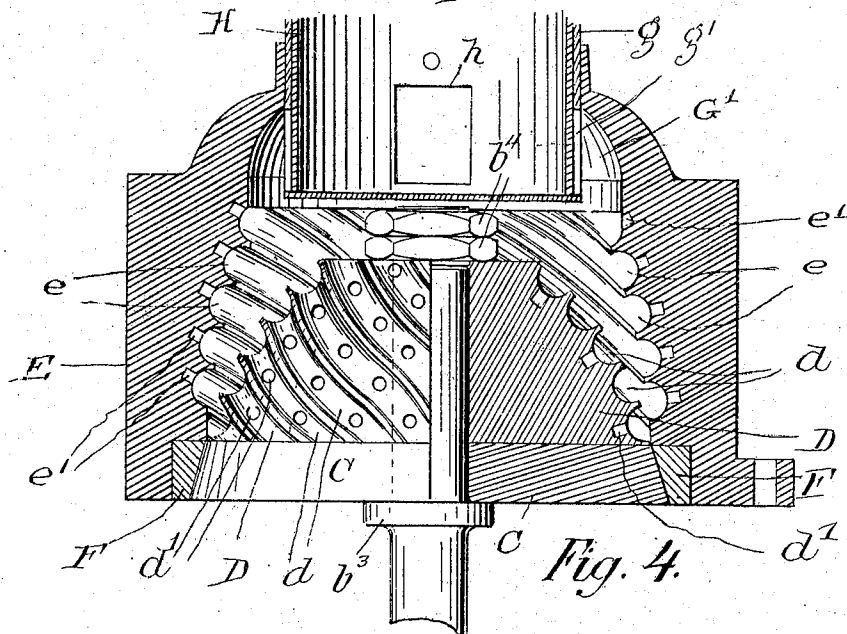


Fig. 4.

Witnesses:

Geo. M. Wager

N. M. Cornwell

Inventor

Julian Cihalewski,

by

Ritau, Miles & Shurway,

Attorneys

UNITED STATES PATENT OFFICE.

JULIJAN CIHALEWSKI, OF CHICAGO, ILLINOIS, ASSIGNOR TO J. CIHALEWSKI FARM MILL MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

MILL.

No. 800,073.

Specification of Letters Patent.

Patented Sept. 19, 1905.

Application filed January 19, 1905. Serial No. 241,753.

To all whom it may concern:

Be it known that I, JULIJAN CIHALEWSKI, a subject of the Emperor of Austria-Hungary, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Mills, of which the following is a specification.

My invention relates to certain new and useful improvements in mills; and its object is to produce a device of this class which shall have certain advantages, which will appear more fully and at large in the course of this specification.

To this end my invention consists in certain novel features, which are shown in the accompanying drawings as embodied in my preferred form of construction.

In the aforesaid drawings, Figure 1 is an elevation of my improved device. Fig. 2 is a view partly in elevation and partly in central vertical section. Fig. 3 is a view partly in plan and partly in horizontal section, the line being indicated at 3 3 in Fig. 2; and Fig. 4 is a detail central vertical section in the line 4 4 of Fig. 3, a portion of the device being shown in elevation.

Referring to the drawings, A is a suitable base having an upwardly-projecting arm A', which carries two vertical journals a a'. The journal a' is provided at its lower end with an adjusting-screw a², conical at its upper end to furnish a bearing for a shaft B, which extends through the journals a a' and bears two pulleys b b', one loose and the other fast on the shaft. On the upper end of the shaft B is a plate C, preferably of hard steel, the same being frusto-conical in form, as illustrated. The plate rests upon a flange b³ on the shaft B. Above this plate is secured a grinding-cone D, the general form of which is clearly indicated in the drawings. This cone is provided with a plurality of steeply-spiral grooves d, each of said grooves having a plurality of pits d' along its center line. The plate and cone are clamped on the shaft B by nuts b⁴, threaded upon the upper end of the shaft. Surrounding the grinding-cone D is a box E, arranged to receive the grinding-cone D, the space surrounding said cone tapering off toward the bottom thereof. The hollow of the box E has a plurality of steeply-conical grooves e, similar to the grooves d on the grinding-cone and like them provided with pits e'.

A grinding-ring F is supported in the lower end of the box E and fits the frusto-conical surface of the plate C.

A hopper G is supported by the frame of the machine, the same opening into a tube g, the lower end of which is perforated at g' to open into a flaring chamber G', communicating with the box E. A thimble H is provided within the tube g, the same having perforations h, which can be brought into registration with the perforations g'. A handle h' is provided by which the thimble can be rotated and the amount of material to be fed to the mill regulated. A second hopper I collects the material which passes through the mill and discharges it through a spout i.

The operation of my improved device will be readily apparent. The grain to be ground is placed in the hopper and passes down into the box E, where it is caught between the conical grooves of the box and grinding-cone and broken up. This crushing is assisted by the pits in the grooves, which greatly roughen the surfaces and also by the fact that the grooves being spirally displaced forces the material downward with a screw action into the most constricted portion of the space between the box and grinding-cone. After the grain is roughly broken up in this way it passes into the very narrow space between the grinding-ring F and plate C and is very finely pulverized, eventually passing out into the second hopper. The fineness of the meal can be regulated by the screw a², by which the space between the grinding-ring F and plate D can be varied as desired.

My improved device is particularly advantageous in that the grinding-surfaces of the box and grinding-cone are provided with pits in the spiral grooves by which an additional roughness is given to the surface which appears after a long period of wear, even after the grooves are very much worn down. These pits assist very greatly in the breaking up of the grain and make the device much more effective. The device is also advantageous in that the frusto-conical plate C and grinding-ring F are separately formed and can be made of hard steel and replaced, as desired. These parts do the actual grinding in the mill and are much more subject to rapid wear than the other parts. It is therefore desirable that they be formed so as to be readily

capable of replacement and so that they can be formed of harder material than is necessary for the other parts of the device.

I realize that considerable variation is possible in the details of this construction without departing from the spirit of the invention, and I therefore do not intend to limit myself to the specific form herein shown and described.

I claim as new and desire to secure by Letters Patent—

1. In a device of the class described, the combination with a box having a roughly-conical chamber and means for feeding grain thereto, of a conical grinding-cone within said box, spiral grooves on the opposing faces of said box and cone, and pits in said grooves.

2. In a device of the class described, the combination with a box having a roughly-conical chamber and means for feeding grain thereto, of a conical grinding-cone within said box, spiral grooves on the opposing faces of said

box and cone, and pits in said grooves, a frusto-conical plate of hard material below said grinding-cone and removable therefrom and a removable grinding-ring supported by the box and opposed to the frusto-conical surface of said plate.

3. In a device of the class described, the combination with a box having a roughly-conical chamber and adjustable means for feeding grain thereto, of a conical grinding-cone within said box, spiral grooves on the opposing faces of said box and cone, and pits in said grooves.

In witness whereof I have signed the above application for Letters Patent, at Chicago, in the county of Cook and State of Illinois, this 17th day of January, A. D. 1905.

JULIJAN CIHALEWSKI.

Witnesses:

GEO. M. MAYER,

CHAS. O. SHERVEY.