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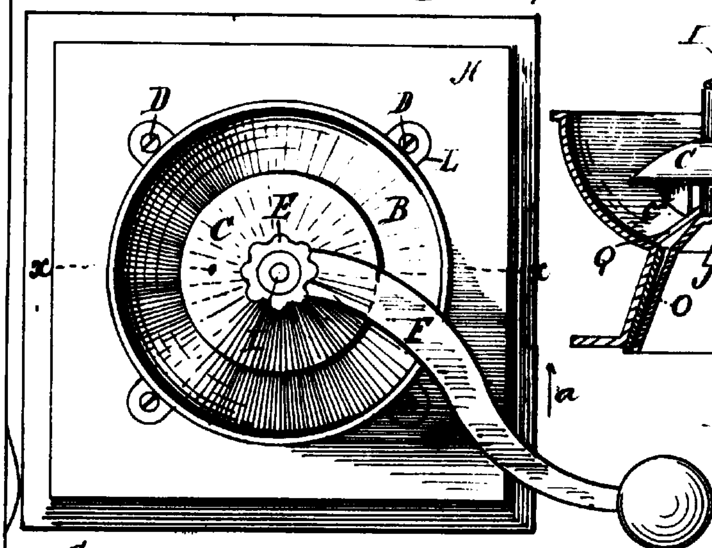


Fig 1

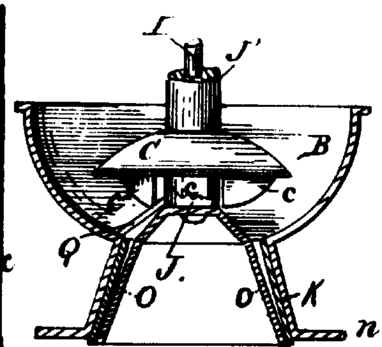


Fig 3

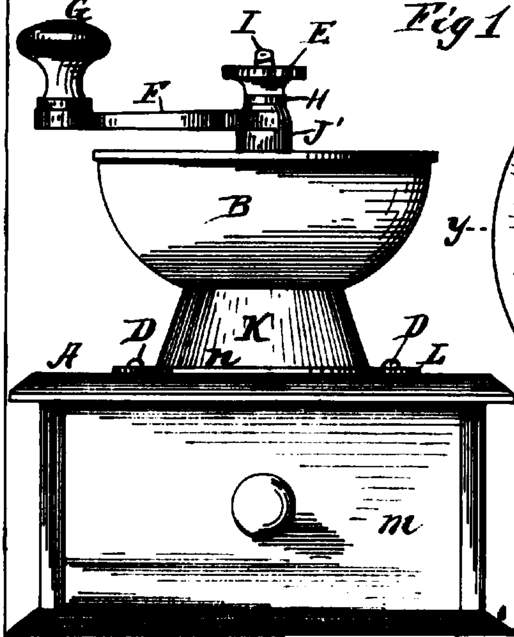


Fig 2

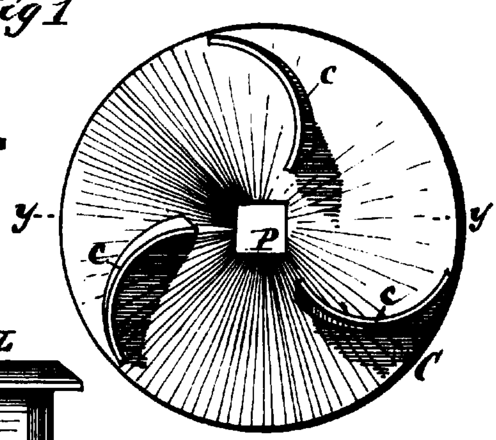
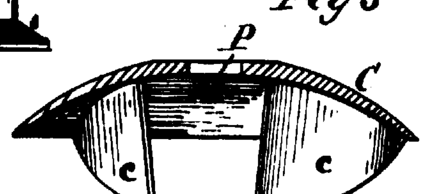


Fig 4

Fig 5



Chicago Ill
November 25th 1887 Certified to be the Drawing's referred to in the Specification hereunto annexed

Witnesses

H. C. Corliss
Harry Bitner

Inventor
Gus Tobias

rotary motion. With the construction last described, the shield need not rotate. The preferable construction, however, in point of simplicity and cheapness, is that shown in the drawings.

Having thus described my invention, I claim as new:-

1. The combination, in a coffee-mill, of the grinding-surfaces O K, and rotary force-feed deflectors c c c, arranged and operating substantially as described.

2. The combination, in a coffee-mill, of the grinding-surfaces O K, and the rotary shield C provided with the deflectors c c c; substantially as described.

Freeport, 25th November, 1887. Ogmus Potts

Signed in the presence of)
Charles Kircher)
Mathias Redlinger.)

C.15.

To All Whom It May Concern:

Be it known that I, Cyrus Tobias, of the City of Freeport, in the County of Stephenson and State of Illinois, one of the United States of America, gentleman, have invented certain new and useful improvements in Coffee-Mills, and I do hereby declare that the following is a full, clear, and exact description of the same, reference being made to the accompanying drawings in which:

Figure 1 is a plan of a coffee-mill embodying my improvement;

Figure 2 is a front elevation thereof;

Figure 3 is a view, partly in central vertical section and partly in elevation, of the working parts of the mill;

Figure 4 is a plan showing the under side of the shield C whose use will be herein explained; and -

Figure 5 is a central vertical section of said shield, showing two of the force-feed wings or deflectors, c c c, hereinafter described.

The first part of my invention relates to the combination of a force-feed with a coffee-mill, in such manner that the force-feed shall force the coffee-grains, or other material to be ground, inward and downward into the annular space between the grinding-surfaces; the object of this part of my invention being to accelerate the feed of the materials and increase the working capacity of the machine.

The second part of my invention relates to

the combination of a force-feed with a shield to prevent the materials from being thrown out of the hopper; the object of this part of my invention being to combine both of said advantages in one structure.

In the drawings, A is the ordinary coffee-mill box, and m is a drawer sliding through an opening in one of the sides thereof.

n is a base-plate resting on and fastened to the top of the box, and supporting a frusto-conical shell K, at the upper end of which is a hopper B, - the base-plate, shell, and hopper being all formed either of one integral piece or of separate pieces rigidly fastened together, as the constructor may prefer. The shell K is formed with grinding-teeth on its inner surface, or provided with a detachable grinding-shell fastened within it. A vertical tubular bearing J is connected to the shell K, or hopper, or both, by means of arms Q either integral with or securely attached to the bearing and the supporting-surface. A grinding-cone O is suspended within the shell K by means of a bolt I, screw-threaded at its upper end, and squared for a sufficient distance below the threaded portion to receive the internally-squared hub J' of a crank F. A regulating nut E engages the screw-threaded portion of the bolt, and serves as a means of raising or lowering the cone O.

Below the hub J', and above the bearing J, is a concavo-convex shield C having a square central opening P

fitting the bolt I, whereby the shield is caused to turn with the bolt, hub, and crank. The concave face of the shield is downward, and is of greater diameter than the top of shell K, so as to intercept any grains of coffee or spice thrown upward by the burrs and prevent their escape from the hopper. The under side of the shield is provided with a series of curved triangular force-feed wings or deflectors c c c, whose lower edges extend downward and inward from the perimeter of the shield, and whose curved upper edges are slightly eccentric to the shield; whereby the deflectors, when the crank is turned in the proper direction, tend to force the coffee inward and downward, crowding it more rapidly into the annular space between the grinding-surfaces O K, and very considerably increasing the working capacity of the mill.

It is not necessary that the relative proportions of the several parts of the mill should be the same as shown in the drawings; but these proportions have proved satisfactory in practice and are recommended for use. Nor is it necessary that the center-bolt I and the opening P should be square; but only that they should be of such shape that the shield and bolt will turn with the crank, and that the parts can be conveniently put together. The force-feed deflectors c c c may be made independent of the shield C, if preferred, in which case they must have a supporting hub of their own which turns with the bolt and crank, so as to give them a positive

G.10.

rotary motion. With the construction last described, the shield need not rotate. The preferable construction, however, in point of simplicity and cheapness, is that shown in the drawings.

Having thus described my invention, I claim as new:-

1. The combination, in a coffee-mill, of the grinding-surfaces O K, and rotary force-feed deflectors c c c, arranged and operating substantially as described.

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