H. STUTTLE.

COFFEE-MILL.

No. 187,567. Patented Feb. 20, 1877.

Fig. 2

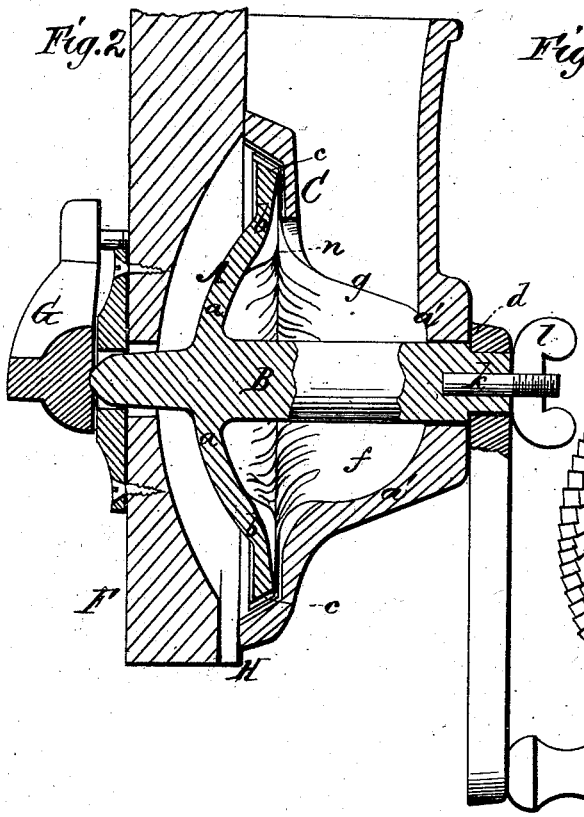


Fig. 1

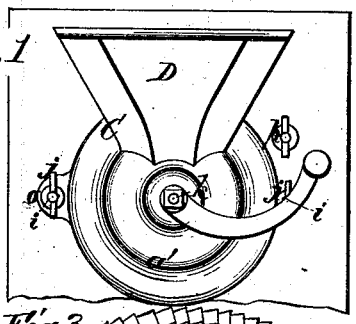


Fig. 3

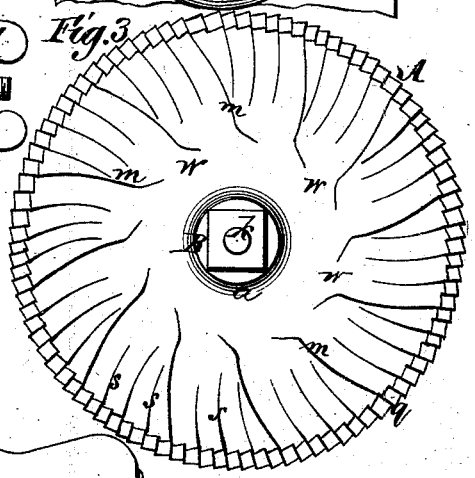


Fig. 5

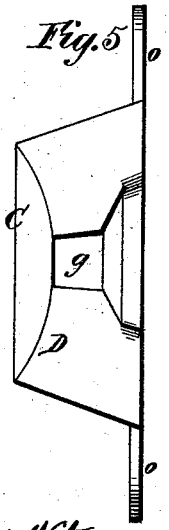
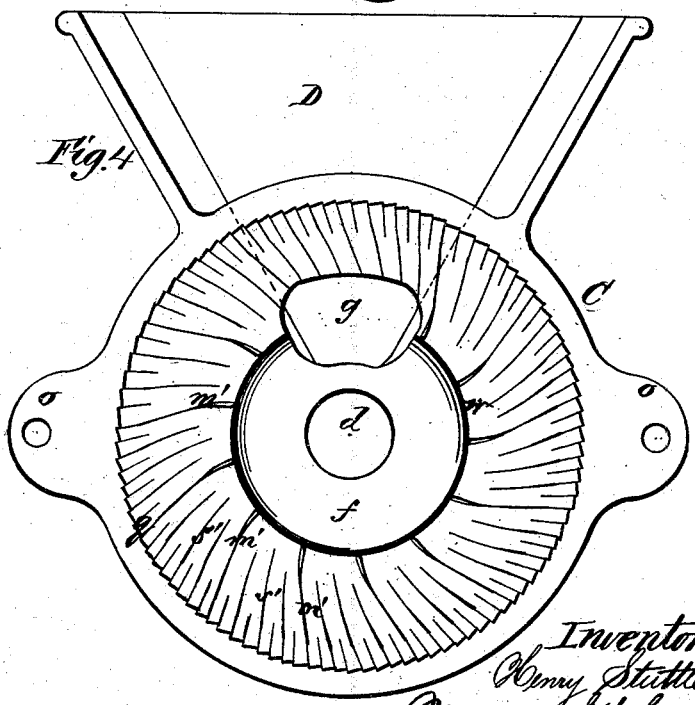


Fig. 4



Witnesses.
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UNITED STATES PATENT OFFICE.

HENRY STUTTLE, OF BATAVIA, ILLINOIS.

IMPROVEMENT IN COFFEE-MILLS.

Specification forming part of Letters Patent No. 187,567, dated February 20, 1877; application filed January 29, 1877.

To all whom it may concern:

Be it known that I, HENRY STUTTLE, of Batavia, in the county of Kane and State of Illinois, have invented a new and useful Improvement in Coffee and Spice Mills; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a front elevation of my improved mill. Fig. 2 is a vertical cross-section of the same. Fig. 3 is a front elevation of the grinding-runner of the mill. Fig. 4 is a front elevation of the hopper and stationary grinding portion of the mill. Fig. 5 is a top view of the hopper and stationary grinding portion of the mill.

The nature of my invention consists in a grinding-mill runner-plate, which is concavo-convex around its central shaft, and is dressed with a series of long and short spiral teeth, which start out from this concavo-convex surface, and terminate in a serrated beveled edge of the runner, in combination with a concavo-convex stationary grinding-plate dressed in a corresponding manner.

Second, my invention consists in the grinding-plate and hopper, so constructed of one piece and combined with the runner that nearly the entire dress of the grinding-faces is retained, and yet a passage from the hopper to the grinder is secured near the center of the mill, and a receiving or distributing chamber formed, and thus room afforded for the ready flow of the coffee or spices from the hopper to the channels of the grinding-surfaces.

Third, my invention consists in a grinding-mill having a hopper, receiving-chamber, stationary grinding-plate, runner-plate, and shaft cast in only two parts, which parts can be united together and to their support, with handle in place, by three screws and nuts, and a lever-step and screw and nut, and when in place can be adjusted for grinding coarse or fine by said lever-step and adjusting-screw and nut.

In the accompanying drawings, A is the runner-plate, and B its shaft, cast with it. C is the stationary grinding-plate, and D the hopper, cast with it. The runner-plate is circular, and is of concavo-convex form immediately around the shaft B, as indicated by *a*, and beyond this concavo-convex portion it is beveled, as indicated by *b*, and on its periphery it is also beveled, as indicated by *c*. The circular portion of the stationary grinding-plate C is similar in form and construction to the runner-plate, except that it has an eye, *d*, in it for the shaft of the runner to pass through, and its concavo-convex portion *a'* is much deeper than the runner-plate, in order to form a hub or bearing for the shaft B, and a chamber, *f*, for receiving the coffee or spices as they descend from the hopper D, which is cast upon the plate and hub, and communicates with the chamber *f* by an opening, *g*, formed during the casting operation. This plate also has a clamping-ear, *o*, on each side, by which, with the aid of two screws, *i i*, and nuts *j j*, and the shaft B, and screw *k*, and nut *l*, with the handle E in place, it is bolted to the runner and to the supporting-board or other support F, as shown. The grinding-faces of the two plates are clearly represented in the drawing, the "dress" consisting of long spiral grinding-teeth *m m'*, which respectively start out from the concaves of the respective plates, and touch one another at *n*, and continue in this manner out to the beveled serrations *q* on the periphery *c* of the plates; and between the long grinding-teeth shorter spiral teeth *s s'*, which touch one another, are formed, these teeth beginning on the outer margin of the concave portion of the plates, and terminating at the beveled serrated periphery of the same. By this arrangement of long and short spiral teeth conducting-channels *w w*, for the passage of the coffee or spices from the chamber *f* to the grinding-surfaces, are secured, and the mill operates without clogging and mashing the grains. At the back of the support F a lever step or bearing, G, for the end of the runner-shaft, is arranged. This step is loosely pivoted by one of its ends, and at its other end it is confined by an adjusting-screw, *p*. By this device the grinding-faces can be brought nearer together or allowed to operate at a greater distance apart. H is the passage formed in the support F, for the escape of the ground substances.

Operation: The coffee or spice being introduced into the hopper and the handle turned,

it flows through the opening *g* into the receiving chamber *f*, and from said chamber passes into the channels *w w*, and between the grinding-teeth, until it reaches the periphery of the plates, when it is finally acted upon by the sharp beveled teeth or the beveled periphery of the plates, and discharged through the passage H into a receiver.

A coffee or spice mill constructed in accordance with my invention herein described will be free from the objection of the rings springing and working irregularly on different parts of their surface, and discharging the coffee or spice in an imperfectly ground condition. The convex form of the plates serves to hold them from springing. Further, the feed of the substances from the hopper directly to the grinding-surfaces avoids the use of a conveyer or auxiliary feeder; and the construction of the main portions of simply two castings greatly reduces the cost of manufacture, and renders the mills more durable or less liable to get out of order.

I contemplate fitting the within-described grinding-mill castings to a coffee-mill box for grinding in the lap. I also contemplate using the grinding-mill plates herein described for grinding and reducing other substances than those specially mentioned.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The runner-plate of the mill constructed with a concavo-convex form immediately around its shaft, and with a dress of long and short grinding-teeth outside of the concavo-convex portion, and with beveled teeth on its periphery, in combination with the stationary grinding-plate having a concavo-convex form immediately around its eye, and dressed beyond this concavo-convex portion with long and short grinding-teeth, and with beveled teeth on its periphery, and provided with an opening, *g*, through it, substantially as and for the purpose described.

2. The stationary concavo-convex grinding-plate with a hopper formed on it, and with a feed-opening, *g*, from the hopper through the concavo-convex part of the plate, substantially as and for the purpose described.

3. The concavo-convex runner-plate formed on its shaft, and with its grinding-surface beyond its concavo-convex surface, substantially as and for the purpose described.

4. The combination of the hopper, stationary concavo-convex grinding-plate, having opening *g* through it, concavo-convex runner-plate, having its shaft attached to it, the supporting-board, and the screws and lever-step, all constructed substantially as and for the purpose set forth.

HENRY STUTTLE.

Witnesses:
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