(No Model.)

2 Sheets—Sheet 1.

F. STAMM.

COFFEE MILL.

No. 351,290. Patented Oct. 19, 1886.

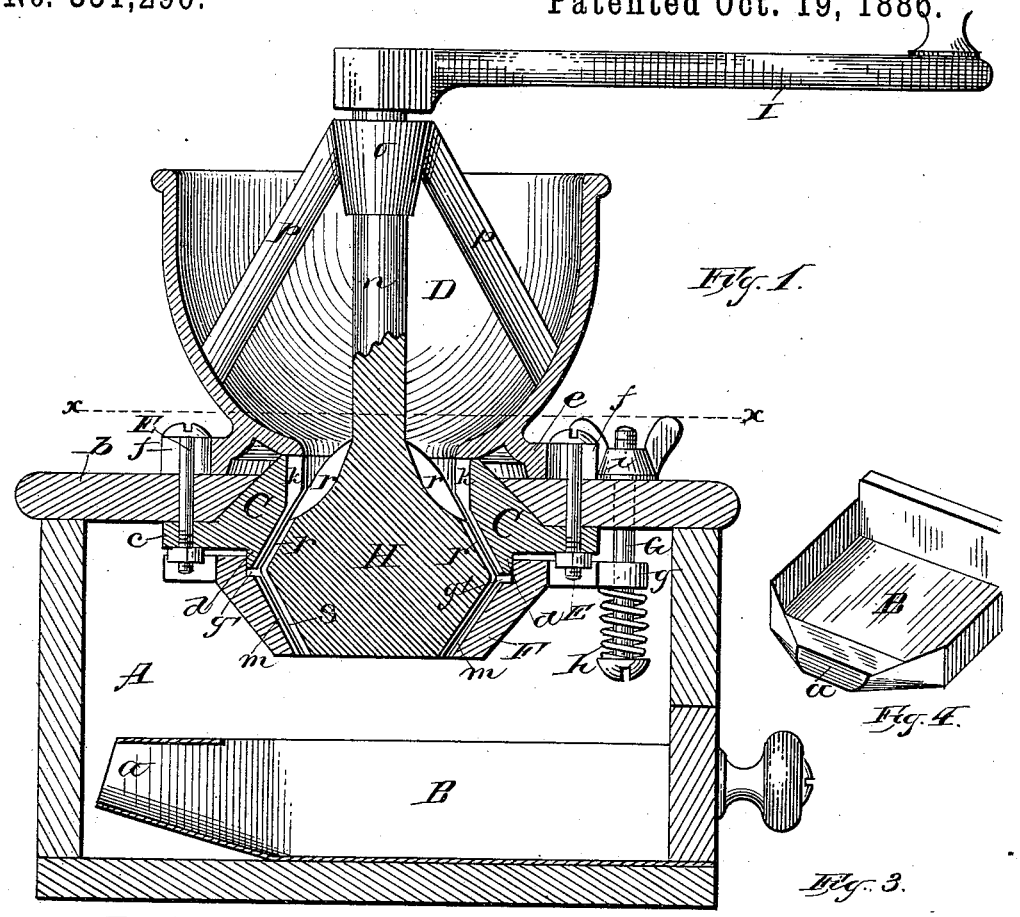


Fig. 1.

Fig. 4.

Fig. 3.

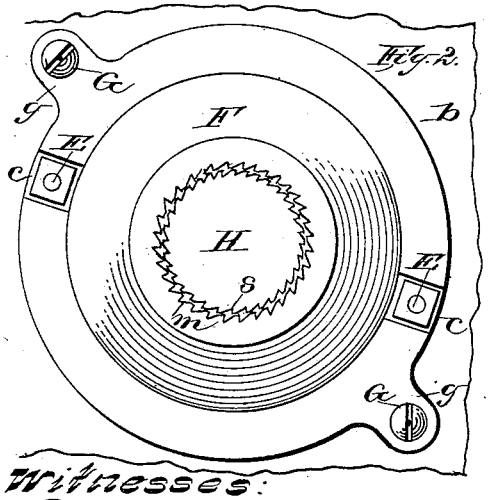
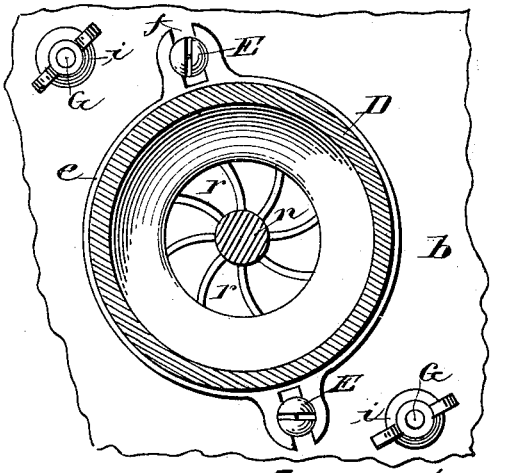


Fig. 2.



Witnesses:
E. G. Parmer
N. E. Oliphant

Inventor:
Ferdinand Stamm
By Stout + Underwood
Attorneys.

(No Model.)

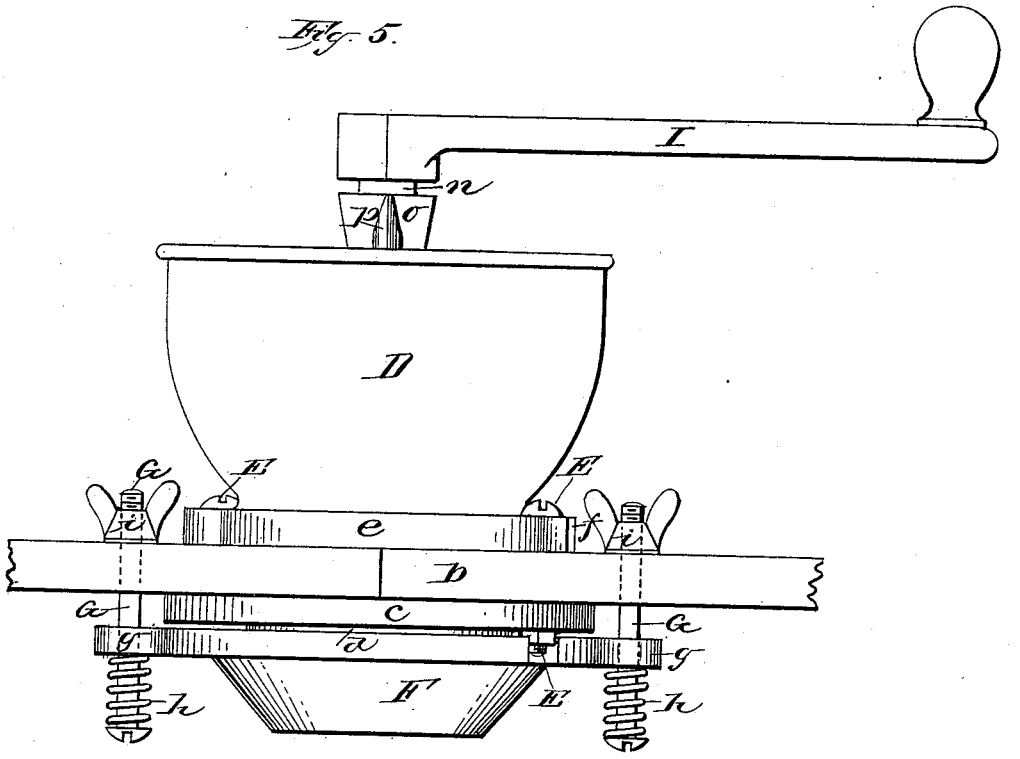
2 Sheets—Sheet 2.

F. STAMM.

COFFEE MILL.

No. 351,290. Patented Oct. 19, 1886.

Fig. 5.



Witnesses:
E. G. Sonnes
N. E. Oliphant

Inventor:
Ferdinand Stamm
By Stout + Underwood
Attorneys.

UNITED STATES PATENT OFFICE.

FERDINAND STAMM, OF MILWAUKEE, WISCONSIN.

COFFEE-MILL.

SPECIFICATION forming part of Letters Patent No. 351,290, dated October 19, 1886.

Application filed January 13, 1886. Serial No. 188,400. (No model.)

To all whom it may concern:

Be it known that I, FERDINAND STAMM, of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, 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 thereof.

My invention relates to coffee-mills; and it consists in certain peculiarities of construction and combinations of parts, as will be hereinafter described with reference to the accompanying drawings, and subsequently claimed.

In the drawings, Figure 1 represents a vertical longitudinal section of my coffee-mill; Fig. 2, a bottom plan view of a portion thereof; Fig. 3, a horizontal section on line *x x*, Fig. 1; Fig. 4, a detail view of the drawer, and Fig. 5 a side elevation of my coffee-mill with the box broken away.

A represents the box of my coffee-mill, provided with a drawer, B, having a funnel-shaped inner end, *a*, to facilitate the emptying of the ground coffee, and prevent it from being spilled during such operation, as is too frequently the case with drawers of the ordinary construction. The top *b* of the box A is provided with a central beveled opening, in which fits a correspondingly-formed grinder-shell, C, having a circumferential flange, *c*, designed to bear against the under face of said top.

D is the hopper, also provided with a circumferential flange, *e*, designed to bear upon the upper face of the box-top *b*, said flange having perforations or slots *f*.

E are bolts, which pass through the perforations or slots *f* of the hopper-flange, and down through suitable perforations in the box-top *b* and flange *c* of the grinding-shell C, thereby serving to retain said hopper and grinding-shell in operative position with relation to the box A.

F is a lower grinding-shell, provided with ears *g*, designed to bear upon spiral springs *h*, surrounding bolts G, which latter pass through suitable perforations in said ears and the box-top *b*, and are provided with thumb-nuts *i*, this construction permitting the lower grinding-shell to be vertically adjusted and at the same time allowing it to have a yielding movement, for the purpose hereinafter described. The shell F is provided with a seat, *g'*, adapted to receive the vertical flange *d* of the shell C.

The grinding-shells C F are respectively serrated upon their interiors, the serrations *k*, upon the interior of the stationary shell C, having their upper portions vertical and their lower portions beveled, while the serrations *m*, upon the interior of the lower or adjustable shell, F, are entirely beveled, but in a direction opposite to the bevel of those on said upper or stationary shell. The serrations *k* of the stationary shell are intended to be coarse, while those, *m*, of the adjustable shell are to be fine.

H is the grinding-nut provided with an upwardly-extended shank or shaft, *n*, adapted to loosely fit and revolve in a bearing, *o*, supported by braces *p*, extending up from the interior of the hopper D, said bearing, braces, and hopper being preferably cast in one piece. The upper extremity of the shank or shaft *n* is adapted to receive a crank, I, by which the mill is operated.

The grinding-nut H has a double beveled face provided with serrations *r s*, corresponding to those upon the interior of the grinding-shells—that is to say, the serrations *r* on the upper beveled face of said grinding-nut are coarse, while those, *s*, of its lower beveled face are fine.

Coffee being introduced into the hopper D, and the crank I operated, said coffee feeds down to the grinding mechanism, where it is first broken into coarse particles by the respective serrations *k r*, on the upper or stationary grinding-shell, C, and grinding-nut H, when it passes on down, and is finely ground by the serrations *m s* on the parts F H, and falls into the drawer B. Should any foreign substance of greater density than the coffee-grains be fed to the grinding mechanism, it will bear against the grinding-nut H and force the latter and the lower grinding-shell, F, in a downward direction, this yielding movement being permitted by the springs *h* and loose shank or shaft *n*. By this downward movement of the grinding-nut H and shell F the space between said nut and the interior of the upper or stationary shell, C, is increased, thus permitting the foreign substance to pass on down without wear or injury to the serrations on said latter parts.

The substance being freed from contact with the upper beveled and serrated face of the grinding-nut and the serrations upon the interior of the upper or stationary shell, C, comes between the lower beveled and serrated face of said grinding-nut and the serrations on the interior of the lower or adjustable shell, F, and acts to cause a further yielding of the latter, and at the same time tends to force the part H in an upward direction, thereby effecting a separation between said parts sufficient to prevent the substance from doing injury to the serrations, and finally allows said substance to pass into the drawer B. The foreign substance having passed through the grinding mechanism, the expansive force of the springs *h h* causes the parts F H to resume their normal position. By having the lower shell adjustable the grinding-nut may be so regulated as to break the coffee into fine or coarse particles, as may be most desirable during the first operation of grinding, and by the peculiar construction and arrangement of the several operating parts the serrations of said grinding-nut and those of the grinding-shells are prevented from coming into frictional contact with each other, or being broken or worn by foreign substances in the coffee during the process of grinding, therefore rendering the mill self-adjusting, more durable, and less liable to get out of order.

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

1. In a coffee-mill, the combination of a supporting frame or box, an upper stationary grinding-shell, an adjustable and automatically-yielding lower grinding-shell, and an automatically-yielding grinding-nut, as set forth.

2. In a coffee-mill, the combination of a supporting frame or box provided with an opening in its top, an upper grinding-shell fitted in said opening and rigidly secured upon the under face of the frame or box-top, an adjustable and automatically-yielding lower grinding-shell, a double-beveled and serrated grinding-nut having a shank provided with a crank, and a hopper rigidly secured to said frame or box-top and having interior upwardly-extended braces that terminate in a loose bearing for the shank of the grinding-nut, as set forth.

3. In a coffee-mill, the combination of a supporting frame or box provided with an opening in its top, an upper grinding-shell fitted in said opening and secured to the under side of the frame or box-top and provided with a vertically-depending flange, a lower adjustable and automatically-yielding grinding-shell provided with a seat for the depending flange of the upper shell, a double beveled and serrated grinding-nut having a suitable loosely-hung shank, and a hopper secured to the upper side of said frame or box-top, as set forth.

4. In a coffee-mill, the combination of a supporting-frame, a suitable hopper and upper grinding-shell, both rigidly secured to the top of said frame or box, a double beveled and serrated loosely-hung grinding-nut, a lower grinding-shell having ears, adjusting-screws that pass through these ears and the frame or box-top, and spiral springs arranged on the screws to bear against the under side of said ears, as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

FERDINAND STAMM.

Witnesses:
H. G. UNDERWOOD,
MAURICE F. FREAR.