2 Sheets--Sheet 1.

W. J. LANE.
Coffee-Mill.

No. 159,517. Patented Feb. 9, 1875.

Fig. 1

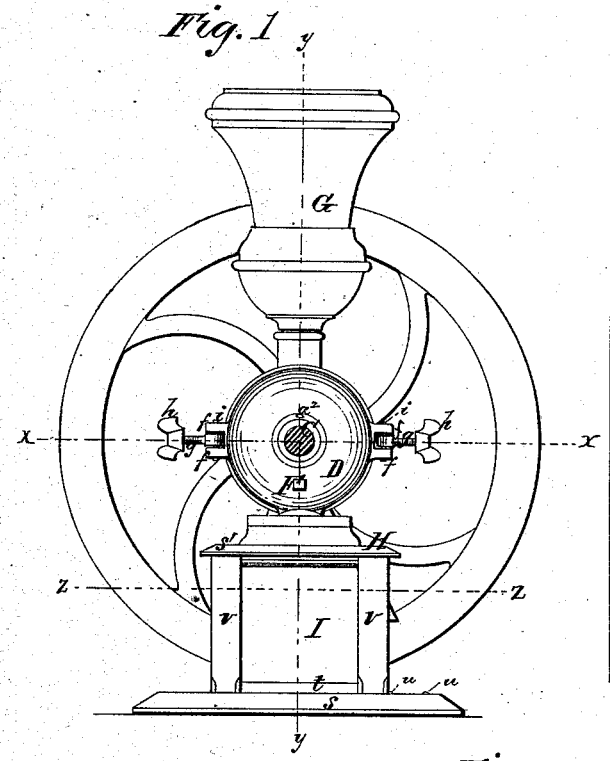


Fig. 2

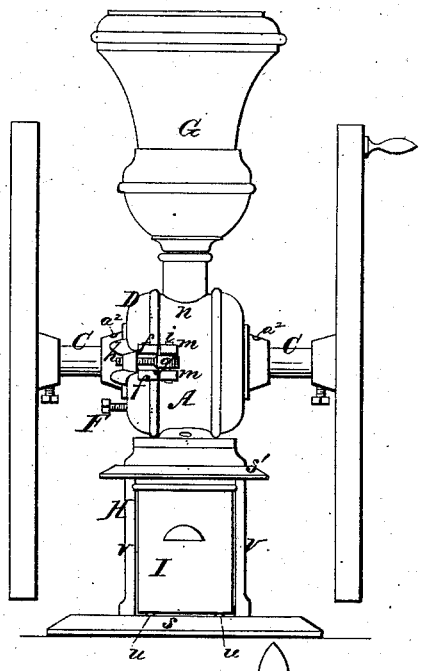
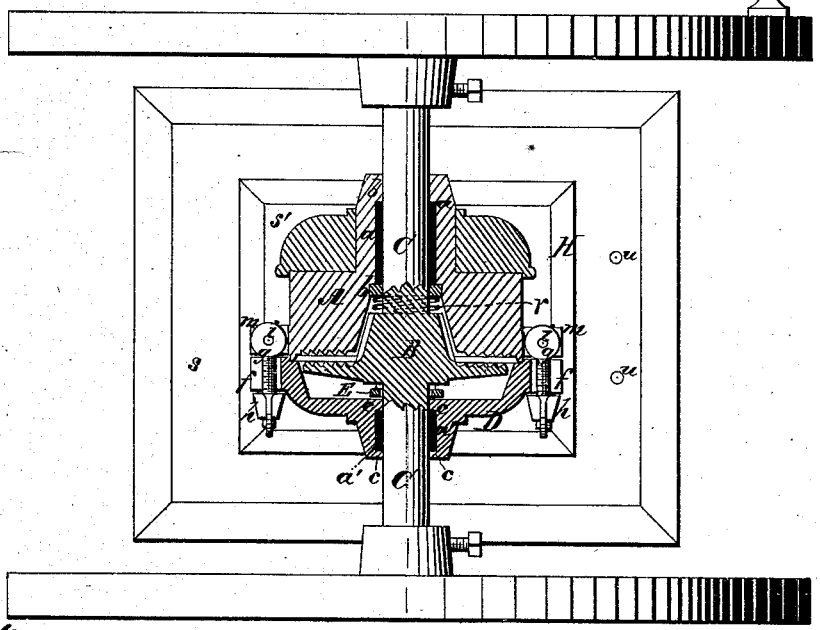


Fig. 3



Witnesses.
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J. N. Campbell

Inventor.
William J. Lane
by Mason Fenwick & Lawrence
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2 Sheets--Sheet 2.

W. J. LANE.
Coffee-Mill.

No. 159,517. Patented Feb. 9, 1875.

Fig. 4

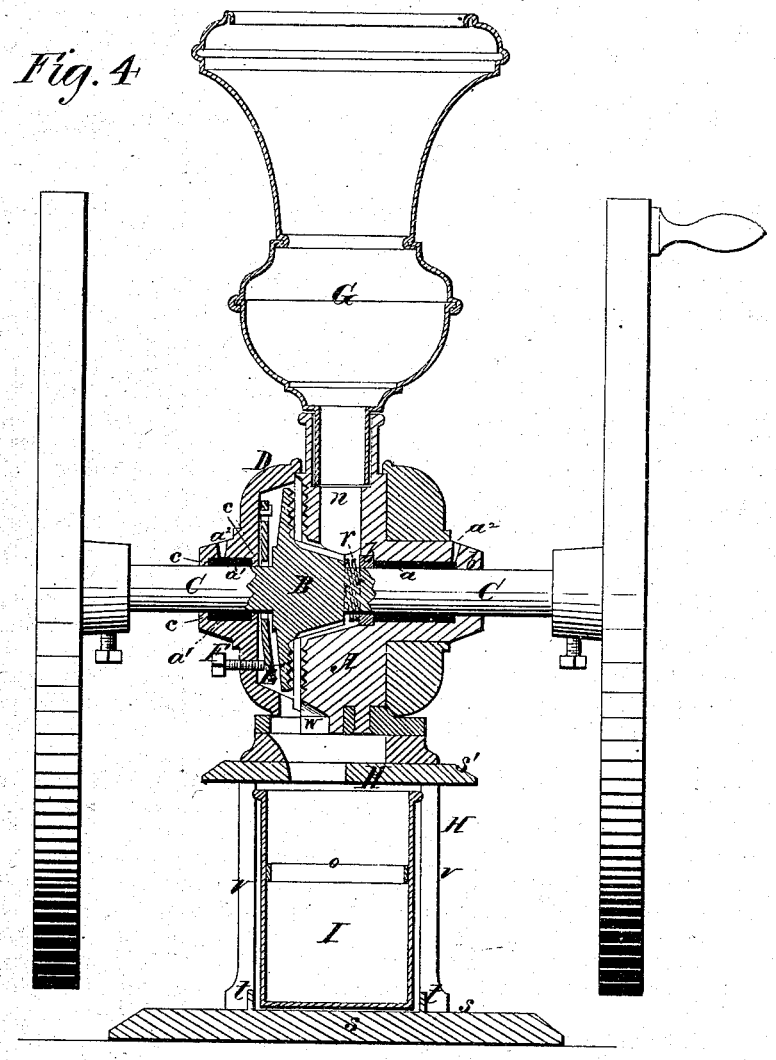
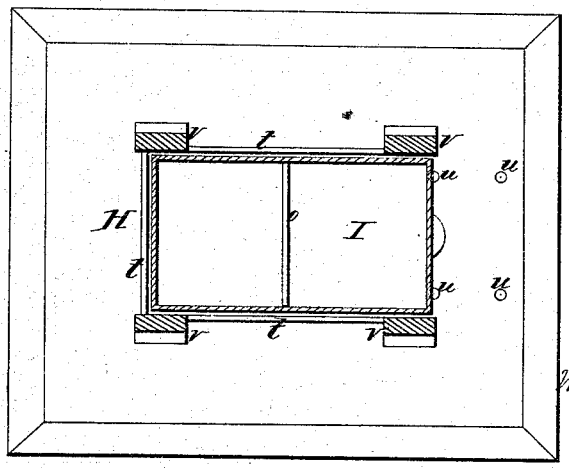


Fig. 5



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UNITED STATES PATENT OFFICE.

WILLIAM J. LANE, OF MILLBROOK, NEW YORK.

IMPROVEMENT IN COFFEE-MILLS.

Specification forming part of Letters Patent No. **159,517**, dated February 9, 1875; application filed November 17, 1874.

To all whom it may concern:

Be it known that I, WILLIAM J. LANE, of Millbrook, in the county of Dutchess and State of New York, have invented a new and useful Improvement in Coffee-Mills; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 is a side elevation; Fig. 2, a front view; Fig. 3, a horizontal section in the line *x x*, Fig. 1; Fig. 4, a vertical section in the line *y y* of Fig. 1; Fig. 5, a horizontal section in the line *z z* of Fig. 1 of my improved coffee-mill.

The nature of my invention consists in certain constructions and combinations of parts, as hereinafter described and specifically claimed.

The grinding devices, A B, proper of my mill are the same as those found in Swift's mill, patented in 1845, and therefore need not be particularly described. The eye-bearings of the stationary ring and hollow conical grinder A are constructed with a long annular chamber, *a*, for the reception of sponge, cotton wick or waste, and lubricating material; and at each end of this chamber a narrow annular bearing-ridge, *b*, is constructed for the shaft C of the grinder to bear against while revolving. By making this bearing-eye of increased length, as shown, and chambering it, a firm balancing-support, with but slight frictional contact, is secured for the shaft, and a large amount of lubricating material can be placed between the ridges *b b*, forming the bearings. The movable capping-plate D or back, in which the adjustable runner B, which is attached fast to the shaft C, revolves, is also constructed with a chamber, a^1, and ridge-bearings *c c*, upon which the other end of the shaft rests in revolving. The chamber a^1 is shorter than the chamber *a*, but in all other respects the eye-bearing is the same as that of the grinder A. The chambers *a* and a^1 are constructed with oil-supply passages a^2 a^2, as shown. Between the grinding-ring and conical runner B and the capping-plate or back D a yielding cross-bar, E, and set-screw F are arranged, the bar being fitted loosely around the shaft, and hinged or otherwise attached by one of its ends to the capping-plate, and made to bear against the screw with its loose end. By this bar and screw the mill is set or adjusted for grinding fine or coarse. The capping-plate D is connected to the grinder A by means of slotted lugs *f f*, formed on itself at opposite points, and swinging screws *g g*, furnished with clamping-nuts *h h*, and attached by pivots *i i* to slotted lugs *m m* of the grinder A, as shown. It will be observed that in Fig. 1 the screws are swung out of the slotted lugs, and in Figs. 2 and 3 they are turned into the slots of the lugs on their pivots, and when the screws are turned in, the thumb-nuts are tightened, and caused to bind against the lugs. By this mode of fastening the capping-plate, it and the runner or ring-plate, with conical grinding-surface, can be unfastened and moved in a straight line laterally away from one another and from the stationary grinder A, and the mill thus opened with the greatest facility—say, in five or ten seconds—without any lifting operation whatever being necessary. This is very important, as the mill often has to be opened for the purpose of removing or allowing obstructions which enter with the coffee to fall out, and for brushing out the mill on both sides of the runner when it is used for grinding different substances. The closing of the mill and fastening of the capping-plate and runner occupies but a few moments. The grinder described has a top opening, *n*, leading to its grinding-surfaces, for the hopper G to set in, as shown. It also has a bottom opening, *w*, for the discharge of the ground substances. This opening is made to incline toward the center of the mill proper, and coincides with an opening in the base-ring and top-plate of the stand or support H, as shown. This is done in order to direct the ground substances to the middle of the coffee-receiving drawer I of the mill. If this were not so, the symmetry of the mill would be interfered with, as the grinder could not be located centrally upon the stand. The stand H is made with a flat base, *s*, and top plate, *s'*, the two united by four pillars, *v v v v*. On three sides of the rectangular space, within the pillars, narrow ledges *t t t* rise from the base, and form side and end guides and stops for the drawer; and just in front of the pillars four small projections, *u u u u*, rise from the base-plate. The drawer is of a rectangular form, and just snugly fits in

the space between the top and base-plate and the pillars. Its sides are tied together by an interior cross-bar, *o*, which prevents them from bulging out and binding against the pillars when filled with ground coffee, and are being drawn out. This also prevents scratching off of the paint from the sides of the receiver, and when the drawer is in position it forms panels between the pillars for the stand, and gives a neat appearance. The small projections prevent the paint on the bottom plate from being marred by sliding the drawer upon the same, and the side ledges, *t t t*, prevent the drawer from vibrating and scratching the paint on its sides as it is drawn out and pushed in between the pillars. For the purpose of preventing the grinding-surfaces working with a wearing and noisy frictional contact when coffee is not supplied to the mill, a spiral spring, *r*, coiled similar to a right-hand screw-thread, is fitted on the shaft between the end of the runner and the bearing of casting A, for the purpose of pressing the runner-teeth out of contact with the stationary teeth. The spring, owing to its construction and arrangement, is, by the friction, wound upon the shaft, instead of being unwound and destroyed.

In constructing the mill the cap of the casting A is made hollow. The casting A is also made hollow on the side opposite said cap; and the stationary grinding-plate is made separate from the casting A, the said cap, casting A, and plate being held together by bolts and nuts.

What I claim as my invention is—

1. The combination of the following parts, viz: the revolving shaft C, extended beyond its bearings, for supporting the parts of the grinder after they have been moved apart; the central stand, H, for supporting the shaft; the runner B and its grinding-plate; the longitudinally-adjustable concave A and its grinding-plate; the longitudinally-adjustable capping-plate or back D; and the slotted ears *f*, hinged clamping-screws *g g*, and the nuts *h h*, substantially as and for the purpose herein described.

2. The grinder A and B, having its discharge-opening inclined toward the center of the hopper, in combination with the supporting-frame H, upon which the grinder is mounted centrally, and which has an opening leading to the drawer I in its top, substantially as described.

3. The small knobs or projections *u*, cast or formed on the forward portion of the base-plate, for the drawer to slide upon as it passes in and out between the pillars of the stand, substantially as shown and described.

4. The drawer having its sides tied together by a cross-bar, for preventing it from bulging out when filled with ground coffee, substantially as described.

WILLIAM J. LANE.

Witnesses:
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AARON H. LANE.