(No Model.) 2 Sheets—Sheet 1.

T. STROBRIDGE.

COFFEE MILL.

No. 259,730. Patented June 20, 1882.

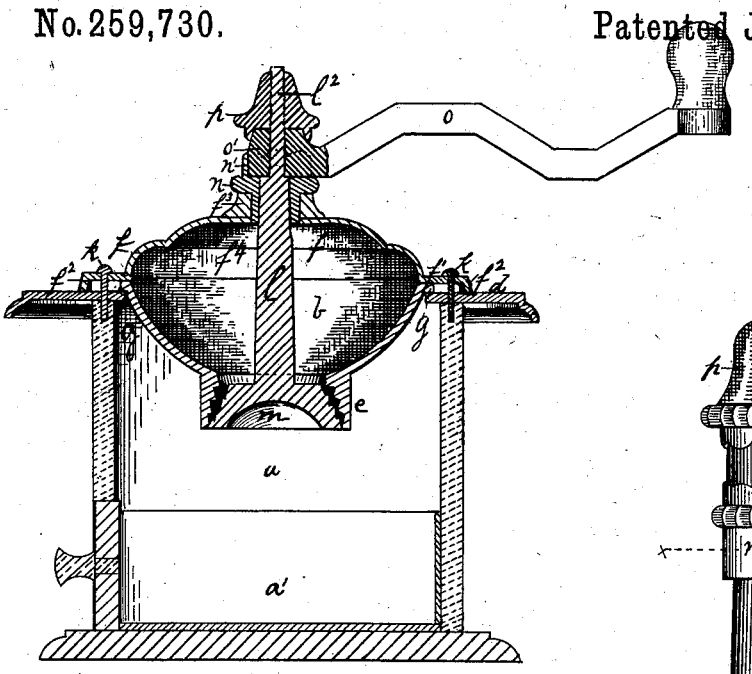


Fig. 1.

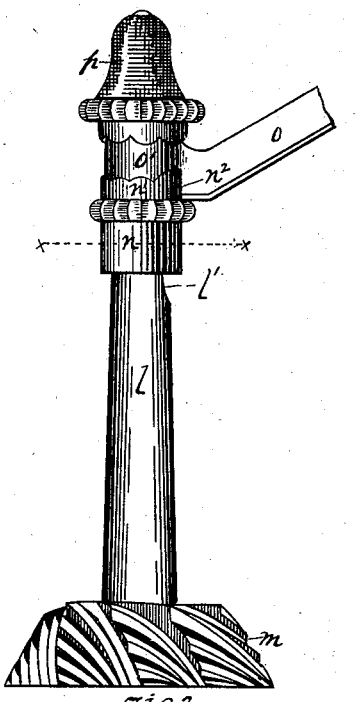


Fig. 2.

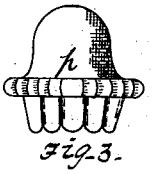


Fig. 3.

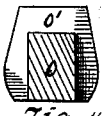
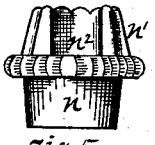


Fig. 4.



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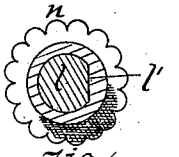

Fig. 6.

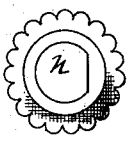

Fig. 7.

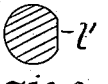

Fig. 8.

WITNESSES.

R. W. Trumbull

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by his attys

Bakewell & Kerr

(No Model.)

2 Sheets—Sheet 2.

T. STROBRIDGE.

COFFEE MILL.

No. 259,730. Patented June 20, 1882.

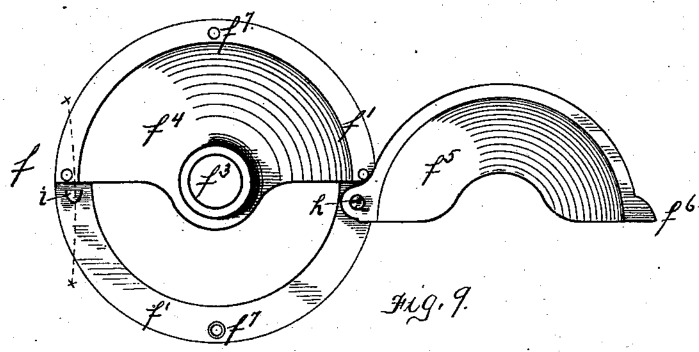

Fig. 9.

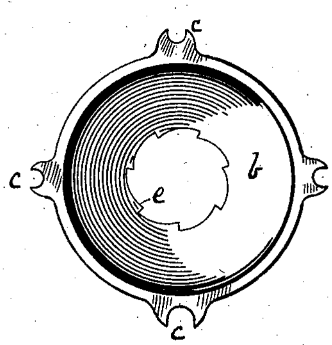

Fig. 10.

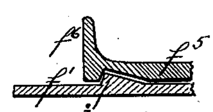

Fig. 12.

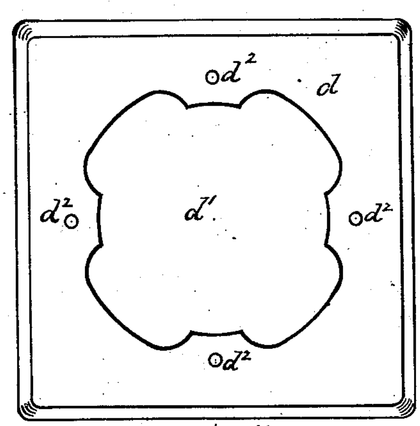

Fig. 11.

Witnesses.

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UNITED STATES PATENT OFFICE.

TURNER STROBRIDGE, OF NEW BRIGHTON, PENNSYLVANIA.

COFFEE-MILL.

SPECIFICATION forming part of Letters Patent No. 259,730, dated June 20, 1882.

Application filed February 15, 1882. (No model.)

To all whom it may concern:

Be it known that I, TURNER STROBRIDGE, of New Brighton, in the county of Beaver and State of Pennsylvania, have invented a new and useful Improvement in Coffee-Mills; and I do hereby declare the following to be a full, clear, and exact description thereof.

My improvement relates more particularly to the class of coffee-mills which have a sunken hopper and a metallic top.

In coffee, spice, and like mills one of the main objects is to simplify the construction so that the parts of the mill can be readily finished, rapidly put together or fitted up by unskilled labor, and the parts easily separated when it becomes necessary to replace defective parts, all of which tends to reduce the cost of the article. In this class of mills the grinding-nut is usually suspended from above, and in order to avoid unnecessary wear upon the parts, as well as inequality of operation, it is essential to guard against lateral play of the grinding-nut, which cannot readily be done if the adjustment is made by the direct combination of the crank and shaft or stem of the grinding-nut.

To enable others skilled in the art to make and use my improvement, I will now describe it by reference to the accompanying drawings, in which—

Figure 1 is a vertical section of my improved mill. Fig. 2 is a side view of the grinding-nut, shaft, and adjusting device. Fig. 3 is a side view of the adjusting-nut. Fig. 4 is a front view of the sleeve of the grinding-lever, the lever being shown in cross-section. Fig. 5 is a view of the loose clutch device used to connect the grinding-lever with the grinding-shaft. Fig. 6 is a cross-section of Fig. 2 on the line x x. Fig. 7 is a bottom view of the clutch device shown in Fig. 5. Fig. 8 is a cross-section of the grinding-shaft. Figs. 9, 10, and 11 are respectively plan views of the hopper-cover, hopper, and box-top. Fig. 12 is a vertical section on the line x x of Fig. 9 when the swinging lid f^5 is closed.

Like letters of reference indicate like parts in each.

In the accompanying drawings, a indicates a wooden box, which is of the usual construction, and is provided with a drawer, a', for receiving and removing the ground material from the mill.

b indicates a sunken hopper, which is provided with a flange or lugs, c, at its upper edge, which rest upon the inner edge of the metallic cover d, and thereby support the hopper b in its suspended position in the box a.

At the lower end of the hopper b is a grinding-shell, e, which is of metal, and preferably cast integral with the hopper b. It may, however, be made separate therefrom and secured thereto by any suitable means of fastening.

The box-top d, which is preferably made of metal in the form shown in Fig. 11, has a central opening, d', for the suspension of the hopper b therein, and is provided with any desired number of screw-holes, d^2. In the present instance four of these screw-holes are shown. The hopper-cover f, which also constitutes the bridge for sustaining the grinding-shaft and nut, is made of metal, and preferably of dome shape, with a surrounding horizontal flange, f', and a narrow vertical flange, f^2, which raises it sufficiently above the box-cover d to admit of placing between the two the lugs or flange on the upper edge of the hopper, as shown at g in Fig. 1. The dome part of the cover f has a central opening, f^3, of tubular form, the upper edge of which is flat, and constitutes the seat for the adjusting devices. The dome part of the cover is divided into two parts, one of which, f^4, is preferably cast with the ring f' and flange f^2. This part is provided with the opening f^3. The other part, f^5, is formed in a separate piece from the rest of the cover, and is pivoted thereto at one end, as shown at h, so as to open or close the hopper at pleasure.

At the point i is a slight incline or projection, which is designed to fasten the swinging cover f^5 shut, there being a corresponding depression in the under side of the thumb-piece f^6 on the outer end of the swinging cover f^5. The swinging cover, when closed, springs over the incline i, there being sufficient resilience in the metal to permit it to do so without fracture. A slight pressure will force it back and open the hopper.

The cover h is provided with holes f^7 for the screws or other fastenings corresponding with

those in the box-top *d*. The purpose of this construction is to enable the separate parts—hopper, box-top, and hopper-cover—to be attached to the box *a* by one and the same set of fastening devices, *k*.

For the purpose of having the element of detachability, I prefer to make use of screws for fastening these parts to the box, so that I may at any time, by loosening the screws, remove them therefrom.

The grinding-nut *m* is suspended in place by means of the grinding-shaft *l*, which projects up through the opening, and at its upper end is beveled, as at *l'*, and provided with a screw, l^2. I place upon the beveled portion of the shaft *l* a collar, *n*, the aperture of which corresponds in shape to the shape of the beveled portion of the shaft. On the upper edge of the collar *n* is a projecting rim, *n'*, one side of which is cut away, as at n^2, sufficiently to admit of the grinding lever or crank being pressed down upon the collar.

The crank *o* is provided with a sleeve, *o'*, which slips down over the screw l^2 until the lower edge of the crank comes in contact with the collar *n* and turns the grinding-shaft, as follows: The crank *o* sets down in the notch n^2 and carries the collar *n* with it when turned. The collar *n*, being of irregular form and fitting snugly upon the correspondingly-irregular form of the shaft *l*, carries the shaft around with it. An adjusting-nut, *p*, is put on the screw l^2 and sustains the grinding-shaft *l*. By turning the nut *p* down on the thread the shaft *l* is drawn up and the mill is set for fine grinding. By screwing the nut upon the screw l^2 the grinding-shaft *l* is dropped down in the mill and the distance between the grinding-nut and the grinding-shell is increased, and the mill is set for coarse grinding.

My adjusting-screw and clutch device is simple in construction and easy and certain in operation. It is also applicable to use in side as well as in vertical mills, and in other grinding-mills operated by a crank and designed for grinding to different grades of fineness.

The manner described of attaching the hopper, with its cover and the box-top, to the box is advantageous, owing to its cheapness, simplicity, and the ease with which the mill can be fitted up, and the fact that defective and broken parts can be readily replaced. It saves separate and different screws or other fastening devices to attach the parts together.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a sunken-hopper coffee or spice mill, the combination, with the hopper and box, of a detachable box-top and detachable flanged hopper-cover having a series of registering holes, whereby the parts may be detachably united by a single set of fastening devices, together with a single set of fastening devices adapted to secure the several parts, substantially as and for the purpose specified.

2. In a sunken-hopper coffee or spice mill, the combination, with the box, of a detachable box-top, a detachable flanged hopper-cover, and a detachable hopper, the several parts having registering screw-holes, whereby the several parts may be secured to the box at one time and by the same fastening devices, together with a set of fastening devices for securing the several parts, substantially as and for the purpose specified.

3. In a sunken-hopper coffee or spice mill, the combination, with the box, of a detachable box-cover and a detachable hopper, said devices having registering screw-holes, whereby the parts may be secured by a single set of fastening devices, and a set of fastening devices adapted to secure the several parts, substantially as and for the purpose specified.

4. In a coffee or similar mill, the combination, with the grinding-nut shaft and crank, of a clutch-collar adapted to clutch both the crank and shaft, substantially as and for the purpose specified.

5. In a coffee or similar mill, the combination of the grinding-nut shaft, of irregular cross-section at its end, with a clutch-collar whose aperture corresponds to a cross-section of the shaft, a bridge or cover having an opening adapted to receive the clutch-collar, a crank-arm adapted to engage in a notch of the clutch-collar, and an adjusting-nut, substantially as and for the purpose specified.

In testimony whereof I have hereunto set my hand this 7th day of February, A. D. 1882.

TURNER STROBRIDGE.

Witnesses:
ANDREW J. BINGHAM,
CHARLES C. ROBINGSON.