

(No Model.)

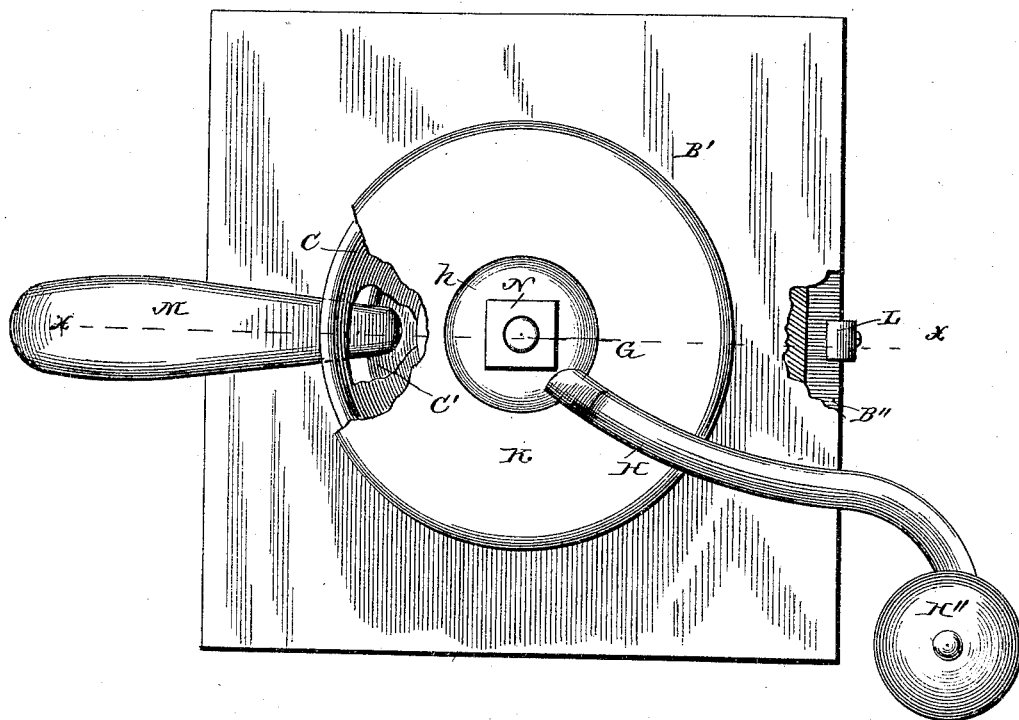
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E. H. & C. MORGAN.
COFFEE MILL.

No. 444,798.

Patented Jan. 13, 1891.

Fig. 1.



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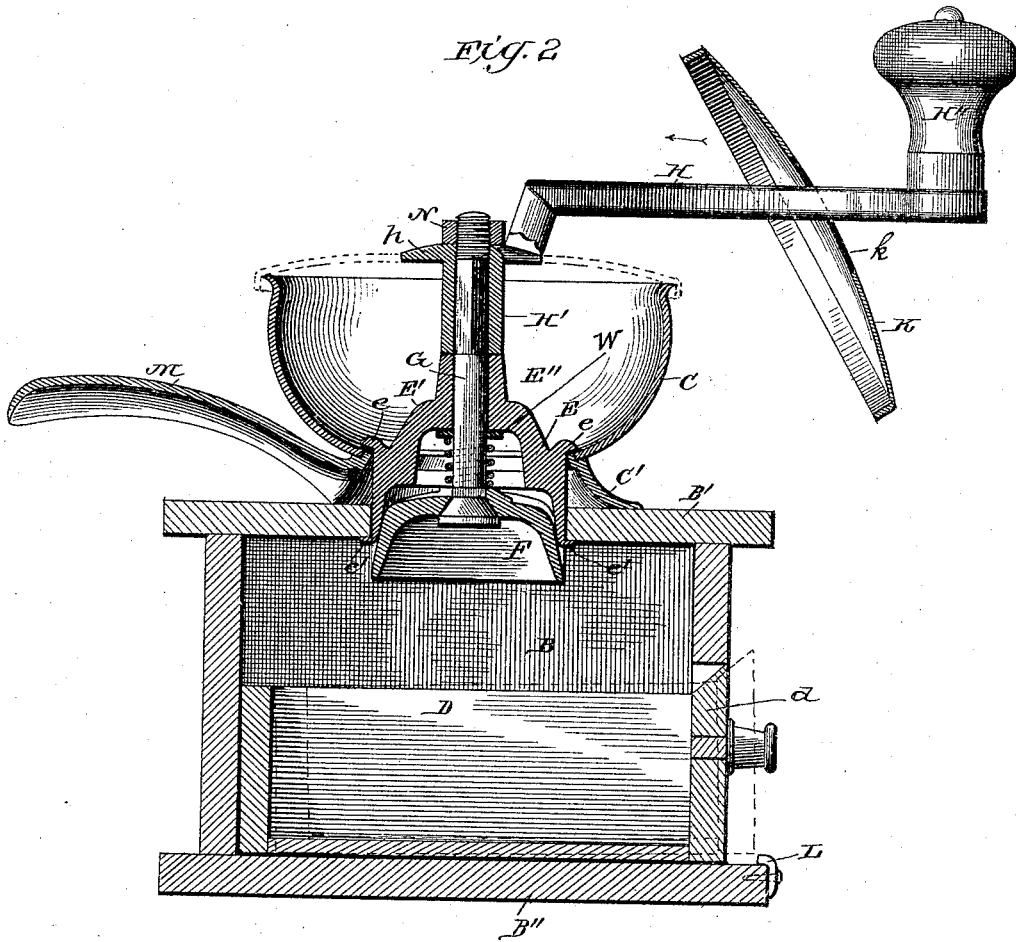
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2 Sheets—Sheet 2.

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Witnesses:
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UNITED STATES PATENT OFFICE.

EDGAR H. MORGAN AND CHARLES MORGAN, OF FREEPORT, ILLINOIS, AS-
SIGNORS OF ONE-THIRD TO ALBERT BAUMGARTEN, OF SAME PLACE.

COFFEE-MILL.

SPECIFICATION forming part of Letters Patent No. 444,798, dated January 13, 1891.

Application filed October 16, 1890. Serial No. 368,284. (No model.)

To all whom it may concern:

Be it known that we, EDGAR H. MORGAN and CHARLES MORGAN, residents of Freeport, in the county of Stephenson and State of Illinois, have invented certain new and useful Improvements in Coffee-Mills; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

Our invention relates to improvements in coffee-mills, and is fully described and explained in this specification and shown in the accompanying drawings, in which—

Figure 1 is a top plan of the mill embodying our improvements, parts being broken away; and Fig. 2 is a central vertical section thereof through the line *xx*, Fig. 1.

In the views, B is a coffee-mill box of ordinary construction, having the usual top B' and bottom B''.

C is a hopper, of any desired form, placed above the top and resting upon a rim or base C', which is supported by the top, the rim or base and the hopper being made separate for convenience in casting. The top B' of the box is formed with the usual cylindrical opening, and in this opening lies a grinding-shell E, provided with an integrally-formed diametrical bridge E' and an upwardly-extending bearing or sleeve E'', and also with integrally-formed lugs *e e'*, which clasp the hopper and the top of the box and hold the parts together. This feature of construction forms no part of our present invention, the box, the hopper, the base supporting the hopper, and the grinding-shell and its features being merely shown and described as forming parts of the operative mill which embodies our invention.

Within the grinding-shell E hangs a grinding-cone F, suspended by means of a bolt G, which is journaled in the bearing E'' already mentioned, the lower end of the bolt being square and provided with a suitable head and the upper end being screw-threaded. The hub H' of a crank or handle H is mounted upon the bolt G, and a nut N, of any desired form, engages the screw-threaded end of the bolt and serves to hold the parts together and also to raise and lower the grind-

ing-cone. Between the upper face of the grinding-cone and the lower face of the bridge E' is a spring S, encircling the bolt G, and a washer W also encircles the bolt and is interposed between the upper end of the spring and the lower face of the bridge. The parts are so arranged that the spring S is under tension, being compressed between the cone and the washer, and the force of the spring thus tends constantly to press the cone downward, thereby taking up any loose motion of the parts and securing noiseless operation of the mill. The spring also holds the cone in its true position, keeping its axis coincident with the axis of the grinding-shell, and thereby preventing uneven grinding at opposite points of the cone. The use of the spring in this way is a substantial advantage in any mill having the general construction shown and described herein, and is particularly valuable where, as in this case, the cone and its supporting bolt or spindle are formed in separate parts instead of being cast in a single piece. On the upper edge of the hopper C rests a cover K, preferably of sheet metal, formed with a central opening *k* of such size as to be readily slipped over the regulating device at the top of the spindle and over the inner end of the crank or handle to the position shown in full lines in Fig. 2. As the central opening in the cover must be of considerable size in order to pass freely from one position to the other, we have found it an advantage to form upon the inner end of the crank a circular disk *h*, of substantially the same size and shape as the opening *k* in the cover, the disk and the opening being both preferably circular, as shown. When the cover is in the position shown in Fig. 1 and in dotted lines in Fig. 2, the disk *h* completely closes the opening in the cover, so that the upper end of the hopper is wholly closed, and accidental escape of material from the hopper, as by the flying up of grains of coffee from the grinding-surfaces, is wholly prevented. The crank H has at its outer end the usual knob H'', adapted to be clasped by the hand of the operator, and we prefer to make this knob of greater diameter than the opening in the cover, though this is evidently not essential. When the knob is of greater

diameter than the opening in the cover, it is evidently impossible to accidentally detach the cover wholly from the mill, though it may readily be brought into the position shown in Fig. 1 or into that shown in full lines in Fig. 2 for the purpose of covering or uncovering the hopper.

Within the box B lies a drawer D, of substantially the construction common in coffee-mills, the front wall of the box being formed with an opening for the admission of the drawer, and the front wall *d* of the drawer being of such dimensions as to close the opening in the front of the box. The side and rear walls of the drawer are lower, however, than the front wall thereof, and the upper edge of the front wall is preferably beveled downward from its front face in the manner shown in Fig. 2. This construction evidently renders it possible to raise the front of the drawer slightly as it is withdrawn from the box, the position of the drawer when so slightly withdrawn and raised being shown in dotted lines in Fig. 2. It is evident, however, that while the front edge of the drawer may be thus raised when intentionally withdrawn from the box the accidental sliding of the drawer from the box will not so raise its front edge, as the weight of the drawer will naturally hold it close against the bottom of the box. In order to prevent the accidental escape of the drawer from the box, we have fastened to the front edge of the bottom board B'' a retaining stop or lug L of such projection above the bottom board as to prevent the escape of the drawer so long as it lies close against the bottom board, but not of such height as to prevent the withdrawal of the drawer from the box when its front edge is lifted in the manner already described. This lug therefore secures the drawer against accidental removal or detachment from the box, but permits its ready withdrawal whenever desired. It is evident that the upper edge of the front wall of the drawer need not be beveled, as shown, provided the drawer may be moved forward sufficiently to raise its front edge before striking the lug L. The operation of this feature of the device and the manner in which the construction of the drawer may be modified without altering its operation will be evident to any mechanic. The lug L may be of any desired form and may be secured to the bottom in any convenient way. The essential feature of its construction is its projection above the bottom to such extent as to make it operative in the manner described. The material, form, and attachment of the lug are none of them essential. Instead of such a lug as is shown in Fig. 2, a screw having a

head of suitable projection may be inserted in the bottom board, and a separately-formed lug thus dispensed with.

In order to facilitate the holding of the box in position by the operator, we have formed upon the base or rim C' a handle M, which may be of any desired form, the inner end of the handle being integral with the base, and the handle being of such length as to be readily grasped and firmly held by one hand of the operator while the crank is turned by the other hand. Where the hopper and base are in two separate pieces, as shown in the drawings, the handle may be cast on the base with no added expense whatever except the added weight of metal, and its point of attachment is such that when held by the operator it gives the mill the greatest possible stability. If the base and hopper be formed in a single piece, the handle may still be formed thereon, but not so conveniently or advantageously as where the base is a piece separate from the hopper.

Having now described and explained our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a coffee-mill, the combination, with a hopper, suitable grinding mechanism, and a crank for operating the same, of a cover adapted to rest upon the hopper and formed with a central opening adapted to be passed over the inner end of the crank in either direction, the inner end of the crank being formed with a disk adapted to substantially close the opening in the cover when the latter is in position on the hopper, substantially as and for the purpose set forth.

2. The combination of the hopper C, the crank H, formed with the disk *h*, and the cover K, formed with the opening *k*, adapted to pass over the inner end of the crank and to fit closely about the disk *h*, substantially as and for the purpose set forth.

3. In a coffee-mill, the combination, with a box B, of the drawer D, formed substantially as set forth and inserted at one side of said box, and the lug L, projecting above the bottom part of the box and adapted to permit the withdrawal of the drawer when its external edge is slightly raised, but to prevent said withdrawal when the drawer rests upon the bottom board, substantially as and for the purpose set forth.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

EDGAR H. MORGAN.
CHARLES MORGAN.

Witnesses:

R. H. WILES,
F. E. SMITH.