A. E. BRONSON, Jr.

COFFEE MILL.

APPLICATION FILED AUG. 11. 1905.

921,074.

Patented May 11, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

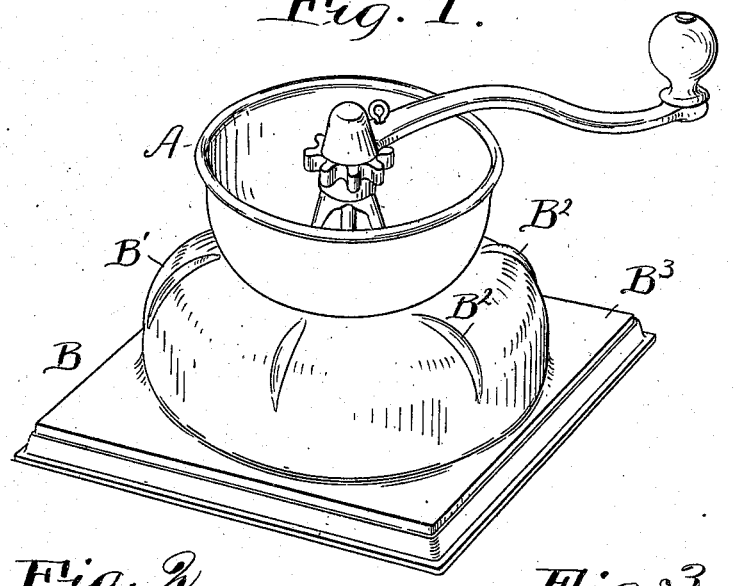


Fig. 2.

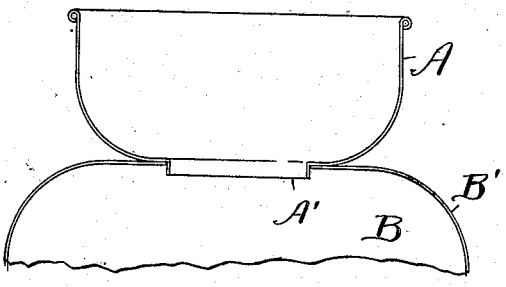


Fig. 3.

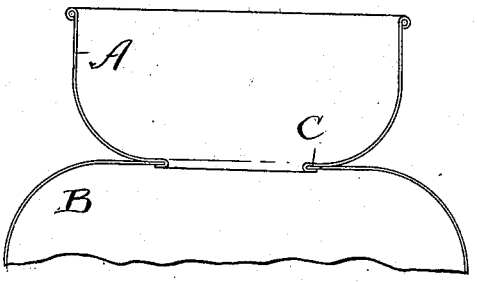
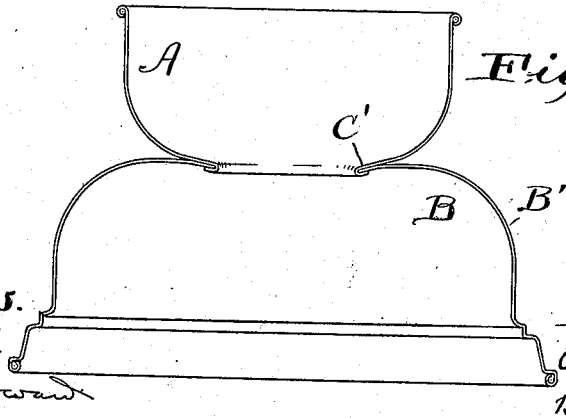


Fig. 4.



Witnesses.
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2 SHEETS—SHEET 2.

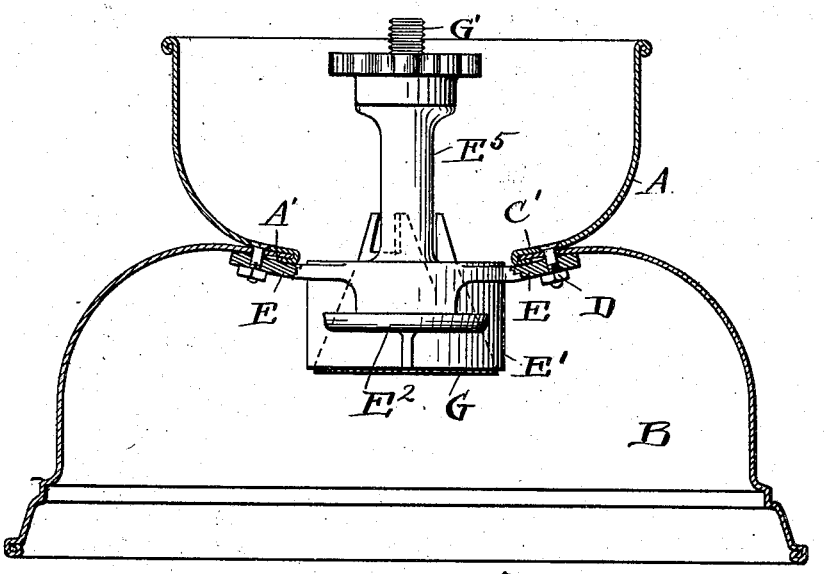


Fig. 5.

Fig. 7.

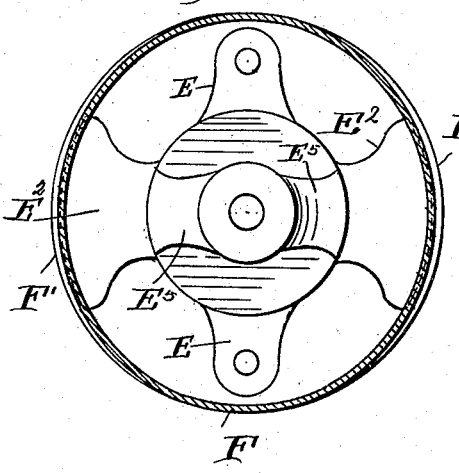


Fig. 6.

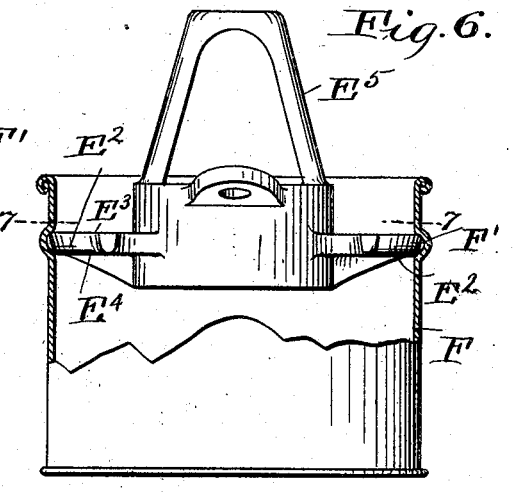
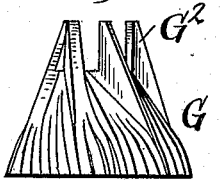


Fig. 8.



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By his Attorneys,
Thurston & Bates.

UNITED STATES PATENT OFFICE.

ADELBERT E. BRONSON, JR., OF CLEVELAND, OHIO, ASSIGNOR TO THE BRONSON-WALTON COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

COFFEE-MILL.

No. 921,074. Specification of Letters Patent. Patented May 11, 1909.

Application filed August 11, 1905. Serial No. 273,744.

To all whom it may concern:

Be it known that I, ADELBERT E. BRONSON, Jr., a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Coffee-Mills, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

The object of my invention is to provide a coffee mill in which the construction is simple and strong and the parts few in number, with novel principles of action in several details.

In the manufacture of coffee mills for household use, one of the principal objects of manufacturers has been to design a construction embodying the fewest possible parts in order that the structure may not only be cheapened but more rapidly assembled and adapted to withstand rough usage. Certain limitations are imposed upon the manufacturer by the materials at his disposal, and with the reduction in the number of the parts, corresponding problems arise in maintaining the strength and other functions necessary to the combination. This will appear more fully in describing the combined hopper and base which I have produced.

In reducing the number of parts which go to make up a complete machine, I have found it possible to dispense with the usual sliding drawer and have substituted therefor a metal cup capable of attachment directly to the grinder and of adhering thereto until removed by the user. I have likewise designed a grinder which will automatically stir and feed the beans to the grinding burs and thus prevent the occasional cessations in the operation of the device with which the user is familiar.

Referring to the accompanying drawings; Figure 1 is a perspective view showing the novel two-part shell. Fig. 2 is a detail vertical section showing the manner in which the hopper is applied to the base in the process of assembling. Fig. 3 is a detail vertical section illustrating the manner of joining the hopper and base in one form of my invention. Fig. 4 is a detail vertical section illustrating a preferred form of hopper and base in which the method of joining is the same as in Fig. 3 but differing as to structure about the feeding orifice. Fig. 5 is a vertical section through the shell of my preferred form showing the stationary bur frame in elevation. Fig. 6 shows the stationary bur frame in elevation from a side at right angles to Fig. 5, with the receiving cup in section. Fig. 7 is a section of the receiving cup on line 7—7 of Fig. 6. the holding lugs on the bur frame being in dotted lines. Fig. 8 is an elevation showing the rotary bur.

The supporting frame, or what I shall call the shell of my mill, consists of but two parts, namely; a hopper A and a base B. Each of these parts is constructed of sheet metal and they are rigidly and permanently secured together at their line of junction by turning back a flange A′, depending from the hopper A, so as to embrace the edge of the opening in the upper part of the base.

In one form of my device, I have united the hopper to the base by a flat, horizontal joint C such as is shown in Fig. 3. This joint is easily made and may be used for small machines where the diameter of the hopper is not great enough to allow the coffee to bank on the sides of the hopper. I prefer, however, to use the form of joint C′ shown in Figs. 4 and 5. This latter joint is made by assembling the parts first as shown in Fig. 2, and then depressing and inwardly inclining the upper edge of the base and the bottom of the hopper simultaneously so as to produce the structure C′ shown in Figs. 4 and 5. As this depression is being made the flange A′ depending from the hopper is turned back on the base and pressed there against. This method of uniting the hopper to the base has the most marked advantages in use. It will be seen that the hopper which is of the ordinary cup shape before being assembled has its base inclined during the joining operation so that there is no flat or bottom portion in which the grains may bank or collect as sometimes happens with the form shown in Fig. 3, when the diameter of the hopper is rather large. In the form shown in Fig. 4, however, the curve of the hopper is continuously downward and as a result the coffee is continuously fed into the grinding burs as it finds no lodging place at which to form banks. Further, the depression of the base about the central opening and the clamping of the hopper flange thereto makes the joint rigid and the hopper does

not spring up and down as it does in the form shown in Fig. 3, when in operation. This latter advantage is a very valuable one since the continual "give" and the resilient spring of the hopper and base relative to each other, is quite tiresome when the mill is used to any extent.

The base B, as will be seen, is provided with a hand gripping portion B′ which is rounded in the form of a turret and provided with strengthening ribs B^2. This turret should be formed with a proper diameter to fit the hand and to withstand the pressure which is ordinarily put upon it in holding the mill steady on the table while being used. Projecting from the bottom of the turret is a rectangular supporting extension B^3 sufficiently large to give a proper base for the machine. This supporting section might be made circular after the manner of the turret, but to do so involves a useless consumption of metal and the appearance is not so attractive. It is necessary, however, that the points of support be extended a considerable distance beyond the base of a turret fitted to the ordinary size of hand, in order that the machine may be securely and firmly held without wabbling during the grinding operation.

The grinder is secured beneath the hopper and within the base by means of two screw bolts D projecting through the hopper and base at their joint and supporting the grinder by two ears E E diametrically disposed projecting from the frame E^5 of the upper or stationary bur E′. Likewise extending from the frame of the upper bur are two arcual holding lugs E^2 E^2 designed to retain and hold the receiving cup F in position. These arcual lugs are, as will be seen from Fig. 6, provided with a sharp angled upper edge E^3 and a curved lower edge E^4. The receiving cup F is provided with corresponding expanded arcual grooves F′, the extreme inner diameter of which is the same as the diameter across the arcual lugs. The upper edge of the cup is elliptical in form,—the longer axis of which is at right angles to the diameter between the expanded grooves and equal thereto and, consequently, equal to the diameter of the holding lugs. The diameter of the cup above the grooves F′ is the shorter axis of the ellipse and less than that of the lugs, with the result that when the cup is forced against said lugs, the former is expanded until the grooves spring over the edge of the latter. The angular upper edge of the lugs will then prevent the cup from being accidentally withdrawn, and as a matter of fact, will render it ordinarily impossible to withdraw the cup without turning the same until the lugs pass out of the grooves in line with the longer axis of the ellipse. Such a method of attaching the receiver, is, as will be apparent, exceedingly convenient and the fact that the receiver will not become detached or slide off, makes it possible to carry the machine from point to point without paying any particular attention to the manner in which it is carried. The running bur G which is mounted on the central operating shaft G′ is provided with stirring prongs G^2 extending upwardly from the coarser shearing teeth of the bur. These prongs project sufficiently beyond the feeding slot to continually agitate the mass of beans in the hopper above and dislodge them. The advantage of this structure is obvious upon inspection without further remark.

Having thus described my invention, I claim:—

1. A coffee mill shell comprising a cup-like hopper and a single piece open-bottomed base having a turret-shaped gripping portion, each of said parts having a central opening at their point of juncture and an inwardly turned edge about said opening, the edge of one part carrying a flange overlapping the edge of the other part.

2. A coffee mill shell composed of two sheet metal pieces, one a hopper having a central opening and a wall with continuously downwardly sloping curve, the other an open bottomed base, means inclosed by the base for supporting a receiver for the ground coffee, said base having a turret-like upper portion provided with an opening in alinement with the opening in the hopper and inwardly and downwardly deflected around the edge of said opening, said hopper and base being secured together around said downwardy deflected edge by means of a flange carried by one member and overlapping the edge of the other member.

3. A coffee mill shell consisting of a hopper and a base, said base having a turret shaped hand gripping upper portion provided with a central opening and vertical stiffening ribs and supporting extensions projecting from the bottom thereof, said turret being downwardly inclined about the edge of its central opening, said hopper being shaped to fit said downward inclination and secured by a backwardly bent overlapping flange at the bottom thereof.

4. A coffee mill comprising a shell composed of two sheet-metal pieces, a base and a hopper united by an overlapping flange at their point of contact, a stationary grinding bur supported by suitable means passing through the abutting edges of the base and hopper and ears projecting from the side of the bur frame, a receiving cup, and co-operating means on said upper frame and receiving cup admitting of the latter being sprung on and secured to said frame.

5. In a coffee mill, a shell carrying a stationary bur, lugs projecting from said

bur, a receiving cup provided with grooves in the side thereof of such diameter as to permit of said cup being sprung over said lugs and embracing them in said grooves.

6. A coffee mill shell comprising a stationary bur frame having projecting therefrom arcual lugs with angular upper edges and rounded lower edges, and a holding cup having arcual shaped grooves of a diameter equal to that of said lugs, said cup being elliptical at its mouth,—the longer axis of the ellipse being at right angles to and equal with the diameter of the grooves.

7. A coffee mill shell comprising two single piece sheet metal sections, one section shaped to form an open-topped hopper, the other section shaped to form an open-bottomed base, said hopper and said base having centrally alined openings and secured together about said openings, a receiver for the ground coffee located beneath said openings and inclosed within and by said base, and means within and inclosed by said base for retaining the ground coffee receiver in position, said receiver being attachable to and detachable from said retaining means.

In testimony whereof, I hereunto affix my signature in the presence of two witnesses.

ADELBERT E. BRONSON, JR.

Witnesses:

J. M. WOODWARD,

N. L. BRESNAU.