B. C. HOLWICK.

COFFEE MILL.

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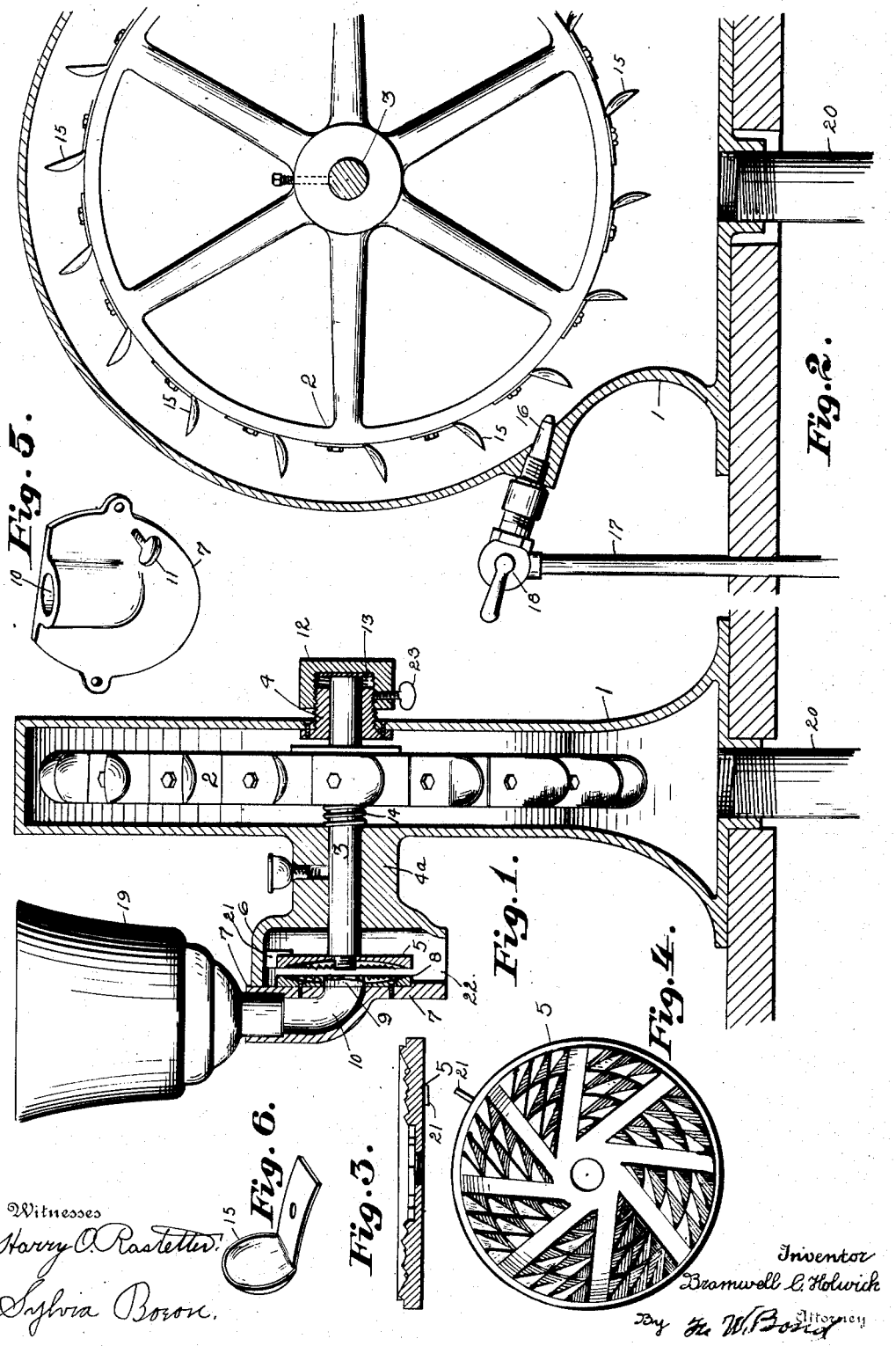
927,971. **Patented July 13, 1909.**



Witnesses
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UNITED STATES PATENT OFFICE.

BRAMWELL C. HOLWICK, OF CANTON, OHIO.

COFFEE-MILL.

No. 927,971. Specification of Letters Patent. Patented July 13, 1909.

Application filed August 17, 1907. Serial No. 389,056.

To all whom it may concern:

Be it known that I, BRAMWELL C. HOLWICK, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, 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 of the same, reference being had to the accompanying drawing, making a part of this specification, and to the numerals of reference marked thereon, in which—

Figure 1 is a vertical section of the mill showing the different parts placed in proper position. Fig. 2 is a transverse view of the shaft showing the motor connected thereto and the jet nozzle placed in position with reference to the motor. Fig. 3 is a sectional view of the rotary grinding disk. Fig. 4 is a face view of the rotary grinding disk. Fig. 5 is a detached view of the detachable head. Fig. 6 is a detached view of one of the buckets.

The present invention has relation to coffee mills and it consists in the novel arrangement hereinafter described and particularly pointed out in the claim.

Similar numerals of reference indicate corresponding parts in all the figures of the drawing.

In the accompanying drawing, 1 represents the base or support, which base or support is formed hollow and of a size sufficient to form a casing for the motor 2, which motor is securely attached to the shaft 3, said shaft being journaled in the bearings 4 and 4^a, said bearings being located upon opposite sides of the base or casing 1 as illustrated in Fig. 1.

To one end of the shaft 3 is attached the grinding disk 5, which grinding disk may be of any desired kind. The outer end of the bearing 4^a is provided with the flange 6, which flange incloses the grinding disk 5 and at the same time provides a means for attaching the head 7, to which head is attached the grinding disk 8, said grinding disk 8 being provided with an opening 9, which opening registers with the passage 10 formed in the head 7. The head 7 is detachably connected to the flange 6 by means of the screws 11. It will be understood that by detachably connecting the head 7 to the flange 6, said head together with the disk can be removed for any cause without disturbing any part of the structure, except that carried by the head.

The bearing 4 is screw threaded and upon which screw threaded bearing is located the screw or cap 12, which cap is provided with the washer 13, which washer is adapted to abut against the end of the shaft 3 as illustrated in Fig. 1. It will be understood that by turning the cap 12 in the direction to move it upon the bearing 4 it will move the shaft 3 endwise after the washer 13 comes in contact with the end of the shaft 3, and as the shaft 3 is moved endwise it will carry the grinding disk 5 toward the grinding disk 8, by which arrangement the space between the disks is adjusted and provision made for grinding coarse or fine as desired. For the purpose of moving the shaft 3 endwise when released by the cap 12 the spring 14 is provided the ends of which spring abut against the hub of the motor 2, and the inner face of the base or casing 1 as best illustrated in Fig. 1.

It will be understood that the chamber in which the motor is located should be formed of a width somewhat greater than the width of the motor so that the motor can move back and forth when the shaft is moved to adjust the grinding disk 5.

To the periphery of the motor 2 are attached a series of buckets 15, which are substantially of the form shown. The jet nozzle 16 is located substantially as shown in Fig. 2, and as shown it will throw a stream of water against the buckets, which buckets are preferably formed cup shaped as best illustrated in Fig. 6, and the buckets located at such an angle that the greatest force of the stream of water will be utilized in rotating the motor wheel 2.

It will of course be understood that a supply pipe 17 must be provided and the usual cut off valve 18 properly located, but this feature forms no particular part of the present invention.

By locating the motor and the grinding disk upon a single shaft and at the same time providing for end adjustment of said shaft I am enabled to drive the grinding disk direct, thereby doing away with gear and reducing the expense in the manufacture of the mill. It will also be understood that by connecting the stationary grinding disk to the head 7 and detachably connecting the head to the main portion of the mill, the

grinding disks are of easy access, owing to the fact that all that is necessary to be done is to remove the head, which removes the stationary grinding disk and carries access to the rotary grinding disk.

It will be understood that a hopper 19 should be provided, which hopper is of ordinary construction and has no specific reference to the present invention.

For the purpose of reducing friction and noise the washer 13 is preferably formed of non-metallic material of any suitable kind. It will be understood that by forming the washer of non-metallic material, a slight resiliency is provided for as between the cap 12 and the end of the shaft 3, by which arrangement there is no metal contact as between the cap and the shaft. For the purpose of drawing the water used in propelling the motor a waste pipe such as 20 should be provided.

For the purpose of preventing the accumulation of coffee in the grinding chamber after it has been properly ground, the rotary grinding disk 5 is provided with the blade 21, which blade is so located that it will sweep the ground coffee that does not fall by gravity into a position to pass through the opening 22 formed at the bottom of the grinding chamber.

For the purpose of preventing any variation in the adjustment of the shaft 3 after said shaft has been properly adjusted so as to bring the grinding disks in proper spaced relationship with reference to each other, the cap 12 is provided with the set-screw 23, which set-screw is for the purpose of preventing any rotation of the cap, except at such times as it is found necessary to adjust the shaft, 3.

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

In a coffee mill, a motor casing, a motor shaft carried by the motor casing, and slidably mounted in its bearings, one of the bearings of said shaft extended beyond the face of the motor casing and provided with a screw-threaded periphery, a cap adjustably attached to said bearing and provided with a washer adapted to abut against the end of the shaft and means for holding said cap against rotation upon the shaft bearing, a grinding disk rotatable with the shaft a chamber adapted to inclose said grinding disk a sweeping blade projecting from the edge of said disk, a fixed grinding disk located adjacent the rotatable disk, a motor wheel located upon the slidable shaft and a spring located between one face of the motor casing and the adjacent face of the motor wheel, said motor wheel formed of a width less than the width of the motor casing, substantially as and for the purpose specified.

In testimony that I claim the above, I have hereunto subscribed my name in the presence of two witnesses.

BRAMWELL C. HOLWICK.

Witnesses:
F. W. BOND,
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