

(No Model.)

2 Sheets—Sheet 1.

J. D. SMITH.
COFFEE ROASTER.

No. 554,094.

Patented Feb. 4, 1896.

Fig. 1.

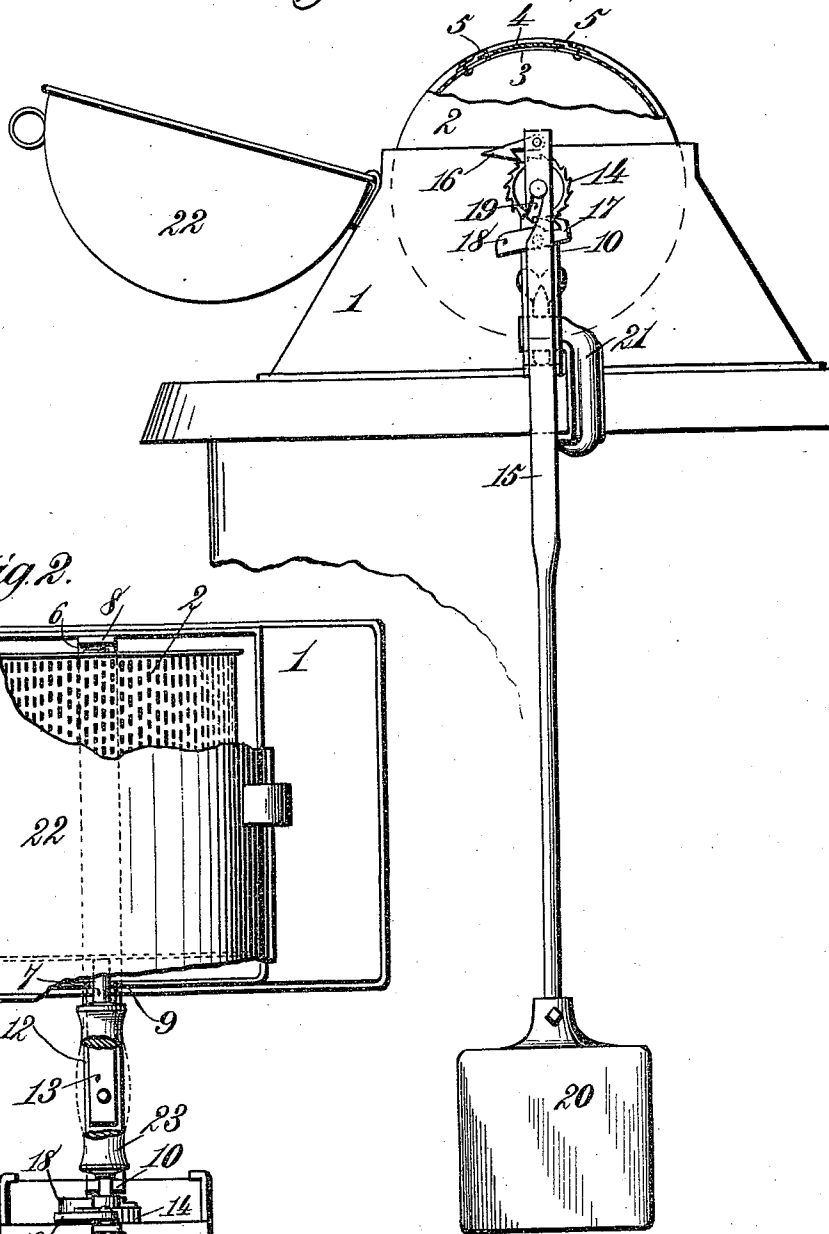
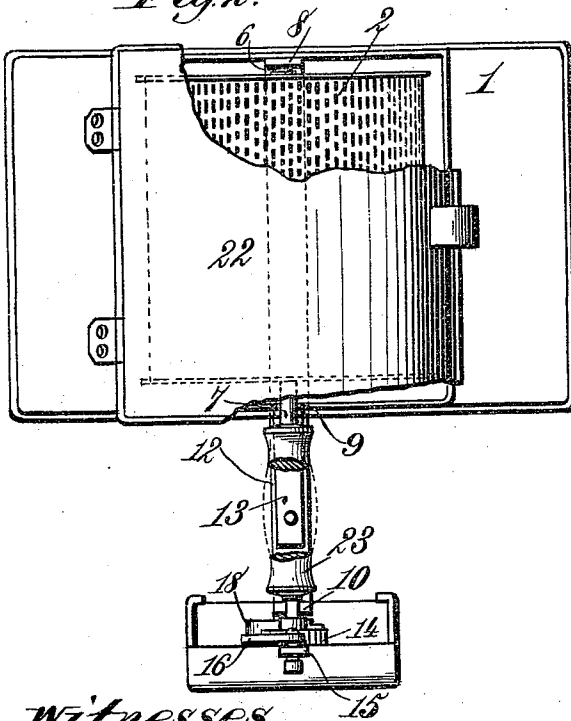


Fig. 2.



Witnesses.
Robert Smith.
Dennis Sumby.

Inventor:
John D. Smith.
By James L. Norris.
Atty.

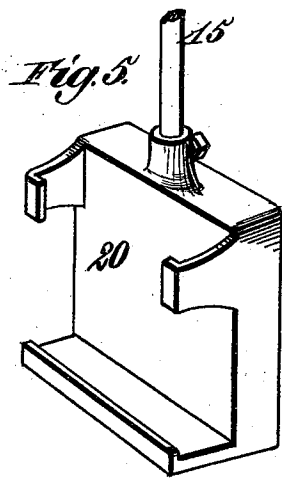
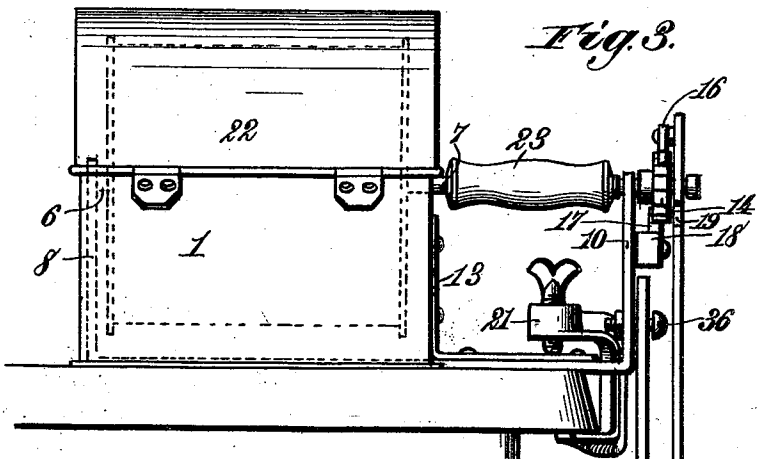
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2 Sheets—Sheet 2.

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Dennis S. Smith

Inventor.
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UNITED STATES PATENT OFFICE.

JOHN DAWSON SMITH, OF BONHAM, TEXAS.

COFFEE-ROASTER.

SPECIFICATION forming part of Letters Patent No. 554,094, dated February 4, 1896.

Application filed July 9, 1895. Serial No. 555,425. (No model.)

To all whom it may concern:

Be it known that I, JOHN DAWSON SMITH, a citizen of the United States, residing at Bonham, in the county of Fannin and State of Texas, have invented new and useful Improvements in Coffee-Roasters, of which the following is a specification.

My invention relates to coffee-roasters, my purpose being to provide an apparatus of this type which shall be specially adapted to family use, and to combine therewith simple means whereby the roasting-cylinder may be intermittently rotated either manually or, if desired, automatically, thereby relieving the cook of the necessity of standing constantly over the roaster and giving attention exclusively thereto.

My invention also comprises certain further improvements in construction and operation, all of which will be fully described hereinafter, and then particularly pointed out and defined in the claims which conclude this specification.

To enable others to fully understand and practice my said invention, I will describe the same in detail, referring for this purpose to the accompanying drawings, in which—

Figure 1 is a side elevation showing a coffee-roaster constructed in accordance with my invention and mounted upon a stove, the lid of the housing being turned back and part of the end of the roasting-cylinder being broken away to show the opening in section. Fig. 2 is a plan view of the parts shown in Fig. 1. Fig. 3 is a side elevation showing a modified apparatus for automatically rotating the roasting-cylinder. Fig. 4 is a detail view showing the automatic devices more completely. Fig. 5 is a further detail view showing the construction of the pendulum in Fig. 1, whereby it is adapted to receive and serve as a housing for the automatic devices.

The reference-numeral 1 in said drawings indicates the housing or inclosing casing of the roaster, which is formed preferably of cast-iron in order that it may have sufficient weight that it may not be overbalanced by the weight of the pendulum and its automatic devices. This housing is substantially trapezoidal in form in side elevation, the bottom and top being left open. In the said housing is journaled a roasting-cylinder 2, having

closed or imperforate ends and a foraminous cylindrical wall, usually formed of perforated sheet metal. At a suitable point in this cylindrical wall is formed an opening 3, which is closed by a sliding door 4, the latter moving in guideways 5, which are secured to the foraminous cylindrical wall of the roaster.

The cylinder is provided upon its imperforate ends or heads with journals 6 and 7, one of which has a seat in a bearing 8 on one wall of the housing, while the other and longer journal lies in a bearing at the bottom of a slot 9 in the other side wall of the housing. This prolonged journal 7 extends some distance beyond the wall of the housing and has a second bearing in the upper end of a vertical bar 10, which rises from a horizontal bar 12, extending from the bottom of the casing, to which it is rigidly fastened by an angular brace 13.

Upon the end of the longer journal 7 which projects beyond the vertical bar 10 is mounted a ratchet-wheel 14, and upon a reduced portion of the journal just outside said ratchet is mounted a pendulum-bar 15, its upper end rising somewhat above the ratchet and being provided with a pawl 16 which engages by its own gravity with the teeth of the said ratchet. Upon the vertical bar 10, beneath the ratchet 14, is pivoted a holding-pawl 17, which has a weighted end 18, by which it is caused to engage the ratchet-teeth. The pendulum-bar 15 is provided with a slot 19 opening through one of its sides, whereby it may be placed upon and removed from the reduced portion of the journal at pleasure. The pendulum-bar may be of any length; but I prefer to bring it as near the floor as possible and to load its lower end with a suitable pendulum-ball 20 of proper weight. This ball is chambered or recessed to provide an opening or space to receive an escapement mechanism, by the use of which the rotation of the roasting-cylinder can be accomplished automatically, as described hereinafter.

The housing may be clamped upon the stove in any manner preferred; but I usually employ a clamp 21, one arm of which overlies the frame of the roaster and the other lies beneath the edge of the stove, a thumb-screw being tapped through one of said arms in order to clamp the roaster firmly and pre-

vent it from being displaced by the oscillation of the pendulum-bar.

The pendulum-bar described above is not vibrated by automatic mechanism, but receives its impulse from the hand of the operator at intervals. Sufficient power is stored in said pendulum to operate the cylinder and enable the cook or other person to bestow the larger portion of their time and attention upon the various other operations under way.

The top of the housing is closed by a hinged lid 22, which I prefer to form of tin or other bright metal to reflect the heat-rays into the roasting-cylinder. The prolonged journal 7 may be provided with a covering 23, of wood or other suitable material, to enable the roasting-cylinder to be handled without burning the hand.

If preferred, the opening in the roasting-cylinder, by which the coffee-berries are introduced and removed, may be formed in one of the end walls of said cylinder.

In order to readily convert the apparatus from a manually-operated to an automatically-operated coffee-roaster, I provide an escapement consisting of a toothed escapement-wheel 24, loose upon a shaft 25, which has bearing in two parallel plates 26. To this shaft is connected one end of a strong spiral spring 27, its other end being secured to one of the posts 28, which connect the plates 26 together. The toothed wheel 24 is connected to the shaft 25 by a ratchet 29, rigid on said shaft, and a pawl 30 pivoted to the wheel 24 and pressed by a spring 31 into engagement with the teeth of the ratchet. The parts thus far described are adapted to be housed in the recess or space formed for that purpose in the pendulum-ball 20, thereby protecting the escapement from excessive heat and from injury from other causes.

Upon a post 32, which rises from the pendulum-ball in rear of the bar 15, is pivoted the crutch 33, which engages the escapement-wheel 24. This crutch is rigidly connected to a bar 34, which rises behind the pendulum-bar, its upper end being provided with a central slot, 35, longitudinally formed and adapted to engage a stud or pin 36, which projects from the vertical bar 10 at a suitable point below the journal 7 of the ratchet 14, with the reduced portion of which journal the upper portion of the pendulum-bar 15 engages in the manner already explained.

The spiral spring 27 being wound up by any suitable key, which is placed upon the squared end of the shaft 25, the pendulum is set in vibration, and its motion will be continued by the action of the escapement mechanism until the coffee is completely roasted.

The automatic devices may be readily detached, if desired, and withdrawn from the pendulum-bar, after which the roaster can

be turned manually by imparting renewed vibration at frequent intervals to the pendulum ball and bar.

What I claim is—

1. A coffee-roaster, consisting of a housing open at bottom and top, a cylindrical roaster journaled in said housing and having one of its journals prolonged and resting in a bearing in a vertical bar outside the housing, a ratchet rigidly mounted on said journal, a pendulum-bar detachably mounted on said journal near the ratchet and provided with a pawl meshing therewith, and a holding-pawl pivoted on the vertical bar, substantially as described.

2. A coffee-roaster consisting of a substantially trapezoidal housing open at bottom and top, a roasting-cylinder having imperforate ends and a foraminous cylindrical wall provided with an opening closed by a slide moving in guideways bolted or riveted to said cylindrical wall, a ratchet mounted on one prolonged journal of the roasting-cylinder, a pendulum-bar having a slot opening through one edge, by which it is mounted upon said prolonged journal adjacent to the ratchet, a recessed, or chambered pendulum-ball, a pawl pivoted upon said pendulum-bar, and a holding-pawl pivoted upon the frame of the roaster, substantially as described.

3. A coffee-roaster consisting of a housed roasting-cylinder having a shaft prolonged at one end to extend outside the housing, a ratchet rigid on said shaft, a pendulum-bar mounted on the journal near said ratchet and having a pawl meshing with the latter, a recessed or chambered pendulum-ball, an escapement mechanism adapted to be housed in said pendulum-ball, and a crutch having a rigid bar the end of which is adapted to engage a rigid stud below the shaft of the ratchet, substantially as described.

4. In a coffee-roaster, the combination with a housed roasting-cylinder having a shaft projected at one end through the housing, of a ratchet rigid on said shaft a pendulum-bar detachably mounted on said shaft and having a pawl meshing with the ratchet, an escapement mechanism adapted to be housed in a chamber in the ball of the pendulum, and a crutch rigid with a bar lying behind the pendulum-bar and having a slot in its end adapted to detachably engage a rigid stud arranged below the shaft, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN DAWSON SMITH.

Witnesses:

SAM MOORE,
MERRICK DAVIS.