

(No Model.)

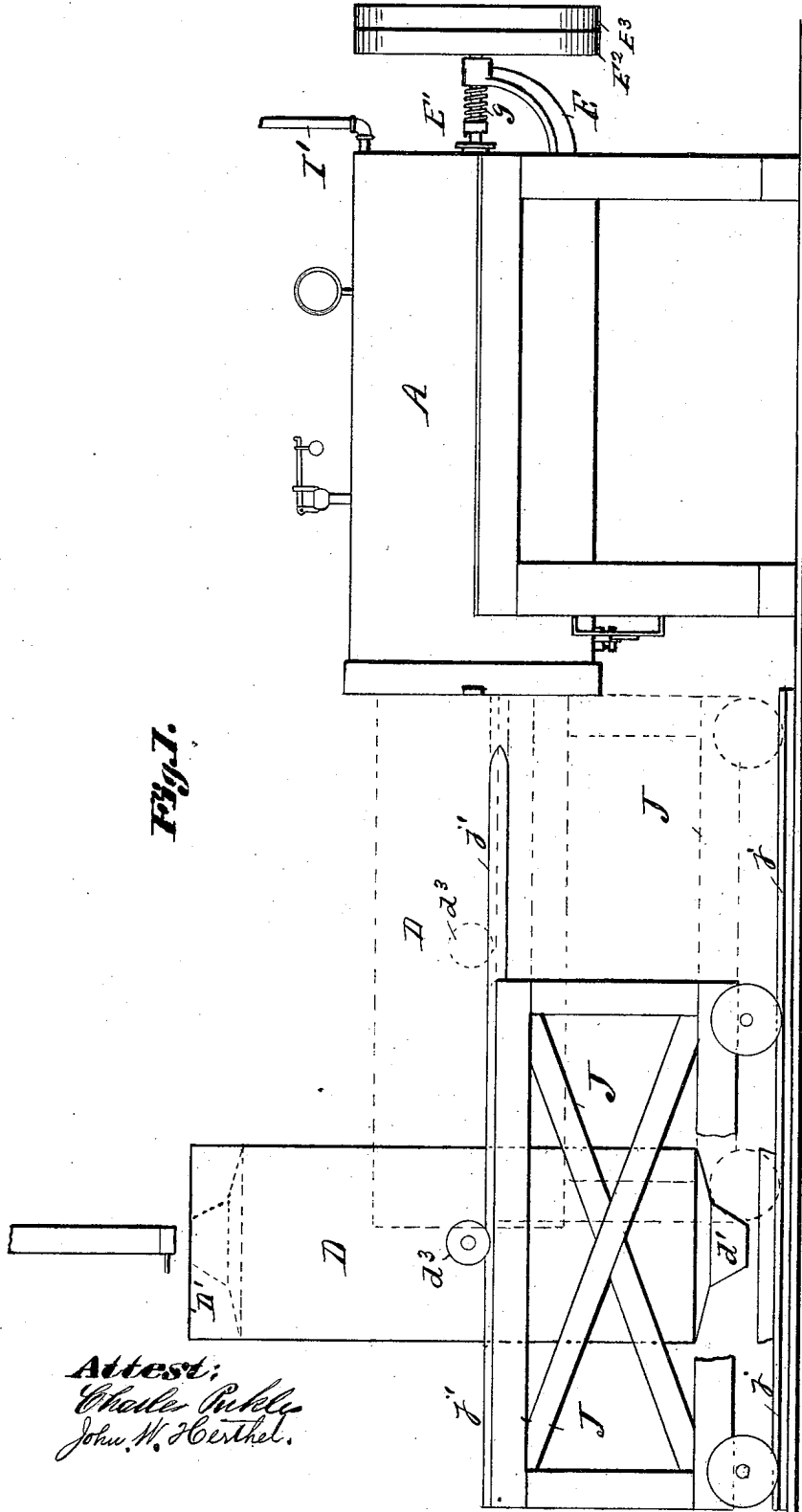
2 Sheets—Sheet 1.

J. C. SALZGEBER.

COFFEE ROASTER.

No. 316,066.

Patented Apr. 21, 1885.



**Fig. 1.**

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

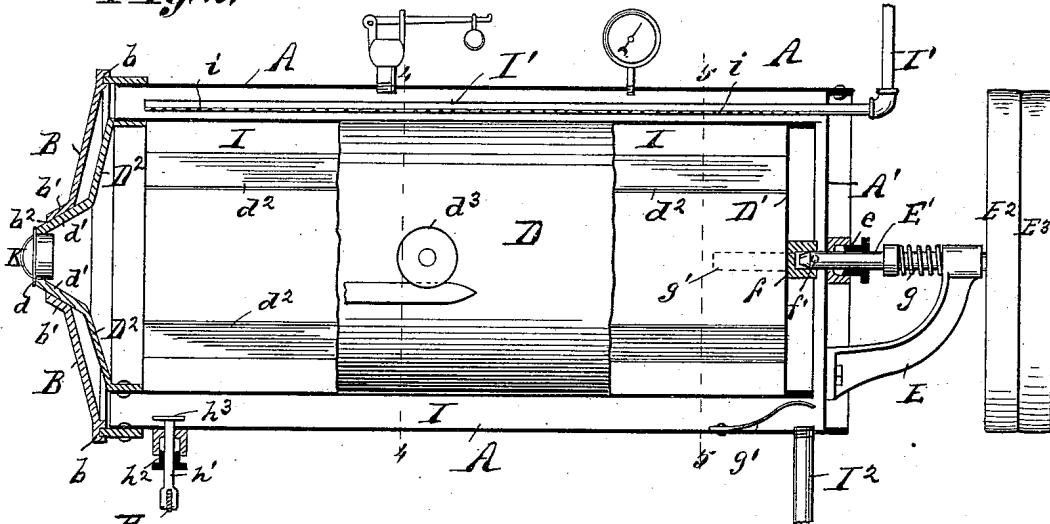


Fig. 3.

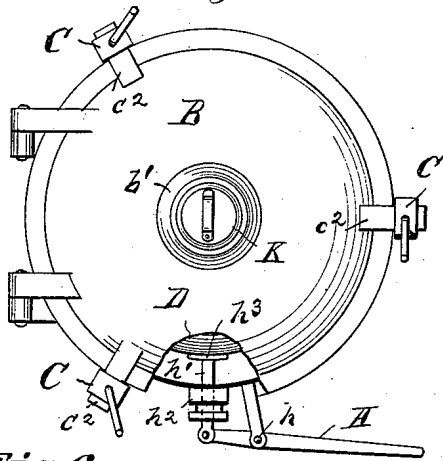


Fig. 4.

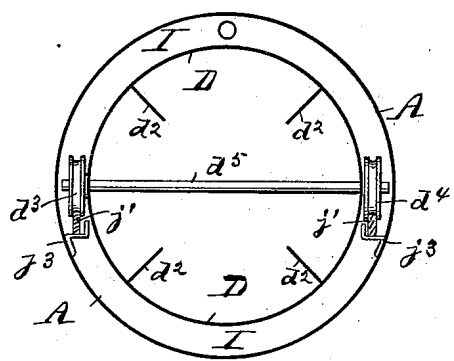


Fig. 6.

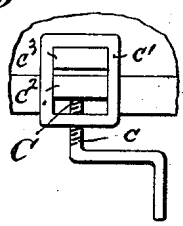


Fig. 5.

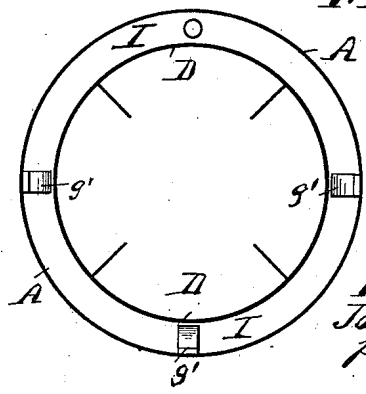
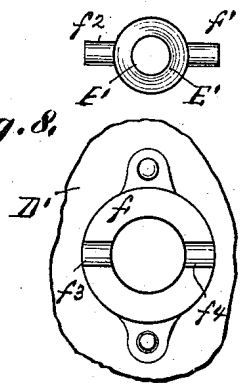


Fig. 8.



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# UNITED STATES PATENT OFFICE.

JOHN C. SALZGEBER, OF ST. LOUIS, MISSOURI.

## COFFEE-ROASTER.

SPECIFICATION forming part of Letters Patent No. 316,066, dated April 21, 1885.

Application filed May 26, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN C. SALZGEBER, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented a new and useful Improved Machine for Roasting Coffee, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

I will first describe the construction and operation of my improvements, and hereinafter point out the nature thereof in the claims.

Figure 1 is a side elevation of my improved coffee-roaster, together with the movable truck on rails employed for supporting the cylindrical case in either upright condition, also for inserting the same into and withdrawing same out of the roaster proper. Fig. 2 is essentially a longitudinal sectional elevation of the machine or apparatus for roasting coffee. Fig. 3 is a front elevation showing the roaster closed. Figs. 4 and 5 are cross-sections taken, respectively, on lines 4 4 5 5. Fig. 6 is an enlarged detail view of one of the screw-clamps to clamp the outer door and close the open end of the steam-cylinder case or roaster proper. Figs. 7 and 8 are enlarged detail views of the socket-bearing on the rear of the coffee-cylinder, and show how same can engage the shaft and its lateral projections.

Similar letters refer to similar parts throughout the several views.

A is the outer or steam cylinder, closed by the rear plate, A', and having the hinged door B to close the front thereof. The front door, B, closes by its groove *b* against the annular edge of the steam-cylinder, (see Fig. 2,) and this closure is retained by the several screw-clamps, C, each consisting of a hand-screw, *c*, and yoke *c'*. (See Figs. 3, 6.) The clamp by its yoke is fitted to engage lugs *c<sup>2</sup>* and *c<sup>3</sup>*, the former being part of the hinged door, the latter projecting from the front of the steam-cylinder, as shown. The clamps draw the hinged door tightly to close the front of the steam-cylinder and retain the door steam-tight and securely fastened against the steam-pressure within. The hinged door B has a taper flange at *b'* and central opening, *b<sup>2</sup>*, through which the cone-shaped portion of the coffee drum or cylinder can project, as indicated in Figs. 2, 3.

D is the inner cylindrical case or drum, to contain the coffee. It is closed by plate D' in the rear, and its front plate, D<sup>2</sup>, tapers to a central opening, *d*. Otherwise the front is made cone-shaped and projects by its forward portion, *d'*. (See Figs. 1, 2.) The opening *d* serves for entering as well as discharging the coffee.

*d<sup>2</sup>* are fixed beaters to stir the coffee-grains inside the drum while same revolves.

Belonging to the coffee-drum are the centrally-located grooved wheels *d<sup>3</sup>* *d<sup>4</sup>*, turning on the axis *d<sup>5</sup>*, as shown. By means of these wheels carrying the coffee-drum the latter can be easily supported, turned, and handled either when hot or cold, and as will hereinafter appear.

The coffee-drum is further adapted to be at all times properly located inside the main cylinder A; also, capable of being readily revolved within the steam-space for purposes of subjecting the contained coffee to proper roasting action; also, said coffee-drum can be readily withdrawn out of the roaster, and said results I accomplish by the following construction of parts:

E is a standard bolted to the rear of cylinder A, to support the revolving-shaft E', carrying the belt-wheels E<sup>2</sup> E<sup>3</sup>, connected to power source in manner ordinary. The shaft passes through a stuffing-box, *e*, attached to the rear plate, A', and the inner end of the shaft is fitted to receive a socket-bearing, *f*, which forms part of the rear plate of the coffee-drum. (See Figs. 2, 8.) Further, the shaft has lateral or projecting pins *f'* *f<sup>2</sup>*, fitted to engage cheeks *f<sup>3</sup>* *f<sup>4</sup>*, forming part of the socket-bearing. (See Figs. 2, 7, 8.) Thus the rear portion of the coffee-drum by its socket-bearing engages the taper end of the shaft E at same time the cheeks of the drum engage the lateral pins of the shaft, (see Fig. 2,) and when so supported that end of the coffee-drum can be made to revolve inside the outer or main cylindrical case. The front end of the coffee-drum is also supported to turn. This is done by closing the hinged door so that its central opening forms the bearing for the projecting or cone-shaped portion of the drum to revolve in, as indicated in Figs. 2, 3. As apparent, the parts that support the coffee-drum so that

it can revolve are such as to readily permit the insertion or withdrawal of the drum into or out of the main cylinder.

$g$  is a coil-spring on the shaft to cushion the seating of the drum on shaft.  $g'$  are spring-blades to guide the rear portion of the drum to its seat on the shaft.

$H$  is a hand-lever, pivoted at  $h$  to a standard attached to the under side of the outer casing. To the outer end of the hand-lever is pivoted a vertical shaft,  $h'$ , that passes through a stuffing-box at  $h^2$  and carries at its upper end, inside the outer casing  $A$ , the step  $h^3$ . (See Figs. 2, 3.) By means of this hand-lever attachment the step can be raised or lowered to lift the forward portion of the coffee-drum on a line with its proper seating on the shaft and permit the hinged door to close over the forward-projecting portion of the drum in manner indicated in Figs. 2, 3. When the hand-lever is raised, the step is lowered out of the way. (See Fig. 2.)

It is my object to prevent the direct contact of the heat, gases, &c., from the fire reaching, commingling with, and permeating the coffee during the process of roasting. Therefore I employ or use superheated steam as the medium or means to produce the heat or surround the coffee-drum with the required hot temperature.

$I$  represents the annular steam-space between the outer casing,  $A$ , and coffee-drum  $D$ . (See Figs. 2, 4, 5.)

Superheated steam enters the pipe  $I'$ , (see Fig. 2,) and this pipe has perforations  $i$ , so that the superheated steam continually surrounds all portions of the coffee-drum, and will be distributed equally at or to every point from front to rear of the coffee-drum while it is being revolved.

$I'$  is the exhaust-pipe.

To facilitate the handling of the coffee-drum, especially to support it in both upright positions, when the green coffee is to fill same or the roasted coffee to be discharged from the heated drum, also as means to properly insert the coffee-drum, with its contents, inside the roaster, and when the roasting process is finished to facilitate the withdrawal of the hot coffee-drum and its contents, I employ a movable truck and its parts as follows: By referring to Fig. 1,  $J$  represents the truck mounted by its wheels on bottom rails,  $j$ . Attached to the top of the truck are top rails,  $j'$ —one on each side—fitted for the wheels carrying the coffee-drum. The truck-rails  $j'$  extend a sufficient distance forward or beyond the front of the truck so that when the latter is moved up to the front of the roaster at same time its rails will be brought within the roaster to form the needed track upon which the coffee-drum can be moved along, either for proper location within the roaster or to be easily withdrawn out of same.  $j^3$  are brackets attached inside the steam-space to the outer casing,  $A$ . Upon these brackets the rails of the track can

bear, and are guided when entering or being withdrawn. (See Fig. 4.)

The complete operation is as follows: The coffee-drum is first charged with green coffee to be roasted. By referring to Fig. 1 the coffee-drum is shown supported by its wheels in upright position, the dotted lines at the top representing the open end of the drum as having been brought in line under the spout, from which the fresh coffee can discharge into and fill the drum. When filled, or nearly so, a stopper,  $K$ , closes the opening of the drum, and it is turned to assume a horizontal position on the rails of the truck. In this condition the truck carrying the charged coffee-drum is moved forward, as indicated by dotted lines in Fig. 1, until the truck is nearly against the front of the roaster, while at same time the coffee-drum, still mounted on the rails, is withdrawn in the roaster. The operator can next readily seat the coffee-drum on the shaft in the rear, while the previously-raised step supports the coffee-drum in front. This done, the truck is completely moved back, its rails in being withdrawn easily slipping out from under the wheels of the coffee-drum. The hinged door next is forced to close the front of the roaster, the step is lowered, and the coffee-drum, with its contents, kept revolving within the roaster, at same time subject to the action of the superheated steam.

When the coffee is roasted, the step is raised to support the coffee-drum in front, the hinged door is opened, the movable truck is moved forward to get its rails under the wheels of the coffee-drum, and both the drum and truck are withdrawn from the roaster. Finally the coffee-drum is turned upright to discharge its roasted coffee out of its opening. (See Fig. 1.) This done, the empty coffee-drum is reversed in upright position to bring its open end under and in line with the feed-spout, and fresh coffee is filled in the drum preparatory to again relocating the same in the roaster and roasting its fresh contents.

What I claim is—

1. The improved machine for roasting coffee, consisting, essentially, of an outer stationary cylindrical casing,  $A$ , closed in the rear and having a hinged door,  $B$ , in front, the inner cylindrical casing or coffee-drum,  $D$ , having its front supported to turn in said hinged door, while its rear portion turns with the spindle or shaft, the annular steam-space  $I$  between said cylindrical casing and the drum, the perforated steam-pipe  $I'$ , by means whereof superheated steam can be admitted to surround the said coffee-drum while same is being revolved, as and for the purposes set forth.

2. In an apparatus for roasting coffee, the combination of the outer stationary cylindrical case,  $A$ , closed in the rear by plate  $A'$  and in front by a hinged door,  $B$ , having a central flange and opening,  $b' b^2$ , the coffee-drum  $D$ , its rear plate having the socket-bearing  $f$ , with cheeks  $f^3 f^4$ , the front plate,  $D^2$ , made conical

to project at  $d'$ , with opening  $d$ , the revolving shaft  $E'$ , having lateral pins  $f' f^2$ , by means whereof said coffee-drum can be removed from or inserted in its outer casing, and capable of being revolved, in the manner and for the purposes set forth.

3. In an apparatus for roasting coffee, the combination of the outer casing, A, closed in the rear by plate  $A'$ , in front by a hinged door,  $B$ , having central opening and flange,  $b' b^2$ , the coffee-drum D, its rear plate having socket-bearing  $f$ , cheeks  $f^3 f^4$ , the front plate,  $D^2$ , thereof made conical, with opening  $d$ , the revolving shaft  $E'$ , having lateral pins  $f' f^2$ , the annular space I, having perforated steam-pipe  $I'$ , exhaust-pipe  $I^2$ , by means whereof said coffee drum and its contents can be subjected

to the action of superheated steam and at same time revolve, substantially as and for the purposes set forth.

4. The combination of the movable truck J, having top rails,  $j'$ , extending beyond the front of the truck, the coffee-drum D, closed at one end, the other end made conical and having a central opening,  $d$ , the grooved wheels  $d^3 d^4$ , forming part of the drum, by means whereof it can be supported, moved, and turned on top of said truck, as and for the purposes set forth.

In testimony of said invention I have hereunto set my hand.

JOHN C. SALZGEBER.

Witnesses:

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JOHN W. HERTHEL.