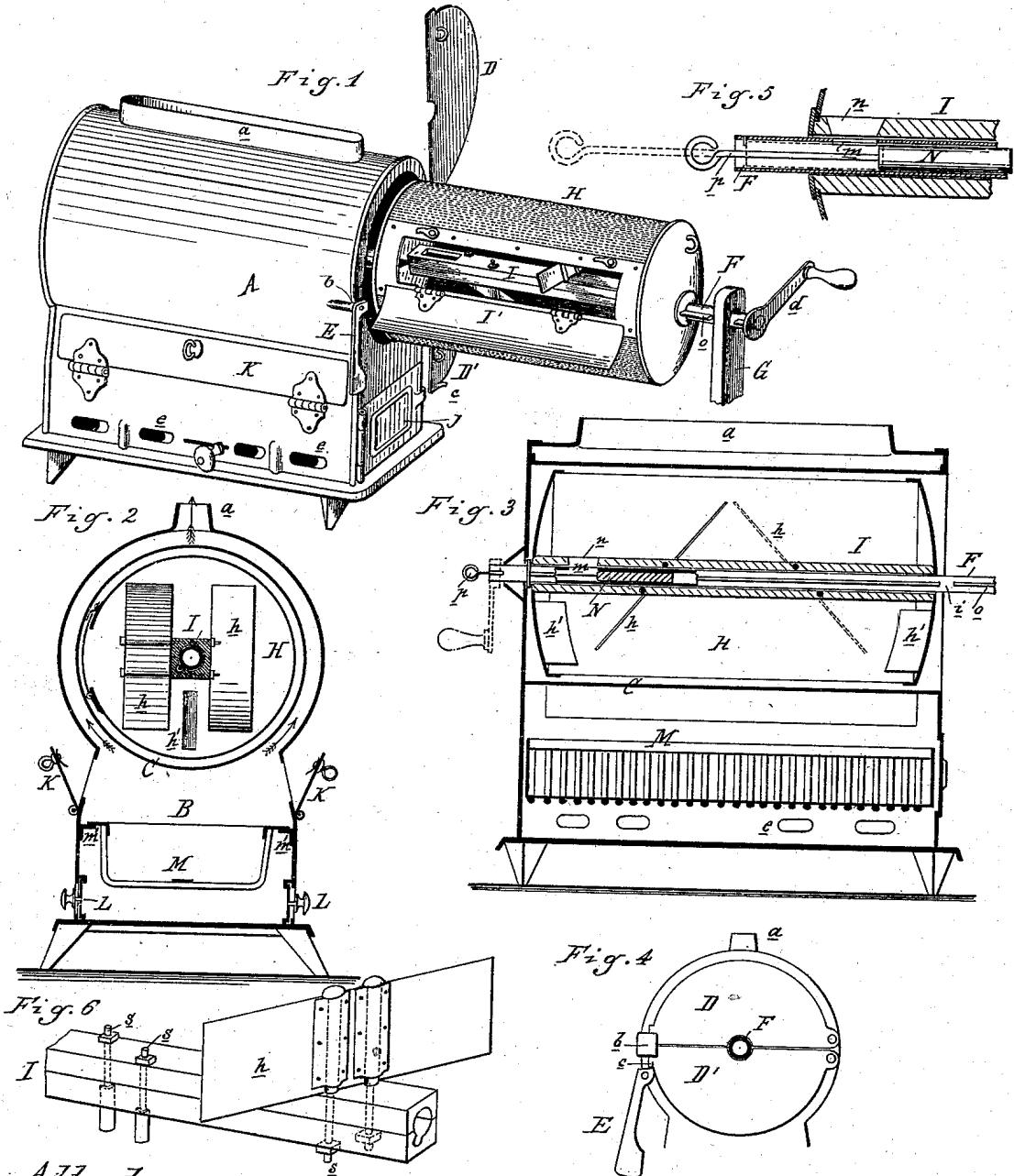


J. H. CHAMBERLIN.  
Coffee-Roaster.

No. 223,993.

Patented Feb. 3, 1880.



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# UNITED STATES PATENT OFFICE.

JOHN H. CHAMBERLIN, OF YPSILANTI, MICHIGAN.

## COFFEE-ROASTER.

SPECIFICATION forming part of Letters Patent No. 223,993, dated February 3, 1880.

Application filed August 23, 1879.

To all whom it may concern :

Be it known that I, JOHN H. CHAMBERLIN, of Ypsilanti, in the county of Washtenaw, State of Michigan, have invented an Improvement in Coffee-Roasters, of which the following is a specification.

The nature of this invention relates to certain new and useful improvements in the construction of that class of devices commonly called "coffee-roasters," and has for its object the production of a device that shall be simple in construction and operation.

The invention consists, first, in providing the oven with half-doors so arranged as to form a support and bearing for the center of the shaft when the roasting-cylinder is within the oven; second, in the combination, with the cylindrical body of the coffee-roaster having an elongated exit for the escape of the products of combustion, of the rectangular combustion-chamber situated directly below such cylindrical body and extending the entire length of the same, a removable basket-grate in such combustion-chamber, an end door to the same, side doors above the grate, on each side of the combustion-chamber, and draft-slides below the grate, on each side, whereby the fire can be regulated as desired and the cylinder will be heated more equably; third, in providing a novel means whereby the coffee can be tested without the necessity of removing the cylinder from the oven or stopping the rotation of the cylinder; and, fourth, in the peculiar construction and arrangement of the parts, as more fully hereinafter set forth.

Figure 1 is a perspective view. Fig. 2 is a vertical central cross-section. Fig. 3 is a vertical central longitudinal section. Fig. 4 is a plan view of the end of the oven-cylinder with half-doors closed. Fig. 5 is a detached sectional view of the shaft, showing the slide. Fig. 6 is a perspective of a section of the outer shaft and spreaders.

In the accompanying drawings, which form a part of this specification, A represents a cylindrically-shaped shell surmounting a combustion-chamber or furnace, B. Within this shell A is secured a cylinder, C, which, with the shell, forms a double-walled oven, which receives the rotary roasting-cylinder, as hereinafter described. This oven is heated by the

products of combustion, which pass from the furnace or combustion-chamber between the shell A and cylinder C, finding exit at the chimney or opening *a* at top of the shell, as shown, which exit-opening is elongated so as to extend nearly or quite the whole length of the shell, and will cause a more equable heating of the whole cylinder.

One end of the oven is closed, and the opposite end is provided with two half-doors, D D', arranged so that the former will open upward and the latter downward, so as to disclose the openings through which the roasting-cylinder is introduced into the oven. The toe of the door D, when closed, rests within a stop, *b*, while the door D' is held in its closed position by the counterweighted lever E, which engages with the stop *c*.

A hollow shaft, F, is journaled at one end in the closed end of the cylinder, its opposite end being journaled in the top of a standard, G, and is provided upon its end with a crank-handle, *d*. At the point where the doors D D' close around the shaft F there is a break made in the web *o*, which latter extends the entire length of the shaft, the break forming a recess or channel, *i*, into which the edges of the half-doors close, forming a bearing for the shaft at that point.

H is a roasting-cylinder, the ends of which are solid, while the barrel is made of perforated sheet metal or wire-cloth, and is provided with a feed-door, I'. Through this cylinder there is secured the square hollow shaft I, which slides upon the shaft F and engages with the web *o* thereon. Upon this shaft I and to the inner faces of the heads of the cylinder are secured proper deflectors *h*.

The shaft I is cast square and in two halves, with a round opening in the longitudinal center to inclose the shaft F. These two halves are bolted together by the bolts *s*, to which, on opposite sides of the shaft I, are secured the spreaders or deflectors *h*. As ordinarily constructed the spreaders are secured so that in the revolution of the cylinder they lift a large proportion of the coffee, thereby requiring a larger amount of power than in my machine, wherein the spreaders are so placed as to avoid this difficulty. Within the roasting-cylinder small wings *h'* are secured to the heads of the

same to stir up and lift the coffee while being roasted.

When the roasting-cylinder is pushed into the oven and the half-doors are closed, the latter, by reason of their engagement with the channel in the shaft F, prevent the cylinder from having any lateral movement upon the shaft until such doors are opened, when it can readily be withdrawn.

In or near the rear end of the shaft I there is cut a slot, *n*, which, when the cylinder is within the oven, is coincident with the slot *m* in the shaft F. Fitted within the end of the interior shaft is a slide, N, which is of sufficient length to close the slot *m*, said slide being operated by the projecting wire *p*.

In the front end of the furnace-chamber is hung a tight door, J, and in the sides of the chamber, above the grate, are hinged the doors K, and below these, upon either side, are arranged the slide-dampers L, which close or disclose draft-openings *e* in the ash-box section, as shown.

M is a basket-grate, which rests upon the ribs or brackets *m'*, which project inwardly from the sides of the combustion-chamber, as is clearly shown in Figs. 2 and 3.

By this construction and arrangement of parts I am enabled to tightly close the doors of the combustion and ash-pit sections, so as to deaden the fire and to regulate the draft as may be desired; or I can remove the grate with the fire, while the half-doors, being secured as described, positively prevent the roasting-cylinder from forcing them open.

When it is desired to test the coffee to ascertain whether it has been sufficiently roasted, I push in the slide N to disclose the slot *m* and afford communication between the interior of the cylinder and the interior of the inner shaft. Through this communication thus formed the coffee will fall into said shaft, from whence it may be withdrawn by pulling

upon the wire *p* until the slide N again closes the communicating channel.

I am aware that it is old to sample coffee while being roasted by removable scoops passed through the ends of hollow shafts into the body of the coffee, and also that it is old to have a tube forming part of the shaft of the revolving roasting-cylinder, with an opening in one side, and with a plunger and rod to draw out of the open end of the tube grains of coffee which fall through the slot into such tube.

What I claim as my invention is—

1. In a coffee-roaster, and in combination with a circular oven provided with half-doors D D', the counterbalance-support E and stop *b*, by means of which the door is held firmly in vertical position and adapted to form a bearing or box to support the center of the driving-shaft F, substantially as described.

2. The combination, with the cylindrical body A of a coffee-roaster, having elongated exit *a*, of the rectangular combustion-chamber B, situated directly below such cylindrical body and extending the entire length of the same, removable basket-grate M, the end door, J, side doors, K, above the grate, on each side of the combustion-chamber, and the draft-slides L below the grate, on each side, substantially as described and shown.

3. In a coffee-roaster, and in combination with the shafts F I, in which are formed the slots *m n*, respectively, the slide N, substantially as and for the purposes described.

4. In a coffee-roaster, the square external and cylindrical internal shaft I and the spreaders *h*, the latter being secured to the shaft by means of the bolts which secure the two halves of the latter together, substantially as specified.

J. H. CHAMBERLIN.

Witnesses:

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