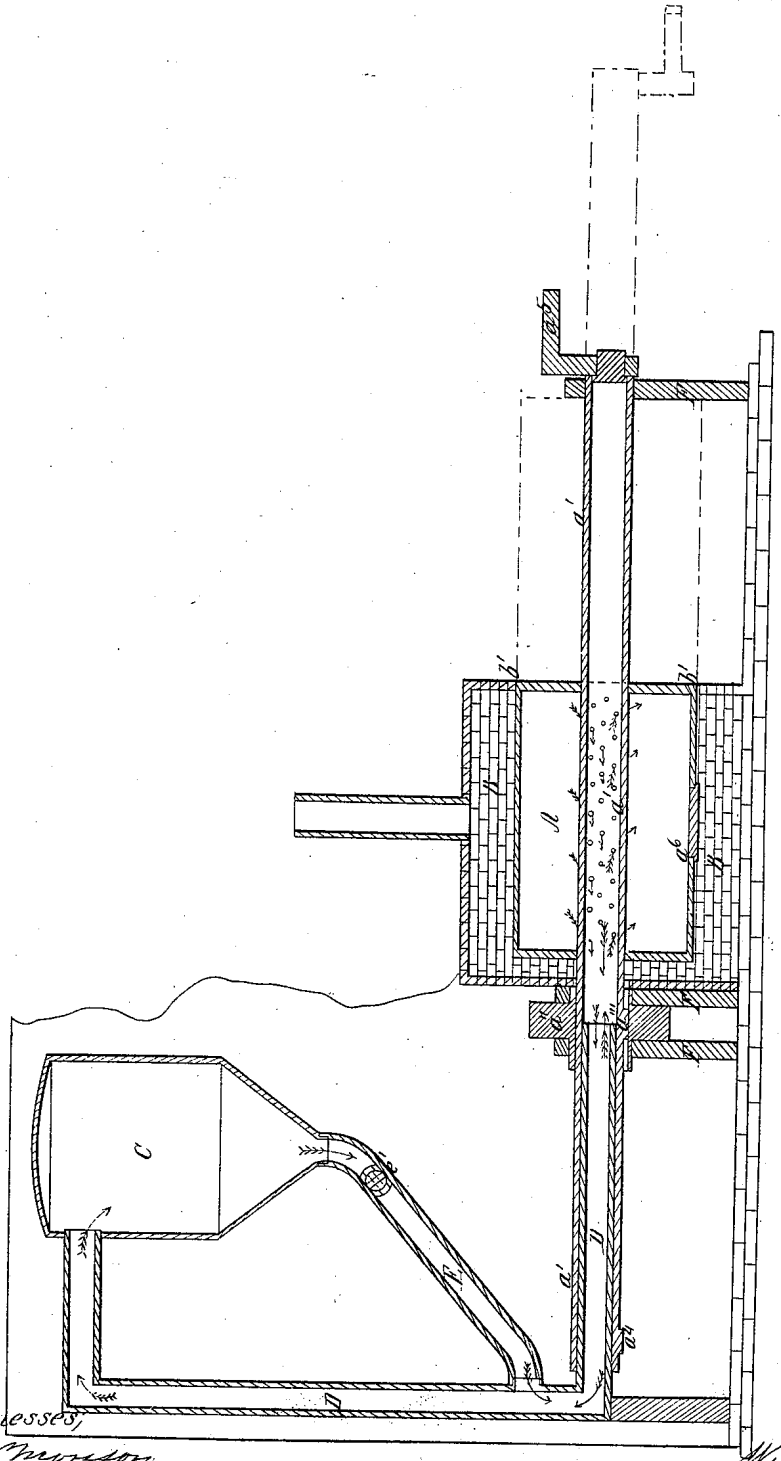
Johnston & Flansburgh.

Coffee Roaster.

No. 84,193. Patented Nov. 17, 1868.



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WILLIAM JOHNSTON AND JOHN D. FLANSBURGH, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 84,193, *dated November* 17, 1868.

APPARATUS FOR ROASTING COFFEE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, WILLIAM JOHNSTON and JOHN D. FLANSBURGH, both of the city of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in Coffee-Roasters; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawing, making a part of this specification, and to the letters of reference marked thereon.

The object of our improvement is to afford or produce a more simple, practical, and effective apparatus for roasting coffee, without losing the developed volatile properties of the same; and our invention consists in the construction, arrangement, and combination, with the usual rotary hollow roasting-vessel and furnace, of the devices hereinafter described and specified.

Referring to the drawing, A is the roasting-vessel, fixed rigidly upon a long hollow rotary shaft, a^1; B, the furnace for heating the same, and C D E, the condenser and its connecting tubes.

The shaft a^1 is hollow, and extends through the centre of the cylindrical roasting-vessel A, which is rigidly and permanently fixed thereon, and provided with an opening, fitted with an adjustable cover at a^6, for receiving and discharging the coffee.

The hollow shaft a^1 and vessel A, together, are supported upon suitably-elevated bearings, F F F, so that the said vessel and shaft can be rotated together, either in the furnace B, or on the outside of the same, when drawn out through the usual opening, b', made in one end of the latter for the purpose, as indicated by the dotted lines in the figure.

That part of the shaft a^1, which is within the roasting-vessel A, is perforated with numerous small holes, through which only the aroma and moisture of the roasting coffee are intended to pass out of the vessel A during the operation of roasting, and return into it during the subsequent cooling, as will hereinafter be explained.

Rotary motion is given to the vessel A by means of a loose pulley, a'', or its equivalent, which receives either of two short "feathers" or studs, a''' a^4, which are fixed on the shaft a^1, so that, when the vessel A is within the furnace, as shown in the drawing, and, also, when drawn out, as indicated by the dotted lines, the said rotating pulley will rotate the vessel A; but, when the said vessel is drawn nearly or not fully out of the said furnace, the said rotating pulley will be released from the feather a''', and, therefore, will rotate loosely on the shaft a^1, and allow the vessel A to rest or admit of its being oscillated by the hand-crank a^5, as occasion may require, in discharging the roasted and cooled coffee therefrom; and, also, so that when the vessel A is drawn fully out of the furnace for cooling, the feather a^4 will have entered the pulley a'', which will again give rotary motion to the said vessel.

At a sufficient distance from the heat of the furnace B, the condensing-vessel C is fixed in an elevated position, and connected to the hollow shaft a^1 by means of the tube D, one end of which latter opens into the upper end of the condenser C, and the other enters the open end of the shaft a^1, and, extending along within the latter, opens thereinto near the furnace-wall on that side, the shaft a^1 fitting over the tube D, like a sleeve, and is made vapor-tight between, by any suitable packing, and, consequently, there is always free communication between the interior of the roasting-vessel A and that of the condenser C. Connected with the bottom of the condenser C, and with the lower part of the upright part of tube D, there is another tube, E, which opens into both, and has a stop-cock, e', near its upper end, arranged so that when the cock is closed, the condensed contents of the said vessel C will be retained therein, but, when opened, there will be a free passage for the said contents of C to the roasting-vessel A.

In the operation of this apparatus, after the coffee to be roasted has been placed within the vessel A, and the latter pushed fully into the furnace B, and put in rotary motion by means of the band-pulley a'', and the feather or stud a''', the roasting commences, and the natural moisture and subsequently-generated or developed aroma, as they arise, are driven through the perforated shaft a^1 and tube D into the vessel C, as indicated by the dark arrows in the figure, which vessel, C, being kept cold, by any suitable surroundings, condenses and retains the same.

After the coffee has been sufficiently roasted, the operator draws the roasting-vessel A fully out to the position indicated by the dotted lines in the drawing, and thus causes the feather a^4 of the shaft a^1 to enter the still rotating pulley a'', and, consequently, causes the vessel A to rotate on the outside of the furnace, and, when the coffee has sufficiently cooled, he opens the stop-cock e', and thus permits the contents of the condenser C to flow down into the vessel A, as indicated by the faint arrows, and become reunited to the roasted coffee therein, which is the final result sought to be obtained.

We are aware that the volatile principles developed by heat, in treating various substances, have been condensed and reunited to the articles treated, and that hot air, and tubes heated by steam, have often been used for the purpose of heating the substances treated for that purpose.

We are also aware that a perforated hollow shaft, communicating either with an "aromatizing-chamber," or with a chimney to carry off the rising vapor and aroma, and carrying a corrugated "roasting-drum," heated by gas-jets fixed in an open frame, has been used; therefore we do not desire to claim either of these processes or devices; but, having fully described our improvement,

What we claim as new, and desire to secure by Letters Patent, is confined to the following, viz:

We claim the elevated condenser C, with its valve e', the tube D, and the tube E, in combination with the hollow perforated sliding shaft a^1, the roasting-vessel A, and the furnace B, the said parts being constructed and arranged to operate together as and for the purpose set forth and described.

WILLIAM JOHNSTON.
JOHN D. FLANSBURGH.

Witnesses:
BENJ. MORISON,
WM. H. MORISON.