

T. HEERMANS.
Coffee-Roasters.

No. 141,789.

Patented August 12, 1873.

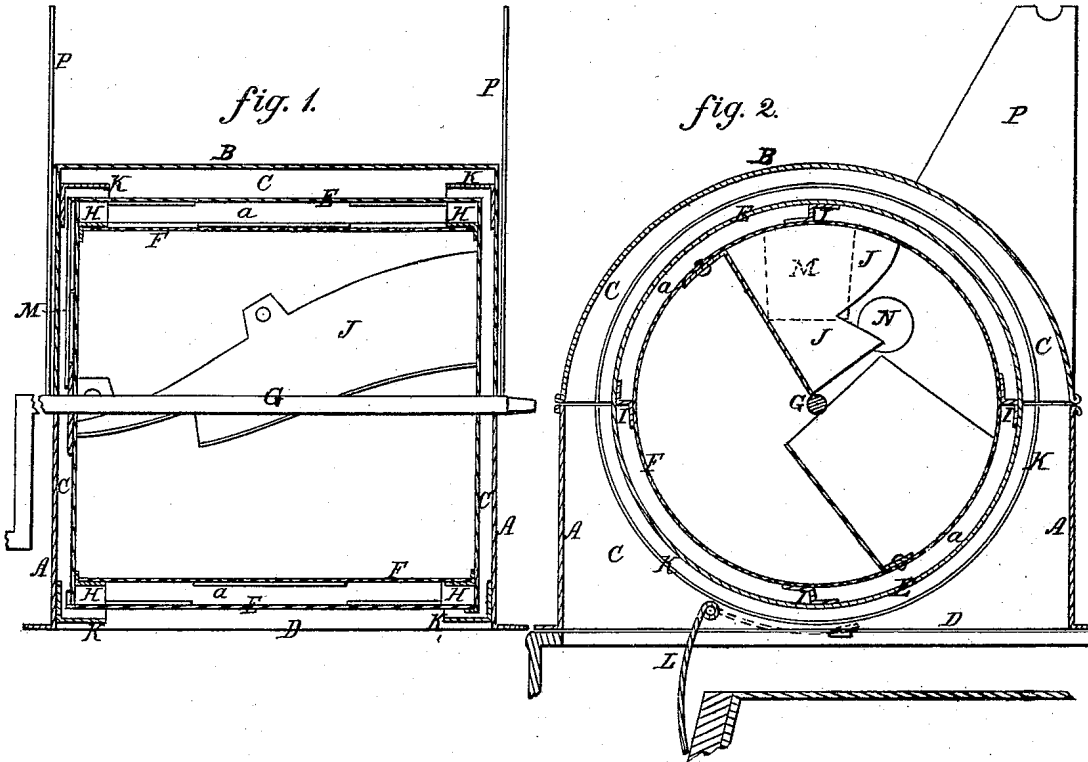
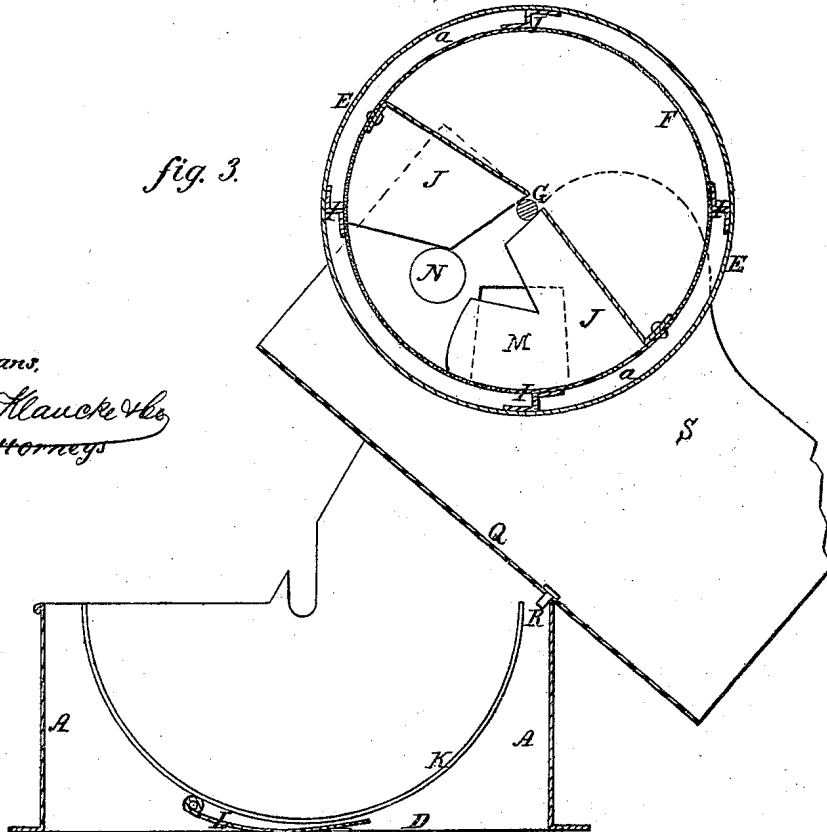


fig. 3.



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UNITED STATES PATENT OFFICE.

THEODORE HEERMANS, OF MATTOON, ILLINOIS.

IMPROVEMENT IN COFFEE-ROASTERS.

Specification forming part of Letters Patent No. **141,789**, dated August 12, 1873; application filed May 26, 1873.

To all whom it may concern:

Be it known that I, THEODORE HEERMANS, of Mattoon, in the county of Coles and State of Illinois, have invented certain new and useful Improvements in Coffee-Roasters, of which the following is a specification:

The object of my invention is to effect the uniform roasting of the coffee-grains, by the combination, in a coffee-roaster, of a double revolving cylinder having an intervening space, with interior stirring and shifting wings, whereby the inner wire cylinder and its stirring-wings are made to hold and give thorough motion to the coffee-grains, while the outer closed cylinder serves as the heater, and thus obtain a more uniform degree of roasting than can be produced by the employment of a double cylinder without the stirring and shifting wings or plates, for, without combining these with a double cylinder, I have found the latter to be imperfect as a roaster; also in the means of giving the proper support and strength to the wire or perforated cylinder, by annular interior flanges on the cylinder-heads, and longitudinal tie and bracing connections with and between the cylinders, whereby the wire-cloth cylinder can be made large enough to roast a sack of coffee at a time, and of ample strength to allow of the attachment thereto, and support of, the interior stirring and shifting wings, the use of which, with a wire-cylinder, would be impracticable without these firmly-bracing devices, and which I have found to be the means of practically combining the wire-cylinder with the stirring-wings; the annular supporting-flanges; serving also to inclose the ends of the wire-cloth, prevent its springing out, and the coffee from passing out between the two cylinders in case they should not fit close; also in the combination of annular fixed guards, at the ends of the supporting case and cap, with the revolving cylinder, to cut off the heat from passing up in contact with the cylinder-heads, which are in contact with the coffee, and thereby prevent them from becoming hot enough to burn the coffee; and in the combination of a case, having elevated ends, with a removable cylinder and a removable discharging-chute, whereby the cylinder may be elevated and supported in a position to be

revolved to discharge the roasted coffee, the chute, also, serving to cover the opening in the stove before it is inclined as a chute.

In the accompanying drawings, Figure 1 represents a vertical longitudinal section of a coffee-roaster embracing my invention; Fig. 2 a transverse section thereof, and Fig. 3 a similar section showing the roaster in position for emptying the roasted coffee.

The case consists of a rectangular base-section, A, to receive and hold the revolving cylinder, and a semi-cylindrical cover, B, to form a heating-space, C, entirely round the cylinder, the base-section A having a flat open bottom, D, to be fitted upon the top of a stove in direct communication with the fire-chamber thereof, so that the heat can circulate round the cylinder, and be cut off, as hereinafter described. The cylinder is double, with a space, *a*, between the two, the outer one E being the heater, and the inner one F, of wire-cloth or perforated sheet metal, to hold the coffee. It is mounted upon a crank-shaft, G, by which it is revolved and supported in bearings in the ends of the base, so as to be easily removed when the cover is off. The wire-cylinder F must be firmly supported to answer the purpose, and this is done by clamping it within and between annular flanges H, cast with or formed upon the inner sides of the cylinder-heads, thus holding each open end of the wire-cylinder and forming a close joint, whether the ends fit or not, so that no coffee can escape. In addition to this support, the wire-cylinder F is strengthened and braced by plates I running lengthwise in the space *a* between the two cylinders, and fastened to both, thereby making the two, in effect, as strong as a single cylinder, and so that stirrers or shifting-plates J for the coffee can be used with the wire-cylinder without breaking the latter down. These stirring-plates J are riveted to the wire-cylinder, and are arranged so as to shift and stir the coffee from one end of the cylinder to the other as it is revolved; and the combination of these wings with the double cylinder is the means of insuring a very uniform roasting of the coffee, by giving it thorough motion for the full action of the hot air passing into and through the cylinder. The coffee being in contact with the closed

heads of the cylinder, I prevent them from becoming hot enough to burn the coffee by annular guards K, extending horizontally from the base and cap, so as to inclose and shield the cylinder-heads from the direct heat of the fire, otherwise they would be liable to become too hot and burn the coffee. Across the open base A I arrange a damper, L, so as to be let down against the breast of the stove in a position to close the top flue, and cause the heat to pass entirely round the cylinder, and to be turned up to open the stove flue to let the heat pass off. By this arrangement and location of the damper L the roaster can be used with any cook-stove having removable caps. The cylinder is supplied with the coffee to be roasted through a door, M, in one of the heads, in which a window, N, is also placed to allow the coffee to be observed during the operation.

To empty the roasted coffee the cylinder is elevated and supported by the crank-shaft in bearings in raised ends P of the base, and a chute, Q, is arranged beneath it, and held in an inclined position by bottom pins R catching into the top edge of the base and a notch in the side S against the crank-shaft, so that by opening the end door M and turning the cylinder slowly the coffee will run out against the side S and bottom of the chute. This adjustment for emptying the coffee is very convenient, as the operation is effected by simply turning the cylinder while one of the shifting-wings being terminated opposite to the door M, directs the coffee out at every revolution and empties every grain.

The cylinder head is perforated in the space *a* between the two cylinders, to let out the dust arising from the roasting coffee.

The end of the cap is provided with a sliding door, through which the coffee can be occasionally examined, by also opening the door M of the cylinder.

When the coffee is nearly done the cap B is removed, and the cylinder is elevated into the top notches, and the chute Q slipped under the cylinder so as to stop off the heat and smoke; then continue to turn until the coffee is done; then draw the chute Q to the left until the pins R rest against the top edge of the base; the left end of the chute is then de-

pressed to bring a notch in its side S onto the crank-shaft G, which holds the chute in position while emptying the coffee.

The base may be provided with handles at the ends by which to manipulate it, and the cylinder may be removed, when required, by the crank-shaft.

In roasters for family use a cap is not necessary. The three front plates of a cook-stove are removed, and a box used similar to the one already described, but with the flanges at the end extended so as to cover the opening in the stove, while the sides are lower so as to allow the roaster to drop one-third of its diameter in the stove. The elevated ends should be sufficiently high so that when the roaster is elevated into the top notch a damper can be slipped under the roaster so as to shut off the heat and smoke. It is best to elevate the roaster into the top notch before the coffee is quite done in order to better watch the progress of the roasting. The elevated ends should be turned to the right so the coffee can be seen through the glass-window during the process of roasting.

The annular flanges that inclose the ends of the large roaster are not necessary in the small roaster, as the ends do not become hot enough to burn the coffee. This cylinder should fit close to the sides of the chamber so as to shut off the heat and smoke.

Having described my invention, I claim—

1. The combination in a coffee-roaster of the heating-cylinder E, the inner wire or perforated cylinder F, and the stirring or shifting-wings J, substantially as described.
2. The wire cylinder F, supported and braced within the outer cylinder by the annular flanges H and the tie-plates I, as described.
3. The annular guards or shield flanges K of the open base A, in combination with a revolving cylinder, as and for the purpose set forth.
4. The elevated ends P of the case, in combination with the removable cylinder and the removable chute Q, as and for the purpose set forth.

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