No. 641,141. Patented Jan. 9, 1900.

F. E. R. OKRASSA.

COFFEE OR MALT DRIER.

(Application filed Oct. 23, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig 1

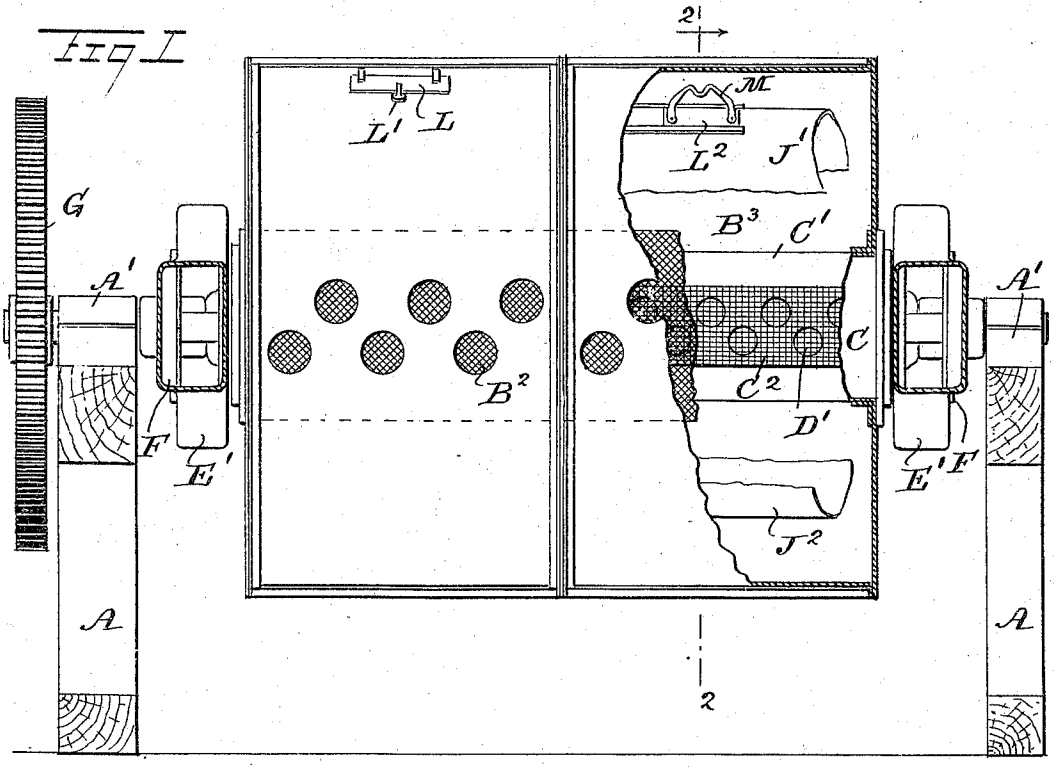
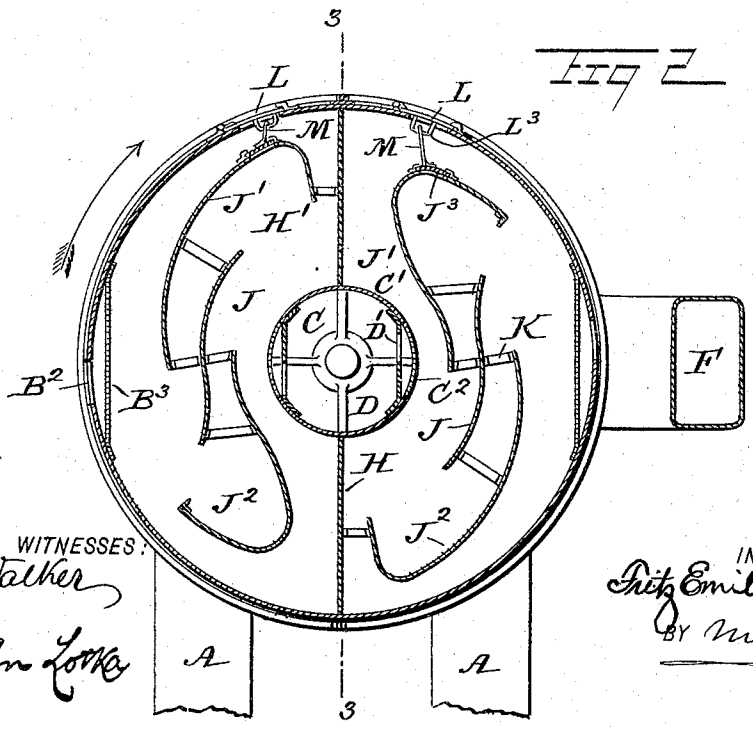


Fig 2



WITNESSES:

H. Walker

John Lotka

INVENTOR

Fritz Emil R. Okrassa

BY Munn & Co

ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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Fig 3

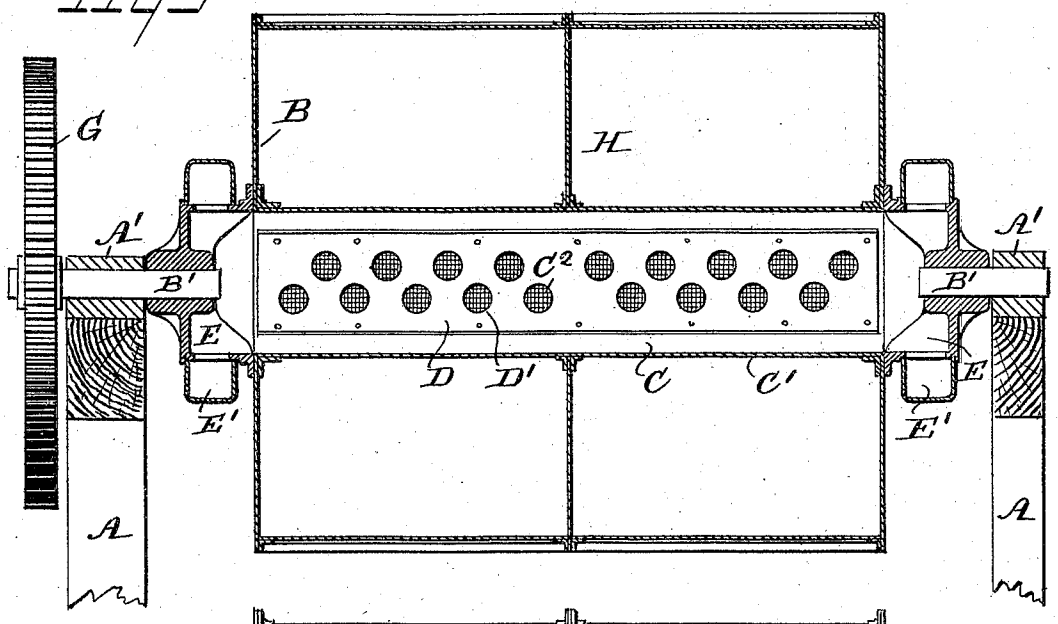
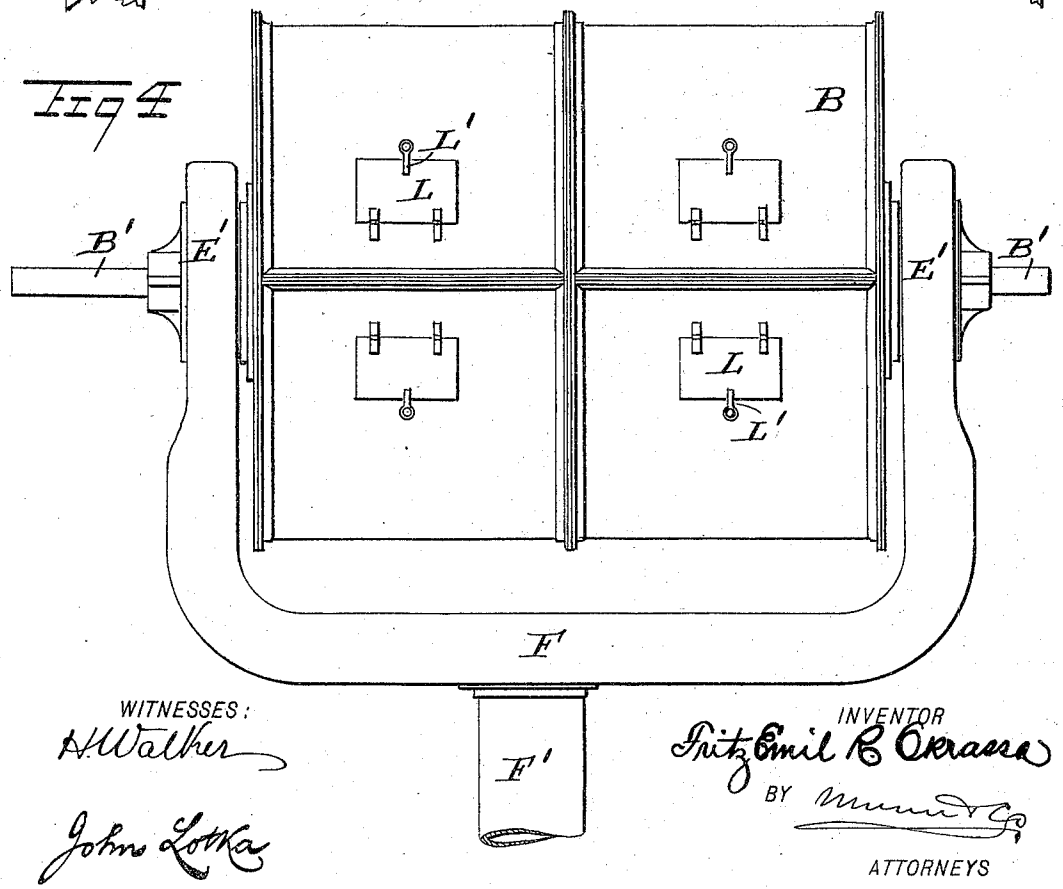


Fig 4



WITNESSES:

A. Walker

John Lotka

INVENTOR

Fritz Emil R. Okrassa

BY Munn & Co.

ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FRITZ EMIL ROBERT OKRASSA, OF ANTIGUA, GUATEMALA.

COFFEE OR MALT DRIER.

SPECIFICATION forming part of Letters Patent No. 641,141, dated January 9, 1900.

Application filed October 23, 1899. Serial No. 734,465. (No model.)

To all whom it may concern:

Be it known that I, FRITZ EMIL ROBERT OKRASSA, of Antigua, Guatemala, have invented new and useful Improvements in Coffee or Malt Driers, of which the following is a full, clear, and exact description.

My invention relates to machines for drying various substances, and particularly coffee and malt, and has for its object to provide a machine for the above-indicated purpose which will be simple in construction and very efficient in operation, and it has been my especial aim to secure a thorough utilization of the available space, so that large amounts of material may be dried with a comparatively small and therefore relatively cheap machine.

To this end I construct the drier as will be fully described hereinafter and specifically pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of the improved machine with parts broken away. Fig. 2 is a cross-section thereof on line 2 2 of Fig. 1. Fig. 3 is a longitudinal section on line 3 3 of Fig. 2, and Fig. 4 is a plan.

The machine comprises suitable supports or standards A, carrying bearings A′, in which are journaled the trunnions B′ of the drum B. This drum comprises a central compartment C, with a cylindrical wall C′, in which are arranged screen-surfaces C^2 and in the rear thereof partitions D, having perforations D′. The central compartment C communicates at the ends with air-admission chambers E, surrounded by tubes E′, into which heated air is conveyed from pipes F F′. Power to turn the drum is applied in any suitable manner—for instance, to a gear-wheel G.

The drum B may be divided transversely by a partition H, which, however, may be omitted, or several such partitions may be employed. It will be observed that the said partition extends only in the annular chamber surrounding the central compartment C. Within this annular chamber are further disposed longitudinal partitions H′, as shown in Fig. 3. In the outer surface of the drum are provided apertures B^2, with screen-surfaces B^3 behind them. In each of the segmental compartments formed by the partitions H H′ and the drum I locate stirrers J of a particular novel construction. These stirrers are of approximately **S** shape and comprise three members J J′ J^2, the end members of which J′ J^2 are bent in opposite directions at their outer ends, while their inner ends are adjacent to each other, but spaced, and in the space between said inner ends extends in a direction substantially parallel with the members J′ J^2 the central member J. Suitable braces K are employed to connect the members J J′ J^2 with each other and with the partitions H′. It will be understood that these stirrer members are stationary in relation to the drum. It will be observed that when the drum is rotated in the direction indicated by the arrow in Fig. 2 the outer stirrer member, which is temporarily at the bottom, will form a pocket or scoop adapted to hold a portion of the material, so as to raise said material during the rotation of the drum until said outer member reaches the upper portion of the drum, when the material will slide out of the said pocket. The spaces between the central and end members of the stirrers allow the material to circulate freely in the drying-compartments, and thus a thorough drying action is secured.

In order to fill the machine, I provide openings in the outer wall of the drum, said openings being normally closed by doors L, secured by catches L′, and the said doors may be opened by turning them on their hinges. To better distribute the material within the drying-compartments at the time of filling them, I provide the outer members J′ of the stirrers with apertures J^3, closed by slides L^2, adapted to move longitudinally of the drum—that is, parallel to the axis thereof. The doors L and slides L^2 are preferably arranged adjacent to each other, and each door is adapted to lock the corresponding slide by the engagement of a staple L^3 on the door L with a bail M on the slide, said bail having a notch for this purpose.

It will be understood that the stirrers will be of substantial **S** shape—that is, with the lower end turned toward the left—when the drum is to be turned in the direction indicated by the arrow in Fig. 2. For rotation

in the opposite direction the stirrers would obviously be of reverse shape—that is, their ends would be turned to the right at the bottom and to the left at the top.

By my improved construction of drying-compartments, particularly by the specific arrangement of the stirrers, I am enabled to fill the drying-compartments about four-fifths, and thus to secure an exceedingly thorough utilization of the available space, so that a machine of a comparatively large capacity will be small and therefore cheap.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A drying-machine comprising a rotary drum provided with means for the admission and egress of the drying agent, stirrers held to rotate with the drum and provided with apertures for the insertion of the material, and slides or doors for closing said apertures, substantially as described.

2. A drying-machine comprising a rotary drum provided with means for the admission and egress of the drying agent, and stirrers held to rotate with the drum, and each comprising three members of which the end members are bent in opposite directions at their outer ends and spaced from each other at their inner ends, and a central member arranged between said spaced ends and substantially parallel with the spaced ends of the end members, substantially as described.

3. A drying-machine comprising a rotary drum provided with means for the admission and egress of the drying agent, and stirrers held to rotate with the drum, each stirrer being of substantially **S** shape and consisting of three members, namely two end members spaced from each other at their adjacent ends and bent in opposite directions at their outer ends, and a central member located in the space between the inner ends of the end members and curved correspondingly thereto, substantially as described.

4. A drying-machine comprising a rotary drum provided with means for the admission and egress of the drying agent, and stirrers held to rotate with the drum, the outer wall of the drum and the stirrers being provided with apertures for the insertion of the material, and slides or doors for closing said apertures, substantially as described.

5. A drying-machine comprising a rotary drum provided with means for the admission and egress of the drying agent, and stirrers held to rotate with the drum, the outer wall of the drum and the stirrers being provided at adjacent points with apertures for the insertion of material, slides or doors for closing said apertures of the drum and stirrers respectively, and a locking connection between said slides or doors, substantially as described.

FRITZ EMIL ROBERT OKRASSA.

Witnesses:
OTTO STAMPFF,
M. BRÜCKNER.