(No Model.)

E. CRAWLEY, Jr. & W. T. JOHNSTON.

COFFEE ROASTING MACHINE.

No. 590,135. Patented Sept. 14, 1897.

Fig. 1.

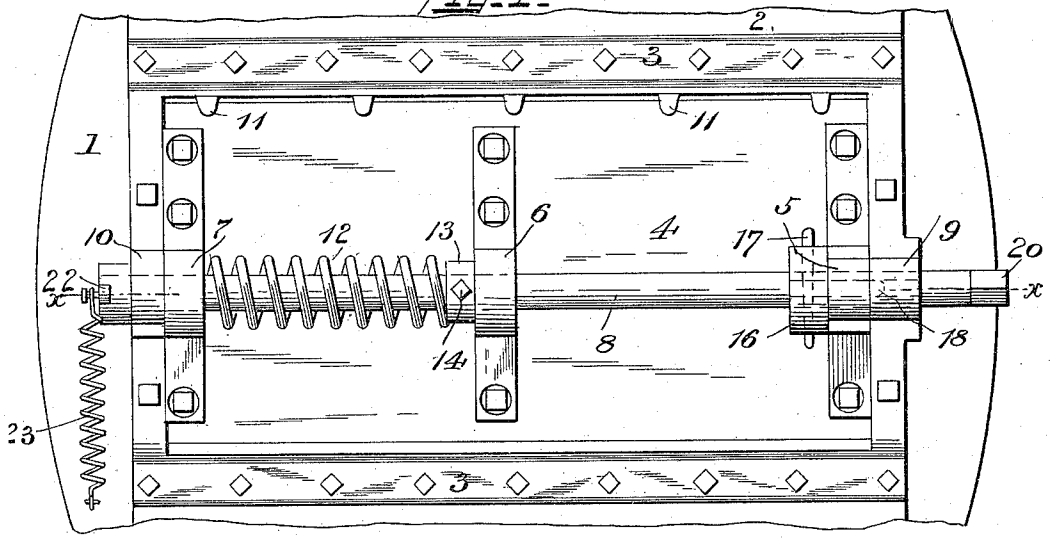
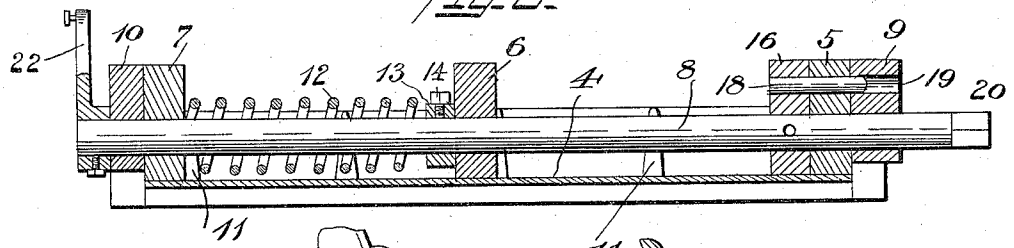


Fig. 2.



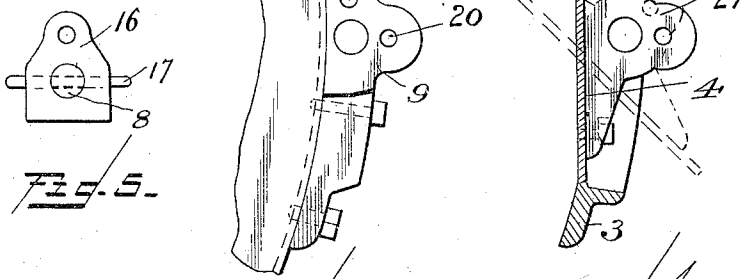


Fig. 5.

Fig. 3.

Fig. 4.

Witnesses
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UNITED STATES PATENT OFFICE.

EDWIN CRAWLEY, JR., AND WILLIAM T. JOHNSTON, OF NEWPORT, KENTUCKY, ASSIGNORS TO POTTER, PARLIN & CAMPBELL.

COFFEE-ROASTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 590,135, dated September 14, 1897.

Application filed November 25, 1896. Serial No. 613,450. (No model.)

To all whom it may concern:

Be it known that we, EDWIN CRAWLEY, Jr., and WILLIAM T. JOHNSTON, citizens of the United States, residing at Newport, in the county of Campbell and State of Kentucky, have invented certain new and useful Improvements in Coffee-Roasting Machines; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates particularly to coffee-roasting machines, though the invention is applicable to any machine wherein material contained within a cylinder or drum is adapted to be discharged from the same through a circumferential opening, and the invention is specifically an improvement in doors and door-frames intended for application to a coffee-roasting drum and adapted to be readily opened and closed for the purpose of charging the drum with the green berries or discharging the berries when roasted from the drum; and the invention consists in the novel construction, arrangement, and combination of parts, as hereinafter fully described, illustrated in the drawings, and pointed out in the appended claims.

In the drawings, Figure 1 is a face view of a door and frame and operating devices constructed in accordance with this invention. Fig. 2 is a vertical section on line *x x* of Fig. 1. Fig. 3 is an end view of Fig. 1. Fig. 4 is a sectional view illustrating in full lines the door as being closed and in dotted lines as being open. Fig. 5 is a detail, hereinafter referred to.

In the drawings, 1 indicates a portion of the roasting-drum, adapted in practice to be suitably supported for rotation, said drum being provided with a circumferential opening 2, within which is fixedly arranged a door-frame 3. Pivotally arranged within the door-frame and adapted to make a snug joint therewith is a door 4. For the purpose of pivotally mounting the door in position we provide the same at opposite ends and toward the center with ears or lugs 5, 6, and 7, through which loosely passes a shaft 8, which at its ends is mounted in bearings 9 10, provided either on the cylinder or the door-frame, as shown. The door-frame may be provided with a shoulder or equivalent means against which the edge of the door may abut for the purpose of preventing said door moving too far inwardly. We show lugs 11 for the described purpose provided at the upper edge of the frame and against which lugs the upper edge of the door abuts. 12 indicates a coiled spring on the shaft 8, bearing at one end against the lug 7 and at the opposite end against a collar 13, held by a set-screw 14 upon the shaft. The tendency of the spring is to force the shaft normally to the right, as viewed in Fig. 1.

For the purpose of holding the door firmly in its closed and open positions we provide a suitable locking device, but preferably the locking device shown, and which comprises a collar and sleeve 16, keyed by a key 17 to the shaft 8, and said sleeve being provided with a pin or bolt 18, which extends through a perforation in the bearing-lug 5 and is adapted to take into a recess or perforation 19 in the bearing 9. When the door is in the closed position, the pin is in engagement with the recess 19 and holds the door firmly in position. When, however, it is desired to open the door, as for discharging the contents of the drum, it becomes necessary to release the pin from the recess, and for this purpose we apply a wrench to the squared end 20 of the shaft 8, press the shaft inwardly, whereby the pin will be released from the recess, and then turn the shaft to cause the pin to come opposite the recess 21, at which moment the spring 12 will cause the shaft to move outwardly again, thus effecting the shooting of the pin into the said recess 21, and thus locking the door in the open position. (Seen in dotted lines in Fig. 4.)

When it is desired to reclose the door, the shaft is pressed inwardly again, as before, to free the pin from recess 21, and the wrench turned to effect the opposite rotation of the shaft until the pin again engages recess 19. We prefer to effect the automatic backward turn of the shaft, and for this purpose we provide the left-hand end of the shaft, as viewed in Fig. 1, with an arm 22, to which is

attached one end of a coiled spring 23, the opposite end of which is attached to the drum. When the shaft is being turned to effect the opening of the door, the spring will be distended, and when the pin is released from recess 21 the stress of the spring is exerted to automatically turn the shaft and door back into normal closed position.

What we claim, and desire to secure by Letters Patent, is—

1. The combination with a receptacle having an opening, of a door adapted to close said opening, a shaft adapted to effect the turning of said door and to be moved endwise independently of the door, and a locking device operated by the endwise movement of the shaft to lock the door temporarily in a closed position.

2. The combination with a receptacle having an opening, of a door adapted to close said opening, a shaft adapted to effect the turning of the said door and to be moved endwise independently of the door, and a locking device operated by the endwise movement of the shaft to lock the door temporarily in a closed and an open position.

3. The combination with a receptacle having an opening, of a door adapted to close said opening, bearings on said door, a shaft mounted and endwise movable in said bearings independently of the door, and means for locking the door to the shaft whereby rotation of the latter will effect the turning of the door.

4. The combination with a receptacle, having an opening, of a door adapted to close said opening, bearings on said door, one of said bearings being provided with a perforation, a shaft mounted and endwise movable in said bearings independently of the door, a sleeve secured to the shaft, and a pin carried by said sleeve and adapted to enter the perforation in the bearing.

5. The combination with a receptacle having an opening, of a door adapted to close said opening, a shaft, bearings for the ends of said shaft, bearing-lugs on the door within which lugs said shaft is mounted and endwise movable independently of the door, one of the bearings for the ends of the shaft being provided with a recess, a sleeve on the shaft, and a pin on the sleeve removably engaging the said recess.

6. The combination with a receptacle having an opening, of a door adapted to close said opening, a shaft, bearings for the ends of said shaft, bearing-lugs on the door within which lugs said shaft is mounted and endwise movable independently of the door, one of the bearings for the ends of the shaft being provided with a plurality of recesses, a sleeve on the shaft, and a pin on the sleeve adapted to removably engage said recesses whereby to lock the door both in its closed and open positions.

7. The combination with a receptacle provided with an opening, of a door adapted to close said opening, a shaft, bearings for the ends of the shaft, bearing-lugs on the door within which lugs said shaft is mounted and endwise movable independently of the door, one of the bearings for the ends of the shaft being provided with a recess, a sleeve on the shaft, a pin on said sleeve removably engaging said recess, and a spring operating upon the shaft to hold the pin normally in engagement with the recess.

8. The combination with a receptacle having an opening, of a door adapted to close said opening, a shaft, bearings for the ends of said shaft, bearing-lugs on the door within which lugs said shaft is mounted and endwise movable independently of the door, one of the bearings for the ends of the shaft being provided with a recess, a sleeve on the shaft, a pin on the sleeve removably engaging said recess, an arm on the shaft, and a spring secured to the said arm and to the cylinder and adapted to effect the backward rotation of the shaft in the manner and for the purpose specified.

In testimony whereof we affix our signatures in presence of two witnesses.

EDWIN CRAWLEY, JR.
WM. T. JOHNSTON.

Witnesses:
SAML. S. CHURCH,
OSCAR C. EVANS.