(No Model.)

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

COFFEE ROASTING MACHINE.

No. 590,567. Patented Sept. 28, 1897.

Fig. 1.

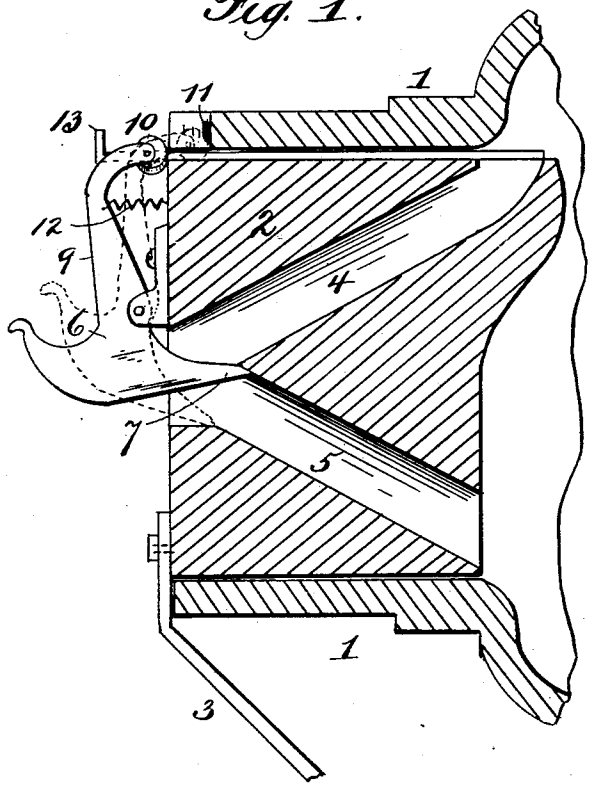
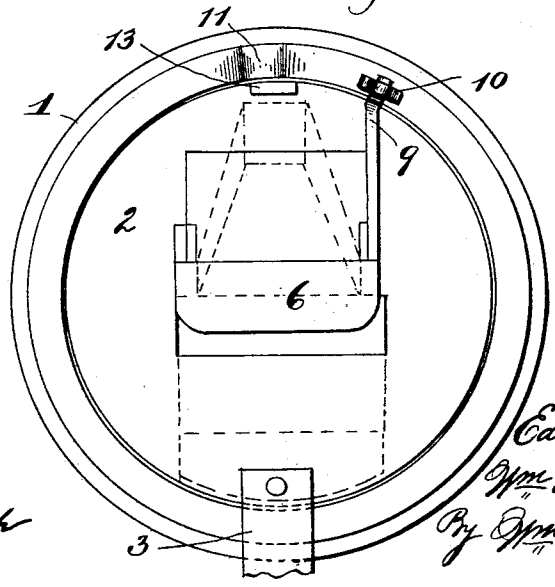


Fig. 2.



Witnesses:
H. K. Boulter
C. E. Northrup

Inventors
Edwin Crawley Jr.
Wm. T. Johnston,
By Wm. E. Boulter acty.

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UNITED STATES PATENT OFFICE.

EDWIN CRAWLEY, JR., AND WILLIAM T. JOHNSTON, OF NEWPORT, KENTUCKY, ASSIGNORS TO THE POTTER-PARLIN COMPANY, OF NEW YORK, N. Y.

COFFEE-ROASTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 590,567, dated September 28, 1897.

Application filed November 25, 1896. Renewed August 26, 1897. Serial No. 649,654. (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 Sampling Devices for 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 has relation to coffee-roasting machines; and it has for its object to provide simple, inexpensive, and efficient means whereby samples of the coffee-berries are automatically delivered exteriorly of the roasting-drum during the rotation of the latter in the process of roasting to enable the operator to determine the degree of roast and such samples then automatically returned to the interior of the drum.

With the above object in view the invention consists in the novel construction, arrangement, and combination of parts constituting the sampling device, and in the combination of the latter with a roasting-drum, all as hereinafter fully described, illustrated in the drawings, and pointed out in the appended claims.

In the drawings, Figure 1 is a vertical sectional view of the sampling device, showing it applied to a roasting-drum. Fig. 2 is a front view thereof.

Our improved sampling device may be readily applied to any coffee-roasting machine having a hollow trunnion through which the samples of berries are to be passed.

In the drawings, 1 indicates a hollow trunnion of a coffee-roasting drum, which drum is adapted to be rotated by any suitable means during the roasting process.

2 indicates an annular block or hub arranged within the trunnion and held stationary therein by any suitable means—as, for instance, by a bracket or brackets 3, bolted to the block and to a portion of the supporting-frame of the machine. The block 2 is provided with two inclined passages or channels 4 and 5, which incline from the inner face of the block toward the outer face thereof at the center and at the latter point merge into each other. The channels are in the same vertical plane, and one of the channels, as 4, projects farther inward within the interior of the drum than passage 5—that is to say, the inner end of channel 4 terminates in a different vertical transverse plane from the inner terminal of channel 5. By this arrangement the channel 4 is adapted at each rotation of the drum to catch or have thrown thereinto a few of the coffee-berries which are being thrown about within the drum during the rotation thereof, and by reason of the channel being inclined the said berries will move down the incline and be caught within some suitable receptacle provided for their reception. We have shown a tray or pan 6, adapted to catch the samples as they are delivered from channel 4. The tray is pivotally connected with the block in such manner that the lip 7 of the tray normally lies across the outer end of the channel 4. In order that the lip may be thus held in position until after the deposit of the coffee-berries therein, the tray may be so pivoted as to throw the greater portion of the weight of the tray beyond the pivotal point, and thus throw the lip 7 upwardly across the channel 4, and such construction is shown in the drawings, though it is evident that a spring might be employed acting upon the tray to attain this end.

The samples of berries having been deposited in the tray, the operator can at once determine the degree of roast and be enabled to cut off the roasting heat at the proper moment. In order that each sample may be automatically returned into the interior of the drum after remaining in the tray sufficiently long to be inspected, say for about one-half a revolution of the drum, more or less, (the rotation of the drum being in practice somewhat slow,) we construct the tray with an upwardly-extending arm 9, whose upper end carries a roller 10, which bears upon the outer face of the journal 1 as the latter is rotating. The said outer face is constructed so that at a certain point in its rotation the arm of the tray may be caused to tilt and thus throw the lip 7 downwardly away

from the end of passage 4 and into the position indicated in dotted lines in Fig. 1, whereby the berries within the tray will fall therefrom into the channel 5 and along the same into the interior of the drum again. To effect this object, the outer face of the trunnion should be somewhat of a cam shape, or, in other words, the greater portion of the said face is flat and the remainder is depressed, as at 11, at about the highest point, and the arm 9 is drawn inwardly by a spring 12, for instance, so that as the roller reaches the depression the arm will be drawn inward to cause the roller to fall within the depression, thus effecting the downward movement of the lip.

13 is a slide arranged in a recess in the block and extending beyond the outer face thereof and is adapted to be operated to effect the partial or entire closure of the inner end of the channel 4. Thus we may vary the quantity of berries in each sample or entirely cut off the sampling.

The sampling of the berries by our device being an automatic one, no attention of the operator is necessary in this respect, and the latter can at any time during the roasting readily ascertain the condition of the charge within the drum and terminate the roasting process at the desired moment.

We claim and desire to secure by Letters Patent—

1. A sampling device for coffee-roasting machines consisting in the combination with a block adapted to be arranged within a hollow trunnion of a roasting-drum and having reversely-inclined passages which incline from one face of the block toward the other face thereof, and merge into each other at one end, of a tray pivotally connected with the block and adapted to receive samples from one of the passages and to be tilted to deliver such samples into the other passage.

2. A sampling device for coffee-roasting machines consisting in the combination with a block adapted to be arranged within a hollow trunnion of a roasting-drum, and having reversely-inclined passages which incline from one face of the block toward the other face thereof, and merge into each other at one end, the inner end of one passage terminating in a different vertical transverse plane from the inner end of the other passage, of a tray pivotally connected with the block and adapted to receive samples from one of the passages and to be tilted to deliver such samples into the other passage.

3. The combination with a hollow trunnion of a coffee-roasting drum, of a block held stationary therein, said block having reversely-inclined passages which incline from the inner face of the block toward the outer face thereof and merge into each other at the outer end, a tray pivotally connected with the block and normally lying across the outer end of one of the passages to receive samples of berries as described, and an arm on the tray adapted to be operated by the trunnion at a point in its rotation to cause the tray to tilt and discharge its contents into the other passage.

4. The combination with a hollow trunnion of a coffee-roasting drum, of a block held stationary therein, said block having reversely-inclined passages which incline from the inner face of the block toward the outer face thereof, and merge into each other at the center, a tray pivotally connected with the block and normally closing the outer end of one of the passages to receive samples of the berries as described, an upwardly-extending arm on the tray, a roller carried by the arm and bearing against the outer face of the trunnion, said face being of a cam shape whereby to permit of the tilting of the tray, for the purpose specified.

5. A sampling device for coffee-roasting machines consisting in the combination with a block adapted to be arranged within a hollow trunnion of a roasting-drum, and having reversely-inclined passages which incline from one face of the block toward the other face thereof, and merge into each other at one end, a tray pivotally connected with the block and adapted to receive samples from one of the passages and to be tilted to deliver such samples into the other passage, and a regulating-slide for the passage discharging into the tray.

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

EDWIN CRAWLEY, JR.
WM. T. JOHNSTON.

Witnesses:
SAML. S. CHURCH,
H. M. KELLER.