No. 824,037. PATENTED JUNE 19, 1906.

J. S. MILLER.

COFFEE ROASTER.

APPLICATION FILED MAR. 6, 1906.

Expansion

FIG. 2.

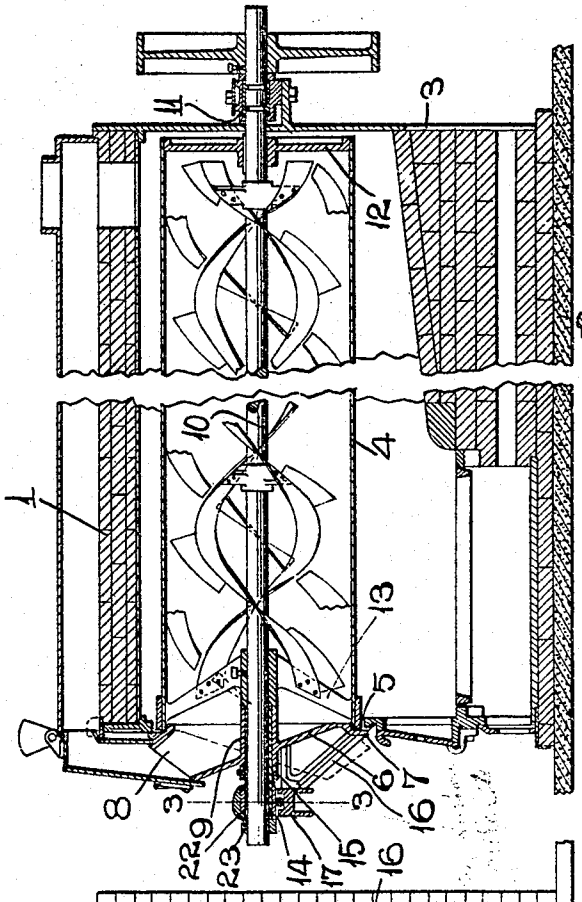


FIG. 4.

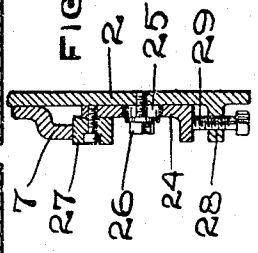


FIG. 1.

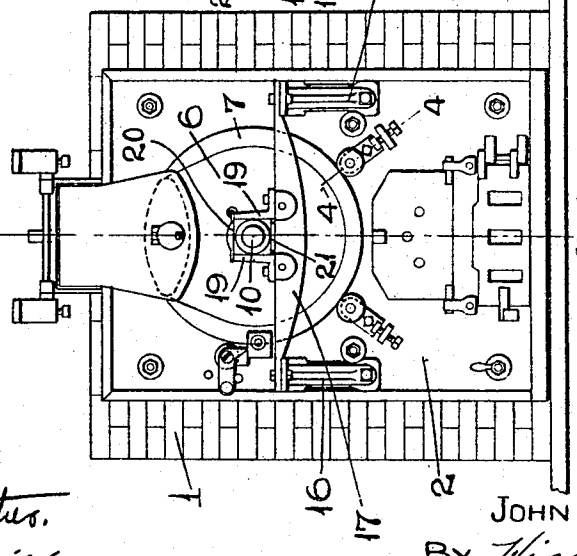
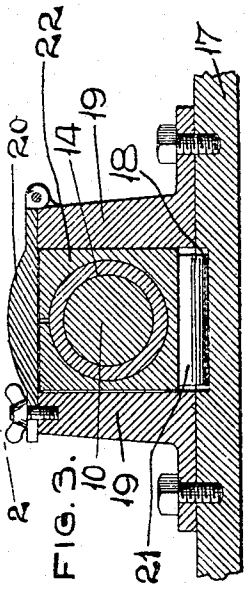


FIG. 3.



ATTEST.

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JOHN S. MILLER, OF ST. LOUIS, MISSOURI.

COFFEE-ROASTER.

No. 824,037. Specification of Letters Patent. Patented June 19, 1906.

Application filed March 6, 1906. Serial No. 304,545.

To all whom it may concern:

Be it known that I, JOHN S. MILLER, a citizen of the United States, and a resident of St. Louis, Missouri, have invented certain new and useful Improvements in Coffee-Roasters, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates generally to coffee-roasters, and more particularly to a construction which will permit of the expansion and contraction of the main shaft that extends longitudinally through the rotating cylinder.

The object of my invention is to provide a roller-bearing at the forward end of the shaft, which roller-bearing supports the box on said shaft and permits the same to move longitudinally as the shaft expands or contracts without binding on any of the fixed parts of the roaster.

A further object of my invention is to provide adjustable supports for the head that is positioned in the front end of the roasting-cylinder by means of which the strain of said head is removed from the forward end of the shaft and which arrangement also provides for a tight joint between said head and the forward end of the cylinder.

To the above purposes my invention consists of certain novel features of construction and arrangement of parts, which will be hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of a coffee-roaster embodying my improvements. Fig. 2 is a vertical section taken on the line 2 2 of Fig. 1. Fig. 3 is an enlarged detail section taken on the line 3 3 of Fig. 2. Fig. 4 is an enlarged detail section taken on the line 4 4 of Fig. 1.

Referring by numerals to the accompanying drawings, 1 designates the furnace of the roaster; 2, the front plate thereof; 3, the rear plate, and 4 the horizontally-arranged cylinder that is held for rotation in the furnace between the front and rear plates. The front end of the cylinder 4 is open, and it terminates in a circular opening 5, formed in the front plate 2. Normally closing the front end of the cylinder 4 is a circular head 6, provided on its edge with a flange 7 and at its upper end with a short spout 8. Formed in the center of the head 6 is a horizontally-arranged bearing 9, in which is journaled the forward end of the shaft 10, which extends longitudinally through the cylinder 4 and which is journaled at its rear end in a bearing 11, formed on the outer face of the rear wall 3. A head 12 is fixed in the rear end of the cylinder 4 and is carried by a shaft 10, and a spider 13, fixed upon the forward end of the shaft 10 inside the bearing 9, carries the forward end of said cylinder. Fixed upon that portion of the shaft 10 that is journaled in the bearing 9 and which extends in front thereof is a bushing 14, of brass or analogous material, and held upon said bushing by means of a set-screw is a collar 15, which engages against the front end of the bearing 9 and holds the rear end thereof against the bearing 13, thus maintaining the head 6 in position in the forward end of the cylinder 4.

Fixed upon the sides of the front plate 2 and extending outwardly therefrom are brackets 16, the forward ends of which support the cross-bar 17, having formed in its top surface a longitudinally-extending groove 18. Fixed upon the top of the bar 17 at each end of this groove are standards 19, the upper ends of which are united by a removable cap 20. Arranged to roll transversely within the longitudinally-extending groove 18 is a roller 21, and mounted thereon is a rectangular bearing 22, through which passes the forward end of the shaft 10 and the bushing 14 thereon. A collar 23, held by a set-screw, is fixed upon the end of the shaft 10 outside this bearing 22.

Located on the front face of the front plate 7 a suitable distance to each side of the center thereof is a roller-bearing, which supports the head 6, and each bearing comprises a short plate 24, in which is formed a longitudinally-extending slot 25, and passing therethrough is a set-screw 26, by means of which the plate 24 is locked to the plate 2. The upper end of each plate 24 carries a roller 27, on the periphery of which rests the flange 7 of the head 6. A lug 28 is formed integral with the plate 2 immediately below each plate 24, and passing through said lug and bearing against the lower end of the plate 24 is an adjusting-screw 29.

The bearing 22, carried by the roller 21, will move backwardly and forwardly, following the expansion and contraction of the shaft 10, due to the heating or cooling of the furnace, and whenever this movement takes place the roller will travel backwardly and

forwardly in the groove 18. Thus the expansion and contraction of the shaft is actuated without undue strain to any of the operating parts of the roaster.

The head 6 is properly centered upon the shaft 10, and the strain or weight of said head is removed from its bearing upon said shaft by the provision of the plates 24, carrying the rollers 25. These plates are adjusted to and from the periphery of the flange 7 by loosening the set-screws 26 and then manipulating the adjusting-screws 29, after which the set-screws 26 are tightened to lock the plates in proper position. When the head 6 is reversed in position to discharge the roasted coffee from the cylinder 4, as shown by dotted lines in Fig. 2, the periphery of the flange 7 rides upon the rollers 27. This arrangement provides for an even wear between the shaft and the bearing 9 in the center of the head 6 and also allows a comparatively tight joint to be maintained between said head and the front end of the cylinder 4.

The improvements as herein described are simple, inexpensive, readily applied for use, and materially increase the efficiency of the coffee-roaster and materially decrease the wear of the parts to which they are attached.

I claim—

1. In a coffee-roaster, provided with a horizontally-arranged shaft and a cylinder carried thereby, of a bearing supporting the forward end of said shaft, and arranged to move longitudinally following the expansion and contraction of said shaft; substantially as specified.

2. In a coffee-roaster, constructed with a longitudinally-extending shaft and a cylinder carried thereby, a journal-box in which the forward end of the shaft is supported, and a roller supporting said journal-box; substantially as specified.

3. In a coffee-roaster, constructed with a longitudinally-arranged cylinder, a head normally closing the forward end of said cylinder, a flange integral with the edge of said head, and rollers carried by the front wall of the roaster on which rollers said flange engages, and which support said head; substantially as specified.

4. In a coffee-roaster, constructed with a longitudinally-extending shaft and a cylinder carried thereby, a head normally closing the front end of the cylinder through which head passes the shaft, a flange integral with the edge of the head, plates adjustably mounted on the front of the roaster, and rollers journaled on the upper ends of said plates, which rollers are engaged by the edge of the flange; substantially as specified.

5. In a coffee-roaster, constructed with a longitudinally-extending cylinder, a rotating head normally closing the forward end of said cylinder, and means whereby said head is adjustably held in position within the cylinder independently therefrom; substantially as specified.

6. A coffee-roaster, constructed with a longitudinally-extending shaft, a cylinder carried thereby, a head normally closing the forward end of said cylinder, means whereby said head is held in position independent of the cylinder, and a longitudinally-moving journal-box supported in front of the head and supporting the forward end of the shaft; substantially as specified.

In testimony whereof I have signed my name to this specification in presence of two subscribing witnesses.

JOHN S. MILLER.

Witnesses:
M. P. SMITH,
JOHN C. HIGDON.