C. CRETORS.

ROASTING APPARATUS.

APPLICATION FILED APR. 30, 1921.

1,436,862.

Patented Nov. 28, 1922.

2 SHEETS—SHEET 1.

FIG. 1.

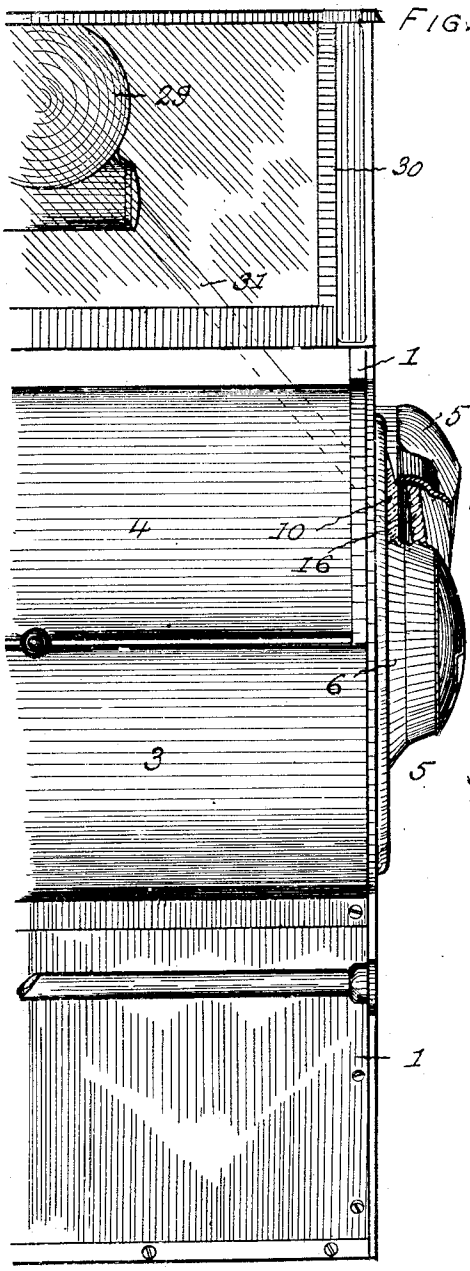
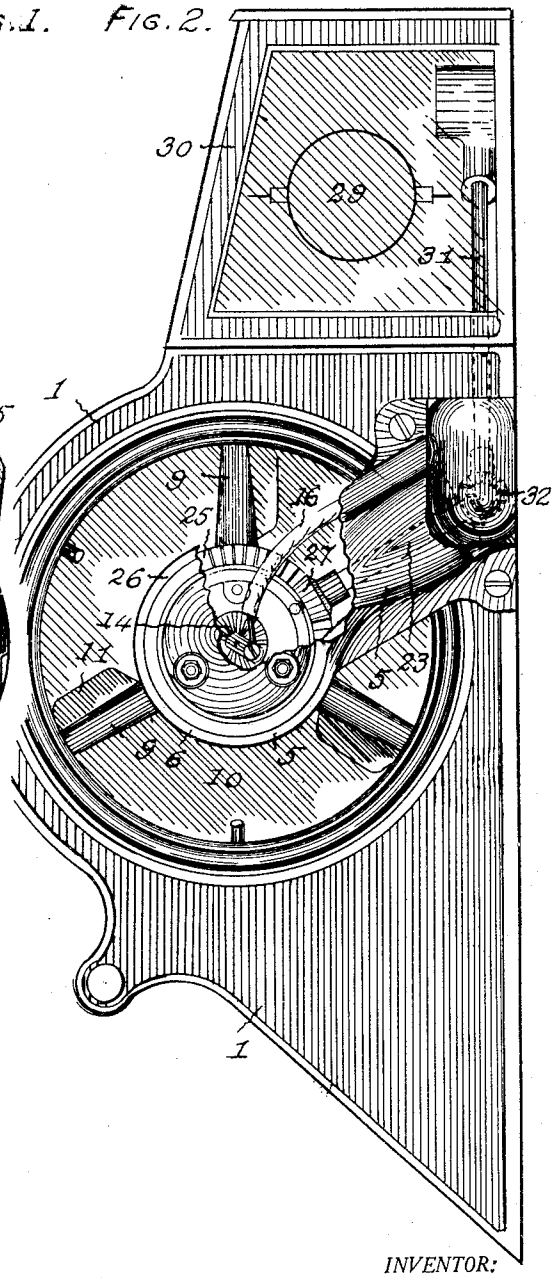


FIG. 2.



INVENTOR:

CHARLES CRETORS

BY

Robert A. Burns

ATTORNEY.

C. CRETORS.

ROASTING APPARATUS.

APPLICATION FILED APR. 30, 1921.

1,436,862. Patented Nov. 28, 1922.

2 SHEETS—SHEET 2.

FIG. 3.

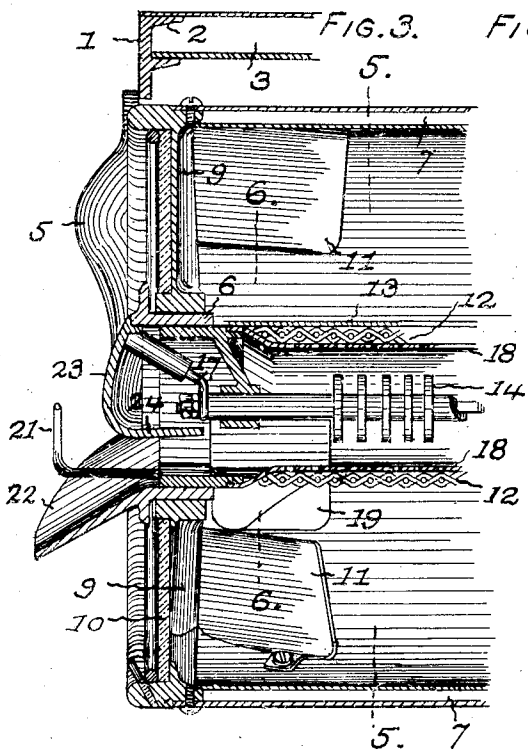


FIG. 4.

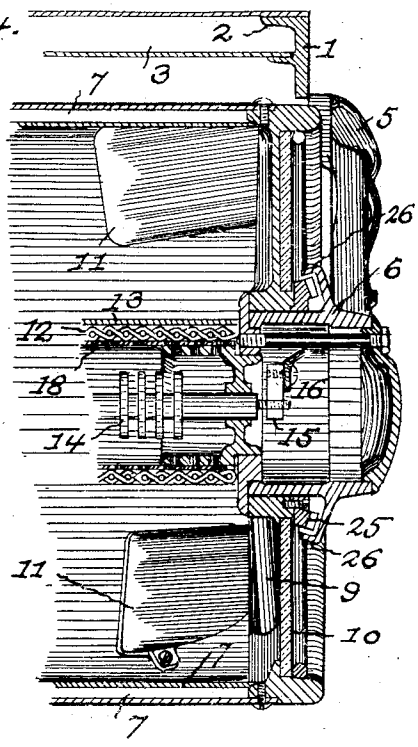


FIG. 5.

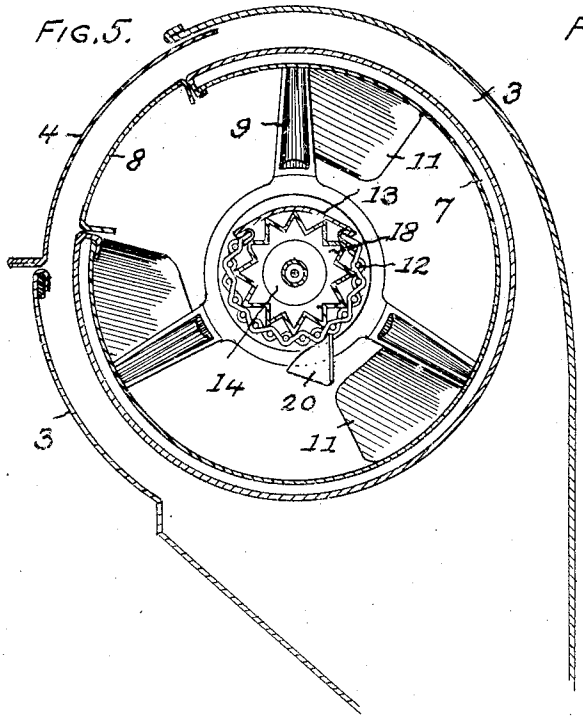
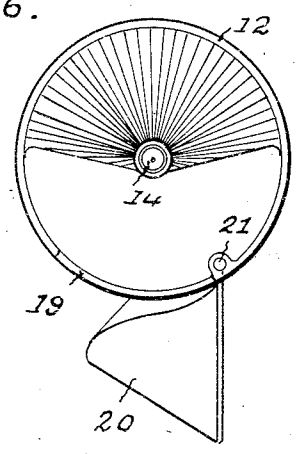


FIG. 6.



INVENTOR:
CHARLES CRETORS,
BY Robert H. Burns
ATTORNEY.

Patented Nov. 28, 1922. 1,436,862

UNITED STATES PATENT OFFICE.

CHARLES CRETORS, OF CHICAGO, ILLINOIS.

ROASTING APPARATUS.

Application filed April 30, 1921. Serial No. 465,877.

To all whom it may concern:

Be it known that I, CHARLES CRETORS, a citizen of the United States of America, and a resident of Chicago, in the county of Cook, State of Illinois, have invented certain new and useful Improvements in Roasting Apparatus, of which the following is a specification.

This invention relates to that class of roasting apparatus for peanuts and the like, in which a horizontally arranged revoluble cylinder or drum is provided with an axially arranged heating element for effecting the roasting operation, and the present improvement has for its objects:—

To provide a structural formation and association of parts in which a revoluble containing cylinder or drum is combined with an axially arranged and stationary electrical heating element, and by means of which an even and uniform roasting operation is effected, with an avoidance of scorching of any portion of the material operated on, and which is adapted to provide a safe and substantial support and encasement for the electrical heating unit and its connections or conductors.

To provide means for a ready removal of a sample of the material operated on, for the purpose of testing and ascertaining from time to time the progress of the roasting operation, all as will hereinafter more fully appear.

In the accompanying drawings:

Fig. 1, is an elevation showing the present improvement in position on the rear of a vending stand for peanuts, etc.

Fig. 2, is an end elevation of the same with parts broken away and in section.

Fig. 3, is a detail central longitudinal section of one end portion of the roasting apparatus.

Fig. 4, is a similar view of the other end of the apparatus.

Fig. 5, is a transverse section on line 5—5 Fig. 4.

Fig. 6, a detail transverse section on line 6—6, Fig. 3.

Like reference numerals indicate like parts in the different views.

Referring to the drawings, 1 designates extensions of the side walls of a peanut vending stand affording support for the parts and mechanisms of the roasting means, and to such end each extension is formed with a circular flange 2, on its inner face for the attachment of the curved enclosing casing 3, and with a curved guide groove for the movement of the door 4 by means of which the entry opening in the casing 3 is closed. Each of the wall extensions 1, is also formed with a circular opening in which an end of the hereinafter described roasting drum or cylinder is adapted to rotate.

5 designate bracket or bridge pieces secured to the respective wall extensions 1 and extending to the axis of the aforesaid circular openings of wall extensions 1 to provide support of the roasting cylinder or drum, and for the electrical heating unit hereinafter described.

6 designate annular heads or rings forming fixtures on the inner ends of the bracket pieces 5 in concentric relation to the circular openings of the wall extensions 1 aforesaid. Said rings 5 are formed with bearings for the carrying heads of the above mentioned roasting drum or cylinder, and with supports for the outer circular shell of the heating unit.

7 designates the revoluble roasting drum or cylinder, preferably of the detail construction shown in Figs. 3, 4 and 5, and having a double wall with an intermediate air space to retard outward radiation of heat. The said drum 7 is formed with a longitudinal peripheral opening for filling and emptying uses, and with a closure plate 8 for said opening of any usual form and arrangement.

9 designate skeleton end heads or spiders secured to the respective ends of the drum 7 and provided with annular hubs for bearing on the annular bearing rings 6 above described.

10 designate transparent end walls fitting the ends of the drums 7 adjacent to the end heads 9 for the purpose of visual inspection of the material undergoing the roasting operation.

11 designate a series of deflecting vanes or blades fixed within the drum 7 near the respective end thereof, and adapted to deflect the material towards the middle of the drum in the revolution of the same.

12 designates a supporting sleeve or shell extending between and fixedly secured to the annular heads 6 aforesaid, to constitute an enclosure for the hereinafter described heating unit and intermediate shell thereof. In the preferred construction the sleeve 12 is formed of perforate metal and having a main portion of woven wire fabric or the

like and a longitudinal crown strip 13 of imperforate metal, as shown more particularly in Figs. 3, and 5. With such construction the transverse flow of material which takes place in actual use, and due jointly to the revolution of the drum 7 and the end deflecting blades 11, thereof, is not impeded owing to the smooth surface of the crown strip 13 aforesaid.

14 designates the electrical heating unit, which may be of any usual and suitable construction, preferably however of the type formed by a series of spaced collars and central core as shown more particularly in Figs. 3 and 4. In the construction shown, the heating unit 14 is supported in place by hanger brackets 15 on the end heads 6 aforesaid, and is connected with a suitable source of electro-motive force by conductors 16 and 17 that are housed in part in recesses or channels in the bracket pieces 5 as shown.

18 designates an intermediate shell arranged between the enclosing shell 12 and the heating unit 14. In the preferred construction shown the shell 18 is formed of perforate metal longitudinally corrugated to afford greater resistance to lateral flexure, and with its bore communicating with the bore of the annular heads 6 for the purpose hereinafter stated.

19 designates an opening or passage formed in the periphery of the shell 12 and shell 18 near one of the same, and 20 designates a hinged cover associated with and controlling said opening.

21 designates a crank shaft attached to the cover 20 at its point of pivotal attachment to the shell 12, and extending out through an annular head 6 for convenient manual operation and so that by a movement by hand of said crank shaft in one direction, the cover 20 is moved away from the opening 19 to permit a sample of the material operated on passing into the end portion of the bore of the shell 12 and from thence to pass to a hand of the operator along the fixed guide chute 22 formed as an extension of the adjacent annular head 6. By a movement of the crank shaft 21 in the opposite direction, the cover 20 is caused to close the opening 19 and prevent any such outflow of the material.

23 designates a shield piece associated with the annular head 6 next adjacent to the aforesaid outlet opening 19, said shield piece is of a segmental form and is provided with an inturned bottom flange 24 as shown more particularly in Fig. 3, adapted to protect the adjacent electrical conducting connection 17 and at the same time admit of the free outflow of the material for inspection purposes.

25 designates a bevel gear wheel fixedly associated with a skeleton end head 9 of the roaster drum 7, and enclosed and protected from accidental contact by a flanged rim 26 on the adjacent annular head 6 as shown.

27 designates a bevel pinion meshing with the bevel gear wheel 25 and carried by a countershaft 28 journalled on the inner side of a bracket piece 5 aforesaid.

29 designates an electric or like motor arranged above the enclosing casing 3, above described, and preferably in a separate casing 30 as shown in Figs. 1 and 2. The motor 29 is adapted to supply driving power to the other mechanisms of the vending machine in addition to operating the roasting drum 7, and to such end said motor has connections as follows:—

31 designates an obliquely arranged shaft connected at one end to the power shaft of the motor 29 and having bevel gear connections 32 at its other end with the countershaft 28 above described.

In the practical operation of the present improvement, the roasting drum 7 is filled with material to be operated on, to a horizontal level approximately even with the crown 13 of the shell 12 which encloses the heating unit 14. With a rotation of the drum 7 such horizontal level or surface of the material is moved to an inclined position until such an inclination is reached that the surface material will roll down in a constant manner over the shell 12 and be exposed to a very effective roasting action from the centrally arranged heating unit 14 aforesaid.

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

1. In a roasting apparatus, the combination of a fixed outer casing having circular orifices in its ends, bracket pieces fixed on said casing ends and having central hubs, a roasting drum mounted on sleeve bearings formed therefor for rotation in concentric relation to said hubs, a longitudinally arranged heating element carried by said hubs, and a protecting shell enclosing said element and attached to said hubs.

2. In a roasting apparatus, the combination of a fixed outer casing having circular orifices in its ends, bracket pieces fixed on said casing ends and having central hubs, a roasting drum revolubly mounted on said hubs, a longitudinally arranged heating element carried by said hubs, and a protecting shell enclosing said element and attached to said hubs.

3. In a roasting apparatus, the combination of a fixed outer casing having circular orifices in its ends, bracket pieces fixed on said casing ends and having central hubs, a roasting drum mounted for rotation in concentric relation to said hubs, a longitudinally arranged heating element carried by said hubs, a protecting shell enclosing said element and attached to said hubs, and an

intermediate shell arranged between said protecting shell and said element and formed with longitudinal corrugations.

4. In a roasting apparatus, the combination of a fixed outer casing having circular orifices in its ends, bracket pieces fixed on said casing ends and having central hubs, a roasting drum revolubly mounted on annular bearings formed therefor on said hubs, a longitudinally arranged heating element carried by said hubs, a protecting shell enclosing said element and attached to said hubs, and an intermediate shell arranged between said protecting shell and said element and formed with longitudinal corrugations.

5. In a roasting apparatus, the combination of a fixed outer casing having circular orifices in its ends, bracket pieces fixed on said casing ends and having central hubs of an annular form, a roasting drum having end heads revolubly mounted on said hubs, a longitudinally extending electrical heating element arranged between said hubs, and a protecting shell attached to said hubs and having a passage near one end communicating with the interior of the roasting drum, said shell enclosing said heating element.

6. In a roasting apparatus, the combination of a fixed outer casing having circular orifices in its ends, bracket pieces fixed on said casing ends and having central hubs of an annular form, a roasting drum having end heads revolubly mounted on said hubs, a longitudinally extending electrical heating element arranged between said hubs, a protecting shell attached to said hubs and enclosing said heating element, and an intermediate shell arranged between said protecting shell and said element and formed with longitudinal corrugations.

7. In a roasting apparatus, the combination of a fixed outer casing having circular orifices in its ends, bracket pieces fixed on said casing ends and having central hubs of an annular form, a roasting drum having end heads revolubly mounted on said hubs, a longitudinally extending electrical heating element arranged between said hubs, and a protecting shell attached to said hubs and enclosing said heating element, the ends of said protecting shell and the bore of said hubs providing containers for the connections of the heating element, and cap pieces attached to the outer ends of said hubs.

8. In a roasting apparatus, the combination of a fixed outer casing having circular orifices in its ends, bracket pieces fixed on said casing ends and having central hubs of an annular form, a roasting drum having end heads revolubly mounted on said hubs, a longitudinally extending electrical heating element, arranged between said hubs, and a protecting shell attached to said hubs and enclosing said heating element, an end of the protecting shell and the bore of an annular hub formed as an end chamber, the shell having an opening into said chamber from the interior of the roasting drum, a hinged cover controlling said opening, and means exterior of said hub for operating said cover.

9. In a roasting apparatus, the combination of a fixed outer casing having circular orifices in its ends, bracket pieces fixed on said casing ends and having central hubs, a roasting drum mounted for rotation in concentric relation to said hubs, and a longitudinally arranged heating element carried by said hubs, and a protecting shell attached to said hubs and enclosing the heating element, the said shell being formed of perforate material and having a crown portion of imperforate material.

10. In a roasting apparatus, the combination of a fixed outer casing having circular orifices in its ends, bracket pieces fixed on said casing ends and having central hubs, a roasting drum revolubly mounted on said hubs, a longitudinally arranged heating element carried by said hubs, and a protecting shell enclosing said element and attached to said heads, the said shell being formed of perforate material and having a crown portion of imperforate material.

11. In a roasting apparatus, the combination of a fixed outer casing having circular orifices in its ends, bracket pieces fixed on said casing ends and having central hubs, a roasting drum mounted for rotation in concentric relation to said hubs, a longitudinally arranged heating element carried by said hubs, a protecting shell enclosing said element and attached to said hubs, and an intermediate shell arranged between said protecting shell and said element and formed with longitudinal corrugations, the said enclosing shell being formed of perforate material and having a crown portion of imperforate material.

12. In a roasting apparatus, the combination of a fixed outer casing having circular orifices in its ends, bracket pieces fixed on said casing ends and having central hubs, a roasting drum revolubly mounted on said hubs, a longitudinally arranged heating element carried by said hubs, a protecting shell enclosing said element carried by said hubs, a protecting shell enclosing said element and attached to said hubs, and an intermediate shell arranged between said protecting shell and said element and formed with longitudinal corrugations, the said enclosing shell being formed of perforate material and having a crown portion of imperforate material.

13. In a roasting apparatus, the combination of a fixed outer casing having circular orifices in its ends, bracket pieces fixed on said casing ends and having central hubs of an annular form, a roasting drum having

end heads revolubly mounted on said hubs, a longitudinally extending electrical heating element arranged between said hubs, a protecting shell attached to said hubs and enclosing said heating element and means for imparting rotation to the roasting drum, the same comprising a bevel gear wheel carried by an end head of the drum, a countershaft journalled in a bracket piece aforesaid and having at one end a bevel pinion meshing with said bevel gear wheel, and a rotary motor operatively connected to the other end of said countershaft.

Signed at Chicago, Illinois, this 27th day of April, 1921.

CHARLES CRETORS.