W. A. BECKETT.

COOKER.

APPLICATION FILED MAR. 22, 1918.

1,275,203.

Patented Aug. 13, 1918.

2 SHEETS—SHEET 1.

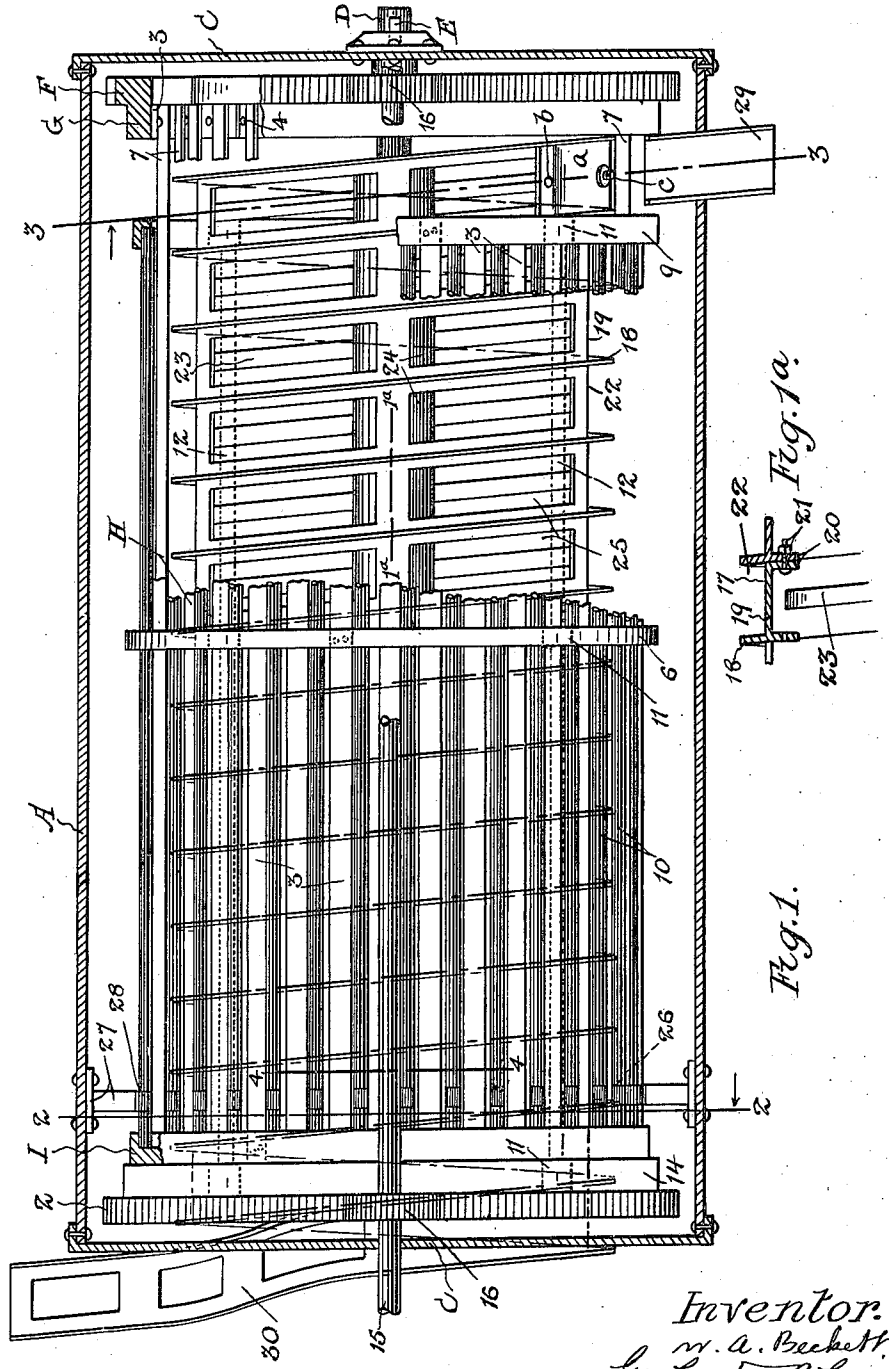


Fig. 1.

Fig. 1a.

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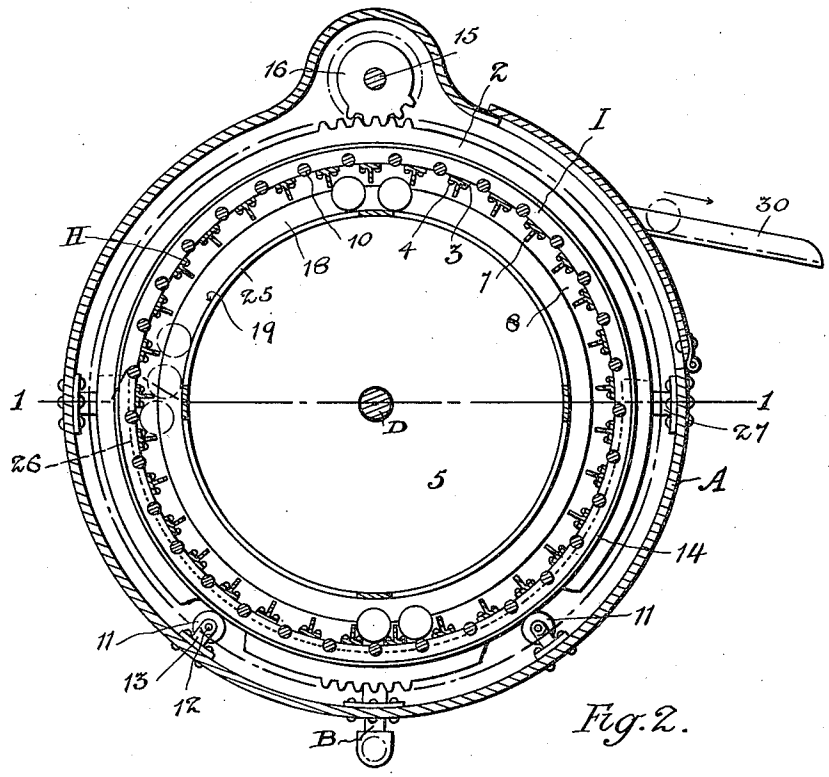


Fig. 2.

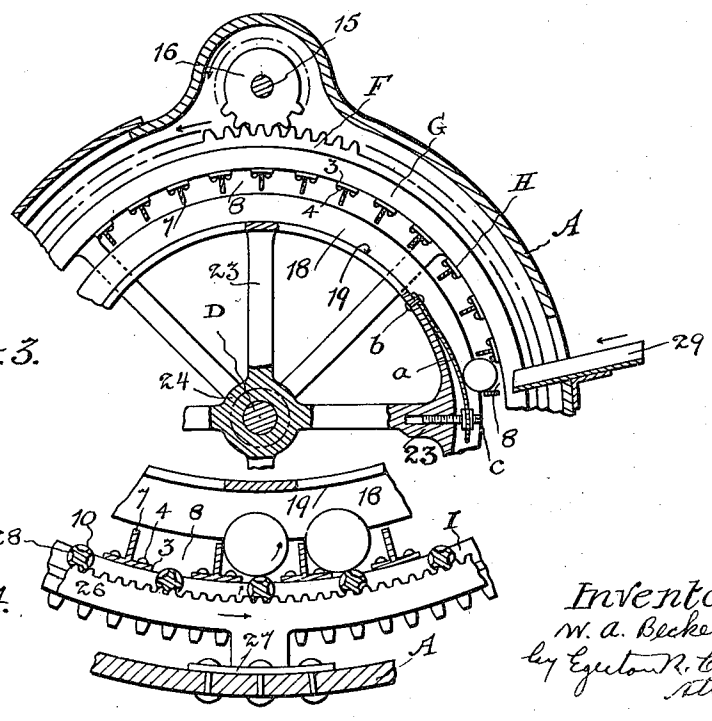


Fig. 3.

Fig. 4.

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UNITED STATES PATENT OFFICE.

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COOKER.

1,275,203. Specification of Letters Patent. Patented Aug. 13, 1918.

Application filed March 22, 1918. Serial No. 224,045.

To all whom it may concern:

Be it known that I, WILLIAM AUSTON BECKETT, a subject of the King of Great Britain, of the town of Kingsville, county of Essex, Province of Ontario, Canada, have invented certain new and useful Improvements in Cookers, of which the following is a specification.

My invention relates to improvements in cookers, and the objects of my invention are: first, to design a cooker whereby all classes of canned goods will be continuously agitated within their containing receptacles so that by the time the cans leave the apparatus, the contents thereof will be cooked; second, to drive the operating part of the apparatus in such a manner as to economize in power; third, to provide an apparatus of this class wherein the canned goods have a clear spiral path from the inlet to the outlet through which the same pass without danger of clogging or jamming, and fourth, to dispense with all conveyers or elevators, since the cans are passed by gravity into and out of the apparatus, and a cooker within my invention will be hereinafter particularly described, and what I claim as new will be pointed out in the claims forming part of this specification.

Figure 1 is, in part, a horizontal longitudinal section on the line 1—1, Fig. 2, and in part a plan elevation, certain parts of the revolving drum being broken away to illustrate construction; Fig. 1ª is a fragmentary longitudinal section on the line 1ª—1ª, Fig. 1; Fig. 2 is a vertical cross section on the line 2—2, Fig. 1; Fig. 3 is a fragmentary cross section on the line 3—3, Fig. 1; and Fig. 4 is a fragmentary section on the line 4—4, Fig. 1.

In the drawings, like characters of reference refer to the same parts.

A is any suitable container, or casing, designed to carry steam and hot water. B are any suitable pipe couplings, by means of which the passage of water and steam into and from the said casing is controlled. Suitably held in the ends C of said casing is an axle D, which passes through the longitudinal axis of said casing A. This axis is preferably held from movement, and the preferred means to effect this purpose is to key the same by means of keys E in the said ends C. The outer drum is constructed as follows: loosely mounted on the axle D is a gear wheel F. This gear wheel is provided at its inner side with a flange G which provides a supporting means for the longitudinal members H which are supported at their opposite ends by the flange I of the toothed-ring 2. These said longitudinal members are preferably in the form of T-irons, and by means of the flanges 3 thereof, screws 4 or other fastening means secure the said longitudinal members in place. As will be seen clearly upon reference to Fig. 2, there are no spokes or other members interfering with the passage of the canned goods through the opening 5 of the ring 2.

The said longitudinal members H are preferably braced midway their ends by a ring 6, to which the flanges of said member are suitably secured. The webs 7 of said members H are spaced apart as are also the flanges of the said members, and these said webs are disposed radially, thus forming pockets 8 to receive the cans for the purpose hereinafter particularly set forth.

The said longitudinal members H are also secured to a bracing ring 9, at the feed end of the machine, and between the ring 9 and the flange G the flanges 3 of the members H are cut off to permit the ready passage of the cans in to the pockets 8, as will be seen upon referring particularly to Fig. 3. Journaled in the ring 9 and in the flange I are a plurality of round bars or shafts 10, which are positioned between the flanges 3 of the members H and extend partly into the pockets 8.

11 are idlers mounted on shafts 12, journaled in suitable brackets 13. These idlers track against the flange 14 secured to or forming a part of the toothed-ring 2, and so support this toothed-ring and its associated parts. Similar idlers 11 track with the rings 6 and 9, and so give additional support to the outer drum.

The outer drum rotates, and the preferred means of rotating the same comprising a drive-shaft 15 which carries pinions 16, one in mesh with the toothed-ring 2, and the other in mesh with the gear-wheel F. These parts are suitably incased, and any suitable means, not necessary to illustrate, may be employed to drive this shaft at the required speed in order to regulate the time required for the passage of the canned goods through the apparatus.

The inner drum is provided with a spiral path therearound, and while it may be constructed in various ways, the following is the preferred form: A plurality of drum-

sections 17 are provided, each composed of a radial peripheral flange 18, and a horizontal flange 19. By any suitable means such as lugs 20 coupled together by bolts and nuts designated by the common numeral of reference 21, the said drum-sections 17, are secured in adjacent position so as to ultimately provide the outer surface of the inner drum with a continuous spiral path or runway 22. The said drum-sections are supported from the axle D by any suitable means: for instance, each drum-section may be provided with spokes 23 carried by the hubs 24 mounted on the axle D. The flanges 19 are provided with openings 25 so as to permit the ready passage into the inner drum of the heat-conveying medium.

The function performed by the bars or shafts 10 is that of insuring the rotation of the cans during the period they do not track with the flanges 19. The said cans, I find, track with the flanges 19 for one-half the circumference of the inner drum, and for the remaining half of the circumference, they naturally extend more or less well into the pockets 8 and away from the flanges 19. When the cans are in the position just described, by means of the bars or shafts 10 which are rotated, the said cans are also rotated during this portion of their path through the apparatus, with the result that the contents thereof are thoroughly agitated. Carried by the casing A, is a curved toothed-rack 26, secured by any suitable means to said casing as by flange-provided lugs 27, bolted or otherwise secured to said casing. As will be observed upon referring to the dotted lines in Fig. 2, this toothed-rack extends a short distance above the horizontal diameter of said casing, and as the bars or shafts 10 are provided with teeth 28, as the said teeth are brought into mesh with the teeth of said rack, the bars 10 are positively rotated to effect the purpose before set forth.

The outer drum is rotated in the direction indicated by arrow in Fig. 3, and as the pockets 8 pass by the discharge end of the feed chute 29, a can passes into the said pockets. The co-action between the webs 7 and the said cans tracking on the flanges 19 will rotate these cans and so agitate their contents. In due course, the cans pass at a tangent from the inner drum on to the discharge chute 30, down which they roll by gravity.

To prevent the cans dropping between the flanges 19 and the inner edges of the webs 7, as they enter the pockets 8, an adjustable trap in the form of an adjusting plate is provided. This plate *a*, is substantially of the same width as the distance between the flanges 18, and is secured by any suitable means such as the rivet *b*, to one of the drum-sections 17, through the medium of the flange 19 thereof. An adjusting screw *c*, is carried by the free end of this plate and screws into one of the spokes 23. All the cans handled by this apparatus will be substantially the same length though they may vary in diameter within certain obvious limits. In case a can of greater diameter than the one illustrated in Fig. 3, be passing into the apparatus, it naturally follows that the plate *a*, must be moved closer to the drum section 17 supporting the same.

From my experiments, I have found that this apparatus not only reduces cost of operation and time in cooking, but since the cooked contents are discharged at the top of the apparatus, we can use nearly all water for cooking purposes.

Changes in construction may be made in various ways in the disclosure illustrated without going outside the scope of the appended claims.

Claims.

1. An apparatus of the class described comprising a suitable casing; an inner stationary drum therewithin provided with a continuous flanged spiral path on its outer perimeter extending from one end to the other; an axle extending longitudinally centrally through the drum and held therein at each end, and supporting said inner drum; an outer drum comprising a toothed gear-wheel loosely journaled on said axle near the intake end of the apparatus; a toothed-ring positioned at the discharge end of said apparatus; means carried by said casing whereby said toothed-ring is supported; a plurality of T-bars coupling said gear-wheel and toothed-ring together and secured thereto through the medium of their flanges and disposed with their webs as well as their flanges laterally spaced apart to form pockets; a plurality of bars positioned between said T-bars and journaled at one end of the apparatus in a flange carried by said toothed-ring; a bracing-ring positioned near the feed end of said apparatus and spaced apart from the said gear wheel, the other ends of said bars having bearing in said bracing-ring; the flanges of said T-bars being removed between said bracing-ring and said gear wheel to permit the entry of cans into the apparatus, and means for rotating said outer drum, for the purpose specified.

2. An apparatus of the class described comprising a suitable casing; an inner stationary drum therewithin provided with a continuous flanged spiral path on its outer perimeter extending from one end to the other; an axle extending longitudinally centrally through the drum and held therein at each end, and supporting said inner drum; an outer drum comprising a toothed gear-wheel loosely journaled on said axle near the intake end of the apparatus; a toothed-ring positioned at the discharge end of said apparatus; means carried by said casing

whereby said toothed-ring is supported; a plurality of T-bars coupling said gear-wheel and toothed-ring together and secured thereto through the medium of their flanges and disposed with their webs as well as their flanges laterally spaced apart to form pockets; a plurality of bars positioned between said T-bars and journaled at one end of the apparatus in said toothed-ring; a bracing-ring positioned near the feed end of said apparatus and spaced apart from the said gear wheel, the other ends of said bars having bearing in said bracing-ring; means for supporting said bracing-ring; the flanges of said T-bars being removed between said bracing-ring and gear wheel to permit the entry of cans into the apparatus; means for rotating said outer drum, for the purpose specified; a curved toothed rack carried by said casing and teeth cut in said bars so that as said outer drum is rotated, the said bars will be rotated through the coaction of their teeth with said toothed rack.

3. An apparatus of the class described comprising a suitable casing; an inner fixed drum therewithin provided with a continuous flanged spiral path on its outer perimeter extending from one end to the other; means supporting said drum against movement within said casing; an outer drum surrounding the said inner drum and provided with a plurality of pockets extending longitudinally thereof without interruption, and communicating with said spiral pathway, and coöperating with the flanges thereof so as to form individual pockets for the cans; means carried by said outer drum and extending into said pockets for the purpose of rotating said cans by frictional contact therewith at certain times; means for positively rotating said means extending into said pockets, and means whereby said outer drum is rotated so as to cause continuous movement of the cans from the intake end of said apparatus to the discharge end thereof, for the purpose specified.

4. In an apparatus of the class described, the combination with a suitable casing; an inner drum therewithin provided with a continuous spiral path on its outer perimeter extending from one end to the other; means supporting said drum from movement within said casing; an outer drum comprising a pair of rotary members; a plurality of T-bars coupling said rotary members together and secured thereto through the medium of their flanges and disposed with their webs and flanges spaced laterally apart to form pockets; means whereby said outer drum is supported and rotated; a plurality of round bars positioned between said T-bars and journaled at their ends in said rotary members; teeth carried by each of the said bars near one end, and a curved toothed-rack carried by said casing and with which co-act the teeth of said bars to positively rotate these bars for the purpose specified.

5. An apparatus of the class described comprising a suitable casing provided at its intake end with a feed opening in its side, and further provided with a discharge opening in its discharge end; an inner fixed drum therewithin provided with a continuous spiral path on its outer perimeter coacting with said feed opening to receive the cans and also with said discharge opening to discharge the cans therethrough; means supporting said drum against movement within said casing; an outer drum surrounding said inner drum comprising a toothed-gear-wheel positioned near the intake end of the casing; a toothed-ring positioned at the discharge end of said casing; a plurality of T-bars coupling said gear-wheels and toothed-ring together and secured thereto through the medium of their flanges and disposed with their webs, as well as their flanges, laterally spaced apart to form pockets; the flanges of said T-bars being removed for a sufficient distance from said gear-wheel so as to permit the entry of cans through said feed opening into said spiral path; the cans ultimately discharging from said spiral path through said toothed-ring into said discharge opening; means for mounting said outer drum within said casing, and means for rotating said outer drum.

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