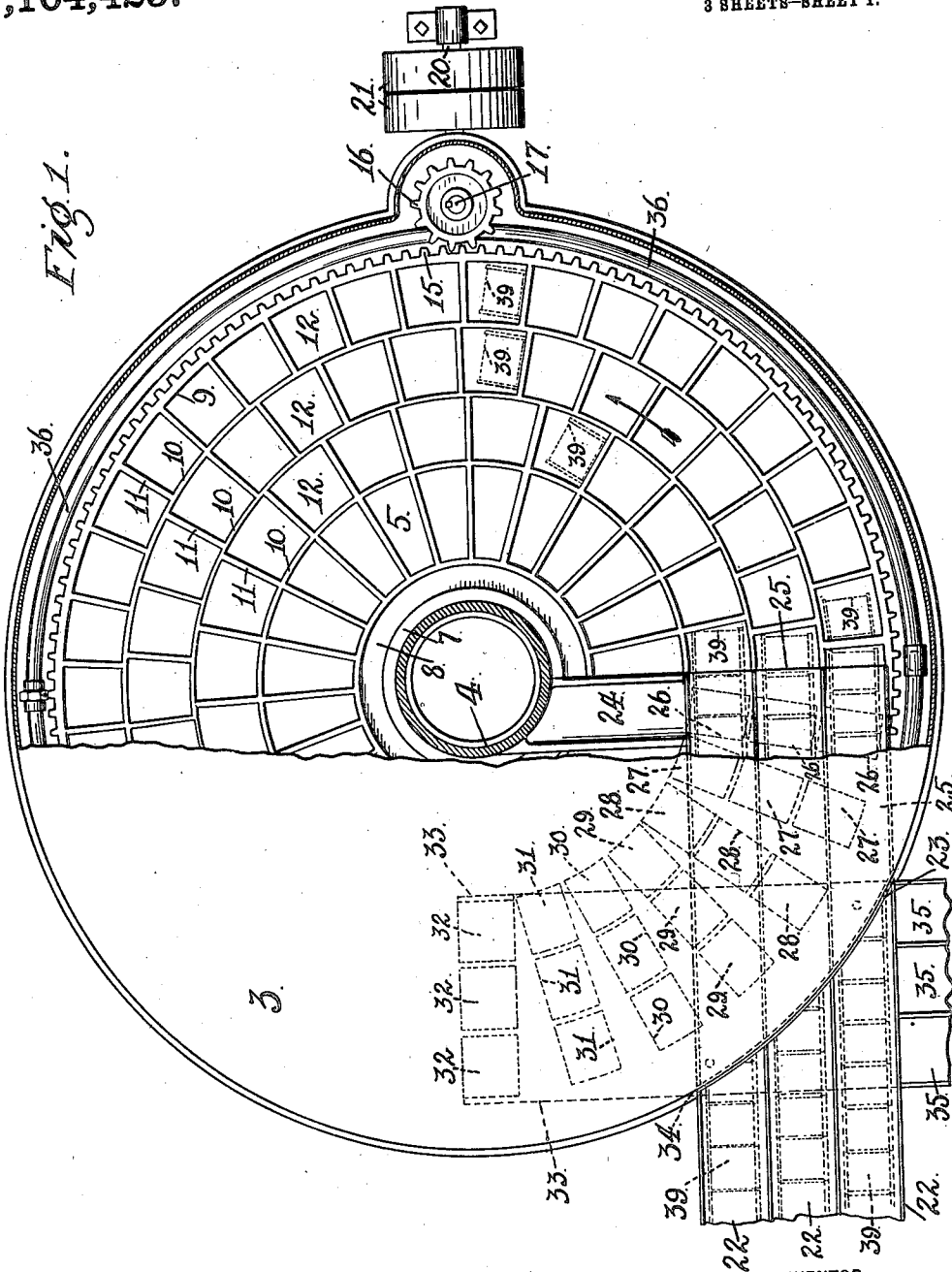


A. J. KEAST.
 COOKER.
 APPLICATION FILED DEC. 1, 1913.

Patented July 21, 1914.
 3 SHEETS-SHEET 1.

1,104,425.

Fig. 1.



WITNESSES:

H. A. Stock
S. Conline.

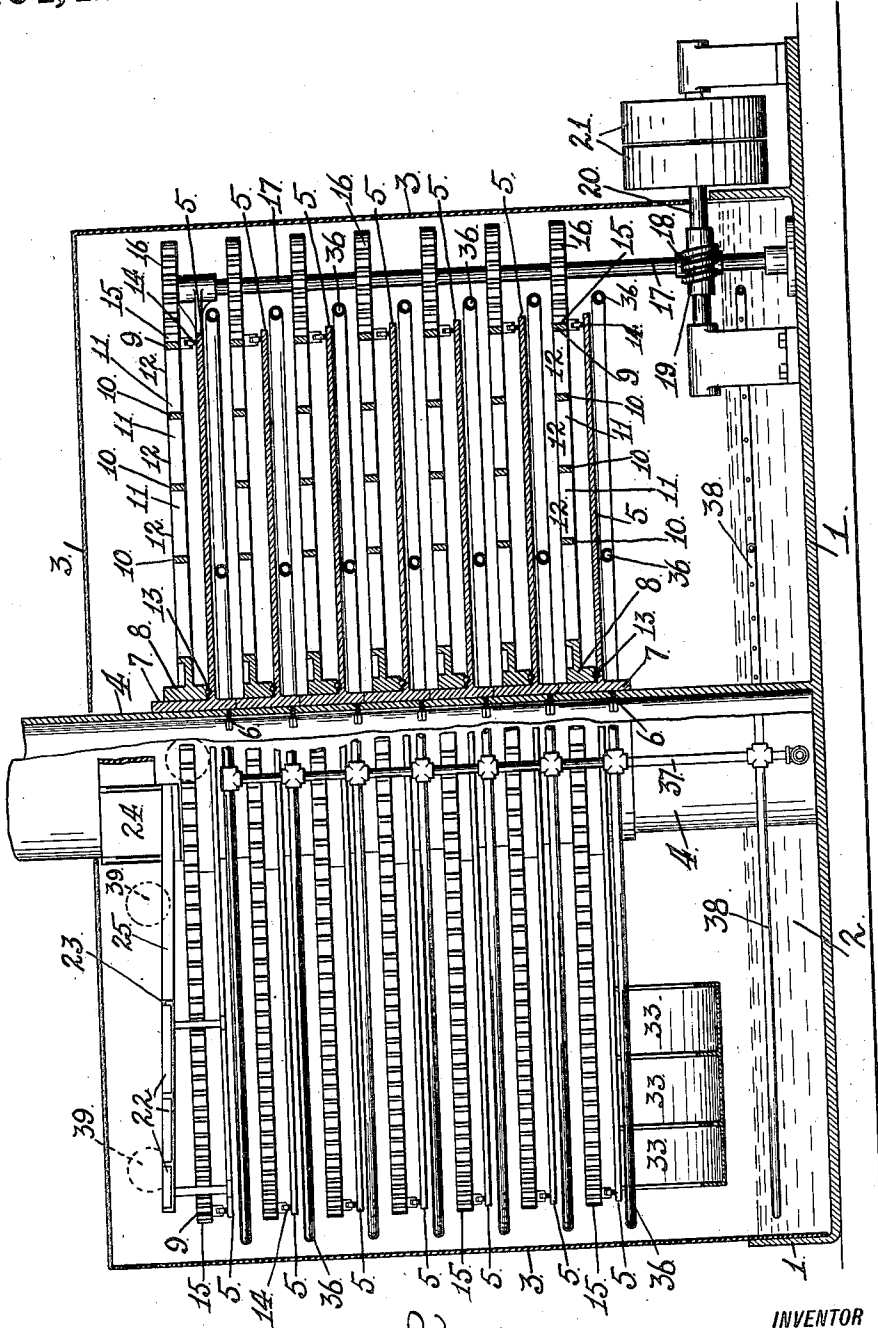
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Patented July 21, 1914.

1,104,425.

3 SHEETS—SHEET 2.



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FIG. 2

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 3 SHEETS-SHEET 3.

1,104,425.

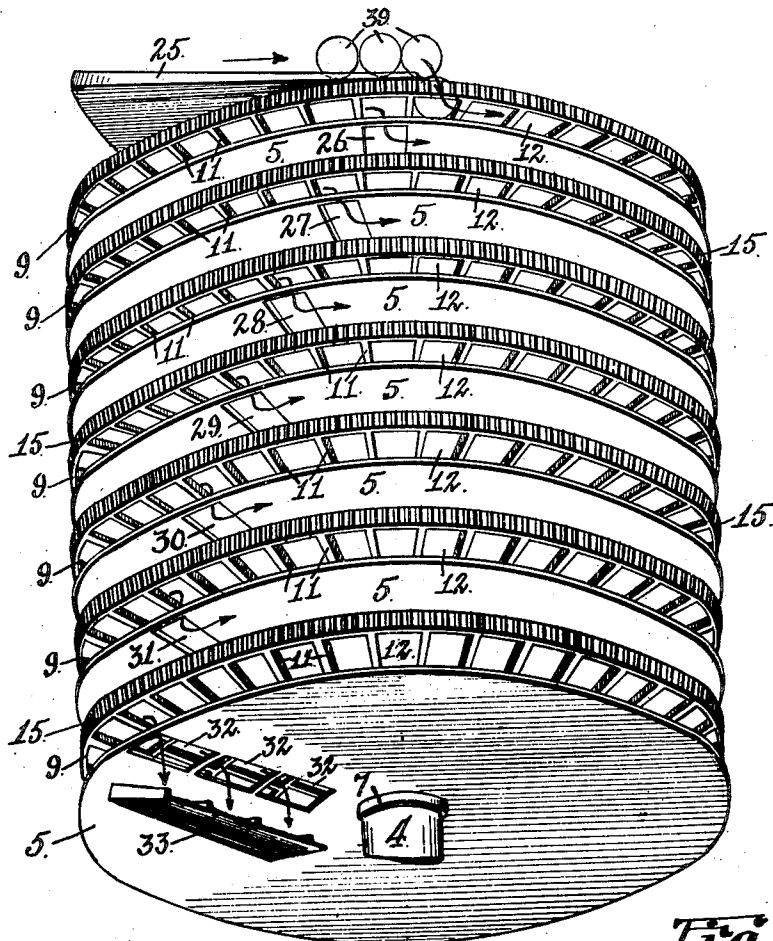


Fig. 3.

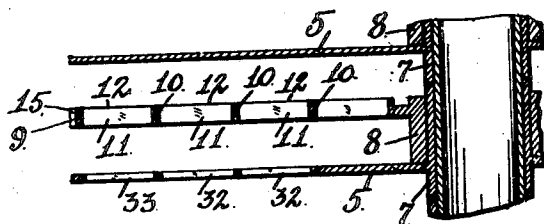


Fig. 4.

WITNESSES:
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UNITED STATES PATENT OFFICE.

ALFRED JOHN KEAST, OF CAMPBELL, CALIFORNIA, ASSIGNOR TO CALIFORNIA FRUIT CANNERS ASSOCIATION, OF SAN FRANCISCO, CALIFORNIA, A CORPORATION OF CALIFORNIA.

COOKER.

1,104,425.

Specification of Letters Patent.

Patented July 21, 1914.

Application filed December 1, 1913. Serial No. 803,910.

To all whom it may concern:

Be it known that I, ALFRED JOHN KEAST, a citizen of the United States, residing at Campbell, in the county of Santa Clara and State of California, have invented certain new and useful Improvements in Cookers, of which the following is a specification.

My invention relates to the class of cookers used in the canning art.

Machines of this class are characterized, in general, by an outer casing with means for heating it, and means for conducting the filled and capped cans in an extensive course through the casing, said course being, in accepted practice, such as is consistent with compactness in the machine for the sake of economy in floor space, and of a nature that will provide for rolling the cans as they travel through their course.

The object of my invention is to provide for these essentials in a simple, compact, and effective machine, and to this end, my invention consists in the novel cooker which I shall hereinafter fully describe, by reference to the accompanying drawings, in which—

Figure 1 is a broken top plan of my cooker. Fig. 2 is a vertical sectional view of the same, partly in elevation, the sectional portion being taken on a radial line from the center to the driving shaft 17. Fig. 3 is a perspective view of the tier or vertical series of floor-plates, together with the overlying can-pusher-frames, the view point being below, in order to show the receding progression of the discharge openings in said floor-plates. Fig. 4 is a fragmentary view taken in a vertical plane through the discharge openings 32 of the lowermost floor-plate.

1 is a foundation plate, having a pan-like shape, to serve as a receptacle for a water seal 2. Into this plate is inverted the casing 3, which may, when required, be readily lifted off to afford access to the interior parts. From the plate 1 rises a fixed column 4 its upper end projecting through the top of the casing.

Mounted on the column 4 are the floor-plates 5 in vertical spaced series, said floor-plates being non-rotatable and fixed to the column in suitable manner as, for example, by the set screw 6, binding the plate hubs 7, as shown in Fig. 2. I have here shown seven of these floor-plates, though there may

be a greater or less number as desired. Above each floor-plate is a can-pusher adapted by its rotation to roll the cans upon the plate. Each pusher is, in its best form, a skeleton or open-work frame composed of a hub 8, a rim 9, concentric spaced rings 10 disposed between the hub and rim, and radial bars 11 between the rings, thus dividing each plate into a multitude of open can-receiving pockets 12. As seen in Fig. 1, there are here illustrated three concentric annular series of these pockets, those of the uppermost pusher-frame only being shown in this figure. These pockets lie between the outer rim 9 and the several rings 10, and said pockets in order to have the proper area to receive a can and be equal in size, are necessarily out of line radially, so that the bars 11 of the three series are not continuous radially. Though I have here shown three annular series of pockets for each pusher-frame, this number may be varied according to the size of the machine.

Each pusher-frame is mounted to rotate about the column axis of the machine. The mounting here shown illustrates a simple and convenient construction, and comprises ball bearings 13 under the hubs of the pusher-frames, seated in raceways on the floor plates, and wheels 14 under the rims of the pusher-frames, running on said floor plates. To drive the pusher-frames, I here show teeth 15 on the rim 9 of each frame, with which mesh gears 16 on a vertical shaft 17 having a worm pinion 18 on its lower end. With this pinion engages a worm 19 on a drive shaft 20, carrying the pulleys 21.

Outside the casing at one side of the upper portion thereof is fixed and suitably supported independently of said casing, the outer feed runway 22, which for the machine here shown, is a three-part one. This runway is slightly inclined as shown in Fig. 2, to enable the cans to roll by gravity. The inner end of the outer runway stops short of the casing, as seen in Fig. 1, so that said casing may be removed without interference from the runway. The runway at its inner end leads directly to the entrance opening 23 in the casing; and inside the casing, and supported by a bracket 24, from the column 4, is the inclined inner runway 25, the outer end of which lies at the entrance opening 23 of said casing and near enough to the outer runway to enable the cans to

roll directly from one to the other. The inner end of the inner runway 25 lies just above the series of pockets 12 of the uppermost pusher frame. In the uppermost floor-plate, on a radial line just back of the line in which said floor-plate receives the cans from the inner feed runway 25, are the discharge openings 26, shown in dotted lines in Fig. 1. One of these openings is shown more clearly in Fig. 3.

In the next floor plate, below the uppermost, and just back of the discharge openings 26 in said uppermost floor plate, are the discharge openings 27, also shown in dotted lines in Fig. 1. In Fig. 3, one of these openings 27 is clearly shown. In similar succession, or, as it may be termed, receding progression, the several floor plates are provided respectively with the discharge openings 28, 29, 30, 31, and 32, the latter being in the lowermost floor-plate. Under these last named discharge openings 32, is the inner discharge runway 33, which leads to the exit opening 34 in the shell, outside of which is the outer discharge runway 35. The receding progression of the several discharge openings is shown fully in Fig. 3.

36 are annular steam pipes in the spacers between floors, 37 is the manifold steam supply pipe, and 38 is a steam pipe in the water seal 2.

Cans 39 are indicated in dotted lines in various positions in connection with the cooker.

The operation is as follows: The cans roll down the outer feed runway 22 and into the machine through its entrance opening 23. Continuing, they roll down the inner feed runway 25 and are delivered into the pockets 12 of the uppermost pusher-frame, and they rest on the uppermost floor-plate 5. This pusher-frame, rotating in the direction of the arrow shown in Fig. 1 and Fig. 3, causes the cans to roll on the floor-plate 5, through out nearly a complete circle, that is, to the discharge openings 26 in said floor-plate. Through these openings they drop down as indicated by the arrow in Fig. 3 into the pockets of the next pusher-frame below and rest on the second floor-plate. By this second pusher-frame they are rolled around on the second floor-plate, until they reach the discharge openings 27 of said floor-plate. Through these they drop as indicated by the arrow in Fig. 3; and in like manner they are carried around by succeeding pusher-frames on succeeding floor-plates, dropping successively through the discharge openings of said floor-plates all as indicated by the arrows in Fig. 3 until finally they drop through the last discharge openings 32 into the inner discharge runway 33, and thence they roll out through the exit opening 34 of the casing to the outer discharge runway 35 by which they are carried to their

destination. It will be seen that by this arrangement of the feed and discharge runways the casing 3 may be lifted off without interference, and, further, that by the inversion of the casing in the pan-like bottom plate 1, a water-seal is possible consistent with the free joint of said casing with said plate.

I claim:—

1. In a cooker, the combination of a heating casing having within it a fixed column; a vertical series of successively communicating, spaced floors within the casing, fixed to its column; a vertical series of pushers, one above each floor and rotatable about the casing column as an axis to roll the cans on the floors to their successive communications; means for feeding the cans to the uppermost floor; and means for discharging the cans from the lowermost floor.

2. In a cooker, the combination of a heating casing having within it a fixed column; a vertical series of successively communicating, spaced floor-plates within the casing, fixed to its column; a vertical series of pusher-frames, one above each floor-plate and rotatable about the casing column as an axis, to roll the cans on the floor plates to their successive communications; means engaging the peripheries of the pusher-frames to rotate them; means for feeding the cans to the uppermost floor-plate; and means for discharging the cans from the lowermost floor-plate.

3. In a cooker, the combination of a heating casing having within it a fixed column; a vertical series of successively communicating, spaced floor-plates within the casing, fixed to its column; a vertical series of pusher-frames one above each floor-plate, said pusher-frames being supported by and adapted to roll upon the floor-plates, and having hubs rotatably fitted about the casing column; means engaging the peripheries of the pusher-frames to rotate them, to roll the cans on the floor plates to their successive communications; means for feeding the cans to the uppermost floor-plate; and means for discharging the cans from the lowermost floor-plate.

4. In a cooker, the combination of a heating casing having within it a fixed column; a vertical series of successively communicating, spaced floor-plates within the casing, fixed to its column; a vertical series of rotating skeleton pusher-frames formed with can-receiving open pockets, one pusher frame above each floor-plate and supported and adapted to roll thereon about the casing column as an axis; means engaging the peripheries of the pusher-frames to rotate them to roll the cans on the floor-plates to their successive communications; means for feeding the cans to the pockets of the uppermost pusher-frame and the uppermost floor plate;

and means for discharging the cans from the lowermost pusher-frame and floor-plate.

5 In a cooker, the combination of a heating casing having within it a fixed column; a vertical series of spaced floor-plates within the casing fixed to its column, each of said plates having a can-discharge-opening relatively arranged out of line successively in receding progression from top to bottom
10 of said floor-plate series; a vertical series of skeleton pusher-frames mounted one on each floor-plate and adapted to rotate about the fixed column as an axis, said frames having open can receiving pockets to roll the
15 cans upon the plates to the successive discharge openings thereof; means for rotating said pusher-frames; means for feeding the cans to the pockets of the uppermost pusher frame and its floor-plate; and means
20 for receiving and discharging the cans from the openings of the lowermost floor plate.

6. In a cooker, the combination of a pan-like bottom plate; a casing freely inverted in said plate, said casing having in its side near

its upper portion a can entrance opening, 25 and in its side near its lower portion, a can exit opening, said pan-like bottom plate and said casing forming a water-seal; means within the casing for heating it; means for advancing the cans through the casing; a 30 feed can runway outside the casing and independent thereof, said runway leading to the can entrance opening; an inner feed can runway to deliver the cans to the beginning of the advancing means within the casing; 35 an inner can discharge runway within the casing to direct the cans from the end of the advancing means, to the can-exit opening; and a second can discharge runway outside and independent of the casing to receive the 40 cans delivered through the exit opening.

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

ALFRED JOHN KEAST.

Witnesses:

J. C. MARTIN,
D. CERRUTE.