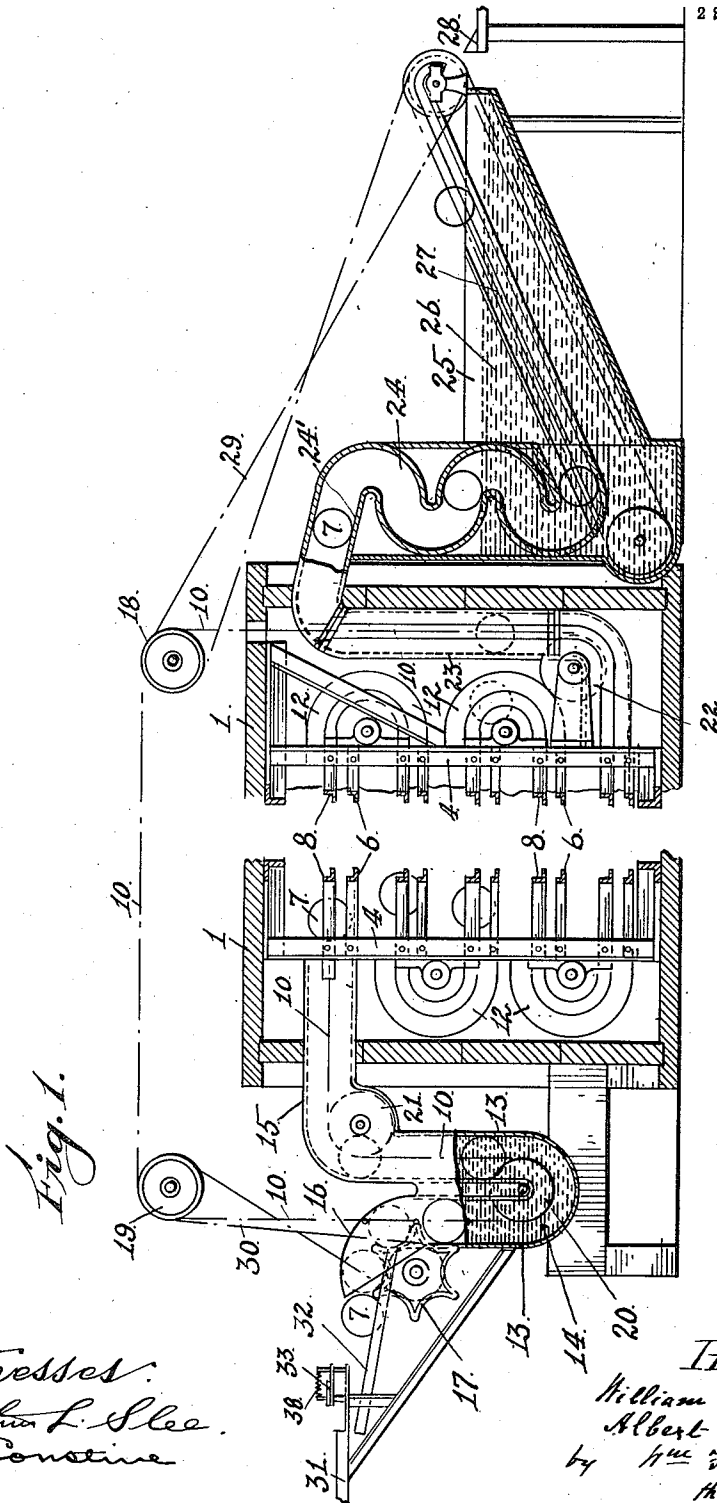


COOKER.

1,062,379.

Patented May 20, 1913.

2 SHEETS—SHEET 1.



Witnesses:
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W. C. ANDERSON & A. R. THOMPSON.
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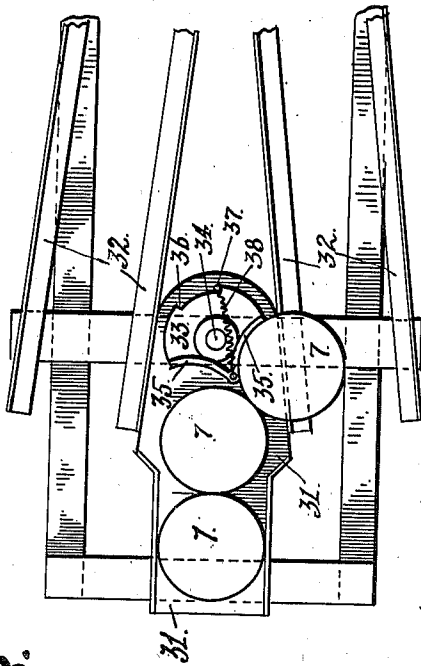


Fig. 3.

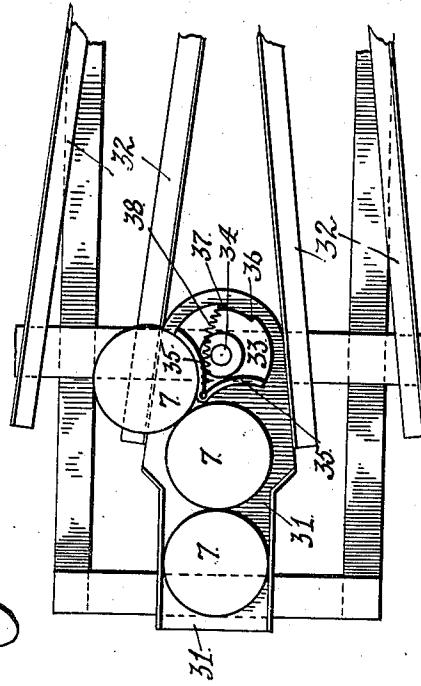
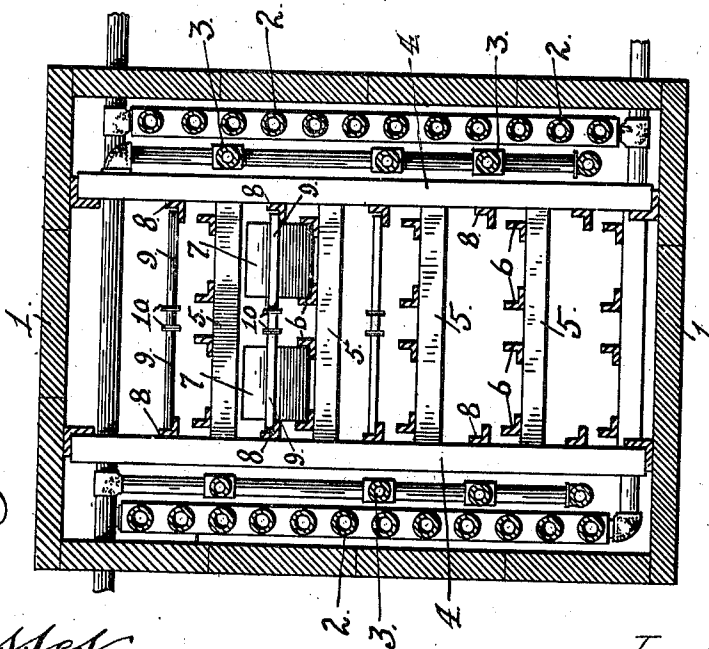


Fig. 4.

Fig. 3.

Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM C. ANDERSON AND ALBERT R. THOMPSON, OF SAN JOSE, CALIFORNIA, ASSIGNORS TO ANDERSON-BARNGROVER MFG. CO., OF SAN JOSE, CALIFORNIA, A CORPORATION OF CALIFORNIA.

COOKER.

1,062,379.

Specification of Letters Patent.

Patented May 20, 1913.

Application filed November 9, 1911. Serial No. 659,314.

To all whom it may concern:

Be it known that we, WILLIAM C. ANDERSON and ALBERT R. THOMPSON, citizens of the United States, residing at San Jose, 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.

Our invention relates to that class of cookers employed in the canner's art in which the cans are rolled through a devious course in a heating medium. In this type of cooker, the tracks are usually arranged in vertical series with successive connections at alternate ends, and a traveling chain which follows a to and fro course over the tracks engages the cans and rolls them throughout said course.

The objects of our invention are to guard against the escape of the heat through the can entrance and exit; to properly position and arrange the cans for entrance to the cooker; and to simplify the can and carrier-chain guides within the cooking chamber.

To these ends our invention consists, in connection with the cooker, of the novel water-seals which guard the entrance and exit; the novel can arranging device in advance of the entrance water-seal; and the novel guides within the cooker, all as we shall hereinafter describe, by reference to the accompanying drawings in which—

Figure 1 is a vertical, longitudinal section, broken, of our cooker. Fig. 2 is a cross section, enlarged, of the same. Fig. 3 is a plan view, enlarged, of the can directing and arranging device showing a can being switched to one side. Fig. 4 is a similar view showing the can being switched to the other side.

1 is the box of the cooker.

2 is a steam coil which extends the full length of the box, on each side, and 3 is another steam coil similarly disposed on each side. These coils are the means for heating the box. In practice one is a closed coil giving its heat by radiation and the other is an open coil admitting live steam to the cooking chamber, thus providing for any degree of heat required by the particular material to be cooked.

Within the box are the vertical side standards 4, to which are secured the vertical series of horizontal bars 5. Upon these bars 5 are secured the angle iron guides 6 for the cans, there being two pairs of guides thereby

adapting the cooker to receive two cans 7 in end alinement as is shown in Fig. 2. To the standards 4 are also secured the angle iron guides 8 for the side arms 9 of the centrally disposed carrier chain 10. As seen in Fig. 2, the pair of cans are rolled upon the guides 6 by the arms 9 of the chain 10, which said arms are supported by the guides 8. The chain passes through the box in a to and fro course being guided by suitable terminal pulleys, and the cans roll from one course of the guides to the next by means of suitable end guides 12. This arrangement of can and chain guides is simple and effective, and provides in a practical manner for the employment and support of a centrally disposed chain with an arm on each side for a can, thus doubling the number of cans, and, by reason thereof, increasing the capacity of the cooker.

13 is a U-shaped can runway or passage in which is a water seal 14. One leg of this passage is extended at 15 and enters the box 1 near the upper portion of one end, its inner end communicating with the beginning of the uppermost course of the can and chain guides inside of the box, as seen in Fig. 1. The other leg of the water-seal passage 13 is hooded at 16 over a peripherally grooved feed wheel 17 which by its rotation is adapted to direct the cans into the passage 13.

The course of the carrier-chain 10 is as follows:—Beginning with the main drive, indicated at 18, the chain runs above the box to a sprocket 19 and thence down into the receiving leg of the entrance passage 13. In the base of this passage it turns about a sprocket 20 and thence up through the other leg of said passage and around a sprocket 21 and thence through the entrance extension 15 and into the box 1. In the box the chain follows its to and fro course upon the successive tiers of chain guides 8, until arriving at the end of the lowermost course which is at the discharge end of the box, it passes around a sprocket 22 and then up through an elevator casing 23 and through the top of said casing and through the top of the box 1 to the main drive at 18. At the discharge end of the box 1 is the discharge runway or passage 24 which at its upper end joins and communicates with the upper end of the elevator casing 23 by means of an inclined chute 24'. This discharge passage 24 is best made tortuous, as shown, in order

to break the fall of the cans, and said passage is inclosed in a tank 25 containing water 26 which forms a seal against the escape of heat and also where necessary serves as a cooling medium, in which latter case the water will be replenished or renewed to keep it cool enough. Within the water-tank 25 is the discharge elevator 27, the lower end of which receives the cans from the passage 24, and its upper end, emerging from the water, delivers the cans to the table 28. The elevator 27 is driven from the main drive 18 by the chain 29. The feed wheel 17 is driven from the carrier chain sprocket 19 by a chain 30.

31 is the feed runway. In this runway the cans come from the capping machine in upright position and in single file, as shown in Figs. 3 and 4, being advanced by contact with each other from pressure behind. Near its end the feed runway 31 opens out on each side to the upper ends of inclined chutes 32 which lie in a lower plane and are in position to receive the cans tilted over from the side edges of the feed runway. The other ends of the inclined chutes 32 lead to the feed wheel 17.

In order to direct the cans which press forward in single file in the feed runway 31, alternately to the right and left, and to turn them from an upright to a horizontal position, an automatic switch 33 is provided. This consists of a triangular plate pivoted at 34 to the floor of the feed runway 31 in its longitudinal central line. This plate has its opposing functional faces 35 concaved to receive the cans, and its base it provided with shoulders 36 which coast with a fixed stop 37 to limit the throw of the plate. A spring 38 attached to the stop 37 and to the plate forward of its pivotal center serves, by crossing the central line, to throw the plate over to either side and hold it there until the pressure of the next can begins to turn said plate back.

The operation of the cooker is as follows:—The upright cans press forward in single file in the feed runway 31, and the foremost can enters one of the faces 35 of the switch plate 33, and by pressure begins to swing said plate over, being itself thus directed sidewise. A continuance of this results in the can reaching the unguarded side edge of the feed runway at the time when the switch plate 33 under the action of its spring 38 completes the swing of the plate, which has the effect of toppling the can over the edge. In falling over, the can comes to rest in a horizontal position in the inclined chute 32 on that side, and it rolls down said chute to the feed wheel 17 by which it is momentarily checked in position ready to enter one end of a groove of said wheel which is rising to receive it. The second can, operating the switch plate

and being shifted thereby to the other side, drops into a recumbent position in the other inclined chute 32, down which it rolls to the feed wheel 17, the groove of which being now in proper position, said second can enters one end of the groove, while the first can enters the other end of the same groove. There now being a pair of cans in alinement in the feed wheel, the latter by its forward rotation deposits the pair of cans in the adjoining leg of the can passage 13, wherein said cans lie between and rest upon the side arms 9 of the carrier chain 10. By these arms they are carried down into and up out of the water-seal 14 which serves to wash off any juice or syrup on the outside of the cans, and such cans are elevated in the other leg of the passage 13 and carried through the entrance extension 15 of said passage into the box 1. Through the box they are rolled upon the guides 6 until having finished their course they are carried up through the elevator casing 23 and roll out therefrom over the inclined chute 24' into the discharge passage 24. From this passage they roll into and are carried through the water seal 26 by the elevator 27 which delivers them upon the table 28. It will thus be seen that the cans are automatically arranged in proper position and are placed in double file in which relation they continue to their discharges. The entrance and the exit to the box are both at the upper portion, thus giving an opportunity to place the water-seals at a point lower down, which position is more effective in retaining the heat in the box.

The carrier chain in this case, in addition to serving as an elevator for conveying the cans up to the discharge from the box, serves also as an elevator for lifting the cans to the inlet of the box.

The water-seals in no wise interfere with the feed or discharge of the cans, but serve to keep the heat in the box, which in the case of a cooker requiring a high temperature is quite essential.

Having thus described our invention what we claim as new and desire to secure by Letters Patent is—

1. In a cooker, the combination with the heating box thereof, conveyer means for conveying a pair of recumbent alined cans through the box, a feed runway in which the cans advance in single file and upright position, a pivoted switch in the path of such can file, and operative under the pressure of said file to direct the cans alternately to the right and left and tip them from the edges of the chute, a spring associated with said switch and adapted to positively shift the same in either direction after initial engagement thereof by the can, and means for delivering the tipped cans onto the conveyer means.

2. In a cooker, the combination with the heating box thereof, said box having a pair of parallel can tracks adapted to receive a pair of recumbent alined cans, of a pair of
5 conveyer supporting rails positioned above said can tracks, a traveling carrier chain positioned between the can tracks and thereabove, and arms projecting laterally from said chain and engaging the conveyer
10 tracks, said arms serving as a support for the conveyer chain and as a means for en-

gaging the cans to propel the same on their tracks.

In testimony whereof we have signed our names to this specification in the presence 15 of two subscribing witnesses.

WILLIAM C. ANDERSON.
ALBERT R. THOMPSON.

Witnesses:

WM. F. BOOTH,
D. B. RICHARDS.