J. S. BAKER.

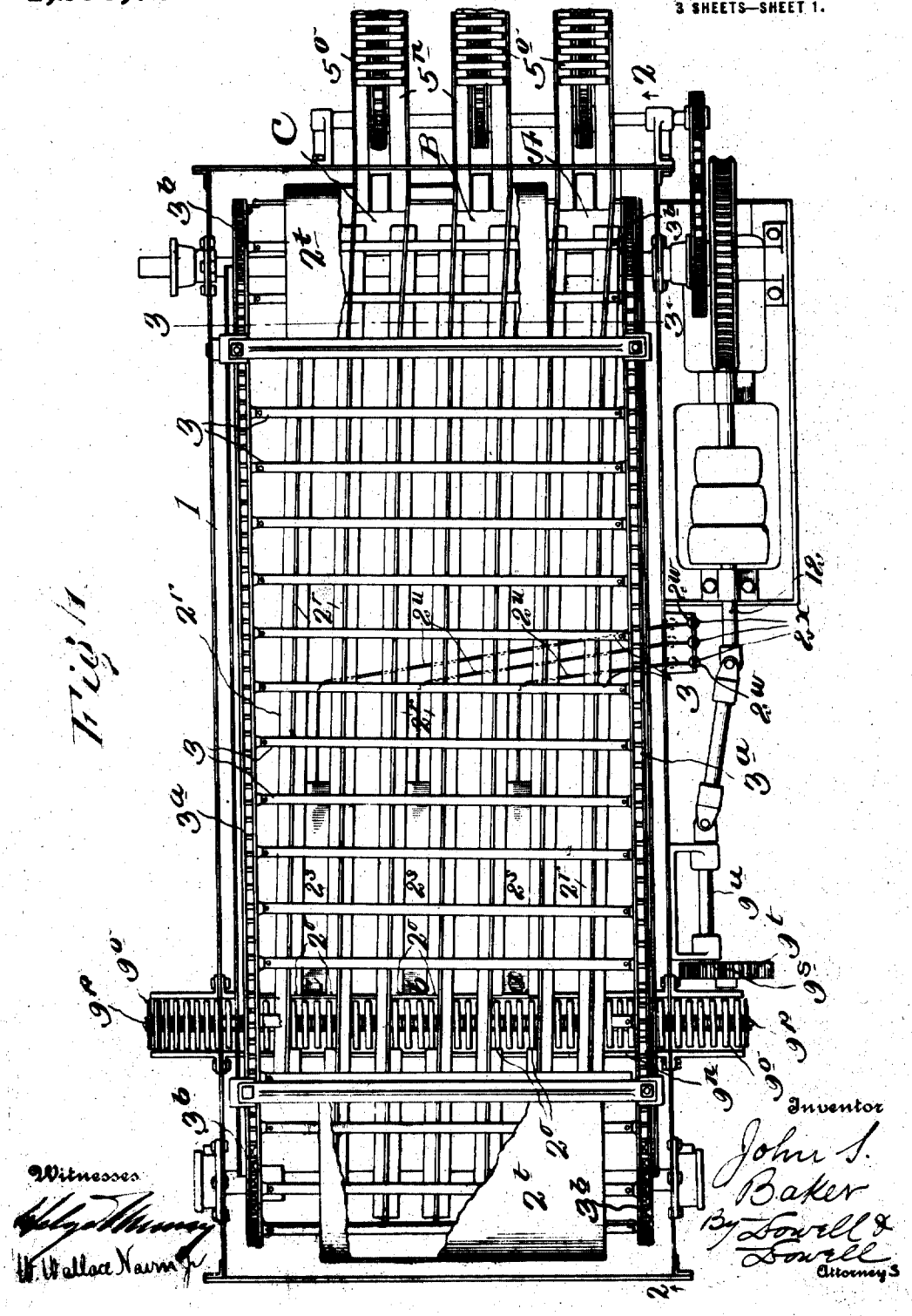
CAN COOKING MACHINE.

APPLICATION FILED MAR. 19, 1914.

1,250,764

Patented Dec. 18, 1917.

3 SHEETS—SHEET 1.



Witnesses

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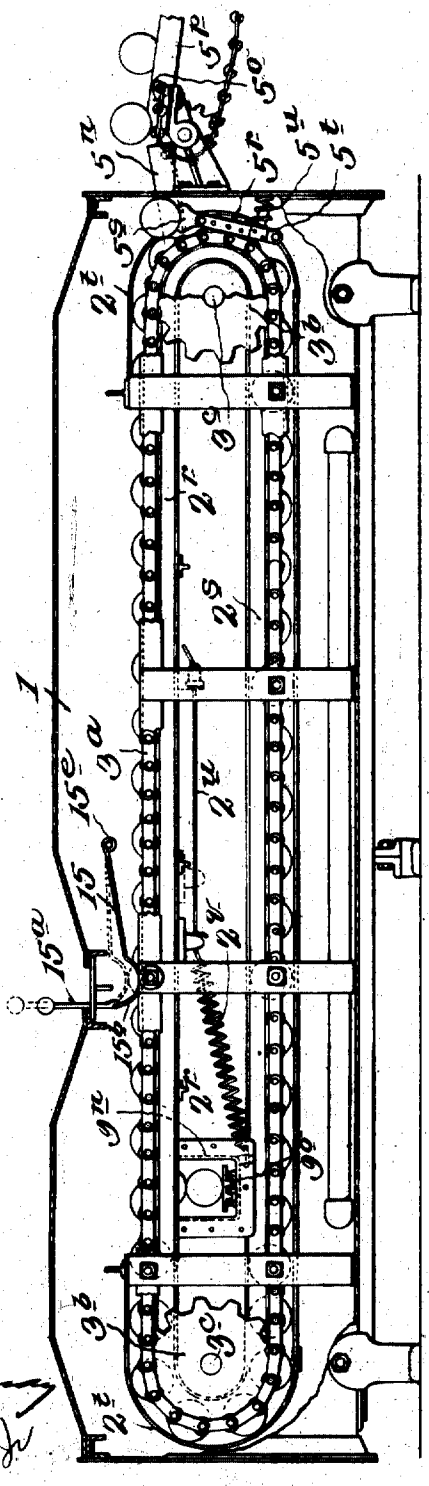
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3 SHEETS—SHEET 2.

Fig. 2.



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3 SHEETS—SHEET 3.

Fig. 3.

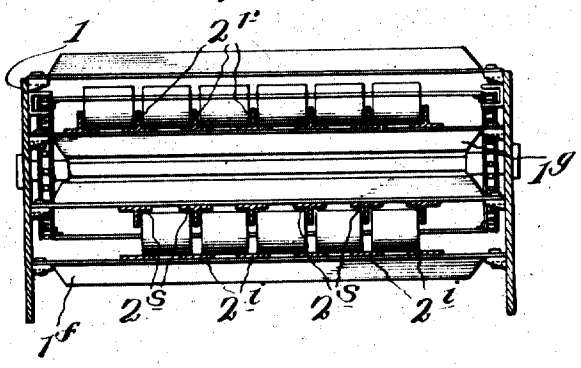


Fig. 4.

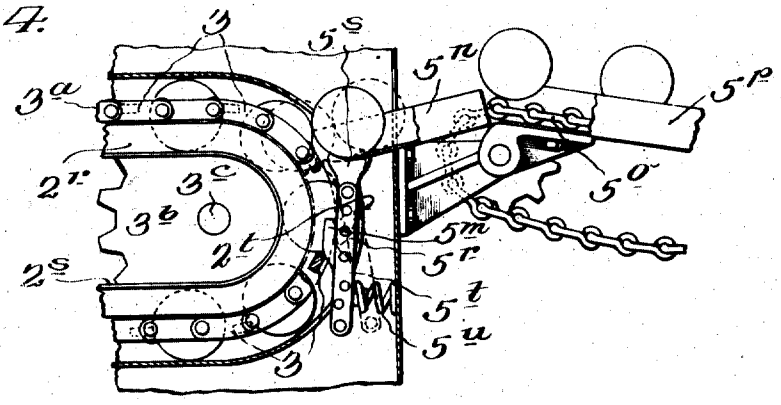
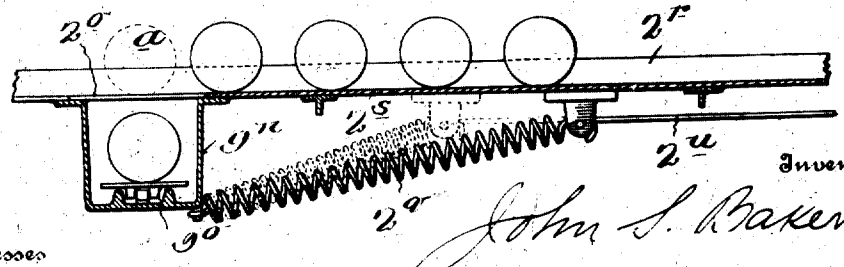


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN S. BAKER, OF LOS ANGELES, CALIFORNIA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO ANDERSON-BARNGROVER MFG. CO., OF SAN JOSE, CALIFORNIA, A CORPORATION OF CALIFORNIA.

CAN-COOKING MACHINE.

1,250,764. Specification of Letters Patent. Patented Dec. 18, 1917.

Application filed March 19, 1914. Serial No. 825,914.

To all whom it may concern:

Be it known that I, JOHN S. BAKER, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Can-Cooking Machines; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

This invention relates to machinery for treating packaged goods and is especially adapted for use in sterilizing and cooking foods contained in ordinary cylindric cans; and the object of the invention is to produce a cooker wherein the packages or cans can be caused to travel greater or less distances through the cooking chamber; or if desired a plurality of series of such packages may be simultaneously moved through the cooking chamber.

More specific objects of the invention are to provide a pathway in the cooking chamber and means whereby packages may be moved for greater or less distances along such path between the point of entry and discharge; to provide means whereby if desired a plurality of series of packages may be moved simultaneously along different portions of such pathway, so that two or more "cooks" can be performed at the same time in the same cooking chamber; and whereby also it will be possible to perform simultaneously two or more "cooks" requiring different lengths of time for treatment.

It is well known that different kinds of canned foods require different lengths of time for proper cooking or treatment, and my invention will enable the same apparatus to be utilized for treating different kinds of goods; and also for treating or cooking two or more series of packages containing the same kind of goods simultaneously in the apparatus; and also for treating or cooking two or more different kinds of goods, simultaneously. These several different operations and novel and useful capabilities of operation of a single apparatus are accomplished in my invention which, specifically speaking, comprises a preferably so-called spiral pathway and a plurality of feed devices whereby packages may be introduced onto said pathway at different points thereof. The invention further includes a plurality of delivering devices whereby the packages may be discharged from said pathway at different points.

The main feature of the present invention is the provision of a plurality of feeds whereby packages may be introduced at different points into a common pathway, so that with one terminal discharge the packages may be caused to traverse different distances along said pathway; and by employing a plurality of feeds and a plurality of discharges the utility of the apparatus is greatly enhanced, as it enables two or more "cooks" to be simultaneously performed in the same chamber, and each "cook" retained therein for the desired length of time, by feeding packages containing different goods to different points of the pathway, and discharging the different "cooks" at different points.

The details of construction of the feeding and delivering devices and of the pathway and means for moving packages along such way are subordinate to the principal features of the invention; and in the accompanying drawings I have illustrated apparatus which embodies the invention, and a description of which will enable those familiar with the art to construct and use the invention.

I will explain the apparatus illustrated in such drawings, and then summarize in the claims the essential features of the invention, and novel details and combinations of parts hereinafter referred to, for which protection is desired.

In said drawings:

Figure 1 is a top plan view of a preferred form of apparatus partly broken away.

Fig. 2 is a longitudinal vertical section thereof.

Fig. 3 is a detail transverse section on line 3—3, Fig. 1.

Fig. 4 is an enlarged detail sectional view of the feed devices shown in Figs. 1 and 2.

Fig. 5 is an enlarged sectional view of the delivery devices shown in Figs. 1 and 2.

Referring to said drawings, 1 designates

a tank or treating or cooking chamber which is preferably substantially closed and is ordinarily made of metal. The particular form and size of such tank can be varied to suit the builder, and according to the desired total capacity of the machine.

Within this tank is a preferably spiral pathway for packages, which may be formed of a series of T-shaped bars, which have upper and lower horizontal runs 2^c and 2^a and curved end portions 2^t connecting the upper runs 2^c with the lower runs 2^a, as shown in the drawings. Underneath the lower runs of the pathway are flat bars 2^l which keep the packages on the lower runs of the pathway while the T-bars guide the cans. The said bars may be attached to transverse bars 1^f, 1^g, secured within the tank 1. This general construction of pathway is specifically old and well understood in the art and is not *per se* claimed herein; and such pathway is practically a long spiral. The packages or cans may be caused to traverse this spiral pathway from one end thereof to the other by means of pusher bars 3 extending transversely across the series of runs of the pathway and connected at their outer ends to endless chains 3^a running over sprockets 3^b attached to transverse shafts 3^c at the opposite ends of the tank. Said shafts may be driven, by suitable gearing, substantially as indicated in the drawings, so as to cause the chains to move the pusher bars laterally through the spirals, and cause them to push the packages along said spiral pathway in a well known manner. Such pusher bars and mechanism for operating same are not specifically claimed herein and need no further explanation, and will be readily understood by those familiar with the art.

At the receiving end of the tank are arranged a plurality of package feeding devices, which may be of any suitable construction; I have shown three such feeds in the apparatus illustrated in the drawings, in which the spiral pathway has about six complete spirals; and the first feed A delivers cans to the first run of the spiral pathway; the second feed B delivers cans to the third run of the pathway; and the third feed C delivers cans to the fifth run of said pathway. The feeding devices may be constructed alike and the description of those shown in Figs. 1–4 will explain the others, similar parts of the feeds being similarly lettered.

For simplicity I will describe the machine as adapted to handle canned goods, but of course the words "cans" or "packages" is merely illustrative and not definitive of the invention.

As shown in Figs. 1–4, adjacent the upper run of the pathway is a chute 5^n which extends through a suitable opening in the end of the machine to a point adjacent one end of the upper run of the pathway so that cans placed on said chute 5^n may roll down and into said canway and be caught by one of the pusher bars and moved on along said pathway, see Fig. 3. The can may be fed onto this chute 5^n by hand, or by an endless conveyer 5^o working in a trough 5^p into which trough cans or packages may be fed by hand or be delivered from a filling, packaging or exhausting machine, not shown, in the usual manner. Preferably I provide a controlling device for regulating the feed of the cans to the canway from chute 5^n, such device, as shown, comprises a lever 5^r adjacent the canway and having a forked head 5^s which when the lever is in the position shown in full lines in Fig. 4 will arrest the can at the inner end of the chute 5^n; but when the lever is in the position indicated in dotted lines in Fig. 4 will permit a can to drop into the pathway. When head 5^s is in the position shown in full lines, Fig. 4, the inner fork arrests the innermost can on the chute 5^n and when the lever is in the position shown in dotted lines Fig. 4 the inner can is discharged onto the pathway and the outer prong arrests the next incoming can on said chute; thus as the lever is vibrated cans are successively delivered onto the pathway. The lever 5^r may be operated automatically by having cam 5^m which extends into the path of the pusher bar 3, so that as these bars approach the chute 5^n they engage the cam 5^m of the lever and rock the same against the action of a spring 5^u interposed between the lever and the adjacent wall of the tank, as shown; so that the lever is swung in one direction by the pusher bars and in the opposite direction by the spring. Each time the lever 5^r is rocked by a pusher bar, a can is delivered onto the pathway in advance of the pusher bar; and thus cans will be successively fed in proper position to the can way. A curved guard plate 2^t may be arranged over the pathway adjacent the inner end of the chute 5^n to insure the cans moving properly onto the pathway when they leave the end of the chute 5^n, and to prevent the cans being pushed up out of the pathway by the action of the pusher bars. A similarly constructed feed mechanism may be arranged, as stated, at other desired points in the canway, as indicated Fig. 1, at A, B, C.

It will be obvious that if an apparatus having three feeds had but one terminal discharge, cans or packages could be passed through such machine for either of three different periods of time, assuming the pusher bars 3 to be always traveled at a uniform rate of speed; *i. e.* if cans were fed at C they would have about one-third the length of time and travel that they would if fed at A; if they were fed at B they would have two thirds the length of time

and travel that they would if fed at A; thus in such a machine with three feeds and one delivery any one of three different kinds of treatments or "cooks" might be obtained.

In order to increase the efficiency of the machine and enable more than one kind of treatment or "cook" to be performed at one time, I propose to use a plurality of discharges; and I have shown three discharges in the drawings, at *a*, *b*, *c*, respectively.

Preferably, in the machine shown, discharge *a* is arranged at the end of the second coil of the canway; discharge *b* at the end of the fourth coil of the canway; and discharge *c* at the end of the sixth coil of the canway; the length of the canway and locations of the feed and deliveries being of course merely illustrative and not definitive. These discharge mechanisms in the apparatus shown in Figs. 1–5 are constructed alike, and the description of one will describe all, similar parts being similarly lettered; but other discharge mechanisms might be substituted for those shown in the drawings, within the scope of the invention.

In the construction shown in Figs. 1 to 5 adjacent the end of the machine opposite the feed and extending transversely through the machine below the upper runs of the pathway, is a trough 9^n, through which runs an endless conveyer 9^o passing over sprockets 9^p mounted on brackets at the sides of the tank at each end of the trough then passing down beneath the tank around suitable guides to the other end of the trough so that the chain can be moved continuously through said trough in one direction. This conveyer may be operated by means of a gear 9^t on the shaft of one of the sprockets 9^p, meshing with a pinion 9^s on a shaft 9^u operatively connected with the driving shaft 12 as indicated in Fig. 1, which shaft 12 may be driven in any suitable manner; and from which the other operative parts may be driven by suitable means which form no part of the present invention and being well known need not be described herein.

This discharge trough 9^n is preferably located below the upper run of the carrier as shown, and should be water-tightly connected with the side walls of the tank, so that the latter can be filled with water up to the desired level.

Above the trough 9^n the flanges of the bars 2^c of the upper runs of the pathway are notched as at 2^o so that when a can or package reaches this point it can drop by gravity through such notches 2^o into the trough and be discharged. The discharge of the cans can be controlled by means of slides 2^s lying in the bottom of the canway supported upon the flanges of the adjacent bars 2^r, see Figs. 1, 3 and 4; and each slide is normally projected into position to close the related opening by means of a contractile spring 2^q connected to the slide and to the side of the trough, as in Fig. 3. The slides 2^s may be retracted to uncover the notches and permit the dropping of cans into the trough by means of cables 2^u attached to the slides and extended to the outside of the machine where they may be provided with rings 2^w adapted to be hooked on pins 2^x on the side of the tank. In Fig. 1 of the drawings I have shown the discharges open. When a discharge is opened the cans traveling in the pathway will fall by gravity into the trough when they reach such discharge and will be moved by the conveyer 9^o out of the trough to a suitable receiver. The operator can easily control any discharge from the side of the machine. When he desires to open a discharge he pulls the related cable 2^u and fastens its ring 2^w to the related pin 2^x and thus uncovers one of the notches 2^o and tensions the spring 2^q. When he desires to close a discharge he simply releases the cable and the spring immediately causes the slide to close the notches and the cans pass on and along the pathway to the first open discharge.

To enable the operator to determine when he can open or close a discharge without having to uncover or go into the machine I preferably provide an indicator adjacent each discharge opening; this indicator may be made of a light metal strap or rod bent approximately into L-shape and having its long arm 15 pivoted within the casing above the pathway as shown at 15^e and its short arm 15^a projecting outwardly through openings in the top of the machine above the pathway, and at the bend of the indicator is a downwardly curved portion 15^b which lies above the pathway and is adapted to rest upon the packages passing thereunder; and as the packages move under the indicator it will be vibrated, being raised by the packages as they pass thereunder and dropping by gravity. The indicator is positioned at such a distance from the discharge opening that when the part 15^b is lowered the operator knows that a can is not at the discharge opening; but when the indicator rises he knows a can is at the discharge opening; he should therefore shift the slide controlling the discharge when the lever is lowered; such shifting can be done instantly, so that no can will be caught by the shifting of the slide.

It will be seen that the invention is not limited to any particular construction of feeding and delivering devices; nor to any particular construction of the pathway. The utility of the invention and the great flexibility of the apparatus constructed in accordance therewith is obvious, and when treating goods requiring only a very short time in the cooker or chamber the apparatus shown can handle about three times the

quanitiy of goods that could be handled in ordinary machines of the same size, having but a single feed and delivery.

The feeds and deliveries can be adjusted so that a plurality of goods or packages, of similar kinds, or of different kinds, may be simultaneously treated or cooked in the same apparatus.

The tank is preferably substantially closed and for high pressure cooking would have to be practically substantially steam-tight; and the feed and discharge devices also substantially steam-tight.

It will be seen from the foregoing description that cans can be fed at A and discharged at *a*, *b*, or *c*; they can be fed at B and discharged at *b*, *c*; or can be fed at C and discharged at *c*; and also that cans may be simultaneously fed at A and discharged at *a* or *b*; while simultaneously cans can be fed to C and discharged at *c*; also cans can be fed at A and discharged at *a* and simultaneously fed at B and discharged at *b* or *c*. In short, in the apparatus shown three series of cans or similar cooks may be fed through the machine and cooked at the same time; or two series of cans can be simultaneously fed through the machine and cooked for different lengths of time; or a single series of cans can be fed through the machine and cooked for any one or two or three different periods of time, assuming that the cans are traveling in each instance along the canway at the same rate of speed. Of course the number of feeds and deliveries may be varied according to the wishes of the constructor and the size and capacity of the machine desired and the minimum and maximum length of time of desired cooking operations.

What I claim is:

1. In combination a cooking chamber, a spiral pathway therein, a trough in the chamber arranged below the upper run of the pathway, a plurality of openings in said pathway above the trough through any of which packages may be dropped into the trough, independent means for closing or opening each of said openings, and means for discharging packages from the said trough.

2. In combination a chamber, a spiral pathway therein, a trough arranged transversely of and below the upper run of the pathway, a plurality of openings in said pathway to permit packages to pass from the pathway into the trough at different points, and means for independently closing or opening the said openings.

3. In combination a cooking chamber, an endless pathway therein, a trough arranged transversely of the machine below the runs of the pathway, openings in said pathway for permitting packages to drop by gravity from the pathway into the said trough to vary the length of travel of the cans in the pathway, a longitudinally movable slide for closing each opening, a spring for moving such slide in one direction, and manually operable means for moving such slide in the opposite direction.

4. In combination a cooking chamber, a pathway therein, pusher bars for moving packages along said pathway, a feed chute, a vibrating lever beside the chute having a forked upper end adapted to deliver cans singly from the chute to the pathway, said pusher bars being adapted to move the lever in one direction, and a spring for moving the lever in the opposite direction.

5. In a machine of the character described the combination of a cooking chamber, means for moving packages therethrough, a discharge trough extending transversely of and beneath the moving means and adapted to receive packages from said moving means, and means for discharging packages at different points from said moving means into said trough to vary the length of travel of the packages in said chamber.

6. In combination a cooking chamber, a pathway therein, a trough below said pathway, selective means in the chamber for discharging packages at different points from the pathway into said trough, and means for removing packages from said trough.

7. In combination a cooking chamber, a pathway therein, a trough below the pathway extending out of the chamber, a plurality of selective discharge openings in said pathway at different points within the chamber through which packages may be dropped into the trough, and means for discharging packages from said trough.

8. In combination a chamber, a pathway therein, a trough extending transversely of said pathway and beneath the runs thereof, a plurality of means for discharging packages from said pathway into the trough at different points, and means for independently controlling the discharges.

9. In combination a chamber, a pathway having several runs therein, a trough extending transversely beneath the runs of said pathway, openings in said pathway to permit packages to pass therefrom into said trough; slides for closing said openings, and manually operable means for moving the slides.

10. In combination a chamber, a pathway having several runs therein, a trough extending transversely beneath the runs of said pathway, said pathway having openings to permit packages to pass therefrom into said trough, slides for closing said openings; a spring for moving said slide in one direction, and manually operable means for moving the slide in the opposite direction.

11. In combination a chamber, a spiral pathway therein, a trough extending trans-

versely beneath the runs of said pathway, a plurality of openings in said pathway to permit packages to pass therefrom into said trough, a slide for closing each opening, and manually operable means for independently moving the slides.

In testimony that I claim the foregoing as my own, I affix my signature in presence of two witnesses.

JOHN S. BAKER.

Witnesses:
HUGO H. WINTER,
ALBERT GUESNIER.