

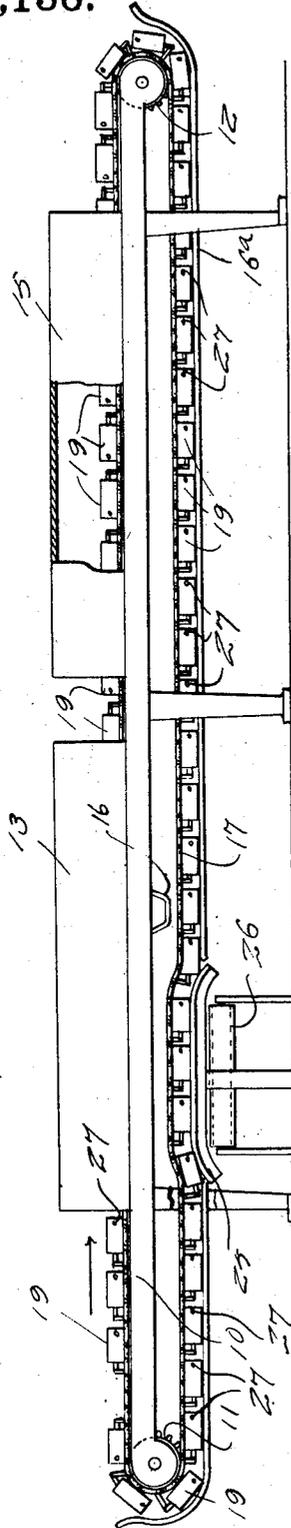
M. H. STUART,  
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 APPLICATION FILED SEPT. 4, 1919.

1,335,136.

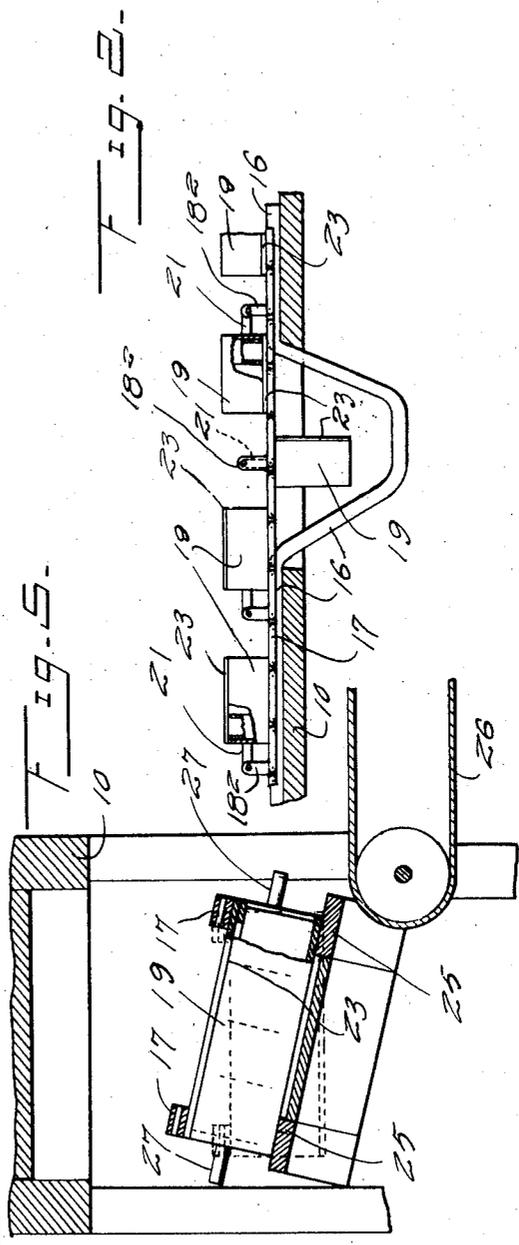
Patented Mar. 30, 1920.

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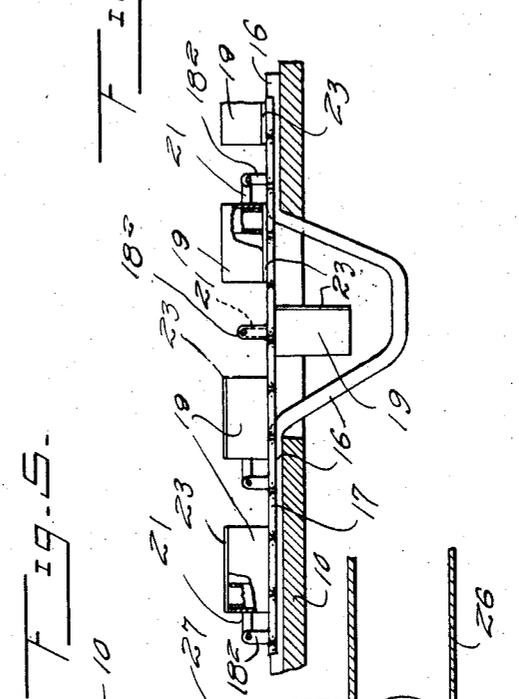
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 M. H. Stuart

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 Attorney

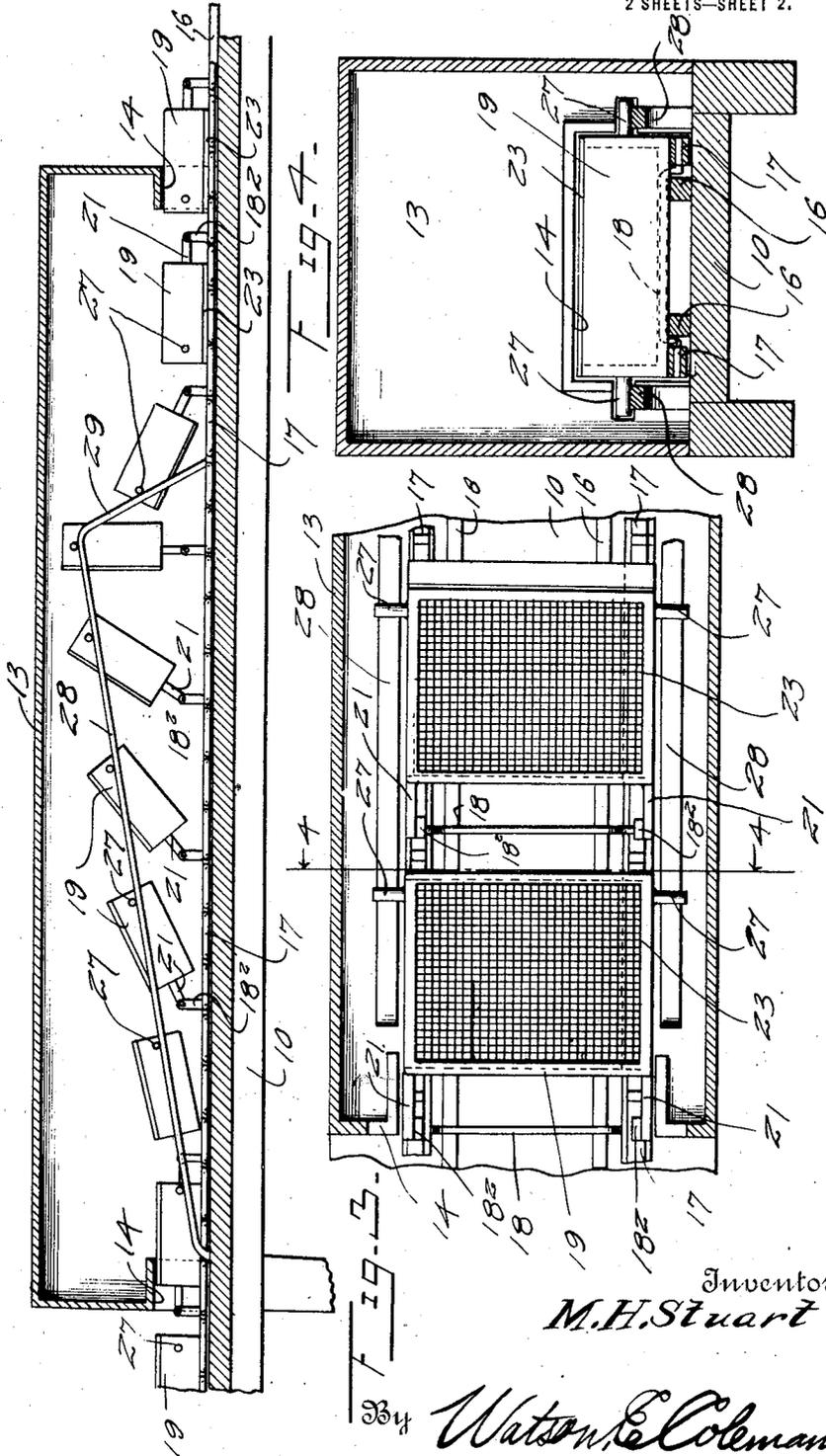
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Fig. 6.



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# UNITED STATES PATENT OFFICE.

MARVEN H. STUART, OF SANTA CRUZ, CALIFORNIA.

APPARATUS FOR COOKING AND DRYING CANNED FOOD.

1,335,136.

Specification of Letters Patent. Patented Mar. 30, 1920.

Application filed September 4, 1919. Serial No. 321,582.

*To all whom it may concern:*

Be it known that I, MARVEN H. STUART, a citizen of the United States, residing at Santa Cruz, in the county of Santa Cruz and State of California, have invented certain new and useful Improvements in Apparatus for Cooking and Drying Canned Food, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to canning apparatus, and particularly to mechanism used for cooking and drying food in cans before the final step has been taken in preparing the material and before the cans are sealed.

The general object of this invention is to provide means whereby open cans containing the food to be preserved may be caused to travel through a steam chamber or cooking chamber, then these cans automatically overturned to drain the contents of the cans while the material is being dried, and then the cans are discharged from the conveyer whereby they are carried through the cooking chamber and the drying chamber.

Other objects will appear in the course of the following description.

My invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a side elevation partly broken away of my cooking and drying apparatus;

Fig. 2 is a fragmentary sectional view through the table showing the manner in which the cans are tipped within the heater 13;

Fig. 3 is a fragmentary top plan view of the carrier and the can holders, the housing 13 being in section;

Fig. 4 is a section on the line 4—4 of Fig. 3;

Fig. 5 is a fragmentary transverse sectional view through the lower flight of the endless carrier and the rails 25;

Fig. 6 is a longitudinal sectional view of the housing 13 and the table, showing another manner of tipping the cans.

Referring to these drawings, 10 designates a table, platform, or like support of any suitable character having at its opposite ends the sprocket wheels or rollers 11 and 12. Disposed on the table intermediate the ends is a steamer or cooking chamber 13, which is illustrated diagrammatically and whose detailed construction forms no part of my invention, having openings 14 at its opposite ends and connected to a source of

steam under pressure. Also disposed upon the table 10 intermediate the ends thereof and beyond the chamber 13 is a drying chamber 15 having entrance and exit openings and heated in any suitable way to dry the material passing therethrough. This chamber is shown diagrammatically, as the details of construction form no part of my invention.

Disposed upon the face of the table and extending longitudinally thereof is a track composed of the rails 16 and moving over the face of the table between said rails are the sprocket chains 17 which pass over the rollers or sprocket wheels 11. Power may be applied to the rollers 11 or to the sprocket chains in any suitable manner to cause the sprocket chains to travel in the direction of the arrow in Fig. 1. Preferably, in one form of my invention, the sprocket chains are connected at intervals by transverse bars 18, and disposed between the sprocket chains are a series of can holders 19 which are made in any suitable manner, which are preferably rectangular and designed to contain a plurality of cans filled with fish or other food to be preserved or canned.

I have illustrated each holder as being adapted to contain a single transversely extending row of cans, but the holder might be formed to support a plurality of rows. The holders or carriers are pivotally connected to the chains, as for instance, by arms 21 extending from one end of the carriers and having eyes through which the rods 18 loosely pass. The holders or carriers are adapted to rest upon the tracks. As the conveyer formed of the chains 17 travels along the upper face of the table, the series of carriers or holders will be caused to travel along over the tracks and will be carried by these tracks into the heating chamber or cooking steamer 13.

One face of each holder or carrier is formed of perforated metal or reticulated material and designated generally 23, and preferably one end of each holder or carrier is open for a purpose which will be later stated. Now it is desired that the holders shall pass through the steamer or cooking chamber 13 with the open ends of the cans upward so that the steam may have access to the contents of the cans to thoroughly cook them and that before the holders pass into the drying chamber, the cans shall be overturned so that the open ends are

downward, to thus permit the liquid contents of the cans to drain away. In Fig. 2 I have shown a means for securing this overturning of the cans which consists in causing the tracks 16 to be downwardly deflected adjacent the exit end of the chamber 13, the table being, of course, cut away at this point for the same purpose, if there is a top to the table, the tracks being so located that as the holders reach this downwardly bowed portion, they will swing down to a depending position, as illustrated in Fig. 2, the cans at this time being on their sides, and then will strike the upwardly inclined portion of the track and will continue on their way with the screened faces of the holders or carriers downward so that the cans are inverted and the liquid contents of the cans may be drained away. This reversing or overturning of the cans may occur either in the steamer 13 or in the drier 15, and while I have illustrated this occurring at the end of the steamer 13 and before the entrance of the cans into the drier, yet I do not wish to be limited to this. It is sufficient that the cans be overturned during a portion or the whole of their travel through the steamer.

The holders or carriers with the cans therein travel in an inverted position through the drier 15 to the end of the table where the chains carry the carriers and the cans over the sprocket wheels or rollers 12, and then the cans travel along beneath the table, with the terminal ends 22 of the prolongations 21 resting upon the upper ends of the rails 25. At a certain point in the return travel of the cans, the rails 25 and the carrier chains are tipped by depressing one of the rails 25, for instance, and elevating the other rail so that the carriers are disposed at an angle, as shown in Fig. 5 and with the open end of each carrier downward so that the cans slide out onto the conveyer 26 to be carried to another portion of the plant where the proper oils, condiments, and spices are added and the cans sealed.

In Fig. 6 I show another means for inverting the holders, in which each holder 19 is provided at its forward end with lateral trunnions 27 which rest upon rails 28, these rails extending gradually upward within the chamber 13, and then at the exit end of the chamber being downwardly turned, as at 29. In this case, the carriers will be shoved along the table and along the tracks 16 until the trunnions reach the lifting rails 28 which gradually elevates the forward end of the holder or carrier until when a carrier arrives at the ends 29 of the rails, the holders are nearly vertical, the open ends of the holders being, of course, upward. At this point the movement of the chains 17 causes that end of the holder which has heretofore been rearward to be drawn ahead of that

end of the holder provided with the trunnions 27 and the holder or carrier will be inverted, as illustrated in Fig. 6. The remainder of the performance is exactly the same as that heretofore described.

It will be understood, of course, that the openings for the entrance and exit of the carriers to the ends of the chamber 13 and the ends of the drier chamber 15 are to be made of suitable size to just admit the carriers, and may also be formed with flaps of flexible material which will rest upon the carriers, bridge the space between them, and prevent, as far as possible, the outlet of steam or of heat.

As before remarked, the holders or carriers may be inverted either in the chamber 13 or the chamber 15, and it is obvious that they might be inverted between these chambers. It is simply sufficient that the holders be inverted while passing through all or a portion of the steaming chamber. Within the drying chamber, hot air is used to secure rapid drying.

This machine may be made of any desired capacity and if the holders are only six cans wide, the machine will take the place of ten men. Of course, it is understood that the cans are disposed in the holders at the place marked A as the holders pass this point.

While I have illustrated a construction which I believe to be thoroughly effective for the purpose indicated and which is simple, I do not wish to be limited to this, as it is obvious that many changes might be made in the details of construction and arrangement of the several parts without departing from the spirit thereof.

I claim:—

1. In canning mechanism, a cooking chamber, means for passing open-ended cans containing the food to be canned through this chamber with the open ends of the cans upward, a drying chamber, and means for passing the cans through this drying chamber with their open ends downwardly to allow the cans to drain while the contents are being dried.

2. A mechanism of the character described including a cooking chamber and a drying chamber, an endless conveyer passing through the cooking and drying chambers, means for supporting open-ended cans on said conveyer and supporting said cans with their open ends upward as they pass through the cooking chamber, and means for automatically reversing the cans to dispose their lower ends downward when they pass through the drying chamber.

3. In canning machinery, means for cooking, drying, and draining cans containing food products comprising an endless conveyer, a series of can holders pivotally connected to the endless conveyer to swing from an upright to an inverted position, the under

sides of said holders being perforated, and means disposed in the path of travel of the conveyer for causing said can holders to swing from an upright to an inverted position.

4. In canning machinery, means for cooking, drying, and draining cans containing food products comprising an endless conveyer, a series of can holders pivotally connected to the endless conveyer to swing from an upright to an inverted position, the under sides of said holders being perforated, means disposed in the path of travel of the conveyer for causing said can holders to swing from an upright to an inverted position, and means for returning the can holders to their upright position, and means for automatically discharging the cans therefrom.

5. In canning machinery, an endless conveyer, tracks extending parallel thereto, a series of can holders pivotally connected to the endless conveyer and traveling on said tracks, and means disposed in the length of the tracks for causing the inversion of the can holders as they are carried along by the endless conveyer, the under side of the can holders being formed of perforated material.

6. In canning machinery, an endless conveyer, tracks extending parallel thereto, and can holders pivotally connected to the ends of the conveyer for movement from an upright to an inverted position, the can holders having perforated material on the bottom, the can holders normally being supported upon said tracks, and means being disposed along the length of the tracks for shifting one end of the holder away from the track until the holder is in a vertical position and causing the free end of the holder to move rearward relative to that end of the holder which is pivotally connected to the conveyer whereby to cause the inversion of the holders.

7. In canning machinery, an endless conveyer, tracks extending parallel thereto, and can holders pivotally connected to the ends of the conveyer for movement from an upright to an inverted position, the can holders

having perforated material on the bottom, the can holders normally being supported upon said tracks, and means being disposed along the length of the tracks for shifting one end of the holder away from the track until the holder is in a vertical position and causing the free end of the holder to move rearward relative to that end of the holder which is pivotally connected to the conveyer whereby to cause the inversion of the holders, said means consisting in interrupting the continuity of the tracks at one point whereby the holders may swing to a vertical position from said conveyer.

8. In canning mechanism, a table having thereon a steam chamber having an entrance and an exit opening at its opposite ends, a drying chamber also having an entrance and exit opening, tracks extending along the table and through said chambers, an endless conveyer having its upper flight disposed between the tracks and passing through said chambers and the lower flight extending beneath the table, a plurality of can holders each having an open, lower end and a perforated bottom and each pivotally connected to the endless conveyer to swing but normally resting upon the tracks, and being disposed prior to their entrance into the cooking chamber with their perforated ends upward, means for causing the inversion of said holders and the cans supported therein during the passage of the cans between the entrance end of the cooking chamber and the exit end of the drying chamber, whereby the contents of said cans may drain, a lateral conveyer extending parallel to the under flight of the first named conveyer and to one side thereof, and means for tilting the conveyer along its under flight to discharge the cans through the open ends of the holders onto said conveyer.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

MARVEN H. STUART.

Witnesses:

LUCAS F. SMITH,  
LUCAS F. SMITH, Jr.