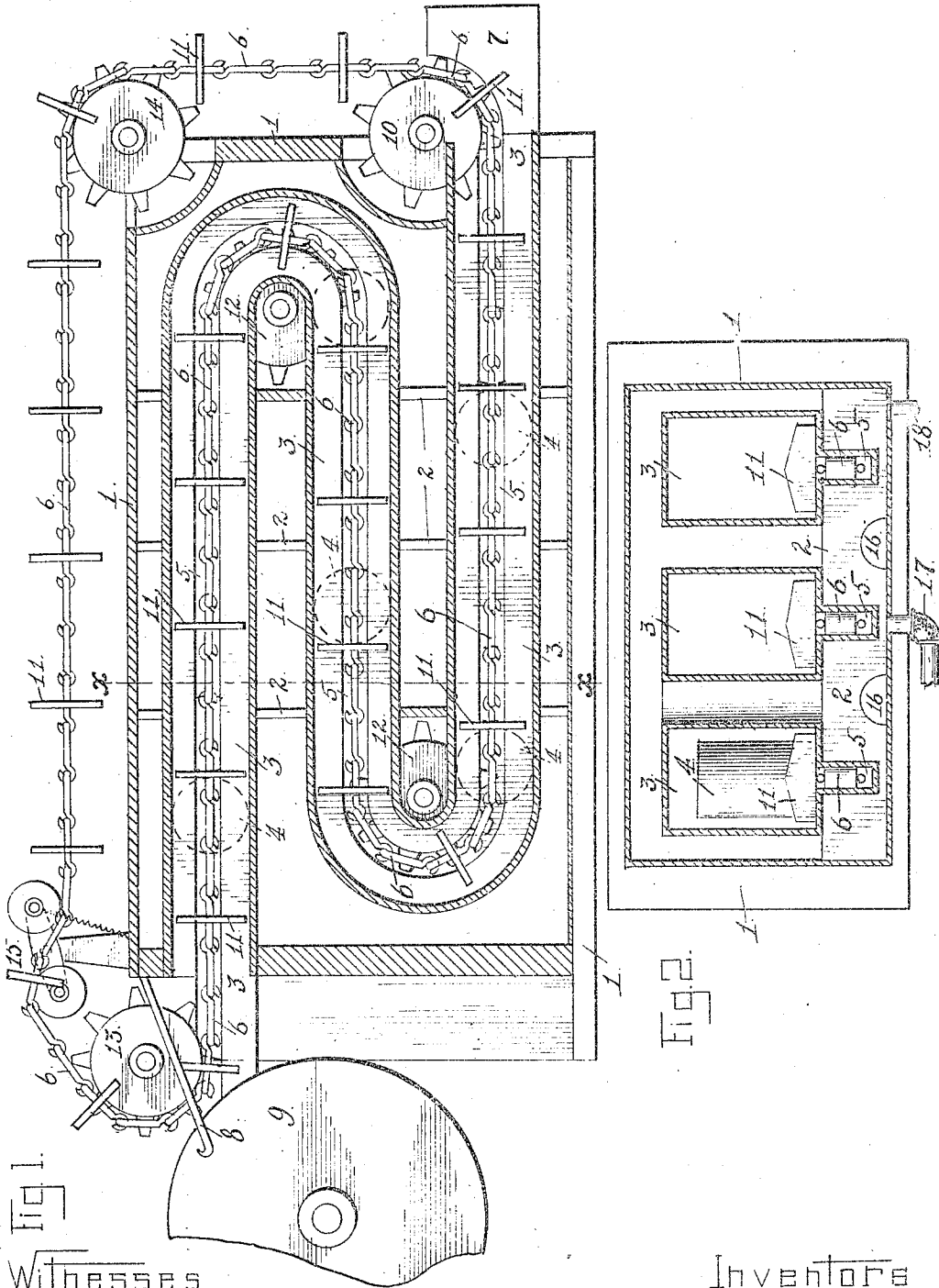


W. C. ANDERSON & A. R. THOMPSON.
EXHAUST BOX FOR FRUIT CANNING.
APPLICATION FILED DEC. 28, 1911.

1,036,534.

Patented Aug. 27, 1912.



Witnesses

Arthur L. Slee.
S. Constance

Inventors

William C. Anderson
Albert R. Thompson
by Wm. F. Booth
Attorney

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.

EXHAUST-BOX FOR FRUIT-CANNING.

1,036,534.

Specification of Letters Patent.

Patented Aug. 27, 1912.

Application filed December 28, 1911. Serial No. 888,366.

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 Exhaust-Boxes for Fruit-Canning, of which the following is a specification.

Our invention relates to the class of "exhaust-boxes" used in the fruit canning art, the purpose of which is to expel the air from filled and syruped cans, by the application of heat, prior to hermetically sealing said cans.

Our invention is applicable to devices or apparatus of this character without regard to any particular course of travel of the cans through the box. By this we mean that it is, in a general sense, immaterial whether the device be one in which the cans pass through the box in a single direct course, or one in which they travel within the box in a to and fro course through a number of runs. We have, however, herein illustrated and shall describe our invention in connection with a form of box in which a single endless traveling carrier chain is arranged to convey the cans through the box in a continuous to and fro course, this form being peculiarly adapted for our improvement.

Our invention consists in a closed box or retort provided with means for the introduction of live steam, said box having within it a continuous can-tunnel with heat conducting walls, said tunnel being closed to the interior of the box, one end of said tunnel opening exteriorly for the entrance of the cans, and the other end opening out for their exit, and means passing through said tunnel for conveying the cans through it, all as we shall hereinafter fully describe.

The object of our invention is to provide for the heating of the cans by live steam, thereby securing any degree of heat required, but without subjecting their contents (the cans at this stage being open) to the direct contact of the steam, which with many articles is injurious.

A further object is to economize the use of steam by making the box a real retort, that is a closed one, no portion of the steam being lost at the can entrance and exit.

Referring to the accompanying draw-

ings—Figure 1 is a horizontal section of our exhaust-box, taken in a plane below the top of the can-tunnel therein. Fig. 2 is a vertical cross section of the box, on the line $x-x$ of Fig. 1.

1 is the closed box or retort constructed in any suitable manner.

2 are spaced cross supports within the box, upon which is carried the can-tunnel 3. This tunnel is formed of heat conducting material, such as sheet metal. A good shape in cross section for the tunnel is that shown in Fig. 2, in which the main body of the tunnel approximates in width and height the size of a can 4, said tunnel having a base portion or chain-conduit 5 in which to house the carrier-chain 6. The tunnel is closed to the interior of the box; at one end it opens through the end of the box 1 with a tight connection, and there receives the entering chain, and also the incoming cans from the entrance table indicated in Fig. 1 by 7. At the other end the tunnel likewise opens through the box with a tight connection, and through this end the carrier-chain emerges, and the cans are discharged, being directed by the rail 8, upon the delivery table 9. Between its ends the tunnel in its best arrangement, extends in a to and fro course throughout the box, in as many runs as may be desired, here shown, for the sake of illustration, as three. At the extremities of the runs, the tunnel curves (as shown in Fig. 1) on an arc adapted for the continuous and uninterrupted passage of the cans.

The carrier chain 6 is an endless one and enters the tunnel 3 from the sprocket 10. It travels in the conduit portion 5 of said tunnel, and is provided at intervals with cross flights 11 which, resting upon the floor of the tunnel, support said chain, and also serve as the means for conveying the cans 4 over the tunnel-floor. At the bends, the chain is guided by sprockets 12, seated within suitable enlargements of the conduit 5. The chain emerges from the tunnel around a sprocket 13 which may be considered the driver. Thence the chain returns along one side of the box, around a sprocket 14 and along the first end of the box to the point of beginning.

At 15 is indicated a tightener to take up the slack of the chain. In the cross supports 2 are made the openings 16 in order

to permit a free circulation of the steam. The box is supplied with live steam, as, for example, through the steam pipe 17, shown in Fig. 2. A drip pipe 18 is also provided.

5 The operation is as follows:—The filled and syrupeed cans 4, with their tops still open or unsealed are fed from the entrance table 7 upon the chain 6 between its flights 11 as they are about to enter the tunnel 3.
10 By the chain-flights, the cans are carried through the tunnel, in the present case, in a to and fro course, and they emerge from the tunnel and are delivered upon the discharge table 9. Live steam is forced into
15 the box through pipe 17 to any desired pressure according to the heat required. The box being tight, no steam escapes and herein lies economy. The tunnel walls being heat
20 conducting, the heat is radiated to the cans within it, and their contents subjected to the proper temperature. The steam does not come in contact with the can contents, and this, with many commodities is a thing
25 to be desired. This result, namely, the avoidance of steam contact, is particularly available in a box having the arrangement of a single endless chain, here illustrated, for the reason that with such a chain a continuous closed can-tunnel having a to and
30 fro course and consequently an extensive one without undue length of box, is possible.

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

1. An exhaust-box, comprising a closed 35 retort; a can-tunnel within said retort composed of heat conducting walls, said tunnel being closed to the retort interior and its ends opening out from said retort to the exterior; means for conveying the cans through 40 said tunnel; and means for introducing steam to said retort.

2. An exhaust-box comprising a closed retort; a can-tunnel within said retort composed of heat conducting walls and extending 45 in a continuous to and fro course in a horizontal plane in the retort, said tunnel being closed to the retort interior and its ends opening out from said retort to the exterior; an endless traveling carrier chain 50 passing through said tunnel for conveying the cans therethrough; and means for introducing steam to said retort.

In testimony whereof we have signed our names to this specification in the presence 55 of two subscribing witnesses.

WILLIAM C. ANDERSON.
ALBERT R. THOMPSON.

Witnesses:

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