J. F. McILVAINE.

CANNING APPARATUS.

APPLICATION FILED JUNE 9, 1908.

928,144.

Patented July 13, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

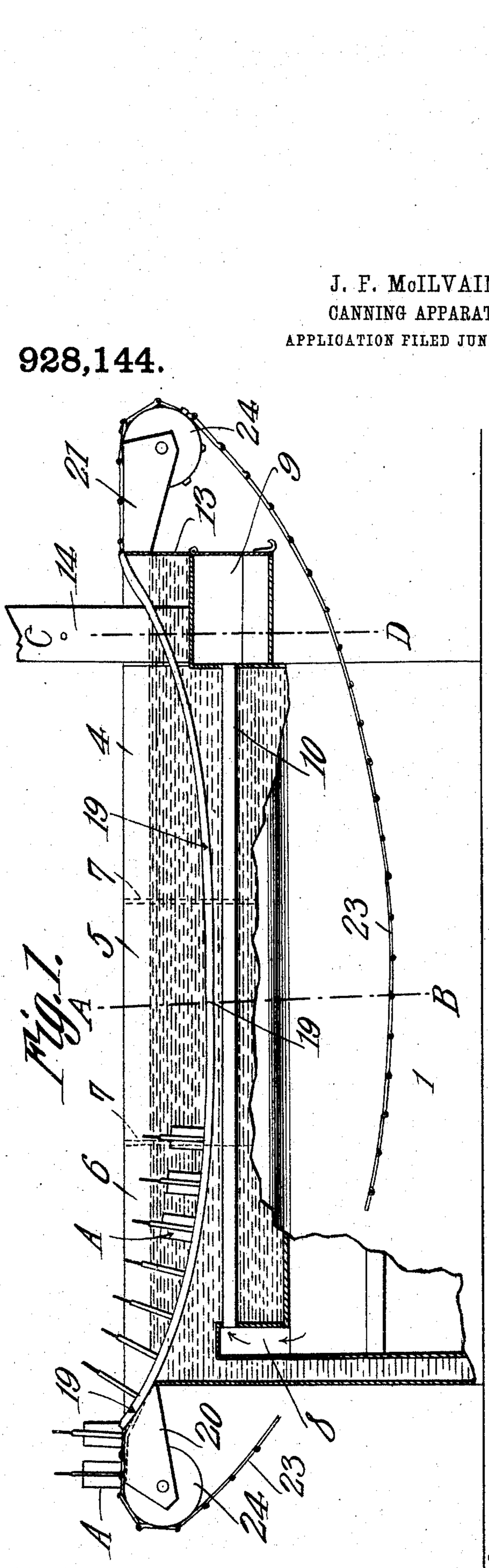
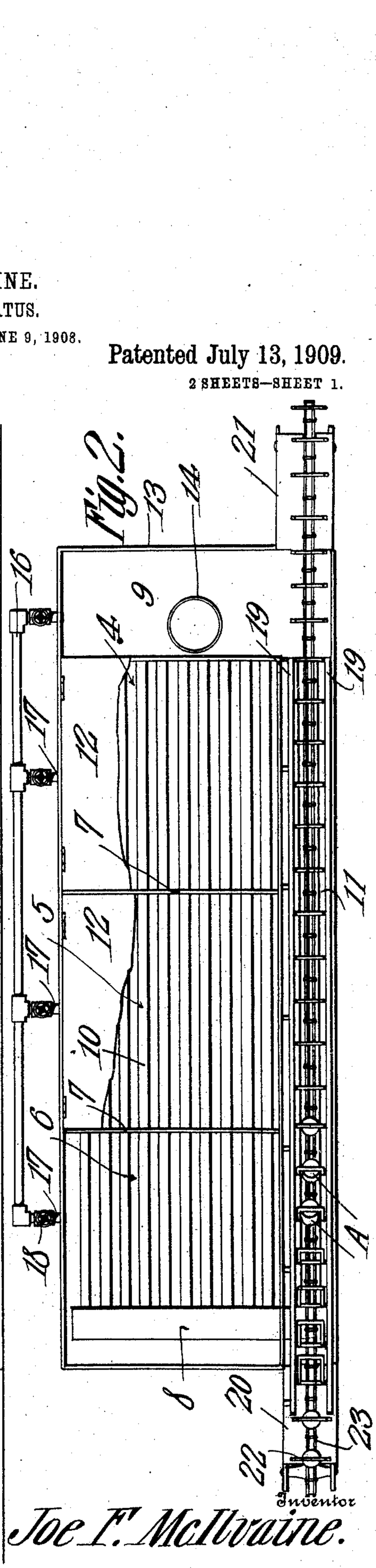



Fig. 2.




Witnesses

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2 SHEETS—SHEET 2.

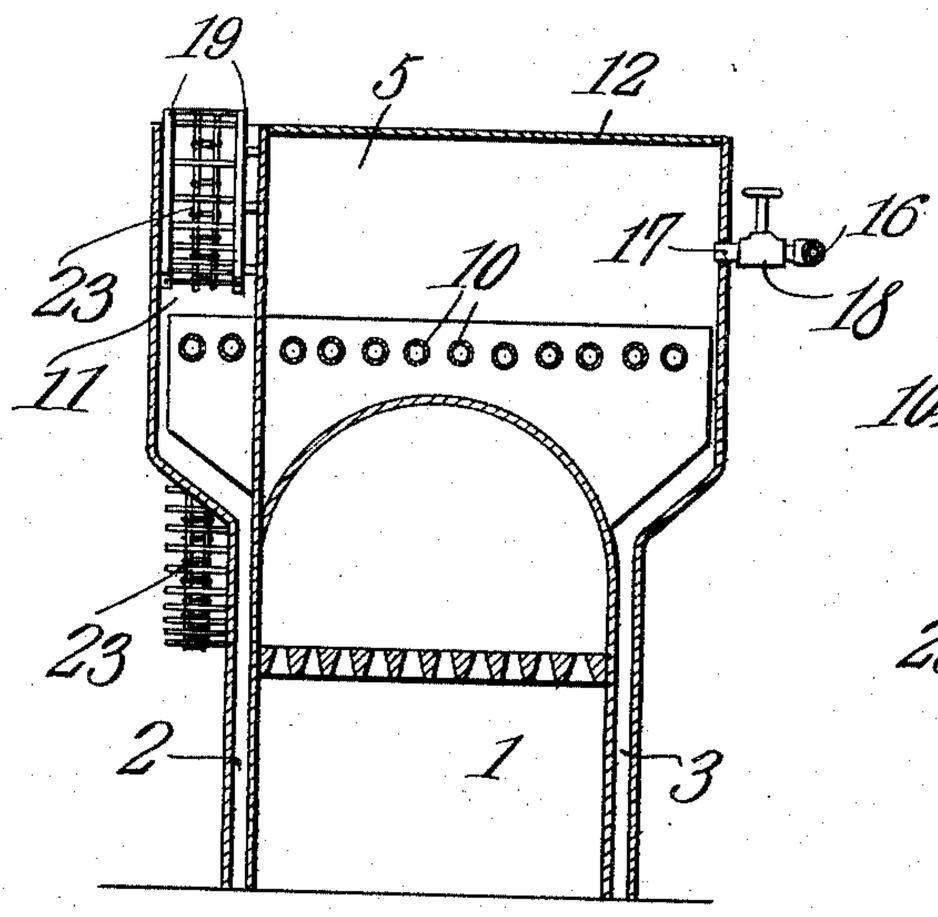


Fig. 3.

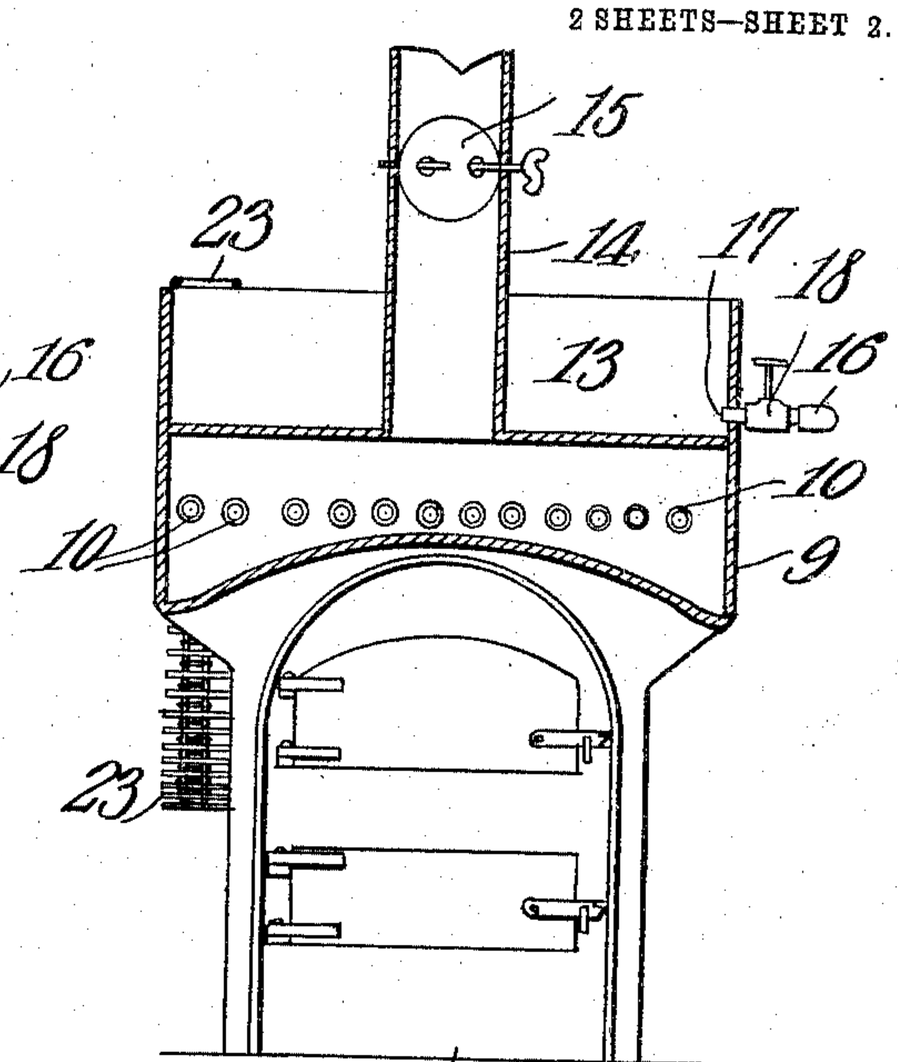


Fig. 4.

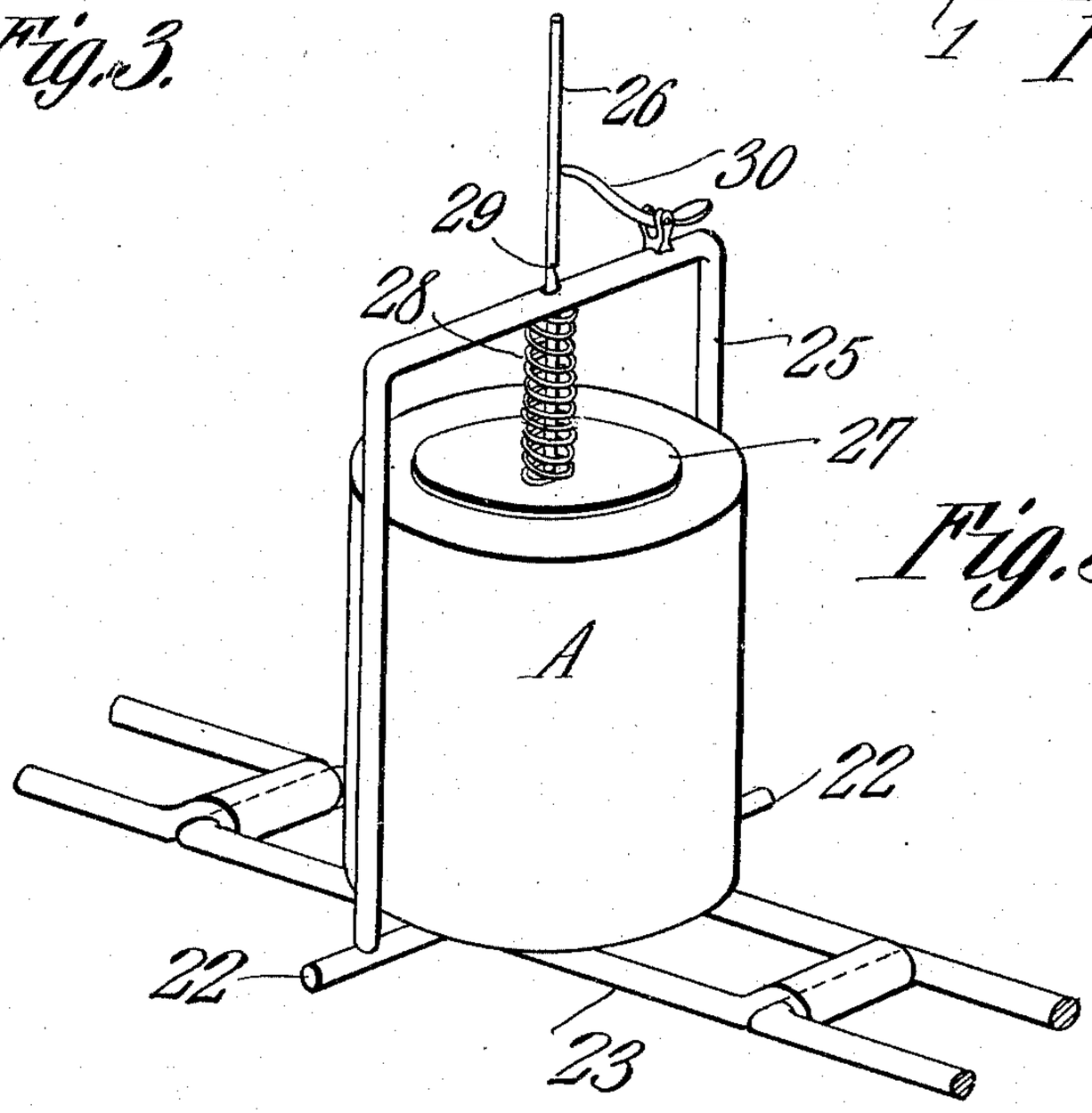


Fig. 5.

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# UNITED STATES PATENT OFFICE.

JOE F. McILVAINE, OF LEBANON, MISSOURI.

## CANNING APPARATUS.

No. 928,144. Specification of Letters Patent. Patented July 13, 1909.

Application filed June 9, 1908. Serial No. 437,575.

*To all whom it may concern:*

Be it known that I, JOE F. McILVAINE, a citizen of the United States, residing at Lebanon, in the county of Laclede and State of Missouri, have invented a new and useful Canning Apparatus, of which the following is a specification.

This invention relates to apparatus for scalding, exhausting and cooking canned goods and its object is to provide apparatus of this character in which practically all of the heat generated within the furnace is utilized for heating the contents of the cooking, scalding, and exhausting tanks, there being a novel arrangement of water jackets and flues whereby all of the walls of the furnace constitute water heating surfaces.

Another object is to provide novel means for conveying cans of fruit, vegetables, and the like through the exhausting tank or trough, said conveying means being flexible and directed positively along a predetermined path within the exhausting tank, there being simple and efficient means for detachably securing the can to the conveyer.

With these and other objects in view the invention consists of certain novel features of construction and combinations of parts which will be hereinafter more fully described and pointed out in the claims.

In the accompanying drawings is shown the preferred form of the invention.

In said drawings: Figure 1 is a view partly in side elevation and partly in section of apparatus embodying the present improvements, most of the can holding devices being removed from the conveyer and a part of said conveyer being removed. Fig. 2 is a plan view of the apparatus the closures of the cooking tank being broken away. Fig. 3 is a section on line A—B Fig. 1. Fig. 4 is a section on line C—D Fig. 1. Fig. 5 is a perspective view of a portion of the conveyer and showing a can secured thereon.

Referring to the figures by characters of reference, 1 designates a furnace having water legs 2 and 3 in the side walls thereof, leg 3 opening into a series of tanks 4, 5 and 6 separated by imperforate partitions 7. The tank 6 constitutes a scalding tank while the remaining tanks are for cooking purposes. A smoke box 8 is located at the rear end of the furnace and another smoke box 9 is located at the front end thereof, the two smoke boxes communicating through flues 10 most of which extend through the tanks 4, 5 and 6 while some of them are arranged longitudinally within a side tank or exhausting trough 11 extending throughout the length of the apparatus and communicating at the bottom with the water leg 2. The cooking tanks 4 and 5 are preferably provided with hinge closures 12. A reservoir 13 is arranged above the smoke box 9 and the smoke stack 14 extends upwardly from the smoke box 9 and through reservoir 13 and may be provided with a suitable damper 15 for regulating the escape of products of combustion. A water distributing pipe 16 extends from reservoir 13 and along one side of the apparatus and has branch pipes 17 opening into the tanks 4, 5 and 6 and provided with valves as indicated at 18 so that the discharge of water from the reservoir into the tank can be readily controlled. It is of course to be understood that the rear smoke box 8 communicates with the fire box in the furnace so that products of combustion can pass freely from one to the other.

Arranged upon the side walls of the exhausting trough or tank 11 are preferably channeled rails 19 the ends of which are located adjacent the front and rear tables 20 and 21 respectively, extending beyond the ends of the apparatus. The two channeled rails 19 are disposed parallel and directly opposite each other and are bowed downwardly. These rails are designed to receive the end portions of arms 22 extending beyond the sides of a conveyer chain 23 which chain is mounted on sprockets 24 carried by the tables 20 and 21. The lower run of the chain or conveyer is designed to hang below the trough 11 and outside the tank 2, as shown in Figs. 3 and 4. Certain or all of the links of the conveyer may be provided with upstanding holding frames 25 of sufficient width to receive a can A therein, said can resting upon the link on which the frame is mounted. Within each of these frames is slidably mounted a stem 26 having a cap 27 at its lower end and between the cap and the upper portion of the frame is arranged a coiled spring 28 which bears constantly downward upon the cap so as to hold it normally clamped upon the upper end of the can within the frame. A notch 29 is preferably formed within the stem 26 and when said stem and the cap are raised to a predetermined point this notch will be automatically

engaged by a pawl 30 pivotally mounted on the frame and normally contacting by gravity with the stem.

Before the cans are placed upon the conveyer the caps are all secured in elevated positions by means of the pawls 30 and when the cans are to be passed through the exhausting trough or tank they are placed successively upon the conveyer and as soon as positioned thereon the pawl 30 is disengaged from the stem above the cans and the spring 28 promptly throws the cap 27 downward onto the can so as to grip the same and hold it in place. As the conveyer travels over the sprocket the cans will be carried downward into the hot water contained within the trough or tank 11, this movement being insured by the provision of the rails 19. The products of combustion of course thoroughly heat all of the walls of the furnace and the contents of the water legs 2 and 3 therefore receive the heat from these walls. By providing flues 10 for the passage of combustion products the temperature of the water within the tanks is further increased. It will be seen therefore that a very small percentage of the generated heat is wasted. The tank 6 is preferably used for scalding purposes and may be provided with any well known or special mechanism for carrying out the scalding operation.

What is claimed is:

1. In canning apparatus the combination with a furnace; of non-communicating cooking and scalding tanks upon the furnace and extending to one side thereof, a longitudinally extending exhausting tank upon the furnace and extending to the other side thereof, and an endless can conveyer extending throughout the length of the exhausting tank.

2. In canning apparatus the combination with a furnace; of cooking and scalding tanks thereon, a water leg upon one wall of the furnace and opening into said tanks, a longitudinally extending exhausting tank at one side of the first mentioned tanks, a water leg upon the other wall of the furnace and opening into the exhausting tank, flues for conveying products of combustion through the tanks, a reservoir opening into the exhausting tank, and means for directing fluid from the reservoir to the cooking and scalding tanks.

3. In canning apparatus the combination with a furnace and water legs upon the side walls thereof; of cooking and scalding tanks upon the furnace and communicating with one of the legs, a longitudinally extending exhausting tank communicating with the other leg, a reservoir communicating with the exhausting tank, and valved means for directing fluid from the reservoir to the cooking and scalding tanks.

4. In canning apparatus the combination with a furnace and water legs upon the side walls thereof; of cooking and scalding tanks upon the furnace and communicating with one of the legs, a longitudinally extending exhausting tank communicating with the other leg, a reservoir communicating with the exhausting tank, valved means for directing fluid from the reservoir to the cooking and scalding tanks, and flues for conveying products of combustion through the respective tanks.

5. In a canning apparatus the combination with an exhausting tank; of an endless conveyer extending longitudinally within and below the tank, a receptacle receiving frame carried by the conveyer, a spring pressed receptacle engaging cap within the frame, and means for locking the cap in a predetermined position.

6. In canning apparatus the combination with an exhausting tank; of a chain conveyer extending longitudinally within and under the tank, a frame upon one of the links of the chain for the reception of a receptacle, a receptacle clamping cap within the frame, a spring for holding the cap normally in clamped position, and means for locking the cap out of locking position.

7. In canning apparatus the combination with a furnace and water-legs upon the side walls thereof and extending throughout the height of the furnace; of cooking and scalding tanks upon the furnace and communicating with one of the water-legs, a longitudinally extending exhausting tank above and communicating with the other leg, said exhausting tank being disposed at one side of the cooking and scalding tanks, a smoke-box above one end of the furnace, a reservoir thereupon, means for directing products of combustion longitudinally within the tanks to the smoke-box, and valved connections between the reservoir and the cooking and scalding tanks, said reservoir communicating at all times with the exhausting tank.

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

JOE F. McILVAINE.

Witnesses:
WM. ANDERSON,
W. I. WALLACE.