

No. 865,190.

PATENTED SEPT. 3, 1907.

L. L. LAWRENCE.
CANNING APPARATUS.
APPLICATION FILED APR. 7, 1906.

2 SHEETS—SHEET 1.

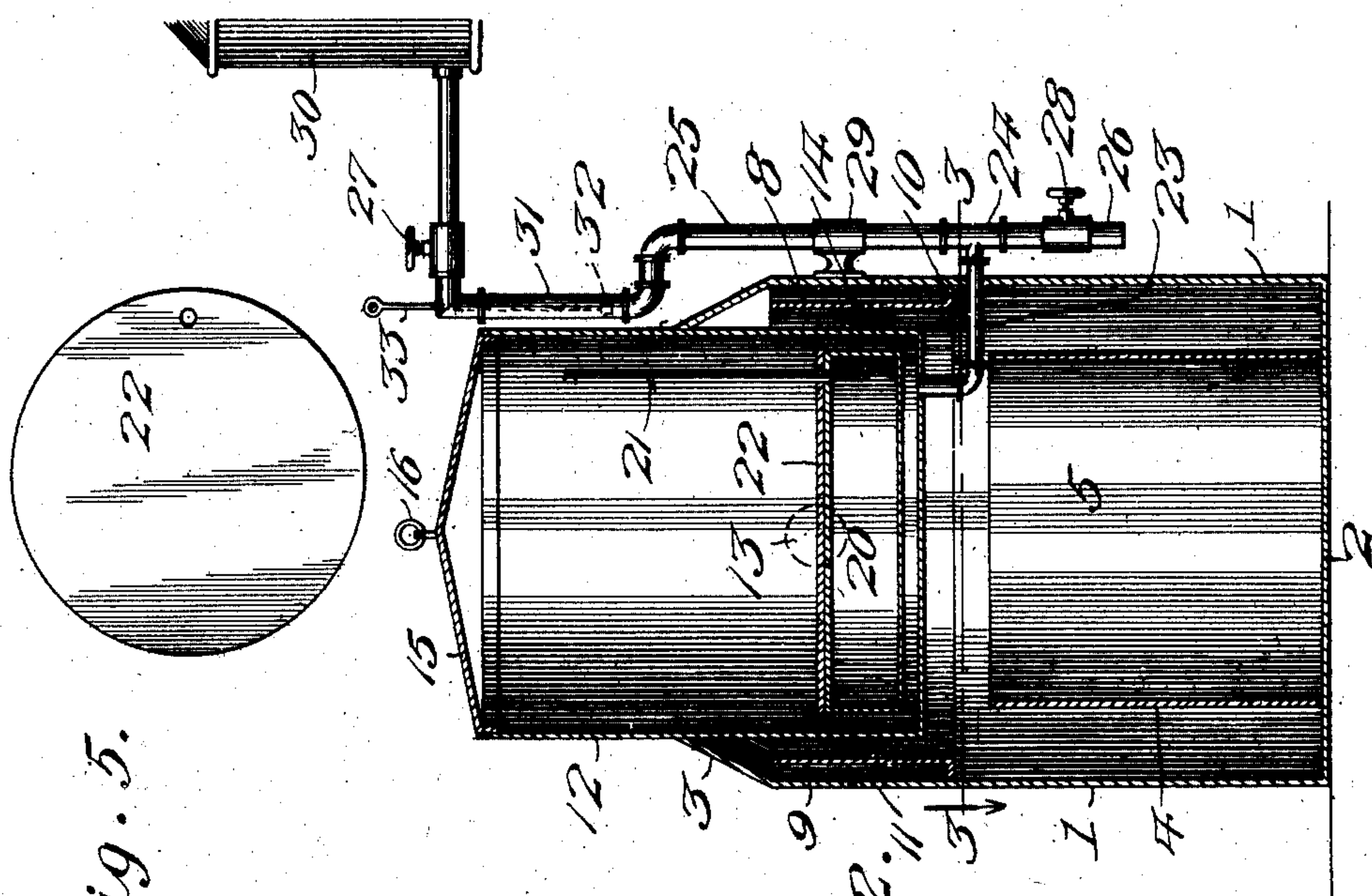


Fig. 5.

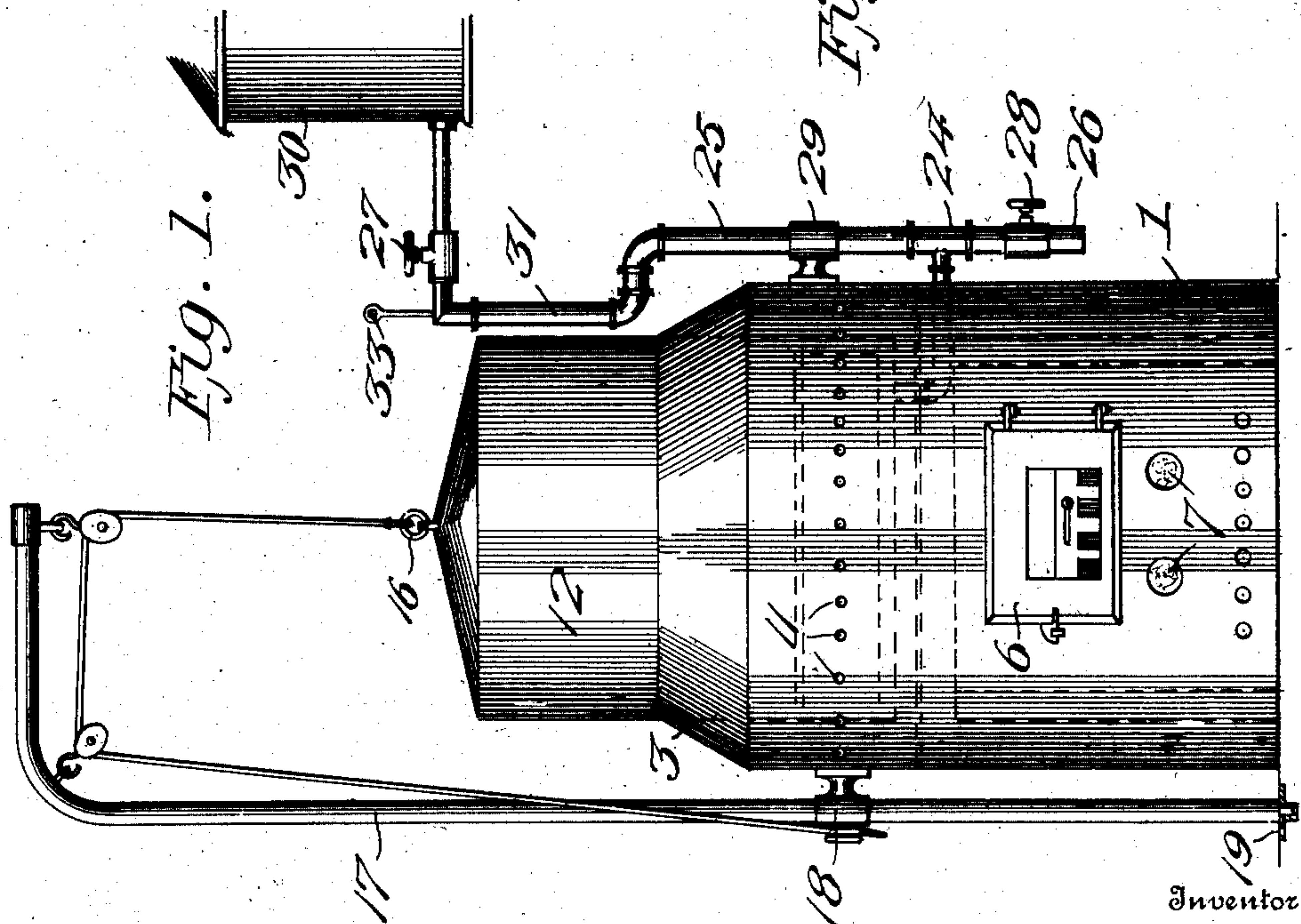


Fig. 1.

Fig. 2.

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L. L. Lawrence

Witnesses

Frank B. Hoffman.
C. C. Hines.

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Victor J. Evans

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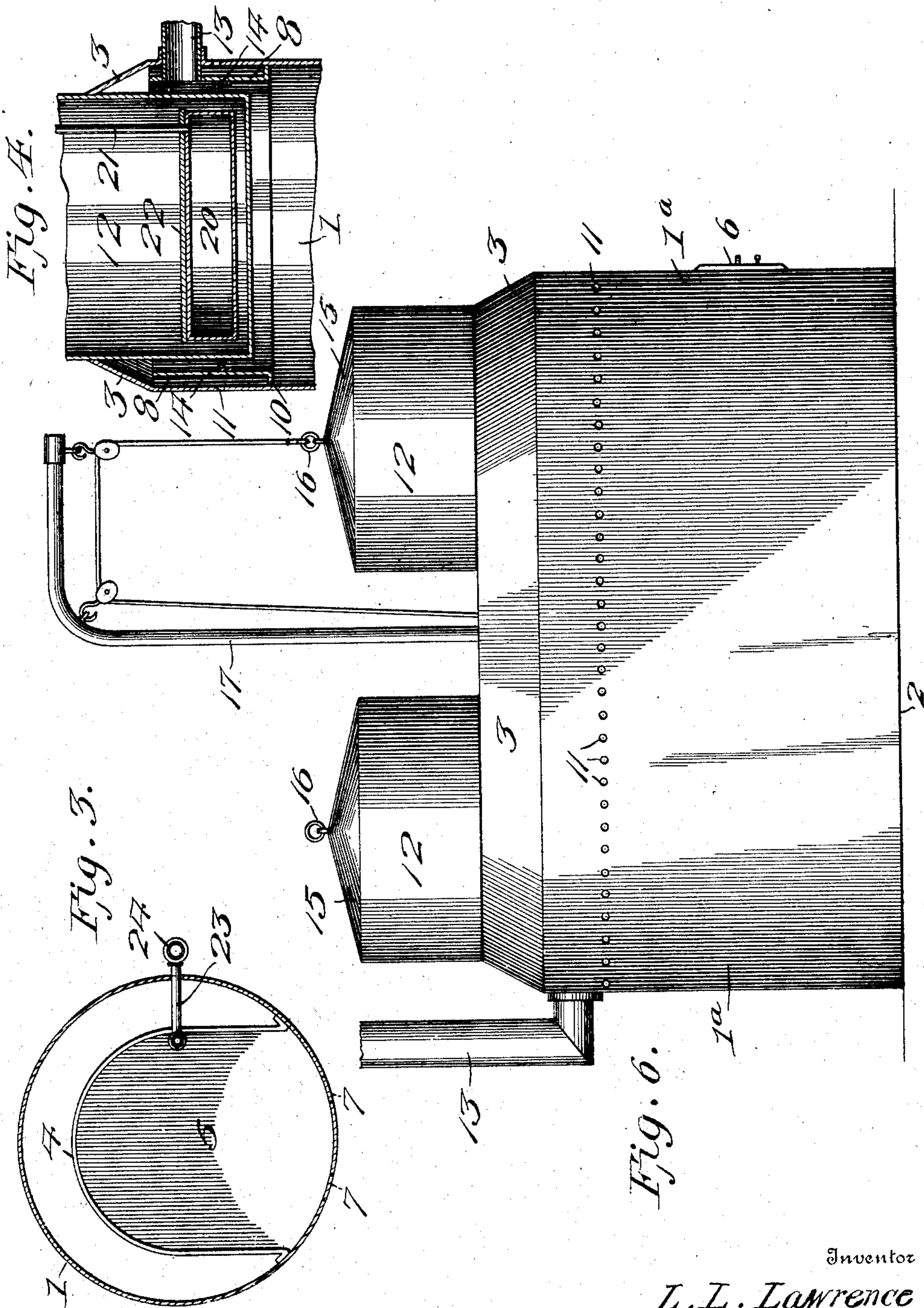
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UNITED STATES PATENT OFFICE.

LILFORD L. LAWRENCE, OF BRIDGEPORT, ALABAMA.

CANNING APPARATUS.

No. 865,190.

Specification of Letters Patent.

Patented Sept. 3, 1907.

Application filed April 7, 1906. Serial No. 310,520.

To all whom it may concern:

Be it known that I, LILFORD L. LAWRENCE, a citizen of the United States of America, residing at Bridgeport, in the county of Jackson and State of Alabama, have
5 invented new and useful Improvements in Canning Apparatus, of which the following is a specification.

This invention relates to new and useful improvements in canning or preserving apparatus for use in putting up fruit, vegetables and other perishable mat-
10 ter for future use.

The object of the invention is to provide a simple apparatus adapted to be operated at slight cost and which is especially designed for the use of small farmers and gardeners, thereby obviating the necessity of shipping
15 the material to a canning establishment, and thus permitting the fruit to be preserved unspoiled and as soon as picked.

Another object is to provide a construction which insures convenience of operation, utilization of the heat
20 to the maximum degree and economy of fuel.

With the above and other objects in view, the invention consists of the features of construction and combination of parts hereinafter fully described and claimed, reference being had to the accompanying drawings, in
25 which:—

Figure 1 is a front elevation of the apparatus. Fig. 2 is a vertical section through the same. Fig. 3 is a horizontal section on line 3—3 of Fig. 2. Fig. 4 is a vertical section through the upper part of the apparatus taken at right angles to the section shown in Fig. 2. Fig. 5 is a plan view of the weight plate. Fig. 6 is a view in side elevation of a modified form of apparatus adapted to contain a plurality of vats.

Referring to Figs. 1 to 5, inclusive, 1 is a cylindrical
35 casing or jacket having a flat bottom 2 and a tapered or frusto-conical upper end 3. Within the lower portion of this casing is arranged a lining or shell 4 of partially circular form, said lining or shell being secured at its open side to the front of the casing and forming a fire
40 box 5, spaced from the casing except at the front to prevent undue heating of the base portion of the casing. Primary combustion is effected in the fire box 5 by the introduction therinto of suitable fuel, and the admis-
45 sion of air to the said fire box is secured through openings 5^a formed in the casing and communicating with the bottom of the fire box. The door 6 is arranged at the front of the casing in front of the open side of the fire box, and below the door one or more openings 7 are
50 formed in the casing to permit of the insertion of soldering irons into the fire box for the purpose of heating said irons, thus obviating the necessity of employing a separate heater for the irons used in the process of soldering the heads of cans into which the goods are packed.

55 Arranged within the upper portion of the casing above the fire box and below the tapered top 3 is an an-

nular lining 8 arranged to form a surrounding air chamber 9 closed at its bottom by a flange 10 formed upon the lining and suitably secured to the casing. A series of air holes 11 are formed in the casing and communicate
60 with said air chamber to keep the upper portion of the casing cool by the introduction of air thereto, the entering air also being employed to promote the combustion of the unconsumed products issuing from the fire box.

A vat 12 fits within the upper portion of the casing and extends to the exterior through the tapered part 3, and terminates at its lower end above the top of the fire box and bottom of the lining 8. The vat is suitably secured in position and is spaced from the lining for the
65 upward circulation therearound of the products of combustion before the discharge of the latter through the flue or pipe 13. Semi-circular deflectors 14, preferably of the construction shown in my prior patent No. 717,419, dated December 20, 1902, are secured between
70 the sides of the vat and lining, and overlap so as to cause the product of combustion to encircle the vat before discharging through the flue. The fire box is of less size than the vat so that the flames and products of combustion will be caused to directly strike against the
80 bottom of the vat and curl around the sides thereof into the space between the same and the lining to cause an effective primary transmission of the available units of heat to the vat. The vat is closed by a removable cover 15 to which is connected a ring or like member
85 16 for convenience in applying and removing the same through the use of the tackle of a crane 17, the latter being journaled in a bearing bracket 18 on the casing and in a stepped bearing 19 on the floor or supporting surface.

A float 20 is disposed in the vat, and is of relatively smaller diameter for the formation of a passage to permit water to circulate around and below the same, and between said float and the bottom of the vat. A pipe
90 21 connects with the float and extends upwardly into the vat above the level of the water line therein. This pipe serves to admit steam from the upper portion of the vat to the float to secure an increased heating action. The float is suitably weighted by a plate 22 resting upon the top thereof. This plate may be of greater
100 diameter than the float to narrow the passage between the same and wall of the vat to any desired degree to control the circulation of the water.

A pipe 23 communicates with the bottom of the vat and is connected on the exterior of the casing with a
105 T-coupling 24 to which are also attached feed and waste pipes 25 and 26 having controlling valves 27 and 28, respectively. These pipes are supported by a bracket 29, and the pipe 25 communicates with a water tank 30 from which water may be readily admitted to the vat
110 to maintain the proper quantity therein. The pipe 26 permits of the discharge from the vat or any excess

amount of water and the drainage of the entire body of water therefrom after the operation of processing. The pipe 25 is provided with a vertical portion 31 in which is a float 32 to which is attached a gage rod 33 extending outwardly from said portion of the pipe and influenced by the rise and fall of the float to enable the quantity of water in the vat to be readily determined.

In the operation, a basket filled with cans is lowered by means of the crane into the vat, from which the cover 15 has been removed. The basket is deposited on the float and the cover replaced or not, according to the character of the material under treatment. The contents of the vat are heated by the fire in the box 5, the products of combustion passing around the vat to transmit a maximum degree of heat thereto, which is increased by the return circulation of steam through the pipe 21 into the float. An increase of efficiency in the heating action is secured by the oxygenation of the products by the air admitted through the openings 11, the construction being such that while the vat is heated to a maximum degree the body of the casing will be kept comparatively cool. After the contents of the vat have been properly cooked they are gradually cooled by admitting cold water through the pipe 25.

In the embodiment of the invention disclosed in Fig. 6 the casing 1^a is of oblong form and is designed to contain a plurality of vats, and the crane is arranged so that it may be controlled for use in connection with either vat, this construction permitting of the processing of different kinds of goods or an increased quantity of goods of the same kind at a time with economy in the use of fuel, as a single fire box, common to all the vats used, is employed.

Having thus described the invention, what is claimed as new, is:—

1. The combination of a casing, a fire box therein, a lining within the casing spaced from and arranged above the fire box and forming an air chamber open at top and in communication with air inlets in the side of the casing, and a vat suspended in the lining and forming an outlet therearound for the products of combustion.

2. The combination of a casing having air inlets in the sides thereof, a fire box therein, a lining within the casing arranged above the fire box, said lining being spaced from the casing to form an air chamber open at top and communicating with said air inlets in the sides of the casing, a vat supported within the lining and terminating above the bottom of the same, said vat being of greater diameter or area than the fire box and spaced from the lining to form an intervening outlet therearound for the products of combustion.

3. The combination of a casing, a fire box therein partially spaced from the wall of the casing, an interior lining arranged above the fire box and spaced therefrom and forming an air chamber therein closed at bottom and open at the top and communicating with inlets in the

sides of the casing, a vat supported within the lining above the fire box and bottom of the lining and of greater area than the fire box, and deflectors inclosing the vat and secured to the lining.

4. The combination of a casing, a vat supported therein, a hollow float arranged in the vat, and a pipe extending upward from the float for conducting steam from the top of the vat to the float.

5. The combination of a casing, a vat therein, a float within the vat, and a weighting plate carried by the float and projecting beyond the same to govern the circulating space between the vat and float.

6. The combination of a casing, a vat therein, a hollow float within the vat and of less diameter than the same, a steam supply pipe carried by the float and extending into the top of the vat, and a plate carried by the float and extending beyond the edges of the float.

7. The combination of a casing, a vat therein, a float within the vat, a valved pipe connection for supplying and withdrawing water to and from the vat, said connections having a vertical portion, and a gage member movable in said portion for indicating the amount of water in the vat.

8. In a preserving apparatus, the combination of a casing, a fire box arranged in the bottom thereof, the casing being provided above said box with air inlets, a lining disposed within the casing above and separated from the fire box and forming an air chamber closed at bottom, open at top and communicating with said air inlets, the said lining being of greater diameter than the fire box, and a vat extending into the top of the casing and suspended in the lining and forming an intervening outlet for the products of combustion, said vat being of less diameter than the lining and of greater diameter than the fire box.

9. In a preserving apparatus, the combination of a casing having a frusto-conical top, a fire box arranged in the base of the casing, the latter being provided below the frusto-conical top and above the fire box with air inlets, an annular shell or lining arranged within the casing between the fire box and frusto-conical top and forming an intervening air chamber communicating with the air inlets and open at top and closed at the bottom thereof, and a vat extending through the frusto-conical top and suspended at its base within the lining, said vat having its bottom terminating above the bottom of the lining and being of greater diameter than the fire box and of less diameter than the lining to provide an intervening outlet for the circulation of the products of combustion.

10. In a preserving apparatus, the combination of a casing, a vat therein, a float within the vat, an exterior water supply tank, a supply pipe, a valved conducting pipe leading from the tank to the vat, said pipe being provided with branches and valves for regulating the action and discharge of water to and from the vat and having a vertical portion, and a gage member movable in said vertical portion for indicating the amount of water in the vat.

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

LILFORD L. LAWRENCE.

Witnesses:

O. O. LENLEER, Jr.,
JETTE ROBERTS.