

No. 740,981.

PATENTED OCT. 6, 1903.

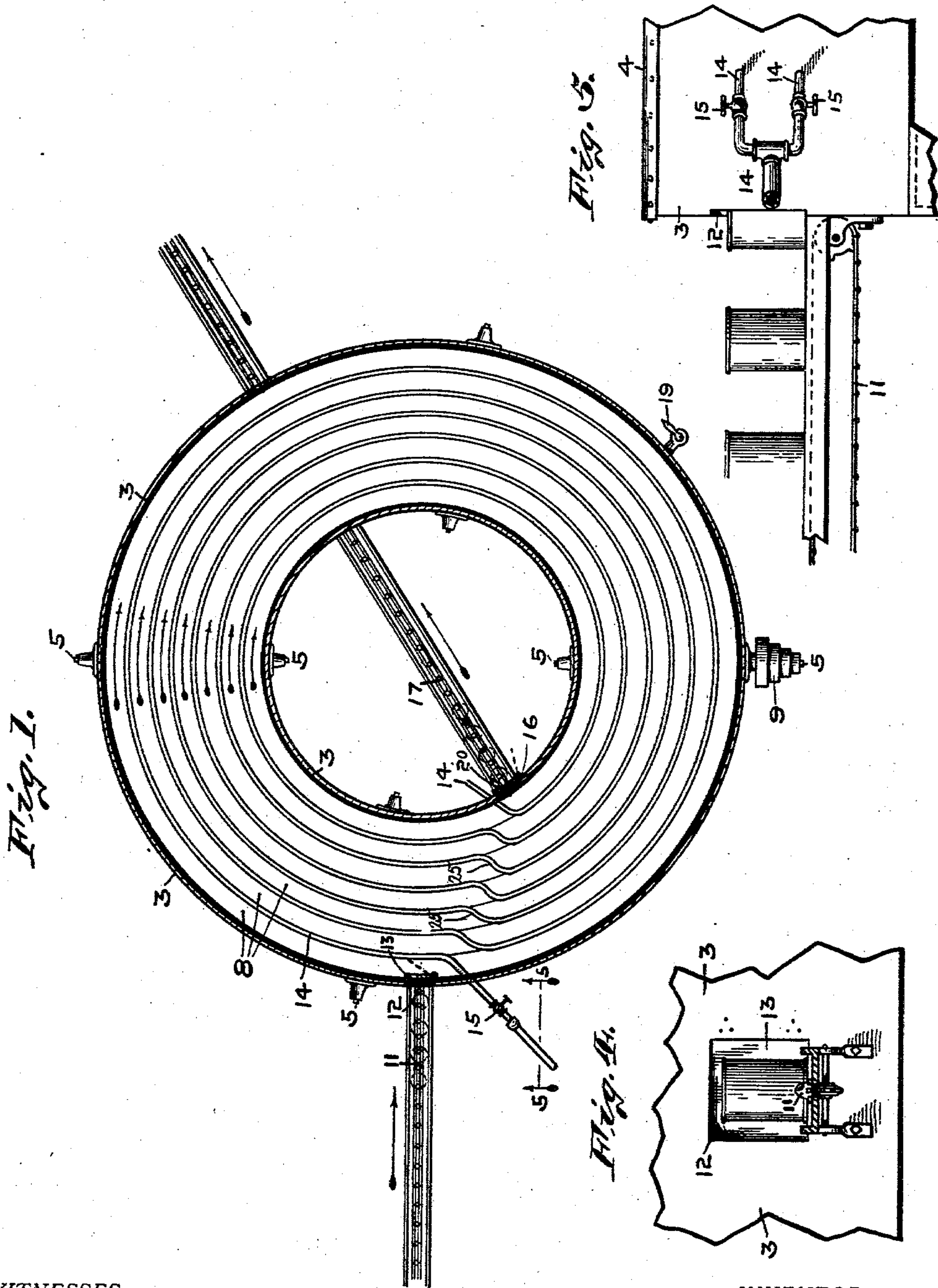
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APPARATUS FOR STEAMING AND PROCESSING CANNED GOODS.

APPLICATION FILED SEPT. 13, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:

C. C. Topp
L. E. Shafer

INVENTOR.

John Jennings,

BY

F. W. Koerner,
ATTORNEY.

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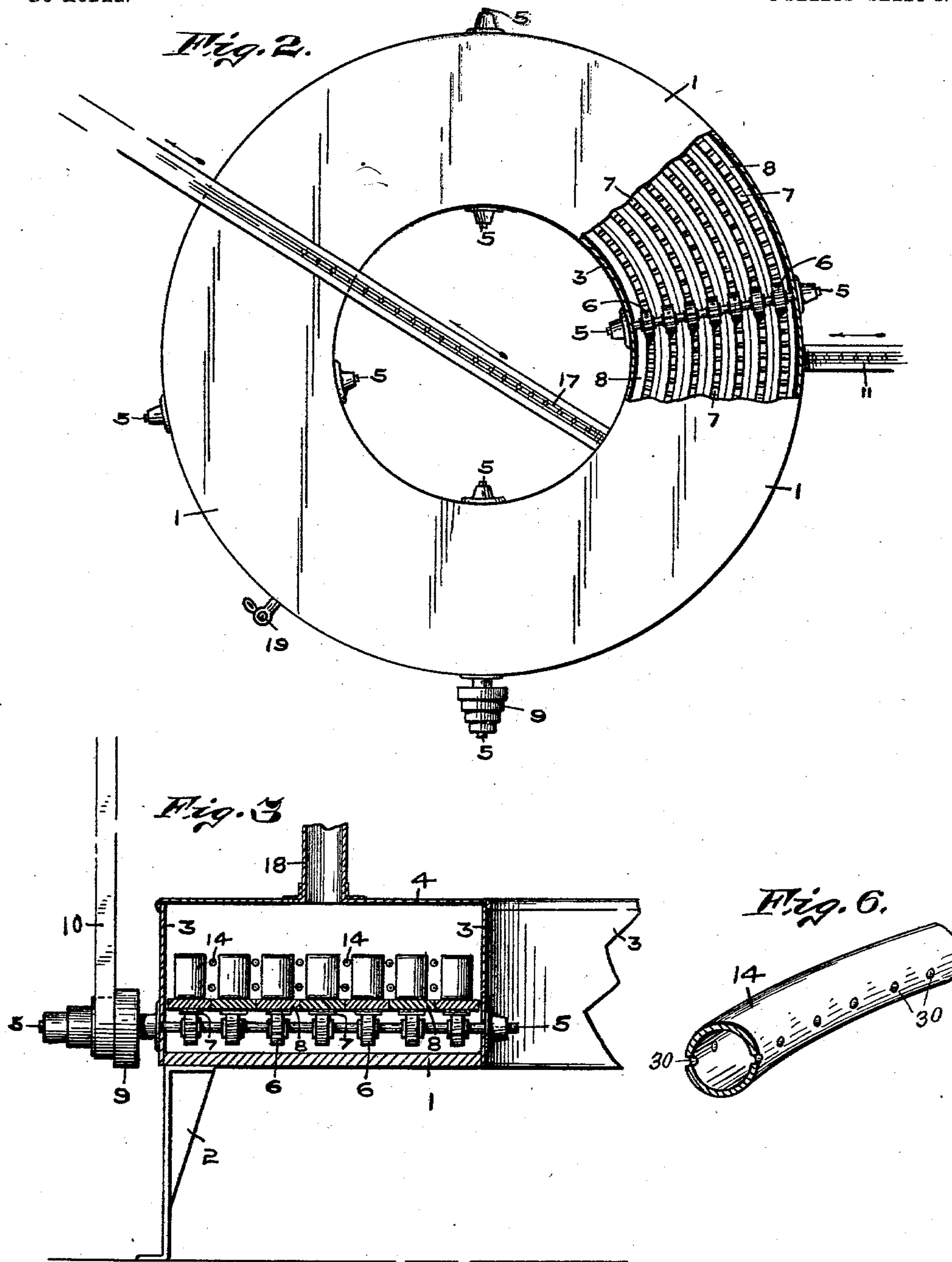
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UNITED STATES PATENT OFFICE.

JOHN JENNINGS, OF GREENWOOD, INDIANA, ASSIGNOR TO THE GREENWOOD PROCESS MACHINE CO., OF GREENWOOD, INDIANA, A CORPORATION OF INDIANA.

APPARATUS FOR STEAMING AND PROCESSING CANNED GOODS.

SPECIFICATION forming part of Letters Patent No. 740,981, dated October 6, 1903.

Application filed September 13, 1902. Serial No. 123,283. (No model.)

To all whom it may concern:

Be it known that I, JOHN JENNINGS, a citizen of the United States, residing at Greenwood, in the county of Johnson and State of Indiana, have invented certain new and useful Improvements in Apparatus for Steaming and Processing Canned Goods, of which the following is a specification.

This invention relates to apparatuses for treating canned goods, and has for its object a means for reheating the canned product before capping the cans by passing the uncapped cans over a circuitous route within an inclosed chamber having the receiving and discharging apertures sufficiently separated to provide ample travel for the product before the same is discharged, the product in transit being constantly subjected to a blast of steam to thoroughly heat same and withal keeping it at all stages confined within a limited area.

Referring to the accompanying drawings, which are made a part hereof, and on which similar numerals of reference indicate similar parts, Figure 1 is a horizontal sectional view of the processing-chamber, in which the top is broken away and exposes the rings and the pipes. Fig. 2 is a bottom view of Fig. 1, except that a small portion of the base is broken away, so as to expose the racks and driving-pinions. Fig. 3 is a cross-section of one side of the processing-chest and shows the rings and pipes in section and the driving-pinions and shafts in elevation, the said view being on an enlarged scale. Fig. 4 is a cross-section of the carrying-chain and its supports, which transport the cans to the processing-chamber. Fig. 5 is a fragmentary detail, in side elevation, of that end of the apparatus which receives the cans and shows the supply-pipes in perspective. Fig. 6 is a fragmentary detail in perspective of a portion of the supply-pipe and shows the numerous perforations through which the steam is discharged.

In the drawings, 1 is the plate, which is circular in form and which forms the base of my processing apparatus. The base 1 has a central opening and is provided with the legs 2. 3 represents the walls, and 4 the top, of the apparatus. Supported in suitable bearings on

the body are the shafts 5, which extend through the chamber in a transverse manner, the shafts being mounted so as to follow a radiating line from the axis of the apparatus. The shafts 5 are provided with a series of pinions 6. Supported by the pinions 6 are the concentric rings 8, nested together, which carry the toothed racks 7 on the under side, which engage with the pinions 6 on the shafts 5. One of the shafts 5, carrying pinions, is employed to drive the rings 8. This shaft is provided with a suitable pulley 9 for obtaining variable speeds and receives the power through the belt 10. Employing a variable-speed pulley, the time required for transmitting the cans through the chamber can be varied. The remaining shafts 5, carrying the pinions 6, are mere idlers for supporting the rings 8.

A carrying-chain 11, suitably mounted, supplies the cans to be treated. The cans are usually brought from the filling-machine, where the product is placed into the cans. The chain 11 is of the endless variety and leads to the periphery of the processing-chamber, which at that point is provided with an aperture 12 for receiving the cans. A door 13 closes the aperture 12 and swings inward when a can is forced into the chest. The door is held in a closed position by any suitable tension device. The cans on entering the chamber are received upon the outermost ring and immediately begin a circuitous course around and within the chamber.

Near the aperture 12, where the cans enter the chamber, a series of pipes 14 pierce the wall of the chamber. The pipes 14 provide the steam for treating the canned product and lead from any suitable supply-point. The pipe 14 before entering the treating-chamber is preferably made so as to bifurcate into two or more lines, each of which is provided with a valve 15, so that the supply of each pipe may be independently cut off. The pipes within the treating-chamber form coils and run in a horizontal direction, but are arranged in a vertical manner, so that the upper pipe of the series is below the top of the cans, while the bottom pipe is somewhat above the base of the cans. These pipes perform

two functions: first, in carrying the steam into the treating-chamber, and, second, as they follow the course of the rings 8 they form a guide for keeping the cans aboard the rings.

5 When a can has made a circuit of the treating-chamber, I shift the cans from one ring to the other by bending the pipes in a diagonal line across the adjacent ring toward the axis of the apparatus. The diagonal bends
10 in the pipes 14 form the inclines 25, and when the cans meet said incline the continued movement of the ring on which the cans stand has a tendency to move the cans toward the next ring. It will be seen as the rings decrease in
15 size they revolve more rapidly. Hence when a can is forced upon the more rapid moving ring the higher velocity of said ring has a greater drawing quality, which encourages the can to mount said ring. The can now
20 aboard the new ring makes a revolution thereon, when it is shifted to the next ring, and so the cans move from one ring to the other until they have made a circuit aboard each ring, when they are finally discharged through an
25 aperture 16 in the inner wall of the treating-chamber. The cans when discharged from the chamber are placed aboard a carrying-chain 17, which carries the cans to the capping-machine to be capped.

30 It will be readily understood that all products to be canned must be heated through and through, and to accomplish this end the cans must travel over a considerable course. To economize space and still allow the necessary
35 travel for the cans is accomplished by using a circular chest, which keeps the cans confined to a limited space.

While the cans are passing through the treating-chamber they are kept within pre-
40 scribed bounds by the pipes 14, which form a guide as well as conveying the steam. As shown in Fig. 6 of the drawings, the pipes 14 have numerous fine perforations 30, through which the steam is discharged and which constantly plays upon the cans while passing
45 through the chamber. The pipes 14 pass out of the chamber at the discharge-aperture 16 and direct the cans thereto. The aperture is closed by an external door 20. The pipes 14
50 after passing out of the chamber are run above the building or any suitable point to allow the remaining steam in the pipes to escape. The chamber is supplied with a number of pipes 18, which communicate therewith
55 and which carry away the steam from the interior which was used in treating the cans. The chamber is also provided with a valve 19, by which the condensed water is drained from said chamber.

60 Having thus fully described my said invention, what I desire to secure by Letters Patent is—

1. In an apparatus for treating canned goods, a chamber provided with ingress and
65 egress apertures, perforate pipes communicating with the chamber for guiding and steaming the cans.

2. In an apparatus for treating canned goods, a chamber provided with ingress and egress apertures, perforate pipes communi- 70 cating with the chamber and forming coils within the latter, said pipes having inclines at predetermined points for shifting the cans.

3. In an apparatus for treating canned goods, a chamber provided with ingress and egress apertures, a moving floor in the cham- 75 ber, perforate pipes communicating with the chamber and forming coils within the latter and adapted to regulate the course of the cans. 80

4. In an apparatus for treating canned goods, a chamber provided with ingress and egress apertures, a moving floor within the chamber, means for operating said floor, per- 85 forate pipes having inclines at predetermined points to shift the cans.

5. In an apparatus for treating canned goods, a chamber provided with ingress and egress apertures, a moving floor carrying racks suitably supported and working within 90 the chamber, perforate pipes communicating with the chamber and forming coils within the latter, for steaming and guiding the cans.

6. In an apparatus for treating canned goods, a chamber provided with ingress and egress apertures, a moving can-receiving floor 95 carrying racks, suitable means engaging with the racks for driving the floor, means communicating with the chamber for directing the cans from the ingress to the egress apertures. 100

7. In an apparatus for treating canned goods, a chamber provided with ingress and egress apertures, a moving floor in the cham- 105 ber for receiving the cans, means for operating the floor, and a means independent of the floor and within the chamber for directing and guiding the cans across the floor.

8. In an apparatus for treating canned goods, a chamber provided with ingress and egress apertures, a moving floor carrying 110 rackssuitably supported within the chamber, means engaging with the racks for driving the floor, a plurality of perforated pipes communicating with the chamber and forming coils within the latter, for steaming and guid- 115 ing the cans, inclines in the line of piping for shifting the cans from one point to another, valves in the pipe for regulating the temperature within the chamber.

9. In an apparatus for treating canned goods, a chamber provided with ingress and egress apertures, a moving can-carrying floor 120 composed of a plurality of concentric rings carrying racks, means engaging with the racks for operating the rings, perforate pipes communicating with the chamber and form- 125 ing coils within the latter, inclines along the line of piping for shifting the cans from one ring to the other.

10. In an apparatus for treating canned goods, a chamber provided with ingress and egress apertures, a movable floor carrying 130 racks within the chamber for receiving the cans, shafts suitably supported and carrying

a plurality of gears which mesh with and drive the racks, perforate pipes communicating with the chamber and forming coils within the latter for steaming and guiding
5 the cans, exhaust-pipes communicating with the chamber for exhausting the steam, and a drain-valve for said chamber.

11. In an apparatus for treating canned goods, a chamber provided with ingress and
10 egress apertures, a movable floor composed of a plurality of concentric rings, carrying-racks, working within the chamber, shafts

suitably mounted and carrying a plurality of gears which mesh with the racks on the rings, means within the chamber for directing the
15 cans across the face of the rings from the ingress to the egress apertures.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 10th day of September, A. D. 1902.

JOHN JENNINGS. [L. s.]

Witnesses:

F. W. WOERNER,
L. E. SHAFER.