

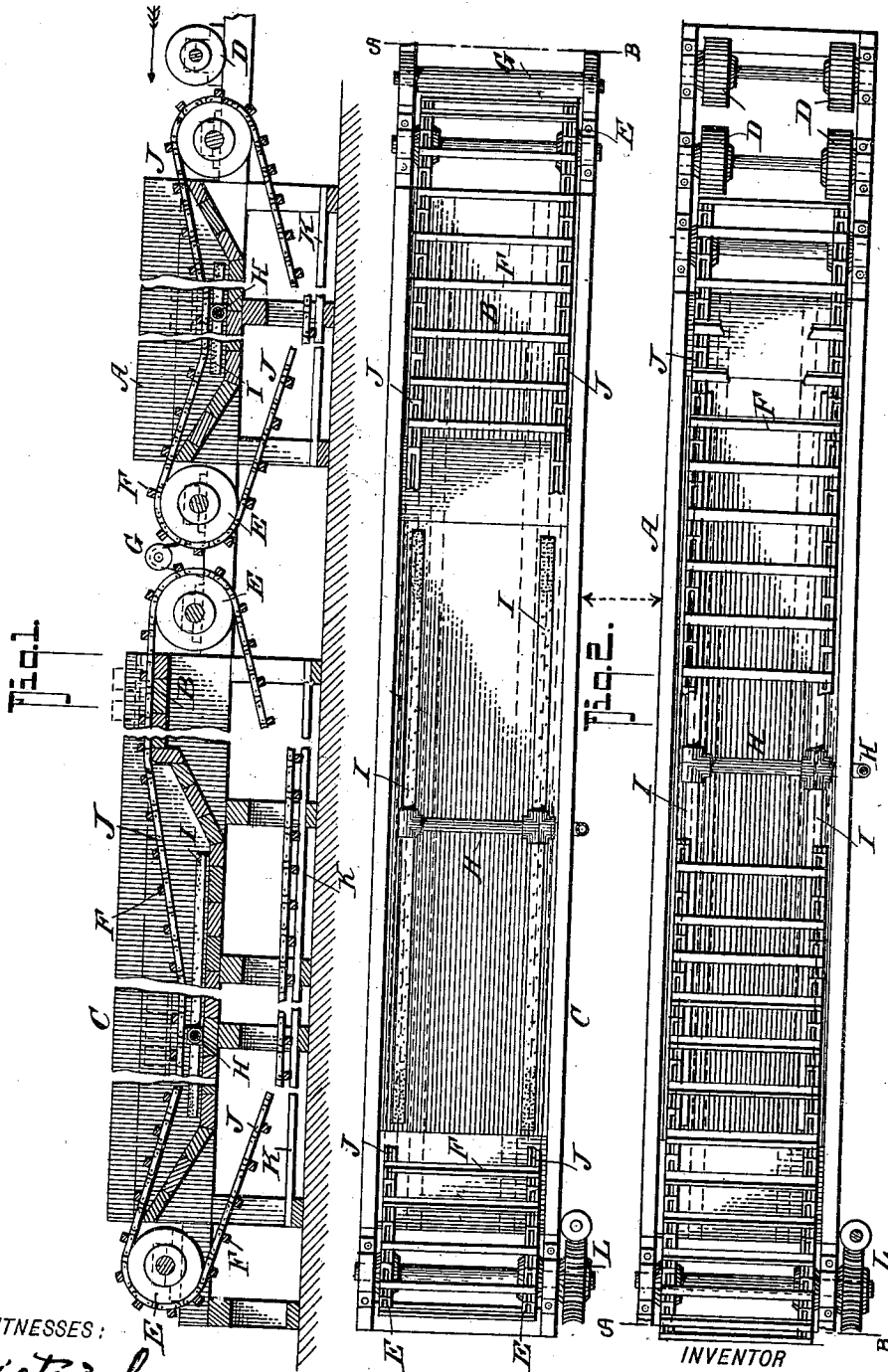
No. 668,491.

Patented Feb. 19, 1901.

T. J. COSENS.  
MACHINE FOR EXHAUSTING AND TESTING CANS.

(Application filed Nov. 1, 1900.)

(No Model.)



WITNESSES:

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# UNITED STATES PATENT OFFICE.

THOMAS JAMES COSENS, OF NEW WESTMINSTER, CANADA.

## MACHINE FOR EXHAUSTING AND TESTING CANS.

SPECIFICATION forming part of Letters Patent No. 668,491, dated February 19, 1901.

Application filed November 1, 1900. Serial No. 35,143. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS JAMES COSENS, a citizen of the Dominion of Canada, residing at New Westminster, in the Province of British Columbia, Canada, have invented a new and useful Machine for Exhausting and Testing Cans, of which the following is a specification.

My invention relates to improvements in the manner of exhausting the steam and air from cans and of testing them after the vent has been soldered up, by which I dispense altogether with what is known as the "first-cooking process" in canning fish, which is really not necessary as a cooking process, but merely serves to expand the air and drive it to the tops of the cans.

In the use of my machine I save the first-cooking retorts and the time and labor necessary in charging the same and closing and opening the steam-tight doors; also, the closing of the vents and reventing, which is found necessary in the use of such a first-cooking system and the considerable handling and moving about incidental to such. I substitute therefor an extremely simple machine wherein the cans are received directly from the soldering-machine for which they have been already vented and during a continuous forward movement are exhausted of air, the vents closed, and the cans finally tested for leaks. I attain these objects by means of the mechanism illustrated in the following drawings, in which—

Figure 1 is a longitudinal section of my machine, and Fig. 2 is a plan of the same.

My machine consists of two shallow baths or troughs A and C, with a table B intervening. These baths are filled with water, which is kept at a high temperature by live steam through the perforated pipes H H I I. Through these baths run conveyers, formed of sprocket-chains J, on each side of the inside of the bath, with slats F across between them. These conveyer-chains are slack enough to allow the weight of the trays of fish to depress them until the cans are immersed in the water, and they are driven at a uniform forward speed by means of sprocket-wheels E at each end of each bath. These are driven from vertical shafts by a worm-wheel L and worm L' at one end of each.

K K are carriers supporting the slack of the return chains.

D D are receiving-rollers at the entering end of the machine, and G is a supporting-roller between the sprocket-wheels of the two separate tanks.

In using my machine the trays of cans are brought direct from the soldering-machine and being run onto the rollers are pushed into the machine until engaged by the cross-slats of the conveyer, which carry them on through the tank of hot water A, the weight of the cans being sufficient to immerse them and the depth of water such as to leave the tops exposed. As they pass through the tank A the heat communicated from the water expels all the air from the cans, and in the further progress of the conveyer they are gradually raised up the incline at the end of the tank and pass over the roller G onto the table B. As they pass over this table attendants stop the vents with a drop of solder. The further movement immerses them slowly but entirely in the tank of hot water, when as the cans become heated up any leakage is revealed by the escaping air-bubbles. The steam-pipes in this tank are arranged close to the sides, and the perforations are accumulated near the ends, so that the disturbance of the water does not interfere with the detection of leaks in the cans. The defective ones are removed, and the remainder are then delivered from the machine in a condition for final cooking or washing and packing, as the process of any particular case may require.

Having now particularly described my invention, what I claim as new, and desire to be protected in by Letters Patent of the United States, is—

1. In combination with a long shallow tank, receiving-rolls at the entering end; a conveyer traveling through the length of such tank; sprocket-wheels at each end to drive such conveyer; a worm-wheel and worm to drive the sprocket-wheel shaft and conveyer at a slow, uniform speed; perforated steam-pipes at the bottom of the tank and means whereby steam is conveyed thereto; a table in line with aforementioned tank the height of which is level with the ends of the tank; a second tank forming a continuation of such table; a conveyer passing over the table and

through the length of this tank; a supporting-roller between the two conveyers; a steam-pipe having branches extending along the sides of the bottom of the tank; perforations  
 5 toward the extreme ends of the branches, and means whereby steam is admitted to the same, substantially as described.

2. In combination with a long shallow tank having receiving-rolls at the entering end and  
 10 a conveyer passing through its length actuated by suitably-driven sprocket-wheels at the ends; a perforated steam-pipe in the bottom of the tank and means whereby steam may be admitted thereto; a table in line with  
 15 the tank, the height of which is level with the ends of the same; a second tank forming a continuation of the table; a conveyer within the width of the tank formed of slats between the sprocket-chains passing over sprocket-  
 20 wheels at the outer end of the table and opposite end of the tank; a worm on a vertical shaft engaging a worm-wheel on the shaft of the sprocket-wheel; a supporting-roller between the conveyers; a steam-pipe at the bot-  
 25 tom of the tank having branches along the sides of the same; perforations toward the extreme ends of the branches, and means whereby steam is admitted to the same, all substantially as described.

3. In combination with a tank having a table in continuation of the same, and a conveyer passing over the table and through the tank; a second tank forming a continuation of aforesaid tank and table; a conveyer in  
 35 the second tank; sprocket-wheels by which such conveyer is driven; a vertical shaft carrying a worm-gearing with a worm-wheel on the sprocket-wheel shaft; a supporting-roller between the conveyers; receiving-rollers at  
 40 the entering end of the second tank, and per-

forated steam-pipes in the bottom of the tank, all substantially as described.

4. An apparatus for the purposes described, comprising two water-holding compartments or tanks, a table between the two tanks in a  
 45 plane above the water-line, means for conveying the cans into one compartment, said means being arranged to cause a partial immersion of the cans as they pass through the  
 50 said compartment, said means including devices for carrying the partly-immersed cans over the table, and then conveying said cans down and through the second compartment, entirely immersing said cans, and then pass-  
 55 ing same out of said last compartment, as specified.

5. An apparatus for the purposes described, comprising two water-holding tanks disposed in the same longitudinal plane, means located in the tank for heating the water therein, a  
 60 table between the adjacent ends of the two tanks, disposed in a plane above the water-level in the tanks, an endless conveyer for the first tank, having a slack portion arranged to cause a partial immersion of the cans as they  
 65 pass through the first tank, a second endless conveyer for the second tank, said conveyer passing over the table and having a slack portion adapted to fully immerse the cans as they pass through the second tank and for  
 70 discharging same after being immersed, all being arranged substantially as shown and for the purposes described.

In testimony whereof I have signed my name to this specification in the presence of  
 75 two subscribing witnesses.

THOMAS JAMES COSENS.

Witnesses:

W. G. TRETHERWEY,  
 ROWLAND BRITAIN.