

No. 607,656.

Patented July 19, 1898.

F. A. DIXON.

AUTOMATIC COOKING APPARATUS FOR CANNERIES.

(Application filed Mar. 2, 1897. Renewed June 2, 1898.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

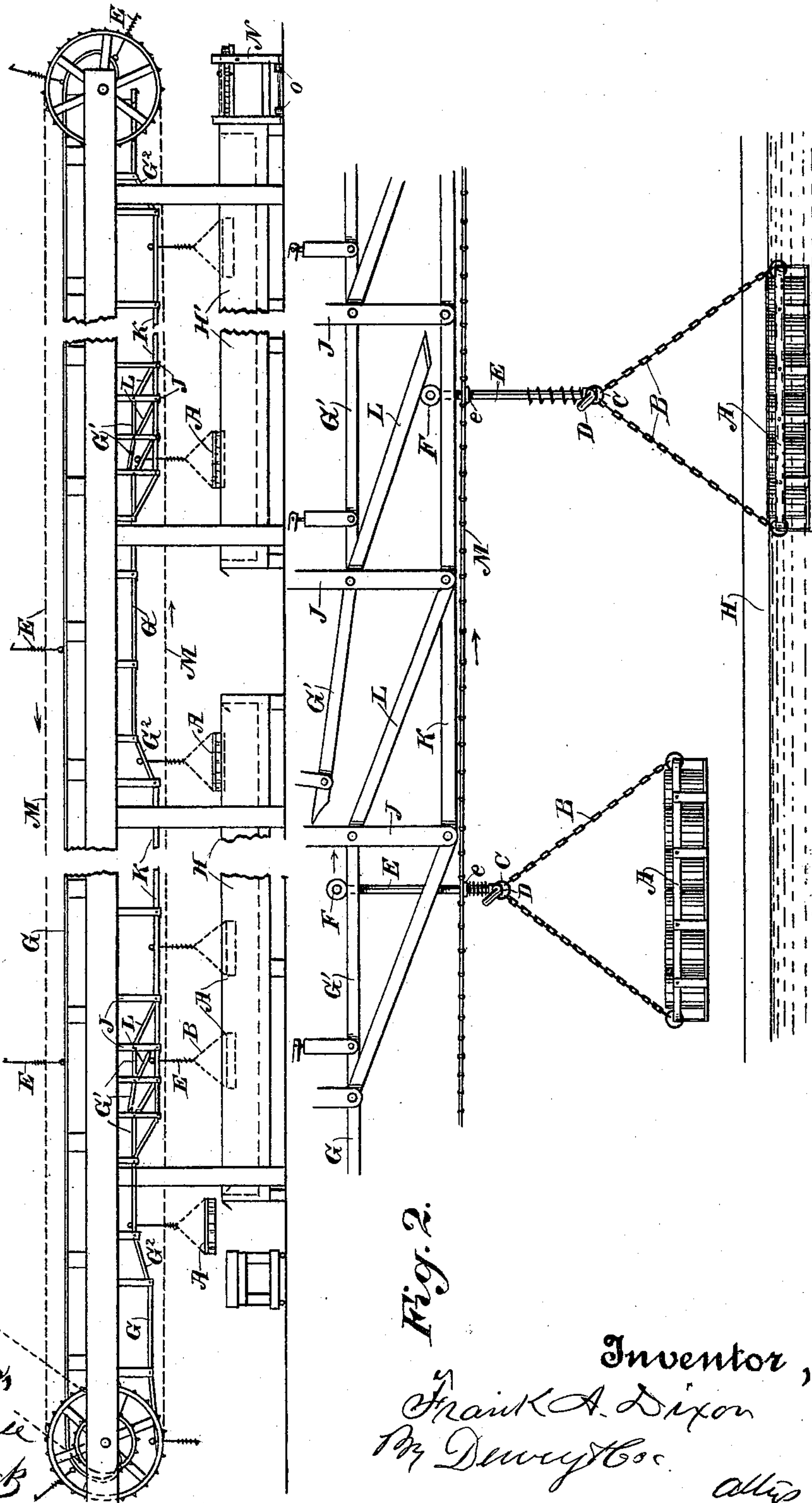


Fig. 2.

Witnesses,
St. Louis
H. F. Elschegg

Inventor,
Frank A. Dixon
By Dwyer & Co. atty

No. 607,656.

Patented July 19, 1898.

F. A. DIXON.

AUTOMATIC COOKING APPARATUS FOR CANNERIES.

(Application filed Mar. 2, 1897. Renewed June 2, 1898.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 3.

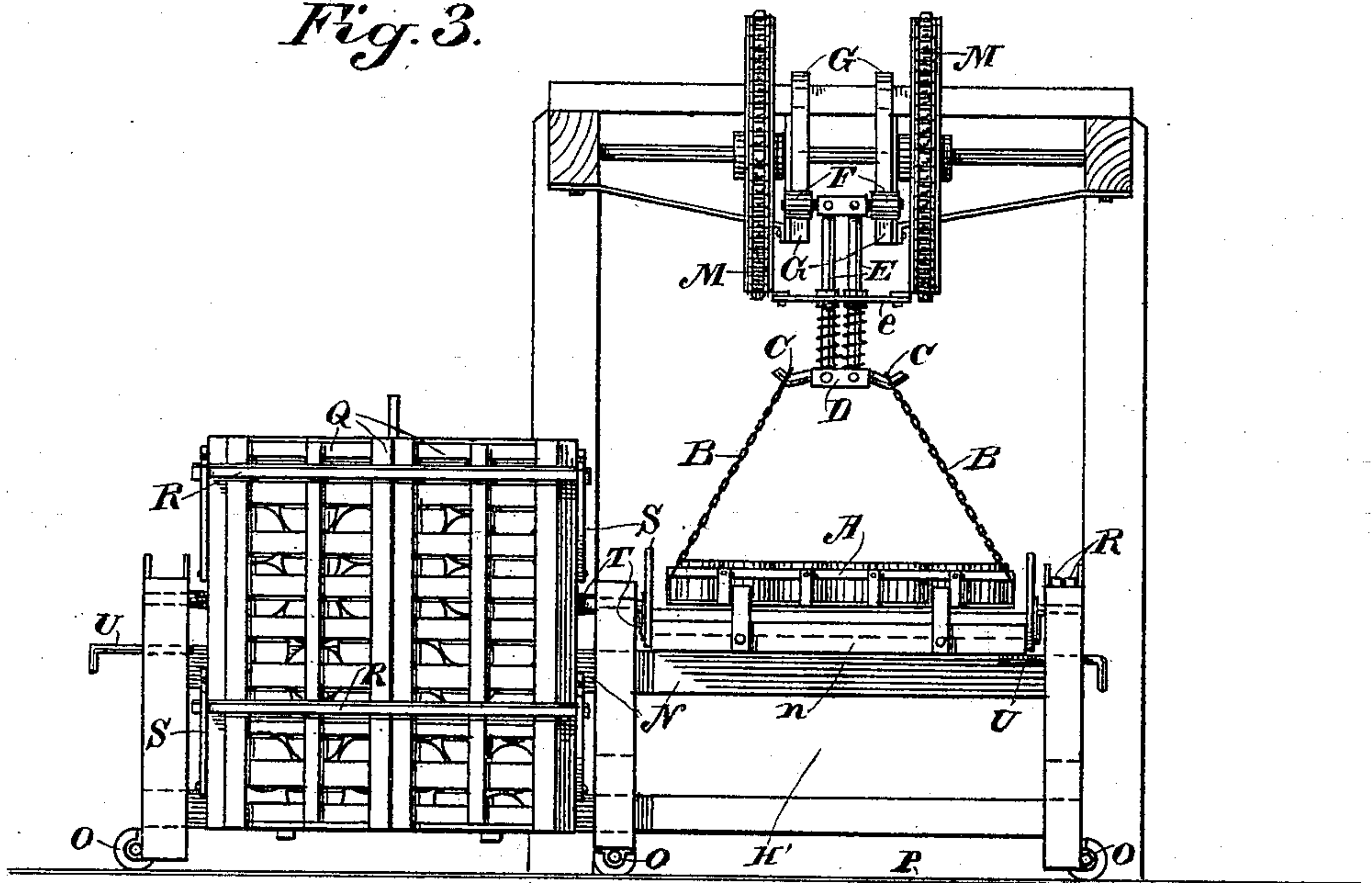
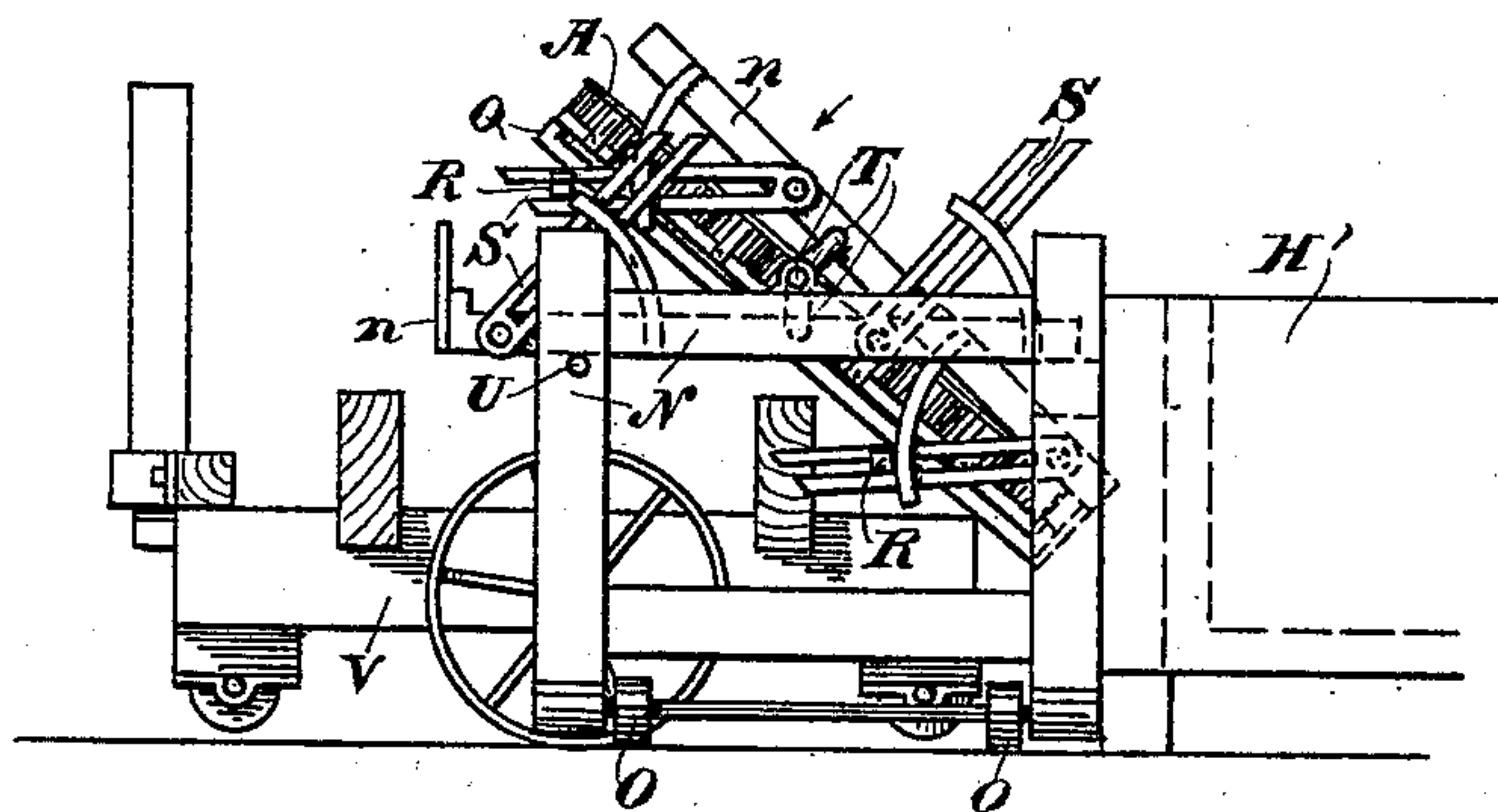


Fig. 4.



Witnesses,
J. H. Source
J. F. Aschbeck

Inventor,
Frank A. Dixon
By Dewey & Co.
attys

UNITED STATES PATENT OFFICE.

FRANK A. DIXON, OF SAN JOSÉ, CALIFORNIA.

AUTOMATIC COOKING APPARATUS FOR CANNERIES.

SPECIFICATION forming part of Letters Patent No. 607,656, dated July 19, 1898.

Application filed March 2, 1897. Renewed June 2, 1898. Serial No. 682,409. (No model.)

To all whom it may concern:

Be it known that I, FRANK A. DIXON, a citizen of the United States, residing at San José, county of Santa Clara, State of California, have invented an Improvement in Automatic Cooking Apparatus for Canneries; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to a device which is especially adapted for use in canneries and places where large amounts of canned goods are prepared for the market.

It consists in the parts and the constructions and combinations of parts hereinafter described and claimed.

Figure 1 is a perspective view of the apparatus. Fig. 2 is a detail view of the switches, hangers, and connections. Fig. 3 is an end view of the discharge end and delivering-truck. Fig. 4 is a side elevation of the same.

The object of my invention is to provide a means for mechanically transferring the prepared cans, automatically submerging them, first, into a tank known as the "exhauster," in which the air is expelled, removing them from this tank until the vents are sealed, then submerging them by continuous operation into the final cooking-tank, regulating the time during which the cans are submerged in the first tank and in the second cooking-tank without changing the speed of the carrier, and in providing a rapid and convenient means for removing and discharging the cans after the operation is completed. The cans having been filled and capped are placed in pans A, which are made of straps of metal riveted together, so as to provide an open framework called a "pan," which may be of any suitable size. From the angles or sides of the pan chains B extend and are provided with links C, by which they are hooked upon the carriers D. These carriers are fixed to the lower ends of hangers E, which extend upwardly and are connected at the upper ends with trolleys or trucks F, which are adapted to travel upon a track or tracks G, extending above the tanks H and H'. These tanks contain water which is kept heated to the boiling-point in any suitable or usual manner, and the trolley-tracks G, extending in line above the tanks, are formed with sections G', as shown, hinged to suitable sup-

porting-hangers J, so that any section may be turned about the hinge-point and lifted up to interrupt the continuity of the track. Beneath and parallel with the upper trolley-tracks G are the lower trolley-tracks K. From the ends of each of the interrupted or broken sections are inclines L, by which the trolleys may be transferred from the upper to the lower tracks. While the suspended pans containing the cans are supported from the upper track, the pans are carried just above the cooking-tanks, and when the trolleys are transferred to the lower tracks K the pans, with their contained cans, will be submerged in the boiling water. The submergence of the cans is thus attained by allowing the trolleys to pass from the upper line of track G to the lower line K. The pans are moved along slowly by means of an endless traveling chain or chains M, passing over suitable carrying and driving wheels at opposite ends, and through any suitable or desired mechanism power is applied to rotate these wheels and cause the chains to travel at any desired rate of speed. The hangers E, from which the pans are suspended, have arms e projecting from them and adapted to engage with the chains M, so that as the chains move they cause the pans to travel along at such rate of speed as may be determined. This rate of speed may be varied by changing the sprocket-wheels or gear through which power is applied, and this may be varied to suit the different substances which are to be cooked, some for a greater time than others, and to suit the time which it is desired to have the cans submerged in the first tank for the purpose of exhausting the air. The arrangement of the switch-tracks in the upper supporting-track G enables the operator to make any changes desirable without altering the speed of the chain when it is set for any one particular class of goods. The operation of this portion of the device will then be as follows: The pans being loaded the finished cans are brought to the apparatus on trucks upon which they have been placed and the chains connected with the hooks of the suspending-rods. The track G at the point where the pans are first brought beneath it is sufficiently low so that the chains are easily connected with the suspending-rods, and as the

pans are then carried along by the connection with the chain the trolleys will be moved up a small incline G^2 until they reach the upper level along which the trolleys are to travel.

5 The pans are then suspended sufficiently high to pass over the cooking-tanks. If it is desired to immerse the cans in the first, or, as it is called, "exhaust," tank, one of the sections G' will be turned up in the upper track
10 G , so that when the trolleys arrive at that point they will pass down the connecting incline L to the lower track K , thus submerging the pan and its contained cans as deeply as may be desired, and the continued move-
15 ment of the chain carries the pan along within the tank for the desired length of time, after which the trolley moves up another incline, which raises the pans out of the water, and during the time that they are passing
20 from this tank to the final cooking-tank the workmen will seal the vents which were made in the caps to allow the air to exhaust. By the time this is completed the pans will be in readiness to enter the final cooking-tank.

25 If the time during which the cans are submerged in the exhaust-tank is to be three minutes, the switch L , between the tracks G and K , will be adjusted so that at a certain rate of travel of the chain the cans will be
30 submerged for that length of time. When they have reached the final cooking-tank, if it be desired to immerse them for six minutes the same operation is performed, a switch connection being made between the
35 tracks G and K , which will immerse the cans at such a point that it will take six minutes for them to pass to the point where they are again lifted out of the tank.

It will be manifest that with a certain rate
40 of speed of chain and a sufficient length of tank different articles may be subjected to the cooking process for different lengths of time by simply making a switch connection between the trolley-tracks at earlier or later
45 points along the line, as in cooking fruit it might be desirable to cook apricots for six minutes and peaches for twelve minutes, and although it is not likely that articles needing a great variety of time in cooking would be
50 canned at one time it would still be possible to thus regulate the cooking to various articles, if desirable.

When the cooking is completed, the cans are removed from the final cooking-tank by
55 the trolleys passing up another incline G^2 , which brings them again upon the upper level, thus suspending the pans containing the cans at a sufficient height to allow them to clear the cooking-tank and pass beyond it.

60 In order to dispose of the pans and cans with sufficient rapidity as they are delivered at the finishing end, I have shown a system of dump and transfer cars, which are arranged as follows:

65 N is a double truck consisting of vertical posts and suitably-connected framework having wheels O , which travel upon lines of

track P transversely to the end of the cooking-tank. The double truck is moved so that one part is brought into line with the cooking-
70 tank, and as the pan containing the cans arrives over the track the trolleys pass off the track or by other means the pan, with its contained cans, is let down upon the truck. Frames or covers Q are then placed over the
75 upper ends of the cans, and bars R , extending across these covers, are laid into diagonal slots formed of iron bars, as shown at S , upon each side. The bars being laid into these diagonal slots serve to temporarily hold the
80 covers upon the tops of the cans.

The floor n of the truck upon which the pans are set is pivoted or journaled, as shown at T , and it is held in place by a locking-bolt
85 U or other suitable means. The truck is then moved along the track until the opposite end is brought in line with the cooking-tank to receive a pan, and while this is being done the first truck is discharged by withdrawing
90 the locking-pin and allowing the floor and the pan containing the cans to turn up on edge, as it will do by gravitation, because it is a little overbalanced to one side of the pivot-line. When in this position, a floor-
95 truck v is run under it, causing it to turn the rest of the distance about its axis, and thus reverse it, so that the pan is then on top while the covers are underneath, resting on the truck. The pan is then removed and
100 taken to the capping-machine for another charge. The holding-bars R slip out of the inclined slots by gravitation when the reversal takes place and may then be removed for use with the next load. The bottom of
105 the double truck swings back into its place and is locked ready to be returned as soon as the opposite end has been filled. By means of this transferring-truck I am enabled to handle the cooking-pans as fast as they arrive, and as they arrive very closely together
110 it needs expedition to get each pan out of the way in time for the next.

The whole apparatus works with very little need of attention, except to bring the pans to the conveyer to regulate the switch-tracks,
115 so that they will be delivered into and out of the tanks at the proper instant and to attend to the transfer car or truck by which they are finally removed.

Having thus described my invention, what
120 I claim as new, and desire to secure by Letters Patent, is—

1. In a cooking apparatus, tanks extending in line with each other, pans adapted to contain cans of material to be cooked, a sus-
125 pending device for each of said pans, tracks extending longitudinally above the cooking-tanks, one above the other, trolley-wheels adapted to travel upon the upper track to suspend the pans above the tanks and switch-
130 track connections between the upper and lower tracks, whereby the trolleys are transferred and the pans submerged in the tanks.

2. In a cooking apparatus, cooking-tanks

extending in line, parallel tracks situated one above the other in line over the tanks, trucks or trolleys adapted to travel on said tracks with suspending devices, pans adapted to contain the cans of material to be cooked with means for connecting them with the suspending devices and trolleys, sections formed in the upper track whereby its continuity is interrupted at any desired point, and switch-tracks forming continuations between the upper and lower track, at the points of interruption, whereby the suspending devices are transferred and the cans lowered into the cooking-tank at any desired point.

3. In a cooking apparatus, tanks disposed in line with each other, tracks situated above the tanks one above the other, trolleys or trucks with suspending apparatus and pans adapted to contain the cans of material to be cooked, said pans being connected with the suspending apparatus, jointed sections formed in the upper track adapted to be turned upward to break its continuity and inclined connections between the interrupted track and the one below, whereby the trolleys pass from one track to the other and the pans are submerged in the tanks beneath, and an endless traveling chain or chains with connections whereby the pans are constantly moved at a given rate of speed.

4. In a cooking apparatus, tanks situated in line with each other, double superposed tracks fixed in line above the tanks, trolleys adapted to travel upon said tracks, and pans containing cans of material to be cooked said pans being suspended from the trolleys, an endless traveling chain with means for engaging it with the suspending devices whereby the pans are moved at a uniform rate of speed, hinged sections in the upper track whereby its continuity is interrupted, and inclined connecting-sections between it and the track below whereby the pans containing the cans are submerged in the cooking-tanks and caused to travel therein for any desired length of time and other inclines whereby the cans are raised out of the tank whereby different pans traveling at the same rate of speed may be submerged in the cooking-tanks for different lengths of time.

5. In a cooking apparatus, tanks extending

in line with each other, pans containing material to be cooked, with suspending and propelling mechanism whereby they are moved at a regular rate of speed above the cooking-tanks, and means for submerging the pans and their contents and again removing them whereby the time of submersion may be varied without change of speed of the carrier.

6. In a cooking apparatus, a transfer-car having a pivoted revoluble bottom, inclined slotted channels connected therewith, covers adapted to be placed upon the tops of the cans after the pan containing them has been lowered upon the car, and bars placed in inclined slots whereby the covers are held in place, a locking-pin whereby the car-bottom is retained in horizontal position until the car has been moved to one side of the line of the tank, said bottom being revoluble upon its axis to allow the pan and cans to be reversed upon the truck or support beneath, whereby the pan may be removed and the cans transferred bodily from the cooking-tanks.

7. In a cooking apparatus, a double transfer-car movable upon tracks transversely to the end of the cooking-tank, each end of the car having a pivoted revoluble bottom adapted to receive one of the pans when either end is brought opposite the tank, said bottom being capable of revolution upon its axis after the car has been moved so as to bring the loaded end within line with the tank whereby the contents of said end may be discharged while the other platform of the car is receiving another pan.

8. In a cooking apparatus of the kind described, a single continuously-moving carrier, heated tanks in which the cans are first immersed to exhaust the air, and after sealing, again immersed to complete the cooking, and mechanism by which the cans are continuously moved and the time of immersion varied without changing the rate of speed of the carrier.

In witness whereof I have hereunto set my hand.

FRANK A. DIXON.

Witnesses:

S. H. NOURSE,
JESSIE C. BRODIE.