

(No Model.)

2 Sheets—Sheet 1.

J. S. MOORE.
CAN FILLING MACHINE.

No. 490,033.

Patented Jan. 17, 1893.

Fig 2.

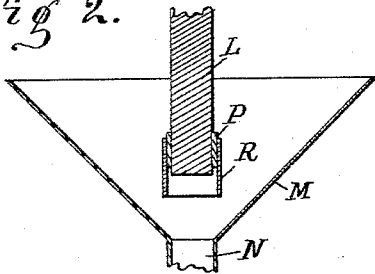


Fig. 4.

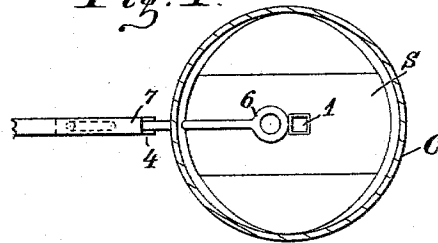
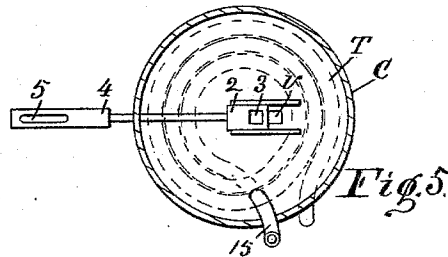
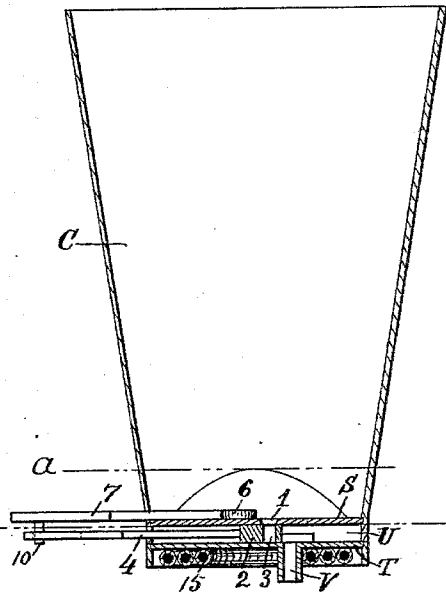
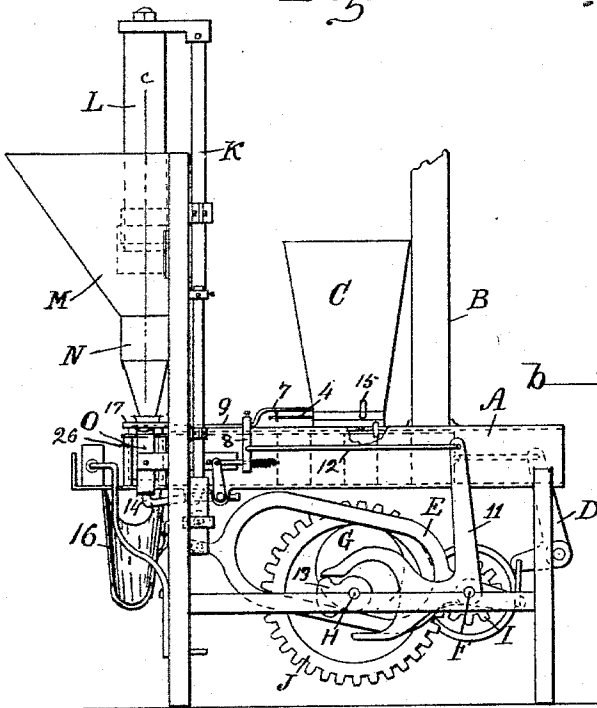


Fig. 3.

Fig. 1.



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BY

H. P. Hood.

ATTORNEY.

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Fig. 7.

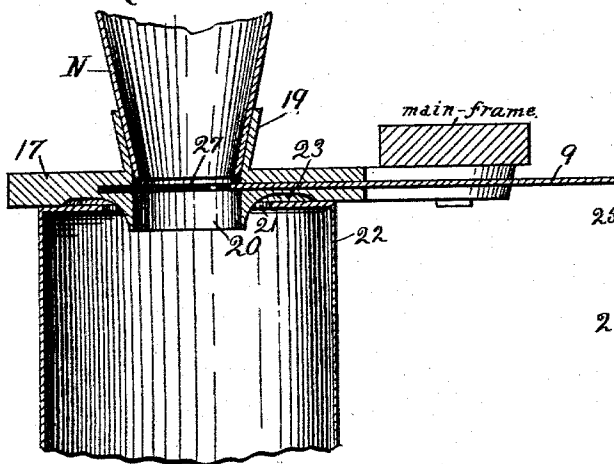


Fig. 8.

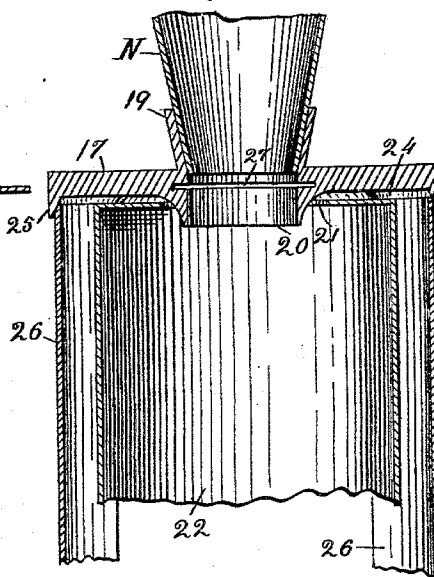
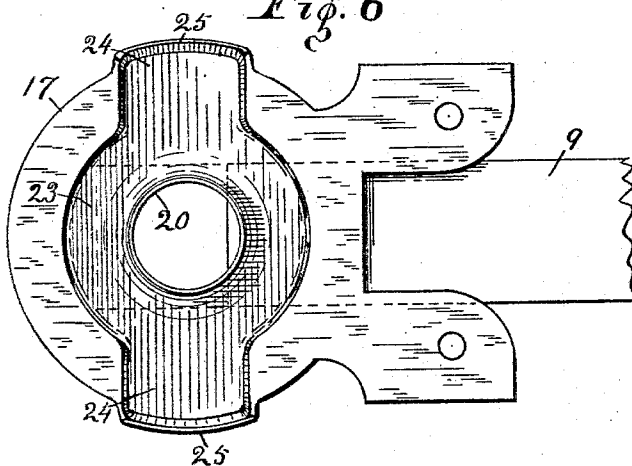


Fig. 6.



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UNITED STATES PATENT OFFICE.

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CAN-FILLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 490,033, dated January 17, 1893.

Application filed August 3, 1892. Serial No. 442,038. (No model.)

To all whom it may concern:

Be it known that I, JAMES S. MOORE, a citizen of the United States, residing at Sullivan, in the county of Sullivan and State of Indiana, have invented a new and useful Improvement in Can-Filling Machines, of which the following is a specification.

My invention relates to an improvement in a can-filling machine, for which Letters Patent No. 468,888, were issued to me February 16, 1892.

The objects of my present improvements are, to simplify the salt-dropping mechanism; to provide means for controlling the flow of material from the filling-hopper, and to provide means for directing the overflow of liquid from the can during the process of filling, all as hereinafter fully described.

The accompanying drawings illustrate my invention.

Figure 1 represents a side elevation of the complete machine. Fig. 2 represents a vertical section of the hopper and plunger, at *a-c*—Fig. 1. Fig. 3 represents, on an enlarged scale, a central vertical section of the salt-chamber and the salt-dropping mechanism. Fig. 4 represents a plan at *a-a*—Fig. 3. Fig. 5 represents a plan at *b-b*—Fig. 3. Fig. 6 represents a plan, on an enlarged scale, of the under side of the face-plate which is secured to the lower end of the hopper-spout, and against which the top of the can rests when in position for filling. Fig. 7 represents a vertical longitudinal section of said face-plate. Fig. 8 represents a vertical transverse section of the same.

In the drawings, A, indicates the can-trough into which the cans are delivered through a vertical chute B. C, is the salt-chamber beneath which the cans pass as they traverse the can-trough; being pushed forward successively by the oscillation of the bell-crank lever D. Lever D is oscillated by means of a lever, E, pivoted upon the shaft F, and operated by means of the cam G, which is secured to the shaft H, so as to rotate therewith, the shaft being driven by means of a pinion, I, which is secured to the driving shaft F and a gear-wheel, J, which is secured to shaft H. Lever E is connected also to the vertical rod K, to the upper end of which plunger L is se-

cured. M, is a hopper terminating in a spout N, beneath which the cans are held, successively, by jaws O. All of these above described parts are similar in their general arrangement, and operation to like parts shown and described in my above mentioned letters patent, and need not be here further described.

For the purpose of controlling the flow of the material from hopper M to the spout N, I secure to the fixed bearing, P, in which the plunger L slides, a cylindrical sleeve, R, which is vertically adjustable upon the bearing so as to project to a greater or less extent below the lower end of the plunger when the plunger is at the upper limit of its stroke, thereby obstructing the entrance to the spout to any desired extent.

For the purpose of delivering a measured amount of salt into each can as it passes beneath the salt chamber, said chamber is constructed with two bottoms, S, and T, having a narrow space, U, between them. Bottom T is provided with a short spout, V, which communicates with space U and with the interior of the can-trough. The bottom S, is provided with a small opening, I, which is arranged at one side of the entrance to spout V. Fitting nicely between bottoms S and T, is a sliding valve 2, having a port, 3, extending vertically through it. Valve 2 is provided with a valve-rod, 4, which projects through the side of the chamber and is provided at its outer end with a longitudinal slot 5. Arranged to slide on the upper surface of bottom S, across the opening 1, is an agitator, 6, which is for the purpose of agitating the salt and insuring its entrance through opening 1 into the port 3, of the valve. Agitator 6 is provided with connecting-rod 7, which projects through the side of the salt-chamber and is attached to a vertical bar 8, to which is also attached a sliding plate, 9, which closes the mouth of spout N during the removal of the filled cans and the coming of an empty can into position beneath the spout. Connecting-rod 7, is provided on its under side with a pin 10, which projects into the slot 5 in valve-rod 4. Bar 8 is given a horizontally reciprocating movement by means of a bell-crank lever, 11, pivoted upon shaft F and having one arm con-

connected with bar 8, by means of a connecting rod 12, and engaging with the other arm of the cam 13, which is secured to shaft H so as to turn therewith. The lower end of bar 8 is connected with the can-lifter, 14, in a common and well known manner.

For the purpose of keeping the salt dry in chamber C, valve 2, and spout V, and in condition to flow readily through the valve and spout, I arrange beneath the double bottom of the chamber and surrounding the spout, a coil of pipe, 15, which is connected with a source of steam-supply, (not shown).

For the purpose of directing the overflow from the can, when being filled, into the waste-trough, 16, I mount upon the front of the main-frame, beneath spout N, a face-plate 17, having upon its upper surface a circular flange, 19, adapted to receive the lower end of spout N; and having upon its under side, concentric with spout N, a flange 20, adapted to enter the opening 21 in the top of the can 22, Figs. 7 and 8. Said flange 20 is of less diameter than the opening in the can, and is surrounded by a circular recess 23 of less diameter than the can, cut in the under face of the face-plate, and having, on opposite sides, lateral extensions 24, which extend beyond the periphery of the can, as shown in Fig. 8; the arrangement being such that the top of the can when in position for filling, is in contact with the smooth under-face of the face-plate, except at those points which are opposite the recess 23, and its extensions. The outer ends of the extensions 24, are closed by flanges 25, to which are connected vertical guides 26.

Plate 17 is provided with a horizontal slot 27, in which is mounted the sliding plate 9, which operates as a valve to cut off the flow of material from spout N, to the can.

The operation of the improved portions of my machine is as follows. The empty cans, having entered trough A through chute B, are pushed forward in succession by the oscillation of lever D, and, as a can comes to rest beneath the spout V, the vertical arm of lever 11 is thrown backward by the movement of cam 13, thus drawing bar 8 backward; the first part of its movement operating to slide agitator 6 across the opening 1 in the bottom of the salt chamber, thus insuring the filling with salt of the port 3, in valve 2. As soon

as pin 10, in connection-rod 7, traverses the length of slot 5, valve 2 is also pushed backward until its port 3 registers with spout V. the solid portion of the valve operating to close opening 1, and the salt being discharged from port 3, through spout V, into the can. The reverse movement of lever 11, restores the parts to the position as shown in Fig. 3. The can having reached a position beneath the face-plate 17 is held by lever 14, in contact with the under side of the face-plate, the flange 20 entering loosely the opening in the top of the can. As the can is filled with material from spout N, the air from the can escapes through the opening in its top around flange 20 and into recess 23, the air carrying with it a portion of the liquid from the material with which the can is being filled, which liquid, passing into the extensions 24 of recess 23, is conducted, by vertical guides 26, into the waste-trough 16, thus avoiding the scattering of the liquid about the machinery. I claim as my invention;

1. In a can-filling machine, the combination with the salt-chamber having bottoms S, and T provided, respectively, with opening 1 and spout V, of the sliding-valve 2 having port 3 adapted to register with said opening or said spout, and arranged to slide between said bottoms, the slotted valve-rod 4 attached to said valve, rod 7 attached to agitator 6 and provided with pin 10 arranged to engage said valve-rod, the revoluble cam 13, and the intermediate connecting mechanism connecting said cam and said rod 7 so as to impart a reciprocating movement to the rod, all arranged to co-operate substantially as set forth, whereby at each revolution of the cam the agitator is first caused to traverse the opening in the bottom of the salt-chamber and the valve is then moved in the same direction.

2. In a can-filling machine, the combination of the salt chamber having bottom S, having opening 1, sliding valve 2, false bottom T, provided with spout V, and the steam coil 15 arranged beneath said false bottom and surrounding said spout as and for the purpose set forth.

JAMES S. MOORE.

Witnesses:

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JAMES HASLAM.