

(No Model.)

4 Sheets—Sheet 1.

T. O. BALLARD & J. C. STEWART.
CAN FILLING MACHINE.

No. 510,953.

Patented Dec. 19, 1893.

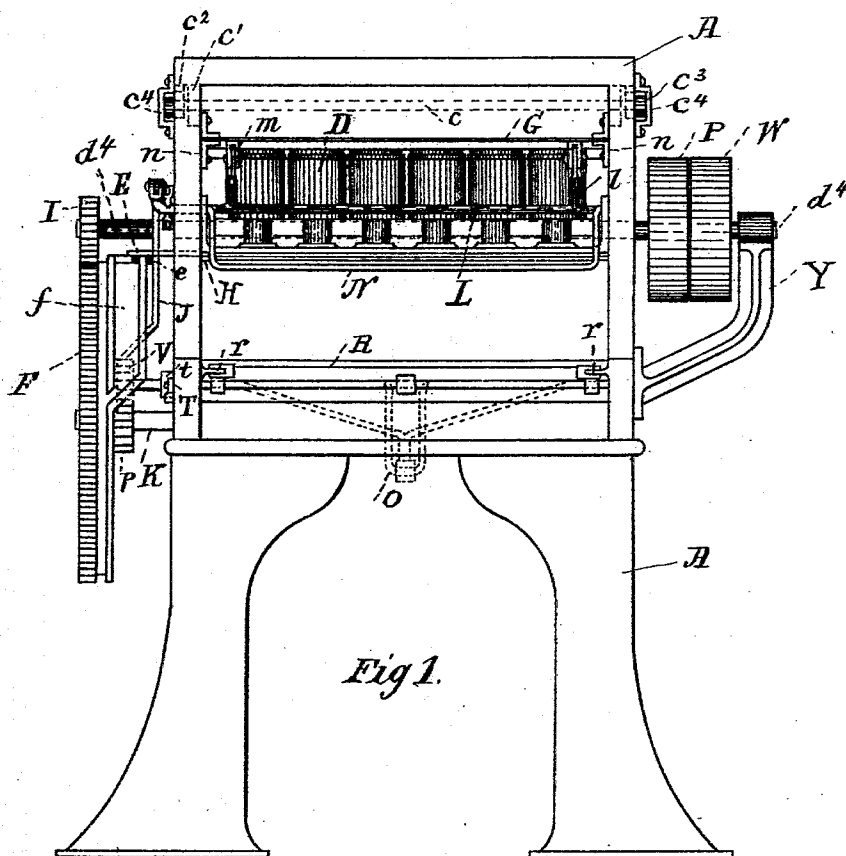


Fig 1.

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BY *Jno. S. Thurman*
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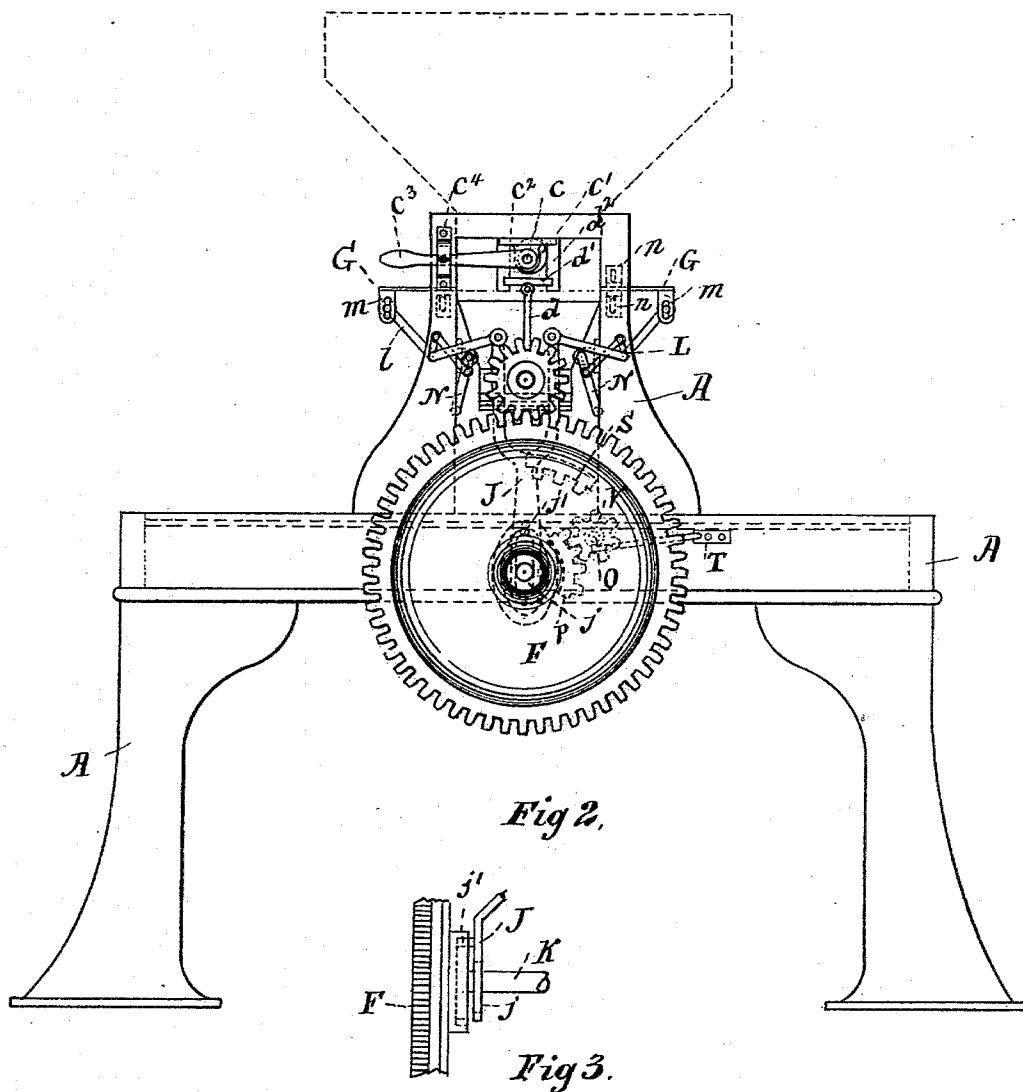
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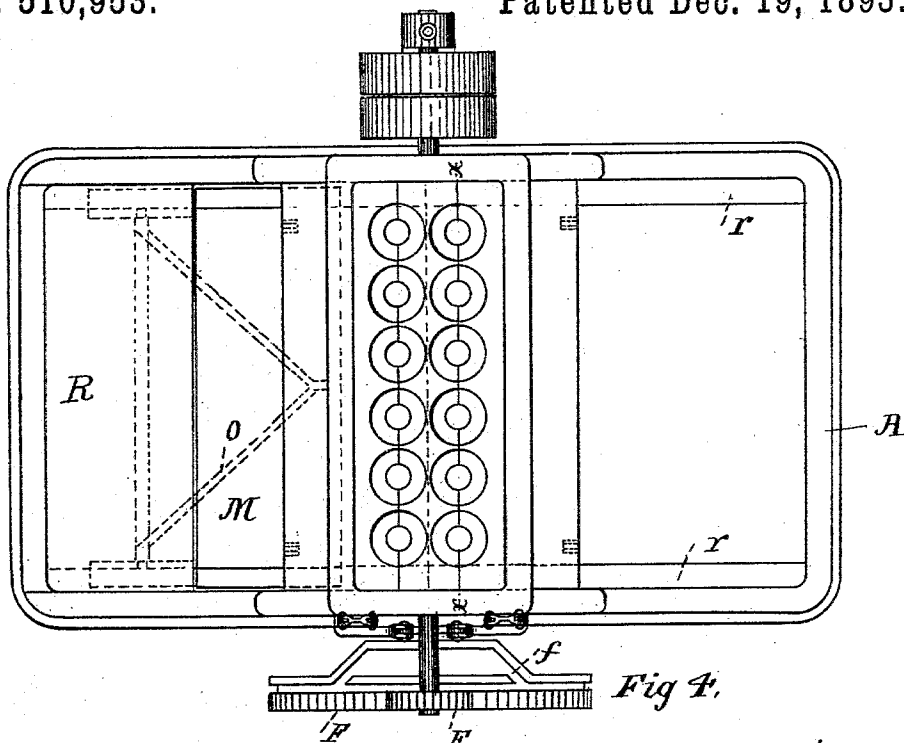


Fig 4.

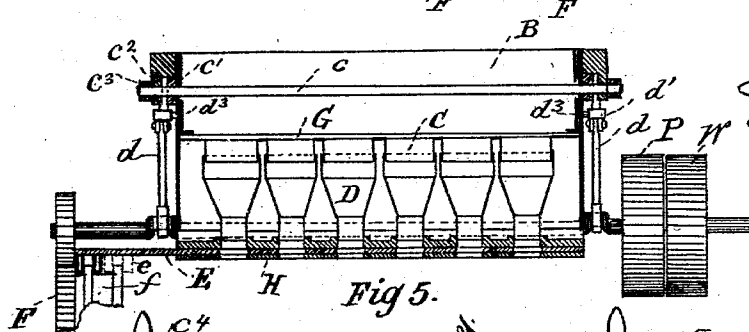


Fig 5.

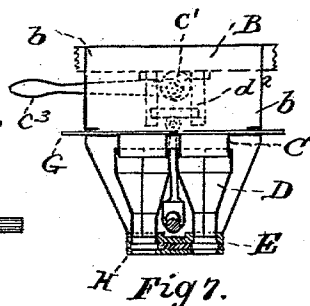


Fig 7.

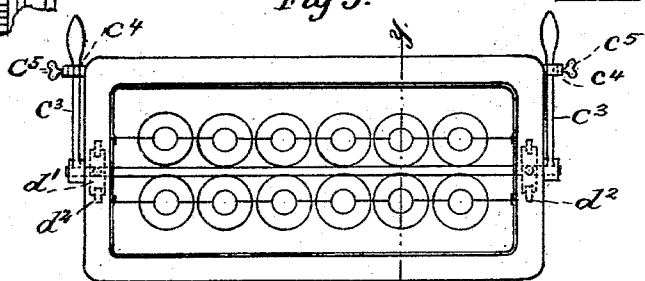


Fig 6.

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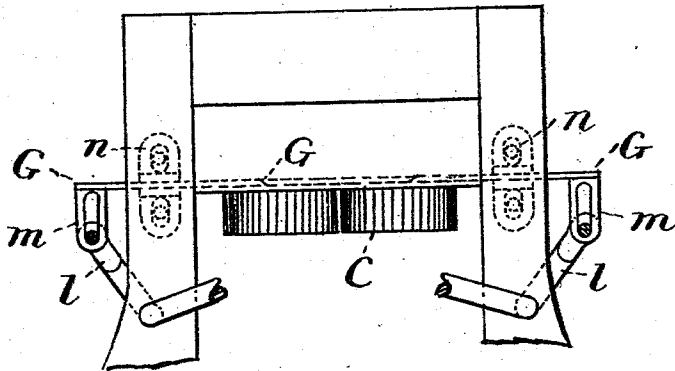
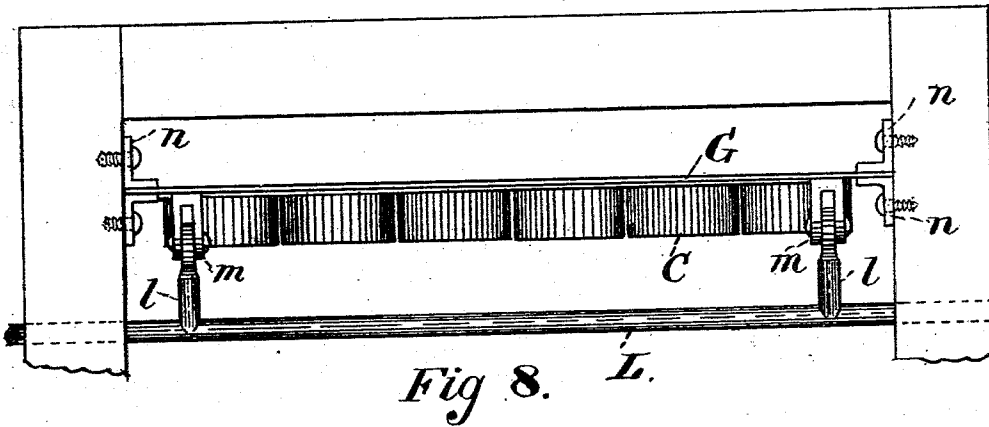


Fig 9.

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UNITED STATES PATENT OFFICE.

TAYLOR O. BALLARD, OF FRANKLIN, AND JOSEPH C. STEWART, OF GREENWOOD, INDIANA; SAID STEWART ASSIGNOR TO SAID BALLARD.

CAN-FILLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 510,953, dated December 19, 1893.

Application filed January 31, 1893. Serial No. 460,443. (No model.)

To all whom it may concern:

Be it known that we, TAYLOR O. BALLARD, of Franklin, and JOSEPH C. STEWART, of Greenwood, in the county of Johnson, State of Indiana, citizens of the United States, have invented certain new and useful Improvements in Can-Filling Machines; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Our invention relates to an improvement in a can filling machine for peas, and has for its object to provide a simple and effective means for feeding the cans on a sliding table to the filling device, and means for holding the cans together and in position after the cans have reached the position for filling and means whereby the cans are released, and removed after being filled, and further to provide means for automatically closing the inlet after sufficient quantity of peas have passed into the hopper, and opening the bottom of the hopper to discharge the contents into the cans immediately after the top is closed and vice versa, and to provide a hopper for the peas so as it can be easily adjusted or elongated for filling cans of different capacities.

A further object of the invention is to provide a vibrating vertical motion to a section of the hopper, or to vibrate the two halves in opposite directions, so as to prevent the peas from clogging before entering the can.

The invention as stated above is particularly adapted for filling peas, but can be used for filling cans with fruit, vegetables, and oysters as well.

To these ends and to such others as the invention may pertain, the same consists in the peculiar construction and in the arrangement and adaptation of parts, all as more fully hereinafter described, shown in the accompanying drawings and specification and defined in the appended claims.

The invention is clearly illustrated in the

accompanying drawings, which with the letters of reference marked thereon, form a part of this specification, like letters of reference indicating the same parts throughout the several views, in which—

Figure 1, represents an end elevation; Fig. 2, a side elevation. Fig. 3, shows the cam movement on the large gear wheel which imparts motion to the top cut off. Fig. 4, is a plan view. Fig. 5, represents a vertical section taken on line *x, x*, of Fig. 4. Fig. 6, is a plan view of Fig. 5. Fig. 7, is a vertical cross section of the hopper on line *y, y*, of Fig. 6. Fig. 8 shows an enlarged view of the top cut off plates. Fig. 9 represents a side view of Fig. 8.

In the drawings A represents the frame of the machine which may be of any suitable form or construction.

B is a receptacle for the peas before entering the hoppers with the sides *b*, snugly fitting inside the frame of the machine.

C, is the graduating top plate of the hopper, and is designed to measure the quantity of the peas to fill cans of different capacities, by means of the shaft *c* which extends across the frame and with eccentrics *c'* on its outer end bearing on the under side of the frame, and with bearings *c²* to support the shaft. Shaft *c* is provided at each end with the lever *c³*, which slides in the guide bracket *c⁴*, and has adjusting screws *c⁵* to hold the shaft firmly in place.

D is the hopper and is made in three sections and to prevent the peas from being clogged before reaching the cans is preferably made with the two outer sections stationary and with the middle section vibrated by means of a bell crank on the main shaft *d¹* which imparts motion to the hopper by means of a connecting rod *d*, and cross-head *d'*, sliding in the guides *d²*. The hopper is connected to the cross-head at *d³*. We do not confine ourselves to vibrating the middle section only, but all three can be vibrated as well.

F, is the large gear wheel which is mounted on the frame A, and is driven from the small

gear I on the main shaft, but if different speeds are required it can be driven with intermediate gearing. f , is the groove track on the inner side of the large gear, and is intended to be shaped as shown to impart the correct reciprocating motion to the plate E, which has the pins e , traveling in the grooved track so that when the top cut off plate G, is open to receive the peas in the hopper, the bottom plate E is closed, and when the bottom plate or cut off is opened, the top plate is closed by means of a cam movement which will be more fully described hereinafter.

H, is a plate perforated with holes to serve as a guide for the reciprocating plate E.

J, represents a bifurcated arm which has the slot j adapted to fit over the shaft K, and has a pin j' designed to travel in the grooved track of the cam to impart the vertical reciprocating motion to the arm J, which causes the top cut off plate to open and close by means of the shafts L, extending across the frame of the machine, with the extension arm l connected to the jaw m , which has the holes slotted so that the top of the hopper can be graduated for different quantities of peas, without materially affecting the stroke of the cut off. The rod N, is operated by means of a crank on the shaft L and intended to press the cans together after they are deposited directly under the hopper to be filled and releases the cans after they are filled.

n , is the guide bracket for the top cut off plate, and is slotted to receive a bolt, so that it is free to move when the lever c^3 moves the graduating plate either up or down.

O, is the crank shaft to push the conveyer M, which slides on the guide r , filled with empty cans from the operator to the hopper to be filled.

R, is a stationary plate to keep the empty cans on.

The shaft O, is mounted on the frame A, with a gear wheel V, on one end adapted to engage in the gear rack p , to convey the cans under the hopper and immediately after the cans are deposited and held in position directly under the hopper. The gear track S, is then engaged with the gear wheel which causes the crank shaft to return the empty table more rapidly to the operator, to be supplied with cans.

T, is a spring fastened to the frame of the machine, and is intended to engage in the recesses on the collar t , on the crank shaft to prevent the crank from falling downward as shown in dotted lines, while the operator is placing the cans on the conveyer.

P, is the tight pulley and W, is the loose pulley, and Y, is the pulley shaft bracket.

The operation of the machine is as follows:—After the required number of empty cans are placed on the table M, they are conveyed under the hopper by means of the gear rack P, coming in contact with the gear wheel

V. After the cans are placed under the hopper, the rods N press the cans together directly under each hole, then the top cut off closes as the bottom plate opens to discharge the contents of the hopper into the cans. While the cans are being filled the conveyer returns more rapidly to the operator to be supplied with empty cans by means of the gear rack S, coming in contact with the gear wheel V, which has a larger radius than the gear rack p . After the cans are filled, the bottom cut off closes and the top cut off opens to fill the hopper with a fresh supply of peas. The rod N opens simultaneously with the closing of the bottom, thus releasing the cans which are pushed backward on the slide to make room for the next supply.

It is obvious that minor changes might be made in the several parts and substituted for those shown and described without in the least departing from the nature or spirit of the invention.

Having thus fully described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a can filling machine, a main fluid reservoir B, a graduating plate C, an adjusting shaft c with eccentric c' to raise and lower said plate, a top cut off plate G, a hopper D in sections with a reciprocating movement, a main shaft d^4 , with connecting rods to reciprocate said hopper, a lower cut off plate E, perforated with holes and sliding on the plate H, a gear wheel F, with a grooved periphery and pins e engaged in grooves to operate the plate E, a crank shaft O to convey the cans under the hopper, all arranged to co-operate substantially as, and for the purpose set forth.

2. In a can filling machine, a hopper D, a crank shaft d^4 having cross-head d' and connecting rod d on said shaft, all arranged as shown to reciprocate the hopper, a shaft c provided with eccentrics c' and lever c^3 to graduate the quantity of peas to enter the hopper, a perforated plate E provided with pins e running in the grooves f to cut off the flow of the fluid entering the cans, a crank shaft O operated by the gear wheel V, and gear segment p and s to deliver the cans under the hopper, all arranged as and for the purpose set forth.

3. In a can filling machine comprising the liquid reservoir B, the bifurcated arm J, operated by means of a cam, the top cut off plate G, operated by the shaft L, the can clamping rods N, N, operated by means of an arm on shaft L, the crank shaft d^4 provided with cross-head d' and connecting rod d to reciprocate the hopper D, to prevent the peas from clogging in the hopper before entering the cans, the gear wheel F driven by the gear wheel I, provided with the gear segment p engaging with the gear V on shaft O to convey the cans under the hopper and gear segment

S engaging with the gear wheel V to return the conveyer more rapidly to the operator, the perforated lower cut off plate E sliding on the perforated plate H with pins *e* designed to travel in the grooves *f* on the wheel F to reciprocate said cut off plate, all arranged substantially as, and for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

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JOSEPH C. STEWART.

Witnesses:

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G. W. THOMPSON.