

(No Model.)

I. W. LANGFORD.
CAN FILLING MACHINE.

No. 462,491.

Patented Nov. 3, 1891.

Fig. 1.

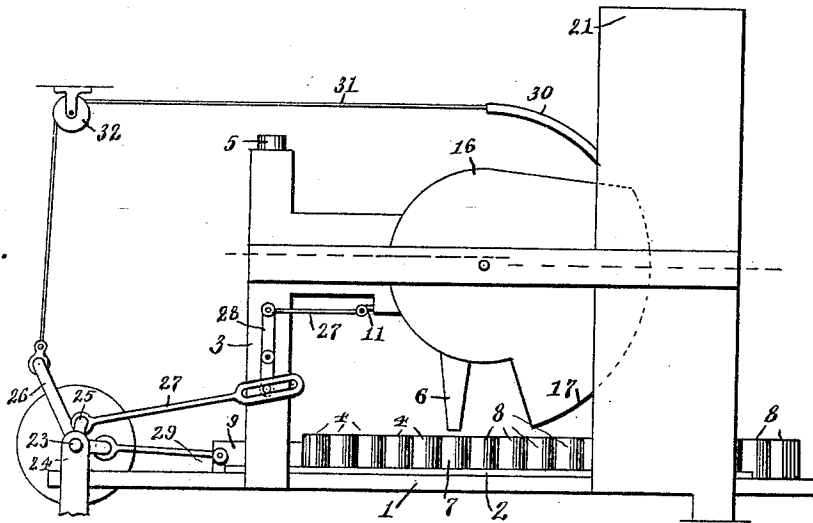


Fig. 2.

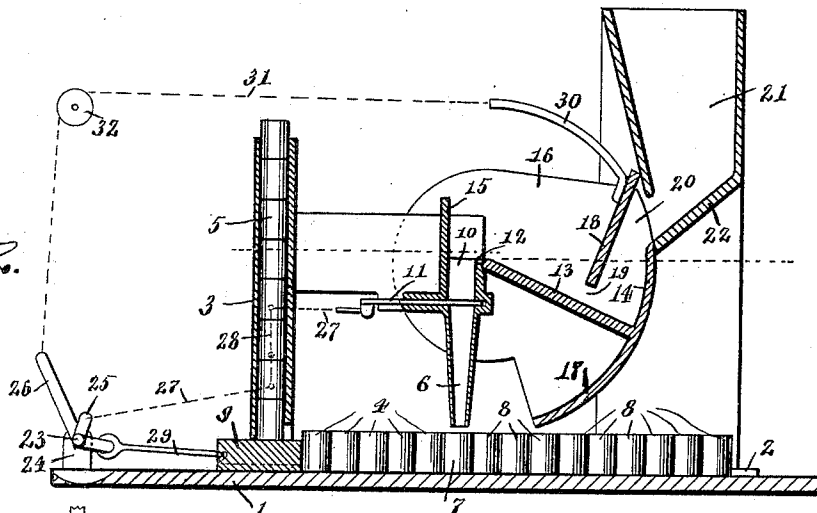
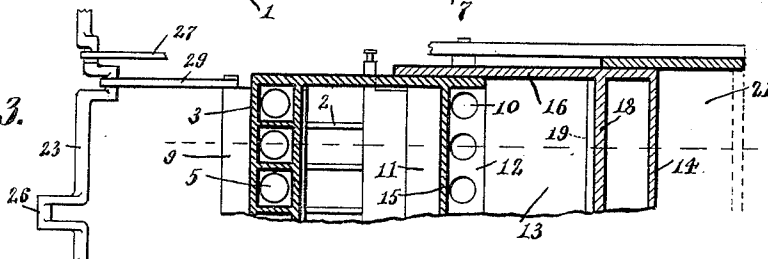


Fig. 3.



Witnesses:

P. P. Shelham
M. S. Belden

I. W. Langford Inventor
by James M. See
Attorney

UNITED STATES PATENT OFFICE.

IRA W. LANGFORD, OF KANSAS, ILLINOIS.

CAN-FILLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 462,491, dated November 3, 1891.

Application filed November 3, 1890. Serial No. 370,207. (No model.)

To all whom it may concern:

Be it known that I, IRA W. LANGFORD, of Kansas, Edgar county, Illinois, have invented certain new and useful Improvements in Can-Filling Machines, of which the following is a specification.

This invention relates to improvements in machines for automatically measuring and charging the contents into cans. In this specification I will use the term "peas" as to contents of the cans, and such term is to be construed as equivalent to any fruit, vegetables, oysters, or the like which are to be measured and charged into cans and which will lend themselves to the action of my machine.

My invention will be readily understood from the following description, taken in connection with the accompanying drawings, in which—

Figure 1 is a side elevation of a can-filling machine exemplifying my invention; Fig. 2, a vertical longitudinal section of the same; Fig. 3, a horizontal section and plan of the main portions of the machine.

In the drawings, 1 indicates a table, along which the cans in one or more longitudinal rows are to be fed, the cans being received empty from a supply-chute and passing under spouts from which they receive measured quantities of contents—say peas—and pass thence onward; 2, longitudinal ribs on the table to form guides for the advancing rows of cans; 3, a vertical chute over the table arranged to receive cans in vertical series, as many series as rows to be dealt with, one or more, the lower end of this chute being a trifle more than a can-height above the table; 4, cans which have left the chute and are proceeding empty in a row in succession to the charging-spout; 5, cans in the chute; 6, discharge-spouts, one for each row of cans, disposed in a line across the table in advance of the chute; 7, a can immediately below a spout ready to receive a charge therefrom; 8, cans which have passed the spout and been filled and are advancing onward out of the machine; 9, a plunger reciprocating back and forth under the chute and serving on its forward stroke to push the lower cans from the chute forwardly on the table and advance the rows so as to bring each can of a row in succession under its charging-spout; 10, the up-

per portions of the charging-spouts, these portions forming measuring-vessels whose contents volume is to be proportioned with reference to the size of cans in hand; 11, a cut-off gate in the discharge-spouts at the base of the measuring-vessel; 12, the upper surface or margins of the measuring-vessels, this margin forming virtually a fixed portion of the bottom of what is otherwise an oscillating pan from which the peas flow to the measuring-vessels; 13, the major portion of the bottom of the oscillating pan, forming when level a continuation of the margin 12, but articulated thereto, so as to be capable of oscillating out of level, Fig. 2 showing this bottom in its downward position of oscillation; 14, that wall of the pan farthest from the measuring-vessels, the outer surface of this wall being on a circle stroke from the axis of oscillation of the pan; 15, the fixed wall of the pan at the side opposite the wall 14 near the measuring-vessels; 16, the end walls of the pan oscillating with the bottom 13; 17, a downward prolongation of the circular-pan wall 14 below the bottom 13; 18, a transverse partition in the pan near wall 14, this partition moving with the pan; 19, a restricted passage underneath this partition, the partition not extending down to the bottom of the pan; 20, admission-opening to the pan at the periphery of the pan between the tops of the partition and the wall 14; 21, a hopper over this opening; 22, the inclined bottom of the hopper fitting to the outer surface of wall 14 and even with the top of that wall when the pan is in downward position, as in Fig. 2; 23, a shaft to be rotated by hand or power and provided with a number of cranks to give motion to the various moving parts of the machine; 24, a crank to reciprocate the plunger 9; 25, a crank to operate the cut-off gate 11, there being two each of these two cranks if the machine be built very wide; 26, a crank to oscillate the pan; 27, connecting-rods for transmitting motion to the cut-off gate from its crank; 28, a lever engaged by these connecting-rods; 29, connecting-rods to transmit motion to the plunger from its crank; 30, a segment concentrically attached to the pan; 31, a cord or rope or the like attached to the pan and lying on the segment and leading to the pan-crank, and 32 a guide-

pulley for this cord. It will be obvious that as the shaft rotates the plunger will be reciprocated, the cut-off gate will be reciprocated, and the pan will be oscillated. These movements of the parts are to be properly timed to each other, as hereinafter explained, and I wish to state that the cranks and connecting mechanism for transmitting the motion to the parts are merely exemplifying in character.

The pile of cans in the chute, as seen in Fig. 2, rests on the plunger. When the plunger moves sufficiently to the left, the pile will descend till the lower can rests on the table. When the plunger moves to the right, this lower can will be pushed out from under the chute and advanced along the table, and will push forward along the table the row of cans formed by cans previously thus pushed from the chute. The row of cans thus moves forward intermittently, each can in turn resting immediately below the spout 6, while the plunger moves to the left. Peas from the hopper flow into the pan while the pan is in its downward position, as in Fig. 2, the peas banking up to the right of partition 18 and tending somewhat to flow uphill through passage 19. This would not be the behavior with water or other liquid; but it is the behavior with peas or such things as are usually canned. During this flow of peas to the pan the pan has been stationary or nearly so. The pan then rocks upwardly upon its axis and wall 14 17 cuts off further flow from the hopper, and the bottom of the pan goes to rest, or nearly so, with its right-hand end much higher than the top of the measuring-vessels. The peas now pass down the inclined bottom through space 19 and fill up the measuring-vessels and bank up against pan-wall 15. During this time the cut-off gate 11 is closed, the pan returns to its former position, and during this return motion the peas which have banked up against

wall 15 roll down toward the other end of the pan, leaving only heaping measures of peas in the measuring-vessels. The measuring-vessels therefore deal with heaped measures instead of struck measures. While the pan is down the cut-off gate is opened, and the contents of the measuring-vessels pass down the spouts into the cans which are below them, whereupon the cut-off gate closes, the pan rises again to fill the measuring-vessels, and the rows of cans are pushed onward to bring the next cans under the spouts, and so on and on, the filled cans being removed from the machine for such subsequent treatment as may be needed.

I claim as my invention—

1. In a can-filling machine, the combination, substantially as set forth, with a spout and mechanism for placing cans in succession under the spout, of a measuring-vessel at the top of the spout, a cut-off gate in the spout at the base of the measuring-vessel, an oscillating pan having a segmental wall and a transverse partition open below and a bottom articulated to the top of the measuring-vessel, and a hopper leading to said pan and closed by the movement of said segmental wall.

2. In a can-filling machine, the combination, substantially as set forth, of a table, a chute and a spout over the table, a plunger to push the cans from the chute to the spout, a measuring-vessel at the top of the spout, a cut-off gate in the spout at the base of the measuring-vessel, a hopper, an oscillating pan communicating with the hopper and measuring-vessel and having a partition open below, and mechanism for giving motion to the plunger and gate and pan.

IRA W. LANGFORD.

Witnesses:

WM. I. LANGFORD,
JAS. M. VAN METER.