

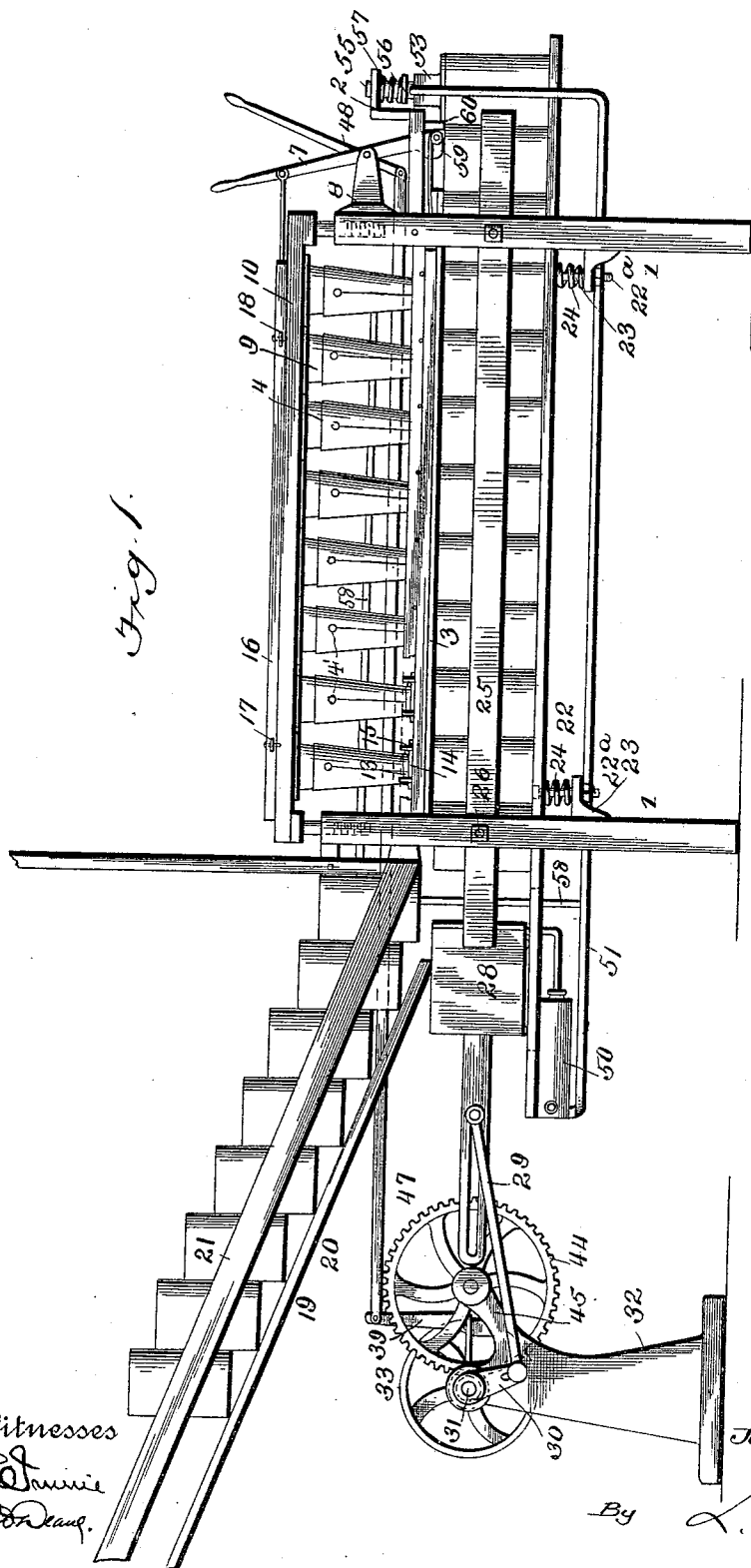
(No Model.)

3 Sheets—Sheet 1.

J. W. KALES.
CAN FILLING MACHINE.

No. 520,683.

Patented May 29, 1894.



Witnesses
John T. Kales
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Inventor
John T. Kales
By *L. Deane*
his Attorney

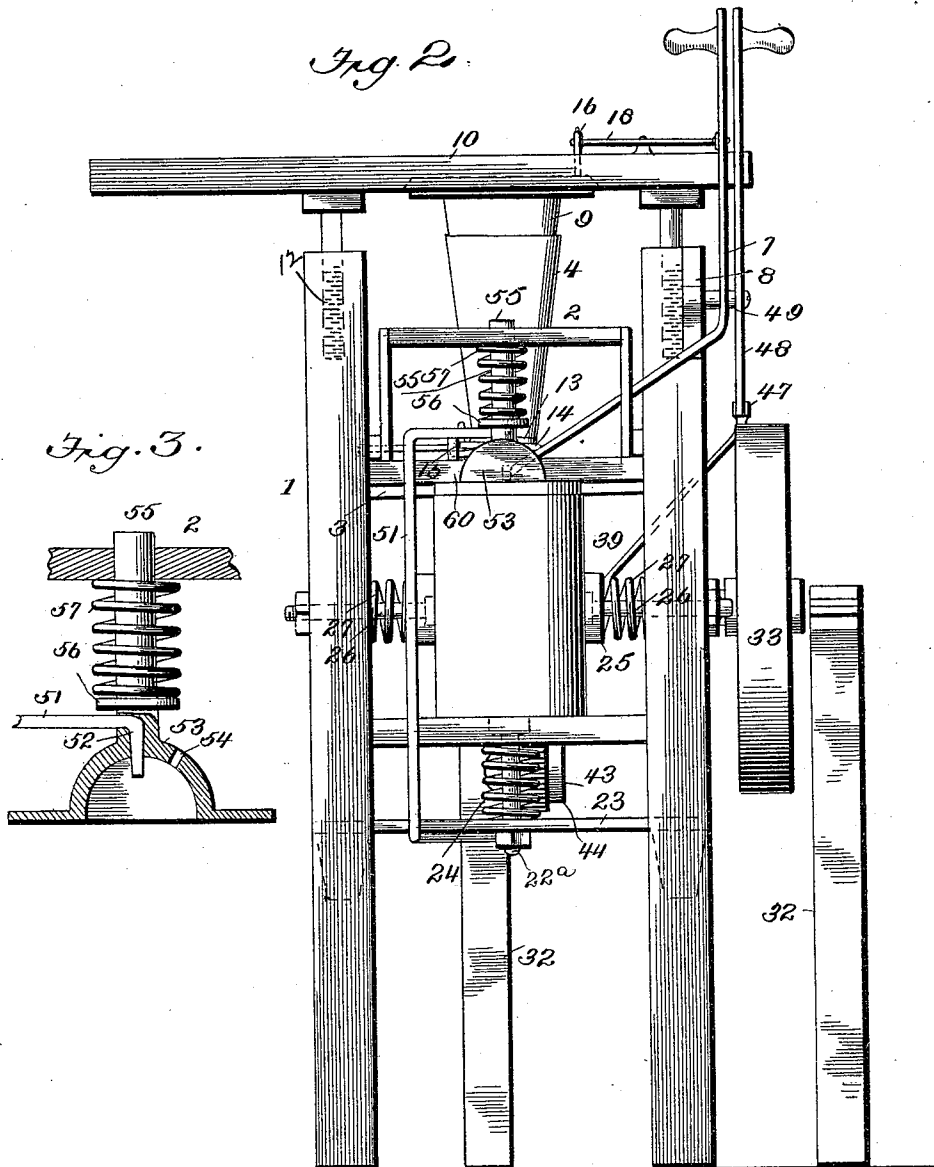
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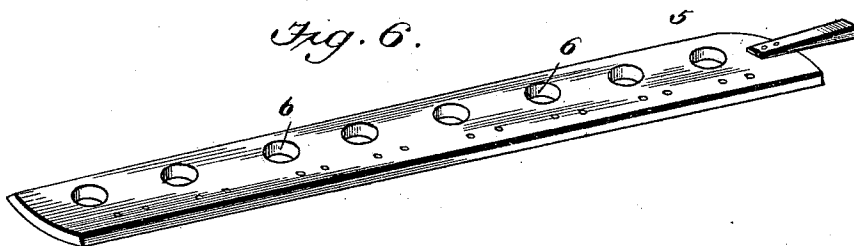
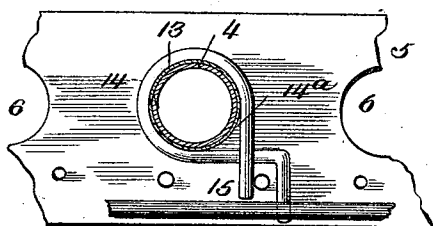
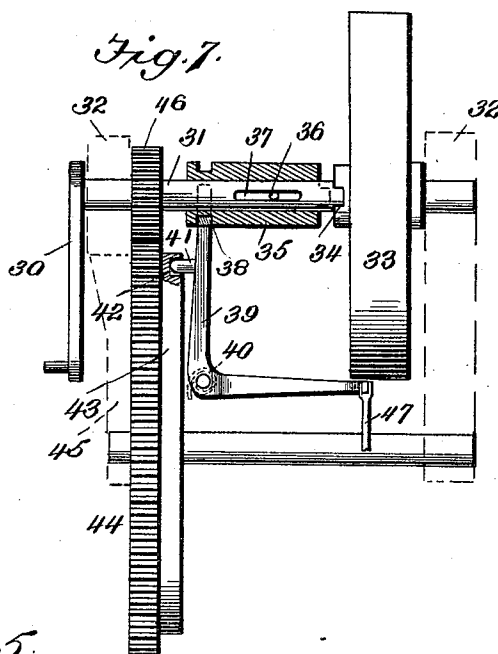
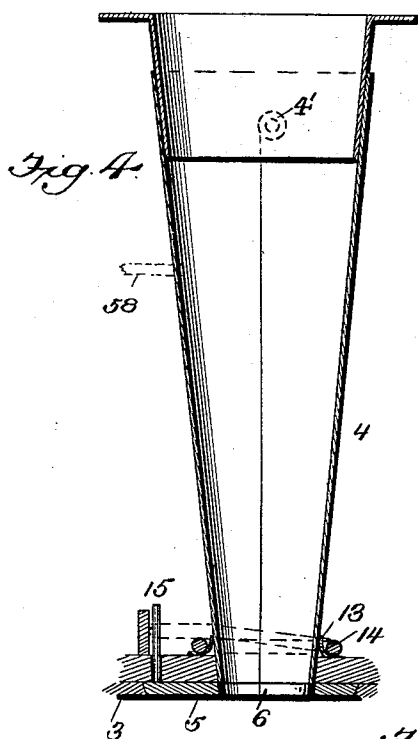
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3 Sheets—Sheet 3.

J. W. KALES.
CAN FILLING MACHINE.

No. 520,683.

Patented May 29, 1894.



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UNITED STATES PATENT OFFICE.

JOHN W. KALES, OF FRANKLINVILLE, NEW YORK.

CAN-FILLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 520,683, dated May 29, 1894.

Application filed January 30, 1894. Serial No. 498,509. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. KALES, a citizen of the United States, residing at Franklinville, in the county of Cattaraugus and State of New York, have invented certain new and useful Improvements in Can-Filling Machines; and I do hereby 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.

My invention relates to improvements in machines employed in canning vegetables and other food products, especially peas, in which the cans or other receptacles are automatically fed under a series of measuring tubes, which accurately measure the amounts to be deposited in the cans; also in which the measuring tubes are simultaneously opened to discharge their contents by the movement of a hand controlled valve, and also in which a preserving fluid is injected into the cans or tubes, by the movement of the plunger which feeds the cans under the tubes.

The object of the invention is to provide an improved machine of the above character which shall possess superior advantages with respect to efficiency in operation.

In the accompanying drawings: Figure 1, is a side elevation of a machine for measuring and depositing articles of food into cans, constructed in accordance with my invention. Fig. 2, is an end view of the same, looking from the front or right end of Fig. 1. Fig. 3, is a detail sectional view of the spring actuated cap showing a portion of the liquid supply pipe. Fig. 4, is a detail sectional view on an enlarged scale of one of the measuring tubes. Fig. 5, is a detailed plan view of the ring for contracting the ends of the measuring tubes. Fig. 6, is a detail perspective view of the valve for opening and closing the measuring tubes. Fig. 7, is a detail plan view of the means for starting and stopping the reciprocating plunger.

In the said drawings the reference numeral 1, designates a series of uprights, 2 side bars and 3 cross bars secured thereto forming a frame for supporting the working parts of the machine.

The numeral 4, designates a series of meas-

uring tubes, in one or more rows, supported by said frame, the lower ends of which are closed by a horizontally reciprocating valve consisting of a plate 5, supported by the cross bars of the frame provided with a series of holes 6, (one for each tube.) Connected with one end of this valve is a hand lever 7, pivoted to a bracket 8, secured to one of the uprights 1. The said tubes 4, are made in two parts, the one sliding or telescoping into the other, the upper part marked 9, being secured to the under side of a shallow tray 10, which is supported upon adjustable screws 12, fitting in the upper ends of the uprights, whereby said tray and the upper parts 9, of said tubes, may be elevated or lowered to regulate the capacity of the tubes. The lower parts 4, of said tubes are slitted vertically, with the edges overlapping, and are made of sheet metal or other elastic material, so that they may be contracted and expanded, a rivet 4' being provided at the upper end of the slit to prevent further splitting of the tube. Around the lower end of the said tubes are segmental collars 13, securely attached thereto, and secured to the frame of the machine are a number of spring wire rods 14, which are coiled around said tubes forming rings 14^a, the free ends of which abut against a stud or pin 15, on the sliding valve 5. The object of this construction is to contract the lower ends of the tubes when the valve closes the same and to allow them to expand when the valve is opened, owing to their elasticity, and thus allow the contents to be readily deposited in the cans below.

The numeral 16, designates a slide resting on the tops of the upper portions of the said tubes and connected by means of links 17, and a rod 18, with the lever 7. This slide is constructed similar to valve 5, and its object is, when said valve is operated to empty the tubes, to brush away the surplus food products at the top of the tubes so as to insure exact measurement. The construction of this slide is such that it operates a little in advance of valve 5, so that the latter begins to open just as the former closes.

The numeral 19, designates an inclined conveyor, consisting of a bottom 20, and side walls 21. The object of this conveyor is to

feed the cans to a plunger below the lower end thereof, by gravity. The sides 21, are secured to the rear uprights 1, while the bottom does not extend quite to said uprights leaving a space for a can to go through to a platform 22, below. This platform consists of a horizontal board located between the said uprights and supported upon pins 22^a, passing through brackets 23, secured to said uprights. Interposed between the lower side of said platform and said brackets, and encircling the pins are coiled springs 24, thus forming a yielding support and insuring the proper pressing of the cans against the bottom of the valve 5. Above this platform are horizontal guide bars 25, provided with outwardly extending adjustable pins 26, provided with coiled springs 27, forming yielding guides for the cans.

Located at the left of the machine, which I term the rear end, is a plunger 28, seated upon the said platform. This plunger is connected by means of a pitman 29, with a crank 30, on a shaft 31, journaled in an upright 32. This shaft is provided with a loose pulley 33, formed with a clutch 34. A sliding clutch 35, is also mounted on said shaft, provided with a pin or rib 36, which engages with a slot 37, in said shaft. This clutch is adapted to be thrown into and out of engagement with the clutch of the pulley, and thus rotate or stop said shaft. This clutch 35, is formed near one end with a peripheral groove, with which engages a yoke 38, on one end of an elbow or bell crank lever 39. This elbow lever is provided with a coiled spring 40, and a lug or projection 41, which latter is adapted to engage with a notch 42, in an annular rim 43, on one side of a cog wheel 44, journaled in a bracket 45. This cog wheel engages with a pinion 46, on the shaft 31. This pinion and cog wheel are so proportioned that the latter will make a single revolution while the former makes a number of revolutions corresponding to the number of measuring tubes employed. In other words, eight measuring tubes being employed in the present instance, the pinion should make eight revolutions to one of the cog wheels. The object of this is to automatically stop the plunger when the requisite number (eight) of cans has been fed under the measuring tubes. This is accomplished by the clutches, elbow lever, and rim above set forth, as when the said eight cans have been fed under the tubes, the lug or projection of the elbow lever will come in coincidence and engage with the notch in the rim, thus causing the elbow lever to be operated by its coiled spring and throw the clutches out of engagement and thereby stopping the rotation of shaft 31, and consequently the movement of the plunger. The other end of the elbow lever is connected by means of arm 47, and rod 47^a, with a hand lever 48, pivoted to a bearing 49, secured to one of the front uprights. By means of this last mentioned lever, the lug of the elbow lever can

be disengaged from the notch in the annular rim and the clutches thrown into engagement to again operate the plunger.

Located underneath the rear end of platform 22, is a force pump 50, of any suitable construction, the piston of which is connected with the plunger 28, so as to be operated thereby. This pump is connected with a tank or vessel containing a suitable preserving fluid and is also provided with a horizontal pipe 51, leading to the front end of the machine where it is bent upwardly and formed with a goose neck 52, which passes through a cap 53, having a vent 54. This cap is provided with a stem 55, passing through one of the end bars of the frame and with a collar 56, and coiled spring 57, which presses it down upon the cans as they pass from underneath the measuring tubes. Pipes 58, also lead from pipe 51, to the measuring tubes so as to supply the preserving fluid thereto before filling the cans, if desired.

The lower end of lever 7, is weighted as seen at 59, which weight is adapted to strike a lug 60, on the frame, and thus jar the valve connected with said lever and free it from any of the food products which may adhere thereto.

The operation is as follows: The cans to be filled are placed in the conveyer from whence they will fall by gravity to the platform below: the tray above the measuring tubes is supplied with the articles to be canned, which will be fed to the tubes below. The machine is then set in operation when the cans will be pushed one by one, by the reciprocating plunger underneath said tubes. When the requisite number of said cans has been fed to the tubes, the plunger will stop as before set forth. The lever 7, is then operated, pushing the slide over the tops of the tubes and brushing off the surplus articles so as to insure exact measurement. The valve 5, is then opened, opening the lower ends of the valves and relieving said ends of the tension of the ring, allowing them to expand so that the contents will readily fall into the cans below. The levers 7 and 48, are then reversed, closing valve 5, and compressing the ends of the tubes, and again setting the plunger in motion. The cans which have been filled will now be forced out at the front end of the machine, and passing under cap 53, will receive a supply of preserving fluid or liquid from the pump, which is so connected with plunger that it will force said liquid thereinto. The liquid may also be fed to the tubes if desired by the pipes 58. Suitable cocks (not shown) should be provided for the pipes connected with the pump for regulating or shutting off the supply of liquid, as described.

From the above it will be seen that I provide a very efficient machine for measuring food products and depositing them, either with or without preserving fluid, in cans, which can be afterward hermetically sealed; the operation being very rapid and clean, and

the measurement exact, thus obviating many of the objections incident to hand filling and canning.

Having thus fully described my invention, what I claim is—

1. In a canning machine, the combination with the inclined conveyer and the reciprocating plunger, of the measuring tubes made in two sections telescoping into each other, and the lower section of each made of elastic material slitted lengthwise at its lower end, substantially as described.

2. In a canning machine, the combination with the inclined conveyer and the reciprocating plunger, of the spring actuated platform, the adjustable tray, the measuring tubes made in two sections, the upper section of each being secured to the adjustable tray and the lower section slitted lengthwise, so that its edges will overlap, the slide resting on said tray, the lever with which said slide is connected and the sliding valve also connected with said lever, substantially as described.

3. In a canning machine, the combination with the frame, of the measuring tubes made of elastic material, the lower end of each lower tube being slitted lengthwise, the sectional collars surrounding the lower ends of said tubes, the rings resting on said collars and having one end secured to said frame, the horizontally slidable valve located underneath said collars, and the studs secured to said valve and adapted to engage with the free ends of said rings, substantially as described.

4. In a canning machine, the combination with the frame, the inclined conveyer, the spring actuated platform, the measuring tubes and sliding valve, of the reciprocating plunger, the pitman connected therewith, the crank with which said pitman is connected, the crank shaft and pulley, the pinion and cog wheel, the clutch engaging with said pulley, the bell crank lever connected therewith, the hand lever connected with said bell crank lever the annular rim on said cog wheel, hav-

ing a notch therein, and the spring for pressing said bell crank lever into contact with the rim, substantially as described.

5. In a canning machine the combination with the frame, the inclined conveyer, the reciprocating plunger, and spring actuated platform, of the spring actuated guide bars, the measuring tubes made in two sections telescoping into each other, the tray to which the upper section is secured, the slide resting on said tray, the sliding valve and the hand lever with which said valve and slide are connected, substantially as described.

6. In a canning machine, the combination with the frame, the inclined conveyer, the reciprocating plunger, the pump connected therewith, the spring actuated platform and guide bars, of the measuring tubes made in two sections telescoping into each other and slitted lengthwise at the lower ends, the tray to which said upper section is connected, the slide resting on said tray, the sectional collar embracing the lower end of the measuring tubes, the sliding valve having studs, the rings resting on said collars having one end secured to the tray and the other end bearing against the studs, the lever with which said slide and valve are connected and the pipe connecting the pump and tubes, substantially as described.

7. In a machine of the character described, the combination with the measuring tubes, the reciprocating plunger, and the platform, of the pump connected with said plunger, the horizontal pipe connected with said pump having its free end bent upwardly and formed into a goose neck, the spring actuated cap, and the vertical pipes connected with said tubes and with the horizontal pipe, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN W. KALES.

Witnesses:

JAMES MCSTAY,
E. D. SCOTT.