

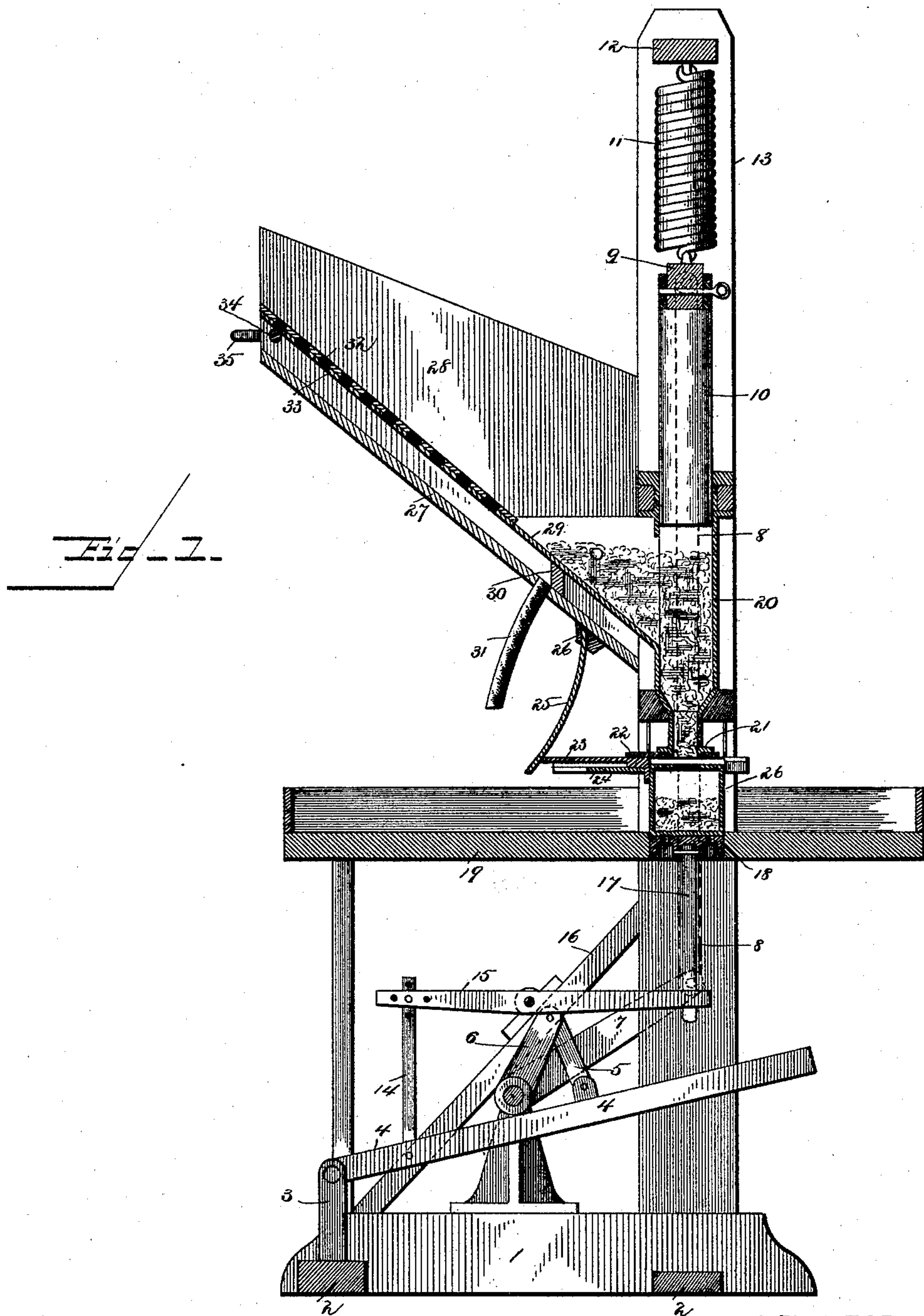
(No Model.)

3 Sheets—Sheet 1.

B. F. THOMAS.  
CAN FILLING MACHINE.

No. 396,717.

Patented Jan. 22, 1889.



WITNESSES.

Edwin L. Yewell,  
John Anders Jr.

INVENTOR.

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his Attorney.

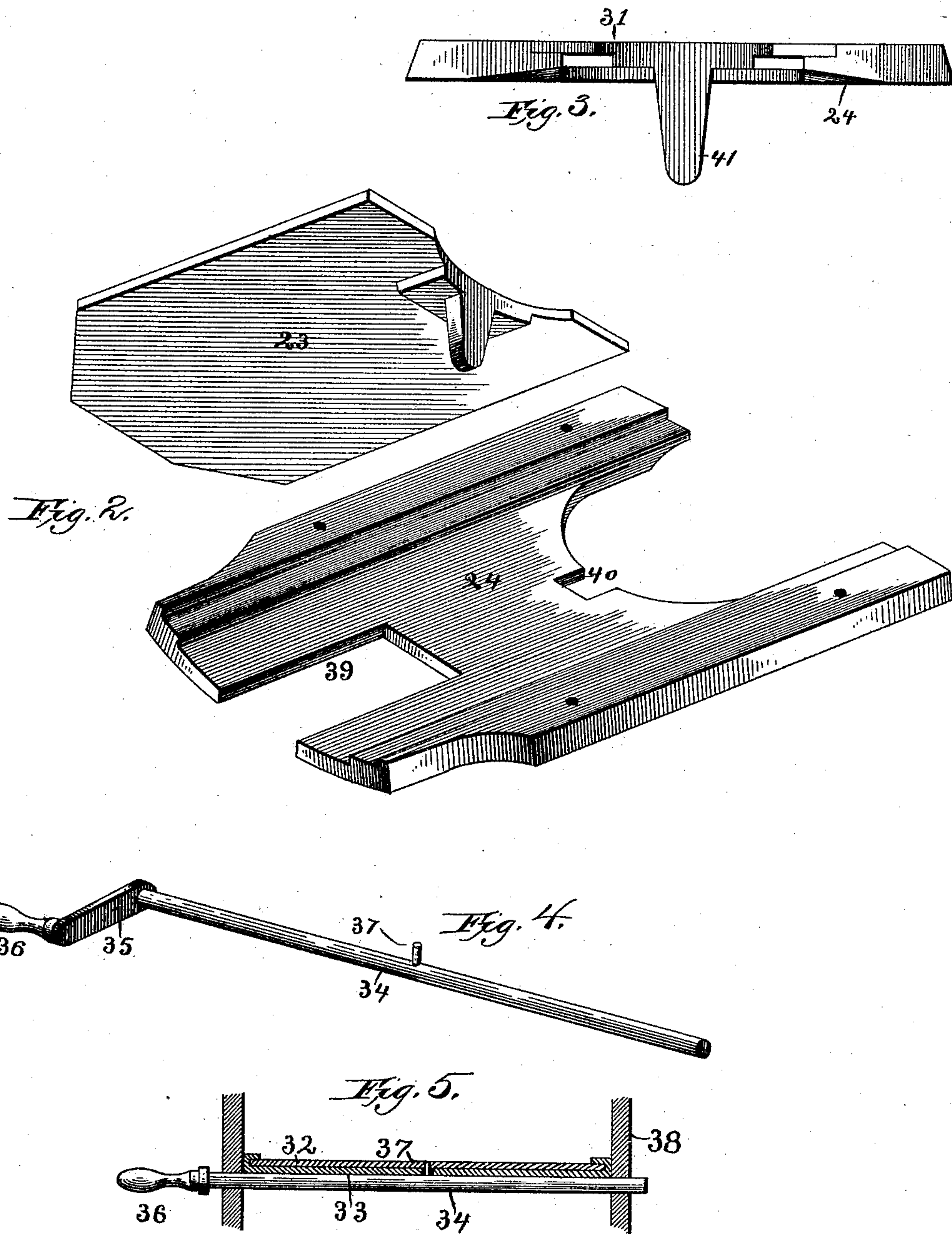
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3 Sheets—Sheet 2.

B. F. THOMAS.  
CAN FILLING MACHINE.

No. 396,717.

Patented Jan. 22, 1889.



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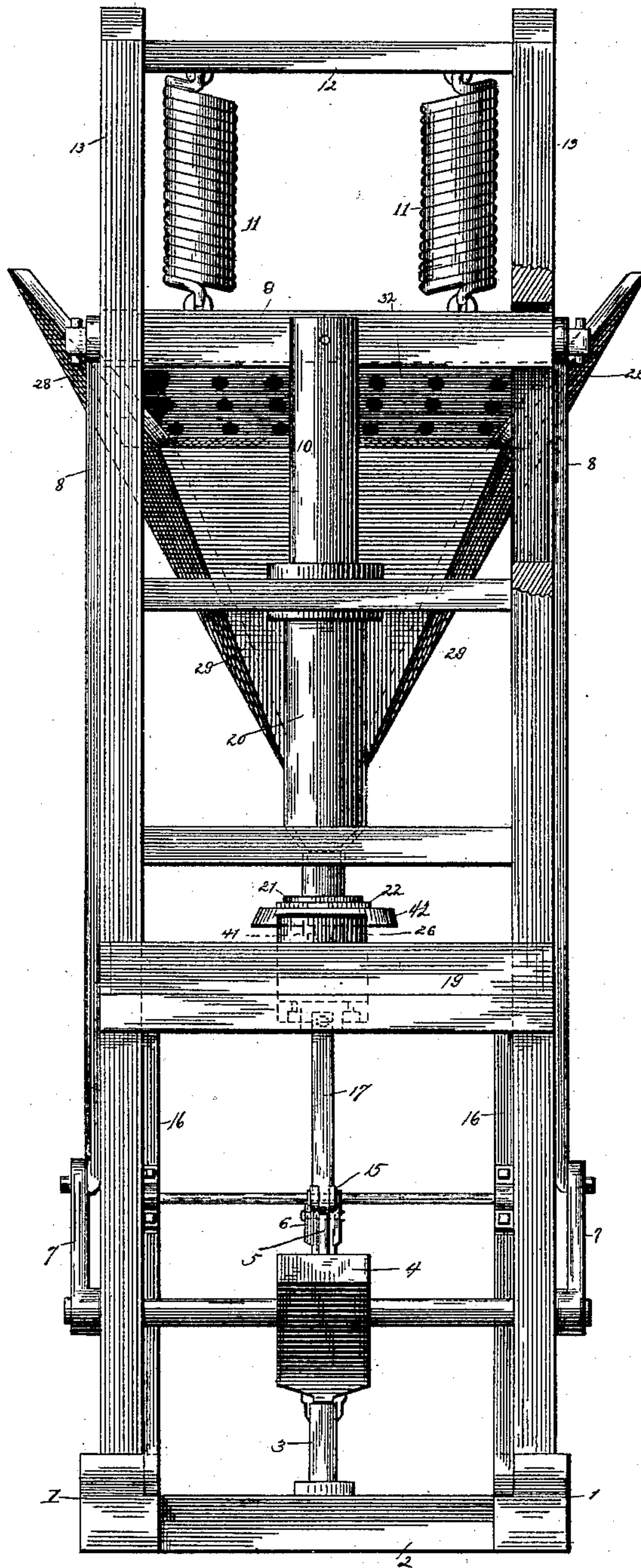
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3 Sheets—Sheet 3.

B. F. THOMAS.  
CAN FILLING MACHINE.

No. 396,717.

Patented Jan. 22, 1889.



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# UNITED STATES PATENT OFFICE.

BENONI F. THOMAS, OF NORTH EAST, MARYLAND.

## CAN-FILLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 396,717, dated January 22, 1889.

Application filed May 8, 1888. Serial No. 273,190. (No model.)

*To all whom it may concern:*

Be it known that I, BENONI F. THOMAS, a citizen of the United States, residing at North East, in the county of Cecil and State of Maryland, have invented certain new and useful Improvements in Can-Filling Machines; and I 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 and figures of reference marked thereon, which form a part of this specification.

This invention relates to machines for filling cans with fruits, vegetables, or other materials in a semi-fluid condition, and has for its object a rapid and convenient performance of the work.

My invention relates more particularly to mechanism for enabling the cans to be placed under the supply-cylinder and withdrawn therefrom with greater rapidity than has heretofore been possible in manually-operated machines, though the invention also embodies other novel features, which will hereinafter be fully described in this specification, and then definitely indicated in the appended claims.

In the drawings, Figure 1 is a vertical section on a plane passing through the middle of a can, showing the latter in the position it occupies before the filling mechanism is operated. Fig. 2 is a perspective view showing the parts of an ejector for forcing the can away from the filling-cylinder. Fig. 3 is a front elevation of the ejector-slide. Fig. 4 is a detail showing the means for operating a perforated bottom, through which an excess of juice may be drained off. Fig. 5 is a partial front view of the hopper, showing the double perforated bottom and the crank-shaft for operating it. Fig. 6 is a rear elevation of my machine, parts being broken away.

On a suitable pedestal, 1, are cross-beams 2 and vertical posts, one of which is seen in elevation at 13. In a support, 3, is pivoted a foot-lever, 4, connected by a link, 5, with a bell-crank lever, 6 7. To the arm 7 of this bell-crank lever are pivoted vertical rods, one

of which is seen in dotted lines at 8. These rods are secured at their upper ends to a cross-piece, 9, which carries a plunger, 10. This plunger is normally held elevated by springs, as 11, hung on a cross-beam, 12, mounted on the top of the frame. The foot-lever carries a link or connecting-rod, 14, which acts on a lever, 15, pivotally mounted on a support, 16. The end of lever 15 is connected with the rod 17, to which is secured a support, 18, perforated, as shown, to permit drainage of any juices which may drip upon it. This support in the operation of the machine is thrust into and withdrawn from an opening in table 19, provided with raised edges, as shown.

In operative relation to plunger 10 is supported on a cross-beam a feed-cylinder, 20, in open communication at one side with a hopper, 28. This cylinder is of such an internal diameter that the plunger 10 can slide in it, and has a contracted discharge-opening at its lower end. Near the mouth or discharge-opening is a flange, 21, and the space between the flange and the lower edge of the discharge-tube is filled by a flexible elastic washer, 22, extended on one side, as shown, so as to overlap the ejector-slide 23. A structure of this slide and its guide is shown in Figs. 2 and 3.

The guide 24, which is fixed to the frame, has side grooves, as shown, and recesses 39 40 at its ends. The ejector-slide has a depending lug or tongue, 41, adapted to bear against the can. A spring, 25, secured to a support, 26, on the bottom 27 of the hopper bears against the rear end of the ejector-slide. In the position shown in Fig. 1, when a can is inserted, this spring is under tension and the can is held in place by the operator until he depresses the treadle 4, when the plunger 10 descends and the can is simultaneously elevated into engagement with flange 21, a tight joint being effected by the elastic washer 22. When the foot-pressure is removed, however, the spring 13 lowers support 18, and the spring 25 pushes the slide forward, the lug 41 forcing the filled can out. The spring 25 forces the can forward on the table the moment the plunger has lowered it sufficiently to clear the



lower edge of the discharge-tube and before the upper face of the support 18 sinks below the top of the table. As the spring 25 comes forward it enters a recess, 39, in the support 24, which gives it sufficient sweep to entirely eject the can.

The hopper 28 is provided with a double false bottom, one portion, 32, of which slides upon the other, 33. The relative positions of these bottoms is shown in Figs. 1 and 5. They are made of sheet metal, the lower one, 33, being bent at the side edges, so as to form a guide for the upper one. The lower one is fixed to the sides of the hopper. These bottoms are provided with perforations which may be thrown into or out of register by shifting the upper one. This may be done by operating a crank-shaft, 34, (see Figs. 1, 4, and 5,) which carries a pin, 37, co-operating with the movable bottom and free to be reciprocated in a slot in the lower one, as shown in Fig. 5. The crank-shaft 34 is provided with a crank, 35 and handle 36. The space between the perforated bottoms and the bottom of the hopper serves to carry off the superfluous juice, a partition, 30, and drain-pipe 31 being located at the rear end of this drip-chamber. The lower perforated bottom is, as stated, fixed to the frame. As shown, it extends forward and is attached to the feed-cylinder. The bottom and feed-cylinder are preferably made of copper to resist the action of the fruit-acids.

The operation of the machine will now be understood. The fruit in condition for canning is emptied into the hopper and feeds forward by gravity into the feed-cylinder. If its consistency is too thin, the excess of juice may be drawn off by making the perforations in the false bottoms register the superfluous juice passing through the pipe 31 and falling upon table 19, whence it may be removed in any convenient manner. A can is placed against the tongue 41 and pushed back against the tension of spring 25 into a curved seat in the support 24. The foot-lever 4 is then pressed down. The support 18 is raised, bringing the opening in the top of the can into close engagement with the discharge-opening of the cylinder. The opening of the cylinder is made of such a size that it will fit the opening in the cans. At the same time that the can-support 18 is raised the plunger 10 is brought down in the cylinder, forcing the canning material into the can. The arms of the levers are so proportioned that the plunger and can-support will be given the proper relative thrust. The foot-lever is then allowed to come up, withdrawing the plunger and lowering support 18. As soon as the can is relieved of the upward pressure of the latter the can is forced out by spring 25, when an empty can can be immediately inserted. The material in the cylinder is prevented escaping by

the ejector-slide, which follows the ejected can and seals the mouth of the cylinder. This slide therefore performs the function of ejecting the filled cans and of sealing the cylinder against leakage during the renewal of cans.

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

1. In a can-filler, the combination of a feed-cylinder with a hopper communicating with said cylinder, said hopper being provided with a perforate bottom and means for opening and closing the perforations, whereby the consistency of the canning material can be kept uniform.

2. In a can-filler, the combination, with a feed-cylinder, of a hopper communicating with said cylinder, said hopper being provided with a perforate bottom and an auxiliary perforated bottom sliding on the main bottom, and an exterior handle to throw the two sets of perforations into or out of register.

3. In a can-filler, the combination of a feed-cylinder with a hopper having perforate bottoms 32 33, means to throw the perforations into and out of register, a drip-chamber below the bottoms, and a discharge-pipe to the drip-chamber.

4. In a can-filler, the combination of a feed-cylinder, a vertically-reciprocating can-support, a plunger, means for bringing the plunger and can-support simultaneously toward the discharge-opening of the feed-cylinder, a spring-actuated can-ejector, and a cover for the discharge-opening controlled thereby, whereby when the plunger is lifted the can is automatically ejected and the discharge-opening sealed.

5. In a can-filler, the combination of a feed-cylinder having a contracted end provided with a flange, with a reciprocating can-support, an automatic cut-off to seal the discharge-orifice of the cylinder when the can is removed, and a flexible washer on the lower face of the flange, said washer overlapping the cut-off when the mouth of the feed-cylinder is open.

6. In a can-filler, the combination of a feed-cylinder with a sliding plate, 23, adapted to seal the mouth of the cylinder when pushed forward, a lug on said plate to engage the can, and a spring to push the plate, simultaneously eject the can, and seal the cylinder, and an elastic washer around the mouth of the cylinder, said washer overlapping the plate when the mouth of the feed-cylinder is open.

7. In a can-filler, the combination of a feed-cylinder with a supply-hopper in communication therewith, said hopper being provided with a perforate bottom and means for opening and closing the perforations, whereby the consistency of the canning material

terial can be kept uniform, a plunger, a can-  
support, a foot-lever, and connecting de-  
vices for simultaneously bringing the plun-  
ger and can-support toward the discharge-  
5 opening of the cylinder, and an automatic  
ejector and cylinder-seal for discharging a  
filled can and preventing waste of the filling  
material.

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

BENONI F. THOMAS.

Witnesses:

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W. T. HAMMOND.