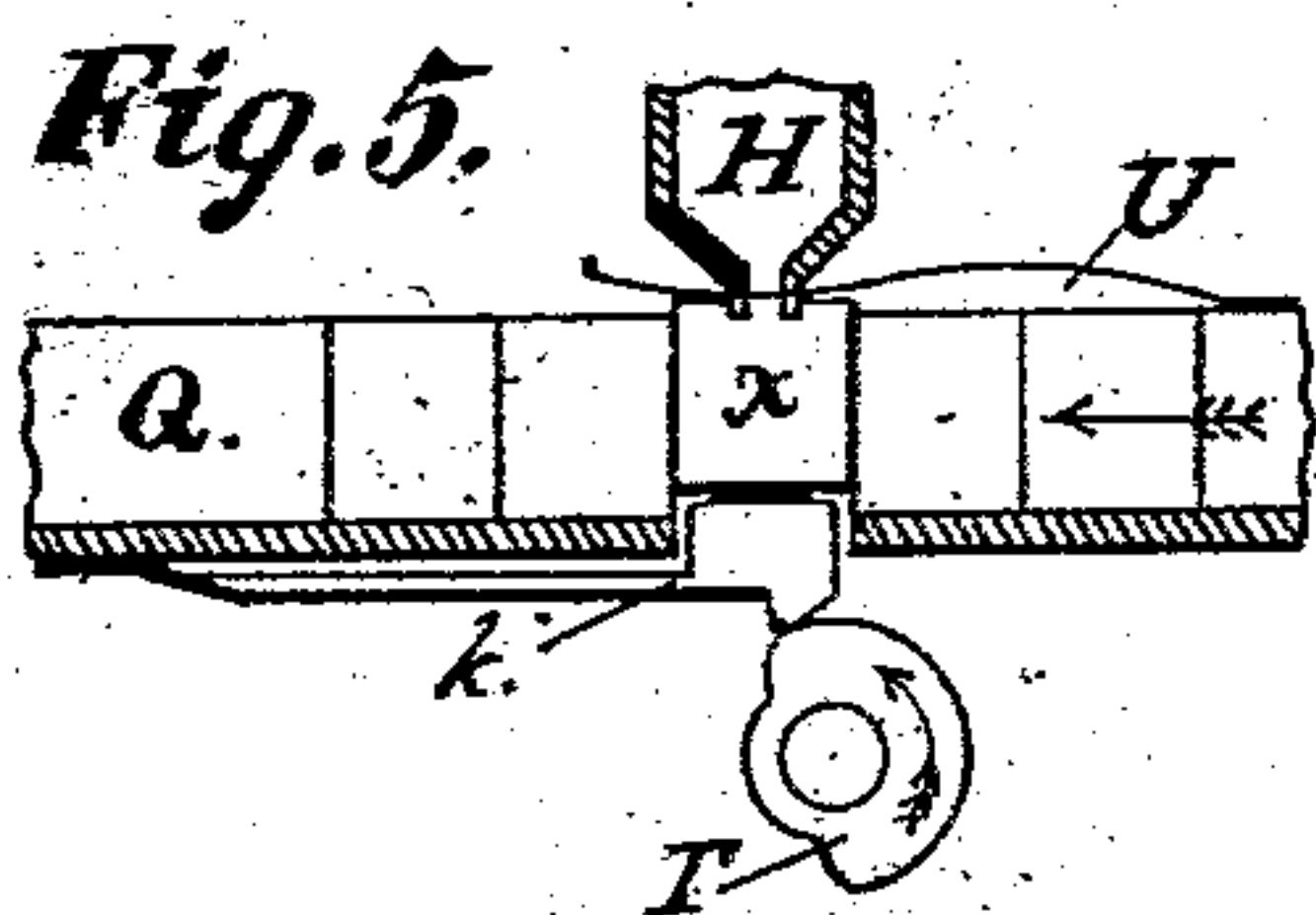
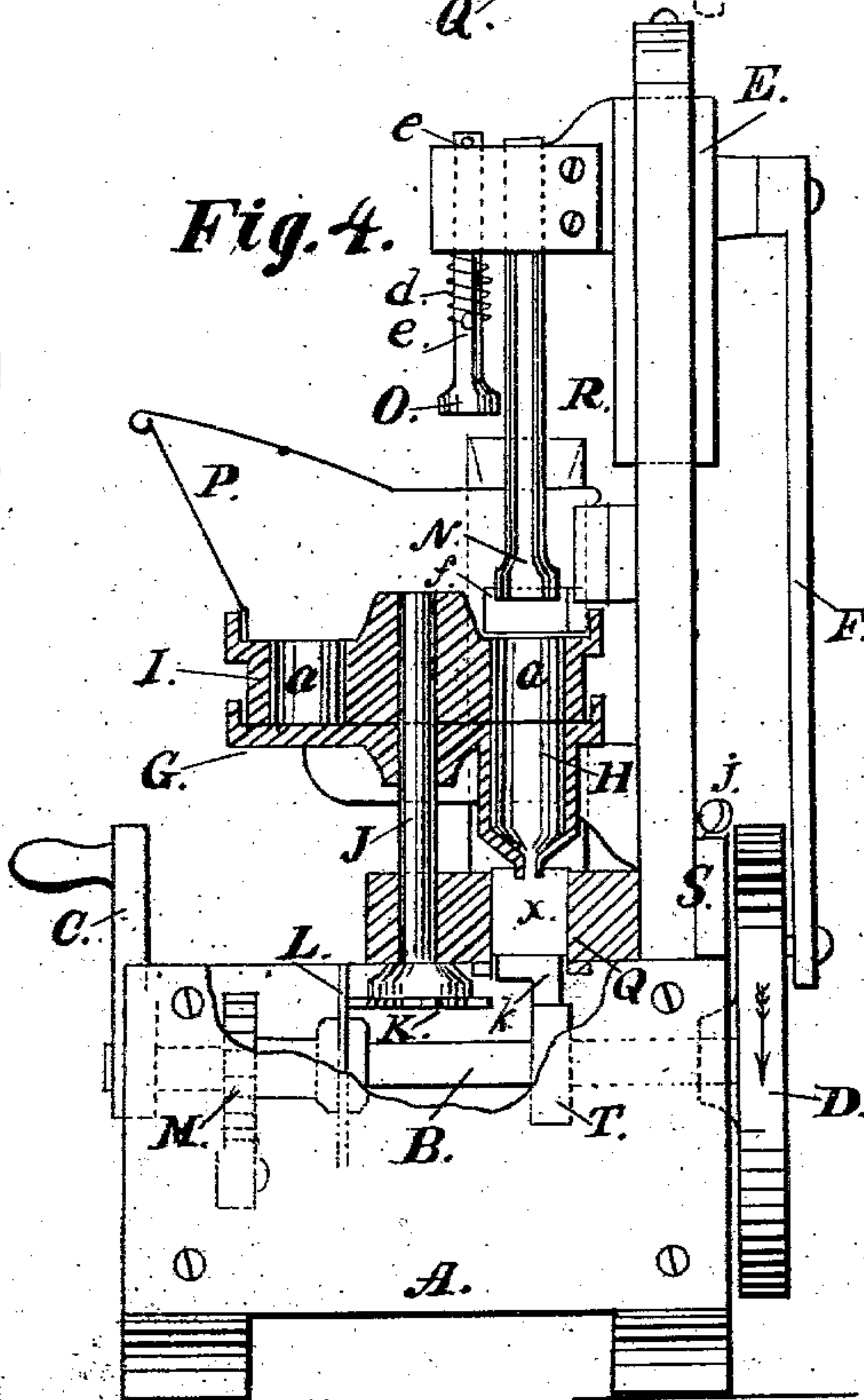
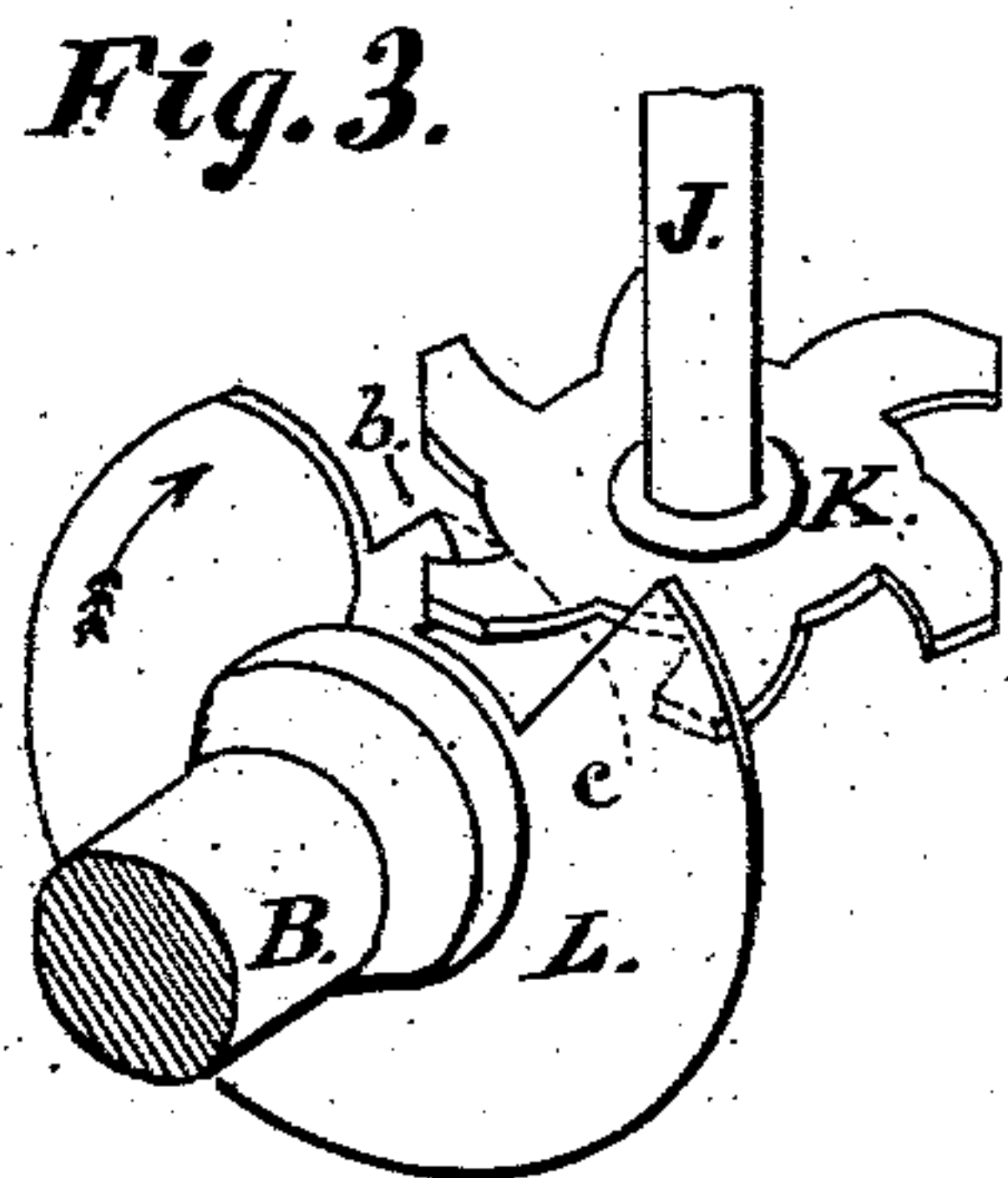
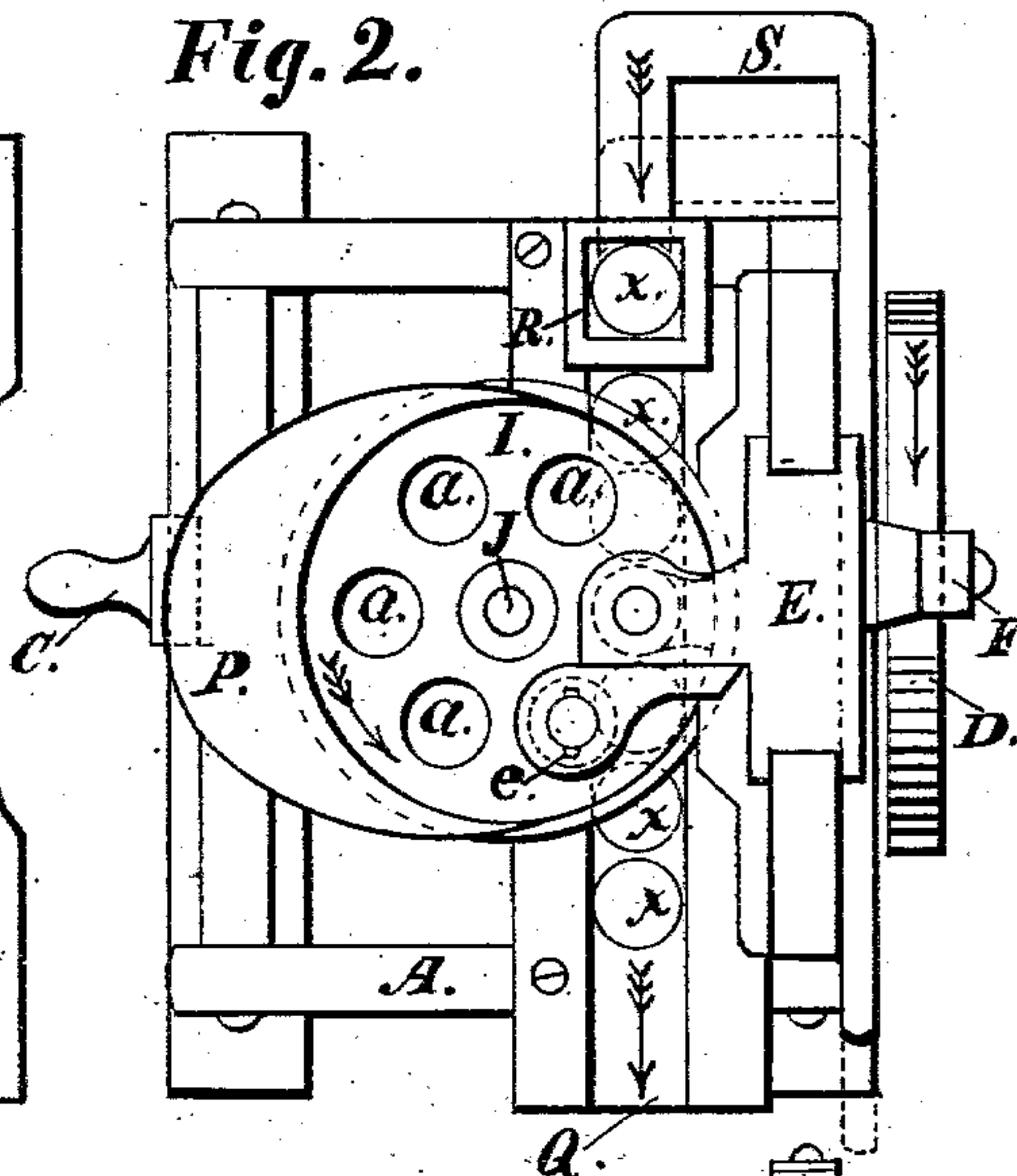
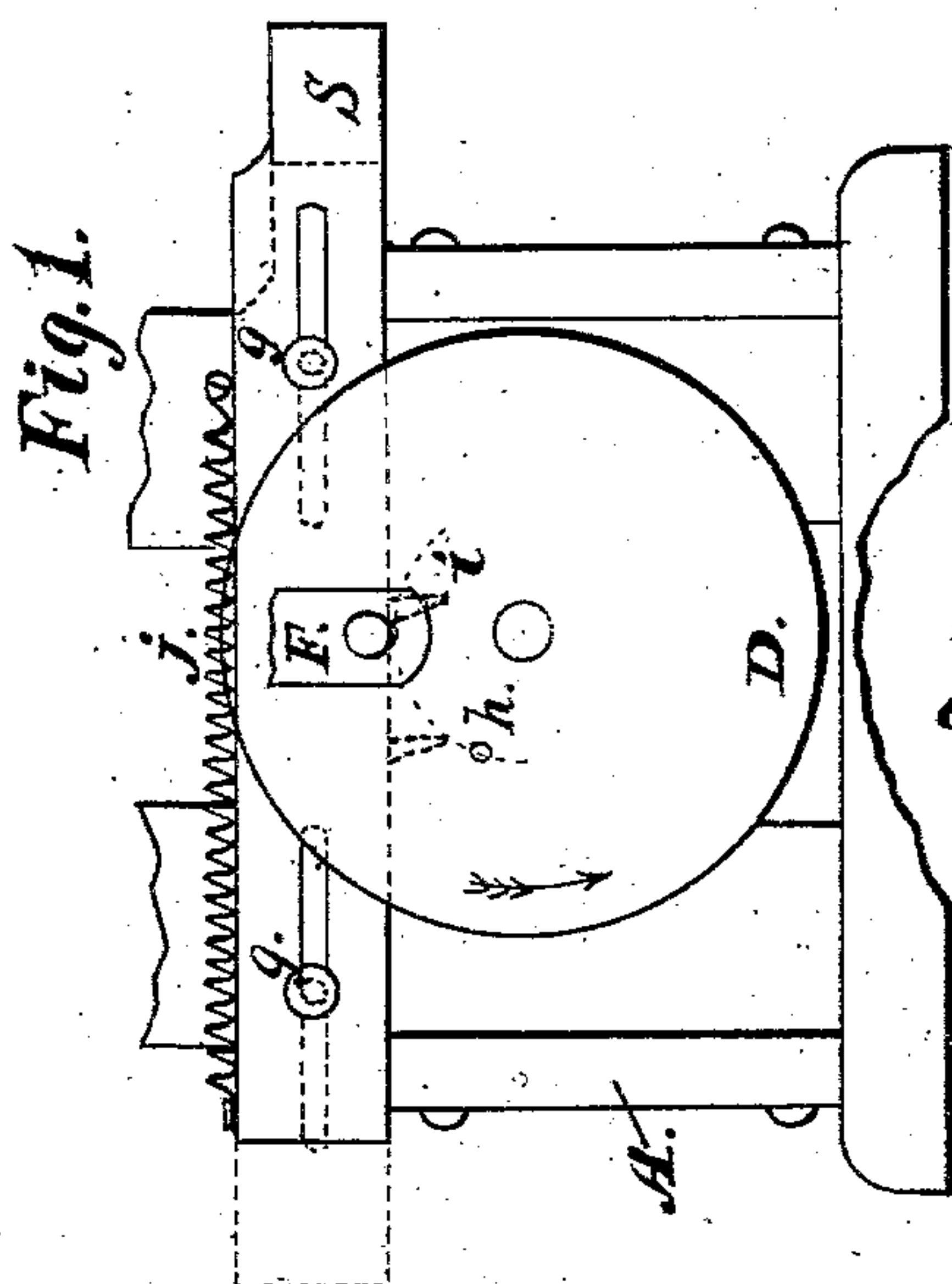


V. BARKER.
Machine for Filling Cans.

No. 203,313.

Patented May 7, 1878.



Witnesses;
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UNITED STATES PATENT OFFICE.

VOLNEY BARKER, OF BRIDGETON, MAINE.

IMPROVEMENT IN MACHINES FOR FILLING CANS.

Specification forming part of Letters Patent No. **203,313**, dated May 7, 1878; application filed March 29, 1878.

To all whom it may concern:

Be it known that I, VOLNEY BARKER, of Bridgeton, in the county of Cumberland and State of Maine, have invented a new and useful Improvement in Machines for Filling Cans, of which the following is a specification:

The invention relates to filling cans with green corn, tomatoes, or other similar articles that are prepared by the hermetical sealing process.

The machines heretofore used for this purpose have generally consisted mainly of a plunger working vertically in a tunnel, and operated by a lever or otherwise, by means of which the corn or other material is forced or injected into the cans, which are placed under the tunnel by hand. The operation is slow, and laborious, and wasteful; besides, the cans cannot be evenly filled, they generally containing either more or less than the desired quantity, which necessitates weighing each can, and the subtraction or addition of a small quantity accordingly.

The object of my invention is to provide a machine which shall gage the exact amount put into each can, and which shall supply the cans automatically to the tunnel, and which shall also work with greater rapidity.

In the accompanying drawing, in which similar letters of reference indicate like parts, Figure 1 is a rear view of the lower portion of my improved machine, showing the driving-bar for operating the cans. Fig. 2 is a top view or plan of the machine, with the feeding-plate and hopper. Fig. 3 is a perspective view, enlarged, of the device for giving intermittent motion to the feeding-plate. Fig. 4 is a side view of the machine, partly in section. Fig. 5 is a detail, showing the device for lifting the cans to meet the tunnel.

The motion of the various parts is indicated by the arrows.

This machine is mounted on a frame, A, of suitable form and construction. B is the driving-shaft, to which is attached the crank C and fly-wheel D; but by attaching a pulley in place of the crank it may be propelled by power. E is a cross-head, which receives motion from the wheel D by means of the pitman F in the usual manner. G is a circular plate, affixed to suitable supports on the frame A,

and having at one side the tunnel H, the lower end of which is of a proper size to easily enter the orifice in the cans *x*. I is another circular plate, thicker than the first, and pierced with six cylindrical-shaped chambers or holes, *a*; but it is obvious that it might contain a greater or less number without departing from the spirit of the invention. Said chambers are of the same size or cubical dimensions as the cans to be filled, and are arranged in a circle about the center of the plate I, at equal distances from each other. Their purpose is to feed the tunnel H.

The plate I rests on the plate G, upon which it rotates; and the tunnel H, which is of the same internal diameter as the chambers *a*, is located so as to exactly coincide with each of the latter.

Intermittent rotary motion is imparted to the plate I by means of the vertical shaft J, which passes through the plate G, and is provided with the spur-wheel K, the spurs or arms of which correspond in number with the chambers *a*.

A flange, L, on the driving-shaft is provided with a dog, *b*, which engages with one of the arms of the wheel K at each revolution. Said flange is so placed that two of the arms of wheel K are in contact with it, thus holding the plate I firmly and preventing any movement of the same except when effected by the dog *b*. A section of the flange is removed or cut out, as shown, to permit the arm of the wheel K to turn at the proper moment.

The axes of the shaft B and J are not in the same plane, the driving-shaft being placed a little at one side, to allow the dog *b* to pass under the tooth of the spur-wheel, as indicated by the dotted line at *c*.

The plate I and wheel K are so adjusted relatively to each other and to the driving-shaft that the movement of the plate I takes place when the cross-head E is near its highest point, and so as to cause the plate to stop with one of the chambers *a* exactly over the tunnel H.

M is a ratchet on the driving-shaft, which operates in the usual manner to prevent turning in the wrong direction.

N is a plunger, attached to the cross-head, and which, at each stroke, descends through

one of the chambers *a*; and nearly to the bottom of the tunnel *H*, and pushing the contents of the chamber into the tunnel, and forcing the same into the can *x*, placed to receive it. *O* is another shorter plunger, which is also connected to the cross-head *E*, in a position directly over the chamber next preceding, and descends to, but not into, the same. The object of this plunger is to compress the material closely into the chamber, so as to fill the same completely previous to its passing beneath the plunger *N*. The plunger *O* plays loosely through a hole in the cross-head, and is held down by the spiral spring *d*, which serves to regulate the degree of pressure exerted by it. Pins *e* serve to hold said plunger in place.

Should the nature of the material operated upon be such as to drop readily into the chambers *a*, so that the secondary plunger is unnecessary, it may be detached at such times, if desired.

Affixed to the frame in a proper manner is the flaring hopper *P*, for the reception of the green corn or other article for filling the cans, which falls upon the plate *I* and into chambers *a*.

Both the plates *G* and *I* are provided with narrow rims or flanges, as shown in the drawing. That of the lower plate incloses the upper plate, and the rim on the upper plate incloses the lower edge of the hopper *P*. The object of this is to prevent waste.

A short tube or ring, *f*, is fastened to the hopper *P*, so as to inclose the end of the plunger *N* when the latter is raised. Said ring is of the same diameter of the chambers *a*, and is so placed as to graze the surface of the plate *I*, and serves to level the contents of each chamber as they successively pass beneath the plunger.

Crossing the machine directly beneath the tunnel *H* is a channel, *Q*, of such size as to allow the cans to slide along easily in it. At one end of this channel, and opening into it, is the square upright tube *R*, which is also just large enough to allow the cans to drop into it easily, and by which the empty cans are supplied to the machine.

The cans *x* are propelled through the channel *Q* and under the tunnel *H* by the driving-bar *S*, which is slotted to slide on pins *g*. One end of the bar *S* is bent around at right angles in such a manner as to enter the channel *Q* at the bottom of the tube *R*. Said bar has a reciprocating motion a little greater than the width of the can, which is effected by a pin, *h*, on the inside face of the wheel *D* acting on a dog, *i*, on the bar, thereby pushing the row of cans in the channel *Q* forward the space of one can. When released from the pin *h*, the spiral spring *j* causes the bar to fly back and allow the column of cans in the tube *R* to drop down the space of one can. Said

movement takes place during the ascent of the plunger, and is so adjusted as to bring each of the cans in succession under the tunnel *H*. At each downward stroke of the plunger a cam, *T*, on the driving-shaft raises the hinged plate *k*, with the can thereon, sufficiently to cause the aperture in the head of the can to receive the lower end of the tunnel *H*, and hold it there during the descent of the plunger. A spring, *U*, serves to press the can down when released by the cam, and also to check, by friction, the momentum of the cans when acted upon by the bar *S*.

The operation of the machine is as follows: Upon turning the crank *C*, the chambers *a* are brought in succession under the plungers *O* and *N*, the former compressing the corn or other material compactly into each chamber, and the latter plunger, in its turn, forcing the same into the cans as they are brought successively under the tunnel *H* by the bar *S*, it being only necessary to keep up the supply of material in the hopper *P* and the tube *R* constantly full of empty cans.

A temporary table can be placed to receive the cans from the channel *Q*, whence they are taken to be sealed.

The cans are evenly filled, and the operation is very rapid.

What I claim is—

1. In a machine for filling cans, the revolving plate *I*, arranged in connection with the plunger *N* and stationary plate *G*, substantially as described, and pierced at regular intervals with chambers *a*, to receive each the exact quantity necessary to fill one can, and provided with means, substantially as shown, for imparting intermittent rotary motion, for the purpose of presenting said chambers in regular succession for the passage of the plunger through them, by which their contents are forced into the cans in the manner specified.

2. The horizontal sliding bar *S*, having a short reciprocating motion imparted to it by the driving parts, arranged and operated in connection with the plunger *N* and channel *Q*, for propelling the cans through the latter, substantially in the manner herein described, and for the purpose specified.

3. The combination, with the tunnel *H* and plunger *N*, of the bar *S*, tube *R*, channel *Q*, and lifting-plate *k*, when constructed and operated substantially as herein described.

4. The combination of the tunnel *H*, plunger *N*, revolving plate *I*, stationary plate *G*, hopper *P*, ring *f*, plunger *O*, channel *Q*, tube *R*, bar *S*, spring *U*, lifting-plate *k*, flange *L*, and wheel *K*, arranged and operating substantially as herein set forth and described.

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Witnesses:

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