

(No Model.)

2 Sheets—Sheet 1.

J. WEST & R. D. HUME.
Can Filler.

No. 233,449.

Patented Oct. 19, 1880.

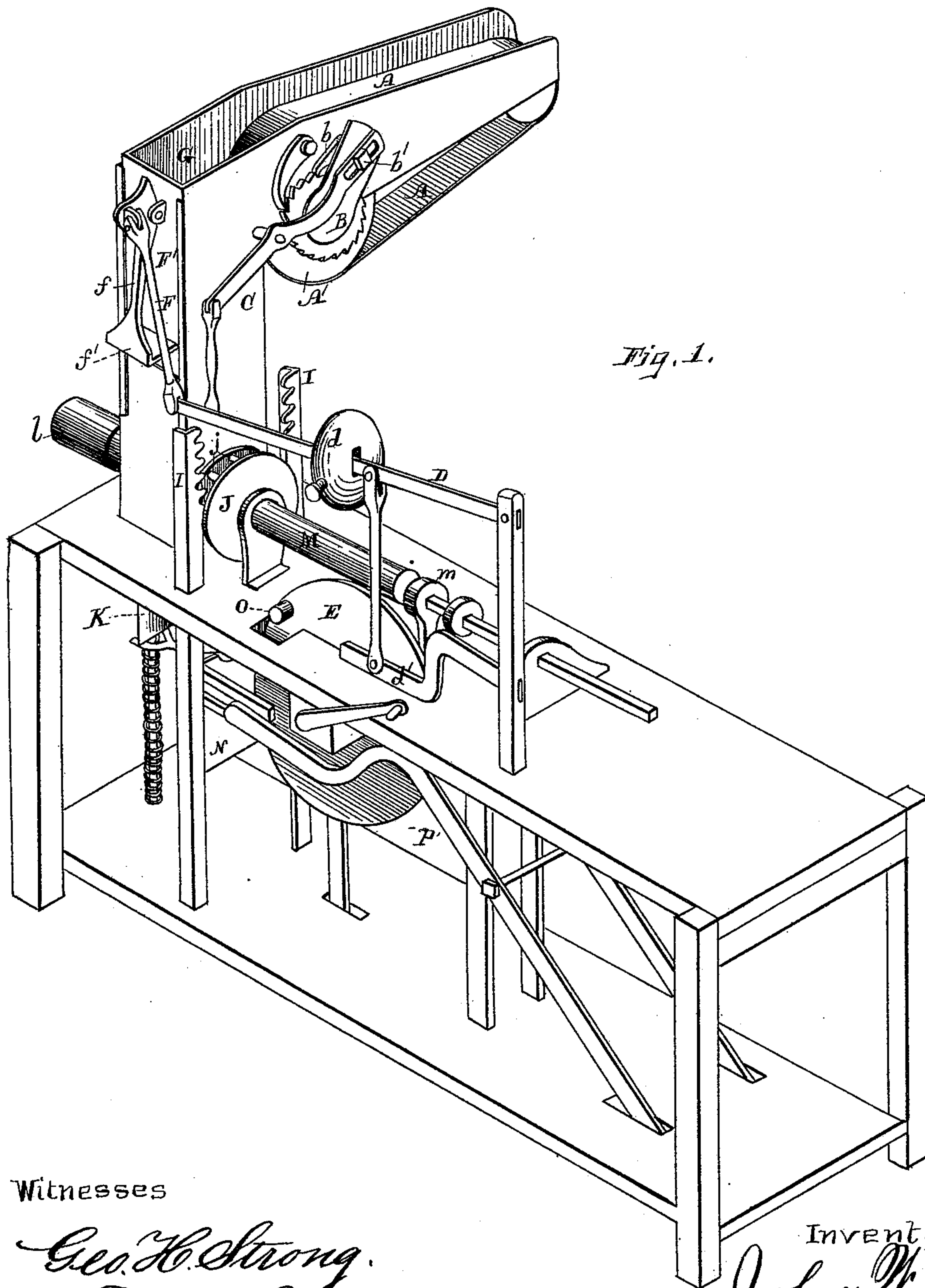


Fig. 1.

Witnesses

Geo. H. Strong.
Frank A. Brooks

Inventors

John West
and Robert D. Hume
By Dewey & Co.
Attys

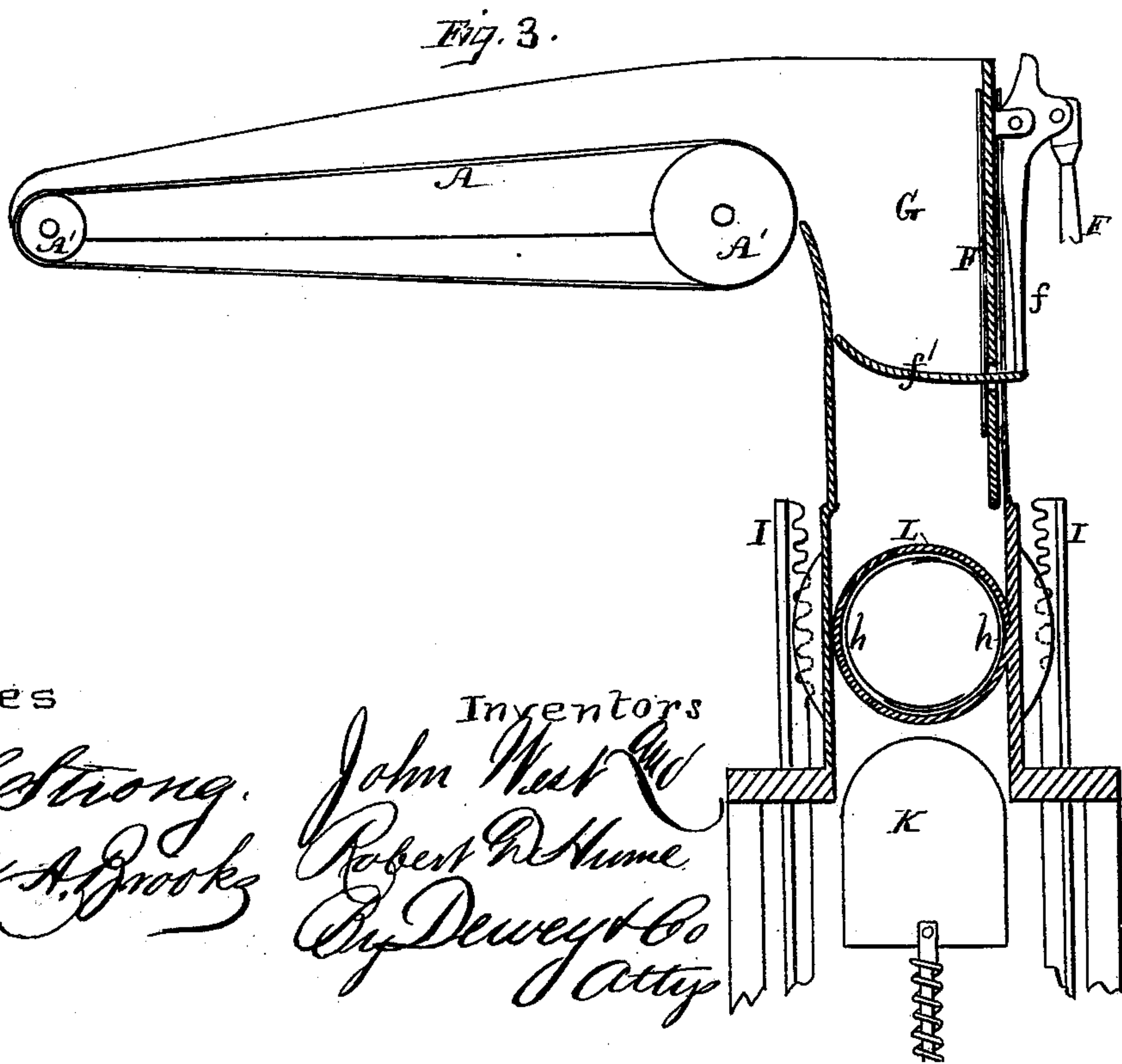
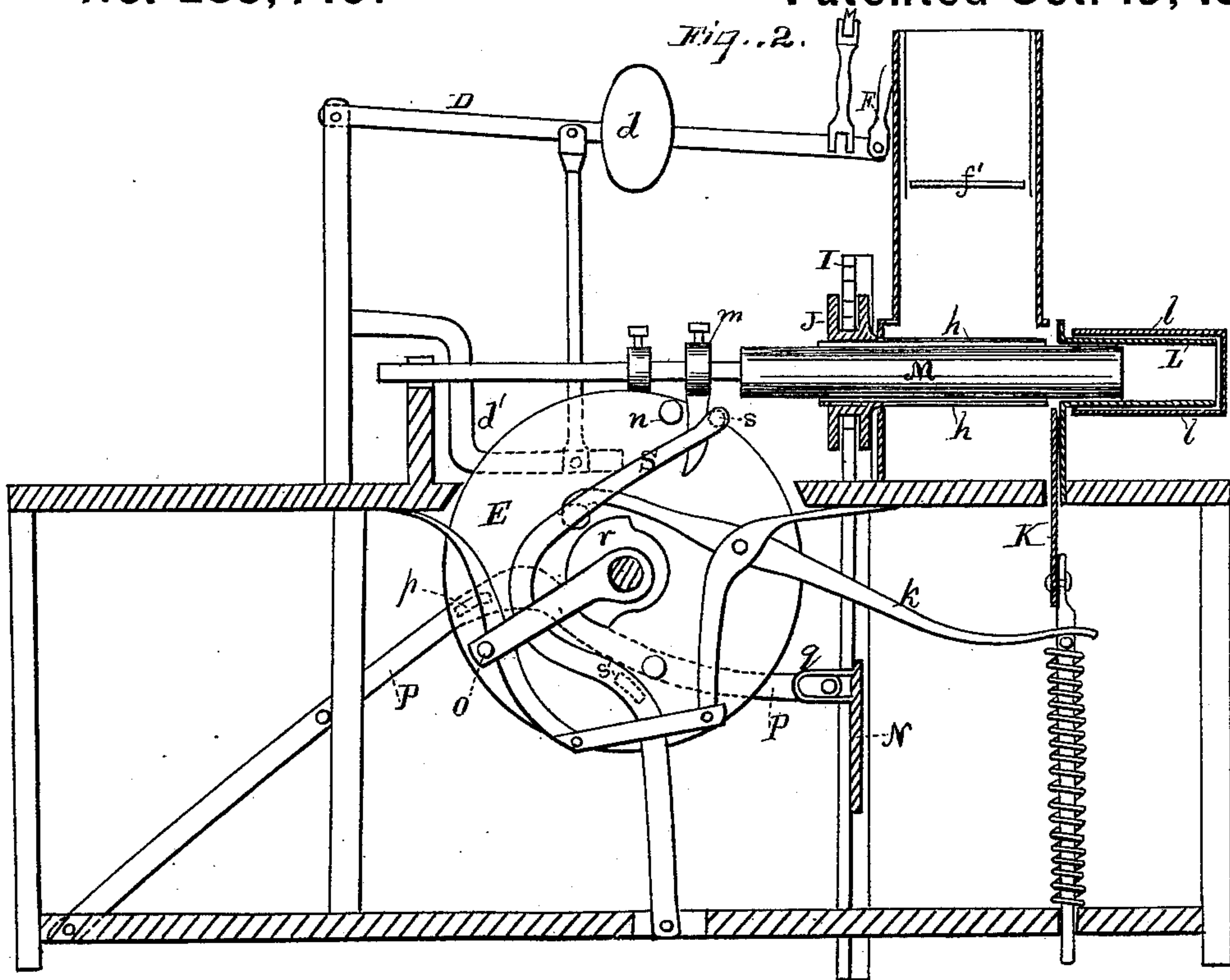
(No Model.)

2 Sheets—Sheet 2.

J. WEST & R. D. HUME.
Can Filler.

No. 233,449.

Patented Oct. 19, 1880.



Witnesses

Geo. H. Strong.
Frank A. Brooks

Inventors

John West
Robert D. Hume
By Dewey & Co
Attys

UNITED STATES PATENT OFFICE.

JOHN WEST, OF WESTPORT, OREGON, AND ROBERT D. HUME, OF SAN FRANCISCO, CALIFORNIA.

CAN-FILLER.

SPECIFICATION forming part of Letters Patent No. 233,449, dated October 19, 1880.

Application filed August 23, 1880. (No model.)

To all whom it may concern :

Be it known that we, JOHN WEST, of Westport, county of Clatsop, and State of Oregon, and ROBERT D. HUME, of the city and county of San Francisco, and State of California, have invented a Can-Filling Apparatus; and we hereby declare the following to be a full, clear, and exact description thereof.

Our invention relates to certain improvements in that class of apparatus which is employed to mechanically pack and fill the cans in which meat, fish, or other solid substances are hermetically sealed for the market; and it consists in the employment of a carrying-belt operated by an automatic pawl and ratchet, whereby the material is carried forward into a chute, through which it is led to the shaping and compressing cylinder, and in combination with this chute the employment of a pair of curved shearing-knives which cut the material to the exact cylindrical shape necessary to enable it to enter the can.

It also consists in the employment of a vertically-moving gate and presser, by which the amount necessary for each can is segregated from the mass in the chute and forced into the former.

It further consists in a cylindrical extension of the former, which is adapted to receive the can to be filled, said can being slipped over this extension with its bottom resting against the end of the extension, so the first portion of the substance which is forced from the former by the can-filling plunger will be deposited at the bottom of the can, and the can thus filled from the bottom toward the top, and the air expelled during the process of filling, the can at the same time being forced off the extension, so that it is filled and removed at one operation.

It further consists in certain details of construction in the mechanism employed to operate the different parts, as will be more fully described by reference to the accompanying drawings, in which—

Figure 1 is a perspective view of our invention. Fig. 2 is a longitudinal section. Fig. 3 is a transverse section.

The draper or feeding-belt A on the rollers A' is intended to feed or deliver the cut pieces

of fish, meat, &c., forward into the receiving-chute, whence they drop down in front of the plunger, as hereinafter described. One of the rollers A' has a ratchet, with which the pawl b of the rod B engages, this rod being operated by the lever C, as shown. Extended slots are cut both in the rod B and in the lever C, through which a bolt, b', passes, and the adjustment of this bolt with relation to the slots regulates the feed of the belt by giving more or less throw to the rod B, carrying the pawl. The lever C is hinged to another lever, D, provided with a spring or weight, and operated by the disk or cam-wheel E, impinging on the arm d' of said lever, as hereinafter described.

On the end of the lever D is an arm, F, hinged to a three-armed lever, f, on the lower end of which is the false bottom f' to the chute G. As the lever D is moved up, the rod or arm F, in operating the lever f, draws the false bottom f' out of the hopper, allowing the material which has been fed in to drop down into the presser-box. The lever f is swung on the top of a sliding plate, F', and this sliding plate moves vertically in guides in the chute, as shown. As the lever moves the plate upward the false bottom is moved out by the same action. After rising to the top, when the cam allows the lever D to drop, the sliding plate F' also drops, and the lever f then throws the false bottom across the chute. In falling thus the false bottom answers as a presser to force downward into the presser-box the fish or meat which has previously rested on said false bottom.

The meat or fish in the receiver is thus forced downward and compressed in the compression-cylinder formed by the two semi-cylindrical bevel-edged knives. These two knives fit by or overlap each other when operated. The knives really serve as molds, and while cutting the meat or fish mold it to a shape to fit the can.

The knives are operated by rack-bars I engaging with the teeth j on the disks J, these disks moving in opposite directions and each one having one of the semicircular knives attached to or forming part of it. These knives are opened, and as the false bottom of the chute

is pressed down the fish or meat is thus forced into the cylinder formed by the knives. As this cylinder is filled the operating mechanism hereinafter described moves the rack-bars upward, rotating the disks and closing the semicircular knives, which thus cut off a cylindrical piece of pressed fish or meat, inclosing it between them. At this moment the gate or knife K of the cylinder is withdrawn by means of a lever, *k*, which is thrown down by a pin or cam on the cam-wheel, and the end of the cylinder is left open. The plunger or piston M then enters the cylinder under the semicircular knives and pushes the cylindrical piece cut by them through their open ends into the cylindrical extension L. A common cylindrical can, *l*, such as is used for canning fish or meat, is slipped over this extension L until its bottom comes in contact with the end of said extension. The cut and molded fish or meat, in being forced into the extension by the plunger or piston, is forced against the bottom of the can, and as it gradually fills the can, said can is pushed off the extension and is left filled. In this way the can is filled by the bottom being filled first, and any air in said can is free to pass out between the inside of the can and the outside of the extension. The material is thus deposited in the can without any air at all.

If it is desired to dispense with the carrying-belt, with its devices, and the presser, so as to leave the vertical chute only, the feeder is formed by a gate or jaw upon the side of the chute, operated by a rod extending to the rack-bars and moving with them. The false bottom and presser are replaced by a weighted block, which is raised and lowered in the chute, fitting it exactly.

The piston or plunger is operated by an adjustable lug, *m*, coming in contact with the pin *n* on the disk E and pushing said piston in. As the piston is thus moved inward by the pressure of this pin on the lug, it forces the compressed fish or meat in the cylinder out into the bottom of the can, and as the can gradually fills it is pushed off the extension, all ready filled to receive its top. Just as this plunger or piston nearly finishes its stroke the pins *o o* on the disk and driving-shaft come in contact with the lugs *p* on the levers P, these levers being provided with pins at their forward ends which engage with loops *q*, attached to a plate, N, carrying the rack-bars I. The rack-bars are thus forced upward, turning the disks J, which, moving in opposite directions, rotate the knives *h*, so as to open them by each other and leave an opening from the chute into the feed-cylinder. As the plunger is withdrawn the sliding plate carrying the false bottom of the chute is raised by the action of the lever D *d'* and lug on the driving-disk, and, the false bottom being opened, all the material drops down onto the plunger or piston in the cylindrical pressure-box. Just the moment the end of the plunger is withdrawn from this cylinder the lug releases

the lever D *d* and its weight or spring draws it down. As it begins to fall the false bottom *f'* shuts in, and as its plate F' is drawn down by the weighted lever this bottom answers as a presser, which compresses the meat or fish into the cylindrical box H between the edges of the knives. At this instant the lugs *o o* on the driving-shaft and disk come in contact with the links or loops *q* on the plate N, carrying the rack-bars. These rack-bars are then drawn down, rotating the knife-carrying disks, and as these knives *h* close by each other, a cylindrical piece of the pressed fish or meat is formed by them, ready to be forced out by the plunger. Just at this time a cam, *r*, on the disk or driving shaft depresses the lever *k*, drawing down the gate K, so that the plunger may force out the fish or meat into the can, as hereinafter described.

A curved arm or lever, S, having a pin, *s*, to engage with the front of the adjustable stop or lug *m* on the plunger or piston, withdraws the piston or plunger at the proper time, a pin on the driving wheel or disk engaging with a lug, *s'*, to draw said lever back. This operation is continuous. The belt continues to pass the material into the chute, the false bottom forces it down into the cylinder, where the knives cut it in proper shape, and the plunger keeps forcing blocks of proper size into the cans, said cans being displaced as soon as filled. An attendant then puts another can onto the extension, which is, in turn, filled, as described.

The object of the gate K is to keep the material in the cylinder in proper shape and prevent it spreading while being pressed down by the false bottom. As soon as the piston is drawn back this valve closes the outlet of the cylinder into the extension. When the piston is coming forward the gate opens and allows the fish or meat to pass out of the cylinder into the extension and into the can.

The material, when pressed together compactly, is cut by the knives in portions which nearly fit the cans, and is placed in the cans without handling, the air at the same time being excluded.

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

1. A can-filling apparatus, in combination with an intermittently-moving belt A, drums A', crank-arm B, lever C, and ratchet *b*, all constructed, arranged, and operated as set forth.

2. The horizontal carrying-belt A, with its drums A', ratchet-wheel, and pawls, in combination with the crank-arm B and vibrating lever C, said crank and lever being slotted, as shown, and united by the adjustable bolt *b'*, whereby the rotation of the ratchet and the movement of the belt may be increased or diminished, substantially as herein described.

3. In combination with the vertical chute G, the combined gate and presser *f'*, with its le-

ver f and vertically-moving slide F' , actuating-disk E , arms D d' , and the pitman F , whereby the gate is opened and closed, and caused to reciprocate to force the material downward, substantially as herein described.

4. The vertically-moving slide F' and the horizontally-moving gate and presser f' , in combination with a triple-arm lever, f , pivoted to the slide F' , and provided with the actuating-pitman F , whereby the vertical movement of the slide and horizontal movement of the gate are performed by one operation, so that the material to be forced downward is separated from that above by each movement of the slide and gate, substantially as herein set forth.

5. The forming and compressing case consisting of the semi-cylindrical plates h h , rotating about a longitudinal axis, and provided with an operating mechanism whereby their upper edges are separated to receive the material from the chute and closed after the case is filled, substantially as herein described.

6. The forcing and compressing case consisting of the semi-cylindrical plates h h , adapted to be rotated upon each other about a horizontal axis, each plate having a recess in its upper edge to receive the material from the chute when separated, and to act as a cutting-knife and shaper while closing, substantially as herein described.

7. The cylindrical shaping and cutting knives h h , adapted to receive material from the vertical chute G , said knives acting as a former to cut and mold a quantity of material sufficient to fill the can, and as a gate to separate this amount from that remaining in the chute, substantially as herein described.

8. The cylindrical former consisting of the two movable sides h h , with their flat toothed disks J , in combination with the rack-bars I , adapted to rotate the disks and plates in oppo-

site directions, substantially as and for the purpose herein set forth.

9. The forming-case consisting of the semi-cylindrical cutting-plates h h , with their actuating-disks J , and rack-bars I , having slotted links q , in combination with the lever P , with its lugs p , and the crank arm or cam o o , whereby the rack-bars and disks are moved and the sides of the cylinder are alternately opened and closed, substantially as herein described.

10. The case formed of the semi-cylindrical rotating and cutting knives h h , with their operating-disks J , said disks turning on a sleeve, whereby the plunger M is allowed to reciprocate through the case, substantially as and for the purpose herein described.

11. In combination with the receiving and forming case consisting of the semi-cylindrical rotating cutters h h , adapted to be opened to receive the charge and closed when full, and the reciprocating plunger M , the stationary extension L , fitted to receive the can l and act as a guide, so that the material is deposited in the can and the latter removed when full, all at one operation, substantially as herein described.

12. In a can-filling apparatus, the can-holding tubular extension adapted to fit within the can, so that the material, when forced through the extension, will be first deposited in the bottom of the can and the air expelled as the can is filled, substantially as and for the purpose herein described.

In witness whereof we have hereunto set our hands.

JOHN WEST.

ROBERT DENISTON HUME.

Witnesses:

FRANK K. LOVELL,

H. M. BRACKETT.