

(No Model.)

3 Sheets—Sheet 1.

J. A. RULE.

SLOT MACHINE FOR AUTOMATIC VENDING OF NEWSPAPERS.

No. 557,235.

Patented Mar. 31, 1896.

Fig. 1.

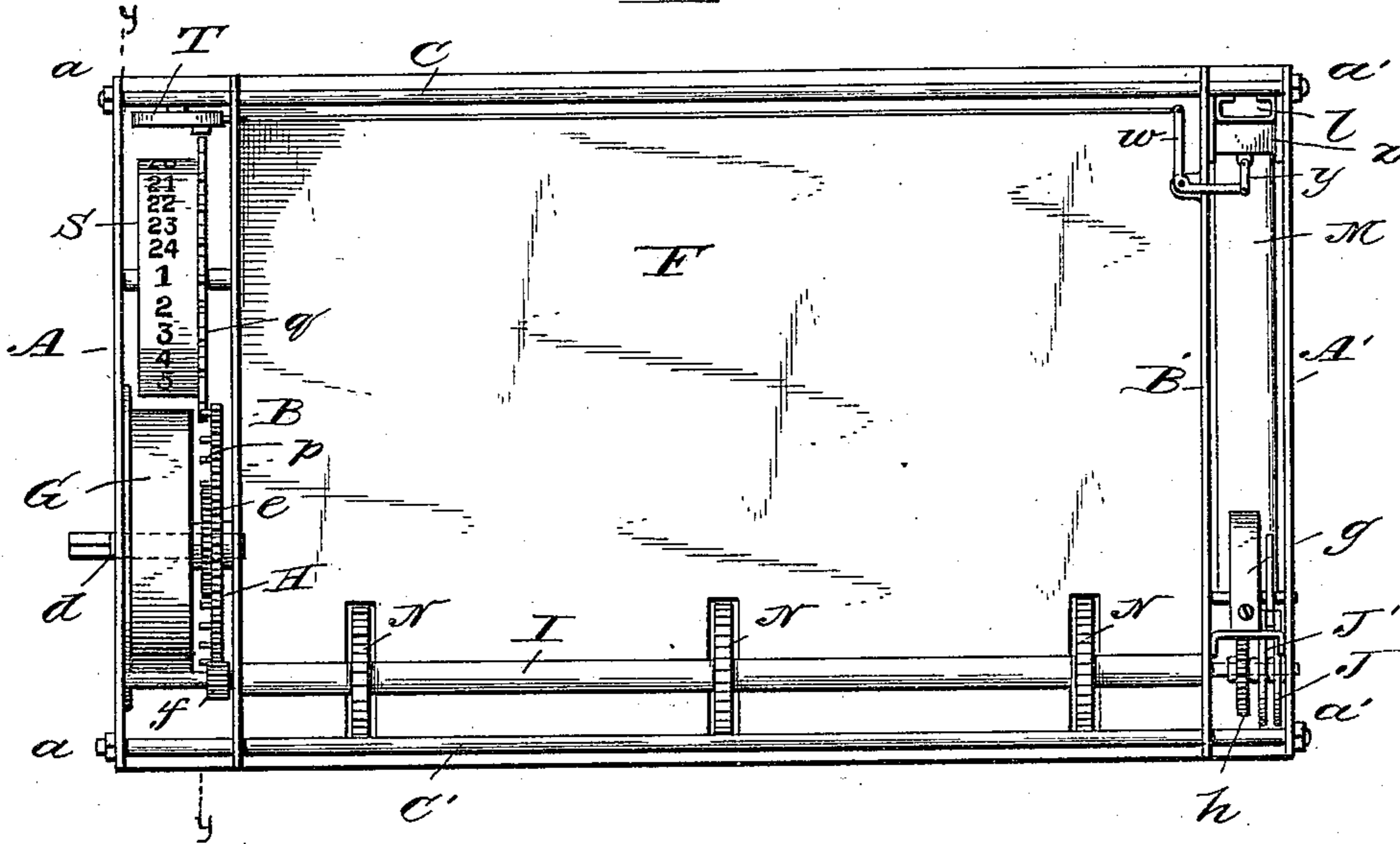
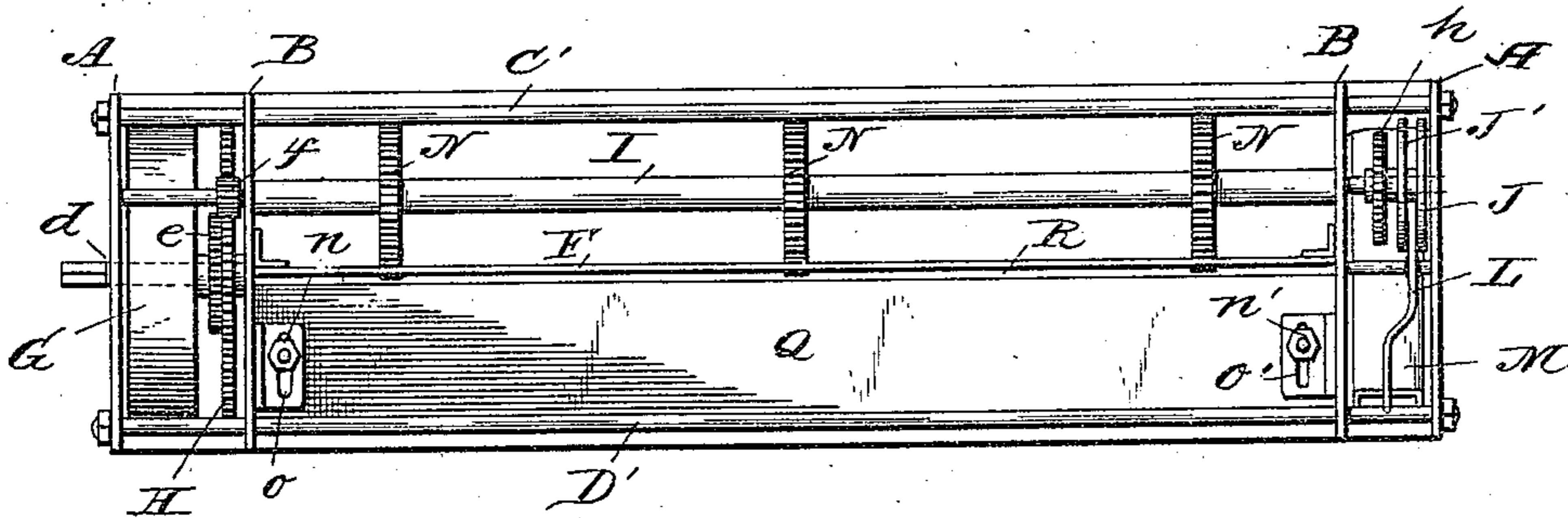


Fig. 2.



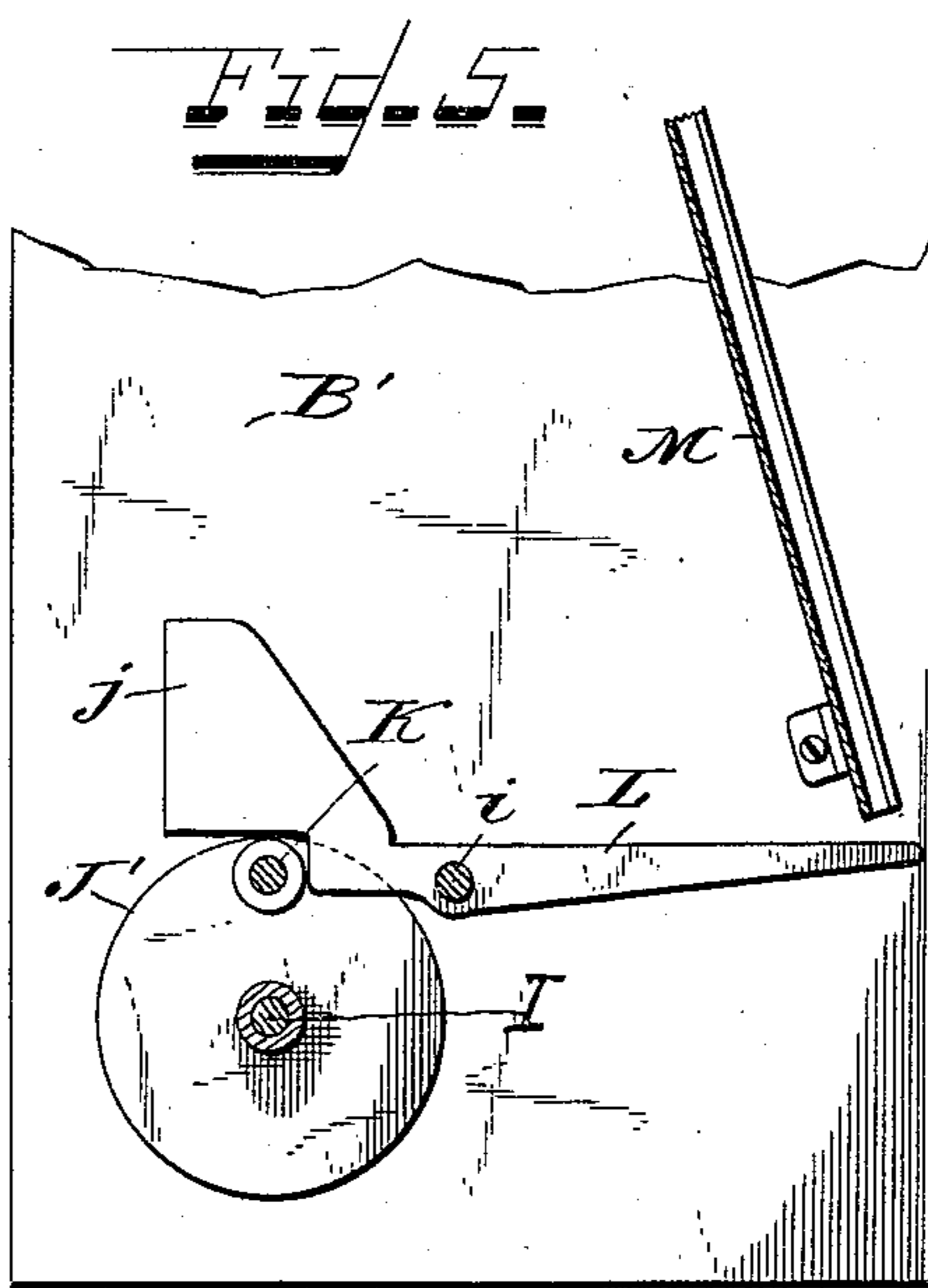
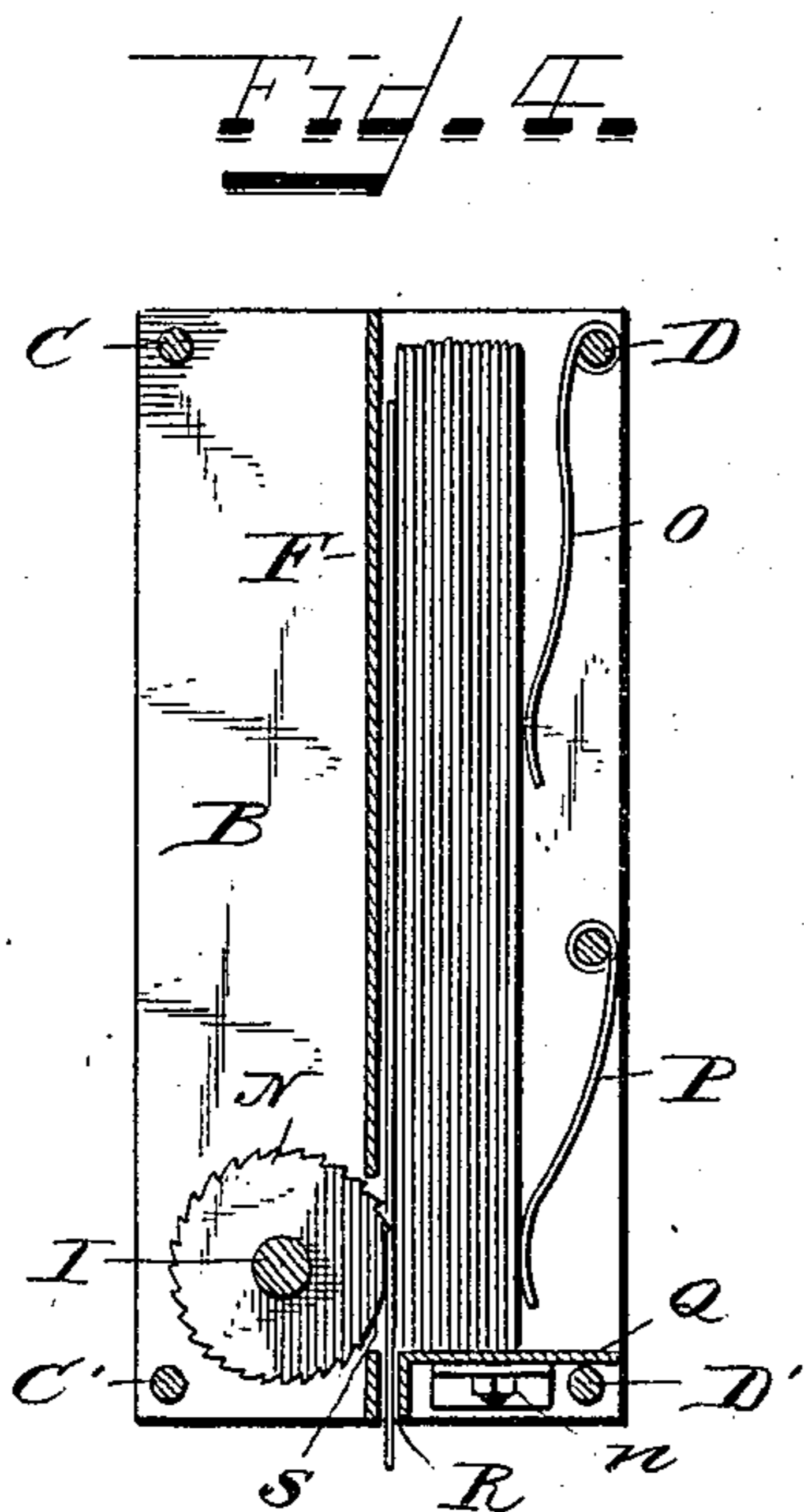
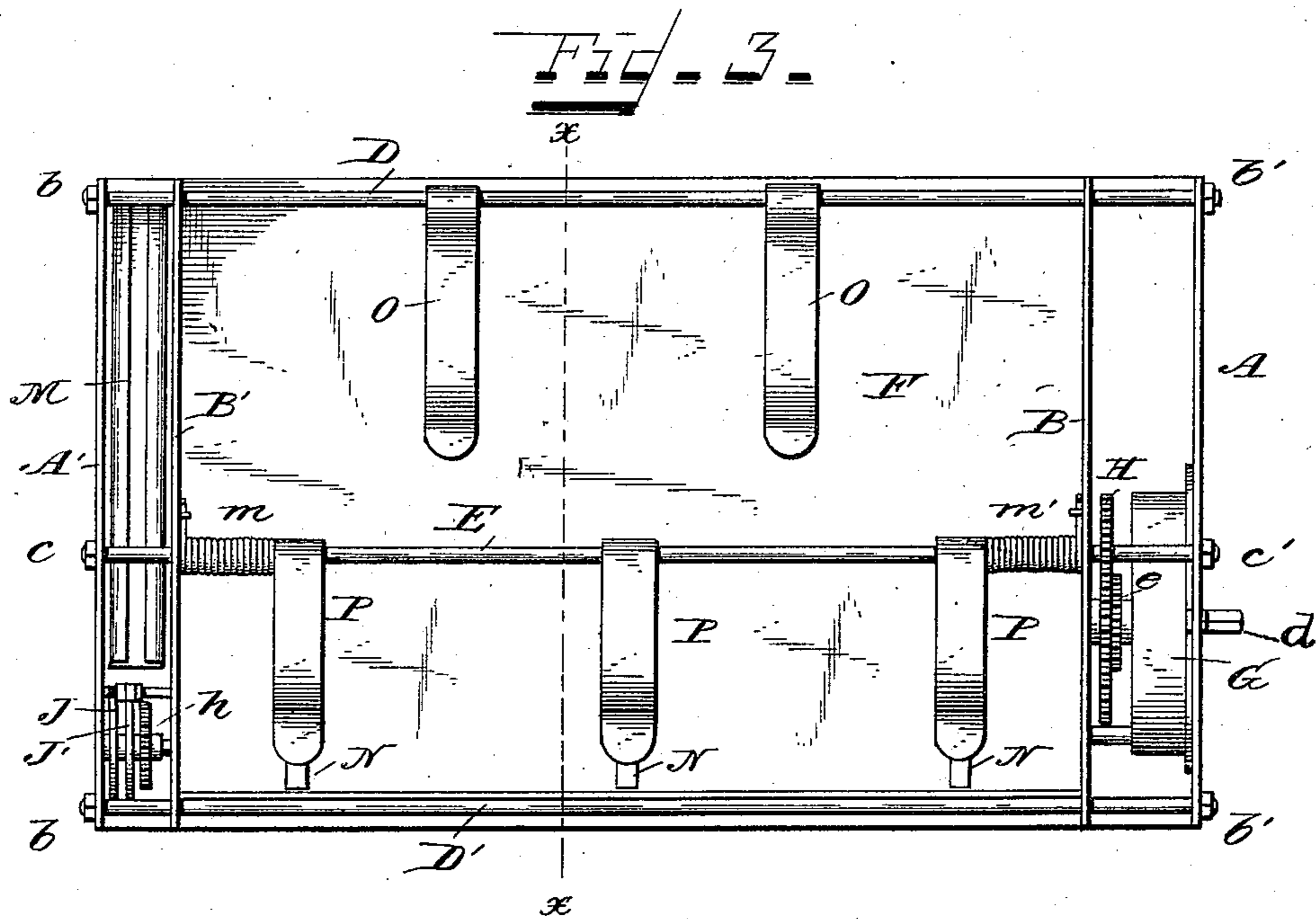
Witnesses.  
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Thos. Kemper

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Attorney.

(No Model.)

3 Sheets—Sheet 2.

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Witnesses.

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(No Model.)

3 Sheets—Sheet 3.

J. A. RULE.

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Fig. 6.

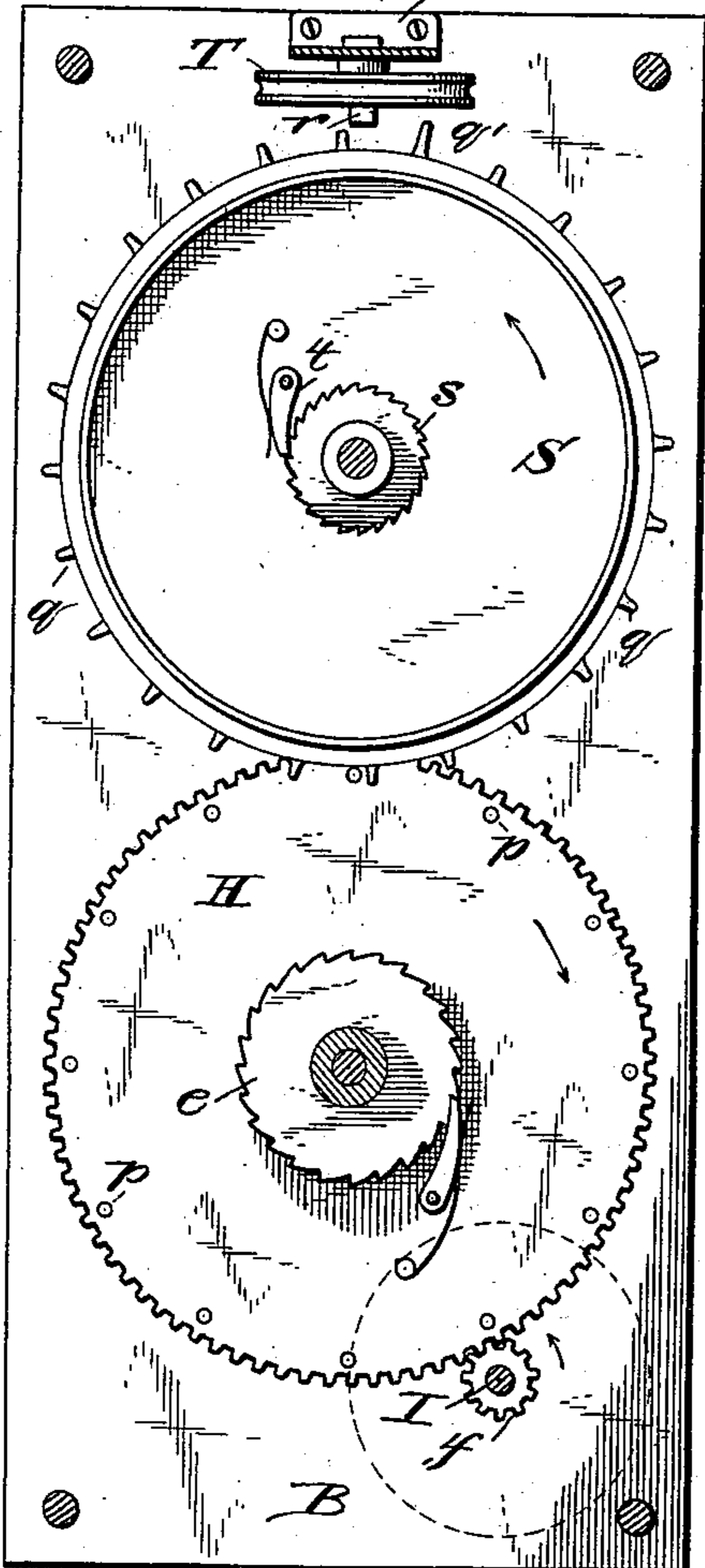


Fig. 7.

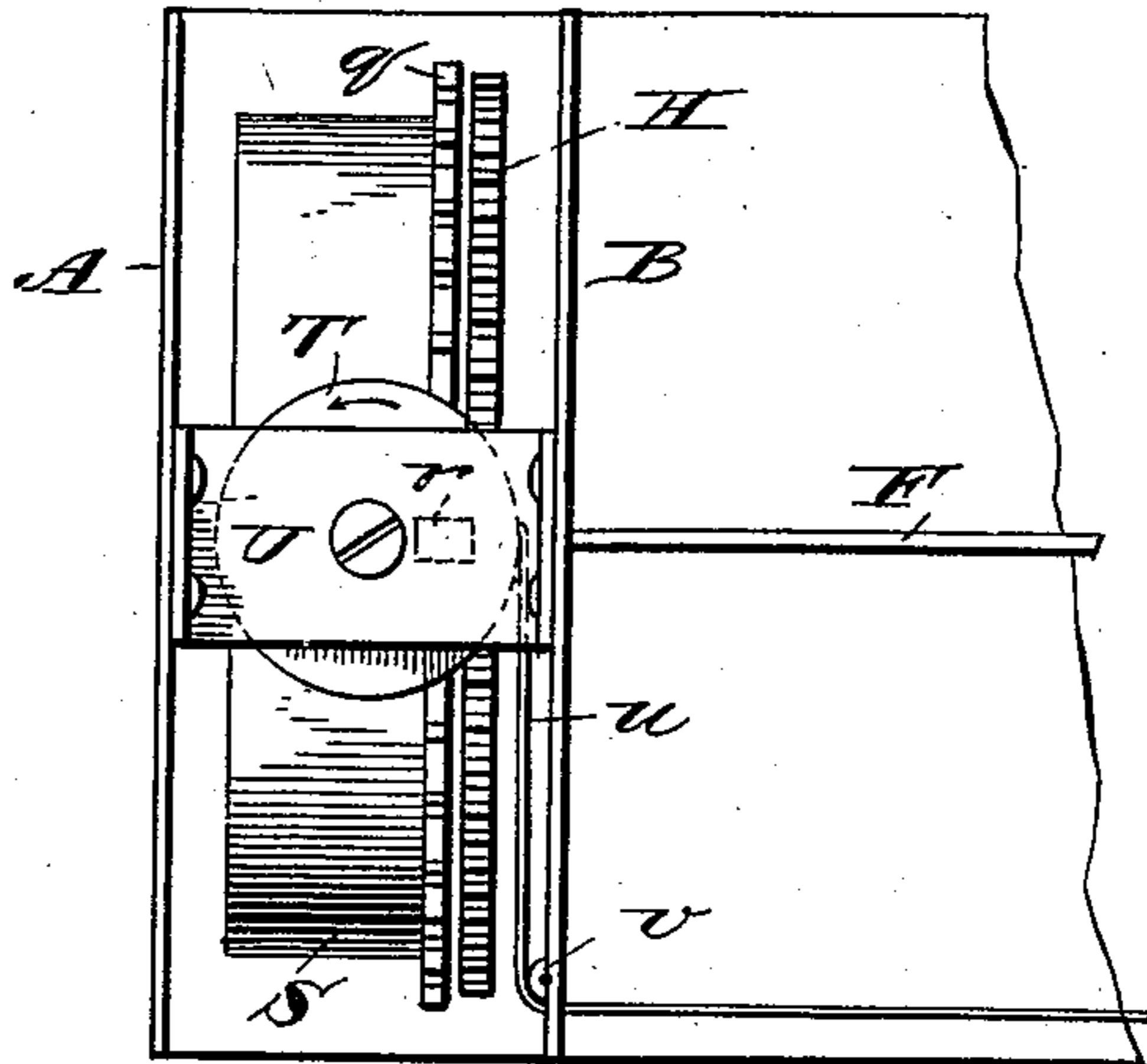
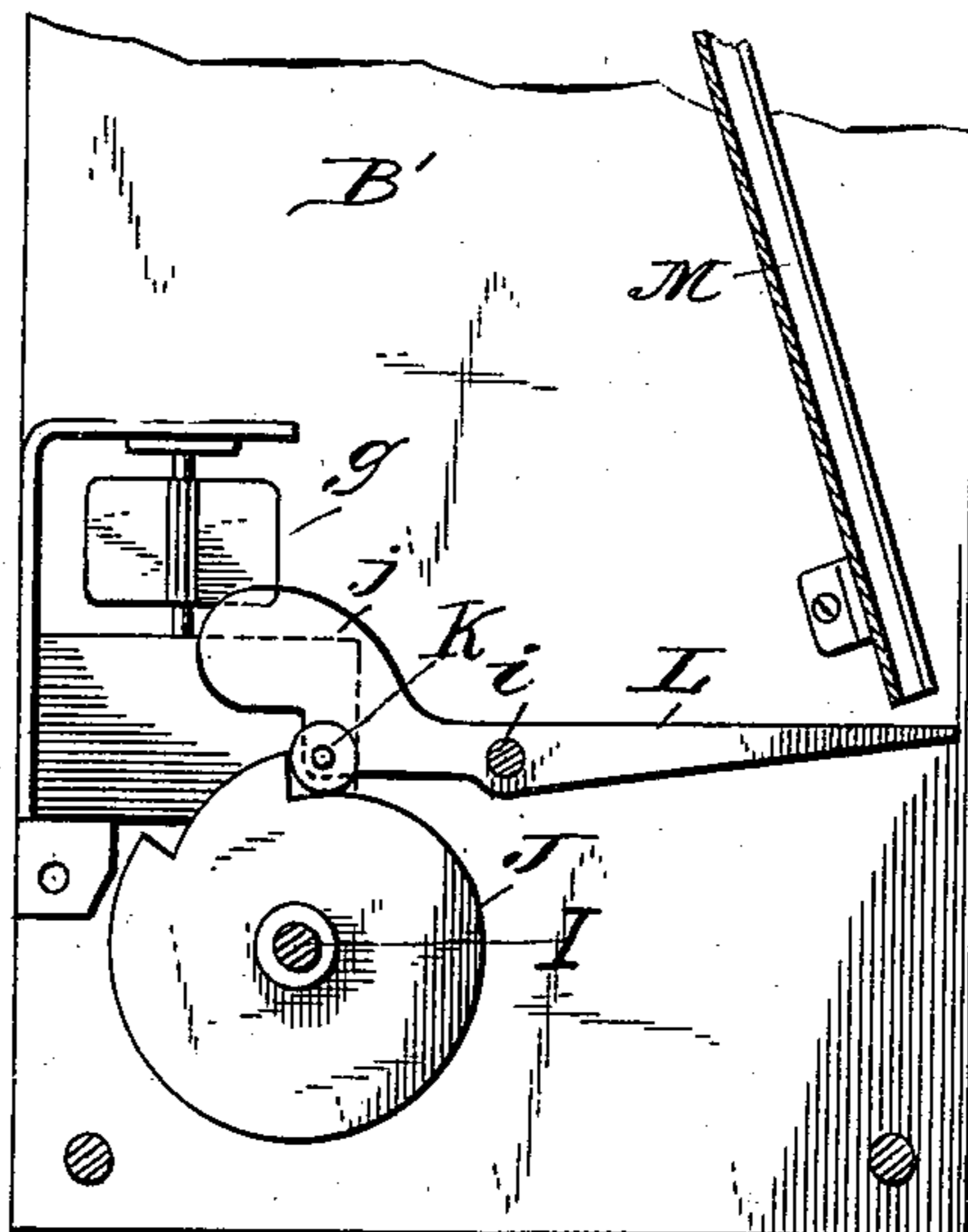


Fig. 8.



Witnesses.

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# UNITED STATES PATENT OFFICE.

JOHN A. RULE, OF MOUNT WASHINGTON, OHIO.

## SLOT-MACHINE FOR AUTOMATIC VENDING OF NEWSPAPERS.

SPECIFICATION forming part of Letters Patent No. 557,235, dated March 31, 1896.

Application filed May 27, 1895. Serial No. 550,750. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN A. RULE, a citizen of the United States, residing at Mount Washington, in the county of Hamilton and State of Ohio, have invented new and useful Improvements in Slot-Machines for the Automatic Vending of Newspapers, of which the following is a specification.

This invention contemplates certain new and useful improvements in coin-controlled machines, and has for its object the production of a simple and inexpensive apparatus for the automating vending of newspapers.

A further object is to provide extremely simple mechanism in a machine of this class which will occupy a minimum of space, and which will be certain in its operation, and in which the coin-inlet slot will be closed when the machine is emptied.

The invention will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a front elevation, the inclosing casing being removed. Fig. 2 is a bottom plan view. Fig. 3 is a rear elevation. Fig. 4 is a vertical sectional view on line *x x*, Fig. 3. Fig. 5 is an enlarged view of the locking and releasing mechanism. Fig. 6 is an enlarged vertical sectional view on line *y y*, Fig. 1. Fig. 7 is a plan view thereof, parts being broken away. Fig. 8 is a slightly-modified form of the locking and releasing mechanism.

Referring now to the drawings, in which corresponding parts are represented by the same letters, A A' are metallic plates forming the outer walls (aside from the casing) of the device, and B B' are also metallic plates at a distance of from one to two inches from the outer plates A A', thus dividing the interior into three compartments, that in the center being of sufficient length and height to admit newspapers of the ordinary size folded in octavo form. These plates or walls are held in position by the rods C C', Fig. 1, D D', and E, Fig. 3, which are fastened by the nuts *a a'*, *b b'*, and *c c'*. The central compartment is in turn divided by the plate F, Fig. 4, which is slotted at the bottom to admit the passage of the toothed wheels hereinafter described, as shown in Fig. 4.

G is a coiled spring (covered by a casing)

which when coiled by winding turns its axle *d* by its impulse to free itself, and in turn the toothed wheel H. *e* is a small ratchet-wheel upon the same axle *d*.

The toothed wheel H engages with the pinion *f* upon the shaft I, which shaft extends the length of the device, and near its opposite extremity is provided with a speed-governor *g*, of any well-known form, with which it engages by means of a toothed wheel *h*, Fig. 2.

J J' are two stop-wheels upon the shaft I, between which is pivoted the small antifriction-roller K, one side of which is most completely shown in Fig. 5.

L is a lever-catch, pivoted at I, and provided with the weight *j*, which keeps it engaged with the wheel K when not released by the dropping of a coin.

M is a coin-chute of a size to permit the passage of the desired coin, terminating above at a slot *l*, through which the coin may be introduced from the outside of the device. The shaft I is also provided with three wheels N N N, having teeth cut upon them at acute angles, like the teeth upon ratchet-wheels. The teeth of these wheels for about one-sixth of the circumference are cut off at *s*, Fig. 4, so that when the revolution of the shaft is completed the remainder of the paper may be drawn out by hand without being checked by the teeth of the wheels. These wheels may be made of rubber, metal, or wood. They pass through slots near the bottom of the plate F in order to reach and engage with the newspapers in the inner compartment behind the plate, as shown in Fig. 4.

To the rod D, Fig. 3, two metallic springs O are attached, and to the rod E, Figs. 3 and 4, three similar springs P are attached, all of these springs exerting their force to hold the newspapers firmly pressed against the wheels N and the plate F. The rod E passes loosely through the partition-plates A A' B B', and in order to give greater force to the springs P is made to turn by means of the springs *m m'*, which are coiled about and fastened to the rod and attached to the partition-plates B B'. The papers rest upon a small metallic plate Q (shown in Figs. 2 and 4) extending from the rear of the device nearly to the plate F, but bent downward at right angles so as to form an opening R for the delivery of the

papers. As newspapers vary in thickness, as they may or may not have supplements, in order that the delivery-opening R may correspond, the bottom plate Q is attached to the partition-plates B B' by means of angle-plates, through which set-screws  $n n'$  pass through slotted openings  $o o'$ .

To the outer side of the wheel H, Fig. 6, near its edge, are attached a number of pins  $p p$ , set apart from each other at distances corresponding to the partial revolution made by the wheel with each entire revolution of the shaft I. These pins engage with projections  $q q'$  upon a flange of the wheel S, which wheel revolves above the wheel H upon an independent axle. One of these projections  $q'$  is of greater length than the others and sufficiently long to engage with a block  $r$  upon the wheel  $t$ , which is set above the wheel S and pivoted upon an independent axle attached to the cross-piece U, which is fastened upon the partition-plates A B. The wheel S is provided with a ratchet-wheel  $s$  and a spring-pawl  $t$  to hold it in place when not moved by the pushing of one of the pins of the wheel H upon the projections  $q$ . To the wheel T is attached a wire  $u$ , which passes over the pulley  $v$  and extends across the top of the device to the bell-crank lever  $w$ , with a small link  $y$ , so that when the wheel T is made to revolve the slide  $z$  is pushed across and closes the slot  $l$ .

The wheel S carries upon it consecutive numbers, from one upward, so as to include as many numbers as there have been newspapers placed inside the device.

The shaft I may be replaced by a roller having its circumference surrounded by some pointed or roughened substance calculated to engage and draw a newspaper.

The object of the engagement of the latch or lever-catch L with a small roller suspended between the two stop-wheels J J' is to diminish the friction and to shorten the long arm of the lever. It seems obvious that if the force of the spring G is to be held in check by the lever-catch acting directly upon the stop-wheel a considerable force will be required for the release or a great length of the long arm of the lever. By the use of the anti-friction-roller K the force required for the release is simply the force necessary to overcome the friction of the roller upon its independent axle without reference to the force exerted upon the shaft or stop-wheel. By this arrangement I am enabled to use a short lever, since it is only necessary to give a slight movement to the long arm thereof to effect the release of the shaft. The roller being partially revolved by the movement of the lever completely frees the stop and allows the shaft to rotate under the action of its impelling force.

As to construction, should it be preferred, the small wheel K may be attached to the lever-catch, as shown in Fig. 8, and be made to engage with a projection upon the stop-wheel.

In case it is desired to vend papers for the

purchase of which more than one coin is necessary two or more small wheels may be pivoted upon the stop-wheels J J' at a slight distance from each other, so that two or more releases will be necessary for a complete revolution of the shaft I, or two or more stops may be arranged upon the stop-wheel J, as shown in Fig. 8. It is also proper to remark that the springs O and P should be so adjusted as to hold the papers firmly against the partition-plate F, whatever may be the number of the papers in the device, and to feed the papers automatically in succession to the wheels or roller. For the spring G any other motive power, as electricity, for example, may be substituted without materially changing the remainder of the device.

The operation of the device is as follows: The spring G being wound and the newspapers having been carefully placed in position, when a coin is dropped into the slot  $l$ , it passes through the coin-chute M and strikes the long arm of the lever-catch L. By the force of its impact the catch is released from its engagement with the anti-friction-roller K, attached to the stop-wheels J J', and the force of the coiled spring G revolves the shaft I, while the coin drops below into a suitable receptacle. (Not shown in the drawings.) As the shaft I revolves, the toothed wheels engage with the nearest newspaper and force it through the delivery-opening R, as shown in Fig. 4. The revolution of the shaft will carry the paper about two-thirds through the bottom of the device, when it can be readily removed by the purchaser. As one revolution of the shaft I is completed one of the pins upon the wheel H comes in contact with one of the projections upon the flange of the wheel S, and a number upon the wheel S is displayed through a small glass opening in the outer case. When the last number is reached, the projection  $q'$  upon the wheel S comes in contact with the block  $r$  upon the wheel T, which causes the wheel T to revolve. This revolution draws the wire  $u$  and closes the slot  $l$ .

Having fully described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a vending apparatus, a rotary delivery-shaft, means for rotating the same, and means for locking and releasing said shaft, the same comprising a stop carried by said shaft, a roller and a detent-lever having two arms, one slightly longer than the other, one of said arms being designed to effect a partial revolution of said roller when said other arm is moved, thereby freeing said stop and permitting said delivery-shaft to rotate, as set forth.

2. In a vending apparatus, a rotary delivery-shaft, means for rotating the same, and means for locking and releasing said shaft, the same comprising two disks carried by said shaft, a cross-pin between said disks, a roller loosely mounted on said cross-pin, and a lever having two arms, one slightly shorter than the other and provided with a detent designed to

engage said roller, whereby when the long arm of said lever is moved the short arm thereof will effect a partial rotation of said roller thereby permitting said delivery-shaft to rotate, substantially as set forth.

3. In a vending apparatus having a compartment designed to hold a series of papers, a partition having a series of slots therein along its lower edge, a rotary delivery-shaft parallel with said partition and having a series of toothed wheels thereon extending through said slots, said wheels having segmental smooth surfaces on their peripheries, mechanism for rotating said shaft, a governor for controlling the movement thereof, a stop carried by said shaft, and a detent-lever designed to engage said stop, substantially as set forth.

4. In a vending apparatus having a compartment designed to hold a series of papers, said compartment having a discharge-outlet, an adjustable bottom for controlling said discharge-outlet, a partition having a series of slots therein along its lower edge, a rotary delivery-shaft having a series of toothed wheels extending through said slots, said wheels having segmental smooth surfaces on their peripheries, mechanism for rotating said shaft, a governor for controlling the movement thereof, a stop carried by said shaft, and a detent-lever designed to engage said stop, substantially as set forth.

5. In a coin-controlled vending apparatus having a slot and a discharge-outlet, a rotary shaft, mechanism for operating said shaft, a

wheel periodically operated by said mechanism, a second wheel engaged by said former wheel, a slide adjacent to and capable of being moved over said slot, and connections between said second wheel and said slide for operating the same, substantially as set forth.

6. In a coin-controlled vending apparatus having a slot and a discharge-outlet, a rotary shaft, mechanism for operating said shaft, a wheel periodically operated by said mechanism, a second wheel engaged by said former wheel, a slide adjacent to and capable of being moved over said slot, a bell-crank lever connected to said slide, and a cord or wire connecting said bell-crank lever to said second wheel, substantially as set forth.

7. In a coin-controlled device for the automatic vending of newspapers, the combination with a shaft provided with gearing for engaging and moving a newspaper, of means for rotating the same, a wheel engaging with said shaft displaying consecutive numbers with each revolution of the shaft, a second wheel engaged by said former wheel at the completion of said revolution, a slide adjacent to the coin-inlet slot and connections between the same and said second wheel, substantially as set forth.

In testimony whereof I have hereunto set my hand, in the presence of two witnesses, this 25th day of May, 1895.

JOHN A. RULE.

Witnesses:

THEO. KEMPER,  
EDW. MOULINIER.