

No. 767,134.

PATENTED AUG. 9, 1904.

L. B. BROWN.  
COIN OPERATED VENDING MACHINE.

APPLICATION FILED MAY 16, 1904.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 2.

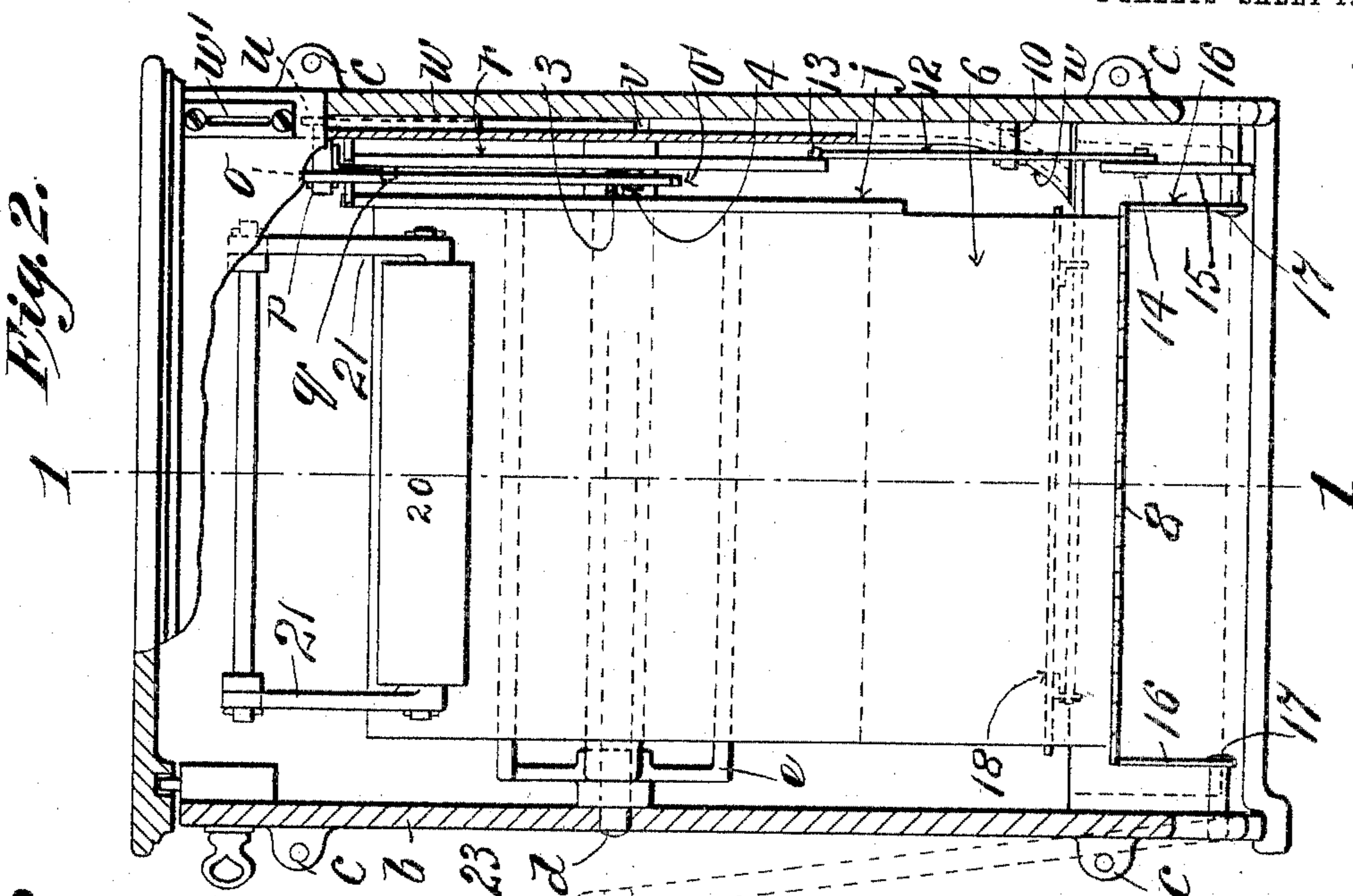
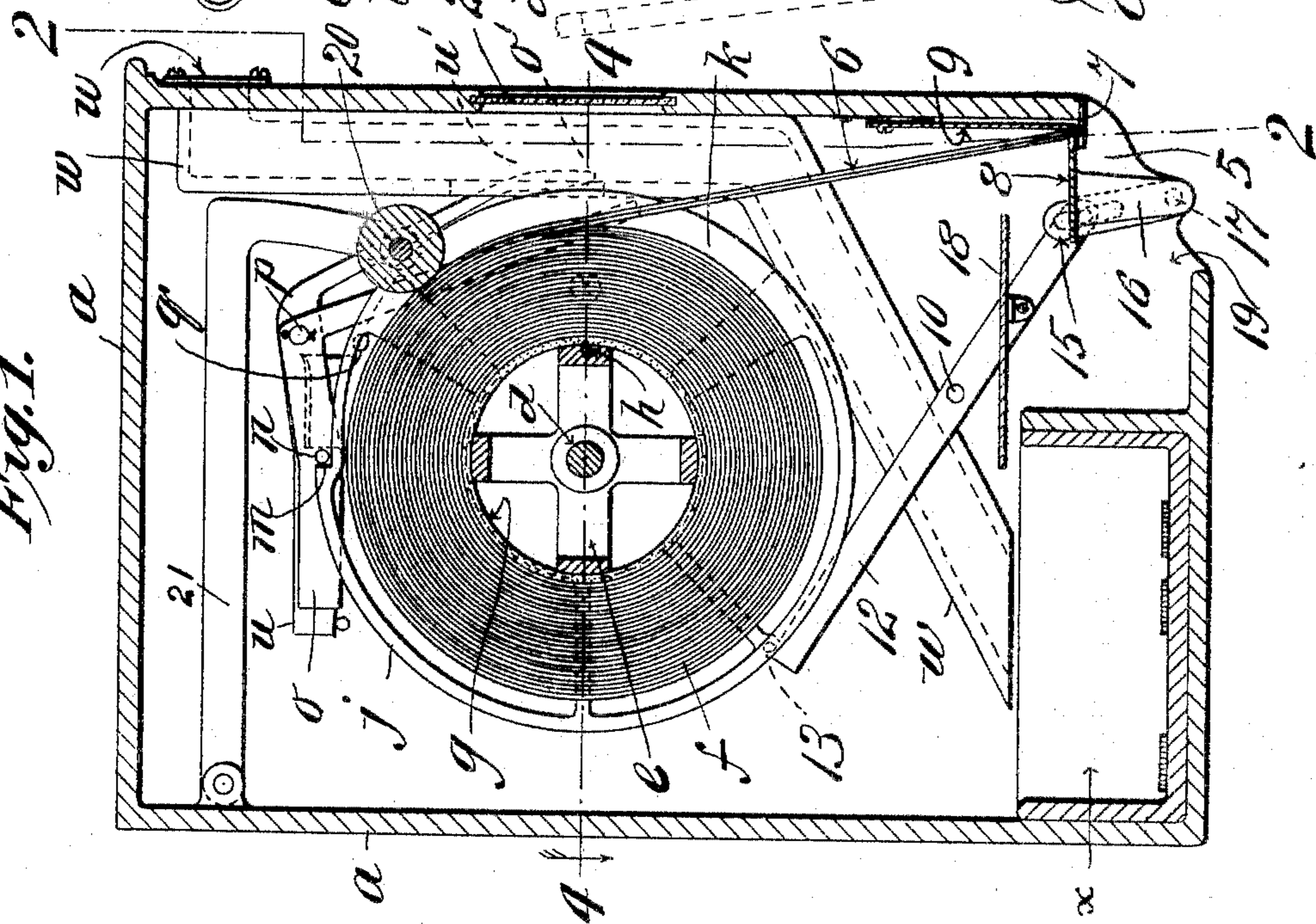


Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 3.

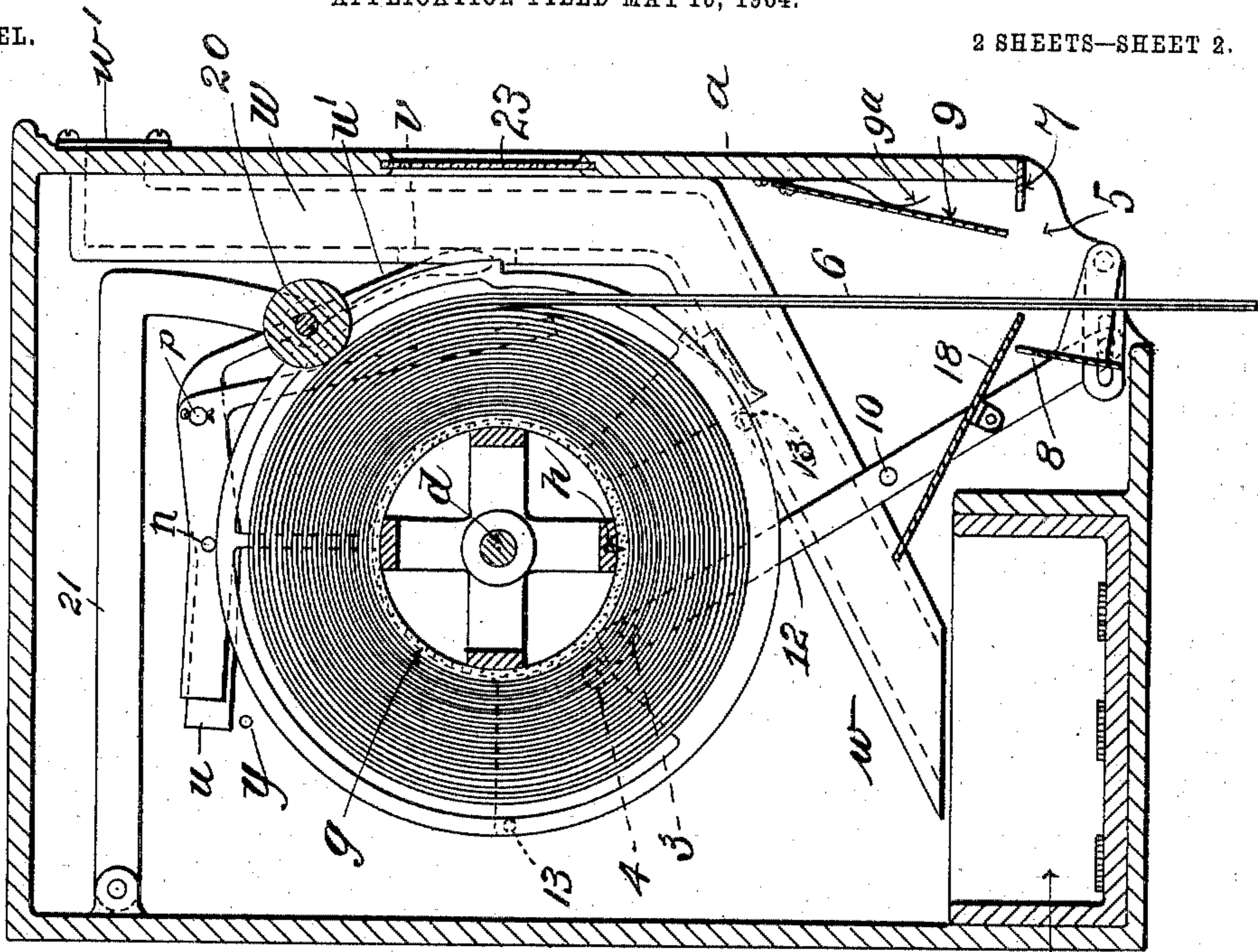


Fig. 4.

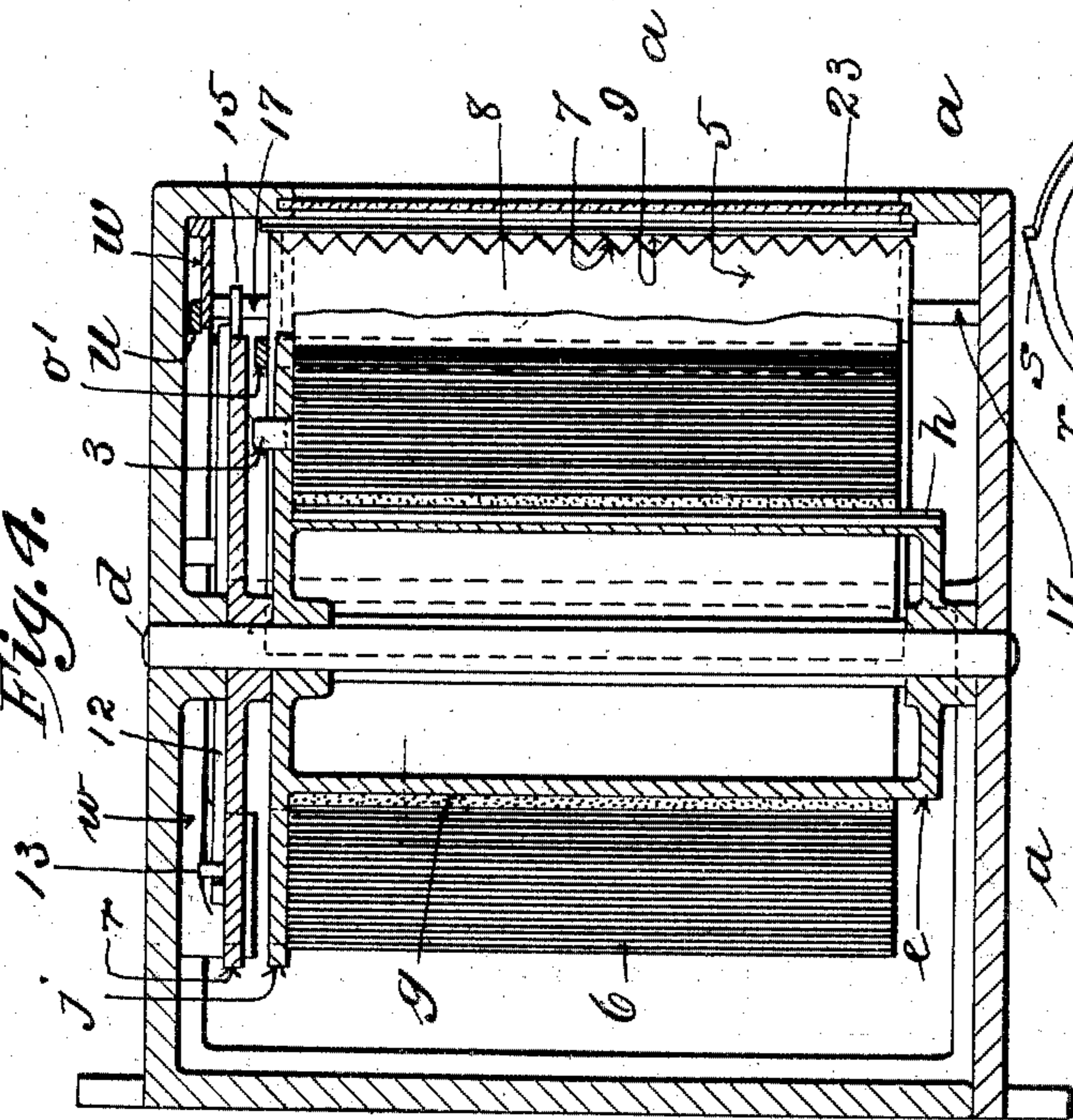


Fig. 5.

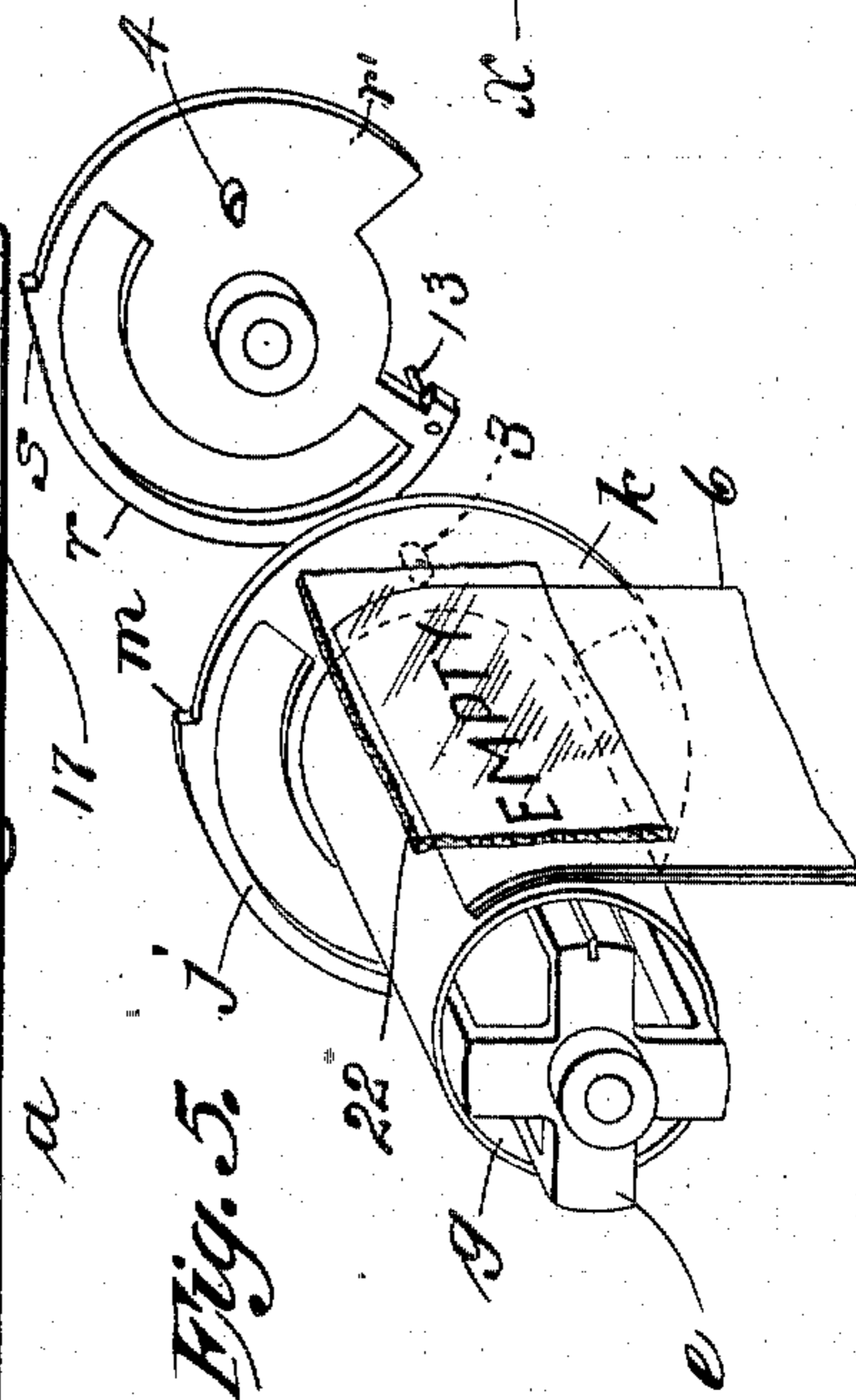
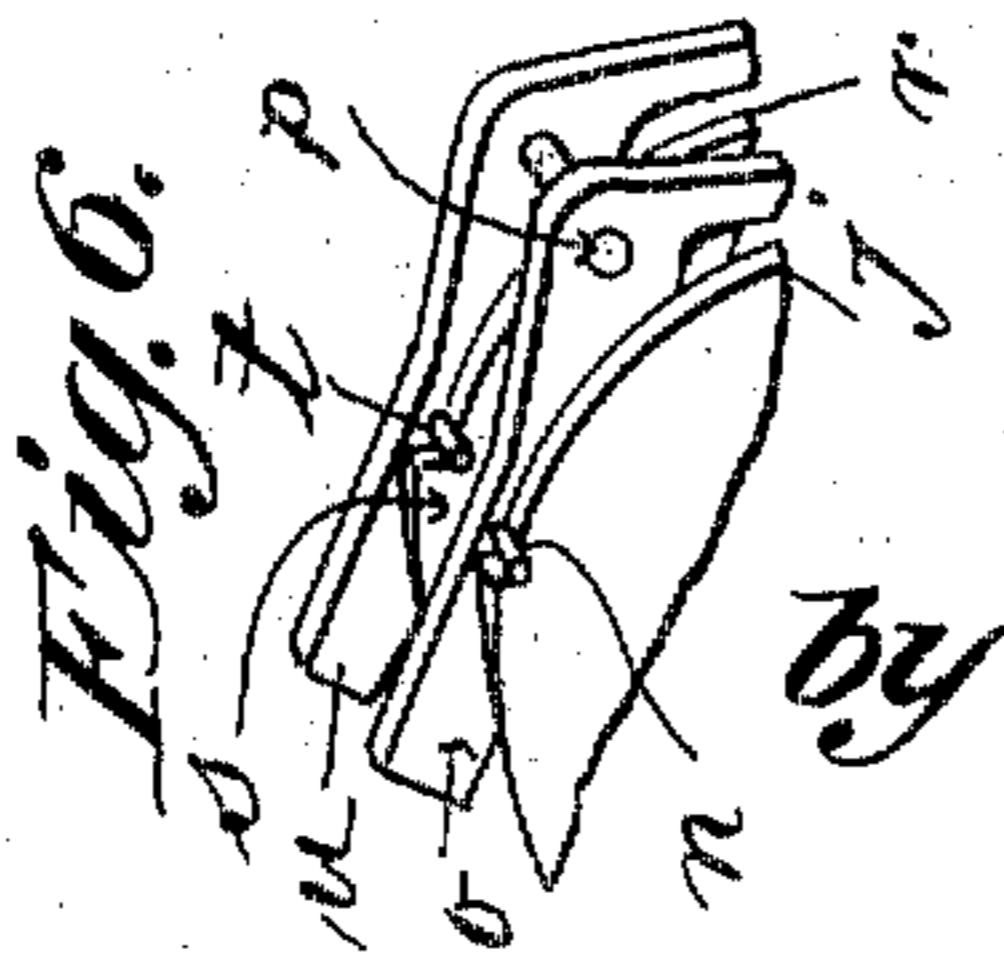


Fig. 6.



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## UNITED STATES PATENT OFFICE.

LEONARD B. BROWN, OF SPRINGFIELD, MASSACHUSETTS.

## COIN-OPERATED VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 767,134, dated August 9, 1904.

Application filed May 16, 1904. Serial No. 208,106. (No model.)

*To all whom it may concern:*

Be it known that I, LEONARD B. BROWN, a citizen of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Coin-Operated Vending-Machines, of which the following is a specification.

This invention relates to coin-operated vending-machines, and especially to a machine of this type for vending paper carried in a roll in a suitable box or casing.

The object of the invention is to improve the construction of a machine of this character whereby the introduction of a coin effects the actuation of certain parts upon the movement of which the uncovering of the paper-delivering slot and the initial gravity-actuated movement of the paper-roll depend and whereby the free end of the paper strip may be projected out of the casing in position to be grasped by the fingers, a further object being to provide means to reset the parts (ready for further actuation by a coin) by the further rotation of the roll, effected by drawing the free end of the strip out of the casing; a still further object of the invention being to provide means whereby when a certain length of paper has been drawn off of the roll to effect the actuation of a device to move over the paper-delivery slot in the casing to hold the strip while being torn off and to secure the loose end of the strip in the box in such position that it cannot be reached by the hand.

Certain other novel features forming part of the invention will be disclosed in the following specification, all of the novel features being summarized in the claims appended thereto.

In the drawings accompanying this application, Figure 1 is a sectional elevation on line 1 1, Fig. 2, of a device in which this invention is embodied. Fig. 2 is another sectional elevation taken on line 2 2, Fig. 1. Fig. 3 is a view similar to Fig. 1, showing the parts in another position. Fig. 4 is a transverse section on line 4 4, Fig. 1. Fig. 5 is a perspective view of a frame for holding a roll of paper, the tubular center of said roll being

shown on the frame. There is also shown in this figure a segmental ring separated from the ring on the end of the roll-frame, the function of which will be duly described. Fig. 6 is a fragmentary view in perspective of a portion of the weighted rings and showing parts of two levers which engage the rings to hold them in a certain relative position one to the other.

Referring now to the drawings, *a* indicates the casing in which the mechanism is inclosed. This casing, as shown in Fig. 1, is provided on one side with a door *b*, the lower edge of which is let into a transversely-slotted base-piece, the door being fastened in any desirable manner. It is intended that the box or casing shall be secured to a wall, clips *c* being provided for that purpose. In that side of the box opposite the door and about centrally thereof there is mounted a shaft *d*, rigidly secured to the box and extending across the latter, the free end thereof being preferably supported in a hole in the door *b*. When the door is removed, the roll-frame *e* may be pulled off of the shaft *d* to have a new roll applied thereto.

The roll of paper is indicated by *f* and is wound on a pasteboard or other tubular core *g*, which may be slipped over the frame *e*, the latter being provided with a thin blade *h* to secure the roll non-rotatably thereon. Usually the paper is wound on the core in a strip composed of three thicknesses. The roll rotates freely on the shaft *d*, and fixed in one end thereof is a ring *j*, a portion *k* of which, as shown in Fig. 5, is made solid to provide a suitable weight. This solid portion is located at an angle of ninety degrees from a shoulder *m* on the ring, whereby when said shoulder is in the position shown in Figs. 1 or 5 the weighted part of the ring will operate to hold it against a retaining-pin *n*, the latter being in a lever *o*, pivoted at *p*. The upper end of this lever carrying the pin *n* is slightly heavier than the opposite end of the lever, whereby said pin will always bear down on the edge of the ring *j*, ready to fall into position behind the shoulder *m*. The downwardly-inclined arm of the lever *o* (shown in back of the ring *j* in dotted lines in Fig. 1 and let-

tered  $o'$ ) is disposed in the path of a pin  $q$ , which is located in the side of a second ring  $r$ , this ring being shown most clearly in Fig. 5. This, like the ring  $j$ , is weighted and provided with a shoulder  $s$ , similar to the shoulder  $m$  on the ring  $j$ , with which a pin  $t$  on a lever  $u$  engages, this lever being pivoted also on the pin  $p$ . This, like the lever  $o$ , is L-shaped, the downwardly-inclined end  $u'$  of which extends through a slot  $v$  in the rear edge of a coin-chute  $w$ , whereby said end will lie in the path of a coin passing through said chute, the latter being perpendicularly arranged on one side of and in one corner of the casing, as shown in Figs. 2 and 4, the lower portion thereof extending obliquely across the side of the casing, its lower end being located over a coin-receptacle  $x$ .

The weighted portion  $r'$  of the ring  $r$  is in the same relation relative to the shoulder  $s$  thereon as is the weighted portion  $k$  of the ring  $j$ . We thus have a ring  $j$  on the end of the paper-roll frame, the lever  $o$  contiguous thereto and between the rings  $j$  and  $r$ , and the lever  $u$  contiguous to the ring  $r$  between it and the casing, the rings having a common axis and the levers having a common axis, the horizontal end of the lever  $u$  being weighted to overbalance the down-hanging end  $u'$ .

As shown in Fig. 5, the ring  $r$  is segmental in shape, and therefore a stop, as the pin  $y$ , is driven into the casing, whereby when the open side of said ring  $r$  is uppermost the end of the lever  $u$  will be prevented from falling.

On the contiguous sides of the rings  $j$  and  $r$  are two pins 3 and 4, the pin 3 being on the ring  $j$ . These pins are so located relative to the centers of the rings that they will intercept—that is to say, when a coin releases the lever  $u$  the ring  $r$  will by reason of the position of its weighted portion make a partial revolution, which will carry its pin 4 away from the pin 3, and when the roll is rotated the pin 3 on the ring  $j$  will pick up this pin 4, whereby during the remainder of the rotary movement of the ring  $j$  both rings will rotate as one. By this means the shoulders  $m$  and  $s$  in said rings will be brought around simultaneously to the position shown in Figs. 1 and 6—that is, against the pins in the levers  $o$  and  $u$ —which movement carries the weighted portion of the ring to such position that the rings will be held in the position shown in Fig. 1—that is, ready for another operation when the lever  $u$  is tripped by a coin.

Mechanism is provided whereby the initial movement of the ring  $r$  will move a slide, which covers the exit or paper-delivery slot 5 in the bottom of the box, leaving said slot clear for the passage of the free end of the strip of paper 6, which is carried through said slot by a partial rotation of the paper-roll, means to effect which will now be described, the slot-closing mechanism being described farther on. When the initial movement of

the ring  $r$  takes place by the tripping of the lever  $u$ , as described, the pin  $q$  on said ring  $r$  will engage the lower end  $o'$  of the lever  $o$ , which at that point lies in its path, and will thereby disengage the pin  $n$  from the shoulder  $m$  of the ring  $j$ , whereupon the weighted portion  $k$  of the ring  $j$  will give the latter a partial rotation, shooting the free end of the paper strip 6 down through the slot 5, which, as stated above, has just previously been opened by the initial movement of the ring  $r$ . Thus immediately after the tripping of the lever  $u$  by a coin the end of the paper strip will be projected through the slot 5, the two weighted portions of the ring will be hanging downward with their pins 3 and 4 in position of engagement, and if the strip of paper now be grasped and pulled off of the roll the pin 4 will pick up the pin 3, as described, and both rings be rotated around to the position shown in Fig. 1, whereupon the pins in the levers  $o$  and  $u$  will bring them to a stop. At this point the free end of the strip of paper may be torn off by pulling it against the toothed edge of a strip of metal 7, located along the front edge of the slot 5, and at the same time the slot-closing plate 8 will be swung against said strip at a point above the latter, thus holding the free end of the strip against a spring-plate 9, the forward edge of the slot-closing plate 8 being serrated like the strip of metal 7.

The means for closing and opening the slot 5 are constructed and arranged as follows: On one side of the box, as on a pin 10, an arm 12 is hung, the upper end of which lies in the path of a pin 13 on the ring  $r$ , and the opposite end of the arm is connected by a pin 14 with a crank-arm 15, which is slotted to give the proper play to the pin 14 when the arm 12 is moved. The slot-closing plate 8 is supported on two depending arms 16, the lower ends of which have a common axis (represented by the pins 17) on which said arms and said plate may swing to carry the plate over the slot, as shown in Fig. 1, or to permit it to fall backward, as shown in Fig. 3, leaving the slot open, and the crank-arm 15 is so connected with one of the arms 16 as to impart this movement to the plate 8. Between the pin 10 on which the arm 12 swings and the lower end of said arm a guard-plate 18 is rigidly secured in such position that it will be horizontal when the slot 5 is covered, whereby it will be impossible to insert any instrument at the point 19—for example, to pick the coins out of the receptacle  $x$  or to pick up the strip of paper and pull it out back of the slot-closing plate 8. The weight of this guard-plate and the slightly-inclined position of the crank-arm 15 to the rear will sufficiently overbalance the lower end of the arm 12, so that whenever the upper end thereof is free the parts will swing to the position shown in Fig. 3, in which position the

guard-plate will prevent access to the coin-receptacle *x* while the slot 5 is opened.

The slot-closing plate 8 is actuated as follows: As stated above, the upper end of the arm 12 lies in the path of a pin 13 on the ring *r*, the relation of the parts being clearly shown in Figs. 1 and 2, and when the parts are in the position shown in Fig. 1 ready for operation when the lever *u* is tripped by a coin the pin 13 will bear on the extreme upper end of the said arm 12, thus positively holding the closing-plate 8 over the slot 5. As soon as the lever *u* has been tripped by a coin and the weighted portion *r'* of the ring *r* has imparted the initial movement to the latter said pin 13 will move out of contact with the end of said arm, and the latter will be swung up to the position shown in Fig. 3, in which position it will remain until the pin 13 again comes in contact with the edge of the lever, which will be toward the end of the movement imparted to said ring by the drawing off of the paper, and when the shoulder *s* comes in contact with the stop-pin on the lever *u* the pin 13 will have depressed the upper end of the arm 12 and then closed the slot 5, the parts being again in the position shown in Fig. 1.

Preferably an idler-roll 20, hung in a suitable frame 21, is mounted in the casing to bear on the roll of paper to prevent the overthrow of the latter and its subsequent oscillation at the time the initial rotation is imparted thereto by the weighted portion of the ring *j*.

When the roll *f* is wound, a printed slip 22 is secured to the inner end thereof and faces a window 23, the word "Empty" being printed on the slip in order that it may be seen when the contents of the latter have been exhausted.

The spring-plate 9 not only serves as a sort of a stripper-plate to push the torn end of the paper off the serrated plate 7, but it also serves as a guard to prevent the paper from being torn when it is drawn off the roll by being pulled across the toothed edge of this plate. Furthermore, the expansive action of the spring 9<sup>a</sup> behind the plate serves when the arm 12 is released to push back the slot-covering plate 8, thus adding to the positiveness of the movement of the parts attached to the lower end of the arm 12.

From the foregoing description it is seen that the operation of these devices is as follows, the parts being set as in Fig. 1: The coin being introduced into the open end *w'* of the coin-chute *w* will in its descent strike the end *u'* of the lever *u* and will raise the pin *t* out of the slot *s* of the ring *r*. The weighted portion of this ring will impart initial rotary movement thereto, causing first of all the pin 13 to disengage the end of the arm 12, which will effect the actuation of the plate 8, as above described, to uncover the slot 5. The pin *q*, carried by the ring *r*, will strike the depend-

ing end *o'* of the arm *o*, raising the pin *n*, thus permitting the weighted portion of the ring *j* to partially rotate the roll *f*, whereby the free end of the paper strip 6 will be projected through the slot 5, the spring-plate 9 meanwhile covering the edge of the toothed plate 7. This free end of the strip may be grasped and the roll rotated until the weighted portions of the rings have been carried over their centers, and as these shoulders *m* and *s* on the rings *j* and *r* approach the pins *n* and *t*, by which the movement of the latter is arrested, the pin 13 will have borne down the upper end of the arm 12, thus causing the plate 8 to move over the slot 5 to catch the strip of paper between the toothed edges of the plates 7 and 8, whereupon the end of the strip may be torn off, the spring-plate 9 operating to hold the free end of the paper within the casing in contact with the toothed edge of the plate, as shown in Fig. 1, the mechanism being in position to be again operated by the introduction of another coin.

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

1. A coin-operated vending-machine of the character described comprising a rotatable frame to receive a roll of paper; a ring on the frame, a separate ring loose on the axis of the frame, and separate swinging members to engage the rings, means, as weights, to hold the rings in engaging position with said members and to hold them in a certain position one relative to the other; a coin-chute having an opening therein into which one of said members extends, means on said loose ring to engage one end of the other of said members, whereby when said loose ring is set free by the actuation of the member extending into the coin-chute it will effect the disengagement of the other swinging member from the ring on the paper-frame to permit the unrolling movement of the latter.

2. In a machine of the class described, an overbalanced rotatable paper-holding frame, a tripping device therefor; an overbalanced rotatable member loose on the axis of the frame, and a tripping device for said loose member; means to actuate the tripping device of said last-named member by the introduction of a coin into the machine, and means on said member to actuate the tripping devices associated with the frame whereby the overbalancing element of the latter will impart rotary movement thereto to unroll more or less of the paper on the frame.

3. In a machine of the character described, an overbalanced rotatable, paper-holding frame, an overbalanced rotatable member loose on the axis of the frame, separate tripping devices for the frame and for said loose, rotatable member, to hold these parts in certain relative position one to the other; a box to contain said rotatable frame and its associated parts there being a slot in the box through

which paper is delivered; a cover for said slot, located within the box; mechanism to move the cover toward and from the slot; means to actuate the tripping device of said loose rotatable member by a coin introduced into the box, and means on said last-named member to actuate the tripping device of said frame; together with devices associated with said loose rotatable member to effect the movement of the slot-cover away from the slot, prior to the release of the paper-holding frame.

4. In a machine of the character described, a rotatable, paper-holding frame, a second rotatable member loosely mounted on the same axis, said frame and said member being overbalanced; two levers, one associated with said member and the other with said frame; means to actuate one of said levers by the introduction of a coin into the machine to permit said rotatable member to swing on its axis; means on said member to engage the lever associated with said frame to permit the latter to subsequently swing on its axis, to effect the projection of the end of a roll of paper on the frame through the delivery-slot of the machine, and means whereby the further rotation of the frame will effect the further rotation of said loose member, whereby the latter and said frame may be engaged by said levers.

5. In a machine of the character described, a rotatable paper-holding frame, a second rotatable member loosely mounted on the same axis, said frame and said member being overbalanced; two levers, one associated with said member and the other with said frame; means to actuate one of said levers by the introduction of a coin into the machine to permit said rotatable member to swing on its axis; means on said member to engage the lever associated with said frame to permit the latter to subsequently swing on its axis to effect the projection of the end of a roll of paper on the frame through the delivery-slot of the machine, and means whereby the further rotation of the frame will effect the further rotation of said loose member, whereby the latter and said frame may be engaged by said levers; a suitable casing for said paper-frame and associated parts having a delivery-slot therein; a cover for said slot, and means associated with said loose rotatable member whereby the initial movement of the latter will effect the movement of said slot-cover away from the slot.

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