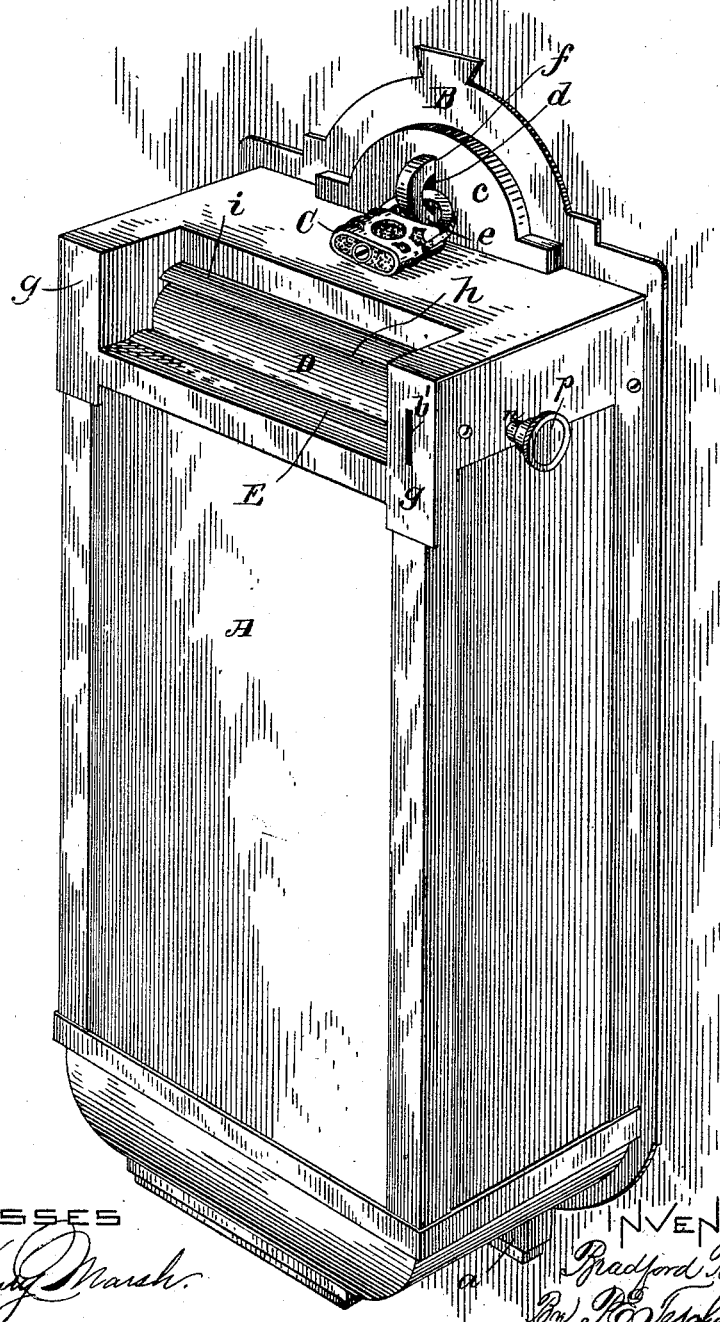
(No Model.) 4 Sheets—Sheet 1.

B. B. BABBITT.

COIN OPERATED MACHINE FOR FURNISHING TOILET PAPER.

No. 456,788. Patented July 28, 1891.

Fig. 1.



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(No Model.) 4 Sheets—Sheet 2.

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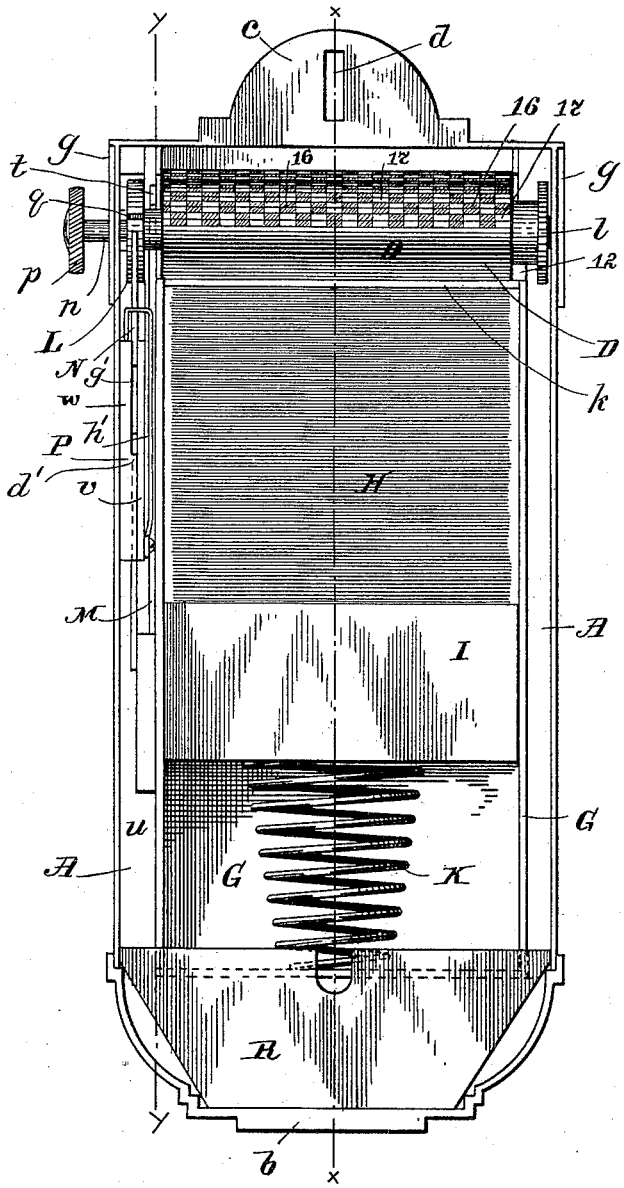
Fig. 2.



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B. B. BABBITT.

COIN OPERATED MACHINE FOR FURNISHING TOILET PAPER.

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Fig. 5.

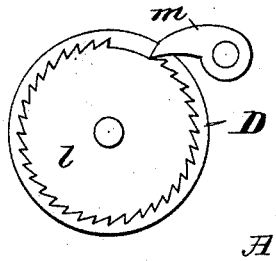


Fig. 4.

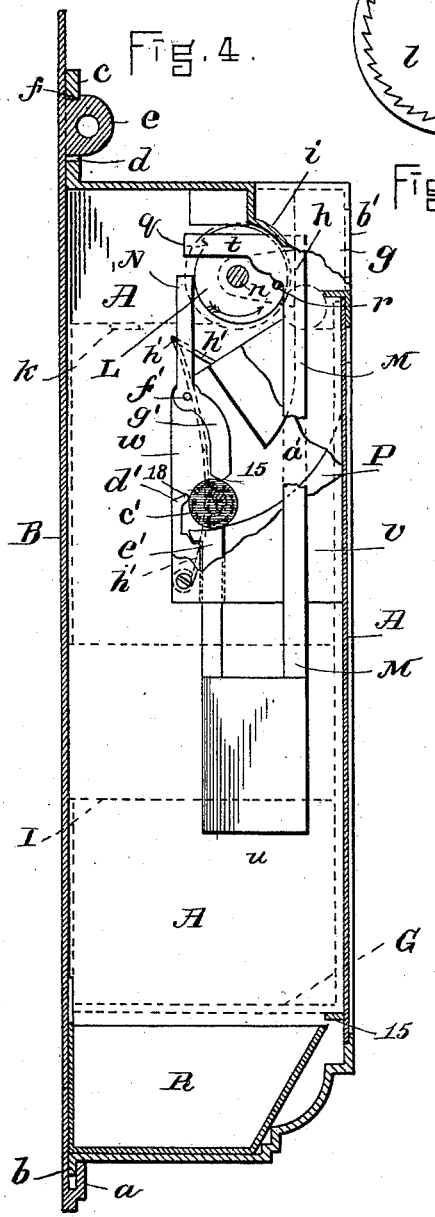
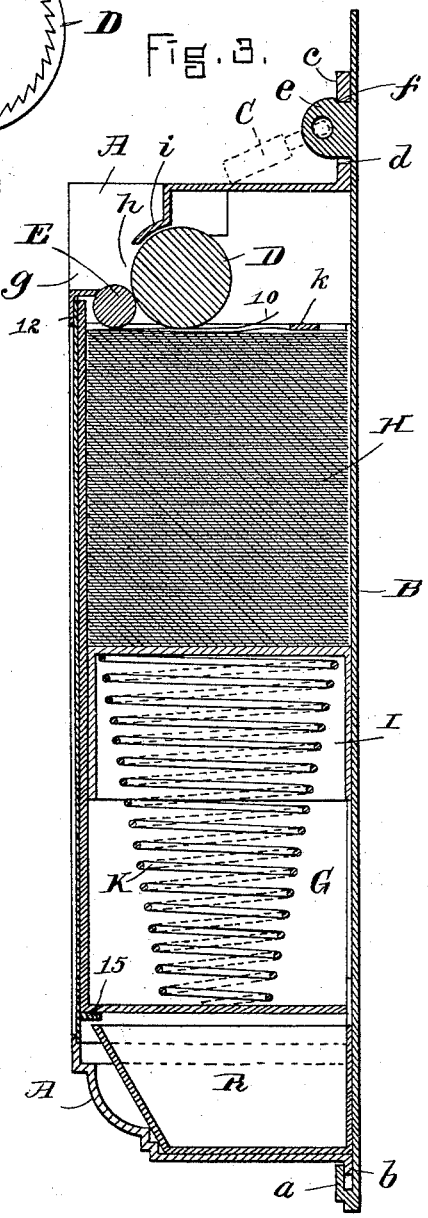


Fig. 3.



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B. B. BABBITT.

COIN OPERATED MACHINE FOR FURNISHING TOILET PAPER.

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Fig. 6.

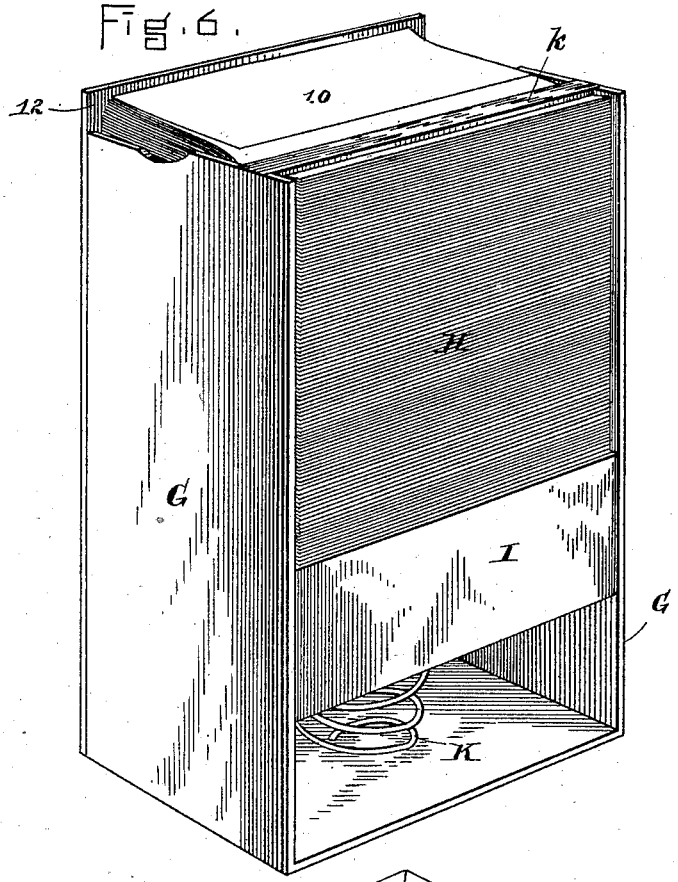
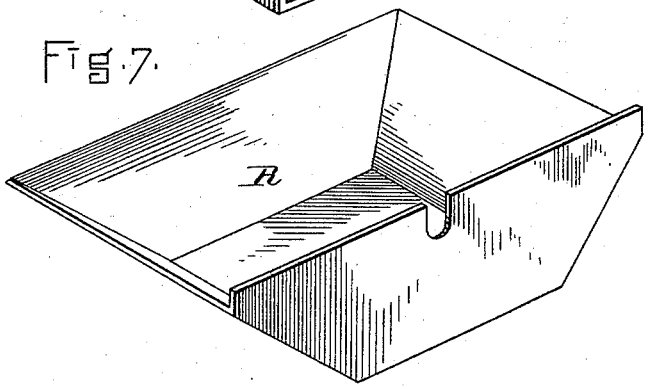


Fig. 7.



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UNITED STATES PATENT OFFICE.

BRADFORD B. BABBITT, OF BOSTON, MASSACHUSETTS.

COIN-OPERATED MACHINE FOR FURNISHING TOILET-PAPER.

SPECIFICATION forming part of Letters Patent No. 456,788, dated July 28, 1891.

Application filed December 4, 1890. Serial No. 373,599. (No model.)

To all whom it may concern:

Be it known that I, BRADFORD B. BABBITT, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Coin-Operated Machines for Furnishing Toilet-Paper, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of my improved coin-operated machine for furnishing toilet-paper Fig. 2 is a rear elevation of the same with the back plate removed. Fig. 3 is a vertical section of the same on the line *x x* of Fig. 2. Fig. 4 is a vertical section of the same on the line *y y* of Fig. 2. Fig. 5 is a detail of the ratchet-wheel and pawl at one end of the delivery roll or cylinder. Fig. 6 is a perspective view of the paper-holding box or container. Fig. 7 is a view of the money-drawer.

My invention relates to coin-operated machines for furnishing toilet-paper, and has for its object to simplify and improve the construction of such machines, whereby they are rendered more certain and reliable in their action than heretofore; and to this end my invention consists in a machine embodying certain novel features and combinations of parts, as hereinafter set forth, and pointed out in the claims.

In the said drawings, A represents the outer metallic casing of the machine, to the rear open side of which is fitted a back plate B, which is adapted to be screwed or otherwise securely fastened to an upright partition or wall, the front side of said plate B having a projecting socket *a* at or near its lower edge extending transversely across its face, into which fits a lip or projection *b* at the lower edge of the casing A. The top of the casing is provided with a vertical lip or plate *c*, having a slot *d*, through which passes a flat staple *e*, projecting from the back plate, a padlock C, hooked through said staple, serving to lock the casing securely in place. The upper edge of the staple *e* is provided with a notch or latch-like depression *f*, with which the upper edge of the slot *d* engages when the lip *c* is pressed back against the plate B, thus holding the casing in place and preventing any liability of its falling when the padlock is removed. When the casing A is to be detached from the back plate to gain access to its interior, it is merely necessary to lift it sufficiently to cause the upper edge of the slot to clear the notch *f*, when the casing can be tipped forward and then raised to detach the lip *b* from the socket *a*. The upper front corner of the outer casing A is cut away or lowered with the exception of a narrow portion *g* on each side, and between these two portions is formed a horizontal slot or opening *h*, through which the sheets of toilet-paper are withdrawn, the opening *h* being filled by the delivery roll or cylinder D and a small guide-roll E placed beneath the same, while above the roller D is a curved guide *i*.

Within the casing A is fitted a removable box or holder G for containing the toilet-paper, consisting of a pack H of separate pieces of any desired length, each piece being folded in reverse layers from front to rear, the last fold 10, Figs. 3 and 6, being from front to rear and shorter than the others, whereby it is left free to be acted upon by the roll D. The paper box or container G is open at the back and top, the front end projecting slightly above the sides, as at 12, Figs. 3 and 6, to enable it to hook under the guide-roll E, while the bottom rests upon a projecting rib or ledge 15 on the inside of the front plate of the casing, whereby when the casing is attached to the back plate the box G will be held immovably in place therein. Within the box G is placed a movable plate or follower I, upon which rests the toilet-paper H, and beneath the plate I is a spiral spring K, which exerts an upward pressure upon the said plate and keeps the rear portion of the pack firmly up against a transverse bar or stop *k*, extending cross the rear end of the top of the box G, the front of the pack being held down at about the same level as the rear portion by the lower or guide-roll E, beneath which it extends, as seen in Fig. 3. When in this position, the upper fold 10 of the topmost sheet of the pack H, which, as before stated, is shorter than the other folds, does not extend beneath the stop-bar *k*, and is consequently not held thereby, but lies loose on top of the pack directly beneath and in contact with

the delivery roll or cylinder D, against which it is pressed by the spring-actuated follower I. The roll E and stop *k* prevent undue pressure of the paper against the cylinder D, the surface of which for about one-third of its circumference is roughened in spots or squares 16, as seen in Fig. 2, which alternate with similar smooth squares 17 after the manner of a checker-board, thus giving it a better hold upon the paper, the remaining portion of the circumference of the roll being smooth. This roughened portion of the surface of the roll D is adapted to be brought into contact with the loose fold 10 of the upper sheet, so that when the roll is revolved in a manner to be hereinafter described the end of the paper will be carried forward between the rolls D E and projected out through the opening *h* into a position to be seized by the hand, when the entire piece can be drawn out for use, the smooth surface of the roll D, which by its rotation has then been brought around into contact with the paper, offering no obstruction to its passage, as would occur if the roll were roughened around its entire circumference. When the casing A is separated from the back plate B, the paper-holding box G can be readily removed for the purpose of refilling it with paper without disturbing the delivery-roll or any of the coin-operated mechanism, and, if desired, a new supply of paper can be introduced without even removing the box from the casing; but I prefer to take it out, as the paper can then be introduced to better advantage.

The delivery roll or cylinder D is supported in suitable bearings, and at one end of said roll is a ratchet-wheel *l*, Figs. 2 and 5, with which engages a pawl *m*, a few of the teeth of the wheel *l* being removed, as seen in Fig. 5, to allow a certain amount of backward movement, for a purpose to be hereinafter described. The shaft *n* at the end of the roll D opposite to the ratchet-wheel extends through the side of the casing, where it is provided with a knob or handle *p*, by means of which the cylinder can be rotated when released or unlocked.

Inside the casing, upon the shaft *n* and at a short distance from the end of the cylinder D, is secured a cam-wheel L, having a shoulder or stop *q*, which normally lies a short distance from the upper end of the lever N, with which it is brought into contact on the partial rotation of the cylinder, the said lever thus preventing any further rotation in that direction until it is withdrawn, in a manner to be hereinafter described. The cam-wheel L, with the cylinder, is, however, permitted to move slightly backward to the position seen in Fig. 4 by the toothless portion of the ratchet-wheel *l*, and the cylinder is thus normally free to be moved backward and forward within these limits, but no farther until it is unlocked or released, in a manner to be hereinafter described.

Across the space between the cam-wheel L and the end of the roll D extends a pin *r*, which acts upon the under side of the horizontal arm *t* of a vertical weighted slide M, moving in suitable guides on a casing P, secured within the casing A in the space *u* between one of its side plates and the paper-containing box G. This casing P is of oblong form and is composed of two plates *w v*, secured together at a short distance from each other by means of screws, which permit of its being easily taken apart. Within this casing P is formed a chute or narrow channel *a'*, extending from a slot *b'* in the front of the casing A, through which chute a coin *c'* may be dropped, which is arrested at the bottom of the chute and prevented from passing out of the casing by contact with a stop *d'*. When in this position, the coin rests upon the upper end of an offset or branch *e'* of the slide M, which extends up within the casing P as far as the bottom of the chute, as seen in Fig. 4. The stop-lever N is pivoted within the casing P at *f'*, its lower arm *g'* being curved inward and beveled, as shown in Fig. 4, while the extreme lower end or point 15 extends inward beyond a vertical line passing through the center of the coin.

h' is a spring, which serves to hold the upper end of the lever N lightly in contact with the cam-wheel L, as it is essential that the latter should not be subjected to undue friction and should be free to be moved into the position seen in Fig. 4 by the weight of the slide M acting through the arm *t* on the pin *r*, this being the normal position of the parts when the machine is not in use.

On the introduction of a coin into the chute it drops to the bottom and rests upon the top of the offset or portion *e'* of the slide M, and also against the stop *d'*, as seen in Fig. 4. The knob *p* on the outside of the casing is then turned forward by the hand, and the pin *r*, acting on the arm *t*, at once commences to raise the slide M, causing its offset *e'* to raise the coin, which then acts upon the lower arm *g'* of the lever N and withdraws the upper end of said lever against the stress of the spring *h'* out of the path of the shoulder or stop *q* of the cam-wheel L, thus releasing or unlocking the cylinder D, which can then be rotated by continuing to turn its knob *p*, when the roughened portion of its surface will be brought around into a position to act upon the loose fold 10 of the uppermost folded piece of toilet-paper of the pack H, which will thus be carried out between the cylinder D and the guide-roll E into a position to be seized by the hand, when the entire sheet can be pulled out for use. As soon as the coin is raised by the upward movement of the offset *e'* sufficiently to bring its center above the point 18 of the stop *d'*, the lever N, by the action of its spring, will throw the coin out through the open space between the two plates of the casing P, when it will drop down through the space *u*, between the side of the casing A and the paper-holder G, into

a removable money drawer or tray R, which fits within the bottom of the casing A beneath the said paper-holder G and projects beyond the same into the space *u*, whereby it is adapted to receive the coin as it is discharged from the casing P. This movement of the lever N in throwing out the coin returns its upper end into a position to intercept the shoulder or stop *q* of the cam-wheel L, and thus again lock the cylinder D, which can only be turned a single revolution for each coin inserted into the machine. Soon after the lever N has been withdrawn and before the coin is thrown out of the casing P into the money-drawer, the toothless portion of the ratchet-wheel *l* passes out of contact with the pawl *m*, and the latter, engaging with the teeth of said wheel, prevents any backward rotation of the cylinder D until the latter has nearly completed its revolution, when the toothless portion of the ratchet-wheel will again be brought under the pawl to permit of the partial backward movement before described. After the sheet of paper has been extracted from the machine and the cylinder D has been turned as far as permitted by the stop-lever N the weight of the slide M, acting on the pin *r*, will return the parts to their normal position, with the pawl *m* in contact with the toothless portion of the ratchet-wheel *l* and the shoulder *q* removed from the end of the lever N, when the operation can be repeated, as before, by the introduction of another coin. The introduction of two or more coins at a time will in nowise interfere with the proper operation of the machine, as they will be thrown out into the money-drawer in succession as the knob *p* is turned, enabling a person to withdraw a corresponding number of sheets of paper from the pack H.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a machine for furnishing toilet-paper, the combination of a delivery roll or cylinder for the paper normally free to be partially rotated before being unlocked or released, a chute or channel adapted to carry the coin, a slide adapted to be raised by a partial rotation of the delivery-roll before being unlocked and having an offset or portion upon which the coin rests on its arrival at the bottom of the chute, and a lever for locking and unlocking the delivery-roll, said lever being operated to release said roll by the coin as the latter is raised by the portion of the slide upon which it rests, substantially as set forth.

2. In a machine for furnishing toilet-paper, the combination of the delivery-roll for the paper normally free to be partially rotated before being released, a box or holder for containing a pack of separate folded sheets of paper and provided with means for feeding the same up to the delivery-roll, a chute or channel adapted to carry the coin, a slide adapted to be raised by a partial rotation of the delivery-roll before being released and having an offset or portion upon which the coin rests after being inserted within the machine, and a lever or catch for locking and unlocking the delivery-roll, said lever being operated to release said roll by the movement of the coin as the latter is raised by the slide on which it rests, substantially as described.

3. In a machine for furnishing toilet-paper, the combination of a paper-holding device, a delivery-roll having a ratchet-wheel and retaining-pawl, said ratchet-wheel having a portion of its teeth removed to allow of a partial backward rotation of the delivery-roll, a cam-wheel on the delivery-roll provided with a shoulder or stop, a lever or catch co-operating therewith to normally prevent the rotation of the delivery-roll, a chute or channel adapted to carry the coin, and a slide operated by the partial rotation of the delivery-roll before being released, said slide having an offset or portion for supporting the coin and raising the same, whereby the said coin is caused to act upon and move the lever or catch to release the delivery-roll, substantially as set forth.

4. In a machine for furnishing toilet-paper, the combination, with the delivery-roll and the coin-operated mechanism connected therewith, of the paper-holder adapted to contain a pack of separately-folded sheets and having a spring-actuated follower for feeding the paper, and a transverse bar or stop at its rear upper corner against which the upper sheet of the pack is held with its shorter upper fold free from said bar or stop and adapted to be acted upon and carried forward by the delivery-roll into a position outside the casing, substantially as set forth.

5. In a machine for furnishing toilet-paper, the combination of a delivery-roll for the paper normally free to be partially rotated before being unlocked or released, a coin-carrying chute or channel, a slide adapted to be raised by a partial rotation of the delivery-roll before being unlocked and having an offset or portion upon which the coin rests, a stop *d'* for arresting said coin, and a spring-actuated stop-lever operated by the movement of the coin for locking and unlocking the delivery-roll, the lower end or point of said lever extending inward beyond a vertical line passing through the center of the coin, whereby when the coin is raised by the slide sufficiently to carry its center above the stop *d'* it will be discharged by the said spring-actuated lever, substantially as set forth.

6. In a machine for furnishing toilet-paper, the combination of a delivery roll or cylinder D, adapted to be rotated by a knob or handle outside the casing, said cylinder being provided with a pin *r* and having a cam-wheel L, with a shoulder or stop *q*, and a ratchet-wheel and pawl, said ratchet-wheel having a portion of its teeth removed to allow of the partial backward rotation of the delivery-roll, the guide-roll E, the chute or channel adapted to carry the coin, the slide M, having an

offset or projection e', upon which the coin rests, and an arm t, adapted to be acted upon by the pin r, whereby said slide with the coin is raised as the roll D is turned, the lever N, with its spring h', and a stop d', all operating substantially as and for the purpose set forth.

7. In a machine for furnishing toilet-paper, the combination, with the paper-delivering roll or cylinder and the paper-holding box or container having the spring-actuated follower, and the bar or stop k at its rear upper corner, of the guide-roller E, arranged on a level with said bar k to hold down the pack of sheets at the front end, substantially as set forth.

8. In a machine for furnishing toilet-paper, the casing A, having at its lower end a lip or projection b and at its upper end a vertical lip or plate c, provided with a slot d, in combination with the back plate B, having a socket a for the reception of the lip b, and a staple e, provided on its upper side with a notch or depression f for engagement with the upper edge of the slot d, whereby the casing is prevented from falling on the removal of the padlock, substantially as set forth.

Witness my hand this 29th day of November, A. D. 1890.

BRADFORD B. BABBITT.

In presence of—
P. E. TESCHEMACHER,
HARRY W. AIKEN.