(No Model.)

H. H. HARRISON.

COMBINED FEEDER AND CUTTER FOR TOILET PAPER.

No. 345,052. Patented July 6, 1886.

Fig. 1.

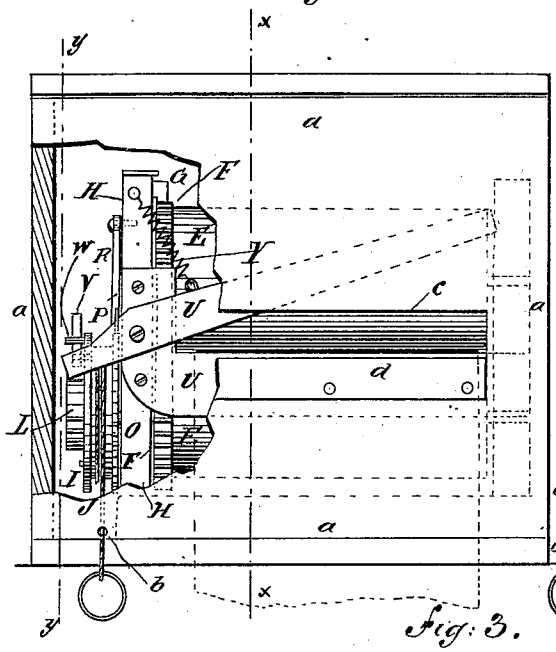


Fig. 2.

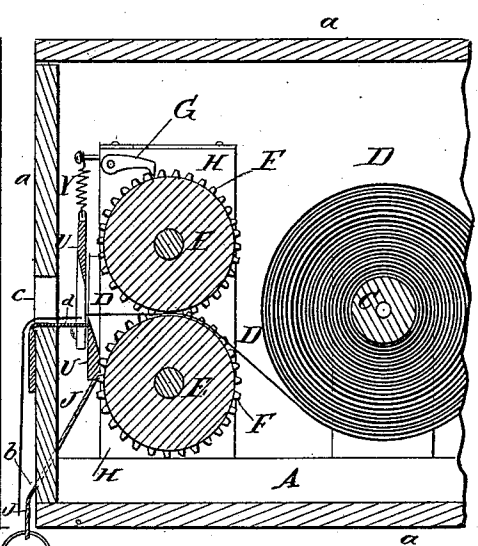
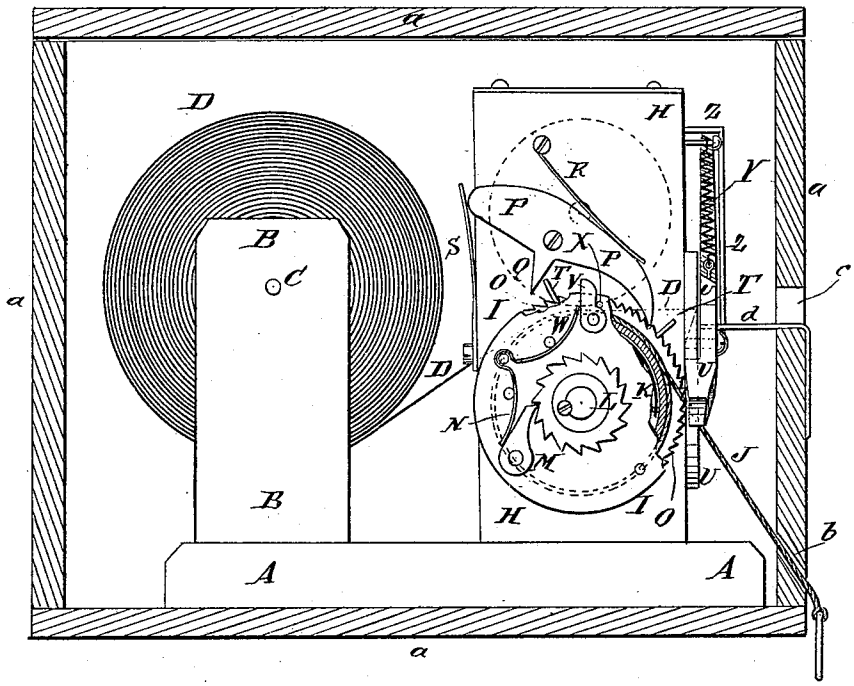


Fig. 3.



WITNESSES:

Chas. Nida

C. Sedgwick

INVENTOR:

H. H. Harrison

BY Munn & Co

ATTORNEYS.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

HENRY H. HARRISON, OF NEW YORK, N. Y.

COMBINED FEEDER AND CUTTER FOR TOILET-PAPER.

SPECIFICATION forming part of Letters Patent No. 345,052, dated July 6, 1886.

Application filed April 13, 1886. Serial No. 198,711. (No model.)

To all whom it may concern:

Be it known that I, HENRY H. HARRISON, of the city, county, and State of New York, have invented a new and useful Improvement in a Combined Feeder and Cutter for Toilet-Paper and other Materials, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of my improvement, part being broken away. Fig. 2 is a sectional side elevation of a part of the same, taken through the line *x x*, Fig. 1, and looking to the left. Fig. 3 is a sectional side elevation of the same, taken through the line *y y*, Fig. 1, and looking to the right.

The object of this invention is to provide feeders and cutters for toilet-paper and other material, constructed in such a manner that a fixed amount of the toilet-paper will be fed out and cut off each time the machine is operated, and the mechanism of which when released will return automatically to its former position, ready to be again operated.

The invention consists in the construction and combination of the various parts of the machine, as will be hereinafter fully described.

A represents the base or bed plate of the machine, to the rear part of which are attached the lower ends of two standards, B. In bearings in the upper parts of the standards B is journaled a shaft, C, upon which is wound a roll of paper, D. The end of the paper D passes between two rolls, E, by the revolution of which the said paper is fed forward. To one end of the rolls E are attached two gear-wheels, F, the teeth of which mesh into each other, so that the said rolls will revolve at the same speed and in opposite directions, and will thus feed the paper D forward with certainty. The rolls E are kept from turning backward by a pawl, G, pivoted to one of two standards, H, to which the said rolls are journaled, and the lower ends of which are attached to the forward part of the base A. One of the journals of the lower roll, E, projects, and upon it is placed a loose drum, I, to which is attached and around which is wound a cord or chain, J. Within the drum I is placed a coiled spring, K, the outer end of which is attached to the said drum, and its inner end is connected with the standard H, or other stationary support. With this construction, when the cord J is drawn outward, the drum I is revolved forward, and when the said cord J is released the said drum is turned back to its former position by the coiled spring K.

To the end of the journal of the lower roll, E, is rigidly attached a ratchet-wheel, L, with the teeth of which engages the pawl M, pivoted to the drum I, and held forward against the said ratchet-wheel L by a spring, N, attached to the drum I. With this construction the drum I in its forward revolution will revolve the rolls E and feed the paper D forward, but can be turned back without moving the said rolls.

To the inner side of the drum I is attached, or upon it is formed, a ratchet-wheel, O, with the teeth of which engages the forward end of the pawl P. The pawl P is pivoted at its middle part to the standard H, and has a downwardly-projecting arm, Q, formed upon the lower edge of its said middle part. The engaging end of the pawl P is held down upon the teeth of the ratchet-wheel O by a spring, R, attached to the standard H, and is held in place, when raised from the said ratchet-wheel O, by a spring, S, attached to the said standard H and resting against the rear end of the said pawl P.

To the ratchet-wheel O are attached two pins, T, at such a distance apart that when the rear pin T rests against the forward side of the arm Q the forward pin T will be in front of the engaging end of the pawl P, as shown in Fig. 3. With this construction, when the drum I is turned forward by drawing upon the cord J to feed the paper D forward, the rear pin T strikes against, raises, and passes the forward end of the pawl P, leaving the said pawl in position to engage with the ratchet-wheel O and hold the drum I from being turned back before the fixed point has been reached, should the draft upon the cord J be interrupted for any cause. When the drum I in its forward revolution brings the forward pin T in contact with the rear side of the arm Q, the pressure against the said arm raises the forward end of the pawl

P away from the ratchet-wheel O, where it is held in place by the spring S, so that when the draft upon the cord J is stopped the drum I and ratchet-wheel O will be turned back by the coiled spring K until the pin T strikes the forward side of the arm Q, stops the said rearward revolution of the said drum I and ratchet-wheel O, and by its pressure throws down the forward end of the pawl P, to again engage with the said ratchet-wheel O. The amount of forward revolution of the drum I, ratchet-wheel O, and rolls E, and consequently the length of paper D fed forward each time, depends upon the distance apart of the pins T, and can be lessened or increased by adjusting the said pins at a greater or less distance apart. In some cases only one pin T will be required, the same pin striking the opposite sides of the arm Q successively.

The paper D is cut off by the shears U, the lower blade of which is stationary and is attached at its shank to the forward edge of the standard H. The upper blade of the shears U is pivoted at its shank to the forward edge of the standard H. The shank of the movable blade of the shears U projects so as to be struck by the pawl V, pivoted to the drum I, and pressed forward by a spring, W, attached to the said drum I. The forward movement of the pawl V is limited by a pin, X, attached to the drum I, and against which the said pawl is held by the said spring W. With this construction, when the drum I is turned forward, the pawl V strikes against, is pressed back by, and passes the shank of the movable blade of the shears U without operating the said blade; but when the said drum is turned back by the tension of the spring K the pawl V strikes against the shank of the movable blade of the shears U, is held by the pin X from being pressed forward, and operates the said movable blade to cut off the paper. After the cut has been made the movable blade of the shears U is raised from the stationary blade by the spiral spring Y, secured at one end to the said movable blade and at its other end to the standard H. The movable blade of the shears U is made to move up and down in a vertical plane by a long keeper, Z, attached to the forward edge of the standard H, to receive the free end of the said movable blade. The mechanism thus described is placed within a box or case, *a*, which is designed to be secured to a wall or other suitable support, and is provided with an aperture, *b*, through which the cord or chain J passes, and with a slot, *c*, through which the paper D passes out. The case *a* is provided with an apron, *d*, resting upon the edge of the front of the said case at the bottom of the slot *c*, and extending inward to the stationary blade of the shears U, to guide the end of the paper, after a piece has been cut off, out through the said slot *c*.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with the paper-holding shaft, the feed-rolls and supports therefor, of the ratchet L, secured to the shaft of one roll, the drum I, loosely mounted on the same shaft, a coil-spring, X, within the drum I, an operating-cord around the drum, the pawl M, connecting the ratchet L and the drum, the ratchet-wheel O, secured to or formed on the drum I, the pawl P, pivoted to a fixed bearing and engaging the ratchet O, a releasing device for said pawl, a fixed and movable shear-blade extending in front of the feed-rolls at right angles to drum I, the shank of the movable blade extending adjacent to the drum and into the path of an attachment thereof, substantially as set forth.

2. The combination, with the paper-holding shaft, the feed-rolls, and the spring-actuated drum I on the shaft of one of the rolls, of a ratchet-wheel on the said drum, a releasing device or pin projecting from the periphery of the ratchet-wheel, and a pawl pivoted between its ends to a fixed support, with its forward end engaging the ratchet-wheel, and having an intermediate projection in the path of the said releasing device or pin, substantially as set forth.

3. In a combined feeder and cutter for roll toilet-paper and other materials, the combination, with the drum I, connected with a feed-roll E by a pawl and ratchet wheel, and provided with a coiled spring and an operating-cord, of the ratchet-wheel O, connected with the said drum, the pawl P, engaging with the said ratchet-wheel and provided with a central downwardly-projecting arm, Q, the springs R S, arranged to hold the pawl P in place when in gear and when out of gear, and the pin T, attached to the said ratchet-wheel, to throw the said pawl into and out of gear and limit the movements of the said drum, substantially as herein shown and described, whereby only a fixed amount of paper can be fed out at one operation, as set forth.

4. In a combined feeder and cutter for roll toilet-paper and other materials, the combination, with the drum I, connected with a feed-roll, E, by a ratchet wheel and pawl, and provided with a coiled spring and an operating-cord, and the movable blade of a shears, U, of the pawl V, pivoted to the drum I, the spring W, and the stop-pin X, against which the pawl is held by the spring W, substantially as herein shown and described, whereby the said pawl will pass the said movable blade without operating it when the said drum is turned forward, but will operate the said blade when the said drum is turned back, as set forth.

HENRY H. HARRISON.

Witnesses:
JAMES T. GRAHAM,
C. SEDGWICK.