(No Model.) 2 Sheets—Sheet 1.

E. L. MOODIE.

TOILET PAPER SAFE.

No. 416,340 Patented Dec. 3, 1889.

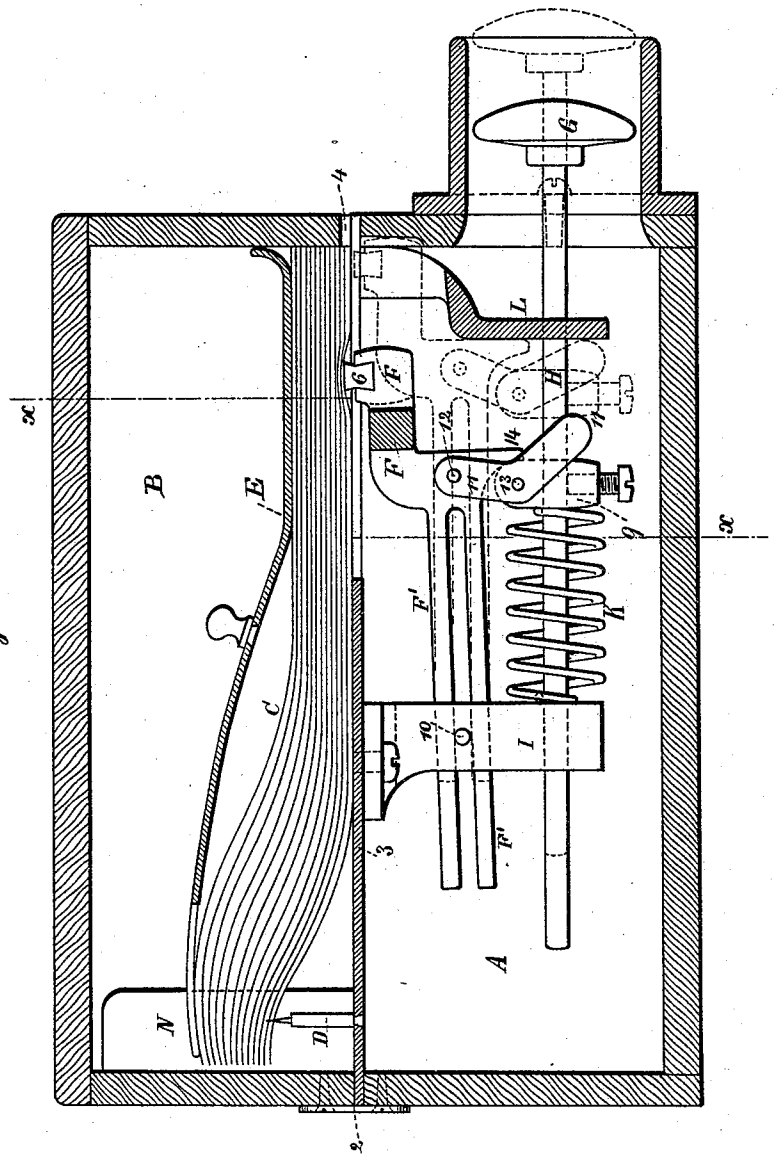

Fig. 1.

Witnesses:
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Chas. H. Smith

Inventor:
Ethanan L. Moodie
per Samuel W. Serrell atty

(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

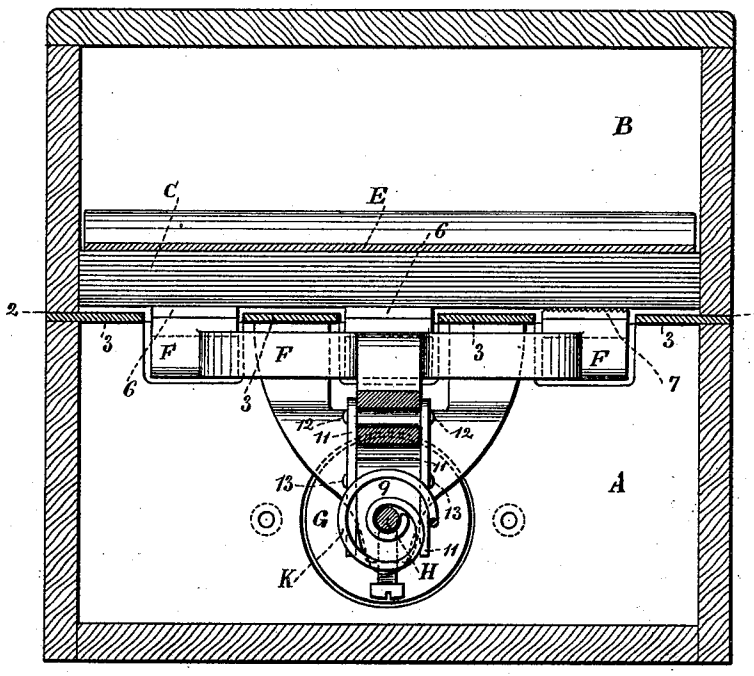
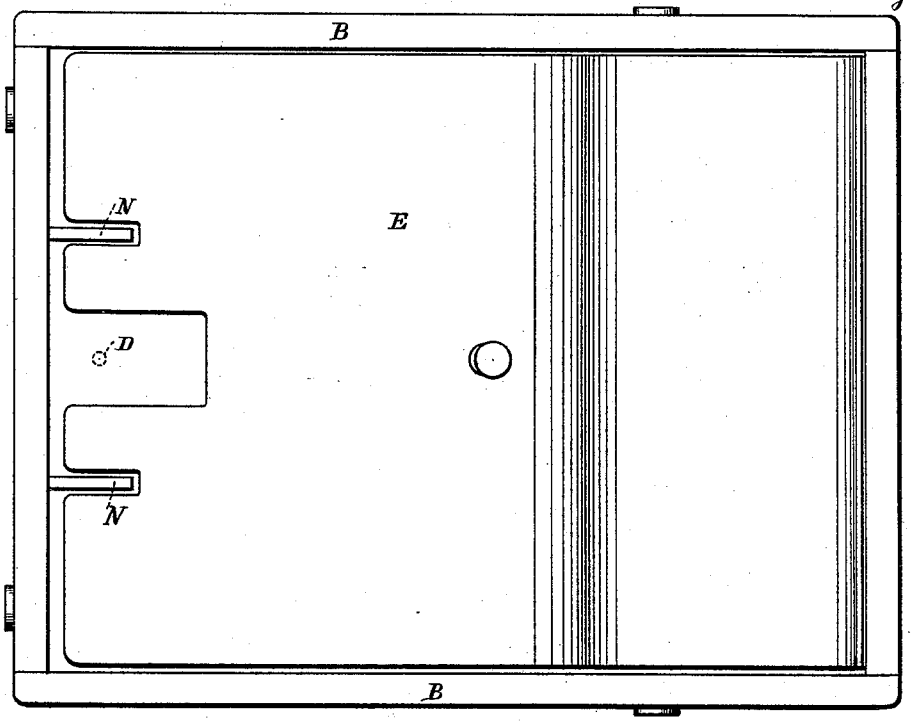


Fig. 3.



Witnesses:
J. Stair
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UNITED STATES PATENT OFFICE.

ELHANAN L. MOODIE, OF NEW YORK, ASSIGNOR TO HIMSELF, AND ROBERT GAIR, OF BROOKLYN, NEW YORK.

TOILET-PAPER SAFE.

SPECIFICATION forming part of Letters Patent No. 416,340, dated December 3, 1889.

Application filed August 31, 1889. Serial No. 322,524. (No model.)

To all whom it may concern:

Be it known that I, ELHANAN L. MOODIE, of the city and State of New York, have invented an Improvement in Toilet-Paper Safes, of which the following is a specification.

Packages of toilet-paper have been introduced into boxes and occupy a vertical position in the same, and a revolving roughened roller has been used for delivering one sheet at a time of such toilet-paper; but this apparatus is not well adapted to the reception and delivery of packages of paper varying in size nor to the holding of such packages of paper in a horizontal position.

In my improvement I make use of a box of a size adapted to receive the package of toilet-paper, and the feeding device consists of a reciprocating delivery-plate that is moved by hand, and also receives an up-and-down motion, so as to rub upon the lower sheet in the package of paper to separate the same from the other sheets and deliver it through a mouth in the box; but I have found that when this device alone is made use of several sheets are liable to be delivered at one movement of the delivery-plate. I therefore combine with the box and delivery-plate a detaining-needle, upon the point of which the package of paper rests, and the point, penetrating one sheet, enters the second sheet, so that the second sheet is held by the detaining-needle sufficiently to prevent the second sheet passing off with the first sheet, and the reciprocating delivery-plate, acting upon the first sheet, carries the same away laterally, tearing the paper thereof against the detaining-needle. By this means I am enabled to deliver one sheet at a time, the power of the detaining-needle upon the second sheet in the pile of sheets being greater than the friction resulting from moving the first sheet across beneath and in contact with the second sheet.

In the drawings, Figure 1 is a vertical longitudinal section. Fig. 2 is a cross-section at the line *x x*, and Fig. 3 is a plan view of the pressing-plate.

The base A of the box contains the mechanism, and the upper part B of the box is to hold the package C of toilet-paper. These parts may be separable at the line 2, and there is a metal plate 3 fastened to the upper part of the box-base A and forming a rest for supporting the package C of toilet-paper, and there is a delivery-mouth 4, through which the sheets are discharged one at a time, as hereinafter set forth, and in the plate 3 there is a detaining-needle D, and there may be one or more of these needles, and as they project above the plate 3 the package of paper is bent, as seen in Fig. 1, and a portion of it rests flat upon the plate 3 and the other portion is elevated by resting upon the detaining needle or needles D, and there is within the box B a pressing-plate E, having a form corresponding, or nearly so, to the shape of the upper surface of the bent package of toilet-paper, said plate E being sufficiently small to pass freely up or down within the box B, and there are slots or notches in such pressing-plate above the detaining needle or needles D, so that such pressing-plate does not come into contact with the detaining-needle even when there are but a few sheets of paper left in the package.

I make use of one or more reciprocating delivery-plates F, that are within openings in the plate 3, and these reciprocating delivery-plates are raised or lowered, as well as moved forward and back, and I remark that these plates F may be acted upon by any suitable mechanism for giving to them the requisite movement; but I prefer the device shown, and I remark that the upper surfaces of these reciprocating delivery-plates are roughened or covered with india-rubber or other suitable material, so as to apply to the lower sheet in the package of toilet-paper the force necessary to project the same laterally through the mouth 4; and it is to be understood that the reciprocating delivery-plates are raised, so that their surfaces press against the under surface of the lower sheet in the pile before such delivery-plates are moved toward the mouth 4, and thereafter such delivery-plates are lowered and returned back to their former position and are raised so as to press upon the sheet of paper, and in this manner one sheet after another is carried out through the mouth, the detaining needle or needles D acting to hold the second sheet from being moved with the first sheet, because such needle passes through the first

sheet and into the second sheet, and as the first sheet is carried off laterally the paper is torn against the detaining-needle.

I have shown the delivery-plate as made with three upward projections passing through slots in the base-plate 3, and at 6 are rubber blocks set in the recesses in the delivery-plate, and at 7 is a roughened metallic surface. Either or both these devices may be made use of for carrying off the paper through the mouth 4. The pusher G is of any suitable character, usually convex, and at the end of the rod H, that is guided at the back end by a stationary bracket I, and there is a collar 9 clamped upon the rod H, against which the spring K acts to move the pusher G forward, and upon the delivery-plate F is a slide-bar F′, extending back through the stationary bracket I and sliding freely therein, and it is preferable to slot this slide-bar F′ for the cross-pin 10, so that such slide-bar is kept in its proper position as it is reciprocated, and there are links 11, pivoted at their upper ends 12 to the slide-bar F′ and at their lower ends 13 to the collar 9, and the length of these links is such that as the pusher G and rod H are driven back against the action of the spring K the links 11 swing into an inclined position and draw the delivery-plate F backwardly in a depressed position, the arm 14 of such delivery-plate resting upon the top of the rod H; but as soon as the pressure upon the pusher G is released the spring K, acting against the collar, moves the same forward until it comes into contact with the arm 14, and in so doing the links 11 spring into nearly a vertical position and raise the delivery-plate, pressing the block or roughened surface 6 7 into contact with the paper, and in so doing the bottom sheet of the pile of sheets is carried out through the mouth 4.

I prefer to make use of a stationary bracket L, through which the rod H slides, and this bracket is placed in such a position that the lower forwardly-bent ends of the links 11 come into contact with such bracket before the end of the sliding bar F′ reaches such bracket; hence the spring K, as it expands, moves the collar 9 forward until the end of the slide-bar F′ comes into contact with the said bracket L, and in so doing the upper ends of the links 11 are swung downwardly and draw down the delivery-plates F and blocks 6 and 7, so that their upper edges are on the level of the top of the plate 3, or nearly so, and are not in the way of the sheet of paper being drawn out, and upon the return movement, when the pusher G is pressed upon, the delivery-plate F is still further depressed, so that the blocks 6 and 7 are entirely away from the under surface of the sheet of paper.

This device is simple and efficient, and the paper is effectually separated one sheet at a time from the paper contained in the box B.

In some cases I prefer to make use of vertical flanges N upon the inner surface of the box B and notch the package of paper at the place where these flanges come, the object of this device being to insure the package of paper being placed in the right position in relation to the detaining-needle, and these notches in the package of paper become an indication that it is made by the proper parties and of a size adapted to the box B. The box B and base A may be in one piece and cast with the plate 3, if desired, and the box B may be sufficiently deep to hold two or more of the ordinary packages of toilet-paper.

I claim as my invention—

1. The combination, with a box for holding a package of toilet-paper, of the stationary detaining-needle to pass through the lower sheet of the package and a reciprocating delivery-plate for discharging one sheet of paper at a time from the package through a mouth in the box holding such package of paper, substantially as set forth.

2. The base A and box B, for holding a package of paper, in combination with a detaining-needle, a supporting-plate for the package of paper having openings in such plate, a reciprocating delivery-plate having a roughened surface adapted to produce friction against the under surface of the lower sheet in a package of toilet-paper, and mechanism, substantially as specified, for giving to such delivery-plate an up-and-down and forward-and-back movement, substantially as set forth.

3. The box B, for holding a package of toilet-paper, the base A, plate 3, and detaining-needle D, in combination with a pressing-plate E, that is curved to rest upon the bent package of toilet-paper and provided with a slot over the detaining-needle, the delivery-plates F, and mechanism for reciprocating the same and for raising them into contact with the paper or lowering them out of contact, substantially as specified.

Signed by me this 23d day of January, 1889.

ELHANAN L. MOODIE.

Witnesses:

GEO. T. PINCKNEY,

WILLIAM G. MOTT.