

(No Model.)

H. F. HAVILAND.
PAPER HOLDER.

No. 575,568.

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Fig. 1.

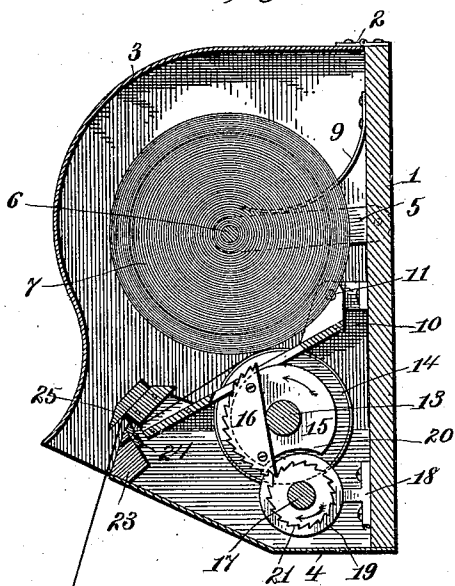


Fig. 2.

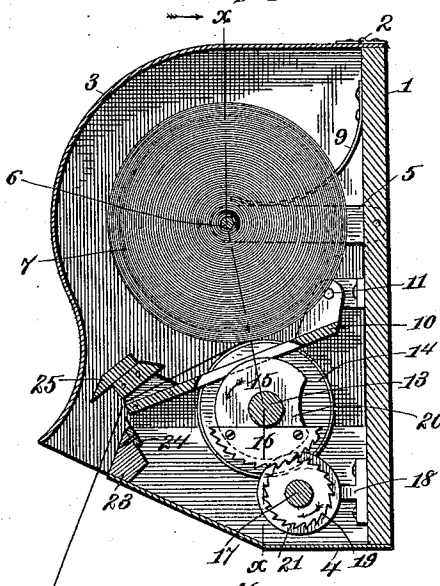


Fig. 3.

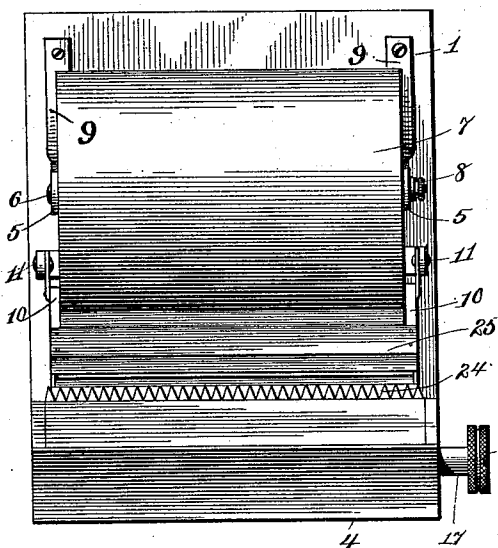
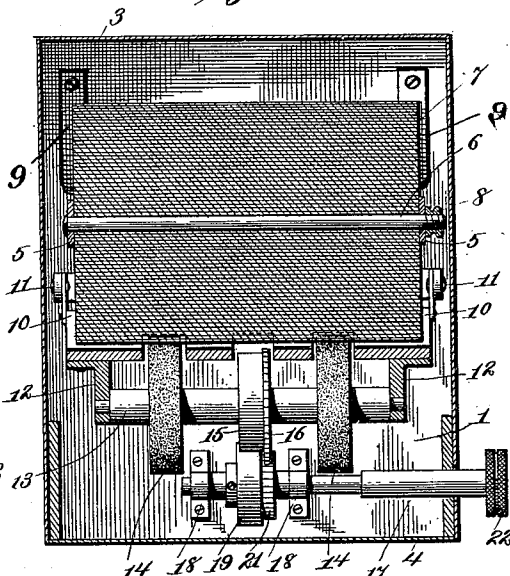


Fig. 4.



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PAPER-HOLDER.

SPECIFICATION forming part of Letters Patent No. 575,568, dated January 19, 1897.

Application filed July 8, 1896. Serial No. 598,398. (No model.)

To all whom it may concern:

Be it known that I, HARRY F. HAVILAND, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Paper-Holders, of which the following is a specification.

This invention relates to a new and useful improvement in toilet-paper holders, and has for its object to provide a device of this description by means of which a given length of paper may be fed from a roll without the possibility of a long length being drawn from said roll, thus accomplishing the much-to-be-desired object of preventing the wasteful use of the paper in public places.

With these ends in view my invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, I will describe its construction and operation in detail, referring by number to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a vertical section showing the position of the operating-gear relative to the segmental gear just after a length of paper has been fed and perforated; Fig. 2, a similar view showing the relative position of these parts during the operation of feeding the paper from the roll; Fig. 3, a front view of the device with the cover removed; Fig. 4, a section at the line *xx* of Fig. 2, looking in the direction of the arrow.

Referring to the drawings in detail, 1 represents a back board of such size and shape as to readily support the several parts of the device, and hinged to this board at 2 is a cover 3, so arranged as to inclose said operating parts, and a suitable lock may be provided for securing the cover in its closed position, so as to prevent interference with the mechanism of the device, the lower portion of said device being inclosed by the casing 4.

A pair of arms 5 are pivoted to the back board, so as to have a swinging movement, and in the outer ends thereof is secured the rod 6, adapted to receive the roll of paper 7 and permit the latter to turn thereon, and for convenience in placing the roll upon this pin one

end of the latter is threaded and provided with a thumb-nut 8, by which it may be secured in place or removed therefrom when the roll is being inserted. These arms are given a downward tendency, in addition to their own weight and the weight of the roll carried thereby, by the springs 9, the object of which will be hereinafter set forth.

The frame 10 is pivoted at 11 to suitable lugs projecting from the board 1, and upon the under side thereof are carried the brackets 12, in which is journaled the shaft 13, the latter having mounted thereon the feed-wheels 14, whose peripheries are roughened or provided with strips of sandpaper, whereby when these wheels are revolved in the direction of the arrow they will cause the paper composing the roll to be fed forward, since said roll rests by means of gravity and the force of the springs 9 upon said wheels, as clearly shown. Also secured upon the shaft 13 is a friction-wheel 15, carrying a segmental ratchet-gear 16, whose teeth are so set as to cause the friction-wheel 15 to revolve in one direction, as hereinafter described. A shaft 17 is journaled in suitable bearings 18, projecting from the back board, and upon this shaft is loosely mounted a roll 19, upon which the wheel 15 rests and by means of which the latter is supported, except when the cut-away portion 20 thereof lies next adjacent the roll, as clearly shown in Fig. 1, in which case the wheel 15 will be dropped.

Secured upon the shaft 17 is a ratchet-gear 21, whose teeth are set in an opposite direction from the teeth of the segmental gear, and the object of this ratchet-gear is to impart motion to the segmental gear, through which motion will be imparted to the shaft 13 and consequently to the feed-wheels 14, which in turn will feed the free end of the paper roll outward, as before described. The radius of the segmental gear is such as to prevent the latter from meshing with the ratchet-gear without elevating the shaft upon which said segmental gear is carried, and as this shaft is journaled to the frame 10 it is obvious that the meshing of these two gears will elevate said frame, and since the roll of paper rests upon the feed-wheels carried by the frame this roll will also be elevated. From this it

will be seen that when the shaft 17, which is the operating-shaft and is provided with a knurled knob 22 upon the outside of the casing, so that it may be easily revolved by hand, is thus revolved in the direction of the arrow upon the ratchet-wheel the teeth of said wheel will engage with the teeth of the segmental gear, forcing the latter to revolve and lifting it at the same time, as shown in Fig. 2, thereby feeding the paper from the roll, as before described, until the segmental gear passes out of mesh with the ratchet-gear, after which the shaft 17 may continue to revolve without affecting the shaft 13, since the roll 19 will remain stationary unless the protruding end of the paper be grasped by the hand and pulled forward, in which case the revolving of the feed-wheels 14 by their contact with the roll will cause the wheel 15 to revolve, which in turn will revolve the roll 19, the latter acting only as a support for the frame 10, until the cut-away portion 20 of the wheel 15 registers with the roll 19, when said frame will be caused to drop, as before described.

A cross-bar 23 extends across the front of the device and has secured thereto a serrated cutter 24, and the frame 10 is provided with a presser-bar 25, adapted to act in conjunction with said cutter, so that when the frame is dropped, as just described, the presser-bar will force the paper which lies between the cutter and said bar into contact with the frame with sufficient force to separate the protruding length of the paper which has previously been fed beyond the cutter from that which lies next behind said cutter. From this it will be seen that a length of paper equal to the circumference of the feed-wheels 14 may be drawn from the roll and cut off, but a greater length of paper cannot be withdrawn from the roll at one operation of the device, since the frame 10, which carries the presser-bar 25, will be dropped for every revolution of the feed-wheels, as just described, as it is only necessary for the cut-away portion of the wheel 15 to register with the roll 19 to permit the frame to drop, thereby embedding the serrations of the cutter in the paper, thus severing the protruding length and preventing the further withdrawal of said paper until the operating-shaft has been again revolved through the medium of the knob 22.

It will be noted that the amount of paper fed at each operation of the device will not vary with the varying of the diameter of the roll of paper, in that the amount of paper fed is determined by the circumference of the feed-wheels, and the roll of paper is caused to follow down as it grows less in diameter on account of paper being withdrawn therefrom by the pressure of the springs 9.

By the use of my improvement the economy of using paper in rolls is had, since this is the cheapest form that paper can be placed upon the market, as but little or no labor is required in handling the same, and another advantage of my improvement is that a large

quantity of paper may not be withdrawn from the device without the continued manipulation of the operating-knob, and as this will become tedious in drawing off a large quantity of paper but little loss is occasioned from this cause, and yet the paper in given lengths may be withdrawn from the device as readily as though it were placed therein in sheets, since the device automatically feeds the predetermined length and severs it from the roll, so that it is only necessary to start the paper by the manipulation of the operating-knob, when the end thereof may be grasped and drawn outward until the presser-bar drops and the length is torn off.

One of the features of this invention is that a length of paper cannot be completely fed from the casing by the revolving of the operating-knob, but only a portion thereof sufficient to permit its being grasped by the hand, after which it must be drawn outward by pulling thereon, and when the proper length has been thus withdrawn it will be severed from the roll automatically, since the strain incident to the drawing outward of the paper is sufficient to tear it after the presser-bar has dropped.

I am aware that slight modifications might be made in the design here described without departing from the spirit of my invention, and I therefore do not wish to limit myself to the exact details of construction shown.

Having thus fully described my invention, what I claim as new and useful is—

1. In a paper-holder of the character described, swinging arms adapted to carry a roll of paper, a swinging frame, feed-wheels journaled in said frame against which the roll of paper is adapted to bear, a friction-wheel carried upon the same shaft with said feed-wheels, said friction-wheel having a cut-away portion, a segmental gear adapted to revolve in unison with said friction-wheel, a roll with which said cut-away portion is adapted to engage, said roll being adapted to support the friction-wheel, a ratchet-gear carried with the friction-roll and adapted to mesh with the segmental gear, a cutter supported by the casing of the device, and a presser-bar carried by the swinging frame, substantially as and for the purpose set forth.

2. In a paper-holder of the character described, a suitable casing for the support of the operating parts of the device, a pair of swinging arms pivoted to said casing, a rod carried by said arms adapted to act as a journal for a roll of paper, a swinging frame pivoted to the casing, a shaft 13 journaled within said frame, feed-wheels carried by said shaft adapted to feed the paper from the roll, a friction-wheel 15 mounted upon the shaft 13, said wheel having a cut-away portion, a segmental gear 16 carried in unison with the wheel 15, a shaft 17 suitably mounted within the casing, a roll 19 carried upon said shaft, a ratchet-gear 21 also carried by the shaft 17 and adapted to operate the segmental gear 16,

a serrated cutter carried by the casing, and a presser-bar carried by the swinging frame so arranged as to force the paper into contact with the cutter when the frame is dropped, substantially as and for the purpose set forth.

3. The herein-described combination of a suitable casing, a hinged cover therefor, a pair of pivoted arms arranged within said casing, a rod carried by said arms adapted to act as a journal for a roll of paper, a swinging frame pivoted within said casing, a shaft 13 journaled within said frame, feed-wheels carried by said shaft, a friction-wheel 15 also carried by said shaft, said friction-wheel having a cut-away portion 20, a segmental gear 16 carried by said friction-wheel, a shaft 17 journaled within the casing, a roll 19 carried

by said shaft, said roll adapted to act in conjunction with the friction-wheel 15, a ratchet-gear carried by the shaft 17 and adapted to revolve the segmental gear and elevate the same, whereby the swinging frame will be lifted, a serrated cutter carried upon a suitable cross-bar of the casing, and a presser-bar carried by the swinging frame adapted to force the paper into contact with the cutter, substantially as and for the purpose set forth.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

HARRY F. HAVILAND.

Witnesses:

S. S. WILLIAMSON,
A. P. RUTHERFORD.