(No Model.)

H. H. HARRISON.

TOILET PAPER CUTTER.

No. 390,018. Patented Sept. 25, 1888.

Fig. 2.

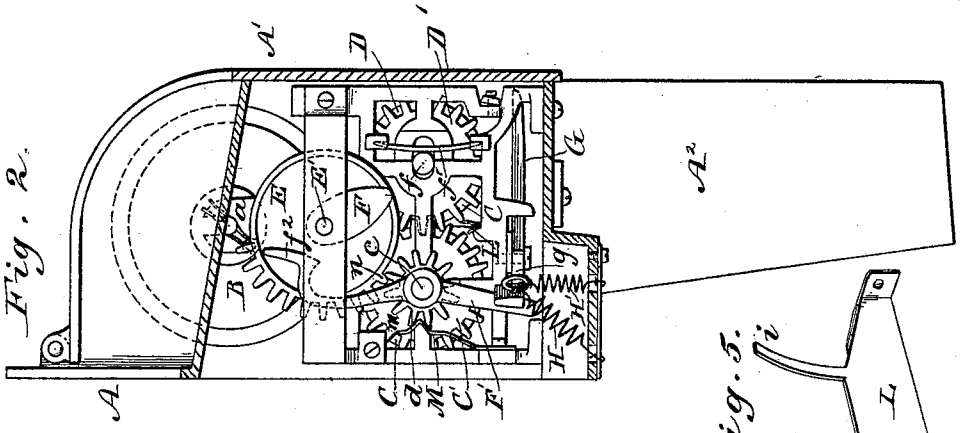


Fig. 5.

Fig. 1.

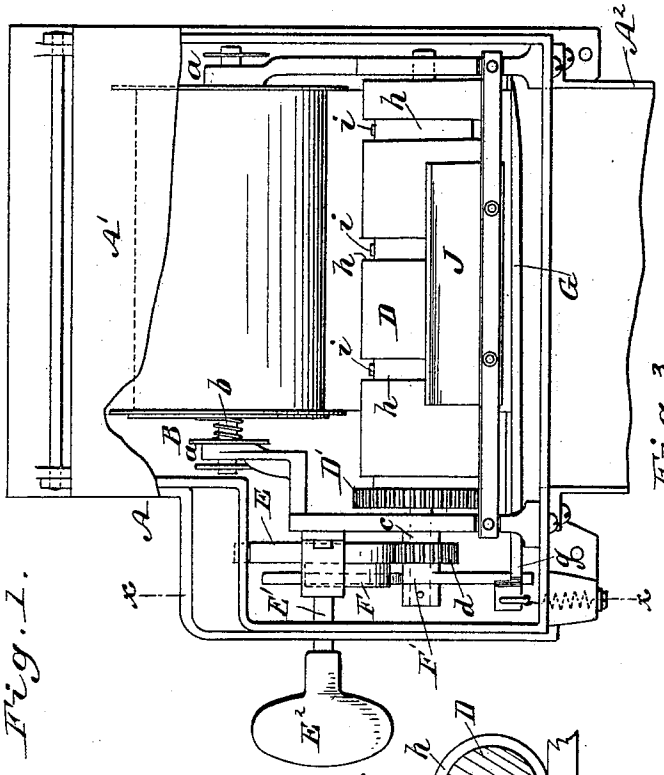


Fig. 3.

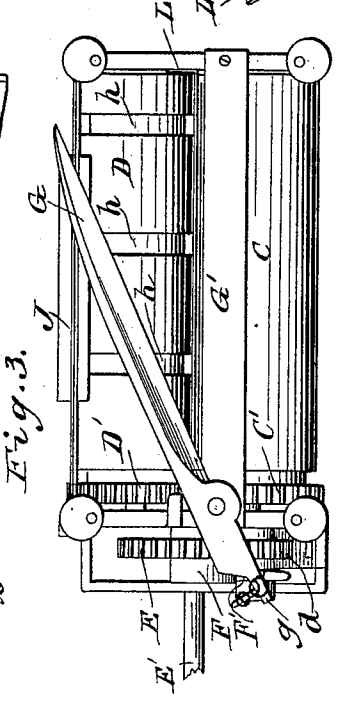
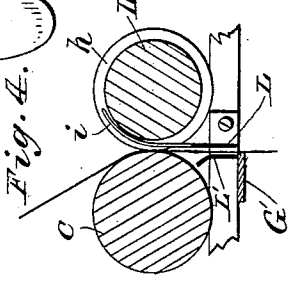


Fig. 4.



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UNITED STATES PATENT OFFICE.

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TOILET-PAPER CUTTER.

SPECIFICATION forming part of Letters Patent No. 390,018, dated September 25, 1888.

Application filed October 29, 1887. Serial No. 253,684. (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 Improved Toilet-Paper Cutter, 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 rear elevation of my invention with the casing broken away. Fig. 2 is a section through the main casing on the line *x x* of Fig. 1, showing the operating mechanism in elevation. Fig. 3 is a detail bottom view of the inner frame and the working parts of the invention removed from the box, and Figs. 4 and 5 are detail views of the drawing-rollers and guide-plates.

The invention will first be described in connection with the drawings, and then pointed out in the claims.

A is the main box of the device, of appropriate size to inclose the operative parts, and adapted to be screwed up against a wall or other vertical surface. Within the box A is journaled the drum B, on which paper may be wound. The shaft of the drum B is held in open bearings *a*, and is acted upon by a spring, *b*, which serves as a brake to prevent the drum from turning too easily. Below the drum B are journaled the two drawing-rollers C D, which are geared together by the gear-wheels C′ D′. The shaft *c* of the roller C is extended at one end, and on it is secured the pinion *d*, which is adapted to be engaged by the teeth of the mutilated gear E and turned for turning the rollers C D intermittently for drawing paper from the drum B. The mutilated gear E is operated by the spindle E′, on which said gear is secured, and the said spindle is adapted to be turned by the knob E^2, secured to the end of said spindle outside of the main box A, and said mutilated gear is formed or provided with the cam F at one side thereof, as shown clearly in Fig. 2. This cam is for operating the pivoted shear-blade G for closing it in contact with the stationary blade G′, for cutting the paper as it is brought between them by the rollers C D. The cam acts upon the blade G while the teeth of the mutilated gear E are out of engagement with the pinion *d* and while the rollers C D are at rest, and it acts through the medium of the lever F′, pivoted upon the shaft *c* next to the pinion *d*, as shown clearly in Fig. 2. The blade G and lever F′ are returned to their normal position after being acted upon by the cam F and lever F′ by the coiled springs H H′, attached at one end to the main casing and at the other to the extended end piece or shank, *g*, of the said blade. The spring H′ has a lateral action upon the blade G, being placed substantially at right angles in the plane of its motion, while the spring H has both a lateral and direct action, being set at an angle to the plane of motion of the blade. In this manner the edge of the blade G is caused always to hug the sharp edge of the stationary cutter G′, so that the shears will never fail in cutting the paper. The lever F′ is formed at its upper end with a lateral shoulder, f^2, against which the cam F strikes, so that when the cam passes the said lateral shoulder the lever F′ will disengage the cam and permit a sudden return of the blade G and lever F′.

The shaft *f* of the roller D is held in elongated bearings, and is acted upon by springs *f*′ to cause the roller D to nip the paper between itself and the roller C, so that the rollers, when revolved, will not fail to draw the paper from the drum B. The roller D is kept from turning of its own accord by the brake-pad J, of soft rubber, felt, or other suitable material, and the said roller is circumferentially grooved, as shown at *h h*, into which the guide-arms *i i* of the plate L project, as shown in Fig. 4. The arms *i* are made a part of the plate L, and parallel with this plate is another, L′. (Shown in Figs. 4 and 5.) The opening or space between those plates is exactly in line with the contact of the rollers C D and with the cutting-edge of the stationary blade G′, so that the paper, in passing from the rollers to the shears, passes between the said plates L L′, and is thus always kept in proper position and guided directly to the shears.

The roller C is kept from turning of its own accord by the pawl M, made with a V-shaped projection, *m*, which bears against the adjacent surfaces of the two cog-wheels between which it enters, and the first cog *n* of the mu-

tilated gear E is made somewhat shorter than the other cogs, so that all "jamming" of the mutilated gear with the pinion *d* is obviated.

The front of the box A is closed by a hinged door, A′, which may be opened for removing and replacing the drum B and inspecting the working of mechanism, and at the bottom of the said box is secured the spout A^2, which serves as a guard to the paper until cut by the shears, so that the paper cannot be obtained except by operating the knob E^2.

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

1. The combination of the drum or paper-supply B, rollers C D, geared together, the pinion *d*, applied to the shaft of one of said rollers, the mutilated gear E, cam F, lever F′, and the blades G G′, all arranged to operate substantially as and for the purposes set forth.

2. The stationary blade G′ and rollers C D, for drawing the paper from the drum B, in combination with the pivoted blade G, having extension *g*, and the two springs H H′, attached to said extension to exert a lateral action upon blade G, substantially as and for the purposes set forth.

3. The combination, with the rollers C D, geared together, the pinion *d*, mutilated gear E, stationary blade G′, and pivoted blade G, of the cam F and lever F′, formed with the lateral shoulder f^2, substantially as shown and described.

4. The roller D, formed with circumferential grooves *h*, in combination with the roller C, drum B, guide-plates L L′, fingers *i*, and cutting-blades G G′, substantially as described.

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Witnesses:
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