(No Model.) 2 Sheets—Sheet 1.

J. H. SPERRY.

TOILET PAPER HOLDER.

No. 363,694. Patented May 24, 1887.

Fig. 1.

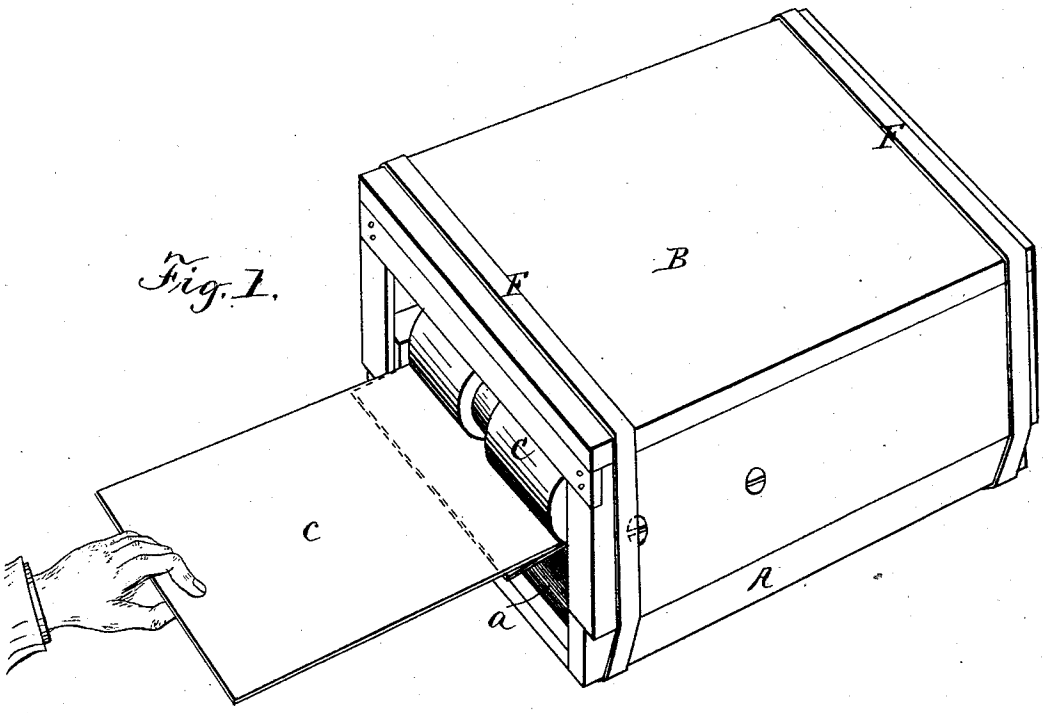
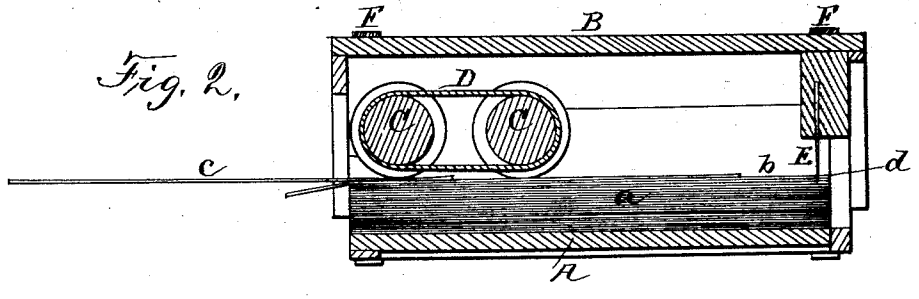


Fig. 2.



Witnesses
Ella S. Johnson
Wm. Blackrille

Inventor
Julius H. Sperry
By his Attorneys
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N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 4

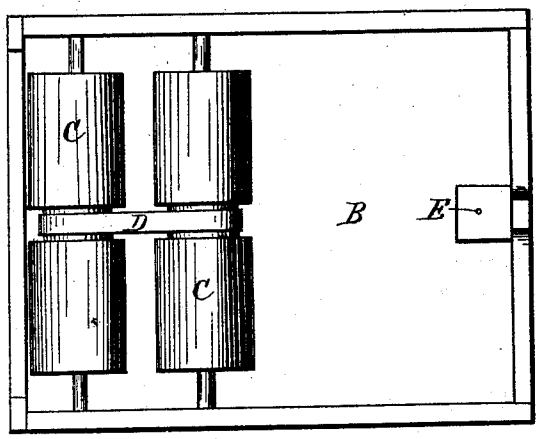


Fig. 3.

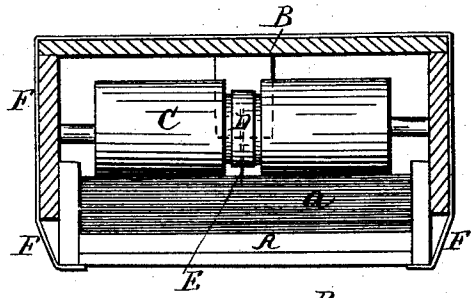
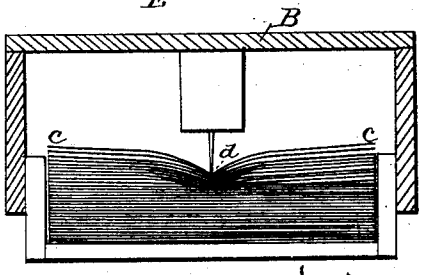


Fig. 5.



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UNITED STATES PATENT OFFICE.

JULIUS HENRY SPERRY, OF BROOKLYN, NEW YORK.

TOILET-PAPER HOLDER.

SPECIFICATION forming part of Letters Patent No. 363,694, dated May 24, 1887.

Application filed December 31, 1886. Serial No. 223,117. (No model.)

To all whom it may concern:

Be it known that I, JULIUS HENRY SPERRY, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Toilet-Paper Holders, of which the following is a specification.

My invention is directed to the production of a holder for paper for toilet or sanitary purposes in which single separate sheets will be fed for use from a box containing a package, and in which the act of withdrawing one sheet from the package by pulling it by hand serves as the means of presenting or feeding the next sheet for use, so that in fact each separate sheet of the package forms the feeder for the next one until the whole package is used, so that there is no waste, and the construction of the holder is, by using one separate sheet to feed out the next one, made simple and comparatively cheap. By my improvement no manipulation after feeding the sheet is required to feed the next one, and it is this self-feeding of separate sheets which distinguishes my improvement from similar things in use. Each sheet is fed by two or more coacting rolls, so that when one sheet is being pulled out by hand for use and is free of one of the rolls the next sheet will be acted upon by that roll and fed partially out. In this operation the sheet being pulled out by hand, becomes the feeder of the next sheet to place it in position also to be pulled out. Coacting with the connected rolls in the automatic feeding of the separate sheets, so that they may be pulled out, I provide a pricking-point arranged to pierce two or more sheets of the package at their inner ends, and thus to cause them to separate from each other at the moment the rolls begin to act upon the sheets and thereby prevent the delivering of more than one sheet at a time. In experimenting I found that the sheets cut by a machine in stacks would stick together at their cut edges and be slightly lapped under the compressing action of the knife, and thereby be liable to be fed out of the box more than one at a time. The provision of the pricking-point serves to hold the sheets at the middle, so that the pulling action of the rolls causes the sheet being fed out to curl up at its inner corners and become separated from the package at the instant the rolls act upon it. To effect this separation of the sheets, it is only necessary that a few of the sheets of the package should be so held as they are being used, and such holding pricking function is effected by the pressure which coacts with the rolls to hold the package of sheets within the box, so that they can be automatically fed and pulled out separately at the open end of the same.

Referring to the drawings, Figure 1 represents in perspective my improved toilet-paper holder, showing a sheet partially fed out of the box by the act of pulling out the previous sheet. Fig. 2 represents a longitudinal section of the same, showing one sheet as it is being pulled out to turn the rolls to feed out the next sheet in position also to be pulled out. Fig. 3 shows a cross-section of the box, taken at its open end in front of the rolls. Fig. 4 shows that section of the box which carries the rolls and the pricking-point inverted, and Fig. 5 shows the pressure-piercing action of the needle-point upon the sheets.

I provide a box of any suitable construction adapted to hold snugly and freely a package of toilet-paper in separate sheets. The box shown in the drawings is made of two sections, one, A, to hold the package of sheets *a*, and one, B, to hold the co-operating rolls and pricking-point to effect the separate feed of the sheets from the box at its open end. These two box parts fit one within the other, and are held in proper relation by a telescoping construction, in which the sides and ends of one part fit over the other part, and are held together by means which may also exert the required pressure of the rolls upon the package of sheets according to the position of the box.

In the box part B, and in transverse relation thereto, is mounted, by suitable bearings in the side of said box part, two or more rolls, C, in the same plane and connected together so as to turn in the same direction. These rolls are preferably of the same diameter, and are connected for co-operative action preferably by a belt, D, it being essential that the acting surfaces of the rolls shall bear upon the surface of the package of sheets in the same plane. These rolls are preferably arranged in pairs, as shown, and connected by a belt at the mid-

dle of their length, and made with a roughened surface, preferably sanded, either by paper or directly upon their surface; or rubber may be used.

At the closed end of the box the part B is provided with a pricking-point or needle, E, arranged in position to pierce or prick into the top or outer sheets, *b*, at the inner end of the package, for the purpose of co-operating with the feeding and delivering action of the rolls, to effect the separation of each sheet singly from the package as required for use. In this separating function of the pricking-point it is only necessary for it to act upon two sheets at a time so as to hold the under one while the outer one, *c*, is being both fed out by the rolls and pulled out by the hand of the user.

The advantage of only piercing a few of the sheets of the package allows the box parts to be put together upon the package of paper for instant use; allows the package of paper to be placed loosely within the box and to be replenished at any time; allows the weight of the cover to give the required piercing function to the needle when the box is used in a horizontal position; allows the pressure exerted upon the box-cover part to give the proper pressure upon the feed-rolls when the box is used in a vertical position; to also give the required piercing function to the pricking point, and it also gives the advantage of placing the feed-rolls and the pricking-point within the movable cover part of the box.

When the box is placed in a vertical position, the two parts may be held together by elastic bands F, or by any other suitable means which will give the required pressure of the cover part, its feed-rolls, and pricking-point upon the package of sheets. These pressure-exerting bands may be connected to each end of the box part A, so as to be placed over the movable cover part B, as shown, or in any suitable way.

The rolls are shown as being arranged across the open end of the box, but they may be placed at the middle of the box, and I may use more than two coacting rolls and produce the same results; but they must be connected in sets and may be operated by hand-knobs.

The paper used for the purpose is thin and generally oblong in shape, and the box may contain quite a large package merely laid in on the box-bottom and the top part put on it so that the rolls will rest and press upon the package until all the sheets are used. This pressing action of the rolls serves to limit the extent to which the pricking-point pierces the package, and the length of the needle, therefore, need only be sufficient to permit it to pierce a few of the outer sheets of the package. The feeding action of the rolls tears the sheets from the pricking-point, and in doing so the pressure of the needle-point holds them at *d*, so that their corners *e* will first be separated from the pack by a curling-up movement.

Apparatus is old in the form of a cabinet or case for holding and feeding tickets and sheets of paper from a package one after the other without disturbing their arrangement in the stack, and in which the successive feed of sheets singly is effected by coacting-pin feed-wheels, in which the act of feeding one sheet from the package serves also to feed the next sheet forward from the case, and so on continuously, from the under side of the package; but my improvement embraces, in connection with such an automatic feed of single sheets from a stack, means whereby the sheets are held in stack and separated to insure their detachment from a point piercing only the sheet being fed.

I claim—

1. The combination of a box open at one end adapted to hold paper in a package of separate sheets, with two or more coacting pressure-rolls and a pricking-point, both arranged to act upon the same side of a package of sheets, the pressure of the pricking-point having a fixed relation to the functions of the coacting-pressure feed-rolls, substantially as described, for the purpose specified.

2. A holder for paper in a package of separate sheets, consisting of a receiving-box part for the package, open at one end, and a removable cover part containing pressure-rolls connected together in pairs, and a needle or pricking-point arranged to pierce the sheets of paper upon which the rolls act, substantially as described, for the purpose specified.

3. The combination, in a holder for paper in a package of separate sheets, open at one end to permit the sheets to be fed and pulled therefrom, as described, of rolls connected together for co-operative action by pressure and friction, and a pricking-point arranged to pierce the sheets in contact with the rolls to an extent limited by them, substantially as described, for the purpose specified.

4. The combination, in a toilet-paper holder consisting of a box part for containg the package of separate sheets, a follower part containing coacting feed-rolls, and a pricking-point, with means for holding the box parts in proper relation and causing one part to act with pressure upon the other part, substantially as described, for the purpose specified.

5. In a toilet-paper holder, the combination of a box consisting of two telescoping sections, one of which is removable and carries coacting feed-rolls connected by belt, and a needle with elastic bands for holding the telescoping sections in their proper relation to each other and to give the proper pressure of the rolls upon the paper, substantially as described, whereby separate sheets are automatically fed from the box.

6. In a device for feeding separate sheets of paper from a package, the combination of a

pressure-feeding device with a pressure-needle pricking-point, substantially as described, for the purpose specified.

7. A paper-holding cabinet-case composed of two telescoping parts, one of which exerts a pressure upon the other, in combination with a revoluble feeding device and a needle-pressure pricking-point, both acting upon the sheets to effect their separate feed, as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JULIUS HENRY SPERRY.

Witnesses:
J. HERVEY MORGAN,
CHAS. D. SPERRY.