

(No Model.)

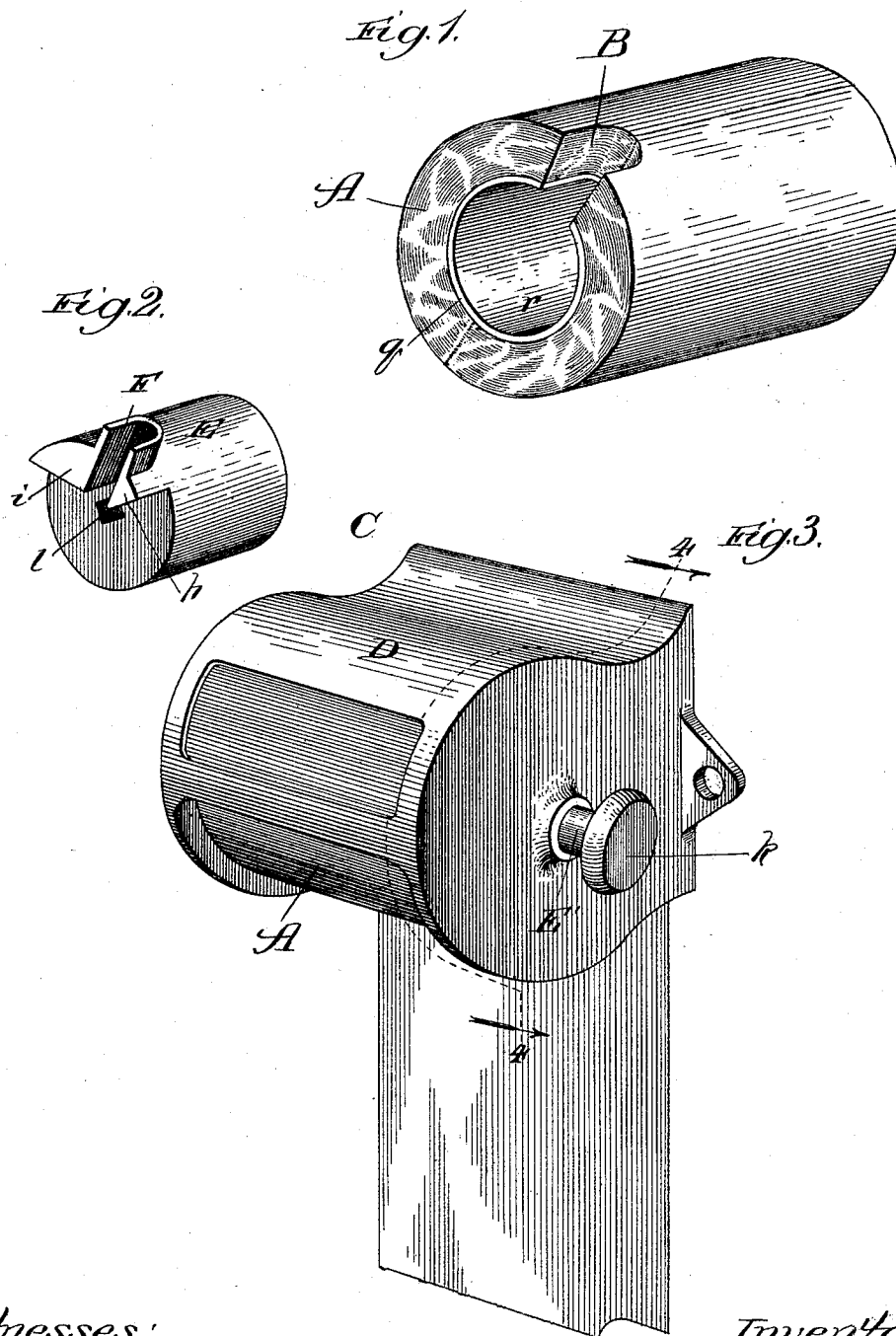
3 Sheets—Sheet 1.

O. H. HICKS.

ROLLED PAPER AND FIXTURE THEREFOR.

No. 498,900.

Patented June 6, 1893.



Witnesses:
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(No Model.)

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Fig. 4.
C

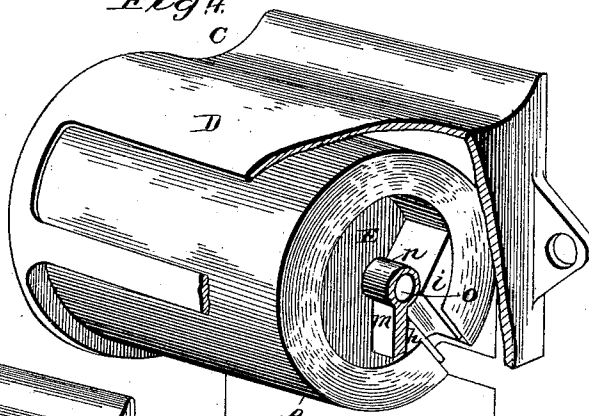


Fig. 5.
C

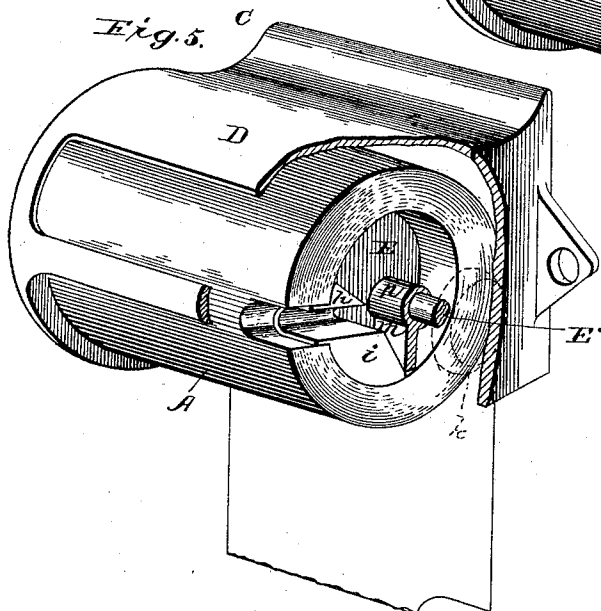
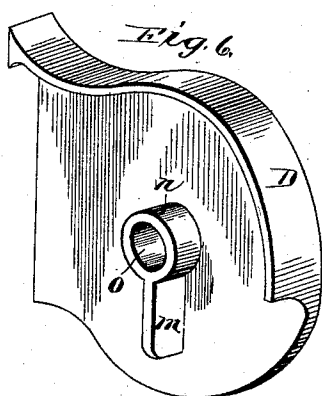


Fig. 6.



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(No Model.)

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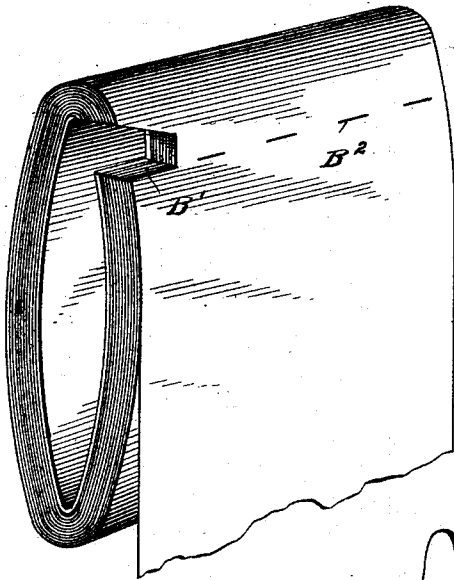


Fig. 7.

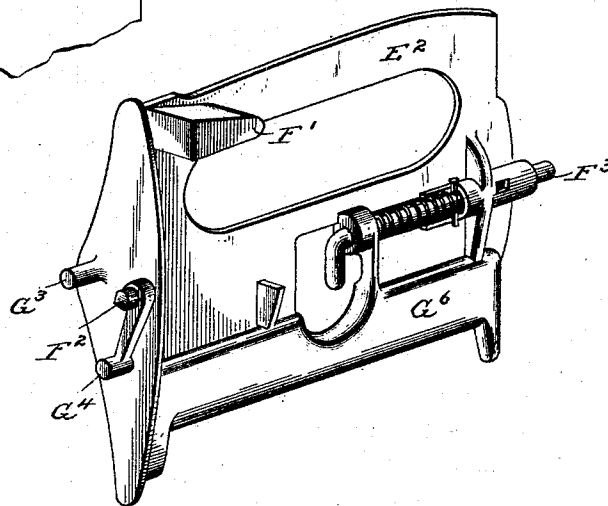
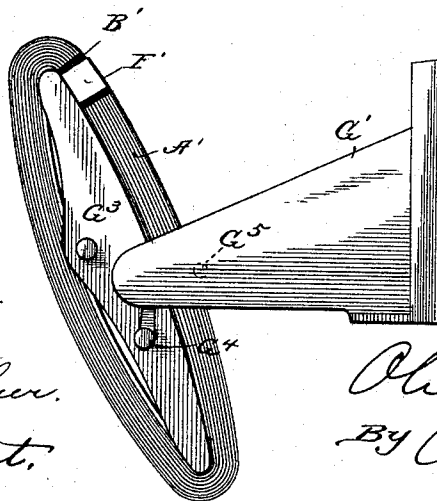


Fig. 8.

Fig. 9.



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UNITED STATES PATENT OFFICE.

OLIVER H. HICKS, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE MORGAN ENVELOPE COMPANY, OF SPRINGFIELD, MASSACHUSETTS.

ROLLED PAPER AND FIXTURE THEREFOR.

SPECIFICATION forming part of Letters Patent No. 498,900, dated June 6, 1893.

Application filed January 12, 1893. Serial No. 458,151. (No model.)

To all whom it may concern:

Be it known that I, OLIVER H. HICKS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Rolled Paper and Fixtures Therefor, of which the following is a specification.

A common difficulty experienced with rolled toilet-paper is due to the strain exerted upon it in turning it to obtain a length to be torn off, whereby the roll is caused to "creep" upon itself, as it were, that is to say, as the rolling of the paper is essentially somewhat loose, the strain will tend to tighten it. As a result, waste will ensue by causing undue lengths to be pulled out; and particularly where the roll is oval or perforated or otherwise weakened, to define the length of the sheets, and form tearing-lines which are originally coincident through the roll, or half-diameter thereof, the creeping of the paper brings the tearing-lines out of coincidence, and thus causes uneven lengths to be presented and also so disorganizes the roll as to tend to direct the tearing-strain between the tearing-lines.

My object is so to construct the roll of paper as to adapt it to be stayed by the fixture against creeping, and thus provide cheaper and more convenient means for effecting the staying function than that hitherto provided on the roll itself; and it is also my object to provide an especially effective fixture to be used with the roll so constructed.

In the accompanying drawings:—Figure 1 is a perspective view of a roll of paper involving my improved construction. Fig. 2 is a similar view of a support for the roll, forming that part of the fixture I have designed for use with my improved roll, which stays the latter against creeping. Fig. 3 is a perspective view of the entire fixture containing one of the rolls of paper. Figs. 4 and 5 are perspective views with one end of the casing broken away, and showing, respectively, the roll and stops at different extremes of movement. Fig. 6 is a sectional view in perspective of the inner side of the end broken away in Figs. 4 and 5. Fig. 7 is a perspective view of an oval roll of paper formed with a stay-recess and a line of weakness in accordance

with my invention. Fig. 8 is a similar view of a core plate adapted to co-operate with said oval roll and Fig. 9 is an end elevation of complete fixture in which the oval roll and core plate of Figs. 7 and 8 are arranged.

A is a roll of paper, having a central opening r in which is commonly contained a stiffening core q , usually of paste-board. The roll A is shown in cylindrical form, though it may, for the purpose of my improvement, as well be oval in cross-section as will be hereinafter explained or of other contour. In an end of the roll I provide a recess or notch B of sufficient depth to receive and retain against slipping past it under any conditions of its use, a stay provided on the fixture and supported to turn with the roll. The gist of my invention lies in the provision of this adequately deep recess; since it adapts my improvement to afford its advantage whether the fixture for the roll be of my improved construction, hereinafter described, or of any other construction involving a stay or stop to enter the notch and turn with the roll.

I may provide a notch B in each end of the roll, or more than one in either end or in both ends thereof, though the one answers the purpose and may then afford a guide in the adjustment of the roll in the fixture, as hereinafter described.

If the paper of the roll be divided into lengths, as it may (and preferably is) or may not be, by lines of weakening, or perforations, they should coincide through the thickness of the roll, and should also, by preference, but not necessarily, be in line with the center of the base of the notch.

C is my improved fixture, comprising, as its essential features, a supporting part, which may be a box or case D, adapted to be affixed to a wall, or the like, and having a stop for the roll, and containing a rotary support for the same carrying a stay to enter the notch B in a roll A.

While the case D may be almost entirely open, it is preferred that it be open only at its front and under side, to about the extent represented, in order that the condition of the supply of paper it contains may be conveniently observed. In one end of the case is a central journal-opening o extended on the

inner side of the said end into a nipple *n*, from which extends radially, and preferably toward the base of the case, a flange *m* affording a stop and also serving the purpose of a guide in adjusting into place the roll-support hereinafter described.

E is my improved roll-support of the general cylindrical form represented, or of such other shape as will adapt it to fit inside a roll A, into one end of which it is inserted. An opening *l* is provided in the support to extend longitudinally through it and should be squared, as represented, at least toward one end, or otherwise adapted to cause it to turn with the shaft E' journaled in the opening *o* and nipple-bearing *n* on the case, the shaft being formed toward its inner end to fit the square or other portion of the opening *l* in the support E, and carrying a knob *k* or handle at its outer end, by which to turn it. At one end of the support E is a stay F, projecting at an angle to its periphery, and beyond the end of the support. The stay is of a form to enter deeply into the roll-recess B, and should closely fit the latter; and it is hollow and open at both ends to adapt it to be slipped over the stop *m* and nipple *n* in adjusting the support (with the paper-roll surrounding it with the stay F introduced into the notch B of the roll) into place in the case D upon the shaft E'. The stay F is flanked by segmental extensions *i* and *h* of the support E, the outer sides of which are adapted to engage alternately the opposite sides of the stop *m* thereby preventing complete rotation of the roll of paper and, as a consequence, a greater length, than that predetermined, of the end of the roll from being pulled out to be torn off at one time. To adjust the parts together, therefore, the support E is first inserted into the end of the roll A having the notch B, in a manner to cause the stay F to enter the notch. Then the support, with the paper-roll upon it, is inserted into the case D, the stop *m* guiding the insertion by entering and passing way through the hollow stay, which is slipped over it till the opening through the support is brought coincident with the opening *o* in the end of the case, when the shaft E' is inserted through the last-named opening and support, and then, obviously, forms, practically, a part of the support for the roll on the fixture. When in this position, the hollow stay is above the shaft and the stop *m* is below the shaft. The shaft may, though not necessarily, be supported in bearings at both ends of the case; and though no locking-device is shown to prevent its unauthorized withdrawal, which would enable the roll of paper to be stolen, I intend to provide a suitable lock for such fixtures, particularly, as is used in public places.

With the parts thus constructed, as to details, and adjusted together, an end of the paper-roll may always be presented at the bottom of the case, through the opening therein,

at which end to grasp the paper and pull the roll around on its shaft till stopped by the segmental extension *h* striking the under side of the flange *m*, at which occurrence the roll should have made a little more than a half revolution in order to bring the end of the paper left after tearing a sheet from it, back to a point slightly beyond a line vertically coincident with the longitudinal center of the roll, to insure dropping of the end. To effect the presentation of another length of paper to be grasped and torn off, the shaft E is reversed by turning it at its handle *k* till the segmental extension *i* strikes the upper side of the flange *m*, which stops the further backward rotation, but at the end of which the end of the paper-roll will have passed the center thereof in vertical line with the shaft, whereby the length to be grasped will fall down; and then by pulling it out the roll A is again reversed to present the two predetermined lengths to be torn off.

As will be seen, the stay F, by its deep insertion into and firm engagement with the recess B in the end of the roll A, precludes all possibility of the roll slipping or "creeping."

It is not necessary that the stop *m* shall occupy the position shown and described, for any suitable form of stop may be provided at any desired position for obstructing the rotation of the shaft; and if another form of such stop be provided, or if it be caused to occupy another position, the form of stay F shown and described may be departed from, since there need be no stop for it to straddle while being adjusted. And my improved fixture may, in other respects, be variously altered in its construction without thereby departing from my invention.

In the application of my invention to an oval roll and fixture therefor, as illustrated in Figs. 7, 8 and 9, the oval roll A' is provided with a stay recess as at B', and also, preferably, with a line of cuts B² extending way through the roll and across from end to end of the same in line with the stay recess as shown clearly in Fig. 7; while the core plate E² is provided with a stay F' adapted to fit within said recess as shown in Fig. 8. The core plate has a fixed pivot F² at one end and a movable pivot or spring bolt F³ at the other end which are respectively adapted to engage suitable sockets or bearings in the arms G' of the fixture frame, shown in Fig. 9.

Stops G³, G⁴, are formed at opposite sides of the pivot F² for arresting the core plate and roll by contact with a suitable co-operating stop G⁵ (shown in dotted lines) on the fixture arm G' when the said core plate and roll are oscillated, as hereinafter described, and one side of the core plate is weighted as at G⁶, so that it and the roll upon it will normally stand in the position shown in Fig. 9.

In operation, a pull upon the free depending end of the paper causes the core plate and roll to be turned until arrested by the strik-

ing of the stop G^3 against its co-operating stop G^5 on the fixture arm, whereupon the continued stress upon the paper causes the latter to separate upon the line of weakness formed by the cuts B^2 , thus permitting the core plate and roll to turn backward and finally resume their normal positions, with the new free end of paper hanging in position to be grasped the next time.

The stay and stay recess in this embodiment of my invention prevent the creeping of the paper and preserve the integrity of the roll as effectually as in the embodiments shown in Figs. 1 to 6.

I make no claim herein to the oval roll *per se*, nor to its combination with an oscillatory core plate and stops, as the same are already covered by my previous Patents Nos. 325,410 and 357,993.

What I claim as new, and desire to secure by Letters Patent, is—

1. As a new article of manufacture, a roll of paper provided in its end with a stay-recess adequately large to receive and retain against displacement or separation therefrom, in rotating the roll, the stay on a fixture for the roll, substantially as and for the purpose set forth.

2. As a new article of manufacture, a roll of paper having tearing-lines at intervals on the web of paper, said lines coinciding in the roll, and provided in its end with a stay-recess in line with the said coincident tearing-lines and adequately large to receive and retain against displacement or separation therefrom, in rotating the roll, the stay on a fixture for the roll, substantially as and for the purpose set forth.

3. In a paper-roll fixture, the combination of a rotary support for the roll and a stay projecting from the support to enter a stay-recess in the end of the roll, substantially as and for the purpose set forth.

4. In a paper-roll fixture, the combination of a rotary support for the roll, a stationary stop in position to prevent complete rotation of the support, and a stay projecting from the support to enter a stay-recess in the end of the roll, substantially as and for the purpose set forth.

5. In a paper-roll fixture, the combination of a case and a roll-support journaled in the case and provided with a projecting stay adapted to enter a stay-recess in the end of the roll, substantially as and for the purpose set forth.

6. In a paper-roll fixture, the combination of a case provided with a stop in position to prevent complete rotation of the roll, and a roll support journaled in the case and provided with a projecting stay adapted to enter

a stay-recess in the end of the roll, substantially as and for the purpose set forth.

7. In a paper-roll fixture, the combination with a rotary shaft of a roll-support E thereon having a stay F projecting from one end to enter a stay-recess in an end of the roll, substantially as and for the purpose set forth.

8. A paper-roll fixture comprising, in combination, a case D having journaled in it a shaft E' and provided at one inner end with a stop m and a roll-support E on the shaft, having a hollow stay F projecting from one end to enter a stay-recess in an end of the roll, and flanked by stops h and i , substantially as and for the purpose set forth.

9. In combination, a roll of paper provided in its end with a stay-recess B , and a fixture therefor having a rotary support for the roll and a projecting stay F to enter the said recess, substantially as and for the purpose set forth.

10. In combination, a roll of paper provided in its end with a stay-recess B , and a fixture therefor comprising a case having a rotary roll-support journaled in it and provided with a projecting stay F to enter the recess in the roll, and a stop on the case in position to prevent complete rotation of the roll-support; substantially as and for the purpose set forth.

11. In combination, a roll of paper having tearing lines at intervals on the web of paper, said lines coinciding in the roll, and provided in its end with a stay-recess B in line with the said coincident tearing-lines, and a fixture for the roll, comprising a case having a rotary-roll-support journaled in it and provided with a projecting stay F to enter the recess in the roll, and a stop on the case in position to prevent complete rotation of the roll-support, substantially as and for the purpose set forth.

12. In combination a roll of paper A having tearing-lines at intervals on the web of paper, said lines coinciding in the roll, and provided in its end with a stay-recess B in line with the said coincident tearing-lines, and a fixture C for the roll, comprising a case D having a rotary shaft E' journaled in it and a stop m extending from the shaft-bearing at one end of the case, and a roll-support E having a hollow stay F projecting from one end to enter the stay-recess in the roll and flanked by stops i and h to engage the stop m , the whole being constructed and arranged to operate substantially as described.

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