

No. 886,092.

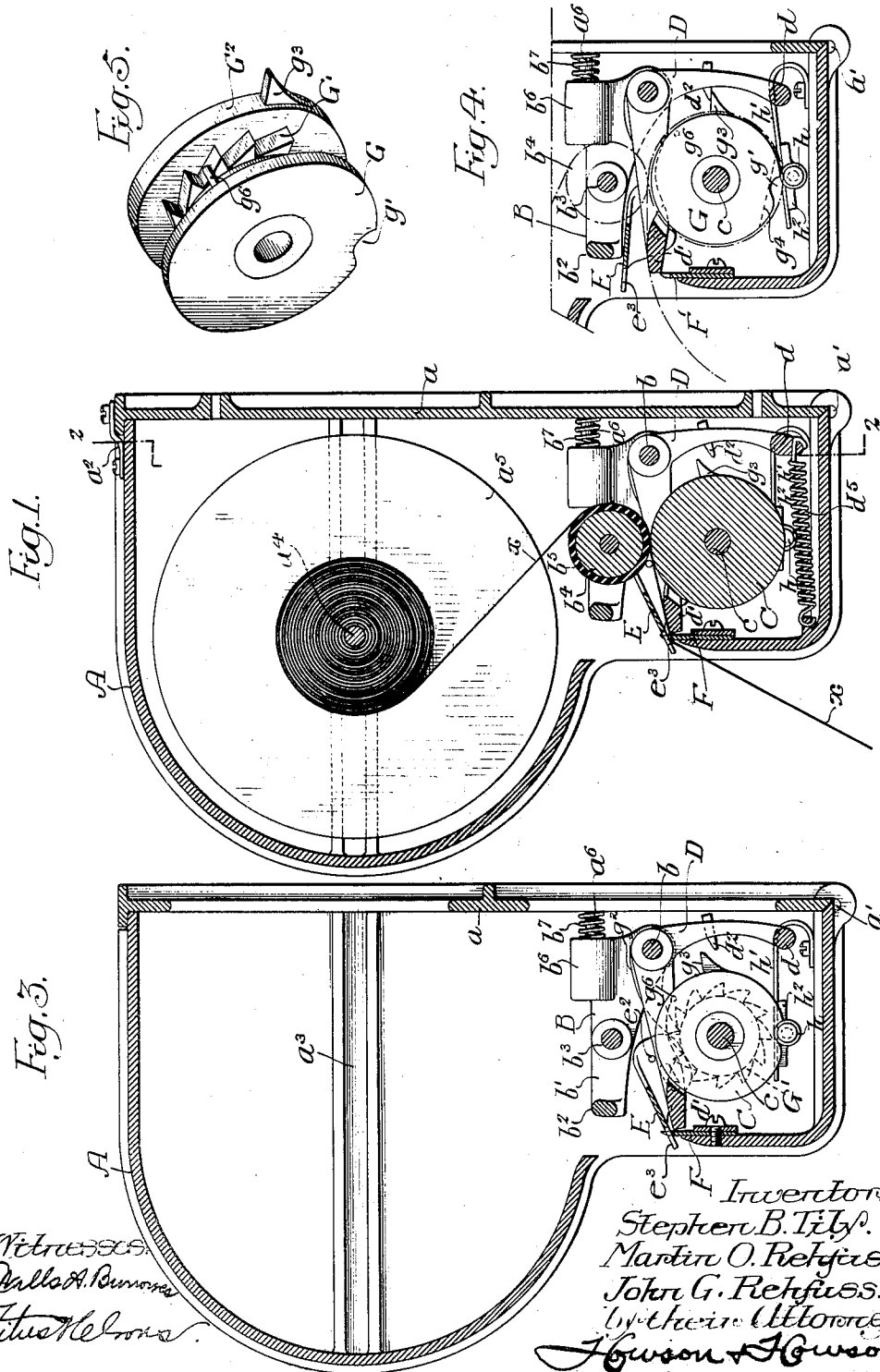
PATENTED APR. 28, 1908.

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PAPER HOLDER.

APPLICATION FILED JAN. 16, 1908.

3 SHEETS—SHEET 1.



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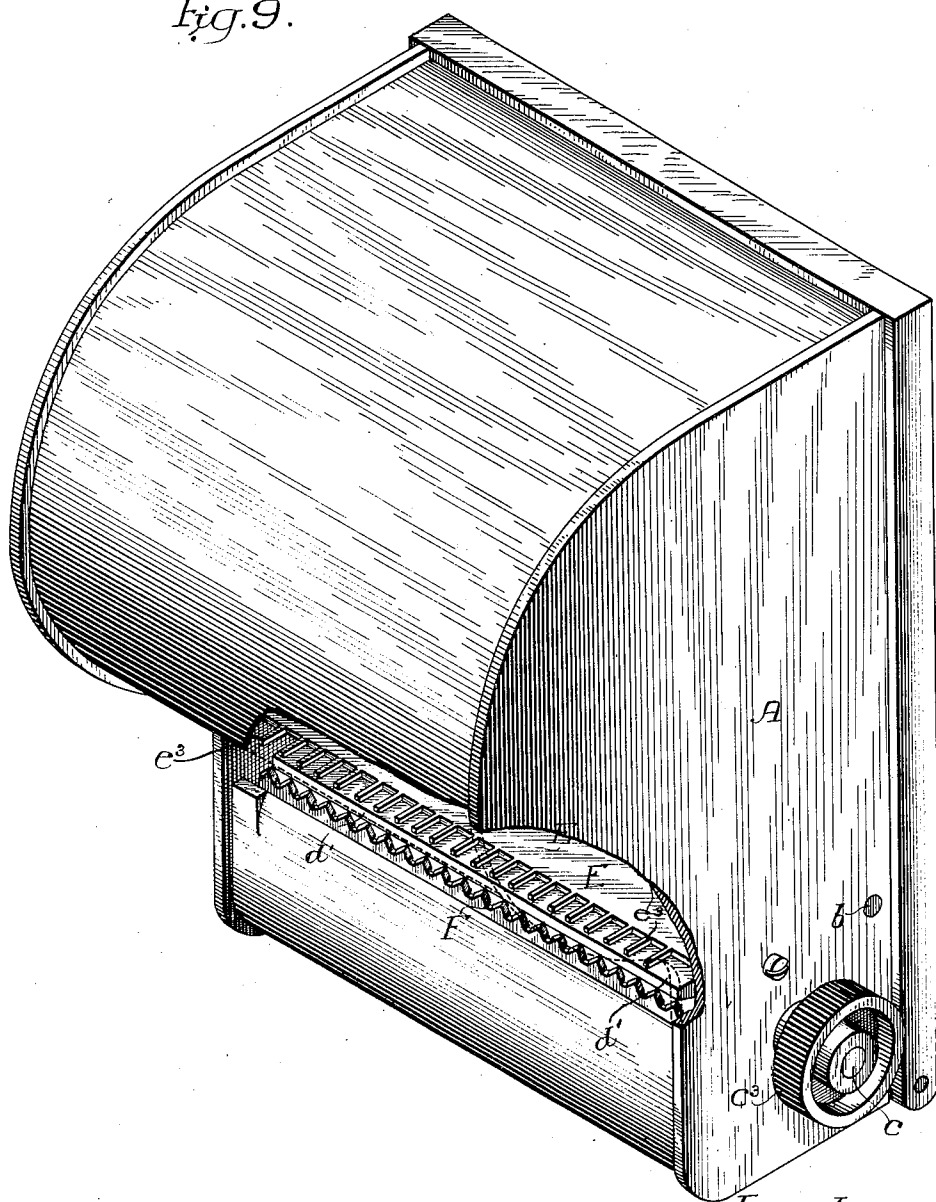
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3 SHEETS—SHEET 3.

Fig. 9.



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PAPER-HOLDER.

No. 886,092.

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To all whom it may concern:

Be it known that we, STEPHEN B. TILY, MARTIN O. REHFUSS, and JOHN G. REHFUSS, citizens of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Paper-Holders, of which the following is a specification.

One object of our invention is to provide a holder or container for a roll or other body of paper, which shall be provided with means whereby the removal at one time of more than a predetermined length of web constituting such body or roll shall be prevented.

We further desire to provide a device of the above general character, with means whereby a predetermined length of paper may be fed from a body of the same, after which the removal of further paper is prevented until the length originally fed out is torn off; the mechanism being of such a nature that after this latter operation has been performed it is again possible to feed out another length of paper.

Another object of our invention is to provide improved mechanism for delivering and severing predetermined lengths of paper from a body of the same mounted within a suitable container.

It is also desired to provide paper delivery controlling mechanism having locking means whose release is accomplished through the paper.

These and other advantageous ends we secure as hereinafter set forth, reference being had to the accompanying drawings, in which:—

Figure 1, is a vertical section of the device constituting our invention; Fig. 2, is a vertical section, taken on the line 2—2, Fig. 1; Fig. 3, is a vertical section, taken on the line 3—3, Fig. 2, illustrating the various parts in the positions occupied by them under normal conditions immediately after a length of paper has been torn off or cut from the main body of the same; Fig. 4, is a fragmentary vertical section illustrating the various parts of the feeding mechanism in the positions occupied by them during the feeding out of a length of paper and before it is cut off; Figs. 5, 6, 7 and 8 are perspective views of various detail parts of the mechanism, and Fig. 9, is a perspective view of the complete device.

In the above drawings, A represents a case

or container of suitable construction to hold and protect a roll of toilet or other paper, as well as the necessary mechanism for regulating its delivery; this case having in the present instance a substantially cylindrical portion in which the roll or other body of paper is mounted, and an extension of rectangular section forming a continuation of and projecting from this main section. The rear face of the casing consists of a plate or door *a* hinged to the lower edge of the casing proper by suitable pins *a'*, the construction being such that this rear plate or door may be permanently fastened to some supporting structure, while the body of the casing may be swung down to permit of the insertion of the paper. The casing is, in the present instance, maintained in a closed position by a hook *a²*, although any other suitable form of locking device may be employed for this purpose.

A guideway is provided as indicated at *a³*, extending horizontally along the sides of the main or cylindrical part of the casing and designed for the reception of a spindle *a⁴* upon which the reel *a⁵* containing the paper is mounted. It is obvious that when the main part of the casing is swung down on its hinges, the rear ends of the guideway are opened so as to permit of the insertion and removal of the paper roll.

Immediately under the body of paper and extending transversely across the lower portion of the casing, is a spindle *b* upon which is pivotally mounted a frame B. This consists of two members *b'* extending parallel with and adjacent to the sides of the casing and united by a transversely extending bar *b²*. These side members *b'* provide bearings for a spindle *b³* upon which is mounted a roller *b⁴* having a roughened surface, or provided, as in the present instance, with a layer of rubber *b⁵*.

On each of the side members *b'* there is formed a hollow lug *b⁶* and in these are held springs *b⁷* so placed as to be entered by pins *a⁶* carried on the inner face of the plate *a*. When the casing is in its closed position, these springs *b⁷* are compressed, with the result that the frame B and its roller are pushed downwardly; so that said roller is caused to frictionally bear upon the surface of a second roller C or upon a web of paper passing between it and said roller. This latter,

though it may be of a uniform diameter throughout its length, is preferably constructed as shown in Fig. 2, with portions c' of greater diameter than the remainder, and each having a rubber or other tire c^2 which engages with the rubber surface b^5 of the roller b^4 .

As shown in Fig. 2, the spindle c on which said roller C is mounted, while being carried in bearings in the sides of the casing A , has one end projecting outside this latter and provided with a handle c^3 , whereby it and the roll C may be turned at will;—it being noted that said roll is rigidly held to said spindle by means of a set screw c^4 . Also mounted upon the spindle b is a second frame D formed of two bell-crank levers having said spindle as their fulcrum and provided with two transversely extending bars d and d' respectively connecting the free ends of their arms. One of said arms is provided with a tooth or projection d^2 for a purpose hereinafter noted, and the other has extending rearwardly from it a number of plates or projections d^3 which project into the spaces between the larger cylindrical portions c' of the roll C . In addition, one of the arms of this frame is provided with a projecting pin d^4 which enters a suitable recess e in a side arm e' of a plate E , shown in Fig. 7. This latter extends transversely of the casing, and its two arms e' extend parallel with and are pivoted to the sides of said casing, being held in position by pins e^2 indicated in Fig. 3.

As shown in Figs. 1, 3 and 4, this plate E extends adjacent to a transverse slot or opening in the front lower portion of the main casing A , and has its front edge provided with a number of forwardly projecting narrow strips or teeth e^3 designed to fit between the relatively sharp cutting teeth of a blade F , shown best in Fig. 8, which is rigidly mounted upon the inner portion of the lower edge of this slot or opening in the front of the casing.

It will be understood that the plate E is free to turn on its pivot so that its teeth may fit between the teeth of the blade F , or be raised some distance above them.

The front bar d' of the frame D extends across the front opening of the casing parallel with and immediately to the rear of the blade F and directly under the plate E , and inasmuch as the pin d^4 of the frame D permanently extends into the slot e of the plate E , it is obvious that any downward movement of said bar d' causes a downward pressure upon the side arms e' of the plate E and tends to draw its teeth down between the teeth of the blade F . In addition, the arrangement and proportions of the parts are such that the bar d' is free to move down sufficiently to permit the teeth e^3 of said plate to extend fully down between the teeth of the blade F .

A spring d^5 extends between the arm d and

any suitable point on the inside of the casing so as to normally tend to maintain the front bar b' in its elevated position.

Fixed to the spindle c , preferably between the end of the roll C and one side of the casing, are three structures which, in the present instance, perform the functions of ratchet wheels. The first of these, G , is generally circular in outline, but is provided with a single notch g' , and has coacting with it a roller h mounted upon a spring h' ; said roller being of such size that it is capable of entering the notch g' , under the action of the spring, in order to hold the ratchet G in the given position. This ratchet wheel also has a pin g^6 projecting from one face as shown in Fig. 5, in such position as to engage one of the side members of the frame D when said wheel is turned so as to turn the frame on its pivots to a limited extent. The second ratchet wheel G' is of the ordinary toothed variety, having co-acting with it a pawl g^2 loosely mounted upon the spindle b . Inasmuch as said ratchet wheel is fast upon the shaft c , said pawl acts to permit rotation of said shaft in but one direction. The third ratchet wheel G^2 is provided with a single projecting tooth g^3 which is designed to coact with the pin d^2 on the frame D . In addition, the ratchet G^2 has a flattened portion g^4 indicated in dotted lines in Fig. 4, so placed as to be immediately adjacent to the notch g' of the ratchet wheel G and from Figs. 3 and 4 it will be seen that there is upon the spring h' a flat block h^2 , which under the action of said spring, tends to lie in engagement with this flat portion of the ratchet wheel, or if it be in engagement with one of the corners at either end of said flat portion, tends to turn the wheel so that it may lie wholly in engagement with this part.

With the above described construction it is obvious that a roll of paper may be mounted upon the spindle a^4 , and according to our invention, the end of the paper web therefrom is led around the roll b^4 and between this latter and the rubber tires c^2 forming the active portion of the roll C . Thence the paper passes between the toothed plate E and the transverse bar d' of the frame, over the teeth of the blade F , and then through the slot in the front of the casing.

Assuming that the various parts are in the positions illustrated in Fig. 1, it will be noted that the block h^2 on the spring h' is in engagement with the flat portion of the ratchet wheel G^2 , while the roller h is likewise in engagement with the notch g' of the ratchet wheel G . The bar d' of the frame D is in its lower position as is also the plate E , while the tooth g^3 of the ratchet wheel G^2 is consequently disengaged from the tooth d^2 of the frame D . If now it be desired to operate the device, the handle c^3 is turned, and such turning can only be accomplished in a single

direction inasmuch as the pawl g^2 prevents turning in the opposite direction. The first result of this turning is to bring the pin g^6 into engagement with one of the arms of the frame D, so that the bar d' is raised slightly above the top of the serrated edge of the blade F, while the plate E, through the pin d^4 and its side member e' , is also raised. The continued turning of the handle c^3 will feed a predetermined length of paper through the slot in the casing, for since the rubber covered roll b^4 forces the paper web c against the tires c^2 of the feed roll C, said web is drawn from its supply roll and forced through the slot between the plate E and the bar d' of the frame D. When, however, the feed roll C has made almost one complete revolution, the tooth g^3 of the ratchet G^2 strikes the tooth d^2 of the frame D, with the result that said feed roll is effectually locked against further turning in either direction by this tooth and by the pawl.

When it is desired to sever the length of paper fed out this may be accomplished by a quick downward pull upon its projecting end, which first results in the paper being drawn taut between the feed roll C and the serrated edge of the blade F. As a consequence, the bar d' of the frame D, which hitherto projected above a straight line between the upper surface of the roll C and the top of the teeth of said blade, is forced downwardly by the pull on the paper, and the downwardly projecting arm of said frame is forced to the rear, so that the tooth d^2 is drawn out of engagement with the tooth g^3 into the position shown in Fig. 1.

It should be borne in mind that the ratchets G and G^2 are so mounted upon the spindle c of the roll C that at the time when the tooth g^3 comes into engagement with the tooth d^2 , the block h^2 on the spring h' is in engagement with one corner of the flat portion of the ratchet G^2 , while the roller h is also immediately adjacent to the notch g' in the ratchet G. When, therefore, the teeth d^2 and g^3 are disengaged as above noted, the spring h' immediately acts to turn the feed roll C through a small angle, so that its tooth g^3 is just beyond the tooth d^2 . The downward movement of the bar d' of the frame D also pulls down the plate E, so that its teeth e^3 are brought violently into contact with the serrations of the blade F. Inasmuch, therefore, as these former teeth force the paper down between the teeth of the blade, the strain upon said paper results in its outer length being immediately severed from the remainder. It is now possible to feed out another length of paper, for inasmuch as the teeth g^3 and d^2 are disengaged, the handle c^3 may again be turned almost a full revolution, thereby raising the bar d' and the plate E with the results previously described. The

spring d^5 may, if desired, be of sufficient strength to automatically raise the bar d' after each length of paper has been severed, in which case it would not be necessary to depend upon the pin g^6 to perform this function.

By means of the above device, it will be noted that while it is possible to obtain any desired quantity of paper from the holder, the process of securing this is necessarily a relatively slow one, so that the temptation to maliciously waste the paper is largely removed owing to the effort, as well as to the time, necessary to secure it.

When it is desired to remove or replenish the roll, the casing A is unlocked and swung from the base plate a , which, as previously noted, is fastened to some suitable supporting structure.

Since the ends of the guideway in the sides of the casing are then exposed, the roll carrying spindle may be slipped out and after a full roll has been placed upon it, may be returned to its original position. The opening of the casing is facilitated by the action of the springs b^7 .

We claim:

1. The combination with a paper holder of means for feeding the paper from said holder, pawl and ratchet mechanism for locking said feeding means after a predetermined amount of paper has been delivered, and means placed to be moved by tension on the paper delivered from said holder for causing the pawl to disengage the ratchet and permit another length of paper to be fed out.

2. The combination with a paper holder of means for feeding the paper from said holder, and a device for locking said feeding means after a predetermined amount of paper has been delivered, said device having unlocking means constructed to be actuated by pressure applied by the paper after said latter has passed the feed means.

3. The combination with means for holding a body of paper, of means for feeding paper from said holder, a device for automatically locking the feeding means after a predetermined amount of paper has been delivered, and a device constructed to be operated by the act of severing a length of paper from the body thereof for releasing said locking means.

4. The combination with means for holding a body of paper, of means for feeding paper from said holder, a device for automatically locking said feeding means after a predetermined amount of paper has been delivered from the holder, and a device actuated by pressure applied by the paper for releasing said locking means after said latter has passed the feed means.

5. The combination with a holder for a body of paper, of means for feeding said paper from said holder, a device for severing a

length of paper from the main body thereof, means for locking said feeding device after a predetermined length of paper has been delivered, and means operated by the paper at the time when the delivered length is severed from the remainder, for releasing said locking means.

6. The combination of a casing, means for supporting a body of paper therein, a roll for drawing paper from the body thereof and feeding it from the casing, a locking device for preventing turning of said roll after a predetermined amount of paper has been delivered, and means actuated by pressure applied by the paper after the latter has passed said roll for releasing said locking means.

7. The combination of a casing, means for supporting a roll of paper therein, a pair of feed rolls, a locking device for preventing revolution of one of the rolls, and a device operated by the paper after it has passed the feed rolls for releasing the locking device.

8. The combination of a holder for paper, a roll for feeding paper from said holder, a device for cutting the paper after it passes said roll, means for locking the feeding roll under predetermined conditions, and a device acted upon by that portion of the paper between the roll and the cutting device for releasing said locking device when the paper is drawn taut.

9. The combination of a casing having means for supporting a body of paper, feeding means including a roll for delivering paper from said supporting means, a device for turning said roll, a ratchet for the roll, and a movable structure having a tooth capable of engaging said ratchet to lock the roll, a portion of said movable structure being placed to be acted upon when the paper is drawn taut after it leaves the roll.

10. The combination of a casing having means for supporting a body of paper and provided with a slot having a serrated edge, means for feeding paper from said supporting means through the slot, said means including a hand operated roll having a ratchet, a movable frame having a tooth capable of engaging said ratchet and provided with a portion placed to be acted upon by the paper when it is drawn taut to move said tooth out of engagement with the ratchet, and means for restoring said frame to its normal position after it has been moved therefrom.

11. The combination of a casing, means for supporting a body of paper therein, means including a roll for feeding said paper from said casing, ratchet mechanism for said roll including a projection, a movable structure having a tooth capable of engaging said projection and a device tending to hold said roll in a position with its ratchet wheel in advance of the tooth, said tooth-carrying structure being arranged to be moved in one direction by the paper.

12. The combination of a casing, means for supporting a body of paper therein, a roll for feeding said paper from said casing and having ratchet mechanism including a projection, a movable structure having a tooth capable of engaging said projection, and a device tending to hold said roll in a position with its projection in advance of the tooth, said tooth-carrying structure being constructed to be moved in one direction by the paper.

13. The combination of a casing having means for supporting a body of paper, a roll for feeding said paper from said casing and having ratchet mechanism including a projection, a movable structure having a tooth capable of engaging said projection, a device tending to maintain said roll in a position with its projection in advance of the tooth, said tooth carrying structure being arranged to be moved in one direction by the paper, and having means whereby it is actuated in the opposite direction when said roll is turned.

14. The combination of means for supporting a body of paper, a serrated edge, means for feeding paper over said serrated edge, and a device for assisting in the cutting off of a length of paper, said device including a toothed structure arranged to coact with the serrated edge when tension is exerted upon the paper.

15. The combination of a casing having means for supporting a body of paper and provided with a slot having a serrated edge, means for feeding paper through said slot, and a device for assisting in the cutting off of a length of paper, said device including a toothed structure arranged to coact with the serrated edge of the slot when tension is exerted upon the paper.

16. The combination of a casing having means for supporting a body of paper and provided with a slot having a serrated edge, means for feeding paper through the slot, a structure placed to engage that portion of the paper between the feeding means and the serrated edge, and a device operatively connected to said latter structure for assisting in the cutting off of the paper when tension is exerted upon the end thereof.

17. The combination of means for holding a body of paper, a serrated edge, means for feeding paper over said serrated edge including a roll having a ratchet, a movable frame having a tooth coacting with said ratchet and provided with a portion extending between the feed roll and the serrated edge, a toothed structure connected to said frame and placed to coact with the serrated edge to assist in cutting off a length of paper, means for turning said feed roll, and a device for raising said toothed structure after it has been moved downwardly.

18. The combination of means for holding

a body of paper, a serrated edge, means including a roll having a ratchet for feeding paper over said edge, a movable frame having a tooth coacting with said ratchet and
5 provided with a portion extending between the feed roll and the serrated edge, a toothed structure connected to said frame and placed to coact with the serrated edge to assist in cutting off a length of paper, means for turning
10 said feed roll, a device for raising said toothed structure after it has been moved downwardly, and means for automatically moving the feed roll to bring its ratchet beyond the point of engagement with the tooth
15 after said tooth has disengaged said ratchet.

19. The combination of a casing having means for supporting a body of paper and provided with a slot having means for cutting
20 off a length of paper; a roll for feeding paper through said slot, means for preventing rotation of the roll in one direction, a ratchet for the roll, a movable structure having a tooth for engaging said ratchet to prevent movement of the roll in the other direction, and a

device actuated by the paper for releasing
25 said tooth from the ratchet.

20. A casing for containing a body of paper having a slot provided with a cutting edge, feeding means for delivering paper
30 through said slot, a movable frame having a portion extending beyond the line of that portion of the paper passing from the feed roll to the cutting edge, and locking means for the feed roll including a member carried
35 by said frame, said locking means being arranged to be released when said frame is moved by the paper being drawn taut between the feed roll and the cutting edge.

In testimony whereof, we have signed our names to this specification, in the presence of
40 two subscribing witnesses.

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