May 29, 1923.

1,456,790

C. FISHER

TOILET PAPER CABINET

Filed Sept. 18, 1920

3 Sheets-Sheet 1

Fig. 1.

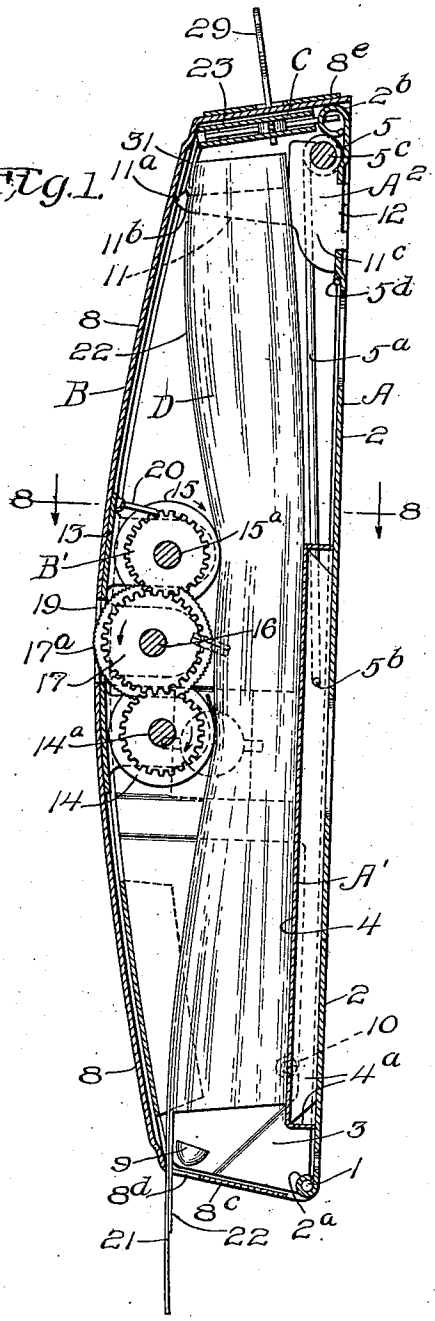


Fig. 2.

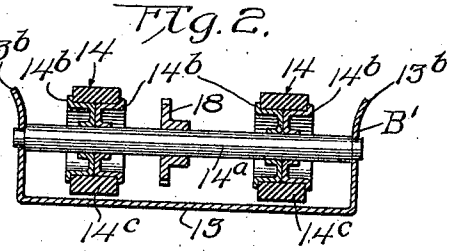


Fig. 3.

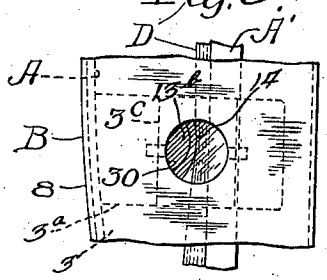


Fig. 4.

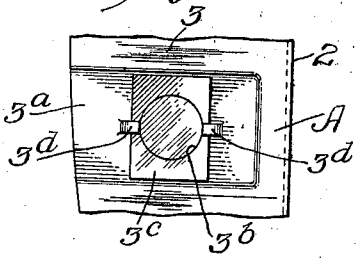
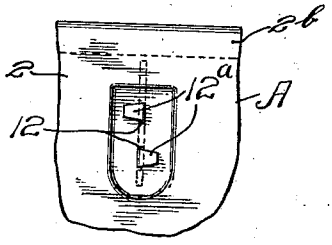


Fig. 5.



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3 Sheets-Sheet 2

Fig. 7.

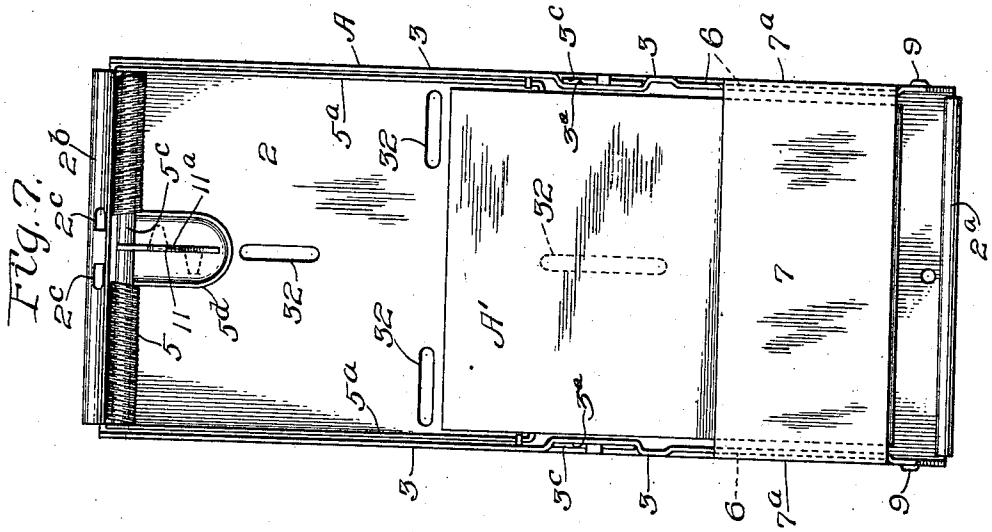
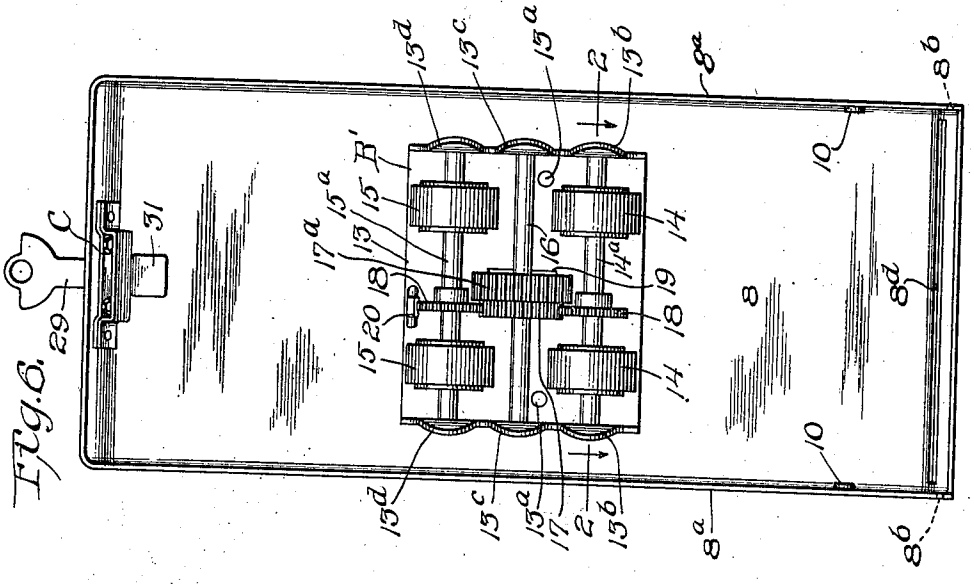


Fig. 6.



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Fig. 8.

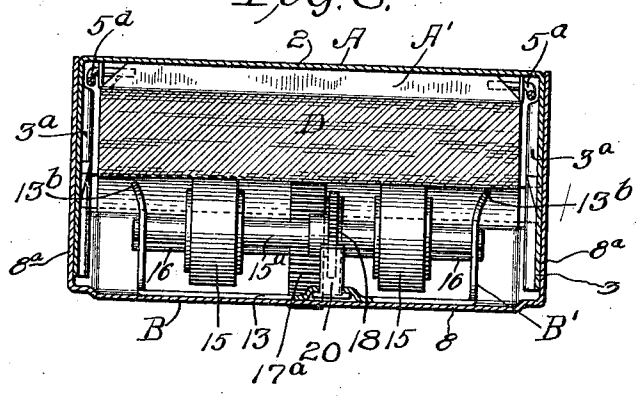


Fig. 9.

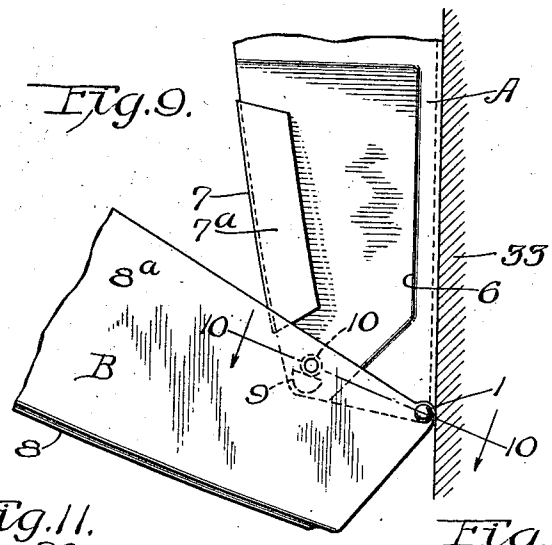


Fig. 11.

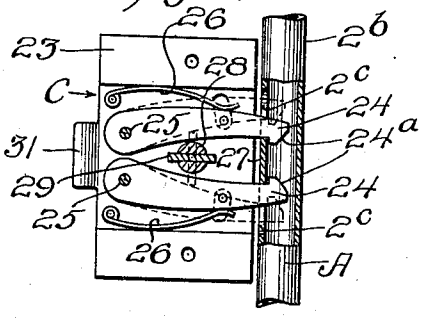
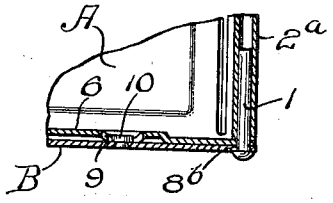


Fig. 10.



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Patented May 29, 1923. 1,456,790

UNITED STATES PATENT OFFICE.

CHARLES FISHER, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-THIRD TO ALBERT C. GRUNWALD, AND ONE-THIRD TO CARL E. CARLSEN, BOTH OF CHICAGO, ILLINOIS.

TOILET-PAPER CABINET.

Application filed September 18, 1920. Serial No. 411,236.

To all whom it may concern:

Be it known that I, CHARLES FISHER, a citizen of the United States, residing at 3100 Carroll Ave., Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Toilet-Paper Cabinets, of which the following is a specification.

This invention relates particularly to toilet-paper cabinets; and the primary object is to provide an improved cabinet into which packages of toilet-paper may be introduced in a very convenient manner, and which will serve to feed the sheets of paper from the cabinet with ease and certainty.

The invention is illustrated in its preferred embodiment in the accompanying drawings, in which:—

Fig. 1 represents a vertical sectional view of a toilet-paper cabinet embodying the invention, the cabinet being shown provided with a package of toilet-paper; Fig. 2, a sectional view showing one of the pairs of feed rolls employed, the section being taken as indicated by line 2 of Fig. 6; Fig. 3, a broken side elevational view of the cabinet, the view illustrating a feature employed for indicating when it is desirable to replenish the cabinet; Fig. 4, a view similar to Fig. 3, but showing only a portion of the main section of the casing, that is with the cover-section removed; Fig. 5, a broken rear view of the upper portion of the main section of the casing, illustrating the manner in which a supporting blade or hook is attached; Fig. 6, an inner face view of the cover-section or closure, of the cabinet, showing the paper-actuated mechanism mounted thereon; Fig. 7, an inner view of the main section of the cabinet, showing a follower mounted therein; Fig. 8, a plan section taken as indicated at line 8 of Fig. 1; Fig. 9, a broken side elevational view of the lower portion of the device, showing the closure in the open position; Fig. 10, a broken sectional view taken as indicated at line 10 of Fig. 9; and Fig. 11, a broken view showing a detail of the locking-device employed.

In the construction illustrated, A represents a main casing-section adapted to be supported on a vertical wall; A′, a paper-follower, or presser-member mounted in the casing-section A; A^2, a paper support or holder mounted in the upper portion of the member A; B, a front or outer casing-section, or closure, having its lower portion connected, by pintles 1 to the lower portion of the member A; B′, paper-feeding mechanism mounted on the inner side of the front wall of the closure B; and C, a lock adapted to releasably connect together the upper portions of the casing-sections.

The main or back casing-section A, in the form shown, comprises a rear wall 2 and side walls 3. The member may be conveniently formed of sheet metal. The lower end of the rear wall 2 is formed to provide a cylindrical hinge member 2^a which receives the pintles 1. The upper edge portion of the rear wall is curved into cylindrical form, as indicated at 2^b; and the member 2^b is provided with slots 2^c adapted to be engaged by the locking-device C.

The side walls 3 of the member A are struck inwardly at points near the center, as indicated at 3^a. In the depressions thus formed are provided perforations 3^b, and these perforations are covered by transparent plates 3^c, which preferably are of glass. These plates are held in place by lugs 3^d. (See Fig. 4). The openings 3^b are sight-openings, enabling one to look into the interior of the casing to ascertain when it is necessary to replenish the supply of paper. It may be added that the inwardly struck portions of the metal afford guides for the lateral edges of the paper, and clearance is afforded for the arms of the follower-spring.

The follower A′ is shown as comprising a sheet metal plate 4 provided at its edges with rearwardly turned flanges 4^a. The follower is actuated by a coil spring 5 having long arms 5^a whose extremities are turned inwardly towards each other and pivotally connected, as indicated at 5^b, with the side flanges of the follower-plate 4, at points between the upper and lower pairs of feed-rolls. The coil spring 5 encircles a rod or core 5^c which is held in place by a lip on the base portion of the paper support or holder A^2. The coil spring is located in the upper portion of the casing, adjacent the rear wall 2. The spring has a central loop portion 5^d which bears against the rear wall of the casing, and thus tension is placed upon the spring. The ends of the rod 5^c abut against the inner surfaces of the side flanges 3 of the casing-member A.

The casing-member A has its side flanges 3 struck inwardly near their lower ends,

thus forming depressions 6. This portion of the member A is equipped with a hood or guard 7, preferably in the form of a piece of sheet metal which extends across and engages the side flanges 3 and is provided with rearwardly turned end portions 7^a which serves as flanges embracing the depressed portions 6 of the flanges 3.

The front section of the case, that is, the closure B, comprises a front wall 8 and side flanges 8^a, which telescope over the side flanges 3 of the rear casing-section. The front edges of the flanges 3 are preferably of the curved outline shown in Fig. 1, and the front wall 8 of the cover is correspondingly curved or bowed. The lower rear corners of the flanges 8^a are provided with perforations 8^b through which the pintles 1 extend. The pintles are in the form of small rivets which extend through the perforations mentioned and are forced into the barrel or pivot portion 2^a of the rear casing-section as will be readily understood from Fig. 10. The depressions 6 of the flanges 3 of the rear casing-section are provided with stops 9, formed by slitting the metal and striking small portions of the metal outwardly as will be understood from Figs. 9 and 10. The stops 9 are adapted to be engaged by studs 10 with which the flanges 8^a of the cover-section are provided near their lower ends and some distance from the pivot point 1. Thus, the cover-section is adapted to be supported by the stops mentioned in the open position shown in Fig. 9.

The paper supporting and retaining device A^2 preferably is in the form of a blade-like arm 11 which has a tapered, or spear-like, extremity 11^a and is adapted to extend through a slit in the upper end portion of the package of paper. The supporting-member A^2 serves as a retainer for the paper and has a hook or shoulder 11^b adapted to prevent the paper from slipping off the end of the blade. The member A^2 is formed with an enlarged base portion 11^c whose rear vertical edge bears against the inner surface of the rear wall 2 of the rear casing-section A. The wall 2 is provided with perforations (see Fig. 5) 12 through which extend clinching lugs 12^a with which the rear end of the member A^2 is equipped. These lugs extend through said perforations and are clinched on the rear side of the wall 2, thus firmly connecting the member A^2 with the rear wall of the member A.

The front casing-section, or closure B is provided at its lower end with a rearwardly extending flange 8^c, which forms a bottom end for the casing. The wall 8^c is provided near its junction with the front wall 8 with a slot 8^d through which the sheets of paper may be served.

The paper-feeding mechanism B′, in the form shown comprises a mounting plate 13 which is secured by rivets 13^a to the front wall 8, said plate being equipped at its lateral or vertical edge portions with pairs of bearings 13^b, 13^c and 13^d; paper-engaging rollers 14 mounted on a shaft 14^a journalled in the bearing 13^b; an upper pair of paper-engaging rollers 15, mounted on a shaft 15^a journalled in the bearings 13^d; and an intermediate shaft 16 journalled in the bearings 13^c and equipped with a gear 17 which meshes with gears 18 on the shafts 14^a and 15^a. The gears mentioned are firmly secured on the shafts. The intermediate gear 17 is rigidly connected with a knurled thumb wheel 17^a. If desired, the gear 17 and actuating wheel 17^a may be formed integrally with each other. The wheel 17^a is adapted to project slightly through a slot 19 through the plate 13 and the front wall 8 of the casing. The bearings for the shafts preferably are of spring metal, and may be sprung apart to enable the shafts to be removed or inserted at will. Each of the paper-engaging rollers is preferably of the construction illustrated in Fig. 2. For example, each of the rollers 14 comprises a pair of flanged, cup-shaped members 14^b forced onto the shaft 14^a, thus providing a channelled rim on which is mounted a rubber-band or tire 14^c. The rubber-band affords a friction surface adapted to engage the paper and provides for a friction feed. The rollers are adapted to feed the paper downwardly, and are prevented from retrograde movement by a pawl 20 pivotally mounted on the plate 13, as will be readily understood from Fig. 1.

The package of toilet-paper is designated D. It comprises a plurality of sheets of paper disposed in the form of a package in the casing, in unfolded condition. This package of paper is provided centrally near its upper end with a slit, or narrow slot, through which the paper supporting member 11 extends. The outermost or front sheet of paper shown in the cabinet is designated 21, and the next succeeding sheet is designated 22. To feed the paper from the cabinet the outermost sheet may be fed downwardly by turning the thumb-wheel 17^a in the proper direction. After the paper has been caused to protrude a short distance through the slot 8^d, the operator may grasp the paper and pull the sheet out, thus causing the rollers 14 and 15 to turn. After the outermost sheet of paper passes from beneath the upper pair of rollers 15, the sheet of paper being drawn from the cabinet will continue to turn the rolls 14 and thus cause the actuation of the rolls 15, which will operate to feed the succeeding sheet of paper downwardly a short distance, thus causing the lower end to protrude from the lower end of the casing. After the outermost sheet

passes from contact with the lower rollers 14, the feeding operation of the device B′ ceases, and the sheet of paper 22 is left protruding a sufficient distance to enable it to be readily grasped to enable the machine to be operated again. It will be noted that the package of paper D is introduced between the spring-pressed follower A′ and the feed rolls 14 and 15. The arms 5^a of the spring 5 are preferably connected with the follower A′ at a point somewhat below a point midway between the pairs of feed-rolls, thus providing for somewhat greater pressure on the lower pair of feed-rolls. During that period of the operation of withdrawing a sheet from the cabinet after the sheet has become disengaged from the upper rollers 15, the rollers 15, being now actuated from the rollers 14 through the medium of the gearing, operate to draw the succeeding sheet of paper downwardly, causing said sheet to be split by the retaining blade 11, thus liberating it therefrom. The friction exerted on the sheet of paper engaged directly by the rollers 15 is sufficient to feed it downwardly and cause the paper to tear or split at the blade, but is not sufficient to affect the next succeeding sheet of paper, that is, a sheet not engaged by the rollers 15. Thus, the mechanism will serve to deliver one sheet at a time and cause the second sheet to be initially fed into position to enable it to be readily grasped.

The locking-device C may be of any desired form. In the form shown, it comprises a lock-casing 23 secured to the inner side of a top flange 8^e with which the closure is provided and a pair of latch members 24 mounted in the casing 23, as shown in Fig. 11. The latch members are mounted on pivots 25 and equipped with springs 26. The extremities of the latch members or pawls 24 are separated some distance and provided with beveled surfaces 24^a. The extremities of the pawls are adapted to engage a portion 27 of the wall of the member 2^b, that is the portion of the wall which is disposed between the two slots 2^c as shown in Fig. 11. The lock-casing is also provided with a key-barrel 28 which receives the key 29. The key is adapted to separate the latch members against the force of the springs 26, thus enabling the cover-section to be opened.

It may be added that as the paper is served from the cabinet, the follower A′ moves slowly away from the rear wall 2, and becomes exposed to view through openings 30 in the side flanges 8^a of the casing, these openings 30 register with the openings 3^b in the side flanges 3. Thus, an observer is able to judge when it is desirable to introduce a fresh package of paper into the cabinet.

It may be stated also that it is preferred to provide the cover-section with means for pressing the upper portion of the package of paper away from the shoulder 11^b of the paper supporting device. The means for this purpose preferably comprises a finger 31 carried by the lock-casing 23. The finger 31 projects downwardly from the front edge of the lock-casing, as shown in Fig. 1, and the extremity of the finger just clears the projecting end of the paper-supporting finger 11. Thus, when the closure 13 is moved to the closed position, it presses the upper end of the package rearwardly, so that when a sheet of paper is withdrawn it will split cleanly and no bits of paper will be torn off and caused to lodge in the crotch 11^b of the supporting hook.

The apparatus described is adapted to receive the paper in unfolded condition, that is lying substantially in a flat plane. The device is adapted to feed the most fragile or delicate sheets without failure. The construction is simple, and the device may be manufactured at moderate cost. In practice, packages of toilet-paper will be supplied for use in the cabinet having provision for enabling a package to be slipped over the supporting member 11 with the utmost facility.

It may be added that a fresh package of paper may be introduced into the cabinet before the supply in the cabinet has become wholly exhausted, such sheets as remain in the cabinet being simply pressed back by the fresh package when it is introduced. Thus, provision is made for a continuous supply of paper, as it is practicable to introduce a fresh package while a considerable portion of the package which is being served still remains in the cabinet.

The rear wall 2 of the casing-member A is shown provided with slots 32 to facilitate attachment to a wall or suitable support. In Fig. 9, the member A is assumed to be attached to a wall 33, by any suitable means.

It will be understood that the improved cabinet may be adapted to the purpose of serving paper towels, it being only necessary to provide a cabinet of large enough dimensions for this purpose. It will be understood, of course, that for such service the paper towels may be folded, if desired, before being prepared as a package for introduction into the cabinet.

The foregoing detailed description has been given for clearness of understanding only, and no unnecessary limitation should be understood therefrom, but the appended claims should be construed as broadly as permissible in view of the prior art.

What I regard as new, and desire to secure by Letters Patent, is:

1. In means of the character set forth, the combination of a casing, paper-holding means mounted therein, said casing having a closure constituting a front wall for the cas-

ing, and paper-feeding means comprising an upper paper-engaging roll, a lower paper-engaging roll, both of said rolls normally engaging the package of paper, and an intermediate shaft geared to said rollers, and equipped with an actuating member accessible through a slot in said closure.

2. In means of the character set forth, the combination of a rear casing-section equipped at its upper portion with immovable paper-supporting means and equipped also below said paper-supporting means with a spring-pressed follower, a closure having its lower end portion pivotally connected with the lower portion of said rear casing-section, means for releasibly locking the closure in the closed position, and paper-feeding mechanism comprising gear-connected upper and lower feed-rolls mounted on the inner side of the front wall of the closure, both of said feed-rolls bearing normally on a package of paper interposed between them and said follower.

3. In means of the character set forth, the combination of a rear casing-section comprising a rear wall and side flanges, a paper-supporting member rigidly attached to and projecting forwardly from the upper portion of said rear wall, a follower disposed adjacent the rear wall, a closure comprising a front wall and side walls telescopically embracing the side walls of the rear casing-section, and feed mechanism disposed adjacent the front wall of the closure and comprising upper and lower feed rollers and an interposed actuating roller geared thereto, said actuating roller being accessible through a slot in the front wall of said closure.

4. In means of the character set forth, the combination of a rear casing-section, a front casing-section having its lower end portion pivotally connected with the lower end portion of the rear casing-section, means for limiting the forward swing of the front casing-section, means for releasably locking the casing-sections together, paper-holding means mounted in the upper portion of the rear casing-section, a follower mounted in the rear casing-section below the paper-holding means, and paper-feeding means mounted in the closure and comprising an upper paper-engaging roller, an intermediate lower paper-engaging roller and a thumb-wheel geared to said rollers.

5. In means of the character set forth, the combination of a rear casing-section equipped at its upper end with a paper-impaling arm, a follower mounted in said casing-section below said arm, a cover-section having its lower end portion pivotally connected with the lower end portion of the rear casing and equipped at its upper end with means for pressing rearwardly the upper end of a package of paper supported by said impaling arm, and paper-feeding means mounted in said cover-section.

6. In means of the character set forth, the combination of a casing, paper-supporting blade mounted in the upper portion thereof, a follower in the rear portion of the casing below the paper-supporting blade, a package of sheets of paper disposed in front of said follower and having the upper end thereof provided with a slit-engaging said paper-supporting means, and feed mechanism mounted in front of the package of paper and comprising a lower paper-engaging roll adapted to be actuated by a sheet of paper, and an upper paper-engaging roll geared to and out of contact with and actuated by the lower roll, the upper roll being adapted to produce the initial feed of a second sheet of paper during actuation of the mechanism by a sheet of paper being withdrawn from the casing.

CHARLES FISHER.