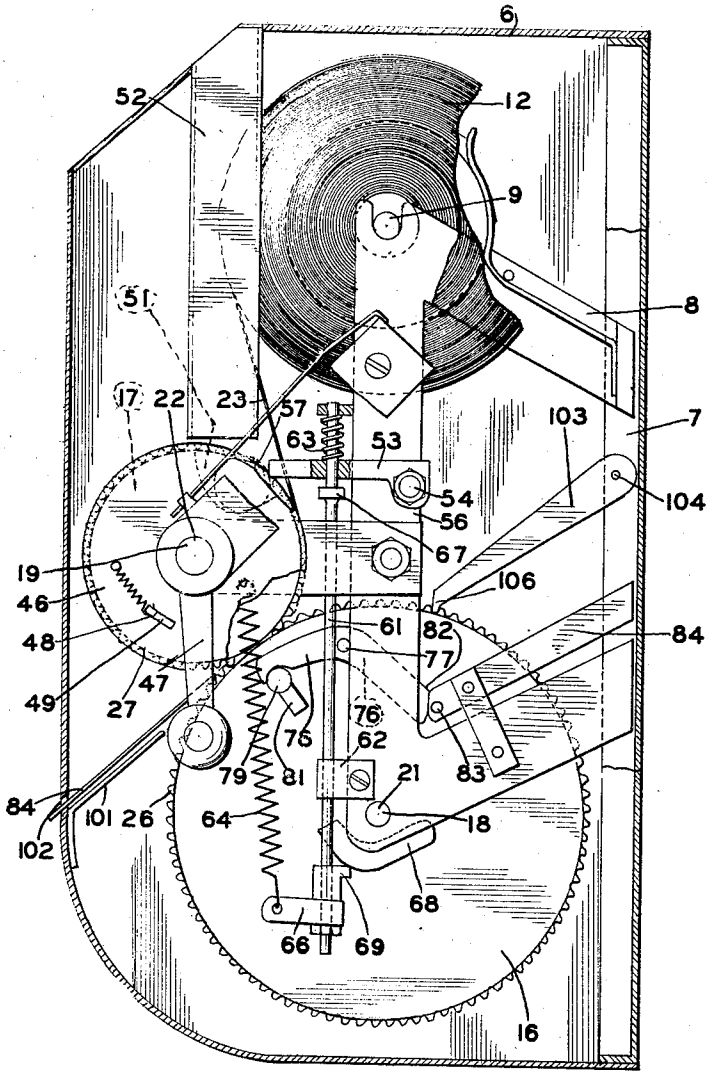
June 23, 1931. S. B. CUMMINGS 1,811,537

SANITARY TOILET SEAT DISPENSER

Filed Jan. 21, 1929 3 Sheets-Sheet 1

FIG. 1.



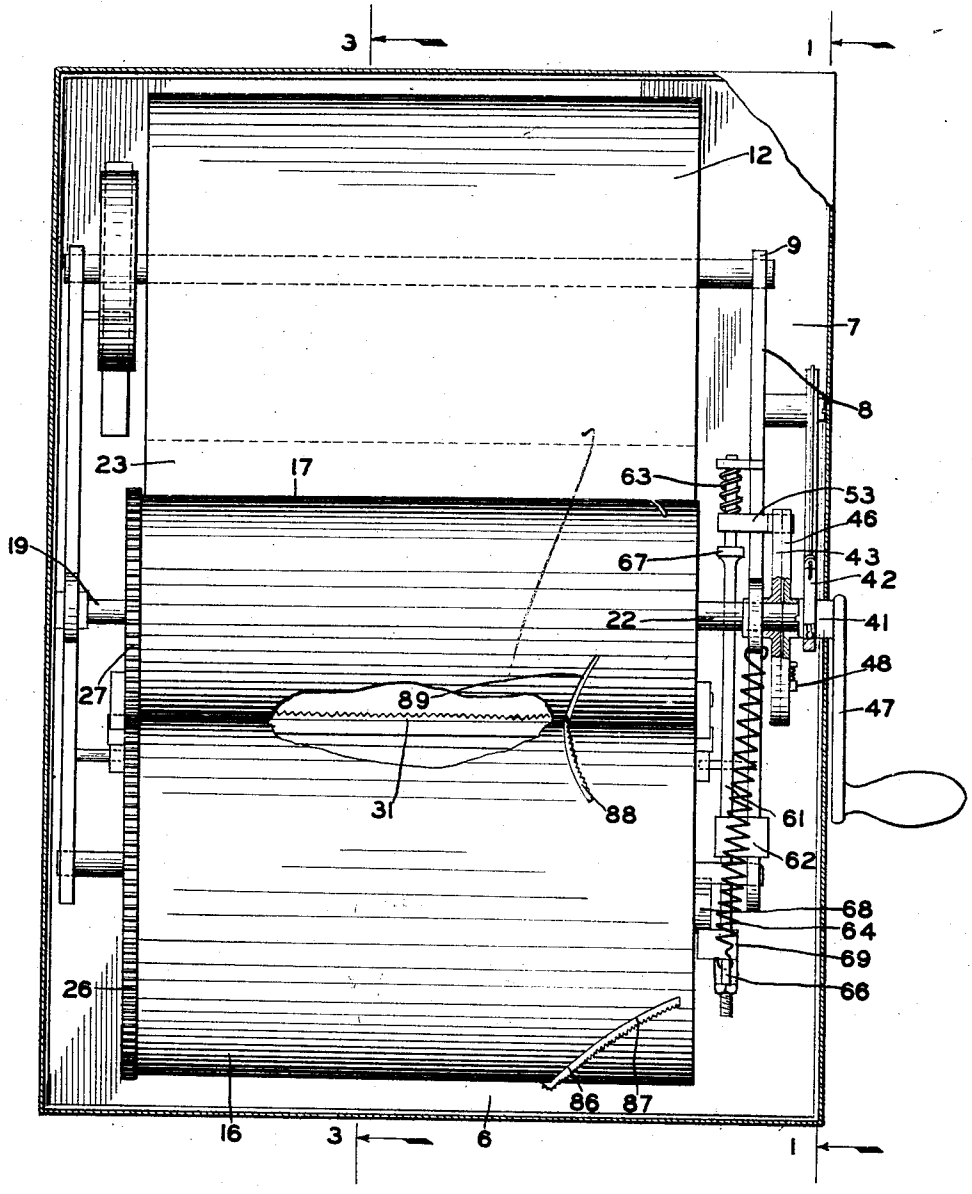
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FIG. 2.



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SANITARY TOILET SEAT DISPENSER

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FIG. 3.

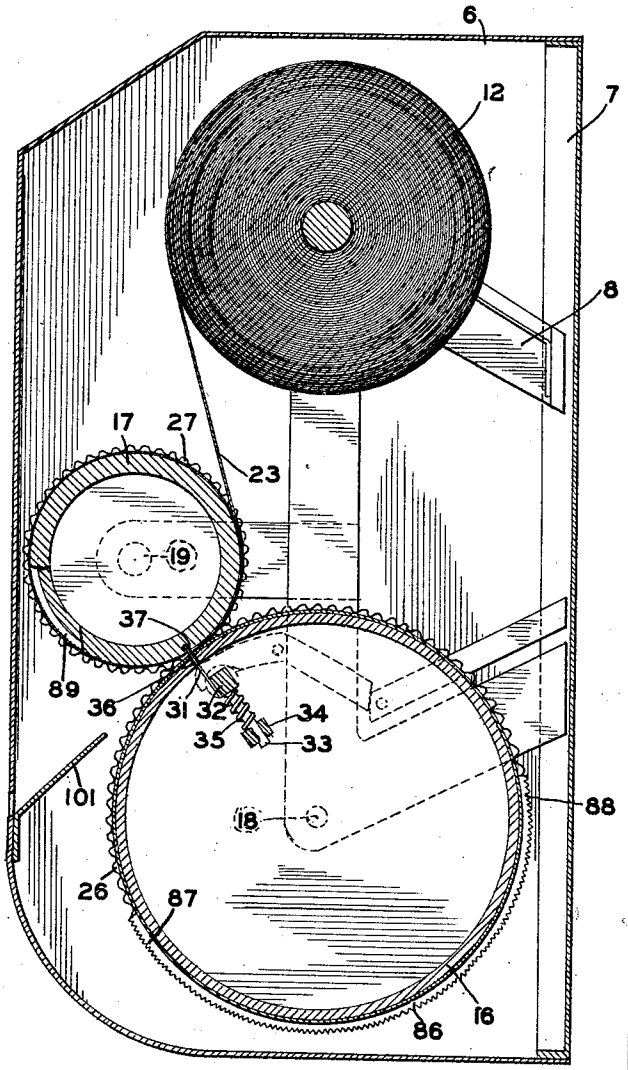


FIG. 4.

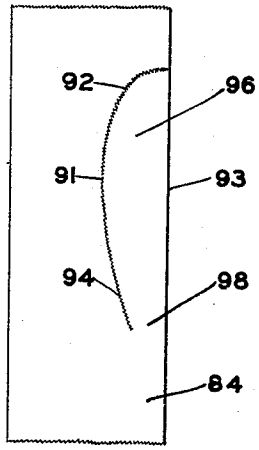
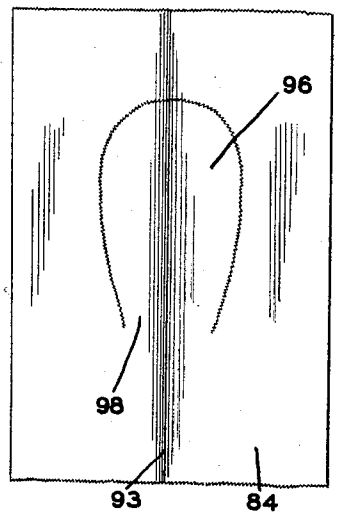


FIG. 5.



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UNITED STATES PATENT OFFICE

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SANITARY TOILET SEAT DISPENSER

Application filed January 21, 1929. Serial No. 334,050.

This invention relates to dispensing devices, and has for an object the provision of an improved apparatus for holding a continuous strip or roll of paper, and for severing the end of the strip into sheets of predetermined length, and discharging said severed sheets one at a time, for use.

Another object is the provision of a dispensing device of the general character described, provided with novel and especially efficient severing means, this severing means being also adapted to permit the discharge of but a single one of the severed sheets at a time.

A further object is the provision of a dispensing device as described, having coin-controlled means for releasing the locking means to permit operation of the device to dispense a single sheet of the paper and sever the sheet from the body of the strip.

A further object is the provision of a device for dispensing a single sheet of paper, combined with means for cutting an opening in the center of the severed sheet during the operation of propelling the sheet from the device.

A still further object is the provision of a combined apparatus as above described, in which the means for cutting the opening in the center of each sheet is arranged so as to leave a portion of the periphery of the opening uncut, forming a resultant sheet particularly adapted to serve as a sanitary cover for a toilet seat.

The invention possesses other objects and advantageous features, some of which, with those enumerated, will be set forth in the following description of the invention's particular embodiment which is illustrated in the drawings accompanying and forming a part of the specification.

Referring to the drawings:

Figure 1 is a vertical sectional view taken through the housing of the device, upon the line 1—1 of Fig. 2, with the direction of view indicated by the arrows and showing the operating mechanism in side elevation.

Fig. 2 is a front elevation of the device, with the front of the housing broken away to show the operating mechanism in front elevation.

Fig. 3 is a longitudinal, vertical sectional view taken upon the line 3—3 of Fig. 1, with the direction of view indicated by the arrows.

Fig. 4 is a plan view of a sheet of the paper folded as discharged from the device.

Fig. 5 is a plan view of the sheet of Fig. 4, unfolded ready for use.

Specifically describing the preferred embodiment of the invention, I have provided a housing 6 removably attached to a back 7 which may be mounted upon any suitable supporting structure. Carried by the back 7 is a framework 8 having a pair of axially aligned sockets 9 for the removable reception of a shaft upon which a supply roll 12 of paper is mounted. Access to the interior of the housing for the renewal of the roll 12, is made possible by removing the housing 6 from the back 7.

A pair of feeding and cutting rolls 16 and 17 are also journalled upon the framework 8, suitable aligned journals 18 and 19 being provided for the reception of the shafts 21 and 22 of the rolls 16 and 17, respectively. The shafts 21 and 22 are spaced a distance equal to the sum of the radii of the two rolls, with the result that the surfaces of these rolls are sufficiently close together to grip the extended end 23 of the paper being unrolled from the supply roll 12. In order to prevent slipping of one of the rolls in respect to the other, enmeshed gears 26 and 27 are made fast to the shafts 21 and 22, respectively. The roll 16 is larger than the roll 17, the diameter of the former being a multiple of that of the latter—preferably the diameter of the roll 16 being twice that of the roll 17, with the result that the roll 17 will make two complete revolutions for each revolution of the roll 16.

A preferably serrated knife 31 disposed within and extending longitudinally of the roll 16, which is hollow, is carried by a strip 32, which is movable radially of the roll 16, being carried by preferably a pair of pins 33 slidably mounted in lugs 34 against each of which a spring 35 presses, urging the strip 32 and knife 31 radially outwards in respect to the roll 16, to project the knife 31 through

a slot 36 in the wall of the roll 16. When in outermost position, the outer or cutting edge of the knife 31, is disposed within a complementary groove 37 in the smaller roll 17. The knife 31 fits sufficiently loosely within the groove 37 to permit the rolls 16 and 17 to turn without interference at the knife 31 with the walls of the groove 37.

Coin-releasable means for holding the rolls 16 and 17 against turning, are provided. The shaft 22 terminates at a point spaced from the inside of the housing 6, and an axially aligned shaft 41 is journalled upon an extension 42 of the frame 8. A disc 43 is rigidly attached to the shaft 22; and a disc 46 is rigidly attached to the shaft 41. An operating handle 47 is rigidly attached to the outer end of the shaft 41, outside the housing 6. A pin 48, rigid with the disc 43, is disposed within an arcuate slot 49 in the disc 46, permitting a degree of play between the two shafts 41 and 22, corresponding to the length of the slot 49, but effecting rotation of the two shafts together after this play has been taken up. A coin recess 51 is formed in the edge of the disc 46; and a coin chute 52 leads from the top of the housing 6 downwards to a point adjacent the coin recess 51, so that a coin deposited in the coin chute 52, will lodge within the recess 51.

A lever 53 is mounted for pivotal movement upon a pin 54 rigid with a portion 56 of the framework 8. The free end of this lever 53 is adapted to engage a projection 57 upon the inner disc 43, in such a manner that it normally holds the disc against rotation. However, when a coin is dropped through the coin chute 52 and lodges within the coin recess 51 which is in the outer disc 46, and then this disc 46 is turned, the rounded edge of the coin will engage the free end of the lever 53 and swing it about its pivot 54 so that the projection 57 of the inner disc 43 will be permitted to turn therepast when the pin 48 is engaged by the after end of the slot 49. As soon as the roll 17 has turned far enough so that the coin recess is disposed adjacent the bottom thereof, the coin will drop from the recess to the bottom of the housing 6.

Means are provided for retaining the lever 53 in unlocking position until the cycle of the machine has been completed. Since the roll 17 must make two revolutions for a single revolution of the roll 16, it is important that the projection 57 shall not engage the lever 53 until the roll 17 has made two complete revolutions. A push rod 61 is mounted for sliding movement within brackets 62 carried by the frame 8. A spring 63 under compression between the lever 53 and one of the brackets 62, urges the lever 53 to locking position, whereas a stronger spring 64 under tension between a portion of the frame 8 and a bracket 66 carried by the rod 61, urges the rod 61 in the direction opposite to that in which the spring 63 exerts its force. A shoulder 67 on the rod 61, is adapted to engage the lever 53 and push it from engaging position. A cam 68 is carried by the roll 16 in position to engage a shoulder 69 rigid with the rod 61. This cam 68 is of such configuration that when it is in engagement with the shoulder 69, the rod 61 is withdrawn from that position in which the shoulder 67 presses the lever 53 out of locking position. Furthermore, the cam 68 is so positioned upon the roll 16 that immediately after the lever 53 has been pressed out of locking position by the coin within the coin recess 51, the cam 68 will pass from engagement with the shoulder 69, whereupon the spring 64 will slide the rod 61 so that the shoulder 67 retains the lever 53 out of locking position. Therefore, when the projection 57 again passes the lever 53, it will not engage the lever 53, permitting a second revolution of the roll 17. However, as the roll 17 approaches the completion of a second revolution, the cam 68 will have again engaged the shoulder 69, withdrawing the rod 61 and permitting the spring 63 to press the lever 53 again to locking position so that the shoulder 57 will come into engagement therewith and retain the mechanism locked until another coin has been deposited in the coin chute 52.

A lever 76 is also pivoted to the end of the roll 16 as by a pin 77. One end 78 of the lever 76 presses against the outer side of a roller or pin 79 carried by the strip 32 and extending through a slot 81 in the end of the roll 16. The other end 82 of the lever 76 is so shaped that as the roll 16 approaches the completion of its revolution, the end 82 engages a pin 83 rigid with a portion 84 of the frame 8. However, the end 82 of the lever 76 is so proportioned that it will pass from engagement with the pin 83 at just the instant that the roll 17 has completed two revolutions, and the roll 16 has completed one revolution. It is obvious that at that time the groove 37 in the roll 17 will have again come into register with the knife 31 so that as the end 82 of the lever 76 passes from the pin 83, the strip 32 will be pressed outwards by the springs 35, so that the knife 31 enters the groove 37, severing a sheet 84 of predetermined length from the end 23 of the paper which has been unrolled from the roll 12. It should be called to attention however, that the end 82 of the lever 76, does not pass from the pin 83 until after the knife 31 and the slot 37 have passed the plane which includes both axes of rotation of the rolls 16 and 17. This is an important feature, in that it insures the retention of the end 23 of the paper from the roll 12 after the sheet 84 has been severed therefrom, because the point of sev-

erance is slightly beyond the line of contact of the two rolls with the paper.

Means are provided for cutting an opening substantially in the center of each of the sheets to be severed and discharged from the device. The sheet of paper of which the roll 12 is formed, is doubled longitudinally upon itself. The roll 16 is provided with a curved and preferably serrated knife 86 upon its surface, the ends 87 and 88 of which are disposed adjacent that end of the roll associated with the folded edge of the paper. However, the end 88 is spaced slightly from that end of the roll 16, for a purpose to be hereinafter disclosed. A complementary groove 89 is formed in the surface of the roll 17, the parts being so proportioned and arranged that as the rolls are turned, the knife 86 is receivable within the groove 89, severing the folded paper along a line determined by the arcuate shape of the knife 86 and groove 89. The end 88 of the knife 86 is disposed at a greater angle with the axis of rotation of the roll 16 than is the end 87 of the knife, with the result that a cut 91 is formed in each sheet 84, and that portion 92 of the cut which is formed by the end 87, being more nearly at a right angle with the folded edge 93 of the sheet 84 than that portion 94 of the cut 91 which is formed by the end 88 of the knife. Furthermore, since the end 88 of the knife 86 is disposed at some distance from the associated end of the roll 16, the extreme end of the portion 94 of the cut 91 is spaced slightly from the folded edge 93 of the paper, with the result that when the sheet 84 is unfolded as in Fig. 5, a tongue 96 is severed from the body of the sheet 84 throughout the entire periphery of the tongue, with the exception of a relatively short space 98. Thus it may be seen that the resultant product is a substantially rectangular sheet having an opening substantially in the center thereof, this opening being defined by the cut 91 and having the tongue 96 which may be folded downwards from one side of the opening. This sheet is so shaped and proportioned that it is adapted to form a sanitary cover for a toilet seat, and the tongue 96 affords additional sanitary protection as it depends from the front portion of the body of the sheet into the toilet bowl.

A guide 101 extends inwards from the housing 6 to guide the sheets 84 through a discharge opening 102, to facilitate the discharge of the severed sheets after they have been released by the cutting rollers 16 and 17. Reversal of the direction of rotation of the rolls 16 and 17, is prevented by a pawl 103 pivoted as by a pin 104 preferably to the back 7. The pawl 103 hangs with a finger at its outer end 106 engaging the teeth of the gear 26 in such a manner that the roll 16 may be rotated forwards but not backwards.

The method of operation of the dispensing device of my invention is substantially as follows:

When an attempt is made to turn the handle 47 without first depositing a coin in the coin chute 52, the projection 57 in engagement with the lever 53, will prevent rotation of the disc 43 so that the only rotation that can be effected will be that of the outer disc 46 which is permitted rotary movement, the extent of which is limited by the engagement of the pin 48 within the slot 49. However, when a coin is properly deposited and then the handle 47 rotated, the coin will engage the lever 53 before the projection 57, raising the lever and permitting the projection to pass. Thus the rolls may be turned to discharge a sheet 84 through the discharge opening 102, drawing a supply of paper from the roll 12. It is obvious that as the rolls turn with the paper therebetween, the cut 91 will be formed, defining the tongue 96. Engagement of the projection 57 with the lever 53 when the roll 17 has made one complete revolution, i. e., when the cycle of the machine is only half completed, is prevented by the rod 61 and the associated parts as described hereinabove. However, after the roll 17 has made more than a complete revolution so that the projection 57 has passed the lever 53 the second time, the rod 61 is returned to normal position so that as the projection 57 again approaches the lever 53, the lever 53 is in engaging position. Consequently, a second sheet 84 can not be withdrawn from the machine until another coin has been deposited. As the roll 16 approaches the completion of its revolution, the knife 31 is retracted because of the engagement of the lever 76 with the pin 83, as above described; and when the cycle of the machine has been completed, the end 82 of the lever 76 will pass from the pin 83, permitting the springs 35 to press the knife 31 outwards of the roll 16 and into the groove 37 in the roll 17 to sever the sheet 84 from the body 23 of the paper.

It is to be understood that the details of the invention as herein disclosed, are subject to alteration within the spirit or scope of the appended claims.

I claim:

1. In a dispensing device, a housing having a delivery opening therein, means for freely supporting a supply of the article to be dispensed, a pair of rolls journalled within said housing and engaging therebetween a portion of said article, said rolls being disposed to propel the end of said portion through the delivery opening as they are rotated, means for rotating said rolls, a knife disposed within a groove extending longitudinally of one of said rolls, spring means urging said knife outwards of said groove to sever a predetermined length of the article, and means for withdrawing said knife.

2. In a dispensing device, a housing hav-

ing a delivery opening therein, means for freely supporting a supply of the article to be dispensed, a pair of rolls journalled within said housing and engaging therebetween a portion of said article, said rolls being disposed to propel the end of said portion through the delivery opening as they are rotated, means for rotating said rolls in opposite directions to draw said article from its supply and propel the end thereof through the delivery opening, a knife disposed within a groove extending longitudinally of one of said rolls, spring means urging said knife outwards of said groove to sever a predetermined length of the article and enter a groove in the other roll, and means for withdrawing and retaining said knife in withdrawn position until it has passed the plane including the axes of rotation of both of said rolls.

3. In a dispensing device, a housing having a delivery opening therein, means for freely supporting a supply of the article to be dispensed, a pair of rolls journalled within said housing and engaging therebetween a portion of said article, said rolls being disposed to propel the end of said portion through the delivery opening as they are rotated, said rolls being of unequal diameters and the diameter of the larger roll being a multiple of that of the smaller roll, means for rotating said rolls in opposite directions to draw said article from its supply and propel the end thereof through the delivery opening, a knife disposed within a groove extending longitudinally of one of said rolls, spring means urging said knife outwards of said groove to sever a predetermined length of the article and enter a groove in the other roll, and means for withdrawing and retaining said knife in withdrawn position until it has passed the plane including the axes of rotation of both of said rolls.

4. In a dispensing device, a housing having a delivery opening therein, means for freely supporting a supply of the article to be dispensed, a pair of rolls journalled within said housing and engaging therebetween a portion of said article, said rolls being disposed to propel the end of said portion through the delivery opening as they are rotated, means for rotating said rolls in opposite directions to draw said article from its supply and propel the end thereof through the delivery opening, a knife disposed within a groove extending longitudinally of one of said rolls, spring means urging said knife outwards of said groove to sever a predetermined length of the article and enter a groove in the other roll, means for withdrawing and retaining said knife in withdrawn position until it has passed the plane including the axes of rotation of both of said rolls, and releasable means holding said rolls against rotation.

5. In a dispensing device, a housing having a delivery opening therein, means for freely supporting a supply of the article to be dispensed, a pair of rolls journalled within said housing and engaging therebetween a portion of said article, said rolls being disposed to propel the end of said portion through the delivery opening as they are rotated, said rolls being of unequal diameters and the diameter of the larger roll being a multiple of that of the smaller roll, means for rotating said rolls in opposite directions to draw said article from its supply and propel the end thereof through the delivery opening, a knife disposed within a groove extending longitudinally of one of said rolls, spring means urging said knife outwards of said groove to sever a predetermined length of the article and enter a groove in the other roll, means for withdrawing and retaining said knife in withdrawn position until it has passed the plane including the axes of rotation of both of said rolls, and releasable means holding said rolls against rotation.

In testimony whereof I have signed my name to this specification.

SCHILLER B. CUMMINGS.