F. J. SCHUMANN.

STAMP OR TICKET VENDING MACHINE.

APPLICATION FILED MAY 7, 1910.

1,009,102.

Patented Nov. 21, 1911.

2 SHEETS—SHEET 1

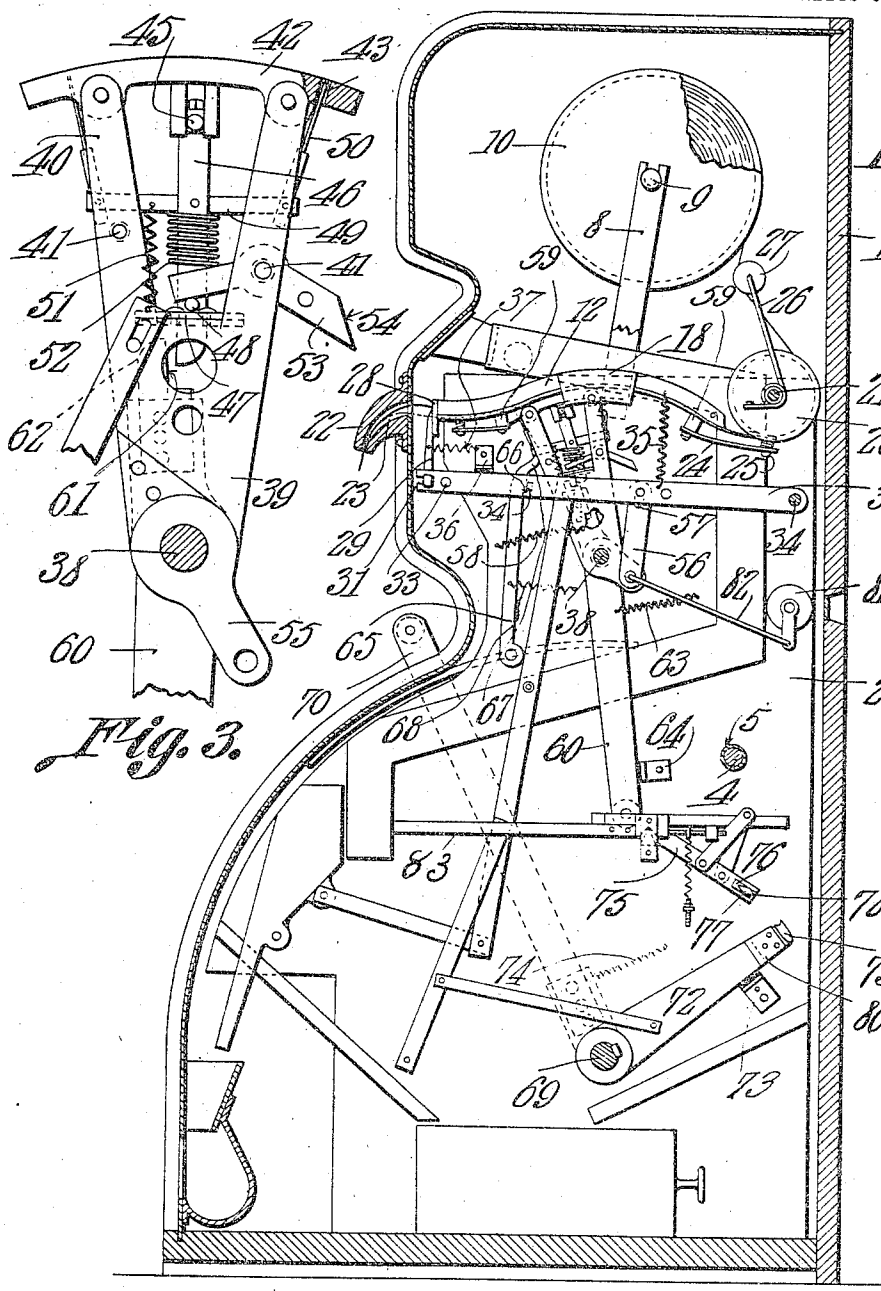

Fig. 1.

Fig. 3.

Witnesses

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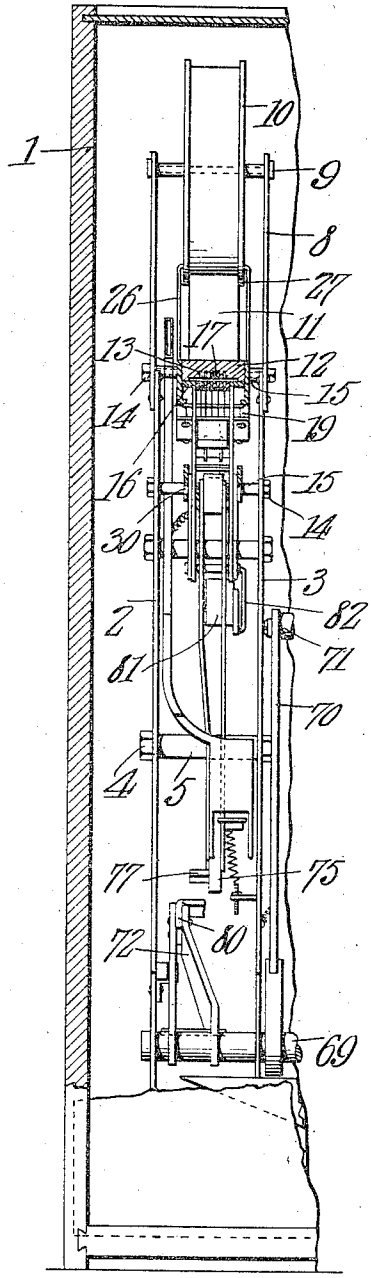
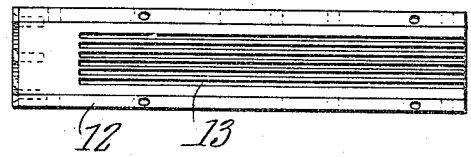


Fig. 2.

Fig. 4.



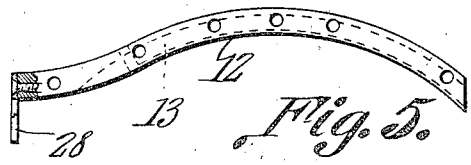


Fig. 5.

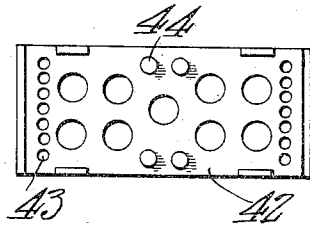


Fig. 6.

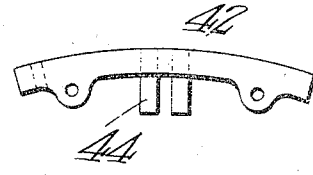


Fig. 7.

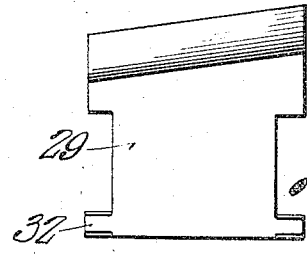


Fig. 8.

Witnesses

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FRANK J. SCHUMANN, OF BETHLEHEM, PENNSYLVANIA.

STAMP OR TICKET VENDING MACHINE.

1,009,102. Specification of Letters Patent. Patented Nov. 21, 1911.

Application filed May 7, 1910. Serial No. 560,056.

To all whom it may concern:

Be it known that I, FRANK J. SCHUMANN, a citizen of the United States, residing at Bethlehem, in the county of Northampton and State of Pennsylvania, have invented a new and useful Stamp or Ticket Vending Machine, of which the following is a specification.

This invention has reference to stamp or ticket vending machines and is designed to provide a machine wherein after the mechanism shall have been actuated to a predetermined extent the vending of the stamp or ticket becomes entirely automatic and the machine cannot be again actuated until a predetermined condition is again established.

The vending machine of the present invention is designed to be operated through the intermediary of a suitable coin but the coin mechanism forms no part of the present invention which latter relates particularly to the vending side of the machine.

In accordance with the present invention the stamps or tickets are lodged in the machine in the form of a long web or strip mounted on a suitable drum or other support and the vending mechanism is so arranged as to deliver a single ticket or stamp at each operation, severing such ticket or stamp from the web and holding the severed ticket or stamp in such position as to be readily accessible to the customer.

The actuating mechanism for the web has a normal position at the end of its active stroke but is withdrawn with relation to the web and when the machine is operated this mechanism is moved to the other limit of its travel to be then automatically moved into engagement with the web and returned to its initial position carrying the web with it, finally coming to rest after withdrawing from engagement with the web, a portion of which latter has in the meantime been projected from the machine and severed from the body of the web.

The invention will be best understood from a consideration of the following description taken in connection with the accompanying drawings forming a part of this specification, in which drawings:—

Figure 1 is an elevation of the actuating mechanism of the machine with the casing in vertical section. Fig. 2 is a front elevation of the machine with parts broken away to expose the interior mechanism with parts of the latter shown in section. Fig. 3 is a detailed view of the web feeding lever and parts carried thereby on a larger scale than in Fig. 1. Fig. 4 is a bottom plan view of the guide block for the web. Fig. 5 is a side elevation of the structure of Fig. 4 with parts in section. Fig. 6 is a bottom plan view of a guide block carried by the web feeding structure. Fig. 7 is a side elevation of the block shown in Fig. 6. Fig. 8 is an elevation of the web securing blade.

Referring to the drawings there is shown a casing 1 of suitable shape and size to inclose the operating mechanism of the machine, the latter in the particular instance shown in the drawing being of multiple type wherein more than one vending apparatus is employed, but this does not preclude the use of a single vending apparatus with the casing reduced to agree therewith.

Since the vending mechanisms are alike in the multiple machine the following description will be confined to the vending apparatus of a single compartment of the multiple machine.

Each vending apparatus is provided with a supporting frame made up of side plates 2 and 3 connected together by bolts 4 and these plates are held in spaced relation by spacing sleeves 5 upon the bolts 4 between the inner faces of the plates. The plates 2 and 3 may be of any suitable shape for the purposes of the invention and either made solid or of skeleton type as may be desired. Projecting upwardly from the top of the plates 2 and 3 are standards 8. The top ends of these standards 8 are shaped to receive the journals 9 of a drum 10 carrying a web 11 of the tickets or stamps or other like articles to be vended. Mounted on the side plates 2 and 3 near the top ends thereof, between said plates, is a curved strip or elongated block 12 having in its under curved face a series of longitudinally disposed parallel slots or grooves 13. The strip or block 12 is held to the side plates 2 and 3 in spaced relation thereto by screws 14 and spacing sleeves 15.

On each side on the under curved edge of the block 12 there is formed a ledge 16 to which is secured a plate 17 having the inner edge projecting a short distance toward the center line of the block 12 in spaced relation to the curved under face thereof, the ledge 16 serving to space the strip 17 a suitable distance away from the under face

of the block 12. At a point about midway of the length of the curved portion of the block 12 on each side thereof, is a plate 18 extending downward below the lower surface of the block for an appropriate distance and at the lower edge formed with an inturned ledge or flange 19 projecting toward the center line of the block 12. To the rear of the block 12 is a roller 20 mounted upon a bolt or pin 21 upon which latter the roller may freely turn. The web 11 is carried around the guide roller 20 and from the latter to the under surface of the curved block 12 in the space between the said under surface and the strips 17, to be ultimately directed toward a discharge guide block or chute 22 at the front of the casing, this chute having a passage 23 therethrough widened at the receiving end so that the end of the web will find ready entrance thereinto while this passage 23 is curved downward and is made of lessened size in the direction of the thickness of the web so that at the discharge end, the web or as will hereinafter appear the stamp or ticket is frictionally engaged to a sufficient extent to remain in the discharge chute until withdrawn therefrom by the customer, the frictional engagement being so regulated that the ticket will not fall from the chute by gravity, but may be readily withdrawn by the customer without sensible effort. The block 12 carries near the ends elastic arms 24 with pressure pins 25 at the free ends of these arms tending to hold the web at these points frictionally against movement except under the action of a sufficient force.

Mounted on the rod or bolt 21 on each side of the roller 20 is an elastic or spring yoke 26 carrying at its end a roller 27 adapted to engage the web 11 between the supply drum and the roller 20 and this roller 27 serves as a tension roller maintaining the web taut but yielding to a force tending to draw the web from the main supply drum.

At the discharge end of the block 12 there is secured a shear plate 28 over which there is movable a knife or shear blade 29 pivotally connected at one end to a lever 30, the end of the lever remote from the shear blade being the pivoted end, while the ends carrying the knife or shear blade are formed with recesses 31 adapted to receive pivot pins 32 on the knife blade arranged to lock in the recesses when the blade is in operative position but when the blade is turned into substantial alinement with the lever then the pivots may be drawn out through the recesses 31. The lever 30 is composed of two side strips spaced apart and joined by bolts or rivets 33, 34 the rivet 34 being in part or in whole of rectangular cross section for a purpose which will appear hereinafter. The lever 30 is of sufficient length to extend from substantially the rear edges of the plates 2 and 3 to the front edges thereof. The lever 30 is under the normal control of a spring 35 tending to maintain the lever in the elevated position against a stop member 36 and the shear or knife blade 29 is maintained in engagement with the shear plate by a spring 37 carried by the stop member 36.

At a point coincident with the axis of curvature of the under face of the guide block 12 is a pivot bolt or rod 38 mounted on the side members 2 and 3. Mounted on the rod 38 is a lever made up of two spaced members 39 of generally segmental shape terminating in divergent legs 40 joined together by bolts or rivets 41. At the outer ends the legs 40 carry a curved plate 42 entering between the guide strips 17 and having the outer surface substantially coincident with the inner faces of these guide strips 17. At the ends the plate 42 is provided with transverse series of perforations 43 for a purpose which will presently appear. The distance between the series of perforations at the two ends of the plate 42 is that of the length of the ticket or stamp or other article to be vended.

About midway of the length of the plate 42 and on opposite sides thereof are pairs of guide pins 44 between which are movable the ends of a cross head 45 on the end of a bolt or rod 46, the other end of which latter traverses a suitable perforation in a guide strip 47 traversing the lever 39 at the crotch of the legs 40. Movement of the rod 46 in one direction is determined by the engagement of the end of the rod with the plate 42 and the movement of the rod in the other direction is determined by a cross pin 48 engaging the strip 47. About midway of its length the rod 46 carries another cross head 49 disposed at right angles to the cross head 45 and extending in the direction of the length of the plate 42. At the ends of the cross head 49 there are series of pins 50 adapted to the series of perforations 43 in the plate 42 and these pins and perforations also coincide with the longitudinal grooves or recesses 13 in the guide blocks 12. The rod 46 is maintained in one position by a spring 51 attached to the lever 39 and to the cross head 49 respectively, and surrounding the rod 46 adjacent the cross head 49, is a spring 52. Mounted on the lever 39 on one of the rivets or bolts 41 between two of the legs 40 is an angle lever 53 having one end straddling the rod 46 in position to engage the spring 52 while the other end is beveled as indicated at 54 so that under circumstances to be presently described this end will engage one of the bolts or rivets 34 of the lever 30.

The lever 39 has a short arm 55 connected by a link 56 to the lever 30 and this link 56 has an elongated slot 57 where connected

to the lever 30 so that there may be relative movement between the link and lever when necessary. The lever 39 is normally maintained at one limit of its movement, this constituting the end of the active movement of the lever, by a spring 58 connected to the lever and to the side plates 2 or 3 as the case may be. The limits of movement of the lever 39 are determined by stops 59 on the guide block 12, which stops may serve as supports for the spring members 24 before referred to.

Mounted on the pivot bolt or rod 38 is a lever 60 having a short arm 61 extending between the side members of the lever 30 and terminating in a cam end 62 in the path of which is normally located the lower end of the rod 46. The lever 60 is maintained in one position by a spring 63 and this position is determined by a stop member 64 in the path of the long arm of the lever.

Pivoted at one end to the side plate 2 or 3 as the case may be is an arm 65 having near its other end a shoulder 66 adapted under certain circumstances to engage the square portion of the rivet or bolt 34 adjacent to it and beyond the shoulder the arm 65 is continued for a short distance as shown in Fig. 1.

Assuming that the parts are in the position shown in Fig. 1 then a properly applied force will move the lower end of the lever 60 toward the left as viewed in said figure. This will bring the cam end 62 into engagement with the lower end of the rod 46 and the lever 39 will be thereby impelled about its pivot support 38 in a direction to carry the legs 40 and plates 42 toward the right as viewed in Fig. 1. In the position of the parts as shown in Fig. 1 it will be noted that the ends of the cross heads 45 are below the lower edge of the flanges or ledges 19. Therefore when the lever 39 is moved toward the right these ends of the cross head 45 will underride the ledges 19 and will so continue until the lever 39 has traveled sufficiently toward the right to bring the cross head 45 beyond the right hand end of the said ledges. As the lever 39 is moved toward the right about its pivot support the lever 30 is moved downward against the action of its spring 35 for a distance sufficient to carry the cutting edge of the knife blade 59 below the point in the shear plate 28 where the web will traverse the latter. Before the cross head 45 has reached the right hand end of the ledges 19 the bevel end 54 of the lever 53 is brought into engagement with one of the pins 34 connecting the two sides of the lever 30 and because of the bevel ends 54 the lever 53 is turned on its pivot in a direction to cause the other end of the lever to compress the spring 52 to an extent to overcome the spring 51, but the rod 46 is unable to move under the action of the spring 52 because the ends of the cross head 45 are still beneath the ledges 19. Ultimately, however the cross head 45 rides beyond the right hand ends of the ledges 19 and then the spring 52 becomes active to move the rod 45 longitudinally in the direction toward the block 12, this resulting in causing the ends of the pins 50, which ends are made sharp, to traverse the perforations 43 in the ends of the plate 42 and also to pass through the portions of the web then overlying the plate 42 and finally enter the slots or grooves 13. The outward movement of the bar 46 under the action of the spring 52 carries the ends of the cross head 45 by the right hand ends of the ledges 19 to a position above the same when the spring 58 is put under tension by the movement of the lever 39 toward the right, becomes active, the inner end of the bar 46 having by the outward movement of said bar been carried beyond the end of the cam 62 on the short arm of the lever 60 so that there is now no resistance to the return of the lever 39 under the action of the spring 58. While the lever 39 is returning toward its first position the pins 50 are in traversing relation to the web and consequently the web is constrained to move with the lever 39 toward the discharge end of the block 12 and a suitable portion of the web is projected beyond the shear plate 28 while an appropriate part of the web is unrolled from the supply on the drum 10. When the lever 30 was moved downward against the action of its spring 35 by the initial or inactive movement of the lever 39 while impelled by the lever 60, the shoulder 66 of the lock arm 65 engaging over the squared portion of the rivet or rod 34 in its path locked the said lever in the lower position, a spring 68 causing the movement of the shoulder into overlying relation to the said rod 34. The knife 29 was therefore locked in the retracted position. When the lever 39 reaches the position at the left hand end of its travel as viewed in Fig. 1 an appropriate one of the pins or rivets 41 is brought into engagement with the extension 67 of the lock arm 65 and the said arm is moved against the action of its spring 68 to a sufficient extent to unlock the lever 30 which immediately returns to its initial position under the action of the spring 35 until arrested by the stop 36, the knife 29 in the meantime traversing the web extending through the shear plate 28 and severing the same, the parts being so proportioned that the point of the web where severed corresponds to a transverse series of perforations caused by the pins 50. As the lever 39 reaches the end of its travel in the active direction, the cross head 45 having been overriding the ledges 19 during this active movement of the lever now pass from said

ledges and the spring 51 and also the action of gravity causes a return of the rod 46 to its initial position, the spring 52 now being inactive because the lever 53 is no longer in engagement with a pin or rod 34 of the lever 30. When the lever 60 is permitted to return to its initial position under the action of the spring 63 the cam end 62 will readily underride the lower end of the pin 46, this lower end being suitably shaped for the purpose and the spring 51 yielding readily to permit the limited longitudinal movement of the rod 46 to allow for the underriding of the cam end 62. The chute 22 is of such length that on the active movement of the lever 39 a length of the web is moved into the passage 23 and its outer end is projected a short distance beyond the outer end of said passage so that when the terminal end of the web is severed from the main body of the web a small extent of the severed portion projects beyond the outer end of the chute 22.

Mounted in the casing and journaled in the plates 2 and 3 and in a multiple machine extending through the several vending devices is an operating shaft 69 carrying at an intermediate point spaced arms 70 extending through the casing to the exterior thereof and there carrying a handle 71 accessible to a customer. Between the plates 2 and 3 of each vending apparatus if there be more than one, the shaft 69 carries a rock arm 72 in the path of which is a stop member 73 determining the movement of the shaft 69 and arms 70 under the action of a spring 74 tending to hold the arms 70 in the uppermost position.

Pivoted at one end to the lower end of the lever 60 is an arm 75 having at its other end a block 76 with a side extension 77 provided with a sharpened or narrow edge 78 movable into the path of the side extension 79 of the block 80 on the free end of the arm 72. The handle member 71 with the arms 70 and rock shaft 69 acting on the rock arm 72 provides a means whereby an operator may cause the actuation of the vending mechanism when the side extension 77 of the block 76 is in the path of the end 79 of the block 80 on the arm 72, the difference in the movement of the free end of the arm 72 and the free end of the lever 60 when these two members are joined by the pivoted arm 75. The extension 77 is brought to this position in the path of the end 79 when a lever 83 to which the coupling is connected is tilted by means of a coin or the like admitted to the machine. Considering the side extension 77 of the block 76 on the arm 75 as in the path of the end 79 of the block 80 on the arm 72, then when the rock shaft 69 is moved by a manipulation of the handle 71 the end 79 of the block 80 is brought against the side extension 77 and the pivoted arm 75 causes a participation of the lever 60 in the movement of the arm 72 and the vending side of the machine is operated in the manner already described. The difference in movement between the arm 72 and the lever 60 is provided for by the arm 75 pivoted at one end to the lever 60 and at the other readily rockable where the sharpened or narrow edge 78 of the extension 77 bears against the end 79 of the block.

While the vending side of the machine is designed to be under control of a suitable coin responsive mechanism, such last named mechanism forms no part of the present invention and therefore description thereof has been omitted.

In order that the number of times the vending mechanism has been actuated may be readily ascertained so as to see whether or not the coins received agree with the actuation of the vending apparatus, there is provided a counter or register 81 of any suitable character connected for operation to the vending side of the machine by a link 82 to the short arm 55 of the lever 39, or the counter may be otherwise connected to the vending mechanism for operation thereby.

What is claimed is:—

1. In a vending machine, an actuating means accessible to a customer, a movably supported web carrying member, web engaging means carried by said member, a pivoted coupling operable by the actuating means and movable in one direction simultaneously with said member, and means for shifting said coupling into and out of the paths of the actuating means.

2. In a vending machine, a web carrying member, means thereon for engaging a web, a lever for shifting said member in one direction, a coupling member pivotally connected to the lever, an actuating element, and means for tilting said member into or out of the path of said member.

3. In a vending machine, a web supporting member, means under the control of an operator for shifting said member out of normal position, means for causing the automatic release of the web supporting member from the shifting mechanism at the termination of said movement, means for automatically returning the web supporting member to normal position independently of the shifting means for yieldingly retaining said member in such position, a web engaging means carried by said member, means responsive to the movement of the shifting means for subjecting the web engaging means to yielding pressure, and means for causing the release of the web engaging means to the action of such pressure at the termination of the movement of the shifting means in one direction.

4. In a vending machine for delivering stamps or tickets from a web or strip of the

same, a guide member for the web, an actuating member for the web comprising a carrier movable endwise of the guide member, a stamping or perforating member for the web on said carrier and movable to and from the guide member, and means on the carrier for storing power to impel the imperforating member toward the guide member, and retaining means on the guide member in the path of the perforating member and of a length less than the extent of travel of the perforating member lengthwise of the guide member.

5. In a vending machine for delivering stamps or tickets from a web or strip of the same, a guide member for the web, and an actuating member for the web comprising a carrier movable endwise on the guide member and provided with a web engaging plate having perforations near the ends, a perforating member for the web provided with pins movable through the perforations in the plate, said perforating member being movable to and from the guide member, and means on the carrier for storing power to impel the perforating member toward the guide member.

6. In a vending machine for delivering stamps or tickets from a web or strip of the same, a guide member for the web, and an actuating member for the web comprising a carrier movable lengthwise of the guide member, a guide bar or rod mounted in the carrier and movable toward and from the guide member, a perforating member carried by the rod and movable with the same to and from the guide member, said perforating member and rod having a normal tendency away from the guide member, a normally inactive spring on the rod tending when compressed to force the perforating member toward the guide member, and means on the carrier for causing the compression of the spring by the movement of the carrier in the direction of the length of the guide member.

7. In a vending machine for delivering stamps or tickets from a web or strip of the same, a guide member for the web, and an actuating member for the web comprising a carrier movable lengthwise of the guide member, a guide bar or rod mounted in the carrier and movable toward and from the guide member, a perforating member carried by the rod and movable with the same to and from the guide member, said perforating member and rod having a normal tendency away from the guide member, a normally inactive spring on the rod tending when compressed to force the perforating member toward the guide member, and means on the carrier for causing the compression of the spring by the movement of the carrier in the direction of the length of the guide member, and means for causing the release of the perforating member to the action of the spring at the termination of the movement of the carrier in one direction.

8. In a vending machine for delivering stamps or tickets from a web or strip of the same, a guide member for the web, an actuating member for the web comprising a carrier movable lengthwise of the guide member, a perforating member on the carrier and means on the carrier for storing power to impel the perforating member toward the guide member, means for moving the carrier in the reverse direction to the delivery movement of the web and at the same time to store power tending to return the carrier to initial position, and means for causing the release of the perforating member to the action of the stored power individual thereto and subsequently causing the release of the carrier to the stored power tending to return the carrier to initial position.

9. In a vending machine for delivering stamps or tickets from a web or strip of the same, a guide member for the web, an actuating member for the web comprising a carrier movable lengthwise of the guide member, a bar mounted in the carrier and movable to and from the guide member and having a normal tendency away from said guide member, an operating lever for the carrier having one end in engaging relation to one end of the bar on the carrier when said bar is in its normal position, web engaging means carried by the bar on the carrier, power storing means on the carrier tending to move the bar toward the guide member, power storing means tending to move the carrier toward initial position, and means for causing the release of the web engaging means to the action of the power storing means individual thereto and subsequently the release of the carrier to the action of the power storing means acting directly thereon.

10. In a vending machine for delivering stamps or tickets from a web or strip of the same, a guide member for the web, severing means for the web, a locking means for the severing means for holding the latter in inactive position, an actuating member for the web comprising a carrier movable lengthwise of the guide member, a perforating member for the web on said carrier and movable to and from the guide member, and means on the carrier for storing power to impel the perforating member toward the guide member, means for actuating the carrier in one direction and at the same time storing power to return the carrier to initial position, and means for causing the release of the web engaging member at the termination of the power storing movement of the carrier and subse-

quently causing the release of the carrier to the stored power acting thereon to return the carrier to initial position and at the same time move the web along the guide therefor, said carrier on its return to the initial position causing the unlocking of the severing means to active movement.

11. In a vending machine for delivering stamps or tickets from a web or strip of the same, a curved guide member for the web having the web engaging surface provided with a series of longitudinal grooves or recesses, and an actuating member for the web comprising a carrier movable lengthwise of the guide member, a perforating member for the web on said carrier having separated series of pins movable to and from the guide member, a perforated plate on the carrier traversed by the pins when moving toward the guide member, the pins and perforations being co-incident with the grooves or recesses in the guide members, means for moving the carrier lengthwise of the guide member, and means on the carrier for storing power to impel the perforating member toward the guide member.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

FRANK J. SCHUMANN.

Witnesses:

FRANK B. OCHSENREITER,

C. E. PREINKERT.