June 29, 1926. 1,590,925

D. K. CAMPBELL

VENDING MACHINE

Filed March 10, 1919 4 Sheets-Sheet 1

Fig. 1.

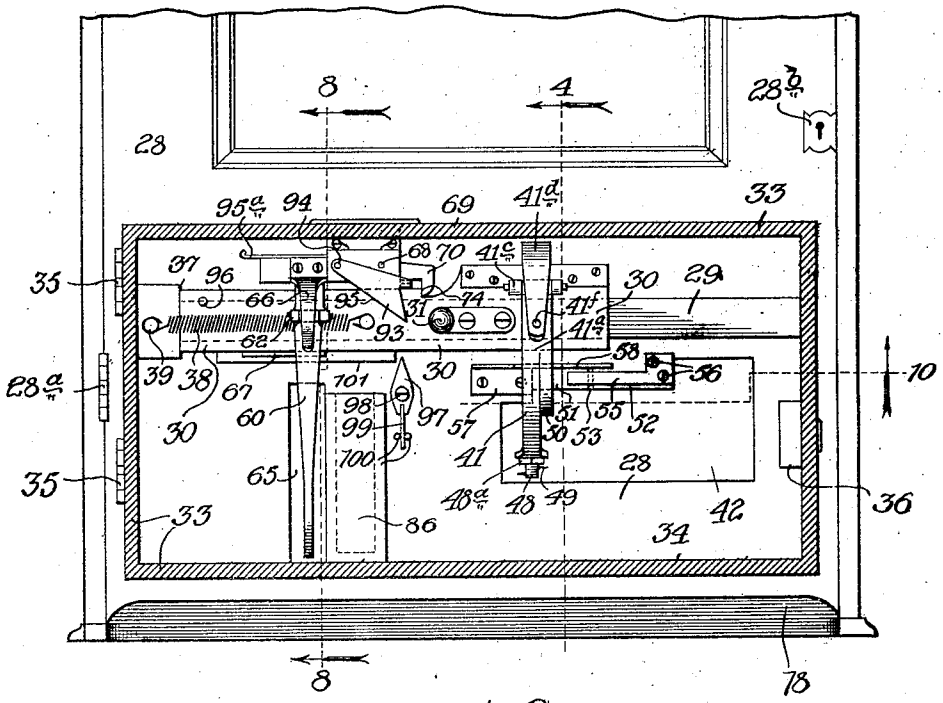
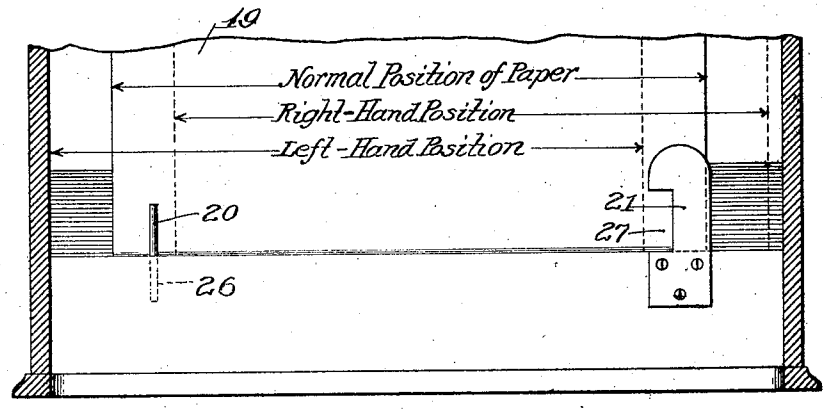


Fig. 2.



Inventor:
Donald K. Campbell,
By Dyer, Smith, Lee, Christie & Niles,
Attys.

June 29, 1926. 1,590,925

D. K. CAMPBELL

VENDING MACHINE

Filed March 10, 1919 4 Sheets-Sheet 2

Fig. 3.

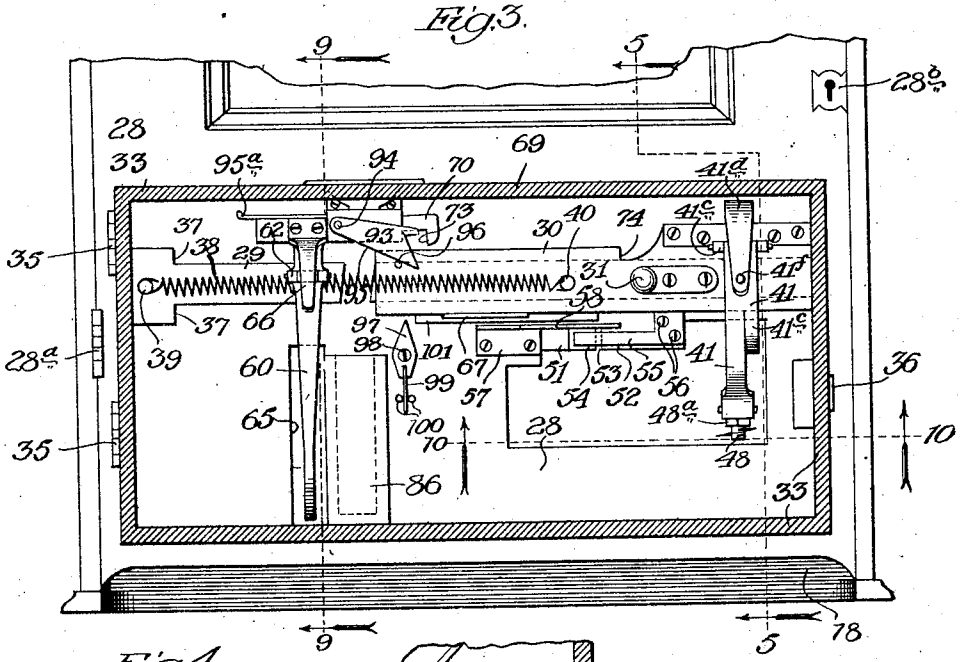


Fig. 4.

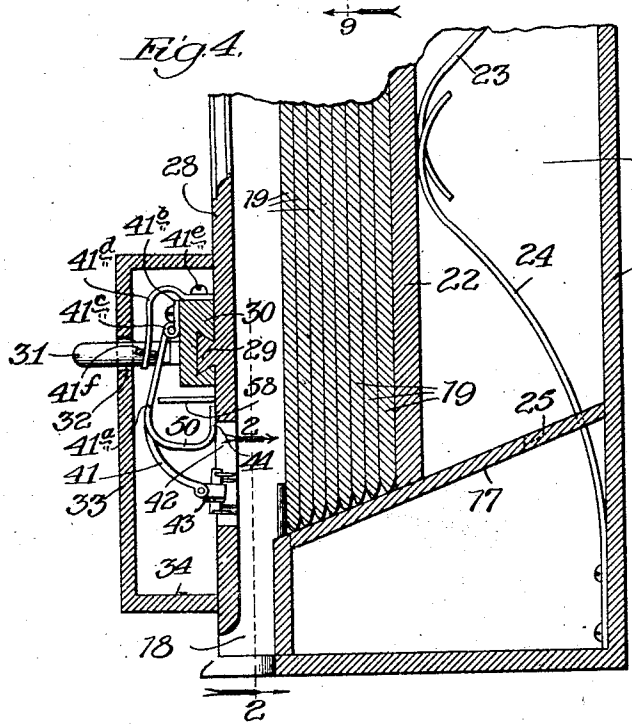
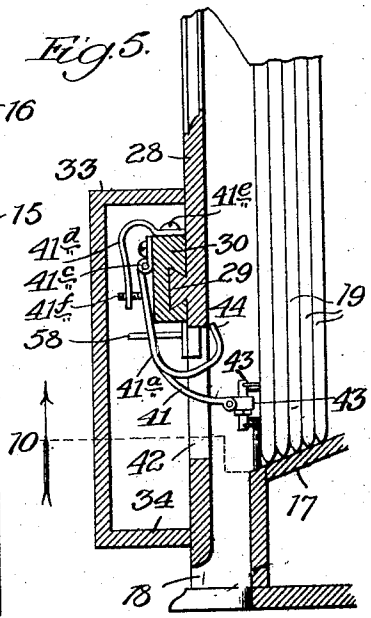


Fig. 5.



Inventor:
Donald K. Campbell.
By Dyrenforth, Lee, Chritton & Miles
Attys

June 29, 1926. 1,590,925

D. K. CAMPBELL

VENDING MACHINE

Filed March 10, 1919 4 Sheets-Sheet 3

Fig. 8.

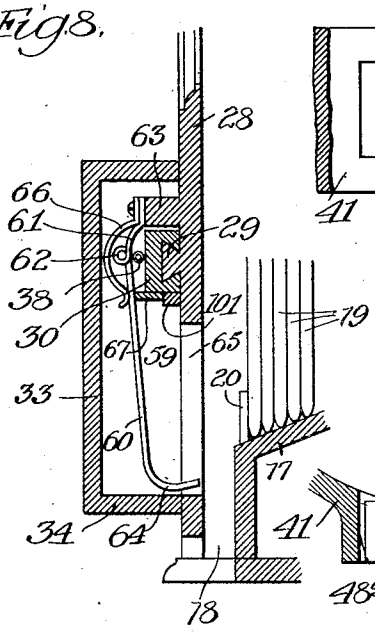


Fig. 6.

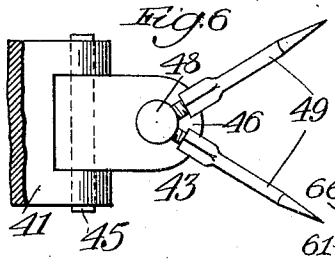


Fig. 9.

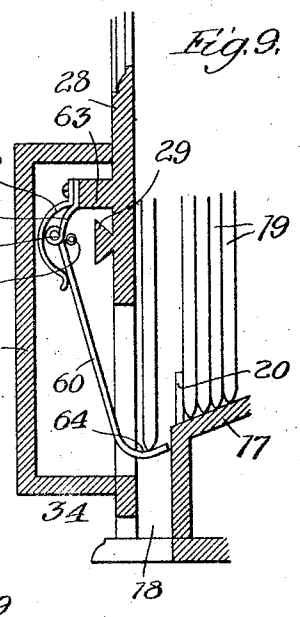


Fig. 7.

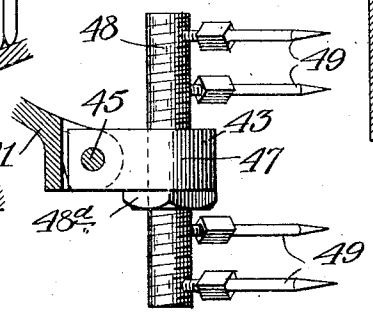
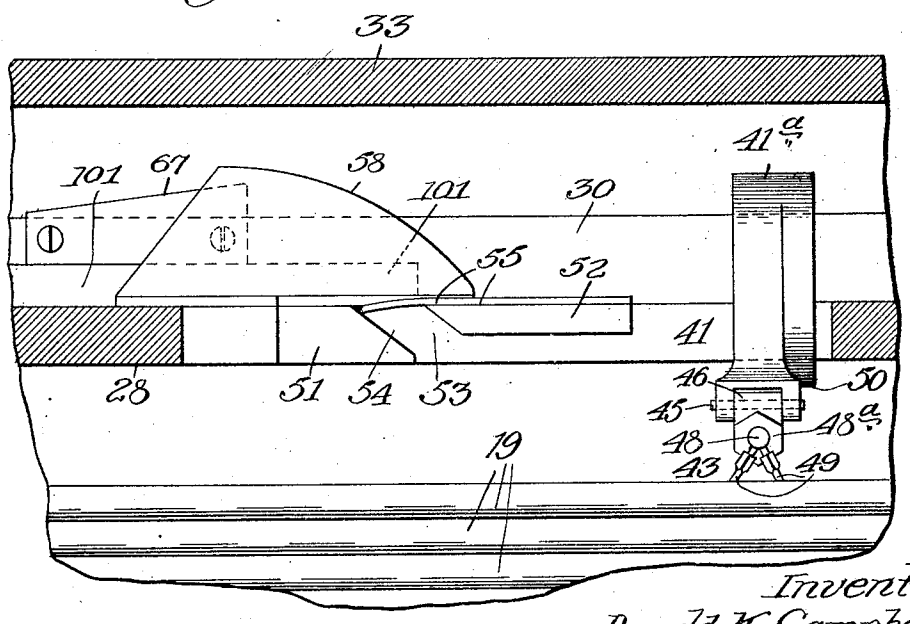


Fig. 10.



Inventor:
Donald K. Campbell,
By Dyrenforth, Lee, Christy & Wiles
Attys.

June 29, 1926. 1,590,925

D. K. CAMPBELL

VENDING MACHINE

Filed March 10, 1919 4 Sheets-Sheet 4

Fig. 11.

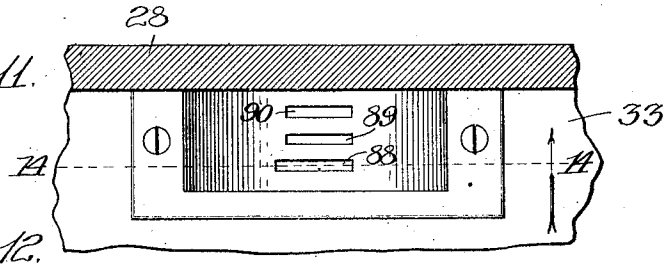


Fig. 12.

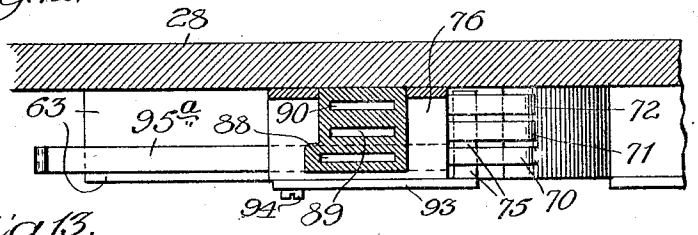


Fig. 13.

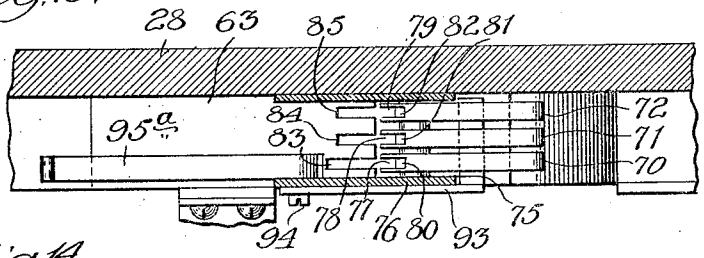
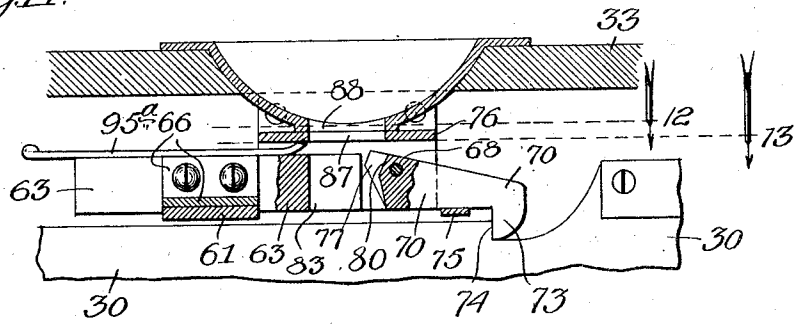


Fig. 14.



Inventor:
Donald K. Campbell,
By Dyrenforth, Lee, Chritton & Wiles,
Attys.

Patented June 29, 1926. 1,590,925

UNITED STATES PATENT OFFICE.

DONALD K. CAMPBELL, OF CHICAGO, ILLINOIS.

VENDING MACHINE.

Application filed March 10, 1919. Serial No. 281,578.

My invention relates to improvements in vending-machines for use more particularly for vending newspapers and similar articles, and my objects, generally stated, are to provide a novel, simple, economical and positively operating machine of the character above stated; and generally to render machines of this kind better adapted for the performance of the work for which they are provided.

Referring to the accompanying drawings: Figure 1 is a front view of the lower part of a vending-machine constructed in accordance with my invention, a portion of the housing for certain of the operative parts, being shown in section, the parts being represented in normal condition. Figure 2 is a section taken at the line 2—2 on Figure 4 and viewed in the direction of the arrow, this view showing diagrammatically the different positions occupied horizontally by the forwardmost article, from its position of rest to delivery position. Figure 3 is a view like Figure 1, showing the positions occupied by the delivery mechanism at the end of the movement of the latter to the right in Figure 1 to move the article to the "Right-hand position" designated in Figure 2. Figure 4 is an enlarged section taken at the line 4 on Figure 1 and viewed in the direction of the arrow. Figure 5 is a section taken in the irregular line 5—5 on Figure 3 and viewed in the direction of the arrows. Figure 6 is a plan view, partly broken, of the pronged member of the article delivery mechanism adapted for engagement with the articles to effect delivery. Figure 7 is a view in elevation of the structure shown in Figure 6. Figure 8 is a section taken at the line 8—8 on Figure 1 and viewed in the direction of the arrows. Figure 9 is a section taken at the line 9—9 on Figure 3 and viewed in the direction of the arrows. Figure 10 is a section taken at the line 10 on Figures 1 and 3 and viewed in the direction of the respective arrows. Figure 11 is a plan view of that portion of the housing for the delivery mechanism, containing the coin slots for receiving coins to release the delivery mechanism for operation. Figure 12 is a section taken at the line 12 on Figure 14 and viewed in the direction of the arrow. Figure 13 is a section taken at the line 13 on Figure 14 and viewed in the direction of the arrow; and Figure 14, a section taken at the line 14 on Figure 11 and viewed in the direction of the arrow.

In accordance with the preferred embodiment of my invention, I provide a casing 15, this casing, by preference, being of general rectangular form and presenting a compartment 16 for newspapers which rest at their lower edges upon a false bottom 17 provided in the compartment 16 and preferably inclined downwardly from its rear edge to its forward edge where it extends adjacent an outlet 18 in the casing 15 and opening downwardly through the bottom of the casing. The compartment 16 is of a length greater than the length of the papers to be vended and represented at 19, in order that they may be shifted lengthwise to effect their delivery into and through the outlet 18 as hereinafter described, the outlet 18 being preferably of the same length as the length of the compartment, to permit the released papers to readily discharge therethrough.

The compartment 16 would be provided with a section (not shown) which is movable to permit the papers to be inserted into the compartment 16 to the position shown in Figure 4, it being preferred that the movable section referred to be the front side 28 of the casing which is preferably hinged at one edge to one of the side walls as represented at its lower end at 28^a, and provided with any suitable locking means represented at 28^b. The forward edge of the board 17 is provided toward the opposite ends of the box with stops 20 and 21 spaced apart a distance less than the length of the articles to be vended, which are preferably introduced into the compartment 16 to the position shown in Figure 4 and against the stops 20 and 21 as shown in Figure 2, the articles, when newspapers, preferably being in the condition in which the paper are generally delivered from the newspaper offices and exhibited at newspaper stands, namely folded once, the papers resting upon the board 17 at their folded portions and occupying the position designated, "Normal position of paper," in Figure 2, the papers being backed up by a follower 22 forwardly yieldingly pressed by spring devices 23 and 24, these spring devices being secured to the rear wall of the casing 15 and bearing at their free ends against the follower. The board 17 is slotted as indicated at 25 to accommodate the spring 24. The stop 20 is preferably in

the form of a pin rotatably mounted in a socket 26 in the forward edge of board 17 and the stop 21 preferably is in the form of a plate having a recessed portion 27 opening toward the stop 20.

It may be stated, as a preface to the following description that the delivery of the papers one by one into the outlet 18 is effected in the particular construction of machine illustrated, by first shifting the forwardmost paper to the right in Figure 2 to the "Right-hand position" designated in this figure in which position the left-hand edge of the forwardmost paper clears the stop 20 and is projected forwardly by the action of the follower 22, the paper then being shifted to the left in Figure 2 to the "Left-hand position" noted thereon, in which position the paper clears the stop 21 and extends into the outlet 18, a description of the mechanism by which the papers are discharged one at a time from the machine, in accordance with the preferred embodiment of my invention, being as follows: the forward wall 28 of the casing 15, is equipped with a horizontally extending guide bar 29, preferably dove-tail in cross-section which guidingly supports a horizontally movable bar, or slide, 30 equipped with a stud 31 which extends forwardly and into an elongated slot 32 provided in the front wall 33 of a casing, or housing, 34 secured to the wall 28, preferably by the hinges 35 and a lock device 36, to house the delivery mechanism. The guide 29 at the left-hand side in Fig. 3 is formed with stop surfaces 37 for limiting the movement of the member 30 to the left in Fig. 3, and a coiled spring, represented at 38, and connected at its opposite ends with the wall 28 and with the slide 30, as indicated at 39 and 40, respectively, operates to normally hold the slide in the position shown in Fig. 1 and automatically return it to this position when the slide 30 is shifted to the position shown in Fig. 3. The slide 30 is provided with a depending arm 41 which is normally rearwardly spring pressed in any desirable way. In the drawings this member is shown as formed of two sections 41^a and 41^b hinged together at 41^c, the section 41^b being secured to the slide 30, and co-operating with the section 41^a, is an adjustable spring device 41^d secured to the slide at 41^e and carrying at its lower, free, end, a threaded pin 41^f bearing against the section 41^a, the section 41^a in Fig. 4 being shown as retracted forwardly against the tension of the spring 41^d. The casing wall 28 adjacent the lower end of the member 41 is apertured as represented at 42, this aperture extending opposite the prong-equipped portion 43 of the member 41 and a shoe section 44 thereof, when the latter, upon movement of the slide 30 to the right in Fig. 1 to a predetermined position, passes the end of a restraining member hereinafter referred to. The prong-device 43 is preferably constructed as shown in Figs. 6 and 7, namely by pivotally connecting, as through the medium of a pin 45, a head 46, to the lower end of the section 41^a this pivot extending in a horizontal position and the head 46 containing a vertically-extending threaded aperture 47 in which a threaded rod 48 is screwed and is thus rotatably adjustable, a lock-nut 48^a being screwed on this shaft. The rod 48 has screwed into it to extend in a general rearward direction, prongs 49 pointed at their rear ends to pierce the forwardmost paper to be delivered, these prongs inclining and alternate ones inclining in the opposite direction as clearly represented in the drawings, the mounting of the prong portion 43 as stated adapting it to rock upon the member 41 to insure the desired grip on the paper when the member 41^a springs rearwardly toward the paper as hereinafter described. The shoe 44 is preferably formed of a section 50 integral with the metal forming the section 41^a and bent rearwardly and then upwardly to produce the shoe section 44, which is adapted to engage and slide along the restraining member referred to and which is formed of the sections 51 and 52 arranged in alining position with a slot 53 presented between their adjacent ends, the front face of the portion 51 adjacent the slot 53 being rearwardly beveled as indicated at 54. A spring-metal strip 55 secured to the section 52, as by the screws 56, extends across the slot 53 at its forward side and normally engages the beveled surface 54, whereby in the movement of the slide 30 to the right in Fig. 1, the shoe 44 moves along the forward side of the sections 51 and 52, and as soon as the shoe 44 clears the right-hand end of the section 52 in Fig. 1, the section 41^a is rapidly projected at its lower end by the spring 41^d, rearwardly in the direction of the articles 19, to drive the prongs 49 against the forwardmost article. The parts referred to are so arranged that the prongs 49 are driven against the forwardmost article at such a point in the movement of the slide 30 to the right in Fig. 1 that continued movement of the slide to the right in this figure while in engagement with the forwardmost article 19, will move the latter to the "Right-hand position" indicated in Fig. 2, the prong device 43 in this operation extending through the recess 27 in the stop 21, and as the paper shifts to the right to the position just stated it moves against the pin 20 which, being free to rotate, practically eliminates friction. The casing wall 28 also carries a forwardly projecting cam-device 57 presenting the cam-surface 58 which is so positioned and formed, as shown,

that in the movement of the slide 30 to the left in Fig. 3 the member 41ª will ride upon the cam-surface 58 at the time the shoe 44, in moving along the rear surface of the restraining section 52, opposes the slot 53, with the result, in the continued movement of the slide 30 to the left to the position shown in Fig. 1, of swinging the member 41ª forwardly against the tension of the spring-device 41ª to the position shown in Fig. 4, the shoe device 44 passing through the slot 53, in which operation the spring 54 flexes forwardly, and thereupon passing beyond the free end of this spring to a position where it opposes the forward surface of the restraining section 51 thereby repositioning the parts for the repetition of the operations just described, it being understood that by the time the member 41ª has been retracted forwardly to a position in which the prong device 43 disengages from the paper, the latter will have been shifted to the left in Fig. 2 to the "Left-hand position" indicated therein in which the paper extends within the outlet 18.

It is preferred that some means be provided for receiving and releasably supporting the left-hand end of the paper after it has been moved to the "Right-hand position" indicated in Fig. 2 and in which position it extends forwardly of the pin 20, and to thus hold this end of the paper in supported condition until the prong device 43 disengages from the paper, this being accomplished in the preferred construction illustrated by the provision of the restraining member represented at 59 and preferably formed of two sections 60 and 61 pivotally connected together at 62, the section 61 being connected at its upper end with a cleat 63 on the wall 28 and the lower end of the section 60 being of curved form as shown to provide a ledge 64 adapted to be projected through an opening 65 in the wall 28 into the path of downward movement of the paper 19 when disengaged from the stop 20 as hereinbefore explained, the means for thus projecting the section 60 comprising a spring member 66 secured to the cleat 63 and bearing at its lower end against the member 60. The section 60 co-operates with a cam 67 which is carried by the slide 30 and extends forwardly therefrom, the cam surface inclining from the rear to the front of the machine from the left-hand end to the right-hand thereof in Fig. 1, the form of this cam and its position on the slide 30 being such as represented, so as to permit the spring 66 to project the member 64 into the path of the descending paper preferably about the same time as the prong device 43, in moving to the right in Fig. 1, engages with the forwardmost paper, and permit the member 64 to remain in this position until the prong device 43 disengages from the forwardmost paper, the cam 67, by preference, operating to withdraw the retainer-section 64 to the position shown in Fig. 8 approximately simultaneously with the disengagement of the prong device 43 from the paper so that the paper in dropping into the outlet 18 extends substantially horizontally and therefore may freely drop through the outlet 18.

The machine is preferably provided as coin-controlled and as shown is adapted for the vending of either two-cent or seven-cent papers, a description of the illustrated coin-controlled mechanism being as follows: pivotally supported on a pin 68 to extend below the top 69 of the housing 33 are three dogs in the form of levers 70, 71 and 72, the right-hand ends of these levers in Figs. 12, 13 and 14 being equipped with shoulder portions 73 adapted to interlock with a shoulder 74 on the upper side of the slide 30 in the normal position of the machine (Fig. 1). These shouldered ends of the levers are heavier than the opposite ends and extend across a cross-piece 75 formed as a part of a coin-releasing member hereinafter referred to. The short ends of these levers are preferably bifurcated as indicated at 77, 78 and 79 and present in the normal position thereof illustrated in Fig. 14, inclined surfaces 80, 81 and 82 for a purpose hereinafter stated. The bifurcated portions 77, 78 and 79, which extend within a casing 76, are opposed to, and in alinement with, slots 83, 84 and 85, respectively, formed in the end of the cleat 63. The slot formed of the bifurcated portion 77 and the slot section 83 is provided for receiving a five-cent piece and the distance from the base of the slot 83 to the surface 80 when this surface parallels the base of the slot 83 upon rocking the lever 70, is preferably equal to the diameter of a five-cent piece so that when a coin is pushed into this slot it will rock the lever 70 and swing the shouldered portion 73 thereof out of engagement with the shoulder 74. The bifurcated portions 78 and 79 co-operating with the slotted portions 84 and 85 are provided each for receiving a penny, and the distance from the innermost portions of these slots to the surfaces 81 and 82 when these surfaces parallel the innermost portions of the slots 84 and 85, is preferably equal to the diameter of a penny so that when pennies are pushed into the slot they will rock the levers 71 and 72 to a position in which their shouldered portions 73 disengage from the shoulder 74 on the slide 30. The upper part of the casing 76 contains slots registering with the slots 83, 84 and 85, one only of which is shown at 87, these slots in turn registering with slots 88, 89 and 90 in a member 91 confined in an opening 92 in the top 69 of the housing 33 the slots 88, 89 and 90 being thus

exposed at the exterior of the machine. The coin-releasing member referred to is represented at 93 this member carrying the cross-piece 75 and being pivotally connected with the cleat 63 as indicated at 94, the member 93 when raised operating to swing the levers 70, 71 and 72 to a position in which the coins introduced into engagement therewith as above stated, are permitted to drop through the slots 83, 84 and 85 and into a box 86. In order that the member 93 be operated as stated its lower edge is inclined downwardly from its left-hand end toward its right-hand end in Fig. 3 to present the inclined surface 95 which extends into the path of a pin 96 carried by the slide 30, in the final movement of this slide to the right in Fig. 1, as represented in Fig. 3.

In order that the slide 30 be locked against return movement, after release of the locking shoulders 73, before the slide has been shifted to the extreme position shown in Fig. 1, I provide the pawl 97 pivoted at 98 on the wall 28 and co-operating with a centering spring 99 confined between two pins 100 on the wall 28, the upper tapered portion of the pawl 97 extending normally above the plane of the lower surface of a cleat 101 secured to the bottom of the slide 30, this cleat in the position of the machine shown in Fig. 3 extending wholly to the right of the pawl 97 and in the position of the slide 30 in Figure 1 extending wholly to the left of this pawl. Thus in the movement of the slide 30 to the right in Fig. 1 the pawl 97 deflects in clockwise direction upon becoming engaged by the cleat 101 and prevents retraction of this slide to the left until the left-hand end of this cleat has passed the pawl 97 (Fig. 3) in which position the forwardmost paper 19 has been disengaged from the stop 20; and in the movement of the slide 30 to the left from the position indicated in Fig. 3, the pawl 97 becomes deflected in anti-clockwise direction by engagement therewith of the cleat 101 and thus prevents retraction of the slide 30 to the right until the right-hand end of the cleat 101 has passed beyond the pawl 97.

The operation of the machine is as follows: Assuming the machine to be in the normal position represented in Figs. 1, 4, 8, 10 and 11 to 14 inclusive, and that it is to be operated by the depositing of a nickel and two pennies into the machine, the operator pushes a nickel into the slot 88 and a penny into each of the slots 89 and 90, the coins engaging the inclined surfaces 80, 81 and 82 of the levers 70, 71 and 72 and lifting all three thereof which, as will be understood, are independently operative, into a position in which the shoulders 73 disengage from the shoulder 74. The operator then grasps the handle 31 and shifts the slide 30 to the right in Fig. 1 to the position shown in Fig. 3 with the result of effecting the rearward movement of the prong-device 43 into engagement with the forwardmost one of the papers 19 and during such engagement moving it to the right in Fig. 3 and thereby shifting the forwardmost paper in the same direction to clear the stop 20. He then releases the handle 31 whereupon the spring 38 shifts the slide 30 to the left in Fig. 3 back to the normal position represented in Fig. 1, it being understood that the paper-supporting member 64 in the movement of the slide to the right in Fig. 1 is projected into the path of downward movement of the left-hand end of the partially released paper which latter falls upon it. In the movement of the slide 30 from the position shown in Fig. 3 to normal position (Fig. 1), the prong-device 43 remains in engagement with the forwardmost paper 19 until the right-hand end of the paper has passed beyond the left-hand edge of the stop 21, the member 41^a in such position engaging the cam 57 and the cam 67 engaging the member 60 to withdraw the prong-device 43 from engagement with the paper and the supporting member 60 from beneath the left-hand end of the paper to permit the latter to drop through the outlet 18, the member 41 and the shoe 44 becoming repositioned for repeating the delivery operation as hereinbefore explained.

In the movement of the slide 30 to the right in Fig. 1 to the position shown in Fig. 3, to disengage the forwardmost paper 19 from the stop 20, the member 93 rocks upwardly thereby effecting the discharge of the coins into the coin-box 86, the levers 70, 71 and 72 dropping to a position in which their shoulders 73 rest on the slide 30 and when the slide is returned to normal position the levers automatically become interlocked with the shoulder 74 to lock the delivery mechanism against actuation until the proper coins are introduced into the machine.

In the particular construction of machine illustrated I provide means for shutting off the slot 83 and locking the lever 70 in a position in which its shoulder 73 is disengaged from the shoulder 74, in order that the machine may be operated with two pennies introduced, respectively, into the slots 89 and 90, these means comprising a slide 95^a which is insertable into the space between the cleat 63 and the top of the casing 76 directly above the slot 83 and upon being pushed to the right in Fig. 14 not only closing the slot 88 but also tilting the lever 70 out of interlocking position with the shoulder 74.

While I have illustrated and described a particular construction embodying my invention I do not wish to be understood as intending to limit it thereto, as the same may be variously modified and altered without

departing from the spirit of my invention, it being my intention to claim my invention as fully and completely as the prior state of the art will permit.

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

1. In a vending machine, the combination of a casing for articles to be vended, said casing containing an outlet, a support for the articles which are adapted to be disposed in a horizontal series and bears at their lower edges on said support, stops spaced apart horizontally and against which the forwardmost article bears, the width of the space between said stops being less than the length of the articles to be vended, and means for bodily shifting the forwardmost one of the articles along said support first in one direction to clear one of said stops and then in the opposite direction to clear the other of said stops.

2. In a vending machine, the combination of a casing for the articles to be vended and containing an outlet, stops spaced apart horizontally and against which the articles bear, the width of the space between said stops being less than the length of the articles to be vended, said stops being located adjacent to, and above, said outlet, and means for shifting the forwardmost one of the articles first in one direction to clear one of said stops and then in the opposite direction to clear the other of said stops.

3. In a vending machine, the combination of a casing for the articles to be vended and containing an outlet, stops spaced apart horizontally and against which the articles bear, the width of the space between said stops being less than the length of the articles to be vended, said stops being located adjacent to, and above, said outlet, means for shifting the forwardmost one of the articles first in one direction to clear one of said stops and then in the opposite direction to clear the other of said stops, and means for receiving and temporarily supporting one end of the article after the latter has shifted clear of the first one of said stops.

4. In a vending machine, the combination of a casing for the articles to be vended and containing an outlet, stops spaced apart horizontally and against which the articles bear, the width of the space between said stops being less than the length of the articles to be vended, said stops being located adjacent to and above said outlet, means for shifting the forwardmost one of the articles first in one direction to clear one of said stops and then in the opposite direction to clear the other of said stops, a member shiftable into and out of a position in which it supports one end of the article after the latter has shifted clear of the first one of the stops, and means for operating said member adapted to withdraw the latter from article-supporting position substantially simultaneously with the disengagement of said first-named means from the article.

5. In a vending machine, the combination of a casing for articles to be vended, said casing containing an outlet, a support for the articles which are adapted to be disposed in a horizontal series and bears at their lower edges on said support, stops spaced apart horizontally and against which the forwardmost one of the articles bears, the width of the space between said stops being less than the length of the articles to be vended, a member shiftable lengthwise of the articles and movable into engagement therewith, and means for bodily shifting said member in opposite directions, said member operating to move into engagement with the forwardmost article during the shifting movement of said member in one direction to shift the article engaged thereby in one direction, along said support, to clear one of said stops and to remain in engagement with the article in the movement of said member in the opposite direction to cause the article to clear the other of said stops and thereafter disengage from the article.

6. In a vending machine, the combination of a casing for the articles to be vended and containing an outlet, stops spaced apart horizontally and against which the articles bear, the width of the space between said stops being less than the length of the articles to be vended, said stops being located adjacent said outlet, and a device shiftable lengthwise of said articles and into and out of engagement therewith for shifting the articles first in one direction to clear one stop and then in the opposite direction to clear the other of said stops, said device being formed with a pivotally supported head carrying prongs, said prongs being so arranged that in the movement of said device in one direction a part of said prongs engage the article and in the movement of said device in the opposite direction the other of said prongs engage the article.

7. In a vending machine, the combination of a casing for the articles to be vended and containing an outlet, stops spaced apart horizontally and against which the articles bear, the width of the space between said stops being less than the length of the articles to be vended, one of said stops being in the form of a rotatably mounted pin against the side of which the articles bear, and means for shifting the forwardmost one of the articles first in one direction to clear one of said stops and then in the opposite direction to clear the other of said stops.

8. In a vending machine, the combination of a casing for the articles to be vended and containing an outlet, a device mounted to be moved into and out of engagement

with the articles and comprising a member movable toward and away from the articles and a head formed of a section pivoted to said member, a bar carried by said section and rotatably adjustable thereon on an axis crosswise of the axis upon which said section is pivoted to said member, and prongs on said bar arranged in different angular positions about the latter, for engaging the articles, said device being supported to be reciprocated in a plane substantially parallel with the planes occupied by the articles.

9. In a vending machine, the combination of a casing for the articles to be vended and containing an outlet, stops spaced apart horizontally and against which the articles bear and located adjacent to, and above, said outlet, the width of the space between said stops being less than the length of the articles to be vended, a member shiftable lengthwise of the articles and movable into engagement therewith, and means for bodily shifting said member in opposite directions and relative to both of said stops, said member operating to move into engagement with the forwardmost article during the shifting movement of said member in one direction to shift the article engaged thereby in one direction to clear one of said stops and to remain in engagement with the article in the movement of said member in the opposite direction to cause the article to clear the other of said stops and thereafter disengaging from the article.

10. An ejecting machine of the character described comprising a pronged ejector element, means for moving said element into and out of operative position, said means including a pivotally mounted carriage upon which said ejector element is pivotally mounted, and means on said carriage for limiting the pivotal movement of said ejector element relative to said carriage and moving said element with said carriage in one direction and means whereby said element when in operative position is moved to and fro to thereby move the article to be ejected first in one direction and then in another, said means including a slidable framework.

11. In a vending machine, the combination of a casing for articles to be vended, said casing containing an outlet, a support for the articles which are adapted to be disposed in a horizontal plane and bears at their lower edges on said support, stops spaced apart horizontally and against which the forwardmost one of the articles bears, the width of the space between said stops being less than the length of the articles to be vended, and reciprocatory means for bodily shifting the forwardmost one of the articles along said support first in one direction to clear one of said stops and then in the opposite direction to clear the other of said stops.

12. In a vending machine, the combination of a casing for the articles to be vended and containing an outlet, means for supporting the articles in upwardly-extending condition, stops spaced apart horizontally and against which the lower edge portion of the forwardmost one of the articles bears, the width of the space between said stops being less than the length of the articles to be vended, and means for bodily shifting the forwardmost one of the articles first in one direction relative to both of said stops to clear one of said stops, and then in the opposite direction to clear the other of said stops.

13. An ejecting machine of the character described comprising a magazine adapted to retain a plurality of articles to be ejected one by one, a pronged ejector element adapted to engage the outermost one of said articles and bodily move it into position of release, a cam controlling said ejector element, and resilient means for forcing said ejector element into engagement with said cam, whereby said element moves from an inoperative position to an operative article-engaging position by snap action.

14. An ejecting machine of the character described comprising article-holding means, an ejector element, a carrier for said element, a guide for said carrier, said element being pivotally mounted on said carrier to move transversely of said guide in a curved path into and out of operative position, and means for sliding said carrier back and forth on said guide whereby said element is moved to and fro in the direction of the pivotal axis thereof to thereby move the article to be ejected first in one direction and then in the opposite direction and release said article from said holding means.

DONALD K. CAMPBELL.