A. ROSSMANITH.

NEWSPAPER VENDING MACHINE.

APPLICATION FILED JULY 11, 1914.

1,160,449.

Patented Nov. 16, 1915.

5 SHEETS—SHEET 1.

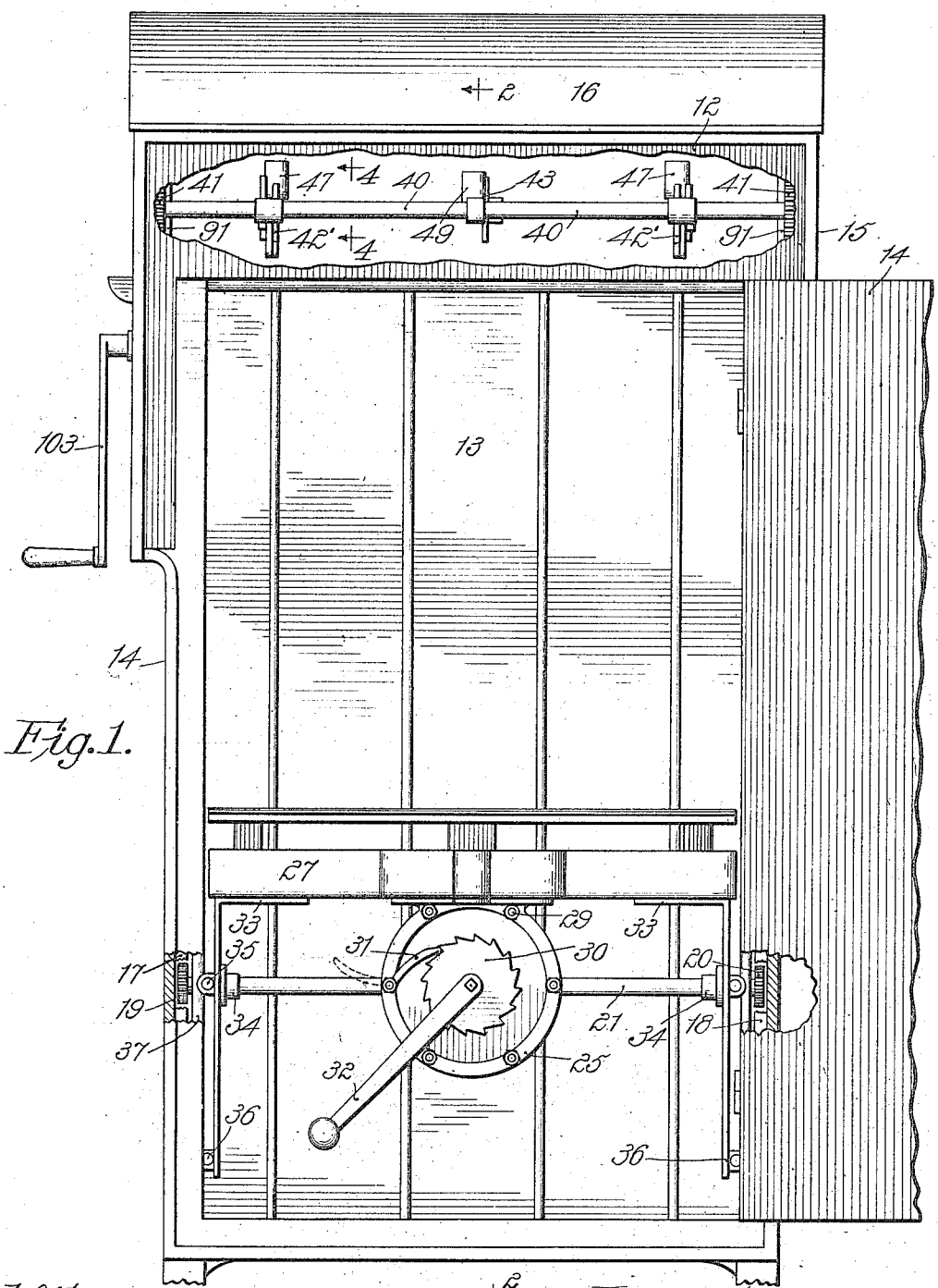


Fig. 1.

Witnesses:
Robert F. Brack
Albin C. Ahlberg.

Inventor
Anton Rossmanith
By. Wyman C. Williams
Attorney

A. ROSSMANITH.

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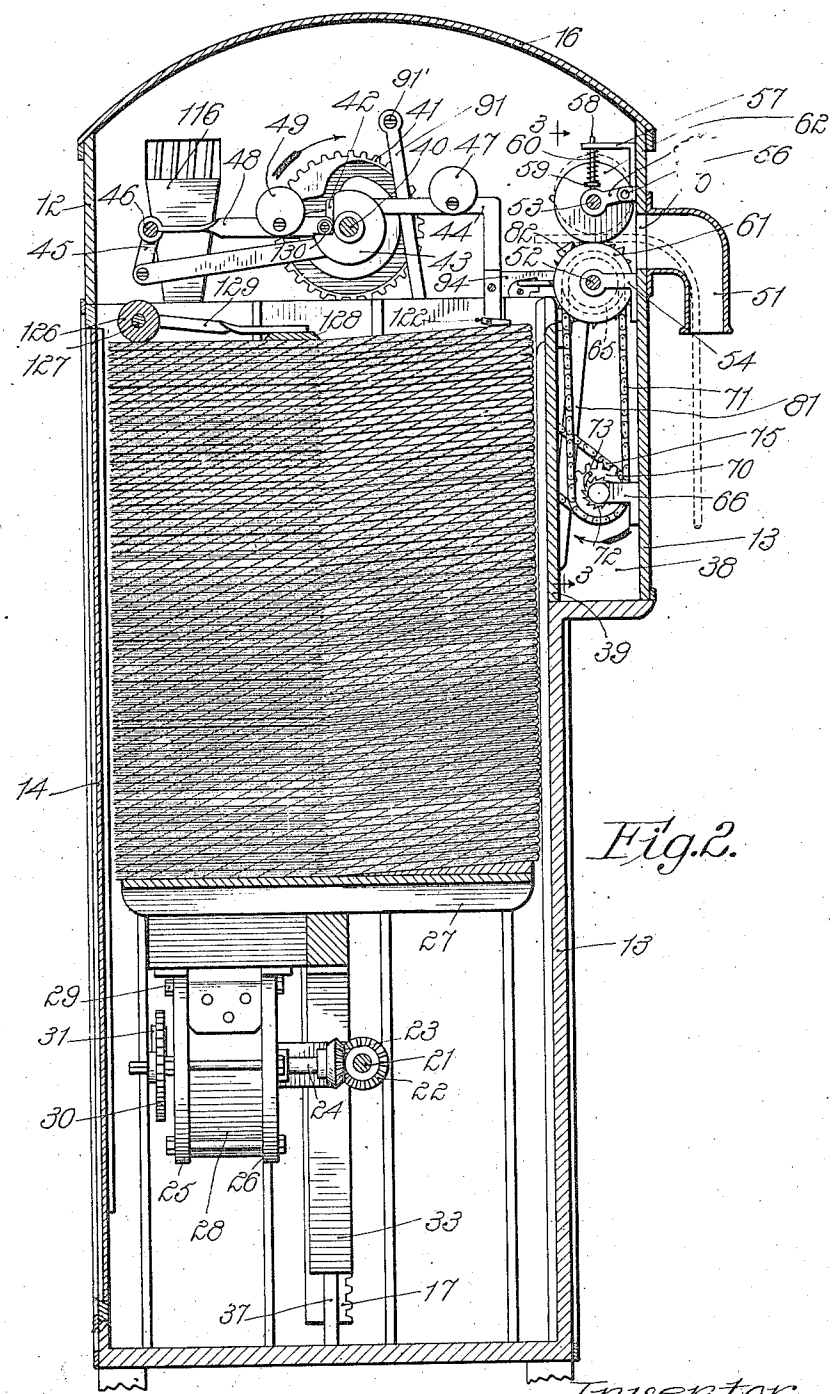


Fig. 2.

Witnesses:
Robert F. Bracke.
Albin C. Ahlberg

Inventor
Anton Rossmanith
By Wynn C. Williamson
Attorney.

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5 SHEETS—SHEET 3.

Fig. 3.

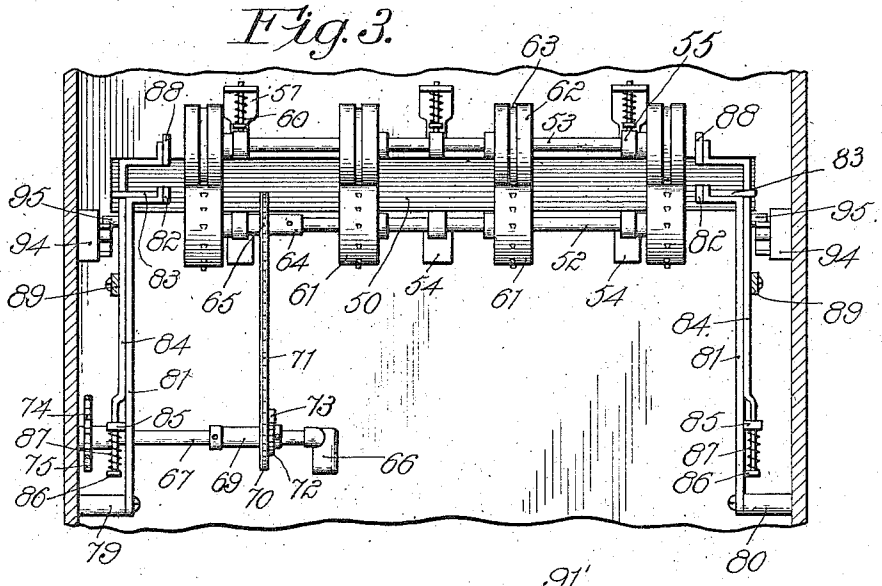
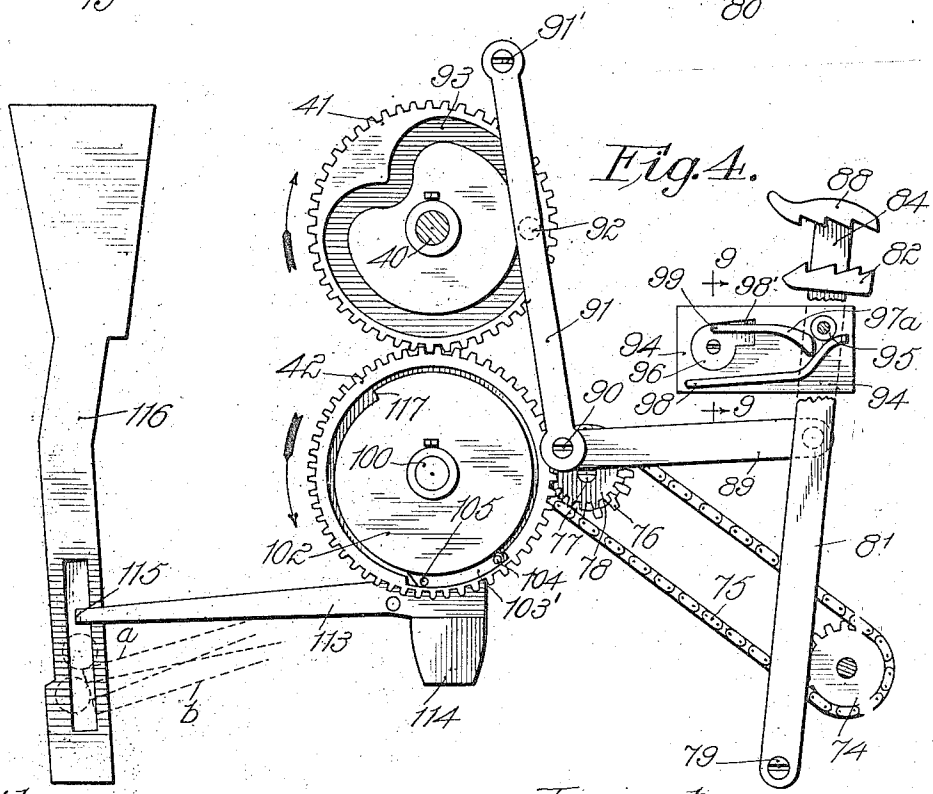


Fig. 4.



Witnesses:
Robert F. Bracke
Albin G. Ahlberg.

Inventor
Anton Rossmanith
By Lynn A. Williamson
Attorney

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Fig. 5.

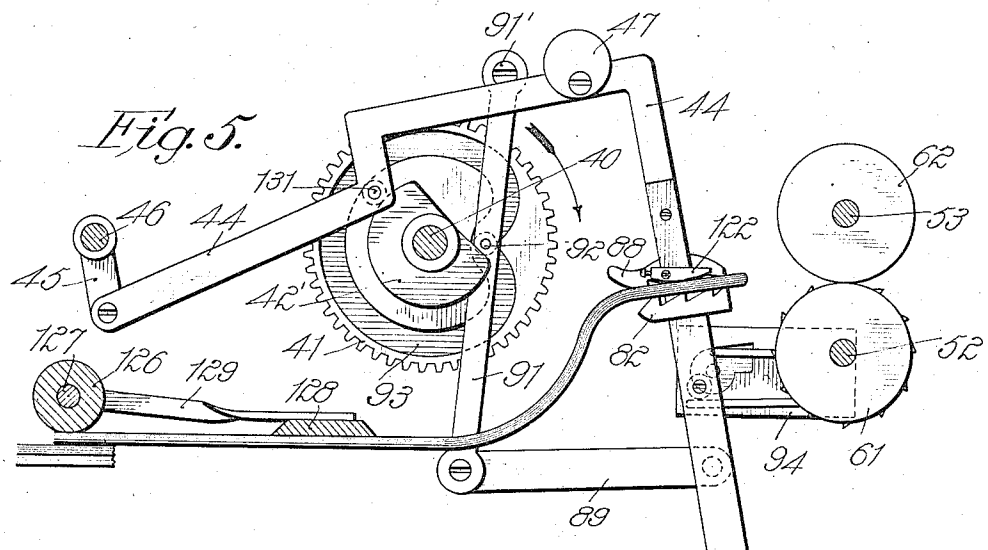
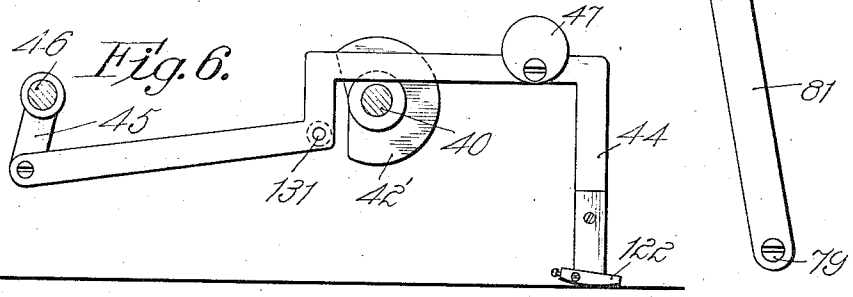


Fig. 6.



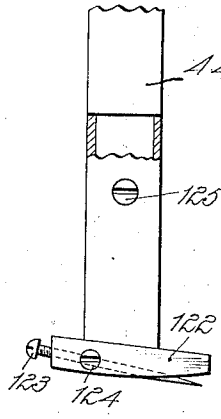


Fig. 7.

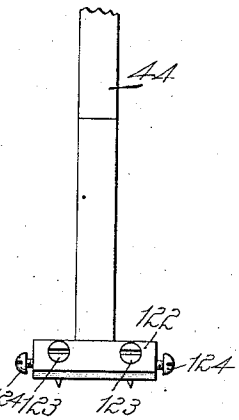


Fig. 8.

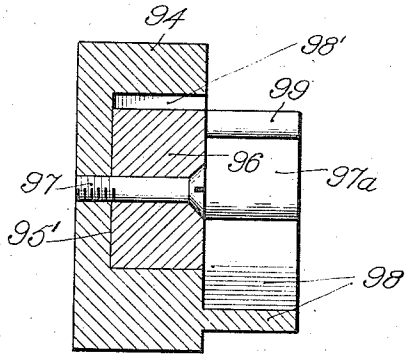


Fig. 9.

Witnesses:

Robert F. Bracke

Albin C. Ahlberg

Inventor

Anton Rossmanith

By Wm. A. Williams

Attorney

A. ROSSMANITH.

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Fig. 10.

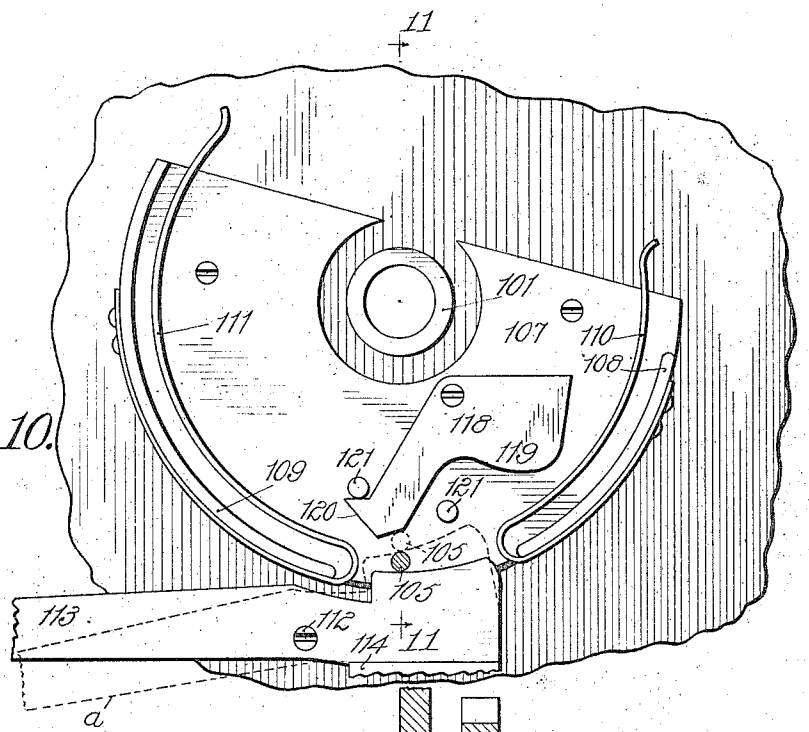
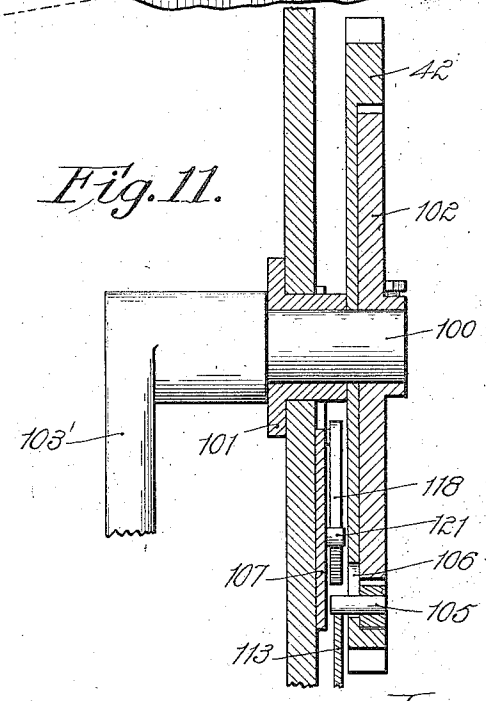


Fig. 11.



Witnesses:
Robert F. Bracke
Albin C. Ahlberg.

Inventor
Anton Rossmanith
By Wynn A. Williams
Attorney

UNITED STATES PATENT OFFICE.

ANTON ROSSMANITH, OF MILWAUKEE, WISCONSIN.

NEWSPAPER-VENDING MACHINE.

1,160,449. Specification of Letters Patent. Patented Nov. 16, 1915.

Application filed July 11, 1914. Serial No. 850,299.

To all whom it may concern:

Be it known that I, ANTON ROSSMANITH, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Newspaper-Vending Machines, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to vending machines for newspapers or the like, and the object of my invention is to provide a machine of this class that can be thoroughly relied upon to operate when required and one which does not necessitate special folding of the newspapers contained therein.

In carrying out the objects of my invention I provide a spring-pressed elevator arranged to carry the newspapers and hold them against a stop at the top of the machine, the elevator moving up one step after each paper has been taken from the top of the stack. Mounted above the stack of newspapers and arranged to engage the uppermost paper I provide lifting arms adapted when actuated to grasp the uppermost paper and feed it to a set of rollers situated at the front of the machine. From these rollers the paper is passed out through one of the walls of the machine, where it may be taken by the operator.

My invention will be more clearly understood by referring to the accompanying drawings, in which—

Figure 1 is an elevational view of the machine of my invention, some of the parts being broken away to more clearly reveal the construction; Fig. 2 is a longitudinal sectional view taken through the line 2, 2 of Fig. 1 and looking in the direction indicated by the arrows; Fig. 3 is a fragmentary sectional view of the roller mechanism employed, this view being taken along the line 3, 3 of Fig. 2 and looking in the direction indicated by the arrows; Fig. 4 is a detail view of the cam mechanism employed in operating the jaw members, this view being taken along the line 4, 4 of Fig. 1 and looking in the direction indicated by the arrows; Fig. 5 is a view similar to Fig. 4, showing the cam mechanism for operating the jaws. This view shows the mechanism in one of its positions for feeding the newspapers to the rollers; Fig. 6 is a view similar to Fig. 5, showing one of the lifting arms in its non-operating position; Fig. 7 is a side elevational view of a lifting foot employed in connection with the lifting arms as shown in Fig. 6; Fig. 8 is a front elevational view of the lifting foot shown in Fig. 7; Fig. 9 is a cross-sectional view of the cam mechanism for controlling the jaw members, this view being taken along the line 9, 9 of Fig. 4 and looking in the direction indicated by the arrows; Fig. 10 is a detail view of the coin-operated mechanism, some of the parts being removed to more clearly reveal the construction thereof; and Fig. 11 is a sectional view of the coin-operated mechanism, this view being taken along the line 11, 11 of Fig. 10 and looking in the direction indicated by the arrows.

Referring to Fig. 1 of the drawings, I have illustrated a casing comprising side walls 12 and 13, end walls 14 and 15, and a top member 16. The wall 12 may, if desired, be provided with a door 14 so that access to the interior of the casing may be had. Secured to each one of the end walls 14 and 15 is a rack 17 and 18. Engaging each one of these racks is a pinion 19 and 20 mounted upon the shaft 21, extending transversely of the casing. Secured to the shaft 21 is a bevel gear 22 meshing with a bevel gear 23 mounted upon a shaft 24 secured in bearings 25 and 26. The bearings 25 and 26 are supported from the under side of an elevator 27, which, as will readily be explained, is arranged to travel up and down within the casing. Mounted within the bearings 25 and 26 is a coiled spring 28, having one end thereof rigidly secured to the shaft 24, and the other end permanently secured to a bolt 29 fixed in the bearings 25 and 26. Mounted upon the front end of the shaft 24 is a ratchet wheel 30 arranged to coöperate with a pawl 31 pivoted on the front bearing plate 25. The shaft 24 may, if desired, be provided with a squared portion, as shown, so that a crank 32 may be utilized for placing the spring 28 under tension. Secured under the elevator 27 at each end thereof is a bracket 33 which provides a bearing 34 for the shaft 21. This bracket may be provided with guides 35 and 36 coöperating with a guide rod 37.

From the description thus far given it will be seen that if the spring is placed under tension and the pawl 31 placed in its

non-operating position, as shown in the dotted lines, the shaft 24 will tend to rotate the shaft 21, due to the bevel gears 22 and 23, to move the elevator in an upward direction, the pinions 19 and 20 meshing with their respective racks 17 and 18. It may here be said that the crank 32 secured to the shaft 24 is not essential, in that the operator may, if desired, merely by pressing on the elevator 27, bring it down to its original position shown in Fig. 1, again placing a tension on the spring.

As will be seen in Fig. 2, a space is provided at 38 between the walls 13 and 39 for the reception of mechanism subsequently to be described. A similar space is provided at each side of the machine. Extending transversely of the machine and near the top thereof is a shaft 40, which has rigidly secured thereto at each end a gear wheel 41, one of said gear wheels meshing with a second gear wheel 42 mounted in the side of the machine. Rigidly secured to the shaft 40 is a pair of cam wheels 42′, which are preferably positioned at each side of the machine, as is most clearly shown in Fig. 1. A third cam wheel shown at 43 is also rigidly secured to the shaft 40.

Coöperating with each of the cam wheels 42′ is a lifting arm 44 pivoted to a lever 45 secured to the shaft 46, extending transversely of the machine and bearing in the side walls thereof. A weight 47 may be secured to the lifting arm so that the arm is held by gravity in the position illustrated in Fig. 2. Coöperating with the cam 43 is a lever 48 also provided with a weight 49, this lever being rigidly secured to the shaft 46. Provided in the wall 13 is an aperture 50 and secured to this wall is a guiding means 51, this guiding means acting as a guide for the newspaper or article to be vended and also as a preventive of the insertion of instruments or tools of any kind into the casing. Extending across the casing and in proximity to the aperture 50 are shafts 52 and 53, the shaft 52 being supported in bearings 54. The shaft 53 is supported in a plurality of bearings 55, each of which is pivoted at 56 to a bracket 57 supported from the wall 13. The bearing 55 is provided with a rod 58 extending up through an aperture in the bracket 57. A shoulder portion 59 is provided on the rod 58 and a spring 60 interposed between the bracket 57 and the projection 59. Mounted upon the shaft 52 is a plurality of rollers 61 engaging a plurality of rollers 62 mounted upon the shaft 53. Each of the rollers 61 may, if desired, be provided with a series of prongs, as shown, and each of the rollers 62 provided with a groove 63 for accommodating the prongs in the rollers 61. It will be seen from this construction that I am enabled to keep the rollers 61 and 62 in engagement with each other and also allow the rollers to separate if an article is inserted between them, the tension in the spring 60 being enough to properly operate the rollers. Rigidly mounted upon the shaft 52 by means of a collar 64 is a sprocket wheel 65. Mounted in the side wall 14 and bearing 66 is a shaft 67, which has slidably mounted thereon a collar 69 rigidly connected to a sprocket wheel 70, a chain 71 serving to connect this sprocket wheel 70 with the sprocket wheel 65 mounted upon the shaft 52. Rigidly mounted upon the shaft 67 is a ratchet wheel 72, preferably placed adjacent the sprocket wheel 70. Secured to the sprocket wheel 70 is a pawl 73 coöperating with the ratchet wheel 72, this pawl and ratchet mechanism serving to prevent rotation of the shaft 52 in a counter-clockwise direction, but permitting rotation of the same in a clockwise direction. The utility of this arrangement will presently be described.

Mounted upon the left-hand end of the shaft 67 (Fig. 3) and fixed thereto is a sprocket wheel 74, said sprocket wheel being driven by a chain 75 coöperating with a second sprocket wheel 76 mounted upon a short shaft 77. A gear wheel 78 also mounted upon the shaft 77 meshes with the gear 42. It will be seen that the construction thus far described will enable the rollers 61 and 62 to be rotated upon rotation of the gear 42 in the indicated direction.

Pivoted at 79 at each side of the machine is one of a pair of jaw members 81 terminating at its upper end in a toothed portion 82. Secured to the upper end of the rod 81 is a guide 83 and extending through an aperture in this guide is a second jaw member 84, extending through a guide 85 mounted upon the first jaw member 81. The lower end of the rod 84 is provided with a projection 86, between which and the guide 85 a spring 87 is interposed. The upper end of the member 84 is also provided with a toothed portion shown at 88, the spring 87 tending to bring the jaw members 82 and 88 into engagement with each other. Secured to both of the rods 84 is a pair of links 89 pivotally mounted at 90 to a pair of levers 91, pivoted at 91′, provided with rollers 92 coöperating with peculiar shaped grooves 93 in each of the gears 41. Mounted in the side walls 14 and 15 and in proximity to each of the jaw members is a cam block 94 coöperating with a roller 95 pivotally mounted on each of the jaw members 84. Each of the cam blocks 94 is provided with a recessed portion 95′, in which extends a somewhat circular cam member 96 which is pivotally secured to the block 94 by means of the screw 97. The cam member 96 has a projection 97ª which extends to the right of the pivot, as seen in Fig. 4, and serves as a means for operating the jaw members, as

will presently be described. Extending under each of the cam projections 97ª is a ledge 98 having its right end extending upwardly, as illustrated. The recess 95′ is enlarged at 98′ to permit a slight angular movement of the cam 96.

The operation of the cam mechanism just described is as follows: Assuming the gear 41 to be rotated in the direction indicated by the arrows, the lever 91 will be swung to the left (Fig. 4), due to the coöperation of the roller 92 mounted thereon and the groove 93, causing the jaw member to be swung toward the left upon its pivot 79. In moving from its normal position to its operating position the roller 95, mounted on the jaw member 84, will travel on the cam surface 97ª until it reaches the end of the cam at 99, where it will drop to the ledge 98 due to the spring mechanism 87. The jaws 88 and 82 will be closed at this position of the levers 81 and 84, but as the gear 41 continues to rotate the lever 91 is again swung to its original position to the right, thereby swinging the jaw members to their normal position, the roller riding up the inclined plane of the ledge 98. In riding up the inclined ledge 98 the roller engages the cam 97ª, but due to the recess 98′ the cam is allowed an angular movement, permitting the roller to ride up past the cam and in the position illustrated in Fig. 4. After the roller is in the position shown in this figure, the cam 97ª again falls to its original position, permitting the second series of operations similar to the one just described. The gear 42, meshing with one of the gears 41, is slidably mounted upon the shaft 100, mounted in the bearing 101 secured in the side wall of the casing. Mounted upon the right-hand end of the shaft 100 (Fig. 11) is a cam wheel 102, the other end of said shaft being connected with a crank 103 arranged to be operated from the outside of the machine. The gear 42, as is clearly shown in Figs. 4 and 11, is dish-shaped so as to accommodate the cam 102 and also a locking lever 103′ pivoted at 104. Secured to the locking lever 103′ is a pin 105 extending through a slot 106 in the gear 42. A plate 107, secured to the wall of the machine is provided with flanges 108 and 109, supporting springs 110 and 111. Pivoted immediately beneath the gear 42 at 112 is a coin-actuated lever 113 provided with a weighted portion 114 at its right end (Fig. 4) and having its left end terminating in a hook 115 extending into a coin chute 116 secured to the side of the machine. The weighted portion 114 may be changed so that the lever will be actuated for coins of any desired denomination.

The operation of the mechanism cooperating with the gear 42 is as follows: A coin of a predetermined denomination is dropped in the chute 116 and engages the lever 113, tending to turn the same in a counter-clockwise direction. The rotation of this lever 113 is, however, prevented at this time due to the engagement of the right-hand end of the lever with the pin 105 of the locking lever 103′, the locking lever 103′ being prevented from moving to its locking position on account of the engagement of it with the cam 102. As the operator rotates the crank 103 and the shaft 100, the portion 117 of the cam 102 will come into register with the locking lever 103′, in which position the lever 103′ will be allowed to swing in a counter-clockwise direction to the position indicated at *a* in Fig. 4, the right-hand end of the lever 113 forcing the locking lever 103′ into engagement with the notch 117. As the shaft 100 continues to rotate, the gear 42 is also rotated, due to the connection just made between the cam 102 and gear 42. In order to retain the locking lever 103′ in engagement with the cam 117 during one complete revolution of the gear 42, applicant has provided the springs 110 and 111 which engage the pin 105 and serve to positively hold the locking lever 103′ in engagement with the notch. After the revolution of the gear 42 has been completed, a means is provided for releasing the lever 103′ so that the gear and cam are disconnected, this means being shown at 118 in the form of a bell crank lever, its right-hand end being weighted at 119 to retain it in the position illustrated. The left-hand end of the lever 118 is provided with a beveled portion 120 and spaced at each side of the left-hand end are stop pins 121, 121 serving to limit the movement of the bell crank lever.

It will be seen that as the gear 42 and lever 103′ are rotated in the direction indicated by the arrow the pin 105 will, at the end of one complete revolution of the gear 42, come into engagement with the beveled portion 120 of the bell crank lever 118, the bell crank lever 118 then swinging on its pivot and forcing the locking lever back to its normal position out of engagement with the cam 102. The position of the coin-controlled lever 113 when the locking lever is moved to locking position is illustrated at *a* in Fig. 10, the weight of the coin retaining the right-hand end in engagement with the pin 105, and it is prevented from further rotation on account of this engagement. The pin 105 is, however, moved from this position due to the rotation of the shaft 100, allowing the coin-controlled lever 113 to move to the position illustrated at *b*, in which position the coin is permitted to pass on down the chute into a box or other receptacle provided for the purpose. The side wall supporting the coin chute 116 is provided with a plurality of openings

from which lead coin guides, each guide being of a size to permit the passage of a coin of one denomination. Either one of these slides may be used as desired, the other one of said slides being put out of commission.

I will now describe the operation of the lifting arms and the mechanism employed in conjunction therewith.

The conformation of each of the lifting arms is best illustrated in Fig. 5. Secured to the free end of each of the lifting arms is a foot 122, shown in detail in Figs. 7 and 8. Extending through the foot in an oblique direction is a pair of screws or needles 123. Set screws 124 may be employed for holding the needles 123 in any position desired. Each one of the lifting feet 122 may be secured to its coöperating lifting arm by means of the screw 125, so that the feet may be easily removed in case repair is necessary. The newspapers or other articles to be vended are placed upon the elevator 27, as shown in Fig. 2, and the pawl 31 disengaged from its coöperating ratchet 30, allowing the elevator to move upwardly. A stop 126 in the form of a roller mounted upon the shaft 127 serves to hold the elevator and papers mounted thereon in the position shown in this figure. A weight 128 pivotally secured to the shaft 127 by means of a pair of arms 129 serves as a guiding means when the paper is being fed to the rollers, as will be seen. As the gear 42 is rotated, due to its connection with the crank shaft 100, the gear 41 and shaft 40 upon which it is mounted are rotated in the direction indicated, the cam 43 engaging a roller 130 mounted upon the lever 48. The operation of this cam will cause the lever 48 to move upwardly, turning the shaft 46 in a counter-clockwise direction. This counter-clockwise movement of the shaft 46 will cause the levers 45 secured thereto to swing in a counter-clockwise direction, the arms 44 moving to the right, as shown in Fig. 2. This movement to the right will cause each of the lifting feet secured to the arms to penetrate the uppermost article. As the shaft 40 continues to rotate, each of the cams 42 will engage a roller 131 secured to the arm 44, causing the arm to swing to the position illustrated in Fig. 5. At this time the lever 91 is caused to actuate the jaw members as has previously been described, said jaw members being here shown in their locking position. As the jaw members are moved to their normal position, the newspaper is fed between the rollers 61 and 62, disengaging the lifting feet 122. The rollers continue to operate until the newspaper is in the position shown in dotted lines in Fig. 2, in which position the operating crank will be disengaged from the mechanism due to the operation of the bell crank lever 118. The newspaper may then be grasped by the operator and pulled out, the pawl and ratchet mechanism mounted on the shaft 67 allowing the roller 65 to rotate.

While I have illustrated my invention in the particular embodiments herein shown, I do not wish to be limited to these constructions, but desire to claim any equivalent constructions coming within the terms and spirit of the appended claims.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A vending machine comprising in combination a casing provided with an outlet, an elevator in said casing, arranged to carry articles to be vended, a stop carried by said casing, means tending to move the elevator toward said stop, and lifting arms carried by said casing for feeding articles to said outlet.

2. A vending machine comprising a casing provided with an outlet, an elevator in said casing, arranged to carry articles to be vended, rollers carried by said casing disposed in proximity to said outlet, lifting arms for feeding said articles to said rollers, and mechanism for operating said lifting arms and rollers.

3. A vending machine comprising a casing provided with an outlet, an elevator in said casing, arranged to carry articles to be vended, rollers carried by said casing disposed in proximity to said outlet, lifting arms for feeding said articles to said rollers, and crank operated mechanism for operating said lifting arms and rollers.

4. A vending machine comprising a casing provided with an outlet, an elevator in said casing, arranged to carry articles to be vended, a shaft carried by the elevator, a pinion mounted on said shaft, a rack carried by said casing coöperating with said pinion, and means tending to turn said shaft to move the elevator.

5. A vending machine comprising a casing provided with an outlet, an elevator in said casing, arranged to carry articles to be vended, a stop carried by said casing, a shaft carried by the elevator, a pinion mounted on said shaft, a rack carried by said casing coöperating with said pinion, and means tending to turn said shaft to move the elevator toward said stop.

6. A vending machine comprising a casing provided with an outlet, an elevator in said casing, arranged to carry articles to be vended, a shaft secured to said elevator, a pinion mounted on said shaft, a rack carried by said casing engaged by said pinion, and spring means tending to turn said shaft to move the elevator toward said stop.

7. A vending machine comprising a casing provided with an outlet, said casing arranged to carry articles to be vended, lifting arms supported by said casing, engaging devices carried by said arms, and cam

mechanism for operating said arms to feed the articles to said outlet.

8. A vending machine comprising a casing provided with an outlet, said casing arranged to carry articles to be vended, lifting arms supported by said casing, and jaw members carried by said casing for feeding said articles from said lifting arms to said outlet.

9. A vending machine comprising a casing provided with an outlet, said casing arranged to carry articles to be vended, lifting arms supported by said casing, rollers in proximity to said outlet, and jaw members carried by said casing for feeding said articles from the lifting arms to said rollers.

10. A vending machine comprising a casing provided with an outlet, said casing arranged to carry articles to be vended, lifting arms supported by said casing, rollers in proximity to said outlet, jaw members carried by said casing for feeding said articles from the lifting arms to said rollers, and a common actuating means for said arms, rollers and jaw members.

11. A vending machine comprising a casing provided with an outlet, said casing arranged to carry articles to be vended, lifting arms supported by said casing, rollers in proximity to said outlet, jaw members carried by said casing, and cam mechanism for operating said jaw members to clamp the article and feed the same to the rollers, said jaw members being arranged to release the article when said article engages the rollers.

12. A vending machine comprising a casing provided with an outlet, said casing arranged to carry articles to be vended, lifting arms supported by said casing, rollers in proximity to said outlet, jaw members carried by said casing, cam mechanism for operating said jaw members to clamp the article and feed the same to the rollers, said jaw members being arranged to release the article when said article engages the rollers, and a common actuating means for said arms, rollers and cam mechanism.

13. A vending machine comprising a casing provided with an outlet, two sets of rollers disposed adjacent the outlet, the sets being positioned parallel to each other to receive between them and deliver to the outlet an article to be vended, driving means for said rollers, ratchet devices connecting said rollers and driving means adapted to permit the rollers to be operated in advance of the driving means, and means for automatically preventing operation of the rollers after the driving means has been operated a certain pre-determined amount, which amount of operation of the driving means imparts rotation to the rollers which is not sufficient to cause the article to pass entirely through the rollers.

14. A vending machine comprising a casing provided with an outlet, said casing being arranged to carry articles to be vended, rollers disposed in proximity to said outlet for feeding the articles to the outlet, driving means for said rollers, devices connecting said rollers and driving means adapted to permit the rollers to be operated in advance of the driving means, said driving means being arranged when fully actuated to operate the rollers an amount not sufficient to cause the articles to pass entirely through the rollers.

15. A vending machine comprising a casing provided with an outlet, an elevator in said casing, arranged to carry articles to be vended, lifting arms supported by said casing, rollers in proximity to said outlet, jaw members carried by said casing, and cam mechanism for operating said jaw members to clamp the article and feed the same to said rollers, said jaw members being arranged to release the article when said article engages the rollers.

16. A vending machine comprising a casing provided with an outlet, an elevator in said casing, arranged to carry articles to be vended, a stop carried by said casing, means tending to move said elevator toward said stop, lifting means supported by said casing, rollers in proximity to said outlet, jaw members carried by said casing, and cam mechanism for operating said jaw members to clamp the article and feed the same to said rollers, said jaw members being arranged to release the article when said article engages the rollers.

17. A vending machine, comprising a casing provided with an outlet, said casing being arranged to carry an article to be vended, lifting arms for feeding the article to the outlet, oblique engaging devices carried by the arms, mechanism for moving said arms and devices in a plane substantially parallel to the plane of the article so as to embed the engaging devices in the article, and means for lifting said arms to feed the article to the outlet.

18. A vending machine comprising a casing provided with an outlet, said casing being arranged to carry an article to be vended, lifting arms for feeding the article to the outlet, oblique needles carried by the lifting arms, mechanism for moving said arms and needles in a plane substantially parallel to the plane of the article so as to embed the needles in the article, and means for lifting said arms to feed the article to the outlet.

19. A vending machine comprising a casing provided with an outlet, an elevator in said casing arranged to carry articles to be vended, lifting arms for feeding the uppermost article to the outlet, oblique engaging devices carried by the arms, mechanism for moving said arms and devices in a plane

substantially parallel to the plane of the article so as to embed the engaging devices in the article, and means for lifting said arms to feed the article to the outlet.

20. A vending machine comprising a casing provided with an outlet, an elevator in said casing arranged to carry articles to be vended, lifting arms for feeding the uppermost article to the outlet, oblique needles carried by the arms, mechanism for moving said arms and needles in a plane substantially parallel to the plane of the article so as to embed the needles in the article, and means for lifting said arms to feed the article to the outlet.

21. A vending machine comprising a casing provided with an outlet, said casing being arranged to carry an article to be vended, a cam shaft extending over the article, an arm shaft disposed substantially parallel to the cam shaft, an arm for feeding the article to the outlet eccentrically connected with the arm shaft and extending over the cam shaft to be vertically moved thereby, a lever rigidly connected with the arm shaft adapted to be operated by the cam shaft to cause oscillation of the arm shaft and thus the arm, and article engaging devices carried by the arm.

22. A vending machine comprising a casing provided with an outlet, an elevator in said casing arranged to carry articles to be vended, a cam shaft extending over the articles, an arm shaft disposed substantially parallel to the cam shaft, an arm for feeding the uppermost article to the outlet eccentrically connected with the arm shaft and extending over the cam shaft to be vertically moved thereby, a lever rigidly connected with the arm shaft adapted to be operated by the cam shaft to cause oscillation of the arm shaft and thus the arm, and article engaging devices carried by the arm.

In witness whereof, I hereunto subscribe my name this 3rd day of July, A. D. 1914.

ANTON ROSSMANITH.

Witnesses:
FRANK SIEGREST,
FERDINAND GINZL.