Oct. 27, 1936. A. F. LEIS ET AL 2,058,700

VENDING MACHINE

Filed Dec. 12, 1931 4 Sheets-Sheet 1

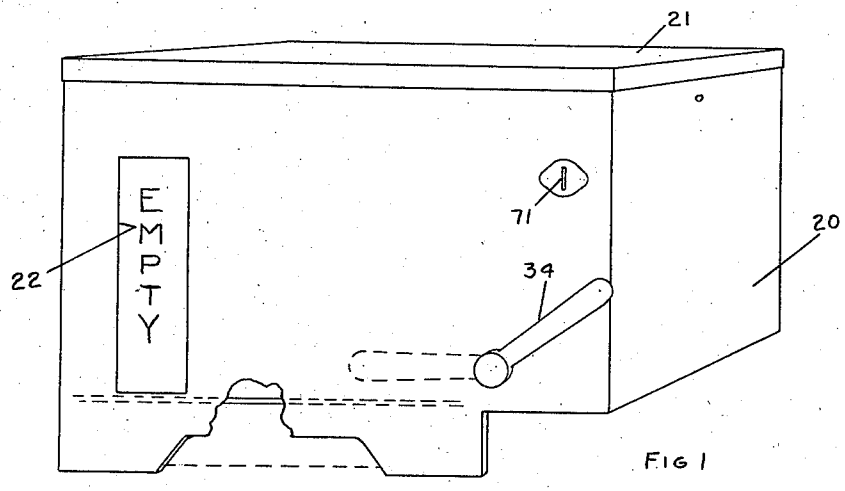


FIG 1

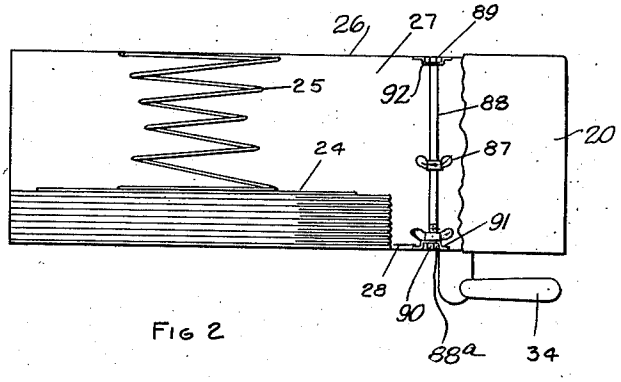


FIG 2

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VENDING MACHINE

Filed Dec. 12, 1931 4 Sheets-Sheet 2

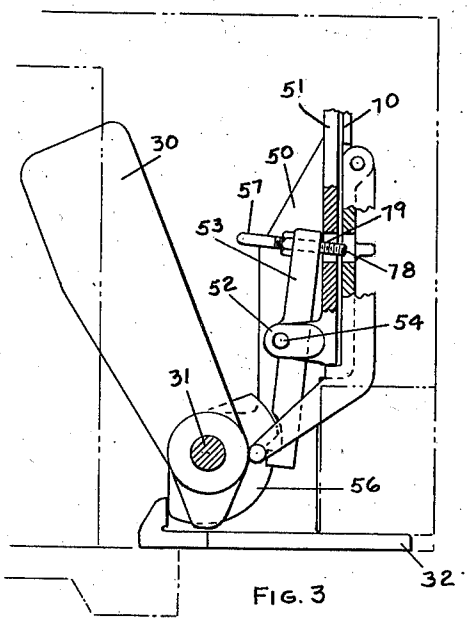


FIG. 3

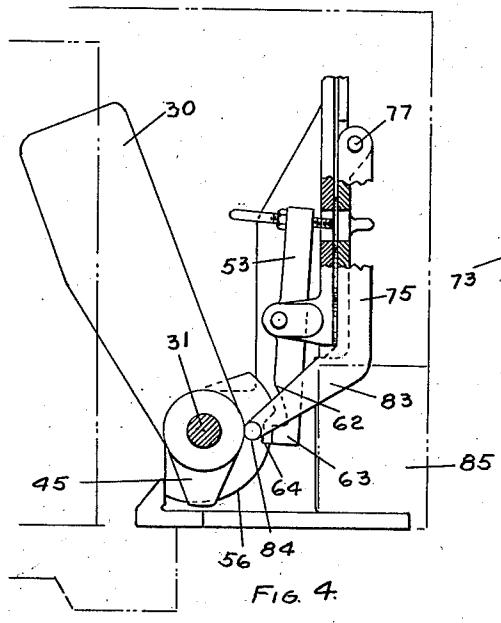


FIG. 4

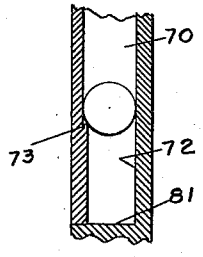


FIG. 9

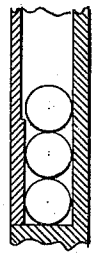


FIG. 10

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VENDING MACHINE

Filed Dec. 12, 1931 4 Sheets-Sheet 3

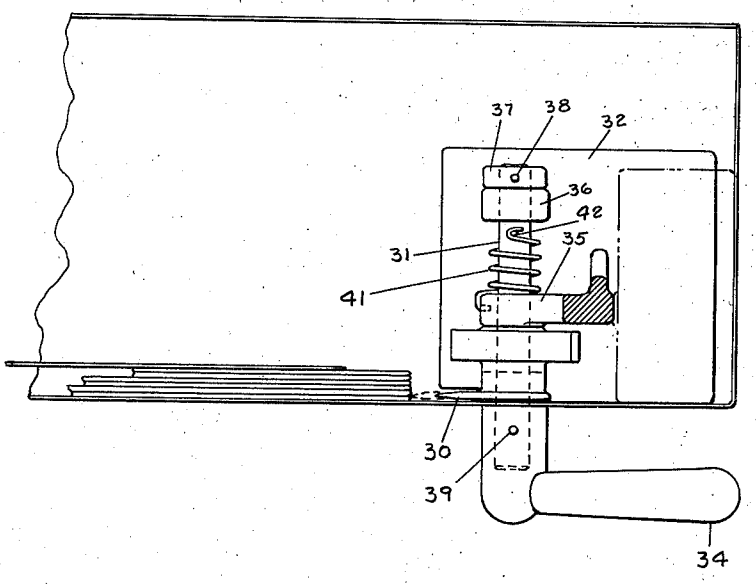


FIG. 6

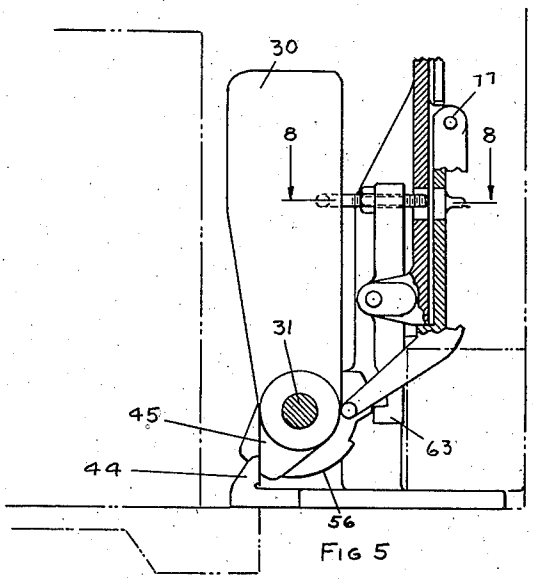


FIG 5

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VENDING MACHINE

Filed Dec. 12, 1931 4 Sheets-Sheet 4

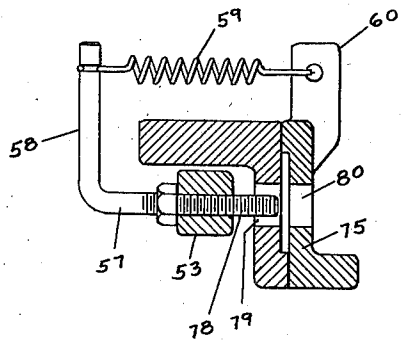


FIG 8

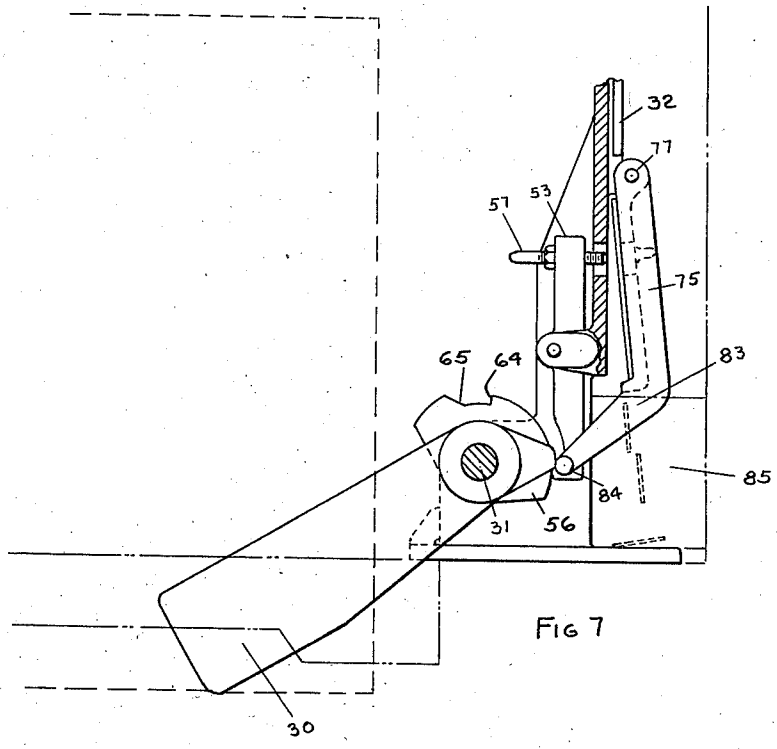


FIG 7

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UNITED STATES PATENT OFFICE

2,058,700

VENDING MACHINE

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Application December 12, 1931, Serial No. 580,517

11 Claims. (Cl. 194—93)

The present invention relates to vending machines and more particularly to coin controlled newspaper vending machines.

One of the objects of the present invention is to provide a vending machine which may be rendered operable either by coin or coins of certain denomination or by a larger number of coins of smaller denomination.

In carrying out the above object it is a further object of the invention to provide a latch mechanism for an ejector and to provide a plurality of different size slots for receiving and retaining different size coins and to provide a latch releasing mechanism arranged to be operated through either coin or coins of one denomination or a larger number of coins of a smaller denomination.

A further object is to place the slots one above the other with the larger slot at the top and to arrange the latch releasing mechanism to operate through the coin in the upper slot only.

A further object is to provide improved coin dumping mechanism for the coin in both slots.

A still further object is to provide for adjustment between the knife-like ejector and the retaining wall for the folded paper whereby to insure that the ejector slips within the folds of the paper to be ejected.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawings, wherein a preferred form of the present invention is clearly shown.

In the drawings:

Fig. 1 is a perspective view of our improved vending machine;

Fig. 2 is a top view thereof, parts being broken away to show the interior of the box;

Fig. 3 is a side view partly in section and showing the ejector, the actuating mechanism therefor and the latch for the actuating mechanism;

Fig. 4 is a view in all respects similar to Fig. 3, except that it shows the position of the latch release mechanism when a coin is inserted in the machine;

Fig. 5 is a view similar to Figs. 3 and 4 showing the mechanism in the "home" position;

Fig. 6 is a top plan view of the mechanism shown in the same position as in Fig. 5;

Fig. 7 is a view similar to Figs. 3, 4 and 5, but showing the mechanism in the extreme paper ejecting position;

Fig. 8 is a sectional view taken on the line 8—8 of Fig. 5;

Fig. 9 is a sectional view of the coin slots showing a coin of larger denomination therein, and

Fig. 10 is a view similar to Fig. 9, but showing the slots containing a plurality of coins of smaller denomination.

For the purpose of illustrating our present invention, we have shown same in connection with a coin controlled newspaper vending machine in which there is shown a box **20** enclosed on four sides and the bottom and preferably made of sheet metal. A removable cover **21** is provided to give access to the interior of the box. The front of the box is open as at **22**, which opening may be covered by a plate of glass or the like. Folded newspapers or the like may be inserted through the top and are preferably stacked vertically with the back of the folds resting on the bottom and the unfolded edges extending toward the left. A large flat paper retaining plate **24** abuts the back of the rear newspaper and a spiral spring **25** is interposed between plate **24** and the back wall **26** of the box **20**. This spring **25** maintains the newspapers in folded and stacked relation and urges the same toward the front of the box. Preferably the plate **24** has imprinted thereon opposite the opening **22**, the word "Empty" so as to indicate when no more newspapers are contained within the box. The bottom wall **27** adjacent the front is provided with a slot **28** (see Figs. 1 and 2) through which the paper adjacent the front wall is ejected downwardly and out of the box.

The mechanism for ejecting the folded newspapers comprises a knife-like ejector **30** which is carried by a rotating shaft **31**, the latter of which is suitably journalled in a main casting **32**. This casting is carried by the bottom wall **27** of the box. The rod or shaft **31** extends to the outside front of the box and there carries an operating handle **34**. The rod **31** extends rearwardly through the journals **35** and **36** and the rear end thereof carries a ring **37** which is secured thereto by pin **38**. This ring **37** and pin **38** prevent the rod **31** from sliding forwardly and a pin **39** extending through the handle **34** and rod **31** prevents the rod **31** from sliding rearwardly. Thus, the rod is maintained at all times in operating position. A spring **41** has one end thereof secured to the rod **31** by a pin **42** and the other end thereof is secured to the outside of the journal **35**. This spring is biased to rotate the rod **31** and therefore the handle **34** in a clockwise direction and a stop **44** formed integrally with the casting **32** engages ear **45** at the bottom of the knife-like ejector **30** so as to limit the counter-clockwise

movement of the rod 31, handle 34 and ejector 30. Therefore, the "home" position of the ejector and handle is that shown in Figs. 6 and 7.

Latching and latch release mechanism are provided for the ejector and will be described later. However, when the ejector is operable to eject a paper from the machine it can be moved counter-clockwise by the handle 34. The knife-like edge of the ejector 30 will move downwardly and inwardly into the paper between the folds thereof and when it engages the bottom fold of the paper, it will force same downwardly through the slot 28 in the bottom wall 27 of the box and force one copy of the paper out of the box. The movement however, of the ejector is limited to that shown in Fig. 7 by suitable stop mechanism and therefore will not push the paper completely out of the box but will eject same far enough that the manipulator may grasp same and pull it out of the box. It will of course be understood that the spring 25 sufficiently binds the partly ejected paper so as to prevent it from falling when it is partly ejected from the box.

The main casting 32 includes an upright frame including a flange portion 50 and a rearwardly extending flat portion 51 (see Fig. 3). The lower part of the flat portion 51 provides bifurcated part 52 between the legs of which there is inserted a lever 53 which is fulcrumed to the ears of the bifurcated part by a pin 54. This lever 53 cooperates with a cam 56 carried by the rod 31 to form a latch for the ejector 30 so as to prevent the operation of the ejector 30 by the handle 34 until after the coin, or coins, have been inserted. The upper end of the lever 53 has screw-threaded engagement with a bolt 57. This bolt is bent to provide an arm 58 (see Fig. 8) and a spring 59 is hooked to the arm 58 and an ear 60 carried by the main lever 75 and normally tends to rotate the lever 53 in a clockwise direction. The lower part of the lever 53 is provided with a cut-away portion 62 (see Fig. 4) to form a catch 63 and this catch will cooperate with a shoulder 64 formed by a cut-away portion 65 in the cam 56.

The spring 59 tends to cause the lower end and catch part of the lever 53 to follow the cam surface of the cam 56. Thus, it will be seen that when an attempt is made to actuate the handle 34 to eject a paper from the machine without the insertion of the proper coin or coins, that is, when an attempt is made to move the mechanism from the position shown in Fig. 5, the spring 59 will rotate the lever 53 in a clockwise direction and the catch 63 will follow the cut-away portion 65 formed in cam 56 and will then engage the shoulder 64 on the cam 56, as shown in Fig. 3, and thereby lock or latch the knife and handle from further counter-clockwise movement.

Coin controlled mechanism is provided for rendering the latching mechanism ineffective. This coin controlled mechanism includes a relatively large groove 70 formed in the main casting 32 and which registers with the coin slot 71 extending to the outside and front of the box. A smaller groove 72 is provided in the main casting 32 directly below the groove 70 and where these slots join, they provide a retaining means 73 for larger coins, for example five cent pieces, while the penny pieces may drop to the bottom of slot 72 (see Figs. 9 and 10). A lever 75 closes one wide side of grooves 70 and 71 and the bottom of groove 72 and therefore cooperates with the main casting to form the closed bottom coin chute. This lever is pivoted to the main casting 32 at 77. The ear 60 to which the spring 59 is attached is formed integrally with the lever 75 and this spring normally tends to hold the lever 75 in the position shown in Figs. 3, 4, 5 and 8.

The right end 78 of the bolt 57 extends a substantial distance through the lever 53 and holes 79 and 80 are provided respectively in the upright 51 and the lever 75 to receive end 78 of bolt 57 so that when no coin is in position directly opposite the opening 79, the end 78 will be free to move within the holes, permitting the spring 59 to rotate lever 53 so that its catch will be effective to prevent the operation of the ejector. When the coin, or coins, have been inserted in the coin chute, they clog the opening 80 and limit the movement of end 78 and consequently the clockwise rotation of lever 53. The position of the lever 53, when a coin is directly opposite the hole 79, is shown in Fig. 4. Thus, when the lever 53 is prevented from rotating in a clockwise direction, the catch 63 on the lever cannot engage the shoulder 64 on the cam 56 to stop same and therefore the cam and likewise the knife-like ejector 30 can be rotated counter-clockwise by the handle 34. Thus, it will be seen that when a coin is opposite the opening 79 in upright 51, the ejector can be operated to push a paper through the bottom wall of the box 20.

The bottom of the coin chute is formed by a ledge 81 of the lever 75 and if this ledge were not present, the coins in the lower slot would be free to fall through the slot. It is apparent therefore that when this ledge is moved outwardly the coins will be permitted to drop from the slot. As previously stated, the lever 75 is pivoted at 77 and is therefore free to move to the right for dumping the coins from the chute formed by said lever and the flat portion of upright 51. The rotation of the handle 34 for the purpose of ejecting the paper from the machine is also utilized for dumping the coins from the slots. The lever 75 includes a downwardly and inwardly extending arm portion 83 having a camming surface 84 arranged to be engaged by the ear 45 which also forms a cam. Thus, when the shaft 31 is rotated, the ear 45 will engage the camming surface 84 and cam the lever 75 outwardly near the end of the ejecting movement of the handle 34. The ledge 81 may be sloped inwardly and downwardly slightly so that the coins may readily slide off of the ledge. A coin box 85 is disposed directly below the coin chute so as to catch the coins which fall therefrom. The cams 56 and 45 are arranged with respect to the latch 63 and the camming surface 84 of lever 75 so that the lever 75 is not cammed outwardly until the lever 56 has moved its shoulder beyond the catch 63 and therefore the lever 53 is prevented from moving clockwise by the cam 56 at the time that lever 75 is cammed outwardly. The movement of the lever 75 is great enough to completely move the coin in the upper groove from binding relation between the extension 78 and lever 75 so that this coin at the top is also free to fall (see Fig. 7).

By arranging the grooves 72 and 70 directly above one another and by providing a ledge 73 for coins of larger denomination, the releasing means for the latch may be operated either by coin or coins of a certain denomination and/or by a larger number of coins of smaller denomination. Although I have shown my mechanism as being operable by one coin of larger denomination and by three coins of smaller denomination, it is to be understood that the ledge forming the retaining means for either the small or large denomination may be raised or lowered or such other

changes may be made whereby a plurality of coins of larger denomination will be necessary before the mechanism can operate to release the latch and of course such other changes could be made so that only two or more coins of smaller denomination would be sufficient to cause a releasing of the latch.

A tie-rod **88** (see Fig. 2) connects the rear and front walls of the box **20**. This rod is provided at the rear end with a head **89** and the opposite or front end **90** is threaded. Clips **91** and **92** are suitably secured to the front and back of the box **20**. These clips retain the rod **88** in position but permit the rotation thereof and this rotation may be effected by a wing **87** suitably secured to the rod **88**. The clip **91** is formed to prevent rotation of a nut **88***a* which receives the threaded end **90** of rod **88**. Thus, it will be seen that by rotating the rod **88** the sheet metal front and rear wall of the box may be flexed so as to move toward or away from one another. The bottom wall of the box which carries the main casting **32** however remains stationary when the front and rear wall is moved. In this manner the front wall can be moved independently of the casting **32** and the knife-like ejector **30** and consequently the distance between the front wall and the ejector can be adjusted. It is apparent therefore that the relative position of the ejector and the paper to be ejected can be adjusted so that the knife-like ejector will always slip between the fold in the side edge of the paper. If the issue is thick, the rod **88** is turned in one direction to force the front outwardly and conversely, if the issue is thin, the rod **88** is turned in the opposite direction to pull the front wall inwardly.

While the form of embodiment of the invention as herein disclosed constitutes a preferred form, it is to be understood that other forms might be adopted, all coming within the scope of the claims which follow.

What is claimed is as follows:

1. In a newspaper vending machine, the combination of an ejector, means for actuating said ejector, relatively wide side walls and relatively narrow end walls providing a narrow vertically extending coin chute for a plurality of edgewise stacked coins, latch mechanism normally maintaining the actuating means inoperative, means rendered operable by the upper of stacked coins for rendering the latching mechanism ineffective whereby the actuating means is rendered operable, a lower part of one of said side walls of the chute being spreadable for dumping all of the coins out of the chute, and means operated by the actuating means for moving said side wall when the latch mechanism is ineffective.

2. In a newspaper vending machine, the combination with an ejector, of mechanism for actuating said ejector, latching mechanism associated with the actuating mechanism for preventing the operation of the latter, means providing a narrow vertically extending coin chute arranged to receive a plurality of edgewise stacked coins of small denomination, said means having an opening extending through a wide wall of the chute at a point spaced from the bottom of the chute at least more than the height of one of the coins, means extending into said chute at such position that a lesser number of coins of larger denomination than coins of smaller denomination are required to detain a coin at said point, and a coin detained device for rendering the latching mechanism ineffective, said device having a part arranged to extend through said opening and engage the face of a coin at said point.

3. In a newspaper vending machine, the combination with an ejector, of mechanism for actuating said ejector, relatively wide side walls and relatively narrow end walls providing a narrow coin chute, latching mechanism having a part adapted to extend through said chute and associated with the actuating mechanism for rendering same ineffective, said latching mechanism part being arranged to engage a coin in the chute for rendering the latching mechanism ineffective, a side wall of said chute being spreadable, for dumping said coin and means operated by the actuating mechanism for moving said side wall of the chute when the latch mechanism is ineffective.

4. In a newspaper vending machine, the combination with an ejector, of mechanism for actuating said ejector, means providing a vertically extending coin chute, latching mechanism having a part adapted to extend into said chute and associated with the actuating mechanism for rendering same ineffective, said latching mechanism part being arranged to engage a coin in the chute for rendering the latching mechanism ineffective, a side wall of said chute being pivoted at the top thereof for separating same from the other wall for dumping said coin, and means operated by the actuating mechanism for moving said wall of the chute when the latch mechanism is ineffective.

5. In a newspaper vending machine, the combination with an ejector, of mechanism for actuating said ejector, relatively wide side walls and relatively narrow end walls providing a narrow coin chute, latching mechanism having a part thereon adapted to extend into said chute and associated with the actuating mechanism for rendering same ineffective, said latching mechanism part being arranged to engage a coin in the chute for rendering the latching mechanism ineffective, a side wall of said chute being movable relative to the other side wall, means for yieldably holding said side wall in chute forming position, and means operated by the actuating mechanism for moving the said side wall outwardly when the latch mechanism is ineffective.

6. In a newspaper vending machine, the combination with an ejector, of mechanism for actuating said ejector, means providing a coin chute, latching mechanism having a part adapted to extend into said chute and associated with the actuating mechanism for rendering same ineffective, means for yieldingly urging said part into said chute, means actuated by the actuating mechanism for rendering the means for urging operative, said part being adapted to engage a coin in the chute for rendering the urging means ineffective whereby the actuating mechanism is rendered operable for actuating the ejector, a side wall of said chute being movable and yieldingly held in chute closing position by said urging means, and means operated by the actuating mechanism for moving said wall when the latch mechanism is ineffective.

7. In a newspaper vending machine, the combination with an ejector, of mechanism for actuating said ejector, means providing a coin chute, latching mechanism having a part adapted to extend into said chute and associated with the actuating mechanism for rendering same ineffective, means for yieldingly urging said part into said chute, means actuated by the actuating mechanism for rendering the means for urging

operative, said part being adapted to engage a coin in the chute for rendering the urging means ineffective whereby the actuating mechanism is rendered operable for actuating the ejector, a side wall of said chute being movable relative to the other side wall for dumping said coin, and means operated by the actuating mechanism for moving said side wall of the chute when the latch mechanism is ineffective.

8. In a newspaper vending machine, the combination with an ejector, of mechanism for actuating said ejector, means forming a coin chute, latching mechanism for preventing the operation of said actuating mechanism, said latching mechanism including a cam and a cam follower, cooperating catch elements on the cam and cam follower for limiting the movement of the cam, said cam follower having a part adapted to extend into the coin chute, means for yieldingly urging said part into said chute and for rendering said cooperating catch elements effective, said part being arranged to engage the face of a coin of proper denomination supported in proper position by said chute for preventing the catch element of the cam follower from limiting the movement of said cam, one side wall of said chute being movable relative to the opposite side wall, and means operated by the actuating mechanism for moving said movable wall of the chute when the latch mechanism is ineffective.

9. In a newspaper vending machine, the combination with an ejector, of mechanism for actuating said ejector, means forming a coin chute, latching mechanism for limiting the movement of the ejector from its home position, said latching mechanism including a cam actuated by said actuating mechanism and a cam follower, cooperating catch elements on the cam and cam follower for limiting the movement of the cam from its home position, said cam follower having a part adapted to extend into the coin chute, means for yieldingly urging said part into said chute and for rendering the catch elements effective upon movement of the cam from its home position, said cam having a surface cooperating with the cam follower for preventing said urging means from moving the said part into the chute when the cam is in its home position, said part being arranged to engage a coin of proper denomination supported in proper position by said chute when the cam is moved from its home position for preventing the catch element from limiting the movement of the cam, one side wall of said chute being movable relative to the opposite side wall, and means operated by the actuating mechanism for moving said movable wall of the chute when the latch mechanism is ineffective.

10. In a newspaper vending machine, the combination with an ejector, of mechanism for actuating said ejector, means forming a coin chute latching mechanism for limiting the movement of the ejector from its home position, said latching mechanism including a cam actuated by said actuating mechanism and cam follower, cooperating catch elments on the cam and cam follower for limiting the movement of the cam from its home position, said cam follower having a part adapted to extend into the coin chute, means for yieldingly urging said part into said chute and for rendering the catch elements effective upon movement of the cam from its home position, said cam having a surface for moving the said part out of the chute when the cam is being moved toward its home position whereby the chute may receive a coin and having a surface cooperating with the cam follower for preventing said urging means from moving the said part into the chute when the cam is in its home position, said part being arranged to engage a coin of proper denomination supported in proper position by said chute when the cam is moved from its home position for preventing the catch element from limiting the movement of the cam, one side wall of said chute being movable relative to the opposite side wall, and means operated by the actuating mechanism for moving said movable wall of the chute when the latch mechanism is ineffective.

11. In a newspaper vending machine, the combination of an ejector, means for actuating said ejector, means providing a vertically extending coin chute, latch mechanism having a part adapted to extend into said chute and associated with the actuating mechanism for rendering the latch mechanism ineffective, said latch mechanism part being arranged to engage the face of a coin in the chute for rendering the latching mechanism ineffective, a side wall of said chute being spreadable for dumping said coin, and means operated with the actuating mechanism for moving said side wall of the chute when the latch mechanism is ineffective.

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