

April 9, 1929.

S. S. LIEBERMAN

1,707,986

NEWSPAPER VENDING MACHINE

Filed Oct. 16, 1922

3 Sheets-Sheet 1

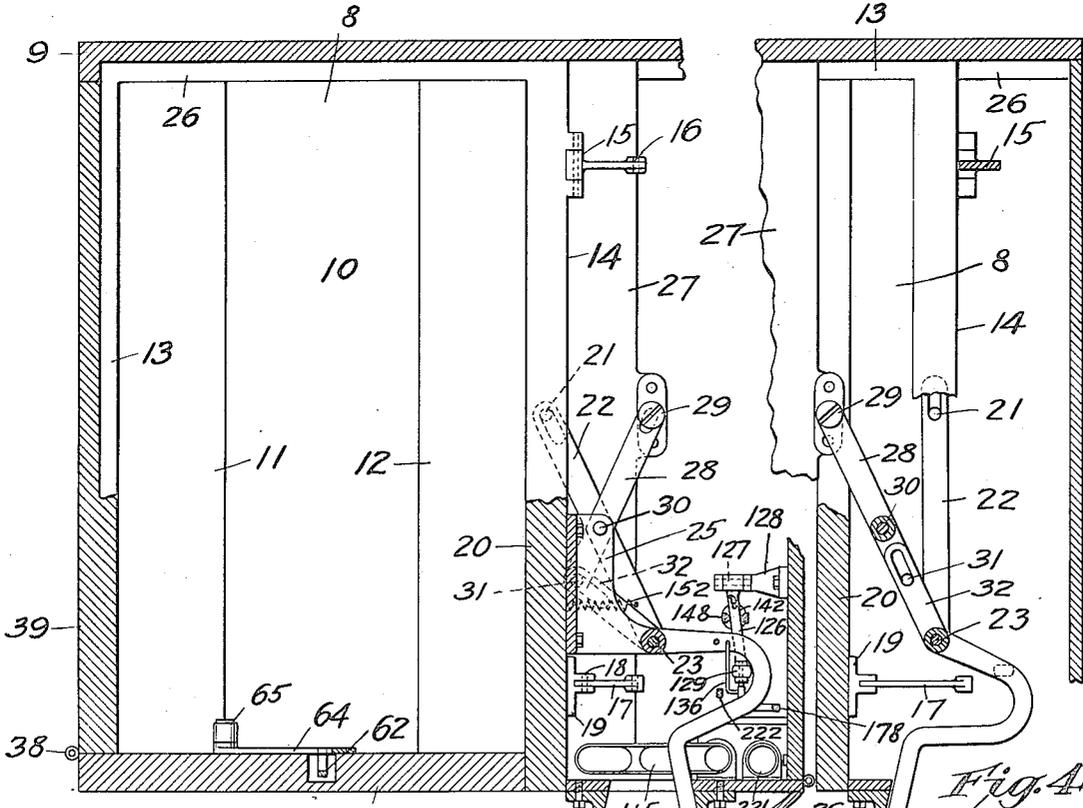
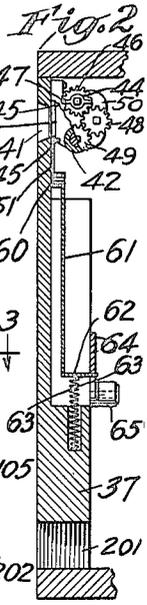
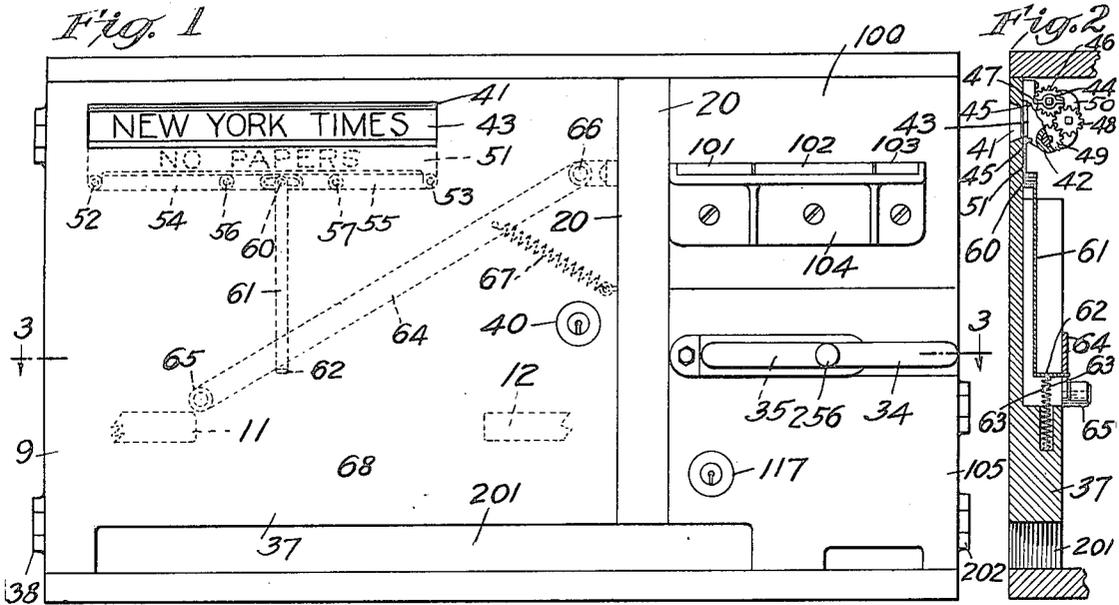


Fig. 3
Fig. 4
INVENTOR
Stanley S. Lieberman
BY
Harry J. Cohen
ATTORNEYS

April 9, 1929.

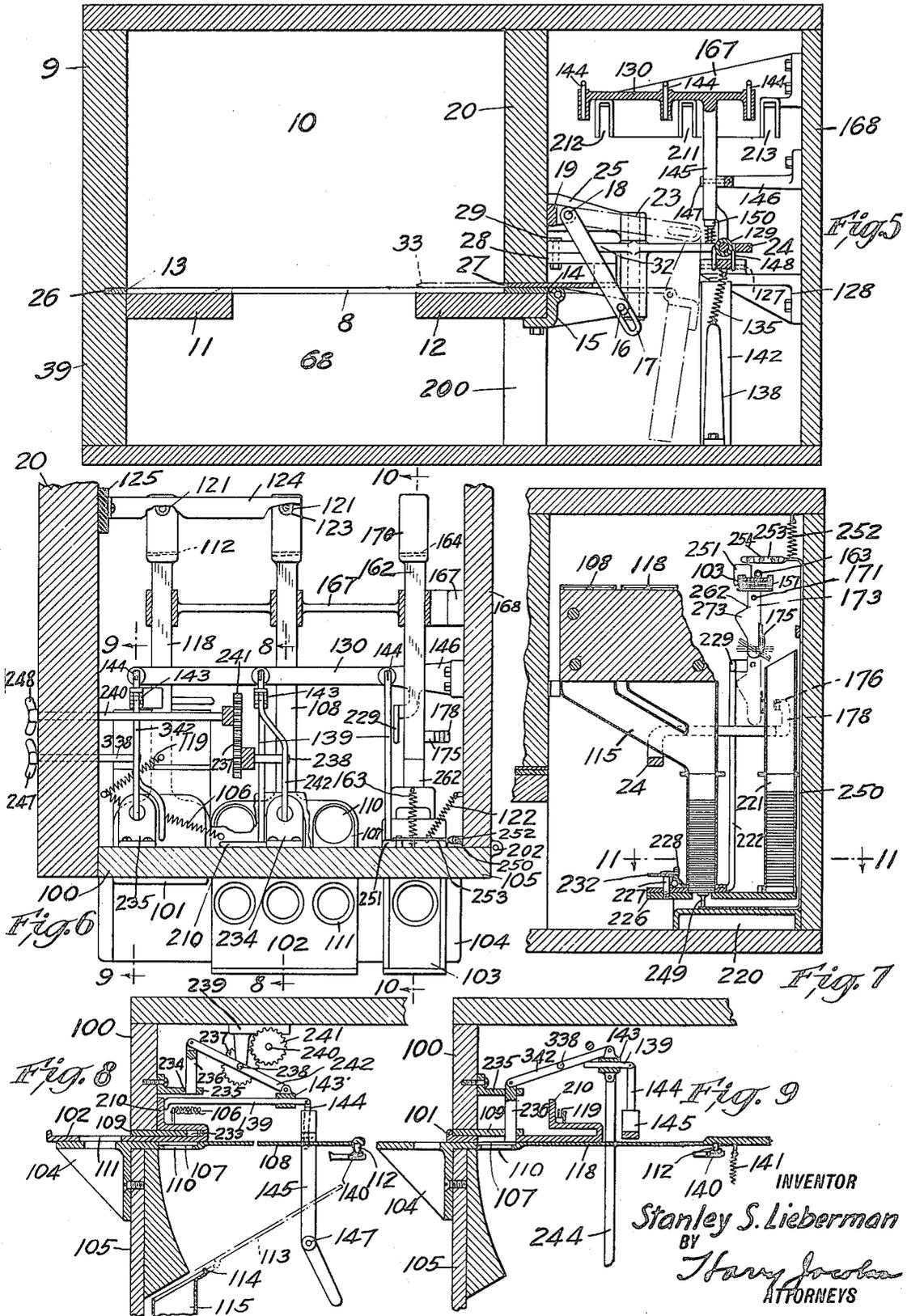
S. S. LIEBERMAN

1,707,986

NEWSPAPER VENDING MACHINE

Filed Oct. 16, 1922

3 Sheets-Sheet 2



INVENTOR
 Stanley S. Lieberman
 BY
 Harry Jacobson
 ATTORNEYS

April 9, 1929.

S. S. LIEBERMAN
NEWSPAPER VENDING MACHINE

1,707,986

Filed Oct. 16, 1922

3 Sheets—Sheet 3

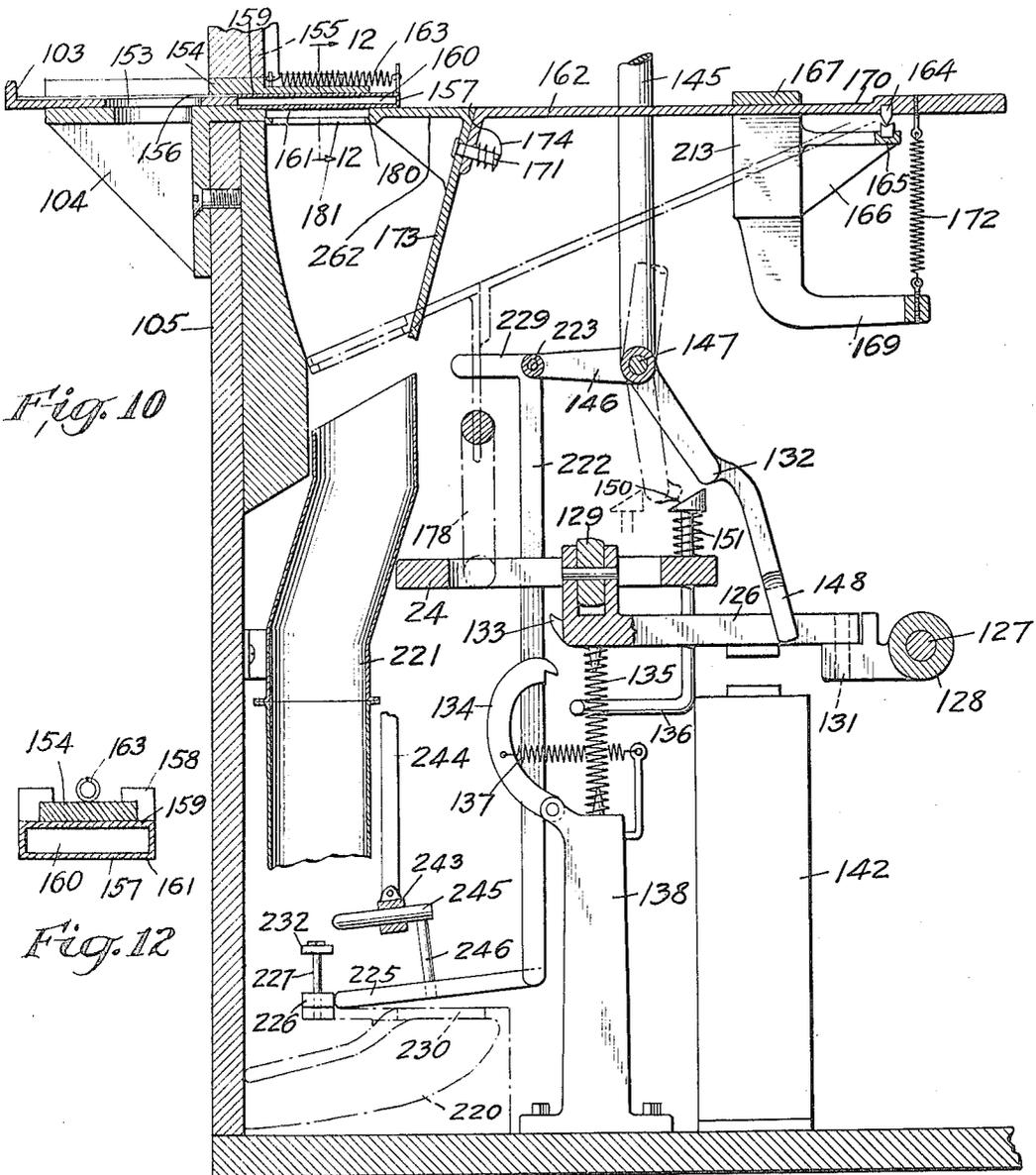


Fig. 10

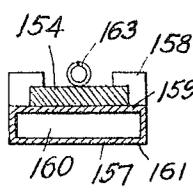


Fig. 12

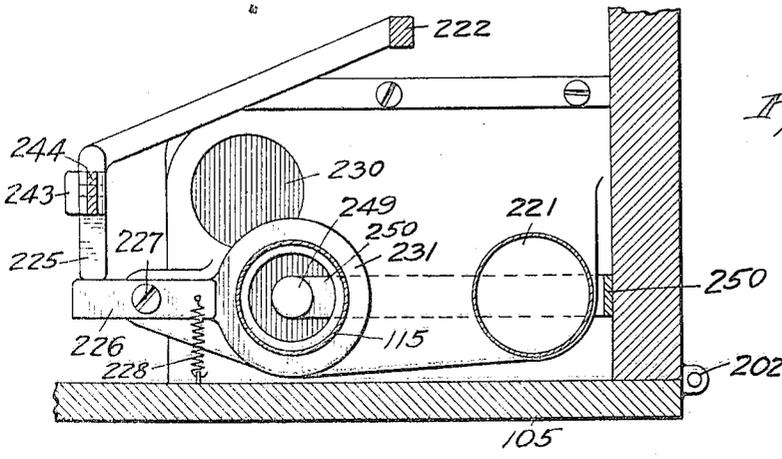


Fig. 11

INVENTOR
Stanley S. Lieberman
BY
Harry Jacobson
ATTORNEY

UNITED STATES PATENT OFFICE.

STANLEY S. LIEBERMAN, OF NEW YORK, N. Y.

NEWSPAPER-VENDING MACHINE.

Application filed October 16, 1922. Serial No. 594,361.

This invention relates to coin-controlled newspaper vending machines, and has for one of its objects the provision of means capable of being released by the insertion of a predetermined number of coins of predetermined denomination into said machine for delivering a newspaper and the proper amount of change to the purchaser.

Further objects contemplated by this invention are; the provision of means for normally locking the delivery and change making mechanism and for releasing said mechanism under predetermined conditions; the provision of means whereby the machine may be quickly and easily adjusted for selling newspapers varying in price; the provision of means for automatically locking the machine and preventing the reception of coins of high denomination should the supply of coins in the change-making coin reservoir become exhausted; the provision of means for indicating the name of the newspaper to be vended by the machine; the provision of automatic means for notifying the prospective purchaser that the machine is empty of newspapers when the supply is exhausted; the provision of means for rendering the machine inoperative when it is attempted to insert coins of the wrong diameter, thickness or weight in said machine; and the provision of means for automatically varying the amount of change deliverable in return for a coin of high denomination by the change making mechanism, depending on the price of the newspaper vended. Other objects of this invention will appear as the description progresses.

In the drawings accompanying this specification, Fig. 1 is a front elevational view of my improved machine. Fig. 2 is a vertical section of a portion of the same. Fig. 3 is a horizontal section on the line 3—3 of Fig. 1.

Fig. 4 is a sectional view similar to Fig. 3 showing part of the delivery mechanism in the delivering position thereof. Fig. 5 is a transverse vertical section of my improved machine. Fig. 6 is a horizontal section of the coin receiving, delivery, and change controlling mechanism. Fig. 7 is a transverse vertical section of the coin receiving and change making mechanism. Fig. 8 is a vertical section on the line 8—8 of Fig. 6, showing part of the coin receiving mechanism. Fig. 9 is a vertical section on the line 9—9 of Fig. 6 showing one of the coin receiving devices locked in its inoperative position. Fig. 10 is

a vertical section on the line 10—10 of Fig. 6, showing the means for locking and unlocking the delivery lever. Fig. 11 is a horizontal section on the line 11—11 of Fig. 7, showing part of the change making mechanism, and Fig. 12 is a vertical section on the line 12—12 of Fig. 10.

My improved machine comprises in part, a box 9 adapted to hold a pile of newspapers therein, an operating or delivery lever which operates mechanism suitable for delivering one newspaper at a time from the bottom of the pile to the purchaser, mechanism for automatically releasing said lever when a coin or coins of the proper denomination and size and weight are inserted in said mechanism, and devices for making and delivering change to the purchaser. The newspapers are preferably arranged horizontally in the compartment 10 of the box 9. Part of the pile of newspapers rests on the fixed support 11 which is of less width than said compartment and which reaches partway across one side thereof. (Figs. 3 and 5). A second support 12 for the pile of newspapers is arranged on the other side of the compartment 10 and extends part way thereinto. Said support 12 is so arranged that it may readily be moved out of the way to allow a single newspaper to be removed from the bottom of the pile and to be dropped into a delivery chute, as will be described more fully hereinafter.

For withdrawing a newspaper from the bottom of the pile, a frame 13 is provided. Said frame has an opening 8 therein, preferably of the size of the folded newspaper to be sold, and is preferably arranged to slide in suitable grooves 26 formed in the sides of the box 9. The height of said frame is made preferably somewhat less than the thickness of said folded paper, so that a single paper normally rests in said opening and upon the supports 11 and 12. Movement of said frame 13 to the right, (Fig. 4) carries the newspaper lying therein, out from the bottom of the pile into a position from which said paper may be readily delivered to the purchaser. The support 12 is hinged to the outermost edge 14 of said frame 13 by means of suitable brackets 15 shaped to fit not only the edge 14 but also part of the under surface of the support 12. At the outer end of the extension arm of the bracket 15, is secured the link 17, as by means of the pin 16 operating in a suitable slot in the lower end of said link 17. Said link is pivoted at 18 to the bracket

19, which is securely fastened to the partition 20 of the box 9. The above described link 17, together with the brackets 19 and 15 enable the support 12 to be moved out of the paper supporting position when the hollow frame 13 and the newspaper carried therein are moved horizontally to the right, said support 12 and the link 17 connected thereto assuming the position indicated by the dotted lines in Fig. 5, in which position the single newspaper carried by said frame 13 is unsupported and may easily drop out of said frame.

The mechanism for moving the frame horizontally will now be described. The main delivery or operating lever 24 is pivoted at 23 on the main bracket 25, said bracket being fastened to the box partition 20. An extension 22 on said lever 24 has a slot at the outer end thereof in which the pin 21 on said frame may operate. For maintaining the lever 24 in its normal position, a tension spring 152 is secured thereto. In order to support the pile of newspapers in the compartment 10 of the machine while the bottom newspaper is being removed by the sliding frame 13, a supplementary plate 27 is inserted simultaneously with the removal of the support 12, just above the lowermost paper of the pile. The lever 28 is suitably connected at one end thereof to the plate 27 as at 29, and is suitably pivoted to the main bracket 25 as at 30 for movement horizontally. The other end of the lever 28 carries the pin 31 operating in a suitable slot in the branch arm 32 of the main delivery lever 24. The plate 27 is preferably bevelled at its left edge 33 to allow the entrance thereof more readily between the two lowermost papers of the pile, and is shown in its innermost position by the dotted lines in Fig. 5.

It will be seen from Fig. 3 that on the movement of the exposed outer end of the lever 24 manually to the left against the action of the spring 152, the arm 22 thereof is moved about its pivot 23 to the left carrying the frame 13 and the paper resting therein to the right a sufficient distance to clear the support 11. Simultaneously, the branch arm 32 of the lever 24 is moved to the right about its pivot 23, causing the lever 28 to rotate about its pivot 30 and thereby to move the plate 27 inwardly to the left in between the two lowermost papers of the pile, and causes said plate 27 temporarily to support the pile along the right side thereof. On the above described movement of the frame 13 toward the right, the supporting member 12 is carried along with said frame. (Fig. 5).

The link 17 is caused to rotate about its pivot 18 on said movement of said frame 13, whereby said support 12 is swung downwardly about its hinge 14 on said frame, toward the position indicated in dotted lines, wherein it is completely out of the way of the paper, and allows said paper to drop out of said frame. The partition 20 is suitably cut away near the bottom thereof as at 200 to allow the members 27 and 12 to pass therethrough and to allow the lowermost released paper to drop to the bottom of the box 9 and out through the opening 201 in the front of said box, guided in its movement by a curved chute of the type usually employed as a guide and hence not shown.

Means are provided for locking the lever 24 against movement until the insertion into the machine of coins of the proper number and denomination to purchase a copy of the newspaper vended, and said means will be described in detail hereinafter.

The outer end 256 of the lever 24 is guided by the sides of the opening 35 in the guide member 36, and is provided with a cover plate 34 near the end thereof whereby the opening 35 remains covered in all positions of said lever 24, and tampering with the coin mechanism in said box is prevented. The front of the machine comprises the door 37 hinged to the left side 39 of the box 9 as by means of the hinges 38, said door being locked normally by the lock 40, Figs. 1 and 3. Near the upper end of said door, (Fig. 2) a slot 41 is provided, through which slot is visible a portion of the flexible sheet 43 on which the titles of the various newspapers which it is intended to sell are printed. Said sheet 43 is normally wound up upon the rolls 42 and 44 sufficiently to display the name of the paper contained in the newspaper compartment 10, and is guided close to the opening 41 by means of the stationary guide pins 45. The wing nut 47 and gear 46 are mounted on the same shaft on which the upper roll 44 is mounted. Said gear 46 meshes with the intermediate gear 48 mounted on the bracket 50. Said bracket is fastened to the inside of the door 37 and carries the shafts on which the rolls 44 and 42 are mounted. The gear 48 meshes with the gear 49 mounted on that shaft which supports the lower roll 42 in such a manner that when the upper roll 44 is manually rotated through the wing nut 46, the lower roll 42 is rotated in the same direction, whereby the sheet 43 is unwound from one roll and wound up on the other thereby changing the name of the newspaper displayed to correspond with the paper being vended. Said wing nut being readily accessible when the door 37 is opened for inserting newspapers in the compartment 10, it will be seen that the sheet 43 may be quickly shifted as required.

The means for automatically notifying the prospective purchaser that the supply of newspapers is exhausted, will now be described. The sign 51, reading No papers is normally maintained below the opening 41 and out of sight. To the ends of said sign, the levers 54 and 55 are pivotally connected as

at 52 and 53 respectively, said levers being each pivotally mounted on the door 37, as at 56 and 57 respectively. Grooves are provided at the inner ends of said levers, in which grooves the pin 60 of the substantially vertical link 61, is inserted. Said link 61 has a horizontal projection 62 at the lower end thereof resting on the compression spring 63, which serves to raise the link 61 and thereby to maintain the sign 51 normally down out of sight. When the compartment 10 is empty of newspapers, downward movement of said link 61 is effected through the lever 64. Said lever is pivoted at 66 on a suitable bracket, and is caused to strike the horizontal projection 62 of the link 61, pulling said link down against the action of the spring 63 and moving the ends 52 and 53 of the levers 54 and 55 upwardly, whereby the sign No papers is raised immediately behind the slot 41 of the door 37. In the position of the parts indicated in Fig. 1, in which there are no papers in the compartment 10, the roll 65 on the end of the lever 64, which rests normally on the top of the pile of newspapers, is about to slip down into the empty space 68 between the supports 11 and 12, urged thereto by the spring 67. When said roll slips into the space 68, the lever 64 is caused to engage the projection 62 suddenly, thereby carrying the link 61 downwardly and raising the sign as above described. It will be seen that since the roll 65 is normally raised by the papers out of contact with the link 61, the spring 63 is sufficiently strong to maintain the sign out of visible position, and that only when the compartment is empty is the stronger spring 67 able to cause the sudden engagement of the lever 64 and the link 61.

While the improved machine illustrated is designed for the sale of newspapers at the price either of two cents or of three cents a copy, it is obvious that it is adaptable for the sale of newspapers at any desired price. In the illustrated embodiment of my invention, the machine has three coin slides numbered 101, 102, and 103 respectively. The slide 101 is designed for the reception of two one cent coins, the slide 102 for the reception of three one cent coins, and the slide 103 for the reception of a single five cent coin. In the drawings, (Figs. 6 to 11) only the slides 102 and 103 are shown in operative position, indicating that the newspaper in the compartment 10 is to be sold at three cents a copy, the slide 101 being locked out of operative position until required for the sale of two cent papers, when the slide 102 is in turn, locked in inoperative position. All of the slides are supported upon the bracket 104 which is suitably secured to the front of the machine. Each of said slides is arranged to operate in a rectangular groove in the stationary box front 100 at the right of the partition 20. A door 105 is disposed below said front 100 and is hinged

to the box 9 at 202. The slide 102 has three holes 111 therein, each of slightly greater diameter than that of a one cent coin. Supporting said slide by means of its horizontal member is the bracket 104 which has a series of smaller holes therein arranged coaxially with the coin holes in said slide and designed to allow coins smaller than one cent coins to fall entirely through the slide and bracket. One end of the compression spring 106 is arranged to engage said slide, while the other end thereof is abutted against the side of the box 9, in such a manner that the inward push of the slide by the purchaser is first resisted by said spring, and afterwards aided when part of the inward movement of the slide has been effected. A similar spring 119 performs the same function for the slide 101, while the spring 122 acts in the same manner for the slide 103.

Each of the slides 101 and 102 has an upturned portion 210 thereon extending inside of the box front 100 and designed as a stop for engaging the inside of the box front when the slide is returned to its outermost position, ready for the insertion of additional coins. For guiding the coins in the slide on the inward movement thereof and for preventing the tilting of said coins in said slide, a guide strip 109 is secured to the box front 100 in the opening just above the upper surface of the slides 101 and 102, the under surface of the coin being guided by the upper surface of the bracket 104, until the slide reaches its innermost position. In said position, the coins are carried to an opening as 107 in a coin receiving lever, as 108 and 118, and fall through the slide on to said lever. The hole 107 extends only part way through the lever 108, a second hole 110, somewhat smaller in diameter than the hole 107 extending the remainder of the distance through the lever for allowing coins smaller than those required to operate the mechanism to fall through.

The coin receiving levers 108 and 118 for receiving three and two cents in coins respectively, being substantially alike and operating in a similar manner, a description of one will suffice for both. Each of said coin levers preferably has a knife edge pivot 112 projecting from the under side thereof and is supported thereby in the notched bearing 140 for easy movement about said knife edge. Normally said levers are in a horizontal position, the inward or rearward ends thereof being of somewhat greater weight than the outer or forward ends. The preferably weak tension spring 141 serves to maintain each of said levers in its normal position. The lever is so balanced, however that when the coins drop from the coin slide on to the end thereof, the additional weight is sufficient to rotate said lever about its pivot against the action of the spring 141 to the position shown

in dotted lines at 113, Fig. 8. The coin opening 107 at the end of said lever is enlarged tangentially to allow the coins therein to slide off said lever into the branched receptacle 115, aided thereto by the upward projections 114 on the rim of said receptacle, which projections engage and tilt the coins up, and free them from the coin lever. When the door 105 is opened by unlocking the lock 117, the receptacle 115 becomes accessible for the easy removal thereof together with the coins contained therein. A change making device, a full description of which will follow, is attached to the lower end of said receptacle 115 and serves to deliver the proper number of one cent coins in change when a five cent coin is deposited in the machine in payment for a newspaper.

The roll 129 supported in the forked end of the arm 126, is normally positioned in contact with and to the left of the operating or delivery lever 24, (Figs. 3 and 10), and acts to prevent movement of said lever 24 and the consequent delivery of a paper, until the proper coins are first inserted into the machine. When the coins have been inserted and the coin slide pushed inwardly, it then becomes possible to move the main lever 24 through a small angle, and after the coins have operated the proper coin lever 108 or 118, the remaining delivery movement of the lever 24 is permitted by means of the mechanism which will now be described. The front end of a longitudinally slidable rod 139 is arranged to engage each projection 210 of the slides 102 and 101 and the projection or flange 251 of the member 157 operated by the slide 103, said rod being supported for longitudinal movement in a movable bearing 143. The rear end of said rod 139 is secured to the long pin 144, which is slidably inserted in the upper end of the roll operating lever 145. The lower end 148 of said lever 145 is forked to fit around the roll arm 126, which arm is obliquely disposed in the machine. For supporting said arm 126, a bracket 128, secured to the side of the compartment containing the coin mechanism and rotatably mounted on the stud 127, is provided. Said bracket is pivoted to one end of the roll arm 126 as by means of the pin 131 for allowing limited horizontal oscillation of said arm about said pin, the roll 129 being carried at the other end of said arm.

When the slide is pushed inwardly, the rod 139 is caused to move in the same direction by the projection 210 of said slide, thereby rotating the lever 145 about its pivot 147 in the bracket 146, and causing the forked end 148 of said lever to move outwardly or toward the front of the box. Such movement of the fork swings the roll arm 126 about its pivot 131 and moves the roll 129 a slight distance away from the lever. If no coins have been inserted in the slide, no further move-

ment of the lever is possible, and delivery of a paper is prevented. If however, the proper coins have been inserted in the slide, the coin lever 108 or 118 is rotated about its pivot sufficiently to bring the contact point 121 near the end of said lever into contact with the contact strip 124, closing a circuit not shown to the electromagnet 142. Said magnet thereupon draws down the roll arm 126, swinging said arm together with the bracket 128 about the shaft 127 and removing the roll 129 from the path of the lever 24, thereby allowing the further operation of said lever 24 for the delivery of a paper.

The contact point 121 is insulated from the coin lever by the insulation 123, while the contact strip 124 is insulated from and fastened to and insulated from the partition 20 as by means of the insulation 125, said strip, point and magnet being in a normally open circuit which receives current from a source not shown.

It will be seen that in the mechanism above described the magnet may be demagnetized immediately after the coins have dropped off the coin lever due to the breaking of the circuit when the coin lever is pulled back to its normal position by the spring 141. Means are therefore provided for maintaining the roll arm 126 in its lowermost position during the movement of the lever 24. Said means comprises the tooth 133 at the end of the roll arm 126, said tooth being adapted to engage and to be locked by the tooth on the end of the pawl 134. The spring 137 secured to said pawl serves to maintain said teeth in engagement until released.

On the movement of the lever 24 for delivering a paper to the purchaser, the bent rod 136 carried by said lever is caused to strike the pawl 134, whereby said pawl is rocked about its pivot in the bracket 138 against the action of the spring 137, and is disengaged from the roll arm 126, said arm being urged into its normal locking position ready for the reengagement thereof with the roll arm tooth, and for the repetition of the operation.

The lever 145 in connection with the slide-operated rods 139 and other mechanism is preferably utilized for restoring said slides to the outermost or forwardmost positions thereof ready for another purchaser. A long, horizontally disposed cross bar 130 is preferably formed at the upper end of the lever 145, and carries a series of vertically slidable pins 144, which are suitably secured to the rearmost ends of each of the rods 139 (Figures 6 and 8). Movement of said lever 145 about the pivot 147 is caused by one of said rods 139 when any one of the slides 101, 102 or 103 is pushed inwardly. Near the lower end of said lever 145, and above the fork 148 thereon, a preferably rounded projection 132 is provided. Adjacent to said projection, a bevelled pin 150 is arranged

in the normal position thereof. Said pin 150 is carried on the upper end of the bent rod 136 mounted on the main delivery lever 24 and is urged upwardly by the spring 151. On the partial rotation of the lever 145 about its pivot 147 as above described when a coin slide is pushed inwardly, the rounded projection 132 of said lever rides up on the pin 150, depressing said pin against the action of the spring 151, and assuming the position shown by the dotted lines in Fig. 10 in which said projection 132 is to the left of said pin 150.

After the roller 129 has been removed from the path of the main lever 24 through the action of the magnet 142, said lever is freed for manual rotation by the purchaser. Said rotation now carries the pin 150 from its position to the right of the projection 132 under the projection 132 of the lever 145 to a position at the left of said projection, at which point the spring 151 raises said pin 150 to its uppermost height. After the completion of the delivery movement of the lever 24, the purchaser releases said lever, which is brought back to its initial position by means of the spring 152 (Fig. 3) as hereinbefore mentioned. On the return movement, the pin 150 engages the projection 132 of the lever 145, and carries said projection with it to the right, thereby rotating said lever 145 back to its initial position. The rotation of the lever 145 moves the cross bar 130 thereon and the rods 139 in the proper direction to force the slides 101, 102, and 103, or whichever one of the slides has been manipulated, out to its outermost or initial position, ready for the next purchaser.

In view of the change making feature of my invention, it becomes particularly desirable and advantageous to guard against the possibility of operating the change making mechanism by means of spurious coins or slugs, in connection with the five cent coin slide 103. Means are therefore provided for preventing the operation of that mechanism which is operatively connected to said slide 103 when no coins or when coins of the wrong diameter, thickness or weight are inserted into said slide. Said means comprises in part a guide member 154 so secured in the slide opening in the box front 100, by means of the upwardly projecting portion 155, as to leave a space 156 between the lower face of said guide and the upper face of the slide supporting bracket 104, just high enough to allow a five cent coin inserted in the coin opening 153 of the slide to pass through said space. Said guide member is adapted to guide the hollow protecting member 157 in its forward and rearward movement, as by means of the upwardly extending flange members 158 on the member 157, said flange members being attached to said member 157 and arranged to engage and rest on the upper surface of said guide 154. The member 157 is made hollow by providing an opening 160 therein of the same height as that of the slide 103, whereby said slide when empty of coins is adapted to enter into said guide opening 160, on the rearward or inward movement of said slide without operating any of the mechanism. However, the slide 103 is made of such thickness or height that when a five cent coin is inserted in the opening 153, said coin projects above said opening an amount sufficient to allow the upwardly projecting part of said coin to engage the forward edge of the wall 159 of said guide 157. On the rearward movement of the slide, the upwardly projecting portion of the coin engages the member 157 and moves said member rearwardly against the action of the tension spring 163, thereby uncovering the opening 161 in the coin lever 162. The coin carried by the slide is allowed to fall onto said coin lever when the slide is pushed to its rearmost position, aided therein by the compression spring 122. It will be seen that coins of less thickness than the five cent coins cannot operate the protecting member 157, that those of greater thickness cannot pass the guide 154 to reach or operate said protecting member, that coins of greater diameter cannot be inserted in the opening 153 and that those of less diameter fall through the opening made for that purpose underneath said hole 153 in the bracket 104.

An annular rim 180 is provided near the end of the coin lever 162 at the intersection of the walls of the coaxial holes 161 and 181, of the proper size to support a five cent coin. A coin of less than the proper diameter, if forced into the machine by the slide 103, drops through the opening 181 and fails to operate the mechanism. Said coin lever 162 is preferably supported and balanced on the notched bearing 165 by means of the knife edge 164. A bracket 167 is fastened to the wall 168 of the box 9. Said bracket guides the coin levers 108, 118 and 162 in the U-openings 211, 212 and 213 respectively (Fig. 5) made in the under side of said bracket, and has an extension arm 166 thereon in which the notched bearing 165 is carried. A second extension 169 carries one end of the lever tension spring 172, the other end of which is secured to the coin lever 162.

Said coin lever is preferably made in two parts. The front part 262 has the coin openings 161 and 181 therein, and is normally arranged to be continuous with the remainder 170 of said lever. Said front lever 262 has a downwardly extending flange 173, on which the cam member 273 projecting toward the left from the edge thereof, is formed. The right edge of said flange 173 carries the contact spring 175 suitably insulated from the remainder of the lever and in a suitable electric circuit not shown, to the magnet 142. A

second contact point 176 is carried by and suitably insulated from the post 178 upstanding from the main operating lever 24, said post being arranged in the circuit above mentioned to the magnet 142.

The lever 162 is so balanced and the spring 172 is so proportioned that the weight of the five cent coin on the end of said lever serves to depress the weighted end against the action of the spring 172 to a point where the contact spring 175 is alongside but not touching the contact point 176. The roller 129 is moved a short distance out of the path of the main lever 24 when the slide 103 is operated, in the same manner and by the same mechanism described in connection with the similar movement of said roller through the slides 101 and 102.

Said slight movement of the roller 129 enables the purchaser to move the main lever 24 sufficiently to bring the contact point 175 of the lever 262, and 176 of the lever 24 together, thereby closing the circuit to the magnet 142 and withdrawing the roller 129 completely out of the path of said main lever. Operation of said main lever 24 causes the front portion of the coin lever 262 to be rotated about the pin 171 which connects the two portions of the lever 162 pivotally together, against the action of the coil spring 174. Said spring tends to bring the two lever parts 262 and 170 into their normal continuously disposed position. Rotation of the lever portion 262 as above described tilts said portion sufficiently to discharge the coin therefrom into the coin receptacle 221, from which the accumulated coins may be removed by one having the keys to the lock 117. Said rotation of the lever part 262 accomplishes the further result of operating the change making mechanism as will be more fully described hereinafter. After the coin has been deposited in the receptacle provided therefor, and the lever 24 drawn back to its initial position, the coil spring 174 rotates the lever portion 262 back to its normal position, and the spring 172 carries the entire lever back to its initial position ready for the repetition of the operation. If the coin or slug inserted in the slide 103 is not of the proper weight, but is too light, the contact point of the lever 262 is not brought down far enough to reach a point opposite the contact point 176, but remains thereabove, whereby no contact can be made, nor can the circuit be closed to release the main operating lever 24. The coin remains on the lever portion 262 and the slide 103 remains in its rearmost position, indicating to the caretaker of the machine that attention thereto is needed. Similarly, if the inserted coin be too heavy, the coin lever 162 drops down past the contact point 176, and may slide off said lever, without operating the mechanism. The rotation of the part 262 of said lever causes the

cam 273 thereon to engage and operate the change making mechanism, which will now be described.

The long lever 222 is pivoted at 223 on the bracket 146, which is suitably attached to the side of the box 9. The lower extremity 225 of said lever 222 engages the change plate lever 226 pivoted at 227, and normally held directly under the pile of one cent coins in the reservoir 115 by means of the spring 228. On the rotation of the lever portion 262 through the lever 24, the cam 273 engages the arm 229 of the lever 222, rotating said lever 222 about its pivot 223 and thereby causing the plate lever 226 to rotate about its pivot 227 to remove two coins from the bottom of the pile to the opening 230 of the change chute 220. The plate rim 231 is made substantially the height or thickness equivalent to that of two one cent coins for the purpose above mentioned.

A second plate lever 232 similar to the lever 226 is made of the thickness equivalent to that of a single one cent coin and is preferably positioned above the plate lever 226. Said second plate lever is adapted to be automatically thrown into operation to act together with the first plate lever 226 for delivering three one cent coins in change instead of two, when the slide 102 is locked out of operation and the slide 101 released for operation, as when the selling price of the paper vended is two cents. Referring to Figs. 6, 8 and 9, the guide strip 109 for each of the slides 101 and 102 has an opening 233 therein below a similar opening 234 in a stationary angle bracket 235 which is secured to the front 100 of the box. When the lock rod 236 is raised out of the opening 233, the slide is free to operate. It will be seen that either one of the slides 101 and 102 is always locked against operation by the lock rod 236 passing through both of the openings 233 and 234 and into either the coin hole 107 or 111 of the slide, so that a paper may be sold at the price corresponding to the number of coins needed to operate the unlocked slide mechanism.

The means for raising or lowering the locking rods 236 comprises in part the gear 237 on the shaft 238 which is supported in the bracket 239, said bracket being preferably secured to the top of the box. The shaft 240 on which the gear 241 meshing with the gear 237 is mounted, is carried by the partition 20. Mounted on and rotatable with the shaft 238 is the connecting rod 242, one end of which carries the bearing 143, hereinbefore mentioned. That one of said bearings 143 used in connection with the slide 101, is secured to the link 244, which carries a substantially horizontally disposed rod 245 slidably mounted in the bearing 243 at the lower end thereof. (Fig. 10). Said rod 245 has a downwardly projecting guide rod 246 secured near the end thereof and adapted to move longitudinally

in a suitable hole in the arm 225 of the change lever 222. When the shaft 338, (Fig. 9) carrying the connecting rod 342 is rotated as by means of the wing nut 247, the lock rod 236 may be lowered into the opening 233 of the slide 101; simultaneously, the link 244 is raised, withdrawing the rod 245 from engagement with the plate lever 232, and causing said lever 232 to become inoperative, so that only the plate lever 226 is allowed to operate to deliver change, and only two one cent coins in change can be given by the machine with the change mechanism in this position.

It may be desired to lock the slide 102, and to release the slide 101, whereby the machine becomes adapted for the sale of two cent papers, and may deliver three cents in change when a five cent coin is deposited. In this event, the wing nut 248 on the shaft 240 is turned in the proper direction to turn the rod 242, thereby lowering a rod 236 into the opening 233 of the guide 109 and into the coin opening of the slide 102 to lock said slide against operation. The wing nut 247 is then operated to raise the rod 236 which locks the slide 101, thereby releasing said slide, and lowering the link 244 to such a position that the rod 245 is adjacent to the upper plate lever 232. The movement of the lever 24 on the deposit of a five cent coin in the slide 103 as above described is now effective to cause the lever 262 to operate the change making lever 222 and the lower plate lever 226, and through the rod 245 operates the upper plate lever 232, whereby three one cent coins are removed from the bottom of the pile of coins and expelled through the change opening 230.

Means are provided for automatically locking the five cent coin slide 103 when the coin reservoir 115 is empty of one cent coins so that change cannot be made. Said means comprises the support 249 for the pile of one cent coins (Fig. 7) said support being carried at the lower end of the long rod 250 extending to a point above the upturned flange 251 of the hollow member 157. The tension spring 252 on said rod 250 serves to keep the support 249 in contact with the lowermost coin of the pile, by exerting an upward pull in said rod. At the upper end of said rod 250 and pivoted thereto is the lever 253 pivoted to the box front 100 at 254, so as to rotate about the pivot 254, said lever being so arranged as to have the left end thereof lowered into engagement with the flange 251 when the rod 250 is raised. This engagement occurs when the reservoir 115 is empty, whereupon the support 249 being no longer held down by the weight of the coins, is drawn into said reservoir by the spring 252, thereby rotating the lever 253 about its pivot 254 into engagement with the flange 251 and preventing horizontal movement of the slide operated member 157 until the weight of the coins inserted in the coin receptacle 115, is

sufficiently great to lower the rod 250 and the support 249.

It will be understood that the mechanism shown and described herein is merely illustrative of my invention; that I do not wish to limit myself to the specific devices shown, and that changes may be made in the proportions, arrangements, materials and design of the various sub-mechanisms without departing from the scope and the spirit of my invention.

I claim:

1. A newspaper vending machine comprising a compartment for holding a pile of newspapers therein, means for removing and delivering a single newspaper at a time from the bottom of the pile, locking means for said delivering means, and coin controlled means for releasing said locking means, including a coin slide, a pivoted coin lever adapted to be operated by a coin dropped therein by said slide, means interposed in the path of said delivering means, and means operatively connected to said coin lever for removing said interposed means from the path of said delivering means, and means for delivering coins in change.

2. In a newspaper vending machine, means for delivering a newspaper means for controlling said delivery means operated by a predetermined number of coins of a denomination less than the price of the newspaper or by the insertion of a single coin of a denomination greater than the price of the newspaper, a coin chute for said coins of lesser denomination, a coin receptacle at the extremity of said chute and means for delivering in change a predetermined number of coins of low denomination from said coin receptacle on the insertion of said coin of high denomination including means for removing the lowermost coins in said receptacle and means for receiving a coin of high denomination movable by the coin into position for actuating said coin removing means.

3. In a newspaper vending machine, means controlled by a coin of higher denomination than the price of the newspaper for delivering a newspaper, a coin slide adapted to receive a predetermined number of coins of low denomination simultaneously, said slide controlling said delivering means, a coin receptacle for said coins of low denomination, and means for delivering change for said coin of higher denomination from said receptacle.

4. In a newspaper vending machine, means adapted to receive a coin of predetermined higher denomination than the price of the newspaper, a reservoir for coins of low denomination, means controlled by said coin receiving means and said coin and by a predetermined number of said coins of low denomination for delivering a newspaper, means for delivering purchasing coins of low denomination into said reservoir, means for

delivering the proper number of coins from said reservoir in change, and means for automatically locking said coin receiving means against operation when said coin reservoir is empty.

5 5. In a newspaper vending machine, a coin slide adapted to receive a predetermined number of coins of low denomination for controlling the sale of newspaper at one price, a
10 second coin slide for a different number of coins of the same denomination for controlling the sale of newspapers at another price, a third coin slide adapted to receive a coin of higher denomination than the price of the
15 newspaper to be vended for controlling the sale of newspapers at either price, change making mechanism operatively connected to said third slide, means for locking one of said first and second coin slides in inoperative
20 position and for adjusting said change making mechanism to deliver the proper number of coins of low denomination in change, manually operable newspaper delivery means and means for normally locking said delivery
25 means adapted to be released on the insertion of coins to the proper amount in the unlocked one of said first and second slides or in said third slide and on the movement of the coin filled slide.

30 6. In a newspaper vending machine, a coin slide, means for delivering a newspaper, means for normally locking said delivering means, means for partly releasing said locking means on the inward movement of said
35 slide for allowing partial operation of said delivering means, and coin controlled means for completely releasing said delivering means.

40 7. In a newspaper vending machine, means for delivering a newspaper, means for normally locking said delivering means, a coin slide, means for partly releasing said locking means on the inward movement of said slide and means operable by a predetermined number of coins of predetermined denomination for completely releasing said locking means, and a guard for preventing the advance of a coin of other than the predetermined denomination by said slide thereby rendering
45 said delivering means operative only on the insertion of a coin of proper weight and diameter into said machine.

50 8. In a newspaper vending machine, a compartment for holding a pile of newspapers therein, manually operable means for delivering a newspaper from the bottom of the pile controlled by the insertion of a predetermined number of coins of a denomination less than the price of the newspaper or by the
55 insertion of a single coin of a denomination greater than the price of the newspaper, including a pivoted delivery lever, a roll arranged in the path of and normally preventing movement of said lever, and coin-controlled means for removing said roll from the
60

path of said lever, and means for delivering in change a predetermined number of coins of low denomination.

9. In a newspaper vending machine, a compartment for holding a pile of newspapers
70 therein, manually operable means for delivering a newspaper from said pile controlled by one of two predetermined numbers of coins of denomination less than the price of the newspaper and by a single coin of higher
75 denomination than the price of the newspaper, including a manually operable delivery lever, and coin slides operatively connected to said lever, and means for delivering change for said coin of higher denomination. 80

10. In a newspaper vending machine, means for delivering a newspaper controlled by the insertion into said machine of one of two predetermined numbers of coins of lower denomination than the price of a newspaper
85 and by a single coin of higher denomination than the price of a newspaper, a coin slide for the simultaneous reception of one of said predetermined numbers of coins, a similar coin slide for the other of said predetermined
90 numbers, a third coin slide for said coins of higher denomination, means for operatively connecting said slides to said delivering means, and means for delivering change for said coin of higher denomination. 95

11. In a newspaper vending machine, a reservoir for coins of low denomination, normally locked, manually operable means for delivering a newspaper, including a pivoted
100 lever, and a removable obstruction normally in the path of said lever, means controlled by a coin of higher denomination than the price of a newspaper for removing said obstruction, including a coin slide and means for operatively connecting said slide to said obstruction
105 and means for delivering the proper number of coins from said reservoir in change.

12. In a newspaper vending machine, means for delivering a newspaper controlled by a variable number of coins of variable
110 denomination, means for making change when a coin of higher denomination than the price of a newspaper is inserted into said machine, a main operating lever operatively connected to said newspaper delivering means
115 and to the change making means, means for normally locking said lever, and means for releasing said lever for manual operation on the insertion of said coins in said machine including coin slides and means for operatively connecting said slides to said locking means. 120

13. In a newspaper vending machine, a normally locked, manually operable lever, means operatively connected to said lever for
125 delivering a newspaper, means interposed in the path of said lever for locking said delivering means, and coin controlled means for releasing said delivering means comprising a reciprocable coin slide, a balanced lever
130

adapted to receive coins from said slide near the end thereof, an electric magnet, and means near the other end of said balanced lever for closing an electric circuit to said magnet for withdrawing said locking means.

14. In a newspaper vending machine, means for delivering a newspaper, including a pivoted lever means for normally locking said delivering means comprising spring pressed means interposed in the path of said lever and means for withdrawing said spring pressed means on the insertion of coins of the proper number and denomination into said machine and means for maintaining said locking means out of the path of said lever until the delivery operation has been completed.

15. In a newspaper vending machine, means for supporting a pile of newspapers, means for removing a paper from said pile including a coin-controlled lever, coin-controlled means for normally locking said lever adapted to be released on the insertion of coins of proper number and denomination in said machine electrically operable means for releasing said lever for operation, and means for maintaining said lever operating preventing means out of the path of said lever until the delivery operation has been completed, and means for making change operatively connected to said lever.

16. In a newspaper vending machine, a coin slide, a balanced coin lever adapted to receive a coin from said slide and to be rotated by said coin, a manually operable newspaper delivery lever, means for normally locking said delivery lever, means for partially unlocking said delivery lever on the inward movement of said coin slide, and means for completely unlocking said delivery lever on the rotation of said coin lever.

17. In a newspaper vending machine, normally locked means for delivering a newspaper, means for releasing said delivering means, a balanced lever adapted to be rotated by a predetermined number of coins of predetermined denomination for controlling said releasing means, a coin receiving part on said lever rotatable relatively to the remainder thereof and a change making mechanism operable by said coin receiving part.

18. In a newspaper vending machine, means for delivering a newspaper, an operating lever connected to said delivering means, means interposed in the path of said lever for normally locking said delivering means comprising a roll, an arm carrying said roll and an electro magnet adjacent to said arm and a balanced lever adapted to be rotated by coins inserted into said machine for closing an electric circuit to said magnet for withdrawing said roll from the path of said operating lever.

19. In a newspaper vending machine, means for delivering a newspaper, a coin

slide, a coin lever adapted to receive coins from said slide and to control said delivering means, and means operatively connected to said delivering means for restoring said coin slide to its initial position.

20. In a newspaper vending machine, a coin slide, a coin lever adapted to receive coins from said slide and to be rotated by said coins, a manually operable newspaper delivery lever, means for normally locking said delivery lever, and means operatively connecting said delivering lever with said slide for restoring said slide to its initial position.

21. In a newspaper vending machine, a coin lever adapted to receive a coin of predetermined higher denomination than the price of the newspaper to be vended and to be rotated through a predetermined angle by said coin comprising a front portion, a rear portion and a pin connecting said portions for relative rotation, means for delivering a newspaper, means for making change for said coin, and a manually operable actuating lever for operating said delivering means and for causing said front portion of said coin lever to rotate about said pin whereby said change making mechanism is operated and said coin is caused to drop from said coin lever.

22. In a newspaper vending machine, means for delivering a newspaper, a slide for receiving a coin of higher denomination than the price of the newspaper vended, means for locking said delivering means, means for operatively connecting said slide to said locking means for controlling said delivering means, and means for making change for said coin comprising a coin reservoir, a plate lever at the lower end of said reservoir adapted to move a predetermined number of coins less in value than that of the coin deposited, and means operatively connected to said delivering means for swinging said plate lever.

23. In a newspaper vending machine, means for delivering a newspaper, means arranged in the path of said delivering means for normally preventing operation of said means, a slide for receiving a coin, means for operatively connecting said slide to said operation preventing means for controlling the operation of said delivering means, means for maintaining said delivery preventing means out of the path of said means until the delivery operation has been completed and means for making change for said coin.

24. In a newspaper vending machine, a compartment for holding a pile of newspapers therein, means for removing and delivering a single newspaper at a time from the bottom of the pile, means for normally locking said removing and delivering means, means controlled by one of two predetermined numbers of coins of low denomination and by a single coin of higher denomination than the price of the newspaper for releasing said locking

means, including a pair of coin slides, operatively connected to said locking means, and means for rendering either of said slides inoperative, a receptacle for purchase coins of low denomination, and means for delivering change for said coin of higher denomination from said receptacle.

25. In a newspaper vending machine, means for delivering a newspaper, a manually operable lever operatively connected to said delivering means, coin controlled means ar-

ranged in the path of said lever for normally preventing operation of said lever, electrically operable means for releasing said lever for operation, and means for maintaining said lever operating preventing means out of the path of said lever until the delivery operation has been completed.

Signed at the city of New York, in the county of New York, and State of New York, this 12th day of October, 1922.

STANLEY S. LIEBERMAN.