Feb. 24, 1942. R. BARTEL ET AL 2,273,814

NEWSPAPER VENDING MACHINE

Filed Aug. 9, 1940 4 Sheets-Sheet 1

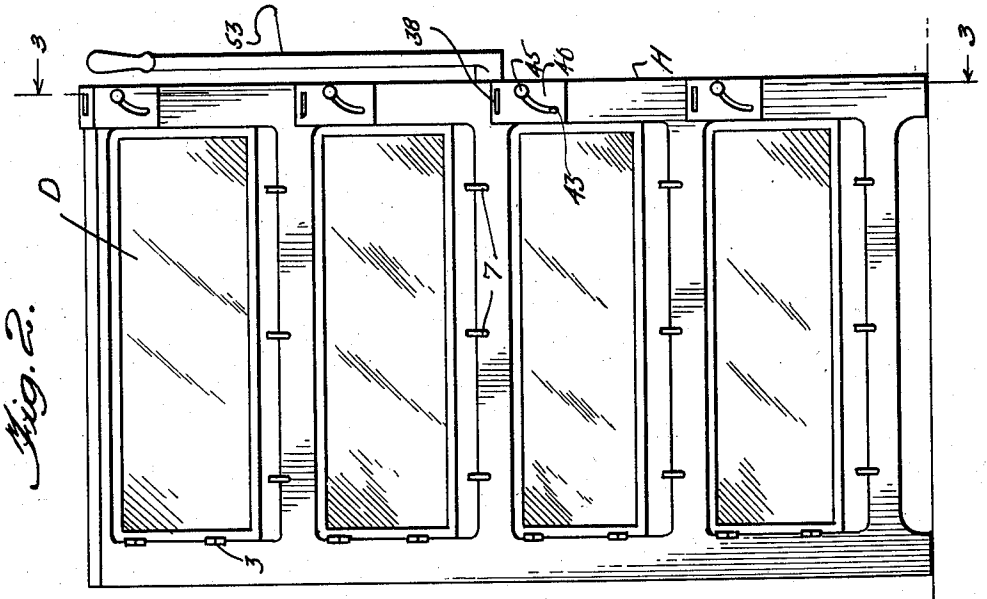


Fig. 2.

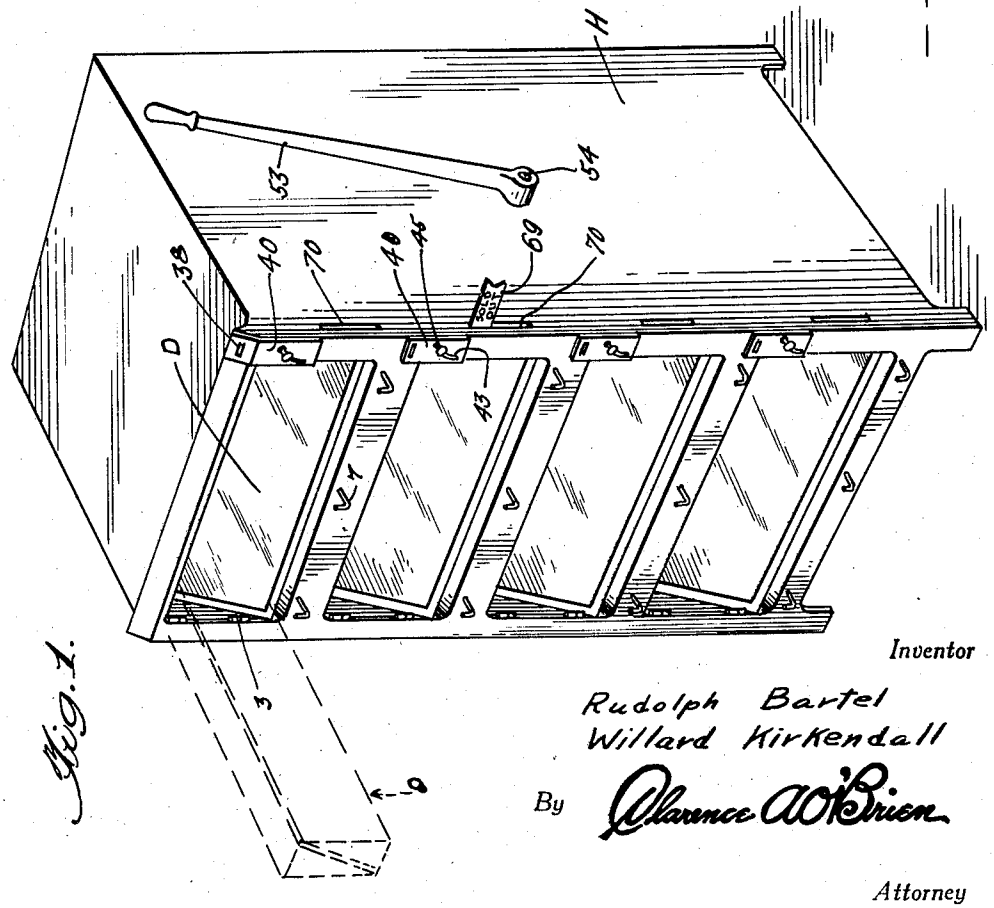


Fig. 1.

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NEWSPAPER VENDING MACHINE

Filed Aug. 9, 1940 4 Sheets-Sheet 2

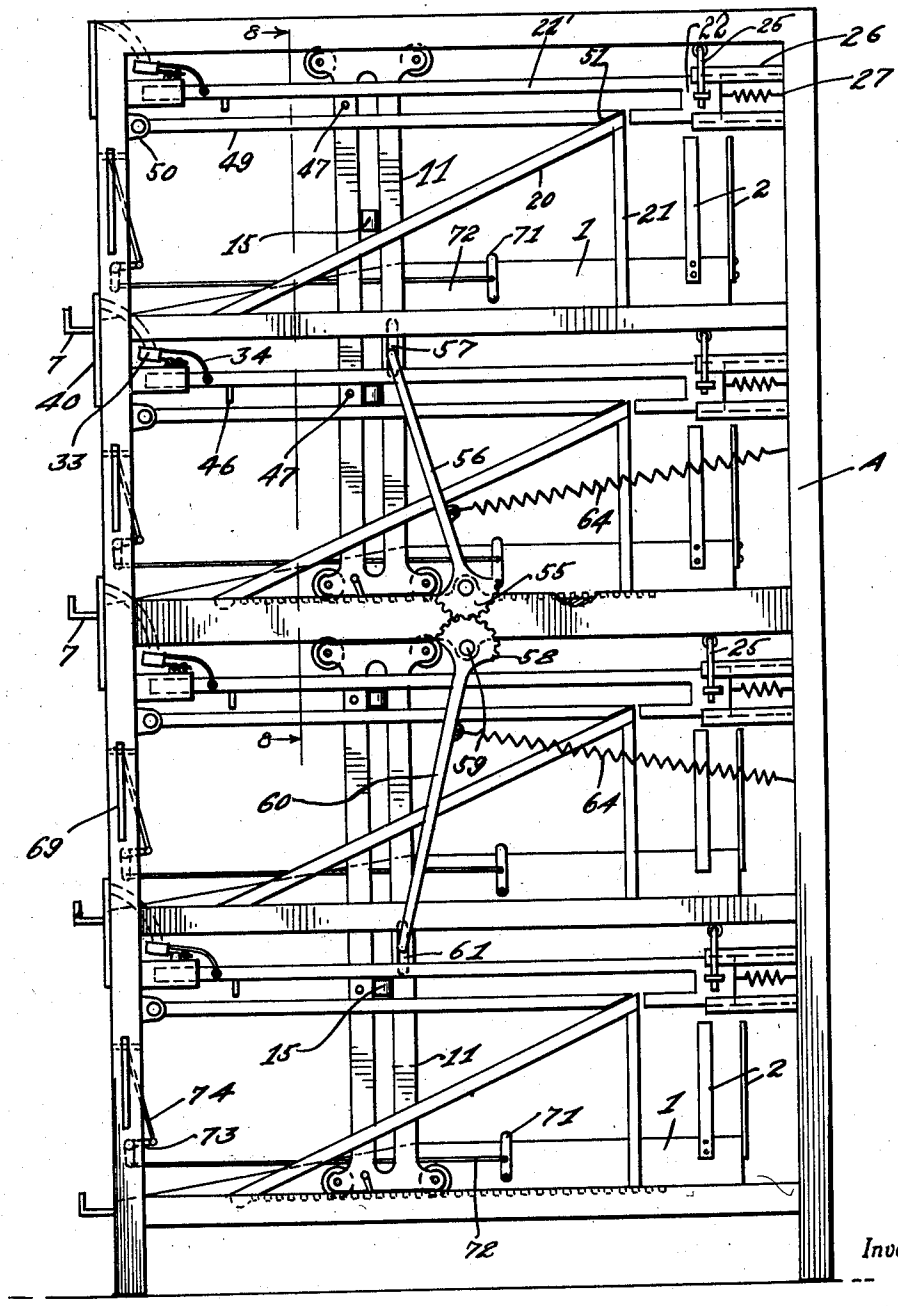


Fig. 3.

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NEWSPAPER VENDING MACHINE

Filed Aug. 9, 1940 4 Sheets-Sheet 3

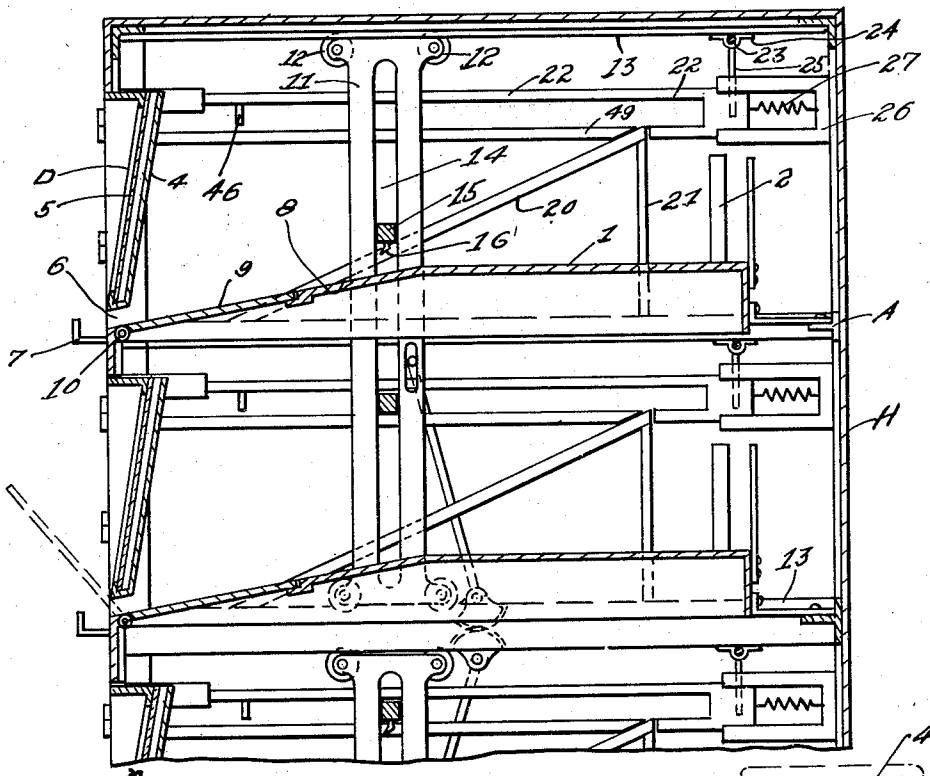


Fig. 4.

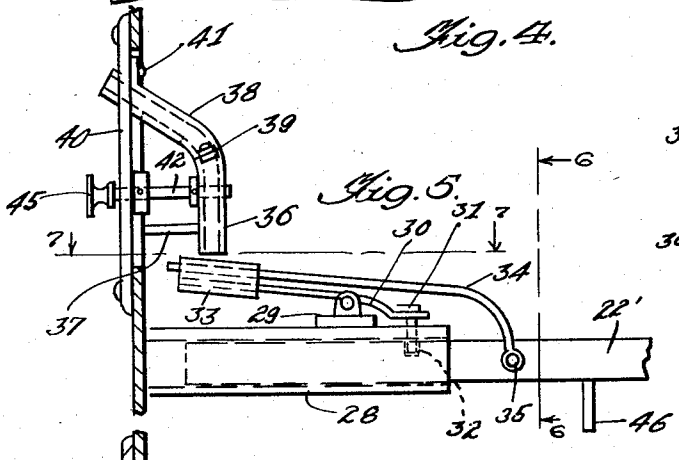


Fig. 5.

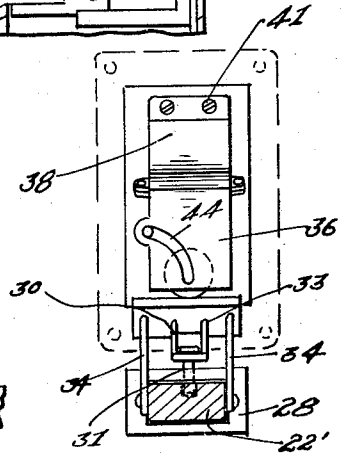


Fig. 6.

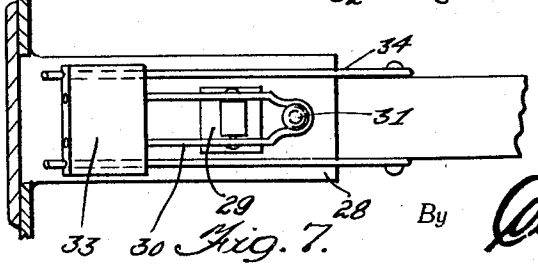


Fig. 7.

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NEWSPAPER VENDING MACHINE

Filed Aug. 9, 1940 4 Sheets-Sheet 4

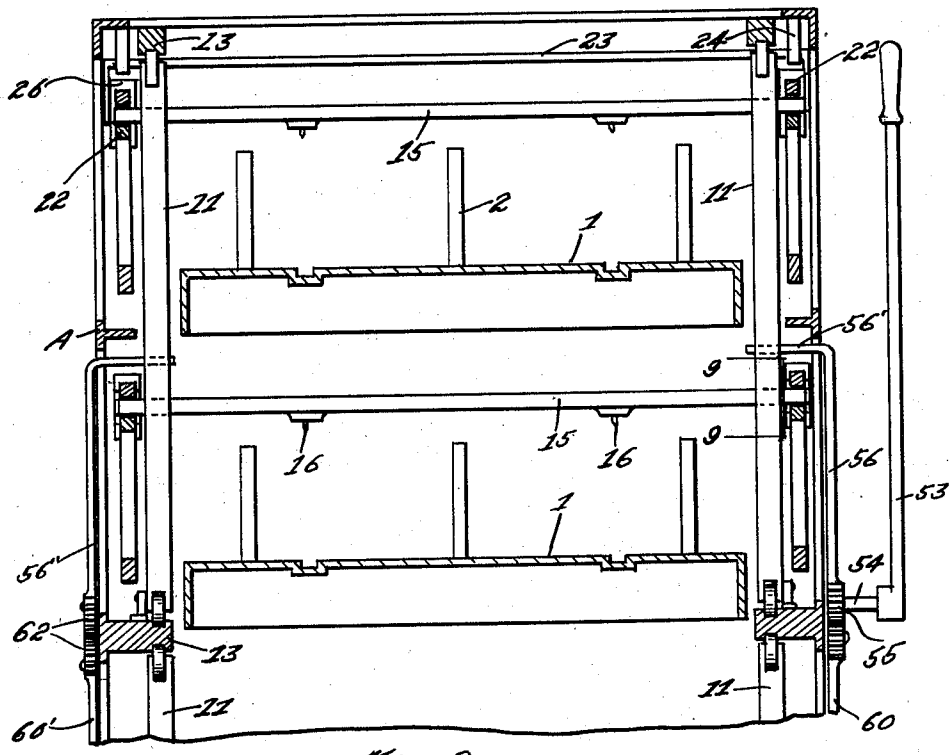
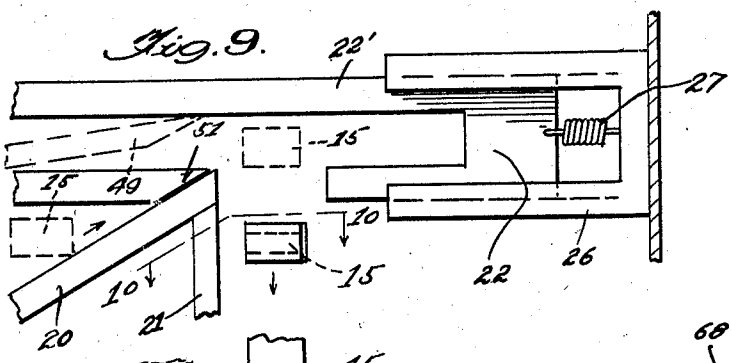


Fig. 8.

Fig. 9.



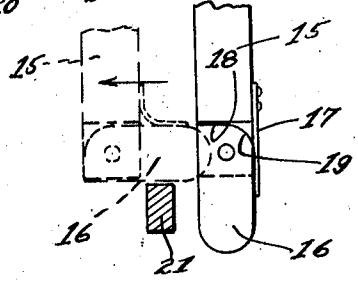
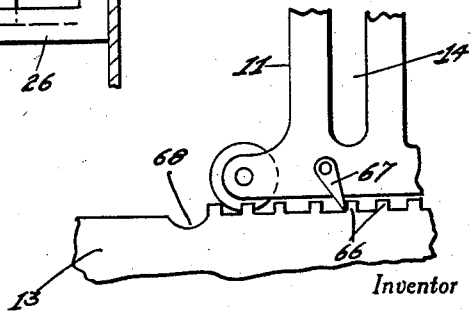


Fig. 10.

Fig. 11.



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2,273,814

UNITED STATES PATENT OFFICE

2,273,814

NEWSPAPER VENDING MACHINE

Rudolph Bartel and Willard Kirkendall,
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Application August 9, 1940, Serial No. 352,008

6 Claims. (Cl. 312—55)

This invention relates to a newspaper vending machine, the general object of the invention being to provide a housing having a plurality of compartments therein for receiving the papers, coin-controlled locking means for each compartment and means operated by a single handle for delivering a paper from that compartment, the locking means of which have been unlocked by a coin.

Another object of the invention is to provide means at the front of each compartment for displaying a sample paper of the stack of papers placed in the compartment and with means for actuating a signal when the compartment is empty so that one will know that there are no more papers in the compartment.

Another object of the invention is to provide means whereby the coin chute can be readily changed for coins of different denominations.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing the invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:

Figure 1 is a perspective view of the invention.

Figure 2 is a front view thereof.

Figure 3 is a section on the line 3—3 of Figure 2.

Figure 4 is a vertical sectional view through the upper portion of the apparatus with parts in elevation.

Figure 5 is a fragmentary vertical sectional view through the front part of one of the compartments and showing the coin-controlled locking means.

Figure 6 is a section on the line 6—6 of Figure 5.

Figure 7 is a section on the line 7—7 of Figure 5.

Figure 8 is a section on the line 8—8 of Figure 3.

Figure 9 is a section on approximately the line 9—9 of Figure 8.

Figure 10 is a section on the line 10—10 of Figure 9.

Figure 11 is a fragmentary elevation showing the dog and rack means for preventing the carriage from being moved back to neutral position until it has been moved forwardly to its full extent.

In these drawings the letter A indicates a frame which is enclosed by a housing H and said housing is divided into a vertical row of compartments by the table forming members 1 on which the piles or stacks of papers are placed, uprights 2 rising from parts of the table forming members holding the papers in an even stack or pile. The front of the housing is formed with a plurality of openings, one for each compartment and a hinged door D closes each opening, the hinges for the doors being shown at 3 and each door has its major portion sloping upwardly and inwardly and said major portion is composed of a back plate 4 and a front transparent member 5 spaced from the part 4 so as to receive a sample paper which is similar to the papers placed in the compartment so that one looking through the transparent member will know what kind of paper he can secure from this particular compartment. The top of the space formed by the members 4 and 5 is open so that the sample copy can be inserted through this open top part. The major part of each door terminates short of the bottom wall of the opening so as to leave a space 6 for the passage of a paper being vended from the compartment and hooks 7 project from the front of the housing below each opening or space 6 for preventing a paper from dropping entirely from the compartment and enabling the paper to be readily picked up by the buyer.

Each table 1 has a sloping front part 8 and a plate 9 hinged at its front edge to the front of the housing, as shown at 10, forms a continuation of this sloping part 8 and these parts 8 and 9 serve to guide the paper being discharged from the apparatus to the opening 6. By hinging these parts 9 they can be swung to open position, after a door has been opened so that the papers on a lower compartment can be seen. Of course, each door would be provided with a suitable lock so that an unauthorized person cannot open the same to take a paper from the compartment.

A vertically arranged elongated carriage 11 is provided for each side of each pair of compartments, the carriages for each pair passing through slots or openings formed between the sides of a table 1 and the side walls of the housing, and each carriage has the wheels 12 at its upper and lower ends for engaging the horizontal tracks 13 in the housing. Each carriage is formed with a longitudinally extending slot 14 and a drag bar 15 is provided for each compartment, each drag bar having its end por-

tion passing through the slots 14 of a pair of carriages. Each drag bar is formed with the projections 16' in its lower edge for engaging the uppermost paper on the pile of papers placed on the table 1 so that the bar will move the paper from the pile and push it through the opening 6 as will be hereinafter explained. Each drag bar has a pivoted tongue 16 at each end thereof which is normally held in a straight position by a spring 17, said spring normally holding the tongue with its straight edge 18 engaging the straight end of the bar 15 but a portion of the edge 18 is rounded as shown at 19 to permit the tongue to be swung on its pivot against the action of the spring 17, these tongues permitting the drag bar to move forwardly and pass by the diagonal bars 20 at the sides of each compartment and which extend from a point adjacent the front of the compartment upwardly and rearwardly to upright bars 21 located adjacent the sides of the compartment and spaced a considerable distance from the rear edge of the table. At each side of each compartment is a U-shaped locking member 22 horizontally arranged and having its upper limb of considerable length and its lower limb very short and only extending to the bar 21 when the locking member is in locking position. The two locking members of each compartment are connected together by a rod 23 journaled in the top of the compartment as shown at 24 and having its depending ends 25 connected with the rear parts of the two locking members 22. The rear part of each locking member is guided in the channel-shaped limbs of a U-shaped bracket 26 attached to the rear of the housing and in the channel parts of which the rear portion of the locking member slides and a spring 27 connects the rear end of each locking member to the bight of the bracket and tends to hold the locking member in unlocking position with the short limb spaced from the upright 21 as shown more particularly in Figure 9. The front end of the long limb 22' of each locking member slidingly engages a hollow guide member 28, see Figure 5, the front end of which is fastened to the inner face of the front wall of the housing. A support 29 is fastened to the top of each member 28 and a lever 30 is pivoted intermediate its ends to the support 29 and has a hole in its rear end through which passes a locking pin 31, this pin also passing through a hole in the top of the member 28 and is adapted to engage a hole 32 in the long limb 22' of the locking member 22 to hold the locking member in locking position and against the action of the spring 27. A coin table 33 is slidably arranged on the lever 30, said lever being of substantially U-shape as shown in Figure 7, and rods 34 have their front ends connected with the table and their rear ends curved downwardly and rearwardly and are pivoted to the long arm 22' as shown at 35. The lower section 36 of a coin chute is supported by a bracket 37 on the front of the compartment and is vertically arranged for depositing a coin partly upon the table, the coin passing through the chute in edgewise position so that its lower edge will engage the table at the lower end ar the chute. The upper section 38 of the chute is detachably connected at its lower end to the upper end of the section 36 as shown at 39 so that this upper section can be readily removed and a section substituted therefor which is made for a coin of a different denomination. The section 38 curves upwardly and forwardly and passes through a plate 40 on the front of the compartment and this section 38 can be connected to the plate as shown at 41 in a detachable manner. The lower part of the section 38 has an opening therein so that when a coin is deposited which is not of the proper denomination the coin will drop through this opening and will not enter the section 36, this section 36 being made large enough to suit coins of different denomination. A rod 42 passes through a curved slot 43 in the plate 40 and through a curved slot 44 in the section 36 and said rod has a knob 45 at its outer end. These parts are so arranged that after a coin has been deposited in the chute the rod is pushed along the slots 43 and 44 into engagement with the coin so that the coin is pressed through the section 36 against the table 33 so as to tilt the table and this action causes the lever 30 to raise the locking pin 31 to release the limb 22' of the locking member 22 so that the springs 27 of the two locking members will move the locking members rearwardly into the position shown in Figure 9.

It will be seen that these locking means and the coin means are only provided for one locking member 22 of each pair though a spring 27 is provided for each member and the locking members are caused to move in unison by the rod 23 and its depending ends 25.

A pin 46 depends from the front portion of the long limb 22' of that locking member 22 which is engaged by the locking pin 31 and a pin 47 on the adjacent carriage 11 is adapted to engage the pin 46 when the carriage is moved forwardly so as to move the locking members forwardly against the action of the springs 27 to cause the hole 32 of the limb 22' to pass under the locking pin so that the pin will enter the hole 32 and thus lock the locking members in their forward position, the rods 34 acting to raise the table 33 as the limb 22' moves forwardly and thus cause the pin 31 to engage the hole 32 as soon as the hole comes under the pin.

A gate bar 49 has its front end pivoted to a bracket 50 at the front of the compartment and the rear end of the bar 49 is beveled as shown at 51 to normally engage the upper end of the diagonal bar 20 and in this position the bar 49 is parallel to the long limb 22' of the locking member. It will, of course, be understood that one of these bars 49 is placed at each side of each compartment. The two bars 49 are raised when the drag bar 15 moves up the diagonal bars 20 for when the ends of the drag bar engage the gate bars, said drag bar will lift the gate bars so that the ends of the drag bar can move under the same and then move between the two limbs of each locking member.

A hand lever 53 at one side of the housing is fastened to a stub shaft 54 which passing through said side and a segmental tooth member or gear 55 is connected to the inner end of the shaft. An arm 56 has one end connected to or formed with this segmental gear 55 and extends upwardly with its upper end bent at right angles as shown at 56' and this bent end passes into a slot 57 formed in the carriage 11. A second segmental member 58 is pivoted as at 59 and has an arm 60 depending therefrom, the bent end of the arm engaging a slot 61 formed in the lower carriage. Upper and lower arms 56'' and 60', respectively, are located at the opposite side of the apparatus and have segmental gears 62 at their adjacent ends meshing with each other and these arms have their bent ends engaging slots of the

two carriages at this side of the apparatus. However, these arms simply act to equalize the movements of the parts as only the arms 56 and 60 are actuated by the hand lever 53.

Springs 64 connect the arms to the rear of the apparatus and act to hold the carriages in their rearmost positions with the drag bars 15 in the spaces formed by the long and short limbs of the locking members 22, it being understood that all the locking members are held in their forward position by the coin-actuated locking means.

Thus when a person wishes to secure a newspaper from the apparatus, he places a coin of the proper denomination in that coin slot or chute of the compartment containing the paper he desires. He then seizes the knob 45 and forces the rod 42 through the slots 43 and 44 to apply pressure to the coin and this pressure tilts the coin table 33 so that the pin 31 is raised to release the long limb 22' of the locking member 22 at that side of the compartment which contains the coin means. Then he swings the lever 53 toward him and this movement of the lever actuates all the carriages through means of the arms 56, 56'', 60 and 60' so that all the carriages are moved forwardly and this movement of the carriages moves all the drag bars forwardly. However, in all the compartments excepting the one in which a coin has been deposited, the locking members 22 are in a forward position so that the drag bars in such compartments simply pass from the short limbs of the locking members upon the gate bars 49, as shown in the second, third and fourth compartments of Figure 3. The compartment in which the coin has been deposited has had its locking means moved to inoperative position so that the springs 27 have moved the locking members 22 in this compartment rearwardly and thus the short limbs of these locking members are spaced from the upper ends of the diagonal bars 20 so that as the drag bar of this compartment is moved forward it will drop through said space, as shown in Figure 9 and fall upon the pile of papers on the table 1 of this compartment. Then the forward movement of this drag bar by its carriages will cause it to move forwardly over the pile of papers and the points 16' will engage the uppermost paper and move it off the pile and upon the sloping parts 8 and 9 so that a part of the paper will be projected through the opening 6 upon the members 7 where the paper can be picked up and fully withdrawn from the opening or slot 6. As the ends of the drag bars pass the members 20 and 21 the pivoted tongues 16 will swing rearwardly so that the drag bar can pass these parts and then when the hand lever is released the springs 64 will return the parts rearwardly and as the carriages move rearwardly the drag bar which has just delivered a paper will move up the diagonal bars 20, raise the gate bars 49 and then all the drag bars will move upon the short limbs of the locking members 22, it being understood that the locking members of the compartment from which a paper has been delivered having been returned to their forward position by reason of the pin 47 of a carriage striking the pin 46 so that the long limbs are moved forwardly to permit the pin 31 to engage the hole 32 in the long limb 22' of the locking member associated with the coin operated locking means.

In order to prevent a partial movement of the carriages by a partial movement of the hand lever 53 we provide the track members at the bottom of each compartment with the upright teeth 66 which are spaced apart as shown in Figure 11 and connect a dog 67 to the bottom of the carriage, these parts being so arranged that the carriage cannot move rearwardly until the dog passes the toothed carrying part and engages a recess 68 in the track member. Then the dog can reverse itself so that the carriage can return to its rearmost position.

A signal arm 69 is provided for each compartment to signal when the compartment is empty and each arm is adapted to be passed through a slot 70 in a side wall of the compartment through means of a lever 71 pivoted to a side of the table and engaged by a drag bar when all the papers have been removed from the compartment, this lever being connected by a link 72 to a bellcrank 73 pivoted to a part of the apparatus and connected by a link 74 to the arm, the parts being so arranged that when the lever 71 is swung forwardly by a drag bar it will cause the link 72 to operate the bellcrank 73 so that the link 74 will swing the signal arm 69 out of the slot 70 as shown in Figure 1.

Thus it will be seen that we have provided a single hand lever for operating all the delivery means of the compartments with means whereby a paper will only be delivered when a coin is inserted in the coin chute of any one of the compartments. Thus the apparatus can be operated by anyone as it is not complicated and all the parts return to normal position as soon as the hand lever has been released.

Of course, a suitable coin receptable may be located under each table to receive the coin dropping from the chute.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts provided that such changes fall within the scope of the appended claims.

Having described the invention, what is claimed as new is:

1. In a paper vending machine, a compartment for receiving a pile of papers and having a delivery opening in its front end for the passage of a paper, carriages at the sides of the compartment having vertical slots therein, a drag bar having its ends passing through the vertical slots, upwardly and rearwardly sloping bars at the sides of the compartment, a pair of U-shaped horizontally arranged locking members supported for sliding movement at the sides of the compartment, spring means for holding the locking members in their rearmost position, each member including a long upper limb and a short lower limb, the short limbs receiving the drag bar from the sloping bars when the locking members are in forward position, locking means manually releasable for engaging a locking member when the locking members have been moved to their forward positions, gate bars pivoted at their front ends to the front of the compartment, and having their rear ends resting on the rear ends of the sloping bars, said gate bars receiving the drag bar from the short limbs of the locking members if the carriages are moved forwardly with the locking members in forward position, said drag bar dropping from the short limbs of the locking members when the carriages move forwardly with the locking members in rearward position, means for causing the drag bar to move a paper off the

pile as it is moved forwardly, after dropping, by the carriages to move a part of the said paper through the delivery opening, a hand lever for moving the carriages forwardly and means for normally holding the carriages in their rearward position, said drag bar moving up the sloping bars as the carriages move rearwardly.

2. A paper vending machine comprising a compartment having a delivery opening in its front, a pair of carriages in the compartment at the sides thereof, each pair having a vertical slot therein, a drag bar having its ends passing through the vertical slots, a pair of locking members horizontally arranged and supported for sliding movement in the compartment, each locking member including an upper long limb and a short lower limb, spring means for holding the locking members in their rearward position, upwardly and rearwardly sloping bars at the sides of the compartment having their upper ends arranged adjacent the ends of the short limbs of the locking members, a pair of gate bars pivotally connected at their front ends to the front of the compartment with their rear ends resting upon the upper ends of the sloping bars, releasable locking means engaging the long limb of one of the locking members when the locking members have been moved to their forward position, means connecting the two locking members together to cause them to move in unison, spring means for holding the carriages in their rearmost position with the ends of the drag bar resting on the short limbs of the locking members, said drag bar dropping off the short limbs of the locking members when the locking means is released and the locking members moved rearwardly by the spring means, a table in the compartment for receiving a pile of papers, the drag bar dropping upon the pile as it falls from the locking members, a hand lever, means actuated thereby for moving the carriages forwardly to cause the drag bar to move a paper from the pile and to project a part of the paper through the delivery opening, the return movement of the carriages causing the drag bar to move up the sloping bars and raise the gate bars and then move upon the short limbs of the locking members and means for moving the locking members forwardly by the carriages on the forward movement of the carriages whereby the locking means will engage the long limbs of one of the locking members to hold the locking members in their forward position.

3. A paper vending machine comprising a compartment having a delivery opening in its front, a pair of carriages in the compartment at the sides thereof, each pair having a vertical slot therein, a drag bar having its ends passing through the slots, a pair of locking members horizontally arranged and supported for sliding movement in the compartment, each locking member including an upper long limb and a short lower limb, spring means for yieldably holding the locking members in their rearward position, upwardly and rearwardly sloping bars at the sides of the compartment having their upper ends arranged adjacent the ends of the short limbs of the locking members, a pair of gate bars pivotally connected at their front ends to the front of the compartment and their rear ends resting upon the upper ends of the sloping bars, releasable locking means engaging the long limb of one of the locking members when the locking members have been moved to a forward position, means connecting the two locking members together to cause them to move in unison, spring means for holding the carriages in their rearmost position with the ends of the drag bar resting on the short limbs of the locking members, said drag bar dropping off the short limbs of the locking members when the locking means is released and the locking members moved rearwardly by the spring means, a table in the compartment for receiving a pile of papers, the drag bar dropping upon the pile as it falls from the locking members, a hand lever, means actuated thereby for moving the carriages forwardly to cause the drag bar to move a paper from the pile and to project a part of the paper through the delivery opening, the return movement of the carriages causing the drag bar to move up the sloping bars and raise the gate bars and then move upon the short limbs of the locking members, means for moving the locking members forwardly by the carriages on the forward movement of the carriages whereby the locking means will engage the long limb of one of the locking members to hold the locking members in their forward position, tongues pivoted to the ends of the drag bar to permit the drag bar to pass the sloping bars on the forward movement of the carriages and then to move up the sloping bars on the rearward movement of the carriages.

4. A paper vending machine comprising a housing containing a vertical row of compartments with a delivery opening in the front of each compartment, a table in each compartment for supporting a pile of newspapers, each table having a sloping front end, a pair of carriages vertically arranged at the sides of each pair of compartments, a hand lever, means operated thereby for moving all the carriages forwardly, spring means for yieldably holding the carriages in their rearmost position, each carriage having a vertical slot therein, a drag bar in each compartment having its ends passing through the slots of the carriages, a pair of locking members horizontally arranged and supported for sliding movement in each compartment, each locking member including a long upper limb and a short lower limb, means for connecting each pair of locking members together for movement in unison, spring means for normally holding the locking members in rearward position, releasable locking means in each compartment for engaging one long limb of a locking member of a compartment when the locking members have been moved to their forward position, upwardly and rearwardly sloping bars at the sides of each compartment having their upper ends terminating adjacent the front ends of the short limbs when the locking members are in their forward position, a pair of gate bars in each compartment at the sides thereof pivotally connected to the front of a compartment and having their rear ends resting on the upper ends of the sloping bars, a drag bar dropping off the short limbs of the locking members of a compartment when the locking means of said compartment have been released to permit the locking members to move rearwardly and as the carriages move forwardly whereby the drag bar will drop upon a pile of papers and then as it moves forwardly with the carriages it moves the upper paper partly through the delivery opening, means whereby the drag bar will move past the lower ends of the sloping bars as the carriages move forwardly and then ride up the sloping bars as the carriages move rearwardly, the drag bar raising the gate bars and moving upon the short limbs of the locking members when

such locking members are in their forward position, means actuated by the carriages on their forward movement for moving the locking members forwardly into engagement with the locking means, those compartments, the locking means of which have not been actuated having their drag bars moving upon the gate bars on the forward movement of the carriages.

5. In a paper vending machine, a compartment for receiving a pile of papers and having a delivery opening in its front for the passage of a paper, vertically arranged carriages at the sides of the compartment and each carriage having a vertical slot therein, a drag bar having its ends passing through the slots, a pair of locking members at the sides of the compartment supported for sliding movement and each including a long part and a lower short part, manually operated means for moving the carriages forward, spring means for normally holding the carriages rearwardly with the drag bar supported on the short parts of the locking members, spring means for moving the locking members rearwardly to release the drag bar as the carriages are moved forwardly whereby the drag bar will drop upon the pile of papers and then as the carriages are moved forwardly the drag bar will move the top paper forwardly and project the same through the delivery opening, upwardly and rearwardly sloping bars at the sides of the compartment up which the drag bar travels as the carriages move rearwardly and from which the drag bar moves upon the short parts of the locking members, means for moving the locking members forwardly as the carriages near the front part of its travel, gate bars pivoted to the front of the compartment at their front ends and having their rear ends resting upon the upper ends of the sloping bars and said drag bar moving upon the gate bars if the locking members are in their forward position and locking means for holding the locking members in their forward position, said locking means including a hollow part for receiving the long part of one of the locking members, a locking pin for holding the long part in the hollow member, a lever for moving the pin out of engagement with the long part, and manually actuated means for moving the lever to release the pin.

6. In a paper vending machine, a compartment for receiving a pile of papers and having a delivery opening in its front for the passage of a paper, vertically arranged carriages at the sides of the compartment and having vertical slots therein, a drag bar having its ends passing through the slots, a pair of locking members at the sides of the compartment supported for sliding movement and each including a long part and a lower short part, manually operated means for moving the carriages forward, spring means for normally holding the carriages rearwardly with the drag bars supported on the short parts of the locking members, spring means for moving the locking members rearwardly to release the drag bar as the carriages are moved forwardly whereby the drag bar will drop upon the pile of papers and then as the carriages are moved forwardly the drag bar will move the top paper forwardly and project the same through the delivery opening, upwardly and rearwardly sloping bars at the sides of the compartment up which the drag bar travels as the carriages move rearwardly and from which the drag bar moves upon the short parts of the locking members, means for moving the locking members forwardly as the carriages near the front part of the travel, gate bars pivoted to the front of the compartment at the front ends and having their rear ends resting upon the upper ends of the sloping bars and said drag bar moving upon the gate bars if the locking members are in their forward position, manually releasable locking means for holding the locking members in their forward position, and dog and ratchet means for preventing rearward movement of the carriages until the lever has been fully actuated to move the carriages to their forward position.

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