United States Patent

[11] 3,537,615

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[54] NEWSPAPER DISPENSER WITH DOOR CONTROLLED SEQUENTIAL RELEASE MEANS

10 Claims, 8 Drawing Figs.

[52] U.S. Cl. 221/298, 221/279
[51] Int. Cl. B65g 59/00
[50] Field of Search 221/1, 155, 174, 226, 246, 279, 281, 289, 298, 312, 246; 194/57, 58, 93, 2

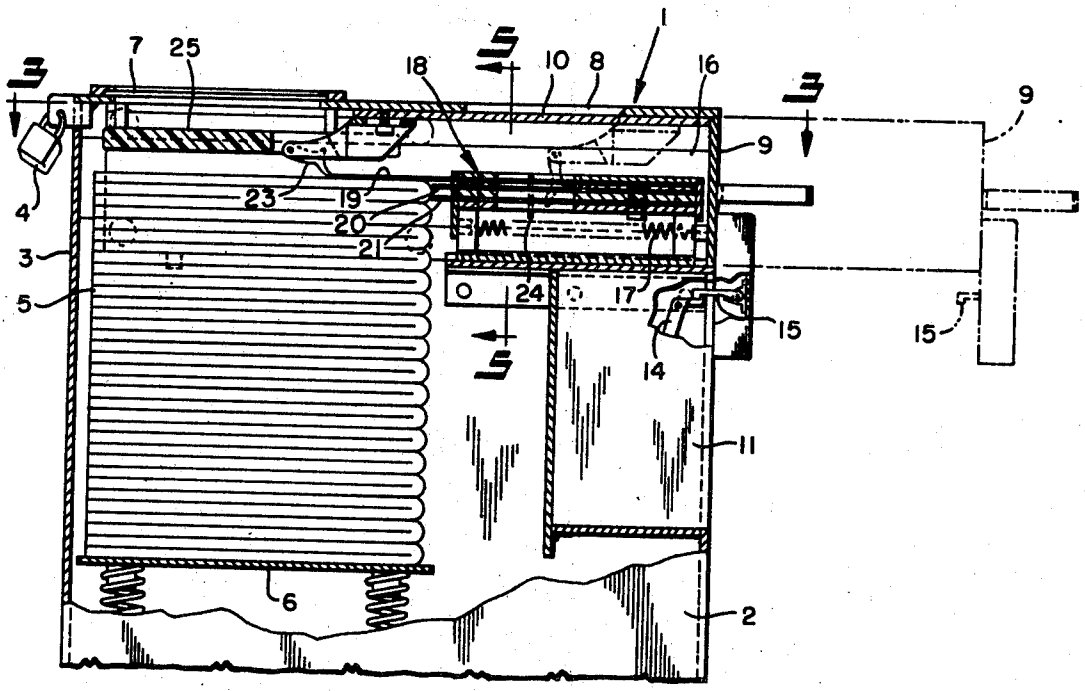
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ABSTRACT: A coin-operated newspaper dispenser characterized in that when the door thereof is unlocked by proper coin deposit, only a single newspaper is exposed for removal by the customer, the dispenser being further characterized in that such exposure of one newspaper at a time for removal is automatically effected regardless of variation in thickness of the newspaper from day to day, or issue to issue.



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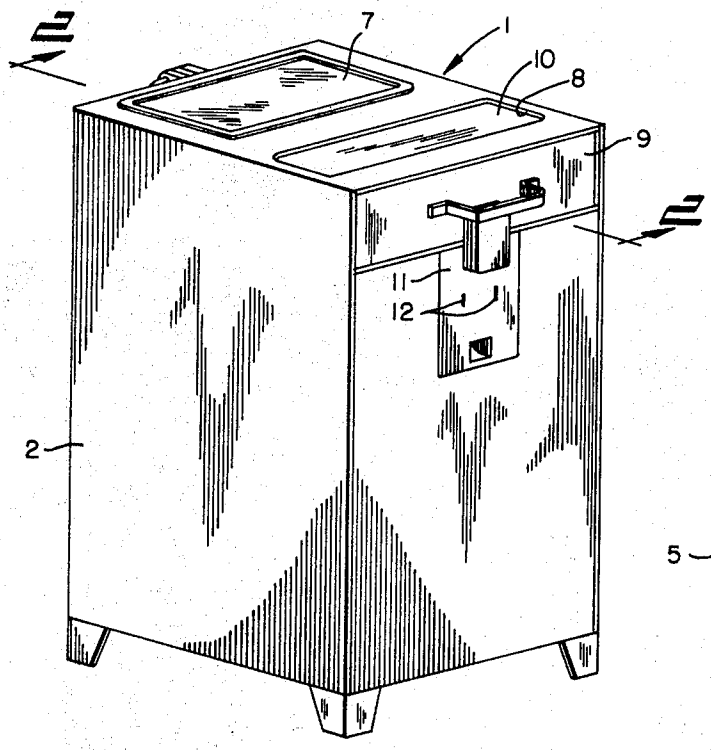


Fig. 1

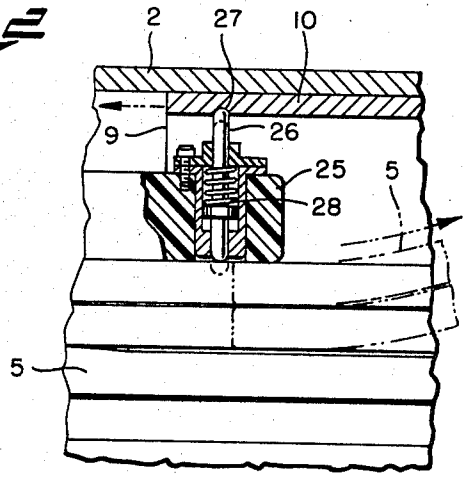


Fig. 4

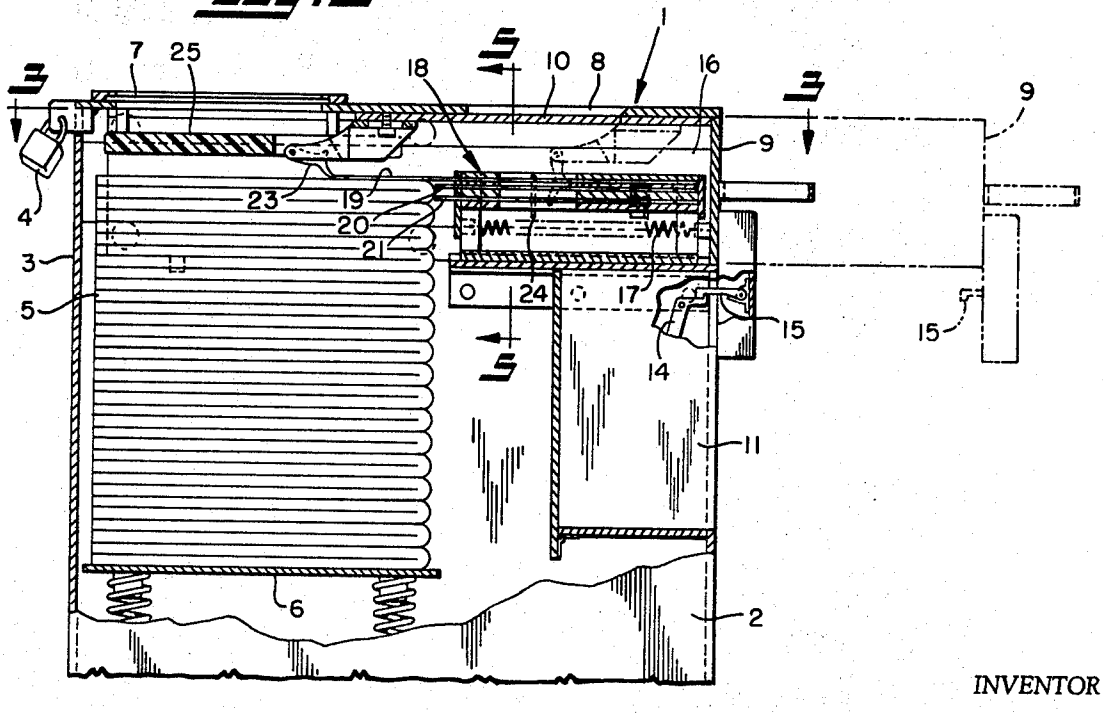


Fig. 2

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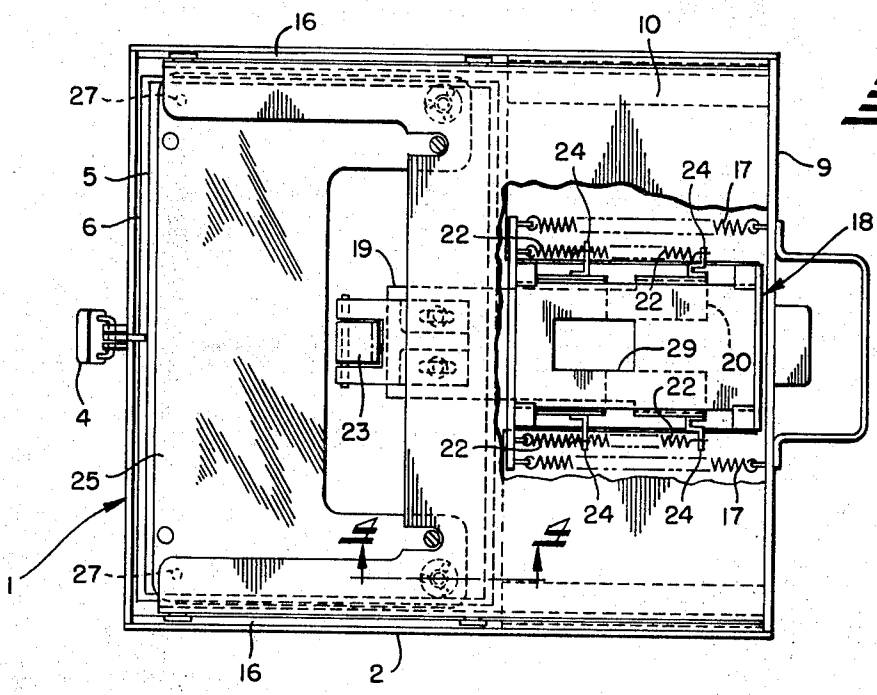


Fig. 3

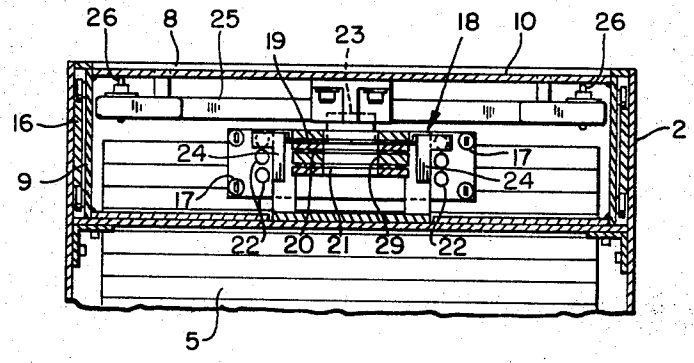


Fig. 5

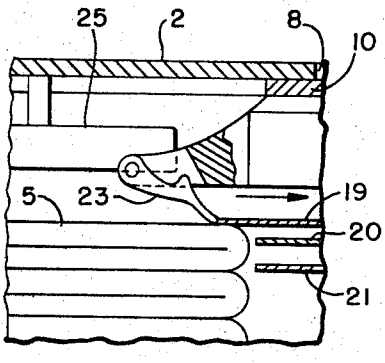


Fig. 6

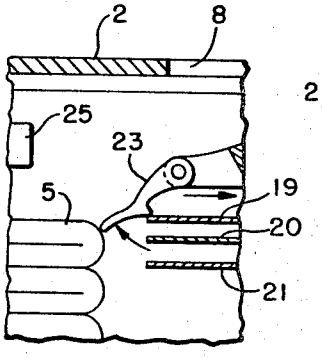


Fig. 7

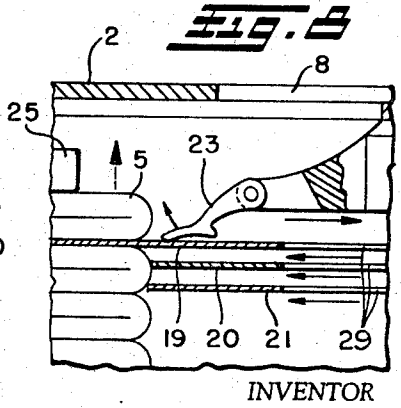


Fig. 8

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NEWSPAPER DISPENSER WITH DOOR CONTROLLED SEQUENTIAL RELEASE MEANS

BACKGROUND OF THE INVENTION

In known coin-operated newspaper dispensers, the newspapers are simply stacked in a container and, therefore, the customer, once he has opened the door by proper coin deposit, may take as many newspapers as he desired.

SUMMARY OF THE INVENTION

It is a principal object of this invention to provide a coin-operated newspaper dispenser which, when the door thereof is released by proper coin deposit, only one newspaper may be removed by the customer.

Another object of this invention is to provide a newspaper dispenser in which the spring-loaded door thereof is held in open position by a detent mechanism until the exposed newspaper is removed to release the detent mechanism for spring closing movement of the door to locked position.

Another object of this invention is to provide a newspaper dispenser having a novel lock plate arrangement which assures that but a single newspaper may be dispensed at a time regardless of the thickness of the newspaper.

Other objects and advantages of the present invention will become apparent as the following description proceeds.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a perspective view of a preferred embodiment of this invention;

FIG. 2 is a central vertical cross-sectional view taken substantially along the line 2–2, FIG. 1;

FIG. 3 is a horizontal cross-sectional view taken substantially along the line 3–3, FIG. 2;

FIG. 4 is an enlarged fragmentary cross-sectional view showing a detent mechanism which holds the newspaper release door in open position until the top newspaper has been withdrawn;

FIG. 5 is a cross-sectional view taken substantially along the line 5–5, FIG. 2; and

FIGS. 6, 7 and 8 illustrate a novel lock plate arrangement which assures that only a single newspaper may be removed even though the door is held in open position, subsequent to removal of a newspaper.

DISCUSSION OF THE INVENTION

As herein shown, the newspaper dispenser 1 comprises a cabinet 2 having a hinged rear door 3 which is adapted to be locked as by a padlock 4 and which, when open, enables loading of a stack of newspapers 5 onto the spring elevator plate 6. The top of the cabinet 2 is provided with a transparent window 7 through which the headline of the top newspaper 5 may be viewed. If the dispenser 1 is empty, the customer can see that there is no newspaper on the elevator plate 6, and, moreover, the elevator plate 6 may have the word "EMPTY" printed thereon in large letters. The top of the cabinet 2 also has a withdrawal slot 8 through which the top newspaper 5 is adapted to be withdrawn when the door 9 is pulled out to the dot-dash position shown in FIG. 2, the door 9 having a top plate 10 which underlies the slot 8 when the door 9 is in closed, locked position.

On the front of the cabinet 2 is a coin box 11 having appropriate slots 12 for coins and containing any well-known mechanism which, when the proper coin total has been deposited, releases the lock member 14 from the latch member 15 of the door 9 so that the latter may be pulled out for removal of a newspaper 5.

The door 9 is mounted for horizontal movement on suitable guides 16 and springs 17 are connected thereto on opposite sides to yieldably pull the door 9 to the locked position, whereat the latch member 15 thereof is engaged with the coin box lock member 14.

Spaced below the top of the cabinet 2 and in front of the folded edge of the stack of newspapers 5 is a lock plate assembly 18 comprising a series of spring-loaded plates 19, 20, and 21 which are variably spaced apart as shown so that at least the top plate 19 will, in the closed position of the door 9, overlie the top newspaper 5 adjacent the fold thereof and the remaining ones 20, and 21 may abut the top newspaper 5 as shown in FIG. 2, or in the case of a thin newspaper 5, the second plate 20 or the second and third plates 20 and 21 may be disposed between the first and second newspapers 5 and/or between the second and third newspapers. Plates 19, 20, and 21 are actuated by springs 22 as best shown in FIGS. 3 and 4.

The door 9 is provided with a pivoted hook 23 (see FIGS. 2, 6, 7, and 8) which, when the door 9 is unlocked by proper deposit of a coin or coins in the slots 12 and is pulled outwardly, is operative to engage and withdraw the top plate 19. Cooperating ears 24 on said plates 19, 20, and 21 effect withdrawal of any other plates 20 or 21 that are above the top newspaper 5 or between the first and second newspapers 5 so that by the time that the plates 19, 20, and 21 are pulled back to the FIG. 7 position, the top newspaper 5 is released so that the elevator platform 6 may raise the stack so that the top newspaper 5 is disposed against the transparent backup plate 25.

At that time, the hook 23 is swung around to release the lock plates 19, 20 and 21 so that at least the top one 19 will enter between the top and second newspapers 5. When the door 9 is pulled out to the dot-dash line position shown in FIG. 2, spring detents 26 at opposite sides of the backup plate 25 will be engaged by the top newspaper 5 to urge the detents into recesses 27 in the top wall 10 of the door 9, thus to hold the door 9 in its outward position whereat the customer may reach in through slot 8 to grasp the folded edge of the top newspaper 5. As the top newspaper 5 is withdrawn, as in the dot-dash line position of FIG. 4, the detents 26 are urged downwardly by springs 28 out of the recesses 27, thus to release the door 9 for spring movement back to locked position with the latch 15 thereof engaged with the coin box lock member 14.

As the door 9 is pulled out to the detent-held positions, the pivoted hook 23 drops through slots 29 in the plates 19, 20, and 21 so that subsequently when the door 9 moves inward, the hook 23 will assume the position shown in FIGS. 2 and 6 preparatory to withdrawing the lock plate 19, the next time that the door 9 is unlocked and pulled outwardly.

It is to be understood that a suitable chute (not shown) may be provided for the coins so as to render them readily accessible when the newspaper delivery man, unlocks the rear door 3 for reloading of the dispenser 1.

Although the lock plates 19, 20, and 21 are spring-loaded, they have a smooth finish and are not readily accessible for forcible retraction while the door 9 is in open position. It is further to be understood that while the door 9 herein is shown as having a horizontal sliding movement, it could be mounted for swinging movement about a bottom hinge to expose a withdrawal slot 8 at the top of the cabinet 2 or at the upper front side of the cabinet. Similarly, instead of having an elevator 6 for the stack of newspapers, the arrangement could be reversed wherein the backup plate 25 and the door 9 are successively moved downwardly as newspapers 5 are withdrawn.

I claim:

1. A dispenser for newspapers and the like comprising a cabinet to receive a stack of newspapers; a door on said cabinet movable to open position to expose the top newspaper for removal; a coin-operated lock mechanism to release the door for such movement; and lock plate means actuated by door opening movement to uncover the top newspaper for removal and to cover the second newspaper so that only the top newspaper can be removed each time that said door is opened.

2. The dispenser of claim 1 wherein said cabinet has elevator means to elevate the stack of newspapers each time that said lock plate means uncovers the top newspaper; and

wherein said lock plate means is spring-actuated and is released from said door upon opening thereof to cover the second newspaper.

3. The dispenser of claim 1 wherein detent means in said cabinet holds said door in open position until the top newspaper is removed; and wherein spring means acting on said door closes it when said detent means is released therefrom by removal of the top newspaper.

4. The dispenser of claim 1 wherein said lock plate means includes at least one plate which is spring actuated to overlie the folded edge of the top newspaper; and wherein said door has pivoted hook means to engage said plate to withdraw said plate as said door is opened and to release said plate for movement to a position between the top and second newspapers in overlying relation to the folded edge of the second newspaper.

5. The dispenser of claim 1 wherein said lock plate means includes upper and lower plates which are spring-actuated toward the folded edge of the top newspaper with at least the upper plate overlying the top newspaper and the lower plate either abutting the folded edge of the top newspaper or overlying the second newspaper; and wherein said door has pivoted hook means to engage said upper plate to withdraw it as said door is opened; said plates having interengaging means thereon similarly to withdraw said lower plate; said hook means being operative upon opening of said door to release said plates for movement of said upper plate between the top and second newspapers in overlying relation to the folded edge of the second newspaper and of said lower plate either to abutting relation to the folded edge of the second newspaper or between the second and third newspapers.

6. The dispenser of claim 5 wherein said cabinet has elevator means to elevate the stack of newspapers each time that said lock plate means is withdrawn as aforesaid whereby the top newspaper is disposed above said upper plate for removal.

7. A dispenser for newspapers and the like comprising a cabinet to receive a stack of newspapers and having in its top wall a window through which the top newspaper may be viewed and a slot through which such top newspaper may be withdrawn; a door on the front wall of said cabinet having a plate underlying said slot; said door being movable to open position whereat said plate is displaced so that the top newspaper is accessible for removal through said slot; a coin-operated lock mechanism to release the door for such movement; and lock plate means actuated by door opening movement to uncover the top newspaper for removal and to cover the second newspaper so that only the top newspaper can be removed through said slot each time that said door is opened.

8. The dispenser of claim 7 wherein said cabinet has elevator means to elevate the stack of newspapers each time that said lock plate means uncovers the top newspaper; and wherein said lock plate means is spring-actuated and is released from said door upon opening thereof to cover the second newspaper.

9. The dispenser of claim 7 wherein detent means in said cabinet holds said door in open position until the top newspaper is removed; and wherein spring means acting on said door closes it when said detent means is released therefrom by removal of the top newspaper.

10. The dispenser of claim 7 wherein said lock plate means includes at least one plate which is spring-actuated to overlie the folded edge of the top newspaper; and wherein said door has pivoted hook means to engage said plate to withdraw said plate as said door is opened and to release said plate for movement to a position between the top and second newspapers in overlying relation to the folded edge of the second newspaper.