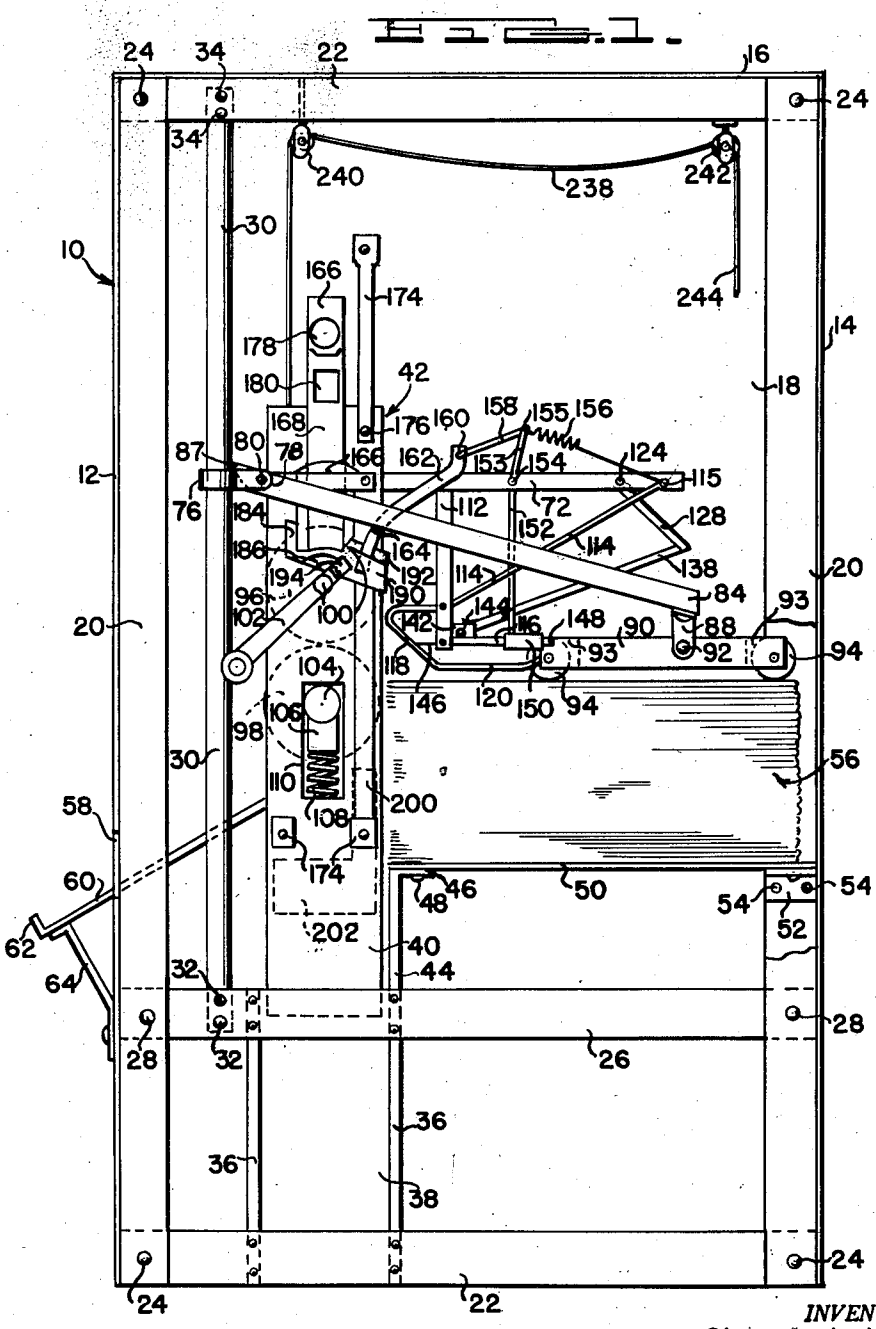
Sept. 30, 1952 C. L. HAWKS 2,612,426

NEWSPAPER VENDING MACHINE

Filed June 18, 1947 3 Sheets-Sheet 1

FIG. 1.



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FIG. 3

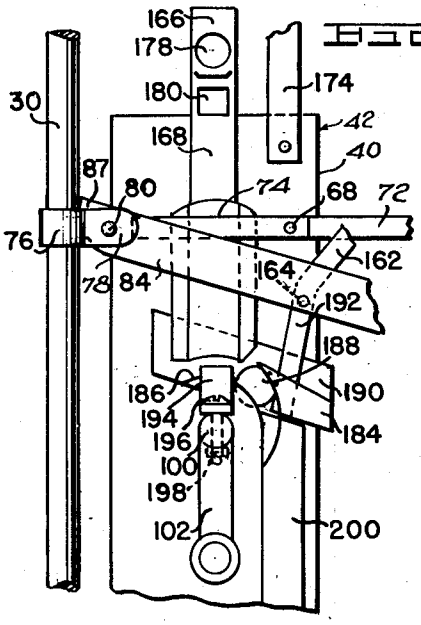


FIG. 4

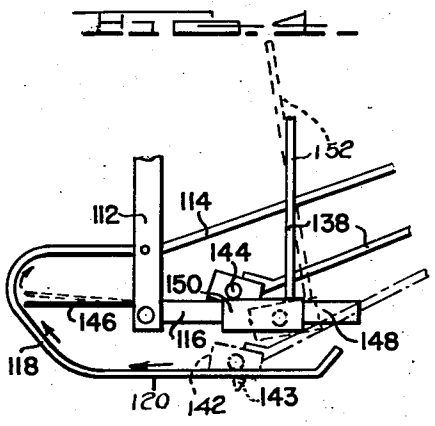
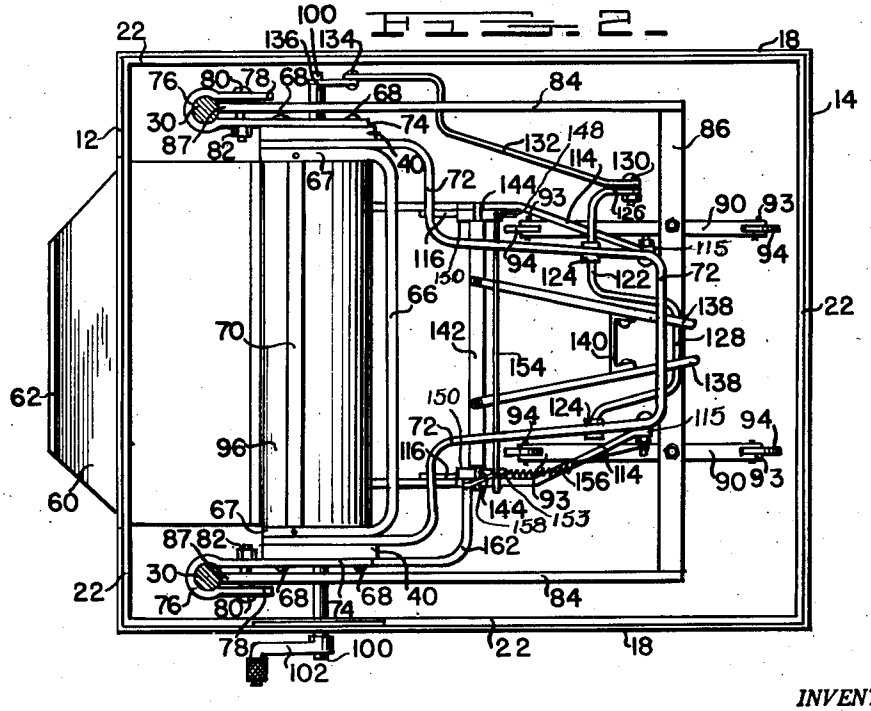


FIG. 2



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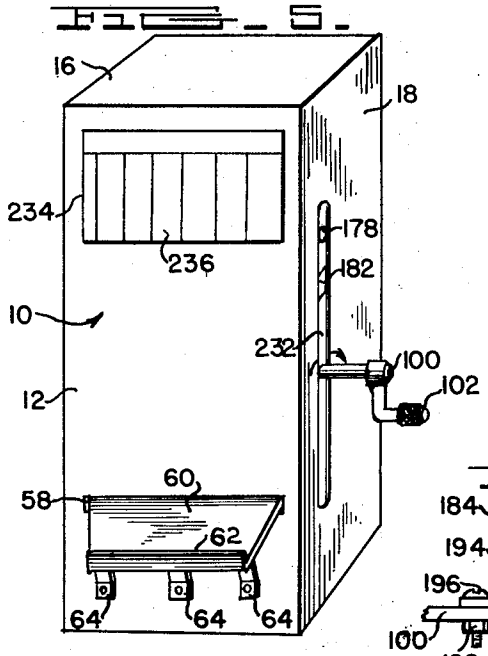


FIG. 5.

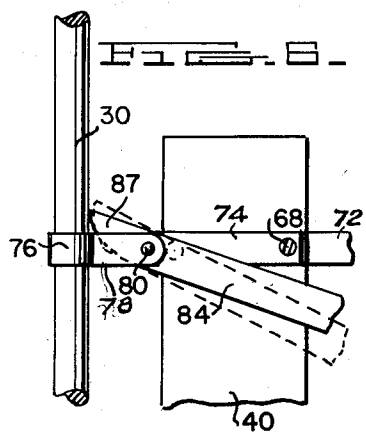


FIG. 6.

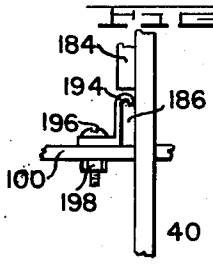
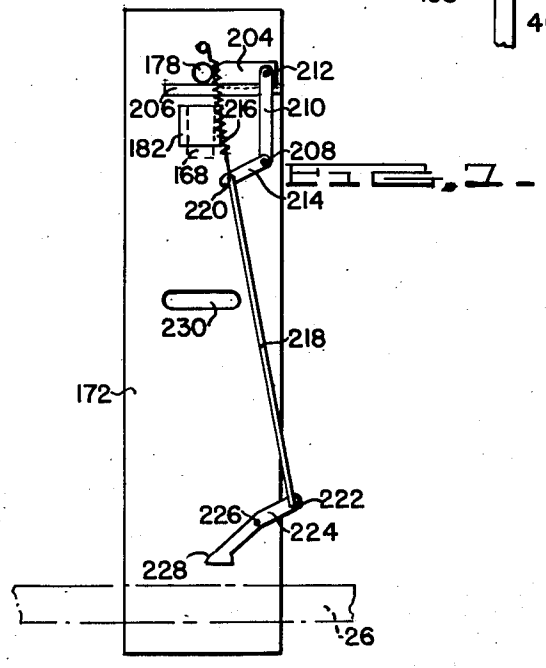


FIG. 7.



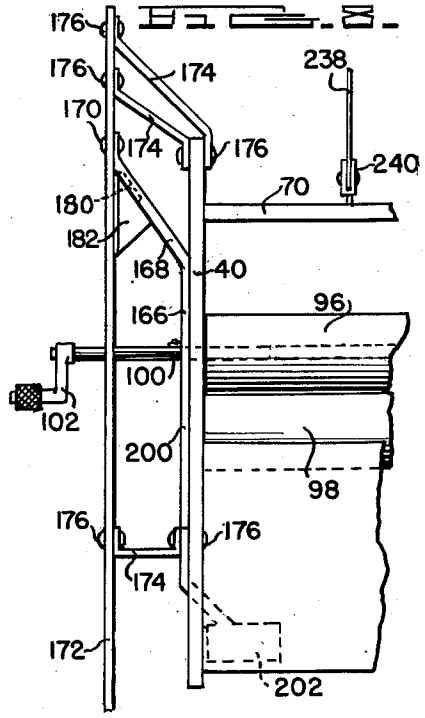


FIG. 8.

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UNITED STATES PATENT OFFICE

2,612,426

NEWSPAPER VENDING MACHINE

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Application June 18, 1947, Serial No. 755,305

9 Claims. (Cl. 312—55)

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The present invention relates generally to the dispensing art and more particularly to a coin controlled newspaper vending machine.

The principal object of the invention is to provide a manually operable coin controlled vending machine adapted to discharge newspapers, magazines, or similar relatively flat articles one at a time, wherein the articles to be sold are enclosed in such manner as to be protected from loss or damage due to the weather until they are sold.

Another object of the invention is to provide a dispensing mechanism for a vending machine of the type described wherein practically all of the moving parts are connected into a unitary assembly which may be easily removed from the machine for the purpose of making any necessary adjustments, replacements, or repairs.

A further object of the invention is to provide a dispensing mechanism for a vending machine of the type described which is movably mounted within the machine and which automatically adjusts itself to accommodate articles of varying thicknesses.

An additional object of the invention is to provide an improved coin controlled apparatus for the dispensing mechanism of a vending machine of the type described adapted to prevent the use of other than a given size coin and which is automatically locked to prevent the insertion of any coin when the machine is empty.

Yet another object of the invention is to provide a container for a vending machine of the type described having a window in its front portion for displaying a sample article sold by the machine and having a loading door in its rear portion, together with a conveniently available loading control for the dispensing mechanism.

A still further object of the invention is to provide a vending machine of the type described which is adapted to be entirely manually operated without the employment of any external power source and which, although extremely durable and rugged, may be inexpensively constructed by the use of standard structural members and working parts.

Other objects and advantages of the invention will become apparent during the course of the following description.

In the drawings I have shown one embodiment of the invention. In this showing:

Figure 1 is a side elevational view of a vending machine in accordance with the present invention with the container wall and auxiliary plate removed to illustrate the interior construction;

Figure 2 is a top plan view of the vending machine of Figure 1 with the top wall of the container removed to illustrate the interior construction;

Figure 3 is a fragmentary side elevational view to an enlarged scale of the coin controlled apparatus shown in the machine of Figure 1 and

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constituting an important part of the invention, the auxiliary plate being removed;

Figure 4 is a fragmentary detail view in side elevation illustrating in dotted and full lines two different operating positions of the feed starting device forming a part of the machine of Figure 1;

Figure 5 is a perspective view to a greatly reduced scale illustrating the general over-all appearance of a complete newspaper vending machine in accordance with the present invention;

Figure 6 is a fragmentary detail side elevational view illustrating the gripping device for controlling the position of the dispensing mechanism;

Figure 7 is a detail side elevational view showing the mechanism for locking the coin controlled apparatus to prevent the insertion of a coin when the machine is empty;

Figure 8 is a fragmentary rear elevational view illustrating the coin controlled apparatus of Figure 3; and

Figure 9 is a detail rear elevational view to an enlarged scale illustrating a preferred form of coin engaging member constituting a part of the apparatus illustrated in Figures 3 and 8.

In Figure 1 the vending machine is designated generally by the reference numeral 10 and comprises a container formed by front, rear, top, and side walls 12, 14, 16, and 18, respectively, secured in any convenient manner to a generally rectangular framework comprising a plurality of vertical beams 20 and horizontal beams 22 secured together as by means of rivets 24 or the like. It will be understood that the side wall of the container toward the observer in Figure 1 has been completely removed in order to illustrate the framework and interior arrangement of the machine. A pair of transverse beams 26, only one of which is illustrated in Figure 1, is secured to the vertical beams 20 at opposite sides of the lower portion of the machine as by means of rivets 28 and serves to support the bottom ends of a pair of vertical guide posts 30 secured thereto by means of rivets 32 and anchored at their top ends to the transverse beams 22 by means of rivets 34. The function of the vertical guide posts 30 will be hereinafter more fully explained in connection with the description of the dispensing mechanism.

At opposite sides of the lower portion of the machine as shown in Figure 1, there are provided pairs of vertical guide strips 36 extending between the transverse beams 22 and 26 and forming a pair of guide channels 38. The guide channels 38 slidably receive the lower ends of a pair of side plates 40 forming the bottom of a vertically movable frame designated generally by reference numeral 42 which carries the dispensing mechanism to be hereinafter more fully described. The rear guide strips 36 extend above the transverse beams 26 as indicated by reference numeral 44 and are provided with flanges 46 at their top ends secured as by means of

rivets 48 to the front corners of a horizontal platform 50. The platform 50 is supported at its rear corners upon a pair of brackets 52 secured as by means of rivets 54 to the vertical beams 20 at the rear of the machine and serves to support a stack of relatively flat articles such as newspapers, magazines, or the like, designated generally by reference numeral 56. A suitable door (not shown) is provided in the rear wall 14 of the container to permit the stack of articles 56 to be loaded on the platform 50 and a discharge slot 58 having a chute 60 extending therethrough is provided in the front wall 12 of the machine to permit articles to be discharged from the stack 56. The chute 60 is provided with an upturned foot portion 62 to catch the articles as they pass through the slot 58 and is preferably held in place by means of braces 64.

As indicated above the dispensing mechanism in accordance with the present invention is preferably constructed as a unitary assembly adapted to move up and down within the container, the bottom ends of the side plates 40 sliding within the channels 38. As shown particularly in Figure 2 the side plates 40 of the frame are connected at their top ends by a generally D-shaped transverse brace 66 held in place as by means of bolts 68 threaded into the opposite ends 67 of the brace and including a member 70 extending transversely between the ends 67 and forming the base of the D. A horizontal yoke 72 is secured rigidly to the side plates 40 between the latter and the ends 67 of the brace 66 and is likewise held in place by means of the bolts 68. The yoke 72 extends in cantilever fashion rearwardly from the frame 42 and serves to support a feed starting device to be hereinafter more fully described.

Referring again to Figure 2 a pair of brackets 74 is secured to the outer faces of the side plates 40 by means of the bolts 68 and extend forwardly to form a pair of collars 76 slidably fitting around the guide posts 30. Each of the brackets 74 includes an outer rearwardly directed portion 78 and a pair of bolts 80 extend between the parts 78 and 74, being held in place by means of nuts 82. The bolts 80 serve as pivots for a pair of levers 84 connected at their rear ends by means of a transverse member 86 and having their forward ends formed in the shape of wedges 87 for engagement with the guide posts 30. It will now be apparent that the collars 76 operate in conjunction with the levers 84, as a clutch, to releasably grip the guide posts 30 depending upon the position of said levers thus serving to guide the upper portion of the frame 42 and to control its posiiton relative to the container as indicated by the full and dotted line positions of the levers 84 in Figure 6.

Referring now particularly to Figures 1 and 2, the transverse member 86 which interconnects the rearward ends of the levers 84 is provided intermediate its ends with a pair of depending brackets 88. A pair of horizontal carriages 90 is pivotally mounted as at 92 upon the lower ends of the brackets 88, each of the carriages 90 being bifurcated at its opposite ends to provide clevises 93 within which are rotatably mounted a plurality of wheels 94. The wheels 94 are adapted to rest upon the top of the stack 56 and serve to control the position of the levers 84 to thereby regulate the gripping action of the collars 76 upon the guide posts 30. Thus the vertical position of the frame 42 and the entire dispensing mechanism carried thereby is determined by the height of the stack 56 with which the carriage 90 and wheels 94 are associated.

A pair of horizontal feed rollers 96 and 98 (Figure 1) is rotatably mounted in the side plates 40 of the frame 42, the rollers contacting each other when at rest and rotating together during a feeding operation to discharge an article from the stack 56 forwardly onto the chute 60. The roller 96 is provided with a drive shaft 100 extending axially from its opposite ends and includes an operating handle 102 secured in any convenient manner to one of the projecting ends of the shaft 100 for manually rotating the rollers. The bottom roller 98 is yieldingly mounted to permit a limited amount of vertical movement relative to the roller 96 to accommodate articles of varying thickness therebetween and to this end the journals 104 of the roller 98 rest upon follower blocks or bearings 106 which in turn are urged upwardly by means of suitable coil springs 108 resting at their lower ends upon the bases of slots 110 formed in the side plates 40.

In the foregoing description mention was made of the yoke 72 which is rigidly secured to the frame 42 for movement therewith and serves to support a feed starting device adapted to move a single article from the top of the stack 56 and feed the same to the rollers 96 and 98 which complete the dispensing operation. The yoke 72 as shown in Figure 2 is suitably bent and offset to provide operating clearance and includes a pair of depending arms 112 rigidly secured thereto and attached at their lower ends in any convenient manner to the forward ends of a pair of track sections 114 and to another pair of shorter track sections 116. The track sections 114 are attached at their top rear ends 115 to the extreme rear portion of the yoke 72 extending downwardly and forwardly and thence downwardly and rearwardly to form inclined sections 118, and finally extending horizontally to form sections 120 lying beneath the track sections 116. A horizontal crankshaft 122 is mounted for oscillation in bearings 124 formed at opposite sides of the yoke 72 (Figure 2) and includes a pair of offset or cranked portions 126 and 128. The cranked portion 126 is pivotally connected as by means of a suitable pin 130 to a connecting rod 132 pivotally connected at its opposite end as indicated at 134 to the free end of a crank arm 136 suitably secured to the projecting end of the drive shaft 100 of roller 96 opposite to the operating handle 102. The other cranked portion 128 of the crankshaft 122 is pivotally connected to a pair of push rods 138 having a suitable brace 140 extending therebetween and connected at their opposite ends to a horizontal feed bar 142 having a plurality of sharpened points 143 (Figure 4) projecting from its bottom surface and adapted to engage the top article upon the stack 56. At its opposite ends the feed bar 142 is provided with pins 144 adapted to slide along and be guided by one or the other of the pairs of track sections 116, 118, or 120.

The mechanism for determining which of the pairs of track sections 116, 118, or 120 will be utilized at any given time may be referred to generally as a feed bar trap. As shown in Figures 1 and 4 this trap comprises a pair of relatively stiff springs 146 secured to the bottom ends of the depending arms 112 and projecting forwardly to a point very close to the inclined track sections 118. The springs 146 in operation yield upwardly to permit the pins 144 of the feed bar 142 to pass upwardly along the inclined track sections 118 while preventing movement of the

pins 144 in the opposite direction. The right-hand ends of the short track sections 116 abut against track continuations 148 carried by horizontal fittings 150 formed at the bottom ends of a pair of arms 152. The arms 152 are secured to a transverse rockshaft 154 pivotally mounted in the yoke 72 and provided with an upwardly extending arm 153 connected at its outer end 155 to a tension spring 156 which in turn is secured to the yoke 72 in such manner as to yieldingly urge the arms 152 in a direction tending to maintain the track sections 116 and continuation sections 143 in engagement. The top end 155 of the arm 153 is also connected by means of a short link 158 to one end 160 of a lever 162 pivotally mounted at 164 upon one of the side plates 40, the function of which will be hereinafter more fully described.

Referring now particularly to Figures 1, 3, and 8 there is illustrated a preferred form of coin controlled apparatus for controlling the operation of the dispensing mechanism which is seen to comprise a relatively flat tubular coin channel 166 secured in any convenient manner to the outer face of one of the side plates 40 preferably at the same side of the machine as the operating handle 102. The coin channel is provided with an inclined portion 168 at its upper end secured as at 170 to the inner face of an auxiliary vertical plate 172. The plate 172 in turn is secured to the side plate 40 of the frame 42 by means of a plurality of brackets 174 held in place in any convenient manner as by means of rivets 176. At its top end the coin channel 166 is provided with a circular aperture 178 so dimensioned as to prevent the insertion of a coin larger than a given size and an elongated aperture 180 is provided in the bottom of the inclined portion 168 of such dimensions as to cause any coins smaller than the given size to be discharged therethrough and into a coin return box 182.

At the bottom of the coin channel as shown particularly in Figure 3 there is provided a coin guide in the form of a block 184 secured in any convenient manner to the outer face of the side plate 40 and provided with an upturned lip 186 providing a curved slot or groove positioned directly beneath the coin channel and adapted to receive a coin 188 therein. The right-hand portion of the block 184 is also slotted as indicated by reference numeral 190 to receive the lower arm 192 of the lever 162 which is normally urged by means of the tension spring 156 in such manner as to project into the groove 186 where it lies in the path of the coin 188.

As shown particularly in Figures 3 and 9 the drive shaft 100 of the roller 96 is provided with a coin engaging member 194 secured thereto as by means of a suitable bolt 196 and nut 198 and having its top portion projecting into the groove 186 in such manner as to contact the coin 188 therein. It will now be apparent that if a coin 188 of proper size is inserted into the aperture 178 it will pass downwardly through the inclined portion 168 of the coin channel and will be deposited within the groove 186 of the guide block 184. The coin engaging member 194 is normally to the left of its position shown in Figure 3, just out of the path of a descending coin. Rotation of the operating handle 102 at this time will cause the coin engaging member 194 to abut against the coin 188 forcing the same to the right in Figure 3 against the arm 192 of the lever 162, thereby causing the latter to rotate slightly in a counterclockwise direction as viewed in Figures 1 and 3. Continued rotation of the operating handle 102 causes the member 194 to force the coin 188 into the lower offset portion 200 of the coin channel which terminates at its bottom end in a suitable coin receptacle 202.

The mechanism for closing the aperture 178 to prevent the insertion of additional coins into the machine after all of the articles have been discharged therefrom is best illustrated in Figure 7. As shown in this figure the aperture 178 is adapted to be closed by means of a relatively flat plate 204 mounted for horizontal sliding movement upon a track 206 secured to the rear face of the plate 172. The sliding plate 204 is normally held in a position clear of the aperture 178 by means of a linkage comprising a rockshaft pivotally mounted at 208 upon the plate 172 and having one of its arms 210 pivotally connected as at 212 to the plate 204 and its other arm 214 yieldingly urged by means of a spring 216 into aperture opening position. The linkage for actuating the plate 204 into aperture closing position includes an elongated connecting rod 218 pivotally connected at its top end to the outer end 220 of the arm 214 and at its bottom end to one end 222 of a lever 224 pivotally mounted at 226 adjacent the bottom end of the plate 172. The opposite end 228 of the lever 224 is positioned in such manner as to contact the top edge of the transverse beam 26 at such time as the frame 42 has fully descended or in other words when no articles remain in the stack 56. This causes the lever 224 to rotate slightly in a clockwise direction thereby slightly rotating the arms 214 and 210 of the rockshaft in a counterclockwise direction and thus sliding the plate 204 over the aperture 178 to obstruct the latter. An aperture 230 is provided in the plate 172 to permit the passage of the drive shaft 100 therethrough and is elongated to provide for lateral adjustments between the shaft and the plate.

The completely assembled vending machine previously described is illustrated in Figure 5 wherein it will be noted that the side wall 18 of the container is provided with an elongated vertical slot 232 giving access to the aperture 178 and coin return box 182 as well as accommodating vertical movement of the drive shaft 100 as the frame 42 and the dispensing mechanism carried thereby move up and down within the container. It will also be noted in Figure 5 that the front wall 12 of the machine is provided with a transparent opening 234 therein arranged to display a sample article shown herein as a newspaper 236.

In Figure 1 there is illustrated a line or cable 238 connected at one end to the frame 42 passing upwardly over pulleys 240 and 242 suitably secured in the top of the container and terminating at its other end 244 at a point convenient to the loading door of the machine. The cable 238 is adapted to be manually grasped by the operator to elevate the frame 42 and dispensing mechanism at the time of loading the machine and during this loading operation the frame 42 may be held in raised position by releasably securing the end 244 of the cable to a convenient portion of the yoke 72.

Although the operation of the device will be readily apparent to one skilled in the art from the foregoing description it may be briefly described as follows:

Assuming the machine to be properly loaded with a stack of flat articles such as newspapers and the dispensing mechanism to be in elevated

position with the carriage 90 and wheels 94 resting upon the top of the stack 56 a complete dispensing operation is accomplished by simply inserting a coin of the correct size into the aperture 178 and rotating the operating handle 102 through a complete revolution to discharge a single newspaper from the top of the stack 56 onto the chute 60. Obviously a coin which is larger than required in payment for a single newspaper cannot be inserted into the aperture 178, whereas a coin smaller than that required will drop through the aperture 180 in the inclined portion 168 of the coin channel 166 and will be returned to the box 182.

Prior to the insertion of a coin of the required dimensions into the aperture 178 it will be noted that the pins 144 of the feed bar 142 are riding upon the short track sections 116 and continuation sections 148 so that regardless of the amount of rotation of the operating handle 102 and feed rollers 96 and 98 the feed bar 142 will merely oscillate back and forth along the track sections 116 and continuations 148 out of contact with the articles in the stack 56. Thus until a suitable coin has been inserted into the machine the feed bar 142 is ineffective to start the feeding of an article from the stack 56 to the feed rollers 96 and 98 to perform a dispensing operation.

Upon the insertion of a suitable coin into the aperture 178 the channel 166 is effective to guide such coin into the groove 186 of the coin guide 184. Rotation of the operating handle 102 under these circumstances causes the member 194 on the drive shaft 100 to engage the coin 188, forcing the latter against the arm 192 of the lever 162 thereby causing the latter to rotate slightly in a counterclockwise direction (Figures 1 and 3). Such movement of the lever 162 by means of the connecting link 158 and arm 153 causes the shaft 154 to be rotated in a counterclockwise direction thereby rotating the arm 152 also in a counterclockwise direction and thus moving the fitting 150 and track continuation sections 148 rearwardly away from the short track sections 116. The track sections 116 and continuation sections 148 thus constitute a sort of trap door arrangement which may be operated in the manner just described to permit the pins 144 to drop between the sections 116 and continuations 148 down into the track sections 120 thereby placing the feed bar 142 in contact with the top article on the stack 56. It will be understood that rearward movement of the pins 144 into dropping position between the sections 116 and continuations 148 is automatically accomplished simultaneously with the actuation of the lever 162, link 158, and arms 153 and 152 by means of the driving connection between the crank arm 136, connecting rod 132, crankshaft 122, and push rods 138.

When the pins 144 have dropped down through the trap and onto track sections 120, continued rotation of the operating handle 102 through the connections 136, 132, 122, and 138 described above will cause the feed bar 142 to move forwardly thus pushing the top article from the stack 56 up into the space between the rollers 96 and 98 which then engage the article and continue to feed it through the slot 58 onto the chute 60. As the feeding operation nears completion the pins 144 begin to move upwardly along the inclined track sections 118, finally passing the springs 146 which prevent return movement of the pins 144 to the track sections 120. Such upward movement of the pins 144 along the track sections 118 serves to disengage the points 143 from the newspaper or other article to discontinue the pushing action of the feed bar 142 which is no longer necessary as the article is now engaged by the feed rollers 96 and 98. Continued rotation of the operating handle 102 then moves the pins 144 back to their original position on the upper track sections 116 and since the spring 156 is now operative through the arms 153 and 152 to close the trap between the sections 116 and continuations 148 the feed bar 142 will be held in its upper ineffective position.

It is to be particularly noted in connection with the operation of the vending machine disclosed herein that the dispensing mechanism is substantially entirely carried by the frame 42 and is automatically positioned within the container in accordance with the height of the stack 56. As indicated above, this automatic positioning is accomplished by the alternate gripping and releasing action of the collars 76 around the guide posts 30 under the control of the levers 84 which in turn are so positioned as to be regulated by the height of the stack 56. Since the movement of the frame 42 and the dispensing mechanism carried thereby is automatically determined by the height of the stack 56 at any given time, it will be apparent that the thickness of the individual articles comprising the stack 56 will have substantially no bearing upon the efficient performance of a feeding operation. It will also be noted that by reason of the yieldable mounting of the feed roller 98 the thickness of the individual articles will likewise have no material bearing upon the subsequent and final stages of the feeding operation.

Obviously numerous modifications, alterations, and deviations from the specific structures disclosed herein as a preferred embodiment and solely for purposes of illustration will occur to one skilled in the art without departing from the spirit of the invention. It will also be understood that numerous changes can be made in size, materials, and arrangement of parts without departing from the principles of the invention as set forth in the appended claims.

I claim:

1. A vending machine comprising, a container adapted to support a stack of relatively flat articles therein, a guide mounted in said container, and mechanism for dispensing said articles from said container comprising a frame movably mounted therein, gripping means on said frame engageable with said guide and operatively associated with said stack for controlling the position of said frame in response to variations in height of said stack, a pair of feed rollers rotatably mounted in said frame, a drive shaft extending axially from opposite ends of one of said rollers and having an operating handle at one of said ends and a crank arm at the other of said ends, a horizontal yoke attached to the upper portion of said frame, a pair of tracks depending from said yoke, a crankshaft mounted for oscillation on said yoke, a feed bar guided by said tracks and connected to said crankshaft for movement thereby to feed one of said articles to said rollers, a connecting rod extending between said crank arm and said crankshaft for oscillating the latter, a feed bar trap adjacent said tracks normally rendering said bar ineffective, and means subject to operation by said handle for controlling the action of said trap to render said feed bar effective.

2. In a vending machine adapted to support a

stack of relatively flat articles therein, mechanism for dispensing said articles from said machine comprising a frame movably mounted therein, means on said frame operatively associated with said stack for controlling the position of said frame in response to variations in height of said stack, a pair of feed rollers rotatably mounted in said frame, a drive shaft extending axially from opposite ends of one of said rollers and having an operating handle at one of said ends and a crank arm at the other of said ends, a horizontal yoke attached to the upper portion of said frame, a pair of tracks depending from said yoke, a crankshaft mounted for oscillation on said yoke, a feed bar guided by said tracks and connected to said crankshaft for movement thereby to feed one of said articles to said rollers, a connecting rod extending between said crank arm and said crankshaft for oscillating the latter, a feed bar trap adjacent said tracks normally rendering said bar ineffective and means subject to operation by said handle for controlling the action of said trap to render said feed bar effective.

3. In a vending machine adapted to support a stack of relatively flat articles therein, mechanism for dispensing said articles comprising a frame, a pair of feed rollers rotatably mounted in said frame, a drive shaft extending axially from opposite ends of one of said rollers and having an operating handle at one of said ends and a crank arm at the other of said ends, a horizontal yoke attached to the upper portion of said frame, a pair of tracks depending from said yoke, a crankshaft mounted for oscillation on said yoke, a feed bar guided by said tracks and connected to said crankshaft for movement thereby to feed one of said articles to said rollers, a connecting rod extending between said crank arm and said crankshaft for oscillating the latter, a feed bar trap adjacent said tracks normally rendering said bar ineffective, and means subject to operation by said handle for controlling the action of said trap to render said feed bar effective.

4. In a vending machine adapted to support a stack of relatively flat articles therein, mechanism for dispensing said articles comprising a pair of feed rollers, a drive shaft extending axially from opposite ends of one of said rollers and having an operating handle at one of said ends and a crank arm at the other of said ends, a pair of tracks in said machine, a crankshaft, a feed bar guided by said tracks and connected to said crankshaft for movement thereby to feed one of said articles to said rollers, a connecting rod extending between said crank arm and said crankshaft for oscillating the latter, a feed bar trap adjacent said tracks normally rendering said bar ineffective, and means subject to operation by said handle for controlling the action of said trap to render said feed bar effective.

5. In a vending machine adapted to support a stack of relatively flat articles therein, a dispensing mechanism comprising a pair of feed rollers, a track mounted adjacent said rollers including a trap normally rendering said mechanism ineffective, a feed bar mounted for guided movement along said track to feed an article from said stack to said rollers, means for simultaneously rotating said rollers and oscillating said feed bar, and means subject to operation by said first-named means for controlling the action of said trap to render said mechanism effective.

6. A vending machine comprising a pair of upright supports, a frame, means connecting said frame to said supports comprising a clutch releasable to provide for downward movement of said frame by gravity, means for supporting a stack of flat articles to be dispensed, a follower carriage resting on the uppermost article of the stack and connected to said clutch and movable downwardly as the height of the stack decreases to release said clutch, and means carried by said frame for dispensing successive articles from the top of the stack.

7. A vending machine comprising a pair of upright supports, a frame, means connecting said frame to said supports comprising a clutch releasable to provide for downward movement of said frame by gravity, means for supporting a stack of flat articles to be dispensed, a follower carriage resting on the uppermost article of the stack and connected to said clutch and movable downwardly as the height of the stack decreases to release said clutch, a pair of rotatable rollers carried by said frame, a handle connected to one of said rollers, and means carried by said frame and operative upon rotation of said handle for feeding the uppermost article of the stack between said rollers to be dispensed thereby.

8. A vending machine comprising a frame, a pair of rollers carried by said frame, a handle connected to one of said rollers and operable to rotate such roller, means for supporting a stack of flat articles adjacent one side of said rollers, a feed starting device operable by said handle, means predetermining a path of movement of said feed starting device, said path having a lower portion in which said starting device engages the uppermost article and moves toward said rollers to feed such article thereto, means operative for preventing said feed starting device from reaching said lower portion of its path of movement, and means for rendering said last-named means inoperative.

9. Apparatus constructed in accordance with claim 8 wherein said path of movement of said feed starting device has a downward portion leading to said lower portion of said path of movement, said means for preventing said feed starting device from reaching said lower portion of said path of movement comprising a trap arranged in said downward portion of said path of movement.

CLARENCE L. HAWKS.

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