

Nov. 11, 1958

D. NEIDIG

2,859,849

COIN CONTROLLED VENDING APPARATUS

Filed Nov. 29, 1951

4 Sheets-Sheet 1

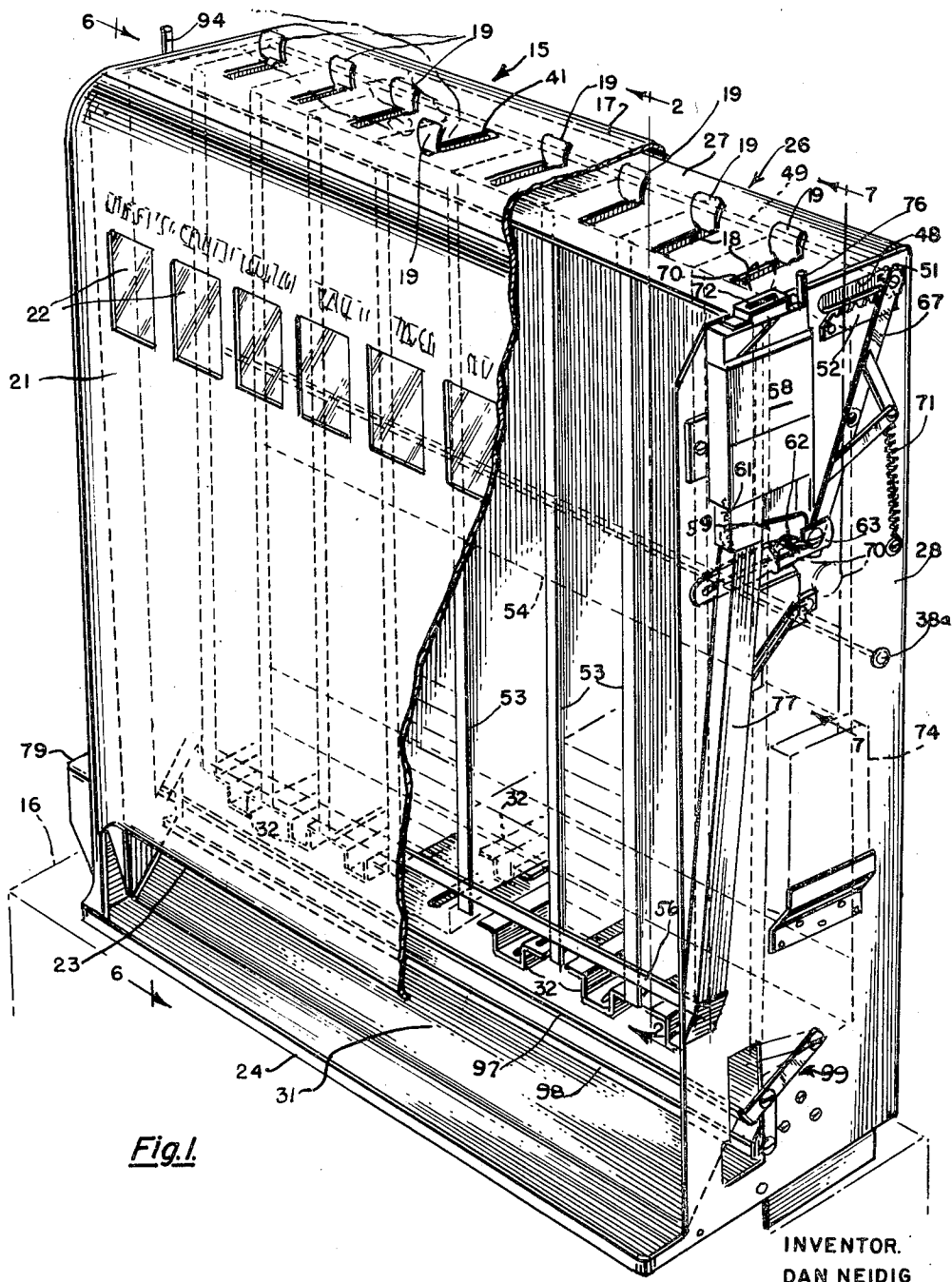


Fig. 1.

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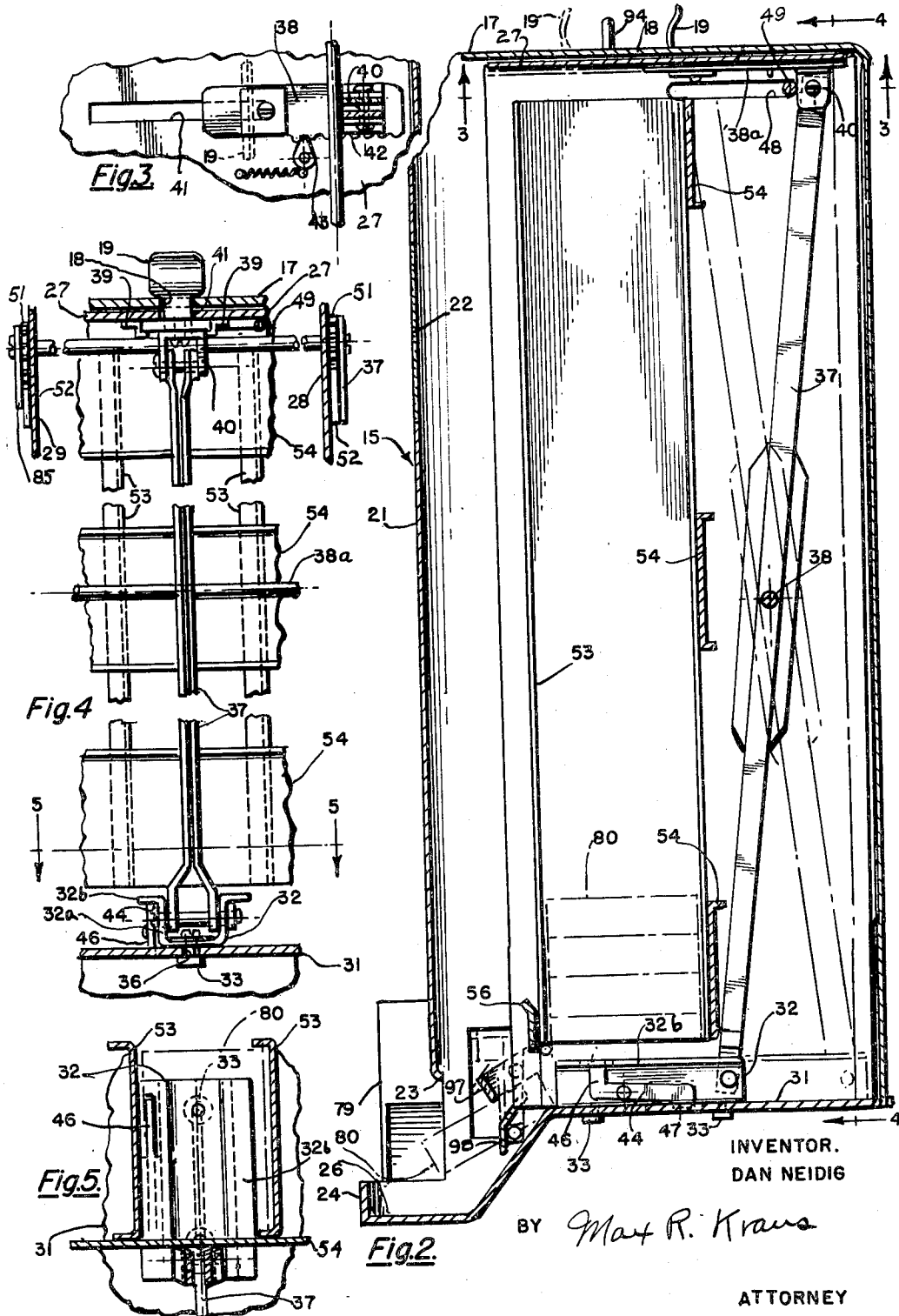
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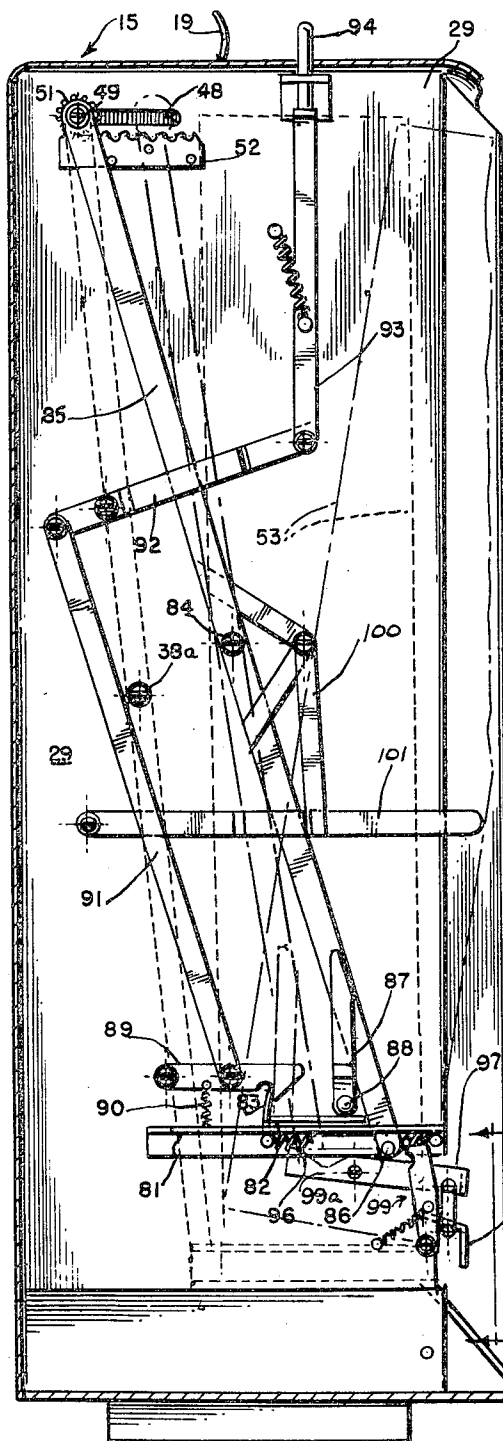


Fig. 6.

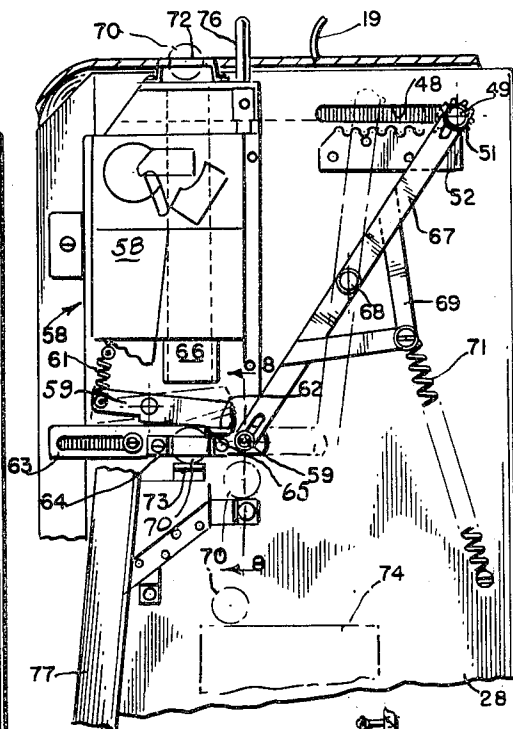


Fig. 7.

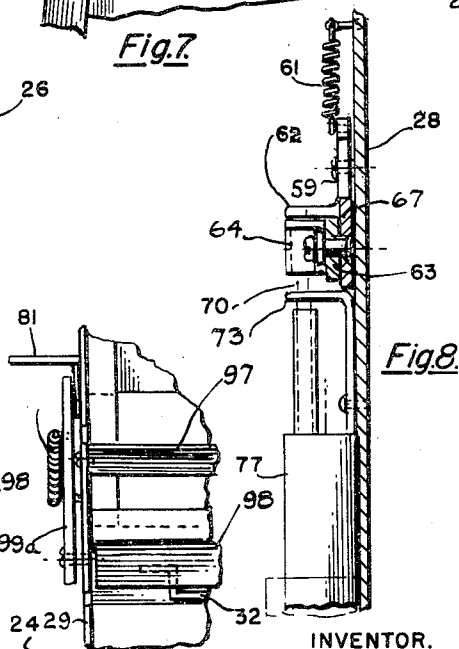


Fig. 8.

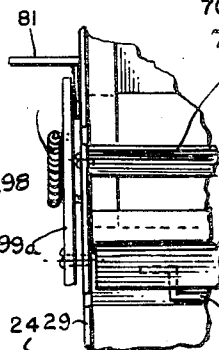


Fig. 9.

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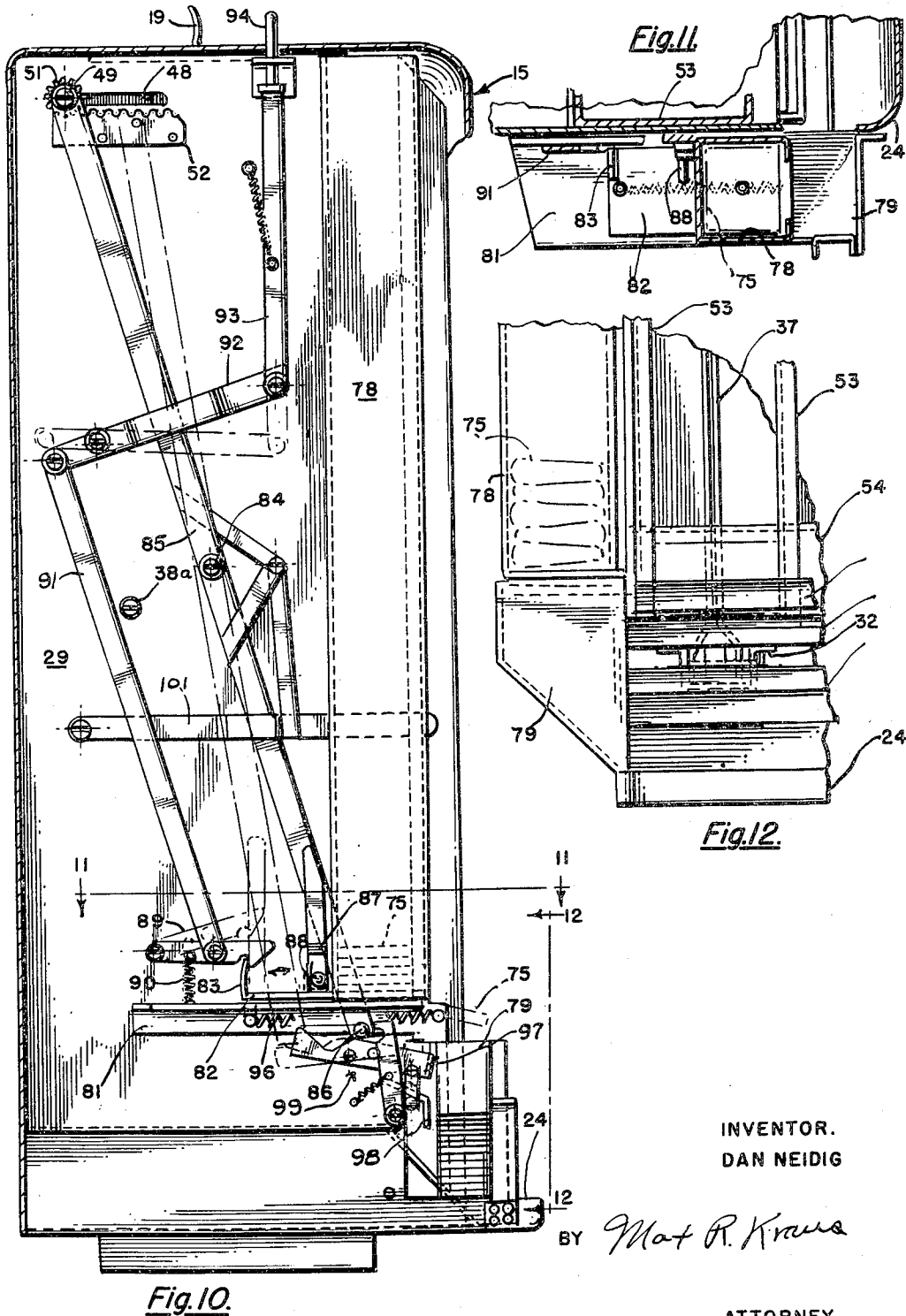


Fig. 11

Fig. 12

Fig. 10

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COIN CONTROLLED VENDING APPARATUS

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Application November 29, 1951, Serial No. 258,847

5 Claims. (Cl. 194—58)

This invention relates generally to a coin controlled vending apparatus for vending or dispensing packaged commodities such as cigarettes and the like.

Vending apparatus and particularly those intended for vending cigarettes, as now generally constructed, are designed with the selector means disposed proximate to the delivery troughs which are positioned low so that in order for a purchaser to operate the apparatus it becomes necessary for him to stoop in order to actuate the selector means thereby resulting in a high degree of inconvenience to the purchaser. Additionally, such machines embody a relatively high structure, usually of the order of 6 feet, so that it is feasible to locate such machines in establishments only against a wall thereof. In restaurant establishments, for example, which usually sell cigarettes, it is highly desirable that a vending machine be placed near the cashier's desk so that patrons in passing by may purchase cigarettes from the machine without deviating from their course of entry or exit. It is obvious that vending machines of the prior art type could not be so located in view of their height, but were required to be located, as against a wall, which in most cases caused inconvenience to the patron desiring to purchase cigarettes, or the vending apparatus might be so located as to not be observed by a patron in the establishment. As a matter of good business, it has been found desirable to locate a vending apparatus adjacent a cashier's desk, as in a restaurant establishment, so that patrons in passing by could not avoid observing the apparatus in the event they desired to purchase cigarettes.

Accordingly, it is an object of my invention to provide a vending apparatus which has an overall height such that it may be conveniently located adjacent a cashier's counter or at any other suitable place, with the selector means disposed on the top surface thereof so that a purchaser may operate the machine to purchase a particular brand without any inconvenience to himself.

A further object of my invention is the provision of a vending apparatus so constructed that the packaged items are discharged or delivered on the basis of first-in first-out so that none of the products becomes stale and unsuitable for use.

A further object of my invention is the provision of auxiliary means associated with the apparatus for dispensing supplemental or auxiliary articles only when desired, as for example, book matches, since it is known that many cigarette smokers do not use matches but prefer to employ pocket lighters.

Still a further object of my invention, is the provisions of an apparatus of the character described which is relatively simple in construction, has relatively few parts, is efficient in operation and durable in service.

Other and further objects and advantages of my invention will become apparent from the following description when considered in connection with the accompanying drawings in which:

Fig. 1 is a perspective view of a coin controlled vending apparatus in accordance with my invention and show-

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ing a part of the cabinet cut away to illustrate details of construction.

Fig. 2 is a cross-sectional view taken substantially on line 2—2 of Fig. 1.

Fig. 3 is a cross-sectional view taken substantially on line 3—3 of Fig. 2.

Fig. 4 is a cross-sectional view taken substantially on line 4—4 of Fig. 2.

Fig. 5 is a cross-sectional view taken substantially on line 5—5 of Fig. 4.

Fig. 6 is a cross-sectional view taken substantially on line 6—6 of Fig. 1.

Fig. 7 is a cross-sectional view taken substantially on line 7—7 of Fig. 1.

Fig. 8 is a cross-sectional view taken substantially on line 8—8 of Fig. 7.

Fig. 9 is a cross-sectional view taken substantially on line 9—9 of Fig. 6.

Fig. 10 is an elevational view similar to Fig. 6 but showing the construction thereof in full elevation.

Fig. 11 is a cross-sectional view taken substantially on line 11—11 of Fig. 10, and

Fig. 12 is an elevational view taken substantially on line 12—12 of Fig. 10.

My invention for purpose of illustration only will be described in relation to a cigarette package vending machine although it will be obvious from the following description of the illustrated embodiment that my invention may be modified to dispense any packaged commodity without departing from my invention, and my invention is to be limited only in accordance with the claims appended.

Referring to the drawings, the numeral 15 indicates generally a cabinet which encloses the mechanism hereinafter to be described, the said cabinet being adapted for mounting on a suitable base 16 and having in the top wall 17 thereof, a plurality of rectangular apertures 18 providing clearance for the hand engaged selector elements 19 which project therethrough. The front wall 21 of the cabinet 15 is provided with a plurality of windows 22 each of which is aligned with an aperture 18 and the lower portion of the front wall 21 is cut away as at 23 to permit the ejected article to fall on the ledge 24 of the apparatus, all as will be hereinafter described.

Contained within the cabinet 15 is a box-like frame indicated generally by the numeral 26, the said frame including a top wall member 27, side wall members 28 and 29 respectively, and a bottom wall member 31 to which is integrally connected an article receiving ledge 24. Supported on the bottom wall member 31 for sliding movement thereon, are a plurality of ejector members 32 which are formed of flanged channel members having a cross-section similar to that illustrated in Fig. 4. Each of the said ejector members is guided for straight line movement by two bolts 33 which pass through a slot 36 in the bottom wall 31, the bolts passing through a slot 36 in the bottom wall 31 and being secured by suitable nuts. Pivotaly connected to each of the ejector members 32 is a lever 37 which is fulcrumed on a transverse shaft 38a, the said shaft being suitably supported in the side walls 28 and 29 of the frame. The upper end of the lever 37 is pivotaly connected to a slide member 38 which is retained substantially contiguous to the underside of the top frame member 27 by a pair of complementary guide members 39 which are welded to the top frame member 27 and which slideably support the slide member 38. A finger engaging selector element 19 secured to the slide member 38 extends through a slot 41 provided in the top member 27. Thus, as will be apparent by moving the selector element 19 to the left, as viewed in Fig. 2, the ejector member 32 is caused to move to the right. The slide member 38

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is provided with a depending yoke 40 and along one edge with a plurality of teeth 42 which are adapted to be engaged with a spring biased pawl 43 for a purpose as will be hereinafter described.

The ejector member 32 is provided with a latch element 44 which is pivotally mounted on a side wall 32a thereof as illustrated in Figs. 2 and 4, the latch element being normally unbalanced so that the vertical extension 46 at the forward end thereof normally projects through a slot in the flange 32b while the opposite end of the latch element 44 is received in a slot 47 in the bottom wall 31 and is adapted to engage with the end wall of the said slot to lock the ejector member 32 against movement. It will be apparent that the said latch element may be pivoted counter clockwise, as by applying some slight pressure or weight to the extension 46 so as to cause the said latch element to move to the position illustrated by the solid lines in Fig. 2 with the latch element out of engagement with the slot 47 so as to permit the slide member 32 to move to the right, it being apparent that when the latch element is engaged in the slot 47 the ejector member 32 is locked against movement.

Referring particularly to Figs. 1 and 2, the side walls 28 and 29 are each provided with a transverse slot 48 thru which extends a shaft 49 and mounted on each end of the shaft is a pinion 51 which is adapted to engage with a gear rack segment 52 welded to the said walls immediately below each of the said slots. The particular arrangement of parts insures that the axis of shaft 49 when the same is moved lengthwise of the slots will always be disposed at a right angle to the planes of the side walls 28 and 29.

Pivotally supported above each of the ejector members 32 and in vertical alinement therewith, is a hopper or magazine 53 adapted to carry a plurality of packaged articles such as cigarettes or the like, the said articles being arranged in stacked relation. Each of the said magazines is connected to transverse members 54 which tie all of the magazines together so that they may be tilted forwardly simultaneously to permit filling of each of the magazines with articles to be dispensed. A retaining member 56 extends across the forward ends of the magazines near the bottoms thereof and serves to prevent the ejection of more than one article at any one time from a magazine.

The means whereby the ejecting mechanism will be unlocked upon the insertion of a suitable coin will now be described. Suitably mounted on the side wall 28 is a coin detecting means of conventional construction for intercepting and returning defective or spurious coins. The said means indicated generally by the numeral 58, forms no part of the present invention and, therefore, will not be described in detail. Pivotally mounted on the side wall 28 below the coin detecting means 58 is a latch member 59 biased by a spring 61 urging the same in a clockwise direction as viewed in Fig. 7. The said latch member has a flange 62 which extends laterally at one end thereof. Disposed below the latch member 59 is an elongated slide member 63 mounted on the side wall 28 for sliding movement. Suitably attached to the outer face of the member 63 is a coin retaining member 64 alined substantially vertically with the coin chute 66 of the coin detecting means 58 so that a coin when discharged from the said chute is caused to drop into said member and is maintained in vertical disposition. The said member is provided with a notch as at 65 into which a shoulder of the latch member 59 is urged by the spring 61 thereby effecting a locking of the member 63 and preventing sliding movement thereof. The member 63 is pivotally connected to a lever 67 which is fulcrumed as at 68, the opposite end of the said lever being pivotally connected to the shaft 49. Suitably welded to the lever 67 is a right angle bracket 69 to which is connected a tension spring 71, the other end of the said spring being attached to a bolt extending through

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the side wall 28. The relative positions of the parts illustrated by the solid lines in Fig. 7 represent a condition wherein the operating parts are locked against movement. When a coin 70 of proper denomination is inserted into the slot 72 of the coin detecting means 58 it passes therethrough and falls into the vertical space defined by the retaining member 64 and the slideable member 63 and comes to rest on platform member 73 which will be hereinafter explained. When the coin 70 is in the position illustrated in Fig. 7 while resting on the platform member 73 the peripheral edge of the coin is proximate to the lateral flange 62 of the latch member 59 and acts as a cam. Thus, when a selector element 19 is moved to the left as viewed in Fig. 7, the lever 67 is caused to be tipped upwardly about its fulcrum to the position indicated by the broken lines. Normally, in the absence of a coin resting on the platform member 73 such movement cannot be effected because of the locking action of the latch member 59 against the slide member 63. However, when a coin 70 is positioned on the platform member 73 as illustrated in Fig. 7, the lateral flange 62 of the latch member 59 is caused to engage with the peripheral edge of the coin making the coin act in effect like a cam and causing the latch member 59 to pivot in a counter clockwise direction, thereby elevating the end of the latch member 59 out of engagement with the notch 66 in the slide member 63 and permitting the said member to move to the right to the position illustrated by the broken lines in Fig. 7. As will be apparent when the slide member 63 moves to the right, the coin 70 is carried off the platform member 73 and falls by gravity into a suitable receptacle 74 which is supported on a platform attached to the side wall 28.

While not here shown because it forms no part of the present invention, the platform member 73 itself is pivotally mounted on the side wall 28 and is connected by a series of link members not shown to the plunger button 76 so that, as will be herein explained more fully, when a particular brand of article selected is exhausted from a particular magazine thereby rendering the ejecting means inoperative, a depression of the plunger button 76 will effect a pivotal movement of the platform member 73 thus causing the coin 70 to drop into the coin return chute indicated generally by the numeral 77 and from there drop into the article delivery ledge 24 from where it may be recovered by the user or purchaser. As will be apparent the spring 71 serves to return the parts to the position shown by the full lines in Fig. 7.

Referring now to the supplemental or auxiliary ejecting means illustrated in Figs. 6 and 10, the said means in the embodiment illustrated, is intended to eject or deliver book matches only when such matches are desired by a purchaser. The said ejector means is operative concurrently with the operation of the previously described primary ejector means to position a book of matches in condition for delivery but not to deliver the same until desired by the purchaser. Thus, should a purchaser not desire a book of matches, the same will remain in position to be delivered to a subsequent purchaser desiring such matches. As seen in Fig. 10, a magazine or hopper 78 is mounted adjacent the side wall 29, the said magazine being adapted to contain a plurality of book matches in stacked relation. Below the magazine 78 is a delivery chute 79 which directs delivery of the book matches to the article delivery ledge 24. Supported on an angle bracket 81 attached to the side wall 29 below the magazine is an ejector member 82 adapted to slide on the bracket 81, the said ejector member having at the rearward end an upright wall 83. The ejector member 82 is adapted to be moved to cocked position by a lever 85 which is fulcrumed as at 84 and has one end pivotally connected to the shaft 49 while the other end carries a roller 86. A finger 87 welded to the lever, as shown in Fig. 10, is provided with a laterally projecting pin 88

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which is adapted to engage with the vertical wall 83 of the ejector member 82 to move the same to the left, as viewed in Fig. 10. A spring biased pivoted latching member 89 is adapted to engage with the vertical wall 83 of the ejector member to retain the same in cocked position. It will be apparent that when the primary ejector means is actuated for the purpose of ejecting packages of cigarettes or the like the lever 85 will be pivoted simultaneously about its fulcrum to the position illustrated by the broken lines in Fig. 10. In such pivotal movement the pin 88 engages with the wall 83 of the ejector member 82 to move the same to the position illustrated by the solid lines in Fig. 10 where it is caused to be engaged by the latching member 89 and retained in said position. The said latching element is pivotally connected through a series of link members 91, 92 and 93 to a plunger button 94 such that when the said plunger button is depressed the latching member 89 is caused to disengage the wall 83 of the ejector member 82 and the spring 96 connected thereto acts to propel the ejector member to the right, as viewed in Fig. 10, thereby impinging on the lowermost match book within the magazine and causing the same to be projected into the chute 79 and from which it drops to the delivery platform.

Guard members 97 and 98 extend completely across the width of the frame and are intended to prevent surreptitious removal of packages from the apparatus when it is not in operation and also during the interval of operation. The said guard rails form no part of the present invention but suffice it to say that they are connected by certain members generally indicated by the numeral 99 so as to assume the positions illustrated in Figs. 2 and 6 which represents a condition during which the apparatus is inoperative. During operation of the apparatus the guard members are elevated by engagement of the roller 86 with the member 99a to prevent insertion of a finger or instrument into any of the magazines.

A lever 101 connected with lever 85 serves to actuate a subsidiary mechanism, not shown, which mechanism for example may effect an operation such as ejecting change or the like.

The operation of my invention should be apparent from the foregoing description, but briefly stated it is as follows. In normal non-operating position, the selector elements 19 are retracted, as illustrated in Figs. 1, 2 and 7, with the yokes 40 of the slide members 38 each engaging the shaft 49 as illustrated more clearly in Fig. 2. Upon the introduction of a coin of proper denomination in the coin detecting means 58 and the coin passing through the coin wall by gravity to come to rest on the platform member 73, the coin being confined in a vertical plane by the retaining member 64. The apparatus is now conditioned for operation and the purchaser may then manipulate one of the selector elements 19 representing his selection of a packaged commodity and move the same forwardly which movement causes the flange 62 of the pivoted latching member 59 to engage with the peripheral edge of the coin 70 and to be displaced upwardly out of engagement with the notch 65 in the sliding member 63 so as to permit the said sliding member to move to the right to the position illustrated by the broken lines in Fig. 7. Correspondingly, as the sliding member 63 moves to the right the coin 20 will be carried off of the supporting platform 73 and will fall by gravity into a coin receptacle 74. As the selector element 19 is moved to the limit of its forward travel, the lever arm 67 is rocked about its fulcrum 68 to cause the ejector element 32 to move to the extreme rear to the position illustrated by the broken line in Fig. 2. Thus, the lowermost package of cigarettes 80 contained within a magazine is permitted to drop to the bottom wall 31 and when the selector element is released, the spring 71 effects a reversal in the movement thereof causing the ejector member 32 to return to normal in which the ejector member 32 moves in a forwardly direction and impinges on the

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lowermost package of cigarettes to discharge the same outwardly to the delivery platform 24.

The pawl 43 in engagement with the gear teeth 42 of the slide 38 permits the slide to be moved only in one direction, once movement of the said slide has been initiated. When the slide has reached the limit of its forward stroke, the pawl 43 is repositioned so that the slide may return to its original non-operative position. However, the pawl 43 locks against a reverse movement of the slide 38 at any point other than when the slide has reached the limit of its forward movement. Thus, once a selection of an article has been made and ejection of that particular selection initiated the ejection of that article must be carried through to a full completion.

As was previously explained the latch member 44 is normally unbalanced so that when the magazine is empty the latch member is engaged in the slot 47 and prevents movement of the slide member 32. Thus, a purchaser upon finding the machine inoperative because the article selected has been exhausted may, upon depressing the plunger 76, obtain a return of the coin and reinsert it, if he desires, for a different selection. When at least one package is contained in a magazine, the weight thereof is sufficient to maintain the end of the latch element out of engagement with the slot 47 and in non-locking position.

With each forward movement of the shaft 49 effected upon actuation of the selector element 19 the lever 85 is caused to pivot clockwise, as viewed in Fig. 10, causing the pin 88 to engage the wall 83 of the ejector member to the retracted position illustrated where it is engaged by the latching member 89. While in this position subsequent operations of the primary ejector means have no effect on the ejector member 82 and until the plunger button 94 is actually depressed to lift the latching member 89 to release the wall 83 the ejector member 82 will remain in the position described and in condition to impinge on the lowermost book of matches in the magazine 78. Upon depressing the plunger button 94, the ejector member 82 is caused to move forwardly and to eject a book of matches into the delivery chute 79. Thus, it will be apparent that a book of matches is ejected only when the same is desired by a purchaser.

I claim:

1. In a dispensing apparatus having a vertically disposed magazine adapted to contain a stack of packages, a reciprocally movable ejector below said magazine and normally supporting a stack of packages, said ejector when moved to a position rearwardly of said magazine permitting said stack to rest on the bottom of said magazine and when moved forwardly impinging on the lowermost package to deliver the same, an actuator mounted for reciprocal sliding movement above said magazine and a fulcrumed lever connected at opposite ends to said ejector and said actuator, said lever being pivotally movable upon movement of said actuator to move said ejector to deliver packages successively from the bottom of said stack, a vertically disposed auxiliary magazine adapted to contain a stack of different packages, a reciprocally movable auxiliary ejector below said auxiliary magazine and arranged when moved forwardly to deliver packages therein successively from the bottom of the stack, spring means normally urging said auxiliary ejector in a forward direction and a fulcrumed lever having one end operatively connected with said first mentioned lever so as to be movable simultaneously therewith and having the other end engageable with said auxiliary ejector to move the same rearwardly to a position to impinge on the bottom package, means for automatically locking said ejector in such impinging position and means for selectively releasing said ejector to impinge on said bottom package so as to deliver the same.

2. In a dispensing apparatus having a vertically disposed magazine adapted to contain a stack of packages, a reciprocally movable ejector below said magazine and ar-

ranged when moved forwardly to deliver packages successively from the bottom of the stack, an actuator mounted for reciprocable sliding movement above said magazine, a fulcrumed lever connected at opposite ends to said ejector and said actuator, said lever being pivotally movable upon movement of said actuator to move said ejector to deliver packages successively from the bottom of said stack, a vertically disposed auxiliary magazine adapted to contain a stack of different packages, a reciprocably movable auxiliary ejector below said auxiliary magazine and arranged when moved forwardly to deliver packages therein successively from the bottom of the stack, a fulcrumed lever having one end operatively connected with said first mentioned lever so as to be movable simultaneously therewith and having the other end engageable with said auxiliary ejector to move the same rearwardly to a position so that when actuated it is caused to impinge on the bottom package, means for locking said auxiliary ejector in such impinging position, means for selectively releasing said locking means to permit said ejector to deliver a package, and spring means for urging said auxiliary ejector in a forward direction to impinge on the bottom package to deliver the same.

3. In combination with means in a dispensing apparatus for delivering packages from a stack, a vertically disposed auxiliary magazine adapted to contain a stack of different packages, a reciprocably movable auxiliary ejector below said auxiliary magazine and arranged when moved forwardly to deliver packages therein successively from the bottom of the stack, means operatively connecting said first mentioned means and said ejector so that actuation of said first mentioned means will effect rearward movement of said ejector to a position so that when actuated it is caused to impinge on the bottom package, means for locking said auxiliary ejector in such impinging position, means for selectively releasing said locking means to permit said ejector to deliver a package, and spring means for urging said auxiliary ejector in a forward direction to impinge on the bottom package to deliver the same.

4. In a vending machine a vertically disposed magazine adapted to contain a stack of packages, ejector means reciprocably movable at the bottom of said magazine and adapted to support a stack of packages, said ejector means when moved forwardly arranged to deliver packages successively from the bottom of the stack, actuator means mounted for reciprocable sliding movement above said magazine, means operatively connecting said ejector means and said actuator means to effect simultaneous movement thereof, locking means for said actuator means comprising a member disposed forwardly of said actuator and arranged for movement in a horizontal plane, said member when in locked position preventing forward movement of said actuator means, coin controlled latching means, linkage connecting said latching means to said member whereby upon release of said latching means said member is released for movement to permit actuation of said actuator means, an auxiliary magazine adapted to contain a stack of different packages, a reciprocably

movable auxiliary ejector below said auxiliary magazine and arranged when moved forwardly to deliver packages successively from the bottom of the stack, a fulcrumed lever having one end pivotally connected to said member and having the other end engageable with said auxiliary ejector to move the same rearwardly to a position so that when actuated it is caused to impinge on the lowermost package, means for locking such auxiliary ejector in such impinging position, means for selectively releasing said locking means to permit said ejector to deliver a package, and spring means for urging said auxiliary ejector in a forward direction to impinge on the bottom package to deliver the same.

5. In a dispensing apparatus having a vertically disposed magazine adapted to contain a stack of packages, a reciprocably movable ejector below said magazine and arranged when moved forwardly to deliver packages successively from the bottom of the stack, an actuator mounted for reciprocable sliding movement above said magazine, a fulcrumed lever connected at opposite ends to said ejector and said actuator, said lever being pivotally movable upon movement of said actuator to move said ejector to deliver packages successively from the bottom of said stack, a vertically disposed auxiliary magazine adapted to contain a stack of different packages, a reciprocably movable auxiliary ejector below said auxiliary magazine and arranged when moved forwardly to deliver packages therein successively from the bottom of the stack, said ejector having an upstanding wall portion at the rear thereof, a fulcrumed lever having one end operatively connected with said first mentioned lever so as to be movable simultaneously therewith and having the other end engageable with said upstanding wall portion to move said auxiliary ejector rearwardly to a rearward position so that when actuated it is caused to impinge on the lowermost package in said auxiliary magazine, a pivoted latch member arranged to engage said upstanding wall portion to lock said auxiliary ejector in said rearward position, plunger means connected by linkage to said latch member for selectively releasing the same, and spring means acting on said auxiliary ejector urging the same in a forward direction so that when released it impinges on said lowermost package to displace the same from said stack.

References Cited in the file of this patent

UNITED STATES PATENTS

1,113,706	Spaulding	Oct. 13, 1914
1,191,377	Weinstein	July 18, 1916
1,619,245	Donathan	Mar. 1, 1927
1,939,127	Martin	Dec. 12, 1933
2,085,153	Goretta	June 29, 1937
2,231,952	Rowe	Feb. 18, 1941
2,494,805	Gabrielsen	Jan. 17, 1950

FOREIGN PATENTS

486,619	Germany	Nov. 19, 1929
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