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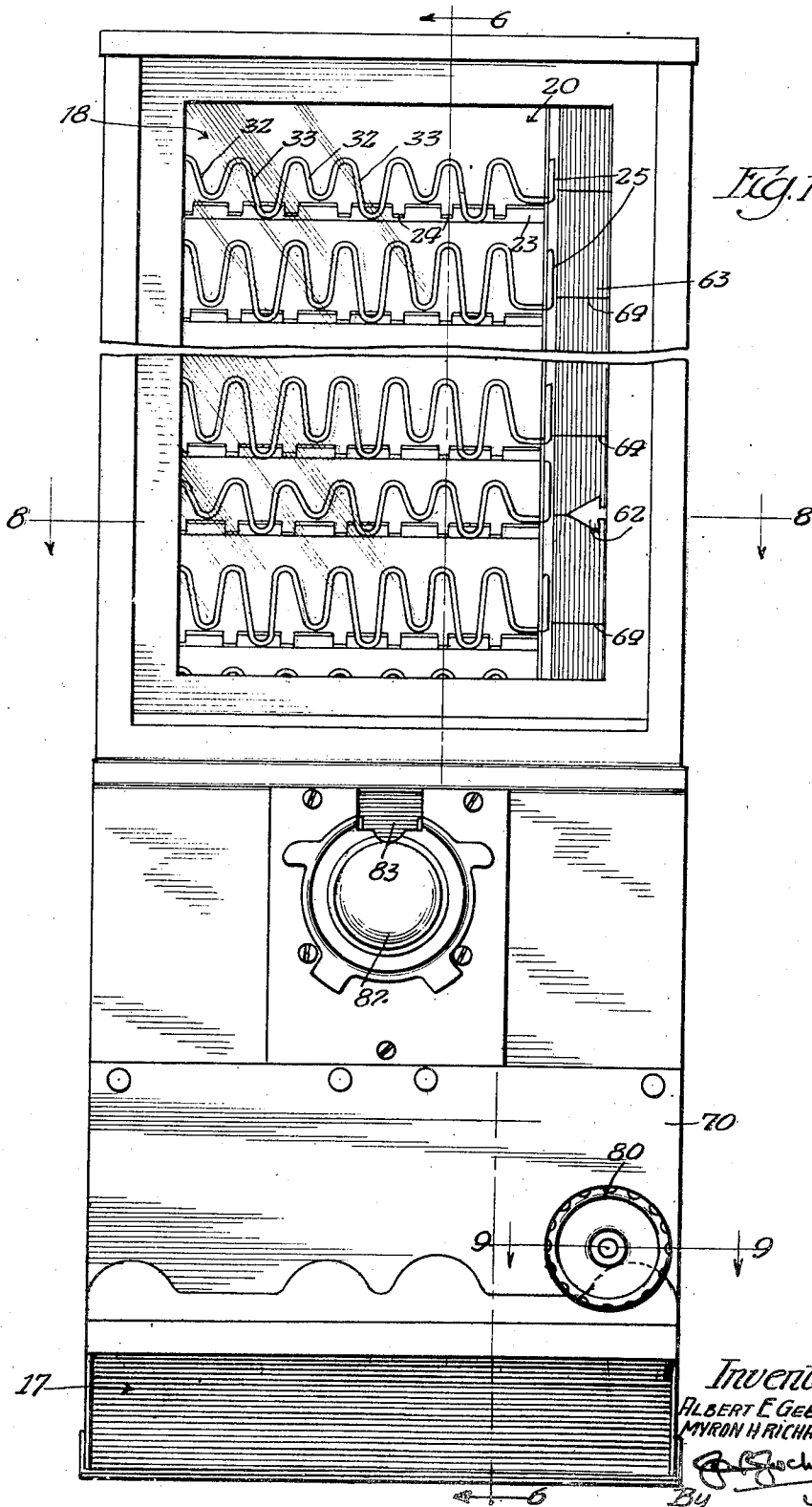
A. E. GEBERT ET AL

2,006,390

VENDING MACHINE

Filed Sept. 20, 1932

6 Sheets-Sheet 1



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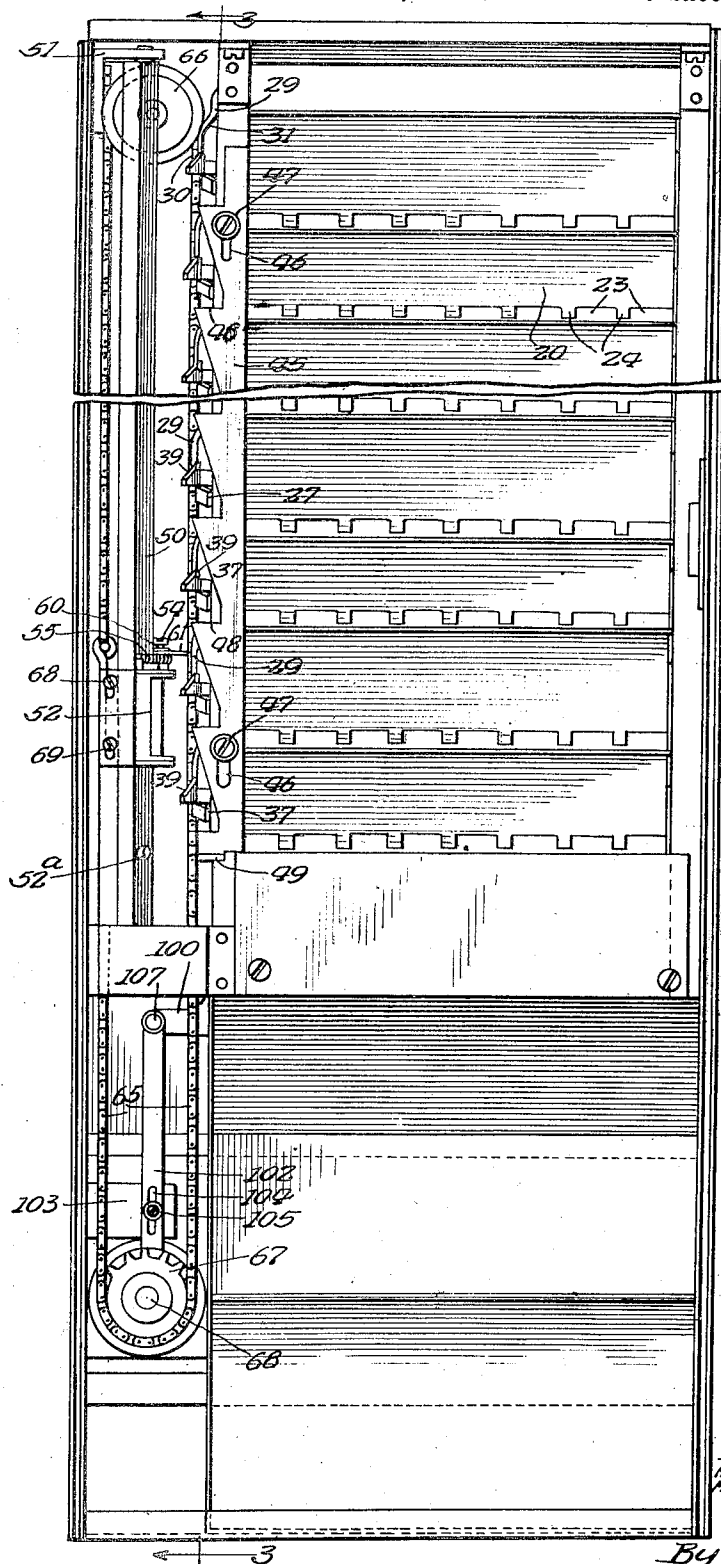
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VENDING MACHINE

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6 Sheets-Sheet 2



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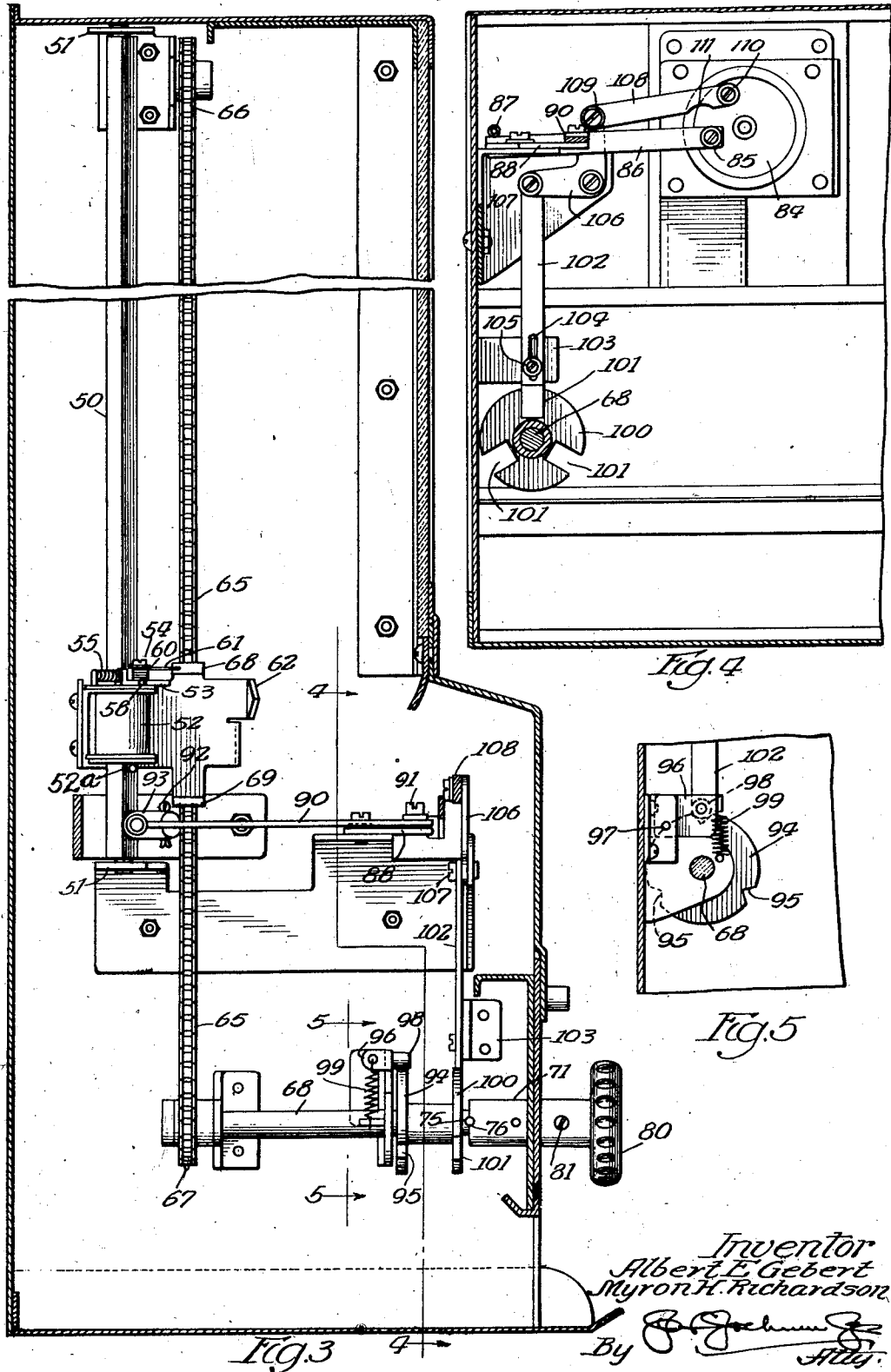
A. E. GEBERT ET AL

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VENDING MACHINE

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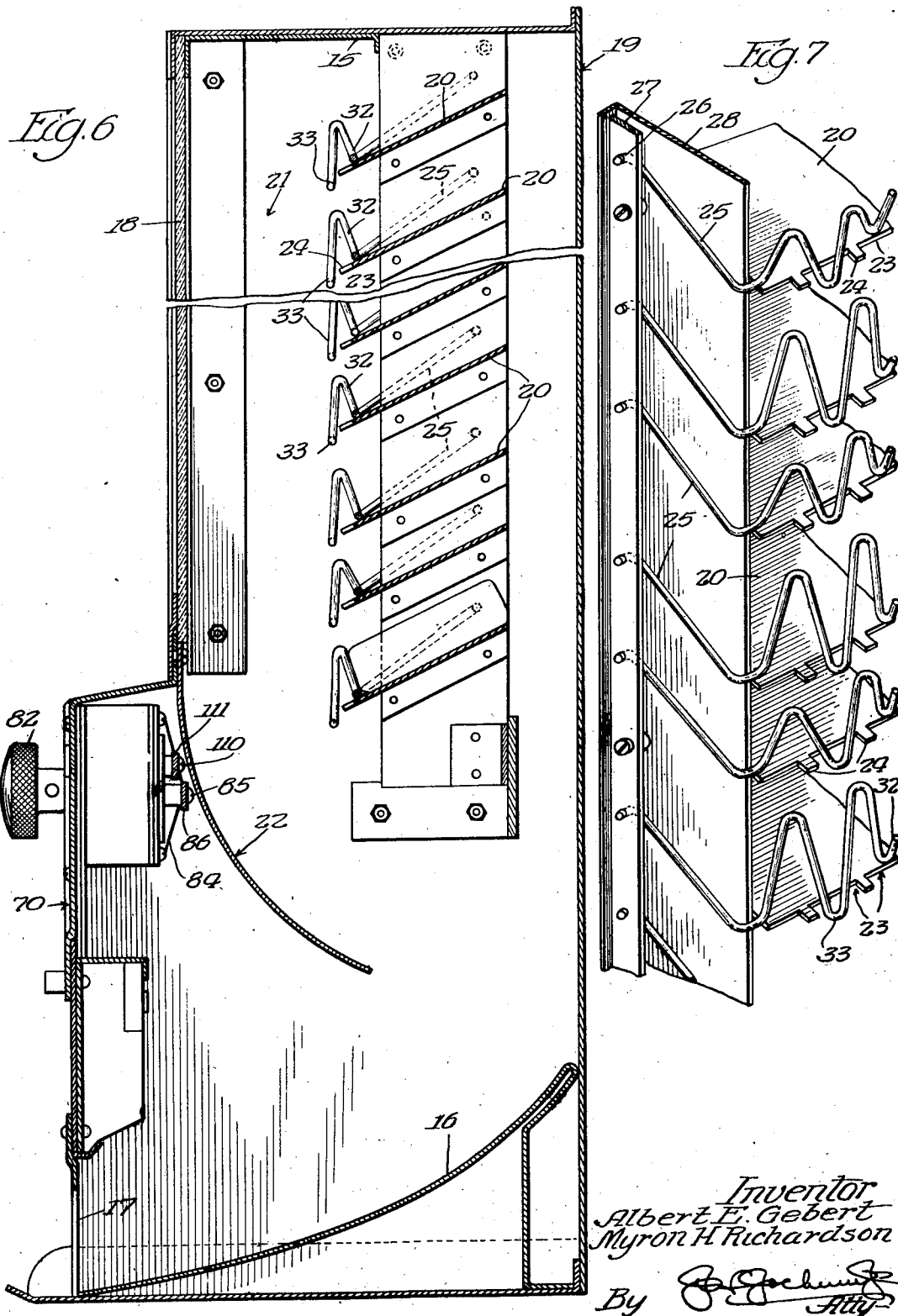
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VENDING MACHINE

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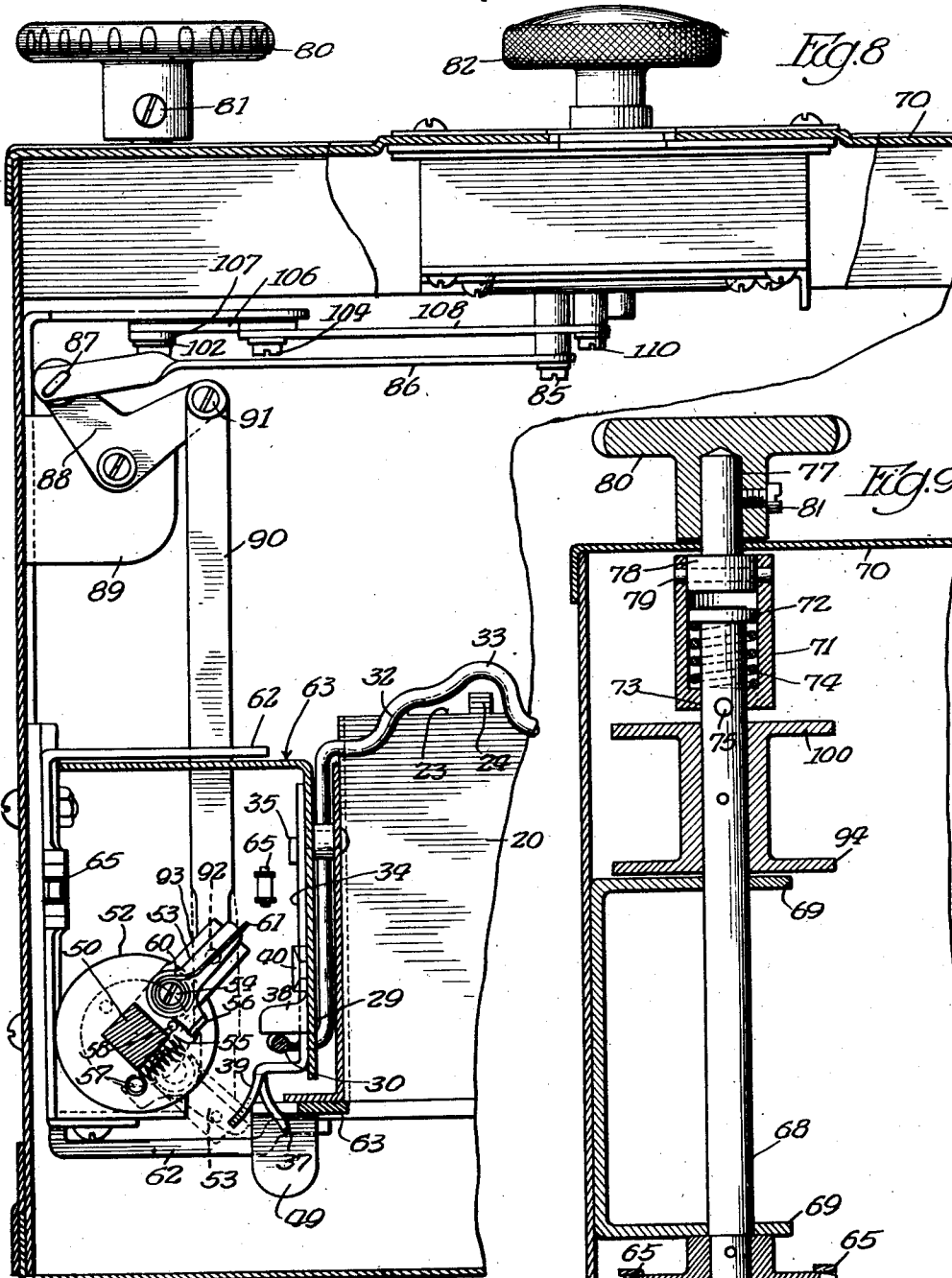
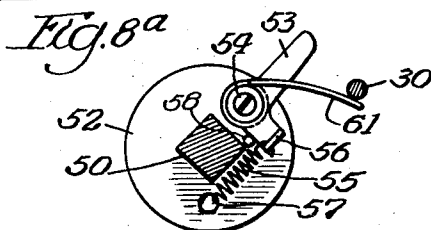
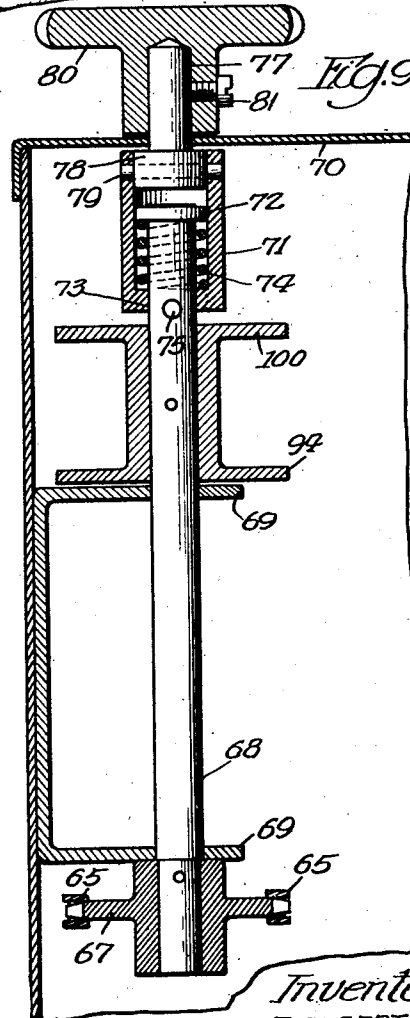
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VENDING MACHINE

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6 Sheets-Sheet 5



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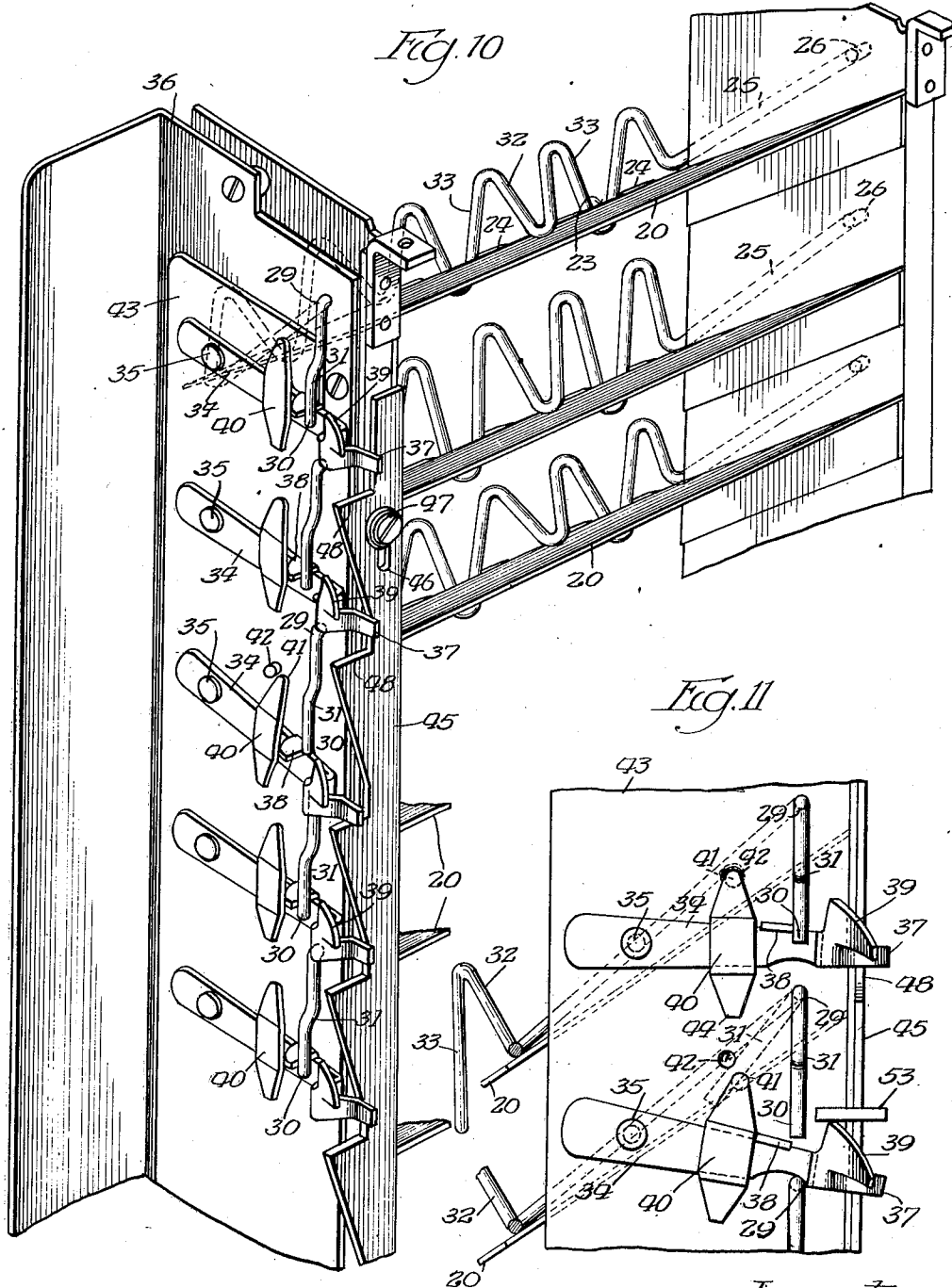
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2,006,390

VENDING MACHINE

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6 Sheets-Sheet 6



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UNITED STATES PATENT OFFICE

2,006,390

VENDING MACHINE

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Application September 20, 1932, Serial No. 634,030

18 Claims. (Cl. 312-94)

This invention relates to improvements in vending machines of the type in which the articles to be vended are arranged upon supports in a column one above the other and properly spaced to receive the articles therebetween, each of the supports holding its respective article or articles, the supports being inclined downwardly toward and spaced from the front of the casing of the machine so that the articles when delivered will fall between the front edge of the supports and the front of the casing, the casing front being provided with a transparent portion so that the articles may be viewed as they rest upon the supports, and also viewed while they are falling from the supports to the delivery opening, and one of the objects of the invention is to provide improved guards or stops arranged at the front of the supports for holding the articles in place upon the supports, and adapted to be shifted to permit the articles to fall by gravity.

The guards or stops are so constructed that a portion thereof will retain the article upon the respective supports, and the other portions thereof are shaped to form guides to direct the articles while falling and to prevent the articles from contacting with the edges of the supports while being delivered.

A further object is to provide improved means for shifting and for holding the guards or stops in their shifted positions so as not to interfere with the delivery of the articles.

A further object is to construct the front portions of the supports in such a manner that a clear view may be had of a considerable portion of the article or articles resting upon a lower support.

A further object is to provide improved means for locking the stops or guards and improved means for rendering such locking means inactive.

A further object is to provide improved means for locking such of the guards or stops that have been released, to facilitate the filling of the machine.

A further object is to provide improved means for selectively rendering the locking mechanism of a predetermined guard or stop inactive to permit the operator to selectively vend the articles from the machine.

A further object is to provide improved means for locking the machine against operation until the selective mechanism has been accurately positioned with relation to the predetermined support from which it is desired to vend the article or articles and thereby prevent the operator from

losing a coin or token which may have been inserted to render the vending mechanism active.

To the attainment of these ends and the accomplishment of other new and useful objects as will appear, the invention consists in the features of novelty in substantially the construction, combination and arrangement of the several parts hereinafter more fully described and claimed and shown in the accompanying drawings illustrating this invention and in which

Figure 1 is a front elevation of a machine of this character constructed in accordance with the principles of this invention, with portions thereof broken away.

Figure 2 is a rear elevation of the machine with the rear of the casing removed.

Figure 3 is a vertical sectional view taken on line 3-3, Figure 2, with parts omitted.

Figure 4 is an irregular sectional view taken on line 4-4, Figure 3, with parts omitted.

Figure 5 is a detail sectional view taken on line 5-5, Figure 3.

Figure 6 is a sectional view taken on line 6-6, Figure 1, with parts omitted.

Figure 7 is a detail perspective view of portions of the article supports and the guards or stops which co-operate with the supports.

Figure 8 is a sectional view taken on line 8-8, Figure 1, with parts omitted and on an enlarged scale.

Figure 8a is a detail view partly in section of the guard actuating dog and supporting member therefor.

Figure 9 is a detail sectional view taken on line 9-9, Figure 1, on an enlarged scale.

Figure 10 is a detail perspective view of the locking and releasing means for the guards or stops for the supports.

Figure 11 is a view in elevation showing the locking means for the guards or stops for two of the supports, one being shown in a position to lock the guard or stop and the other in a position to release the guard or stop.

Referring more particularly to the drawings, the numeral 15 designates an enclosing casing which may be of any desired size and configuration and constructed of any suitable material having arranged in the bottom thereof a chute 16 upon which the articles are deposited and from which the articles are delivered through a delivery opening 17, to the operator.

The front of the casing is provided with a transparent portion 18 through which the articles may be viewed, and the casing is provided with a removable back or closure 19.

Arranged within the casing are a plurality of superposed supports 20 which incline downwardly toward the front of the casing, but terminate a considerable distance from the front wall of the casing to form a passageway 21 into which the articles are delivered as they fall by gravity from the respective supports 20, and through which passageway the articles will fall until they strike a deflector 22 supported at the bottom of said passage 21 and extending below the series of supports 20, to direct the article to the chute 16, thereby rendering it possible for the operator to at all times view the article while it is resting upon the support 20 and also while falling through the passageway 21.

Any number of these supports 20 may be provided and the supports may be arranged any desired or suitable distance above each other to accommodate the various articles to be dispensed. The front edges of the supports 20 are shaped to provide cut away portions 23 (see particularly Figures 1 and 7) so as to permit the operator to view a considerable portion of the article or articles resting upon a lower support. These cut away portions 23 may be formed in any suitable manner so as to provide projecting lips or portions 24.

Co-operating with each of the supports 20 is a guard or stop 25 preferably formed as a bail or of a substantially U shaped configuration, the extremities of the sides of the bail being pivotally mounted as at 26 in an upright 27 which latter is spaced from uprights 28 arranged at the respective ends of the supports 20, so that the ends of the bail or arms of the stops or guards will be disposed within the space formed between the uprights 27 and 28.

These stops or guards are mounted for free pivotal movement and connected to the extremity of one end of the stop or guard is a depending arm 29, the extremity 30 thereof being offset as at 31, for a purpose to be hereinafter set forth.

The body portion of the stop or guard extends across the front edge of the support 20 and is formed preferably of wire bent back and forth upon itself to form spaced loops 32—33 preferably alternately arranged across and in close proximity to the front edge of the support. The lower ends of the portions 32 (see particularly Figure 6) of the stop or guard preferably terminate a considerable distance above the lower end of the portions 33 and the portions 32 and 33 are laterally deflected with respect to each other so that when the stop or guard is in the position shown in Figure 6, the lower extremities of the portions 32 will rest upon a portion of the support 20 to hold the stop or guard in position and will be engaged by the article to hold the latter in position upon the support. The lower extremities of the portions 33 will depend below the edge of the shelf 20 and are arranged in a substantially vertical plane so that when the guards or stops are in the position shown in Figure 1, 6 or 7, and one of the guards or stops is shifted to release the article upon the respective support 20, in a manner to be set forth, the portions 33 of the remaining guards or stops will serve as a guide or deflector for the articles falling through the space 21, and thereby prevent the articles from striking the edge of a lower support.

Any suitable means may be provided for locking the guards or stops against swinging movement and thereby prevent the article from being discharged from the support 20. A simple and efficient means embodies a locking device com-

prising a member 34 (see particularly Figures 10 and 11), one for each of the guards or stops, and this member is pivotally mounted as at 35 upon a fixed portion 36 of the machine. The member 34 projects towards the rear edge of the support 20 and beyond the extremity 30 of the guard or stop when the latter is in a position to restrain an article from being discharged from the support, and terminates in an extremity 37. The deflected portion 31 of the end 29 of the guard or stop is provided so as to permit the member 34 to extend beneath the end of the portion 29 so that a shoulder 38 formed on the member 34 (see particularly Figures 10 and 11) will pass behind the end of the arm or portion 29 and lock the guard or stop against being raised or swung about its pivot. Carried also by the member 34 is a cam shaped portion 39 and a spring 40 is connected with the member 34. This spring is preferably in the form of a leaf spring and extends above and below the member 34, one extremity of the spring being formed into a deflected portion 41 adapted to enter a recess 42 in a surface 43. The other end 44 of the spring contacts with the surface 43 and tends to create a friction so as to hold the member 34 against a loose movement.

When the member 34 is elevated so that the deflected portion 41 of the spring 40 will enter the recess 42, the shoulder 38 will stand behind the extremity 30 of the arm or portion 29 of the guard or stop and lock the latter against movement about its pivot in one direction, while the lower extremities of the portions 32 of the guard or stop will rest upon the support 20 and lock the latter against movement in the opposite direction.

In order to release any one of the guards or stops it is only necessary to depress or move the member 34 about its pivot 35, in a manner to be set forth, so as to lower the shoulder 38 from the position shown at the top of Figure 11 to the position shown at the bottom of Figure 11, thereby freeing the extremity 30 of the portion 29 of the guard or stop so as to allow the latter to swing about its pivot to an elevated position and thereby release the article resting upon the particular support 20 so that it will slide by gravity therefrom to fall through the passage 21.

After any one or more of the members 34 has been moved from the position shown at the top of Figure 11 to the position shown at the bottom of Figure 11, and it is desired to refill the machine, the back 19 of the casing is removed and a supplemental locking member 45 may be operated. This member 45 is preferably in the form of a slide provided with any desired number of slots 46 through which fastening screws 47 pass, and the slots are of a length to permit of a longitudinal movement of the slide. The slide is provided with a series of shoulders 48, one for each of the members 34 and the shoulders 48 are so located and the slots 46 are so arranged that when the slide 45 is in its lowermost position as shown in Figure 10, any one of the guards or stops may be released but, when it is desired to lock the released guards or stops the slide 45 may be moved by means of a handle or finger engaging portion 49, so as to raise the latter and cause the respective shoulders 48 to engage beneath the ends 37 of the respective members 34 and thereby raise such members from the position shown at the bottom of Figure 11 to the position shown at the top of Figure 11, at which time the shoulder 38 will pass behind the extremity 30 of the respec-

tive guards or stops. The slide 45 may be arranged so that when released it will drop by gravity or may be lowered by the operator by depressing the handle or finger engaging portion 49.

It will therefore be manifest that with this supplemental locking member, any one of the guards or stops that have been released to previously discharge a commodity from one of the supports, will be locked against further movement so as to permit of the ready filling of the machine.

The guards or stops after they have been released by the mechanism which swings them about their pivot, will fall by gravity into a position in front of the respective supports 20.

Any suitable means may be provided for releasing a predetermined guard or stop and for swinging the same about its pivot to discharge an article. A simple and efficient means will now be described.

An upright shaft 50 is rotatably mounted by its extremities in suitable bearings or brackets 51 (see particularly Figure 3) and this shaft is preferably angular in cross section.

A member 52 preferably in the form of a collar is mounted to slide upon the shaft 50 and the member 52 is provided with an opening angular in cross section to receive the shaft 50, so that while the member 52 may be moved longitudinally upon the shaft, it will rock with the shaft when the shaft is rocked.

Mounted upon the member 52 is a dog 53 which swings about a pivot 54 and a spring 55 is connected by one end as at 56 with the dog, and is anchored as at 57 to the member 52 and tends normally to move the dog in one direction about its pivot. A stop 58 projects above the member 52 and serves to limit the movement of the dog 53 about its pivot 54 under the stress of the spring 55.

The pivot 54 of the dog 53 preferably projects for a considerable distance thereabove so that a spring 60 may be coiled thereabout above the dog (see also Figure 3) and one end 61 of the spring projects beyond the dog 53 and is spaced thereabove to form a resiliently yielding arm which operates to hold the guard or stop in an elevated position with respect to the support 20, for a predetermined time during the cycle of operation of the mechanism, in a manner to be presently described.

Carried also with the member 52 is an index or pointer 62 (see also Figure 1) which projects over a surface 63 arranged along one edge of the front portion of the supports 20, and this surface 63 is provided with indicating lines 64 with which the indicator co-operates, to determine the accurate and necessary position into which the sleeve or member 52 must be moved in order to insure the operation of releasing the articles from the supports.

The indicator 62 together with the member 52 and the supporting mechanism is adapted to be moved longitudinally of the shaft 50 in any suitable manner, such as by means of an endless flexible member 65 preferably in the form of a sprocket chain which passes over a sprocket wheel 66 (see Figures 2 and 3) at the top of the casing and a sprocket wheel 67 adjacent the bottom of the casing, and is connected by its ends as at 68—69 with the slide to which the indicator 62 is connected. The sprocket wheel 67 is connected to a shaft 68 (see also Figure 9) which is journaled in suitable bearings 69. The forward end of the shaft 68 terminates short of the front

wall 70 of the lower portion of the casing and telescopes into a sleeve 71 located within the casing. The shaft is provided with a sleeve or collar 72 secured thereto and disposed within the sleeve 71, the sleeve being provided with a closed end 73, having an opening for the shaft to pass there-through.

A coiled spring 74 encompasses the shaft 68 within the sleeve 71, one end of the spring resting against the closed end 73 of the sleeve, and the other end resting against the collar 72. The spring 74 tends normally to move the sleeve 71 in a direction that a pin 75 which extends through the shaft 68 and projects beyond the lateral face thereof, will be caused to enter recesses 76 in the end of the sleeve 71 and thereby yieldingly lock the shaft 68 and sleeve 71 together for simultaneous rotation.

A trunnion 77 projects through the front wall 70 of the casing and is provided with a head 78 which enters the open end of the sleeve 71 and the two are secured together preferably by means of a pin 79 passing therethrough. A handle 80 is arranged on the outside of the casing and into which handle the trunnion 77 projects, the two being secured together by means of a fastening screw 81.

It will therefore be manifest that when the handle 80 is turned by the operator, the shaft 68 will be likewise rotated and the sprocket wheel will be rotated, with the result that the sprocket chain 65 will be caused to travel and this will in turn cause the member 52 together with the slide or indicator 62 to travel lengthwise of the shaft 50 to the desired position either upwardly or downwardly according to the location of the sleeve 52 and indicator 62.

When, however, the indicator 62 moves into a predetermined position with respect to the indications 64 on the surface 63, the dog 53 will be in the position as shown in full lines in Figure 8. That is to say, when the locking member 34 is in the position that the shoulder 38 will be behind the extremity 30 of the portion 29 of the guard or stop, the dog as well as the spring arm 61 will engage behind the depending portion 29 of the guard or stop above the shoulder 38, so that a further movement of the member 52 in the same direction will cause the dog to swing about its pivot 54, and will pass the depending portion of the guard or stop as well as the cam 39 until the parts move to the position shown in dotted lines in Figure 8. When the direction of movement of the shaft 50 is reversed, the dog 53 will contact with the cam 39 and will ride over the top of the cam 39 as indicated at the bottom of Figure 11, during which time the dog will move against the stop 58 on the member 52 to prevent the dog from rotating about its pivot 54, with the result that a further movement of the dog or the cam 39 will cause the member 34 to be depressed to move the shoulder 38 from behind the depending portion 29 of the guard or stop, thereby releasing the latter so that upon a further movement of the member 52 and dog 53 in the same direction, the dog 52 will move into engagement with the extremity 30 of the depending portion 29 of the guard or stop and swing the latter about its pivot to elevate the same and thereby release the article upon the support to allow the article to fall by gravity from the support. After the dog 53 passes out of contact with the depending portion 30 of the guard or stop, the spring arm 61 will engage therewith to hold the stop or guard in its elevated position, so as to prevent the guard or

stop from dropping before the article has left the support 20.

The shaft 50 is adapted to be rocked by means of a coin controlled mechanism, any form of which mechanism may be employed which is adapted upon the insertion of a coin, to permit the shaft to be rocked. Suffice it to say, that the coin controlled mechanism embodies an operating handle or knob 82 which, upon the insertion of a proper coin in the slot 83, will rotate a disc 84 (see particularly Figures 4 and 8). To this disc 84 is pivotally connected as at 85 a link 86, the other end of which may be pivotally connected as at 87 with one arm of a bell crank lever 88, pivotally supported upon a bracket 89. To the other arm of the bell crank lever a link 90 is pivotally connected by one end as at 91, and the other end of the link is pivotally connected as at 92 to an arm or projection 93 (see also Figure 3) and projecting laterally from the shaft 50. Thus, it will be seen that when the knob or handle 82 is rotated in one direction, the upright shaft 50 will be rotated in one direction through the medium of the intermediate connecting means and bell crank lever, and likewise when the handle 82 is rotated in the opposite direction, the shaft 50 will be correspondingly rotated, so that upon the rotation of the knob 82 in one direction, the operating dog 53 will be positioned with respect to the locking members 34 that upon the rotation of the shaft 50 in the opposite direction the dog will operate to depress the locking member 34 to move the locking shoulder 38 thereon into an inactive position to release the selected guard or stop.

In order to insure a proper position of the indicator 62, so as to properly position the dog 53 with respect to the mechanism which it is to release and operate, means are provided for locking the parts in their adjusted position when they have acquired such position. To that end there may be provided on the shaft 68 a disc 94 (see particularly Figures 3 and 5) having notches 95 in its periphery. A member 96 is pivotally mounted as at 97 and is provided with a laterally projecting portion 98 which may, if desired, be in the form of a roller adapted to be held in contact with the periphery of the disc 94 by means of a suitable spring 99 so that when one of the notches 95 is in proximity to the projection 98, the spring 99 will cause the latter to enter one of the notches 95, it being understood that the notches 95 are arranged in proper position with relation to the positioning of the indicator 62.

Carried also by the shaft 68 (see also Figure 4) is another disc 100 which is provided with recesses 101 opening through its periphery and which recesses are preferably in alinement with the recesses 95.

A slide 102 mounted to move upon a suitable guide 103 is provided with a slot 104, through which a fastening screw 105 passes. One end of this slide 102, which is preferably in the form of a bar, is adapted to enter and fit within the recesses 101. The slide is given its movement by means of a bell crank lever 106, to which one end of the slide is pivotally connected as at 107. To the other end of the bell crank lever 106 a link 108 is pivotally connected as at 109, and the other end of the link is pivotally connected as at 110 to the disc 84.

The link 108 is preferably provided with a notch 111 to receive the pivot 85 of the link 86 so as not to interfere with the operation of the mechanism.

This additional locking means is provided so as to insure and positively lock the parts against being strained or forced, and against a manipulation of the member 52 and indicator 62, and thereby prevent unauthorized removal of the commodity from the machine.

It will be manifest that inasmuch as the disc 84 is connected with the handle 82 of the coin controlled mechanism that when the latter is operated, the shaft 50 will be oscillated, and therefore in order to prevent the movement of the member 52 and indicator 62 longitudinally of the shaft 50 by the manipulation of the handle 80, after the coin controlled handle 82 has started to operate, this positive locking mechanism is provided, as it will be manifest that if the member 52 and indicator slide 62 are properly positioned with respect to the support from which it is desired to release or discharge a commodity, one of the recesses 101 in the disc 100 will be in alinement with the end of the slide 102 to receive the latter and therefore the coin controlled mechanism will be permitted to operate but, should it so happen that the member 52 and indicator slide 62 are not in a proper position so that one of the recesses 101 will receive the end of the slide 102, the end of the slide will engage the periphery of the disc 100, and it will therefore be impossible to operate either the coin controlled mechanism or oscillate the shaft 50.

The resilient connection formed by the spring 70, shaft 68 and sleeve 71 will prevent forcing of the shaft 68 to rotate and also will prevent damage to the machine.

A stop 52^a may be provided on the shaft 50 to limit the lowering movement of the member 52 upon the shaft.

It is thought that the operation will be clearly understood from the foregoing, but briefly stated it is as follows. To start the mechanism, the guards or stops are all positioned in front of their respective supports and the members 34 shifted so as to place the shoulders 38 in position to lock the guards or stops against swinging movement. This may be done either by individually shifting the members 34 with the finger or by shifting the slide 45. The operator then selects the desired commodity or the commodity from the desired support 20, by manipulating the handle 80 to move the indicator 62 in register with the indicator marks 64 on the surface 63. The coin is then deposited in the coin slot 83 and the handle 82 is rotated in one direction. This will position the disc 100 so that one of the recesses 101 therein will be in a position to receive the end of the slide 102. Upon a further rotation of the handle 82, the slide 102 will enter one of the recesses 101, and at the same time the shaft 50 will be rotated in one direction. This will cause the dog 53 to pass from behind the depending portion 29 of the guard or stop to a position in front of the cam surface 39, so that when the handle 82 of the coin controlled mechanism is rotated in the opposite direction, the end of the dog being locked against movement about its pivot by the stop 58 on the member 52, will pass over the cam surface 39 to depress the locking member 34 and thereby move the shoulder 38 out of locking position with respect to the depending portion 29 of the guard or stop, thereby releasing the latter. Upon a further movement of the shaft 50 in the same direction, the dog 53 will engage the depending portion 29 of the guard or stop to swing the latter about its pivot, elevating the guard or stop to release the commodity so that it will fall by grav-

ity from the support 20 into the delivery space 21. After the dog has passed out of engagement with the depending portion 29 of the guard or stop, the spring arm 61 will hold the latter in an elevated position to insure a free delivery of the commodity.

When the shaft 50 is moved in the opposite direction the guard or stop which has been elevated will fall by gravity as the spring arm 61 moves away from the depending portion 29 to permit of such action.

To lock all of the guards or stops against movement about their pivots, that is the ones which have been previously released, the slide 45 may be manipulated to cause the shoulders 48 to engage the extremities 37 of the locking members 34 and shift them about their pivots back into locking position.

While the preferred form of the invention has been herein shown and described, it is to be understood that various changes may be made in the details of construction and in the combination and arrangement of the several parts, within the scope of the claims, without departing from the spirit of this invention.

What is claimed as new is:—

1. A vending machine embodying a casing, a column of superposed spaced downwardly and forwardly inclined supports for the articles to be vended, the forward edges of the supports being spaced from the front wall of the casing to form a passage through which the articles fall by gravity as they pass from said supports, a guard arranged at the forward edge of each of the supports for retaining the articles on the support, a portion of the guard resting upon the support and another portion thereof disposed beyond and extending above and below the forward edge of the support and means under the control of the operator and common to the guards for raising them to permit the articles to pass off of the said supports, a portion of the support adjacent the forward edge thereof being shaped to afford a view of a considerable portion of the articles upon the support.

2. A vending machine embodying a casing, a column of superposed spaced downwardly and forwardly inclined supports for the articles to be vended, the forward edges of the supports being spaced from the front wall of the casing to form a passage through which the articles fall by gravity as they pass from said supports, a pivotally mounted guard arranged at the forward edge of each of the supports for retaining the articles on the supports, a portion of the guard being disposed beyond and extending above and below the front edge of the support, and means under the control of the operator and operable adjacent the pivots of the guards for raising them to permit the article to pass off of the said support, a considerable portion of the wall of the casing being transparent to afford a view of the articles on the supports and as they fall through said passage.

3. A vending machine embodying a casing, a column of superposed spaced downwardly and forwardly inclined supports for the articles to be vended, the forward edges of the supports being spaced from the front wall of the casing to form a passage through which the articles fall by gravity as they pass from said supports, a pivotally mounted guard arranged at the forward edge of each of the supports for retaining the articles on the supports, and means under the control of the operator and operating adjacent the pivots

of the guards for raising them to permit the article to pass off of the said support, a portion of said guard being shaped to form a shield disposed in front of and extending above and below the edge of the support to prevent falling articles from contacting the edge of supports below those from which the articles have been delivered.

4. A vending machine embodying a plurality of spaced superposed downwardly and forwardly inclined supports for the articles to be vended, pivotally mounted guards individual to the supports and arranged adjacent the forward edges thereof to retain the articles thereupon, a portion of the guards resting upon the support and another portion of the guards extending above and below the front edge of the support, means common to the guards for raising them to release the articles, and means for selectively positioning the last said means with respect to said guards.

5. A vending machine embodying a plurality of spaced superposed downwardly and forwardly inclined supports for the articles to be vended, guards individual to the supports and arranged adjacent the forward edges thereof to retain the articles thereupon, means common to the guards for raising them to release the articles, means for bodily moving and selectively positioning the last said means with respect to said guards, and additional means carried with and operating in conjunction with the first recited means for maintaining the raised guard against return movement during a predetermined portion of the cycle of operation of the machine.

6. A vending machine embodying a plurality of superposed spaced downwardly and forwardly inclined supports for the articles to be vended, pivotally mounted guards individual to the supports and arranged adjacent the forward edges thereof for maintaining the articles upon the supports, means for locking the guards against pivotal movement, means common to the guards for rendering the respective locking means inactive and for swinging the guards about their pivots to release the article upon the support, means rendered active upon releasing of the guards for maintaining them elevated during a predetermined portion of the cycle of operation of the machine, and means for selectively positioning the last recited means with respect to said guards.

7. A vending machine embodying a plurality of superposed spaced downwardly and forwardly inclined supports for the articles to be vended, pivotally mounted guards individual to the supports and arranged adjacent the forward edges thereof for maintaining the articles upon the supports, means for locking the guards against pivotal movement, means common to the guards for rendering the respective locking means inactive and for swinging the guards about their pivots to release the article upon the support, means for selectively positioning the last recited means with respect to said guards, and additional means for simultaneously rendering active all of the said locking means which have previously been rendered inactive.

8. A vending machine embodying a plurality of superposed spaced supports for the articles to be vended, means individual to the supports for releasing the articles held thereby, actuating means common to the said releasing means for controlling them, means for selectively positioning said actuating means with respect to said releasing means and embodying an operating shaft, an actuator for the shaft, a yielding connection between the said actuator and shaft, and means

responsive in its operation to the operation of said actuating means for locking said shaft against operation for maintaining the said actuating means in its set position during the operation of the said actuating means.

9. A vending machine embodying a plurality of superposed spaced supports for the articles to be vended, means individual to the supports for releasing the articles held thereby, actuating means common to the said releasing means for controlling them, means for selectively positioning said actuating means with respect to said releasing means and embodying an operating shaft, an actuator for the shaft, a yielding connection between the said actuator and shaft, and means responsive in its operation to the operation of said actuating means for locking said shaft against operation for maintaining the said actuating means in its set position during the operation thereof, the said locking means embodying a disc rotatable with the shaft and provided with a recess and a locking element movable into said recess when the latter assumes a predetermined position.

10. A vending machine embodying superposed supports for the articles to be vended, pivotally mounted means individual to the supports for retaining the articles thereupon and embodying an operating arm, actuating means common to the first said means for engaging said arm to swing the latter to release the article, means for bodily moving and selectively positioning said actuating means, an actuator for the said actuating means when the latter is in a set position, and means connected with and operating in conjunction with said actuating means for maintaining the said pivotally mounted means in its elevated position, for a predetermined period of time in the cycle of operation of the said actuating means.

11. A vending machine embodying a plurality of superposed spaced supports for the articles to be vended, pivotally mounted guards individual to and arranged adjacent the supports to retain the articles thereupon, an arm connected with each of the guards for swinging them about their pivots, a locking member pivotally mounted adjacent each arm, a shoulder on the member adapted to pass behind the arm to lock the guard against swinging movement, a cam connected with said member, an actuating member, means for selectively positioning said actuating member with respect to said locking member, means for operating the actuating member when so positioned, and means connected with said actuating member for engaging said cam to render the locking member inactive and for engaging said arm to swing the guard into an inactive position.

12. A vending machine embodying a plurality of superposed spaced supports for the articles to be vended, pivotally mounted guards individual to and arranged adjacent the supports to retain the articles thereupon, an arm connected with each of the guards for swinging them about their pivots, a locking member pivotally mounted adjacent each arm, a shoulder on the member adapted to pass behind the arm to lock the guard against swinging movement, a cam connected with said member, an actuating member, means for selectively positioning said actuating member with respect to said locking member, means for operating the actuating member when so positioned, means connected with said actuating member for engaging said cam to render the locking member inactive and for engaging said arm to swing the guard into an inactive position, and means co-operating with said actuating member

for engaging said arm to hold said guard in the elevated position into which it has been moved by said actuating member.

13. A vending machine embodying a plurality of superposed spaced supports for the articles to be vended, pivotally mounted guards individual to and arranged adjacent the supports to retain the articles thereupon, an arm connected with each of the guards for swinging them about their pivots, a locking member pivotally mounted adjacent each arm, a shoulder on the member adapted to pass behind the arm to lock the guard against swinging movement, a cam connected with said member, an actuating member, means for selectively positioning said actuating member with respect to said locking member, means for operating the actuating member when so positioned, means connected with said actuating member for engaging said cam to render the locking member inactive and for engaging said arm to swing the guard into an inactive position, and means for frictionally holding said locking member against movement about its pivot.

14. A vending machine embodying a plurality of superposed spaced supports for the articles to be vended, pivotally mounted guards individual to and arranged adjacent the supports to retain the articles thereupon, an arm connected with each of the guards for swinging them about their pivots, a locking member pivotally mounted adjacent each arm, a shoulder on the member adapted to pass behind the arm to lock the guard against swinging movement, a cam connected with said member, an actuating member, means for selectively positioning said actuating member with respect to said locking member, means for operating the actuating member when so positioned, means connected with said actuating member for engaging said cam to render the locking member inactive and for engaging said arm to swing the guard into an inactive position, and means common to said locking members for rendering active those locking members which have previously been rendered inactive.

15. In a vending machine an inclined support for the articles to be vended, a pivotally mounted guard at the delivery edge of the support for retaining the articles thereupon, and means for swinging said guard about its pivot to release the article, said guard being formed of a member bent back and forth upon itself to form laterally spaced portions, certain of said portions resting upon the support for holding the guard in position and other of said portions extending above and below the delivery edge of the support to form a guide to direct a falling article past the support.

16. In a vending machine, superposed supports for the articles to be vended, pivotally mounted guards individual to and disposed at the delivery end of the respective supports, each of said guards being formed of a member bent back and forth upon itself to form laterally spaced portions, certain of said portions being disposed above and in rear of the front edge of the support for holding the articles upon the support, another portion of the guard being disposed in a plane in advance of the last said portions and at the edge of the support and extending above and below said edge to form a guide and deflector for the articles falling from a support thereabove, and means for swinging said guards about their pivots.

17. In a vending machine, superposed supports for the articles to be vended, pivotally mounted

guards individual to and disposed at the delivery
end of the respective supports, each of said
guards being formed of a member bent back and
forth upon itself to form laterally spaced por-
5 tions, certain of said portions being disposed
above and in rear of the front edge of the support
for holding the articles upon the support, another
portion of the guard being disposed in a plane in
advance of the last said portions and at the
10 edge of the support and extending above and
below said edge to form a guide and deflector for
the articles falling from a support thereabove, an-
other portion of the guard being shaped to form
an arm, and means adapted to selectively engage
15 said arms for individually swinging the guards
about their pivots.

18. In a vending machine, superposed supports

for the articles to be vended, pivotally mounted
guards individual to and disposed at the delivery
end of the respective supports, each of said
guards being formed of a member having por-
tions thereof disposed above and in rear of the
5 front edge of the support for holding the ar-
ticles upon the support, other portions of said
member being disposed in a plane in advance of
the last said portions and of the edge of the
support and extending above and below said edge
10 and forming a guide and deflector for the articles
falling from a support thereabove, and means
for individually swinging said guards about their
pivots.

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