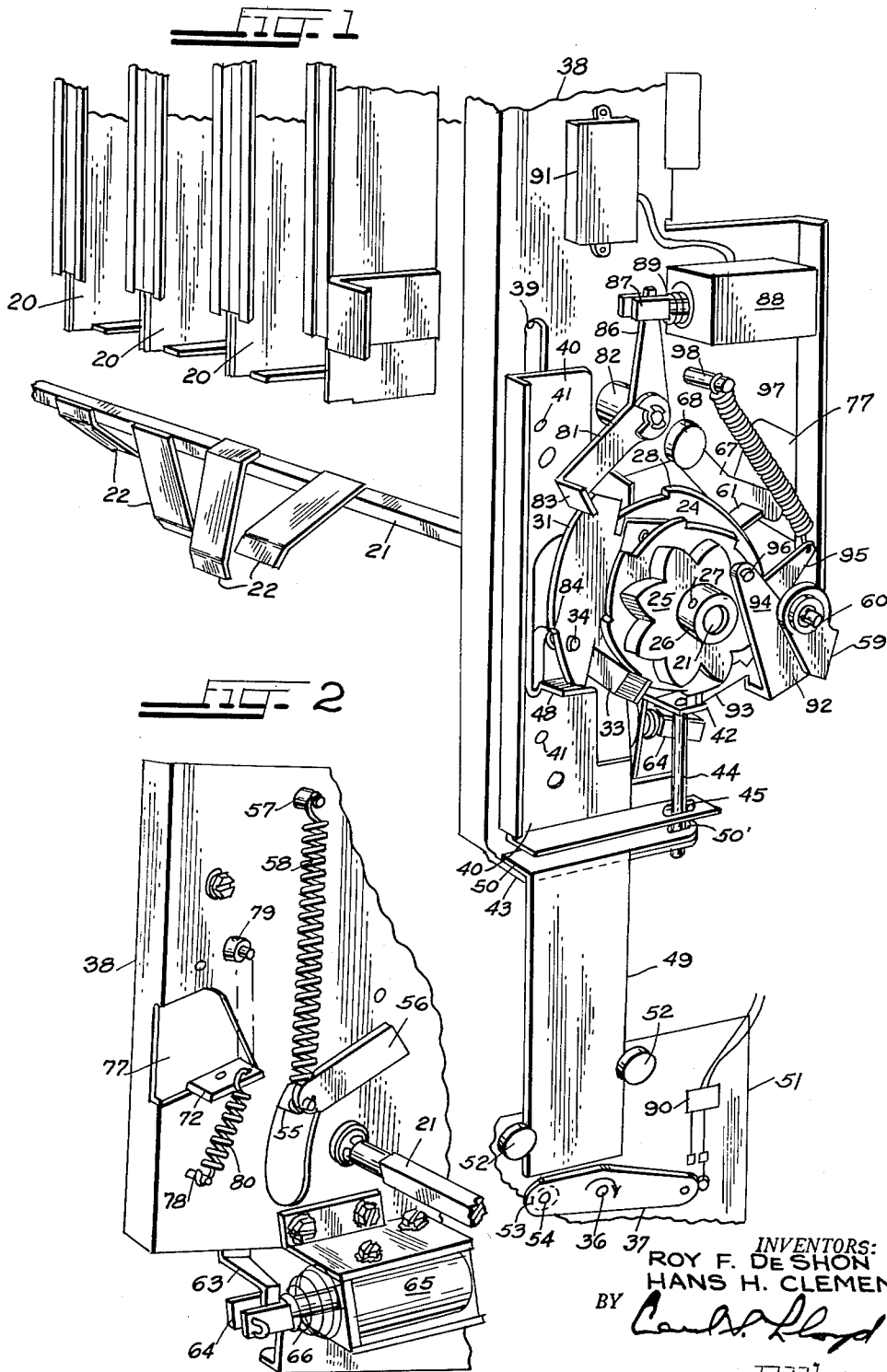


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SECONDARY ARTICLE DISPENSER FOR VENDING MACHINES

Filed Oct. 5, 1959

4 Sheets-Sheet 1



Oct. 2, 1962

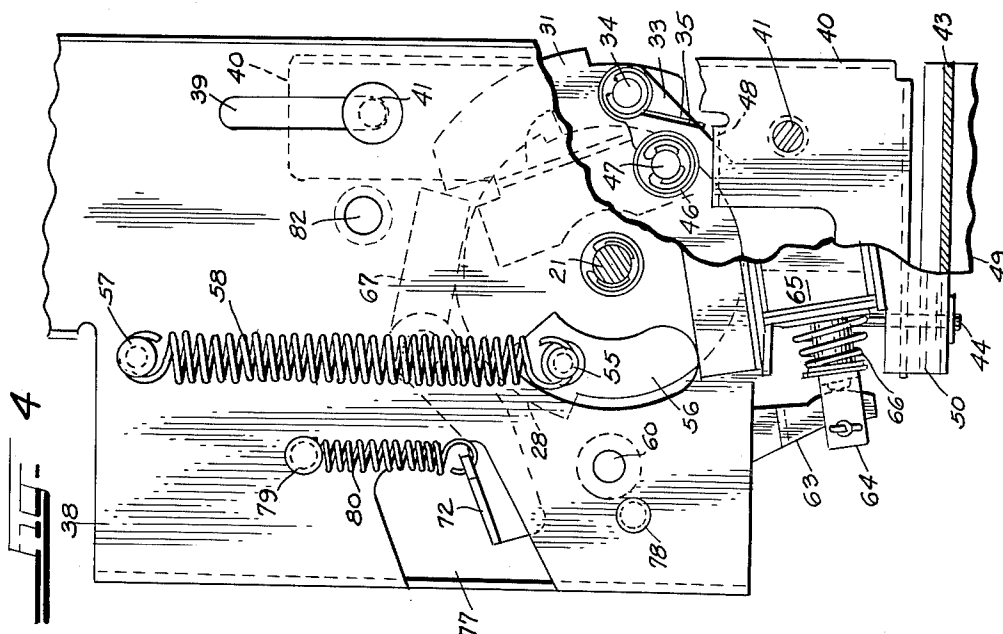
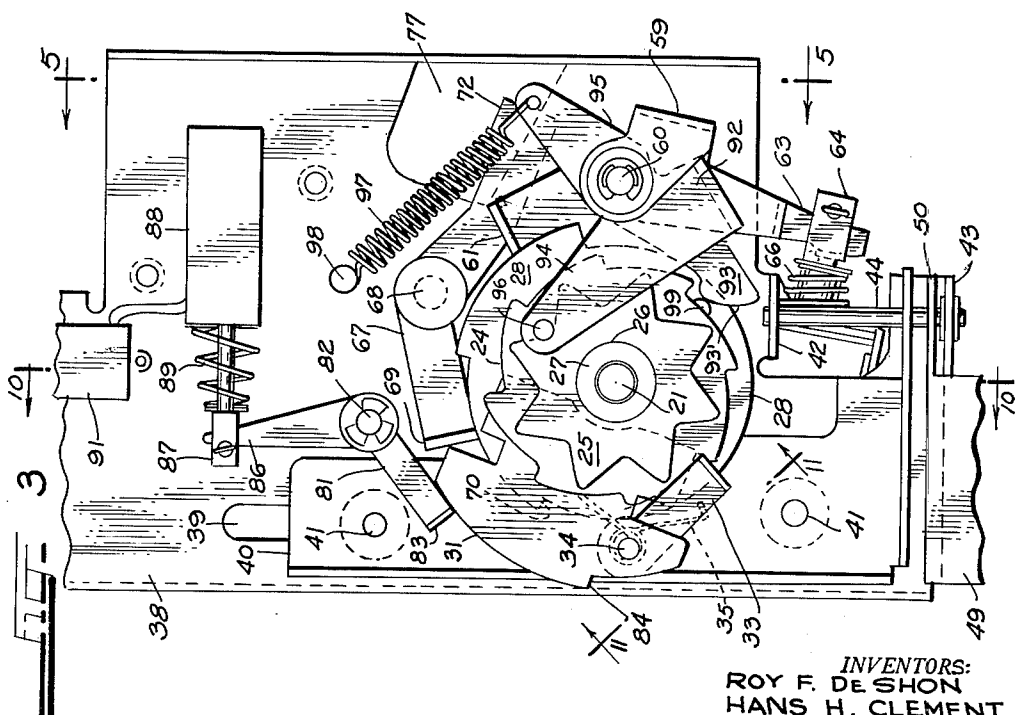
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SECONDARY ARTICLE DISPENSER FOR VENDING MACHINES

Filed Oct. 5, 1959

4 Sheets-Sheet 2



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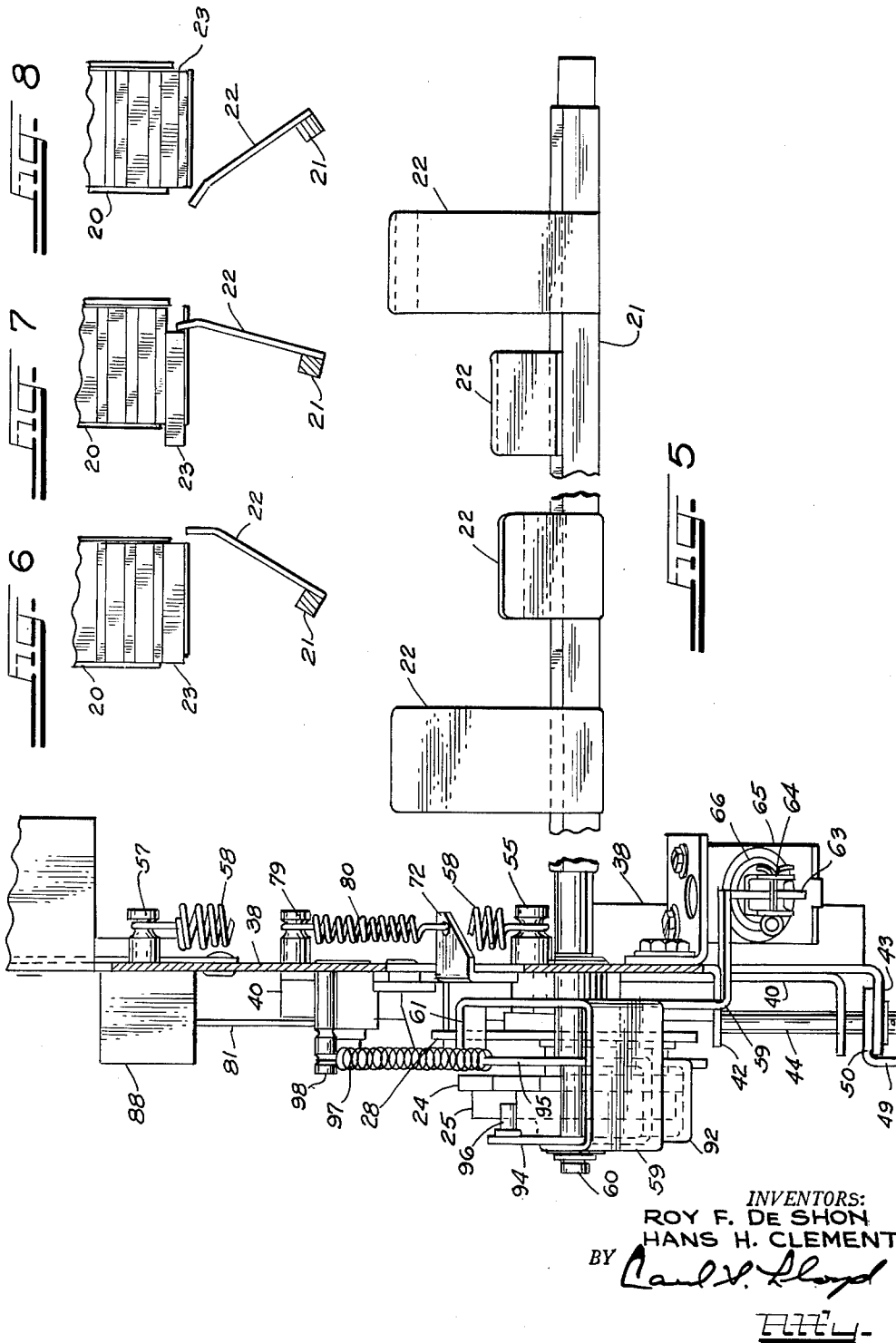
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SECONDARY ARTICLE DISPENSER FOR VENDING MACHINES

Filed Oct. 5, 1959

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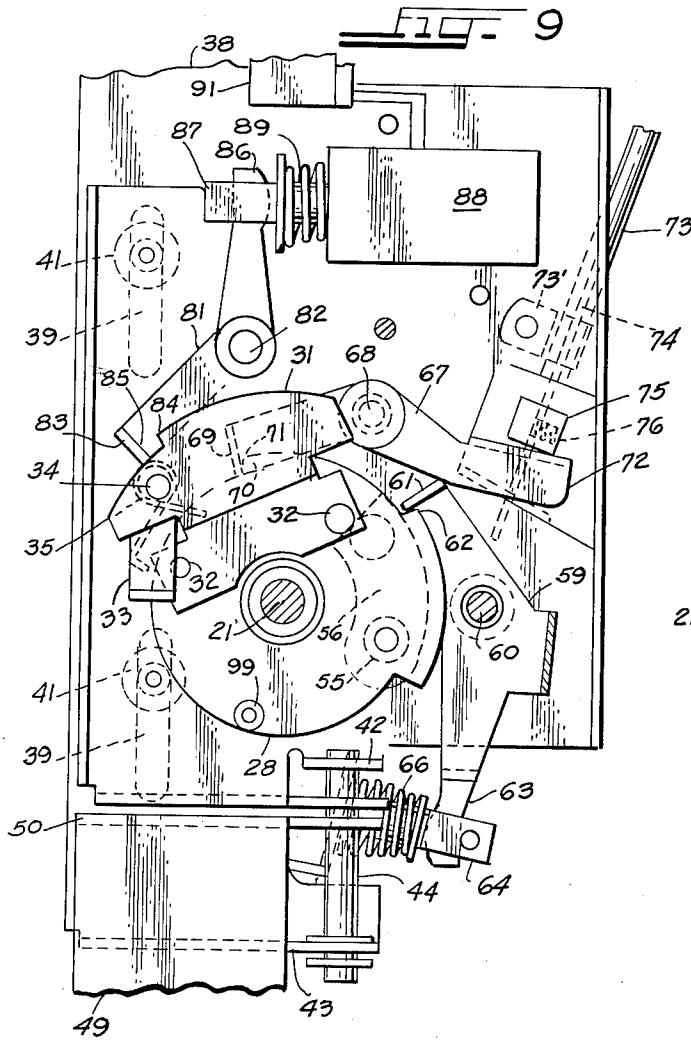
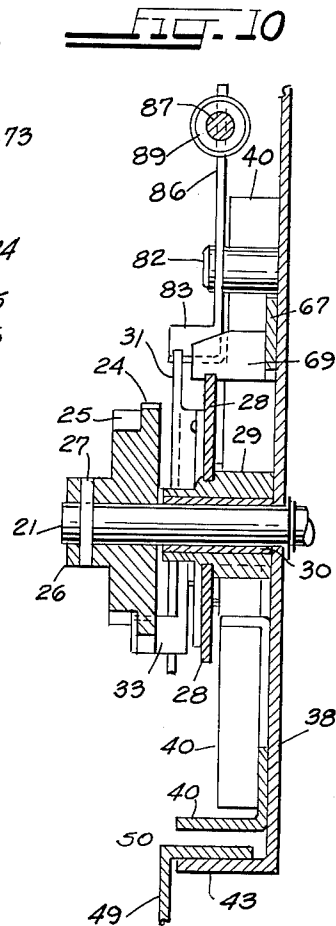
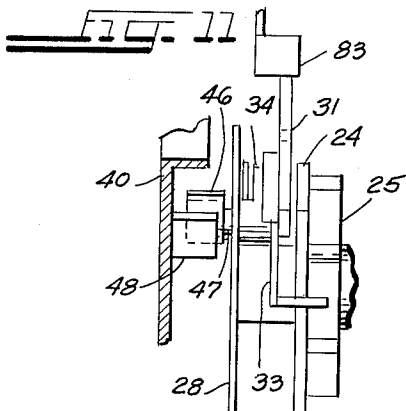
R. F. DE SHON ET AL

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SECONDARY ARTICLE DISPENSER FOR VENDING MACHINES

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4 Sheets-Sheet 4



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Fig. 11

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3,056,529

SECONDARY ARTICLE DISPENSER FOR
VENDING MACHINES

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Filed Oct. 5, 1959, Ser. No. 844,540
15 Claims. (Cl. 221-15)

This invention relates generally to vending machines and more particularly to a secondary article dispenser for use in such machines which will dispense a secondary article such as matches in conjunction with the vending of a main article such as cigarettes.

More specifically, our invention relates to an improved secondary article dispenser which can be set to dispense a secondary article automatically when the main article is vended, or which can be set to register a credit when the main article is vended so as to permit the customer to obtain such a secondary article upon actuation of a selector button.

The embodiment to be described herein relates to a match dispenser for use in cigarette vending machines but it will be understood that the dispenser of our invention has application with respect to various other types of vending machines in which a secondary article is dispensed in conjunction with a main article.

In most of the cigarette vending machines heretofore known, of the type which dispense matches as a secondary article, the match dispenser is designed to dispense matches each time the cigarette delivery mechanism runs through a delivery cycle. In some of the machines heretofore known, means are provided for rendering the match dispensing mechanism responsive to the actual delivery of a package of cigarettes so that if the selected cigarette column is empty and the deposited coins are returned the customer will not receive matches. However, in all of such machines matches are automatically delivered along with cigarettes, whether they are desired by the customer or not.

One object of our invention is, therefore, to provide a secondary article dispenser for vending machines which can be set to deliver a secondary article automatically when the main article is delivered, or which can be set to register a credit when the main article is vended so as to permit the customer to select a secondary article if he desires.

Another object of the invention is to provide such a secondary article dispenser which is extremely simple in its construction and operation and requires a minimum of maintenance, and which can be set by the vendor to operate in either of the above two fashions in a matter of seconds by making one simple adjustment of the dispenser mechanism.

A further object of this invention is to provide such a secondary article dispenser which, when set to register a credit for secondary articles when the main article is dispensed, will automatically cancel said credit if matches are not selected within a predetermined length of time.

Still another of our objects is to provide such a secondary article dispenser which is actuated into a charged or cocked position when the operation of a main prime mover is initiated, and which is released from said position to effect delivery when the main article is delivered or when a button is depressed by the customer, depending upon the setting of the dispenser mechanism.

A still further object of the invention is to provide a secondary article dispenser which will dispense a secondary article to the purchaser of a main article if the purchaser actuates a selecting button provided for that purpose and in which said selecting button is easily actuable with a minimum of effort.

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Other objects and advantages of the invention will be apparent from the following description of a preferred embodiment thereof, taken in conjunction with the accompanying drawings, in which:

FIG. 1 is a reduced perspective view of a match dispenser illustrating columns for holding the books of matches along with an ejector shaft and means for actuating said shaft;

FIG. 2 is a reduced perspective view, partly broken away, illustrating the mechanism mounted on the inside of the mounting plate of FIG. 1;

FIG. 3 is an end elevational view, partly in phantom, showing the mechanism illustrated in FIG. 1 for actuating the ejector shaft;

FIG. 4 is an elevational view, partly in phantom and partly broken away, illustrating the opposite side of the mounting plate shown in FIG. 3 and the mechanism mounted thereon;

FIG. 5 is an elevational view, partly in section, taken along the line 5-5 of FIG. 3;

FIG. 6 is a side elevational view of one of the secondary article columns showing book matches therein as the article to be dispensed and illustrating the ejector shaft and an ejector finger thereon positioned to dispense one of said articles;

FIG. 7 is a view of the type shown in FIG. 6 showing the ejector shaft rotated a portion of the way through an ejection cycle;

FIG. 8 is a view of the type shown in FIG. 6, illustrating the position of an ejector finger at the completion of a delivery by said finger from the particular column shown;

FIG. 9 is a view of the type shown in FIG. 3 with certain parts of the mechanism removed so as to illustrate the interior portions thereof;

FIG. 10 is an elevational sectional view taken along the line 10-10 of FIG. 3; and

FIG. 11 is a view, partly broken away, taken along the line 11-11 of FIG. 3.

As previously noted, the particular embodiment being described is a match dispenser for use in cigarette vending machines. Referring to FIG. 1 there is a plurality of columns 20 adapted to hold the books of matches to be dispensed. An ejector shaft 21 positioned near the lower end of the columns 20 has a plurality of circumferentially staggered ejecting fingers 22 fixed thereto. One such ejecting finger 22 is provided for each of the columns 20 and said fingers are so arranged that one of them is always in an ejecting position as shown in FIG. 6. The ejection of a book of matches 23 is effected through rotation of the ejector shaft 21 an amount sufficient to move an ejecting finger from the position shown in FIG. 6 to the position shown in FIG. 8.

A ratchet wheel 24 is fixedly mounted on the ejector shaft 21 and it is through rotation of the ratchet wheel 24 that matches are dispensed from the columns 20 as will be described hereinafter. In the present embodiment the ratchet wheel 24 is made integral with a cam 25 which has a hub 26 thereon, and the integral unit is fixed to the shaft 21 by means of a pin 27 (see FIGS. 1, 3, 5 and 10).

A latch disc 28 (see FIGS. 1, 3, 5, 9 and 10) is fixed to a hub 29 (shown best in FIG. 10) and the latter is rotatably mounted on the shaft 21 by means of a bearing 30. A latch disc segment 31 is affixed to the latch disc 28 by means of rivets 32 (shown best in FIG. 9) and a ratchet pawl 33 is rotatably mounted on said segment by a pin 34 (see FIGS. 1, 3, 9 and 11). The ratchet pawl 33 is arranged to cooperate with the teeth on the ratchet wheel 24 in such a manner that when the latch disc 28 is rotated in a counterclockwise direction (as viewed in FIG. 1) the pawl 33 will engage the ratchet wheel 24 and rotate the same in a counterclockwise direction, thus effecting delivery of a book of matches 23 from one of the columns

20. A torsion spring 35 (see FIGS. 3 and 9) is mounted on the pin 34 for cooperation with the pawl 33 so as to bias the latter against the ratchet wheel 24.

Before delivery of a book of matches 23 can be effected by the dispenser described herein, it is first necessary to rotate the latch disc 28 into its charged or cocked position. When coins in the proper amount are deposited in the cigarette machine (not shown), of which the match dispenser described herein is to be a part, and the customer depresses a selecting button, the main prime mover of said cigarette machine is started and a power shaft 36 (see FIG. 1) is caused to rotate one complete revolution.

A crank 37 is fixedly mounted on the shaft 36 and a crank (or its equivalent) would normally be used to actuate the cigarette delivery mechanism. It is believed advantageous to utilize the movement of said crank 37 for the additional purpose of cocking the match delivery mechanism, and the means for accomplishing this result will now be described.

A mounting plate 38 (see FIG. 1) has two slots 39 provided therein (shown best in FIG. 9) and an actuator slide 40 is mounted in said slots by two rivets 41. It will be understood that the actuator slide 40 is mounted so that it is free to move vertically a limited amount, the rivets 41 being movable in and guided by the slots 39. The plate 38 also has a mounting lip 42 and a lower mounting ledge 43 (see FIGS. 1, 3, 5 and 9) and between said members a pin 44 is fixedly mounted in a vertical position. The lower end of the actuator slide 40 has a hole 45 provided therein (see FIG. 1) and the pin 44 passes through said hole so as to further guide and stabilize the movable slide 40.

The latch disc 28 has a roller 46 (see FIGS. 4 and 11) mounted thereon by a pin 47, and a lip 48 (see FIGS. 1, 4 and 11) is provided on the actuator slide 40 for cooperation with said roller. It will now be understood that if the actuator slide 40 is moved upwardly from its lowermost position (as shown in FIG. 1) the lip 48 engages the roller 46 and causes the latch disc 28 to be rotated in a clockwise direction (as viewed in FIG. 1). Such a rotation of the disc 28 is necessary in order to cock or charge the delivery mechanism, as will be more fully explained.

As previously mentioned, the rotation of the crank 37 is utilized to effect the cocking of the match delivery mechanism. For this purpose a slide link 49 (shown best in FIG. 1) having an upper ledge 50 is also mounted on the pin 44 through a hole 50' provided in said ledge, the ledge 50 on said link 49 being supported by the mounting ledge 43 of the plate 38 when said link 49 is in its lowermost position. It can be seen that the slide link 49 can be moved vertically and that when moved upwardly it will engage the lower end of the actuator slide 40 and move the latter in an upward direction.

A mounting plate 51 (see FIG. 1), through which the power shaft 36 projects, has two rollers 52 rotatably mounted upon it and each of said rollers has a circumferential groove provided therein. The slide link 49 is positioned between said rollers and within said grooves so as to be supported laterally and guided by said rollers. The crank 37 has a roller 53 mounted thereon by a pin 54 and said roller 53 is adapted to cooperate with the lower end of the link 49 so that when said crank is rotated one full revolution during the operation of the cigarette delivery mechanism, as previously described, the roller 53 engages and lifts the link 49. Consequently, the link 49 raises the actuator slide 40 which rotates the latch disc 28 to its cocked position, in which position it is locked by means to be described hereinafter. Once the roller 53 passes beyond the slide link 49, said link and the actuator slide 40 are both returned by gravity to their lower most positions.

The latch disc 28 has a stud 55 affixed to its rear side (see FIGS. 2, 4 and 5), which stud projects through an opening 56 in the mounting plate 38. A stud 57 is also provided on the rear side of the plate 38 and a delivery

spring 58 has one end fixed to each of said studs. It will be understood that when the latch disc 28 is rotated to its cocked position, such rotation is against the bias of the delivery spring 58. It will further be seen that if the disc 28 is rotated to its cocked position and subsequently released, said delivery spring will return the disc 28 to its counterclockwise position (as viewed in FIG. 1). When the disc 28 is thus returned to its counterclockwise position it rotates the ratchet wheel 24, by means of the ratchet pawl 33, in a similar direction. In the manner above described the ejector shaft 21, which is fixed to the wheel 24, is caused to rotate so as to eject a book of matches 23 from one of the columns 20.

The locking means which serve to retain the latch disc 28 in the cocked or charged position, to which it is rotated upon each operation of the main power shaft 36, will now be described. Referring to FIG. 9, a locking lever 59 is rotatably mounted on the plate 38 by a pin 60, and the end 61 of said lever is adapted to engage a tooth 62 on the disc 28. The other end 63 of the lever 59 is fixed to the armature 64 of a solenoid 65 (shown best in FIG. 2), the latter being affixed to the rear of the mounting plate 38. A compression spring 66 is positioned on the armature 64 so as to bias the lever 59 to its locking position (as shown in FIG. 9).

When the latch disc 28 is rotated to its cocked position upon rotation of the power shaft 36, it is locked in said position by the above-described lever 59. It is intended that in the cigarette machine which is used in conjunction with the match dispenser being described, a flap or bar (not shown) will be arranged to be actuated by a package of cigarettes being delivered. Such flaps are well known in the art and for this reason are not described herein. The movement of such a flap or bar is utilized to energize the solenoid 65 and thus rotate the lever 59 in a clockwise direction (as viewed in FIG. 9) to its unlocked position. In other words, when the latch disc 28 is rotated to its cocked position it is retained therein by the locking lever 59, and when cigarettes are delivered by the main article dispenser the lever 59 is moved to its unlocked position.

A further means of retaining the disc 28 in its cocked position is the locking lever 67 (see FIG. 9) which is rotatably mounted on the plate 38 by the pin 68. The lever 67 has one end 69 which is adapted to engage a tooth 70 on the disc 28 so as to retain said disc in its cocked position independently of other locking means. It will be noted that when the disc 28 is being retained by the locking lever 59, a small clearance 71 is provided between the locking end 69 of lever 67 and the tooth 70. The purpose of such a clearance is so that if lever 59 is released momentarily by energization of the solenoid 65, then even though the lever 67 is in a locking position, it will permit a slight rotation of the disc 28 so as to prevent the lever 59 from returning to its locked position when the solenoid 65 is de-energized.

The second end 72 of the lever 67 is arranged to be displaced by actuation of a match selector button or release member (not shown) on the exterior of the vending machine. A flexible cable 73 which passes through a mounting bracket 73' (see FIG. 9) serves as a housing for a push wire 74, the upper end of said wire being connected to said button so as to be responsive thereto. The lower end of the push wire 74 has a collar 75 affixed to it by a set screw 76, and the collar 75 is adapted to engage and displace the end 72 of lever 67 whenever the push wire 74 is moved downwardly. In this manner a customer can release the lever 67 by actuating a match selecting button positioned on the exterior of the cigarette vending machine which embodies our match dispenser.

A simple means of bearing the lever 67 to either operative or inoperative position is provided. The end 72 of the lever 67 projects through an opening 77 in the plate 38 (see FIG. 2) and two studs 78 and 79 are

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mounted on the rear side of said plate. A spring 80 has one end fixed to the end 72 of the lever 67 and its other end can be connected to the lower stud 78 or the upper stud 79 as desired. When the spring 80 is attached to the lower stud (as shown in FIG. 2) the lever 67 is biased to its inoperative position so that its locking end 69 will not engage the tooth 71 on the disc 28. However, when the spring 80 is attached to the upper stud 79 (as shown in FIG. 4) the lever 67 will be biased to its operative position in such a manner that when the disc 28 is rotated to its cocked or charged position, it will be retained therein by the lever 67 until the latter is released by actuation of the match selector button as previously described.

A third locking lever 81 (shown best in FIGS. 1 and 9) is rotatably mounted on the plate 38 by a pin 82. The end 83 of the lever 81 is adapted to engage a tooth 84 on the latch disc segment 31 so that it can serve to retain the disc 28 when the latter is in its cocked position. When lever 81 is in locked position (as shown in FIG. 9) a clearance 85 is provided between the end 83 of said lever and the tooth 84. The purpose of said clearance is so that even when the lever 59 has been released and the disc 28 thus permitted to rotate a slight amount until retained by lever 67, yet the end 83 will still be movable into its locking position.

The other end 86 of the lever 81 is fixed to an armature 87 of a solenoid 88 in such a manner that energization of said solenoid rotates lever 81 in a clockwise direction to its inoperative position. A compression spring 89 is positioned on the armature 87 to bias the lever 81 to its operative or locking position.

A switch 90 (see FIG. 1) is affixed to the plate 51 and said switch is arranged to be closed momentarily when the crank 37 is rotated. Said switch 90 is adapted to control the energization of the solenoid 88 which will, therefore, be energized each time the crank 37 is rotated and the latch disc 28 is moved to its cocked position. A timer 91 is also provided to control the solenoid 88, the function of said timer being to maintain energization of the solenoid 88 for a predetermined length of time.

It will now be seen that when the latch disc 28 is actuated to its cocked position, the solenoid 88 is energized and the locking lever 81 is rotated to its inoperative position. It will further be understood that after a predetermined length of time the timer 91 will effect the de-energization of said solenoid and the lever 81 will be moved by the spring 89 to its locked position. Of course, the return of the lever 81 to its locked position after such a predetermined length of time will be effective to retain the latch disc 28 only in those instances when said disc has not previously been released and a delivery of matches effected. In those instances where delivery has been effected the de-energization of the solenoid 88 will simply cause the lever 81 to be positioned as shown in FIG. 1, without effecting any locking action.

As previously described, when the latch disc 28 is released from its cocked position it is rotated by the delivery spring 58 and consequently the ejector shaft 21 is rotated so as to effect delivery of one of the books of matches 23. In this respect, it is important that the shaft 21 be rotated the amount necessary to move one of the ejecting fingers 22 from the position shown in FIG. 6 to the position shown in FIG. 8. When this is done a single book of matches will be properly delivered and another ejecting finger will assume the position shown in FIG. 6 in preparation for the next delivery. It is necessary, therefore, that the amount of rotation of the shaft 21 during a delivery cycle be accurately controlled.

In order to control the amount of rotation of the shaft 21, a detent lever 92 (shown best in FIG. 3) is mounted on the pin 60. The detent lever 92 has three arms 93, 94 and 95 and the middle arm 94 has a pin 96 projecting therefrom. The pin 96 is arranged to cooperate with the cam surfaces on the cam 25, which

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cam surfaces are designed to provide the proper positioning of the fingers 22 on the ejector shaft 21.

A spring 97 has one end connected to the arm 95 of the detent lever 92 and the other end connected to a stud 98 which is fixedly mounted on the plate 38. The spring 97 serves to bias the detent lever 92 in a counterclockwise direction so as to maintain the pin 96 in contact with the cam surfaces on the cam 25. Said spring also maintains the arm 93 in the proper position so that it will act as a stop as will now be explained.

A pin 99 (see FIGS. 3 and 9) is affixed to the latch disc 28 for cooperation with a cam surface 93', on the end of the stop arm 93. In operation, the latch disc is alternately cocked into the position shown in FIG. 9 and rotated by the spring 58 into the position shown in FIG. 3, said cycle being repeated for each delivery of a book of matches. Each time the disc 28 is released from its cocked position it rotates until the pin 99 engages the cam surface 93' on the stop arm 93, thus stopping the rotation of the latch disc 28. It should also be noted that as the pin 99 contacts the cam surface 93', it tends to rotate the detent lever 92 in a counterclockwise direction. Such rotation forces the pin 96 on the middle arm 94 between two of the projections on the cam surfaces of the cam 25, thus stopping and positioning the shaft 21 in the proper position. Thus, while the only connection between the driving latch disc 28 and the cam 25 (which is fixed to the shaft 21) is the ratchet pawl 33, yet the detent lever 92 serves to stop the rotation of the disc 28 and also to stop and position the cam 25 and shaft 21.

Operation

The mode of operation of the above-described match dispenser in conjunction with a cigarette vending machine (not shown) will now be explained and for this purpose it will be assumed that the spring 80 is attached to the upper stud 79 so that the dispenser is set for optional match delivery.

When the proper amount of coins is deposited in the cigarette vending machine and the customer selects his brand of cigarettes by depressing a cigarette selector button, the operation of the main prime mover (not shown) is initiated and the power shaft 36 (see FIG. 1) is rotated one complete revolution. As the shaft 36 begins to rotate the crank 37, switch 90 is closed thus energizing the solenoid 88 and initiating the operation of the timer 91 which will maintain the solenoid 88 energized for a predetermined length of time. The energization of the solenoid 88 causes the locking lever 81 to be rotated to its inoperative position.

The rotation of the crank 37 also forces the slide link 49 in an upwardly direction resulting in a rotation of the disc 28 to its charged or cocked position (see FIG. 9) in which it is locked by the locking lever 59 and the locking lever 67. It should be noted that there is no rotation of the ejector shaft 21 during the cocking of the disc 28. Such independence between these two parts is important since reverse rotation of the ejector shaft is not feasible as can be seen, for example, from FIG. 8.

The main function of the power shaft 36 is to operate the cigarette delivery mechanism (not shown) and thus by the time the shaft 36 and crank 37 have completed their one full revolution a package of cigarettes will have been delivered to the customer unless the selected cigarette column is empty. If a package of cigarettes is delivered said package will actuate a flap (not shown) which will effect energization of the solenoid 65. Such energization of the solenoid 65 will momentarily cause the locking lever 59 to be moved to its unlocked position permitting a rotation of the disc 28 an amount equal to the clearance 71 (see FIG. 9). After such rotation the lever 59 will be unable to return to its locking position and the disc 28 will be locked only by the lever 67.

The customer will now have the selected package of

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cigarettes and if he wishes to have matches delivered he will depress the match selector button (not shown) located on the exterior of the machine. When said button is actuated, the push wire 74 and collar 75 (see FIG. 9) will be moved downwardly and the locking lever 67 will be rotated to its unlocked position permitting the latch disc 28 to be rotated by the delivery spring 58. In this manner the disc 28 will be rotated until the pin 99 engages the stop arm 93 (see FIG. 3) on the detent lever 92 at which time the disc 28 will be stopped in the position shown in FIG. 3. It will be understood that because the power necessary to rotate the ejector shaft 21 is not derived from the actuation of the match selector button, said button can be actuated with a minimum of effort.

Such rotation of the disc 28 will cause the shaft 21 to be rotated an equal amount thus moving one of the ejecting fingers 22 from the position shown in FIG. 6 to the position shown in FIG. 8. Consequently, a book of matches 23 will be delivered to the customer. It should be noted that the action of the pin 99 against the arm 93 will tend to rotate the detent lever 92 in a counterclockwise direction (as viewed in FIG. 3) forcing the arm 94 towards the cam 25. Thus, the pin 96 will be positively positioned between two of the projecting cam surfaces on the cam 25 and will stop the movement of the ejector shaft 21 and properly position said shaft in preparation for the next delivery cycle.

In the situation where the cigarette vending machine does not contain the brand of cigarettes selected, it is customary to provide a coin return mechanism whereby the customer can have the deposited coins returned to him. In this instance the locking lever 59 will not be unlocked and the customer will not be able to obtain matches by actuating the match selector button.

Where the match dispenser is set for optional delivery the customer obtains matches by depressing a match selector button as described above. However, once the cigarettes have been selected and a predetermined length of time has expired, the timer 91 will cause the solenoid 83 to be de-energized permitting the locking lever 81 to be rotated by the spring 89 towards its locking position. If the lever 81 is so rotated prior to the actuation of the match selector button, then lever 81 will engage the tooth 84 on the segment 31 and lock the latch disc 28 in its cocked position. In this instance, the dispenser will not deliver matches until additional coins are deposited by the next customer. The function of the lever 81 and timer 91 is, therefore, to prevent anyone other than the purchaser of the cigarettes from obtaining matches from the machine. The time setting of the timer 91 is regulated accordingly.

When it is desired to have matches delivered automatically with each delivery of cigarettes it is merely necessary to remove the spring 80 from the stud 79 and attach said spring to the lower stud 78. In this manner the lever 67 will be maintained in an inoperative position. When the dispenser is set for automatic match delivery the timer 91, solenoid 83 and lever 81 serve no useful purpose and can be disconnected if desired.

This invention can, of course, be applied in various ways and the present description should, therefore, be regarded as disclosing only an illustrative embodiment of the invention from which no unnecessary limitations should be implied.

We claim:

1. A secondary article dispenser for use in vending machines of the type having main and secondary article dispensers, comprising: a container for holding the secondary articles to be dispensed; a manually operable secondary article release member; ejecting means adapted to eject one of said secondary articles upon each actuation thereof; means for actuating said ejecting means, said actuating means normally being in an inoperative position; means responsive to the operation of said main article dispenser for moving said actuating means to an

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operative position; primary locking means for preventing the subsequent operation of said actuating means, said primary locking means being automatically released when one of said main articles is dispensed; and secondary locking means for preventing the operation of said actuating means, said secondary locking means being releasable by operation of said release member.

2. A secondary article dispenser for use in vending machines of the type having main and secondary article dispensers, comprising: a container for holding the secondary articles to be dispensed; a manually operable secondary article release member; ejecting means adapted to eject one of said secondary articles upon each actuation thereof; means for actuating said ejecting means, said actuating means being normally in an uncocked position; means operable by said main article dispenser for moving said actuating means to cocked position, said actuating means being thereafter operable only upon the delivery of an article by said main article dispenser and the manual operation of said release member; normally inoperative means for preventing the operation of said actuating means; and timing means adapted to render said preventing means operative a predetermined length of time after the delivery of said main article.

3. A secondary article dispenser for use in vending machines of the type having main and secondary article dispensers, comprising: a container for holding the secondary articles to be dispensed; a manually operable secondary article release member; ejecting means adapted to eject one of said secondary articles upon each actuation thereof; means for actuating said ejecting means, said actuating means including an actuating member movable in one direction to a cocked position and movable in the opposite direction to actuate said ejecting means; yielding means for biasing said actuating member in said opposite direction; cocking means for moving said actuating member into said cocked position each time said main article dispenser is operated; and a plurality of locking means for retaining said actuating member in said cocked position, one of said locking means being releasable by operation of said main article dispenser and another thereof being operable by operation of said release member.

4. A secondary article dispenser for use in vending machines of the type having main and secondary article dispensers, comprising: a container for holding the secondary articles to be dispensed; a manually operable secondary article release member; ejecting means adapted to eject one of said secondary articles upon each actuation thereof; means for actuating said ejecting means, said actuating means including an actuating member movable in one direction to a cocked position and movable in the opposite direction to actuate said ejecting means; yielding means for biasing said actuating member in said opposite direction; cocking means for moving said actuating member into said cocked position each time said main article dispenser is operated; primary locking means for retaining said actuating member in said cocked position, said primary locking means being automatically released upon the delivery of one of said main articles; and secondary locking means for retaining said actuating member in said cocked position, said secondary locking means being releasable by manual operation of said release member.

5. A secondary article dispenser for use in vending machines of the type having main and secondary article dispensers, comprising: a container for holding the secondary articles to be dispensed; a manually operable secondary article release member; ejecting means adapted to eject one of said secondary articles upon each actuation thereof; means for actuating said ejecting means, said actuating means including an actuating member movable in one direction to a cocked position and movable in the opposite direction to actuate said ejecting means; yielding means for biasing said actuating member in said opposite

direction; cocking means for moving said actuating member into said cocked position each time said main article dispenser is operated; primary locking means for retaining said actuating member in said cocked position, said primary locking means being automatically released upon the delivery of one of said main articles; secondary locking means for retaining said actuating member in said cocked position, said secondary locking means being releasable by manual operation of said release member; and tertiary locking means for retaining said actuating member in said cocked position, said tertiary locking means normally being in an inoperative position and being automatically movable into a locking position a predetermined length of time after the delivery of one of said main articles.

6. A secondary article dispenser for use in vending machines of the type having main and secondary article dispensers, comprising: a plurality of columns for holding the secondary articles to be dispensed; a manually operable secondary article release member; an ejecting shaft having a plurality of ejecting fingers thereon corresponding respectively to said columns, said shaft being adapted to eject one of said secondary articles upon each actuation thereof; means for actuating said ejecting means, said actuating means including a disc which is rotatably mounted on said ejector shaft, said disc being rotatable in one direction to a cocked position and rotatable in the opposite direction to rotate said ejector shaft an amount necessary to actuate said shaft; means connecting said disc to said ejector shaft when said disc is being rotated in said opposite direction; yielding means for biasing said disc in said opposite direction; cocking means for rotating said disc into said cocked position each time said main article dispenser is operated; and locking means for retaining said disc in said cocked position, said locking means being releasable by operation of said release member.

7. A secondary article dispenser for use in vending machines of the type having main and secondary article dispensers, comprising: a container for holding the secondary articles to be dispensed; a manually operable secondary article release member; ejecting means adapted to eject one of said secondary articles upon each actuation thereof; means for actuating said ejecting means; primary locking means for preventing the operation of said actuating means, said primary locking means being automatically released when one of said main articles is dispensed; and secondary locking means for preventing the operation of said actuating means, said secondary locking means being releasable by operation of said release member.

8. A secondary article dispenser for use in vending machines of the type having main and secondary article dispensers, comprising: a container for holding the secondary articles to be dispensed; a manually operable secondary article release member; ejecting means adapted to eject one of said secondary articles upon each actuation thereof; means for actuating said ejecting means, said actuating means including an actuating member movable in one direction to a cocked position and movable in the opposite direction to actuate said ejecting means; yielding means for biasing said actuating member in said opposite direction; cocking means for moving said actuating member into said cocked position each time said main article dispenser is operated; primary locking means for retaining said actuating member in said cocked position, said primary locking means being automatically released upon the delivery of one of said main articles; secondary locking means for retaining said actuating member in said cocked position, said secondary locking means being releasable by operation of said release member; and means for setting said secondary locking means in an operative or inoperative position as desired whereby when said means are set in said operative position a secondary article will be dispensed only upon delivery of an article by said main article dispenser and manual operation of said release member and when said means are set in said in-

operative position a secondary article will be dispensed automatically upon delivery of one of said main articles.

9. A secondary article dispenser for use in vending machines of the type having main and secondary article dispensers, comprising: a container for holding the secondary articles to be dispensed; a manually operable secondary article release member; ejecting means adapted to eject one of said secondary articles upon each actuation thereof; means for actuating said ejecting means; primary locking means for preventing the operation of said actuating means, said primary locking means being automatically released when one of said main articles is dispensed; secondary locking means for preventing the operation of said actuating means, said secondary locking means being releasable by operation of said release member; and means for setting said secondary locking means in an operative or inoperative position as desired whereby when said means are set in said operative position a secondary article will be dispensed only upon delivery of an article by said main article dispenser and manual operation of said release member and when said means are set in said inoperative position a secondary article will be dispensed automatically upon delivery of one of said main articles.

10. In a cigarette vending machine, a match dispensing device comprising: a holder for a supply of match books; ejecting means for dispensing such books individually; actuating means for said ejecting means, including a rotatable latching disc which is normally in uncocked position; means operable by a cigarette dispensing operation of the machine for rotating said disc to cocked position; a locking member engageable with said disc to lock the same in its cocked position; manually operable means for optionally disengaging said locking member from said disc; and spring means for operating said actuating means to cause the same to actuate said ejecting means and thereby dispense a book of matches when said locking member is optionally disengaged from said disc.

11. In a cigarette vending machine, a match dispensing device comprising: a holder for a supply of match books; ejecting means for dispensing such books individually; actuating means for said ejecting means, including a rotatable latching disc which is normally in uncocked position; means operable by a cigarette dispensing operation of the machine for rotating said disc to cocked position; a plurality of locking members engageable with said disc to lock the same in its cocked position; means for automatically disengaging one of said locking members from said disc upon a cigarette dispensing operation of the machine; manually operable means for optionally disengaging another of said locking members from said disc; and spring means for operating said actuating means to cause the same to actuate said ejecting means and thereby dispense a book of matches when both said automatically operable locking member and said manually operable locking member have been disengaged from said disc.

12. In a cigarette vending machine, a match dispensing device comprising: a holder for a supply of match books; ejecting means for dispensing such books individually; actuating means for said ejecting means, including a rotatable latching disc which is normally in uncocked position; means operable by a cigarette dispensing operation of the machine for rotating said disc to cocked position; a plurality of locking members engageable with said disc to lock the same in its cocked position; means for automatically disengaging one of said locking members from said disc upon a cigarette dispensing operation of the machine; manually operable means for optionally disengaging another of said locking members from said disc; spring means for operating said actuating means to cause the same to actuate said ejecting means and thereby dispense a book of matches when both said automatically operable locking member and said manually operable locking member have been disengaged from said disc; a third locking member; and means for causing engagement of said third locking member with said disc after the lapse

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of a predetermined time following said cigarette dispensing operation to prevent subsequent operation of said actuating means by disengagement of said manually operable locking member from said disc prior to the next cigarette dispensing operation.

13. In a cigarette vending machine, a match dispensing device comprising: a holder for a supply of match books; ejecting means for dispensing such books individually; actuating means for said ejecting means, including a rotatable latching disc which is normally in uncocked position; means operable by a cigarette dispensing operation of the machine for rotating said disc to cocked position; a plurality of locking members engageable with said disc to lock the same in its cocked position; means for automatically disengaging one of said locking members from said disc upon a cigarette dispensing operation of the machine; manually operable means for optionally disengaging another of said locking members from said disc; and spring means for operating said actuating means to cause the same to actuate said ejecting means and thereby dispense a book for matches when both said automatically operable locking member and said manually operable locking member have been disengaged from said disc; said disc and said locking members being so constructed and related that said manually operable locking member operatively engages said disc only after said automatically operable locking member has been disengaged therefrom and said disc has moved under the influence of said spring means to a position in which it cannot be relocked by said automatically operable locking member prior to the next cigarette dispensing operation.

14. In a cigarette vending machine, a match dispensing device comprising: a holder for a supply of match books; ejecting means for dispensing such books individually; actuating means for said ejecting means, including a rotatable latching disc which is normally in uncocked position; means operable by a cigarette dispensing operation of the machine for rotating said disc to cocked position; a plurality of locking members engageable with said disc to lock the same in its cocked position; means for automatically disengaging one of said locking members from said disc upon a cigarette dispensing operation of the machine; manually operable means for optionally disengaging another of said locking members from said disc; spring means for operating said actuating means to cause the same to actuate said ejecting means and thereby

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dispense a book of matches when both said automatically operable locking member and said manually operable locking member have been disengaged from said disc; a third locking member; and means for causing engagement of said third locking member with said disc after the lapse of a predetermined time following said cigarette dispensing operation to prevent subsequent operation of said actuating means by disengagement of said manually operable locking member from said disc prior to the next cigarette dispensing operation; said disc and said locking members being so constructed and related that said manually operable locking member operatively engages said disc only after said automatically operable locking member has been disengaged therefrom and said disc has moved under the influence of said spring means to a position in which it cannot be relocked by said automatically locking member prior to the next dispensing operation and that said third locking member may effect locking engagement with said disc after movement thereof into locking engagement with said manually operable locking member.

15. A secondary article dispenser for use in vending machines of the type having main and secondary article dispensers, comprising: a container for holding the secondary articles to be dispensed; a manually operable secondary article release member; ejecting means adapted to eject one of said secondary articles upon each actuation thereof; means for actuating said ejecting means; locking means for preventing operation of said actuating means, said locking means being releasable by operation of said release member for optional dispensing of one of said secondary articles; and means for setting said locking means in an operative or an inoperative position as desired whereby optional dispensing of a secondary article is provided for only when said locking means are set in such operative position.

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