Jan. 16, 1934. F. J. KEEFE 1,943,678

CIGARETTE CASE

Filed June 24, 1931 2 Sheets-Sheet 1

Fig. 1.

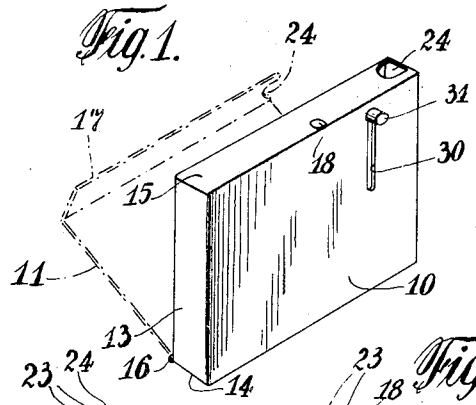


Fig. 2.

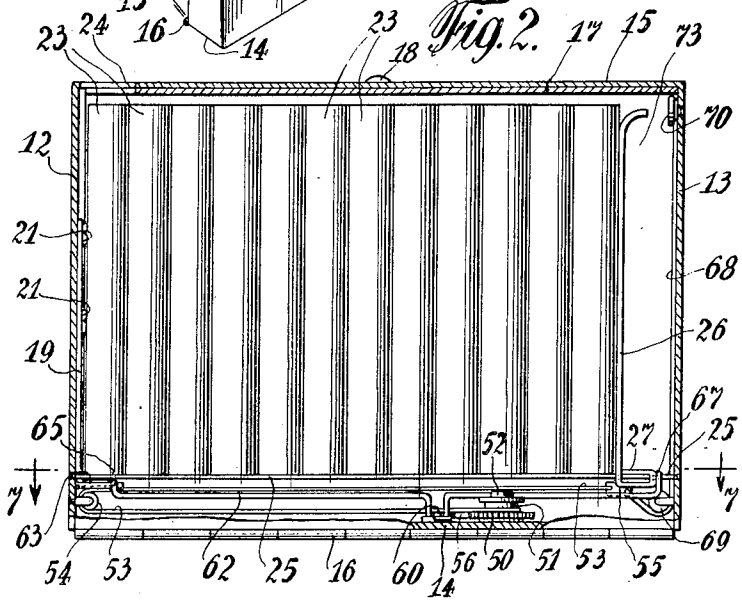


Fig. 3.

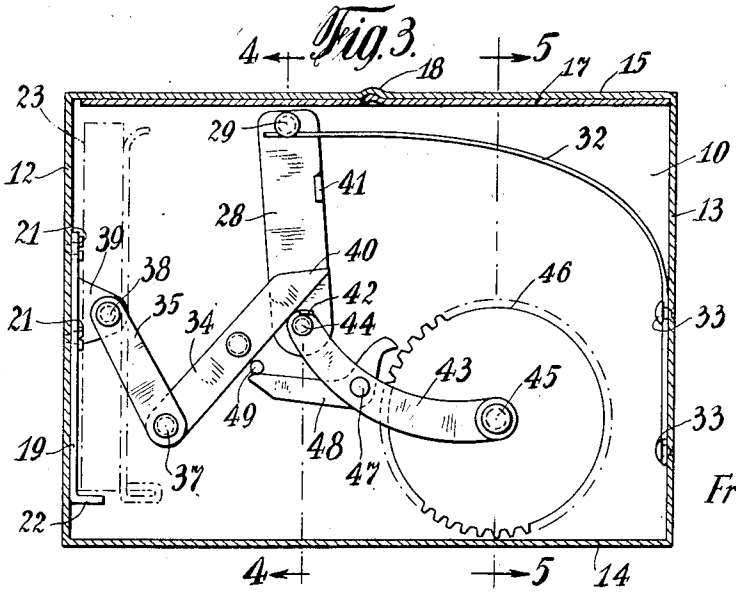


Fig. 4.

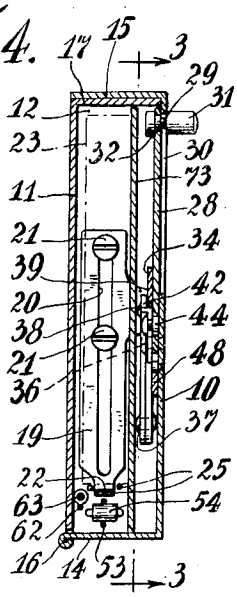
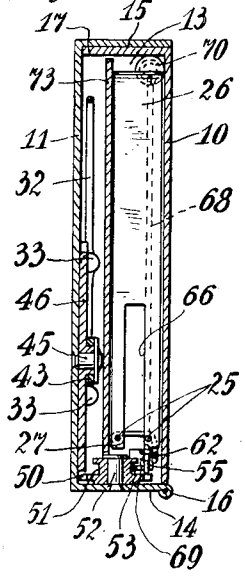


Fig. 5.



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Fig. 6.

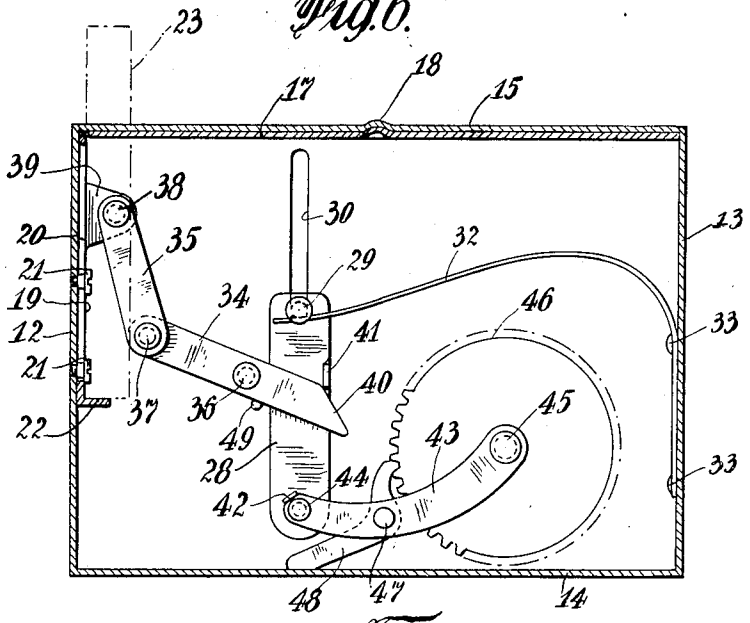


Fig. 7.

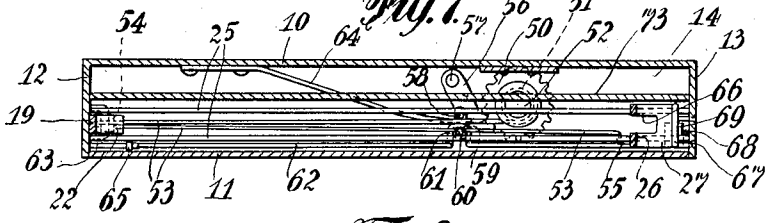


Fig. 8.

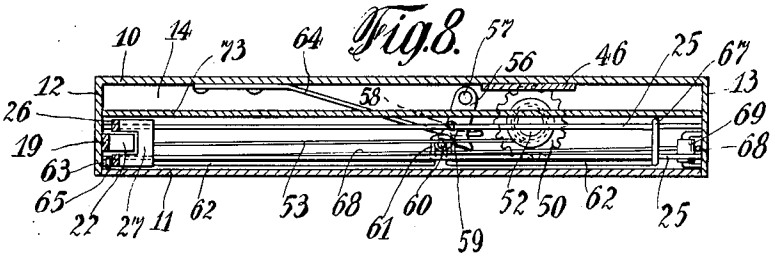
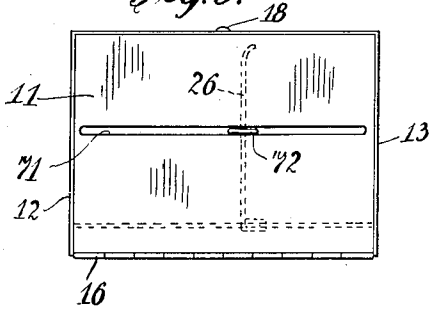


Fig. 9.



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UNITED STATES PATENT OFFICE

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CIGARETTE CASE

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Application June 24, 1931. Serial No. 546,542

10 Claims. (Cl. 206—41)

This invention relates to cigarette cases, the invention being more particularly related to cigarette cases or boxes of the type constructed with mechanical means whereby, at will, to effect the ejection or delivery of the cigarettes for use.

An object of the invention is to provide an improved case or box having improved means by which to effect the ejection or delivery of the cigarettes, and in conjunction with each operation which results in the delivery of a cigarette, to automatically feed into position for ejection another cigarette which will in turn be ejected upon the succeeding operation of the ejecting means. With the device of my invention, by means of a simple sliding lever, the entire stock of cigarettes contained in the case may be ejected one by one, each operation of the sliding lever resulting in the ejection of a cigarette until the supply within the case has been exhausted. The case conveniently fits the hand, and the thumb of the hand which holds the case may be used to operate the sliding lever. The cigarettes are not expelled or cast free of the case, but are ejected so as to be protruded a distance therefrom for ready seizure either by the fingers or by the mouth, for final removal thereby. Owing to these provisions, the device of my invention is especially advantageous for use by motorists and others who can spare only one hand for procuring a cigarette.

Another object of this invention is to provide a case the interior of which is readily accessible for stowing cigarettes therein and which may have a capacity sufficient to accommodate at one loading the contents of a standard commercial package of twelve cigarettes; but it is to be understood in this connection that the case, if desired, may be made in sizes to contain either more or less than twelve cigarettes.

No springs for exerting pressure on the cigarettes are used, and the feeding and ejecting mechanisms are so controlled that their respective functions and their cooperative relationship will be the same irrespective of the capacity of the case.

Another object of the invention is to so construct and arrange the feeding and ejecting mechanisms that the cigarettes, while in stowed condition and during the feeding and ejecting processes, will not be subjected to squeezing or lashing actions, such as will cause breaking or cracking of the wrappers or other injury.

Another object is to provide a construction in which partial or accidental operation of the sliding or actuating lever will not result in any disturbance to the cigarettes or tend to cause the ejection of a cigarette, the parts in this regard being so arranged that said lever must be actuated a considerable distance from its initial position before the ejector will commence its ejecting stroke.

A further object of the invention is to provide in a device of the character described, means whereby, upon the ejection of the last cigarette, to cause automatic re-positioning and re-setting of the feeding mechanism for the refilling of the receptacle and still further to provide means for indicating to the user the fact that the last cigarette has been ejected.

With the above and other objects in view, the invention consists in the improved cigarette case and dispensing device and in the construction and relative arrangement of its several parts, as will be hereinafter more fully described, illustrated in the accompanying drawings and finally claimed.

In the accompanying drawings:—

Figure 1 is a perspective view of the case in close condition, showing also by dot-dash lines the hinged side of the case in partial open posision;

Fig. 2 is a side elevation and section, looking toward the vertical partition which conceals part of the operating mechanism;

Fig. 3 represents a vertical longitudinal sectional view, with some of the parts omitted and showing in dot-dash lines a cigarette in position for ejection;

Fig. 4 is a cross section taken on the line 4—4 of Fig. 3;

Fig. 5 is a similar view taken on the line 5—5 of Fig. 3;

Fig. 6 is a view similar to Fig. 3, but showing the parts in the relative positions they occupy when a cigarette has been moved into protruding position;

Fig. 7 is a horizontal longitudinal sectional view, taken on the line 7—7 of Fig. 2, and showing the ratchet mechanism engaged to cause winding of the pull cord and hence advancement of the cigarette feed member;

Fig. 8 is a view similar to Fig. 7, but showing the ratchet mechanism released to permit unwinding of the pull cord and hence re-positioning of the feed member; and

Fig. 9 is a side elevation showing an index button applied to the feed member.

By reference to the drawings, it will be noted

that the invention is disclosed as embodied in a rectangular box or receptacle consisting of opposite side members 10 and 11, opposite end members 12 and 13 and bottom and top members 14 and 15. The side member 11 is connected by a hinge 16 to the bottom 14 so as to be swung into open position to provide access to the interior of the box; and in the present instance said side member 11 is provided with a top portion 17 adapted, when the side member is moved into closed position, to pass into the box and closely underlie the top 15. In the present instance, for securing the side member 11 in closed position, the portion 17 and top 15 are provided with cooperating detent deformations 18, although in practice, the box may be provided with any suitable means for securing the hinge-connected part in closed engagement with the body of the box. This case or box may be produced from sheet metal or any suitable material. By opening the box at one side thereof, access may be had to the entire interior of the box for stowing cigarettes therein. As illustrated in the present drawings, the case or box may be of a size sufficient to contain twelve cigarettes, this being the number that is usually contained in the standardized commercial packages of cigarettes. It will be evident that in practice the case or box may be made in different sizes and of a capacity to accommodate at one time a stock of cigarettes which in number may be more or less than twelve.

For ejecting the cigarettes into a position for delivery, I provide an ejector 19 which slides up and down along the inner face of the end member 12, this ejector being slidably mounted by providing it with an elongated slot 20 and suitable screw members 21 which pass transversely through the elongated slot and are threaded into the wall or end member 12. An inwardly projecting foot part 22 is provided on the ejector slide for engaging under the lower end of a cigarette 23 to lift the cigarette upwardly and protrude it through suitable delivery openings 24 provided respectively in the top member 15 and portion 17, when the ejector slide is moved upwardly. The cigarettes 23 are stowed in the box in a row as shown in Fig. 2 and upon a pair of parallel spaced-apart slide rails 25, the opposite ends of which are secured in the end members 12 and 13. The foot part 22 of the ejector slide passes between the slide rails and when the ejector slide is in its lower position, as shown in Fig. 2, the said foot part 22 occupies a position below the rails so that the foremost cigarette in the row can be fed to the ejector slide in such manner that when the ejector slide is lifted the cigarette will be lifted with it to protrude a distance above the top of the box where it may be seized by the fingers or by the mouth for removal. For moving the cigarettes along the slide rails, I provide a feed member 26 in the form of an upright strip or plate the foot of which is bent into a suitable rectangular loop 27 suitably holed for receiving the slide rails, so that the feed member will be mounted upon the slide rails for sliding movement thereon.

In carrying out my invention, two operating mechanisms are provided, one for operating the ejector slide and the other for operating the feed member. Both of these mechanisms are operated by a single control or slide lever 28 which is made in the form of a plate, as best shown in Fig. 6, to slide downwardly and upwardly along the inside face of the side wall 10, the said control lever 28 being provided at its top end with an outwardly projecting pin 29 which works in a vertically extending guide slot 30 and is provided exteriorly of the case with a finger piece 31. Said lever 28 is normally held in elevated position by a strip spring 32, one end of which is engaged under the inner end of the pin 29, while the opposite end is secured by members 33 to the end member 13. The mechanism for operating the ejector slide from the control lever consists of two links 34 and 35, the former being in the form of a rocking lever fulcrumed intermediate its length on a pin 36. Said parts 34 and 35 are pivotally connected at 37 and the latter at its remote end is pivoted at 38 to a lug 39 projecting from the ejector slide. The free end of the part 34 has a beveled or cam-shaped edge 40 which, as best shown in Fig. 3, faces a lug 41 on the lever 28 when the ejector slide is in its lower position. By exerting a downward push upon the finger piece 31, the lever 28 will be given a down thrust near the conclusion of which the lug 41 will engage the cam edge 40 with the result that the rocking part 34 will be swung on its fulcrum and in a direction to lift the ejector slide upwardly into the position illustrated in Fig. 6. Manifestly, the ejector slide will be maintained in its elevated position as long as the lever 28 is held in its down position by the exertion of pressure upon the finger piece 31. While the ejector slide is maintained in its elevated position, the protruding end of the cigarette may be seized by the fingers or by the mouth for removal from the case. Upon releasing the finger piece 31, the spring 32 will cause the lever 28 to make its upward or return stroke; and upon the disengagement of the lug 41 with the part 34, the ejector slide will immediately fall downwardly by its own weight and in the event its downward movement is slow such movement will be accelerated by the engagement of a lug 42 with the underneath edge of the free end portion of said rocking part 34.

The mechanism for operating the feed member 26 includes an arcuate arm 43 one end of which is pivoted at 44 to the lever 28, while the opposite end thereof is mounted for turning movement upon a stud shaft 45 projecting from the side member 10 and which carries a gear wheel 46. The lug 42, hereinbefore mentioned, is formed on said arm 43 adjacent the pivot point 44. The arcuate arm 43 is moved downwardly and upwardly in conjunction with the lever 28, the remote end of such arm turning on the stud 45. Pivoted at 47 to the arm 43 is a pawl 48, the pointed or hooked end of which is adapted to cooperate with the teeth of the gear wheel 46. As the lever 43 approaches its lower terminal of movement, the tail end of the pawl 48 engages the bottom of the box with the result that the pawl is tripped into a position to engage the pawl point with the teeth of the gear wheel, so that upon the return stroke of the lever 28, the gear wheel will be caused to rotate upon the stud 45. As the lever 43 approaches its upper terminal of movement, the tail of the pawl engages a stop 49 with the result that the pawl is swung upon its pivot 47 in a direction to disengage its point from the teeth of the gear wheel. Therefore, under this arrangement, each time the lever 28 is given a downward thrust or stroke, the ejector slide will

be given an upward movement for projecting a cigarette through the top of the case; and each time the lever 28 makes its return or upward stroke, the gear wheel 46 will be rotated for a distance. The gear wheel 46 is in engagement with a ratchet wheel 50 which has a cylindrical part in the form of a drum 51. The ratchet wheel with its drum portion is mounted to revolve upon a stud 52 secured to the bottom of the case. 53 denotes a pull-cord which is trained about a pulley 54 adjacent the end member 12. One end of the pull-cord is attached to a member 55 rigid with the foot 27 of the feed member 26. The opposite end of the pull-cord is attached to the drum. This arrangement is such that when the lever 28 makes its upward stroke, the ratchet wheel will be rotated in a direction to wind the pull-cord upon the drum; and the several parts are so proportioned and related that upon each upward stroke of the lever 28 the feed member 26 will be drawn toward the ejector slide a distance substantially equal to the diameter of a cigarette 23. In this way, immediately after the removal of a protruded cigarette and in conjunction with the spring urged return stroke of the lever 28, the feed member 26 will be pulled toward the ejector slide, moving the row of cigarettes along the slide rails a distance sufficient to feed the foremost cigarette of the row in position to be ejected upon the next down stroke of the lever 28.

Reverse movement of the ratchet wheel 50 is normally prevented by a dog 56 pivoted at 57 to the inner face of the bottom element 14. Pivotally connected at 58 to the body of the dog is a swingable portion 59 provided with a pin 60 which engages a loop 61 formed intermediate the length of an endwise shiftable release member or rod 62, the opposite ends of which have sliding fit on suitable stationary retaining pins 63. A spring member 64 normally urges the dog in a direction for engagement with the ratchet wheel 50. The shiftable release member 62 controls the dog and its purpose is to move the dog out of engagement with the ratchet and thereby permit reverse turning of the gear wheel 46 along with the ratchet wheel and the unwinding of the pull-cord from the drum 51 when, after the ejection of the last cigarette, the feed member 26 is to be slid along the rails to a position remote from the ejector slide in order to provide for the stowing of a new supply of cigarettes between the feed member 26 and ejector slide 19. In carrying out this arrangement, when the last cigarette has been ejected, the feed member engages the end 65 of the release rod 62 under the movement influenced by the upward stroke of the member 28; and this is accomplished so as to shift the release rod 62 to the left in Fig. 8, thereby withdrawing the dog from the ratchet wheel. In this connection, it is to be noted that the feed member 26 is provided with an elongated slot 66, open at the bottom, for suitably clearing the foot 22 of the ejector slide for the full upward movement thereof. When the feed member 26 is moved to its remote position, as shown in Fig. 2, the foot 27 thereof engages the end 67 of the release rod 62, shifting said rod to the right in Fig. 7, thereby re-engaging the dog with the ratchet wheel. The movement of the feed member to the right, as in Figs. 2 and 7, may be accomplished automatically, through the provision of an elastic element 68, capable of yielding upon the forced feeding movement of the feed member and adapted immediately upon the dis-engagement of the dog from the ratchet wheel to draw the feed member along the slide rails and into its remote position to permit the refilling of the box. In the present instance, the elastic element is connected at one end to the member 55 rigid with the foot 27 of the feed member and, after being trained over a pully 69 it is connected by its other end to a post 70 fixed to the end member 13. With this provision, unwinding of the pull-cord from the drum 51 and re-positioning of the feed member 26 is accomplished automatically.

It will be evident that the elastic member 68 may, if desired, be dispensed with; for the feed member may be readily positioned by hand in order to permit the refilling of the box, it being only necessary in order to reposition the feed member by hand to open the hinged side 11 of the box. In the form of construction illustrated in Fig. 9, means are provided whereby to re-position the feed member by hand without opening the box. In this instance, the side 11 of the box is provided with an elongated slot 71 and the feed member 26 is provided with a finger piece 72 which projects outwardly through this slot and is movable therein. In this form of construction, the finger piece 72 serves as an index capable of indicating to the user when the last cigarette has been ejected and, if there are cigarettes within the box, the amount of the supply thereof.

A suitable partition 73 is located within the box lengthwise thereof to protect the cigarettes upon the slide rails from the mechanism and working parts located at the inner face of the side member 10. In this connection it is to be pointed out that the cigarettes freely move along the slide rails between the partition 73 and the openable side member 11; and they are held in place upon the slide rails between the feed member 26 and ejector slide 19. Owing to the fact that the feed member 26 is not propelled or otherwise operated upon by a spring, but to the contrary is pulled along under the operation of the pull-cord and gear transmission means, the cigarettes in the row are not squeezed or pressed together so as to break or crack the wrappings thereof, and further because of this arrangement, the cigarette under process of ejection is not interfered with by the cigarette which adjoins it.

It will be obvious that the mechanisms of my invention, controlled and operated by a single manually operated slide or lever, are capable of embodiment in many different types of boxes or environments, in which it may be desirable to lift and thereby separate one or more cigarettes from a row or group of cigarettes and to feed individual members of the row or group into position for the separating or lifting operation. It has been sought herein to illustrate only such an embodiment as will suffice to exhibit the character of the invention.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of the construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

I claim:

1. A cigarette case having a slide rail, an ejector and a feed member, said ejector receiving a cigarette at the rail and being operative to protrude the received cigarette from the case, said feed member being arranged for pulling actuation, to move cigarettes along the rail to the ejector, a slide adapted, when operated, to effect the operation of the ejector, and mechanism commanded by the movement of the slide for operating the feed member.

2. A cigarette case having a slide rail, an ejector and a feed member, said ejector receiving a cigarette at the rail and being operable about a pivot to protrude the received cigarette from the case, said feed member being arranged for moving cigarettes along the rail to the ejector, and mechanisms commanded by a single sliding finger piece for operating said ejector and moving said feed member, said mechanisms being effective to first operate the ejector and then to impart a feeding stroke to the feed member.

3. A cigarette case having a slide rail, an ejector and a feed member, said ejector receiving a cigarette at the rail and being operative to protrude the received cigarette from the case, said feed member being arranged for pulling actuation, to move cigarettes along the rail to the ejector, a reciprocating finger slide, mechanism positively operated by one movement of the finger slide for imparting an ejecting stroke to the ejector, and mechanism positively operated by the reverse movement of the finger slide for imparting a pulling stroke to the feed member.

4. A cigarette case having a bottom slide rail for cigarettes, an ejector slide receiving the cigarettes at the rail and operable about a pivot to protrude a received cigarette from the case, a feed member slidably mounted for movement along the rail to feed cigarettes to the ejector slide, a single control slide, mechanism arranged to be operated thereby for operating the ejector slide on its pivot, and mechanism under the control of said control slide for pulling said feed member, including a pull-cord connected with the feed member, and a winding element whereon to wind the cord and pull the feed member toward the ejector slide, said control slide being effective to cause a winding operation of said element after operating the ejector slide on its pivot.

5. In combination, a slide rail for cigarettes, a device for lifting cigarettes from said rail and including a member rocking on a pivot and having a free end, a feed member slidingly mounted to have movement along the rail for moving cigarettes to said device, a control slide adapted, when operated in one direction, to contact the free end of the rocking member for causing lifting movement of said device, and mechanism in connection with the control slide adapted, on the reverse movement of the control slide, to be commanded thereby for moving said feed member.

6. In combination, a slide rail for cigarettes, a device for lifting cigarettes from said rail, a feed member movable along the rail, a control part, mechanism connected with said device and adapted to be commanded by the control part for causing lifting movement of said device, mechanism connected with the control part and commanded thereby for moving said feed member in a direction to move cigarettes to said device, said last mechanism including in its construction releasing means actuable to release the feed member from the command of the control part, to permit movement of the feed member in a direction away from said device.

7. In combination, a slide rail for cigarettes, a device for lifting cigarettes from said rail, a feed member movable along the rail, a control part, mechanism connected with said device and adapted to be commanded by the control part for causing lifting movement of said device, mechanism connected with the control part and commanded thereby for moving said feed member in a direction to move cigarettes to said device, said last mechanism including in its construction releasable means actuable to release the feed member from the command of the control part, to permit movement of the feed member in a reverse direction, and a pull-back connected with said feed member for pulling the same in a reverse direction upon the actuation of said releasing means.

8. In combination with an ejector adapted, when operated, to lift a cigarette from a line, a feed member movable to move cigarettes into position to be lifted by the ejector, linkage including a pivoted lever connected with the ejector for operating the same, a control slide engageable with the pivoted lever for operating the same, a pull-cord connected to said feed member and a drum whereon to wind said cord for pulling the feed member, means operated by the control slide for imparting winding movement to said drum, including a ratchet on the drum, a pawl impelled wheel operated by the control slide and engageable with the ratchet, and a dog for preventing reverse movement of the ratchet.

9. In a cigarette case of the kind having discharging mechanism including an ejector for discharging cigarettes from the case, a slide rail whereon to move the cigarettes, extending to said ejector, a feed member, a pull-cord connected with the feed member for pulling the same in a direction to move the cigarettes along the rail to said ejector, a take-up drum for the pull-cord, a control slide having means adapted, on the operation of such slide, to engage and effect the operation of the take-up drum in one direction, means for preventing reverse movement of said drum, means for effecting the operation of said ejector by an operating movement of said control slide.

10. A cigarette case comprising, with an ejector for moving cigarettes from the case and actuable means for operating the ejector, a slide rail whereon to move the cigarettes, extending to said ejector, a feed member, a pull-cord connected with the feed member for pulling the same in a direction to move the cigarettes along the rail to said ejector, a take-up drum for the pull-cord, and means arranged to be operated by said actuable means for operating said take-up drum.

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