Sept. 20, 1960 E. E. SCARBORO 2,953,280

TIME REGULATED CIGARETTE DISPENSERS

Filed March 26, 1958 4 Sheets-Sheet 1

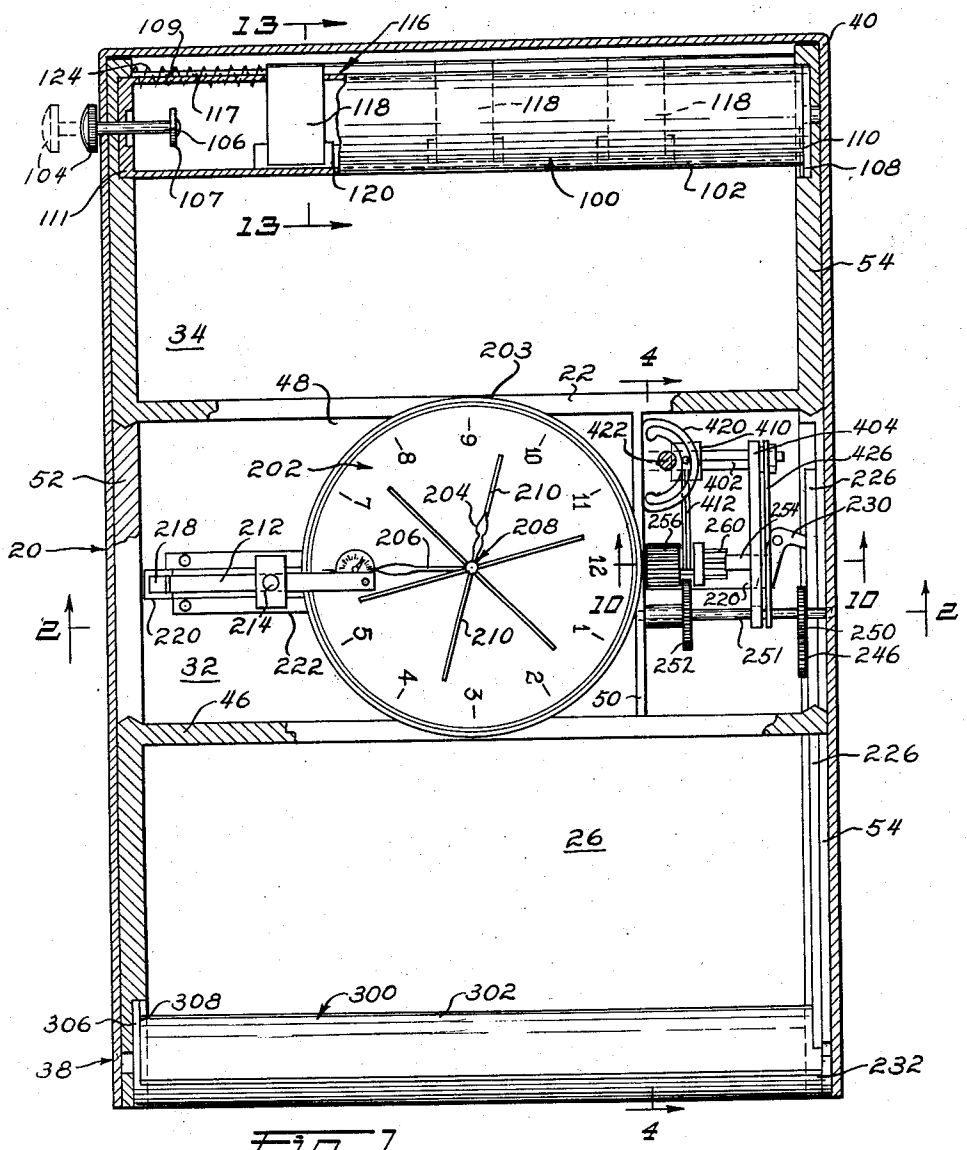


Fig. 1

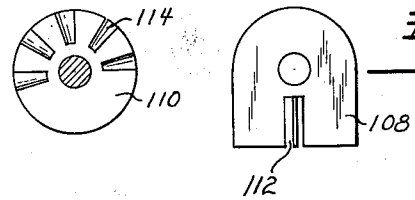


Fig. 16

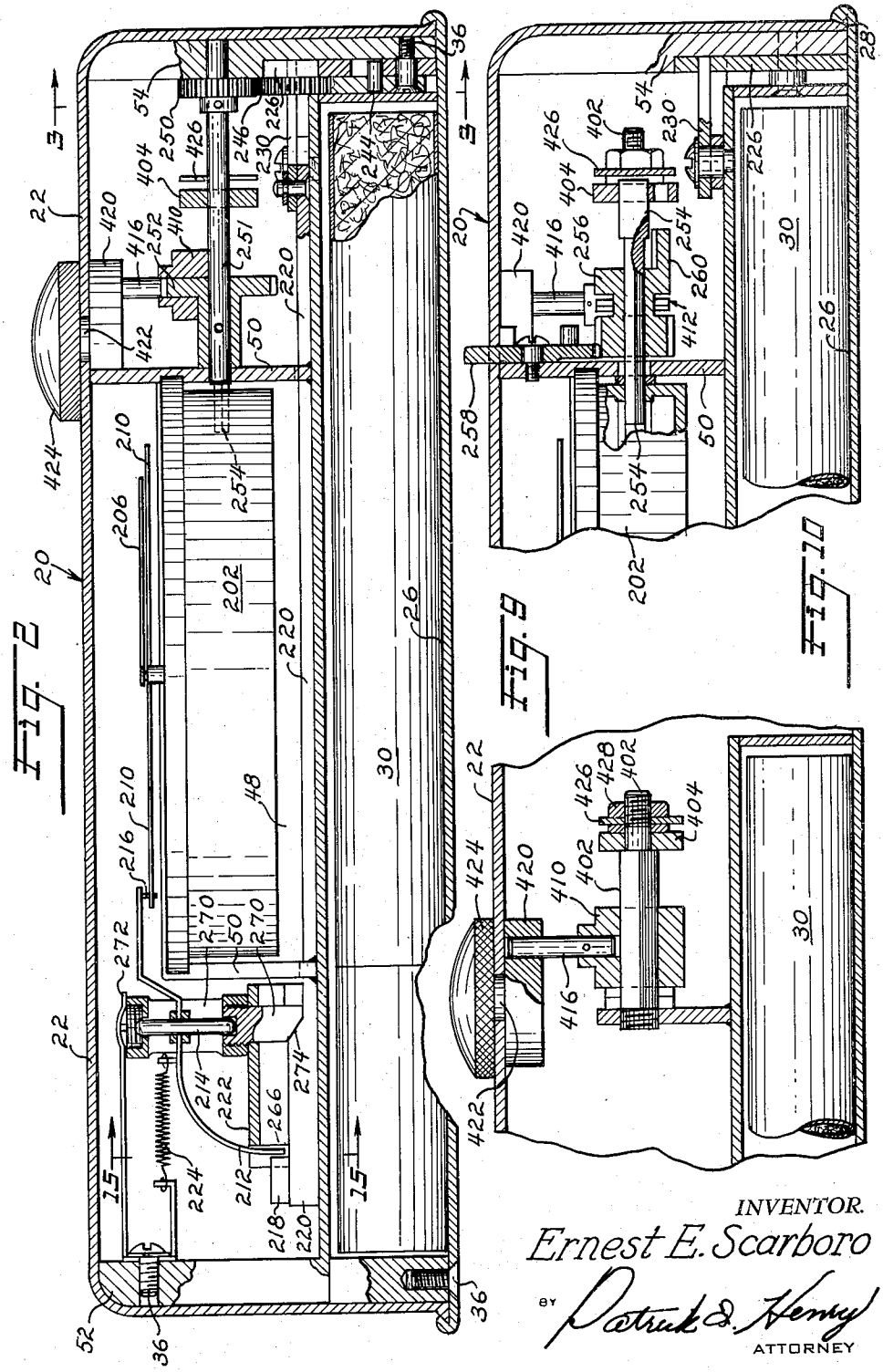
Fig. 17

INVENTOR.
Ernest E. Scarboro
BY Patrick D. Henry
ATTORNEY

Sept. 20, 1960 E. E. SCARBORO 2,953,280

TIME REGULATED CIGARETTE DISPENSERS

Filed March 26, 1958 4 Sheets-Sheet 2



Sept. 20, 1960 E. E. SCARBORO 2,953,280

TIME REGULATED CIGARETTE DISPENSERS

Filed March 26, 1958 4 Sheets-Sheet 3

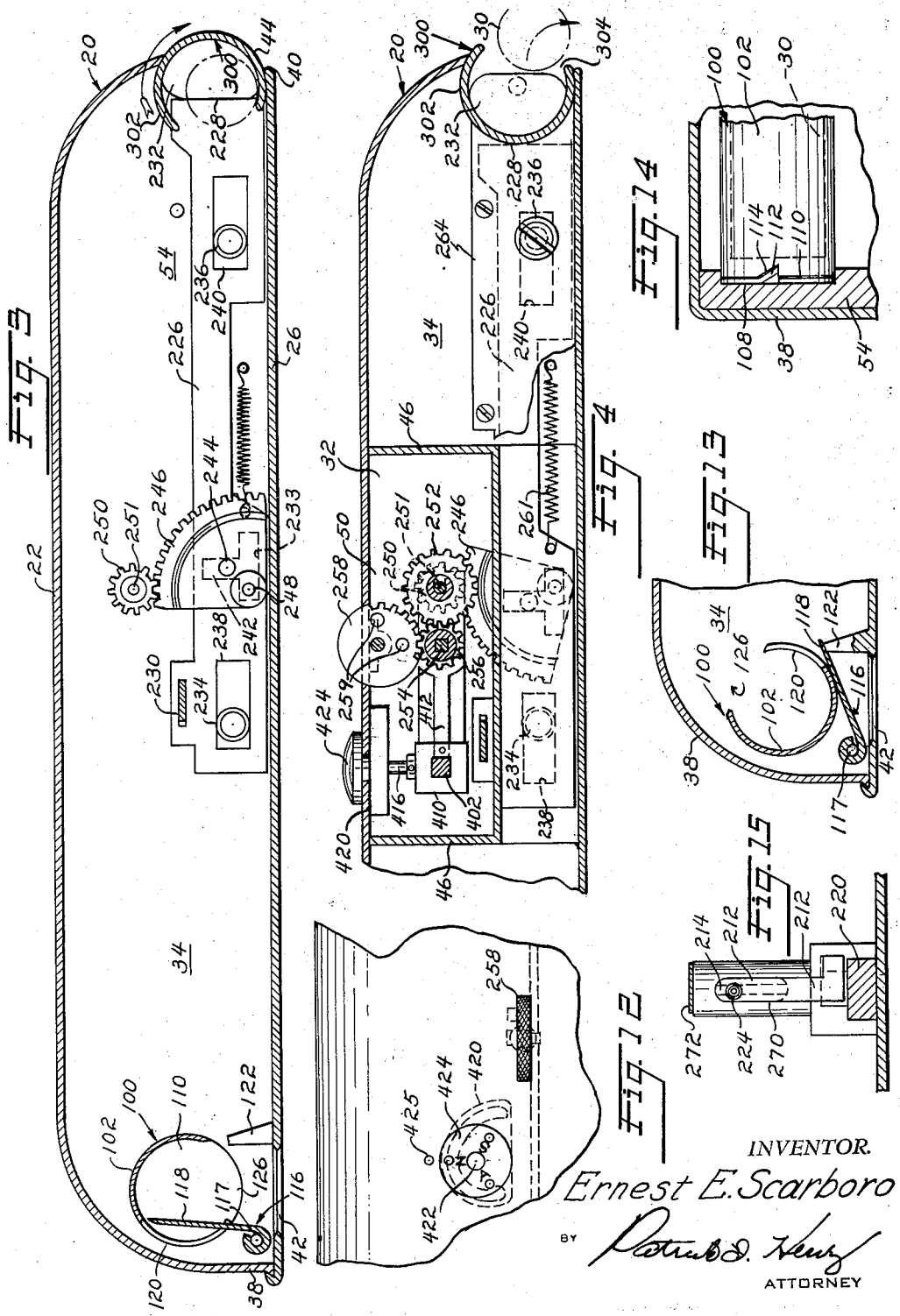


Fig. 3

Fig. 4

Fig. 14

Fig. 13

Fig. 15

Fig. 12

INVENTOR.
Ernest E. Scarboro
BY Patrick D. Kelly
ATTORNEY

Sept. 20, 1960 E. E. SCARBORO 2,953,280

TIME REGULATED CIGARETTE DISPENSERS

Filed March 26, 1958 4 Sheets-Sheet 4

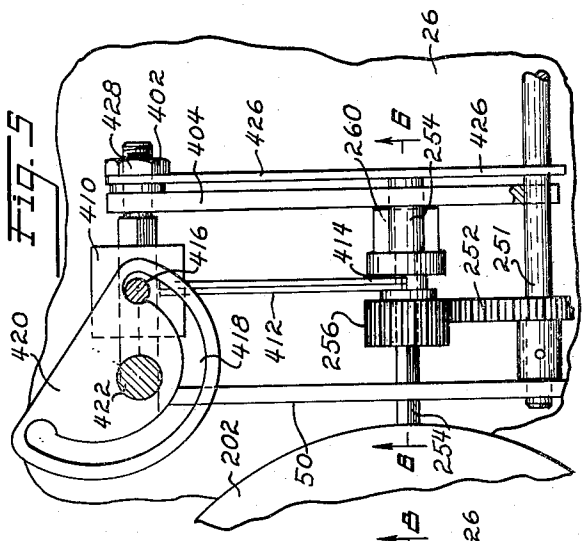


Fig. 5

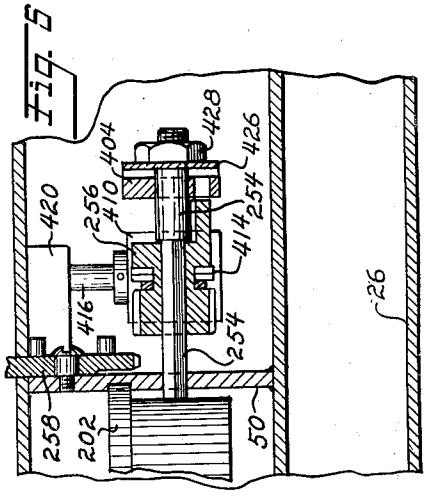


Fig. 6

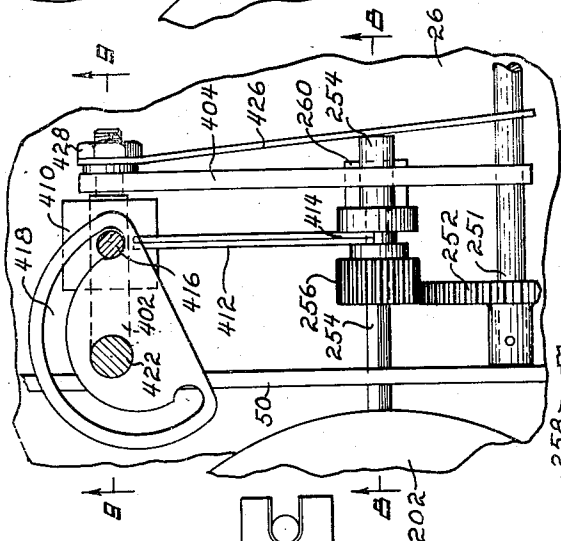


Fig. 7

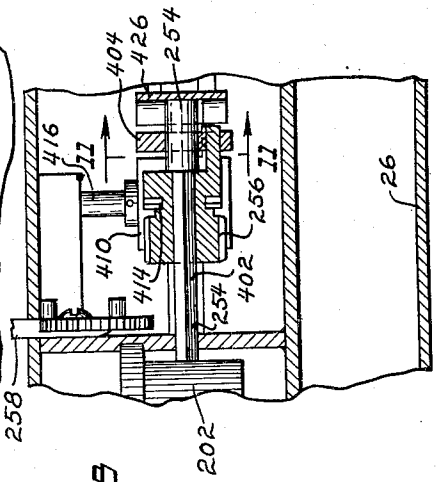


Fig. 8

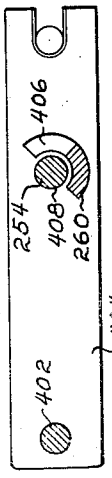


Fig. 11

INVENTOR.
Ernest E. Scarboro
BY Patrick D. Henry
ATTORNEY

United States Patent Office 2,953,280 Patented Sept. 20, 1960

2,953,280

TIME REGULATED CIGARETTE DISPENSERS

Ernest E. Scarboro, 583 Amsterdam Ave. N.E. Atlanta, Ga.

Filed Mar. 26, 1958, Ser. No. 724,206

23 Claims. (Cl. 221—15)

This invention relates to a time regulated cigarette dispenser and particularly to a portable pocket size cigarette storage dispenser that is mechanically controlled by a time watch to release a cigarette at a pre-determined time and which is constructed to prevent removal of cigarettes other than one at a time according to each timed interval.

Some people have either a genuine desire or medical reason for reducing the number of cigarettes smoked per day. They wish to cut down on the amount of smoking or perhaps they are tapering down with an intent to quit altogether. These people must carry cigarettes on their person and in doing so find it much too convenient and easy to smoke when under stress or whenever the desire strikes them. If, however, they can carry their cigarettes in a case which is locked against access except for a properly regulated single removal, then they would be willing to put up with whatever inconvenience is involved in using such a case. The present invention provides such a portable cigarette storage dispenser.

There are a few prior art cigarette dispensers that control the entry thereinto according to a timed interval. However, my invention differs in many aspects. For example, my control mechanism is different from any prior art devices and my apparatus for loading cigarettes into the case is different. In addition, my ejector, or cigarette removal is different as is the watch control. These many differences are compounded together in a novel combination of timed cigarette dispenser not found in the prior patents or publications and not used before. Further, my device dispenses only one cigarette at a time and does not open the entire case.

My invention is presented herein in considerable detail and it is complete in every aspect of design. However, generally described in terms of cooperating elements, and without reference to scope of invention or patent terminology but rather in its most understandable terms, my device is a substantially flat case about the width of a cigarette length and just thick enough to accommodate a number of cigarettes stacked across said width. One end of the case is the injector, or entrance end and has the cigarette loading injector mechanism located thereat; the other end is the ejector, or exit end and has the ejector tube mounted thereat to receive and release one cigarette when turned by hand after release by the timing mechanism. A watch is mounted within the interior of the case and visible through the top thereof. The watch has conventional hands and an extra spoke of timing trip hands connected on the hour shaft. The trip hands are spaced according to the time interval desired and are positioned to contact a trip lever normally blocking a slide block and actuatable to move to permit said block to slide. The slide block when freed by the trip lever is free to be moved by a bell lever and cam lever which normally block the ejector tube thereby preventing any movement to remove a cigarette. Cigarettes are fed one at a time whenever the trip lever is released by the time watch. The ejector mechanism consists of an ejector tube

open along one side to pick-up and receive a cigarette from the stack inside the case therein and to turn and release the cigarette from its opening out of the case end. Normally the ejector tube is blocked from turning by a longitudinal slide with cam surface engaging said tube. However, when the trip lever clears the slide block, it permits the cam slide to be pushed by manual turning of the ejector tube.

In connection with the operation of the ejector tube and the removal of a cigarette, a mechanism is provided herein for automatically winding the watch at the same time the ejector is being operated. This is accomplished by a selector button on the case actuatable on a shifting mechanism to cause the cam slide to turn a winding gear when it moves. The mechanism also provides a selective shift arrangement for winding the watch by hand or for setting the watch by hand.

Another mechanical arrangement is provided for controlling the operation of the injector, or putting in, of cigarettes in such a manner as to prevent tampering or subsequent removal of any cigarettes through the injector tube. Once cigarettes have been loaded into the case, they cannot be removed except through the cycle of time out of the ejector tube.

One embodiment of this invention is in the form of a cigarette case 1 inch high, 3¾ inches wide, and 5½ inches long with the following features:

(*a*) A locking system, time lock, which permits a cigarette to be withdrawn or taken during a delayed waiting period, or refused.

(*b*) A means of injecting the cigarettes but prohibiting removal through the same means.

(*c*) On arrangement for removal of only one cigarette during the selected period of time.

In accordance with this arrangement, a mechanical means is used to control the smoking of cigarettes to a limited number each day according to the wishes of the user of this equipment. Such periods as one only each 30 minutes, 1 hour, 2 hours and so forth are available. Of course, the use of the case is entirely voluntary from the beginning but from that point on various preventatives are provided in the mechanism to prevent or discourage cheating ones self.

The controls of the case provide a means for automatic winding, self winding, user hand winding or neutral winding so that the time can be adjusted for keeping the watch adjusted to proper time. A control is provided with the watch setting to prevent more than a 15 minute adjustment at one time thereby preventing that being used to gain an extra cigarette.

A case such as this can hold one and one-half packages of cigarettes (a total of 30) either king size or regular. In addition, the case is very well sealed against moisture and dust.

In operation the case is filled with cigarettes one at a time through the injector tube which loads directly into the hollow case interior. The injector is provided with stops to prevent backing up or removal after insertion. The other end of the case has an ejector tube positioned therein and any time it makes a turn it picks up a cigarette from the inside and drops it to the outside. However, the ejector tube is locked against turning by a long cam slide member bearing thereagainst and the long cam member is prevented from displacement by a trigger locked block positioned in its way. A watch fixed in the case has special hands contacting the trip for the trigger lock at certain intervals. It will hold the trigger back and permit the user to manually turn the ejector tube to remove a cigarette. Once the cigarette is removed, the trip and trigger return to position blocking the movement of the cam slide. As the cam slide moves each time, it actuates a gear system connected with the

watch stem thereby, if set by a control knob on the case, winding the watch. The winding control has other shift positions for setting the watch or manual winding as stated heretofore.

As the details of my novel case unfold in the following description many additional advantages and objects thereof will become apparent. The figures of the drawings numbered according to the following specification are identified as follows:

Fig. 1 is a top plan view of my case with portions of the top cover removed to expose the interior.

Fig. 2 is a vertical transverse cross-sectional view taken along line 2—2 in Fig. 1.

Fig. 3 is a longitudinal cross-sectional view taken along the line 3—3 in Fig. 2.

Fig. 4 is a longitudinal, vertical cross-sectional view taken substantially along lines 4—4 in Fig. 1 and with parts broken away.

Fig. 5 is an enlarged top plan fragmentary view of the shifting control mechanism seen in Fig. 1.

Fig. 6 is a cross-sectional view taken along the lines 6—6 in Fig. 5.

Fig. 7 is a view the same as Fig. 5 but with the control shifted.

Fig. 8 is a cross-sectional view taken along lines 8—8 in Fig. 7.

Fig. 9 is a full cross-sectional view taken along lines 9—9 in Fig. 7 with the block shifted to the other side.

Fig. 10 is a cross-sectional view taken substantially along lines 10—10 in Fig. 1.

Fig. 11 is a cross-sectional view taken substantially along line 11—11 in Fig. 8.

Fig. 12 is a partial top plan view of the control details.

Fig. 13 is a cross-sectional view of the injector taken substantially along lines 13—13 in Fig. 1.

Fig. 14 is an enlarged section view of the tube detent stop.

Fig. 15 is a cross-sectional view taken along line 15—15 in Fig. 2.

Fig. 16 is an elevation view of the end bearing detent plate.

Fig. 17 is an elevation view of the spring steel detent which fits with the detent plate in Fig. 16.

As stated in the preliminary discussion introducing the present invention, the device is a substantially flat, portable cigarette case having several cooperating elements or parts mounted in the case and interconnected or interrelated in certain fashion to allow the storage of cigarettes in the case and to dispense same at a certain time interval. These parts are as follows: (1) the case 20 and its structural parts and miscellaneous items numbered between 20 and 100; (2) the cigarette injector, or loading, mechanism identified by the numbers in the 100 to 198; (3) the setting and operating controls, including the watch and attendant mechanism, numbered in the 200 to 298 range; (4) the ejector, or unloading mechanism having numbers in the 300 and up range; and (5) the time watch controls in the 400 and up.

In the operation of the device, cigarettes 30 are stored in the case 20 through their introduction therein by twirling them one at a time through the injector tube mechanism 100. Cigarettes are put in from time to time to keep the case substantially full. Once inside the case, the cigarettes cannot be removed (save ripping up the case 20) except by twirling them out one at a time from an ejector tube device 300 similar in some respects to the injector. The ejector device is locked from operation and is released only upon operation of the controls 200 from the time watch associated therewith. In the operation of the device, the watch is running with trip hands set at predetermined intervals. Every time a trip hand trips part of the control apparatus 200 that releases the ejector tube mechanism 300 permitting the user to move the ejector tube and ejecting a cigarette therewith.

Referring to Fig. 1 and then on to the other figures of

the drawings, the case 20 has a one piece cover with top 22, clear plastic dome (not shown) and a bottom 26 rigidly attached with the top as by the fitting together of beaded edges 28. The interior 32 is divided into compartments 34 and the various parts thereof fitted together and attached by special screws 36. The ends 38, 40 of the case have respective entrance 42 and exit slots 44 therein to receive and dispense a cigarette 30.

Formed in interior 32 by walls 46 is a watch compartment 48 with watch support walls 50.

CONTROL LOCK

The control lock mechanism 200 consists of a watch 202 supported on circle 203 on supports 50 inside the case 20 and having hour hand 204 and minute hand 206. Also mounted for movement with hand 204 is the trip wheel 208 with individual trip members 210. The arcuate spacing between adjacent, successive trips 210 determines the interval of cigarette dispensing. The present embodiment is shown with a two hourly combination with six hands or trips 210 to open the lock at two hour intervals. A pivoted, balanced locking bar 212 mounted on shaft 214 carries a pin 216 normally in the path of the trip hands 210. The lowertail end of locking bar 212 curves downwardly and normally lies freely in front of a shoulder 218 rigidly fixed on a slide bar 220 and in back of or between the rigid block 222. A spring 224 fixed to side frame 52 and connected with locking bar 212 blocks movement of the bar 220 by engagement with the shoulder 218 thereon. Slide bar 220 is mounted in the case for sliding movement transversely of the case when released by locking bar 212.

The ejector mechanism 300 is locked and prevented from movement by the lock mechanism 200. Mounted on the side of the interior of case 20 on side frame 54 is the cam slide lock member 226 of flat, plate-like construction with a cam engagement end 228 normally blocking the ejector mechanism 300. The slide bar 220 is connected with this slide cam member 226 by a bell crank 230 causing the transverse movement of bar 220 by translation of the longitudinal movement of cam slide 226 when the ejector 300 is turned by hand. The ejector has built therewith the cam 232 engaged by the cam engagement end member 228. Cam slide 226 is guided in longitudinal travel by a pair of rollers 234, 236 acting in respective slots 238, 240. A T-shape slot 242 in slide 226 has a roller 244 confined therein which roller 244 is attached to a gear rack segment 246 pivoted on a shaft 248 running through the bottom of the T-slot 233. Gear rack 246 drives a gear 250 mounted on a common shaft 251 with another gear 252. A square winding stem shaft 254 in watch 202 has a gear 256 sliding thereon which is shiftable to engage a finger winding wheel 258 with stops 259 mounted on the plate 50, gear 256 has a 90 degree arcuate protrusion 260 thereon. A spring 261 returns slide 226 to normal.

The mounting structure for shaft 214 on which is pivoted locking bar 212 consists of a floating mounting post 270 movably resting in block 222 and retained under pressure therein by leaf spring 272 attached to screw 36 together with spring 224. Block 220 is formed at this place with a slanting raised portion 274 contacting the bottom of post 270. As slide block 220 moves into open position for cigarette removal the raised portion 274 lifts slightly post 270 thereby lifting locking bar 212 to clear its pin 216 from any of the watch hands. This clears the bar 212 to return immediately to a new lock position and when the shoulder 218 is again in locked position, post 270 lowers to normal and lock bar 212 is again locked in place.

The watch 202 winding controls 400 are interrelated with the ejector controls 200 to cause selectively automatic winding of the watch 202 when ejecting a cigarette. That is, the movement of the cam slide 226 through rack 246 will wind the watch. A square stub shaft 402 rigidly

mounted on the case wall **50** has attached thereto the end of a flat guide plate **404** which has the other end thereof fitted on shaft **251** and has formed therein a semi-circular cut-out **406** and circular opening **408** to receive the end of shaft **254** therein. Opening **406** is 180 degrees and receives therein the protrusion **260** which is 90 degrees thereby permitting a one-fourth turn only of gear **256** when engaged with protrusion **260** in opening **408**. A shifting block **410** is mounted on shaft **402** and has an elongated, leaf spring shifting fork **412** rigidly mounted thereon and extending and having the end **414** thereof in engagement with the hub of gear **256**. A control pin **416** is attached to and extends upwardly from block **410** to the top of the case and into an arcuate segment slot **418** formed in a shifting cam **420** mounted on a shaft **422** supported for rotation on the top of case **20**. A finger control button **424** marked with A for automatic, N for neutral, and S for set is attached on shaft **422** to rotate same selectively from outside the case **20**. An index mark **425** on the outside shows the position of button **424**. A leaf return spring **426** is mounted on the end of shaft **402** by a nut **428** and extends across in front of the end of shaft **254** to be engaged thereby when shaft **254** is extended into and past plate **404**. Spring **426** is bent when shaft **254** moves thereagainst and will return the shaft **254** to normal position when released. When the button **424** is in "A" position (automatic wind) cam **420** is in the position of Fig. 5 in which position rack **246** will drive through gears **250, 251, 252** to drive floating gear **256** thereby turning the watch stem **254** which is merely a continuation of the shaft **254**. With this setting, operation of the cam slide **226** winds the watch a limited amount.

NEUTRAL WIND OR HAND WIND

When button **424** is set in "N" (neutral) position, as seen in Fig. 1, only hand winding from wheel **258** is possible. The turning of control button **424** to "N" position shifts gear **256** in mesh with finger wind gear **258** mounted on plate **50**, and gear **258** is oscillated to wind the watch by hand. In the Fig. 1 position, drive gear **252** is in slot of gear **256** to avoid automatic wind.

HAND SET POSITION AND OPERATION

When it is desired to set the time hands on the watch **202**, the button **424** is ultimately to be set on the "S" position. First the button **424** is turned to "N" position and the watch is hand wound slowly until protrusion **260** on gear **256** is observed below center of stem shaft **254**. In advancing or retarding the watch, the protrusion **260** can be left in any position after hand wind or automatic wind. Then with the button **424** set on "S," the ejector **300** is turned by hand slowly until the desired setting on the watch is obtained or until the protrusion **260** reaches its limit in the arcuate limiting opening **406**.

With control **424** turned to "S," cam opening **418** shifts gear **256** on stem shaft **254** to pick up hub round portion of **254** stem shaft. Then further motion causes protrusion **260** of gear **256** to enter opening **406** for limited setting of the watch and at the same time movement of **254** causes the watch to be in setting position. The end of stem shaft **254** bends flat spring **426** which is mounted rigidly on shaft **402** and held by nut **428** riding loosely on shaft **251**. When cam **418** is turned out of "S" position, spring **426** will restore wind stem shaft **254** from set position. Flat guide plate **404** is rigidly mounted on shaft **402** and the other end fits freely on shaft **251** for supporting and guiding the end of the stem shaft **254**. Protrusion **260** in opening **406** limits the turn to a one-fourth turn of gear protrusion **260** thereby limiting all setting operations to 15 minutes or ¼ turn. This eliminates temptation of getting an extra cigarette out of turn by changing the watch time.

To set the watch for accurate time of day

(A) First turn control **424** to "N" position (this permits hand winding).

(B) Hand wind **258** until protrusion **260** (which is visible through the top) is directly below **252** shaft (this aligns **260** with opening **406**).

(C) Turn control **424** to "S" position (this pulls out winding stem **254** to set position).

(D) Turn ejector tube **302** slowly until desired movement of hands **204, 206** is obtained, or until protrusion **260** reaches its limit.

(E) Turn control **424** from "S" position to either "A" or "N" positions (setting operations are only possible during opening time).

To set the time hands backwards

(1) First turn ejector tube **302** one half turn to emptying position. Stop turning (this leaves the mechanism ready to be used to back up the time hands on the return or reverse movement).

(2) Leave the ejector tube **302** in this position for twenty minutes (this allows time hands to advance so that the time hands may be reversed without limiting on or being blocked from turning backwards by release hands **210** against pin **216**).

(3) Turn control **424** to "N" position (this permits hands winding).

(4) Turn hand wind wheel **258** until protrusion **260** is directly above **254** winding stem (this allows a full amount of drive of **260** in opening **406** for maximum setting).

(5) Turn control **424** to "S" set position (under spring tension of spring **412** and when **260** reaches opening **406** on the return movement, **260** will move into opening **406** which will turn the time hands back).

(6) Turn ejector tube **302** slowly until the desired setting is obtained or until protrusion **260** reaches its limit.

(7) Turn control **424** from "S" to either "A" or "N" positions.

INJECTOR

The injector mechanism **100** comprises an elongated slotted, hollow tube **102** having an injector twirler knob **104** with "push-pull" shaft **106** having keyed end **107** fitting into matching notches in injector tube **102**. Knob **104** is pulled out and shaft **106** engaged when it is desired to use the injector. A spring steel detent **108** fits between the side frame **54** and the end **110** of tube **102**. As readily seen in Figs. 16 and 17, detent **108** has a one-way prong **112** matching one-way teeth **114** in the end of **110** to prevent backing-up, or reversal, of tube **102**. This assures only one way movement for loading of cigarettes without unloading from the same end. A flapper or gate **116** on a shaft **117** with flaps, fingers or flippers **118** fits inside the injector tube **102** when the tube **102** is in the receiving position (Fig. 3) to place the flaps **118** blocking the entrance to tube **102**. Tube **102** has cut out portions **120** corresponding to a respective flapper **118**. As seen in Fig. 3, flaps **118** move into tube **102** permitting insertion of a cigarette therein. Then, as tube **102** is rotated, the flaps will drop to close the opening and as the flaps **116** drop they will push the cigarette **30** out into the open storage chamber. A block **122** stops the flaps **116** above the opening **42**. A coil spring **124** wound around shaft **117** returns the flaps **116** simultaneously to normal position. Tube **102** has an elongated opening **126**.

INJECTOR OPERATION

To load a cigarette into the case

Turn the case bottom upwards. Then the cigarette is placed in tube **102** through opening **42** in case **20** and slot **126**. Tube **102** is turned counter-clockwise and the sides of the cut-outs **120** close over the cigarette as turning starts. The cut-outs **120** bottoms delay contact movement

of flappers 118 until opening 126 is inside the storage compartment 34. Then the bottoms of cut-outs 120 pick up the flappers 118 and further turning of tube 102 pushes the cigarette out of tube 102 into compartment 34. Blocks 122 limit the movement of flaps 118. As turning takes place, the flaps 118 idle around the outside of tube 102 and re-enter the tube 102 through the slot 126, moved by the spring 124. Cigarettes are loaded one at a time in this manner and once released to tube 102 cannot be removed by reversal.

EJECTOR

The ejector tube apparatus 300 is similar in many respects with the injector tube apparatus just described. An elongated tube 302 with open slot 304 along one side is mounted for rotation at the ejector end of the case 20 filling the exit end opening 40 provided for this purpose. A spring detent plate 306 similar to 108 acting with detent end 308 similar to end 110 of tube 302 permits only one way rotation of the ejector tube 302. Cigarettes 30 pushed in the compartment interior 34 naturally fall one at a time into tube 302. The cam 232 is built onto the end of tube 302 and is normally locked against the end 228 of slide 226. However, release of the locking bar 212 will release slide 226 permitting tube 302 to turn by hand and to dump the cigarette therefrom.

The time allowed for the removal of a cigarette after the lock has actually opened (waiting time) but before operation of ejector 300 is goverened by the depth across the watch of pin 216 because the hand 210 clears quicker when the pin is nearer the end thereof. Accordingly, variations in the length of the trip hands 210 could cause the opportunity for operating the ejector 300 to remain in existence longer but, of course, this would not affect the time interval of operation at all. Should the user pass up one chance to get a cigarette after the trip hand 210 had actuated the lock 212, the hands would merely continue on and eventually re-lock and re-set, immediately after 210 releases 212.

While I have shown and described in fine detail all the parts and operations of one preferred embodiment of my invention, it will be apparent at once to those skilled in the art that this is but one concrete expression of my invention and that many changes, alterations, substitutions, eliminations, variations, and re-arrangements may be made in this embodiment shown and described without departing from the scope of my invention defined in the appended claims.

I claim:

1. In a time operated cigarette case for storing a number of cigarettes therein and dispensing same by hand operation only after a pre-selected interval of time between cigarettes, a closed case having a cigarette compartment formed therein, an injector on said case for injecting cigarettes into said storage compartment one at a time, an ejector on said case receiving from inside said case one cigarette at a time and transferring same by hand operation thereof to the outside after an inteval of time, a time watch on said case operable to keep time and having a time shaft thereon turning as said watch unwinds, lock means on said case normally locking said ejector against movement thereby preventing the removal of any cigarettes, and lock control means on said case responsive to the movement of said watch shaft to control said lock means to unlock same after a definite interval thereby unlocking said ejector for the removal of a single cigarette.

2. In a time operated cigarette dispenser for storing a number of cigarettes therein and dispensing same by hand operation only after a pre-selected interval of time between cigarettes, a closed case having a cigarette compartment formed therein, a cigarette injector on said compartment for receiving and transferring cigarettes from the outside to the inside of said compartment, a cigarette ejector on said case for receiving one cigarette from inside said compartment and transferring same to the outside, a watch on said case, a lock control member operable by said watch at a definite interval of time, lock means on said case normally locking said ejector against ejection, said lock control means being operable at pre-selected intervals to unlock said lock means, watch setting means on said watch, watch winding means on said watch, and control means on said case selectively operable by hand to wind said watch and set said watch.

3. In a time operated cigarette dispenser case for storing a number of cigarettes therein and dispensing same by hand operation only after a pre-selected interval of time between cigarettes, a closed case having a cigarette compartment formed therein, an injector on said case for injecting cigarettes into said compartment one at a time, an ejector tube on said case receiving from inside said case one cigarette at a time and transferring same outside by hand, after a pre-determined interval of time, a time watch on said case operable to keep time and having a time shaft thereon turning as said watch unwinds, lock means on said case normally locking said ejector against hand operation thereby preventing cigarette removal, lock control means on said case responsive to the movement of said watch shaft to control said lock means to unlock same after a definite interval thereby unlocking said ejector for removal of a single cigarette, a winding and setting shaft on said watch inaccessible from outside said case to prevent operation thereof, and control means on said case for selectively winding said watch and setting said watch by hand from outside said case.

4. In a time operated cigarette dispenser, a cigarette storage case, a watch mounted on said case, trip means driven by watch and timed thereby to delay a definite interval of time, an injector tube on said case closing an injector opening in said case, said injector tube having an injector slot therein to receive one cigarette at a time and to transfer same into the interior of said case without exposing the interior thereof, an ejector tube in said case closing an ejector opening and normally locked from opening and from exposing any cigarettes therein, an ejector slot formed in said ejector tube to receive a cigarette therein from the inside of said case and to transfer same to the outside upon operation of said tube, lock means engaged with said ejector tube normally preventing same from operation, and lock release means operable by said trip means to unlock said lock temporarily and to release said ejector for hand operation to dispense one cigarette therefrom.

5. In a time operated cigarette dispenser, an elongated cigarette storage case having an interior compartment adapted to accommodate cigarettes stacked transversely thereof, said case being closed and tightly sealed against entrance therein, an injector tube mounted transversely of said case for rotational movement therein and normally closing an injector opening formed in said case, an injector means mounted adjacent said tube and being operative therewith to inject a cigarette into said case upon operation of said tube, said tube having a slot formed longitudinally therein along one side thereof to receive a single cigarette therein and to deposit same inside said tube, an ejector tube mounted transversely of said case adjacent said storage compartment and normally closing an ejector opening therein, said tube having a longitudinal slot formed along one side thereof to receive a single cigarette therein from the interior of said case, a lock portion formed on said tube, a slide lock member normally engaging said lock portion and thereby preventing movement of said tube, a time watch mounted on said case, trip means carried by said watch and driven by the unwinding thereof at a definite interval of time, and movable blocking means normally blocking said slide and being temporarily actuatable by said trip means to unblock said slide thereby permitting said ejector to be turned one time for ejecting one cigarette.

6. In a time operated cigarette dispenser for dispens-

ing one cigarette at a time without access to any others, a closed cigarette case having a storage compartment sealed therein and having an opening at one end for injection of a single cigarette and an opening at the other end for ejection of a single cigarette, an injector tube mounted in and closing the injector opening and have an opening therein to receive one single cigarette therein on one position thereof and to transfer same inside said case in another position thereof, an ejection tube mounted in and closing the ejector opening and having an opening therein to receive one single cigarette from inside said storage compartment and to transfer same outside said case, said ejector having a portion thereof exposed to be operated by turning with the hand, time means on said case, trip means mounted with said time means and movable therewith at a pre-selected interval of time, locking means on said case normally locking said ejector tube from moving, said locking means being engageable by said trip means to unlock same thereby releasing said ejector tube for movement, said locking means being returned to lock position after unlocking said ejector tube.

7. In a time operated cigarette dispenser for storing a number of cigarettes therein and dispensing same by hand operation only after a pre-selected interval of time between cigarettes, a closed case having a cigarette compartment formed therein and being permanently closed and locked against accessibility to the interior thereof, a watch confined within said case and inaccessible to the outside, a watch winding stem on said watch confined within said case and inaccessible to the outside, an injector means on said case for injecting cigarrettes into said case an ejector means normally locked in said case for ejecting cigarettes from said case by hand operation one at a time when unlocked, said ejector being operable to eject one cigarette and to re-lock thereafter, lock means on said case including a movable lock member locking said ejector lock control means on said watch operable thereby at definite, pre-selected intervals to unlock said lock means, said lock member when unlocked being movable in response to the movement of said ejector, a watch winding member on said watch stem, and means selectively engaging said watch winding member with said movable lock member when said member moves to wind said watch as said ejector ejects a cigarette.

8. The device in claim 7 including watch setting means on said watch operable to set said watch, and watch setting control means on said case selectively operable to select and set said watch.

9. The device of claim 8 including a limit means on said case operable between said watch setting means to limit the amount of setting of said watch.

10. The device in claim 9 wherein there is a selective hand wind means engageable selectively to hand wind said watch and to dis-engage automatic winding from said lock member, said control means being selectively operable between hand winding, hand setting and automatic winding.

11. In a time operated cigarette case having a watch with trip hands spaced at time intervals and a lock mechanism unlocked temporarily by said watch trip hands, an elongated ejector tube mounted on said case and having an elongated slot thereon to receive one cigarette therein and to turn and release same to the outside, a movable member engaging said tube and normally preventing movement of same, a lock member normally engaging said movable member and locking same, said lock member being engageable by said trip hands to temporarily unlock same for releasing said movable member thereby releasing said tube, a winding stem on said watch movable from winding to setting position, a winding member engageable with said winding stem and operable by movement of said movable member on each operation of said ejector tube to wind said watch as each cigarette is ejected therefrom, a hand winding member on said case operable to hand wind, a dial on said case shiftable from ejector watch winding position to hand winding position, and means on said case operable by said dial to shift said watch from winding to setting position.

12. In a time operated cigarette case having a watch with trip hands spaced at time intervals and a lock mechanism unlocked temporarily by said watch trip hands to allow removal of a cigarette, a closed case sealed from entrance and with a cigarette compartment therein inaccessible from the outside so that cigarettes cannot be removed therefrom, an elongated injector tube mounted for rotational movement on said case about its longitudinal axis and having an elongated injector cigarette slot formed therein to receive one cigarette in said tube, means on said case operable with said tube to prevent counter rotation thereof and to maintain one way direction whereby said cigarette inserted in said tube is rotated into said case but not out thereof, flipper means on said tube operable upon rotation of said tube with a cigarette therein to engage said cigarette and flip same from said tube into said compartment, said cigarettes being injected through said tube one at a time to fill said cigarette compartment in said case, an ejector tube mounted for movement on said case about its longitudinal axis and having a longitudinal ejector slot therein adapted to receive a cigarette from inside said case into said tube and to eject same outside said case, said case having means thereon operable with said ejector tube to prevent counter rotation of said tube thereby maintaining said tube in one direction of rotation, a movable member engaging said tube to prevent rotation of same and normally locked in said position, and means in said case actuatable by said watch trip hands to be tripped thereby to unlock said member engaging said ejector tube after a pre-determined interval of time thereby permitting a single cigarette to be removed through said tube.

13. The device of claim 12 wherein said means for preventing counter rotation movement of both said injector tube and said ejector tube is a one way detent with teeth engaging a detent plate for said respective injector and ejector tubes.

14. In a time operated cigarette dispenser, a cigarette storage case, a watch mounted on said case, trip hands mounted on and driven by said watch and spaced from each other to represent an interval of time, an injector tube on said case adapted to receive a cigarette therein and to transfer same into the interior of said case, an ejector tube on said case adapted to receive one cigarette at a time from the interior of said case to transfer same outside, a cam locking face on said ejector tube, a cam lock slide mounted for movement on said case in response to engagement with and movement of said cam face on said ejector tube, a locking block mounted for movement on said case, a locking bar mounted for movement on said case and having a portion thereof engaging said locking block preventing movement of said block motion transfer means between said block and said slide, a trip engagement member mounted on said locking bar in the path of movement of said trip hands to be engaged thereby for moving said locking bar from said block permitting said block to move and said cam lock slide to unlock said ejector tube, said locking bar returning to normal lock position after unlocking said ejector tube.

15. In a portable time operated cigarette case for dispensing one cigarette at a time at pre-selected intervals, a closed cigarette case having a closed cigarette compartment formed therein to accommodate a plurality of cigarettes stacked therein, an injector tube mounted from movement at one end of said case and having an opening therein exposed at certain times to receives a cigarette therein, said tube being rotatable to transfer said cigarette from outside to inside said case, an ejector tube mounted on said case and having an ejector slot formed therein to admit a single cigarette to said tube, said tube slot being exposed to and accessible to said cigarette compartment to receive a cigarette therefrom, a tube en-

gagement locking member mounted on said case and normally engaging said ejector tube to prevent same from turning, a lock control means on said case operable with said locking engagement member to unlock same at pre-selected intervals, a watch mounted in said case and normally inaccessible from the outside, a watch stem on said watch shiftable to wind said watch on one position and to set said watch in another position, said watch stem being within said case and inaccessible to the outside, a winding and setting gear on said watch stem shiftable from winding to setting position, a limit member on said case limiting said winding gear to a pre-determined amount during setting, said gear being shiftable from winding to limited setting position, a rack member on said case driven by said tube engagement locking member during movement while unlocking said ejector tube as said tube turns, said rack member engaging said winding gear member in winding position to wind same as said locking engagement member moves, a shift member for shifting said winding and setting gear, and a dial member on said case for dialing said shift member to correct position.

16. In a time operated cigarette dispenser for dispensing one cigarette at a time without access to any others, a closed cigarette case, an injector tube mounted for movement at one end of said case and having an elongated opening therein to receive one cigarette, said injector tube being rotatable to move said single cigarette from outside to inside said case, a plurality of injector tabs mounted for movement in said injector tube and engageable with the outside of said tube to ride therearound when said tube is turned, said tube having a plurality of tab slots formed therein matching with a respective tab to admit same in said tube in the cigarette loading position thereof, spring means urging said tabs into upward position in said tube, a cigarette storage compartment formed in said case receiving and storing cigarettes from said injector, an elongated ejector tube mounted at the other end of said case from said injector and having an elongated opening along the side thereof to admit one cigarette from inside said case thereinto to transfer same to the outside, locking means engaged with said ejector tube preventing movement of same, a watch mounted in said case and having a hand shaft thereon, a watch winding shaft in said watch movable to set same, a plurality of trip hands mounted on said watch shaft and movable therewith in a pre-determined interval, a movable trip lever mounted on said case and engageable by said trip hands, said trip lever normally blocking said locking means to maintain same in lock position, spring means on said trip means to return same to normal position, said trip lever being contractible by said trip hands to open said locking means and thereby unlocking said locking means to unlock said ejector tube with one cigarette therein, said ejector tube thereby being rotatable by hand to unlock said cigarette to the outside, said trip lever thereafter returning to locking position to lock said case until another interval has passed.

17. The device in claim 16 wherein there is a means for winding said watch operated by the locking means as it is moved out of position to eject a cigarette from said ejector tube.

18. The device in claim 17 including a means on said case for shifting said watch from wind to set position, a means for moving said hands to re-set same, and a means therewith for limiting the amount of time said watch can be advanced or retarded by said setting means thereby to prevent removal of a cigarette out of normal turn.

19. In a time operated cigarette dispenser, a cigarette dispenser case having cigarette storage means therein, an injector end having an opening formed therein to receive a cigarette, an injector tube mounted on said injector end and having an elongated opening therein to receive said cigarette, an ejector end formed on said case adapted to eject one cigarette at a time from said case interior, but normally locked against movement, an ejector tube mounted in said ejector end to receive only one of said cigarettes one at a time from inside and transfer same to the outside, a slide member mounted on said case and normally engaging said ejector tube to prevent same from moving, a watch mounted on said case, a watch winding stem in said watch adjustable from winding to setting, a locking block mounted on said case normally locked, drive means connecting said locking block with said cam slide, a locking bar movably mounted on said case and normally locking said block, and time operated trip hands actuatable to unlock said locking bar by contacting same and moving same out of the way, said trip hands being mounted with said watch hands to travel a pre-determined amount of time between each unlocking of said locking bar, and means returning said locking bar to normal locking position after unlocking said block, said ejector tube being operable each time said block is unlocked to move said cam slide out of the way to turn said ejector tube and remove one cigarette therefrom.

20. In a time operated cigarette dispenser, a cigarette dispenser case having cigarette storage means therein, an injector end having an opening formed therein to receive a cigarette, an injector tube mounted on said injector end and having an elongated opening therein to receive said cigarette, a means on said ejector for ejecting a cigarette placed therein into said case, an ejector end formed on said case adapted to eject one cigarette at a time from said case interior, but normally locked against movement, an ejector tube mounted in said ejector end to receive only one of said cigarettes one at a time and transfer same to the outside, a locking means mounted on said case and operable with said ejector tube, watch winding means operable by movement from said locking means as same moves to unlock, a watch mounted on said case, a watch winding stem in said watch adjustable from winding to setting, a selective gear mounted on said winding stem and shiftable to different positions therealong, said selective gear being driven by said watch winding means in one position thereof, a limit means operable with said selective gear adapted to limit watch setting, a shifting means on said case, a shift selector button on said case for selecting the position of said shifting means to shift same from winding to neutral to setting as desired in any sequence, in one position said watch winding means automatically winding said watch upon movement, a locking member mounted on said case normally locked, drive means connecting said locking member with said locking means, a locking bar movably mounted on said case and normally locking said member, and time operated trip hands actuatable to unlock said locking bar by contacting same and moving same out of the way, said trip hands being mounted with said watch hands to travel a pre-determined amount of time between each unlocking of said locking bar, and means returning said locking bar to normal locking position after unlocking said block, said ejector tube being operable each time said block is unlocked to move said locking bar out of the way to turn said ejector tube and remove one cigarette therefrom.

21. In a time operated cigarette dispenser, a cigarette dispenser case having cigarette storage means therein, an injector end having an opening formed therein to receive a cigarette, an injector tube mounted on said injector end and having an elongated opening therein to receive said cigarette, a plurality of flaps mounted in said injector end and protruding into said injector tube, a plurality of flap spaces formed in said tube to receive a flap therein, spring means retaining said flaps in normal position, an ejector end formed on said case adapted to eject one cigarette at a time from said case interior, but normally locked against movement, an ejector tube mounted in said ejector end to receive only one of said cigarettes one at a time and transfer same to the outside, a cam locking member mounted on said ejector tube, a cam slide member mounted on said case and normally engaging said cam locking member to prevent same from moving, a toothed

rack mounted on said case in engagement with and driven selectively by said cam slide member, a first gear mounted for rotation on said case in engagement with and driven by said rack, a transfer gear driven by said first gear, a watch mounted on said case, a watch winding stem in said watch adjustable from winding to setting, a selective gear mounted on said winding steam and shiftable to different positions therealong, said selective gear being driven by said transfer gear in one position thereof, a guide bar mounted on said case adjacent said selective gear and having a limit segment therein, a limit protrusion formed with said selective gear and adapted to be inserted in said limit segment in one position thereof, a shifting block on said case, a shifting fork on said shifting block engageable with said selective gear to shift same, a shifting cam on said case, having an arcuate opening therein, a shifting post on said cam engageable with said opening in said cam, a shift selector button on said case for selecting the position of said cam to shift same from winding to neutral to setting as desired in any sequence, in one position of said rack said slide automatically winding said watch upon movement, a locking block mounted on said case normally locked, drive means connecting said locking block with said cam slide, a locking bar movably mounted on said case and normally locking said block, and time operated trip hands actuatable to unlock said locking bar, said trip hands being actuatable by said watch at preselected intervals.

22. In a time operated cigarette dispenser, a cigarette dispenser case having cigarette storage means therein, an injector end having an opening formed therein to receive a cigarette, an injector tube mounted on said injector end and having an elongated opening therein to receive said cigarette, an ejector end formed on said case adapted to eject one cigarette at a time from said case interior but normally locked against movement, an ejector tube mounted in said ejector end to receive only one of said cigarettes one at a time and transfer same to the outside, a cam locking member mounted on said ejector tube, a cam slide member mounted on said case and normally engaging said cam locking member to prevent same from moving, a toothed rack ounted on said case in engagement with and

driven selectively by said cam slide member, a first gear mounted for rotation on said case in engagement with and driven by said rack, a transfer gear driven by said first gear, a watch mounted on said case, a watch winding stem in said watch adjustable from winding to setting, a selective gear mounted on said winding stem and shiftable to different positions therealong, said selective gear being driven by said transfer gear in one position thereof, a guide bar mounted on said case adjacent said selective gear and having a limit segment therein, a limit protrusion formed with said selective gear and adapted to be inserted in said limit segment in one position thereof, a shifting block on said case, a shifting fork on said shifting block engageable with said selective gear to shift same, a shifting cam on said case, having an arcuate opening therein, a shifting post on said cam engageable with said opening in said cam, a shift selector button on said case for selecting the position of said cam to shift same from winding to neutral to setting as desired in any sequence, in one position of said rack said slide automatically winding said watch upon movement, a locking block mounted on said case normally locked, drive means connecting said locking block with said cam slide, a locking bar movably mounted on said case and normally locking said block, and time operated trip hands actuatable to unlock said locking bar by contacting same and moving same out of the way, said trip hands being mounted with said watch hands to travel a pre-determined amount of time between each unlocking of said locking bar, and means returning said locking bar to normal locking position after unlocking said block, said ejector tube being operable each time said block is unlocked to move said cam slide out of the way to turn said ejector tube and remove one cigarette therefrom.

23. The device of claim 19 including a positive cigarette injector means on said injector tube for injecting a cigarette into said case.

References Cited in the file of this patent

UNITED STATES PATENTS

371,278	Richardson	Oct. 11, 1887
2,206,983	Troy	July 9, 1940