June 22, 1954 V. C. SHUTTLEWORTH ET AL 2,681,560

CIGARETTE CASE HAVING A TIME-CONTROLLED LOCKING MEANS

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Fig. 1

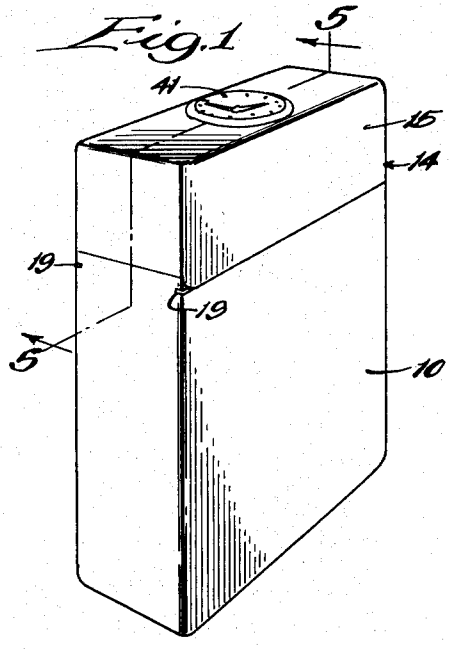


Fig. 2

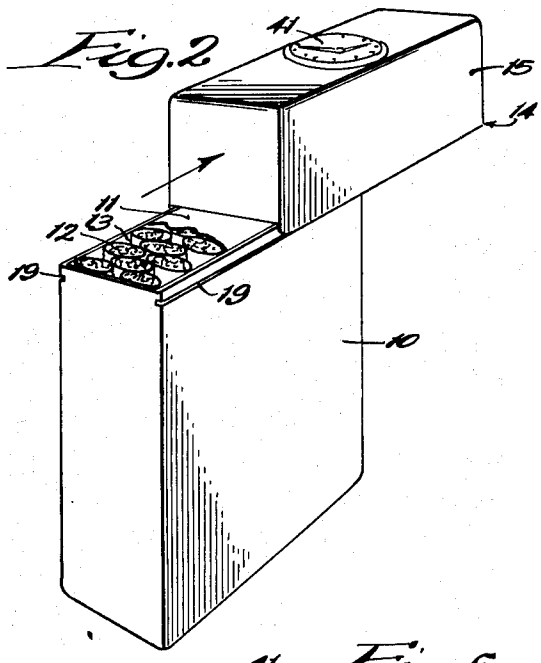


Fig. 3

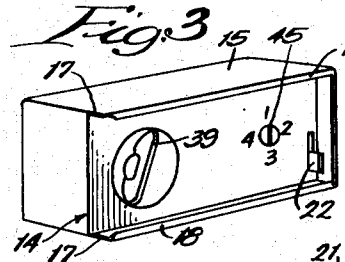


Fig. 4

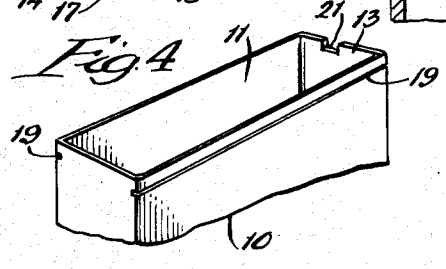


Fig. 5

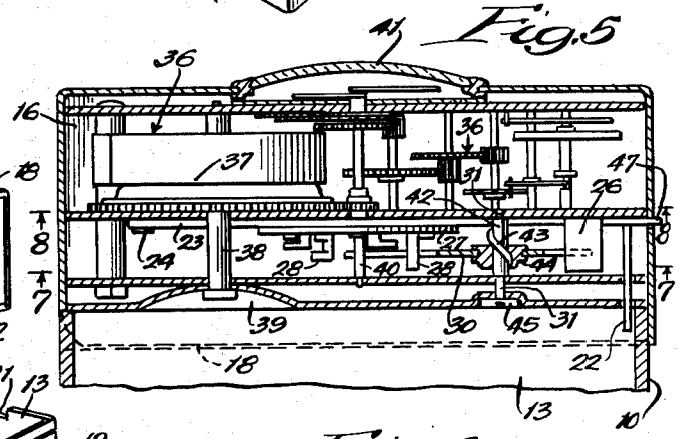
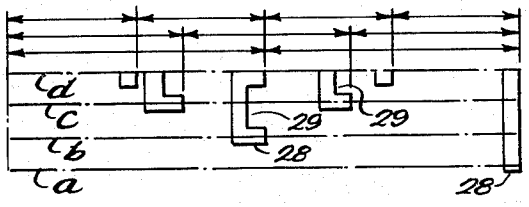


Fig. 6



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Fig. 7

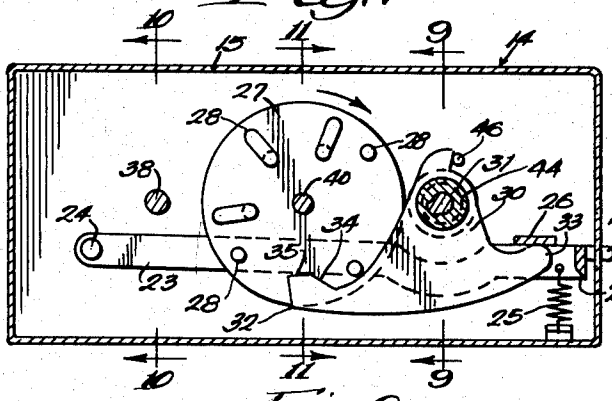


Fig. 9

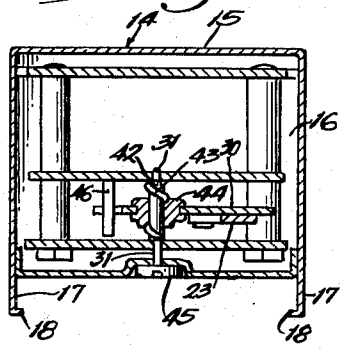


Fig. 8

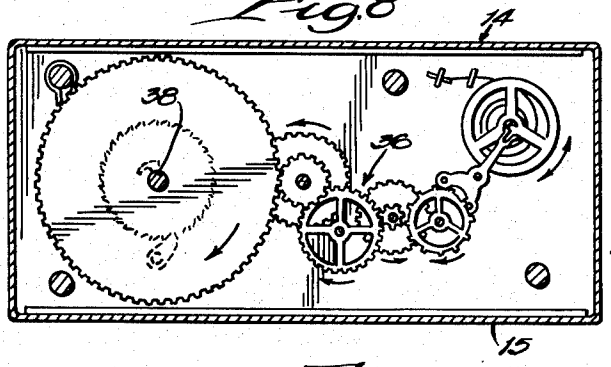


Fig. 10

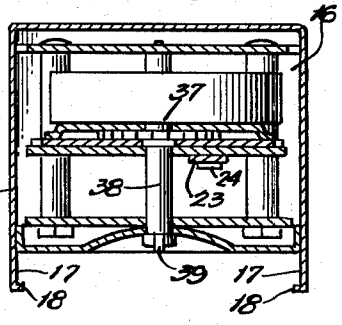
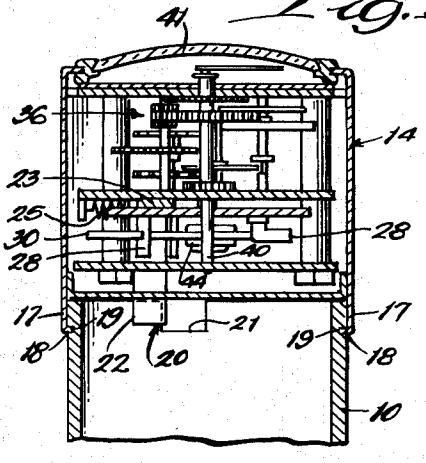


Fig. 11



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CIGARETTE CASE HAVING A TIME-CONTROLLED LOCKING MEANS

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5 Claims. (Cl. 70—273)

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Our invention relates to a cigarette case having a time-controlled locking means, and more particularly to such a case which is adapted for being carried on the person of the smoker such as in a coat pocket, etc.

It is well-known that the smoking of cigarettes tends to become a fixed habit, and that for many smokers there is a tendency to progressively increase the number of cigarettes smoked during a given period of time until such smoking becomes excessive and therefore detrimental to the health of the smoker. An extreme form of this type of smoking habit is sometimes referred to as "chain smoking." As will readily be understood, there are widely varying degrees of chain smoking, but the general condition is that the smoker tends to light one cigarette after another in rather rapid succession. As with any ingrained habit, the act of reaching for and lighting the next cigarette tends to become automatic and to be carried out without conscious attention. Thus, it is very difficult for a person who has reached the chain smoking stage to decrease his consumption of cigarettes so long as there is a supply of cigarettes readily available to him. Studies have indicated as with other types of drug habits that the best method of overcoming chain smoking is to present a hindrance to smoking which causes the lighting of a cigarette to be a matter of conscious choice, and then to gradually space out the smoking of cigarettes over intervals of time of increasing length.

It is therefore an object of our invention to provide a cigarette case which will normally remain locked, but which will become unlocked at spaced intervals of time in order that a smoker who desires to decrease the number of cigarettes smoked will be hindered from automatically lighting a cigarette without conscious attention. It is a further object of our invention to provide a cigarette case having a timing mechanism therein which will cause the lid to be opened at periodic intervals while allowing the whole case to be sufficiently compact to be carried in the pocket. It is another object of our invention to provide a latch structure for a cigarette case which is normally locked but which can be periodically opened by a clock-mechanism actuating a camming member. It is also an object of our invention to provide an adjustment for the camming member in our cigarette case which will allow the opening mechanism to be set to open the case over varying selected time intervals, and particularly over evenly spaced time intervals. Further objects and advantages of our invention will appear as the specification proceeds.

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Our invention is shown in an illustrative embodiment in the accompanying drawings, in which—

Figure 1 is a perspective view of the exterior of a cigarette case or container embodying the mechanism of our invention; Fig. 2, a perspective view similar to Fig. 1 showing the cigarette case partially open; Fig. 3, a perspective view of the closure or lid which houses the clock mechanism showing the latch pin in its closed position; Fig. 4, a fragmentary perspective view of the top portion of the cigarette case to which the closure member shown in Fig. 3 attaches; Fig. 5, a front cross-sectional view taken in elevation on line 5—5 of Fig. 1 showing the clock-operated unlocking mechanism. Fig. 6, a developed view of the camming projections affixed to the rotating plate shown in Fig. 5; Fig. 7, a cross-sectional bottom view taken on line 7—7 of Fig. 5 showing the relationship of the parts of the latch operating mechanism; Fig. 8, a bottom cross-sectional view taken on line 8—8 of Fig. 5 showing the relationship of the parts of the clock mechanism; Fig. 9, a side cross-sectional view taken in elevation on line 9—9 of Fig. 7 showing the means for adjusting the distance between the projection-bearing plate and the camming member; Fig. 10, a side cross-sectional view taken in elevation on line 10—10 of Fig. 7 showing further details of the clock mechanism; and Fig. 11, a side cross-sectional view taken on line 11—11 of Fig. 7 showing the top closure covering the opening in the case and locked thereto.

In the illustration given, 10 generally designates a container or case providing a compartment 11 therein for storing cigarettes 12. It will be understood that case 10 can be made in various shapes, but preferably compartment 11 is made of sufficient size to receive a package of cigarettes.

Container 10 is provided with an opening 13 to allow cigarettes to be inserted into or removed from compartment 11. It will be understood that opening 13 can be provided on the sides of container 10, as well as at the top as shown. Opening 13 is provided with a cover or lid designated generally as 14. In the illustration given, cover 14 includes a housing 15 which provides a compartment 16 in which the unlocking mechanism is contained. In the illustration given, housing 15 extends downwardly to provide flanges 17 with inwardly turned end portions 18 which are received within slots 19 when cover 14 is slid onto

the top of case 10. If desired, cover 14 can be secured to case 10 so as to cover and uncover opening 13 as desired by means of hinges, etc. It is preferred, however, to provide means for securing cover 14 to case 10 so that these members can be locked together by a single latch.

As shown more clearly in Fig. 11 a latch 20 is provided for locking lid 14 to case 10 when it is positioned so as to fully close opening 13. In the embodiment shown, latch 20 comprises a latch member or pin 22 depending from the bottom of lid 14 and extending upwardly into compartment 16. Fig. 11 positions latch 20 in closed or locked position wherein latch pin 22 is in the position shown in Fig. 3. It will be apparent that when latch pin 22 is moved to the right, as shown in Fig. 11, that it will be brought into alignment with a recess 21 in the top of the side of case 10 and thereby allow cover 14 to be partially or completely removed from case 10. Thus, it can be seen that this arrangement allows means to be provided within housing 15 to shift latch pin 22 from locked to unlocked position as desired. This means will now be described.

As shown more clearly in Fig. 5, latch pin 22 extends upwardly into compartment 16 and is connected to a lever arm 23. Lever arm 23 is pivotally mounted at 24 as shown more clearly in Figs. 5 and 7. In the illustration given, a spring 25 is connected to the free end of lever arm 23 so as to normally hold it in latching position. Lever arm 23 is also provided with a laterally extending camming flange 26.

A rotatably mounted member on plate 27 is mounted so as to rotate below lever arm 23. In the illustration given, plate 27 is circular in shape and has radially spaced camming projections 28 extending downwardly from the outer portions thereof. The shape of projections or lugs 28 is shown best in Fig. 6 where the camming member to the extreme right is the one approaching the bottom and coming into engagement as shown in Fig. 7. The function of these variously shaped camming projections will subsequently be described in detail. It will be noted here, however, that several of the camming projections 28 are provided with recess 29.

Any suitable camming means can then be provided for causing the spaced projections 28 to periodically shift lever arm 23 sufficiently to move latch pin 22 to unlatched position. In the illustration given, there is provided an angular camming member 30, as shown best in Fig. 7. Camming member 30 is rockably mounted on pin 31. As shown, camming member 30 is shaped to provide oppositely-disposed camming ends 32 and 33. End 33 is positioned so that its inner surface just engages the under surface of flange 26 when lever arm 23 is in latching position. End 32 has its inner surface inclined at 34 and relatively flat at 35. Thus, when a projection 28 engages inclined surface 34, lever arm 23 will be cammed to unlatching position by the rocking of member 30, and held in open position while projection 28 rides over surface 35.

Rotatably mounted plate 27 can be driven by any suitable clock mechanism such as the mechanism shown which is designated generally as 36. Clock mechanism 36 is of a conventional type, and therefore it is believed that it will not be necessary to describe it herein in detail. As shown best in Fig. 5 clock mechanism 36 contains a main spring 37 which is wound by shaft 38 having key 39 attached to the end thereof. Central shaft 40 is driven through gears by spring 37 and is maintained at a uniform angular velocity by means of an operable regulating structure, such as the one shown in Fig. 8. In the illustration given, plate 27 is maintained directly on shaft 40 and thereby rotates in synchronism with shaft 40, and thus is maintained at a uniform angular velocity. For most clock mechanisms and preferably, shaft 40 will make one complete revolution per hour. It will be understood, however, that if as desired the angular velocity of shaft 40 can be varied, or plate 27 can be driven through gears by timed shaft such as shaft 40.

If desired, shaft 40 can be made to extend upwardly to the top of housing 15 and hands attached thereto to provide a conventional clock 41. Also, if desired shaft 40 can be extended below lid 14 so that clock 41 can be set.

By the positioning of camming projections 28 at spaced points around the periphery of plate 27, clock mechanism 36 can be made to open latch 20 at predetermined time intervals, while allowing the latch to be maintained in closed position between these intervals. However, it is desired to provide a means for varying the length of the intervals of time during which the cigarette case remains locked, and particularly to provide means for gradually increasing the length of these intervals. Therefore, in the illustration shown we provide a means for adjusting the distance between angular camming member 30 and plate 27. The particular adjusting means provided is shown more clearly in Figs. 5 and 9. Pin 31 is equipped with a collar 42 having a spiral ridge or thread 43 extending about its outer surface. A rider 44 having an aperture therein and being interiorly threaded to correspond with threads 43 is secured about collar 42. Pin 31 is then extended below cover 14 and equipped with a slotted head or other turning adaptation 45. Thus, when pin 31 is rotated while camming member 30 remains stationary, camming member 30 will be moved upwardly or downwardly as shown in Figs. 5 and 9 and thereby increasing or decreasing the distance between camming member 30 and plate 27. In order to hold camming member 30 stationary while pin 31 is rotated, there is provided a stop pin 46 as shown best in Fig. 7.

As previously described, camming projections 28 are made of varying lengths. It can now be seen that the variation in the position of camming member 30 will cause camming member 30 to contact different camming projections. In the illustration given, as shown best in Fig. 6 I provide six camming projections which allow headed pin 31 to be adjusted so that the cigarette case will be unlocked 1, 2, 3, or 4 times per hour as desired. These settings are indicated numerically in Fig. 3, and diagrammatically in Fig. 6. The dotted lines in Fig. 6 designated as *a*, *b*, *c*, and *d* indicate the four positions of camming member 30. In one position the camming member 30 will be contacted only by extreme right-hand projection 28 which is the longest of the projections, and is shown approaching end portion 32 in Fig. 7. When camming member 30 is adjusted to lie in the plain of line *b*, it can be seen that the camming member will be contacted not only by the camming projection to the extreme right but also by the central camming projection. Similarly, when camming member 30 lies in the plain of line *c*, it will be engaged by all of the camming members extending downwardly that far except the central camming member, as shown in Fig. 6 which is provided

with a recess 29, so that the case will be opened only at uniformly spaced intervals. Finally, when camming member 30 lies in the plain of line *d* it will contact four of the projections as indicated, but will not engage the two L-shaped cam members which are also provided with recess 29.

If desired, lever arm 23 can be provided with an outward extension 47 extending through a suitable slot in a wall of housing 15 by which latch 20 can be opened if it is desired to do so without waiting for the operation of the clock mechanism.

Operation

In operating a cigarette dispenser of the type shown, cigarettes are first placed within compartment 11 as shown in Fig. 2, then the spring of the clock mechanism can be wound by key 39, and pin 31 can be rotated by means of slotted head 45 to position camming member 30 at the desired distance from plate 27. As discussed above, in the illustration shown, this positioning can be made so that latch pin 22 will be moved to open position at intervals of 15, 20, 30, or 60 minutes as desired.

Cover 14 is then slid onto the top of case 10 so as to completely close opening 13. Lever arm extension 47 can then be used to temporarily move latch pin 22 to the open position so that it can pass through recess 21, and when released will move to its locked position because of the tension exerted by spring 25. After having been thus closed and locked latch 20 will remain locked for a predetermined time interval which may be from 15 to 60 minutes in the structure shown.

The particular advantage of the structure shown is that a smoker using such a cigarette case will be aided to overcome a chain smoking habit. This is true because the clock mechanism can be set to unlatch the case at spaced intervals, which can be increased in duration as desired. It is of particular importance in this connection that the structure allows the spaced intervals to be uniform at a given setting.

While in the foregoing specification, we have set forth structures in great detail for the purpose of illustrating embodiments of our invention, it will be understood that such details of structure may be varied widely by those skilled in the art without departing from the spirit of our invention.

We claim:

1. A cigarette case having a time-controlled locking means, comprising a case providing a compartment therein for storing cigarettes and an opening into said compartment to allow cigarettes to be inserted into or removed from said compartment, a closure for said opening mounted so that it can be moved to cover or uncover said opening, a latch securing said closure to said case when said closure is in closed position, said latch having a latch member movable from locked to unlocked position but being normally maintained in locked position, said latch member having a shiftably mounted lever arm connected thereto, a rotatably mounted member having radially spaced camming projections thereon, a clock mechanism driving said rotatably mounted member at a uniform angular velocity, and camming means actuated by said spaced projections and thereby actuating said lever arm sufficiently to move said latch member to unlocked position, whereby cigarettes can be easily removed from said case at timed intervals while their removal is hindered during the intervening periods.

2. A cigarette case having a time-controlled locking means, comprising a case providing a compartment therein for storing cigarettes and an opening into said compartment to allow cigarettes to be inserted into or removed from said compartment, a lid for said case mounted so that it can be moved to cover or uncover said opening, a latch securing said lid to said case when said lid is in closed position, said latch having a latch pin shiftable from locked to unlocked position but being normally maintained in locked position, a pivotally mounted lever arm for actuating said latch pin, a rotatably mounted plate having radially spaced camming projections attached thereto, a clock mechanism driving said plate at a uniform angular velocity, and a rockably mounted angular camming member positioned so as to periodically be engaged by said spaced projections and thereby caused to shift said lever arm sufficiently to move said latch pin to unlocked position, whereby cigarettes can be removed from said case at predetermined intervals while their removal is hindered during the intervening periods.

3. A cigarette case having a time-controlled locking means, comprising a case providing a compartment therein for storing cigarettes and an opening into said compartment to allow cigarettes to be inserted into or removed from said compartment, a closure for said opening mounted so that it can be moved to cover or uncover said opening, a latch securing said closure to said case when said closure is in closed position, said latch having a latch member movable from locked to unlocked position but being normally maintained in locked position, said latch member having a shiftably mounted lever arm connected thereto, a rotatably mounted member having radially spaced laterally-extending camming lugs of varying lengths attached thereto, a clock mechanism driving said rotatably mounted member at a uniform angular velocity, and camming means pivotally mounted on an axis transverse to the plane of rotation of said lug equipped member and rotatable about said axis upon being contacted by each of said camming lugs and thereby actuating to periodically shift said lever arm to move said latch member to unlocked position, said camming means also being shiftably mounted along said axis to positions at which it is contacted by less than all of said camming lugs, whereby the number of times said lever arm is cammed to open position per revolution of said projection-bearing member can be varied.

4. A cigarette case having a time-controlled locking means, comprising a case providing a compartment therein for storing cigarettes and an opening into said compartment to allow cigarettes to be inserted into or removed from said compartment, a closure for said opening mounted so that it can be moved to cover or uncover said opening, a latch securing said closure to said case when said closure is in closed position, said latch having a latch member movable from locked to unlocked position but being normally maintained in locked position, said latch member having a shiftably mounted lever arm connected thereto, a rotatably mounted plate having radially spaced camming projections of varying lengths extending laterally therefrom, a clock mechanism driving said plate at uniform angular velocity, a rockably mounted angular camming member in offset parallel alignment with said plate and positioned to engage each of said projections and to be rocked thereby, said cam-

ming member actuating said lever arm upon being rocked by one of said projections and thereby moving said latch member to unlocked position, and means for shifting said camming member so as to vary the distance between said camming member and said plate in order that the number of times said lever arm is cammed to open position per revolution of said plate member can be varied as desired.

5. The cigarette case structure of claim 4 in which some of said camming projections have a recess therein to permit said camming member to miss said projections when it is positioned at a certain distance from said plate but to engage said camming member when positioned at a different distance from said plate, the portions of said projections arranged to be engaged by said camming member at the selected distance from said plate being spaced at even intervals,

whereby at a given setting of said camming member said case latch can be moved to unlocked position only at evenly spaced intervals.

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