Oct. 14, 1969 T. Y. SHINODA 3,472,362

SELF-FEEDING CIGARETTE CASE

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FIG. 1.

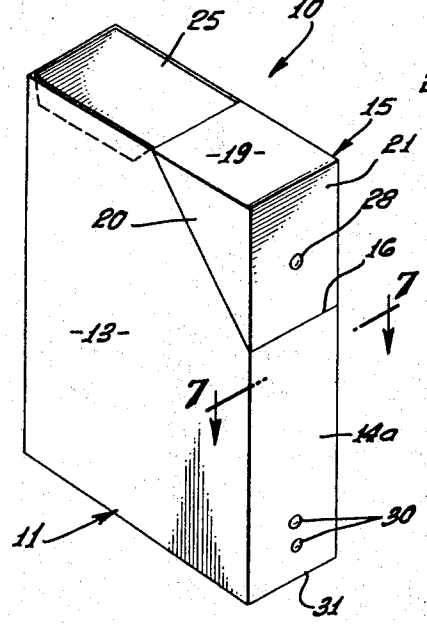


FIG. 2.

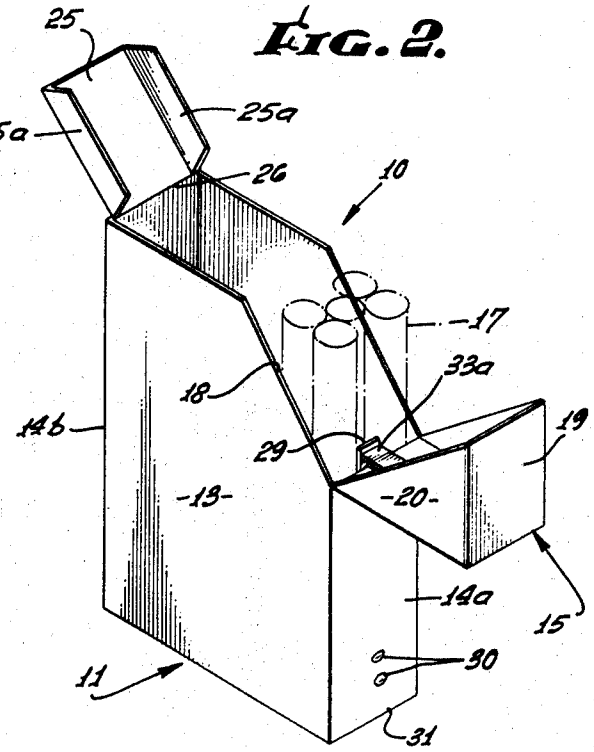


FIG. 3.

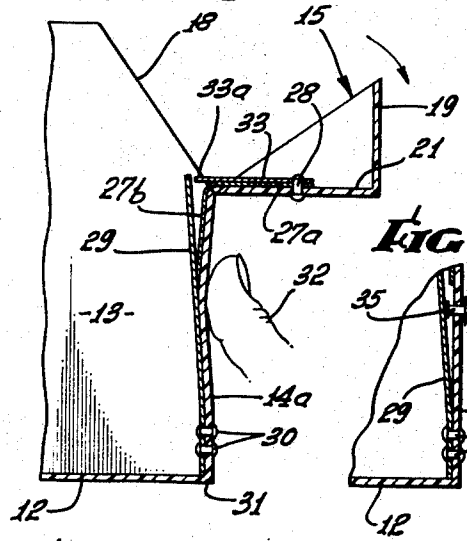


FIG. 11.

FIG. 4.

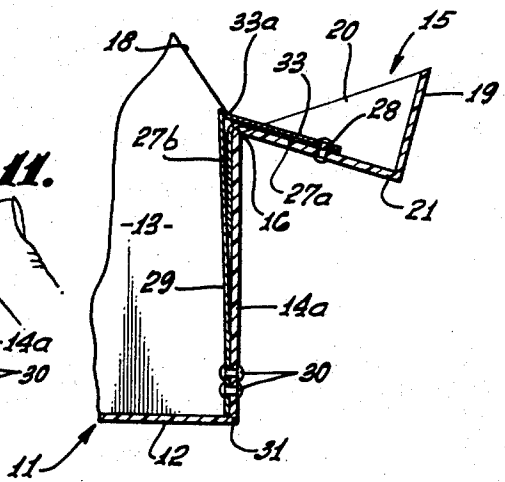
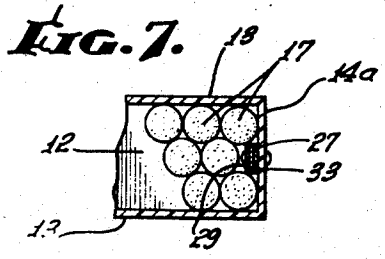


FIG. 7.



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FIG. 5.

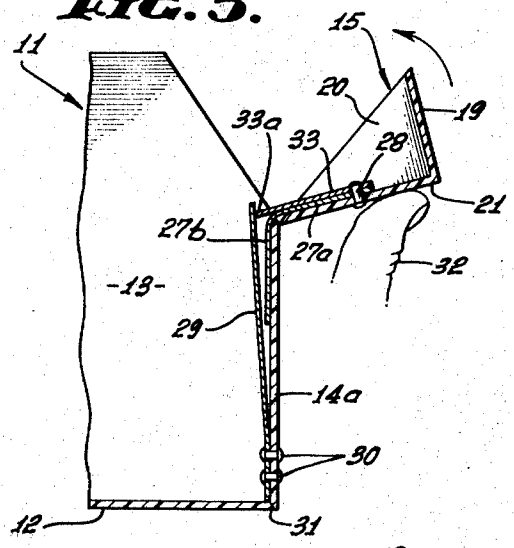


FIG. 6.

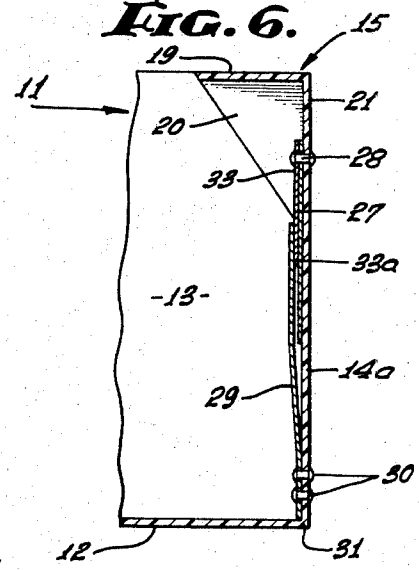


FIG. 8.

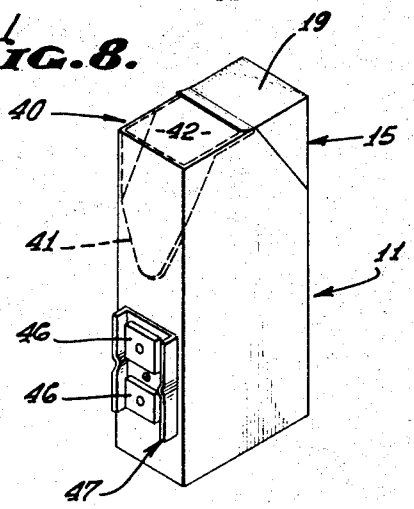


FIG. 9.

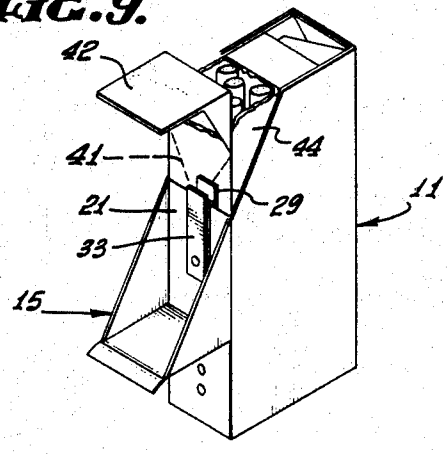
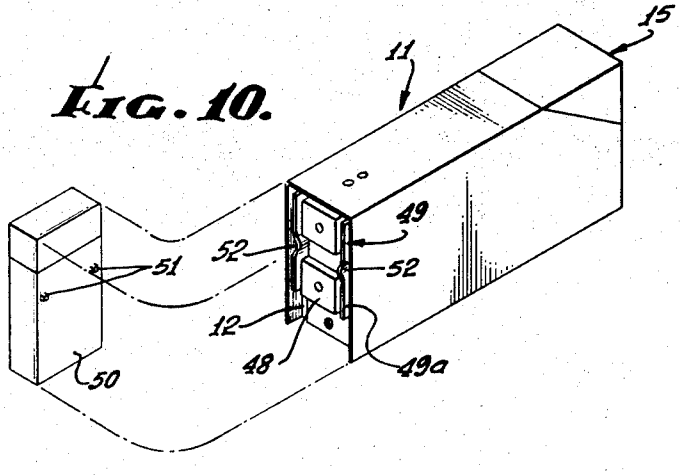


FIG. 10.



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FIG. 12.

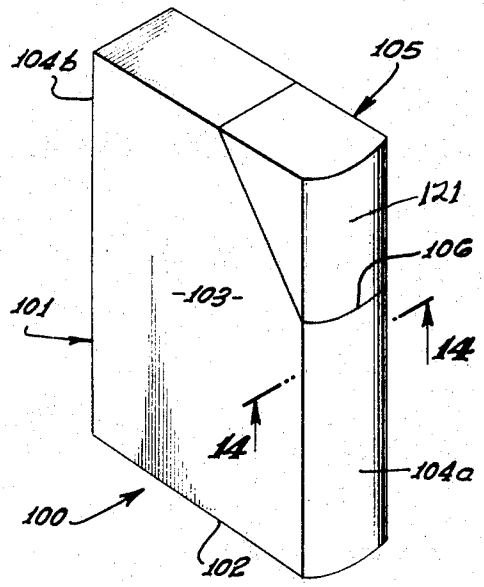


FIG. 13.

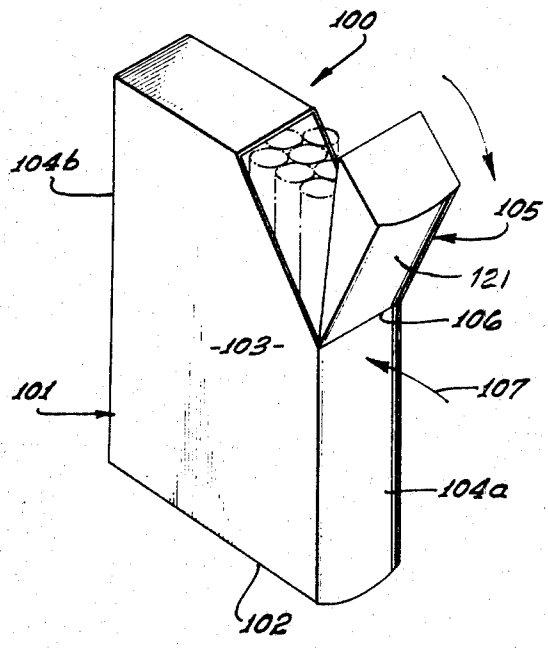


FIG. 15a.

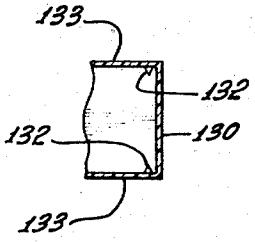


FIG. 15b.

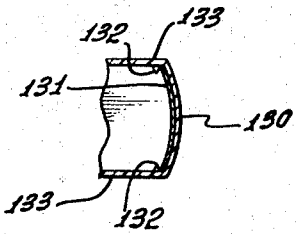
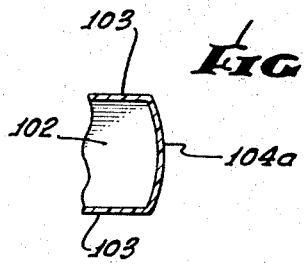


FIG. 14.



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3,472,362

SELF-FEEDING CIGARETTE CASE

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Filed Nov. 3, 1967, Ser. No. 680,433
Int. Cl. A24f *15/00*; B65d *85/10*
U.S. Cl. 206—41.4 14 Claims

ABSTRACT OF THE DISCLOSURE

The disclosed cigarette container incorporates a receptacle, and a movable cover which opens away from the receptacle in response to manual pressure exerted proximate a wall of the receptacle. Other improvements include magnetic attachment means for holding the receptacle to a support and a lighter releasably attached to the receptacle.

BACKGROUND OF THE INVENTION

This invention relates generally to cigarette containers and more specifically concerns quick opening case or package facilitating ease of access to contained cigarettes and promoting self-feeding of the cigarettes to withdraw position.

In the past, cigarette containers such as relatively inflexible cases have been characterized by disadvantages such an inability to feed or provide easy access to cigarettes. On the other hand, while such past containers have been bulky, they have had the advantage of reducing crushing of contained cigarettes. Further, prior containers and packages have not particularly lended themselves to one-handed manipulation for opening purposes to give access to cigarettes, as for example in automobiles.

SUMMARY OF THE INVENTION

It is a major object of the invention to provide a cigarette container characterized as overcoming the above as well as other problems encountered by the smoker, the container being quickly openable to provide self-feeding of cigarettes in response to one-handed manipulation. Other features of the invention include the incorporation into such a container of a lighter that is always accessible, the lighter being releasable from the container; the incorporation into such a container of a cutter operable to quickly open a cigarette package within the container; and the incorporation into such a container of magnetic means operable to removably attach the container to an iron containing support as for example a steel panel found in an automobile.

These and other objects and advantages of the invention, as well as the details of illustrative embodiments, will be more fully understood from the following detailed description of the drawings, in which:

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view showing an example of a container in the form of a case incorporating the invention;

FIG. 2 is a view like FIG. 1, but with the container in completely opened condition;

FIG. 3 is a fragmentary vertical section taken through the container of FIG. 1, illustrating the manner in which the movable cover may be opened;

FIG. 4 is a view like FIG. 3, showing the container movable cover in fully open condition;

FIG. 5 is a view like FIG. 3, showing the manner in which the movable cover may be closed;

FIG. 6 is a view like FIG. 3, showing the movable cover in fully closed condition;

FIG. 7 is a section taken on line 7—7 of FIG. 1, and showing the locations of cigarettes placed in the container;

FIG. 8 is a perspective view of a modified container;

FIG. 9 is a perspective view of the FIG. 8 container or case for a cigarette package which is being cut open;

FIG. 10 is a perspective view of a container incorporating a releasable lighter;

FIG. 11 is a fragmentary section illustrating a modified container;

FIGS. 12 and 13 are perspective showings of a modified case in closed and partially open condition, respectively;

FIG. 14 is a section taken on line 14—14 of FIG. 12; and

FIGS. 15*a* and 15*b* are sections similar to FIG. 14 showing another modified case.

DESCRIPTION OF PREFERRED EMBODIMENTS

Referring to FIGS. 1–6, the illustrated cigarette container or case **10** includes an upright receptacle **11** having a bottom **12**, opposite side walls **13** and opposite end walls **14***a* and **14***b*. The case also includes a movable cover **15** at an upper corner of the receptacle, and having hinge connection to the receptacle at **16** to accommodate swinging of the cover between closed position as seen in FIGS. 1 and 6 in which cigarettes within the receptacle are concealed, and fully open position as seen in FIGS. 2 and 4, in which cigarettes in the receptacle are exposed. Note in this regard the cigarettes **17** seen in broken lines in FIG. 2 as having considerable upper length exposed for ease of removal from the container or case. Such cigarette exposure and positioning are also facilitated by the slanted edges **18** of the receptacle walls **13** and by the construction of the cover. The latter has a top wall **19**, opposite side walls **20** generally co-planar with the receptacle side walls **13**, and an end wall **21** generally co-planer with receptacle end wall **14***a* in cover closed position. Hinge connection **16** is located proximate terminals of the cover end wall **21** and of the receptacle end wall **14***a* and defines a hinge axis characterized in that the cover swings downwardly and away from the top of the receptacle in moving toward fully open position.

The thin walled cover and receptacle may be constructed of rather stiff material such as cardboard or suitable molded plastic. Note also in FIGS. 1 and 2 that the receptacle has a top wall in the form of a flap **25** attached to the receptacle side walls **13** as by bonding of integral side flaps **25***a* to the side walls. Such attachment is effected after loading of cigarettes into the receptacle through the top thereof, the flap **25** at that time being swung on hinge connection **26** to open position seen in FIG. 2. After such loading the side flaps **25***a* are bonded to the side walls **13** to bring the top flap **25** into co-planar relation with the cover top wall **19** in cover closed position.

In accordance with an important aspect of the invention biasing means is provided for releasably holding the cover in closed position and to be responsive to manual pressure exertion proximate a wall of the receptacle to urge the cover toward open position. While such a biasing means may take various forms all of which operate in generally the same way to produce the same result, as described, one highly advantageous form of such a biasing means includes a spring, such as narrow flat spring **27**, operatively connected between the receptacle and cover and movable from more tensioned condition in cover closed position (FIG. 6) to more released (i.e. less or even untensioned) condition in cover open position (FIG. 4). Accordingly, the spring **27** may have a naturally bowed position in FIG. 4 and an unnaturally straightened position in FIG. 6. The spring **27** as illustrated has one leg **27***a* attached as by rivet **28**, or other means, to the cover end wall **21**, whereas leg **27***b* is attached to the receptacle

end wall **14***a* as by the clamping action of spring arm **29**.

Arm **29** is an element of detent structure operable to block opening movement of the cover in closed position (FIG. 6), and to unblock such opening movement in response to inward deflection of the receptacle end wall **14***a* as depicted in FIG. 3. Arm **29** is suitably attached as by rivets **30** to the receptacle wall **14***a* near bottom wall **12**, and in such manner that the upper extent of the arm is free to be resiliently displaced inwardly and away from the receptacle wall **14***a* in response to inward deflection of the wall **14***a* at a location between edge connection **31** to the bottom wall **12** and hinge connection **16** to the cover. Note the manual exertion as by finger **32** in FIG. 3 accomplishing this deflection.

The detent structure also includes a part **33** carried by the cover, as for example by rivet attachment at **28**, and engaging the arm **29** at terminal **33***a* in FIG. 5, to deflect the arm **29** inwardly and travel over center as the cover is swung from open to closed position. Note that in closed position the part terminal **33***a* is kept adjacent the receptacle wall **14***a*, in FIG. 6, by spring arm **29**, whereby the part **33** extends upright and the cover is biased closed against the tension of the spring **27**. Such retention of the part terminal **33***a* is relieved when the spring arm is deflected inwardly in FIG. 3, whereby the spring **27** may then deflect and "pop open" the cover.

Accordingly, the cover opens automatically when finger pressure is exerted on the receptacle as described. Also, the compactness and flatness of the detent and spring arm structure prevents damage to the cigarette contents of the case. See in this regard the local positioning of these narrow, thin elements in the void space between the end cigarettes, as shown in FIG. 7.

FIG. 11 illustrates the provision of a button **35** adapted to be finger pressed at receptacle end wall **14***a*. The button may be pushed inwardly to deflect the spring arm **29** inwardly, when it is desired to allow the cover **15** to pop open.

Referring now to FIGS. 8 and 9, the modified case has a receptacle **11** and cover **15** as described above. In addition, it includes an auxiliary cover **40** at and fitting the opposite upper corner of the receptacle, cover **40** being removable and carrying a downwardly projecting cutter **41**. The latter fits downwardly within the receptacle in FIG. 8, during non-use of the cutter, and at which time the top wall **42** of the auxiliary cover **40** extends over the top of the receptacle in generally co-planar relation with the top wall **19** of the cover **15**. FIG. 9 illustrates the reception of a package **44** of cigarettes within the case, as well as the use of the cutter **41** to slice downwardly into the package at the upper end thereof adjacent the wall **21** of the movable cover **15** when the latter is in closed position. Such slicing results in quick opening of the end of the package **44**, the top of which may then be torn off to expose the cigarettes. Thereafter, the auxiliary cover **40** may be returned to its position as seen in FIG. 8.

FIG. 8 also illustrates the mounting of magnets **46** by and within channel **47** attached to the end wall **14***b* of the receptacle. Such magnets are exposed for magnetically attaching the case to an iron containing support, such as a steel panel within an automobile passenger compartment. Accordingly, the driver may reach out, push the case wall or button to open the case, and pick out a cigarette, all with only one hand. He may then close the case with the same hand, leaving the other hand at all times for steering the car. As succeeding cigarettes are removed, other cigarettes fall to pull out position due to vibration of the automobile, producing self-feeding.

FIG. 10 illustrates the mounting of magnets **48** by and within a channel **49** attached to the bottom wall **12** of the receptacle. In addition, a small cigarette lighter **50** has releasable connections to the receptacle, as by fitting of projections **51** on the lighter into indentations **52** on the channel flanges **49***a*, whereby the lighter and case form a package unit that may be carried in a purse, the lighter being readily available as needed. The projections are held in the indentations by magnetic attraction. Removal of the lighter facilitates magnetic attachment of the receptacle to a steel panel in an automobile.

Referring to FIGS. 12–14, the modified container or case **100** includes an upright receptacle **101** having a bottom **102**, opposite side walls **103** and opposite end walls **104***a* and **104***b*. The case also includes a movable cover **105** at the upper corner of the receptacle, hinge connection to the receptacle being provided at **106** to accommodate swinging of the cover between closed and open positions. FIG. 13 shows the cover in partially open position, and traveling toward fully open position in response to inward force exertion at **107** against the upper extent of relatively stiff wall **104***a*.

In this embodiment, the hinge connection **106** provides the biasing means which acts, in conjunction with the relatively stiff curved end walls **104***a* and **121** of the receptacle and cover, to hold the cover in closed position in FIG. 12. As the wall **104***a* is urged inwardly, as shown in FIG. 13, the curved hinge connection **106** deflects and responds to straigtening to urge the cover toward open position. The case **100** may typically be molded of plastic such as polypropylene, having a wall thickness of between about .010 and .015 inche. Instead of outward curvature, the end walls may have outward bulging in the form of a shallow triangle or sawtooth.

FIG. 15*a* shows a further modification end wall **130** typical of both cover and receptacle end walls in as molded condition without curvature. Subsequently, as shown in FIG. 15*b*, a curved flat spring **131** is inserted into the position shown, for retention by small inward projections **132** on the opposite side walls **133**. Flat spring **131** biases the end wall **130** into curved configuration as shown in FIG. 15*b*, both the cover and receptacle end walls then taking this configuration. Operation of the modified case is similar to operation of the FIGS. 12–14 case, as described, excepting that the biasing means in this instance may be considered to include the flat spring **131**. The latter may typically consist of thin plastic stock, such as the commercial product known as Delrin.

I claim:

1. In a cigarette container, the combination comprising

an upright receptacle having a bottom, opposite side walls and opposite end walls,

a movable cover at the top of the receptacle and having connection to the receptacle to accommodate swinging of the cover between closed position in which cigarettes in the receptacle are concealed and open position in which cigarettes in the receptacle are exposed,

and biasing means for releasably holding the cover in closed position and responsive to manual pressure exertion proximate a wall of the receptacle to urge the cover toward said open position.

2. The combination of claim **1** wherein said cover has a top wall, opposite side walls generally co-planar with the receptacle side walls and an end wall generally co-planar with one end wall of the receptacle in cover closed position, said connection being located proximate terminals of said cover end wall and of said receptacle one end wall and defining a hinge axis characterized in that the cover swings downwardly and away from the top of the receptacle in moving toward open position.

3. The combination of claim **2** wherein said biasing means includes a spring operatively connected between the receptacle and cover and movable from more tensioned condition in cover closed condition to more released condition in cover open position, and detent structure operable to block opening movement of the cover in cover closed position and to unblock opening move-

ment of the cover in response to inward deflection of the receptacle one end wall.

4. The combination of claim 3 wherein said spring has one leg attached to the cover end wall and another leg attached to the receptacle one end wall, said detent structure including a spring arm attached to said receptacle to be resiliently displaced inwardly from said receptacle one end wall in response to said inward deflection of the receptacle one end wall, said detent structure including a part carried by the cover and engaging said arm to deflect the arm inwardly and travel over center as the cover moves from open to closed position.

5. The combination of claim 4 including cigarettes in said package, said spring arm projecting in the space formed between cigarettes adjacent said one end wall of the receptacle.

6. The combination of claim 2 wherein the receptacle has a top wall flap attached to said receptacle side walls and extending in generally co-planar relation with the cover top wall in cover closed position.

7. The combination of claim 1 wherein said movable cover is located at one upper end of the receptacle, and including an auxiliary cover located at the other upper end of the receptacle, the auxiliary cover being removable and carrying a cutter manipulable to cut open a cigarette package received in the case and at a location exposed by opening of said movable cover.

8. The combination of claim 1 including a permanent magnet attached to said receptacle and exposed to the periphery for magnetically attaching the case to an iron containing support.

9. The combination of claim 1 including a cigarette lighter having releasable connection to said receptacle to extend opposite said receptacle bottom.

10. The combination of claim 9 including a permanent magnet attached to the receptacle to extend between the receptacle bottom and said lighter.

11. The combination of claim 1 wherein said biasing means comprises said connection in the form of an outwardly bulged hinge positioned to be inwardly deflected in response to said manual pressure exertion.

12. The combination of claim 11 wherein said cover and receptacle have outwardly bulged end walls interconnected by said hinge.

13. The combination of claim 12 wherein said biasing means includes a flat spring biasing at least one of said walls into said curvature.

14. In a container for elongated objects, the combination comprising

an upright receptacle having a bottom, opposite side walls and opposite end walls,

a movable cover at the top of the receptacle and having connection to the receptacle to accommodate swinging of the cover between closed position in which said objects in the receptacle are concealed and open position in which said objects in the receptacle are exposed,

and biasing means for releasably holding the cover in closed position and responsive to manual pressure exertion proximate a wall of the receptacle to urge the cover toward said open position.

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JAMES B. MARBERT, Primary Examiner