Nov. 19, 1940. J. VISSER 2,221,959

SPRING LATCH

Filed July 11, 1938 2 Sheets-Sheet 1

Fig. 1.

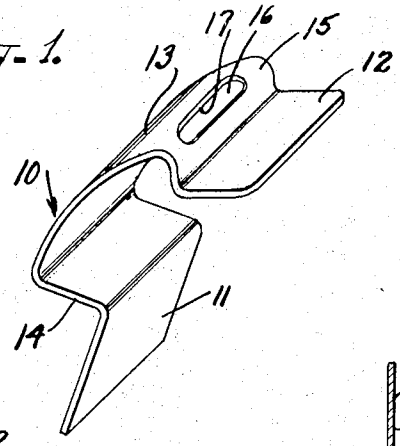


Fig. 4.

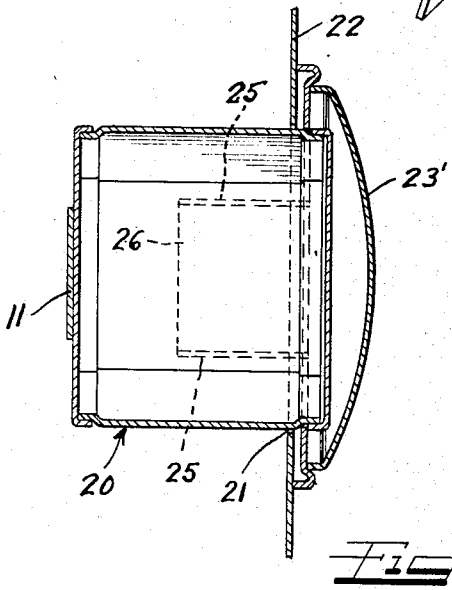


Fig. 2.

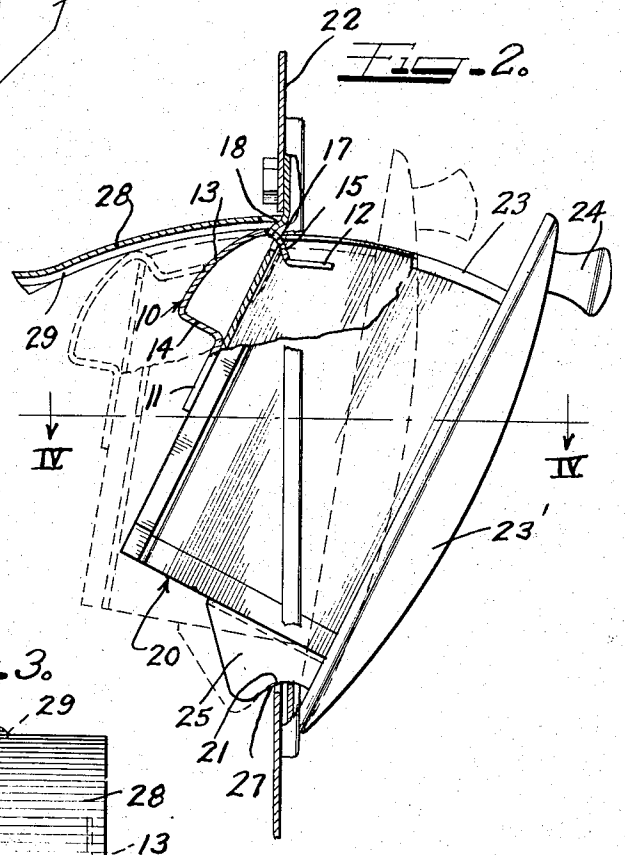
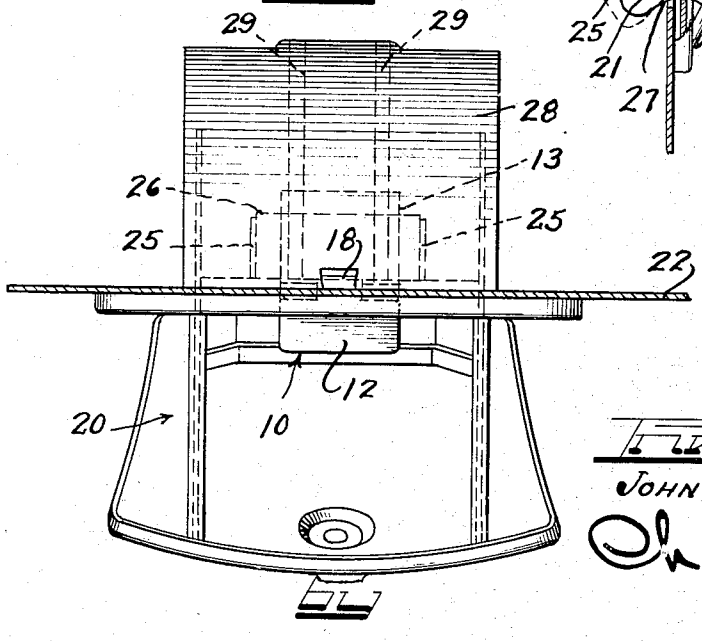


Fig. 3.



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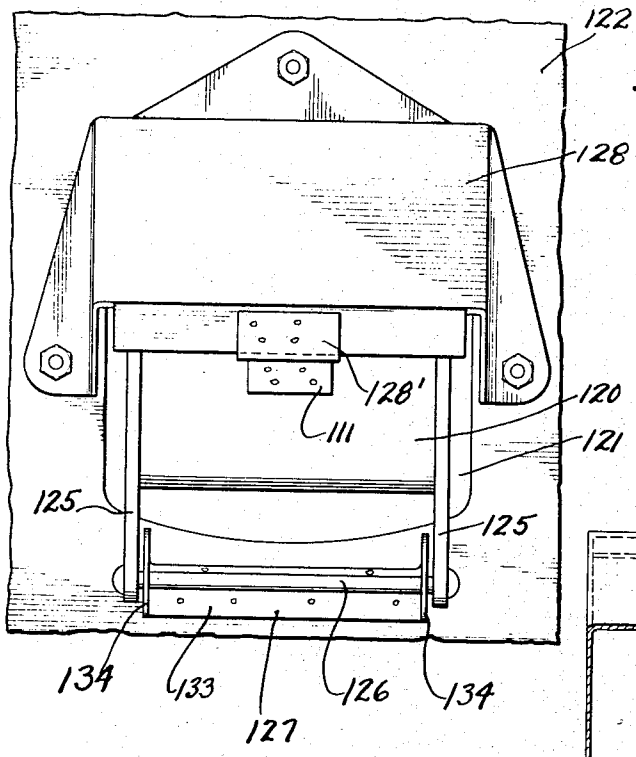


Fig. 7.

Fig. 6.

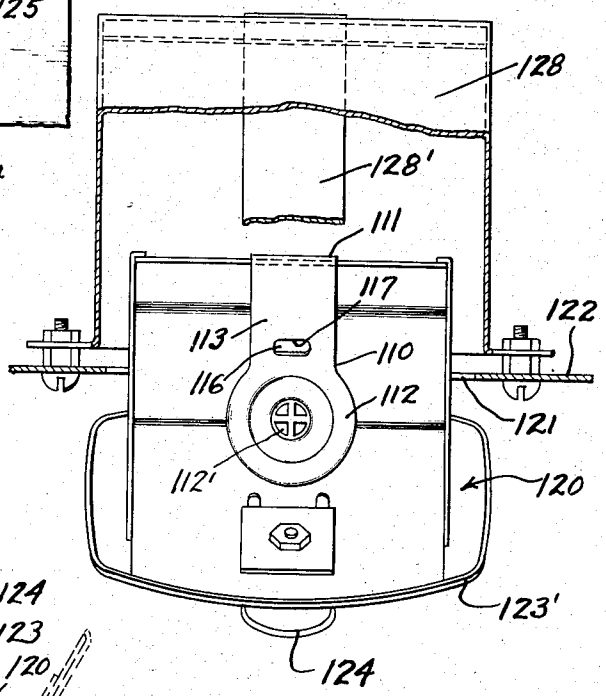
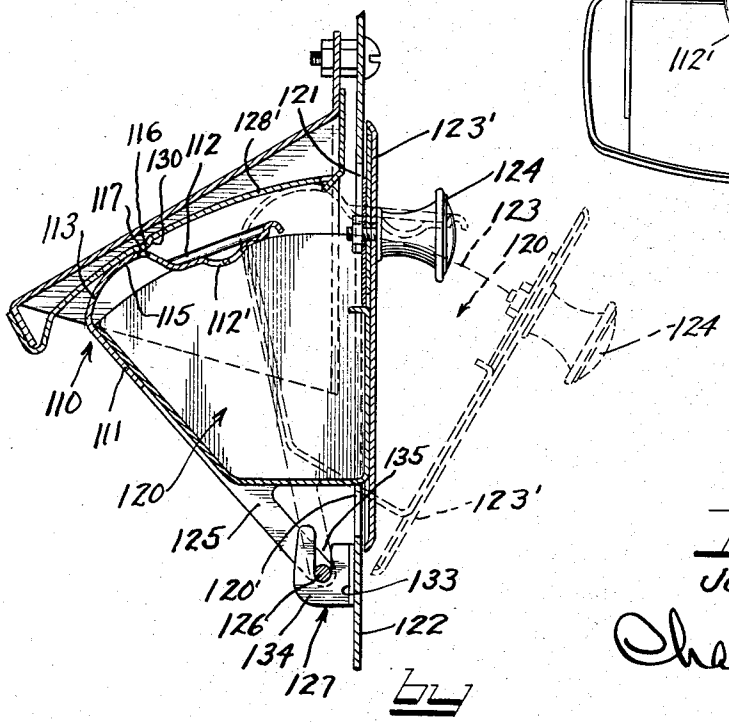


Fig. 5.



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Patented Nov. 19, 1940

2,221,959

UNITED STATES PATENT OFFICE

2,221,959

SPRING LATCH

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Application July 11, 1938, Serial No. 218,539

9 Claims. (Cl. 131—256)

This invention relates to a spring latch and more particularly to a combination spring latch and snuffer for cigarettes and cigars.

The subject matter of one embodiment of my invention has been divided from my copending application Serial No. 13,690, filed March 29, 1935, and the subject matter of the second embodiment of my invention has been divided from my copending application Serial No. 14,619, filed April 4, 1935, which matured into Patents No. 2,159,061 and No. 2,159,062, respectively, on May 23, 1939. The instant application is a continuation-in-part of each of the above-named copending applications.

An object of this invention is to provide an improved, simple, and novel spring latch adapted for retaining an object in a given position, such, for example, as retaining an ash receptacle in a position accessible for use.

Another object of this invention is to combine the advantages of a spring latch and a snuffer in a single article so as to simplify the same, as well as lower the cost of manufacture.

In accordance with the general features of this invention there is provided a spring latch comprising a metallic strip having two angularly arranged legs connected by a flexible intermediate portion, one leg being formed for attachment to an object to be latched and the other extending forwardly therefrom and being formed into an accessible free finger engageable portion for manually flexing the intermediate portion; the latter portion having a latching shoulder adapted to be flexed out of latching engagement upon manual pressure being applied to the free portion.

Another feature of the invention relates to the provision of a single article of manufacture comprising a combination spring latch and cigarette snuffer which includes a strip of metal having an attaching portion, an intermediate latching portion, and a free portion formed into a snuffer for cigarettes, cigars, and the like.

Other objects and features of this invention will more fully appear from the accompanying description taken in connection with the appended drawings, in which:

Figure 1 is a perspective view of the embodiment of my spring latch taken from my above referred to copending application Serial No. 13,690;

Figure 2 is a side view of an automobile ash receptacle to which my novel spring latch is shown applied and in which the ash receptacle is shown applied to a supporting panel, the view being partly broken away, partly in section, and showing in full lines the position of the ash receptacle when it is in latched or open position and showing in dotted lines the position of the ash receptacle when it is in a partially closed position;

Figure 3 is a plan view of the structure shown in Figure 2 with the supporting panel shown in section;

Figure 4 is a horizontal cross sectional view taken on substantially the line IV—IV of Figure 2 and showing the ash receptacle in its closed position;

Figure 5 is a vertical sectional view through a modified form of spring latch and ash receptacle assembly, the subject matter of this embodiment of the invention having been divided from my copending application Serial No. 14,619; the spring latch and ash receptacle being shown in section in a closed position, the dotted line position showing the position of the spring latch when it is in latched position for retaining the receptacle in an open and accessible position;

Figure 6 is a fragmentary plan view partially in section looking downwardly on the spring latch and showing the position of the same when the ash receptacle is in open position; and

Figure 7 is a rear view of the structure shown in Figure 5.

As shown on the drawings:

The reference character 10 designates generally one embodiment of my invention or, in other words, one form of my novel spring latch which is illustrated in perspective in Figure 1. While I have in Figures 2, 3, and 4 illustrated this novel spring latch in ash receptacle application of the same, it is, of course, to be appreciated that it is fully contemplated that this spring latch may be used equally well in other applications.

This latch includes a pair of angular portions 11 and 12 which are disposed in planes at an angle closely approximating a right angle. These two portions 11 and 12 have at their junction an intermediate or connecting portion which is adapted to be flexed upon the depression of the portion 12 as will be more fully described hereinafter.

The portion or leg 11 comprises the attaching portion of the spring and may be suitably secured to an object such as an ash receptacle to be latched in position by any convenient means, such, for example, as soldering, welding, riveting, or the like. It will be perceived from the illustration in Figure 2 that this attaching portion 11 is secured to the rear side or back of an ash

receptacle or box designated generally by the reference character 20.

The intermediate or junction portion 13, as will also be noted from Figures 1 and 2, includes a rearwardly offset section 14 disposed at substantially right angles to the attaching portion 11. From this offset section 14 the balance of the intermediate portion 11 is curved forwardly to a rib-like section or hump 15 disposed directly between the forwardly extending leg or portion 12 and the intermediate portion 13. At this time it should be noted that the portion 12 constitutes a finger engaging portion which is adapted to be manually depressed downwardly in a direction toward leg or portion 11 for the purpose of flexing the intermediate portion 13 so as to flex the spring latch to a non-latching position. In this embodiment of the invention the portion 12 is formed relatively straight and smooth and embodies one of the principal differences between this form of the invention and the embodiment to be hereinafter described in connection with Figures 5, 6, and 7. An important feature of this form of the invention is manner in which the intermediate portion 13 of the latch 10 is offset to the back of the plane of the back of the receptacle 20 and of the attaching portion 11 of the latch. This permits the hump 15 to be located approximately in the plane of the back of the receptacle to permit the entire top of the receptacle to be swung out where it is accessible and at the same time permits the rib-like section 15 to be readily sprung down when desired.

In order to provide the rib or hump 15 of the intermediate portion 13 with a latching shoulder, the hump 15, as it will be perceived from Figures 1 and 2, is slotted or apertured at 16 thus providing a latching shoulder 17. This shoulder is adapted to be brought into register or engagement with a stop or detent, such as the detent 18 shown in Figure 2, on an object or support for the purpose of enabling the article or ash receptacle 20 to be latched in a given position which in this case is in an open position accessible for use, as is clearly shown in Figure 2 in full lines. It may be noted that the aperture 16 is located on one side of the hump 15, so that one edge 17 of the aperture 16 will engage the detent 18 and the opposite edge of the aperture 16 will pass freely under it. This construction provides a positive, releasable stop against outward movement of the receptacle 20 without providing a similar stop against inward movement thereof.

I shall now proceed to describe more in detail one application or use of this spring latch 10 which is illustrated in Figures 2, 3, and 4.

It will be perceived that the ash receptacle or box 20 is of the tilt or pivotal type and is adapted to be swung into and out of an opening or aperture 21 in a suitable support which in this instance is illustrated as being in the form of a panel, which for example may be the instrument panel of an automobile, and is designated by the reference numeral 22.

The ash receptacle 20 is of an irregular configuration although generally it may be considered as being in this instance of substantially a rectangular form, with the exception of its top edges which are curved as indicated at 23. The outer or front side of the box or ash receptacle 20 is provided with an ornamental plate 23' of a larger size than the opening 21 so as to conceal the same when the box is in a shut or closed position and provided with a handle 24 for swinging the ash box into its various positions. In Figure 2 the ash receptacle is illustrated in full lines in its open position and in dotted lines in a partially closed position.

The ash receptacle is provided on its lower or bottom side with a pair of spaced plates 25—25 which may be connected by an integral intermediate portion 26 suitably secured as by welding, soldering, or the like to the bottom of the ash box 20. The purpose of these two plates 25 (Figures 2 and 3) is to provide the under side of the box with curved bearing surfaces 27 adapted to rest against the lower edge of the opening 22 and to slide thereover as the ash receptacle is swung into its various positions. Thus it will be appreciated that the ash receptacle is bodily swingable over an arcuate path into and out of the opening 21 in the support or panel 22.

In order to accommodate and properly support the ash receptacle, the panel 22 is provided with a rearwardly extending curved frame member 28 which it will be perceived from Figure 2 has a curvature corresponding generally with that of the curved top edges 23 of the ash box. This member 28, in addition to serving as a frame member, also constitutes a cover or closure for the top of the ash box when the box is in a closed position. Moreover, this member may be suitably attached to the panel 22 as by bolting, riveting, welding, or the like so that in reality it constitutes an integral component of the panel 22 as distinguished from being a part of the ash receptacle or box 20. In addition thereto, it should be noted that the detent 18 is struck from this member 28 and extends downwardly into the path of the rib 15 of the spring latch 20 prior to the flexure of that spring latch, so that this detent can contact the shoulder 17 to thus limit the outward displacement of the ash box or, in other words, retain the ash box in the open position shown in Figure 2.

During the time that the spring latch 20 is underneath the cover plate or member 28, as illustrated by dotted lines in Figure 2, the rib 15 of the intermediate portion 13 of spring latch 10 bears against and has a sliding contact with the under side of the cover member 28. If it is so desired, this member 28 may be ribbed on its under side as indicated at 29—29 in Figures 2 and 3. These ribs provide surfaces against which the rib section 15 of the spring latch may bear and slide on, and reduce the amount of friction between the cover plate and the box so as to make it easier to move the ash box into its various positions.

It will further be appreciated that in order to release the spring latch from its latching position all that is necessary is for the operator to press his finger against the finger portion 12 which is accessible through the top or open side of the box 20. Obviously, upon a downward movement of this portion 12, the intermediate portion 13 of the spring latch 10 is flexed so that the shoulder 17 thereof may be brought out of engagement with the stop or detent 18. Thereafter the ash receptacle or box 20 may be completely removed from the supporting panel 22 to enable the emptying of the box or the like.

In inserting the box in the supporting panel, the curved plates 25 on the bottom side are inserted through the opening 21 in the panel 22 and are brought into engagement with the lower edge of the opening. Thereafter the box is swung inwardly so that the spring latch 10 is snapped past the detent or stop 18. It will, of course, be appreciated that once the spring latch

is in a position wherein its rib 15 has sliding engagement with the under surface of the cover member 28, the spring latch is also effective to resiliently urge the box downwardly into cooperation with the lower edge of the opening in the panel 22. This insures a snug fit of the box in the support and enables it to be maintained in use under tension and against rattling.

In the embodiment of my invention illustrated in Figures 5, 6, and 7, the spring latch designated generally by the reference character 110 corresponds generally with the spring latch 10, although differing in two respects from the spring latch 10. In the first place, it differs from the spring latch 10 in that it does not include an offset corresponding to portion 14 of spring latch 10. More important, however, it differs from spring latch 10 in that it has its finger engaging or forward portion 112 depressed into a cup-like shape and apertured at 112', as illustrated in Figures 5 and 6, so as to provide this portion of the spring latch with a cigarette or cigar snuffer. That is to say, this portion of the latch is adapted to be used in the putting out of the lit end of a cigarette or cigar which may be accomplished by merely pressing the lit end into the depression of the portion 112 and rubbing it against the apertured central part 112' of this portion.

In the spring latch 110, the portions 111, 112, 113, and 115, and the slot 116 and shoulder 117 correspond generally, as well as in function, with the similarly numbered components of the previously described spring latch 10.

The angular portion 111 is secured to the rear side of a tiltable ash box 120 movable into and out of opening 121 in the supporting panel 122. The ash box 120 has an outer ornamental plate 123' of a larger size than the opening 121 so as to conceal the same when the box is in closed position and is also provided with a handle 124 for swinging the box into its various positions.

In this form of ash box 120, while the upper edges 123 are curved similar to the curved edges 23 of the previously described box 20, these edges 123, however, are spaced from the under side of the cover member 128 secured to the supporting panel 122 (Figure 5). Also, it will be perceived that the cover member 128, as is evident from Figures 5, 6, and 7, is of an angular configuration with its opposite legs suitably secured as by means of bolts or the like to the supporting panel 122. The under side of this supporting or cover member 128 is provided with an underturned integral spring member 128' of curved configuration and adapted to be yieldably engaged by the ribbed or curved portion 115 of the intermediate section 113 of the spring latch 110. Also, it should be noted that this spring plate or element 128' (Figure 5) is provided at an intermediate point with a hump or rib 130 over which the intermediate portion 113 of the spring latch 110 is adapted to ride so that when the ash box is in its closed position the edge 117 of the spring latch 111 is behind and in engagement with the hump 130. This feature enables the spring element 128' to cooperate with the spring latch 110 in yieldably retaining the ash receptacle in a shut position.

The lower or bottom side of the ash box 120 is also of a slightly different configuration than that of the box 20 and has a slightly different mounting than the box 20.

The under side of the box 120 is provided with a pair of spaced supporting legs 125—125 connected by a pin 126 supported in a bearing member 127. This bearing member 127 is secured to the panel 122 adjacent the opening 121 and is of U-shape formation. The base of this bearing member 127, as indicated at 133 in Figure 7, is suitably secured as by means of rivets to the supporting panel 122, and each of the spaced legs 134 of this bearing member are slotted, as indicated at 135 in Figure 5, so as to accommodate the pin 126 connected to the bottom of the box 120. This arrangement enables the pin to turn in the slotted legs 134—134, and also permits of the complete removal of the pin from the slotted legs when it is desired to remove the ash receptacle from its mounting and out of the supporting panel. The operation of this form of the invention, however, is substantially the same as that of the previously described embodiment.

I am aware that many changes may be made and numerous details of construction may be varied through a wide range without departing from the principles of this invention, and I, therefore, do not purpose limiting the patent granted hereon otherwise than necessitated by the prior art.

I claim as my invention:

1. A spring latch comprising a metallic strip having two angularly arranged legs connected by a flexible intermediate portion, one leg being substantially flat and formed for attachment to an object to be latched and the other extending forwardly of the plane of said first leg and being formed into an accessible free finger engageable portion for manually flexing the intermediate portion, said intermediate portion lying largely in back of the plane of said first leg and having a latching shoulder located approximately in said plane and adapted to be flexed out of latching engagement upon manual pressure being applied to said free portion.

2. A spring latch comprising a metallic strip having two angularly arranged legs connected by a flexible intermediate portion, one leg being formed for attachment to an object to be latched and the other extending forwardly therefrom and being formed into an accessible free finger engageable portion for manually flexing the intermediate portion, said intermediate portion having a latching shoulder adapted to be flexed out of latching engagement upon manual pressure being applied to said free portion, said free finger portion having at least one aperture therein smaller than the end of a cigarette and thereby being adapted for use as a snuffer for cigarettes and the like.

3. As an article of manufacture, a combination spring latch and cigarette snuffer comprising a strip of metal including an attaching portion, an intermediate latching portion, and an end portion having at least one hole therein smaller than the end of a cigarette and thereby being adapted for use as a snuffer for cigarettes and the like.

4. A spring latch comprising a strip of sheet metal of uniform thickness and having two angularly arranged legs connected at their closest ends by a flexible intermediate portion, one leg being formed for attachment to an object to be latched and the other leg extending forwardly therefrom to form an accessible finger engaging portion for manually flexing the intermediate portion, an offset at one end of said intermediate portion forming a shoulder adapted to be flexed out of a latching engagement upon manually

flexing said free portion, and a bearing surface on said intermediate portion adapted to slidably engage an adjacent surface when not in latched engagement, said intermediate portion applying yieldable pressure against said adjacent surface when in slidable contact therewith.

5. A spring latch for a member adapted to arcuately swing about an axis to open and closed positions relative to a cover therefor comprising a strip of sheet metal of uniform thickness and having two angularly arranged legs connected at their closest ends by a flexible intermediate portion, one leg being formed for attachment to the swingable member and the other leg extending forwardly therefrom to form an accessible finger engaging portion for manually flexing the intermediate portion, an offset at one end of said intermediate portion adapted to be latched with said cover when the swingable member is rotated to an open position and to be flexed out of a latching engagement when the swingable member is rotated to a closing position, said intermediate portion slidably engaging the cover for applying yieldable pressure thereagainst in any position.

6. In a receptacle structure comprising a panel having an aperture, a receptacle mounted to swing through said aperture, and a cover plate fixed to and projecting back from said panel from above said aperture and having a narrow rearwardly facing abutment on the underside near the plane of said panel, a strip of resilient metal fixed at one end to the back of said receptacle and having a forwardly facing abutment near the other end, said abutment on said strip being approximately in the plane of the back of said receptacle and being adapted to engage the abutment on said cover plate, and the portion of said strip between the abutment thereon and the fixed end thereof being curved back a substantial distance away from the plane of said back.

7. In a receptacle structure comprising a panel having an aperture, a receptacle mounted for movement through said aperture, and a cover plate fixed to and projecting back from said panel from above said aperture and having a rearwardly facing abutment on the underside, a strip of resilient metal fixed at one end to the back of said receptacle and projecting forward under said cover plate, said strip of metal having a portion near the other end sloping forward and down at an angle to said cover plate and having an aperture therein, the rear edge of said aperture being close enough to said cover plate to engage the abutment thereon and the front edge of said aperture being far enough below said cover plate to pass freely under said abutment.

8. In a receptacle structure comprising a panel having an aperture, a receptacle mounted for movement through said aperture, and a cover plate fixed to and projecting back from said panel from above said aperture and having a rearwardly facing abutment on the underside, a strip of resilient metal fixed at one end to the back of said receptacle and having a forwardly facing abutment near the other end, said abutment on said strip being adapted to engage the abutment on said cover plate, and said other end of said strip being offset downwardly far enough to pass freely under the abutment on said cover plate and having at least one hole therein smaller than the end of a cigarette and thereby being adapted for use as a snuffer for cigarettes and the like.

9. In a receptacle structure comprising a panel having an aperture, a receptacle mounted for movement through said aperture, and a cover plate fixed to and projecting back from said panel from above said aperture and having a narrow rearwardly facing abutment on the underside, a strip of resilient metal wider than said abutment and comprising an end portion fixed to said receptacle and a flexible portion extending under said cover, said flexible portion including an upwardly projecting rounded hump bearing slidably against said cover and having an aperture in line with and wider than said abutment, one side of said aperture being near the top of said hump and the other side being spaced down from said top whereby said abutment will abut firmly against one side of said aperture and will clear the other side of said aperture and thus form a positive stop against movement of said receptacle in one direction past a predetermined position while offering no resistance to movement away from said position in the opposite direction.

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