

May 9, 1950

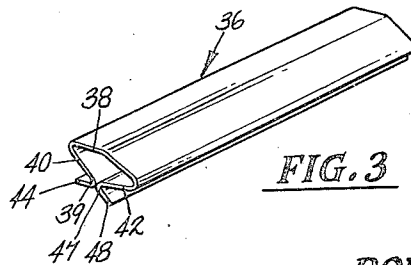
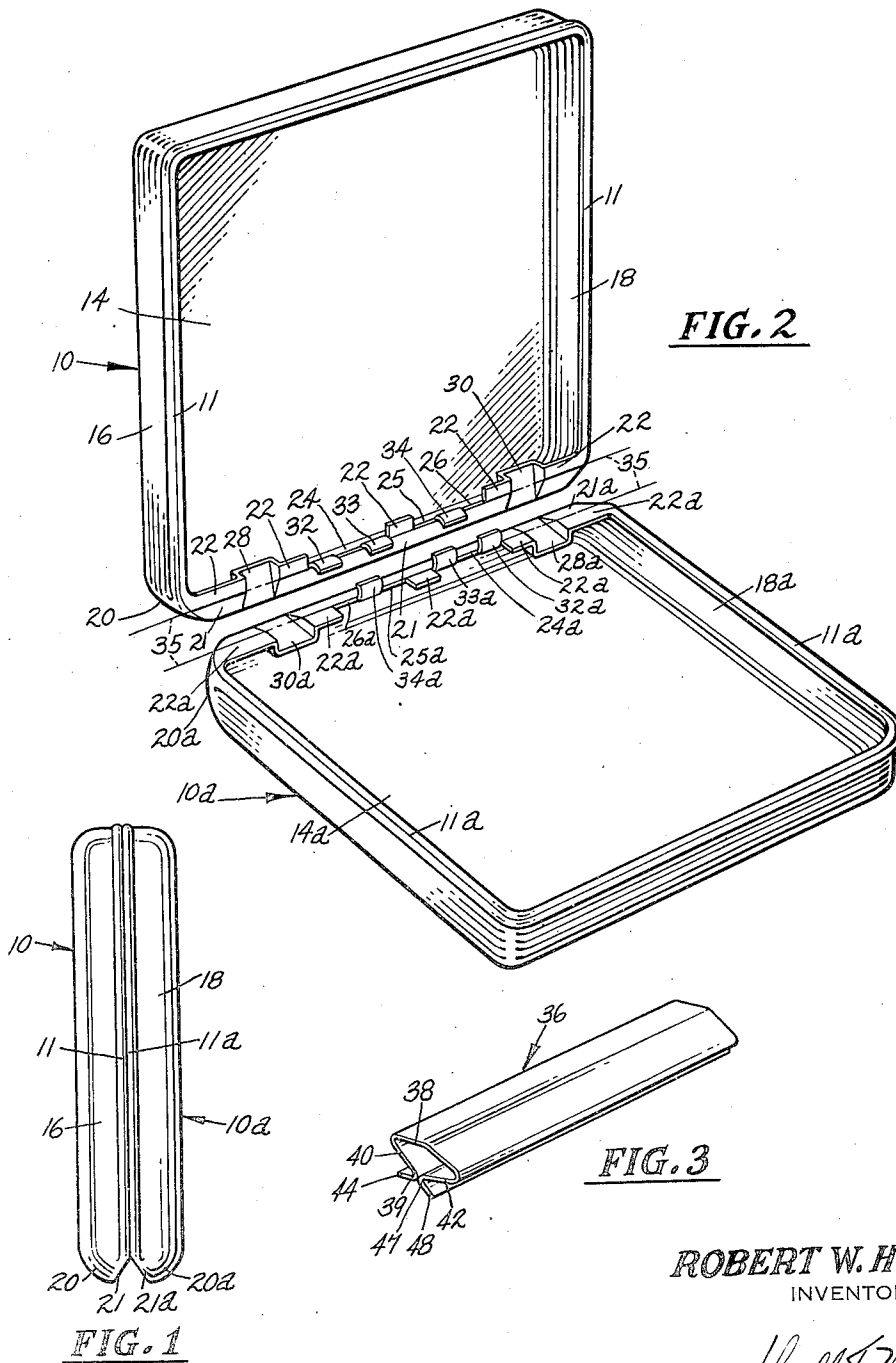
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2,506,789

CASE WITH DOUBLE-ACTING SPRING HINGE

Filed June 15, 1946

2 Sheets-Sheet 1



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CASE WITH DOUBLE-ACTING SPRING HINGE

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2 Sheets-Sheet 2

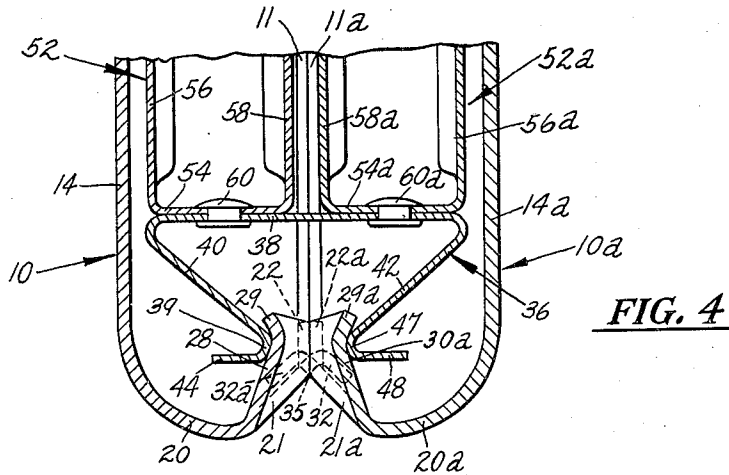


FIG. 4

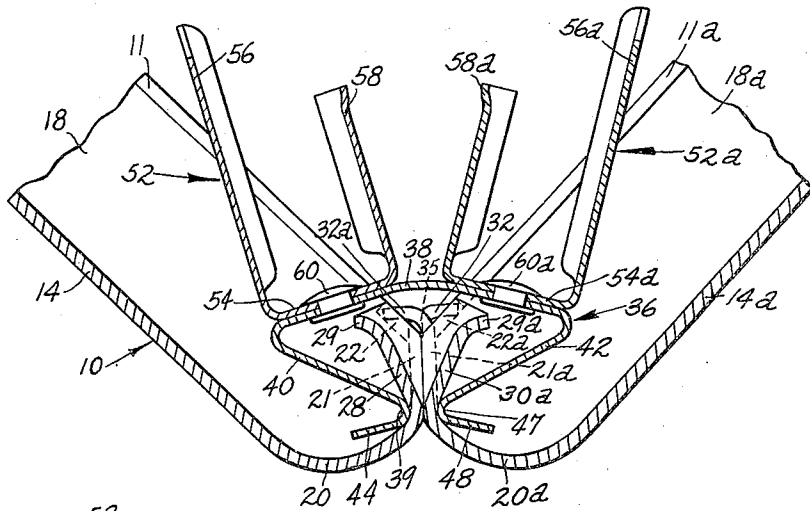


FIG. 5

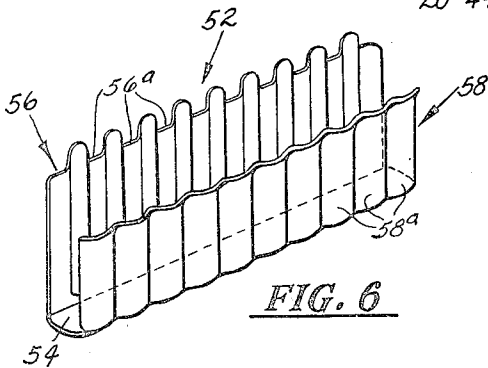


FIG. 6

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CASE WITH DOUBLE-ACTING SPRING
HINGE

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Application June 15, 1946, Serial No. 677,073

4 Claims. (Cl. 206-41)

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My invention relates to an improved case section and hinge and locking construction for use in connection with pocket cases and the like, and will be illustrated in connection with a cigaret case.

It is a principal object of my invention to provide an improved case section and hinge construction which, unlike the conventional hinge arrangement, may be easily and cheaply manufactured, and which can be assembled with a maximum of ease.

It is a further object of my invention to provide such a device having a minimum of parts which will withstand long usage without the normal effects of wear and breakage.

As will become apparent upon a reading of this specification, my construction may comprise a minimum of parts, including only two identical case sections and a lock hinge, the lock hinge being movable relative to the case sections when the case is opened or closed in a manner which will always keep the sections in proper position for hinging movements upon opening and closing the case. Also, the lock hinge moves into such a position during the closing of the case that it will retain the case in closed position until manually reopened, and upon reopening of the case the lock hinge moves into a different position so that it will keep the case open until manually closed. Other parts may also be included in my invention, as when used in connection with a cigaret case, as will subsequently appear.

In order that the exact nature of my invention may be understood, reference is made to the accompanying drawings, wherein

Fig. 1 is an exterior end view of a typical case which may form a part of my invention.

Fig. 2 is a perspective view of the interior portion of the left and right case sections, slightly separated and arranged to show their interfitting structures.

Fig. 3 is a perspective view of the lock hinge.

Fig. 4 is a partial cross sectional view taken on a vertical plane through a portion of the case to be later described, and showing the position of the lock hinge when the case sections are closed.

Fig. 5 is a cross sectional view taken on the same plane as Fig. 4, but showing the position of the lock hinge when the case sections are open.

Fig. 6 is a perspective view of one of the cigaret holders which may be combined with my invention.

Reference is now made to Fig. 1 which is an

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end view of my improved case, and it will be seen that it comprises two sections 10 and 10a which are identical, each section having a lip 11 or 11a, the two lips being arranged to about against one another when the case is closed. It may also be stated at this point that the lips 11 and 11a also run along the top of each of the sections as well as the opposite ends so as to extend about three-quarters of the way around the case when the case is closed.

In Fig. 2 it will be seen that the section 10 comprises a side wall 14 having integral therewith the curved end walls 16 and 18, shaped as shown, and integral with which is the previously mentioned lip 11. The bottom 20 of section 10 is also integral with the side wall 14 and ends 16 and 18, and as also seen in Fig. 1, is generally rounded upon the outside but has a substantially flat surface at 21. As best seen in Fig. 2, integral with the upwardly sloping flat surface 21 is the wall 22 which extends the entire length of the section except for the cut-out portions 24 and 26 and the indentations 28 and 30, and which is parallel to the main side wall 14. Also integral with the flat portion 21 of bottom 20 are the interlock tabs 32, 33 and 34, shaped as shown.

In Fig. 2 all parts of the section 10a are identified by the same number as the corresponding part of section 10, with the exception that the suffix "a" has been used to denote the parts of section 10a.

The right section 10a is identical in all respects with the left section 10, as will be apparent upon an inspection of Fig. 2, and when the two sections are placed together in their assembled positions, the tabs of the two sections interlock for hinging action about the axis 35. When so positioned, it will be appreciated that the interlock tabs 32, 33 and 34 engage the upper edge of flat surface 21a of bottom 20a of section 10a, and that the tabs 32a, 33a and 34a engage the upper edge of flat surface 21 of bottom 20 of section 10 so that the two sections may move relative to one another only about the axis 35 along the lower edges of the six tabs. Accordingly, the only motion permissible between the two sections, when assembled, is a hinging action.

Reference is now made to Fig. 3 which is a perspective view of the novel hinge lock which forms an important part of my invention, and to Fig. 4 which is a vertical cross sectional view taken through the indentations 28 and 30a, with the sections 10 and 10a in the closed position. A similar view through the indentations 30 and 28a, with the case closed, is shown in Fig. 5.

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In Figs. 3 and 4 it will be seen that the hinge lock is designated generally by 36 and comprises a bridge member 38 having formed integrally therewith two inwardly sloping depending walls 40 and 42, angularly formed with member 38 and extending towards one another. Integrally formed with member 40 and extending outwardly from the bottom thereof is the generally horizontal member 44. The bend between members 40 and 44 forms the elbow 39. Member 48 bears the same relation to member 42 as does member 44 to member 40, and the bend between members 42 and 48 forms the elbow 47. In Fig. 3 it will be seen that the inherent resilience of the lock hinge 36 compresses the elbows 39 and 47 toward one another, and that these elbows will engage in the absence of any elements inserted therebetween.

The entire hinge lock shown in Fig. 3 is preferably integral, as shown, and is preferably formed of light, resilient metal stock.

In Fig. 4 it will be seen that when the case sections 10 and 10a are closed together the indentations 28 and 30a incline upwardly and inwardly to form two converging surfaces, and the inherent resiliency of the lock hinge members 40 and 42 which always presses the elbows 39 and 47 inwardly is sufficient to cause the elbows 39 and 47 to slide upwardly along the indentations 28 and 30a until they engage the lips 29 and 29a of the indentations, at which position they will stop.

It should be particularly noted that in the closed position the elbows 39 and 47 press the indentations 28 and 28a inwardly at a point above the hinge axis 35, and therefore that the hinge lock 36 will keep the sections closed until later manually opened. In the closed position the walls 22 and 22a abut one another.

Fig. 5 is a vertical cross sectional view through the indentations 28 and 30a when the case sections are opened, and it will be appreciated that a similar view through the indentations 30 and 28a, under corresponding circumstances, would appear the same. When the case sections are opened the indentations 30 and 28a incline downwardly and inwardly, and the inherent resiliency of the lock hinge 36 causes the elbows 39 and 47 to slide downwardly, the elbows 39 and 47 applying opposite forces against the lower inside edges of the indentations, keeping the walls 21 and 21a flush against one another. It should be particularly noted that the pressures exerted by the elbows 39 and 47 when the sections are opened are applied below the axis 35, and so the lock hinge 36 keeps the sections opened until they are later manually closed.

It will be appreciated that the indentations 30 and 28a function with respect to the lock hinge in the same manner as the indentations 28 and 30a. It should be noted the hinging action always occurs about the axis 35, and that at all times the hinge lock 36 forces the two sections 10 and 10a so that they engage along axis 35.

When it is desired to use my improved construction in connection with a cigaret case, a pair of cigaret holders like the one designated generally by 52 in Fig. 6 may be used. This holder may comprise a base 54 and two rows of upwardly extending members 56 and 58, integral with the case 54, separated as shown, the interior sides of the members 56 and 58 having concave portion 56a and 58a so that each pair of oppositely disposed concave portions may receive and hold a cigaret. This particular type of holder can be easily and cheaply made by stamping. However, other types of holders may be used, if desired.

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Referring now to Fig. 5, it will be seen that the base 54 of the holder 52 extends parallel to side wall 14 and may be affixed upon the bridge 38 of the lock hinge 36 by rivets 60 (only one shown).

A second holder 52a, having a base 54a and fingers 56a and 58a like holder 52, may be affixed upon the right side of bridge 38 by rivets 60a (only one shown).

It will be appreciated that the row of cigarets held by holder 52 is, when the sections are closed, contained within section 10, while those held by holder 52a are contained within section 10a.

Referring to Fig. 5, it will be seen that when the case is opened, the bridge member 38, being more resilient along its center because it is not there reinforced by the bases 54 and 54a, will bend slightly and that the fingers 56 and 58 of the two holders 52 will form a "V," as will the cigarets held thereby. The side walls 14 and 14a move away from the fingers so that the cigarets held thereby may be easily grasped and removed from the case.

In the event it is desired, as may be the instance when my invention is used in conjunction with other types of cases than cigaret cases, the bridge member 38 may be made sufficiently strong to keep it from bending when the case is opened. The cigaret holder moves upwardly upon opening the case sections, thereby rendering the cigarets readily accessible, and moves downwardly when the case sections are closed.

In the assembly of the case sections and lock hinge, the case sections are first placed in proper relative position with the tabs interlocking the sections, and the sections are opened. The lock hinge is then angularly inclined at about 45 degrees to the walls 22 and 22a, parallel to them, and the lower end of the lock hinge is pressed downwardly so that the lower end of elbow 39 is inside wall 22 and the lower end of elbow 47 is inside wall 22a, at points near the slots 24 and 25a. The lock hinge is then slid toward the indentations 28 and 30a so the lower ends of the elbows are below these indentations. The outer end of the lock hinge is pressed downwardly, and by means of any suitable separating tool, the outer ends of the elbows 39 and 47 may be separated and then pushed downwardly so that the elbows engage the inner surfaces of indentations 30 and 28a.

In view of the above it will be appreciated that my invention comprises a novel and highly useful hinge arrangement which may be easily and cheaply made, adaptable for use with a casing comprising identical main sections which also may be easily and cheaply fabricated. The lock hinge may be easily placed in operative position with respect to the casing sections, and when the lock hinge and case sections are assembled the lock hinge keeps the case closed or open, as the case may be, and holds the case sections in proper position for the hinging action during opening and closing of the case.

It will be apparent to those skilled in the art that many changes may be made in the disclosed embodiment of my invention without departing from the substance thereof. Also, it is clear that my invention is not restricted for use in connection with cigaret cases. All such changes in construction and use in connection with other types of cases are intended to be covered by the following claims.

I claim:

1. In a case construction of the type described, the combination of a pair of opposed vertically

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disposed case sections, means interlocking the two case sections to locate a horizontal hinge axis, means comprising a part of each section located on opposite sides of said axis and forming surfaces extending from below said axis to above said axis, when said case is oriented in a preselected position, so that when the case sections are closed said surfaces incline inwardly and upwardly and when said case sections are open said surfaces incline downwardly and inwardly, and a resilient hinge member having surfaces arranged to bear against the said surfaces of said case sections to slide along the same in response to relative movements of said sections.

2. In a case construction of the type described, the combination of a pair of opposed vertically disposed case sections, means interlocking the two case sections to locate a horizontal hinge axis, means comprising a part of each section located on opposite sides of said axis and forming surfaces extending from below said axis to above said axis, when said case is oriented in a preselected position, so that when the case sections are closed said surfaces converge toward a second axis above said first axis and when said case sections are open said surfaces converge toward a third axis below said first axis, and a resilient hinge member having separate parts arranged to bear against the mentioned surfaces of said case sections in opposite directions and toward a plane through said three described axes.

3. In a case construction of the type described, the combination of a pair of opposed vertically disposed case sections, means interlocking the case sections to form a horizontal hinge axis, each of said sections comprising an upper and a lower angularly disposed surface joining along

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the hinge axis, means comprising a part of each of said sections displaced from its associated angularly disposed surfaces and forming a bearing surface extending from below said axis to above said axis, when said case is oriented in a preselected position, so that when the sections are closed said surfaces incline inwardly and upwardly and when said sections are open said surfaces incline downwardly and inwardly, and resilient compression means having a part arranged to bear against and slide along each of said bearing surfaces from one side of said axis to the other side of said axis when the case sections are moved, whereby the upper angularly disposed surfaces are pressed together by said compression means when the case sections are closed and the lower angularly disposed surfaces are pressed together by said compression means when the case sections are opened.

4. The structure set forth in claim 1 in which the bearing surfaces of the resilient hinge member are connected by a bridge member carrying a holder for a plurality of cigarets.

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