

Feb. 13, 1962

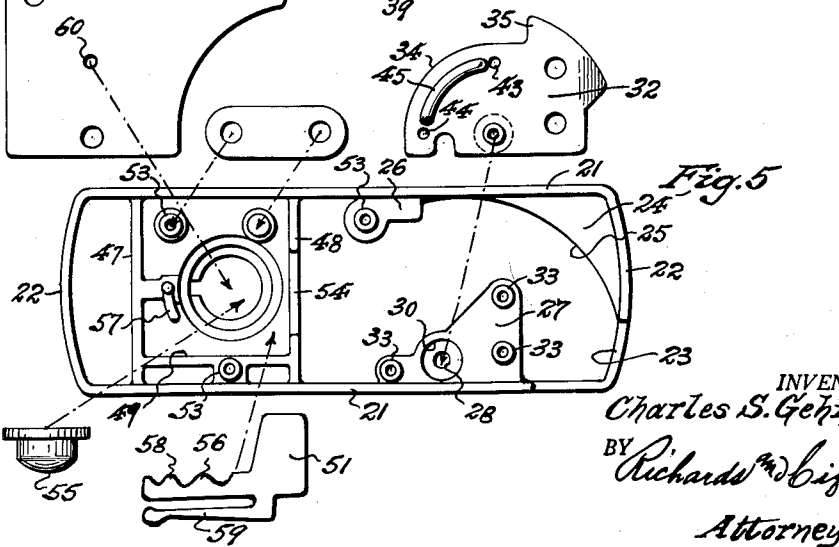
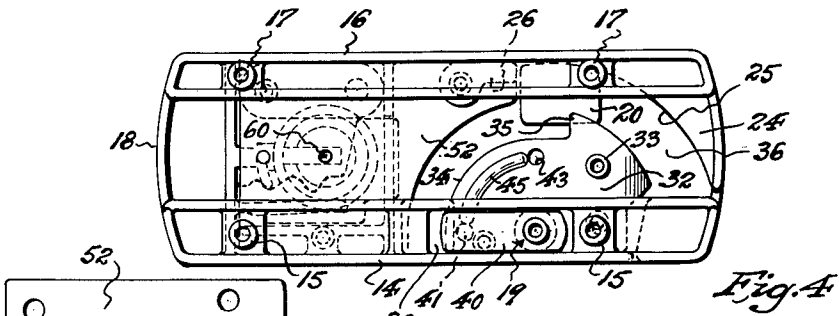
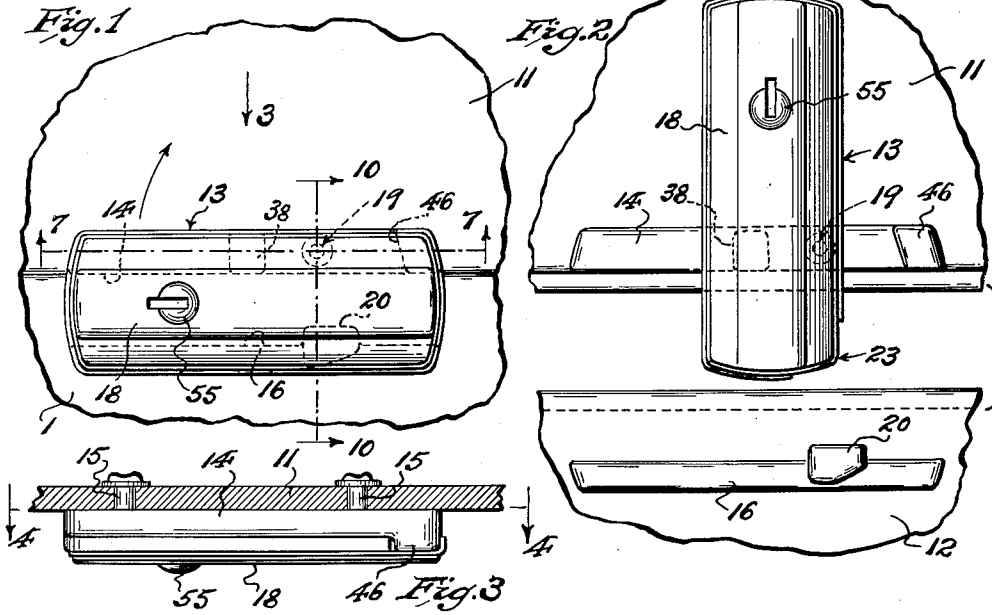
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3,020,742

LATCH AND LOCK DEVICE FOR CONTAINERS

Filed March 7, 1960

2 Sheets-Sheet 1



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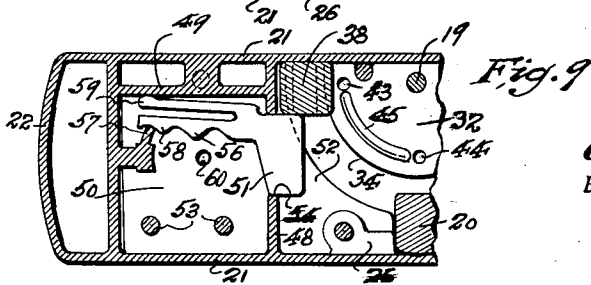
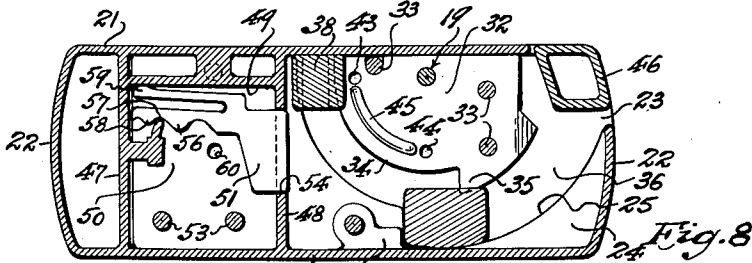
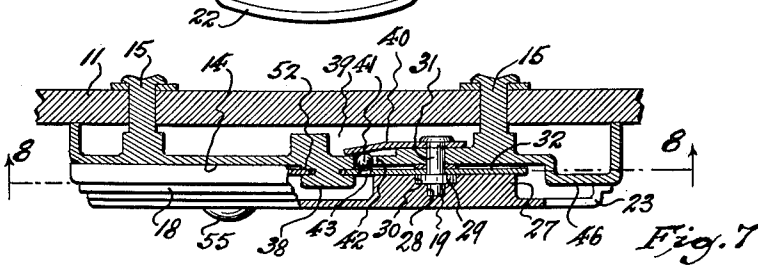
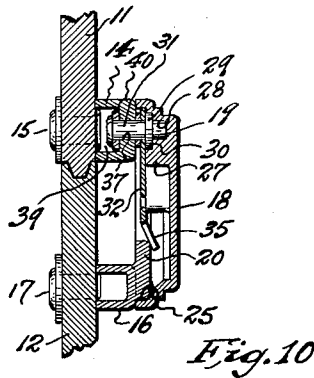
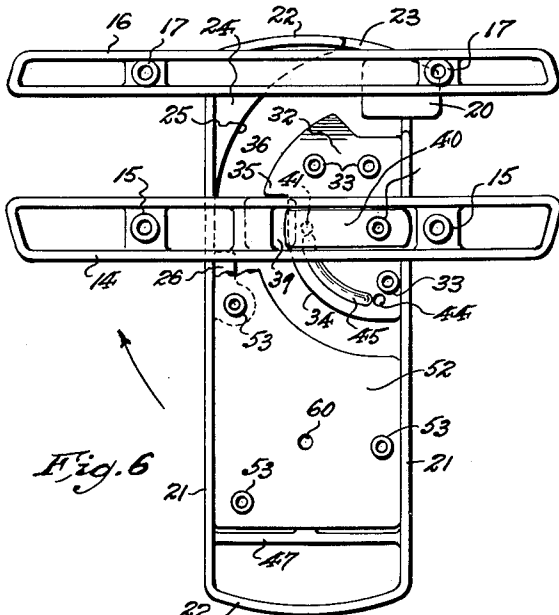
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LATCH AND LOCK DEVICE FOR CONTAINERS

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2 Sheets-Sheet 2



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3,020,742

**LATCH AND LOCK DEVICE FOR CONTAINERS**  
Charles S. Gehrie, Montclair, N.J., assignor to Presto  
Lock Co., Garfield, N.J., a limited partnership  
Filed Mar. 7, 1960, Ser. No. 13,243  
4 Claims. (Cl. 70-69)

This invention relates to releasable latch and lock devices for luggage and like containers of the kind having a cover section hinged to a body section for closing the latter; the present invention having reference more particularly to improvements in a latch or lock device of the kind disclosed in my co-pending application for United States patent, Ser. No. 792,526, filed February 11, 1959. As disclosed in said prior application, the latch and lock device comprises a pivot bar adapted to be affixed to one of the separable parts of a container, adjacent to an edge thereof, a latching bar adapted to be affixed to the other of the separable parts of said container in spaced parallel relation to the pivot bar, and a body member pivotally connected with the pivot bar in a scissor like manner, in a plane parallel to the face plane of said pivot and latching bars; said body member and latching bar having cooperative latching means operative to hold the separable members of the container in closed together relation, when the body member is disposed in longitudinally aligned relation to and over the pivot and latching bars, but being released from such holding relation when the body member is turned on the pivot bar to extend transverse to the lengths of said pivot and latching bars.

The present invention has for an object to simplify the structural make-up of a latch and lock device of the kind above referred to.

A further object of the present invention is to provide improved detent means operative to yieldably hold the body member in its respective latching and released positions.

Another object of the present invention is to provide simplified key actuatable means for locking the body member against releasing manipulation.

Other objects of this invention, not at this time more particularly enumerated, will be understood from a reading of the following description of the improved latch and lock device in connection with the accompanying drawings, which illustrate a preferred embodiment thereof, in which drawings:

FIG. 1 is a plan view of the latch and lock device of the present invention as operatively mounted on and for securing separable parts of a container closed together, the device being shown in latching position.

FIG. 2 is a plan view similar to that of FIG. 1, but showing the latch and lock device released and the separable parts of the container separated.

FIG. 3 is a side elevational view of the latch and lock device viewed in the direction of the arrow 3 in FIG. 1.

FIG. 4 is a bottom plan view of the latch and lock device in latching condition, taken on line 4-4 in FIG. 3.

FIG. 5 is an exploded bottom plan view of the parts comprising the body member of the latch and lock device.

FIG. 6 is a bottom plan view of the latch and lock device, similar to that of FIG. 4, but showing the same in released condition.

FIG. 7 is a longitudinal sectional view, taken on line 7-7 in FIG. 1.

FIG. 8 is a sectional view in horizontal plane, taken on line 8-8 in FIG. 7, showing a key actuatable lock bolt released; and FIG. 9 is a fragmentary view, similar to that of FIG. 8, but showing the lock bolt actuated to lock the body member against releasing manipulation.

FIG. 10 is a cross-sectional view, taken on line 10-10 in FIG. 1.

Referring to the drawings, in which like characters of

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reference indicate corresponding parts, a container, which can be a luggage case, comprises a body section 11 and a cover section 12 to close the former, a latch and lock device 13 being provided for releasably holding said sections closed together.

The latch and lock device comprises a pivot bar 14 having rearwardly projecting rivet studs 15, or other suitable fastening means, by which it can be affixed to one of the separable parts of the container, e.g. to the body section 11 adjacent and parallel to a free edge thereof; a latching bar 16 having rearwardly projecting rivet studs 17, or other suitable fastening means, by which it can be affixed to the other separable part of the container, e.g. to the cover section 12 in parallel relation to a free edge thereof, and so as to be spaced from and parallel to the aforesaid pivot bar; and a body member 18 which is pivotally connected by a pivot element 19 to the pivot bar 14, so as to turn in a scissor-like manner upon and relative to the pivot and latching bars. The latching bar 16 is provided intermediate its ends with a suitably located external upstanding latch lug 20.

The body member 18 is preferably of oblongate rectangular form, and of hollow construction open at its bottom face, thus having side walls 21 and end walls 22. At one end of the body member, the juncture of a side wall 21 and an end wall 22 is cut away to provide a latch lug entranceway 23 leading into the interior of said body member. Formed within the interior of the body member to be unitary therewith, and preferably as an integral part thereof, is a latch boss 24, the free marginal edge of which provides a latching shoulder 25 of arcuate form. This latching shoulder 25 extends inwardly from the end wall side of said entranceway 23, and eccentric to the pivotal connection of the body member with the pivot bar 14, so as to be opposed to the pivoted side of said body member. Said latching shoulder is terminated at its inner end by a stop boss 26 disposed within and unitary with said body member. Being eccentric to the pivotal connection of the body member with the pivot bar, said latching shoulder 25, when operatively engaging the latch lug 20 of the latching bar 16, exercises a camming effect upon the latch lug, whereby to draw the container sections tightly together, when the body member is turned to its latching position shown in FIG. 1.

The body member 18 is provided with a bearing boss 27 which is positioned within said body member opposite the inner terminal end of the latching shoulder 25. This bearing boss is provided with a seating socket 28 to receive the pivoting end of the pivot element 19, the latter having a diametrically enlarged flange 29 to seat in an enlargement 30 of said seating socket 28, so that said flange is flush with the surface of the bearing boss 27, with the anchoring portion 31 of the pivot element 19 projecting therefrom (see FIG. 10). Seated upon the bearing boss 27 is a combined keeper and detent inlay plate 32. The bearing boss 27 is provided with a plurality of projecting rivet studs 33, which extend through the inlay plate 32, so as to be riveted over the same, thus to fixedly secure the inlay plate in supported overlying attached relation to said bearing boss 27, and over the flange 29 of the pivot element, thereby rotatably mounting the body member on the pivot element 19. The free edge 34 of the inlay plate 32 is concentric to the pivot element 19, and is opposed in spaced away relation to the latching shoulder 25 of the body member. Projecting radially from the free edge 34 of the inlay plate 32 is a stop shoulder or tongue 35, which overhangs the inned end portion of the latch lug passageway 36 that borders the latching shoulder 25. The anchoring portion 31 of the pivot element 19 is disposed in an opening 37 with which the face wall of the pivot bar 14 is provided, and is suitably affixed to said pivot bar. Thus

the body member 18 is pivotally connected with the pivot bar 14 for turning movement relative thereto.

The pivot bar 14 is provided with an external lock bolt engageable abutment element 38, which projects into the interior of the body member 18 at the inner end of the inlay plate 32. Preferably said abutment element 38 is provided, in the side thereof toward the inlay plate, with a groove which receives and embraces the marginal edge of the inlay plate, thereby, in addition to the pivotal connection 19 preventing outward displacement of the body member 18 relative to the pivot bar 14. This abutment element 38 cooperates with the stop shoulder or tongue 35 to limit the turning movement of the body member to its releasing position, as well as to cooperate with the body member locking means hereinafter described.

In the use and operation of the latch device as thus far described, the body member 18 can be turned clockwise from its latching position, as shown in FIG. 1, to a released position transverse to the lengths of the pivot and latching bars, as shown in FIG. 2, whereby, in the latter position, the latch lug 20 of latching bar 16 will be disposed at and in alignment within the entranceway 23 of the body member passageway 36 (see FIG. 6). When the body member 18 is thus disposed in such released position, the cover section 12 can be opened out from the body section 11 of the container, thus withdrawing the latch lug 20 out of and away from the body member 18 (see FIG. 2).

To close and latch the container sections the cover section 12 is closed upon the body section 11 whereupon the latch lug 20 of latching bar 16 is entered in the entranceway 23 adjacent the outer end of the latching shoulder 25 of the body member 18. This having been done the body member is turned about its pivotal connection with the pivot bar 14 in counter-clockwise direction. This turning movement of the body member engages the latch lug 20 by the latching shoulder 25 so that the former rides along the latter until stopped by abutment against the stop boss 26, thus opposing the inner end of the latching shoulder 25 to the latch lug 20, so as to prevent outward movement of the closed cover section 12 relative to the body section 11 of the container (see FIGS. 8 and 10), while at the same time positioning the body member in parallel and overlying covering relation to the pivot and latching bars 14 and 16. In thus turning the body member 18 to such latching position, the eccentricity of the latching shoulder 25 exerts pressure upon the latch lug 20, whereby to draw and hold the cover section 12 in tightly closed relation to the container body section 11.

The pivot bar 14 and body member are provided with novel cooperative detent means operative to yieldably retain the body member in its respective latching and released positions. To this end, the pivot bar 14 is provided with an internal chamber 39 opening out from the bottom thereof. Seated on the underside of the top wall of the pivot bar, within the chamber 39, is a leaf spring 40, through the seated end portion of which extends the anchoring end portion 31 of the pivot element 19, said end portion 31 being riveted over the leaf spring 40, thus not only affixing the latter to the pivot bar 14, but also further serving to retain the body member 18 in operative non-separable assembled relation to the pivot bar 14. The free end of the leaf spring 40 thrusts against a check piece or ball 41, which projects outwardly through an opening 42 with which the top wall of the pivot bar 14 is provided, whereby said check piece or ball 41 is opposed to marginal portions of the inlay plate 32 carried by the body member 18. Said inlay plate is provided with suitably disposed and spaced apart detent openings 43 and 44, that are adapted to be engaged by the check piece or ball 41, whereby to detain the body member 18 in its respective latching and released posi-

tions. If desired, the inlay plate 32 may also be provided with an arcuate raised detent rib 45 the respective ends of which can be abutted by the detent piece or ball 41 to determine the respective latching and released positions of the body member 18. The detent openings 43 and 44 may alone be provided, or the detent rib 45 may alone be provided, or both may be used to supplement each other in detaining effect.

The pivot bar 14 is provided at one end thereof with an outwardly projecting gate boss 46 which is formed to enter and close the entranceway 23 of the latch lug receiving passageway 36, when the body member 18 is disposed in normal latching position.

In most cases it is desirable to provide the latch device with key actuatable means operative to lock the body member 18 against unauthorized releasing manipulation, when in container closing and latching condition. To this end, the interior of the body member 18, at the end portion thereof which is opposite to its latch lug receiving portion, is subdivided by transverse partitions 47 and 48 and a longitudinal partition 49, whereby to provide a lock bolt seating chamber 50. A lock bolt 51 is slidably supported within said chamber 50 and is retained against outward displacement therefrom by a cover inlay plate 52, which is secured in place by a plurality of rivet studs 53, or other suitable fastening means, with which the interior of the body member 18 is provided. The partition 48 is provided with an opening 54, through which the operative end of the bolt 51 can be projected to engage the abutment element 38 of the pivot bar 14, when the body member 18 is disposed in its latching position, thus obstructing manually affected turning movement of said body member to its released position. To effect shifting of the bolt 51 from withdrawn to operative advanced locking position, and vice versa, the top wall of the body member 18 is provided with a rotatable key barrel 55, through which a suitable key (not shown) can be entered for operative engagement with the lock bolt 51. For cooperation with the inserted key, the lock bolt is provided with a forward key engageable projection or shoulder 56 to receive the thrust of a turned key. To yieldably retain the lock bolt 51 in either withdrawn nonlocking or advanced locking position, the body member 18 is provided in connection with partition 47, with a stop nosing 57 that is engageable by a rearward projection or shoulder 58 with which the lock bolt is provided. In order to urge the lock bolt 51 toward the stop nosing 57, the bolt is provided with a spring arm 59. This spring arm 59 bears against the longitudinal partition 49 (see FIGS. 8 and 9). An opening 60 is provided in the cover inlay plate 52 to facilitate accurate disposition of an inserted key, ready to engage and advance or retract the lock bolt 51, as the case may be.

Although provision of the locking means is usually desirable, it will be understood that the same may be omitted in any embodiment of this invention which is desired to merely provide latching effect.

Having now described my present invention, I claim:

1. A latching device for releasably retaining separable parts of a container or the like closed together comprising a hollow longitudinal pivot bar adapted to be affixed to a marginal edge portion of one of said parts parallel thereto, a pivot element carried by said pivot bar, a hollow substantially rectangular body member having the marginal portion of one of its long sides superposed upon the pivot bar and having an internal bearing boss to journal said pivot element, whereby to rotatably support said body member for scissor-like movement relative to said pivot bar, the journaled end portion of the pivot element having an enlargement countersunk in the bearing boss, an inlay plate seated on and affixed to the bearing boss and over said enlargement of the pivot element and concentric to the latter, whereby to retain said body member against separation from the pivot bar, a longitudinal latching bar adapted to be affixed to a mar-

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ginal edge portion of the other of said separable parts in spaced away parallel relation to the pivot bar, whereby the marginal portion of the other long side of the body member will overlie said latching bar when the container parts are closed together, a latch lug carried by the latching bar, said body member having an internal latch boss providing a latching shoulder opposed to the pivotal connection of the body member to the pivot bar and defining a passageway between said latch boss and inlay plate adapted to receive said latch lug for engagement by said latching shoulder, a stop boss at the inner end of the latching shoulder and engageable by the latch lug of the latching bar to limit turning movement of the body member to its latching position, an end of the body member having a latch lug entranceway to said passageway, detent means comprising a check piece radially offset from the pivot element and projecting exteriorly from the pivot bar toward the body member, a leaf spring supported within the pivot bar to exert thrust against said check piece, and said inlay plate in the body member having detent means cooperative with said check piece, whereby to yieldably retain said body member in its respective latching or released positions.

2. A latching device according to claim 1, including a key actuatable means to lock the body member against releasing manipulation.

3. A latching device according to claim 1, including a key actuatable means to lock the body member against releasing manipulation comprising a chamber in the body member at an end portion thereof opposite its latching means, a key actuatable lock bolt slidable in said cham-

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ber, said body member having a rotatable key barrel to receive a lock bolt actuating key, said lock bolt and body member having cooperative means to yieldably retain the lock bolt in respective retracted or operative advanced position, and said pivot bar having a lock bolt engageable abutment element to project into the body member interior to receive locking engagement of the key advanced lock bolt, when the body member is disposed in its latching position.

4. A latching device according to claim 1, wherein the pivot bar is provided with an abutment element to project into the body member interior adjacent to the inlay plate, and said inlay plate being provided with a stop tongue radially projecting from its periphery and adapted to engage said abutment element, whereby to limit turning movement of the body member to its released position.

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UNITED STATES PATENT OFFICE  
CERTIFICATE OF CORRECTION

Patent No. 3,020,742

February 13, 1962

Charles S. Gehrie

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 1, line 21, after "bar" insert -- to turn thereon,  
--.

Signed and sealed this 12th day of June 1962.

(SEAL)  
Attest:

ERNEST W. SWIDER  
Attesting Officer

DAVID L. LADD  
Commissioner of Patents