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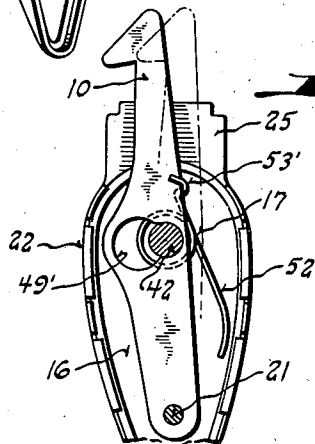
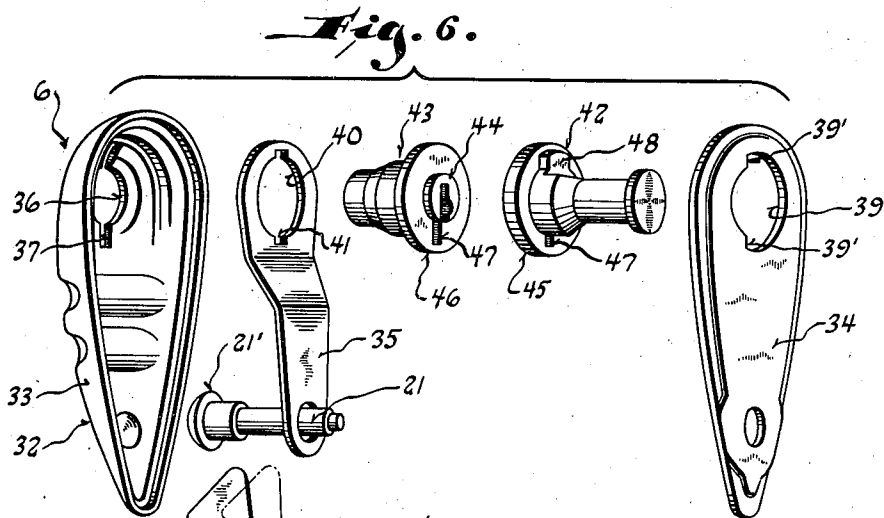
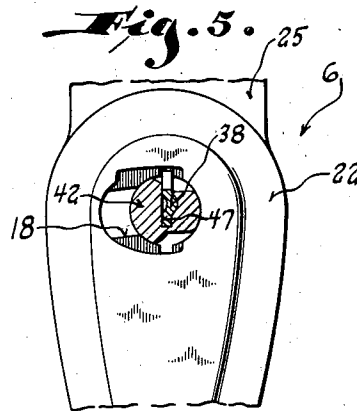
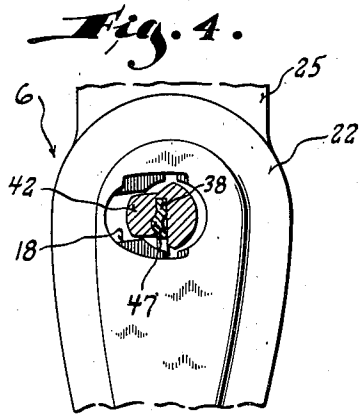
E. N. JACOBI

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LATCH

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Inventor
Edward N. Jacobi
By Edw. N. Jacobi
Attorney

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LATCH

Edward N. Jacobi, Milwaukee, Wis., assignor to
Briggs & Stratton Corporation, Milwaukee,
Wis., a corporation of Delaware

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14 Claims. (Cl. 70—71)

This invention relates to latches and refers particularly to a locking type of latch designed particularly for use on luggage and especially hand luggage.

One of the prerequisites of latches of this type is that they be compact, and to this end it is an object of the present invention to provide a latch wherein the locking bolt occupies a position within the wall thickness of the meeting walls of the luggage case on which the latch is mounted.

Another object of this invention is to provide a locking type of latch suitable for hand luggage which is so constructed that substantially no portion thereof projects into the interior of the luggage case with which it is used.

A further object of this invention is to provide a latch of the character described which, besides having no portion thereof projecting into the interior of the luggage case or other receptacle, likewise does not project greatly from the exterior but has a rather flat compact formation.

Another object of this invention is to provide an exceedingly simple manner of securing the latch to its supporting wall which obviates the need for separate rivets and instead utilizes integral ears extended from a finishing sheath which covers the exterior of the escutcheon base of the latch.

Another object of this invention is to provide an effective and simple manner of actuating the bolt and wherein the connector between the handle or actuating member and the bolt is utilized to secure the latch in its locking position by being key operated to a predetermined position of rotation.

With the above and other objects in view which will appear as the description proceeds, this invention resides in the novel construction, combination and arrangement of parts substantially as hereinafter described, and more particularly defined by the appended claims, it being understood that such changes in the precise embodiment of the hereindisclosed invention may be made as come within the scope of the claims.

The accompanying drawings illustrate two complete examples of the physical embodiment of the invention constructed in accordance with the best modes so far devised for the practical application of the principles thereof, and in which:

Figure 1 is a front plan view of a portion of a hand luggage case illustrating the application of this invention thereto;

Figure 2 is a longitudinal sectional view through Figure 1 on the plane of the line 2—2;

Figure 3 is a perspective view of the latch per se showing the back portion thereof with its back plate removed;

Figure 4 is a detail view in cross section taken on the plane of the line 4—4 in Figure 2 and showing the position of the parts in the unlocked condition of the latch;

Figure 5 is a view similar to Figure 4 but illustrating the parts in the locked condition of the latch;

Figure 6 is a perspective view of the handle or actuator and the key controlled connector by which driving force is imparted to the bolt; and

Figure 7 is a back view of the latch illustrating a slightly modified form of construction.

Referring now particularly to the accompanying drawings in which like numerals indicate like parts, the numeral 5 designates the front wall of the main section of a hand luggage case upon which the latch of this invention, indicated generally by the numeral 6, is mounted to secure the lid or cover 7 of the case closed.

The front wall of the lid 7 meets the front wall 5 of the main section in abutting relationship and as more clearly illustrated in the copending application of George H. Wheary, Jr., Serial No. 329,690, filed April 15, 1940, the meeting edges of the main section and cover are bound with interfitting metal moldings 8 and 9.

The molding 8 which is carried by the main section, forms a groove for the reception of the cover carried molding 9. In this manner the meeting walls are guided into and held in proper planar alignment.

The latch 6 has a bolt 10, which is substantially in the form of a hook, mounted in a notch 11 in the wall 5 with its hooked outer end portion projecting through a hole 12 in the molding 8 to project through a hole 13 in the U-shaped binding molding 9 and into a notch 14 in the cover wall 7. A keeper 15 conveniently formed by one edge of the hole 13 is engageable by the hook of the bolt as it moves to operative position.

The bolt 10 is pivotally mounted at its inner end on the inner face of an escutcheon base 16 and is yieldingly urged to its locked or operative position by a spring 17. Hence, when the latch is in its unlocked condition the bolt snaps to operative position upon closure of the case.

The escutcheon base 16 preferably is formed from stiff sheet metal and for the sake of appearance has a teardrop or streamlined shape in elevation and is dished or hollow to accommo-

date the spring 17. At its large end, the escutcheon base has an irregularly shaped hole 18 there-through, and at its opposite small end it is indented to provide a wall 19 in the plane of the back edge of the escutcheon base.

This wall 19 has a bore 20 which provides a bearing for a pin 21 which pivotally mounts the bolt. This location of the wall 19 provides a support for the pivot directly adjacent to the bolt as the bolt engages the inner face of the wall.

The exterior of the escutcheon base is covered by a sheath 22 of plated and polished sheet metal which is shaped to conform to the configuration of the base except at its indented portion where it is pressed in slightly as at 23 and extruded to provide a bearing 24 for the pivot pin. At the large end of the escutcheon base its metal sheath 22 has a lip 25 extended therefrom which projects up under the molding 8 and closes the notch 11 in the space intervening between the escutcheon base and the adjacent edge of the molding 8.

On the inside of the case a cover plate 26 closes the notch 11 and covers the entire latch mechanism. A lip 27 similar to the lip 25 extends from the cover plate to project under the molding 8.

Assembly of the cover plate 26 to the rest of the latch structure, as well as the attachment of the latch to its supporting wall, is effected by tangs extended from the edge of the ornamental sheath 22. There are alternate tangs 28 and 29, respectively, engaged over the edge of the escutcheon base and projecting therefrom to pass through holes (not shown) in the supporting wall and through holes 30 in the cover plate 26 where they are struck in to secure the parts together.

The cover plate has its medial portion bulged outwardly slightly as at 31 to protect the in-struck ends of the tangs 29 from contact with the contents of the case.

Pivotally mounted on the exterior of the escutcheon base is a handle or actuating lever 32. With a view towards compactness, the handle or actuating lever is pivotally mounted by the same pivot 21 which mounts the bolt. It is to be understood, however, that a separate pivot may be provided for the handle.

In keeping with the streamlined motif of the design employed in the latch, the lever 32 has a teardrop shape in elevation and is bulged or hollowed to provide maximum depth at its large end. It consists of a main stamping 33 and a back plate 34 suitably secured together along their marginal edges. The edge of the main stamping 33 preferably is rabbeted to receive the edge of the back plate which lies flush against the same where it is secured by brazing, clinching, or the like.

Before the main stamping and the back plate are secured together, the pivot pin 21 is anchored to the back plate so that upon completion of the handle assembly, the pin will be rigidly held against rocking, and as the escutcheon base bearings 20 and 24 in which the pin is journaled are relatively widely spaced, motion of the handle will be constrained to a single plane.

Inside the interior of the handle or lever is an arm 35 offset to have a portion thereof lie flat against the inner face of the back plate while its opposite end portion is spaced therefrom. The first designated portion of this offset arm has a hole through which the pivot pin 21 passes.

Thus in securing the pivot pin to the back plate, the pin is first passed through the holes

in the offset arm and the back plate to bring the head 21' of the pin against the arm and then the pin is staked or riveted over the edge of the hole in the back plate as at 34'.

At the large end of the handle or actuator its main stamping 33 has a round hole 36, the edge of which is notched as at 37 at diametrically opposite points to accommodate the insertion of a key 38, and the back plate 34 has an aligned two diameter opening 39 providing stop abutments 39'. The adjacent portion of the arm 35 has a round hole 40, which is also notched as at 41 in alignment with the notches 37.

Assembled between the arm 35 and the back plate 34 are the complementary inner and outer sections or parts 42 and 43 of a connector by which the handle or lever is drivingly connected to the bolt. A projection 44 on the outer part 43 entering a socket 44' in the adjacent portion of the inner element 42 secures the two parts against lateral displacement while permitting relative rotation therebetween.

Endwise separation of the connector parts is prevented by virtue of the fact that a flange 45 on the inner connector bears against the inner face of the back plate, while a flange 46 on the outer connector part bears against the adjacent surface of the arm 35.

The extreme outer end of the outer portion projects through the hole 36 and inasmuch as both connector parts are provided with key ways 47, insertion of the key 38 is possible only when the outer portion is in its position at which its keyway aligns with the notches 37.

Upon insertion of the key the two parts of the connector may be turned from an unlocked position shown in Figure 4 to a locked position shown in Figure 5. These positions are defined by the engagement of the opposite sides of a radial projection 48 on the inner connector part with the abutments 39'.

In the unlocked position of rotation, as best shown in Figure 4, the inner connector part is so disposed with relation to the edge of the irregularly shaped hole 18 in the escutcheon base that swinging movement of the handle or actuator, and consequently the connector, is possible. Such swinging movement is imparted to the bolt to move the same to its disengaging position, shown in dotted lines in Figure 1, in view of the interconnection between the inner part of the connector and the bolt.

In the locked position of the parts such swinging movement is prevented as the full diameter of the inner connector part is then in position to engage the adjacent edge of the hole 18.

As will be readily apparent, the construction here employed enables complete assembly of the handle or lever unit independently of the escutcheon base and then, by the simple expedient of securing the bolt to the connector and its pivot stem, the entire latch unit is assembled.

To facilitate this latter assembly operation, the bolt has a keyhole shaped opening 49 to receive the headed end of the inner part of the connector. After its assembly thereon and its disposition over the end of the pivot pin, a washer 50 having an ear 51 is placed in position. The ear 51 engages under the back edge of the bolt as clearly shown in Figure 2, and the washer is secured in position by swedging over the extreme end of the pin 21.

The spring 17, which yieldingly urges the latch bolt to its operative position is coiled about the inner part of the connector and has one long

arm 52 bearing against the side wall of the escutcheon base and its other end 53 hooked over the edge of the bolt. It is, of course, to be understood that the spring is assembled on the connector part before the bolt is secured in place.

The latch thus far described is of the dead bolt type, that is, in the locked position of the parts the bolt is not free. It is, of course, possible to apply the advantages and features of this invention to the so-called spring bolt type of lock as shown in Figure 7.

In this case it is only necessary to provide sidewise clearance between the hole 49' and the inner end of the driving connector part 42. For this purpose, the axis of the keyhole shaped opening 49' may be arranged transversely of the bolt.

The same spring construction may be employed to oppose manual manipulation of the handle or actuator and to provide the spring tension for the bolt by merely extending the end 53' of the spring and hooking it over the back edge of the bolt.

In all other respects the construction shown in Figure 7 is the same as hereinbefore described.

From the foregoing description taken in connection with the accompanying drawings it will be readily apparent that this invention provides a locking latch for hand luggage cases which has numerous advantages over such latches heretofore in use, that it obviates the objectionable projection of any portion of the latch into the interior of the case, and because of its novel construction achieves compactness and an exceedingly simple and efficient manner of securing the latch to its supporting wall.

What I claim as my invention is:

1. In combination with two abutting walls of a luggage case: a mounted plate fixed on the exterior of one of said walls; a hook bolt; means pivotally mounting the hook bolt behind the mounting plate with the bolt movable in a plane parallel with the walls and with its hooked end projecting from the edge of said wall; a keeper on the other wall engageable by the hooked end of the bolt; a handle part pivotally mounted on the exterior of said mounting plate; and means connecting said handle part with the hook bolt at a distance from their pivots so that pivotal movement may be imparted to the bolt from said handle part.

2. In combination with two abutting walls of a luggage case having meeting recesses: a bolt keeper in the recess of one wall; a hook bolt in the recess of the other wall; an escutcheon base covering the exterior of the last designated recess; means pivotally mounting the hook bolt on said escutcheon base in a manner constraining the hook bolt to movement in the plane of the wall on which it is mounted and for movement to and from operative engagement with the keeper; and a handle part movably mounted on the exterior of the escutcheon base and connected with the bolt for actuating the same.

3. In a latch of the character described: a supporting wall having an opening therein; a latch device disposed in said opening; an escutcheon base overlying the front of said supporting wall in a position covering the front of the opening; a cover plate overlying the back of said supporting wall in a position covering the back of the opening and cooperating with the escutcheon base to house the latch device; a metal finishing sheath fitted over the escutcheon base; and tangs extended from said finishing sheath passing

through the supporting wall and struck over the cover plate to hold said parts assembled on the supporting wall with the supporting wall securely clamped between the escutcheon base and the cover plate.

4. In a latch of the character described: a supporting wall having an opening therein; a latch device disposed in said opening; an escutcheon base overlying the front of said supporting wall in a position covering the front of the opening; a cover plate overlying the back of said supporting wall in a position covering the back of the opening and cooperating with the escutcheon base to house the latch device; a metal finishing sheath fitted over the escutcheon base; and a plurality of tangs projecting from the finishing sheath, certain of said tangs being bent over the edge of the escutcheon base to secure the finishing sheath thereto and others passing through the supporting wall and being struck over the cover plate to secure the escutcheon base and the cover plate in clamping relationship to the supporting wall.

5. In combination with a supporting wall having an opening therein: an external finishing sheath covering the front of the supporting wall at said opening; a cover plate overlying the supporting wall at the rear thereof so as to be spaced from the external finishing sheath and so as to cover the back of the opening; a latch device in the space between the cover plate and finishing sheath and tangs extending from the edge of the finishing sheath passing through the supporting wall and struck over the cover plate to maintain the sheath and cover plate assembled with the supporting wall clamped therebetween.

6. In a latch device of the character described: an escutcheon base having substantially a keyhole shaped opening therethrough; a hook bolt; means pivotally mounting the hook bolt on one side of the escutcheon base for movement across said opening; a handle part pivoted on the opposite side of the escutcheon base to swing about substantially the pivotal axis of the hook bolt; and a key controlled connection between said handle part and the hook bolt passing through said keyhole shaped opening and cooperable with the edges thereof to control bolt retraction.

7. In a latch device of the character described: an escutcheon base having an irregularly shaped opening therethrough; a hook bolt; means pivotally mounting the hook bolt on the escutcheon base and positioning the same for movement across the irregularly shaped opening; and key controlled means connected with the hook bolt and passing through said irregularly shaped opening, said key controlled means being cooperable with the edges of the opening to secure the hook bolt against retraction.

8. In a latch device of the character described: an escutcheon base having an irregularly shaped opening therethrough; a hook bolt overlying one face of the base and crossing said opening; a handle part overlying the opposite face of the escutcheon base with a portion thereof disposed over the irregularly shaped opening; means pivotally mounting the hook bolt and said handle part on the escutcheon base for pivotal movement about substantially the same axis; and a key controlled connection between the handle part and the hook bolt passing through said irregularly shaped opening and including a key operable part shaped to cooperate with the edges of the opening and secure the hook bolt against retraction.

9. In a latch device: an escutcheon base having an irregularly shaped opening therethrough; a bolt movably mounted on the escutcheon base and arranged to move across the opening in the base; an actuator; means mounting the actuator on the opposite side of the escutcheon base and constraining it to movement in a defined path with a part thereof moving across the opening; and a driving connection between the actuator and the bolt passing through said opening, said driving connection comprising a plurality of parts one of which is connected to the bolt and another to the actuator, said parts being connected to each other to be secure against relative lateral displacement while enabling relative rotation; and the part which passes through the opening having a cross-sectional shape so related to the shape of the opening as to require a predetermined position of rotation of said part to enable retraction of the bolt.

10. In a latch device of the character described: an escutcheon base having an irregularly shaped hole therethrough; a latch bolt overlying one face of the base with a part crossing said hole; means pivotally mounting the latch bolt on the base; an actuator pivotally mounted on the opposite face of the base to swing about an axis substantially coinciding with the pivotal axis of the bolt and with a part thereof extending across the hole in the base; and a driving connection between the actuator and the bolt passing through said hole and comprising inner and outer parts relatively rotatable but secure against lateral displacement and against endwise separation, the outer part being accessible from the exterior of the actuator and the inner part being received in the hole of the escutcheon base and being connected to the bolt, said inner part having a cross-sectional shape at its portion within the hole so related to the shape of the hole as to require a predetermined position of rotation of said inner part for the application of bolt retracting motion from the actuator to the bolt, and said parts having keyways to receive a key for turning the inner part to said predetermined position of rotation.

11. In a latch device of the character described: a base; a hook bolt pivoted to one side of the base and having its hooked end projecting beyond the base; an actuator pivotally mounted on the opposite side of the base to swing about an axis substantially coinciding with the pivotal axis of the hook bolt; and a driving connection between the actuator and the bolt passing

through an opening in the base and located a substantial distance from the axis about which the actuator and bolt swing.

12. In a latch device of the character described: a base; a hook bolt pivoted to one side of the base and having its hooked end projecting beyond the base; an actuator pivotally mounted on the opposite side of the base to swing about an axis substantially coinciding with the pivotal axis of the hook bolt; and a driving connection between the actuator and the bolt passing through an opening in the base and located a substantial distance from the axis about which the actuator and bolt swing; and spring means yieldingly urging the connected actuator and bolt to one of their limits of movement.

13. In a latch device of the character described: an escutcheon base having a hole therethrough; a hook bolt overlying one face of the base with a part thereof crossing said hole; an actuator overlying the opposite face of the base, said actuator comprising a hollow outer shell having a hole therethrough substantially in line with the hole in the base; a driving connection between the actuator and the bolt passing through the hole in the base and comprising inner and outer relatively rotatable parts each of which has a portion disposed within the hollow outer shell of the actuator with the outer part accessible through the hole in said shell and the inner part projecting from the actuator through the hole in the base and connected with the bolt; a back plate covering the open back of the actuator shell and confining said relatively rotatable parts in place; and a pivot pin secured to said back plate and passing through the escutcheon base and connected to the hook bolt to pivotally mount the actuator and bolt on the base.

14. In combination with two abutting walls of a luggage case having meeting recesses in their edges: an escutcheon base mounted against the outer face of one wall in a position overlying the recess therein; a latch bolt in said recess behind the escutcheon base having one end projecting from the edge of said wall beyond the area covered by the escutcheon base; means on the escutcheon base guiding the latch bolt for movement in the plane of said wall; and a keeper on the other of said walls with which said end of the hook bolt engages, said keeper being so located on said other wall as to be within the thickness thereof.

EDWARD N. JACOBI.