May 15, 1962 L. F. GARMON, JR., ET AL 3,034,327

LATCH

Filed Feb. 2, 1959 4 Sheets-Sheet 1

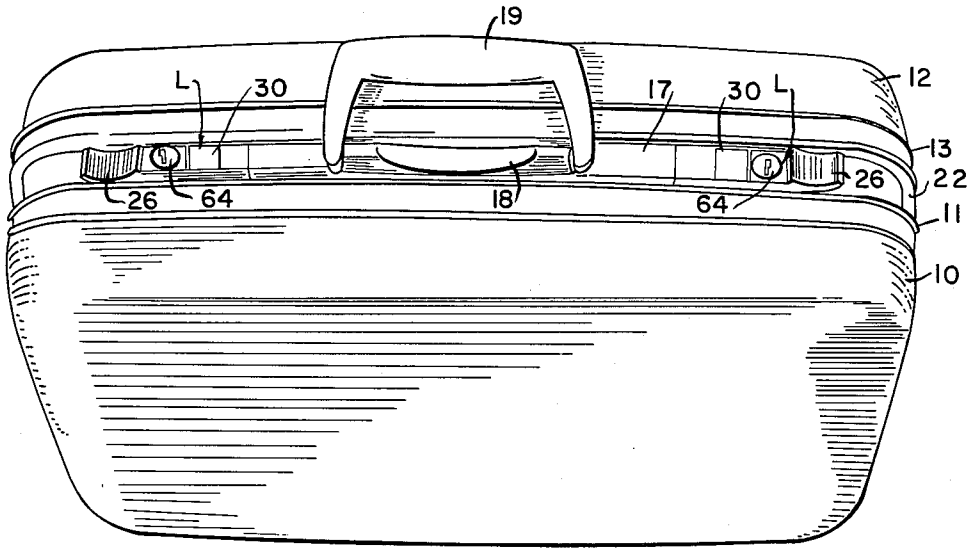


FIG. 1.

INVENTORS.
LEE F. GARMON, JR.
WILLARD G. AXTELL
BY
Horace B. Van Voorhees
ATTORNEY

May 15, 1962 L. F. GARMON, JR., ET AL 3,034,327

LATCH

Filed Feb. 2, 1959

4 Sheets-Sheet 2

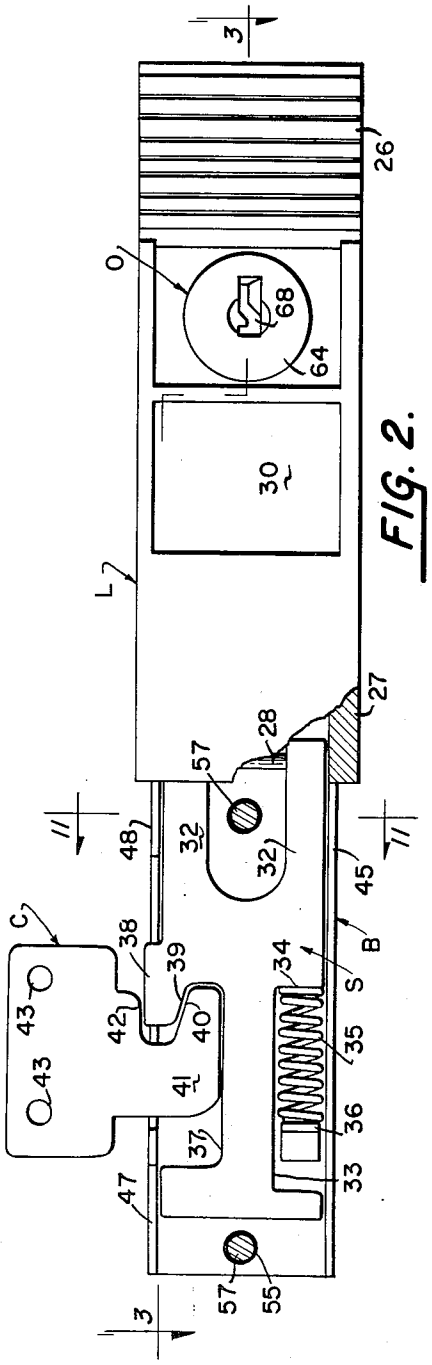


FIG. 2.

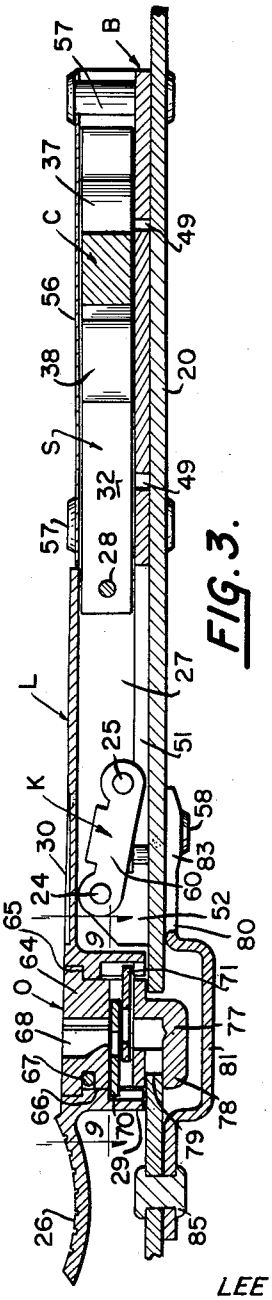


FIG. 3.

INVENTORS.
LEE F. GARMON, JR.
WILLARD G. AXTELL
BY
Horace B. Van Valkenburgh
ATTORNEY

May 15, 1962 L. F. GARMON, JR., ET AL 3,034,327

LATCH

Filed Feb. 2, 1959 4 Sheets-Sheet 3

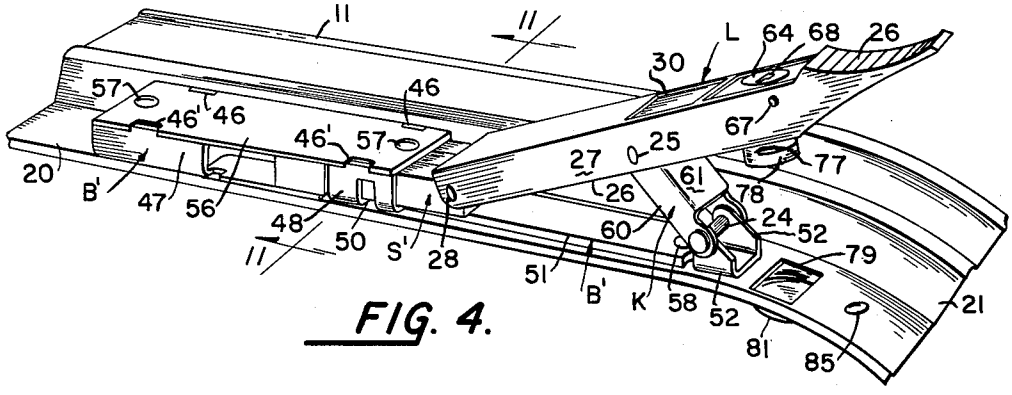


FIG. 4.

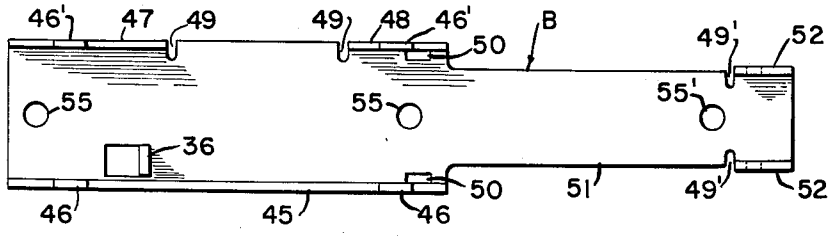


FIG. 5.

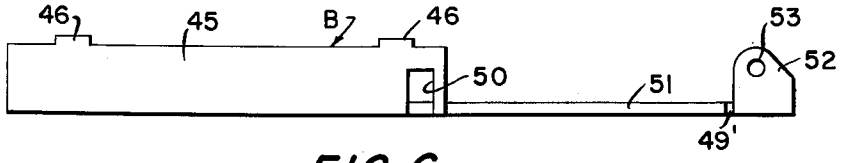


FIG. 6.

INVENTORS.
LEE F. GARMON, JR.
WILLARD G. AXTELL
BY
Horace B. Van Valkenburgh
ATTORNEY

May 15, 1962 L. F. GARMON, JR., ET AL 3,034,327

LATCH

Filed Feb. 2, 1959 4 Sheets-Sheet 4

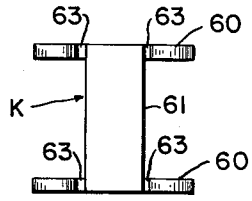


FIG. 7.

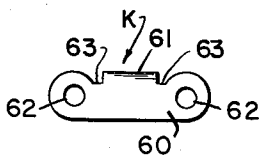


FIG. 8.

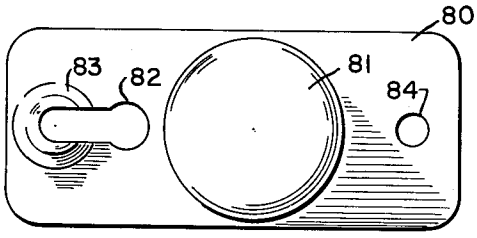


FIG. 10.

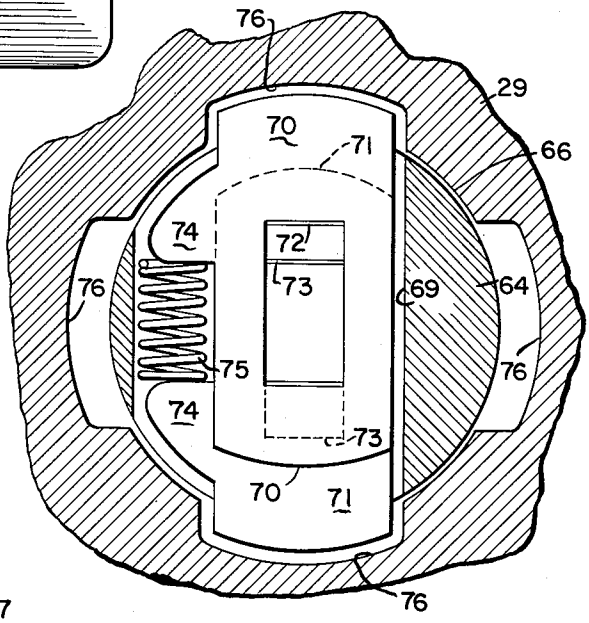


FIG. 9.

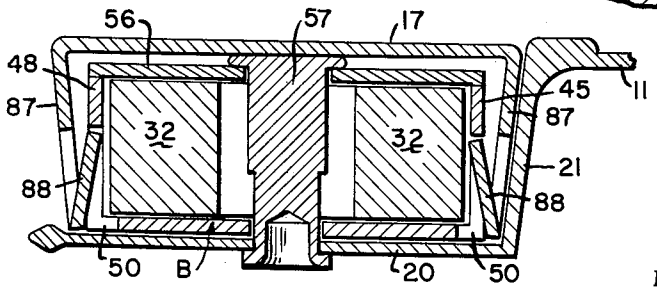


FIG. 11.

INVENTORS.
LEE F. GARMON, JR.
BY WILLARD G. AXTELL
Horace B. Van Valkenburgh
ATTORNEY

United States Patent Office 3,034,327
Patented May 15, 1962

1

3,034,327
LATCH

Lee F. Garmon, Jr., and Willard G. Axtell, Denver, Colo., assignors to Shwayder Bros., Inc., Denver, Colo., a corporation of Colorado

Filed Feb. 2, 1959, Ser. No. 790,675
9 Claims. (Cl. 70—70)

This invention relates to latches, and while not limited thereto, the latch of this invention is especially adapted to be used in a luggage case.

Latches for luggage cases, also termed drawbolts, are used to hold the two sections of a luggage case closed and therefore are adapted to connect two separable parts together. Such a latch should be readily opened and closed, but should resist accidental opening, as by shocks, jars or impacts. Also, such a latch is conveniently provided with a lock so that the latch may be locked in closed position. Such a latch may include a drawbolt structure mounted on one half of the luggage case and a catch mounted on the other half of the luggage case, so that the drawbolt will engage the catch with the case sections in closed position, when the drawbolt is moved to closed position. Also, the drawbolt should cooperate with the catch to move the luggage case sections closer together when the latch is closed, to facilitate the production of a tight connection between the luggage case sections. Conventionally, luggage case latches or drawbolts are mounted in pairs on one side of the luggage case, with the hinges connecting the case sections together being mounted on the opposite side. The latch may be provided with a movable part, such as a handle or lever, which usually extends transversely of the joint between the two sections of the luggage case, but in certain luggage cases it is desirable for the latch structure to extend longitudinally of the luggage case. When a pair of longitudinally extending latches are mounted on a luggage case, it is desirable that they be complementary, i.e., extend in opposite directions relative to the center of the luggage case, with the operating elements or handles of the respective latches being movable in opposite directions. The operating element may be moved inwardly and outwardly relative to the luggage case, which is more convenient in use than an operating element which is slidable, for instance. However, unless an inwardly and outwardly movable element is held securely in closed position, the latch may tend to be opened by an accidental impact or blow.

Among the objects of this invention are to provide a novel latch; to provide such a latch which is particularly adapted to be used on luggage cases and the like; to provide such a latch which is readily opened and closed, but is held securely in closed position; to provide such a latch which includes an inwardly and outwardly moving operating element, but which does not tend to cause the latch to open if struck accidentally; to provide such a latch which will move the luggage case sections and the like closer together when being closed; to provide such a latch which may be used in complementary pairs on luggage cases and the like; to provide such a latch which may be provided with a lock; to provide such a latch which is readily manufactured and easily installed; and to provide such a latch which will be durable and effective in use.

2

Additional objects and the novel features of this invention will become apparent from the description which follows, taken in connection with the accompanying drawings, in which:

FIG. 1 is a perspective view of a luggage case provided with a pair of complementary latches constructed in accordance with this invention;

FIG. 2 is a top plan view, on an enlarged scale, of one of the latches of FIG. 1, certain parts being partially broken away or removed to show the interior construction more clearly;

FIG. 3 is an offset longitudinal section, taken along line 3—3 of FIG. 2;

FIG. 4 is a perspective view, on an enlarged scale, of the other of the latches of FIG. 1, in open position, showing also an adjacent portion of the luggage case;

FIG. 5 is a top plan view of a base plate forming a part of the latch of FIG. 2;

FIG. 6 is a side elevation of the base plate of FIG. 5;

FIG. 7 is a top plan view of a link forming a part of the latch of FIG. 2;

FIG. 8 is a side elevation of the link of FIG. 7;

FIG. 9 is a transverse section, on an enlarged scale, of a lock installed in the latch of FIG. 2 and an adjacent portion of the latch, taken along line 9—9 of FIG. 3;

FIG. 10 is a bottom plan view, on an enlarged scale, of a cap for a slot with which the lock cooperates; and

FIG. 11 is a cross section, on an enlarged scale, taken at the position of line 11—11 of FIGS. 2 and 4, showing particularly the attachment of certain parts and one point of attachment of the latch to an associated part of the luggage case.

A pair of complementary latches, each constructed in accordance with this invention, may be utilized to hold the luggage case of FIG. 1 in closed position, the luggage case being constructed in the manner disclosed and claimed in the copending application of Willard G. Axtell, Serial No. 785,880, filed January 9, 1959, now U.S. Patent 2,950,793. Thus, the luggage case includes two opposed concave sections, one section of which may include a shell **10** attached to a tongue strip **11**, to which each latch is attached, and the other section a concave shell **12** attached to a groove strip **13**, the tongue strip **11** and groove strip **13** being adapted to interfit with the case sections closed and the tongue and groove strips also being adapted to form a recess which extends longitudinally around the case and in which the latches are disposed. Each latch is adapted to extend beneath a housing **17**, while a handle support **18** may be attached to the tongue strip **11**, as by rivets extending through the housing **17**, and a handle **19** may be pivotally mounted on handle support **18**. The latches may be similar but complementary in construction, as will be evident from FIGS. 2 and 4, and may be mounted on a tongue **20** of tongue strip **11**, which forms the bottom of the recess extending longitudinally around the case. The sides of the recess may be provided by a wall **21** of tongue strip **11**, as in FIG. 4, extending outwardly from the inner edge of tongue **20**, and a wall **22** of groove strip **13**, as in FIG. 1, the inner edge of wall **22** being conveniently provided with an angular flange at its inner edge adapted to engage the edge of tongue **20**. Each latch is adapted in closed position to engage a catch C of FIG. 2, which is attached to the groove strip **13** and extends through a slot in the

wall 22 of the groove strip 13, as in the manner disclosed in the aforesaid application Serial No. 785,880.

The right hand latch of FIG. 1, as shown in FIGS. 2 and 3, may include a base B, which is attached to tongue 20, a slide S adapted to engage the catch C, a lever L which is pivotally connected at its inner end to slide S, and a link K which pivotally interconnects lever L with base B. The left hand latch of FIG. 1, as shown in FIG. 4, includes similar but complementary parts, i.e., a base B', a slide S', a lever L and a link K, it being noted that the same link K and lever L is used for the right hand latch as for the left hand latch, being merely reversed in position, while only the base and the slide need be complementary to the base and slide of the right hand latch. In accordance with this invention, the link K is a toggle link, i.e., its point of pivotal attachment at pin 24 to the base B or B' is spaced further from the tongue 20, as will be evident from FIG. 3, than its point of pivotal attachment to lever L at pin 25 and pin 28 which pivotally connects lever L to slide S when lever L is in down or closed position. Thus, pin 25 is in an overcenter position below a line connecting pin 24 and pin 28 when lever L is in closed position. The link K thus effectively locks lever L in closed position, since any accidental blow or striking of lever L on the top cannot move slide S and only an outwardly direct force, as by the insertion of a finger beneath the extending end 26 of lever L, can cause the lever to open the latch. The extending end 26 of lever L may be slightly arcuate and convex on the underside to facilitate insertion of a finger therebeneath, while the concave upper surface may be provided with transverse grooves, for decorative purposes and also to facilitate pressing the end 26 of the lever inwardly to close the latch.

Lever L may be provided with a longitudinally extending, depending flange 27 at each side, provided adjacent the inner end of the lever with holes for reception of pin 28 and with holes at an intermediate position to receive pin 25, which, as indicated above, pivotally connects the lever to the link K. Inwardly from end 26, as in FIG. 3, the lever L may be provided with a depending block 29, which may be integral with the depending side flanges 27. Extending from the top of the lever and through block 29 is a generally circular hole for reception of a lock structure O, which will be described later. On its upper surface, lever L may be provided with a shallow recess 30, in which an initial or monogram strip may be secured.

The slide S, as in FIG. 2, to which the slide S' of FIG. 4 is similar but complementary may be provided at its inner end with a pair of longitudinally extending, spaced arms 32, providing a slot therebetween and provided at their outer end with holes for reception of pin 28, as shown also in FIG. 3. On the side opposite catch C, the slide S may be provided with a slot 33 providing a shoulder 34 at one end, against which a coil spring 35 abuts, the opposite end of spring 35 abutting against an ear 36, conveniently struck upwardly from base B. Spring 35 moves slide S toward open position and therefore facilitates opening the latch, since as soon as end 26 is lifted upwardly to a position in which pin 25 is spaced from tongue 20 a slightly greater distance than the pin 24, the spring 35 will move the latch to open position. However, with the latch in closed position and particularly with link K in the position of FIG. 3, the spring 35 will tend to maintain the latch closed, through pressure exerted against the slide which tends to maintain link K in its overshot toggle or locking position. On the side adjacent catch C, slide S may be provided with a slot 37 having a configuration such that at one edge a lip or dog 38 is formed, which is provided with an inner angular edge 39 adapted to engage an angular edge 40 of a hook 41 of catch C, the edges 39 and 40 producing a cam action to move the two sections of the case closer together, when the latch is moved to closed position. Catch C may be provided with a shoulder 42 opposite edge 40 of hook 41, adapted to abut against the opposite or outer edge of lip 38 and thereby securely hold the luggage sections together when each latch is closed. Catch C may also be provided with holes 43, through which rivets or other suitable attaching devices may extend, for securely extending catch C to groove strip 13.

It will be noted that the catch C shown in FIG. 2 is the catch for the right hand latch of FIG. 1, while the catch for the left hand latch of FIG. 1 may be identical, but merely reversed in position when attached to the groove strip 13 at an appropriate position. Also, the slide S' of the left hand latch of FIG. 1, as shown in FIG. 4, may be identical to slide S of FIG. 2, except that it is merely turned over, so as to be movable in the opposite direction to the slide S of the right hand latch of FIG. 1.

Base B, as in FIGS. 5 and 6, may be a plate from which ear 36 is struck upwardly at an appropriate position and provided with an upwardly extending flange 45 at the side adjacent ear 36, flange 45 having on its upper edge a pair of spaced, upwardly extending, preferably rectangular projections 46, for a purpose described later. On its opposite side, base B may be provided with upwardly extending flanges 47 and 48, spaced apart a distance to accommodate entry of hook 41 of catch C and also to accommodate the movement of lip 38, which preferably extends slightly outwardly beyond the base, so that the base will not interfere with the abutment of shoulder 42 of catch C with the outer edge of lip 38. Flanges 47 and 48 may be provided with projections 46', similar to and disposed opposite the projections 46 of flange 45. A slot 49 may be provided at the inner edge of each flange 47 and 48, to facilitate bending flanges 47 and 48 upwardly, while rectangular slots 50 may extend in opposed relationship downwardly in each of flanges 45 and 48 and then inwardly into the lower portion of the base, as shown. Base B may further be provided with a longitudinally extending neck 51, having a width less than the distance between the side flanges 27 of lever L, so that in closed position, side flanges 27 may lie alongside each side of neck 51. At its outer end, neck 51 may be provided with a pair of upstanding flanges 52 of suitable configuration, such as shown in FIG. 6, and provided with holes 53 for reception of pin 24 of FIGS. 3 and 4, by which link K may be pivotally connected to base B at a distance farther from the base than the position of pin 25 with the lever L in closed position, as described previously and shown in FIG. 3. Base B may also be provided with a series of holes 55 and neck 51 with a hole 55', through which rivets or other suitable attachment devices may extend, as described later, to attach the base B to the tongue 20. Neck 51 may be provided with slots 49' adjacent flanges 52, to facilitate bending the flanges 52 upwardly.

In order to retain the slide S in position for longitudinal movement only and also to prevent spring 35 of FIG. 2 from moving out of position, a cover plate 56 may be attached to the top of base B. Cover plate 56 conveniently rests on the top of flanges 45, 47 and 48 and is provided with slots to interfit with projections 46 and 46', as in FIG. 4. The cover plate 56 may be secured in position by rivets 57 of FIGS. 2, 3 and 4, which extend through holes 55 in the base B or B' and corresponding holes in the cover plate 56. A rivet 58 may extend through hole 55' in neck 51, as in FIG. 4, additionally to attach the base to the tongue 20.

Each link K, as in FIGS. 7 and 8, may be provided with sides 60 connected by a top or cross bar 61, each side 60 having a hole 62 adjacent each opposite end thereof, for reception of the respective pins 24 and 25 of FIGS. 3 and 4. The upper edge of each side 60 may be arcuate, as shown, terminating in a slot 63 adjacent the top 61, to facilitate bending each side 60 downwardly from the top.

The lock structure O, as in FIGS. 3 and 9, may comprise a cylinder 64 having an annular head or flange 65

adapted to seat in a correspondingly shaped enlargement of the upper end of a hole **66** extending through depending block **29**. A slot beneath flange **65**, which may extend for slightly greater than 90° around the cylinder and into which may extend a pin **67**, shown also in FIG. 4, and inserted in an appropriate hole through block **29**, maintains the cylinder **64** in position but permits it to rotate through 90°. Cylinder **64** may be provided with a slot **68**, extending downwardly from its upper end and having an appropriate configuration, such as shown in FIG. 2, for insertion of a key. Slot **68** extends past a transverse slot **69** of FIG. 9, in which is disposed an upper tumbler **70** and a lower tumbler **71**. As in FIG. 9, upper tumbler **70** is provided with a central rectangular slot **72** and lower tumbler **71** with a central rectangular slot **73**, the edges of slots **72** and **73** being adapted to be engaged by appropriate projections on the key, so as to move the tumblers inwardly from the position shown in FIG. 9. Each tumbler **70** and **71** is also provided on one side with a laterally extending ear **74**, between which a coil spring **75** is disposed to move the opposite ends of the respective tumblers outwardly after the key is withdrawn. When the key is inserted, the appropriate projections on the key move the tumblers **70** and **71** inwardly against the pressure of spring **75**, so that the ends of the tumblers will correspond in position to the outer diameter of the cylinder **64**, as will be evident from FIG. 9, thus permitting the cylinder **64** to be rotated through 90° by the key. When the key is withdrawn, the opposite ends of the tumblers will extend into an opposed pair of grooves **76**, which are four in number, equally spaced, and extend upwardly from the lower end of the hole **66** through block **29**. When the ends of the tumblers **70** and **71** are in extended position, within an opposed pair of grooves **76**, the cylinder **64** will be maintained in either locked or unlocked position, depending upon which pair of grooves **76** are engaged by the ends of the tumblers. When the tumblers are moved inwardly by the key, the lock cylinder may then be turned to the opposite position, either locked or unlocked, and will be maintained in that position by spring **75** until the key is again inserted and the lock turned to the other position.

Lock cylinder **64** may be provided with a reduced diameter lower end **77**, as in FIGS. 3 and 4, which is provided with an outwardly extending lip **78** at one side, adapted to engage the under edge at one side of a slot **79**, conveniently rectangular, in the groove strip **20**. In order to prevent clothing in the luggage case, or the usual fabric lining thereof, from interfering with the action of the lock, the underside of slot **79** may be covered by a cap **80**, shown also in FIG. 10 and provided with a central bell **81** to provide ample space for the lower end **77** of the lock cylinder. Cap **80** may be provided adjacent one end with an elongated slot **82**, conveniently provided with an enlargement at one end, which may be slipped over a head on rivet **58** and the cap then pulled back to tighten rivet **58** by engagement of a raised or outwardly offset portion **83** of cap **80** with the underside of the head of rivet **58**. Adjacent its opposite end, cap **80** may be provided with a hole **84**, through which a rivet **85** of FIG. 3 may extend to attach the opposite end of the cap to the underside of tongue **20**.

The housing **17**, as in FIG. 11, may be provided with side flanges **87**, which are conveniently sloped inwardly to correspond to the inclination of wall **21** of tongue strip **11** and wall **22** of groove strip **13**. Each flange **87** may be provided, adjacent each free edge, with a finger **88** which may be struck inwardly so as to snap into the position of FIG. 11 when the housing is inserted over the base B and B′ of the respective latch. Fingers **88** engage slots **50** of the respective base B and B′, so as to hold the housing **17** in position while the handle support **18** is being attached and also to attach the ends of the housing **17** to the base B and B′, to prevent the ends of the housing from being accidentally pried upwardly.

From the foregoing, it will be evident that a latch constructed in accordance with this invention fulfills to a marked degree the requirements and objects hereinbefore set forth. By the use of a slide adapted to engage a catch and a lever which is moved inwardly and outwardly for locking and unlocking, the latch is readily opened and closed. Also, the spring which normally presses the slide toward open position facilitates opening the latch and also assists the toggle link in maintaining the latch in closed position. The toggle link, which is overthrown when the latch lever is moved to closed position, insures that any blow or the like on the top of the latch, even though obliquely directed, will not cause the latch to open. As indicated above, it is only by an outwardly directed force, as by a finger inserted beneath the end of the latch lever, that the latch can be opened. The inclined cam surfaces on the slide and catch cooperate in moving the two sections of the case to a more tightly closed position, when each latch is closed. While the latch of this invention is particularly adapted to be used in a luggage case in which a recess is formed to receive the latch, it may of course be used in other luggage cases and for other types of equipment.

Although a preferred embodiment of the latch of this invention has been illustrated and described, it will be understood that other embodiments may exist and that various changes may be made, all without departing from the spirit and scope of this invention.

What is claimed is:

1. A latch for connecting two separable parts together, comprising a catch mounted on one of said parts; a base attached to the second of said parts and provided with upstanding sides, the side of said base facing said catch being provided with an opening through which said catch may enter; a slide movable longitudinally in said base and provided with means for engaging said catch when said catch enters said opening; a top for said base and maintaining said slide therein, the bottom of said base extending longitudinally to a point spaced from said sides and top and then outwardly; a lever movable toward and away from said base and pivotally connected to said slide for moving said slide longitudinally in said base; and a link pivotally interconnecting said lever with the outwardly extending portion of the bottom of said base at a position spaced outwardly from the remainder of said base a greater distance than the pivotal connection between said lever and said slide, whereby the pivotal connection between said link and said lever is closer to the bottom of said base than a line extending between the pivotal connection of said link with said outwardly extending portion and the pivotal connection between said lever and said slide when said lever is in closed position.

2. In a luggage case having a pair of opposed concave sections pivotally connected at the bottom and constructed to provide a longitudinally extending recess between said sections at the top, one said section being provided with a longitudinal tongue extending toward the other section and a wall extending upwardly from the adjacent edge of said tongue, said tongue forming the bottom of said recess, the other of said sections being provided with an upwardly extending wall and means at the lower edge of said wall for engaging the edge of said tongue with said case sections closed; a latch mounted on said tongue adjacent each end of said luggage case, said latches being complementary and each including a lever movable inwardly and outwardly from said tongue with the free end of each lever being disposed toward the respective end of said case section; a catch for each latch mounted on the opposite case section and extending laterally from the wall thereof; each said latch including a longitudinally movable slide provided with means for engaging a catch, said lever being adapted to move said slide into engagement with and disengagement from said catch; each said latch including means pivotally interconnecting said lever with said tongue; a housing disposed in said re-

cess and extending between said latches, said housing having a top extending over the slide of each latch and depending sides which correspond to the walls of said recess; and means for attaching the ends of said housing sides to each said latch.

3. A latch for connecting two separable parts together, comprising a catch mounted on one of said parts; a base mounted on the other of said parts and disposed adjacent said catch with said parts together; a slide mounted on said base for longitudinal movement along said base and provided with a slot and a dog at one end of said slot, said catch being provided with a hook adapted to enter said slot and engage said dog upon movement of said slide from said disengaged to said engaged position; a lever pivotally connected at its inner end to one end of said slide for moving said slide between catch engaging and disengaging positions, said lever being movable toward and away from the plane of said base; a link pivotally connected at one end to said lever at an intermediate position on said lever, said lever and said slide being in general alignment when said slide is in catch engaging position; and a support extending outwardly from said base, the opposite end of said link being pivotally connected to said support at a position spaced outwardly farther from said base than the pivotal connection between said lever and said slide, whereby said link will be overthrown past a position of alignment with said lever and said slide, when said slide is moved to catch engaging position, with the pivotal connection between said link and said lever being closer to the plane of said base than a line extending between the pivotal connection between said lever and said slide and the pivotal connection between said link and said support.

4. A latch for connecting two separable parts together, comprising a catch mounted on one of said parts and provided with a hook having an inclined edge; a slide mounted on the second of said parts for movement into engagement with and disengagement from said catch, said slide being provided with a slot on the side facing said catch and said slot having at one end a lip provided with an inclined surface for wedging engagemen twith said hook edge, said slide being provided on the opposite side with a slot providing a shoulder which forms a spring abutment; a lever for moving said slide between positions of engagement with and disengagement from said catch, said lever being pivotally connected at its inner end to one end of said slide and provided with depending sides, the outer end of said lever being generally arcuate and curved upwardly to facilitate moving said lever away from said second part; a link pivotally interconnecting said lever and said second part, one end of said link extending between said lever sides and being pivotally connected thereto; a spring disposed in the slot of said slide and engaging said shoulder; and a lock carried by said lever at a position spaced inwardly from the outer end thereof, said lock being rotatable and provided with an end extending beneath said lever and having a transverse slot to provide a lip, said second part being provided with a slot in which said end of said lock may extend and so constructed and arranged that the underside of one edge of said second part slot will be engaged by said lock lip when said lock is turned to locking position.

5. A latch as defined in claim 4, including a base having a bottom mounted on said second part and upstanding side flanges, said flanges on the side facing said catch being spaced apart by an opening into which said catch hook may extend and in which said lip of said slide may move; said base being provided with an upwardly extending ear to provide an abutment for the opposite end of said spring; said base bottom extending longitudinally from said side flanges as a neck having a width less than the distance between the sides of said lever, so that the sides of said lever may lie alongside said neck with said lever in closed position; and said neck being provided at its outer end with a pair of upstanding ears to which the opposite end of said link is pivotally connected.

6. A latch for connecting two opposed sections of a luggage case, said sections being adapted to form a recess therebetween extending longitudinally of the case and said latch being disposed in said recess, comprising a catch mounted on one of said sections; a base mounted on the other of said sections and disposed in said recess adjacent said catch with said sections together; a slide mounted on said base for longitudinal movement along said base and provided with means for engaging said catch; a lever pivotally connected at its inner end to one end of said slide for moving said slide between catch engaging and disengaging positions, said lever being movable toward and away from the plane of said base; a link pivotally connected at one end to said lever at an intermediate position on said lever, said lever and said slide being in general alignment when said slide is in catch engaging position with said lever in closed position; and a support extending outwardly from said base, the opposite end of said link being pivotally connected to said support at a position spaced outwardly further from said base than the pivotal connection between said lever and said slide, so that the pivotal connection between said link and said lever is closer to the plane of said base than a line extending between the pivotal connection of said link with said support and the pivotal connection between said lever and said slide, when said lever is in closed position.

7. A latch comprising a base; a slide movable longitudinally along said base and provided with a first slot extending inwardly from one edge thereof and a second slot extending inwardly from the opposite edge thereof, said second slot being provided at one end with an inner angular edge and said base being provided with an abutment extending into said first slot; a lever pivotally connected to said slide for moving said slide along said base, said lever being movable toward and away from the plane of said base; a toggle link having one end pivotally connected to said lever and the other end pivotally connected to said base, said base having outwardly extending means pivotally connected to said link so that the pivotal connection between said link and said lever is closer to the plane of said base than a line extending between the pivotal connection of said link with said means and the pivotal connection between said lever and said slide, when said lever is in closed position; and a spring biasing said slide longitudinally of said base, one end of said spring engaging said abutment and the opposite end of said spring engaging an end of said first slot spaced from said abutment.

8. A latch for connecting two separable parts together, comprising a catch mounted on one of said parts; a base having a longitudinaly extending neck and mounted on the other of said parts and disposed adjacent said catch with said parts together; a slide mounted on said base for longitudinal movement along said base and provided with means for engaging said catch; a lever pivotally connected at its inner end to one end of said slide for moving said slide between catch engaging and disengaging positions, said lever being movable toward and away from the plane of said base and being provided at an intermediate position with side flanges which extend along said neck with said lever in closed position and said slide in catch engaging position, said lever and said slide being in general alignment when said slide is in catch engaging position; a pin extending between said side flanges of said lever; a link pivotally connected at one end to said pin; and a support extending outwardly from said base, the opposite end of said link being pivotally connected to said support at a position spaced outwardly further from said base than the pivotal connection between said lever and said slide, whereby said pin connecting said link and said lever is closer to the plane of said base than a line extending between the pivotal connection of said link with said support and the pivotal connection between

said lever and said slide when said lever is in closed position.

9. A latch as defined in claim 8, wherein said support comprises upstanding ears on said neck, said link being pivotally connected to said ears.

References Cited in the file of this patent

UNITED STATES PATENTS

1,118,768	Helgeson	Nov. 24, 1914
1,450,365	Gray	Apr. 3, 1923
1,582,833	Levine	Apr. 27, 1926
1,896,476	Boesel	Feb. 7, 1933
1,979,560	Levine	Nov. 6, 1934
2,006,129	Craft	June 25, 1935
2,055,688	Halinka	Sept. 29, 1936
2,146,485	Roedding	Feb. 7, 1939
2,642,300	Pelcin	June 16, 1953
2,798,371	Gehrie	July 9, 1957
2,874,986	Henrichs	Feb. 24, 1959
2,940,291	Swanson	June 14, 1960

FOREIGN PATENTS

286,515	Great Britain	Mar. 8, 1928
341,214	Great Britain	Jan. 15, 1931
411,621	Great Britain	June 14, 1934