July 2, 1968 H. BLOSS 3,390,555

ROTATING LUGGAGE LATCH

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Fig. 1.

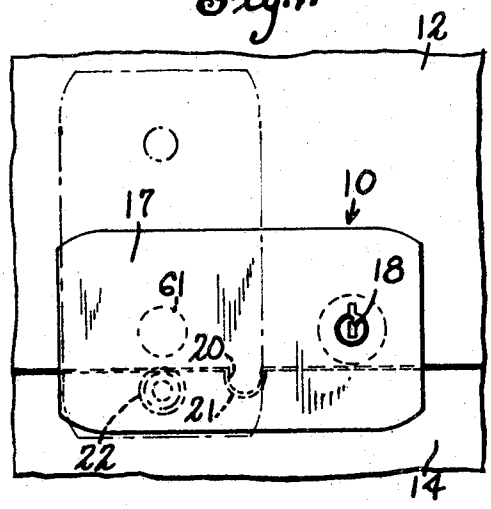

Fig. 2.

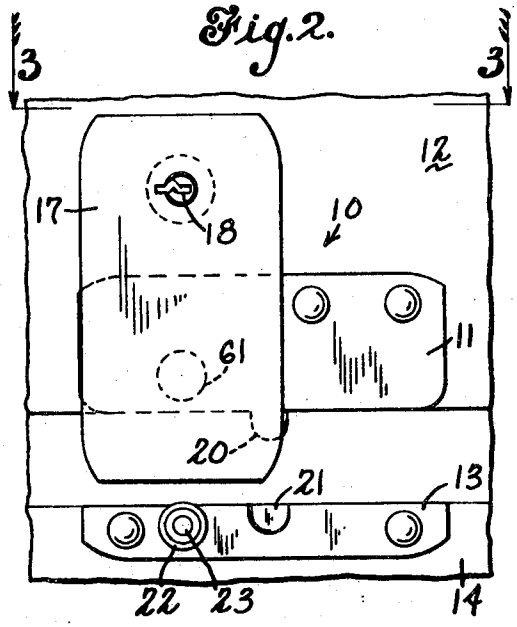

Fig. 3.

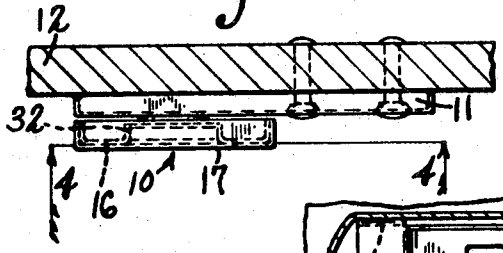

Fig. 4.

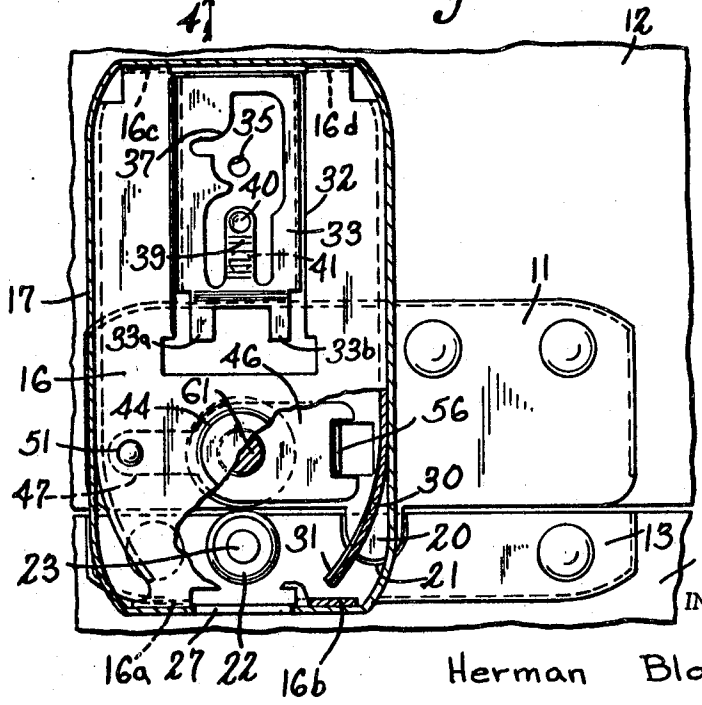

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Fig. 5.

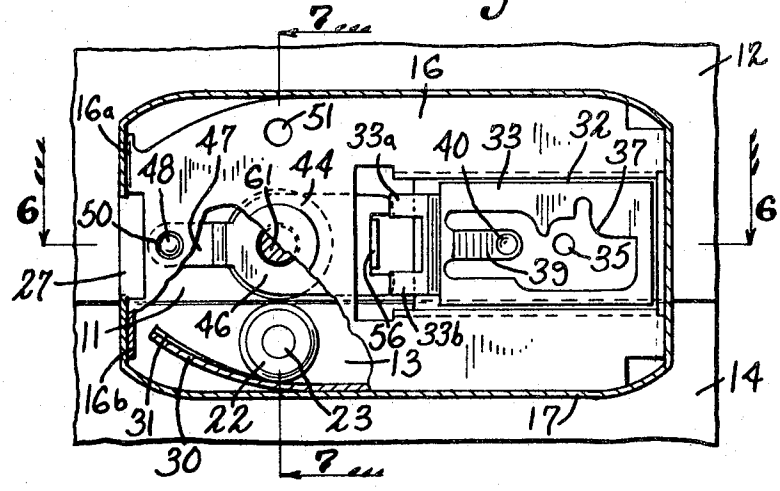


Fig. 6.

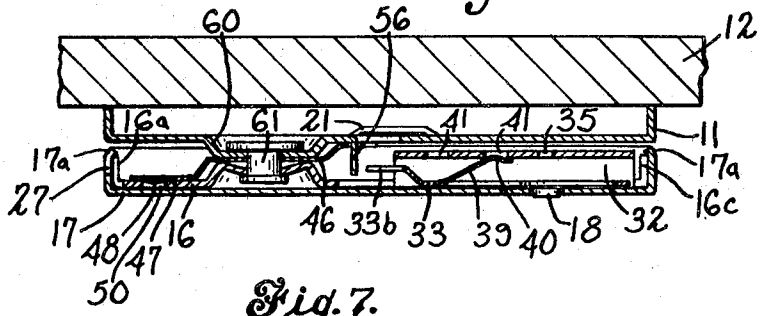
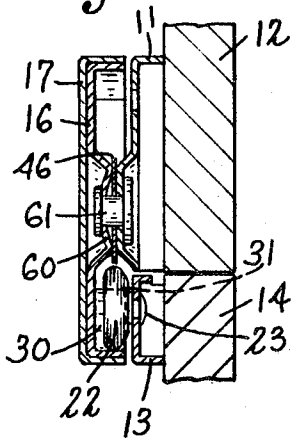


Fig. 7.



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ROTATING LUGGAGE LATCH

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6 Claims. (Cl. 70—69)

ABSTRACT OF THE DISCLOSURE

This invention relates to a luggage latch of a luggage case or the like having a cover or lid hinged to the body section for closing the latter and for other uses requiring means to releasably fasten separable parts one to another and, in particular, comprising a stationary member having a pivotal member mounted thereon, the pivotal member being provided with a guide rail which engages another member to close two covers of a device together.

This invention relates to a latching device and more particularly to a luggage latch for a luggage case or a like container of the kind having a cover or lid hinged to a body section for closing the latter, and for other uses requiring means to releasably fasten separable parts one to another.

Due to the fierce price competition between lock manufacturers and the counter-requirements of luggage manufacturers for lower cost locks, a situation has been created such that for a lock manufacturer to remain competitive, new and improved lock constructions must be developed in order to reduce manufacturing costs while at the same time maintaining quality. Not only must the new lock constructions be economical, but they must also be so constructed that they are essentially failure-free.

In view of the foregoing, applicant has invented a new and improved lock construction which utilizes a minimum of parts and is fabricated such that the major operating parts are formed with guideways, recesses, openings and positioning means. In this manner a locking mechanism is provided which is susceptible to mass-production techniques, requiring a minimum of hand labor to complete the fabrication of this device.

Accordingly, it is an object of this invention to provide a new and improved luggage latch which is both simple in construction and economical to manufacture.

Another object of the invention is to provide a new and improved latch making maximum use of metal stampings throughout to permit a latching device to be fabricated with a minimum of hand labor.

A further object of the invention is to provide a new and improved latch having a scissor-like construction, such that opposing portions of a suitcase are drawn tightly together upon closure thereof.

A still further object of this invention is to provide a new and improved latch construction having an integral guide for a locking bolt formed therein to permit a rotating portion of the lock to be secured in a locked position

Still further objects of the invention will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises the apparatus possessing the features, properties and relation of elements which will be exemplified in the apparatus hereinafter described and the scope of the invention will be indicated in the claims.

For a fuller understanding of the nature and objects of the invention reference should be had to the following detailed description taken in conjunction with the accompanying drawings, in which the same reference numerals

designate like or corresponding parts in the several views and in which

FIG. 1 is a front view of the latch mounted on the body and cover or lid portion of the piece of luggage;

FIG. 2 is a view similar to FIG. 1, but with the body portion and the lid portion of the luggage separated;

FIG. 3 is a sectional view taken along line 3—3 of FIG. 2;

FIG. 4 is a sectional view taken along line 4—4 of FIG. 3;

FIG. 5 is a view similar to FIG. 4 with the latch in a closed position;

FIG. 6 is a sectional view taken along line 6—6 of FIG. 5; and

FIG. 7 is a sectional view taken along line 7—7 of FIG. 5.

Referring to FIGS. 1–3, the latching device of the invention is generally shown at **10** and includes a pivot bar **11** mounted by a plurality of screws to a flap **12** of a suitcase or other type of luggage. An anchor plate **13** for mating with the pivot bar **11** is mounted to a bottom flap **14** of the same suitcase. Pivotally connected to the pivot bar **11** is a pivotal member **16** having a cover **17** mounted thereon. The cover **17** includes a keyway **18** for permitting a key (not shown) to enter and position a locking bar to secure the pivotal member in the position shown in FIG. 1. FIG. 2 shows the flaps **12** and **14** separated and the pivotal member **16** and its cover **17** in an upright position prior to the anchor plate **13** engaging the pivot bar. To initially set the position of the pivot bar **11** with respect to the anchor plate **13**, there is provided a catch **20** on the pivot bar and a socket indentation **21** on the anchor plate **13**. Thus, to close the suitcase, the two flaps **12** and **14** are brought together such that the catch enters the socket **21** and the pivotal member **16** is rotated to the position shown in FIG. 1. As the pivotal member **16** rotates it is adapted to receive a roller **22** mounted on a pin **23** supported by the anchor plate **13**, such that an edge of flap **14** is lifted to engage an edge of flap **12**.

Referring now to FIGS. 4 through 7, there is shown in more detail the operable parts of the latch of the invention. FIG. 4 shows the position of the pivotal member **16** prior to its being rotated and FIG. 5 shows the position of the pivotal member after it has been rotated to secure the flaps **12** and **14** together. As shown in these figures, the pivotal member **16** is secured to the cover **17** by bending down the cover regions **17***a* so that they extend over the flanges **16***a*–**16***d* of the pivotal member **16**. In this manner an ornamental cover may be easily secured to the pivotal member containing the operating parts of the device.

The cover **17** has a passageway **27** defined therein to permit the roller **22** to extend into the interior of the cover and overlie a portion of the pivotal member **16**. Necessarily, the pivotal member **16** has its flanges **16***a* and **16***b* so defined as to permit the roller **22** to enter therein. It is to be understood that although portions of the cover are bent over to retain the flanges of the pivotal member, the device could be constructed such that the cover may be welded to the pivotal member or held together in any other suitable manner, although bending portions of the cover over the flanges is preferred because of the low cost in manufacturing the same.

The rotatable member **16** includes a guiderail **30** which is preferably formed from the flat portion of the rotatable member material utilizing stamping fabricating techniques. The guiderail **30** is preferably at a right angle to the main flat surface of the rotatable member **16**. An end portion **31** of the rail **30** is preferably rolled over to insure that roller **22**, when engaged by the guiderail as the rotatable member is pivoted in a scissoring action,

is securely held within the guiderail **30** and cannot move away from or slide off the guiderail. The rotatable member **16** is also formed with a recessed guide portion **32** permitting a locking bolt **33** to slide therein. This recessed guide portion additionally includes an opening **35** for permitting the tip of the key utilized to be positioned therein, such that it may rotate and move the locking bolt by engaging camming surface **37** of the locking bolt **33**. The locking bolt **33** is fabricated so as to include a raised detent portion **39** which acts as a spring and stop mechanism. The tip of detent **39** includes a boss **40** which frictionally contacts the surface of the recessed guide portion **32**. A plurality of stops in the flat portion of the guide **32** are provided so that while the locking bolt is moved it will snap in and out of stops **41** in the surface of the guide **32** in order to securely hold the locking bolt in place between one of two positions. The end of guide **32** is open such that tips **33***a* and **33***b* of locking bolt **33** can be moved into and out of the guide region formed by guide **32**. Additionally, the rotatable member **16** is formed with a collar recess **44** so that a pin can be recessed below the outside surface of the rotatable member as it is secured to the pivot bar **11**.

Preferably positioned on top of the collar recess **44** is a spring element **46** having a raised detent portion **47** with a raised boss **48** for frictionally sliding against the interior surface of the rotatable member. The rotatable member **16** preferably includes the two additional stops **50** and **51**, such as recesses or punched-out holes, for receiving the boss **48** in order to securely establish stops for the rotatable member when it is in either a vertical or horizontal position. The other end of spring **46** has a hook arrangement for engaging a flange **56** formed from the pivot bar **11**. In this manner the spring is securely affixed so that it will not rotate with the rotatable member. The pivot bar also includes a recess **60** which abuts the other side of the spring **46**. The pin **61** passes through the collar **44** and recess **60** and through a hole in the spring **46** to securely hold the combination of elements together in such a manner that the pivotal member **16** is free to rotate so that roller **22** will be engaged by the rail **30** and lifted slightly to insure a close fit between the flaps **12** and **14**. This is accomplished since the guiderail portion is constructed such that the distance from the pivot point of the pivotal member to the end of the rail **30** is greater than the distance that the roller finally sits in after the pivot member is rotated to a horizontal position.

In order to lock the pivotal member in a horizontal position, a key is inserted in the keyway **18** to engage the cam surface **37** in order to position the locking bolt so that its tips **33***a* and **33***b* will surround a portion of the flange **56**.

Thus, applicant has provided a lock having a relatively small number of parts and having integrally fabricated portions formed from each of the elements so that the device may be constructed by utilizing mass-production techniques. The rotatable member as formed includes a guide means for the locking bar as well as means providing stops for the locking bar and stops for the spring between the rotatable member and the pivot bar itself. Furthermore, the rotatable member is formed with at least one integral guiderail which is so constructed that it will engage and guide a roller attached to the anchor bar and raise it slightly to ensure that the flaps of the luggage are firmly secured. Additionally, applicant has constructed the pivot bar such that it includes a flange formed from the pivot bar itself and which not only retains a friction spring in place but also provides a means for a locking bolt to secure the rotatable member in a horizontal position by the action of a key against a camming surface of the locking bolt.

It will thus be seen that the objects set forth above, among those made apparent from the preceding description, are efficiently attained and since certain changes

may be made in the foregoing construction without departing from the spirit and scope of the invention, it is intended that all matter contained in the description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention, which, as a matter of language, might be said to fall therebetween.

What is claimed is:

1. A latching mechanism for two relatively movable closure members, comprising a pivot bar adapted to be secured to a marginal edge portion of one of said closure members, an anchor bar having a projection extending from one side thereof, said anchor bar adapted to be secured to a marginal edge portion of the other of said closure members, said anchor bar and said pivot bar positioned on said members so that an edge of one may engage an edge of the other, a pivotal member journalled to said pivot bar so as to be rotatable with a scissoring movement relative to the pivot bar, a guide rail formed within said pivotal member and extending at substantially a right angle away from the main body of the pivotal member, said guide rail having a curvilinear surface over a portion thereof, and said guide rail positioned on the pivotal member so that when the pivotal member is rotated the projection on the anchor bar may ride thereon and be raised thereby, a locking bar guideway formed from said pivotal member, said locking bar positioned for sliding movement in said guideway and having an end insert cut out therefrom to form a slot therein, and a raised flanged bar formed from said pivot bar and positioned to receive the slot of the locking bar thereabout when the pivotal member has been completely rotated to engage the projection of the anchor bar and the locking bar has been positioned by a key.

2. A latching mechanism for two relatively movable closure members, comprising a pivot bar adapted to be secured to a marginal edge portion of one of said closure members, an anchor bar having a projection extending from one side thereof, said anchor bar adapted to be secured to a marginal edge portion of the other of said closure members, said anchor bar and said pivot bar positioned on said members so that an edge of one may engage an edge of the other, a pivotal member journalled to said pivot bar so as to be rotatable with a scissoring movement relative to the pivot bar, a guide rail formed within said pivotal member and extending at substantially a right angle away from the main body of the pivotal member, said guide rail having a curvilinear surface over a portion thereof, and said guide rail positioned on the pivotal member so that when the pivotal member is rotated the projection on the anchor bar may ride thereon and be raised thereby, said guide rail also including a rolled-over portion for limiting the sidewise movement of the anchor projection as it moves on the track.

3. A latching mechanism according to claim **1**, wherein said locking bar includes a raised detent having a recessed portion on a tip thereof, and wherein said guide rail includes a recessed portion receiving means formed therefrom for establishing at least one stop for the locking bar.

4. A latching mechanism for two relatively movable closure members, comprising a pivot bar adapted to be secured to a marginal edge portion of one of said closure members, an anchor bar having a projection extending from one side thereof, said anchor bar adapted to be secured to a marginal edge portion of the other of said closure members, said anchor bar and said pivot bar positioned on said members so that an edge of one may engage an edge of the other, a pivotal member journalled to said pivot bar so as to be rotatable with a scissoring movement relative to the pivot bar, a guide rail formed from said pivotal member and extending at substantially

a right angle away from the main body of the pivotal member, said guide rail having a curvilinear surface over a portion thereof, and said guide rail positioned on the pivotal member so that when the pivotal member is rotated the projection on the anchor bar may ride thereon and be raised thereby, a raised flange formed from a portion of said pivot bar and including a resilient member having one end thereof positioned about said flange and against a surface of the pivot bar, wherein the other end of the resilient member includes an indent portion in frictional contact with the surface of the pivotal member, and wherein said pivotal member has a plurality of stops thereon for receiving said indent portion of said resilient member.

5. A latching mechanism for two relatively movable closure members, comprising a pivot bar adapted to be secured to a marginal edge portion of one of said closure members, an anchor bar having a projection extending from one side thereof, said anchor bar adapted to be secured to a marginal edge portion of the other of said closure members, said anchor bar and said pivot bar positioned on said members so that an edge of one may engage an edge of the other, a pivotal member journalled to said pivot bar so as to be rotatable with a scissoring movement relative to the pivot bar, a guide rail formed from said pivotal member and extending at substantially a right angle away from the main body of the pivotal member, said guide rail having a curvilinear surface over a portion thereof, and said guide rail positioned on the pivotal member so that when the pivotal member is rotated the projection on the anchor bar may ride thereon and be raised thereby, a resilient member having one end thereof in sliding contact with said pivot bar and the other end thereof having a slot cut out therefrom, said slot adapted to surround at least a portion of said pivot bar.

6. A latching mechanism for two relatively movable closure members, comprising a pivot bar adapted to be

secured to a marginal edge portion of one of said closure members, an anchor bar having a projection extending from one side thereof, said anchor bar adapted to be secured to a marginal edge portion of the other of said closure members, said anchor bar and said pivot bar positioned on said members so that an edge of one may engage an edge of the other, a pivotal member journalled to said pivot bar so as to be rotatable with a scissoring movement relative to the pivot bar, a guide rail formed from said pivotal member and extending at substantially a right angle away from the main body of the pivotal member, said guide rail having a curvilenar surface over a portion thereof, and said guide rail positioned on the pivotal member so that when the pivotal member is rotated the projection on the anchor bar may ride thereon and be raised thereby, means formed in the anchor bar and the pivot bar for initially establishing the lateral position of one with respect to the other when the closure members are positioned together, a locking bar, a cover mounted over said pivotal member such that said locking bar is positioned between the bottom surface of said guideway and the interior surface of said cover, said cover including a keyway and said locking bar including a cam surface for engagement with a key.

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