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3,186,197

LUGGAGE LOCK

Filed May 25, 1962

2 Sheets-Sheet 1

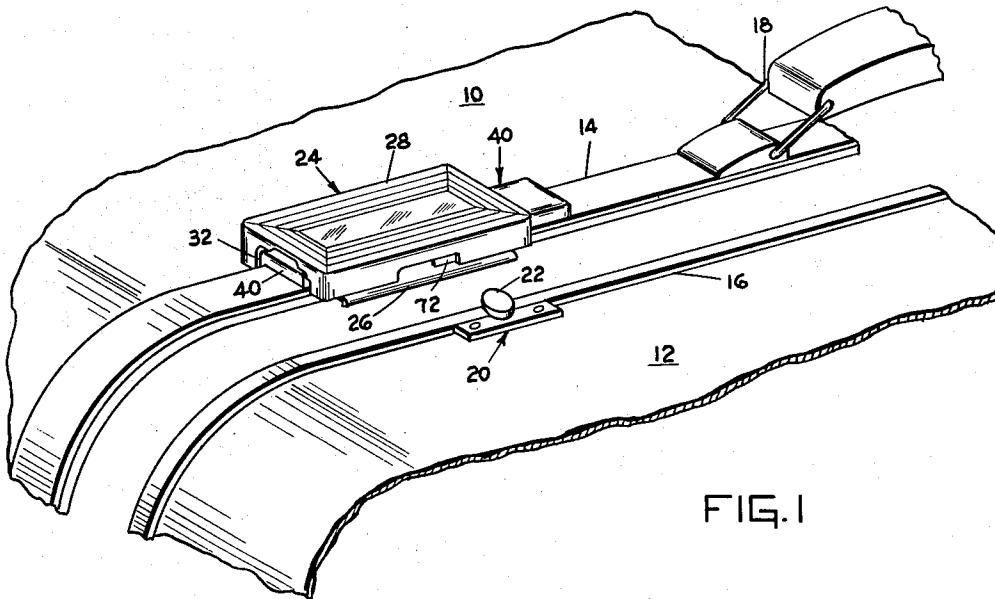


FIG. 1

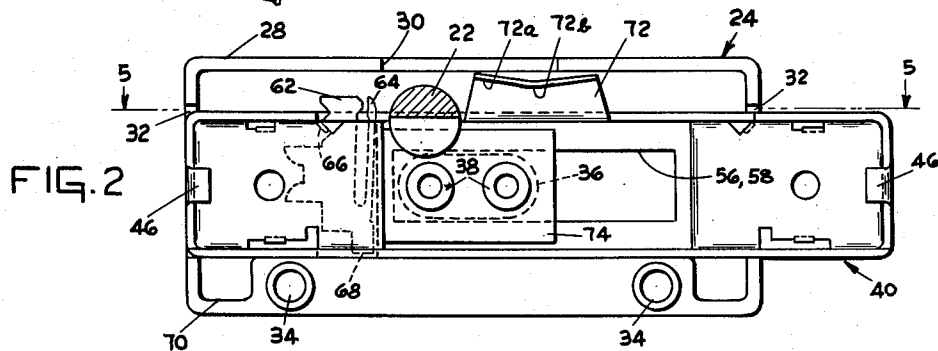


FIG. 2

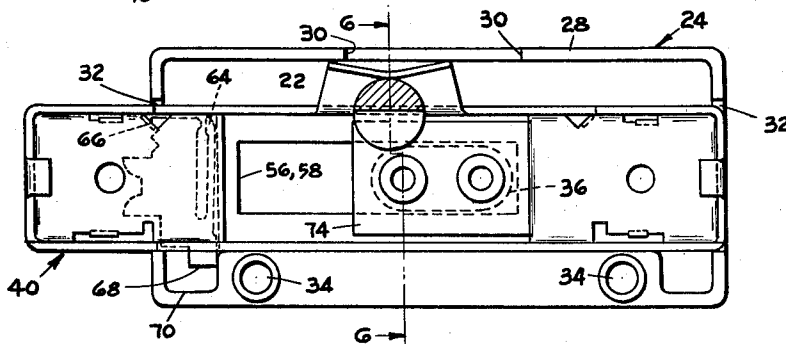


FIG. 3

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FIG. 4

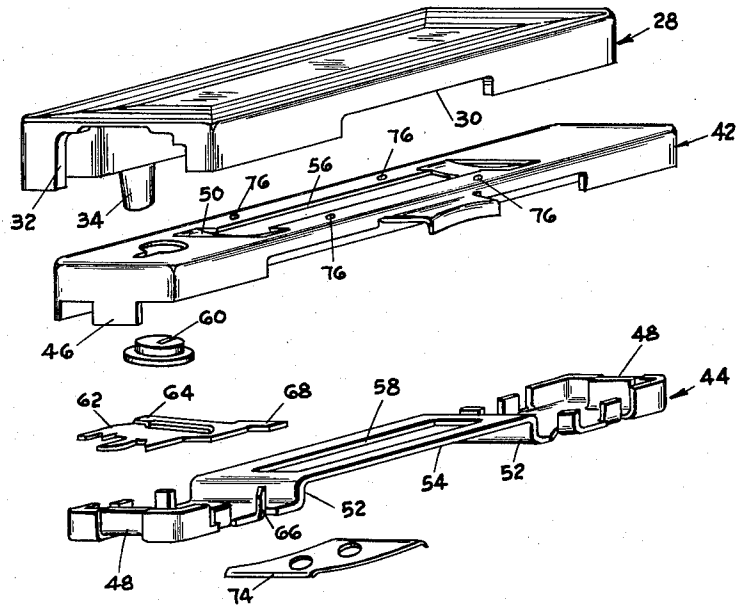


FIG. 5

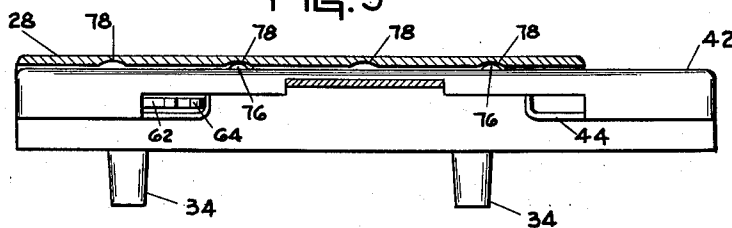
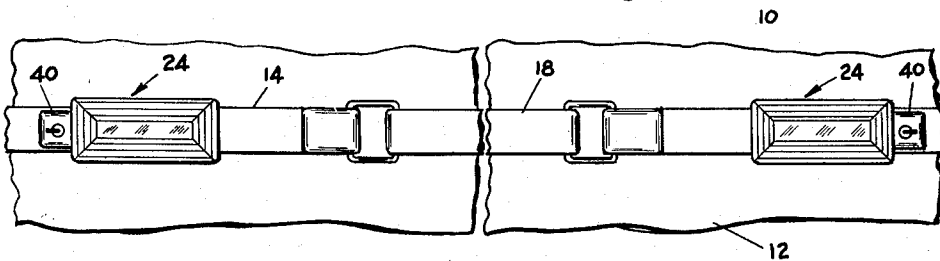


FIG. 7

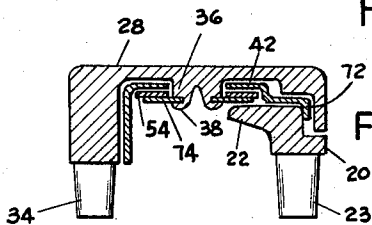


FIG. 6

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3,186,197

LUGGAGE LOCK

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9 Claims. (Cl. 70-71)

The present invention relates to devices that may be fastened to the companion parts of luggage for holding the luggage closed, and for locking the luggage.

An object of the invention resides in a novel form of luggage lock for companion luggage parts, the new and improved luggage lock being compact, reliable, rugged and attractive.

An additional object of the invention is to provide a new form of locking means for luggage that is operable positively in one stroke to hold the companion luggage parts together, and that is operable positively in a reverse stroke when the luggage is to be released.

Still another object of the invention resides in the provision of a novel slide-operated luggage lock in which the mechanism is enclosed, so that the luggage lock is both rugged and attractive in appearance.

A further object of the invention resides in the provision of a luggage lock of a novel form that is particularly well-suited to mounting on valance strips. It is common for valance strips to be secured along the edges of luggage parts to provide edge reinforcement and to provide overlap or tongue-and-groove mating of the edges.

A still further object of the invention relates to an improved luggage lock that is self-indicating to show whether or not the hasp is engaged.

A further feature of the novel luggage lock is that it includes a hasp detent in the form of a cam that is effective to draw together the luggage parts and hold them tightly together.

The presently preferred embodiment of the invention is described in detail below and is shown in the accompanying drawings. In this embodiment, the lock includes an elongated tunnel member that contains a still longer slide body. One side of the tunnel member has an opening that admits a hasp carried by the companion luggage part. The slide body has a hasp-retaining detent that blocks the hasp-admitting opening in one position of the slide body. The hasp is locked in one position of the slide and the hasp is released by shifting the slide. The hasp-retaining slide projects from one end of the tunnel member in its locking position and the slide projects from the opposite end of the tunnel when the hasp is released. The slide can be positively operated into either position. This has the advantage of making the lock independent of operating springs and virtually immune to sticking of parts.

A key-operated locking bolt and a key-receiving barrel are carried in the slide body, near one end. The key-receiving portion of the slide is shifted into the tunnel member when the slide is in its hasp-releasing condition. Consequently, exposure of the key-receiving part of the slide outside the tunnel member automatically provides assurance that the slide is in position to retain the hasp and hold the luggage closed.

The hasp-retaining detent carried by the slide is formed with a camming portion and a holding portion, and the hasp is rounded for cooperation with this detent. With this relationship, the detent and the hasp are effective to draw the two parts of the luggage tightly together, and to remain stably in this condition at the end of the stroke. To guard against any inadvertent release motion of the slide, the tunnel member and the slide member have co-operating click-stop means that yieldingly retains the slide

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in its hasp-locking position. The click-stop means also holds the slide in its hasp-admitting position.

A detailed description of the illustrative embodiment of the invention follows, in which reference is made to the accompanying drawings forming part of this disclosure. In the drawings:

FIG. 1 is a fragmentary perspective view of a pair of companion luggage parts, showing the illustrative luggage lock in its released configuration;

FIG. 2 is an enlarged bottom view of the luggage lock of FIG. 1, with the hasp showing in section in its released position;

FIG. 3 is a view of the luggage lock corresponding to FIG. 2, but with the hasp in its retained position effective to hold the luggage closed;

FIG. 4 is an exploded perspective view of the luggage lock of FIGS. 2 and 3, omitting the hasp;

FIG. 5 is a longitudinal cross-section of the illustrative luggage lock as viewed from the plane 5-5 in FIG. 2;

FIG. 6 is a transverse cross-section of the illustrative luggage lock as viewed from the plane 6-6 in FIG. 3; and

FIG. 7 is a fragmentary top plan view of a piece of luggage, showing a pair of the luggage locks in position holding the luggage closed.

In FIG. 1, the companion luggage parts 10 and 12 have broad and narrow strengthening valance strips 14 and 16, respectively, along the confronting edges of those parts of the luggage. The valance strips are of complementary shapes so as to provide overlapped or tongue-and-groove mating edges. A carrying handle 18 is secured to strip 14.

A hasp member 20 is fixed to luggage part 12, and has an upstanding hasp 22 that is circular as viewed from above. Integral rivets may be used to advantage for fixing member 20 to luggage part 12. Such rivets 23 are shown in FIG. 6 before they are deformed in securing the hasp unit to the luggage.

Opposite the hasp on luggage part 10 is a luggage lock 24 that is fixed to the luggage part and has a bottom contour that is complementary to valance strip 14. One longitudinal edge of lock 24 projects beyond the edge of valance strip 14. Below luggage lock 24 and at the inside of luggage part 10, there is a bracket 26. The bracket extends outward beyond the edge of valance strip 14 and is aligned approximately with the overlying longitudinal edge of luggage lock 24. Valance strip 16 and hasp 22 enter the space between bracket 26 and lock 24 when the luggage is closed.

The construction of lock 24 is shown in FIGS. 2-6. Lock 24 includes a tunnel member 28 having an opening 30 in one side, and a pair of openings 32 at its opposite ends. At its bottom, along one longitudinal edge, member 28 has a pair of integral rivets 34, shown in FIG. 6 as they appear before the lock is mounted. These rivets are to be set into holes through a luggage part and bracket 26, and flattened to fix the lock to the luggage. Depending at the center of tunnel member 28 is an internal boss 36 from which two integral rivets 38 project.

A composite slide body 40 (FIGS. 1 and 7) includes companion top and bottom sheet-metal parts 42 and 44. These are keyed together by interengaging formations. These formations include tongues 46 (only one shown) that are received in the spaces outside off-sets 48, and downward bowed parts 50 that straddle legs 52 of the bridge section 54 of member 44. A pair of aligned slots 56 and 58 in members 42 and 44, respectively, flank boss 36 and are guided thereby for longitudinal sliding through a stroke that is limited by the relative lengths of the boss and the slots.

Rotatably mounted between members 42 and 44 is a

key barrel 60. A key may be inserted into the aligned key-receiving slots in member 42 and barrel 60, and rotated 360° to lock or unlock the slide member. Locking bolt 62 has an integral spring 64 that maintains one of two notches of the bolt in engagement with a locking lance 66 (FIGS. 2 and 3). When a key (not shown) is inserted and rotated in the proper direction, bolt 62 is lifted out of contact with lance 66 and shifted from either position in FIGS. 2 and 3 to the other. A locking projection 68 is operated between respective retracted and extended positions. In the latter position (FIG. 3) locking projection is received in a recess 70 in tunnel member 28, to arrest the slide body 40.

Member 42 has a laterally extending integral portion 72 disposed adjacent hasp-admitting opening 30 in tunnel member 28. At this point it may be mentioned, incidentally, that opening 30 as shown is longer than required, in order that the same tunnel member 28 may be used both for left-hand and right-hand installation at opposite ends of the piece of luggage as shown in FIG. 7. Members 42 and 44 are also adaptable to such alternative installations. In any event, with portion 72 of the composite slide in one position (FIG. 2), a transverse path for admitting and removing a hasp is provided. In the opposite position of the slide body, portion 72 blocks the path through which hasp 22 must move to release the luggage. Notably, the key-barrel end of the slide is in a projecting position, clear of the tunnel, only in the hasp-retaining position of the composite slide. This gives clear indication outside the tunnel member 28 that the locking slide is in position to hold the luggage closed.

Portion 72 of the locking slide 40 has a cam part 72a that slants, relative to the direction of sliding, and it also has a rounded part 72b. During an operating stroke from the position in FIG. 2 to that in FIG. 3, cam part 72a engages a rounded surface of hasp 22 and urges the hasp downward in FIG. 2, applying force in the direction to tighten the luggage edges toward each other. The rounded part 72b moves into contact with round hasp 22 at the end of the stroke. The engagement is such that there is no tendency of upward hasp pressure to return the slide to its hasp-releasing position. Such upward hasp pressure would develop in the case of a tightly packed piece of luggage. Additional means is described below that further assures the retention of the slide in either its open or its locked position.

A longitudinally bowed spring 74 bears against the bottom of member 44, urging members 44 and 42 upward against the inside top surface of tunnel member 28. This spring 74 is held in position by rivets 38. Upper member 42 of the composite slide member 40 has four raised nibs 76 that ride along the inside surface of member 28, thereby normally biasing the rest of member 42 downward and out of rubbing contact with tunnel member 28. Member 42 may thus be brightly finished without danger of being scratched during operation of the slide. At each extreme position of composite slide 40, the nibs 76 enter into correspondingly located recesses 78 on the underside of the tunnel member 28. Spring 74 presses the nibs into such recesses, and provides an audible click. This provision of click-stops holds the slide in either position in which it is left, so that the hasp-receiving opening 30 will be either entirely clear of the hasp detent 72 or the hasp will be blocked, without relying on a dead-center relationship of parts 22 and 72a and without requiring use of locking bolt 68 to retain the slide member in its luggage-locking position. When necessary or desirable, a key may be used to extend bolt 68 and positively lock the slide as previously described.

The mechanism for locking and releasing slide 40 is contained within tunnel member 28, making the luggage lock attractive and protecting the mechanism from tampering and accidental damage. Being a structure that is best made long, narrow and shallow, the disclosed luggage lock is well suited to use along valance strips at the edges

of luggage parts. The described lock includes a key-barrel and locking bolt in the slide to engage the fixed tunnel. The luggage lock is in its hasp-retaining condition only when the key-receiving opening is in the part of the slide that projects clear of the tunnel member. This provides an automatic indication of the internal condition of the luggage lock.

The slide body is always accessible for direct manual pushing effort, to engage and to release the hasp. In this respect the present luggage lock is an improvement over catches that depend on catch-closing springs. The slide includes a cam part that applies a firm force drawing the luggage parts together. The cam part is shaped to remain stably in position at the end of its closing stroke; but to supplement this, and to hold the slide definitely in its "open" or its "engaged" position, a click-stop means is incorporated into the slide and the tunnel member assembly.

The foregoing illustrative embodiment of the invention has a number of related novel and important features, and is the presently preferred form of the invention. However, variation in detail, rearrangement and omission of some of these features will readily occur to those skilled in the art. Consequently the invention should be broadly construed in accordance with its full spirit and scope.

What is claimed is:

1. A luggage lock adapted for mounting on one of two companion luggage members for cooperation with a fixed hasp on the other luggage member, said luggage lock including an elongated tunnel member adapted for fixed mounting along the edge of one luggage member and having a lateral opening for admitting a hasp mounted on the companion luggage member, and a slide longer than the tunnel member captive in said tunnel member and movable longitudinally therein bodily from hasp-retaining position to hasp-releasing position and vice versa, said slide projecting from only one end of the tunnel member when the slide is in hasp-retaining position and projecting from only the opposite end of the tunnel member when the slide is in hasp-releasing position whereby the slide has an externally engageable operating portion in all positions thereof accessible for manual operation, said slide having a hasp-retaining detent fixed thereto for movement across said hasp-admitting opening and being selectively operable by said slide into a hasp-retaining position and a hasp-releasing position.

2. A luggage lock adapted for mounting on one of two companion luggage members for cooperation with a fixed hasp on the other luggage member, said luggage lock including an elongated tunnel member adapted for fixed mounting along the edge of one luggage member and having a lateral opening for admitting a hasp mounted on the companion luggage member, and a slide longer than the tunnel member captive in said tunnel member and movable longitudinally therein bodily from hasp-retaining position to hasp-releasing position and vice versa, said slide projecting from only one end of the tunnel member when the slide is in hasp-retaining position and projecting from only the opposite end of the tunnel member when the slide is in hasp-releasing position whereby the slide has an externally engageable operating portion in all positions thereof accessible for manual operation, said slide having a hasp-retaining detent fixed thereto for movement across said hasp-admitting opening and being selectively operable by said slide into a hasp-retaining position and a hasp-releasing position, said detent including a cam surface that slants at a small but substantial angle relative to the direction of sliding movement to engage the hasp and draw the luggage parts forcibly toward one another during operation of the slide toward said hasp-retaining position, and cooperating means on said slide and in said tunnel member to arrest the slide in its hasp-retaining position.

3. A luggage lock adapted for mounting on one of two companion luggage members for cooperation with a fixed

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hasp on the other luggage member, including an elongated tunnel member adapted for fixed mounting along the edge of one luggage member and having a lateral opening for admitting the hasp on the companion luggage member, and a slide longer than the tunnel member captive in said tunnel member and longitudinally movable bodily therein from hasp-retaining position to hasp-releasing position and vice versa, said slide projecting from only one end of the tunnel member when the slide is in hasp-retaining position and projecting from only the opposite end of the tunnel member when the slide is in hasp-releasing position so that one end of the slide always projects from the tunnel member and is accessible for manual operation, said slide having a hasp-retaining detent fixed thereto for movement across said hasp-admitting opening and being selectively operable by said slide into hasp-retaining and hasp-releasing positions, respectively, and key-receiving means and a key-actuated locking bolt carried by the said slide in the end thereof that projects when the slide detent is in its hasp-retaining position, said bolt being operable into and out of locking cooperation with said tunnel member.

4. In combination, a luggage lock and a rounded hasp adapted for mounting in lateral alignment on respective companion luggage members, said luggage lock including an elongated tunnel member adapted for fixed mounting along an edge of one luggage member and having a lateral opening for admitting the hasp on the companion luggage member, and a slide longer than the tunnel member captive in said tunnel member and longitudinally slidable therein bodily from hasp-retaining position to hasp-releasing position and vice versa, said slide projecting from only one end of the tunnel member when the slide is in hasp-retaining position and projecting from only the opposite end of the tunnel member when the slide is in hasp-releasing position so that one end of the slide always projects for manual operation, and a hasp-retaining detent fixed to said slide for movement across said hasp-admitting opening and selectively operable into hasp-retaining and hasp-releasing positions, respectively.

5. In combination, a luggage lock and a rounded hasp adapted for mounting in lateral alignment on respective companion luggage members, said luggage lock including an elongated tunnel member adapted for fixed mounting along an edge of one luggage member and having a lateral opening for admitting the hasp on the companion luggage member, and a slide longer than the tunnel member captive in said tunnel member and longitudinally slidable therein bodily from hasp-retaining position to hasp-releasing position and vice versa, said slide projecting from only one end of the tunnel member when the slide is in hasp-retaining position and projecting from only the opposite end of the tunnel member when the slide is in hasp-releasing position so that one end of the slide always projects for manual operation, and a detent fixed to said slide for movement across said hasp-admitting opening and selectively operable into hasp-retaining and hasp-releasing positions, respectively, said detent being an integral part of said slide and having a camming portion that slants at a small but significant angle relative to the direction of slide operation so as to cooperate with said rounded hasp and draw the hasp transversely in the luggage-closing direction during longitudinal operation of the slide toward said hasp-retaining position, said hasp and detent having abutting portions approximately in dead-center contact in the hasp-retaining position of the slide.

6. A luggage lock adapted for mounting on one of two companion luggage members for cooperation with a fixed hasp on the other luggage member, said luggage lock including a slide and a fixed tunnel member shorter than the slide and having end openings in which said slide is movably received, at least one end of the slide always projecting clear of the tunnel member so that the slide

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may be manually pushed bodily from a position in which it projects at only one end of the tunnel member to a position in which it projects at only the opposite end of the tunnel member, said slide and said tunnel member having interengaging click-stop means in each said position, said slide carrying a hasp-retaining detent within the tunnel member and engageable behind the hasp in one said position and movable by operation of the slide to said other position to release said hasp.

7. A luggage lock adapted for mounting on one of two companion luggage members for cooperation with a fixed hasp on the other luggage member, said luggage lock including a slide and a fixed tunnel member shorter than the slide and having end openings in which said slide is movably received, at least one end of the slide always projecting clear of the tunnel member so that the slide may be manually pushed bodily from a position in which it projects at only one end of the tunnel member to a position in which it projects at only the opposite end of the tunnel member, said slide and said tunnel member having interengaging click-stop means in each said position, said slide carrying a hasp-retaining detent within the tunnel member and engageable behind the hasp in one said position and movable by operation of the slide to said other position to release said hasp, said slide having key-receiving means in the portion thereof that projects when said hasp-retaining detent is in its hasp-retaining position, said slide also having a key-operable locking bolt movable transversely of said tunnel member, into and out of locking engagement therewith.

8. A luggage lock adapted for mounting on one of two companion luggage members for cooperation with a fixed hasp on the other luggage member, said luggage lock including a slide and a fixed tunnel member shorter than the slide and having end openings in which said slide is movably received, at least one end of the slide always projecting clear of the tunnel member to a sufficient extent to enable the slide to be manually pushed bodily from a projecting position at only one end of the tunnel member to a projecting position at only the opposite end thereof, resilient slide guide means biasing said slide into sliding contact with said tunnel member, said slide and said tunnel member having interengaging nubs and recesses in each of said position held in interengagement by said resilient slide guide means, said slide carrying a detent within said tunnel member and engageable behind a hasp in one said position and movable by the slide to said other position to release said hasp.

9. A luggage lock adapted for mounting on one of two companion luggage members for cooperation with a fixed hasp on the other luggage member, said luggage lock including an elongated fixed guide member and a movable slide assembled thereto, said guide member having a lateral opening for admitting the hasp, said slide and guide member being adapted for mounting along an edge of said one luggage member, and a camming part fixed to said slide and adapted to embrace the hasp on the companion luggage part, said camming part having a portion that slants relative to the direction of slide movement for drawing the hasp toward the fixed guide member, said camming part also having a portion not thus slanted, and stop means on the guide member limiting slide operation so that the slide is arrested when the latter portion of the slide is in contact with the hasp.

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M. HENSON WOOD, JR., *Primary Examiner.*