March 30, 1954 W. G. AXTELL 2,673,756

LATCH MECHANISM FOR PARTITIONS OF LUGGAGE CASES

Filed June 28, 1951

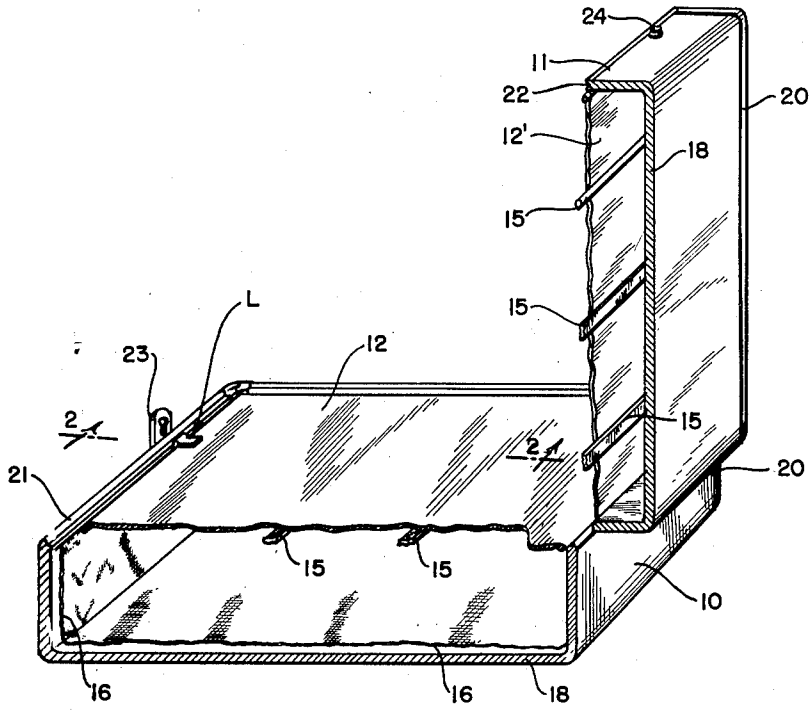


FIG.-1

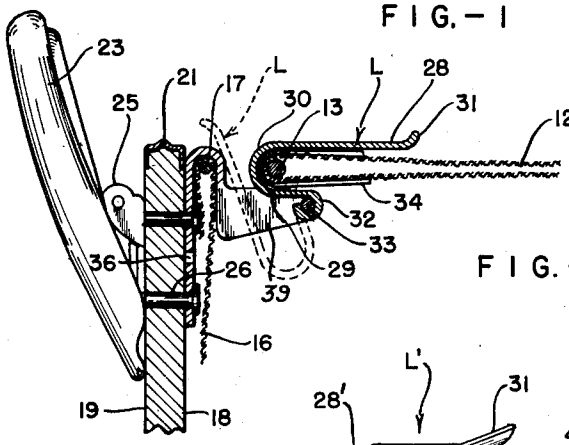
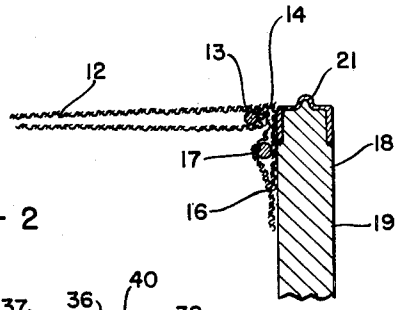


FIG.-2



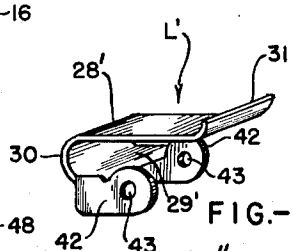


FIG.-4

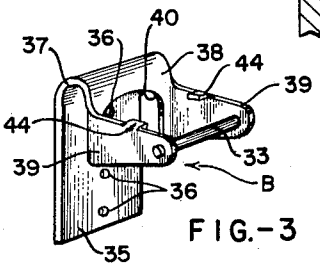


FIG.-3

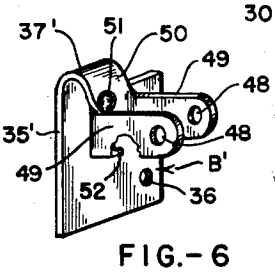


FIG.-6

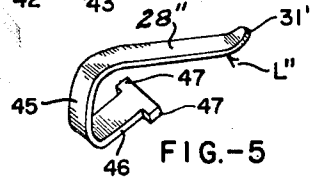


FIG.-5

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LATCH MECHANISM FOR PARTITIONS OF LUGGAGE CASES

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9 Claims. (Cl. 292—101)

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This invention relates to latch mechanism for partitions of luggage cases and the like, such as trays, compartment covers, and the like.

Heretofore, trays or compartment covers for luggage cases have generally been attached in position by a button fastener which extends through a hole in the tray or compartment cover, but these require the hole in the tray to be reinforced and the parts thereof are also comparatively expensive, since not only a base and a top for the button are involved, but also a pivot pin for the button and a spring which will tend to hold the button in the position in which set, i. e. latched or unlatched. Also, the button must be twisted by grasping the same on both sides, as with a thumb and one finger, either to fasten or unfasten. In addition, such button type attachments tend to extend into an opposite compartment when the case is closed, so that for a luggage case having two compartments, if each is to be provided with a cover, the available space is reduced by the height of the pivoted portion of the button fastener.

Among the objects of the present invention are to provide a novel latch mechanism catch for partitions of luggage cases and the like; to provide such a mechanism including a latch which extends a minimum distance above or beyond the partition when engaged therewith; to provide such a latch mechanism which requires only one finger for engagement or disengagement thereof by a user; to provide such a latch mechanism which obviates the necessity for making holes and hole reinforcements in the partition; to provide such a latch mechanism which is reliable and effective in operation; to provide such a latch mechanism which is particularly adapted to be installed in conjunction with hardware or the like for fastening the two halves of the case together; to provide such a latch mechanism which provides a maximum space in each compartment, when each of two compartments is provided with a cover; to provide such a latch mechanism which is readily and efficiently made and in several different sizes; and to provide such a latch mechanism which may be made in any one of several different forms.

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 cabinet drawing of a luggage case provided with latch mechanism constructed in accordance with this invention, the luggage case being shown in open position and also being broken away to show the interior construction more clearly;

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Fig. 2 is a condensed cross section, on an enlarged scale with respect to Fig. 1, and taken along line 2—2 of Fig. 1;

Fig. 3 is an enlarged perspective view of a bracket forming a part of the mechanism of Fig. 2;

Fig. 4 is an enlarged perspective view of an alternative construction of a latch, which forms a part of the mechanism of Fig. 2;

Fig. 5 is an enlarged perspective view of an additional alternative latch; and

Fig. 6 is a perspective view of an additional alternative bracket, particularly adapted to be utilized with the latch of Fig. 5.

As illustrated in Fig. 1, a luggage case having a bottom 10 and a top 11, each of which forms a compartment which may be closed interiorly by a compartment cover 12 and 12', respectively, may be provided with one or more latch mechanisms which include a latch L, constructed in accordance with this invention and hereinafter described with greater particularity, for holding the covers 12 and 12' in closed position. As in Fig. 2, each of the compartment covers 12 and 12' may be formed by a double thickness of fabric, enclosing a rectangular form defining its edges, such as a rod 13, and the rear end 14 of the cover may be attached, as by a suitable adhesive, to the rear inside edge of the compartment. Also, as in Fig. 1, each cover 12 and 12' may be provided with straps 15 for attachment of articles thereto. One of the compartments may, of course, be provided with a cover similar to covers 12 and 12', and the other compartment with a cover constructed in the manner disclosed and claimed in the copending application of James Donald, Marvin W. Stimson and Raymond Birza, Serial No. 69,684, filed January 7, 1949, now U. S. Patent No. 2,649,940, issued August 25, 1953, and entitled "Luggage Compartment Covers," in which event only one set of latch mechanisms constructed in accordance with this invention may be necessary. In addition, each of the compartments of the case may be provided with a liner or lining 16, such as constructed in the manner disclosed and claimed in the copending application of James Donald, Marvin W. Stimson, and Raymond Birza, Serial No. 68,948, filed January 3, 1949, now U. S. Patent No. 2,649,939, issued August 25, 1953, and entitled "Luggage Compartment Liners." As disclosed therein, such liners

may comprise in general a layer of fabric attached to a layer of stiffer material, such as cardboard or the like, and an additional strip of cardboard which is sewed to the fabric and the backing strip so as to form a space to receive a reinforcing rod, such as the rods 17 of Fig. 2. The wall of the luggage case may comprise a relatively shallow U-shaped, wall 18 of plywood or the like, covered on the outside with a layer 19 of a suitably colored and abrasion and scuff resistant plastic material, the ends of each compartment being closed by a similarly constructed plastic covered plywood wall (not shown) attached to the edges of the U-shaped wall and the joint reinforced by strips 20 of suitable material, such as plastic. In addition, the edges of the compartments which fit together may be provided with inverted, U-shaped metal strips 21 and 22, the strip 21 having a tongue and the strip 22 having a groove into which the tongue fits, so as to form a seal between the compartments. The top 11 of the luggage case may be provided with a suitable handle (not shown), while the bottom 10 may be provided with a pair of drawbolts 23 (only one being shown), each adapted to cooperate with a stud 24 on top half. Each of the drawbolts 23 may be pivotally mounted on a bracket 25 which is adapted to be attached to the wall of the case by rivets 26, while the studs 24 may be attached to the wall of the case by a single rivet each.

In accordance with the present invention, each of the compartment covers 12 and 12' may be held in closed position by a latch L, which is mounted on a bracket B, the latch and bracket together forming the latch mechanism of this invention. As in Fig. 2, the latch L may be generally U-shaped, having an upper and preferably longer arm 28 and a lower and preferably shorter arm 29, the two arms being disposed in substantially parallel relation and joined by an arcuate section 30. The free end of the longer arm 28 may be provided with an upturned lip 31, under which a portion of the finger of a user may be inserted in flipping the latch from the full or closed position to the dotted or open position of Fig. 2, while the corresponding end of the shorter arm 29 may be provided with an arcuate section 32, adapted to enclose a pivot pin 33 of bracket B, on which the latch L pivots in moving between the full and dotted positions of Fig. 2. The compartment cover 12 may be provided with a reinforcing strip 34, as of leather or plastic, sewn to the cover over the portion engaged by the latch L, to minimize wear.

As will be evident from Fig. 2, the latch L, when in the dotted position, permits the cover 12 to be opened or closed, as desired, and after the cover is closed, the latch L may merely be flipped from the dotted to the full position, to hold the cover in place. As will also be evident from Fig. 2, the latch L is pivoted at a point inwardly from the point of contact with the edge of cover 12, which edge is disposed at a predetermined spaced position from the wall of the luggage case, so that any force on the cover tending to open it will bend to pivot the longer arm 28 of the latch and force it against the cover. Stated in another way, the latch L is pivotally mounted on the bracket B farther from the wall of the luggage case than the front edge of cover 12, when the latter is in closed position. The cover 12 or 12' may, of course, be relatively solid, rather than merely fabric stretched over the rectangularly formed rod, in which event similar results will be secured, i. e. the pivoting of the shorter or under arm 29 of the latch at a point inwardly from the edge of the cover will maintain the latch securely in engagement with the cover. As will be further evident from Fig. 2, the latch L, because of the relatively straight upper and preferably longer arm 28, may be positioned close to the edge of the compartment, so that when the case is closed, the compartment covers 12 and 12' may engage or substantially engage each other. Thus, additional room is provided in the compartments, than if the cover 12 or 12' were held by the previous pivoted button type of fastener, which would extend for a considerable distance above the cover.

Preferably, of course, the latches L for at least one of the covers 12 and 12' is closed when the luggage case is to be closed, as otherwise they would tend to interfere with proper closing of the case, since as shown in the dotted position of Fig. 2, the latch L may extend slightly beyond the level of the metal sealing strip 21. However, if desired, the longer arm 28 of each of the latches L may be shortened, as in the case of arm 28' of latch L' of Fig. 4, so that they will lie more closely against the bracket B, but it is more convenient, for opening and closing of the latches, for the latches to extend slightly beyond the strip 21 or 22.

The bracket B may, as in Figs. 2 and 3, include a base 35 having suitable holes 36 therethrough for the rivets 26, the upper end of the base being contiguous with a 180° arcuate section 37 which merges into a front section 38, from each side of which an integral arm 39 may extend forwardly, the front section 38 either being solid between the arms 39, or being cut away, as shown, as along a portion 40 which may be arcuate and extend for 180° or have any other suitable shape, so as to provide access to the upper rivet 26 when attaching the bracket B to the case. The inner end of each arm 39 may be provided with a hole adapted to receive the opposite ends of the pivot pin 33, pivot pin 33 conveniently having a head at one end and being riveted over against the arm 39 at the opposite end, or pin 33 may be riveted at each end. For assembly, the pin 33 is preferably slid into position through the arcuate section 32 of latch L, and then riveted.

In the latch L', an alternative construction of the latch illustrated in Fig. 4, the upper or longer arm 28' and its lip 31, as well as the arcuate section 30, may be similar to corresponding parts of the latch L, although arm 28' of latch L' may be shorter than arm 28 of latch L, as indicated previously. However, a pivot or bearing for the latch may be formed by a pair of ears 42, which are bent downwardly from each side of the shorter arm 29' and provided with pivot holes 43. The latch L' may be mounted on the bracket B of Fig. 3, except that the pivot pin 33 extending across the bracket arms 39 may be omitted, and a short rivet passing through each of holes 43 and the holes in the arms 39 may be utilized to pivotally attach the latch L' to the bracket B. However, the pin 33 may be utilized as a pivot, if desired. As will be evident, the latch L' may be used in the same manner and will operate in substantially the same manner as latch L of Fig. 2, as described above. In the bracket B of Fig. 3, the bracket arms 39 may be provided with a projection or projections

44 on the upper edge which will limit the rotation of latch L and/or latch L' about pin 33 or the short rivets passing through each of the holes 43 and the holes in the arms 39 when latch L' is used. It is desirable that the rotation of latch L and latch L' be limited to between the full and dotted positions as shown in Fig. 2.

The latch L'' of Fig. 5 may be utilized, particularly for smaller luggage cases, when the size of the tray or compartment cover is such that a narrower latch may be sufficient to hold the tray or cover in position. In the latch L'', the upper and preferably longer arm 28'', provided with an upturned lip 31' at its end, is similar in shape, but narrower, than the longer arm 28 or 28' of the latches L and L'. The longer arm 28'' may merge into a back 45, which may be perpendicular to arm 28'' and the lower end of which merges into a shorter arm 46, which in turn may be inclined upwardly, as at about 45°, although the back 45 may be made shorter and the arm 46 extend generally parallel to the upper arm 28''. In addition, a pair of laterally extending, pivoting ears 47 may be formed at the inner end of the arm 46, the ears 47 being adapted to pivot in holes 48 of arms 49 of bracket B' of Fig. 6. The arms 49 of the bracket B' may be spaced closer together than the arms 39 of the bracket B of Fig. 3, extending forwardly from each side of a front section 50 which is connected by a 180° arcuate section 37' with a flat base 35', in which the rivet holes 36 (only one being shown in Fig. 6, but the other two being directly thereabove) are placed at the side of the front section 50, thereby permitting access to the rivets when the bracket is attached to the wall of the luggage case. The front section 50 of the bracket B' may be provided with a rearwardly extending dimple or indentation 51, to hold the rod 16 in position, particularly when the liner of the aforesaid Donald et al. U. S. Patent No. 2,649,939 is utilized. The bracket B of Fig. 3 may, of course, also be provided with a smiliar dimple, if desired. Also, the bracket arms 49 may be provided with a projection or projections 52 on the lower edge which will limit the rotation of latch L'' about the ears 47 within the holes 48 in bracket arms 49. It is desirable, as with latch L and latch L', that the rotation of latch L'' be limited to between full and alternate positions, similar to those shown in Fig. 2.

When the bracket B or B' is to be installed opposite a drawbolt 23, as in Fig. 2, only the outside holes 36 are necessary for the rivets 26, while when the bracket is installed opposite a stud 24, the center hole 36 may be used for the single rivet involved. Of course, brackets with only two holes 36, for installation opposite a drawbolt 23, and other brackets with only a single hole 36, for installation opposite a stud 24, may be made, but manufacturing problems may be simplified by making the brackets with three holes, as shown, so that any bracket may be installed opposite a drawbolt 23 or a stud 24.

It will be evident that the brackets B and B', as well as the latches L, L' and L'', may each be formed from a single piece of metal, by suitable stamping and forming operations. Thus, in the case of latch L'' of Fig. 5, a suitable blank may be stamped out and then readily bent to shape. In the case of latch L, a blank may be cut out, the pivot section 32 bent to shape around

a pin or suitable mandrel, and the arms 28 and 29 then bent to parallel relation around a pin or mandrel of larger diameter. Lip 31 may be formed as the last, or an intermediate operation. Similarly, in forming the latch L' of Fig. 4, the pivot holes 43 may be made at the same time that the blank is cut out, and the ears 42 then bent down, after which the arm 28 may be formed by bending the opposite end of the blank around a suitable pin or mandrel, the lip 31 being formed as the final or an intermediate opening.

In forming the bracket B of Fig. 3, a suitable blank may be cut or stamped to shape, and the rivet holes 36 may be made simultaneously, or either previous to or after the initial stamping operation. The arms 39 may then be bent forwardly, and the base 35 then be bent down into position, as around a suitable pin or mandrel. As indicated previously, the pivot pin 33 may be assembled with the bracket at the same time that the latch L is attached thereto, or when a separate rivet is used for each of the ears 42 of the latch L', the latch L' may be attached to the bracket B as the final operation. Bracket B' may be formed by similar operations, with arms 49 slightly apart, so that latch L'' may be attached thereto by placing pivoting ears 47 in position to engage holes 48, and then pressing arms 49 toward each other.

It will be evident, of course, that the various arms and ears of the latches and brackets may be formed of separate pieces, welded or otherwise attached to the remainder of the bracket or latch, as by welding, although the brackets and latches are sufficiently simple in construction that each may be made of a single piece of metal, and an integral construction is therefore preferable. It will further be evident that various changes may be made in the manner in which the latches and brackets are attached to each other, i. e. pivoted together, and that each of the various latches may be utilized with a bracket similar to either bracket B or bracket B', and that the brackets may be attached to the case in any other suitable manner. Also, brackets of other designs may be utilized, such as brackets in which the arms for receiving the pivoted latches merely extend from each side of a base, particularly when the catch of this invention is utilized on a case in which the luggage compartment liner of the aforesaid Donald et al. U. S. Patent No. 2,649,939 is not utilized. It will be understood, of course, that the partition of the luggage case need not be a compartment cover, but may be a tray or other type of partition.

From the foregoing, it will be evident that the latch mechanism of this invention fulfills to a marked degree the requirements and objects hereinbefore set forth. As will be evident, the latch tends to remain in engaged or disengaged position—particularly the engaged position—since the under or preferably shorter arm is pivoted at a point inwardly from the edge of the tray or compartment cover, so that any upward force directed against the upper and preferably longer arm will tend merely to cause the latch to engage the tray or compartment cover more firmly. The brackets having inwardly extending arms, on the inner ends of which the latches are pivoted, are particularly desirable since they accurately position the pivot points of the latches. In addition, the brackets having a front and back adapted to enclose the liner are particularly useful when the liner of the aforesaid Donald et al U. S. Patent

No. 2,649,939 is utilized. As indicated previously, variations in construction of both the latches and brackets may be made, and it will also be evident that other embodiments of this invention may exist, without departing from the spirit and scope thereof.

What is claimed is:

1. A latch mechanism for a movable partition in a luggage case, said partition having a front edge spaced from a wall of said case when in closed position, said latch mechanism comprising a support mounted on said wall; and a generally U-shaped latch pivotally mounted on said support at a point beneath said partition, the pivot point of said latch being spaced farther from said wall than the front edge of said partition when in said closed position, said latch including an upper arm and lower arm, said lower arm being pivoted on said support and said upper arm being adapted to extend over the top of said partition when in said closed position.

2. In a latch mechanism for a movable partition in a luggage case, as defined in claim 1, wherein said upper arm of said latch is longer than the lower arm.

3. In a latch mechanism for a movable partition in a luggage case, as defined in claim 1, wherein the free end of the upper arm of said latch is upturned with said latch closed.

4. In a latch mechanism for a movable partition in a luggage case, as defined in claim 1, wherein said bracket comprises a base having rivet holes for attachment to said wall, a front section spaced from said base and connected thereto at the upper end thereof by an integral arcuate section, said front section having at each side a transversely extending, integral arm, said bracket arms being disposed in substantially parallel relation and each having at its free end a hole for attachment of a pivot for said latch and said front section being cut away between said arms to provide access to the uppermost rivet hole.

5. In a latch mechanism for a movable partition in a luggage case, as defined in claim 1, wherein said support comprises a bracket including a base having rivet holes for attachment to said wall, a front section spaced from said base and connected thereto at the upper end thereof by an integral arcuate section, said front having at each side a transversely extending, integral arm, said bracket arms being disposed in substantially parallel relation and each having at its free end a hole for attachment of a pivot pin and said front section being cut away between said arms to provide access to the uppermost rivet hole; and said latch is pivoted on said pin.

6. In a latch mechanism for a movable partition in a luggage case, as defined in claim 1, wherein said support comprises a bracket including a base having rivet holes for attachment to said wall, a front section spaced from said base and connected thereto at the upper end thereof by an integral arcuate section, said front having at each side a transversely extending, integral arm, said bracket arms being disposed in substantially parallel relation and each having at its free end a hole for attachment of a latch, said base being wider than said front section and said rivet holes being disposed laterally with respect to said front section.

7. In a latch mechanism for a movable partition in a luggage case, as defined in claim 1, wherein said support comprises a bracket having a pivot pin whose axis extends generally parallel to said wall at a point beneath said partition; and wherein the upper arm of said latch is longer than the lower arm, said arms are connected together by a curved section, the free end of said upper arm is upturned with said latch closed, and the end of said lower arm is pivoted on said pin.

8. In a latch mechanism for a movable partition in a luggage case, as defined in claim 1, wherein the upper arm of said latch is longer than said lower arm and said arms are connected together by an integral curved section, the free end of said upper arm being upturned with said latch closed and said lower arm having integral ears at each side thereof pivotally attached to said support.

9. In a latch mechanism for a movable partition in a luggage case, as defined in claim 1, wherein the upper arm of said latch is longer than the lower arm and said lower arm extends upwardly toward said upper arm, said arms being connected together by an integral section extending generally perpendicular to said upper arm, the free end of said upper arm being upturned with said latch closed and the free end of said lower arm being provided with laterally extending ears pivoted on said support.

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