Aug. 25, 1942. A. LEVINE 2,294,120

LATCHING MEANS FOR LUGGAGE

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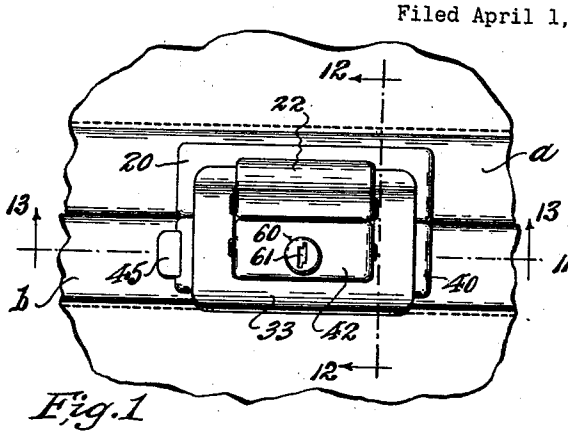



Fig. 1

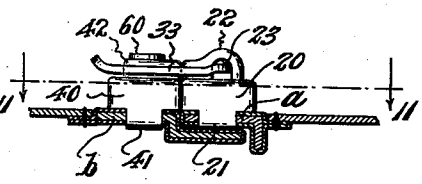



Fig. 2

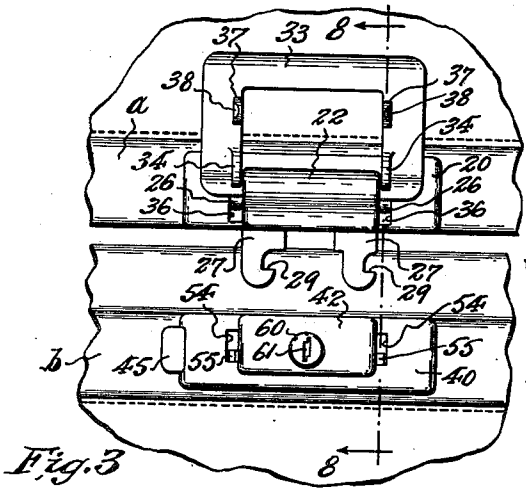



Fig. 3

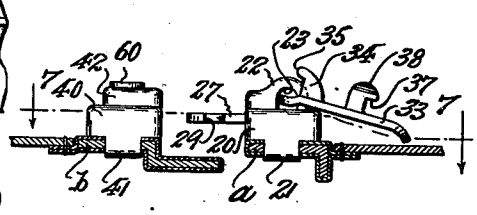



Fig. 4

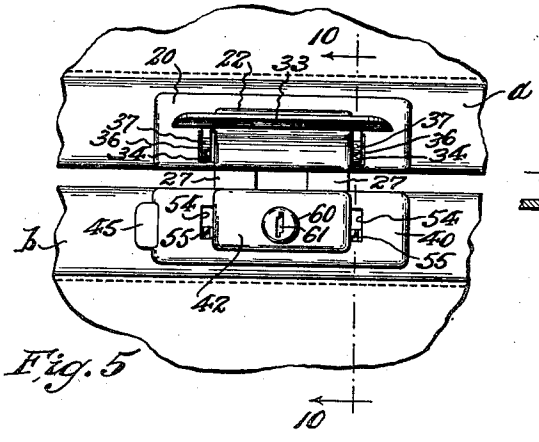



Fig. 5

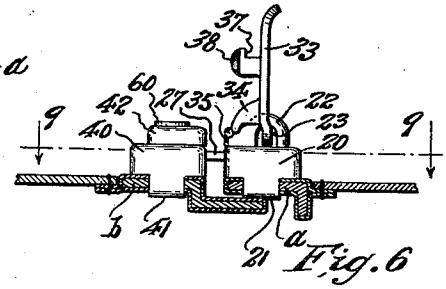



Fig. 6

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Fig. 7

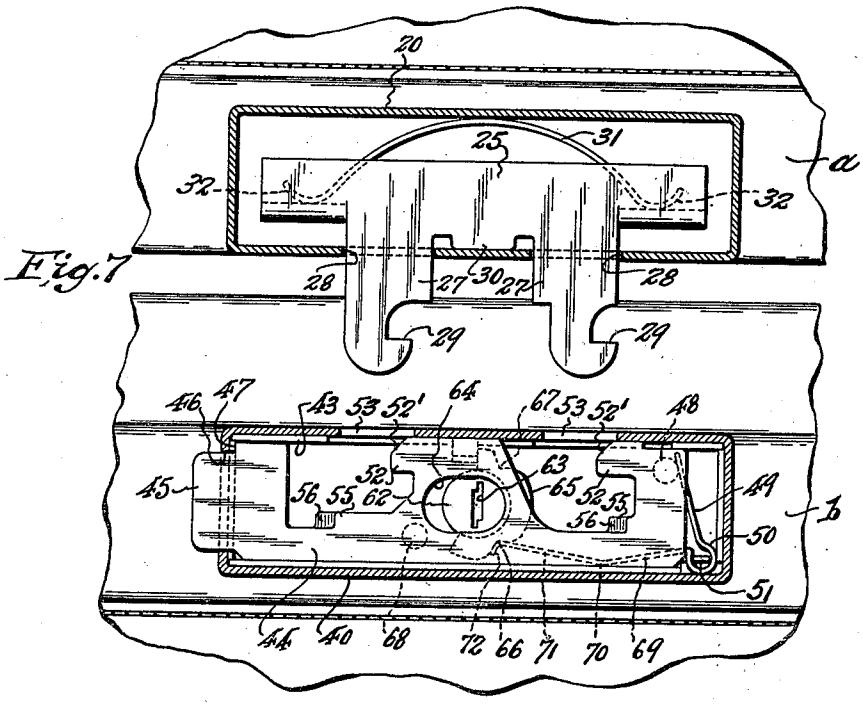



Fig. 8

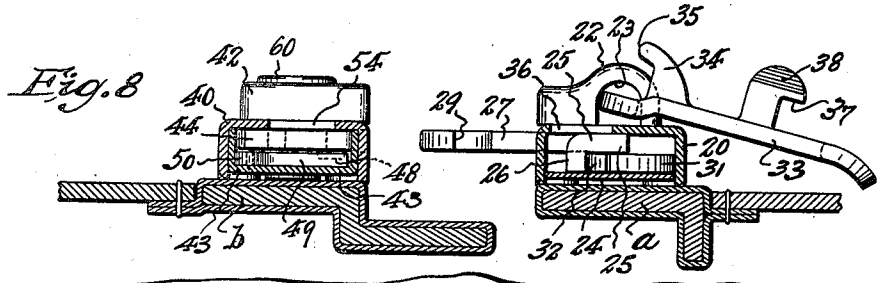
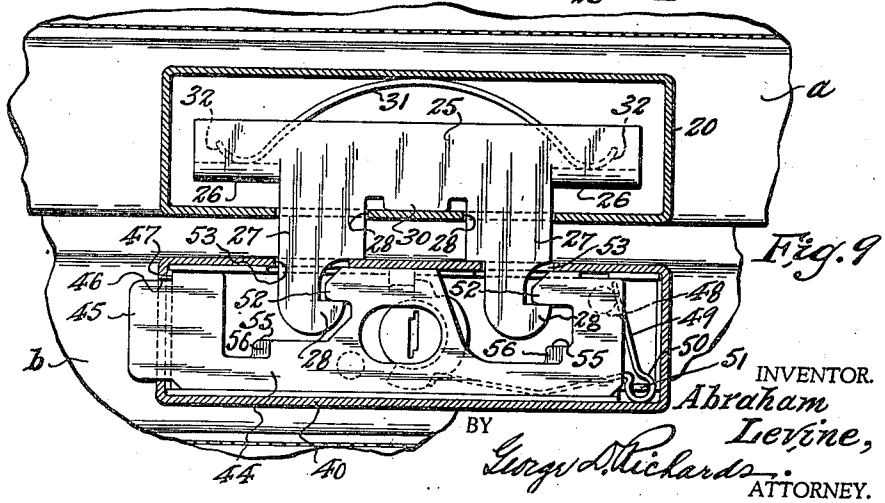



Fig. 9




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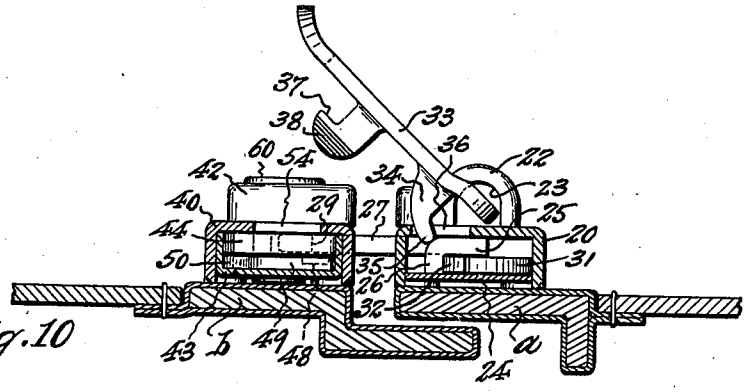



Fig. 10

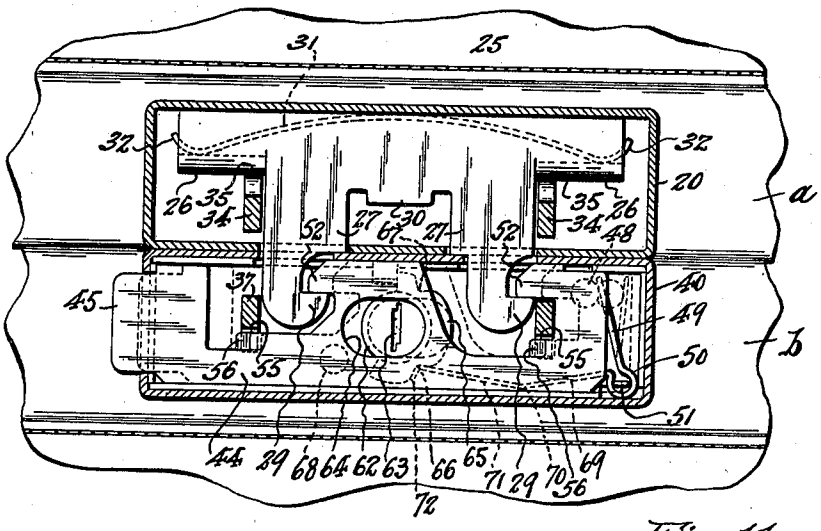



Fig. 11

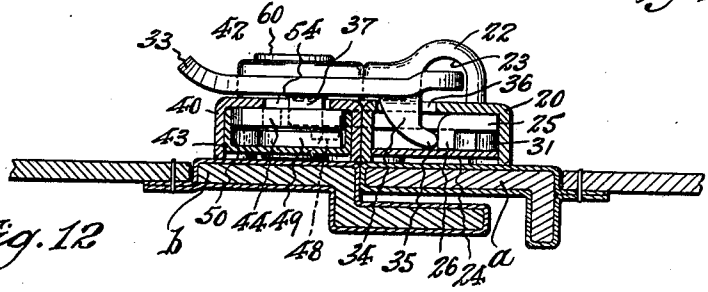



Fig. 12

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LATCHING MEANS FOR LUGGAGE

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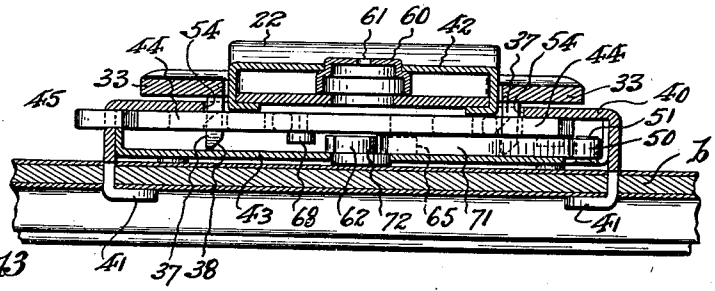



Fig. 13

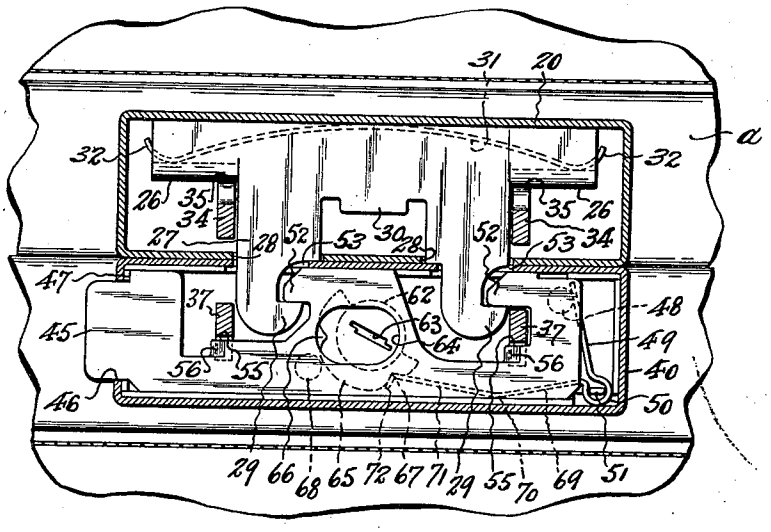



Fig. 14

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# UNITED STATES PATENT OFFICE

2,294,120

## LATCHING MEANS FOR LUGGAGE

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Application April 1, 1941, Serial No. 386,301

10 Claims. (Cl. 70—76)

This invention relates to latching means for luggage; and the invention has reference, more particularly, to a novel construction of latching device for luggage articles operative to draw and secure separable sections of a luggage article served thereby tightly together in closed relation.

This invention has for an object to provide a novel latching device comprising cooperative interengageable latching means adapted to be respectively mounted upon opposed separable sections of an article of luggage, including manipulatable means operative, after engagement of said latching means, to draw and secure the luggage article sections in tightly closed together relation.

This invention has for another object to provide a novel latching device of the kind stated wherein one of the cooperative interengageable latching means includes movable means subject to actuation by cam means carried by an associated pivoted hasp element whereby the latched luggage article sections are drawn tightly together in closed relation, and wherein the other latching means includes means adapted to be embraced by the hasp element whereby to hold the luggage article sections thus tightly closed, and further includes means to engage and hold the hasp element against accidental release.

A further object of this invention is to provide a novel latching means of the kind stated which includes associated key operable means for locking the latching and securing elements against unauthorized releasing manipulation.

Other objects of this invention, not at this time more particularly enumerated, will be understood from the following detailed description of the same.

An illustrative embodiment of this invention is shown in the accompanying drawings, in which—

Fig. 1 is a plan view of the luggage latching means in operative closed condition; and Fig. 2 is a side elevation thereof, the frame portions of the luggage article sections being shown in section.

Fig. 3 is a plan view of the latching means in released condition; and Fig. 4 is a corresponding side elevation thereof.

Fig. 5 is a plan view of the latching means as initially engaged preparatory to closing the article of luggage served thereby; and Fig. 6 is a corresponding side elevation thereof.

Fig. 7 is a horizontal section on an enlarged scale, taken on line 7—7 in Fig. 4; and Fig. 8 is an enlarged transverse vertical section, taken on line 8—8 in Fig. 3.

Fig. 9 is an enlarged horizontal section, taken on line 9—9 in Fig. 6; and Fig. 10 is an enlarged transverse vertical section, taken on line 10—10 in Fig. 5.

Fig. 11 is an enlarged horizontal section, taken on line 11—11 in Fig. 2; and Fig. 12 is an enlarged transverse vertical section, taken on line 12—12 in Fig. 1.

Fig. 13 is an enlarged longitudinal vertical section, taken on line 13—13 in Fig. 1; and Fig. 14 is a view similar to that of Fig. 11, but showing latching and securing elements locked against unauthorized releasing manipulation by the associated key operable means.

Similar characters of reference are employed in the above described views, to indicate corresponding parts.

Referring to the drawings, the novel latching means of this invention is readily adapted for use in latching and securing together opposed separable sections of various forms of luggage articles, but is especially well adapted for use in connection with traveling bags or cases having flush type frames, that is frames of the kind wherein the opposed frame sections respectively include exterior portions *a* and *b* which lie in a common plane, and which, in closing, meet in edge to edge relation, as shown in the accompanying drawings.

The novel latching means according to this invention comprises a chambered housing member **20** having lugs **21** dependent therefrom, preferably from its ends; said lugs **21** extending through the bag frame section *a*, and being clenched over the underside of the latter, thereby to rigidly affix said housing member to said frame section in such relation that a longitudinal inner wall of the former is disposed substantially flush with the free edge of said frame section exterior portion. Suitably secured to the top wall of said housing member **20** is a bearing member **22** having perforate end walls providing bearing openings **23**. Said bearing member **22** is of less length than said housing member, and is mounted centrally intermediate the ends of the latter. Disposed within said housing member **20**, between its top wall and an inlay plate **24** with which the interior thereof is provided, is a combined catch and draw plate **25**, the same having adjacent to its ends downturned thrust lugs or ears **26** parallel to its longitudinal axis. Formed as integral parts of said catch and draw plate **25** are spaced outwardly projecting catch

arms 27 arranged to project exteriorly of the housing member 20 through openings 28 with which the inner wall of the latter is provided. Said catch arms 27 terminate at their free end portions in catch hooks 29. Formed in connection with the forward margin of said catch and draw plate 25 is a stop member 30 adapted to normally abut the inner wall of said housing member 20, whereby to limit forward movement of said catch and draw plate. Said catch and draw plate 25 is yieldably urged to a forwardly projected position, as determined by said stop member 30, by a bow spring element 31 which is based against the outer wall of said housing member 20. The respective free terminal portions 32 of said spring element thrustingly engage the backs of the thrust lugs or ears 26 of said catch and draw plate 25.

Pivotally journaled in the bearing openings 23 of the bearing member 22 is a hasp element 33. Integrally formed with and so as to depend from the respective side portions of said hasp element 33 are cam members 34, which terminate at their free ends in cam nosings 35. Provided in the top wall of said housing member 20 are cam access openings 36. Also integrally formed with and so as to depend from the respective side portions of said hasp element 33, at points intermediate the free and pivotal ends of said hasp element, are hasp catch hooks 37 having laterally chamfered extremities 38.

The reference character 40 indicates a second housing member having lugs 41 dependent therefrom, preferably from its ends; said lugs 41 extending through the bag frame section *b*, and being clenched over the underside of the latter, thereby to rigidly affix said housing member 40 to said frame section *b* in such relation that a longitudinal inner wall of the former is disposed substantially flush with the free edge of an exterior portion of said frame section *b*. Suitably secured to the top wall of said housing member 40 is a hollow boss piece 42, the same being mounted centrally intermediate the ends of said housing member 40, and being suitably shaped to conform to and so as to enter the opening of the hasp element 33, when the latter is swung down thereover, in the manner and for the purposes subsequently explained. Disposed within said second housing member 40, between its top wall and an inlay frame 43 with which the interior thereof is provided, is a longitudinally slidable latch plate 44. Said latch plate 44 is provided at one end (the left hand end as shown) with a push-piece 45 of reduced width which projects exteriorly from an end of said second housing member 40 through an opening 46 provided therein. At the juncture of said push-piece 45 with the body of said latch plate 44 is formed a stop shoulder 47 which limits the movement of said latch plate 44 and thus determines its operative latching position. Adjacent to its opposite end, said latch plate 44 is provided with a stud 48 dependent from its under side, said stud being engaged by one arm 49 of a spring member 50 which is supported within the housing member 40 in connection with an anchoring stud 51 formed on the inlay frame 43. Said spring arm 49 thrusts against the latch plate 44, whereby to yieldably hold the latter in the operative latching position above mentioned. Said latching plate 44 is suitably cut away at the inner side thereof to provide latch hooks 52 having chamfered portions 52'; said latch hooks being so positioned as to be subject to engagement by the previously described catch hooks 29, when the latter are entered through passage openings 53 with which the inner side wall of the housing member 40 is provided.

Provided in the top wall of said housing member 40 are access openings 54 through which the previously described hasp catch hooks 37 may be entered when the hasp element 33 is swung down into embracing relation to said boss piece 42. Said latch plate 44 is provided with suitably positioned latching lips 55 having chamfered end portions 56, said latching lips being engageable by said hasp catch hooks 37.

Key operable means is provided for locking the latch plate 44 against unauthorized releasing manipulation. Such key operable means comprises a key barrel 60 rotatably mounted in connection with said boss piece 42 of the housing member 40, the same having a key entrance slot 61 conformably shaped to accommodate a selected key (not shown). Rotatably mounted in connection with the inlay frame 43 of the housing member 40, in vertically aligned relation to said key barrel 60, is a tumbler 62 which is also provided with a key slot 63 conformably shaped to receive the selected key admitted through said key barrel slot. Said latch plate 44 is provided with a slot or opening 64 through which the inserted key may gain access to said tumbler 62 for operative engagement therewith. Said tumbler 62 is provided with a radially offset lock-piece 65, the periphery of which is provided with spaced indents or notches 66 and 67. Dependent from the underside of said latch plate 44 is stop stud 68, into and out of the path of movement of which said lock-piece 65 may be swung by rotation of said tumbler 62. Normally said tumbler 62 is turned to a position wherein said lock-piece is removed out of the path of movement of said stop stud 68, and is yieldably held in such position by detent spring means. Preferably the detent spring means is formed by an arm 69 of the spring member 50, said arm 69 being angularly shaped to provide, intermediate its ends, a fulcrum elbow 70 which bears against an adjacent side of the inlay frame 43, whereby the free end portion of said arm extending beyond the fulcrum elbow constitutes a detent spring element 71 terminating in an angular extremity 72 to engage and fit the respective indents or notches 66 and 67 of the tumbler 62. When the tumbler 62 is positioned to remove the lock-piece 65 out of the path of movement of said latch plate stop stud 68, the indent or notch 66 is engaged by said detent spring element 71, thereby yieldingly retaining the tumbler 62 in latch plate releasing position (see Figs. 7, 9 and 11). To lock the latch plate, the selected key is inserted through the key barrel 60 and thence into the tumbler 62, whereupon by turning the key in clockwise direction, rotative movement in corresponding direction is imparted to the tumbler 62 which disengages the indent or notch 66 from the detent spring element, and engages the latter with the indent or notch 67; such rotation of the tumbler 62 operating to swing around the lock-piece 65 into the path of movement of latch plate stop stud 68, whereby to prevent unauthorized releasing manipulation of said latch plate (see Fig. 14).

In the operation of the latching device, the sections of the luggage article equipped therewith are moved one toward the other so that the frame sections *a* and *b* thereof are disposed in opposed relation ready to be closed together, as shown in Figs. 3, 4, 7 and 8; the catch and latch

structures of the latching device being in such case disconnected and separated, and the hasp element being swung back to inactive position. Under such circumstances, the catch and draw plate 25 is thrust forward by the bow spring 31 to normal stopped position against the inner wall of the housing member 20, whereby the catch arms 27 are projected to an exteriorly advanced position relative to said housing member 20, with their catch hooks 29 opposed to the passage openings 53 of the latch plate housing member 40. As the frame sections *a* and *b* are further moved one toward the other from such positions, the catch hooks 29 are caused to enter through said passage openings 53, and thereupon engage the chamfered portions 52' of the latch hooks 52 carried by the latch plate 44. As the catch hooks 29 press against said chamfered portions 52' of the latch hooks 52, the same ride over the latter, thus sliding back the latch plate 44 from left to right against the tension of the spring arm 49, until said catch hooks 29 snap over said latch hooks 52; the latch plate 44 then being returned by the spring arm 49 to normal initial position, thus operatively interengaging said latch hooks 52 and catch hooks 29 (see Figs. 5, 6, 9 and 10). Since the spring arm 49 is tensionally weaker than the bow spring 31, the combined catch and draw plate 25 does not yield during this initial latching operation.

While the above operations effect a latching together of the catch and latch structures, the frame sections *a* and *b* are not fully closed together by said operations. To thereafter draw and secure said frame sections into tightly closed together relation, the hasp element 33 is manipulated so as to swing the same forward toward the boss piece 42 carried by the latch plate housing member 40. As the hasp element 33 is swung forward, the cam members 34 carried thereby are caused to enter through the access openings 36 of the housing member 20, thus bringing the nosings 35 into engagement with the thrust lugs or ears 26 of the combined catch and draw plate 25 (see Fig. 10). Continued down swinging movement of said hasp element 33 causes the cam members 34 to exert a strong rearwardly moving pressure upon the catch and draw plate against the tension of the bow spring 31, whereby, as said catch and draw plate is thus moved back within the housing member 20, the catch arms 27 are retracted therewith, and being coupled by their catch hooks 29 with the latch hooks 52 of the latch plate 44, operate to draw the entire latch structure, and the frame section *b* to which it is secured, toward the frame section *a*, until said frame sections *a* and *b* are tightly closed together, while at the same time the boss piece 42 is carried forward into registration with the hasp element interior, so that the hasp element 33 will close down over and around the same (see Figs. 1, 2 and 12), thus securing or interlocking the catch and latch structures together, whereby to hold the frame sections *a* and *b* in said tightly closed together relation.

As the hasp element 33 swings down over and around the boss piece 42, the hasp catch hooks 37 enter through the access openings 54 of the housing member 40, so that their laterally chamfered extremities 38 engage the chamfered end portions 56 of the latching lips 55 with which the latch plate 44 is provided. As the hasp catch hooks 37 continue downward movement, their chamfered extremities 38 press against and ride over the chamfered end portions 56 of the latching lips 55, thus sliding back the latch plate 44 against the tension of the spring arm 49, until said latching lips snap over the hasp catch hooks 37 as the spring arm 49 returns the latch plate 44 to normal initial position (see Fig. 11), whereby the hasp element is latched down against accidental releases from its embracing relation to the boss piece 42.

If it is desired to lock the latch plate 44 against releasing manipulation, the key operable means above described is actuated in the manner already above set forth.

To release the latching device to free the luggage frame sections for opening movement, the latch plate 44 (if locked by the key operable means, being first unlocked) is moved from left to right by pressing inwardly upon its push-piece 45. Such movement of the latch plate 44 first frees the latching lips 55 from the hasp catch hooks 37, and thereafter frees the latch hooks 52 from the catch hooks 29 of the catch and draw plate 25. Since the catch and draw plate 25 is retracted against the stored tension of the bow spring 31, as soon as catch hooks 37 are released, said bow spring 31 reacts against the housing member 20 and catch and draw plate 25, causing the latter to move forward relative to the former. Such relative movement causes the thrust lugs or ears 26 to press against the cam members 34 of the hasp element 33, so as to swing the latter up and away from the boss piece 42, thus releasing the latter, while at the same time withdrawing the catch arms 27 outwardly of and away from the housing member 40 as the catch and latch portions separate.

Frove the above it will be understood that a very simple and effective latching device is provided, which is adapted not only to strongly secure separable sections of a luggage article served thereby in closed relation, but also to draw said sections tightly together as well.

It will be understood that various changes could be made in the constructions above set forth, and that many apparently widely different embodiments of this invention could be made without departing from the scope thereof. It is therefore intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. Latching means for luggage and like articles having opposed separable sections comprising, cooperative catch and latch structures respectively mounted on said respective sections, a hasp element pivotally connected with said catch structure, said catch structure having retractable spring projected catch and draw plate means adapted to engage with said latch structure, said latch structure including a boss piece adapted to be embraced by said hasp element, and said hasp element having cam means to retract said catch and draw plate means after initial engagement of the latter with said latch structure, whereby to draw said sections into tightly closed together relation when said hasp element is swung to boss piece embracing position.

2. Latching means for luggage and like articles having opposed separable sections comprising, cooperative catch and latch structures respectively mounted on said respective sections, said latch structure having a manually releasable spring pressed latch plate, an external hasp element pivotally connected with said catch struc-

ture, said catch structure having retractable spring projected catch and draw plate means adapted to engage with the latch plate of said latch structure, said latch structure including an external boss piece adapted to be embraced by said hasp element, and said hasp element having cam means to retract said catch and draw plate means after initial engagement of the latter with the latch plate of said latch structure, whereby to draw said sections into tightly closed together relation when said hasp element is swung to boss piece embracing position.

3. Latching means for luggage and like articles having opposed separable sections comprising, cooperative catch and latch structures respectively mounted on said respective sections, said latch structure having a manually releasable spring pressed latch plate, an external hasp element pivotally connected with said catch structure, said catch structure having retractable spring projected catch and draw plate means adapted to engage with the latch plate of said latch structure, said latch structure including an external boss piece adapted to be embraced by said hasp element, said hasp element having cam means to retract said catch and draw plate means after initial engagement of the latter with the latch plate of said latch structure, whereby to draw said sections into tightly closed together relation when said hasp element is swung to boss piece embracing position, and said latch structure including key operable means for preventing manual release of said latch plate.

4. Latching means for luggage and like articles having opposed separable sections comprising, cooperative catch and latch structures respectively mounted on said respective sections, said latch structure having a manually releasable spring pressed latch plate, an external hasp element pivotally connected with said catch structure, said catch structure having retractable spring projected catch and draw plate means adapted to engage with the latch plate of said latch structure, said latch structure including an external boss piece adapted to be embraced by said hasp element, said hasp element having cam means to retract said catch and draw plate means after initial engagement of the latter with the latch plate of said latch structure, whereby to draw said sections into tightly closed together relation when said hasp element is swung to boss piece embracing position, and said hasp element also having catch hook means engageable with the latch plate of said latch structure to secure said hasp element in said boss piece embracing relation.

5. Latching means for luggage and like articles having opposed separable sections comprising, cooperative catch and latch structures respectively mounted on said respective sections, said latch structure having a manually releasable spring pressed latch plate, an external hasp element pivotally connected with said catch structure, said catch structure having retractable spring projected catch and draw plate means adapted to engage with the latch plate of said latch structure, said latch structure including an external boss piece adapted to be embraced by said hasp element, said hasp element having cam means to retract said catch and draw plate means after initial engagement of the latter with the latch plate of said latch structure, whereby to draw said sections into tightly closed together relation when said hasp element is swung to boss piece embracing position, said hasp element also having catch hook means engageable with the latch plate of said latch structure to secure said hasp element in said boss piece embracing relation, and said latch structure including key operable means for preventing manual release of said latch plate.

6. Latching means for luggage cases and the like having opposed separable sections comprising, a catch structure housing member affixed to one section, a latch structure housing member affixed to the other section, said catch structure housing member having an external bearing member, a hasp element pivotally supported by said bearing member, said latch structure housing member having an external boss piece adapted to be embraced by said hasp element, a manually releasable spring pressed latch plate longitudinally slidable in said latch structure housing member, said latch plate having latch hook means, a retractable spring pressed catch and draw plate transversely movable in said catch structure housing member, said latter plate having externally projecting catch hook means, and said hasp element having cam means adapted to enter said catch structure housing member to engage and retract said catch and draw plate after entrance of said catch hook means into said latch structure housing member and into initial engagement with the latch hook means of said latch plate, whereby to draw said sections into tightly closed together relation when said hasp element is swung to boss piece embracing relation.

7. Latching means for luggage cases and the like having opposed separable sections comprising, a catch structure housing member affixed to one section, a latch structure housing member affixed to the other section, said catch structure housing member having an external bearing member, a hasp element pivotally supported by said bearing member, said latch structure housing member having an external boss piece adapted to be embraced by said hasp element, a manually releasable spring pressed latch plate longitudinally slidable in said latch structure housing member, said latch plate, having latch hook means, a retractable spring pressed catch and draw plate transversely movable in said catch structure housing member, said latter plate having externally projecting catch hook means, said hasp element having cam means adapted to enter said catch structure housing member to engage and retract said catch and draw plate after entrance of said catch hook means into said latch structure housing member and into initial engagement with the latch hook means of said latch plate, whereby to draw said sections into tightly closed together relation when said hasp element is swung to boss piece embracing relation, key operable means within said latch structure housing member for preventing manual release of said latch plate, and a key barrel rotatably mounted in said boss piece to receive and pass a key into engagement with said key operable means.

8. Latching means for luggage cases and the like having opposed separable sections comprising, a catch structure housing member affixed to one section, a latch structure housing member affixed to the other section, said catch structure housing member having an external bearing member, a hasp element pivotally supported by said bearing member, said latch structure housing member having an external boss piece adapted to be embraced by said hasp element, a manually

releasable spring pressed latch plate longitudinally slidable in said latch structure housing member, said latch plate having latch hook means, a retractable spring pressed catch and draw plate transversely movable in said catch structure housing member, said latter plate having externally projecting catch hook means, said hasp element having cam means adapted to enter said catch structure housing member to engage and retract said catch and draw plate after entrance of said catch hook means into said latch structure housing member and into initial engagement with the latch hook means of said latch plate, whereby to draw said sections into tightly closed together relation when said hasp element is swung to boss piece embracing relation, said latch plate having latch lip means, and said hasp element also having dependent catch hook means adapted to enter said latch structure housing member into engagement with said latch lip means, whereby to secure said hasp element in boss piece embracing relation.

9. Latching means for luggage cases and the like having opposed separable sections comprising, a catch structure housing member affixed to one section, a latch structure housing member affixed to the other section, said catch structure housing member having an external bearing member, a hasp element pivotally supported by said bearing member, said latch structure housing member having an external boss piece adapted to be embraced by said hasp element, a manually releasable spring pressed latch plate longitudinally slidable in said latch structure housing member, said latch plate having latch hook means, a retractable spring pressed catch and draw plate transversely movable in said catch structure housing member, said latter plate having externally projecting catch hook means, said hasp element having cam means adapted to enter said catch structure housing member to engage and retract said catch and draw plate after entrance of said catch hook means into said latch structure housing member and into initial engagement with the latch hook means of said latch plate, whereby to draw said sections into tightly closed together relation when said hasp element is swung to boss piece embracing relation, said latch plate having latch lip means, said hasp element also having dependent catch hook means adapted to enter said latch structure housing member into engagement with said latch lip means, whereby to secure said hasp element in boss piece embracing relation, key operable means within said latch structure housing member for preventing manual release of said latch plate, and a key barrel rotatably mounted in said boss piece to receive and pass a key into engagement with said key operable means.

10. Latching means for luggage and like articles having opposed separable sections comprising, cooperative catch and latch structures respectively mounted on said respective sections, a lever pivotally connected with said catch structure, said catch structure having retractable spring projected catch and draw plate means adapted to engage with said latch structure, and said lever having cam means to retract said catch and draw plate means after initial engagement of the latter with the latch structure, whereby to draw said sections into tightly closed together relation when said lever is swung toward said latch structure.

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