Nov. 3, 1942. A. J. KOMENAK 2,300,508

TOGGLE SWUNG LOCKABLE HASP

Filed Dec. 11, 1940 2 Sheets-Sheet 1

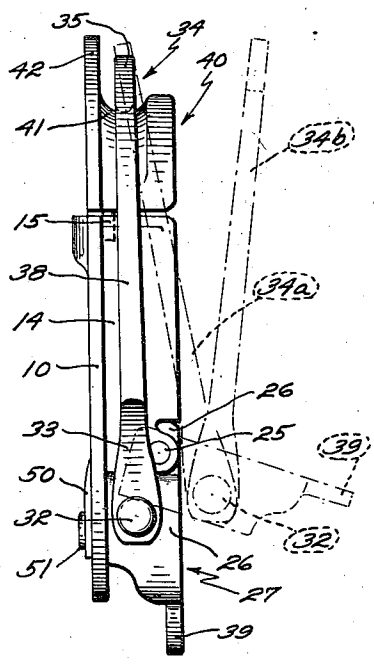


Fig. 2

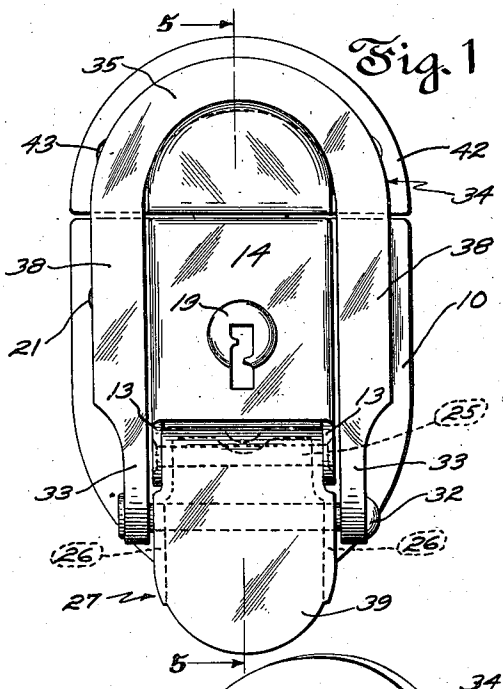


Fig. 1

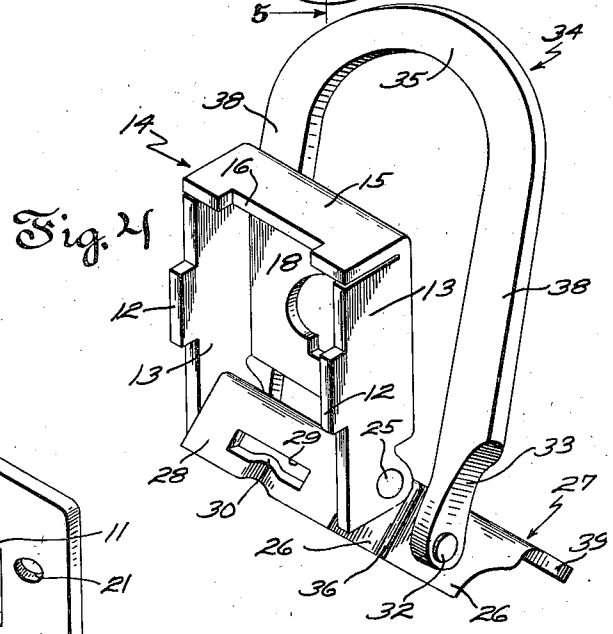


Fig. 4

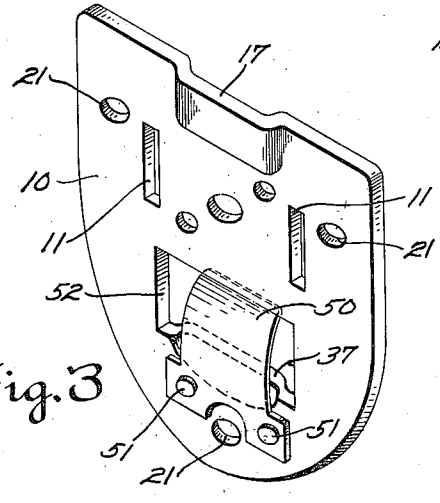


Fig. 3

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TOGGLE SWUNG LOCKABLE HASP

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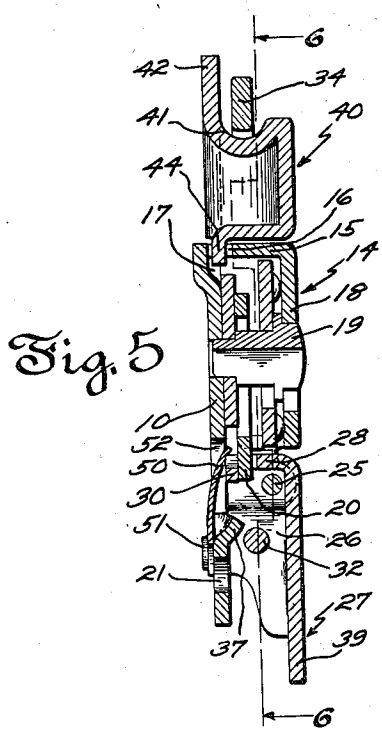


Fig. 5

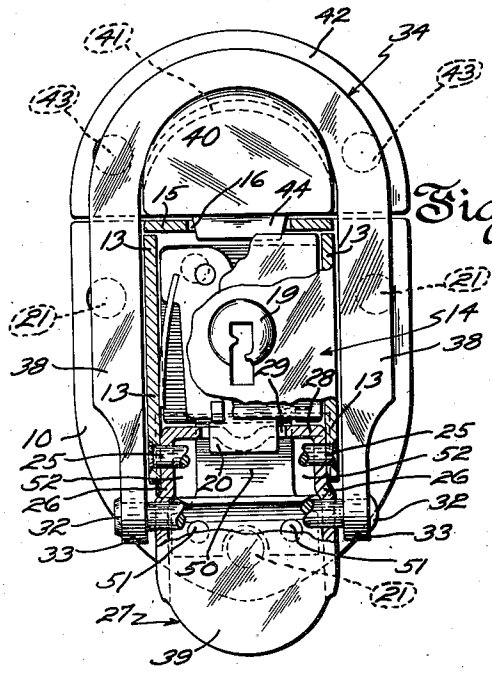


Fig. 6

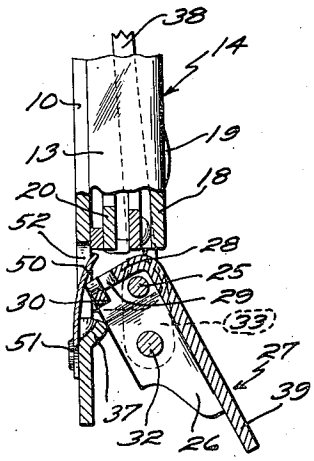


Fig. 7

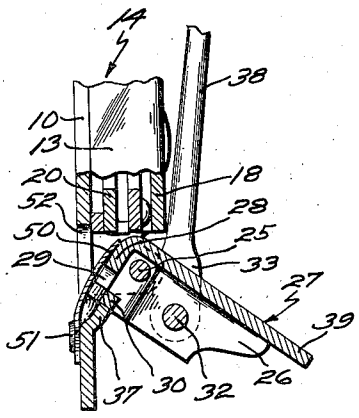


Fig. 8

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TOGGLE SWUNG LOCKABLE HASP

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Application December 11, 1940, Serial No. 369,583

12 Claims. (Cl. 70—76)

This invention relates to a type of lock equipped hasp fastener having a loop-like draw bolt especially suited for drawing and locking together separable edges of the hinged together sections of luggage cases, trunks, or the like.

My former U. S. patent, No. 1,652,676, discloses this general type of lockable hasp fastener in a form wherein the hasp is hung from a manually operated toggle lever but wherein a key operated lock is provided, parts of which lock must be housed at the rear of a mounting or escutcheon plate requiring the latter to be dished or hollow and therefore undesirably thick for certain uses.

An object of the present improvements is to reduce the undesirable overall thickness of the escutcheon plate by placing the lock entirely in front of the latter and still swing the hasp from a finger operated toggle action lever as in my said patent.

A further object is to provide a lock for the hasp that is located as and for the purpose described while remaining stationary with the escutcheon plate instead of being carried on, or bodily movable with, either the hasp itself or the toggle lever from which it is swung.

A further object is to do away with unsightly apertures in the front face of the escutcheon plate for accommodating hasp keeper projections, lock bolts or the like so placed that they are objectionably visible when the hasp is open.

A further object is to do away with exposed projections heretofore carried by the hasp or carried by the toggle action lever from which it is swung for engagement and retention by the bolt of the lock mechanism.

Still further objects relate to space saving cooperative arrangements of parts which have been devised to make the above results possible. All such objects will appear in greater particular from the following description of a preferred embodiment of the invention, in which description reference is made to the accompanying drawings, wherein:

Fig. 1 is a front elevation of a lockable hasp fastener incorporating the present improvements.

Fig. 2 is an edgewise view looking from the left at Fig. 1 showing a plurality of positions of the hasp and of the finger operated toggle action lever.

Fig. 3 is a perspective view of the mounting plate looking toward the rear outer face thereof.

Fig. 4 is a perspective view of the pivotally connected lock case, toggle lever, and hasp removed from assemblage with the mounting plate of Fig. 3.

Fig. 5 is a view taken in section on the plane 5—5 in Fig. 1 looking in the direction of the arrows.

Fig. 6 is a view similar to Fig. 1 showing certain of the parts in section on the planes 6—6 in Fig. 5 looking in the direction of the arrows.

Fig. 7 is a fragmentary view of a portion of Fig. 5 showing the toggle action lever in the first stage of its hasp releasing movement.

Fig. 8 is a view similar to Fig. 7 showing the toggle lever moved to its position for fully releasing the hasp.

The mounting or escutcheon plate 10 as best shown in Fig. 3 has elongated slots 11, 11 which receive fastening tongues 12 projecting from the side walls 13, 13, respectively, of the lock case which case as a whole is designated by 14. This case is further provided with a top wall 15, the rear edge of which contains a shallow notch 60 which registers with a shallow pocket 17 embossed rearward in the top of mounting plate 10. When the fastening tongues 12 are swaged over at the rear of plate 10, the side walls 13, top wall 15 and front wall 18 of lock case 14 form cooperatively with the front surface of plate 10 an open bottomed enclosure for the working parts of the lock mechanism. These parts may include the key barrel 19 which is rotatable in bearing holes in both the front wall 18 and mounting plate 10 and may in other respects be like the lock mechanism disclosed in my copending application, Serial No. 349,339, filed August 1, 1940, inclusive of the vertically slidable plate 20 which serves as the bolt of the lock.

A pivot pin 25 is fixedly lodged at its ends in the side walls 13 of the lock case and extends therebetween and passes through the edge flanges 26 of a finger operated toggle action lever 27. The edge flanges 26 are thus pivotally supported by and freely swingable on the pin 25 and these flanges may be formed by drawing out the metal of the toggle lever into a cup form which also produces integrally with flanges 26 the nose flange or keeper flange 28 flanking the before described bottom open end of lock case 14 and whose free end presents a detentive edge or corner. Flange 28 contains the keeper aperture 29 at whose rear edge the remaining marginal strip of flange 28 is deformed into a V-shape which provides the projection 30 cooperative as shown in Fig. 8 with a forward projecting stop lip 37 formed by bending out the metal of plate 10. The illustrated V-shaped deformation of this marginal strip of flange 28 has been found to strengthen this flange considerably in the

region of aperture 29 against yielding to forcible attempt to swing toggle lever 27 away from its position in Fig. 5 to its position in Fig. 8 when locked by bolt 20. This is because the leverage or turning moment of the opposite edges of aperture 29 with respect to lock bolt 20 is increased by displacing tongue 30 from the general plane of flange 28. The junctions of flanges 26 with flange 28 comprise crackless corners which render member 27 particularly strong.

Edge flanges 26 of toggle lever 27 contain horizontally aligned bearing holes in which the hinge pin 32 is turnable. The ends of pin 32 project outside of flanges 26 and thereat are fixed to the ends 33 respectively of hasp loop 34 having spaced side arms 38 and whose curved nose 35 is adapted to engage with keeper 40.

Keeper 40 is here shown to be constructed in the form of a hollow piece of drawn sheet metal forming a saddle-like seat 41 which is convex as viewed in Fig. 1 and concave as viewed in Fig. 2. A mounting flange 42 borders about this seat and contains holes 43 to receive screws (not shown) by which the keeper 40 may be secured fixedly on, say, the lid of a trunk or baggage case. When such lid is closed the flange 42 will fall in planar alignment with mounting plate 10 if the latter is secured to the body of such trunk or baggage case by means of screws (not shown) accommodated by holes 21 in the mounting plate. When flange 42 and plate 10 are so related, a dowel tab 44, which is bent over and projects downward from the rear edge of the bottom wall of hollow keeper 40, is firmly lodged in the dowel socket defined jointly by the aforesaid notch 16 and pocket 17 in lock case 14 and mounting plate 10, respectively. In this closed position of the fastener parts it will be observed that all heads of holding screws occupying holes 21 or 43 are blocked off by the hasp 34 and toggle lever 27 so that no one of these screws could be removed for gaining access to whatever piece of baggage my improved fastener may serve to lock closed.

For biasing the finger operated toggle lever 27 into either of the extreme positions to which it can swing about pivot pins 25, a leaf spring member 50 is made fast to the rear or outer surface of mounting plate 10 by rivets 51. These extreme limits of swing are determined in one direction by the abutting of the rear edges of flanges 26 of toggle lever 27 against mounting plate 10 and in the other direction are determined by abutting engagement of stops 30 and 31 as hereinbefore described. Spring member 50 slants forwardly through an aperture 52 in mounting plate 10 and yieldably occupies the arc of swinging travel of the rear edge of the keeper flange 28 or corner of toggle lever 27 about pivot 25. Therefore this spring 50 will resiliently press upon and be rubbingly engaged by toggle lever 27 as the latter passes through its position shown in Fig. 7, which position is intermediate its positions shown in Figs. 5 and 8. Thus spring 50 acts normally to bias toggle lever 27 toward either its position shown in Fig. 5 or its position shown in Fig. 8.

Fig. 2 shows that the front flat faces of keeper 40, lock case 14, and finger operated toggle lever 27 fall mutually flush when the hasp is closed and locked. By inserting and turning the usual key (not shown) in lock barrel 19, the locking bolt 20 is shot upward and out of aperture 29 in the flange 28 of toggle lever 27 whereupon the thumb or finger of the user's hand can be used to swing this toggle lever from its full line position to its broken line position in Fig. 2. This operation, without individually touching hasp 34, will lift the curved hasp nose 35 clear of the seat 41 from its full line position to its broken line position 34a in Fig. 2. The hasp may then be swung forward into a further broken line position 34b, whereupon it is removed from position to engage with keeper 40 and the lid of the trunk or baggage case is free to be opened. When such lid is next swung closed, dowel tab 44 enters and nests snuggly in the pocket 17, 18. Hasp 34 is then swung into position 34a in Fig. 2 and toggle lever 27 is then pressed downward, swinging about its pivot 25 from broken to full line position in Fig. 2. This draws the hasp nose 35 forcibly downward against keeper seat 41 and draws the trunk lid to an optimum tightness of closure. Now the aforesaid lock key may be turned and bolt 20 thereby shot into engagement with toggle lever aperture 29 thus preventing further displacement of the toggle lever, and therefore of the hasp, from their full line positions in Fig. 2.

In the foregoing description of operation it may be noticed that the toggle lever 27 in swinging from its position in Fig. 5 to its position in Fig. 7 occasions very little, if any, flexure of the detentive spring 50 and hence lifting of the finger piece end 39 of the toggle lever requires little more force than is required to overcome the frictional resistance to rubbing of flange 28 against spring 50. However, in Fig. 5, spring 50 will be observed to press on the detent edge of this flange in a direction relative to pivot pin 25 which exerts considerably more biasing force opposing counterclockwise swinging of toggle lever 27 than is the case in Fig. 7. In the latter figure an exact or near dead center relationship obtains.

For convenience, the term closure sections is used in certain of the appended claims to include the lid and body of a trunk or equivalent parts of an article of baggage, although it will be understood that my improved fastener may serve to secure together meeting parts of any form of container or closure. Modifications in the details of the particular construction of several parts of the fastener which are herein disclosed for illustrative purposes only may be made within the scope of the present invention and the following claims will be understood to comprehend and cover all substitutes and equivalents which fairly come within their terms.

I claim:

1. In a lockable hasp fastener for holding together mating container sections, the combination of, a mounting plate adapted to be carried by one of said sections and having an accessible front face, a keeper abutment adapted to be carried by the other of said sections and having at least a portion projecting forward therefrom beyond said front face of said mounting plate, a lock case fixed on and so projecting from said front face of said mounting plate that one end of said case closely flanks and registers with said forward projecting portion of said keeper abutment the opposite end of said case being open, locking mechanism within said case including a bolt projectable through said open end of the latter at the front of said mounting plate, a hasp having spaced arms swingable to a position wherein said arms lie beside said lock case, a strike, and structure movable relative to said lock case carrying said strike to and from a location to be engaged and retained by said bolt and restricting said strike to locations in front of said

mounting plate, said structure being connected to said hasp in a manner to anchor the latter in its said position while said strike is retained by said bolt.

2. In a lockable hasp fastener, the combination defined in claim 1, in which the said strike comprises a bent sheet metal angle piece including a flange flanking the said open end of the said lock case.

3. In a lockable hasp fastener, the combination defined in claim 1, in which at least a part of the said structure is hollow and formed from sheet metal to provide a front wall having rearward turned edge flanges and a nose flange flanking the said opposite open end of the said lock case and carrying the said strike.

4. In a lockable hasp fastener, the combination defined in claim 1, in which at least a part of the said structure is hollow forming a manually swingable lever pivotally connected to the said hasp and drawn from sheet metal in a manner to provide a front wall and edge forming walls joining said front wall and joining each other in a continuous crackless extent of said metal, a nose section of said edge forming walls flanking the said opposite open end of the said lock case and carrying the said strike.

5. In a lockable hasp fastener for holding together mating container sections, the combination of, a mounting plate adapted to be carried by one of said sections and having an accessible front face, a keeper abutment adapted to be carried by the other of said sections and having at least a portion projecting forward therefrom beyond said front face of said mounting plate, a lock case fixed on and so projecting from said front face of said mounting plate that one end of said case closely flanks and registers with said forward projecting portion of said keeper abutment the opposite end of said case being open, locking mechanism within said case including a bolt projectable through said open end of the latter at the front of said mounting plate, a hasp having spaced arms swingable to a position wherein said arms lie beside said lock case, a strike element containing an aperture, and a member movable in relation to said lock case carrying said element to and from a location wherein said aperture may be occupied, by said bolt thereby to retain said member, the movements of said member restricting said aperture to locations in front of said mounting plate and connected to said hasp in a manner to anchor the latter in its said position while said aperture is occupied by said bolt.

6. In a lockable hasp fastener, the combination defined in claim 5, in which the said member incorporates a bent sheet metal angle piece including a flange flanking the said open end of the said lock case and containing the said aperture.

7. In a lockable hasp fastener, the combination defined in claim 5 in which the said member includes a hollow structure forming a manually swingable lever pivotally connected to the said hasp and formed from sheet metal to provide a front wall having rearward turned edge flanges and a nose flange flanking the said opposite open end of the said lock case and containing the said aperture.

8. In a lockable hasp fastener, the combination defined in claim 5, in which the said member includes a hollow structure forming a manually swingable lever pivotally connected to the said hasp and drawn from sheet metal in a manner to provide a front wall and edge forming walls joining said front wall and joining each other in a continuous crackless extent of said metal, a nose section of said edge forming walls flanking the said opposite open end of the said lock case and containing the said aperture.

9. In a hasp fastener, the combination with a hasp, of frame structure including a mounting plate having an aperture, a manually swingable lever pivotally mounted on said structure in a position to conceal said aperture carrying a detentive corner and connected to swing said hasp, a leaf spring secured to the rear face of said mounting plate having a yieldable portion protruding through and in front of said aperture at an incline and occupying the path of swing of said detentive corner of the lever thereby at different times to bias the latter toward each of its opposite directions of throw.

10. In a hasp fastener, the combination defined in claim 9, in which the said detentive corner of the said manually swingable lever comprises the free edge of a thin flange-like wall deformed in its marginal portion adjacent said edge to produce a projection offset in relation to the remaining portion of said wall, together with a shelf-like obstruction fixed on said mounting plate at the border of the said aperture and located in the path of swinging travel of said projection thereby to limit the movement of the said manually swingable lever in one direction.

11. In a lockable hasp fastener for holding together mating container sections, the combination of, a mounting plate adapted to be carried by one of said sections and having an accessible front face, a keeper abutment adapted to be carried by the other of said sections and having at least a portion projecting forward therefrom beyond said front face of said mounting plate, a lock case fixed on and so projecting from said front face of said mounting plate that one end of said case closely flanks and registers with said forward projecting portion of said keeper abutment the opposite end of said case being open, locking mechanism within said case including a bolt projectable through said open end of the latter at the front of said mounting plate, a hasp having spaced arms swingable to a position wherein said arms lie beside said lock case, and a manually swingable lever confined to the front of said mounting plate engageable thereat by said bolt and connected to said hasp for anchoring the latter in its said position.

12. In a lockable hasp fastener, the combination defined in claim 5, in which the said strike element embodies an angle piece including a flange flanking the said open end of the said lock case and containing an aperture receptive to said locking bolt and separated from the edge of said flange by an elongated marginal portion of the latter, said bolt projecting lengthwise into said aperture in a direction transverse said flange, and said marginal portion of said flange being at least in part offset from the plane of the rest of the flange in a manner to engage with said locking bolt at a point spaced lengthwise of said bolt from said plane.

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