Aug. 14, 1945. R. S. WAGNER ET AL 2,382,756

HASP LOCK

Filed April 19, 1943 3 Sheets-Sheet 1

Fig. 1.

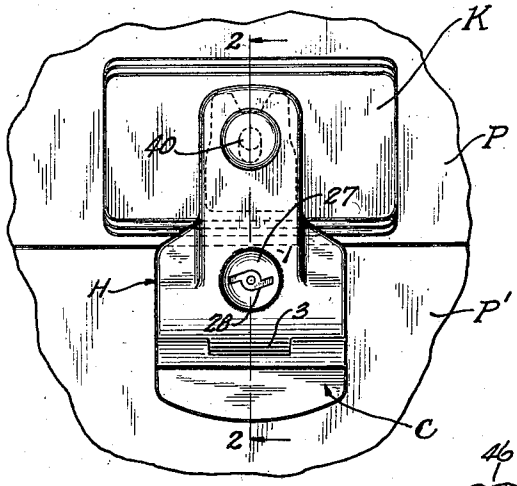
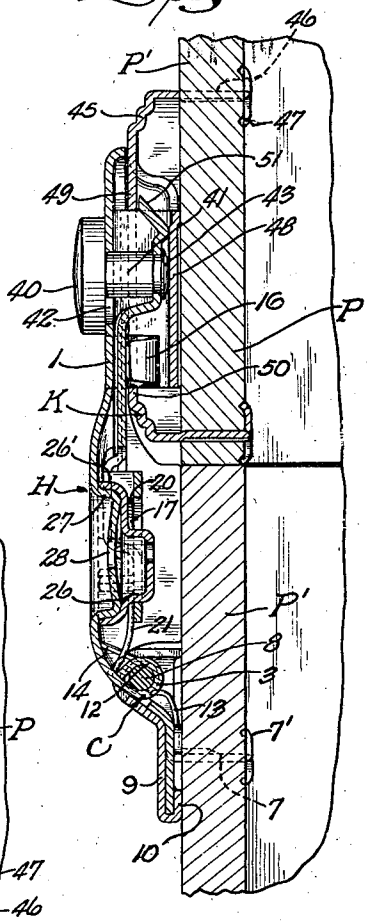


Fig. 2.



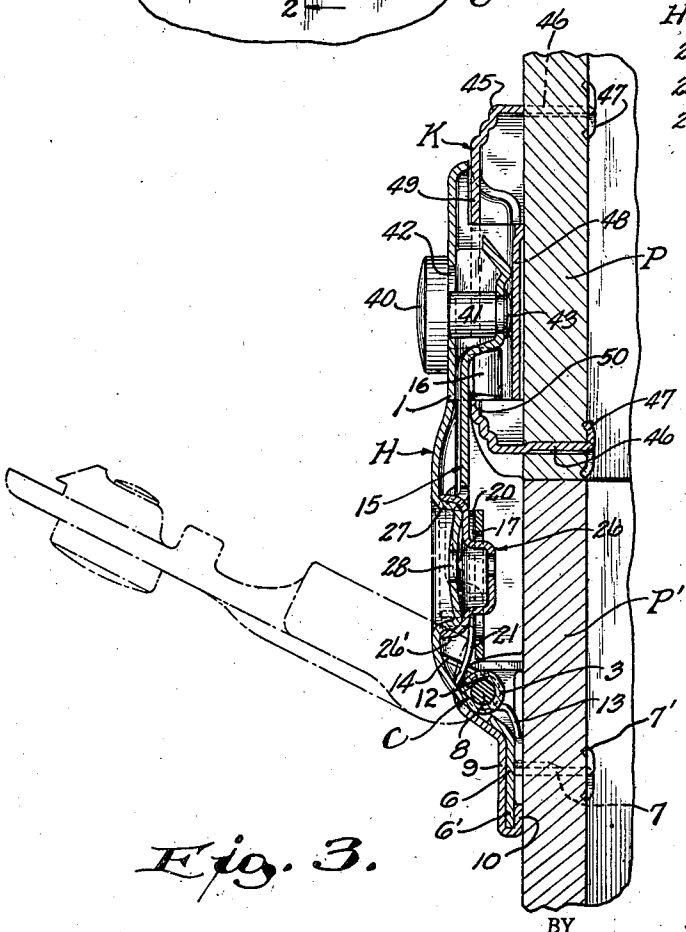


Fig. 3.

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Aug. 14, 1945. R. S. WAGNER ET AL 2,382,756

HASP LOCK

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Fig. 4.

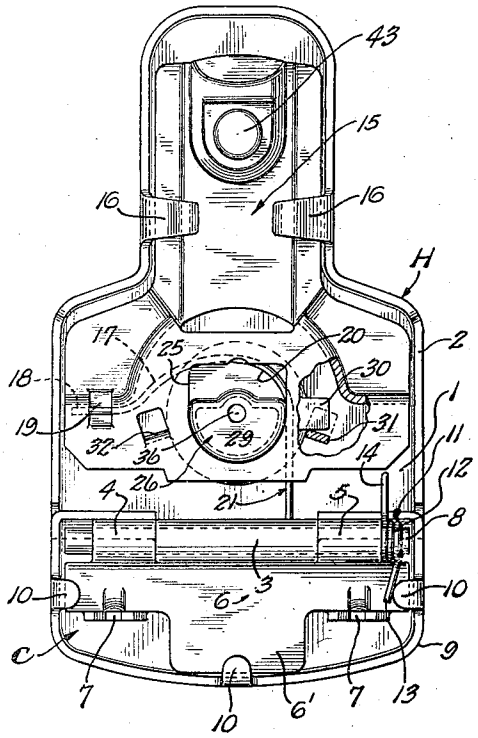
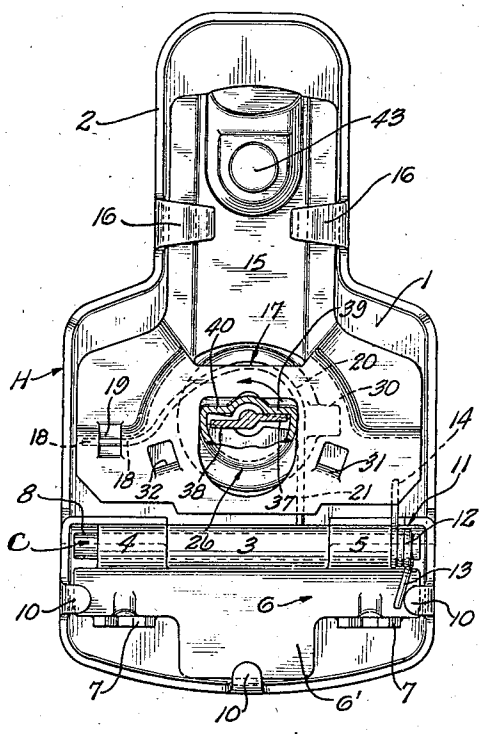


Fig. 5.



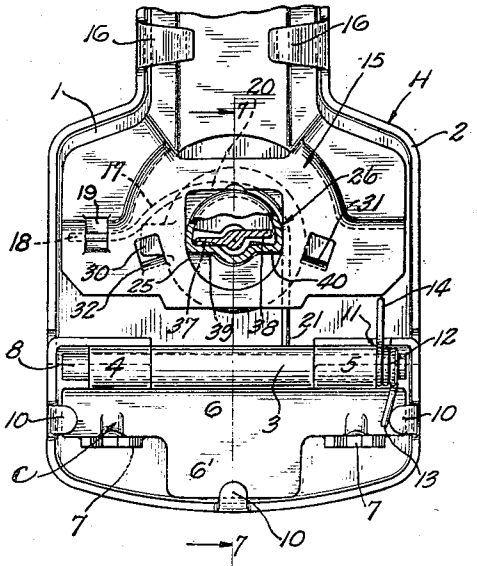


Fig. 6.

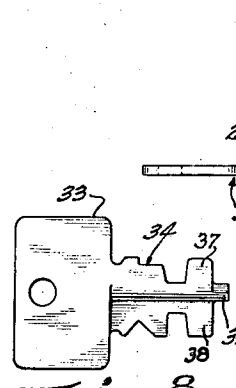


Fig. 8.

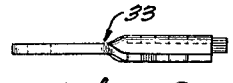


Fig. 9.

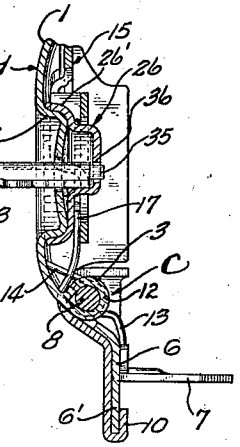


Fig. 7.

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Filed April 19, 1943 3 Sheets-Sheet 3

Fig. 10.

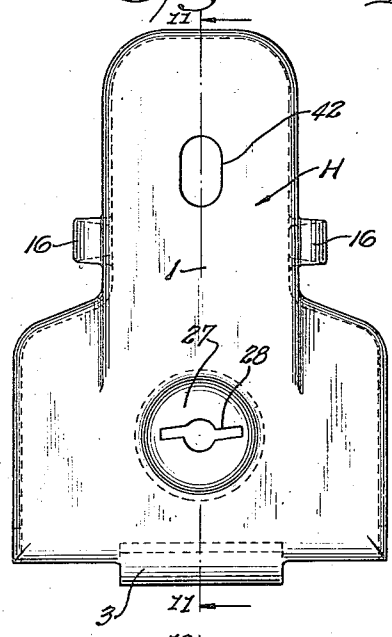


Fig. 11.

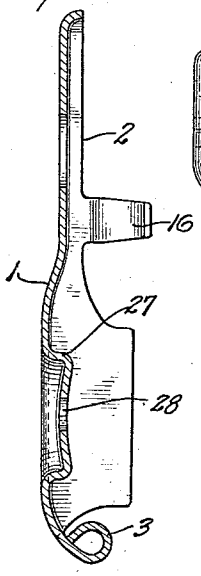
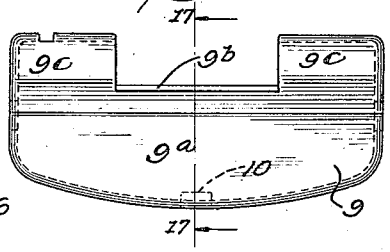


Fig. 16.



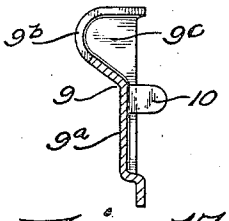


Fig. 17.

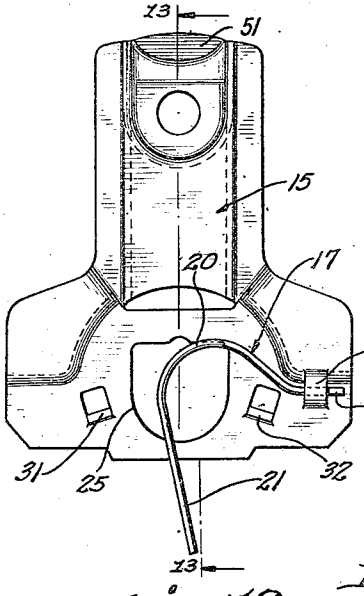


Fig. 12.

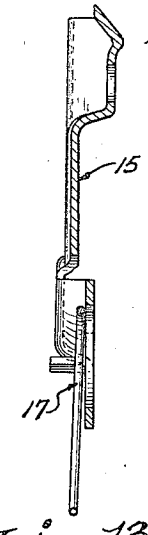


Fig. 13.

Fig. 14.

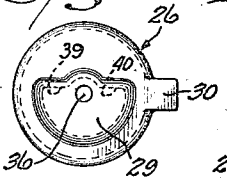
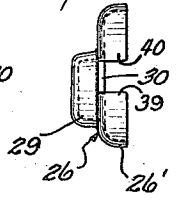


Fig. 15.



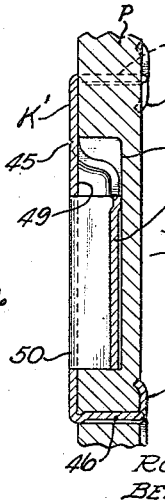


Fig. 18.

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UNITED STATES PATENT OFFICE

2,382,756

HASP LOCK

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Application April 19, 1943, Serial No. 483,546

18 Claims. (Cl. 70—75)

This invention relates to a hasp lock of the type employing a hasp-carried latching bolt which may be locked by a key. Such a hasp lock is usually employed on suitcases, trunks, traveling bags, or the like, but, of course, may be employed for securing together any two contiguously disposed parts.

The object of the invention is to provide a hasp lock of this character which is extremely simple in construction in that it is constituted of very few parts and wherein the elements of the lock are closely and compactly organized, and this in such a way as to provide for smooth and effective action. The lock is constituted, except for springs, entirely of sheet metal stampings, and these are held assembled by appropriate holding or guide lugs so that no riveting or welding is necessary to maintain the major elements assembled in proper cooperative relation.

Another feature of the lock resides in the special manner in which the hasp and keeper are constituted and cooperatively interrelated, the structure being such that the two lugs which guide the latching bolt, and retain it assembled with the hasp body plate, positively though releasably interlock with a locking shoulder on the keeper plate (in the locked position of the parts) to take the stress of holding the contiguously disposed parts with which the hasp and keeper are associated against movement away from each other, the latching bolt serving only to exert its latching or locking function.

Another feature of the lock resides in the special way in which the latch spring is combined with the latching bolt and with its tumbler, the organization being such that the spring serves not only to exert the required biasing action on the latching bolt, but also functions to releasably hold the tumbler in the position to which it is adjusted by the key.

Another object of the invention is to provide a hasp lock wherein the means employed to pivotally or hingedly connect the hasp to one of the contiguously disposed parts to which the hasp is applied is so constituted as to completely enclose the hinge pin and hinge barrels of the pivotal connection, thereby preventing unauthorized removal of the hinge pin and unauthorized removal of the hasp, as well as improving the appearance of the structure.

Other objects and advantages reside in certain novel features of the construction, arrangement, and combination of parts which will be hereinafter more fully described and particularly pointed out in the appended claims, reference being had to the accompanying drawings forming a part of this specification, and in which:

Figure 1 is a view in top plan showing a hasp lock embodying the present invention;

Figure 2 is an enlarged view in cross section taken on line 2—2 of Figure 1 and illustrating the hasp latched to the keeper;

Figure 3 is a view similar to Figure 2, but showing the latching bolt as it is positioned when manually retracted to unlatched position, the dotted line shown illustrating how the hasp will then swing away from the keeper plate under the influence of the spring incorporated in its pivotal connection to one of the parts of the suitcase, or the like;

Figure 4 is a view in elevation showing the inner side of the hasp as it appears before application to a suitcase or the like, portions of the latching bolt being broken away and shown in section to illustrate the co-action between the stop of the tumbler and the fixed stop of the hasp when the tumbler is rotated to unlocked position;

Figure 5 is a view similar to Figure 4, but illustrating the latching bolt retracted to unlatching position and also having a portion of the tumbler broken away and illustrating such portion of the tumbler and the co-acting portion of the key in section to illustrate how these two parts cooperate;

Figure 6 is a fragmentary view similar to Figure 5, but showing the tumbler rotated to locking position;

Figure 7 is a fragmentary sectional view taken on line 7—7 of Figure 6;

Figures 8 and 9 are detail views illustrating the key in side and edge elevation, respectively;

Figure 10 is a detailed view on an enlarged scale illustrating the body plate of the hasp in front elevation, the guide lugs being shown as they appear prior to being bent into final position;

Figure 11 is a view in vertical cross section on line 11—11 of Figure 10;

Figure 12 is a view in elevation illustrating the latching bolt and its biasing spring;

Figure 13 is a view in vertical cross section taken on line 13—13 of Figure 12;

Figure 14 is a detailed view in front elevation illustrating the tumbler;

Figure 15 is a view of the tumbler in edge elevation;

Figure 16 is a detailed view in elevation showing the casing or housing employed to encase the means which pivotally connects the hasp to one part of the suitcase;

Figure 17 is a view in cross section taken on line 17—17 of Figure 16; and

Figure 18 is a central vertical cross section showing a keeper construction illustrated in Figures 1 and 2 adapted for a recessed type of attachment to its receptacle part.

Referring to the drawings, and more particularly to Figures 1 to 3, P and P' designate two contiguously related parts, for example, the sections of a suitcase or the body and lid of any other similar receptacle. The hasp which is applied to the part P' is designated generally at H and is pivotally or hingedly interconnected with the part P' by connecting means designated as a whole at C. The hasp H cooperates with a keeper designated generally at K, which is applied and secured to the part P.

The hasp H comprises a body plate 1 constituted of a sheet metal stamping which is shaped and fashioned as shown in detail at Figures 10 and 11. The body plate 1 is provided with a marginal flange 2 to adapt it to encase and guide the latching bolt and the lock therefor in a manner to be hereinafter more fully described. The enlarged end of the body plate 1 is provided with a curled or rolled extension providing a hinge barrel 3 centrally and symmetrically disposed with respect to the enlarged end of the body plate. The hinge barrel 3 is fitted between correspondingly formed, although shorter hinge, barrels 4 and 5 integrally formed with an attaching plate 6. The attaching plate 6 is disposed against the outer surface of the part P' and it has attaching prongs 7 integral with its rear edge on the opposite sides of a tailpiece or extension 6' also integral with the attaching plate and giving it a broader bearing on the part P'. The attaching prongs 7 are driven through the part P' and staked over as at 7' (see Figures 2 and 3) to securely and rigidly fasten the attaching plate 6 to the part P'. As shown in the drawings, the prongs 7 have their inner ends split and the portions of the inner ends of each prong are staked or clinched over in opposite directions. While this is desirable, it is not essential since an unsplit prong with its inner end staked over in one direction may be employed. A hinge pin 8 is fitted in the alined hinge barrels 3, 4, and 5 to pivotally interconnect the body plate 1 of the hasp to the attaching plate 6. A casing 9 is provided for hinge barrels 4 and 5, the hinge pin 8, and the attaching plate 6. This casing is a sheet metal stamping shaped and fashioned as shown in detail in Figures 16 and 17, and provides a complete enclosure for the hinge barrels 4 and 5, the hinge pin 8, and the attaching plate 6. In carrying out this purpose, the body portion 9^a of the casing 9 is flanged to provide a box-like enclosure for the attaching plate 6 and its tail-piece 6', a cut-out 9^b is provided to accommodate the hasp hinge barrel 3 and roll-like formations 9^c are provided to encompass the attaching plate hinge barrels 4 and 5. The casing 9 is fastened to the attaching plate by means of securing tabs or lugs 10, which are clinched or bent around the ends of the attaching plate and under and around the tail-piece 6', as shown in Figures 2 to 6, inclusive. The hasp H is biased to swing to the position shown in dotted lines in Figure 3 by means of a spring designated generally at 11, the spring 11 having coils 12 wrapped around one of the projecting ends of the hinge pin and having the terminals 13 and 14 projecting from the coils and engaging the attaching plate 6 and the body plate 1 of the hasp H, respectively.

A latching bolt designated generally at 15 is slidably fitted in the flanged body plate 1 of the hasp H. This latching bolt is also constituted of a sheet metal stamping and in general conforms in outline to the outline of the body plate 1 of the hasp, although, of course, it is appropriately smaller so that it may be slidably interfitted therewith, as illustrated to advantage in Figures 4 and 5.

The side edges of the latching bolt 15 have a free sliding engagement with the opposed inner surfaces of the marginal flanges 2 of the body plate 1 of the hasp. For maintaining the latching bolt 15 assembled with the body plate 1 of the hasp H, and in proper sliding engagement therewith, a pair of lugs 16 are integrally formed with the opposed portions of the marginal flange 2 of the body plate 1 of the hasp H, and these lugs 16 are bent over the latching bolt 15 and have their inner ends extended downwardly and in wiping contact with the underlying portions of the latching bolt 15. This feature is believed to be one of substantial practical advantage in that these two lugs 16 serve as the primary means which maintains all of the parts of the hasp assembled. No riveting or welding is necessary although in one instance it is convenient to resort to resetting or staking, as will hereinafter more fully appear.

The latching bolt 15 is biased to latching position by a latch spring 17. This spring comprises a piece of appropriately shaped or bent and stiffly resilient spring wire. An end 18 of the spring 17 is anchored or fixed to the latching bolt, as indicated at 19. The spring 17 beyond its point of attachment to the latching bolt is bowed or curved as at 20 and terminates in a leg 21 extending lengthwise of the hasp but tensioned and consequently transversely flexed or bowed. The end of the leg 21 bears against a suitable, fixed structure of the body plate of the hasp H and in the construction shown bears against the juncture of the body plate with the extension thereof that is formed into the hinge barrel 3.

A key-operated lock is combined with the latching bolt 15, and to adapt it for this purpose the enlarged portion of the latching bolt 15 has an opening 25 therein. The opening 25 is illustrated as being of U shape. However, its shape may be varied. It is essential only that its upper and lower edges present stops or limiting edges for the tumbler 26. A tumbler 26 is provided and is constituted of a cup-like sheet metal stamping (see Figures 14 and 15). The body 26' of the cup-shaped tumbler 26 is rotatably fitted on an inwardly directed boss 27 pressed from the body plate 1 of the hasp H (see Figures 2, 3, and 7). This boss 27 serves as a bearing for the tumbler 26. It also has a key-hole slot 28. The inward depression or recess which the boss 27 presents on the surface of the hasp serves as an escutcheon for indicating and facilitating the location of the key-receiving slot 28. The tumbler 26 has its inner end wall formed with an integral inwardly displaced segmental projection 29 approximately in the form of a half circle in its outline and interfitted with the U-shaped opening 25 of the latching bolt. In the assembly the bowed or curved portion 20 of the latch spring 17 extends around and engages the periphery of this segmental projection 29 so as to hold the tumbler in rotative engagement with its bearing 27 and to act as a frictional shoe or brake thereon whereby to releasably secure the tumbler 26 in any position to which it is adjusted by its key. At one point of its periphery the circular body of the main, cup-like portion of the tumbler 26 has a

stop lug 30 struck outwardly therefrom. This lug 30 is in cooperative relation to stop lugs 31 and 32 struck up from the body of the latching bolt 15.

A key 33 is provided and has its shank 34 of such configuration and is so slotted as to correspond to the configuration of the ward-like formation of the keyhole slot 28 so that the key may be inserted in the keyhole slot and rotated after it has been completely inserted. The inner end of the key is provided with a short, circular stud 35 which extends into a bearing opening 36 provided in the segmental projection 29 of the tumbler whereby the key is centered and supported for rotation. Adjacent the stud-like projection the key has two crank lugs 37 and 38 adapted to have driving engagement with the flat inner surfaces 39 and 40 of the segmental projection of the tumbler so that the key may be utilized to rotate the tumbler in either direction.

When the key rotates the tumbler in one direction, as, for example, from the position shown in Figure 4 to the position shown in Figure 6, the circular periphery of the projection 29 wipes past the curved portion of the opening 25 and into engagement with the transverse, flat, upper edge of the opening, thereby locking the latching bolt 15 against retraction to unlatched position. Reverse rotation of the key brings the tumbler back to the position shown in Figure 4, in which position the latching bolt 15 is released and may be unlatched upon further rotation of the key, or may be manually disengaged or unlatched.

For the purpose of manually shifting the latching bolt 15 from its latched to its unlatched position, a finger button 40' is provided. The head of the button is disposed on the outside of the body plate 1 of the hasp H, and its shank 41 extends through an elongated slot 42 provided in the plate 1 and the inner end of the button is staked or riveted or otherwise suitably secured to the latching bolt 15, as indicated at 43. The button 40 may be readily grasped and when the lock is unlocked may be utilized to press the latch to its unlatched position. Incidentally this button 40 also supplements the guiding action of the flanges 2 of the hasp body and of its guiding lugs 16.

The present invention may be utilized with either a surface or recess type of keeper. In the form of the invention shown in Figures 1 to 3, the surface type of keeper is disclosed. This keeper comprises a box-like housing 45 stamped or drawn from sheet metal and having integrally attached prongs 46 which are driven through the part P and are staked over as at 47 to rigidly secure the keeper in place. The top wall of the keeper housing is incised and pressed inwardly to provide a floor 48, a keeper shoulder 49, and a locking shoulder 50. The recess type of keeper, designated at K', and illustrated in Figure 18, is identical with the structure described, save that the marginal flange thereof is omitted, and that the part P is provided with a recess 52 to receive the keeper K'.

In use, when the hasp H is swung to closed or latched position, the tapered or beveled end 51 of the latching bolt 15 moves below the keeper shoulder 49 and into latching engagement therewith, as illustrated in Figure 2. At the same time the lugs 16 also come into interlocking engagement with the locking shoulder 50, the lugs 16 and locking shoulder 50 holding the parts P and P' against movement away from each other so that the latching bolt may only take the stress of its latching or locking action. When desired the lock may be manipulated to secure the latching bolt in latching position, in the manner previously described.

While we have shown and described several constructions in which the invention may be advantageously embodied, it is to be understood that various changes may be made therein without departing from the spirit of the invention or the scope of the subjoined claims.

We claim:

1. A hasp lock comprising a pivotally supported body plate constituted of a sheet metal stamping and having a marginal flange, a latching bolt also constituted of a sheet metal stamping and corresponding in outline to the body plate although slightly smaller, said latching bolt being interfitted with the flanged side of the body plate for sliding movement from a latched to an unlatched position, and vice versa, and lugs integral with opposed portions of the flange of the body plate and overlying and having wiping engagement with the latching bolt to maintain the bolt assembled with the body plate and constrain it to movement to and from latched position.

2. A hasp lock comprising a body plate constituted of a sheet metal stamping and having a marginal flange, a latching bolt also constituted of a sheet metal stamping and corresponding in outline to the body plate although slightly smaller, said latching bolt being interfitted with the flanged side of the body plate for sliding movement from a latched to unlatched position, and vice versa, and means carried by the body plate and coacting with the latching bolt to maintain it assembled with the body plate and constrain it to its sliding movement.

3. A hasp lock comprising a body plate having a marginal flange, a latching bolt corresponding in outline to the body plate although slightly smaller, said latching bolt being interfitted with the flanged side of the body plate for sliding movement from a latched to unlatched position, and vice versa, and lugs carried by the body plate and overlying and in wiping engagement with the latching bolt to maintain the bolt assembled with the body plate and constrain it to its sliding movement.

4. A hasp lock comprising a pivotally supported body plate, a latching bolt shiftably interfitted therewith for movement from latched to unlatched position, and vice versa, said latching bolt having a U-shaped opening therein, said body plate having an inwardly depressed boss opposite said opening, a tumbler comprising a cup-like sheet metal stamping having rotative bearing engagement with said boss, said tumbler having an inward projection disposed in the opening and shiftable to lock the latching bolt in latched position or to free the same for unlatching, said boss having a key-hole slot, and said tumbler having means adapted to cooperate with a key inserted through the slot whereby the tumbler may be rotated to locking or to released position.

5. A hasp lock comprising a pivotally supported body plate, a latching bolt shiftably interfitted therewith for movement from latched to unlatched position, and vice versa, said latching bolt having a U-shaped opening therein, said body plate having an inwardly depressed boss opposite said opening, a tumbler comprising a cup-like sheet metal stamping having rotative bearing engagement with said boss, said tumbler

having an inward projection disposed in the opening and shiftable to lock the latching bolt in latched position or to free the same for unlatching, said boss having a key-hole slot, and said tumbler having means adapted to cooperate with a key inserted through the slot whereby the tumbler may be rotated to locking or to released position, in combination with a spring for biasing the latching bolt to latched position, said spring also bearing on the tumbler to releasably hold it in the position to which it is adjusted.

6. A hasp lock comprising a body plate constituted of a sheet metal stamping having a marginal flange, a latching bolt also constituted of a sheet metal stamping and corresponding in outline to the body plate although slightly smaller than the body plate, said latching bolt being interfitted with the flanged side of the body plate for sliding movement from a latched to an unlatched position, and vice versa, means carried by the flange of the body plate and bearing on the inner face of the latching bolt to maintain it assembled and constrain it to sliding movement, said latching bolt having a U-shaped opening therein, said body plate having an inwardly depressed boss opposite said opening, a tumbler comprising a cup-like sheet metal stamping having rotative bearing engagement with said boss and held there by said latching bolt, said tumbler having an inward projection disposed in the opening of the latching bolt and shiftable to lock the latching bolt in latched position or to free the same for unlatching, said boss having a key-hole slot, and said tumbler having means accessible through the key-hole slot and adapted to cooperate with a key inserted through said slot whereby the tumbler may be rotated to locking or releasing position.

7. A hasp lock comprising a pivotally supported body plate, a latching bolt shiftably interfitted therewith for movement from latched to unlatched position, and vice versa, said latching bolt having a U-shaped opening therein, said body plate having an inwardly depressed boss opposite the said opening, a cup-shaped tumbler having rotative bearing engagement with said boss and having an inward projection of segmental form disposed in the opening of the latching bolt and shiftable to a position to lock the latching bolt in latched position or to free the same for unlatching, said boss having a key-hole slot, said tumbler having a bearing opening alined with said slot whereby the tumbler may be rotated by means of a key inserted through said slot.

8. A hasp lock comprising a pivotally supported body plate constituted of a sheet metal stamping and having a marginal flange, a latching bolt also constituted of a sheet metal stamping and corresponding in outline to the body plate although slightly smaller than the latter, said latching bolt being interfitted with the flanged side of the body plate for sliding movement from a latched to an unlatched position, and vice versa, lugs integral with the opposed portions of the body plate and overlying and having wiping engagement with the latching bolt to maintain the bolt assembled with the body plate and constrain it to sliding movement, a spring for biasing the latching bolt to latching position, said body plate having a slot therein and extending lengthwise thereof, a finger button disposed exteriorly of the body plate and having a shank extending through the slot and secured to the latching bolt whereby the latching bolt may be manually shifted to unlatched position, said finger button and its shank also supplementing the action of said lugs for guiding the latching bolt.

9. A hasp lock comprising a body plate consisting of a sheet metal stamping having an integral hinge barrel at one end thereof, an attaching plate having a pair of hinge barrels interfitted with the hinge barrel of the body plate, a pintle pin pivotally interconnecting said hinge barrels, and a casing for the hinge barrels and pintle pin comprising a sheet metal stamping of flanged construction having a cutout to accommodate the hinge barrel of the body plate, roll-like formations to enclose the hinge barrels of the attaching plate, and means interlocking the casing and the attaching plate.

10. A hasp lock comprising a body plate consisting of a sheet metal stamping having an integral hinge barrel at one end thereof, an attaching plate having a pair of hinge barrels interfitted with the hinge barrel of the body plate, a pintle pin pivotally interconnecting said hinge barrels, a casing for the hinge barrels and pintle pin comprising a sheet metal stamping of flanged construction having a cutout to accommodate the hinge barrel of the body plate, roll-like formations to enclose the hinge barrels of the attaching plate, said casing having tabs clenched on the under side of the attaching plate, said attaching plate having attaching prongs integral therewith and adapted to be driven into the part to which the hasp is attached.

11. A hasp lock comprising a body plate having a hinge barrel at one end thereof, an attaching plate having a hinge barrel alined with the hinge barrel of the body plate, a pintle pin pivotally interconnecting said hinge barrels, and a casing completely enclosing the attaching plate, the hinge barrels, and the pintle pin, means for permanently securing the attaching plate to the part on which the hasp lock is mounted, and means interlocking the casing and the attaching plate and inaccessible from the exterior of the casing when the attaching plate is secured to the part on which the lock is mounted.

12. A hasp lock comprising a pivotally supported body plate, a latching bolt shiftably interfitted therewith for movement from latched to unlatched position, and vice versa, said latching bolt having a U-shaped opening therein, said body plate having an inwardly disposed boss opposite said opening, a cup-shaped tumbler having rotative bearing engagement with said boss and having an inward projection of segmental form disposed in the opening of the latching bolt and shiftable to a position to lock the latching bolt in latched position or to free the same for unlatching, said tumbler having a lateral stop lug, a stop lug on the latching bolt cooperable with the stop lug of the tumbler to limit the movement of the tumbler to locking position, a second stop lug on the latching bolt cooperable with the stop lug of the tumbler to indicate the unlatched position of the tumbler, said boss having a key-hole slot therein, said tumbler having means adapted to cooperate with a key inserted through the slot whereby the tumbler may be rotated to locked or released position.

13. A hasp lock comprising a hasp including a body plate, an attaching plate for mounting on the case to be locked, said body plate being pivotally supported on said attaching plate, and a casing formed as a sheet metal stamping for enclosing said attaching plate and the connection

therewith of said body plate, said casing including means for interlocking said attaching plate and said casing.

14. A hasp lock comprising a hasp having a hinge barrel formed integral therewith, an attaching plate formed with hinge barrels interfitting the hinge barrels of said hasp, a pin connecting the hinge barrel of said hasp and the hinge barrels of said attaching plate, and a casing for enclosing all of said hinge barrels and said pin, said casing being formed with a cutout portion for the hinge barrel of said hasp and with roll-like enclosures for the hinge barrels of said plate and including means for interlocking said attaching plate with said casing.

15. A hasp lock comprising a hasp body plate, a plate having prongs for attachment to a case to be locked and pivotally supporting said hasp, and a casing enclosing said attaching plate and the pivotal connection thereof with said hasp, said casing including means inaccessible from exteriorly of said casing for interlocking said attaching plate with said casing.

16. A hasp lock comprising a hasp body plate having a boss thereon, a latching bolt carried by said hasp plate, and a tumbler having a rotative bearing with the boss of said plate and associated with said bolt for movement into positions to retain said bolt in locked and in unlocked relation.

17. A hasp lock comprising a hasp body plate having a boss thereon, a latching bolt carried by said hasp body plate and having an opening therein, and a tumbler rotatively associated with the boss and having a projection into the opening in said bolt and movable into positions to retain said bolt in locked and in unlocked relation.

18. A hasp lock comprising a hasp having a body plate provided with a boss, a latching bolt carried by said hasp body plate and having lugs thereon, and a tumbler mounted for rotation on the boss of said body plate and associated with said bolt, said tumbler having a stop lug coacting with the lugs on said bolt.

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