

Oct. 31, 1950

R. RATZLAFF

2,527,850

GARMENT LOCK

Filed Nov. 23, 1946

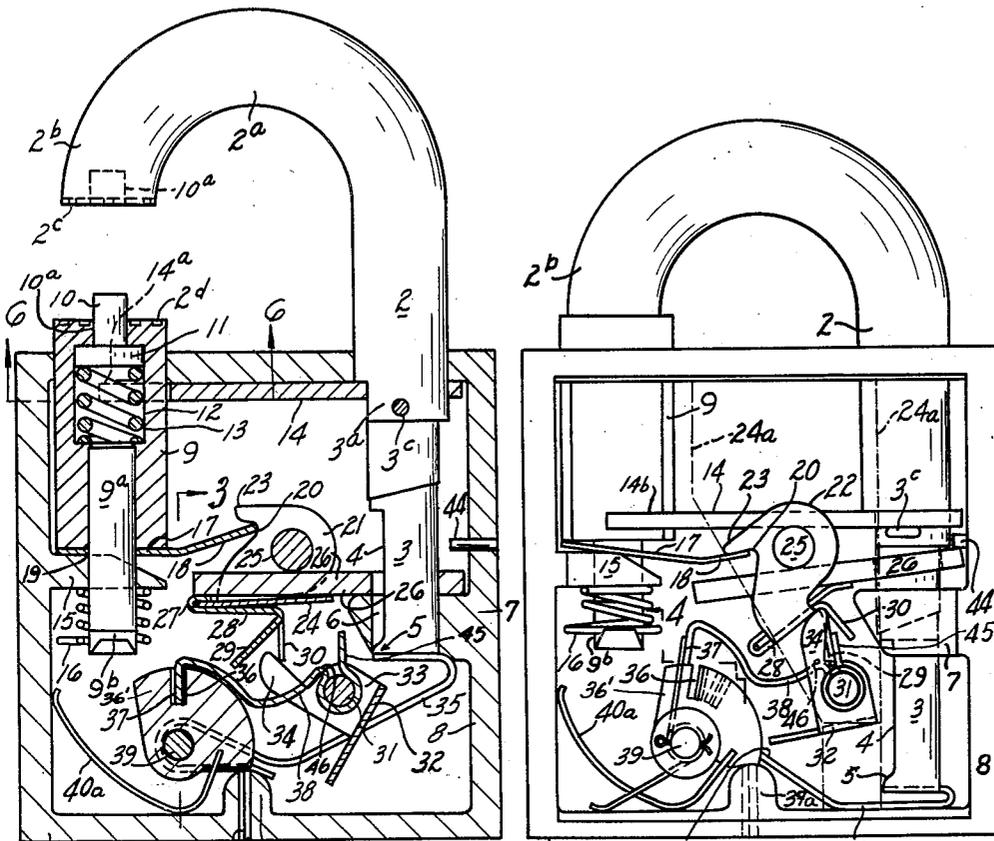


Fig. 2

Fig. 1

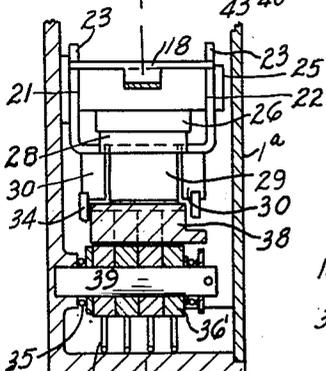


Fig. 3

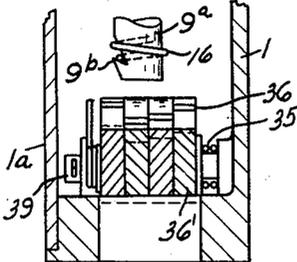


Fig. 4

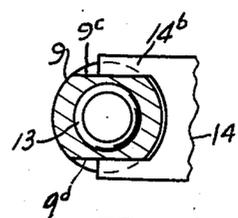


Fig. 6

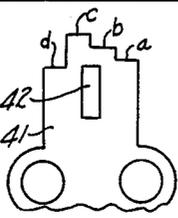


Fig. 5

INVENTOR.  
 RUDOLPH RATZLAFF  
 BY  
 Charles E. Weiss  
 ATTORNEY

# UNITED STATES PATENT OFFICE

2,527,850

## GARMENT LOCK

Rudolph Ratzlaff, Dearborn, Mich.

Application November 23, 1946, Serial No. 711,971

10 Claims. (Cl. 70—38)

1

This invention relates to a garment lock and the object thereof is to provide a lock having a two-part hasp in which one part is movable in the lock body toward or from a stationary part to hold an article, such as a coat or other garment, between the two parts of the hasp.

It is further a feature of the invention to provide a garment lock having a movable hasp and a stationary part including a projectable pin for entering an aperture in the opposed end of the hasp and a casing supporting the pin which is slidable in an aperture provided therefor in the casing, provision also being made for the insertion of a non-rotatable key in an aperture in the casing to engage a series of tumblers, the key having a series of stepped portions at its end alignable with the tumblers in the manner hereafter more fully described, whereby insertion of the key positions the tumblers with the slots therein in alignment, means being provided to release the element engaging in the notches as the hasp is moved to locked position wherein the slots in the tumblers are out of alignment one with the other, as shown in the accompanying drawing in which—

Fig. 1 is an elevation of the lock with the cover removed and the hasp in locked position.

Fig. 2 is a sectional view on line 2—2 of Fig. 3 showing the parts in the relationship thereof in the unlocked position.

Fig. 3 is a section taken on line 3—3 of Fig. 2.

Fig. 4 is a sectional view taken on line 4—4 of Fig. 1 showing the tumblers with the slots therein in misalignment.

Fig. 5 is an elevation of a key utilizable with the lock.

Fig. 6 is a section taken on line 6—6 of Fig. 2.

The lock according to my invention comprises a casing 1 shown in Fig. 1 with the cover 1a thereof removed and showing the lock in the position assumed when the parts are in locked relation. The hasp 2 has an end 3 provided with a flat surface 4 on the inner side and providing an outwardly extending end portion 5 which is longitudinally movable in the aperture 6 in the inwardly extending flange 7 integral with the wall 8 of the casing 1. The hasp 2 has a U-shaped end portion 2a terminating in an end 2b, the face 2c of which is provided with a series of projections and recesses with the latter aligned with the recesses 2d of a plunger 9 and which is also provided with an aperture 10a to receive a pin 10 projecting centrally from the end of the plunger 9. This pin 10 is formed integral with a cylindrical end 11 of greater diameter positioned in the recess 12 in the plunger 9. A spring 13 is positioned in the recess and engages the said end 11 of the pin 10.

The opposite side walls of the plunger 9 have parallel side faces 9c and 9d as shown in Fig. 6,

2

A keeper 14 has one end apertured to receive the portion 3a of the hasp which has a flat surface 3b engaging a similar surface of the keeper 14 as shown in Fig. 2. The keeper is held in position on the end of the hasp by a pin 3c and the slotted end 14b of the keeper 14 engages the opposite parallel surfaces 9c and 9d of the plunger 9 as shown in Fig. 6 thereby holding the same from rotation. Therefore when the hasp is moved to the locked position the end thereof is maintained in alignment with an end of the plunger 9 and the fork end 14b of the keeper may move downwardly of the parallel surfaces of the plunger 9 which is thereby held from rotation. The plunger 9 is apertured to receive by a press fit the cylindrical member 9a which extends through an aperture in the inwardly projecting lug 15 preferably formed integral with the casing.

A coiled spring 16 has one end engaging the recess 9b adjacent the distal end of the member 9a and the opposite end of the spring engages the under side of the lug 15 which is integral with the casing. The spring 16 tends to hold the plunger 9 in contact with the upper face of the flat spring 17, which has an inwardly extending end 18 and the opposite end is provided with an aperture 19 through which the cylindrical member 9a loosely extends. The aperture 19 is greater in diameter than the diameter of the cylindrical member 9a. The end 18 of the flat spring 17 engages in the notch 20 of the two lever elements 21 and 22. When the parts are in the position shown in Fig. 1 the flat spring 17 is moved downwardly under compression by the hook ends 23 of the levers 21 and 22 and is turned on the lug 15 as a fulcrum thereby tending to force the plunger 9 upwardly. These levers 21 and 22 are joined together by a plate 28 and are mounted on a shaft 25 which extends from the rear wall of the casing 1 and against which bears the upper surface of the hasp locking plate 26.

Leaf spring 24 bears against the under surface of hasp locking plate 26 and has one end thereof secured within the intumed end 27 of plate 28. The right end of plate 28 has an angular tongue 29 intermediate its spaced depending flanges 30.

A shaft 31 parallel to the shaft 25 is supported by a side wall of the casing. A trigger 32, which is of plate like form, has spaced side flanges 33 pivotally mounted on the shaft 31. These flanges 33 have projecting portions 34 that engage the flanges 30 of the plate 28 on each side of the inbent tongue 29.

By movement inwardly of the hasp against the tension of the spring 35 the edge 5 at the inner end of the hasp engages an edge of the trigger 32 which is normally beneath the said edge, as shown in Fig. 2.

This inward movement of the hasp turns the

trigger 32 and the ends 34 thereof engage the flanges 30 of the plate 28 and thus turns the levers 21 and 22 on the axis of the shaft 25 thereby tilting the flat spring 17 upwardly at its left end against the tension of the spring 16 and thus tends to project the plunger 9 outwardly of the casing 1.

There are a series of tumblers 36' of plate like form on the shaft 39 each having a radial slot 36 into which an end 37 of the lever 38 may extend when the slots 36 of the tumblers are in alignment longitudinally of the supporting shaft 39.

When the hasp has been moved inwardly to the position shown in Fig. 1 the pin 10 enters the recess 10a. The end portion 5 engages the trigger 32 turning the same in a clockwise direction on the shaft 31 and, due to its engagement with the flange 30, levers 21 and 22 are tilted counter-clockwise and the plate 26 is turned upwardly under the action of spring 24 as shown in Fig. 1 with the flat spring 17 compressed downwardly on the lug 15 to the locked relationship of parts shown in Fig. 1.

Consequently this clockwise movement of the trigger 32 and its projections 34 about pin 31 effect a counter-clockwise pivotal movement of the flanges 30 and tongue 29 as well as the levers 21 and 22 and their connecting plate 28.

Tongue 29 moves from the position of Fig. 2 to the position of Fig. 1 and operatively engages the upright projecting right hand end 45 of the lever 38 which extends around the pin 31. This causes a pivotal movement of the lever 38 clockwise around the pin 31, lifting the tumbler retaining end 37 of said lever out of the respective slots of tumblers 36'. The tongue 29 is thus confined between the right hand end 45 of lever 38 and the upturned opposed portion 46 of lever 38 when the lock is in the locking position as seen in Fig. 1.

Tumblers 36' rotatably mounted upon casing supported pin 39 are thus released, and are urged by their respective springs 40a to the position shown in Fig. 1, with their lower edges resting upon rib 39a within the casing, and with their respective slots 36 out of alignment.

When the hasp 2 is moved inwardly to closed position, trigger 32 rotates clockwise, and levers 21 and 22 and their interconnecting plate 28 pivot in a counter-clockwise direction on shaft 25 and the leaf spring 24 carried by plate 28 tips the hasp locking plate 26 in a counter-clockwise direction about the pin 25 as shown in Fig. 1.

In Fig. 2 the hasp shaft 3 is free relative to the opening in the locking plate 26, however after the plate 26 has turned to the angular position of Fig. 1 and the upper enlarged end 3a of said hasp is positioned in the opening in the hasp retaining plate 26, then the opposite corners of said opening frictionally engage and retain the shaft end of the hasp effectively securing the same in its innermost locked position.

The rib 39a is integral with the casing and has a slot 40 opening through the outer face of the casing as shown in Fig. 2 and into which the key 41 may be introduced.

The key has a rib 42 in one face thereof which rides in the groove 43 on insertion of the key. The key has an end portion formed of a series of steps a, b, c, d and upon insertion in the slot 40 the stepped portions successively engage the tumblers 36' projecting the same about their shaft 39 until their respective slots 36 are in alignment to permit the end 37 of lever 38 to enter said slots as shown in Fig. 2.

When the hasp 2 was initially closed to locked position the forward ends 23 of levers 21 and 22 place the end 18 of leaf spring 17 under substantial compression. This compression is transmitted through the plate 28 of said levers and to the tongue 29, which as shown in Fig. 1 is bearing against the right end 45 of lever 38. However this compression is transmitted through tongue 29 so that it operatively engages the opposed portion 46 of lever 38 adjacent pin 31 tending to tilt the same in a counter-clockwise direction about pin 31. Just as soon as the key 41 has aligned the slots 36 of the tumblers 36' the lever 38 is free to so tilt about the pin 31 under the action of the tongue 29 urged by the compressed leaf spring 17-18.

Consequently the end 37 of lever 38 moves into the slot 36 of said tumblers, and this motion releases the lower end of the tongue 29 from between the right end 45 of lever 38 and the adjacent opposed portion 46 thereof which extends around the pin 31.

Tongue 29 and its levers 21 and 22 are free to pivot in a clockwise direction about the pin 25 under the expansive action of the leaf spring 17-18, to assume the position shown in Fig. 2. At the same time the hasp locking plate 26 is pivoted in a clockwise direction about the pin 25 to automatically release the hasp 2, the latter then moving outwardly of the casing under the expansive action of spring 35.

The key 41 is non-rotatable in the slot 40 and, to unlock the hasp, the key is simply moved inwardly of the casing.

By moving the hasp inwardly from the position shown in Fig. 2 to the position shown in Fig. 1 both springs 13 and 15 are placed under tension and the spring 35 is also under tension by the portion 3 of the hasp.

It will be noted that when the hasp is moved to locked position the plunger 9 is resiliently urged into engagement therewith and, due to its having flat surfaces 9c and 9d on each of its opposite sides, it is non-rotatable in the recess of keeper 14 and thus the corresponding ends 2c and 2d are in registry and the article of clothing is thus secured between the end 2b of the hasp and the opposed notched end of the member 9.

It is further pointed out that the plate 26 is limited in the extent to which it may be turned by means of the pin 44 secured in the side of the casing as will be understood from Figs. 1 and 2.

It will be realized from the foregoing that the key is only utilized to unlock the device. When in the unlocked position shown in Fig. 2 the hasp is manually movable downwardly to the locked position shown in Fig. 1. Each tumbler 36' is actuated by a spring 49a individual thereto and that by insertion of the key 41 the tumblers automatically assume the position shown in Fig. 2.

24a-24a represents a plate in dotted lines which is positioned within the casing 1 adjacent cover plate 1a and having openings to supportingly receive the outer ends of pins 25 and 31.

It is believed obvious from the foregoing description and the drawing that the lock is well adapted for the service required and while the lock is useful for securing a portion of a garment between the hasp and plunger it may be used in any place where a hasp lock is serviceable.

Having thus described my invention, its utility and mode of operation, what I claim and desire

5

to secure by Letters Patent of the United States is:

1. In a garment lock, a casing, a hasp with one end slidably positioned through an opening in one end of said casing and with its opposite in-  
 5 turned end movable towards and away from said casing, a garment engaging plunger movably positioned within another opening in said casing and projecting outwardly therefrom for registry with the inturned end of said hasp for gripping  
 10 a garment therebetween, a leaf spring fulcrumed within said casing with one end bearing against the under side of said plunger, and pivotal means within said housing engageable with the other  
 15 end of said leaf spring for compressing the same upon inwardly closing movement of said hasp relative to said casing, whereby said plunger is forcefully urged outwardly for compressive engagement with the inturned end of said hasp.

2. In a garment lock, a casing, a hasp with one end slidably positioned through an opening in one end of said casing and with its opposite in-  
 20 turned end movable towards and away from said casing, a garment engaging plunger movably positioned within another opening in said casing and projecting outwardly therefrom for registry with the inturned end of said hasp for gripping  
 25 a garment therebetween, a leaf spring fulcrumed within said casing with one end bearing against the under side of said plunger, pivotal means within said housing engageable with the other  
 30 end of said leaf spring for compressing the same upon inwardly closing movement of said hasp relative to said casing, whereby said plunger is forcefully urged outwardly for compressive engagement with the inturned end of  
 35 said hasp, and a keeper secured at one end to said hasp, the other end of said keeper being longitudinally slotted, said plunger having a pair of opposed parallel walls slidably and non-rotatively positioned within said keeper slot, main-  
 40 taining said hasp and plunger against rotation.

3. In a garment lock, a casing, a hasp with one end slidably positioned through an opening in one end of said casing and with its opposite in-  
 45 turned end movable towards and away from said casing, a garment engaging plunger movably positioned within another opening in said casing and projecting outwardly therefrom for registry with the inturned end of said hasp for gripping  
 50 a garment therebetween, a leaf spring fulcrumed within said casing with one end bearing against the under side of said plunger, pivotal means within said housing engageable with the other  
 55 end of said leaf spring for compressing the same upon inwardly closing movement of said hasp relative to said casing, whereby said plunger is forcefully urged outwardly for compressive engagement with the inturned end of said hasp, said plunger having a central bore, a pin movably positioned within said bore and projecting  
 60 beyond the outer end of said plunger, and a coil spring within said bore normally urging said pin outwardly, the inturned end of said hasp having a corresponding aligned opening to receive the  
 65 outer end of said pin when said hasp is projected inwardly of its casing.

4. In a garment lock, a casing, a hasp with one end slidably positioned through an opening in one end of said casing and with its opposite in-  
 70 turned end movable towards and away from said casing, a garment engaging plunger movably positioned within another opening in said casing and projecting outwardly therefrom for registry with the inturned end of said hasp for gripping  
 75

6

a garment therebetween, a leaf spring fulcrumed within said casing with one end bearing against the under side of said plunger, and pivotal means within said housing engageable with the other  
 end of said leaf spring for compressing the same upon inwardly closing movement of said hasp relative to said casing, whereby said plunger is forcefully urged outwardly for compressive engagement with the inturned end of said hasp, the inturned end of said hasp and the outwardly projecting end of said plunger being serrated to grip a garment therebetween.

5. In a garment lock, a casing, a hasp with one end slidably positioned through an opening in one end of said casing and with its opposite in-  
 turned end movable towards and away from said casing, a garment engaging plunger movably positioned within another opening in said casing and projecting outwardly therefrom for registry  
 with the inturned end of said hasp for gripping a garment therebetween, a leaf spring fulcrumed within said casing with one end bearing against the under side of said plunger, pivotal means within said housing engageable with the other  
 end of said leaf spring for compressing the same upon inwardly closing movement of said hasp relative to said casing, whereby said plunger is forcefully urged outwardly for compressive engagement with the inturned end of said hasp, a normally horizontal hasp locking plate having a transverse opening to loosely receive said hasp when in open position relative to said casing, and means pivotally mounted within said casing engageable by said hasp upon inward closing movement thereof for tilting said locking plate relative to said hasp, whereby portions of said locking plate adjacent its opening frictionally grip  
 said hasp retaining the same in locked position.

6. In a garment lock, a casing, a hasp with one end slidably positioned through an opening in one end of said casing and with its opposite in-  
 turned end movable towards and away from said casing, a garment engaging plunger movably positioned within another opening in said casing and projecting outwardly therefrom for registry with the inturned end of said hasp for gripping  
 a garment therebetween, a leaf spring fulcrumed within said casing with one end bearing against the under side of said plunger, pivotal means within said housing engageable with the other  
 end of said leaf spring for compressing the same upon inwardly closing movement of said hasp relative to said casing, whereby said plunger is forcefully urged outwardly for compressive engagement with the inturned end of said hasp, said pivotal means including a lever pivotally mounted within said casing with one end engaging the said other end of said leaf spring, a normally horizontal hasp locking plate supportably mounted upon said lever and having a transverse opening to loosely receive said hasp when in open position, and means pivotally mounted within said casing engageable by said hasp upon inward closing movement thereof for tilting said lever which in turn tilts said locking plate relative to said hasp, whereby portions of said locking plate adjacent its opening frictionally grip  
 said hasp retaining the same in locked position.

7. In a garment lock, a casing, a hasp with one end slidably positioned through an opening in one end of said casing and with its opposite in-  
 turned end movable towards and away from said casing, a garment engaging plunger movably positioned within another opening in said casing

and projecting outwardly therefrom for registry with the inturned end of said hasp for gripping a garment therebetween, a leaf spring fulcrumed within said casing with one end bearing against the under side of said plunger, pivotal means within said housing engageable with the other end of said leaf spring for compressing the same upon inward closing movement of said hasp relative to said casing, whereby said plunger is forcefully urged outwardly for compressive engagement with the inturned end of said hasp, said pivotal means including a lever pivotally mounted within said casing with one end engaging the said other end of said leaf spring, a normally horizontal hasp locking plate supportably mounted upon said lever and having a transverse opening to loosely receive said hasp when in open position, means pivotally mounted within said casing engageable by said hasp upon inward closing movement thereof for tilting said lever which in turn tilts said locking plate relative to said hasp, whereby portions of said locking plate adjacent its opening frictionally grip said hasp retaining the same in locked position, and a leaf spring anchored at one end upon said lever and with its opposite end bearing against the under surface of said hasp locking plate.

8. In a garment lock, a casing, a hasp with one end slidably positioned through an opening in one end of said casing and with its opposite inturned end movable towards and away from said casing, a garment engaging plunger movably positioned within another opening in said casing and projecting outwardly therefrom for registry with the inturned end of said hasp for gripping a garment therebetween, a leaf spring fulcrumed within said casing with one end bearing against the under side of said plunger, a lever pivotally mounted within said casing with one end engaging the other end of said leaf spring, a normally horizontal hasp locking plate supportably mounted upon said lever and having a transverse opening to loosely receive said hasp when in open position, a trigger member pivotally mounted within said casing engageable by said hasp upon inward closing movement thereof, and projecting means upon said trigger engageable with a portion of said lever for tilting the same and the locking plate carried thereby relative to said hasp, whereby portions of said locking plate adjacent its opening frictionally grip said hasp retaining the same in locked position, said lever simultaneously compressing said leaf spring.

9. In a garment lock, a casing, a hasp with one end slidably positioned through an opening in one end of said casing and with its opposite inturned end movable towards and away from said casing, a garment engaging plunger movably positioned within another opening in said casing and projecting outwardly therefrom for registry with the inturned end of said hasp for gripping a garment therebetween, a leaf spring fulcrumed within said casing with one bearing against the under side of said plunger, a lever pivotally mounted within said casing with one end engaging the other end of said leaf spring, a normally horizontal hasp locking plate supportably mounted upon said lever and having a transverse opening to loosely receive said hasp when in open

position, a trigger member pivotally mounted within said casing engageable by said hasp upon inward closing movement thereof, projecting means upon said trigger engageable with a portion of said lever for tilting the same and the locking plate carried thereby relative to said hasp, whereby portions of said locking plate adjacent its opening frictionally grip said hasp retaining the same in locked position, said lever simultaneously compressing said leaf spring, and pivotal means within said casing restraining said lever in its tilted position, and a plurality of key operated tumblers pivotally mounted within said casing and having alignable slots therein to cooperatively receive one portion of said pivotal restraining means to relieve the restraint of said lever permitting the same and said locking plate to return to their initial position under the expansive action of said leaf spring.

10. In a garment lock, a casing, a hasp with one end slidably positioned through an opening in one end of said casing and with its opposite inturned end movable towards and away from said casing, a garment engaging plunger movably positioned within another opening in said casing and projecting outwardly therefrom for registry with the inturned end of said hasp for gripping a garment therebetween, a leaf spring fulcrumed within said casing with one end bearing against the under side of said plunger, a lever pivotally mounted within said casing with one end engaging the other end of said leaf spring, a normally horizontal hasp locking plate supportably mounted upon said lever and having a transverse opening to loosely receive said hasp when in open position, a trigger member pivotally mounted within said casing engageable by said hasp upon inward closing movement thereof, projecting means upon said trigger engageable with a portion of said lever for tilting the same and the locking plate carried thereby relative to said hasp, whereby portions of said locking plate adjacent its opening frictionally grip said hasp retaining the same in locked position, said lever simultaneously compressing said leaf spring, and pivotal means within said casing restraining said lever in its tilted position, and a plurality of key operated tumblers pivotally mounted within said casing and having alignable slots therein to cooperatively receive one portion of said pivotal restraining means to relieve the restraint of said lever permitting the same and said locking plate to return to their initial position under the expansive action of said leaf spring, said lever upon initial tilting thereof operatively engaging another portion of said pivotal restraining means for withdrawing its one portion from the tumbler slots, said restraining means pivoting to a position to restrain said lever against return movement.

RUDOLPH RATZLAFF.

#### REFERENCES CITED

The following references are of record in the file of this patent:

#### UNITED STATES PATENTS

Number	Name	Date
91,610	Crosby	June 12, 1869
98,015	Bernhard	Dec. 21, 1869
232,070	Russell	Sept. 7, 1880