July 12, 1932. G. R. TERRILL 1,866,955

LOCK

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Fig. 1.

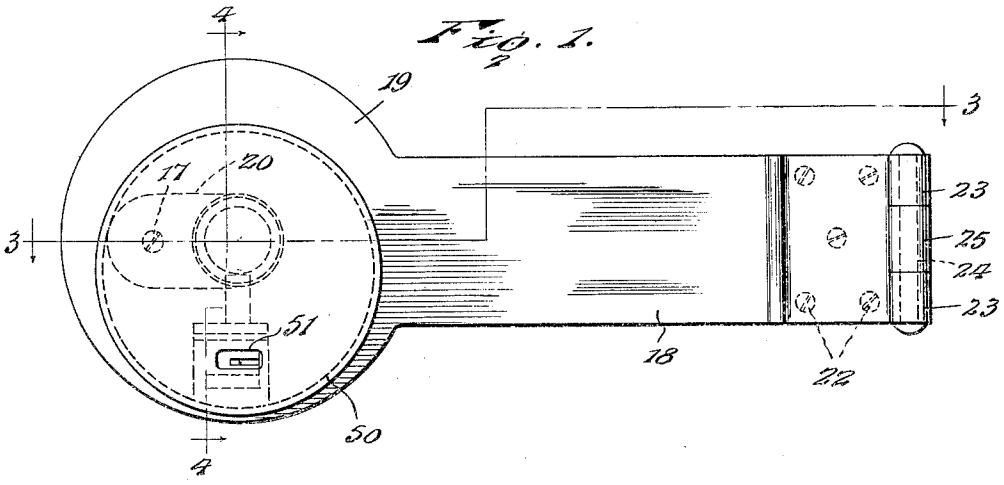


Fig. 2.

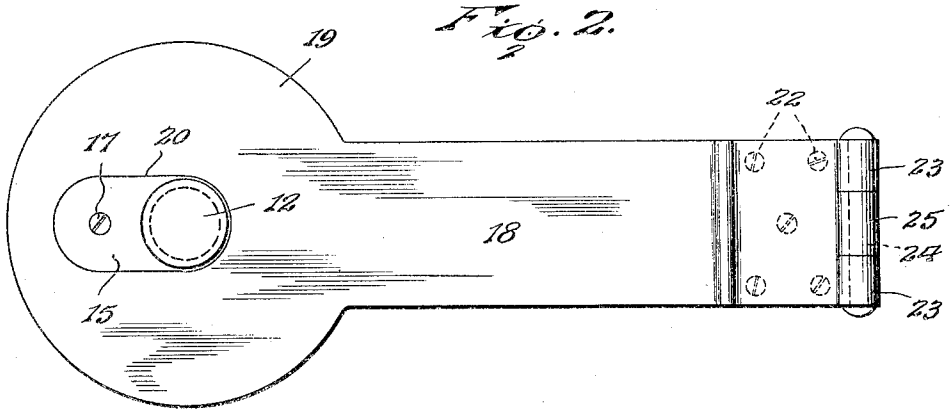
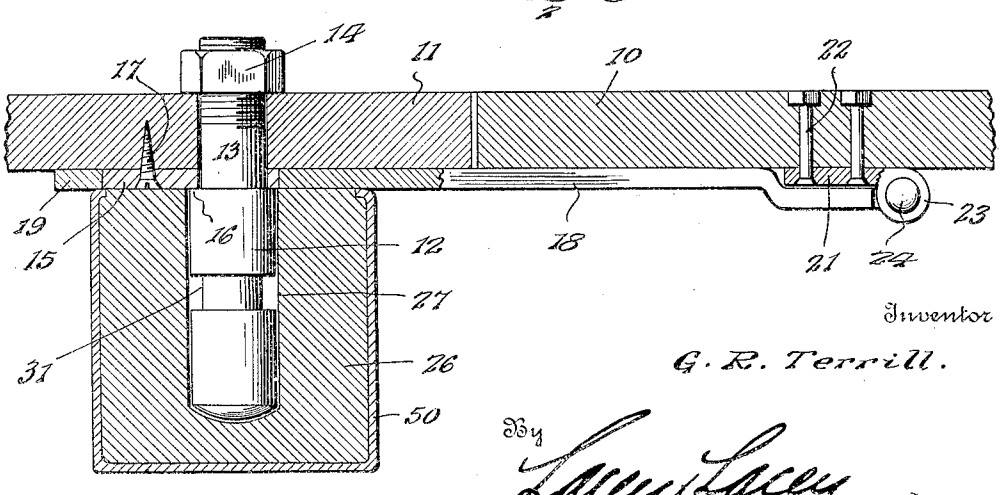


Fig. 3.



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Fig. 4.

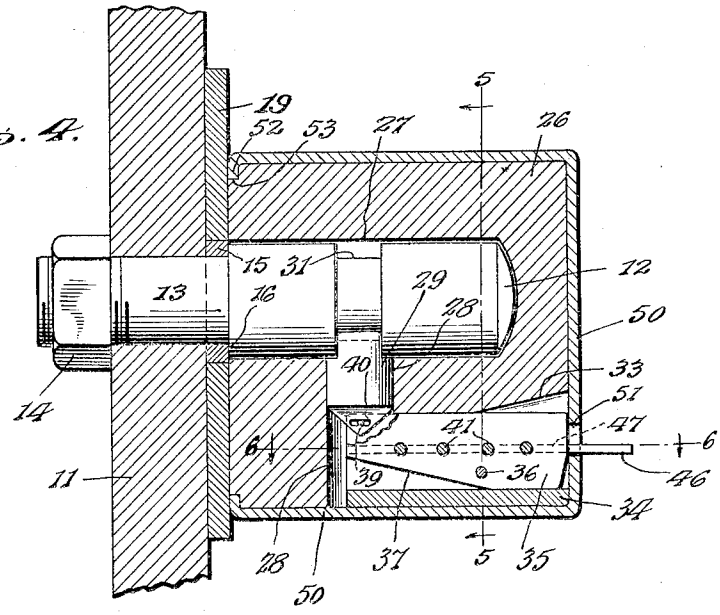


Fig. 6.

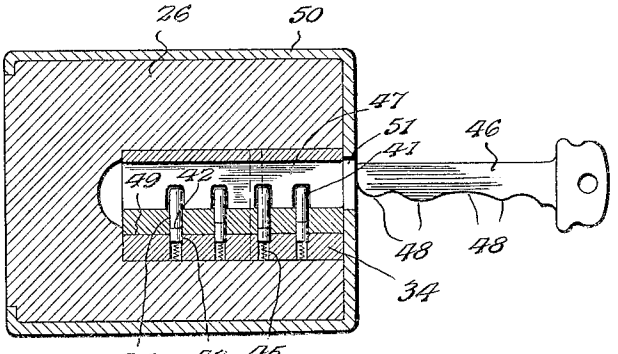


Fig. 5.

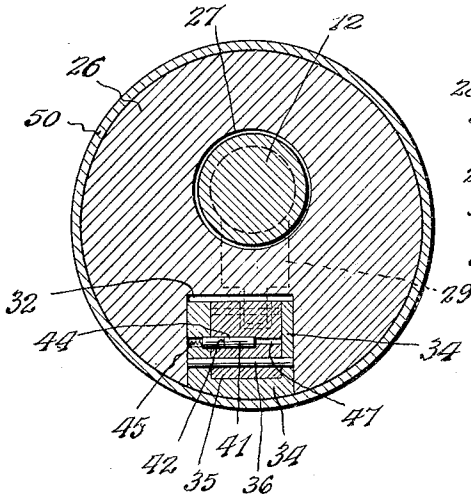
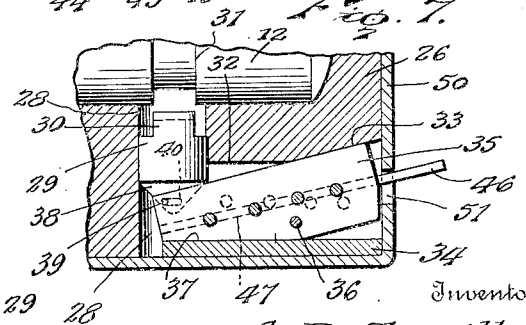


Fig. 7.



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Patented July 12, 1932 1,866,955

UNITED STATES PATENT OFFICE

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LOCK

Application filed April 30, 1930. Serial No. 448,624.

This invention relates to locks and has for an object to provide a lock which cannot be twisted from its locked position on the locking post by virtue of the lock being freely rotatable on the post as an axis.

A still further object is to provide a lock in which the movable parts are not operated by rotation of a key as usual but the key operated parts are mounted to tilt on a fulcrum or pivot whereby the latch is operated by a tilting movement of the key instead of the usual rotary movement.

A still further object is to provide a lock which will employ no bolts, screws, rivets or similar fastening devices and which will be devoid of a main or locking spring whereby the working parts are reduced to a minimum and the failure to function because of mechanical defects reduced to an unavoidable minimum.

A still further object is to provide a lock in which the pivoted key-receiving plug is substantially rectangular in contour and is mounted in a housing of similar contour so that the plug cannot be twisted to destroy the pin tumblers.

A still further object is to provide a lock which may be used in connection with a hasp in lieu of a padlock and will be devoid of projecting parts which might afford a point of contact for burglars' tools such as a jimmy or a cutter.

A still further object is to provide a lock which will be composed of a few strong, simple and durable parts which will not easily get out of order and which will be inexpensive to manufacture.

With the above and other objects in view the invention consists in certain novel details of construction and combinations of parts hereinafter fully described and claimed it being understood that various modifications may be resorted to within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings forming part of this specification,

Figure 1 is a front elevation of a lock and hasp constructed in accordance with my invention,

Figure 2 is a front elevation of the parts shown in Figure 1 with the lock removed to expose the locking post,

Figure 3 is a cross-sectional view taken on the line 3—3 of Figure 1,

Figure 4 is a cross-sectional view taken on the line 4—4 of Figure 1,

Figure 5 is a cross-sectional view taken on the line 5—5 of Figure 4,

Figure 6 is a cross-sectional view taken on the line 6—6 of Figure 4, and

Figure 7 is a fragmentary sectional view of the parts shown in Figure 4 but showing the same in unlocked position.

Referring now to the drawings in which like characters of reference designate similar parts in the various views, and referring more particularly to Figures 3 and 4, 10 designates a door and 11 a wall. In carrying out the preferred embodiment of the invention a post 12 is secured to the wall 11 in lieu of the usual staple used in connection with hasps which are secured with padlocks. The post 12 is provided with a reduced shank 13 which is passed through a suitable opening in the wall and is terminally threaded to receive a securing nut 14. A face plate 15 best shown in elevation in Figure 2, is provided with an opening to loosely receive the shank of the post, there being a shoulder 16 on the post which bears against the face plate. A screw 17 secures the face plate to the wall. The function of the face plate is to provide a rigid surface against which the post may be tightly secured by advancing the nut 14 and it will also be pointed out that the face plate is of considerably greater length than width for a purpose which will presently appear.

A hasp 18 is provided at the free end with a substantially circular head 19 and there is formed in the head a slot 20, which snugly receives the above mentioned face plate 15 whereby when the hereinafter described lock is applied the hasp will be held rigidly against movement by the face plate 15. The slot 20 also permits of the hasp being swung laterally during application to or removal from the post 12. The hinge of the hasp

comprises a member 21 which is fixed to the door 10 preferably by means of bolts 22 and is provided with eyes 23 which receive a pintle 24 which also is passed through an eye 25 formed integral with the hasp 18.

The rotary lock comprises a body 26 which is substantially cylindrical in contour and is provided with a longitudinal opening 27 which extends from the inner face thereof to nearly the outer face of the body and is of sufficient size to slidably receive the post 12. The body 26 is furthermore provided with a radial opening 28 as best shown in Figures 4 and 7, which extends from the longitudinal opening 27 to the cylindrical outer face of the body. A latch 29 of substantially cylindrical contour is slidably mounted in the radial opening 28 and is provided with a tongue 30 which is receivable in an annular groove 31 formed in the post 12. When the tongue of the latch is engaged in the groove in the post longitudinally withdrawal of the lock from the post will be impossible while at the same time the lock may be swiveled or rotated on the post as an axis indefinitely without dislodging any of the locking parts as will presently appear.

The body 26 of the lock is also provided in its circumferential wall with a longitudinal slot 32 which extends from the outer end wall of the body and opens into the above mentioned latch receiving opening 28. The slot 32 is preferably formed rectangular in contour and is cut away obliquely at the bottom thereof as shown at 33 for a purpose which will presently appear.

A substantially U-shaped casing 34 of substantially rectangular contour is snugly fitted in the slot 32 as best shown in Figure 5. A plug 35 as best shown in Figures 4 and 7 is pivotally mounted in the casing by means of a pivot pin 36 passed through the plug and through the walls of the casing as shown in Figure 5. The plug is substantially rectangular in cross-section to snugly fit in the casing and it will be observed that by virtue of the rectangular contour of both the plug and the casing, twisting of these parts from position will be positively prevented. The plug 35 is substantially rectangular in longitudinal section with the exception that the inner lower corner is cut away obliquely as shown at 37 whereby the plug may be tilted on its pivot pin 36, the obliquely cut away wall 33 of the slot and the obliquely cut away edge 37 of the plug permitting of this tilting movement of the plug. The plug is furthermore slotted at the inner end thereof to receive the tongue 38 formed on the outer end of the above described latch 29. A pivot pin 39 is passed through the plug and through the tongue to pivotally connect the plug to the latch and it will be observed that the said tongue 38 is provided with a slot 40 in which the pivot pin 39 is received to prevent binding of the parts during pivotal movement of the plug. When the plug is rocked to the inner limit of movement on its pivot the latch 29 will be engaged in the groove 31 of the post 12 as shown in Figure 4 and when the core is rocked to its outer limit of movement the latch will be withdrawn from the groove as shown in Figure 7.

By now referring to Figures 5 and 6 it will be seen that a plurality of tumbler pins designated in general by the numeral 41 are arranged to connect the pivoted plug 35 and casing 34. Each tumbler pin is split transversely as shown at 42 and is furthermore preferably formed cylindrical in contour and is slidably receivable in correspondingly shaped aligned openings 43 and 44 formed in the casing and plug respectively. A small coil spring 45 is housed in each opening in the casing back of each tumbler pin and normally holds the tumbler pin pressed outwardly into the recess in the plug. The tumbler pins 42 as above stated are split transversely and it will be observed that the splits 42 are disposed in staggered relationship with respect to each other as most clearly shown in Figure 6. The purpose of this is to permit of a key 46 being inserted in a key slot 47 formed in the plug and brought into contact with the ends of the tumbler pins. The key is provided with wards designated in general by the numeral 48 and corresponding in number to the number of the tumbler pins and so cut as to engage with the corresponding tumbler pins when the key is inserted and press the tumbler pins against the pressure of their springs sufficiently to cause the staggered transverse splits 42 of the pins to align with the wall 49 of the plug. In this position of the pins the key may be tilted to rock the plug outwardly as shown in Figure 7 and release the latch 29 from the post 12. Upon reverse movement of the key the plug will rock inwardly to engage the latch with the post whereupon the key may be withdrawn to allow the tumbler pins to be forced outwardly by their control springs and lock the tilting plug against movement.

A shell 50 is snugly fitted on the exterior of the body 26 and is provided with a slot 51 to receive the key 46 as best shown in Figure 1. The inner end of the shell is crimped inwardly to provide a flange 52 which is receivable in a recess 53 formed in the body to rigidly secure the shell to the body. The body 26 and shell 50 are so proportioned that when the latch is engaged with the locking post 12 the shell and body will fit snugly against the hasp 18 whereby no crevices are presented for the insertion of burglars' tools to pry off the lock.

It will be observed that the body of the lock may be swiveled on the locking post indefinitely without disturbing or dislodging the latch 29 or plug 35. It will be also ob-

served that the lock is unlocked by tilting movement of the key instead of rotary movement of the key as usual. It will be still further pointed out that by virtue of the rectangular contour of the plug and casing therefor, as well as the contour of the slot 32 of the body, twisting of the locking parts from position will be impossible.

Having thus described the invention, I claim:

1. A lock comprising a post, a body mounted to swivel on said post, a radially movable latch carried by said body and having a tongue slidably fitting in an annular groove in said post, a pivoted plug carried by said body and pivotally connected to said latch for moving said latch into and out of said groove, a casing carried by said body and receiving said core, said casing and said plug being of angular cross-section whereby said plug is held against being twisted in said body, and means for normally locking said plug against movement.

2. A lock comprising a post, a body having a longitudinal opening receiving said post and having a radial opening communicating with said longitudinal opening, a latch slidably fitted in said radial opening and having a tongue fitting in an annular groove in said post and preventing longitudinal withdrawal of said body from said post while permitting said body to swivel on said post as an axis, there being a longitudinal slot formed in the circumferential wall of said body and opening through one end wall thereof and communicating with said radial opening, said slot being angular in cross-section, a casing of angular cross-section snugly fitting in said slot, a plug pivoted in one end of said casing and being of substantially angular cross-section, the angular contour of said slot, said casing and said plug preventing twisting of the parts from position in said body, said plug having a key slot, and a plurality of spring pressed tumbler pins carried by said casing and projecting through said plug into said key slot.

3. A lock comprising a post having an annular groove, a body rotatably mounted on said post, a radially movable latch carried by said body and engaging in the groove in said post, a pivoted plug disposed in a longitudinal slot in said body and pivotally connected to said latch for moving the latch into and out of engagement with the groove in said post, an angular casing carried by said body and embracing said plug to prevent axial twisting of the plug in the body, said casing having a plurality of alined openings registering with corresponding alined openings in said plug, and spring-pressed tumbler pins disposed in said alined openings for holding said plug against pivotal movement.

4. A lock comprising a post having an annular groove, a body mounted to swivel on said post, a radially movable latch carried by said body and adapted to be moved into and out of engagement with the groove in said post, a substantially U-shaped casing carried by said body, a plug fitting in said casing, a pivot pin passed through said plug intermediate the ends thereof and engaged in the walls of said casing, one end of said plug being pivotally connected to said latch, means for locking the plug against pivotal movement, and a shell surrounding said body and having a key slot registering with a key slot in said plug for receiving a key to release said means.

In testimony whereof I affix my signature.

GEORGE R. TERRILL. [L. S.]