

May 7, 1935.

Y. HUSARIK

2,000,445

PADLOCK

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Fig. 1

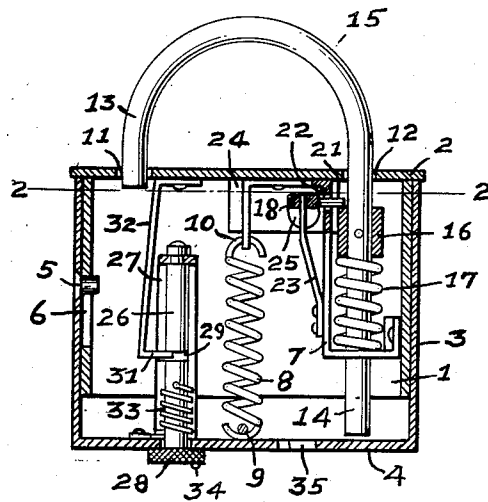


Fig. 2

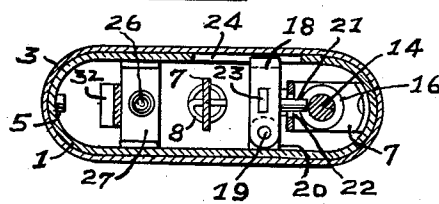


Fig. 4

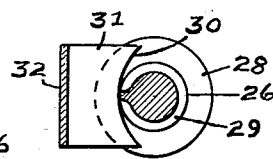
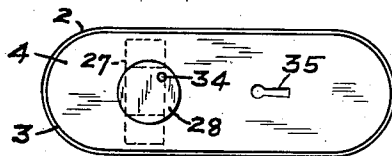


Fig. 3



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## UNITED STATES PATENT OFFICE

2,000,445

## PADLOCK

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4 Claims. (Cl. 70—108)

My invention relates to a padlock of the type disclosed in my United States Patent Number 1,930,809, and issued October 17th, 1933.

The object of the invention is to provide a padlock of the character described, which is simple in its construction and that may be released without the use of a key.

To the accomplishment of these and such other objects as may hereinafter appear, the invention consists of the novel construction, combination and arrangement of parts herein specifically described and illustrated in the accompanying drawing, but it is to be understood that changes in the details of construction may be resorted to that come within the scope of the claims hereunto appended.

In the drawing wherein like numerals designate corresponding parts throughout the several views:

Figure 1 is a vertical sectional view of a padlock constructed in accordance with the invention.

Figure 2 is a sectional view on line 2—2, Figure 1.

Figure 3 is a bottom plan view of the device, and Figure 4 is an enlarged transverse sectional view of the latching pin and associated latching spring.

Referring in detail to the drawing 1 denotes an inner casing having an open lower end. A top plate 2 is permanently fixed to the upper end of the inner casing. The latter is enclosed in an outer casing 3, which has an open upper end and a bottom 4. The inner and outer casings 1 and 3 are similar in contour, and the latter is telescopically shiftable on the former. The movement of the outer casing on the inner casing is limited by a stop pin 5, which is fixed in the outer casing and projects through a vertically disposed slot 6 formed in the inner casing. When in the closed position the upper end of the outer casing abuts against the projecting edge margin of the top plate 2, as clearly shown in Figure 1.

A substantially Z-shaped bracket 7 is mounted in the inner casing 1 and fixed in position in the latter in any suitable manner. A spiral spring 8 extends vertically in the center of the casings 1 and 3, and has its lower end secured, as at 9, to the outer casing bottom 4. The upper end of the spring 8 is attached to the bracket 7, as at 10. The action of the spring 8 normally forces the outer casing 3 to the closed position on the inner casing 1, but allows said outer casing to be projected on said inner casing a distance permitted by the stop pin 5 in the slot 6.

The top plate 2 is provided with a pair of spaced openings, respectively indicated at 11 and 12, for the passage of the arms 13 and 14 of a shackle 15. The arm 14 is of greater length than the short arm 13, and extends through the top plate opening 12 into the inner casing 1 and through the lower end of the bracket 7. The short arm 13 is free and engages in the top plate opening 11.

A sleeve 16 is fixed on the long arm 14, within the inner casing 1 and limits the vertical movement of the shackle 15, but allows the free end of the short arm 13 to clear the top of the plate opening 11 when the shackle 15 is released.

A spiral spring 17 is mounted on the shackle arm 14 between the sleeve 16 and the lower end of the bracket 7. The action of the spring 17 forces the shackle 15 upwardly to the releasing position.

An operating bar 18 extends transversely through the inner casing 1 directly beneath the upper end of the bracket 7. One end of the operating bar is pivotally connected, as at 19, to a lug 20 fixed in the inner casing 1. The other end of the operating bar is provided with a depending lip 25 to facilitate the manipulation of the operating bar when releasing the shackle 15 in the manner to be described.

The operating bar 18 carries a fixed, laterally disposed locking pin 21, which extends through an aperture 22 provided therefor adjacent to the upper end of the bracket 7. The locking pin 21 engages the upper end of the sleeve 16 and thereby secures the shackle 15 in the locked position. A flat spring 23, carried by the bracket 7, and engaged in the operating bar 18; normally forces the locking pin 21 to the locking position.

The inner casing 1 is provided with a large opening 24 to allow access to the lip 25 for shifting the operating bar 18 to the releasing position.

A vertically disposed latching pin 26 is revolvably mounted in a supporting bracket 27 fixed to the outer casing bottom 4. The latching pin extends through the latter and carries a fixed knurled head 28, which is positioned flatly against the outer surface of the outer casing bottom. The latching pin is provided with a circumferentially extending cam groove 29, in which engages the concaved free end 30 of the horizontal arm 31 of a flat spring catch 32. The latter is fixed to and depends from the top plate 2.

As shown in Figure 4, the formation of the cam slot 29 is such whereby the rotation of the latching pin 26 to one position will cause the catch end 30 to clear said cam slot. The en-

gagement of the end 30 in the cam slot will secure the casings 1 and 3 together until the latching pin is rotated to the position clearing said end from the cam slot. A spiral spring 33 is mounted on the latching pin 26 and has one end fixed to the latter, while the other end thereof is fixed to the casing bottom 4. The action of the spring 33 always returns and maintains the latching pin in the securing position.

The latching pin head 28 is provided with a teat 34, which is positioned at a predetermined point relatively to the clearance position of the latching pin. By the sight or feel of the teat 34, the operator can readily adjust the latching pin to the clearance position to permit the shifting of the outer casing 3 on the inner casing 1, provided he is acquainted with the relative position of the teat 34 with respect to the clearance position of the latching pin.

The outer casing bottom 4 may be provided with a keyhole slot 35 for the purpose of confusing an unauthorized attempt to operate the padlock to release the shackle 15.

In practice the operation of my improved padlock is as follows: Assuming that all parts of the device are in the positions shown in Figure 1, the latching pin 26 is first turned to the clearance position and held in this latter position while the outer casing 3 is pulled downwardly to expose the opening 24 in the inner casing 1. The operating bar 18 is now shifted until the locking pin 21 clears the sleeve 16 to release the shackle 15. The latter will now be shifted outwardly by the action of the spring 17 until the sleeve 16 abuts against the top plate 2 and the free end of the shackle arm 13 clears the associated top plate opening 11. The shackle 15 is then free to be swung laterally to effect its removal. When the outer casing 3 is released the end 30 of the spring catch 32 will automatically engage the latching pin 26 and the said outer casing will be drawn to the closed position by the action of the spring 8. To secure the shackle 15 the latter need only be forced downwardly through the top openings 11 and 12 until the locking pin 21 engages the top of the sleeve 16, as illustrated in Figure 1.

What I claim is:

1. In combination, a padlock comprising, an inner casing, a top plate fixed to the upper end of said inner casing and provided with a pair of spaced apertures, a shackle including a pair of arms normally extending through said apertures into said inner casing, a sleeve fixed on one of said arms, a locking element mounted in said inner casing and engaging said sleeve, an outer casing inclosing said inner casing and shiftable on the latter to permit access to said locking element, and means for securing said outer casing against movement on said inner casing.

2. In combination, a padlock comprising, an inner casing, a top plate fixed to the top of said inner casing and provided with a pair of spaced apertures, a shackle including a pair of arms normally extending through said apertures into said inner casing, a sleeve fixed on one of said arms, a locking element mounted in said inner casing and engaging said sleeve, an outer casing inclosing said inner casing and shiftable on the latter to permit access to said locking element, said sleeve limiting the outward movement of said shackle, and automatically operable means for securing said outer casing against movement on said inner casing.

3. In combination, a padlock comprising, an inner casing, a top plate fixed to the upper end of said inner casing and provided with a pair of spaced apertures, a shackle including a pair of arms normally extending through said apertures into said inner casing, a sleeve fixed on one of said arms, a locking element mounted in said inner casing and engaging said sleeve, an outer casing inclosing said inner casing and shiftable on the latter to permit access to said locking element, means carried by said outer casing for limiting of the latter on said inner casing, and means for securing said outer casing against movement on said inner casing.

4. In combination, a padlock comprising, an inner casing provided with a large opening in the side wall thereof, a top plate fixed to the upper end of said inner casing and provided with a pair of spaced apertures, a substantially Z-shaped bracket mounted in said inner casing and fixed to the latter and to said top plate, a shackle including a short arm and a long arm, said arms normally extending through said apertures into said inner casing, said long arm extending through the lower end of said bracket, a sleeve fixed on said long arm for limiting the outward movement of said shackle, a spiral spring mounted on said long arm between said bracket and said sleeve for normally shifting said shackle outwardly, an operating bar pivotally connected in said inner casing, a locking pin carried by said bar and engaging said sleeve for locking said shackle, a spring carried by said bracket and engaging said bar for normally forcing said locking pin to the locking position, an outer casing inclosing said inner casing and shiftable on the latter to expose said opening to permit access to said operating bar, a spring connected with said bracket and with said top plate for normally shifting said outer casing to inclose said inner casing, a latching pin revolvably supported by said outer casing, a spring catch carried by said top plate and engaging said latching pin for securing said outer casing against movement on said inner casing.

JUSTINA HUSARIK.