United States Patent [19]

Wellekens

[11] **3,721,112**

[45] **March 20, 1973**

[54] **LOCKS**

[76] Inventor: **John F. Wellekens,** 51 East 42nd St., New York, N.Y. 10017

[22] Filed: **Aug. 18, 1971**

[21] Appl. No.: **172,820**

[52] **U.S. Cl.** **70/39,** 70/52, 70/97, 70/101, 70/129, 70/181

[51] **Int. Cl.** **E05b 67/02,** E05b 65/08, E05b 65/44

[58] **Field of Search**.....70/14, 31, 32, 33, 34, 35, 70/36, 37, 38 A, 38 C, 39, 52, 53, 54, 129, 181, 361, 371, 463

[56] **References Cited**

UNITED STATES PATENTS

1,698,201	1/1929	Pietrie	70/371 X
1,688,187	10/1928	Jackson et al.	70/52 X
1,566,473	12/1925	Gibson	70/52 X
3,475,931	11/1969	Foote	70/54
1,947,524	2/1934	Horldt	70/463 UX

FOREIGN PATENTS OR APPLICATIONS

377,797	6/1923	Germany	70/39
250,827	9/1912	Germany	70/38 C
897,050	3/1945	France	70/38 C

Primary Examiner—Albert G. Craig, Jr.
Attorney—Harry Radzinsky

[57] **ABSTRACT**

A lock which can be either of the padlock type or bolt type comprising, in one embodiment, a substantially U-shaped yoke or hasp having one or both of its legs provided with notches, the notched part of the legs extending into a lock body or housing. The body or housing is provided with a bore or cavity that receives an axially movable cylindrical lock casing containing lock mechanism that is effective, when key-operated, to retract a latch that normally holds the lock casing within the housing. The lock casing extends across the legs of the yoke or hasp and the notches in the legs of the yoke are shaped to conform to the cylindrical curvature of the lock casing so that the engagement between the lock casing and the legs of the yoke is effective to hold the yoke from displacement out of the lock body or housing. When the latch is retracted, the lock casing can be axially moved to withdraw it from the lock body or housing, thus freeing it from the yoke or hasp which can then be separated from the housing. A saddle or guard may be provided, attached to or separate from the lock housing, to receive the bight portion of the yoke when the yoke is in a locking position. Another embodiment of the invention involves a sliding bolt that is capable of being locked in either an advanced or retracted position by the engagement with a part provided on the cylindrical lock casing.

6 Claims, 19 Drawing Figures

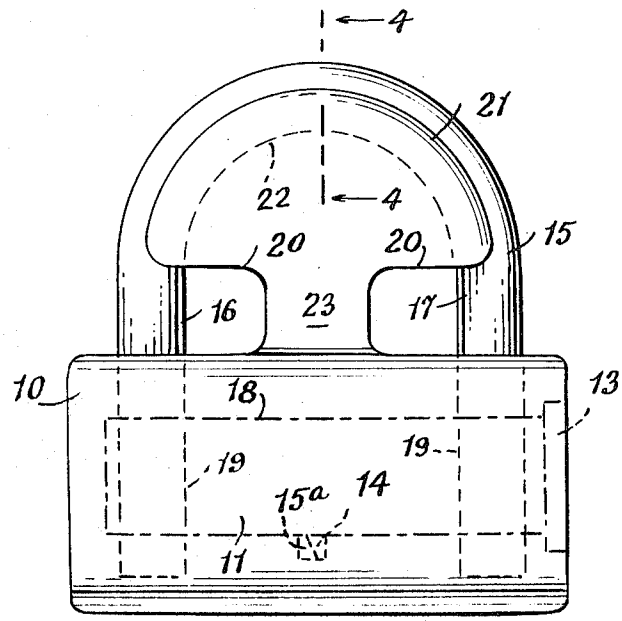


FIG. 1.

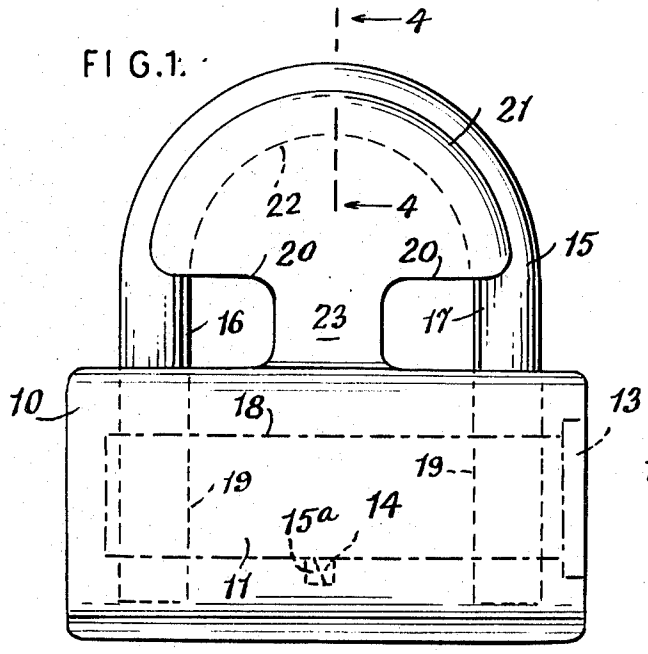


FIG. 2.

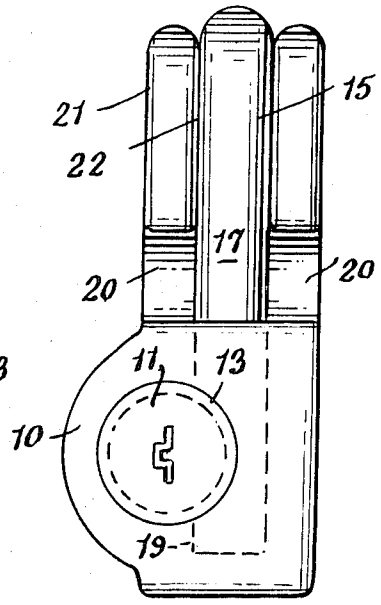


FIG. 3.

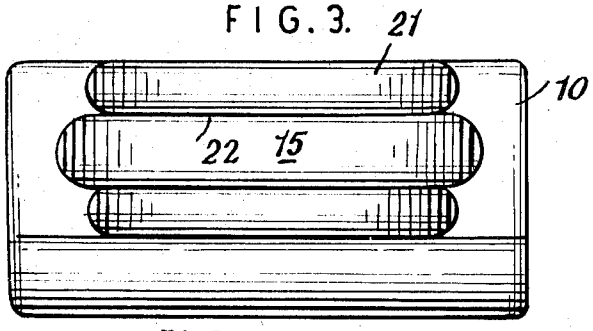


FIG. 4.

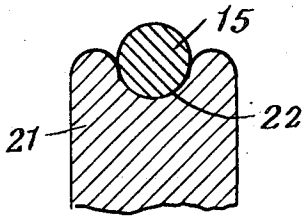


FIG. 5

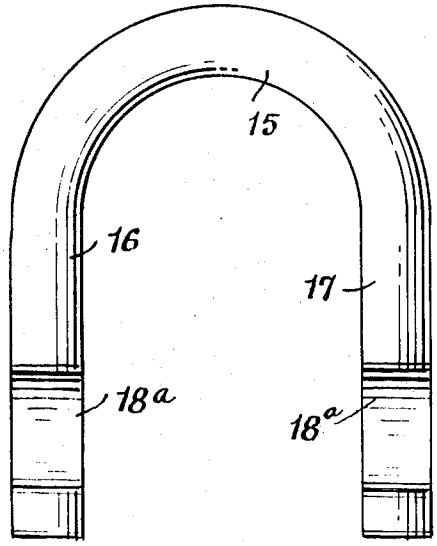


FIG. 7.

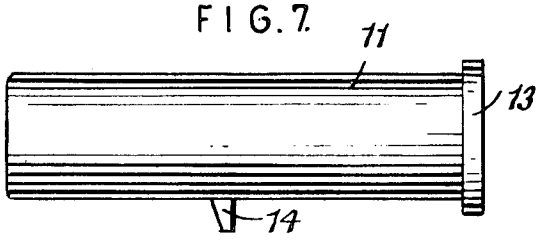
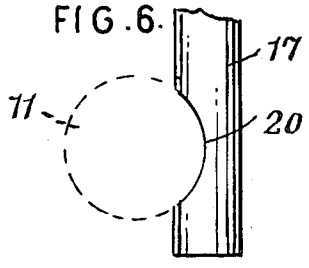


FIG. 6.



INVENTOR.
John F. Wellekens
BY Harry Radzinsky
Attorney.

FIG. 8.

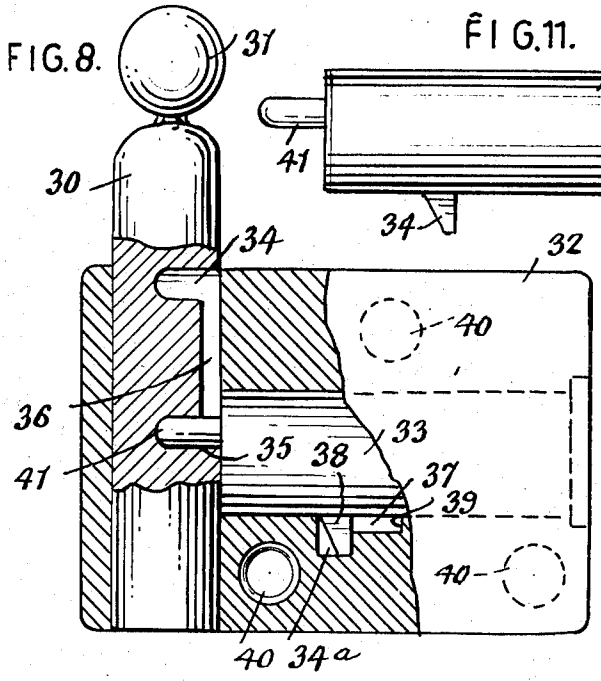


FIG. 11.

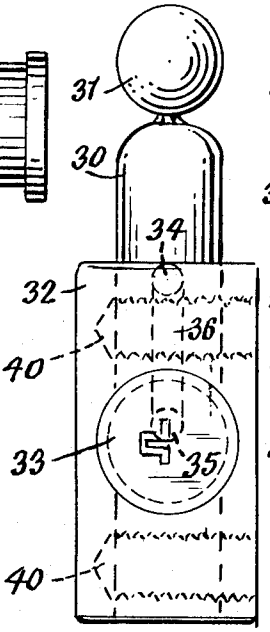


FIG. 9

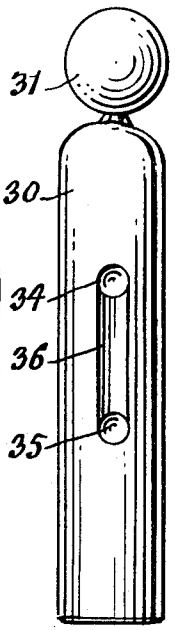


FIG. 10.

FIG. 12.

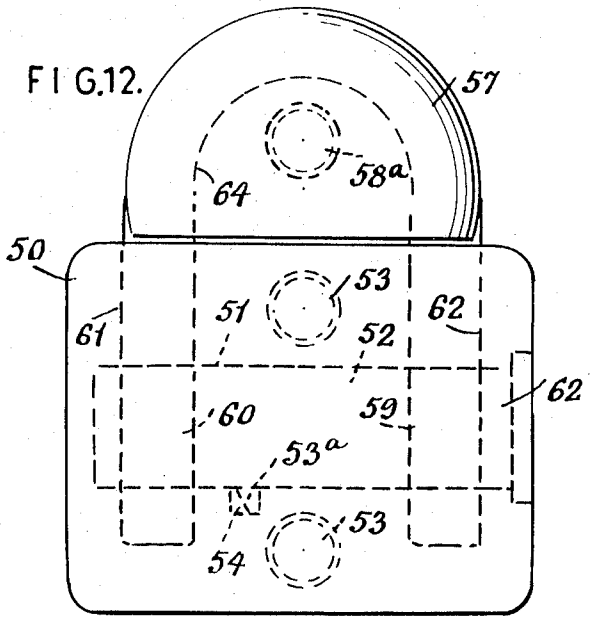


FIG. 13.

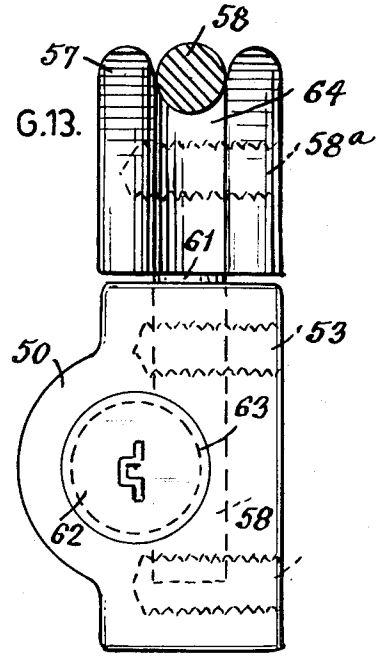
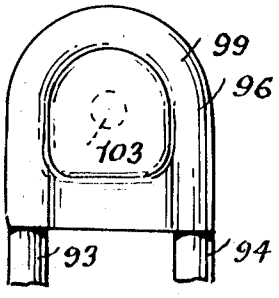


FIG. 19.



INVENTOR.
John F. Wellekens
BY Harry Raizinsky
Attorney

FIG. 14.

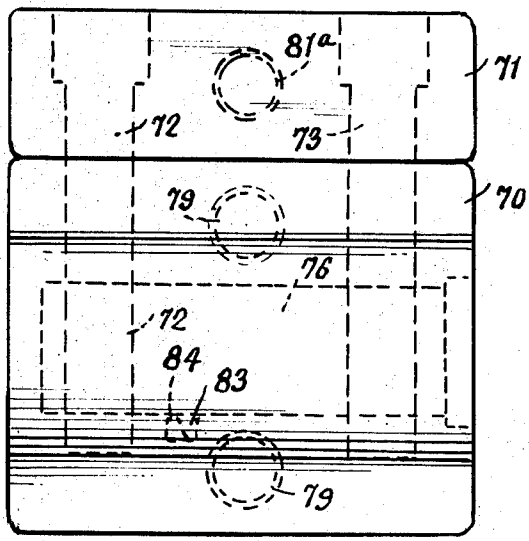


FIG. 15.

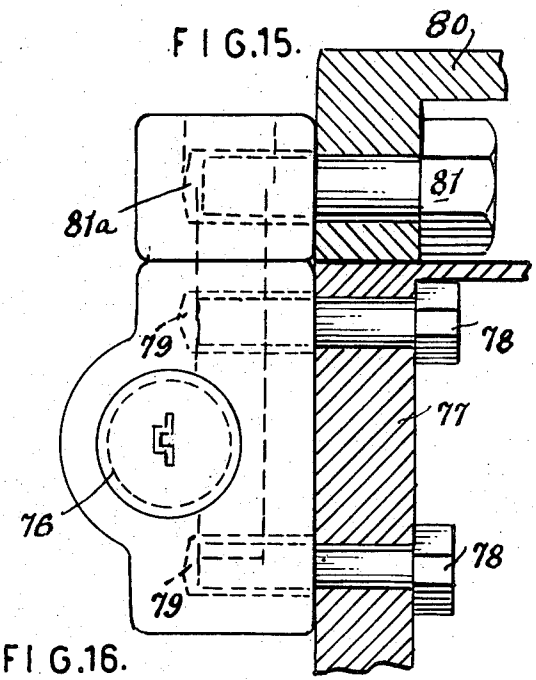


FIG. 16.

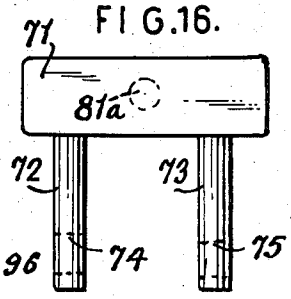


FIG. 17.

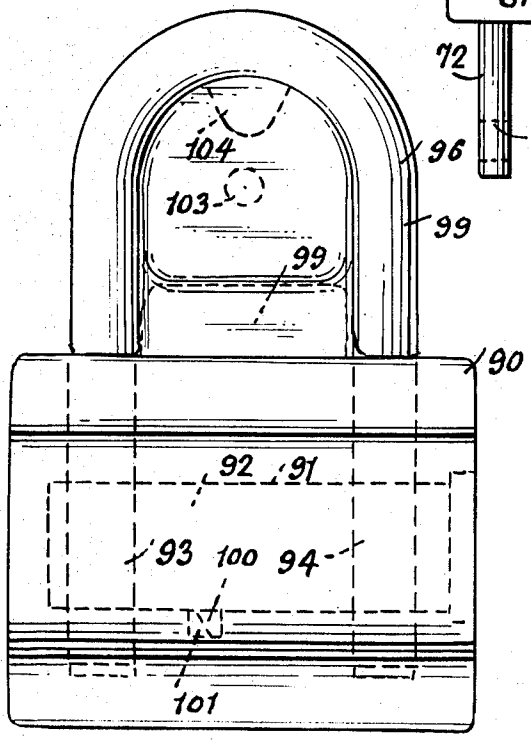
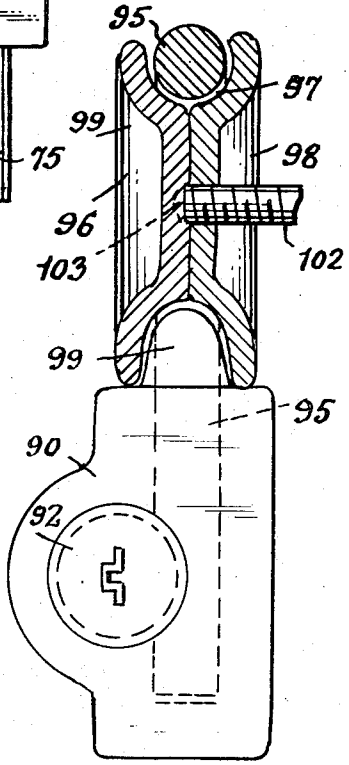


FIG. 18.



INVENTOR.
John F. Wellekens
BY Harry Radzynsky
Attorney.

LOCKS

It is an object of the present invention to provide a lock of a construction which will enable it to function as a padlock, or in one embodiment as a sliding bolt lock, and which is of simple and sturdy construction; which permits its combination to be changed whenever desired, and which may have its operating parts replaced whenever required by simple operation.

It is another object of the invention to provide a guard means for the yoke or hasp of the lock, thereby reducing the possibility of the yoke or hasp being pried loose from the lock body.

More particularly, the invention contemplates in one of its embodiments, the provision of a U-shaped yoke or hasp that is received in a cross-wisely extending housing, the housing receiving an axially shiftable cylindrical lock casing that is latched within the housing and the yoke being notched to conform it to the peripheral curvature of the lock casing so that when the lock casing extends across the legs of the yoke it will fit into the notches in the legs and will hold the yoke against displacement out of the housing until the latching connection between the lock casing and the housing is broken by key operation. A guard means is employed for the yoke to prevent it from being pried loose.

In another embodiment of the invention, a slidable bolt is engaged by a part of the lock casing, the bolt being capable of being locked in either an advanced or retracted position.

In the accompanying drawings, wherein embodiments of the invention are disclosed,

FIG. 1 is a front elevational view of a type of padlock which can be used on a chain or the like;

FIG. 2 is a side elevational view of the same;

FIG. 3 is a top plan view of the same;

FIG. 4 is a sectional view, taken substantially on the line 4—4 of FIG. 1, looking in the direction of the arrows;

FIG. 5 is an elevational view of the U-shaped yoke or hasp;

FIG. 6 shows an end portion of one of the legs of the yoke, showing how the notch therein is engaged by the lock casing;

FIG. 7 shows the lock casing with the latch projecting therefrom;

FIG. 8 is an elevational view, with parts in section, of a sliding bolt type lock embodying the invention;

FIG. 9 is an end view of the same;

FIG. 10 shows the bolt in the above-mentioned lock;

FIG. 11 shows the lock casing employed in this embodiment of the invention;

FIG. 12 is a front elevational view of another embodiment of the invention;

FIG. 13 is a side elevational view of the embodiment of FIG. 12 with the yoke or hasp shown in section;

FIG. 14 is an elevational view of another embodiment of the invention;

FIG. 15 is a side elevation of the lock of FIG. 14 showing the lock attached to parts of a cabinet or the like;

FIG. 16 is a view, in a reduced scale, of the hasp or yoke of the lock of FIGS. 14 and 15;

FIG. 17 shows another embodiment of the invention;

FIG. 18 is a side elevational view, with parts in section, of the lock of FIG. 17, and

FIG. 19 is a view in a reduced scale, of the part of the lock that serves as a saddle and guard for the yoke or hasp of the lock.

Referring to the drawings, and particularly to FIGS. 1 to 7 thereof, there is shown therein a lock which can be used for connecting together parts of a chain, or used for numerous other purposes. The body or main housing 10 of the lock may be of the shape shown, and it is provided with a longitudinally extending bore 18 extending partly through it and in which a cylindrical lock casing 11 is mounted for manual axial sliding movement.

The lock casing 11 contains an operating or locking mechanism which may preferably, but not necessarily, be of a construction similar to that disclosed in my U.S. Pat. Nos. 3,260,080 and 3,464,241. Such type of locking mechanism is one in which the combination of the lock can be speedily and easily changed whenever it is found desirable to cause the lock to be operated by the use of a different key. Thus, an advantage obtained from this arrangement is that when the possibility exists that the lock might be opened by a person or persons having unauthorized possession of a suitable key, the combination of the lock can be quickly changed and this can be done without difficulty or extensive effort so that a differently contoured key will then be required in order to open the lock.

The cylindrical lock casing is provided at one end with a disk-shaped head 13, this being located at the end of the smooth cylindrical housing in which the lock parts are contained.

The lock mechanism includes a latch 14 engaging in a recess 15a in the lock housing to hold the lock casing 11 from axial movement. That is the locked position of the lock. When the latch is retracted by operation of a suitable key inserted in the keyhole, the lock casing can be withdrawn either wholly or partly out of the bore 18 to free a yoke or hasp 15.

The yoke or hasp 15 has legs 16 and 17 which enter into the lock body or housing 10 into cavities 19 provided in the body. One or both of the legs 16, 17 is notched as shown at 18a in FIGS. 5 and 6, and the cylindrical lock casing 11 when in place in the lock housing, engages in the notch or notches 18a and this prevents separation of the yoke or hasp from the lock body 10. It will be obvious that when the lock casing 11 is moved axially toward the right as viewed in FIG. 1, and out of the lock housing 10, or is at least so moved sufficiently to bring the lock casing 11 out of the notches or notch 18a in the yoke, the yoke can then be withdrawn out of the lock housing 10.

When the yoke is locked in position as shown in FIGS. 1 and 2 its bight rests in a saddle 21 forming an extension of the lock body or housing. Said saddle is shaped in its opposite edges in a manner to form two notches 20 which co-operate with the legs of the yoke in providing clearance for the links or other parts of a chain for example, through which the legs 16 and 17 of the yoke may be passed.

The saddle 21 is formed with a peripheral groove 22 into which the bight of the yoke or hasp 15 fits, such fitment of the yoke permitting the saddle to effectively act as a guard or protector for the yoke and reducing the possibility of the yoke or hasp 15 being engaged by a prying tool likely to force its disengagement from the lock body.

The saddle 21 is connected to the lock body 10 by a neck 23 and this part of the lock can, if desired, provide a means or post around which a part of a chain or the like can be extended during the use of the lock.

The yoke or hasp 15 can be separated from the lock body 10 by the retraction of the latch 14 by using a key and sliding the lock casing 11 toward the right as viewed in FIG. 1 to bring it completely out of the housing until the lock casing 11 clears the notches 18a whereupon the yoke 15 will be free to have its legs moved out of the lock housing.

In FIGS. 8 to 11 inclusive of the drawings there is shown a sliding bolt type of lock. The bolt is indicated at 30 and it is provided at one end with an enlargement or ball 31 by which it can be conveniently manipulated, or moved to either an extended or retracted position, the latter position being that shown in the drawings.

The bolt 30 is slidable through the lock body or housing 32 which slidably receives a lock casing 33 of cylindrical form and constructed as heretofore described. The lock casing 33 is provided with a latch 38 adapted to engage with a recess 34 in the housing 32 to normally hold the lock casing against axial movement.

The bolt 30 is provided with a pair of cavities or recesses indicated at 34 and 35 which are connected by an axially extending channel 36. Provided on the end of the lock casing 33 is an off-center, axially extending pin 41 adapted to engage with either one of the cavities or recesses 34 and 35 according to the position of the bolt 30.

When the bolt is in its retracted position as shown in FIGS. 8 and 9 of the drawings, the pin 41 will be entered into the recess 35 thus holding the bolt 30 in its retracted position and maintaining it against axial shift. When it is desired to extend the bolt into locking position, the latch 33 is retracted by key operation of the locking mechanism in the lock casing 33 and to an extent to permit axial withdrawal of the lock casing 33 until movement of the lock casing is halted by the partially retracted latch 38 reaching the end 39 of a groove 37 that constitutes an extension of the recess 34*a*.

At this time the pin 41 will have been moved out of the recess 35 to such an extent as to reach the channel 36, then permitting the bolt 30 to be moved out of the lock body to an extent until the pin 41 has become registered with the recess 34 and the pin 41 can then enter recess 34 to hold the bolt 30 in its projected position out of the lock housing, The pushing inwardly of the lock casing 33 will cause the latch 38 to enter the recess 34 and hold the lock casing 33 against withdrawal movement.

The internally threaded cavities 40 in the lock housing 32 provide for the entry of fastening bolts for attaching the lock body or housing 32 to any element to which the lock is to be applied.

The construction in this embodiment is such that the lock contains a bolt that can be locked against movement while in either its extended or retracted position. Such a lock is useful for example, at the bottom of a swinging or sliding door or in any other environment wherein a sliding bolt type of lock is required.

In the embodiment shown in FIGS. 12 and 13, the body or housing of the lock is shown at 50, the same being provided with a bore 51 which slidably receives the cylindrical lock casing 52. Apertures 53 are provided in the lock body for the reception of bolts or screws for the attachment of the body 50 to one of the elements to be locked. The lock mechanism includes a latch 53*a* for engagement with a recess 54 in the body 50 of the lock.

At 57 is shown a block provided with a transverse internally threaded aperture or recess 58 for the reception of a bolt or screw for fastening the block to an element to be locked. The block 57 can be secured adjacent to the lock body 50 and said lock body and the block 57 are adapted to be coupled together in locked relationship, by means of a U-shaped yoke or hasp 58 of the construction shown in FIG. 5. The yoke 58 is provided with legs 59 and 60 which enter into recesses 61 and 62 respectively in the body of the lock and are held therein by their engagement with the cylindrical lock casing 52. The legs 59 and 60, or at least one of them, is provided with notches 63 such as those shown at 18a in FIGS. 5 and 6, for engagement with the cylindrical surface of the lock casing 52. When such engagement is in effect, the yoke 58 cannot be separated from the lock body 50 and the yoke thus acts as a coupling element between the lock body and the block 57 to maintain in locked relationship the parts to which the lock body and the block are attached.

The block 57 forms a saddle and has a peripheral groove 64 into which a substantial portion of the bight of the yoke 58 fits when the yoke is in its locking position as shown in FIGS. 12 and 13.

When it is desired to secure an unlocked relationship between the block 57 and the lock body or housing 50, the latch 53*a* is retracted by key operation to permit the axial shift of the lock casing 52 to the right as in FIG. 12 and to an extent to disengage it from the notch or notches 52 and the yoke or hasp 58 may then be lifted out and thus permit the separation of the lock body 50 and the block 57 and the elements to which these parts may be attached.

To place the device in locked condition, the yoke or hasp 58 is fitted in place in the lock housing 50; the lock casing 52 is pushed inwardly and the latch projected into the recess 54.

In the embodiment shown in FIGS. 14 to 16 inclusive the lock housing or body is shown at 70, the same cooperating with a yoke or hasp that is composed of a rectangular cross piece or bar and two pins or rods 72 and 73 fitted in the cross piece and projecting therefrom as seen in FIG. 16. One or both of the pins or rods 72, 73 is notched as shown at 74,75 in dotted lines in FIG. 16, to receive the cylindrical lock casing 76 constructed in the manner descrkbed in respect to the embodiments shown in FIGS. 1, 2, 12 and 13.

The lock body or housing 70 can be fastened to a cabinet body 77 or some other container such as a vending machine part, by means of bolts or screws 78 entering the internally threaded cavities 79 in the lock body 70. The yoke, composed of the pafts 71, 72 and 73, can be attached to the cover or lid 80 of the cabinet by the bolt shown at 81 entering cavity 81*a*.

FIGS. 14 and 15 show the lock in its locked position, thus connecting together the lid 80 to the body of the cabinet in locked relationship. When it is desired to raise the cover or lid 80, the latch 83, projecting from the lock casing 76 and entering recess 84, is retracted and the lock casing is slid axially and to the right as seen in FIG. 14 until it is freed from the notches 74 and

75 in the rods or pins 72 and 73, whereupon the yoke or hasp, composed of the parts 71, 72 and 73, may be moved away from the lock body or housing 70 by the shifting or swing of the cover 80.

To provide for any slight arcuate swing of the yoke due to the hinging of the cover 80, the recess 81*a* in which the bolt 81 is mounted can be lined with a flexible insert of rubber or similar material. As an alternative, the pins or rods 72 and 73 might be mounted so as to have a required movement relatively to the head or cross piece 71 to permit the cover swing. The lock is restored to locking position by the insertion of the lock casing 76 in the lock housing and the advancement of the latch 83 into the recess 84.

In FIGS. 17, 18 and 19 is shown a lock having a lock body or housing 90 provided with a bore 91 in which the cylindrical lock casing 92 is mounted for axial movement when required. The body of the lock casing 92 is adapted to engage with notches in the legs 93 and 94 of the yoke or hasp 95 in the manner described in respect to the embodiments shown in FIGs. 1, 2, 12 and 13.

The bight portion of the yoke or hasp 95 extends around a guard or keeper 96 composed of two similar halves 98 and 99 welded or otherwise secured together into an integral unit. The sections 98 and 99 co-operate in the formation of a peripheral groove 97 into which the bight portion of the yoke or hasp 95 fits as clearly shown in FIG. 18. On the body of the lock is provided a projecting lug 99 which fits between the legs of the yoke 95 and extends into the groove 97 as shown in FIG. 18.

The arrangement described is such that when the lock is in locking condition, as in FIGS. 17 and 18, the guard or keeper 96 is confined between the yoke 95 and the lug 99. By operation of a key, the latch 100 projecting from the lock casing 92, can be retracted out of recess 101 in the housing and the lock casing 92 can then be axially shifted to disengage it from the notches in the legs of the yoke 95 whereupon the yoke can be separated from the housing 90.

The guard or keeper can if desired, be attached to an element to which the lock is to be applied, by means of a bolt or screw 102 engaging in a threaded cavity 103 provided in the keeper. Also, if desired, the keeper or guard can be apertured as indicated in dotted lines at 104 in FIG. 17 to enable an element to be locked to pass through such aperture and be extended around the bight portion of the yoke or hasp 95.

The guard or keeper 96, containing that part of the yoke which is exposed out of the body or housing 90 acts as a protective medium for the yoke and prevents a prying tool from reaching the yoke and thus materially retards the breaking open of tee lock.

The body 90 of the lock may be provided with bolt-receiving cavities as shown at 79 in FIG. 15 when it is desired to attach this part of the lock to an element to be locked.

In the several embodiments disclosed, breaking open of the locks by prying off the loop shaped yoke or hasp is reduced and a sturdy, useful lock is the result and one with which the combination can be readily changed whenever required.

What I claim is:

1. A lock comprising, a lock housing having cavities, a yoke having legs adapted to enter the cavities, a cylindrical lock casing slidably fitted in the housing and extending crosswisely of the portions of the legs located in the housing, at least one of the legs being notched to fit the curvature of the lock casing, the fitment between the lock casing and the notches in the legs holding the yoke from separation from the housing, latch means operative within the housing for holding the lock casing from withdrawal out of the housing, the housing being provided with a fixed extension constituting a saddle, said saddle including a neck spaced from the legs of the yoke to result in a plurality of openings between the legs of the yoke and the neck, the saddle having a peripheral groove fitting the bight of the loop of the yoke when the yoke is coupled to the housing.

2. A lock according to claim 1, wherein the fixed extension of the housing has a grooved saddle part and the neck connects said saddle part to the body of the housing, said neck defining two spaces between its sides and the legs of the yoke for the reception of elements to which the lock is to be attached.

3. A lock comprising a housing, a yoke having legs inserted in the housing, the yoke having a bight portion extending beyond the housing, a non-rotative keeper separate from the housing and fitted within the space between the bight of the yoke and the top of the housing and completely filling such space, said keeper being peripherally grooved to fit the bight of the yoke as well as parts of the legs thereof so that all of the portions of the yoke that extend beyond the housing are received in the groove of the keeper, and means on the keeper between the legs of the yoke for receiving a fastening element for the keeper.

4. A lock according to claim 3, wherein the body of the housing is provided with a fixed lug for positioning between the legs of the yoke, said lug entering a part of the groove in the keeper.

5. A lock comprising, a lock housing, a bolt slidable in the housing and movable to project a part of it out of the housing, a cylindrical lock casing mounted for sliding adjustment in the housing, the lock casing having a pin at one end, the bolt having spaced recesses for selective engagement with the pin, a channel in the bolt connecting the recesses and through which the pin can be moved to bring it from one of the recesses to the other, latching means for holding the lock casing against its axial movement, the housing having a recess for engagement by the latching means, said recess having an extension into which the latching means can be moved upon being partially retracted, the extension of the recess limiting axial withdrawal movement of the lock casing from out of the housing.

6. A lock according to claim 5, wherein the bolt is disposed at right angles to the lock casing and is located beyond one end of the lock casing, one of the recesses in the bolt receiving the pin on the lock casing when the bolt is retracted in the lock housing, and another of the recesses receiving said pin when a portion of the bolt is extended out of the housing.

* * * * *