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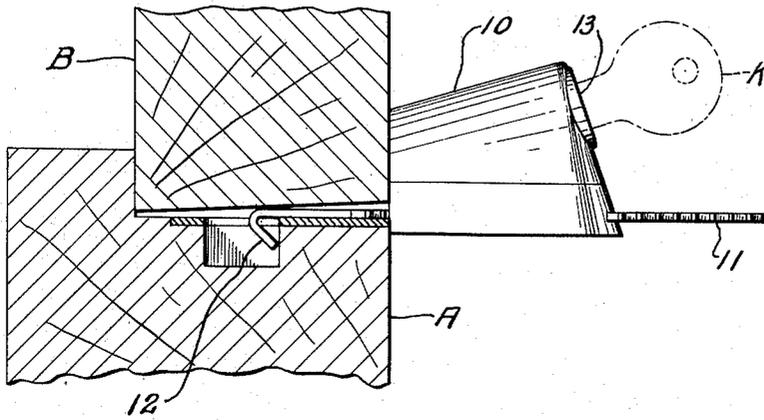
R. C. SPAIN

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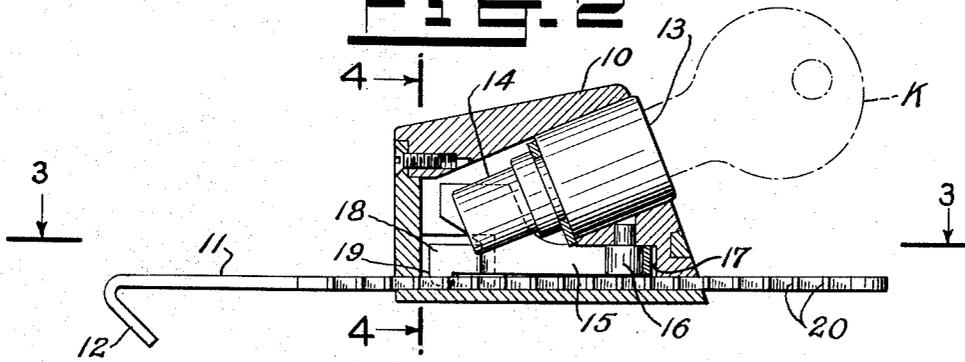
PORTABLE LOCK

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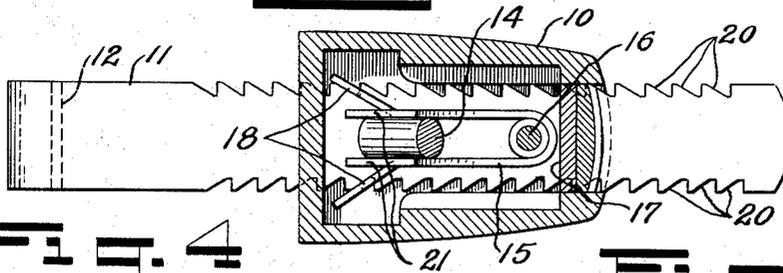
**FIG. 1**



**FIG. 2**

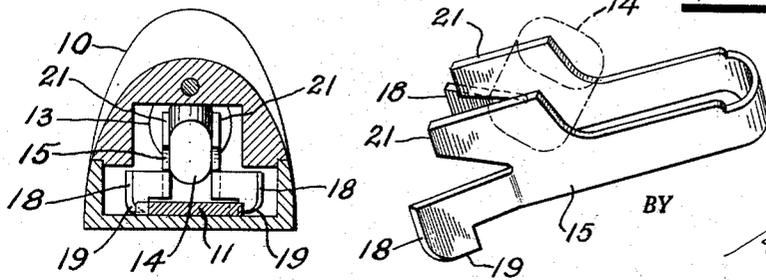


**FIG. 3**



**FIG. 4**

**FIG. 5**



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**PORTABLE LOCK**

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5 Claims. (Cl. 70—14)

This invention relates to portable locks, and more particularly to a lock of the class in which a lock body slides upon a bar so as to lock relatively to each other the members with which the bar and the lock body are engaged. In locks of the particular class, the end of the bar is formed as a detent for attaching the bar to one of the members to be locked, and in one example the detent may engage in a strike on a door frame, the lock body being arranged so that it slides on the bar to abut the face of the door. The lock body is then locked to the bar to hold the door closed, the locking action being controlled through a key plug that rotates in the lock body. The bar has a considerable length, and the body can be locked in various positions along the length of the bar, so that the lock is adjustable as conditions may require.

As one feature of my invention, I so construct the lock body that the key when inserted into the key plug will be very easily accessible for the operation of the lock, and the manipulation of the key will not in any way be obstructed or hampered by the bar, which usually projects from the rear of the body when assembled. This I accomplish by mounting the key plug to rotate upon an axis that is inclined relatively to the bar upon which the lock body slides. Thereby the outer end of the key is a considerable distance away from the bar, and is also located away from the door against which the lock body is engaged, being therefore perfectly accessible for operation.

As a further feature of my invention, I utilize an extremely novel U-shaped spring that interlocks directly with the bar and that is operated by a cam on the inclined key plug. As a part of this feature of the invention, I have constructed the bar and the spring to provide a ratcheting action that will allow the lock body to slide into a desired locking position upon the bar and to be locked without requiring the use of the key for this purpose.

I have thus outlined rather broadly the more important features of my invention in order that the detailed description thereof that follows may be better understood, and in order that my contribution to the art may be better appreciated. There are, of course, additional features of my invention that will be described hereinafter and which will form the subject of the claims appended hereto. Those skilled in the art will appreciate that the conception on which my disclosure is based may readily be utilized as a basis for the designing of other structures for carrying out the several purposes of my invention. It is important, therefore, that the claims be regarded as including such equivalent constructions as do not depart from the spirit and scope of my invention, in order to prevent the appropriation of my invention by those skilled in the art.

Referring now to the drawing: Fig. 1 is a view showing my novel lock applied to a door. Fig. 2 is a longitudinal sectional view of the lock. Fig. 3 is a sectional view taken on the line 3—3 of Fig. 2. Fig. 4 is a cross-sectional

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view taken on the line 4—4 of Fig. 2. Fig. 5 is a perspective view of the spring.

In the drawing, I have indicated the body of my novel lock by the numeral 10, and the bar upon which the body slides by the numeral 11. Upon the front end of the bar 11 is a hook 12 that is adapted to be engaged in a strike on a door frame A, as shown in Fig. 1, so that when the body 10 slides on the bar against the door B and is locked, the door will be prevented from opening.

In my invention, I mount the key plug 13 to rotate in the body 10 about an axis that is inclined at a substantial angle relatively to the bar 11. The arrangement is such that a cam 14 on the inner end of the key plug 13 is located quite close to the bar 11 within the body 10, as will be further described, while the key K when inserted into the key plug will be disposed with its outer end away from that part of the bar 11 that projects from the rear of the body, so that the key may be easily manipulated.

The actual locking action upon the bar 11 is performed in my invention by an extremely novel spring 15 within the body 10. The spring 15 is formed from spring sheet metal bent to U-shape to provide legs, and these legs are disposed with their edges longitudinally against the inner face of the bar 11. In order to hold the spring 15 in place, I utilize a retainer pin 16 that is mounted in the interior of the body 10 and engaged in the loop of the U-shaped spring 15 so as to confine this loop between the pin and an inner wall 17 of the lock body. The legs of the spring 15 are bent outwardly at their ends so as to provide diverging detent portions 18, and formed as parts of these detent portions are pawl elements 19 that project across the opposed edges of the bar 11, as may be observed in Fig. 4. The action of the U-shaped spring 15 is such as to urge the elements 19 normally against the edges of the bar 11, and for the purpose of coacting with these elements, I form the edges of the bar with ratchet teeth 20. The ratchet teeth 20 are inclined toward the hooked end 12 of the bar 11 so that the detent portions will ride over these teeth to permit the lock body 10 to be slid at all times toward the hooked end 12 of the bar, but will normally prevent a reverse movement of the lock body upon the bar. Because of this action, I may term the bar 11 also a ratcheting member. I have shown the ratchet teeth 20 as staggered on opposite edges of the bar 11 in order to afford closer adjustment of the bar in the lock body 10, but this is not essential to my invention.

It will be observed at this point that the cam 14 on the inner end of the key plug 13 is disposed between the legs of the U-shaped spring 15, or preferably between upwardly extending arms 21 that are integral parts of these legs. The cam 14 is in the form of a flattened oval proportioned in a particular manner so that when disposed flatwise between the arms 21 the action of the U-shaped spring 15 will press the pawl elements 19 against the ratchet teeth 20 on the bar 11, thereby locking the lock body against outward movement on the bar 11. When the key plug 13 is rotated, however, the cam 14 will spread the arms 21 and therefore the elements 19, thus permitting the lock body 10 to be removed from the bar 11, or in fact to slide freely in either direction upon this bar. I believe that those skilled in the art will now readily appreciate the novel construction and the advantages of my lock.

I now claim:

1. In a lock of the class described, a flat thin ratcheting member having ratchet teeth at each edge thereof, a lock body having a through slot for said ratcheting member whereby to be slidable thereon, a U-shaped spring mounted in said lock body and extending longitudinally at one face of said flat thin ratcheting member, the legs of said U-shaped spring pressing against the ratcheted edges of

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said ratcheting member whereby to lock said lock body relatively to said ratcheting member, a cam between said legs of said U-shaped spring at the said face of the ratcheting member, and a rotatable key plug for rotating said cam in said lock body to spread said legs whereby to release said lock body for sliding on said ratcheting member.

2. In a lock of the class described, a ratcheting member, a lock body slidable on said ratcheting member, a U-shaped spring mounted in said lock body and extending longitudinally at one side of said ratcheting member, detents formed on the legs of said U-shaped spring, said spring pressing said detents against opposed edges of said ratcheting member whereby to lock said lock body relatively to said ratcheting member, a rotatable key plug mounted in said lock body on an axis inclined relatively to said ratcheting member whereby a key in the key plug is inclined away from said member, and a cam on said key plug between said legs of said U-shaped spring whereby rotation of said key plug will cause said cam to spread said legs to release said lock body for sliding on said ratcheting member.

3. In a lock of the class described, a ratcheting member, a lock body slidable on said ratcheting member, a U-shaped spring mounted in said lock body, angular detent portions on the legs of said U-shaped spring pressing against said ratcheting member whereby to lock said lock body against movement in one direction relative to said ratcheting member, said detent portions yielding on said U-shaped spring to allow movement of said lock body in an opposed direction relatively to said ratcheting member, a rotatable key plug mounted in said lock body in an axis inclined relatively to said ratcheting member whereby a key in the key plug is inclined away from said member, and a cam on said key plug between said legs of said U-shaped spring for spreading said legs upon rotation of said key plug whereby to disengage said detent portions from said ratcheting member and to release said lock body for sliding in both directions on said ratcheting member.

4. In a lock of the class described, a ratcheting member, a lock body slidable on said ratcheting member, a U-shaped spring mounted in said lock body and extending longitudinally at one side of said ratcheting member, angular detent portions formed on the legs of said

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U-shaped spring, said spring pressing said detent portions against opposed edges of said ratcheting member whereby to lock said lock body against movement in one direction relatively to said ratcheting member, said detent portions through yielding of said U-shaped spring allowing said lock body to slide in an opposed direction relatively to said ratcheting member, a rotatable key plug mounted in said lock body on an axis that is inclined relatively to said ratcheting member whereby a key in the key plug is inclined away from said member, opposed arms formed on the legs of said U-shaped spring, and a cam on said key plug between said opposed arms for spreading said legs upon rotation of said key plug whereby to disengage said detent portions from said ratcheting member and to release said lock body for sliding in both directions on said ratcheting member.

5. In a lock of the class described, a ratcheting member, a lock body slidable on said ratcheting member, a U-shaped spring mounted in said lock body and extending longitudinally at one side of said ratcheting member, an angular detent portion on at least one leg of said U-shaped spring pressing against said ratcheting member whereby to lock said lock body against movement in one direction relatively to said ratcheting member, said detent portion yielding on said U-shaped spring to allow movement of said lock body in an opposed direction relatively to said ratcheting member, a key plug mounted in said lock body to rotate on an axis that is spaced relatively to the said side of said ratcheting member, and a cam on said key plug between the legs of said U-shaped spring for spreading said legs upon rotation of said key plug whereby to disengage said detent portion from said ratcheting member and to release said lock body for sliding in both directions on said ratcheting member.

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