Nov. 3, 1959 C. MORENO CAMBA 2,910,860

LOCKING DEVICE WITH SLIDING PLUG

Filed Aug. 24, 1956

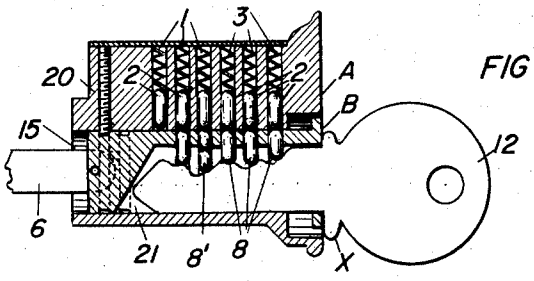


FIG 1

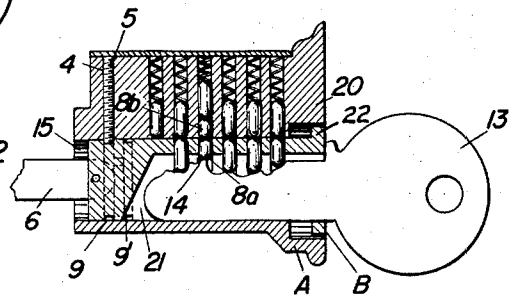


FIG 2

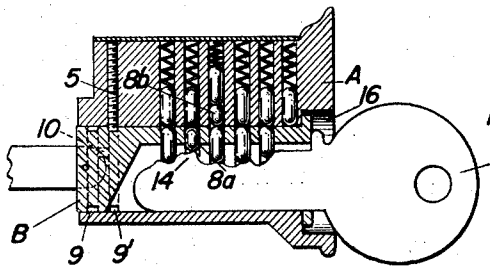


FIG 3

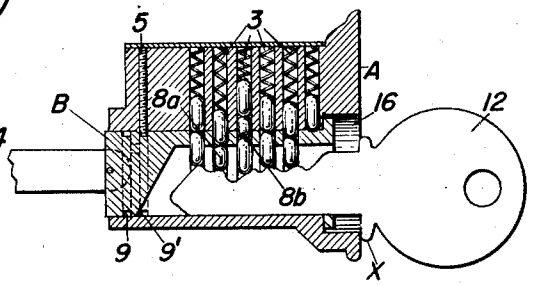


FIG 4

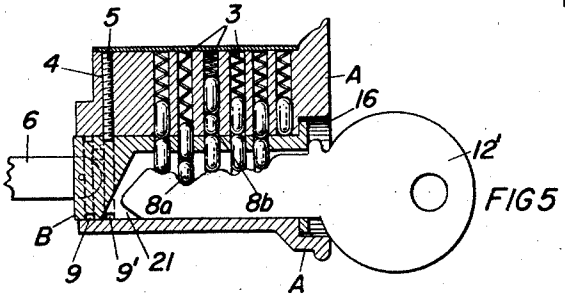


FIG 5

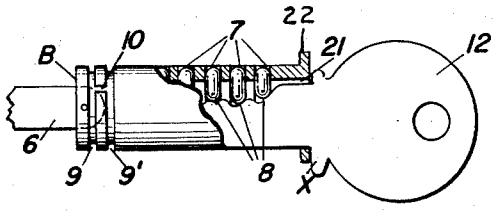


FIG 6

INVENTOR.
Carlos Morena Camba
BY Wenderoth, Lind and Ponack

Attorneys

United States Patent Office 2,910,860 Patented Nov. 3, 1959

2,910,860

LOCKING DEVICE WITH SLIDING PLUG

Carlos Moreno Camba, Guanabacoa, Cuba

Application August 24, 1956, Serial No. 605,980

Claims priority, application Cuba December 20, 1955

2 Claims. (Cl. 70—338)

The present invention relates to safety locks used in doors, chests, boxes, filing cabinets and the like, and the object of the invention is to avoid the risks and difficulties caused by the loss of the keys for the locks.

The advantage of the present invention is that the risk of loss of the original keys or duplicates thereof is eliminated by providing for the owner of the house or other device in which a locking device according to the present invention is installed with a special key by the use of which the owner can make the original keys or duplicates thereof of no use in operating the locking device. This is accomplished by making the plug in the locking device slidable so as to change the alignment and sequence of certain of the locking pins so that only the special key will operate the locking device.

Other objects of the present invention will be apparent from the following specification and claims taken together with the accompanying drawings in which:

Fig. 1 is a cross-sectional view of a locking device according to the present invention with one of the keys which fits the lock in position in the lock and showing the lock in a first operational position;

Fig. 2 is a similar cross-sectional view of the locking device of the present invention with the special key which fits the lock;

Fig. 3 is a similar cross-sectional view of the lock in a second operational position with the special key still in position;

Fig. 4 is a cross-sectional view of the lock in the second operational position with the original key in the lock;

Fig. 5 is a cross-sectional view similar to Fig. 4 with a modified original key in the lock; and

Fig. 6 is the sliding plug forming part of the locking device with a key inserted therein.

As seen in the drawings, the locking device comprises two main parts, a body A and a plug B. The body A is in the form of a cylinder **20** having a cylindrical bore **15** therein into which the plug B fits. The cylinder **20** has a plurality of spaced drilled holes **1** therein extending in a direction transverse to the bore **15** and joining the bore. The holes **1** house a plurality of pins **2** and coil springs **3** which urge the pins toward the bore **15**. The bore **15** is enlarged at **16** at the face of the cylinder **20**. A bored and tapped cylindrical hole **4** is also provided in the cylinder **20**, in which hole a bolt or retaining pin **5** is fitted.

The plug B has a key slot **21** therein into which a first or original key **12** is inserted to enable rotation of plug B to operate a bolt by means of bar **6**. Plug B has a plurality of spaced drilled holes **7** which are alignable with the holes **1** in the cylinder **20** but which are fewer in number than the holes **1**. The holes **7** extend in a direction transverse to the key slot **21** and intersect key slot **21**. The holes **7** house pins **8** which rest on cuts in the key **12** when the key **12** is inserted into the key slot. One of the holes **8** has a two-part master pin **8'** therein, which pin has an inner part **8***a* and an outer part **8***b*. Two circular grooves **9** and **9'** which are interconnected by a third groove **10** extending between them, are provided on the inner end of the plug B next to the connection to bar **6**. One of the grooves **9** and **9'** receives the retaining pin **5** for permitting the plug B to rotate within the bore **15**. Plug B also has a flange **22** on the end thereof opposite grooves **9** and **9'**, which flange fits into enlargement **16** in the cylinder **20**.

In operation a first or original key **12** having a stop X thereon is inserted into the slot **21** and by turning it the plug B is rotated to rotate bar **6**. With the key **12** inserted in slot **21**, the ends of pins **2** and **8** and the end of outer part **8***b* are aligned with the surface of the plug B as seen in Fig. 1.

When it is desired to render the original key **12** or duplicates thereof inoperative, a special key **13** having a shallower cut **14** thereon and having no stop similar to stop X, as shown in Fig. 2, which special key is, of course, different from key **12**, is inserted into slot **21**. This aligns the ends of pins **2** and **8** with the surface of the plug B, except in this instance the end of the inner part **8***a* of the two-part master plug **8'** is aligned with the surface of plug B. Key **13** is rotated several degrees and plug B is then displaced inwardly by the person turning the key, the retaining pin **5** passing along groove **10** until it reaches grove **9'**. Flange **22** is permitted to move into the enlargement **16** inasmuch as key **13** has no stop similar to stop X thereon.

An attempt to open the lock with one of the regular keys **12** will not succeed after the manipulation by means of key **13**. The stop X on key **12** will prevent the key from being inserted completely into slot **21**, as seen in Fig. 4. Further, even assuming that stop X is removed from key **12** and it can thereby be inserted all the way into slot **12**, the pins will not permit plug B to rotate because the ends of the parts of master pin **8'** will not be aligned with the surface of the plug, as seen in Fig. 5.

It is thought that the invention and its advantages will be understood from the foregoing description and it is apparent that various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing its material advantages, the form hereinbefore described and illustrated in the drawings being merely a preferred embodiment thereof.

I claim:

1. In combination, a cylinder having a cylindrical bore therein and a plurality of spaced holes therein extending in a direction transverse to the direction of said bore and intersecting said bore, a plurality of pins in said holes, a plurality of springs in said holes urging said pins toward said bore, a plug slidably and rotatably mounted in said bore and having a key slot therein, said plug having a plurality of spaced holes therein extending in a direction transverse to said key slot and intersecting said key slot and alignable with said holes in said cylinder, a master pin having an inner part and an outer part in one of said holes in said plug, a plurality of pins in the remainder of said holes in said plug, and means on said cylinder and slidably engaged with said plug for retaining said plug in either of two positions along the length of said bore and spaced from each other an integral multiple of the spacing of the holes in said cylinder and in said plug and for permitting rotation of said plug in either position, said means comprising a fixed retaining pin in said cylinder and projecting into said bore, and said plug having a plurality of peripheral grooves therein and a longitudinal groove connecting said peripheral grooves, said grooves receiving the end of said retaining pin therein, a first key having a stop thereon engageable with

the end of said cylinder and having a plurality of cuts therein of a depth such that when it is inserted in said key slot said master pin has the end of the outer part aligned with the outer surface of said plug and the remaining pins have their ends aligned with the outer surface of said plug, and a second key having a stop thereon engageable with said plug and having a plurality of cuts therein of a depth such that when it is inserted in said key slot said master pin has the end of the inner part aligned with the outer surface of said plug and the remaining pins have their ends aligned with the outer surface of said plug.

2. In combination, a cylinder having a cylindrical bore therein and a plurality of spaced holes therein extending in a direction transverse to the direction of said bore and intersecting said bore, a plurality of pins in said holes, a plurality of springs in said holes urging said pins toward said bore, a plug slidably and rotatably mounted in said bore and having a key slot therein, said plug having a plurality of spaced holes therein extending in a direction transverse to said key slot and intersecting said key slot and alignable with said holes in said cylinder, a master pin having an inner part and an outer part in one of said holes in said plug, a plurality of pins in the remainder of said holes in said plug, and means on said cylinder slidably engaging said plug for retaining said

plug in either of two positions along the length of said bore and spaced from each other an integral multiple of the spacing of the holes in said cylinder and in said plug and for permitting rotation of said plug in either position, said means comprising a fixed retaining pin in said cylinder and projecting into said bore, and said plug having a plurality of peripheral grooves therein and a longitudinal groove connecting said peripheral grooves, said grooves receiving the end of said retaining pin therein, whereby when a first key is inserted in the key slot said master pin has the end of one of its parts aligned with the outer surface of said plug and the remaining pins have their ends aligned with the outer surface of said plug, and when a second key is inserted in said key slot said master pin has the end of the other of its parts aligned with the outer surface of said plug and the remaining pins have their ends aligned with the outer surface of said plug.

References Cited in the file of this patent

UNITED STATES PATENTS

1,050,692	Resch	Jan. 14, 1913
1,433,591	Abell	Oct. 31, 1922
1,896,319	Littell et al.	Feb. 7, 1933
2,050,696	Schoorel	Aug. 11, 1936
2,654,073	Katz	Sept. 29, 1953