United States Patent

[11] 3,590,610

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[54] **LOCK WITH MANUAL RELEASE FROM THE INTERIOR OF A SAFE VAULT**
6 Claims, 7 Drawing Figs.

[52] **U.S. Cl.** **70/92,** 70/133, 292/145, 292/137
[51] **Int. Cl.** **E05b 63/00,** E05c 15/02
[50] **Field of Search** ..... 292/92, 57, 60, 137, 2, 370, 376, 145, 169.19, 149, 140, 175; 70/92, 134, 133, 156; 287/58 CT

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Primary Examiner—Marvin A. Champion
Assistant Examiner—Albert G. Craig, Jr.
Attorney—Young & Thompson

ABSTRACT: A lock with means for manually releasing its bolt from the interior of a safe vault which comprises a lock mechanism, a base bolt connected to and controlled by the lock mechanism, a hollow joining member provided with a guide recess and secured to the base bolt, a bolt extension with one end slidably supported in said hollow joining member, and the distal end engageable with a keeper, and a stemmed knob secured to the supported end of the bolt extension, said stemmed knob being slidable along the guide recess and being accessible for manual actuation.

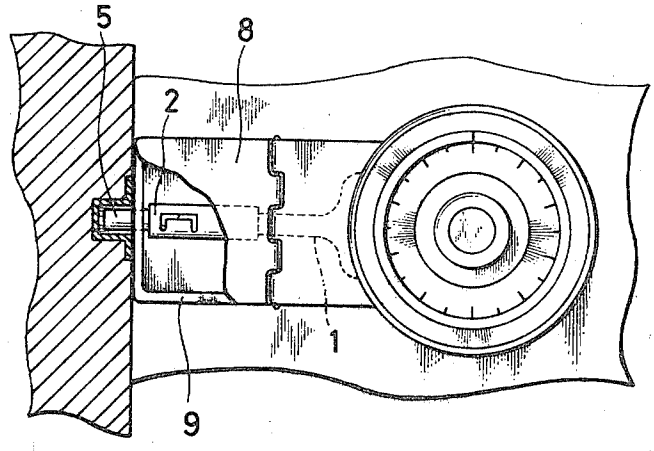


FIG.1

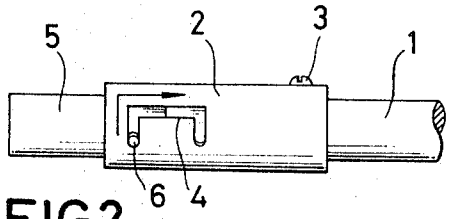


FIG.2

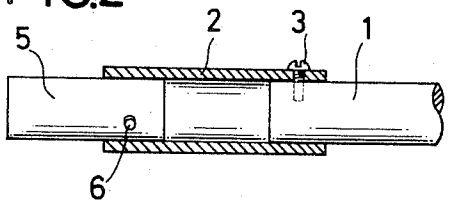


FIG.3

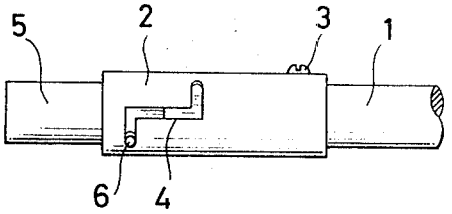


FIG.4

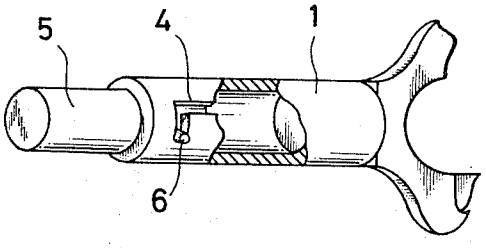


FIG.5

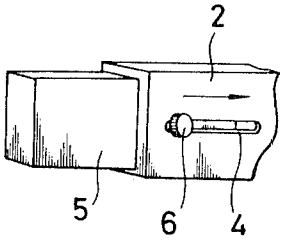


FIG.6

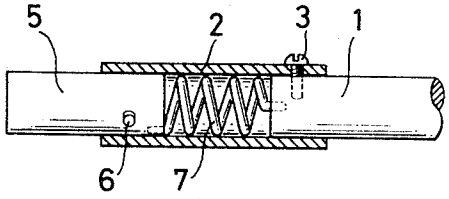
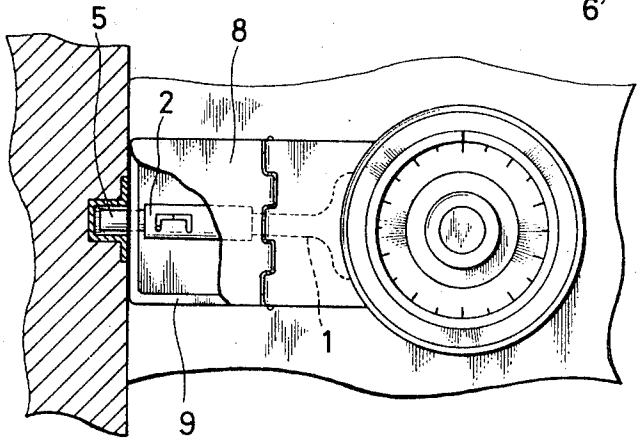


FIG.7



INVENTOR

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LOCK WITH MANUAL RELEASE FROM THE INTERIOR OF A SAFE VAULT

BACKGROUND OF THE INVENTION

This invention relates to a lock with means for manually releasing its bolt from a keeper from the interior of a safe vault.

According to the lock, particularly, the dial lock heretofore used, the locking and unlocking operations may only be carried out by the person standing outside the door. Accordingly, when the person is shut in the safe vault by accident, he can not release the lock from the interior of the vault.

SUMMARY OF THE INVENTION

It is thus a principal object of the invention to improve the security of the lock, particularly, the dial lock and to provide a new lock releasing device for manually unlocking the lock from the interior of the safe vault.

Another object of the invention is to provide a lock releasing device for manually withdrawing a bolt extension of the lock from the keeper from within the safe vault.

A further object of the invention is to provide a lock releasing device for manually unlocking the lock from the interior of the safe vault which comprises a base bolt connected to the lock mechanism, a hollow joining member provided with a guide recess and secured to the base bolt and a bolt extension which is slideably connected to the said hollow joining member through a fingerpiece or knob provided at the end of the bolt extension so as to slide along the guide recess.

A further object of the invention is to provide a lock releasing device for manually unlocking the lock from the interior of the safe vault which comprises a hollow base bolt which is provided with a guide recess and connected to the lock mechanism and a bolt extension which is slideably connected to the said hollow base bolt through a fingerpiece or knob provided at the end of the said bolt extension so as to slide along the guide recess.

Still another object of the invention is to provide a lock releasing device for manually unlocking the lock from the interior of the safe vault which comprises a base bolt of rectangular form connected to the lock mechanism, a rectangular hollow joining member which is provided with a guide recess and secured to the base bolt and a bolt extension of rectangular form which is slideably connected to the said hollow joining member through a stemmed knob provided at the end of the said bolt extension so as to slide along the guide recess.

Yet another object of the invention is to provide a lock releasing device for manually unlocking the lock from the interior of the safe vault which comprises a hollow base bolt of rectangular shape which is provided with a guide recess and connected to the lock mechanism, and a bolt extension of rectangular shape which is slideably connected to the said hollow base bolt through a stemmed knob provided at the end of the said dead bolt so as to slide along the guide recess.

Still a further object of the invention is to provide a lock releasing device for manually unlocking the lock from the interior of the safe vault which comprises a base bolt connected to the lock mechanism, a hollow joining member which is provided with a guide recess and secured to the base bolt, a bolt extension which is slideably connected to the said hollow joint through a fingerpiece or knob provided at the end of the bolt extension so as to slide along the guide recess and a spiral spring means which is interposed between the base bolt and a bolt extension to throw the bolt extension back.

BRIEF DESCRIPTION OF THE DRAWINGS

Various further and more specific objects, features and advantages of the invention will appear more fully in the following detailed description of preferred embodiments illustrated in the accompanying drawings in which the same reference numerals designate the same or similar parts throughout the drawings in which:

FIG. 1 is a front elevation of the lock releasing device according to the invention;

FIG. 2 is a fragmentarily sectioned view of FIG. 1;

FIG. 3 is a front elevation of the lock releasing device according to another embodiment of the invention;

FIG. 4 is a fragmentarily sectioned view of the lock releasing device of another embodiment according to the invention;

FIG. 5 is a perspective view of the lock releasing device of a still further embodiment according to the invention;

FIG. 6 is a fragmentarily sectioned view of the lock releasing device containing a spring means; and

FIG. 7 is a view illustrating how the lock releasing device of FIG. 1 is mounted in the dial lock.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring first to FIGS. 1 and 2, the lock releasing device according to the invention comprises, a base bolt 1 of rod shape which is connected to the locking mechanism (not shown) mounted in the locking case. To the base bolt 1 is secured a joint pipe 2 by a setscrew 3 and the said joint pipe 2 is provided with a recess 4 of channel shape. This recess 4 may be formed of angularly related portions, as shown in FIGS. 1 and 3, or straight as shown in FIG. 5.

Into the joint pipe 2 is slideably inserted a bolt extension 5 of rod shape which is provided at its end with a fingerpiece or screw or stemmed knob 6. The knob 6 is manually slideable along the recess 4 when the bolt extension 5 is withdrawn or thrown back.

In FIG. 4, the base bolt 1 is hollow and is provided with a recess 4. Into the said hollow base bolt 1 is directly and slideably inserted the bolt extension 5 in the same manner as illustrated above but without using the joint pipe 2.

In FIG. 5, the base bolt, the hollow joining member and the bolt extension are all of rectangular shape. In this case, the bolt extension 5 reciprocates horizontally and does not rotate, so that the recess 4 must be straight and the bolt extension 5 is tightly connected to the base bolt 1 with the stemmed or screw knob 6. In an emergency, the screw knob 6 is somewhat loosened so that the bolt extension 5 can be manually withdrawn toward the arrow.

In FIG. 6, between the base bolt 1 and the bolt extension 5 is interposed a spiral spring 7 so that the bolt extension 5 may be thrown back automatically.

The unlocking operation according to the invention will be effected in such a way that in an emergency a cover 8 of the lock case 9 is opened and the knob 6 is manually moved in the direction of the arrow as shown in FIGS. 1 and 5 along the recess 4 so that the bolt extension 5 is retracted into the joint pipe 2 or the base bolt 1 as shown in FIG. 4.

As illustrated above, according to the invention the lock may be released from the interior of the safe vault by a simple manual operation.

While I have shown and described preferred forms of my invention by way of illustration, further modifications will occur to those skilled in the art. I, therefore, contemplate by the claims which conclude this specification to cover all such modifications as fall within the true spirit and scope of my invention.

I claim:

1. A lock with means for manually releasing its bolt from a keeper from the interior of a safe vault, which comprises a lock mechanism, a base bolt connected at one end to, extending to one side of, and controlled by said lock mechanism, a hollow joining member provided with a guide recess and secured to the other end of the base bolt, a bolt extension with one end slideably supported in said hollow joining member and the distal end engageable with a keeper, and a stemmed knob secured to the supported end of the bolt extension, said stemmed knob being slideable along the guide recess and being accessible for manual actuation.

2. A lock as claimed in claim 1, said guide recess being of channel form.

3. A lock as claimed in claim 1, said guide recess being of Z-shape.

4. A lock as claimed in claim 1, said guide recess being straight and said stemmed knob releasably connecting the bolt extension, to the hollow joining member.

5. A lock as claimed in claim 2, the base bolt, the hollow joining member and the bolt extension being all rectangular in cross section, the bolt extension being releasably connected to the hollow joining member by the stemmed knob.

6. A lock as claimed in claim 1, and coil compression spring means interposed between the base bolt and the bolt extension continuously to urge the base bolt and the bolt extension away from each other.