(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 190 809**
A1

(12) # EUROPEAN PATENT APPLICATION

(21) Application number: 86200181.5

(22) Date of filing: 07.02.86

(51) Int. Cl.⁴: E 05 B 47/06

(30) Priority: 08.02.85 NL 8500360

(43) Date of publication of application:
13.08.86 Bulletin 86/33

(84) Designated Contracting States:
BE CH DE FR GB IT LI LU NL SE

(71) Applicant: Brondool B.V.
Bruningweg 11
NL-6827 BW Arnhem(NL)

(72) Inventor: Bron, José
Hemsterhuisstraat 159
NL-1065 JX Amsterdam(NL)

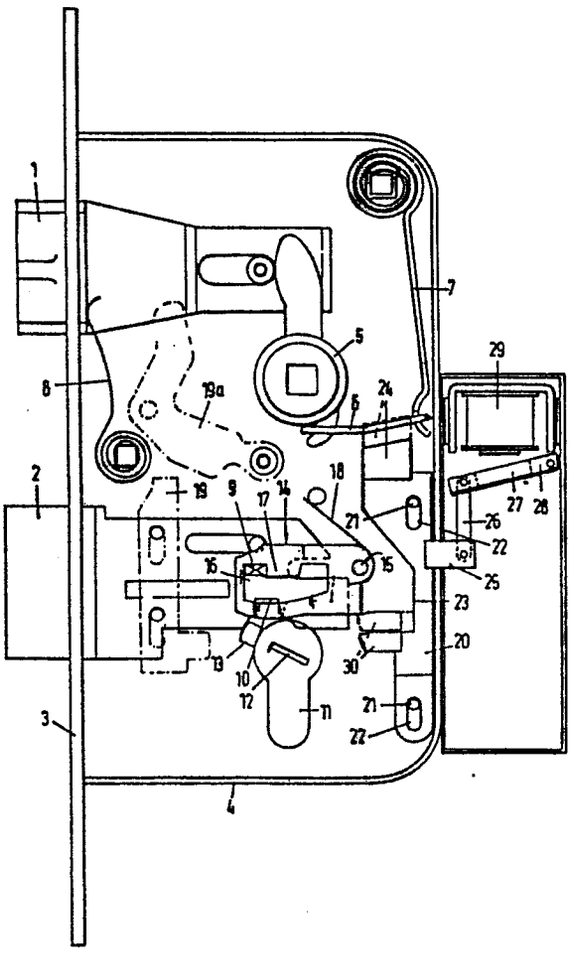
(74) Representative: Urbanus, Henricus Maria, Ir. et al,
c/o Vereenigde Octrooibureaux Nieuwe Parklaan 107
NL-2587 BP 's-Gravenhage(NL)

(54) **A lockable lock.**

(57) The invention relates to a door lock comprising at least one bolt (1, 2) which by means of a fitting key is slidable between an extended locking position and a retracted unlocking position, said lock further comprising a slide (20) which by actuation from the outside of the lock housing (4) is shiftable at right angles to the direction of bolt movements, between a position wherein said slide (20) does not influence bolt movements and a position wherein movement of the bolt (1, 2) from the extended locking position towards the retracted unlocking position by means of the key is prevented.

EP 0 190 809 A1

./...


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
19a
20
21
22
23
24
25
26
27
28
29
30

0190809

Title: A lockable lock.

The present invention relates to a lock comprising at least one bolt slidable between an extended locking position and a retracted unlocking position by rotation of a fitting key.

Under certain circumstances, it may be desirable to lock the bolt of such a lock, irrespective of whether it is designed as a mortise lock, as a rim lock or otherwise, so that it is not possible to open the lock even with a fitting key. For instance in hotels, theft from a room temporarily left by a guest can be avoided if the moment when the guest hands in his key when leaving the hotel, his room door lock is locked from the reception. The lock can be unlocked again as soon as the guest claims his key when entering the hotel. Also in laboratories key holders can thus be prevented from acquiring access without being noticed and in psychiatric institutions isolation cells can thus be kept closed, thereby preventing the door from being opened inadvertently.

It is an object of the present invention to provide a lockable lock of the above kind, with the means rendering the lock lockable being designed in such a simple manner that incorporation in existing lock types does not require substantial alterations.

To this effect, according to the present invention, the lock is fitted with a slide operable

from outside the lock, said slide being slidable at right angles to the direction of bolt movements between a position in which it does not influence the bolt movements and a position in which the displacement of the bolt from the extended locking position to the retracted unlocking position is prevented.

Said slide may have e.g. a rest position wherein it is beyond reach of the bolt so that the bolt can be pushed from the extended locking position to the retracted unlocking position by means of a fitting key. By lifting the locking slide, which is possible only with an extended bolt in the locking position, the slide is brought within reach of the bolt, thereby preventing the bolt from being retracted in the lock housing. In a simple embodiment the slide may include a slotted member adapted for up and down movement to a limited extent over pins provided in the lock housing, said member not impeding other moving parts of the lock, such as a tumbler packet.

For operating the slide-like locking member from outside, there may be provided according to the present invention an electro-magnet adapted to act in two directions on a portion of the locking member projecting from the lock, that is to say, said locking member or the locking slide can move both upwardly to the operative position and downwardly to the rest position.

In a locking including a tumbler-controlled

night bolt and a day bolt actuated by a handle-operated tumbler, according to the present invention, a part of the locking member may extend towards the handle-operated tumbler and when the night bolt is locked, may also lock said handle-operated tumbler.

In a lock including a strap connecting the day bolt tumbler to an associated return spring, according to the present invention, the part of the locking member extending towards said handle-operated tumbler may project in the locking position through the strap, thereby preventing strap movements and hence handle movements.

One embodiment of the lockable lock according to the present invention will now be described, by way of example, with reference to the accompanying drawing.

The drawing diagrammatically shows the interior of a known type of mortise lock having the locking system according to the present invention.

The lock comprises a day bolt 1 and a night bolt 2, both depicted in the locking position projecting from the lock plate 3. The lock housing 4 contains the lock mechanism comprising a tumbler 5 for a day-bolt handle, not shown. The tumbler 5 is connected to a return spring 7 through a strap 6.

Acting on bolt 1 is a spring 8 loading the same to the extended locking position.

The night bolt 2 comprises a laterally projecting locking pin 9 and a recess 10. A nose 13 of a cylinder

11 with key channel 12 is adapted to move night bolt 2 to and fro by engagement in the recess 10, for which purpose, however, the nose 13 should first swivel away a packet of tumblers 14 about a common pin 15, so that the locking pin 9 projecting through a recess 16 into the tumbler packet 14 is released from the locked position behind a cam 17 shown in the drawing. Upon further clockwise rotation of the nose 13 from the position shown in the drawing, this is released from the tumblers, which are then swivelled back by tumbler springs 18 to the position shown in the drawing, wherein the locking pin 9 is again locked, but now at the other side of cam 17. The night bolt 2 is therefore locked also in the retracted, releasing position.

The drawing also shows members 19, 19a enabling the day bolt to be released when the night bolt is in the released state, by once again turning the key clockwise.

The known lock described so far includes according to the present invention, a locking member in the form of a slide 20 which, guided by slots or holes 22 engaging over pins 21 mounted in the lock housing 4, can move up and down a predetermined distance in the lock housing 4 in the plane of the night bolt 2, which in the embodiment shown is situated below the plane of the tumbler packet 14. Consequently, slide 20 can move without influencing the tumblers 14.

Slide 20 includes a recess 23 whose form

approximately corresponds with the rear of the night bolt 2 so that in the lower rest position of slide 20 shown in solid lines, the night bolt can be reciprocated by means of a fitting key without being impeded by slide 20.

Slide 20 further includes a thickened end 24 extending in the direction of the day bolt tumbler 5, said end 24 terminating in the rest position, shown in solid lines, at some distance underneath the strap 6.

Slide 20 moreover includes an arm 25 connected through a swivelling arm 26 to a swivelling arm 28 carrying a magnet 27.

An electro-magnet 29 is adapted to attract and repel magnet 27.

By energization of electro-magnet 29 for it to attract magnet 27, the arm 28, and hence, through swivelling arm 26 and arm 25, the slide 20, are lifted a distance defined by the length of the slotted holes 22. In this high position of the locking slide 20, shown in dotted lines, a projection 30 of the slide is present behind the night bolt 2 and in the same plane thereof, thereby preventing the night bolt from being moved clockwise from the locking position shown. At the same time, the upper end 24 of slide 20 extends through strap 6, preventing anti-clockwise movement of strap 6, so that the handle 5 cannot be turned clockwise and the night bolt 1 cannot be retracted.

For locking and unlocking the lock, pulses

can be remotely fed to electro-magnet 29.

It is clear that the present invention is not limited to the embodiment described. For instance, various locking slide configurations are possible, partly depending on whether the lock in which such a member is used is fitted with one or two bolts and furthermore besides by remote control in the manner shown, the locking slide can be influenced by a separate key or otherwise from a position in the immediate proximity to the lock. The electro-magnet may also be mounted in the lock housing. Essential is that a simple and easily operable locking member is used that can be mounted in existing locks without alterations.

CLAIMS

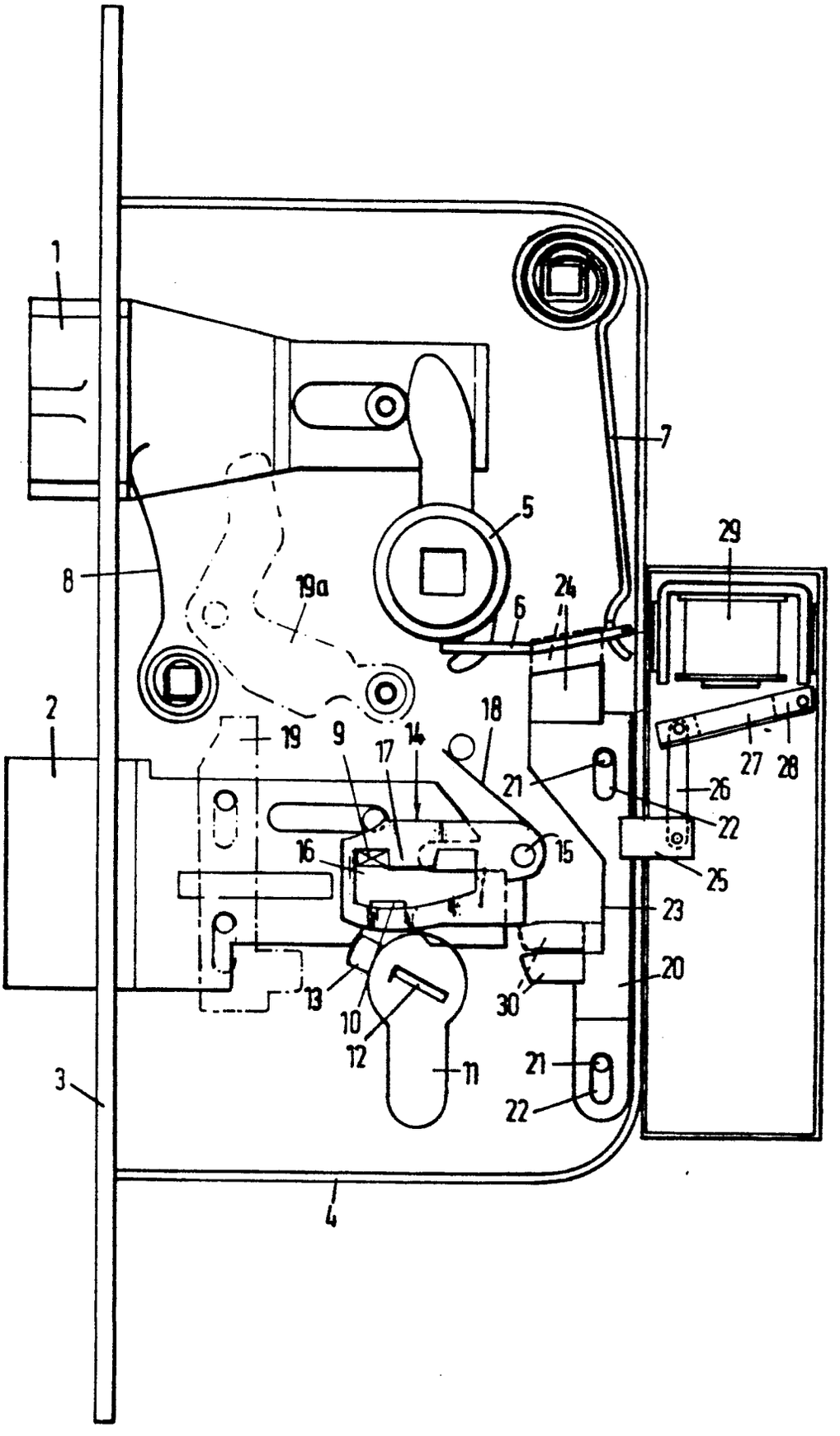
1. A lock comprising at least one bolt slidable between an extended locking position and a retracted unlocking position by rotation of a fitting key, characterized in that the lock includes a slide operable from outside the lock, said slide being movable at right angles to the direction of bolt movements between a position in which it does not influence the bolt movements and a position in which the displacement of the bolt from the extended locking position to the retracted unlocking position is prevented.

2. A lock according to claim 1, characterized in that for influencing the locking member, there is mounted an electro-magnet which is adapted to act in two directions on a portion of the locking member projecting from the lock.

3. A lock according to claim 1 or 2, comprising a tumbler-controlled night bolt and a handle-operated tumbler-controlled day bolt, characterized in that a part of the locking member extends towards the handle-operated tumbler and when the night bolt is locked, the handle-operated tumbler is locked as well.

4. A lock according to any one of the preceding claims, comprising a strap connecting the day bolt tumbler to an associated handle return spring, characterized in that the portion of the locking member extending

towards the handle-operated tumbler in the locking position projects through the strap, thereby preventing strap movements and hence handle movements.


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
19a
20
21
22
23
24
25
26
27
28
29
30

European Patent Office

EUROPEAN SEARCH REPORT

0190809
Application number

EP 86 20 0181

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
X	DE-C- 223 957 (ZABSKI) * Whole document *	1,2	E 05 B 47/06
Y		3	
Y	US-A-1 816 504 (ULRICH) * Figure 2 *	3	
A	FR-A- 354 442 (RONDEAU) * Whole document *	1	TECHNICAL FIELDS SEARCHED (Int. Cl.4) E 05 B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	28-04-1986	VAN BOGAERT J.A.M.M.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO Form 1503 03.82