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(56) Documents Cited:
EP 1803875 A2
US 6378344 B1
US 20070080778 A1
US 20040025550 A1
WO 2002/035479 A1
US 5083122 A
US 20060114099 A1

(58) Field of Search:
Other: **EPODOC, WPI**

(54) Abstract Title: **Door lock having fingerprint reading device, keypad and mechanical locking means**

(57) A door lock 1 has a finger or thumb print reading device 2, a keypad 3A, 3B, and a keyhole 7 for conventional mechanical locking means. To lock or unlock the door any of the means may be utilised although for security purposes the use of fingerprint reading or the input of a PIN verification code provide a more secure means of locking a door. An audible locking signal may be provided. The lock may be provided with battery power. The lock is intended for use with conventional / standard doors and is intended to be used as a replacement or retro fit for a conventional lock.

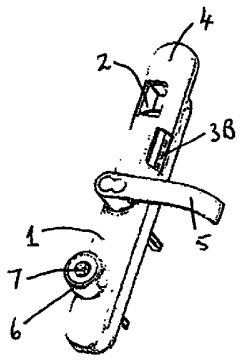


Figure.1

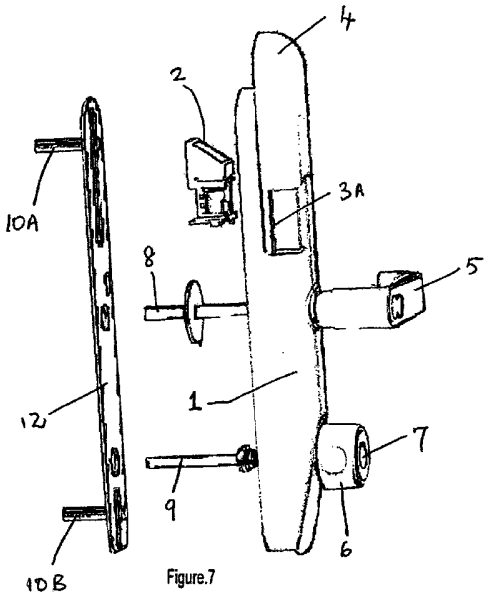


Figure.7

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Original Printed on Recycled Paper

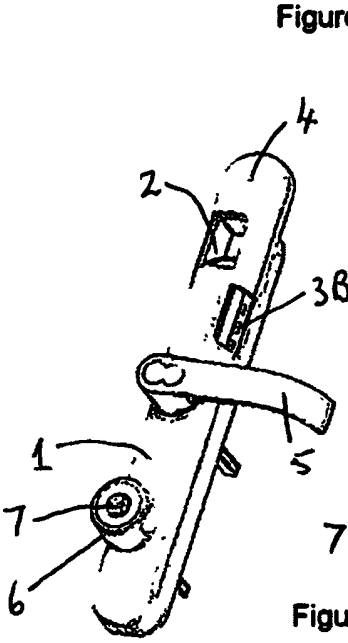


Figure.1

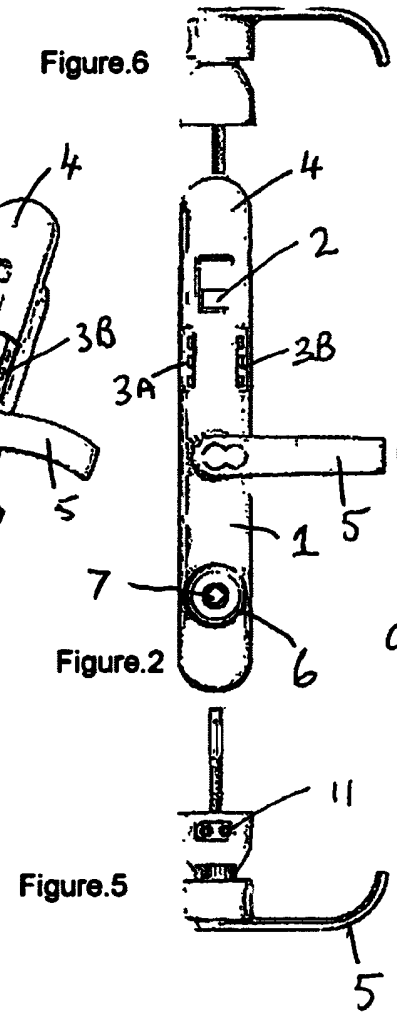


Figure.2

Figure.6

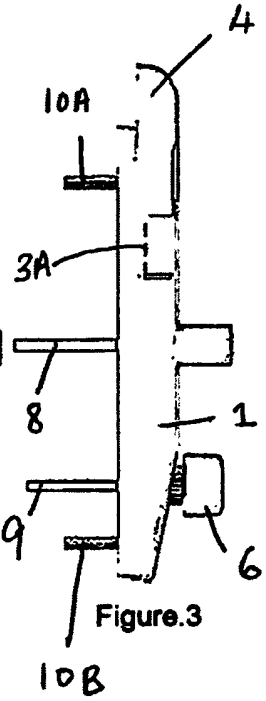


Figure.3

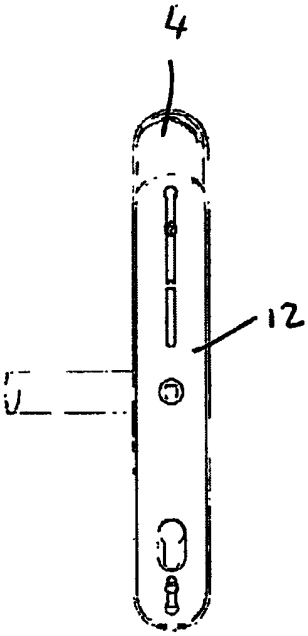


Figure.4

Figure.5

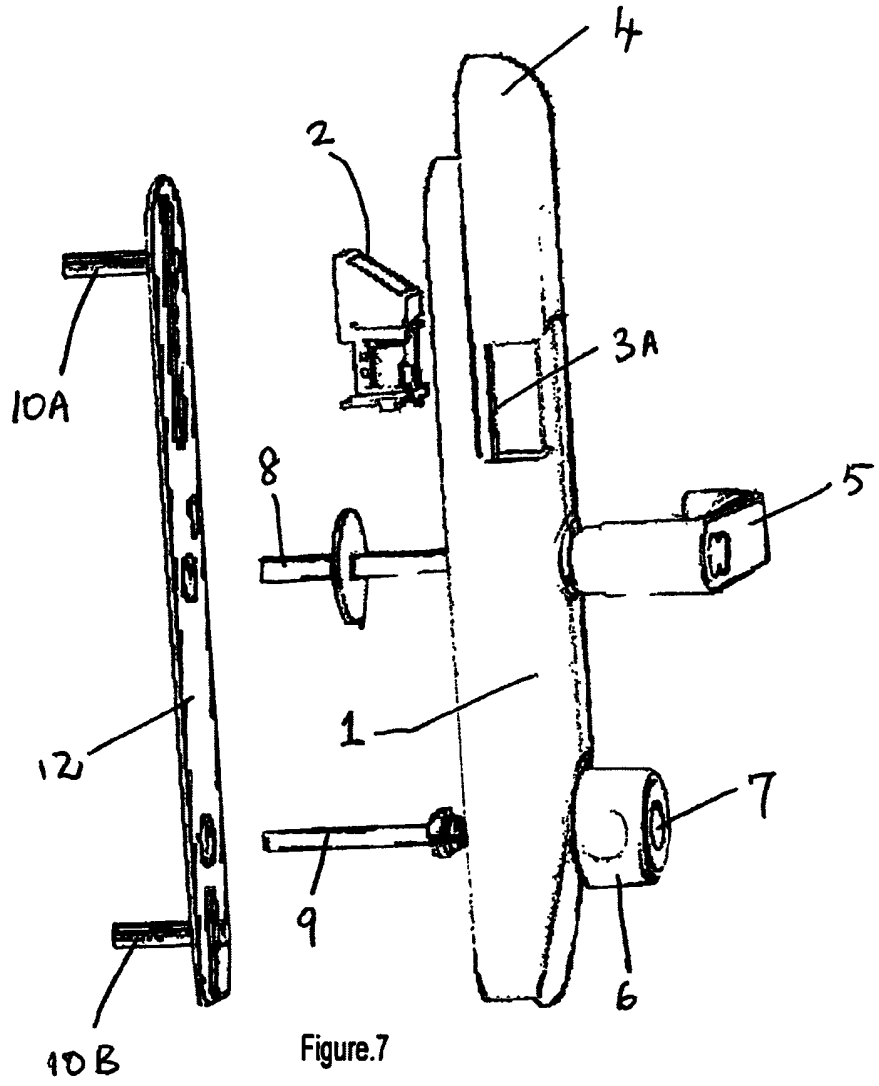


Figure.7

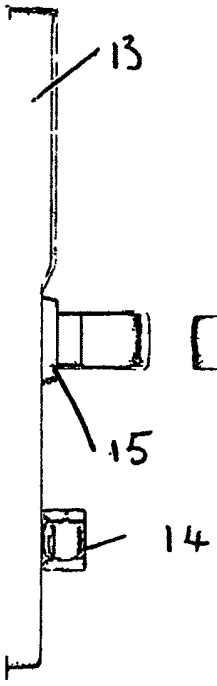


Figure.8

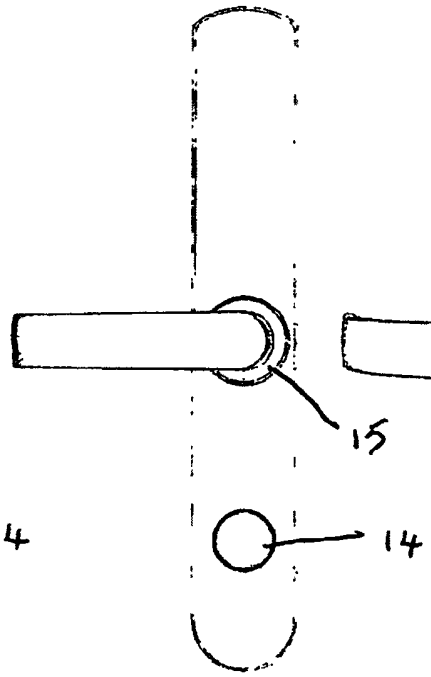


Figure.9

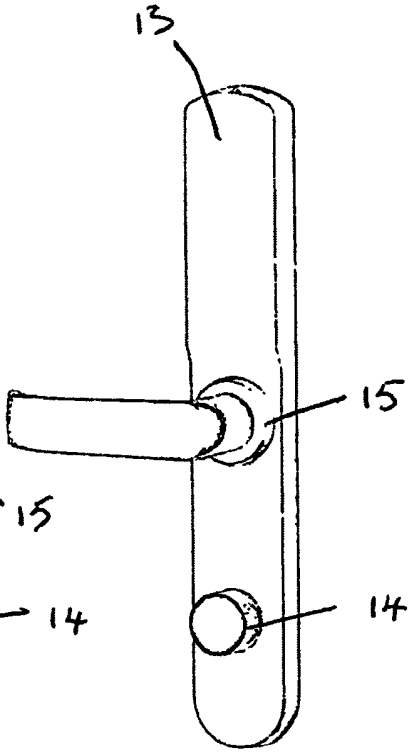


Figure.10

Fingerprint multipoint Lock

This invention relates to a device for using fingerprint input to the fingerprint sensor release the multipoint lock from outside of your home /the building instead of using the conventional mechanical key to open the door.

The use of conventional mechanical key locks can lead to a number of difficulties. The fingerprint lock overcomes a number of these. It is more convenient as there is no searching for keys, especially for teens when they come back from school, plus the security of knowing you will not be locked out of your house at the mercy of your nearest lock smith. Unlike mechanical keys, your fingerprints cannot be duplicated; therefore this offers the peace of mind that there are no misplaced, lost or stolen keys that can be duplicated and get in the hands of unwanted guests and potential thieves. Also money can be saved by not having to change the locks on your home.

Your fingerprints are unique to you and are conveniently available wherever you go. When someone gets home and are stood at there front door, the hassle of searching for the right key from their key ring, as well as possibly holding a baby/toddler or groceries can be reduced. It is simpler just place your fingerprint onto the scanner of the door handle as you reach the door. This process becomes even more beneficial in the dark when it is harder to locate the keyhole.

The fingerprint multipoint lock also includes a keypad for entering a pin password and a mechanical key that overrides the other two devices. The fingerprint lock powered by 1.5V AA standard alkaline batteries can also use a 9v battery to provide back up/temporary power when the AA batteries are low.

The invention will now be described solely by way of the fingerprint multipoint lock to demonstrate how it operates and with reference to the accompanying drawings-

Figures (1 – 6) show the different deviation view of the front part of the fingerprint multipoint lock.

Figure (7) shows the front part of the fingerprint multipoint lock fitted onto the entry door from outside.

Figures (8 - 10) show the different deviation view of the back part of the fingerprint multipoint lock.

In figures, a multipoint lock (1) and(13) includes a scanner (2), keypad (3A & 3B), lid cover (4), front handle (5), knob handle (6), keyhole (7), axis (8) and flab bar (9), Back up (11), knob handle (13) and handle (14) which relates to opening and locking the entry door. The movement causes the

latches/rollers/hooks from the mortice to secure the door or open the door. The rod- housing (10A &10B) is secure on an adjustable flat plate(12) which can move along to fit into the pre-drilled holes from the UPVC /wooden door ready for the screws to secure the multipoint lock onto the door. The back housing (13) will be secured by the ring nut (15).

To operate the door while the door is in the locked position, first of all pull the lid cover (4) up so you are able to see the scanner (2) which will light up along with the keypad (3A &3B). Either place your registered finger onto the scanner (2) or key in your pins. Once the data has been authorised you hear a long bib signal to allow you to enter by pulling the handle down. If there is a double bib, the verification has failed and the latches will not be released if the handle is pulled down.

The knob handle (6) and Keyhole (7) are for entry by using mechanical key to unlock the latches/rollers/hooks from the mortice inside the door.

While in the locked stage, the front handle (5) and knob handle (6) are in the free rotate state. This offers further security to prevent using extreme forces to try to break in or damage the door lock or vandal the guard handle.

To secure the door from inside, turn the knob handle and the latches/rollers/hooks of the multi point mortice will move into door housing to secure the entry. From outside the entrance, you just need to pull the handle (5) up and the latches/rollers/hooks of the multi point mortice will move into the door housing. Further security can be applied by verifying with a fingerprint once the green light has come on and the knob handle has been turned. (6). Back up point (11) is for special features when the batteries are low. A 9V battery can be used to provide extra power for temporary/back up use.

Claims

1 A fingerprint multipoint lock fits to a new or existing UPVC /wooden door with the rollers/latches/hooks (multi-points locking system) mortice. The Lock uses registered fingerprints, PINs or a mechanical key to allow entry through a door of a building or room.

2 A fingerprint multipoint lock according to claim 1, increases the number of methods in which entry through a door into a building or room can be obtained.

3 A fingerprint multipoint lock according to claim 1, provides greater security as your fingerprint cannot be duplicated. As keys are not used, the possibility of keys getting into the wrong hands and being duplicated is reduced therefore improving peace of mind.

4 A fingerprint multipoint lock according to claim1 uses a connection between the lock mechanism and the image scanner that determines whether the input fingerprint corresponds to that in the data storage before allowing access to the building or room.

5 A fingerprint multipoint lock according to claim 1, is designed with a rear plate with moveable screw rod-housing. This enables the lock mechanism to be installed onto doors as new or as a replacement without the need to create further holes in the door frame for the multi-point locking system.

Intellectual Property Office

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Application No: GB0805758.0 **Examiner:** Gareth Jones

Claims searched: 1 - 5 **Date of search:** 16 July 2008

Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X	All	US 2007/0080778 A1 (STRADER et al) See whole document especially figure 2 items 23, 32, 38.
X	All	EP 1803875 A2 (BIRKEGARDEN DANMARK) See whole document especially figure 1 items 11, 12, 14.
X	All	US 2006/0114099 A1 (DENG et al.) See figures 1 and 12 at least.
X	All	US 2004/0025550 A1 (YAMAGISHI) See whole document especially figures 1, 4 and 5.
X	All	US 6378344 B1 (GARTNER) See whole document especially figures 1 and 2.
X	All	WO 02/35479 A1 (LOCHISLE INC.) See whole document.
X	All	US 5083122 A (CLARK) See whole document especially figures 2, 4 and 5.

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category	P	Document published on or after the declared priority date but before the filing date of this invention
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^{X} :

Worldwide search of patent documents classified in the following areas of the IPC

The following online and other databases have been used in the preparation of this search report

EPODOC, WPI

International Classification:

Subclass	Subgroup	Valid From
E05B	0049/00	01/01/2006