

(12) UK Patent Application (19) GB (11) 2485817 (13) A

(43) Date of A Publication 30.05.2012

(21) Application No: 1020006.1  
(22) Date of Filing: 25.11.2010

(71) Applicant(s):  
**Michael John Miller**  
Apt BE, Los Arcos, Rua da Cassias, Vilamoura,  
Algarve 8125-466, Portugal

(72) Inventor(s):  
**Michael John Miller**

(74) Agent and/or Address for Service:  
**Scott & York Intellectual Property**  
45 Grosvenor Road, ST ALBANS, Hertfordshire,  
AL1 3AW, United Kingdom

(51) INT CL:  
*E05B 63/00* (2006.01) *E05B 63/24* (2006.01)  
*E05B 65/48* (2006.01) *E05C 7/00* (2006.01)  
*E05C 19/08* (2006.01)

(56) Documents Cited:  
**GB 1602013 A** **GB 1278821 A**  
**EP 2310602 A1** **FR 002300197 A1**  
**US 4482177 A** **US 3787082 A**

(58) Field of Search:  
INT CL **E05B, E05C**  
Other: **EPODOC, WPI, Internet**

(54) Title of the Invention: **Alternative locking device**  
Abstract Title: **Locking Device**

(57) A locking device with a first plate 10 having a locking projection 16 and an aperture 14; a second plate 20 having a projection 22 and an aperture (fig 4, 24); and releasable means for securing the first and second plates in engagement with each other; where the projection 16 of the first plate passes through the aperture (fig 4, 24) of the second plate, and the projection 22 of the second plate passes through the aperture 14 of the first plate when the plates are brought into engagement with each other. The first plate may have a second aperture and the second plate may have a corresponding second projection. The projection of the first plate may have a channel for passing a suitable releasable means for securing the plates, for example a padlock or chain. One of the plates may be fixable to a window or door frame, while the other may be removably engagable with the fixed plate.

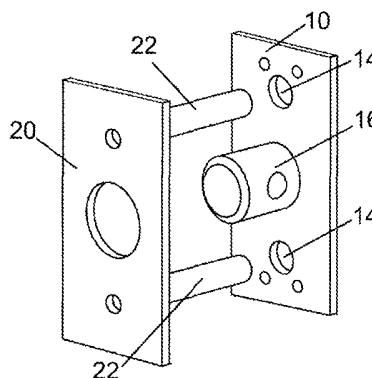


Figure 6

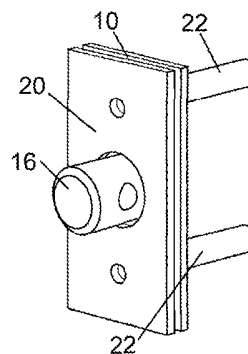
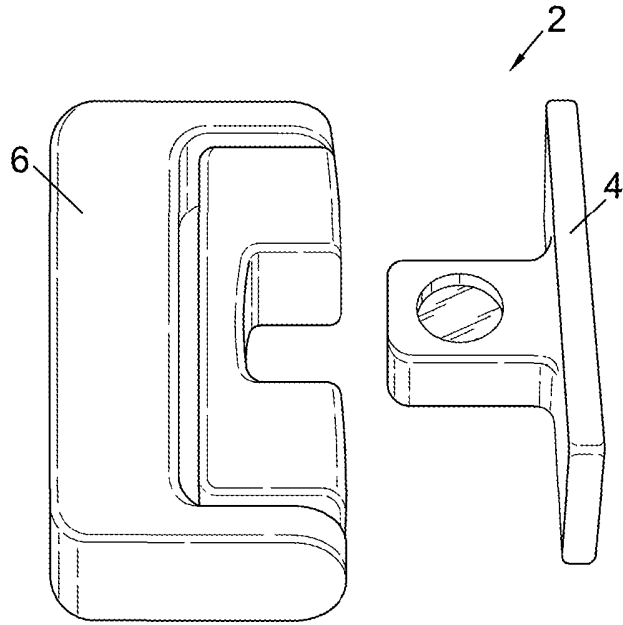


Figure 7

GB 2485817 A



PRIOR ART  
Figure 1

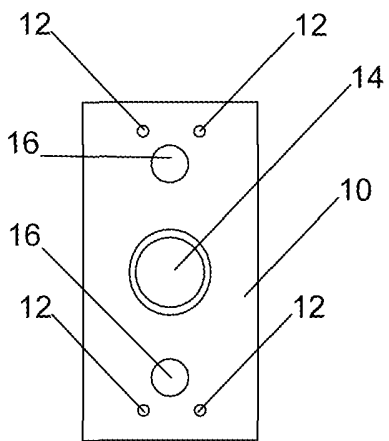


Figure 2

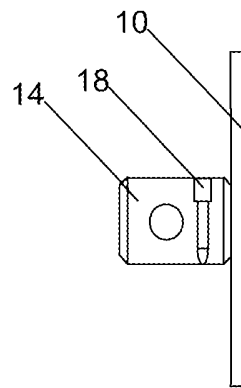


Figure 3

23 02 12

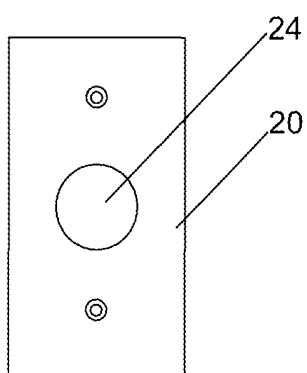


Figure 4

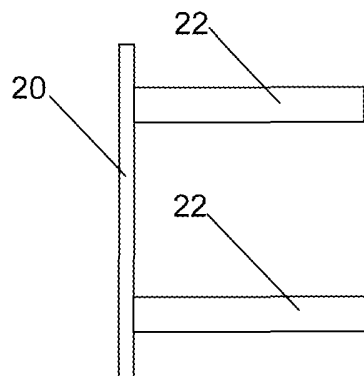


Figure 5

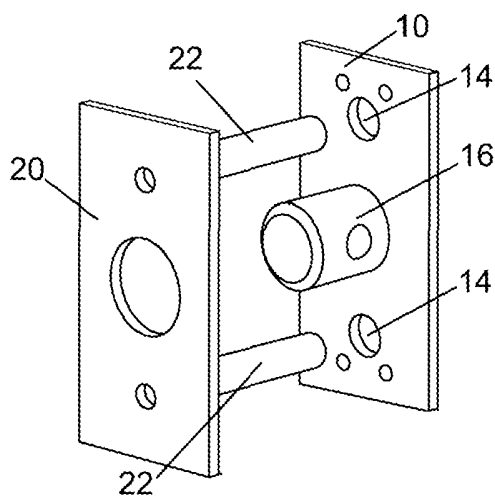


Figure 6

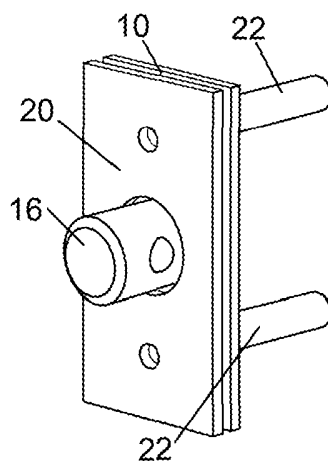


Figure 7

23 02 12

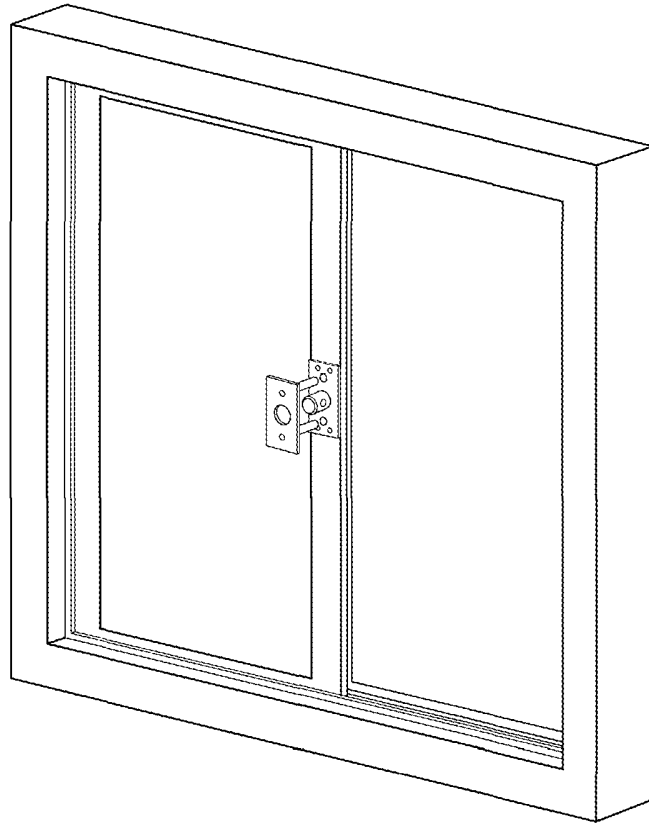


Figure 8

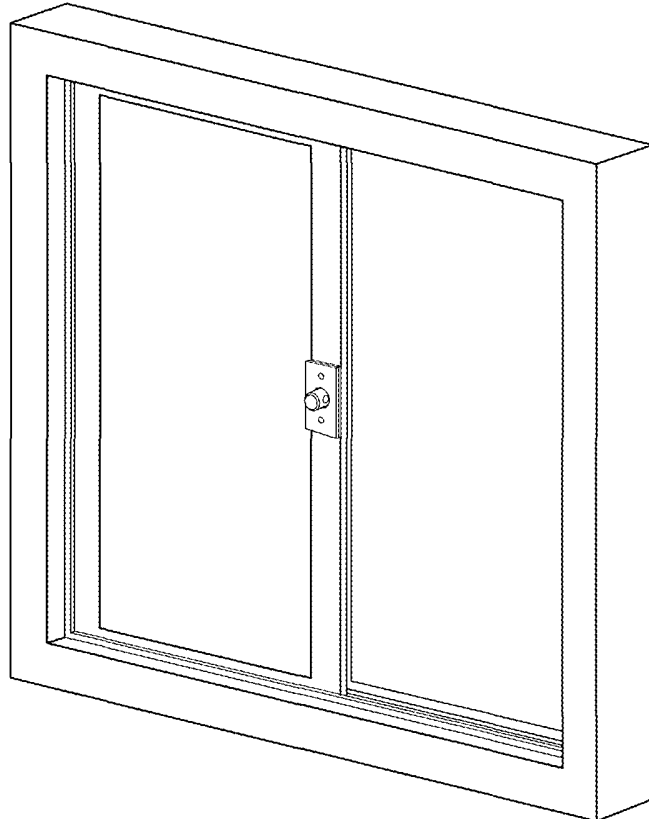


Figure 9

### Alternative Locking Device

This invention relates to a locking device. The locking device is suitable for use in securing door and window frames in a closed position.

5

In recent times increased security has become important to homeowners to prevent unwanted entrants into their homes. As part of this increased security locking devices are often fitted to doors, including patio doors, and windows to make opening them from the outside more difficult.

10

One known locking device is the use of a key operated lock within a window or door's closing mechanism, such as a handle. A user may then use a key to lock the handle and prevent its rotation. Another known locking device 2 is illustrated in Figure 1 and has a staple portion 4 attached to the outer, stationary part of the window or door frame and a hingeable portion 6 attached to the moveable part of the window or door frame. The hingeable portion 6 is positioned to be able to pass over the staple portion 4 when the window is closed and a key can then be used to extend a grub screw, or similar, (not shown) into contact with the staple portion 4. Further extension of the grub screw pulls the moveable part of the window or door frame towards the stationary part of the window or door frame, thereby decreasing the opportunity for a person to slip something between the two parts of the frame to force entry.

15  
20

Whilst these locking mechanisms improve the security of a door or window they also require the use of a key. Keys can become lost meaning that the door or window cannot be

adequately secured, either permanently or temporarily. Key operated window locks can also be difficult for people with agility problems and limited hand function to use.

According to a first aspect of the invention there is provided a locking device including a first  
5 plate comprising a projection and an aperture, a second plate comprising a projection and an  
aperture, releasable means for securing the first and second plate in engagement with one  
another wherein the projection of the first plate is arranged to pass through the aperture of  
the second plate and the projection of the second plate is arranged to pass through the  
10 aperture of the first plate when the first and second plates are brought into engagement. By  
using a plate as a removable feature the locking device may be more readily used by people  
with motor problems. Additionally, the use of the projections and apertures means that the  
locking device cannot be rotated using outside means to move the locking device into a less  
secure conformation.

15 Optionally, the first plate may comprises a second aperture and the second plate a second  
projection, the second projection being arranged to pass through the second aperture when  
the first and second plates are brought into engagement. This provides further security  
against rotational interference with the locking device.

20 The means for securing the first and second plate in engagement comprises the projection  
of the first plate being provided with a channel for passing a padlock or chain through. The  
ability to use a padlock or other lockable means to secure the locking device means that, if  
the property is to be left locked for any long period of time additional security is provided.

Alternatively, the means for securing the first and second plate in engagement may be a spring clip attachable to the projection of the first plate. The spring clip is able to be held in engagement around a substantial part of the circumference of the lockable projection. The spring clip may be made from any suitable material, however, it should enable sufficient frictional engagement to prevent easy sliding along the length of the projection of the first plate.

The projection of the first plate may be provided with a recessed portion around at least part of its circumference, the recessed portion being configured to receive a spring clip and form a channel in which it can sit. Alternatively, the projection of the first plate may be provided with horizontal ribs. The presence of the recessed portion and ribs increases any external force that is required to push the spring clip along the length of the locking projection.

The releasable means may, alternatively, comprise one or more pins configured to retract into and project from the projection of the first plate, such that, when the one or more pins are projecting from the projection they hold the second plate in engagement with the first plate. The one or more pins may comprise spring release pins configured to be biased towards projecting from the projection or be moveable between a position where they project from the projection of the first plate and are retracted into the projection of the first plate by rotating at least a part of the first projection.

The first plate is preferably provided with means for attaching the plate to a door or window frame.

According to another aspect of the present invention there is provided a doorframe or a window frame including the first plate. The doorframe or window frame are preferably provided with one or more means, in registration with the apertures of the first plate, arranged to receive the projection of the second plate. This allows the projections of the first plate to be of greater length and increases the engagement of the locking device with the window frame thereby increasing security.

A specific embodiment of the present invention will now be described by reference to the following drawings in which:

- 10 Figure 1 illustrates a prior art locking device;
- Figure 2 is a bird's eye view of a plate of the present invention;
- Figure 3 is a side on view of a plate of the present invention;
- Figure 4 is a bird's eye view of a removable plate of the present invention;
- Figure 5 is a side on view of a removable plate of the present invention;
- 15 Figure 6 illustrates the plates being brought into engagement with one another;
- Figure 7 illustrates the plates in engagement with one another; and
- Figures 8 and 9 illustrate the locking device in use on a window frame.

Figures 2 and 3 illustrate a fixable plate 10 of the present invention. The plate 10 includes four screw holes 14, each screw hole 14 being sized to enable a screw to pass through it; the screws being used to fasten the plate 10 to a window or door frame as illustrated in Figure 8. The plate 10 includes two further apertures 14 and a locking projection 16 which will be described in more detail below.



Figures 4 and 5 illustrate a removable plate 20 of the present invention. The removable plate 20 comprises two projections 22 and an aperture 24. The aperture 24 is positioned to allow the locking projection to pass through it when the projections are projecting through the apertures in the fixing plate as illustrated in Figures 6 and 7.

5

Preferably, the projections 22 of the removable plate 20 pass through the apertures 14 in the plate 10 and are received within the frame of the window or door as illustrated in Figures 8 and 9. By receiving these projections within the frame rotation of the plates using an external force can be prevented.

10

The locking projection on the fixing plate is provided with a means to prevent the locking plate from sliding free and enabling the window to become unlocked.

15

The means to prevent the locking plate from sliding free may be a grub screw 17 as illustrated in Figure 3. The grub screw may be screwed into the locking projection 16 in order to allow the removable plate to pass over the site of the screw and be either brought into engagement with, or apart from, the plate. When the two plates are in engagement with one another the grub screw 17 may be screwed out so that it partially extends out of the locking projection and prevents the removable plate from passing over it and becoming unengaged with the other plate.

20

Optionally, the locking projection may be provided with, either in addition to or in combination with the grub screw 17, a channel 18 through which a padlock, cable tie or other fixable member can be passed. The presence of the padlock means that the removable plate

cannot be brought out of engagement with the plate and thereby increases the security of the window further.

Alternatively, a spring clip may be fastened around the projection adjacent to the removable plate to hold the plates in contact. This increases the force required to disengage the removable plate from the plate fixed to the frame. A groove, not shown, may also be provided in the locking projection. The groove is configured to receive the spring clip and thereby ensure that the spring clip is situated in the correct position. The advantage of using a spring clip to fasten the plates in engagement is that it is easily locatable. The spring clip may be attached via a tether, such as a chain to either the locking plate or the fixing plate.

Optionally, the locking projection may be provided with one or more retractable pins which are retractable into the locking projection to allow the removable plate to pass over the pins. Each retractable pin is preferably situated such that, when the locking projection is in contact with the fixing plate the retractable pin is in contact with the locking plate and thereby holding the plates in contact.

The retractable projection may, for example be controlled by a biasing means such as a spring or any other suitable means. Alternatively, the retractable pins may be manually controlled, for example, they may be retracted and projected from the locking projection by rotating a part of the locking projection.

The length of the projections from the locking plate are preferably less than the depth of the frame to which the locking device is to be applied.

As will be understood by the skilled person the plate may be affixed to the frame using any suitable means, for example, it may be fixed using nails, or adhesive glue. Additionally, the locking device may be attached in any suitable position that enables the frame to be maintained in a closed position. For example, it may be provided across a join in two  
5 moveable parts of a frame, with one removable plate projection entering one moveable part and the other removable plate projection entering another part.

**CLAIMS**

1. A locking device comprising:

(i) a first plate comprising a projection and an aperture;

5 (ii) a second plate comprising a projection and an aperture;

(iii) releasable means for securing the first and second plate in engagement with one another;

10 wherein the projection of the first plate is arranged to pass through the aperture of the second plate and the projection of the second plate is arranged to pass through the aperture of the first plate when the first and second plates are brought into engagement.

2. The locking device of claim 1 wherein the first plate comprises a second aperture and the second plate comprises a second projection, the second projection being arranged to pass through the second aperture when the first and second plates are brought into engagement.

3. The locking device of claim 1 or claim 2 wherein the means for securing the first and second plate in engagement comprises the projection of the first plate being provided with a channel for passing a padlock or chain through.

4. The locking device of any preceding claim the means for securing the first and second plate in engagement comprises a spring clip attachable to the projection of the first plate.

25

5. The locking device of claim 4 wherein the projection of the first plate is provided with a recessed portion around at least part of its circumference, the recessed portion being configured to receive a spring clip.
- 5 6. The locking device of any preceding claim wherein the releasable means comprises one or more pins configured to retract into and project from the projection of the first plate, such that, when the one or more pins are projecting from the projection they hold the second plate in engagement with the first plate.
- 10 7. The locking device of claim 6 wherein the one or more pins comprise spring release pins configured to be biased towards projecting from the projection.
8. The locking device of claim 6 wherein the one or more pins are moved between a position where they project from the projection of the first plate and are retracted into the  
15 projection of the first plate by rotating at least a part of the first projection.
9. The locking device of any preceding claim wherein the first plate is provided with means for attaching the plate to a door or window frame.
- 20 10. A doorframe including the first plate of any one of claims 1 to 7.
11. The doorframe of claim 8 wherein the doorframe is provided with one or more means, in registration with the apertures of the first plate, arranged to receive the projection of the second plate.

12. A window frame including the first plate of any one of claims 1 to 7.

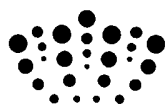
13. The window frame of claim 10 wherein the doorframe is provided with one or more means, in registration with the apertures of the first plate, arranged to receive the projection  
5 of the second plate.

14. A locking device substantially as herein described with reference to and as shown in any combination of the accompanying drawings.

10 15. A doorframe substantially as herein described with reference to and as shown in any combination of the accompanying drawings.

16. A window frame substantially as herein described with reference to and as shown in any combination of the accompanying drawings.

15



**Application No:** GB1020006.1

**Examiner:** Mr Gareth Price

**Claims searched:** 1-13

**Date of search:** 21 December 2011

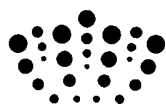
**Patents Act 1977: Search Report under Section 17**

**Documents considered to be relevant:**

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X	1-3	EP 2310602 A1 (MASTER LOCK) See figures 3a-h, 4a, 7 and 8 particularly; also see desc, p4-p5, para 29. Note first & second clasp members 110a, 110b; projecting apertured flanges 115a,115b; an apertures 116a, 116b.
X	1, 10, 12	FR 2300197 A1 (ILLT FASTEX) See English language abstract by WPI (Acc. no: 1976-L8502X [39]) and figures 1-4 particularly. Note hinge part comprising aperture 4 and projection 5,6.
X	10, 12	US 4482177 A (NAGY) See entire document, particularly figures and desc of col 2, lines 49-54; & col 3, lines 5-20. A striker plate 10 is described for fixing to a door frame, having plate member 32 which itself has apertures 34 and projections, lugs 40.
X	10, 12	GB 1278821 A (WALSALL LOCKS) See entire document, particularly figure 1 and description of page 1, lines 9-13, lines 56-59 and lines 79-86. The device is intended for fixing to a door frame and shows a plate 1 having apertures 2 and a projection, tongue 7.
X	10, 12	US 3787082 A (FOOTE) See entire document, particularly figs 1, 2 & 8; and desc. of col 2, lines 49-64 & col 4, lines15-51 . A hasp is described having a staple unit 16 secured to a frame member 18, the staple unit comprising a staple plate 25, with openings 26 and projection in the form of staple eye 40.
X	10, 12	GB 1602013 A (LINDBLOM) See entire document, particularly figures and desc of page 2, lines 19-49. A device is shown having a plate 10 having an opening 11 and a projection in the form of U-shaped member 12, which also has an opening 13 which would seem applicable to a doorframe or window.

**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	P	Document published on or after the declared priority date but before the filing date of this invention.



same category. & 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<sup>X</sup> :

--

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

E05B; E05C
------------

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

EPODOC, WPI, Internet
-----------------------

**International Classification:**

Subclass	Subgroup	Valid From
E05B	0063/00	01/01/2006
E05B	0063/24	01/01/2006
E05B	0065/48	01/01/2006
E05C	0007/00	01/01/2006
E05C	0019/08	01/01/2006