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(54) Security latch

(57) The latch comprises a bracket (10) for mounting to one article (30), e.g. a computer case, and an abutment member (11) engageable with the bracket (10) so as to protrude into the path of another article, e.g. a closure for the case, so as to prevent relative movement of the articles (30,31) in a given direction. The bracket may also include a loop (13) for surrounding an electrical cable.

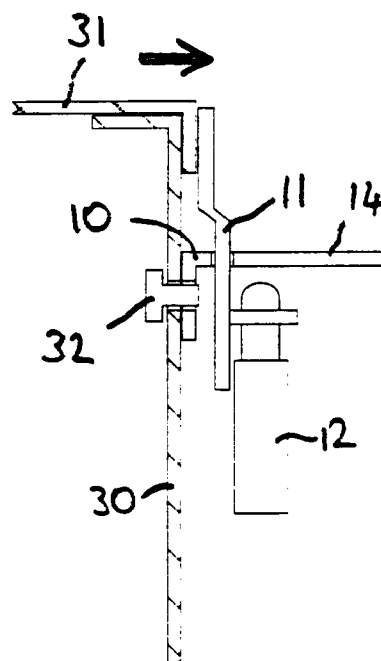


FIG. 4.

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Description

This invention relates to a security latch particularly, but not exclusively, for latching a cabinet which has a body and a closure, for example a computer case which has a removable cover. Further applications of the invention include security latches for doors, windows, drawers and cabinets for electrical or non-electrical equipment generally. In each case the security latch is operable for preventing the relative movement in one direction of two articles, for example the body and closure of a cabinet.

In accordance with one aspect of the invention, there is provided a security lock for preventing the relative movement in one direction of two articles and for securing an electrical cable, comprising a bracket having mounting means to enable the bracket to be mounted on one of the two articles without preventing said relative movement, and an unmounted abutment member which is engageable with the bracket to protrude therefrom into the path of the other of the two articles to prevent said relative movement and which is lockable with the bracket when so engaged, one of either the bracket or the abutment member including a loop for surrounding at least one electrical cable, the loop having an open side through which the cable can be passed and which is closed when the bracket is mounted on one of the two articles and/or when the bracket and the abutment member are engaged with each other.

Preferably a finger on one of either the abutment member or the bracket passes into the loop on the other one of either the bracket and the abutment member to engage the abutment member with the bracket.

Preferably the finger is lockable when it has passed into the loop.

Preferably further, the finger has a tip portion which can be passed into and fully through the loop, and the tip portion has means to receive the hasp of a padlock or a locking wire to lock the bracket and the abutment member together when the abutment member is engaged with the bracket.

Preferably further the abutment member includes a bar which at least partially inhibits access to the mounting means when the abutment member is engaged with the bracket.

Preferably further the bar also interacts with a latching surface on the bracket when the abutment member is engaged with the bracket, and thereby aids that engagement.

Preferably the loop is small enough to prevent the cable from being unthreaded through the loop without the removal of a connector or an item of equipment from an end of the cable.

Preferably further the loop is on the bracket and the open side of the loop is adjacent the mounting means and is closed when the bracket is mounted on one of the two articles, trapping the cable in the loop.

Preferably, the loop is on the bracket and the open side thereof is closed by the abutment member when the abutment member is engaged with the bracket.

In accordance with another aspect of the invention, there is provided a cabinet comprising a body and a closure, provided with a security latch as described above, the cabinet being openable by the movement in one direction of the closure relative to the body, wherein the bracket is mounted on the body or the closure without preventing the closure being opened, and the abutment is engageable with the bracket to protrude therefrom to prevent the closure from being opened and wherein one or more cables can be surrounded by the loop.

Preferably the body is constituted by a computer case on which the bracket is mounted, the closure is constituted by a cover for the computer case and one or more cables from the computer can be surrounded by the loop.

According to a further aspect of the invention, there is provided an enclosure for a personal computer comprising a casing with a cover which can only be removed therefrom by movement in a given direction, a security latch being provided to prevent removal of the cover from the casing comprising a bracket having mounting means to enable the bracket to be mounted on the casing without preventing removal of the cover and an abutment member engageable with the bracket to protrude therefrom so as to prevent removal of the cover by movement thereof in said direction, the bracket and the abutment member being adapted to be locked together when so engaged.

The invention will now be further described, merely by way of example, by reference to the accompanying drawings in which:-

Figure 1 is a perspective view of a bracket of the security latch of a preferred example of the invention;

Figure 2 is a perspective view of an abutment member of the security latch of this example;

Figure 3 is a side view of part of a computer case on which the security latch has been mounted and locked by a padlock; and

Figure 4 is a cross-sectional view taken along the line 4-4 on Figure 3.

Referring to the drawings, in the preferred example of the invention, a security latch consists of a bracket 10 shown in Figure 2, and an abutment member 11 shown in Figure 2; the security latch in this example is lockable by a padlock 12 as shown in Figures 3 and 4.

The bracket 10 is substantially U-shaped with the base of the U forming a wide loop 13 for a purpose described below, and the loop 13 narrowing with the arms 14 of the U brought more closely together with parallel facing inner edges 15. The tips 16 of the U are

bent over at right angles to give the bracket 10 an L shape in side view and are each pierced by a hole 17 to constitute mounting means for mounting the bracket 10 in an operable position. The outer edge 18 of each arm 14 is provided with a rectangular notch 19 close to its inner edge 15. The notches 19 provide latching surfaces on the bracket 10, as described below.

The abutment member 11 has a substantially rectangular body 20 from which upstands a rectangular abutment portion 21 parallel to but a little offset rearwardly from the body 20. The abutment portion 21 has the same width as the body 20. The body 20 is provided with a pair of parallel bars 22 each of which project down from each end of and co-planar with the body 20. The bars 22 are spaced appropriately from each other and are each an easy fit in one of the notches 19 in the bracket 10 to enable the abutment member 11 to be engaged with the bracket 10 with each bar interacting with the latching surfaces provided by its notch 19, as more fully described below in relation to Figures 3 and 4 of the drawings.

The body 20 is also provided with a co-planar finger 23 centrally between the bars 22. The tip 24 of the finger 23 is at right angles to the plane of the body 20, the bars 22 and the rest of the finger 23. The width of the finger 23 and its tip 24 is an easy fit between the surfaces 15 on the bracket 10 as the abutment member 11 is engaged with the bracket 10, the bars 22 simultaneously sliding into the notches 19, again as described below in relation to Figures 3 and 4 of the drawings. The tip 24 is furnished with a hole 25 for the hasp of the padlock 12.

Referring now additionally to Figures 3 and 4 of the drawings, a computer case 30 has a cover 31 which can only be removed from the case 30 in the direction of the arrow shown on Figure 4. Accordingly, the bracket 10 of the security latch is mounted on the case 30 at such a position that the bracket 10 alone does not obstruct the cover 31 from being slid in the direction of the arrow, but the engagement of the abutment member 11 with the bracket 10 causes the abutment member 11 to protrude into the path of the cover 31 shown by the arrow. Because the cover 31 cannot be slid in the direction of the arrow, the cover 31 cannot be removed from the computer case 30, and the computer and/or other equipment stored in the computer case 30 is kept secure.

Figure 4 in particular shows the bracket 10 mounted on the computer case 30 by screws 32 inserted from the interior of the case 30 for added security. Until the abutment member 11 has been engaged on the bracket 10, the cover 31 can be freely put on or off the computer case 30, and has no latch mechanism fixed to it to be a nuisance in any way, or to affect the design of the cover 31 to allow a latch mechanism to be mounted on the cover 31. Indeed the security latch of this example is well suited to the upgrading of existing computer cases to provide them with security.

When the cover 31 is required to be latched, it is put on the computer case 30 and the abutment member 11 is then slid vertically downwards (as seen in Figures 3 and 4) with the bars 22 first engaging and sliding down through the notches 19 and the finger 23 and its tip 24 then engaging between the surfaces 15 and sliding down through the loop 13. The tip 24 passes fully through the loop 13 and the hole 25 can be used for a locking wire (not shown) or the hasp of a padlock 12 to secure the abutment member from being disengaged from the bracket 10.

Figure 4 shows the location of the abutment portion 21 of the abutment member 11 protruding in front of the cover 31 to prevent it being slid in the direction of the arrow, and hence removed from the computer case 30. Also to be seen in Figure 4 is the effect of the offset of the abutment portion 21 from the body 20 to give the best snugness of positioning of the abutment portion 21 in front of the cover 31.

Figure 3 shows that the bars 22 at least partially inhibit access to the screws 32 to further increase security.

A further feature of this preferred example is that the wide part of the loop 13 on the bracket 10 can be used to surround one or more cables and thereby secure them to the security latch and hence to the computer case 30. The cables particularly relevant are those for electrically connecting together valuable equipment such as a printer, a keyboard, a mouse or a computer. The loop is too small to prevent the cable concerned from being unthreaded through the loop without the removal of a connector or an item of equipment from an end of the cable. Each cable is passed through the open side of the loop before the bracket is mounted on the computer case, and then the bracket is so mounted, the open side of the loop being closed by the computer case itself. Valuable equipment is thereby well secured to the computer case 30, even when the cover 31 is unlatched, to minimise being mislaid or stolen. However, as long as too many cables are not secured in the loop, the neck of the loop can still receive the finger 23 when the abutment member is engaged in the latching position. Engagement of the abutment member with the bracket may also be arranged to close the loop in place of or in addition to closure by mounting the bracket to the computer case. For example, finger 23 may close the loop, giving more security for the cables.

In modifications of the preferred example of the invention, the security latch described above is adaptable for latching cabinets which have a body and a closure, for example for electrical or non-electrical equipment generally, or doors, windows or drawers; in each case the security latch is operable for preventing the relative movement in one direction or two articles, the use of an unmounted abutment member means that one of the articles has no latch mechanism mounted on it, and the use of a loop means that a cable may also be secured by the latch.

Claims

1. A security lock for preventing the relative movement in one direction of two articles and for securing an electrical cable, comprising a bracket having mounting means to enable the bracket to be mounted on one of the two articles without preventing said relative movement, and an unmounted abutment member which is engageable with the bracket to protrude therefrom into the path of the other of the two articles to prevent said relative movement and which is lockable with the bracket when so engaged, one of either the bracket or the abutment member including a loop for surrounding at least one electrical cable, the loop having an open side through which the cable can be passed and which is closed when the bracket is mounted on one of the two articles and/or when the bracket and the abutment member are engaged with each other.
2. A security latch according to Claim 1 wherein a finger on one of either the abutment member or the bracket passes into the loop to engage the abutment member with the bracket.
3. A security latch according to Claim 2 wherein the finger is lockable when it has passed into the loop.
4. A security latch according to Claim 3 wherein the finger has a tip portion which can be passed into and fully through the loop, and the tip portion has means to receive the hasp or a padlock or a locking wire to lock the bracket and the abutment member together when the abutment member is engaged with the bracket.
5. A security latch according to any of the preceding claims wherein the abutment member includes a bar which at least partially inhibits access to the mounting means when the abutment member is engaged with the bracket.
6. A security latch according to Claim 5 wherein the bar also interacts with a latching surface onto the bracket when the abutment member is engaged with the bracket, and thereby aids that engagement.
7. A security latch according to any preceding claim wherein the loop is small enough to prevent the cable from being unthreaded through the loop without the removal of a connection or an item of equipment from an end of the cable.
8. A security latch according to Claim 7 wherein the loop is on the bracket and the open side of the loop is adjacent the mounting means and is closed when the bracket is mounted on one of the two articles, trapping the cable in the loop.
9. A security latch according to Claim 7 or 8 wherein the loop is on the bracket and the open side thereof is closed by the abutment member when the abutment member is engaged with the bracket.
10. A cabinet comprising a body and a closure, and provided with a security latch according to any of the preceding claims, the cabinet being openable by the movement in one direction of the closure relative to the body, wherein the bracket is mounted on the body or the closure without preventing the closure being opened, and the abutment is engageable with the bracket to protrude therefrom to prevent the closure from being opened and wherein one or more cables can be surrounded by the loop.
11. A cabinet according to Claim 10 for use in containing a personal computer, wherein the body is constituted by a computer case on which the bracket is mounted, the closure is constituted by a cover for the computer case and one or more cables from the computer can be surrounded by the loop.
12. An enclosure for a personal computer comprising a casing with a cover which can only be removed therefrom by movement in a given direction, a security latch being provided to prevent removal of the cover from the casing comprising a bracket having mounting means to enable the bracket to be mounted on the casing without preventing removal of the cover and an abutment member engageable with the bracket to protrude therefrom so as to prevent removal of the cover by movement thereof in said direction, the bracket and the abutment member being adapted to be locked together when so engaged.

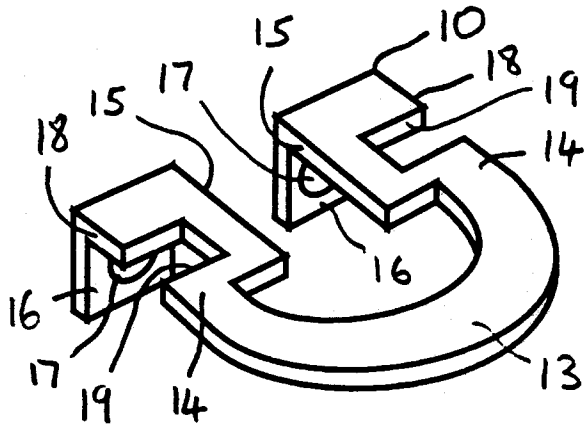


FIG. 1.

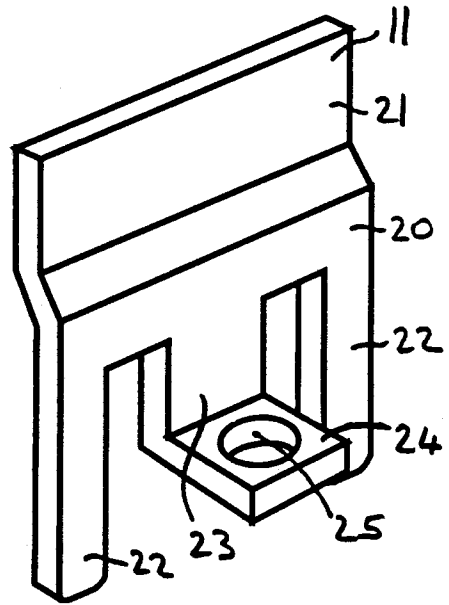


FIG. 2.

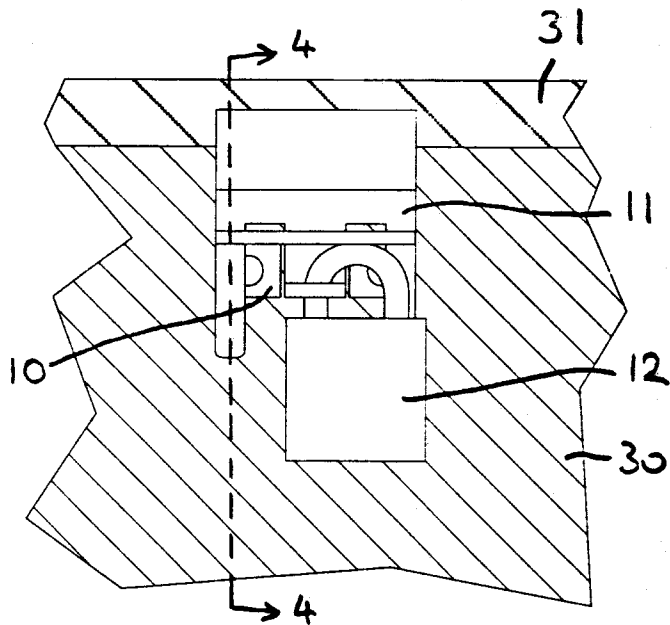


FIG. 3.

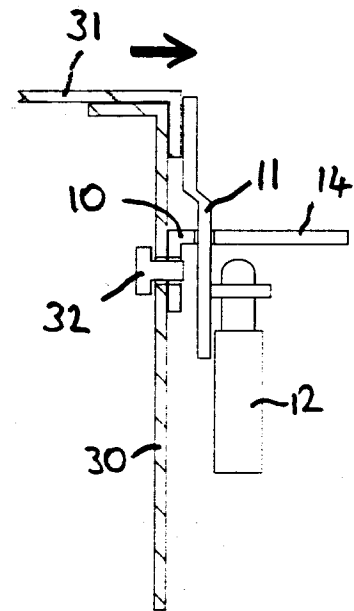


FIG. 4.



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EUROPEAN SEARCH REPORT

Application Number
EP 96 30 3305

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.6)
X	US-A-4 252 007 (KERLEY JAMES J) 24 February 1981	1-4,7-12	E05B73/00 E05B67/38
Y	* column 1, line 40 - column 5, line 2; figures *	5,6	

X	US-A-5 228 319 (HOLLEY RAYMOND J ET AL) 20 July 1993	1-4,7	
A	* column 2, line 23 - column 3, line 18; figures *	5,10-12	

X	US-A-4 003 228 (LIEVENS JAMES LEE ET AL) 18 January 1977	1,7, 10-12	
Y	* column 1, line 55 - column 4, line 33 *	2-4	
A	* figures *	5,6	

Y	US-A-4 843 848 (IGELMUND DARRELL A) 4 July 1989	2-4	
A	* column 2, line 6 - column 4, line 60; figures *	1,7-12	

Y	GB-A-2 268 223 (DENMAN PHILIP) 5 January 1994	5,6	TECHNICAL FIELDS SEARCHED (Int.Cl.6)
A	* page 2, line 30 - page 5, line 14; figures *	1-4,7-10	E05B E05C

T	US-A-5 526 226 (KATOH KATSUTOSHI ET AL) 11 June 1996 * the whole document *	1-6, 10-12	

The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 21 August 1996	Examiner Henkes, R
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	

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