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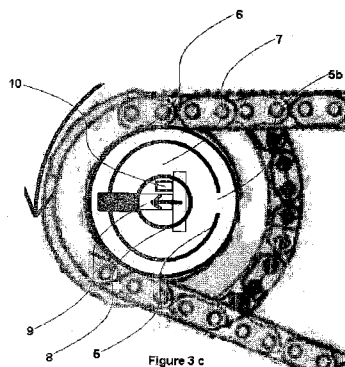
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(54) Title: AN ANTI-THEFT SYSTEM FOR MOTORCYCLE



(57) Abstract: An anti-theft system with locking mechanism (2) adapted to lock the wheel of a motorcycle wherein the locking device is adapted to interlock with the motorcycle engine housing member cam chain area (6) which comprises a spocket cap (5), metallic cylinder (7), building motor (8), metallic lock bar (9) and a switch (10). The present invention further comprises a central control unit (1) which controls the locking mechanism and having a built-in shock sensor (13). A wireless unit (4) controls the locking and unlocking, function of the said locking mechanism.

AN ANTI-THEFT SYSTEM FOR MOTORCYCLEDESCRIPTIONFIELD OF THE INVENTION

This invention relates to an anti-theft system for the locking of a motorcycle and in particular to a
5 locking device to lock the wheel of a motorcycle wherein the locking device is adapted to
interlock to the spoke cap in the motorcycle engine housing cam chain area.

BACKGROUND OF THE INVENTION

Locks are known for immobilizing or substantially immobilizing the steering mechanism of a
motorcycle. If a motorcycle cannot be steered, the motorcycle cannot be driven away by
10 bypassing the ignition system of the motorcycle. In the same way, the motorcycle cannot be
moved due to the locked steering.

There are many motorcycle locks which prevents rotation of steering for example the use of chain
locks. The existing locks for steering mechanisms of motorcycles are not without its limitations.
The existing locking mechanisms with sophisticated features are usually expensive due to the
15 high manufacturing costs and costs of components. In addition, these locking devices are too
complicated and difficult to assemble.

There are yet some other locking devices which uses wires or cables, however, while such locks
are comparatively cheap and uncomplicated, safety features are compromises as they are easily
and quickly cut and/or opened.

20 There are also other locking devices which can only be installed in a motorcylce with much
hassle and difficulty. Practically, such locking devices are only appropriate for pre-installation at
the time the motorcycle is manufactured.

The existing motorcycle locking devices only have the funtion of delaying the time period for a
burglar or thief to steal the vehicle. They cannot completely prevent the motorcycle from being
25 stolen.

SUMMARY OF THE INVENTION

Accordingly, the primary object of present invention is to provide an anti theft system for immobilizing the motorcycle that is made up of readily available components which can be easily installed in a motorcycle and effectively lock a vehicle and to prevent it from being stolen.

5 To achieve the above object, the present invention incorporates an anti theft system that integrates mechanical and electrical security system for motorcycle. The said locking mechanism is interlocked with the spoke cap in the motorcycle engine housing at the cam chain area and integrated into the motorcycle ignition system, which will not void the factory warranty as it does not interfere with the vehicle electronic or electrical system.

10 However, the present invention in particular the locking mechanism is not limited in scope and not confined to interlocking with the spoke cap within the motorcycle engine housing. The embodiment of the present invention in this regard may vary according to the type, model and design of the motorcycle. For instance the present invention may also be adapted to perform the same function on a scooter.

15 The vehicle is armed once it is activated by a wireless unit. If the anti theft system is not activated after the ignition is off, an alarm warning will be sent out. The system coupled with the shock sensor capability can also be used to detect an abnormal inclination of the vehicle which, with ignition is off indicates a possible theft by jacking up and towing away,

20 Once the vehicle is armed, and any movement of the wheel, any abnormal quiver of the motorcycle, the alarm system will be triggered and the locking mechanism will be activated. When the locking mechanism is activated, this anti theft system is designed to mechanically lock the spoke cap of the motorcycle and even if the battery is disconnected, the motorcycle remains locked and unmovable.

BRIEF DESCRIPTION OF THE DRAWINGS

25 Fig. 1 shows the functional block diagram of the present invention

Fig. 2 shows the functional block diagram of the central control system

Fig. 3a is sectional view showing that the system is disarmed

Fig. 3b is a sectional view showing that the system is armed

Fig. 3c is a sectional view showing the alarm trigger when the wheel is moved

Fig. 4 shows a functional block diagram of the piezo siren which is connected to the central control system

Fig. 5 shows the structural view of a wireless unit which consists of four functional buttons (as foregoing paragraph below)

DESCRIPTION OF THE PREFERRED EMBODIMENT

Figure 1 shows the overview of the anti theft system which consists of central control system (1) that controls the locking mechanism (2) that is interlocked within the motorcycle engine housing member, alarm system (3) and a wireless unit (4).

Figure 2 shows the central control unit (1) for the present invention. This control unit (1) consists of compact microprocessor control module (11). This system is provided with a control means which forms the integral part of the motorcycle power supply (12) and the ignition system so as to detect whether the system is activated by the wireless unit (4) after the ignition is off. The present also invention also embodies passive activation in that that a warning alarm from the alarm system (3) will buzz to remind the user to activate it. If the user accidentally deactivated the system while the ignition is at off mode, the central control unit (1) is has the capability to reactivate the system after a few seconds. This control unit is connected to the shock sensor (13). This shock sensor (13) will trigger to detect any possible theft for instance, attempt of jacking up, towing or moving of wheels of the motorcycle. The wireless unit controls the switching on and switching off function. The central control unit (1) is also connected to the alarm system (3) that has an audible alert sound output at the speaker or compact design piezo siren (14). The central control unit (1) also has integrated memory (15) that records each shock sensitivity or mode that the user has selected through the wireless unit (4).

Figure 3a, 3b and 3c illustrate the embodiment of the locking mechanism (2) showing the situation the system whereby it is deactivated (FIG. 3a), activated (FIG. 3b), and triggering of alarm when the wheel is moved (FIG. 3c) respectively. A spoke cap (5) is mounted to the motorcycle engine housing at the cam chain area (6). The locking mechanism (2) is preferably engaged around the spoke cap (5) placement. The spoke cap (5) has two opening (5a, 5b) that are spaced apart. The opening (5a, 5b) enables the locking of either of the opening (5a, 5b) during any movement of the wheels forward or backward, hence trigger the alarm system (3). The locking mechanism (2) consists of solid metallic cylinder (7) with a building motor (8), solid metallic lock bar (9) and a switch (10). The motor (8) and switch (9) are connected to the central control unit (1). Once the anti theft system is activated by the wireless unit (4), the motor (8) will push the solid metallic lock bar (9) outward towards the spoke cap (5). At this stage, the switch (10) remains at OFF mode. When there is any movement of the forward or backward, the solid metallic lock bar (9) will lock into either one of the opening (5a, 5b) of the spoke cap (5). Once the solid metallic lock bar (9) moved into the opening (5a, 5b), it will trigger the switch (10) that linked to the central control unit (1) to activate the alarm system (3) resulting the vehicle being locked and no movement can be performed thereafter. After the solid metallic lock bar (9) is interlocked into the opening (5a, 5b), there will still be no movement even if the main power supply is disconnected. And in addition to aforesaid, the said locking mechanism (2) will not cause the pins that are mounted to the spoke cap (5) in the motorcycle engine housing member at the cam chain area (6) to be displaced due to the placement of the solid metallic cylinder (7) with a building motor (8), solid metallic lock bar (9) and a switch (10) that are tamper-proof.

Figure 4 shows that the alarm system (3) consists of the compact design piezo siren (14) that is connected directly to the central control unit (1). The shock sensor (13) is built-in in the central control unit (1) that is then connected to the alarm system (3).

Figure 5 shows the wireless unit (4) that comprises four buttons that correspond to four functionalities, that is Lock or Activate Button (16), Unlock or De-activate Button (17), Shock Sensitivity or Mode Button (18), and Panic Button (19). The Lock or Activate Button (16) is to control the arming of the anti theft system. The Unlock or De-activate Button (17) is to control the disarming of the anti theft system. Shock Sensitivity or Mode Button (18) is to allow user to select the shock sensitivity of the shock sensor (13), select Automatic Activation where the anti theft system is automatically activated after ignition is turned off for a few moments or disable this options, select Passive Activation where as if the user accidentally deactivated the system

while the ignition is at off mode, the central control unit (1) is can reactivate the system after a few seconds, or totally have this option disabled. The Panic Button (19) will trigger the alarm system (3) that will produce an audible alarm warning to detect any possible theft of the vehicle, or to search for the vehicle at the parking area.

- 5 It will be understood that modifications can be made in the structure of the present invention without departing from the scope and purview of the invention as defined in the appended claims.

CLAIMS

1. An anti-theft system which comprises a central control unit (1) that controls the locking mechanism (2), alarm system (3) and a wireless unit (4), spoke cap (5).
- 5 2. An anti-theft system as claimed in Claim 1 wherein the said central control unit (1) having a microprocessor control module (11) integrated into the motorcycle power supply (12).
3. An anti-theft system as claimed in Claim 2 wherein said alarm system (3) has a shock sensor (13), with integrated memory (15).
- 10 4. An anti-theft system as claimed in Claim 1 wherein said locking mechanism (2) is interlocked to the spoke cap (5) within the motorcycle housing member at the cam chain area (6).
5. An anti-theft system as claimed in Claim 1 wherein spoke cap (5) has two opening (5a, 5b) which enable the locking mechanism (2) lock into either one of the opening (5a, 5b) which is spaced apart during the movement of the wheels forward or backward.
- 15 6. An anti-theft system as claimed in Claim 5 wherein said locking mechanism (2) comprises of a metallic cylinder (7), building motor (8), metallic lock bar (9) and a switch (10) wherein said motor (8) and switch (9) are connected to said central control system (1).
- 20 7. An anti-theft system as claimed in Claim 6 wherein said switch (10) is connected to the central control system (1) having a capability to activate the alarm system (3) resulting in the motorcycle being locked.
8. An anti-theft system as claimed in Claim 1 wherein said wireless unit (4) comprises four keys which corresponds to four functionalities including Lock/Activate Button (16),
25 Unlock/Deactivate Button (17), Shock Sensitivity or Mode Button (18), and Panic Button (19) wherein said lock /activate button (16) controls the activation of the anti-theft system and said unlock/deactivate button (17) controls the deactivation of the anti-theft system.

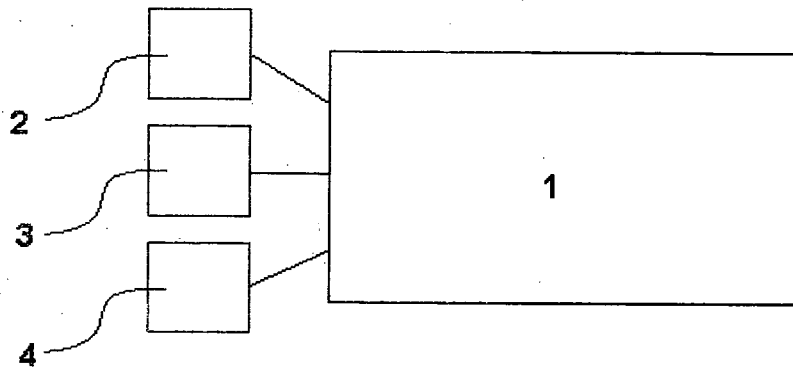


Figure 1

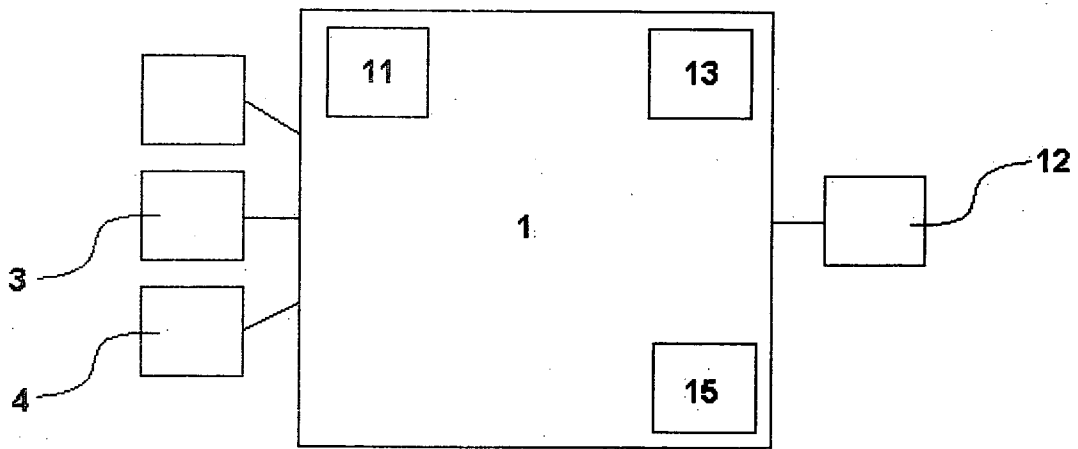


Figure 2

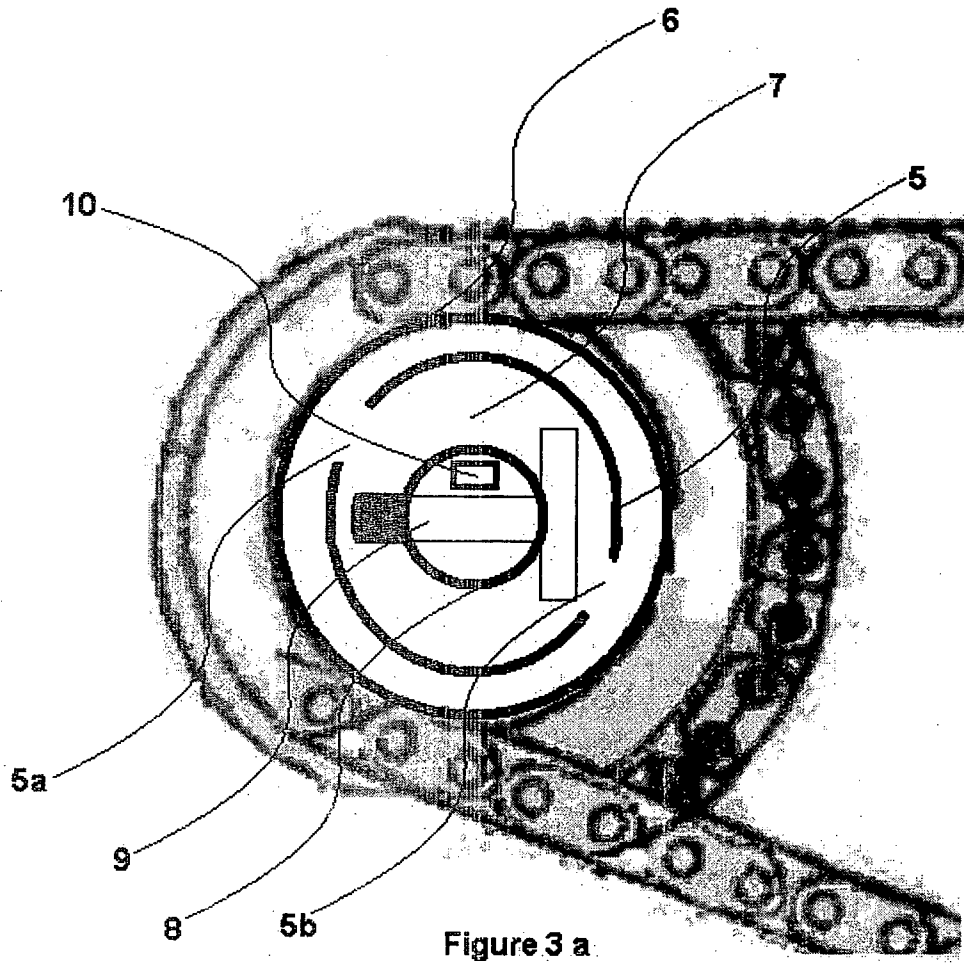


Figure 3 a

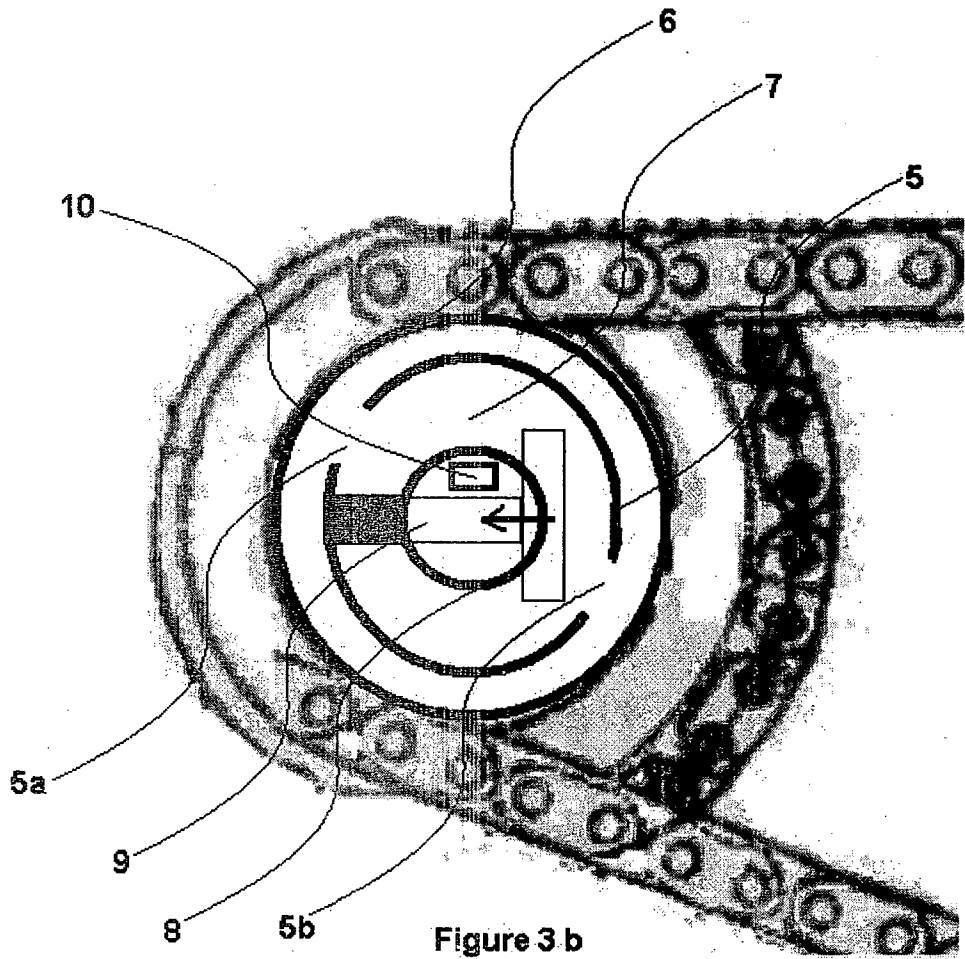


Figure 3 b

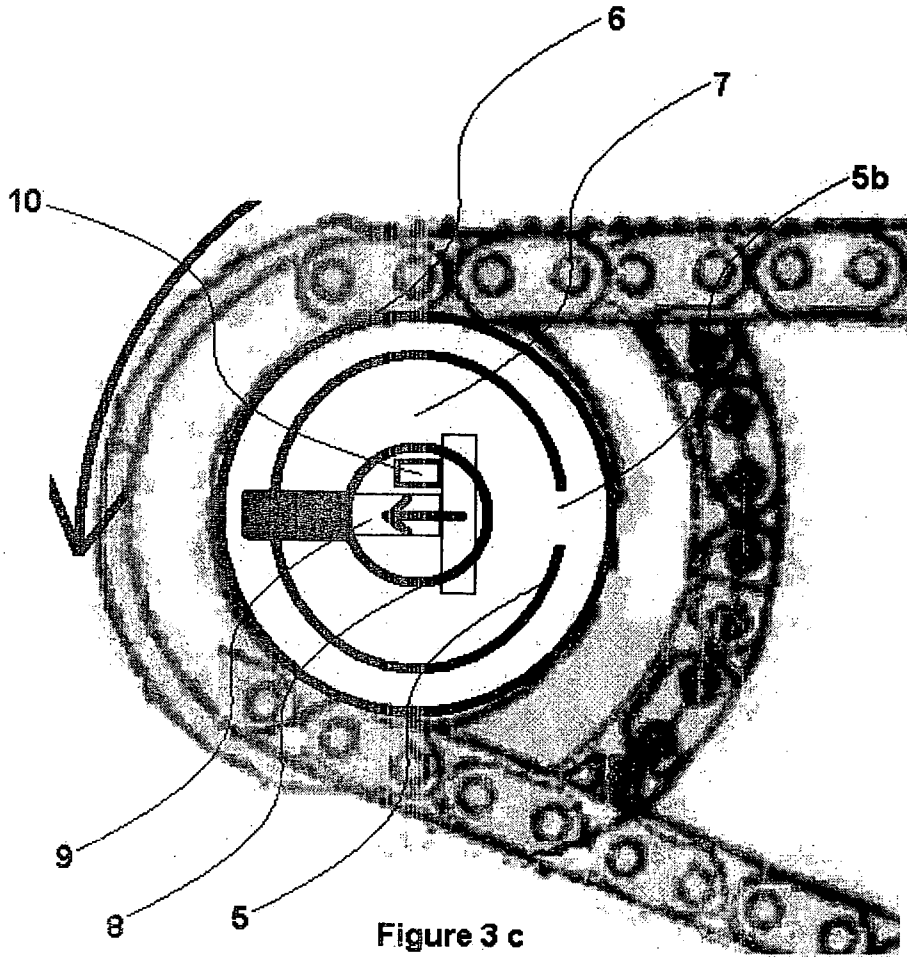


Figure 3 c

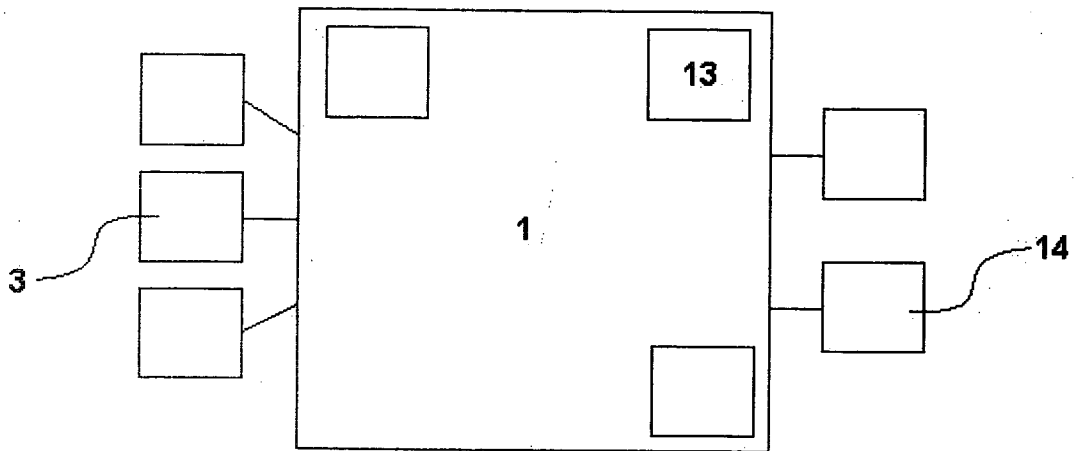


Figure 4

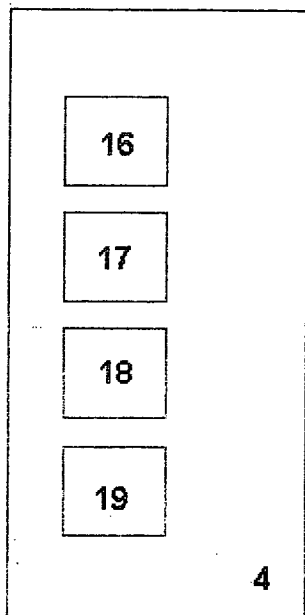


Figure 5

INTERNATIONAL SEARCH REPORT

International application No
PCT/MY2008/000106

A. CLASSIFICATION OF SUBJECT MATTER
INV. B62H5/12

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B62H B60R

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 197 41 643 A1 (KECK KLAUS DR [DE]) 25 March 1999 (1999-03-25)	1
Y	abstract; figures column 4, line 22 - line 23 column 4, line 30 - line 37	2-8
Y	WO 2007/007367 A (SARRACINO FABRIZIO [IT]) 18 January 2007 (2007-01-18) abstract; figures	2,3
Y	JP 55 111882 U (UNKNOWN) 6 August 1980 (1980-08-06) figure 5	4-7
Y	US 5 612 669 A (ALLEN GEOFFREY C [US] ET AL) 18 March 1997 (1997-03-18) abstract; figures column 6, line 55 - line 65	8
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Further documents are listed in the continuation of Box C.

See patent family annex.

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Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

International application No
PCT/MY2008/000106

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 329 953 A (ROW JON D) 18 May 1982 (1982-05-18) abstract; figures -----	1
A	DE 104 527 C (TROMMER ERNST ALBIN) 8 August 1899 (1899-08-08) abstract; figures -----	1

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/MY2008/000106

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DE 104527	C		NONE	