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(54) A anti-theft-device

(57) An anti-theft device for objects to be protected against theft, comprises a container for the objects, including a container lower-part (1), and a lid (2). A lock is provided between the lower-part and the lid, and there are means on the container for triggering an alarm. The lock includes a row of mutually spaced projections (4) provided on one of the lower-part and the lid and forming each a head (5) at a free end thereof, and a lock bar (6) with round or polygonal cross section mounted for axial displacement on the other one of the lower-part and the lid. The bar can be displaced between an engaged position in which it locks the lid to the lower-part, and a

disengaged position in which it allows the lid to be opened. A spring tongue (9) protrudes against the bar and latches the bar in the engaged position but can be withdrawn from the bar by means of a special tool associated with the anti-theft device, to allow the bar to be displaced to the disengaged position unlocking the lid. The bar forms a number of notches (11) distributed along the bar with the same spacing as the projections and positioned in register with the projections in the disengaged position of the bar. The notches allow the bar to pass over the heads of the projections at closing of the lid. With the lid closed the bar engages behind the heads when displaced to the engaged position.

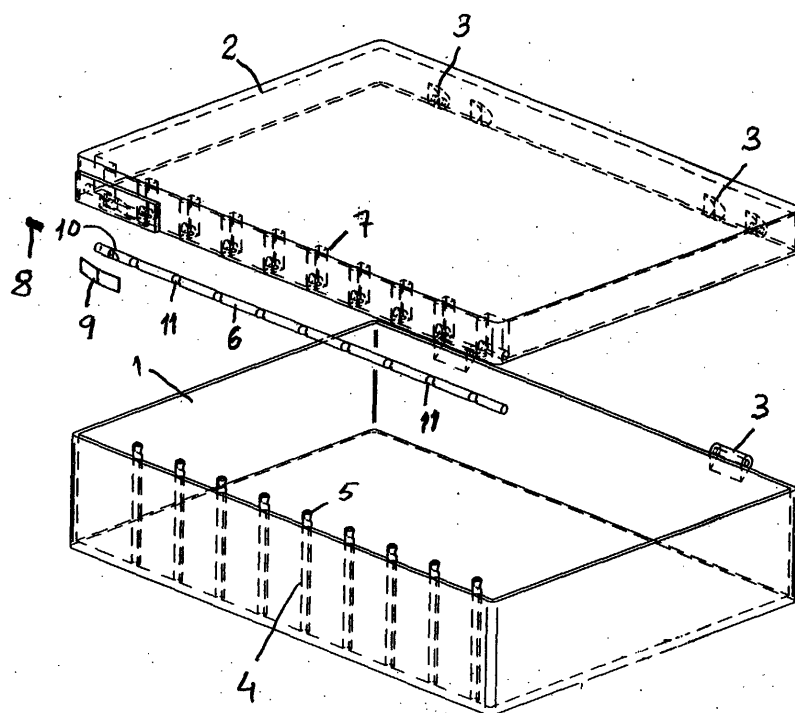
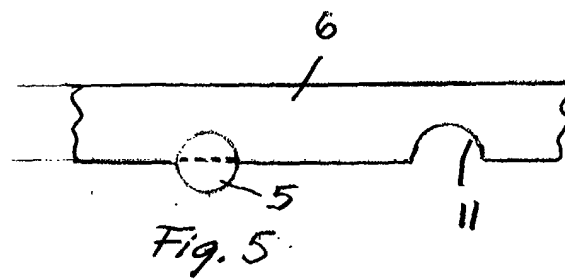
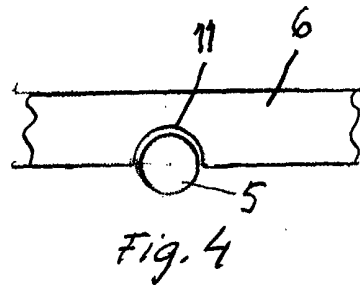
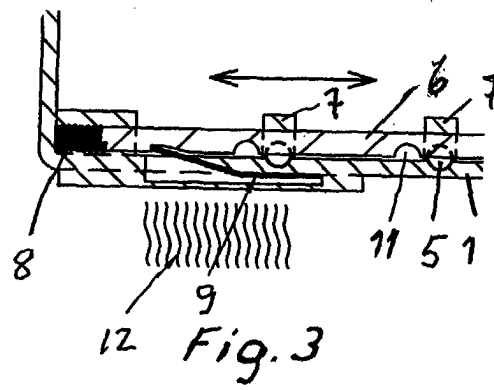
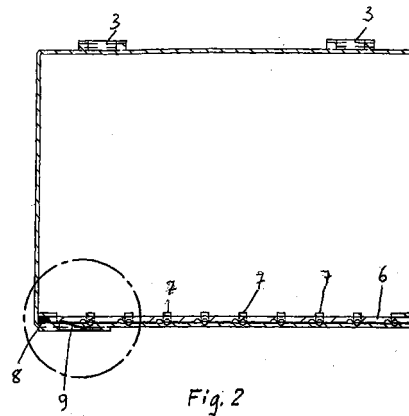


Fig. 1



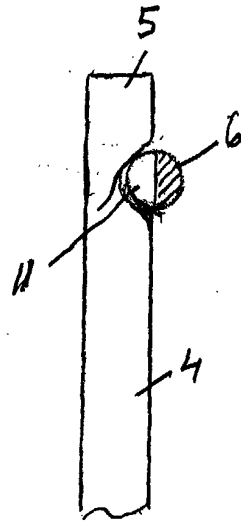


Fig. 6

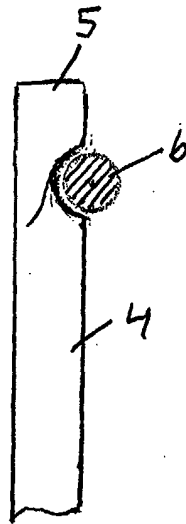


Fig. 7

Description

[0001] The present invention concern an anti-theft device for objects to be protected against theft of the kind comprising a container intended to receive the object or objects and including a container lower-part, a lid, a lock between the lower-part and the lid and means on the container for triggering an alarm, the lock including a lock slide on one of the lower part and the lid displaceable between an engaged position in which it locks the lid to the lower-part, and a disengaged position in which it allows the lid to be opened, and a spring tongue which protrudes against the slide and latches the slide in the engaged position but can be withdrawn from the slide by means of a special tool associated with the anti-theft device, to allow the slide to be displaced to the disengaged position unlocking the lid.

[0002] An anti-theft device of this kind is disclosed in EP 0 616 103 B1, wherein the lock comprises a flat slide mounted for displacement in the lower-part lid and having projecting lugs which in the engaged position of the slide with the lid closed engage under noses projecting from the lid. The slide has a finger grip which is available on the outside of the lower part for manual displacement of the slide.

[0003] The purpose of the present invention is to provide an anti-theft device of the kind referred to above which consists of elements that are easy to manufacture and can easily be assembled, and still to maintain a high security against breaking of the anti-theft device in an effort to get access to the object or objects received therein.

[0004] This is achieved by an anti-theft device of the related kind which is characterised in that a row of mutually spaced projections are provided on the other one of the lower-part and the lid and form each a head at a free end thereof, and that the lock slide comprises a bar with round or polygonal cross section mounted for axial displacement, said bar forming a number of notches distributed along the bar with the same spacing as the projections and positioned in register with the projections in the disengaged position of the bar, the notches allowing the bar to pass over the heads of the protections at closing of the lid, the bar engaging behind the heads when displaced to the engaged position with the lid closed.

[0005] It is preferred that the bar is spring biased at one end thereof towards the engaged position and projects from the container at the other end thereof in said position.

[0006] An illustrative embodiment of the device of the invention will be described below reference being made to the accompanying drawings.

[0007] In the drawings

Fig. 1 is an exploded perspective view of the device;
Fig. 2 is a horizontal sectional view of the device;
Fig. 3 is an enlargement of the portion indicated by

a dot-and-dash ring in Fig. 3;

Figs 4 and 5 are fragmentary plan views of the projections and the bar in the engaged and disengaged position, respectively of the bar;

Fig. 6 is a side view of a projection with the bar shown in cross section in the disengaged position; and

Fig. 7 is a view corresponding to Fig 6 with the bar in the engaged position.

[0008] The anti-heft device comprises a parallelepipedic container including a lower-part 1 and a lid 2 which is connected with the lower part 1 by means of hinges 3 at one longitudinal wall of the container. On the inside surface of the longitudinal wall of the lower-part opposite to the hinges a row of uniformly spaced vertical ribs 4 are provided which project from the upper edge of the wall and at the upper end form heads 5. A lock bar 6 having round or polygonal cross section is mounted for axial displacement in ribs 7 formed on the inside surface of the wall of the lid which is opposite to the hinges. The lower part and the lid can be injection molded elements of suitable plastics, and the ribs 4 and 7 are integral with the respective elements. Means are provided preventing the bar from rotation but allow axial displacement thereof, such as a fixed pin slidably engaging an axial groove in the bar.

[0009] The lock bar is biased to the right as seen in Figs 1 and 2 by a helical spring 8 at the left end of the bar. In a right end position the right end of the bar projects from the lid so that the bar can be pushed manually to a left end position against the bias of the spring. A spring blade 9 of a steel that allows the spring blade to be attracted by a magnet is mounted to the lid and projects towards the bar engaging the surface thereof. A notch 10 is formed in the bar, and the spring blade engages this notch in the left end position of the bar and prevents displacement of the bar to the right end position. The bar forms a number of notches 11 which have the same spacing as the ribs 4 and are dimensioned to allow the heads 5 to pass through the notches.

[0010] When the lid is open and the bar is in the right end position the lid can be closed and during closing the heads 5 of the projections pass through the notches 11, figs 4 and 6. Then, when the lid has been closed the bar 6 is pushed manually to the left at the projecting end of the bar against the bias of the spring 8, and the spring blade 9 engages the notch 10 and latches the bar in this position in which the notches 11 are offset from the heads and the bar engages behind the heads and thus locks the lid against opening thereof. As will be understood the right end position of the bar is the disengaged position of the bar and the left end position is the engaged position of the bar.

[0011] The bar 6 when it is in the engaged position can be released by means of a magnetic field indicated at 12, which is generated by means of an external permanent magnet or electromagnet. By the magnetic field

the spring blade 9 is attracted out of engagement with the notch 10, so that the bar will be free to move to the right to the disengaged position under the bias of the spring 8. The lid can then be opened.

[0012] The container is provided with means (not shown) for triggering an alarm as is well known in the art. 5

[0013] Instead of a magnet a mechanical device can be provided as a special tool for bringing the spring blade 9 to the disengaged position.

[0014] In a modified embodiment the lock can be reversed so that the bar 7 is mounted in the lower-part and the heads 5 are provided on the lid. 10

Claims

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1. Anti-theft device for objects to be protected against theft, comprising a container intended to receive the object or objects and including a container lower-part (1), a lid (2), a lock (5, 6) between the lower-part and the lid and means on the container for triggering an alarm, the lock including a lock slide (6) on one of the lower-part and the lid displaceable between an engaged position in which it locks the lid to the lower-part, and a disengaged position in which it allows the lid to be opened, and a spring tongue (9) which protrudes against the slide and latches the slide in the engaged position but can be withdrawn from the slide by means of a special tool associated with the anti-theft device, to allow the slide to be displaced to the disengaged position unlocking the lid, **characterised in that** a row of mutually spaced projections (4) are provided on the other one of the lower-part and the lid and form each a head at a free end thereof, and that the lock slide comprises a bar (6) with round or polygonal cross section mounted for axial displacement, said bar forming a number of notches (11) distributed along the bar with the same spacing as the projections and positioned in register with the projections in the disengaged position of the bar, the notches allowing the bar to pass over the heads of the projections at closing of the lid, the bar engaging behind the heads when displaced to the engaged position with the lid closed. 20 25 30 35 40 45
2. Device according to claim 1 **characterised in that** the bar (6) is spring biased at one end thereof towards the engaged position. 50
3. Device according to claim 2 **characterised in that** the bar (6) projects from the container (1,2) at the other end thereof in the engaged position. 55

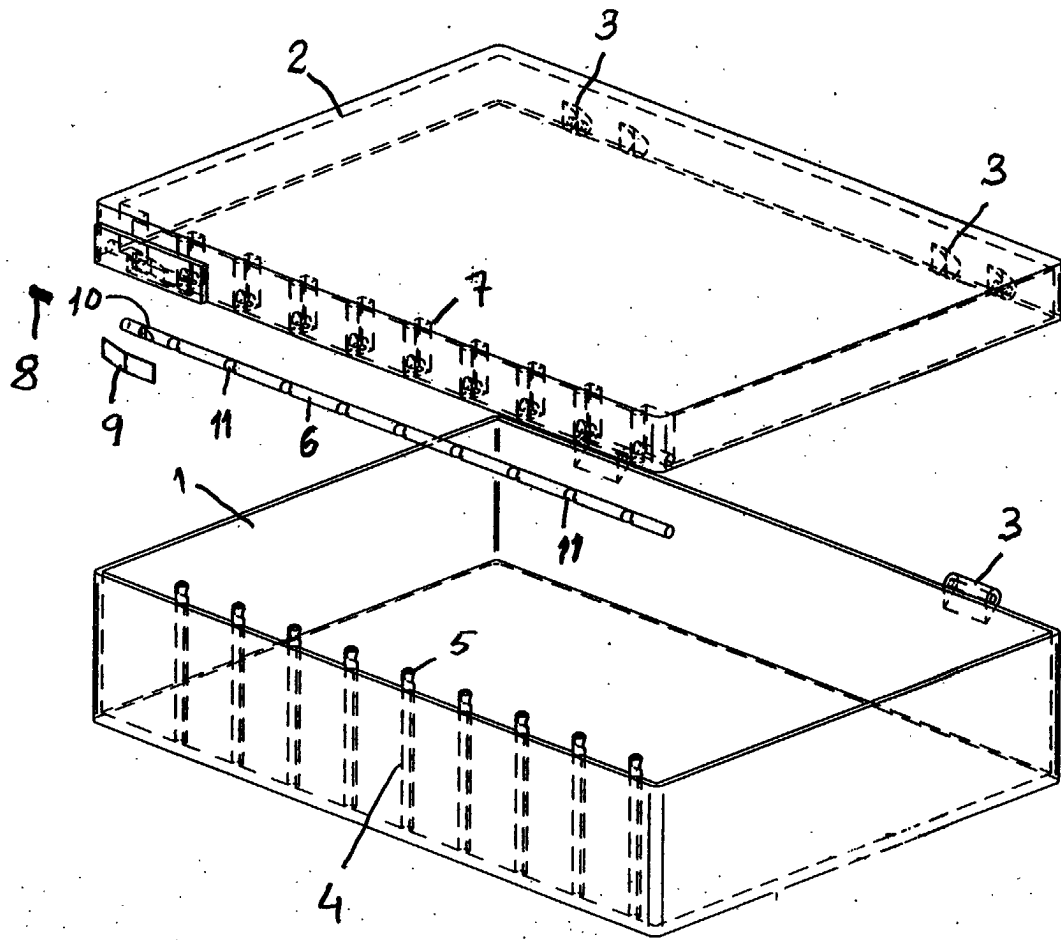
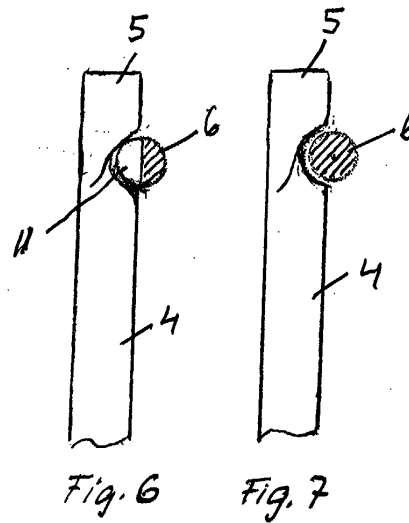
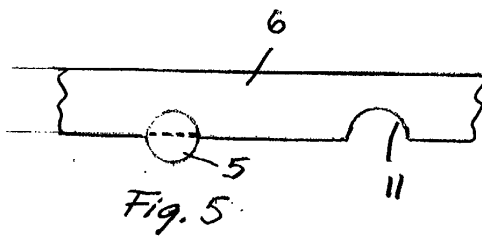
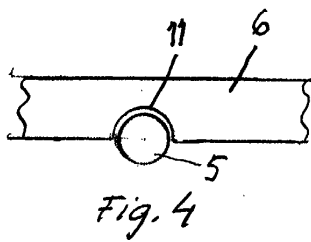
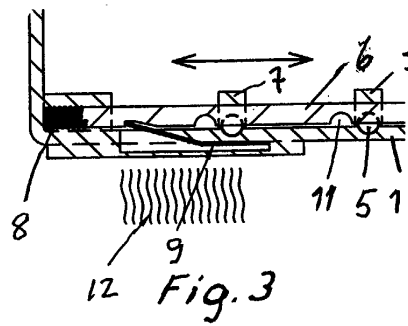
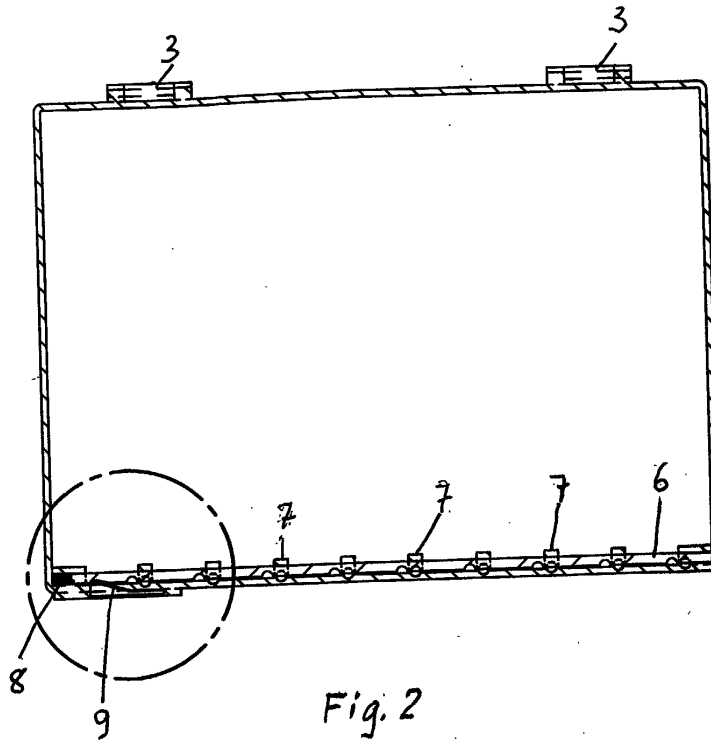


Fig. 1





European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 02 00 3248

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			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
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The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 3 July 2002	Examiner Friedrich, A
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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**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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