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(54) An anti-theft element particularly for the doors of motor vehicles

(57) An anti-theft element (18) for the doors of motor vehicles, fitted to the lower edge of the lowerable windows 5 (dropping-glass or partially dropping windows) of the doors (1) of a motor vehicle, operable to prevent the insertion between the window and the outer skin (3) of the door of a break-in tool shaped so as to act on the members of the lock so as to open it; the anti-theft element (18) including an elongate fin (19) integrally joined by a sufficient length to a support element (22) so as to project therefrom, the support element being operable to fix the fin (19) to the window (5); the support element (22) being made of a section, U-shaped or otherwise, irremovably fixed by gluing (or other method) around the lower edge (20) of the window; in use, the fin (19) is positioned along the lower edge (20) of the window (5) and extends laterally, outwardly of the window, ending in a free edge (23) which, when the window is fully raised, is positioned beneath the upper portion of the outer skin (3); the anti-theft element (18) may be made of metal or of rigid plastics, resistant to flexing; the element (18) offers more effective protection against attempts to break in and enables current specific protection elements to be removed from components of the lock and/or various pull rods and levers, these prior art elements being easier to avoid with break-in tools; mounting the element is simpler and faster, even on different types of motor vehicle.

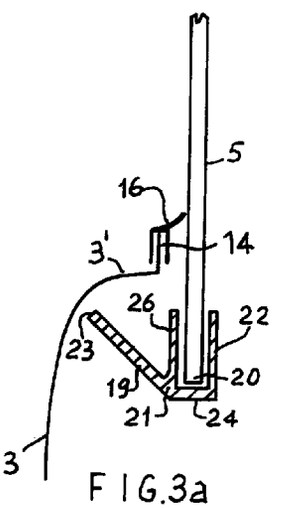

FIG.3a

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Description

The present invention relates to an anti-theft element particularly for the doors of a motor vehicle, and in this instance to an element for protection against attempts to force the locks of the doors.

One of the most commonly used methods of breaking into a motor vehicle consists in inserting between the outer glass-scraper seal and the lowerable, side dropping-glass window in the door a specially shaped tool A (Figure 1) operable to reach and act on the movable elements of the locks, such as pull rods, levers and the like, arranged inside the inner panel of the doors.

Until now, in order to protect the locks and associated pull rods and levers, known small special protective elements T shaped like tiles were used, mounted in specific positions on inner ribs N inside the door; however, these tiles T were not sufficient fully to protect the locks and associated movable parts (schematically illustrated with a broken line in Figure 1) from the aforesaid break-in tools A, inserted between the glass and the glass-scraper seal, which was sometimes removed.

The object of the present invention is therefore to provide an anti-theft element particularly for the locks of the doors of a motor vehicle, which is of simple construction and easy to fit and provides effective protection for the components of the locks, such as pull rods and levers, and constitutes an effective barrier to the insertion of break-in tools, making it possible to eliminate current protection.

According to the specified object, the invention provides an anti-theft element, in particular for the doors of a motor vehicle, which includes means for protecting the locks of the doors, operable to prevent any insertion from the outside of break-in tools used to act on the locks,
characterised in that the protection means are constituted by an elongate fin, integrally joined to a support element so as to project from one longitudinal edge thereof, this element being designed to be fixed to the lower edge of a lowerable window in such a way that, when the window is fully raised the fin extends laterally so that a free end thereof is adjacent, in particular just beneath, an upper portion of the outer skin of the door.

A detailed description follows of a preferred embodiment of the invention, provided purely by way of non-limitative example, with reference to the Figures in the appended drawings, of which:

Figure 1 is a schematic view of a motor vehicle door, fitted with prior art lock-protection elements;
Figure 2 is a schematic view of a section of a door of a motor vehicle fitted with an anti-theft element according to the present invention;
Figure 3 illustrates some of the possible embodiments of the anti-theft element of Figure 2.

With reference to the drawings, a door of a motor vehicle is indicated 1, constituted by an inner panel 2 and an outer metal skin 3, defining between them an internal cavity 4 in which a dropping-glass window pane S is vertically slidable on guides 6, under the action of a known raising device schematically indicated 7; the cavity 4 also houses opening/closing members, constituted by a lock 9, connected by pull rods 10 to an inside handle 11 and to an outside handle 12, set into a hollow in the outer metal panel 3.

The outer door panel ends at the top with a portion 3' curved towards the window pane 5, delimited by a folded metal edge 14 on which a glass-scraper seal 16 is mounted, resiliently pressed against the outer surface of the pane 5.

According to the invention, an anti-theft element 18, for fixing to the window pane 5 near a lower edge 20 of the pane itself 5, is provided to protect the lock 9 and the movable components associated with it, such as the pull rods 10. The anti-theft element 18 is constituted by an elongate fin 19, in this case flat (but which could also be curved), integrally joined to a support element 22 so as to project from a longitudinal edge thereof, this element 22 being designed to be irremovably fixed to the pane 5 and constituted by a section substantially the sane length as the fin 19.

In use, the fin 19 is arranged along the lower edge 20 of the pane 5 and projects laterally from the outward side in relation to the pane 5, ending in an edge 23 which, when the window pane is fully raised, is adjacent the outer door skin 3, being more specifically immediately beneath the top portion 3' of the outer skin 3 of the door; the fin 19 and the support element 22, which are substantially the same length, extend for the full length of the lower edge of the window pane 5 or, at least, for the greater portion thereof; in this way, the anti-break in element 18 of the invention effectively prevents any break-in tool from being inserted between the glass-scraper seal 16 and the pane 5, since the outer edge of the fin 19 is adjacent the outer panel 3 of the door, and always beneath the upper portion 3' which curves towards the pane 5 so that, viewed in plan from above, it overlaps this latter, thereby blocking any passage from the outside.

The support element 22 and the fin 19 may be made of metal, for example thin steel plate, or of rigid, high strength plastics material.

The section of the support element 22 can be of various shapes, in accordance with the need to fit it on different models of motor vehicle; in a first, preferred embodiment (Figure 3a), the support element 22 is U-shape in section and the fin 19 is joined to the element 22 at the horizontal portion 24, for example by gluing or welding (by ultrasound or hot blade, for example); in another embodiment (Figure 3b), the fin 19 is joined to the lower end of an extension 25 of a lateral arm 26 of the support 22, so that it is always located a predetermined distance beneath the lower edge 20 of the pane 5; in both these embodiments, the support element 22

is mounted around the lower edge 20 of the pane $ and, as specified, glued, for example to the pane 5 by a known method.

Figure 3c shows a further variant of the anti-theft element, according to the present invention, in which the support element 22 is constituted by a length of elongate metal strip 27, to which the fin 19 is joined along a longitudinal edge 28; in use, the metal strip 27 is fixed to the side of the window pane 5, on its external surface, adjacent the lower edge 20; the strip 27 has laterally projecting pins 29 for engagement in through-holes 30 formed near the lower edge 20; the pins 29 can be fixed to the pane 5 by any known method, for example by means of clips 31 with radial, resilient retaining arms 32.

The fin 19 is connected to the support element 22 so as to form with the arm 26 (Figures 3a, 3b) or with the metal strip 27 (Figure 3c), and thus also with the pane 5 when mounted for use, an angle no greater than 90E. However, under certain conditions, a wider angle may prove necessary and effective.

Claims

1. An anti-theft element (18), in particular for locks (9) in the doors (1) of a motor vehicle, which include means (19,22) for protecting the said locks (9), acting to prevent the introduction from outside of break-in tools designed to act on the said locks (9), characterised in that the said protection means (19,22) are constituted by an elongate fin (19) integrally joined to a support element (22) so as to project from a longitudinal edge (21) thereof, this support element 22 being fixable to a lower edge (20) of a lowerable window pane 5 in such a way that, when the pane (5) is fully raised, the said fin (19) projects laterally from the pane towards the outer skin(3) of the door (1), ending in a free portion (23) adjacent an upper portion (3') of the outer skin (3) of the door (1).

2. An anti-theft element according to Claim 1, characterised in that the said free end (23) of the said fin (19) extends, when the said window is fully raised, beneath the said upper portion (3') of the outer skin (3) of the door, which is curved towards the pane (5) so that, viewed in plan from above, the said free end (23) of the fin (19) overlaps the said upper portion (3') of the skin (3).

3. An anti-theft element according to Claim 1 or Claim 2, characterised in that the said support element (22) is constituted by a section, substantially the same length as the fin (19), having a U-shaped cross section and being securely fixable, for example by gluing, to the said lower edge (20), the said fin (19) being joined to the said support (22) at a horizontal portion thereof.

4. An anti-theft element according to Claim 1 or Claim 2, characterised in that the said support element (22) is constituted by a metal strip (27) of a length substantially the same as that of the fin (19) and fixable laterally to the said window pane (5) by means of fixing pins (29) engaging through-holes (30) in the said pane (5).

5. An anti-theft element according to any one of the preceding Claims, characterised in that, in use, the said fin (19) forms an angle substantially less than 90E with the said pane (5).

6. An anti-theft element according to any one of the preceding Claims, characterised in that the said fin (19) and the said support element (22) are made of sheet metal or high-strength plastics material.

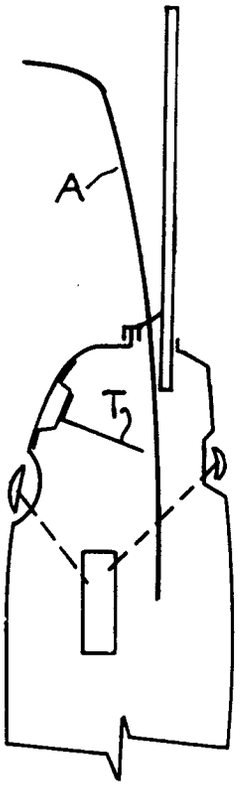

FIG.1

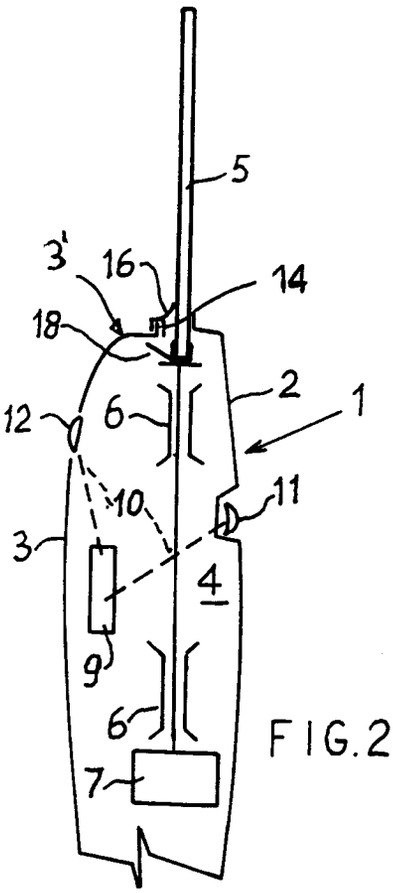

FIG.2

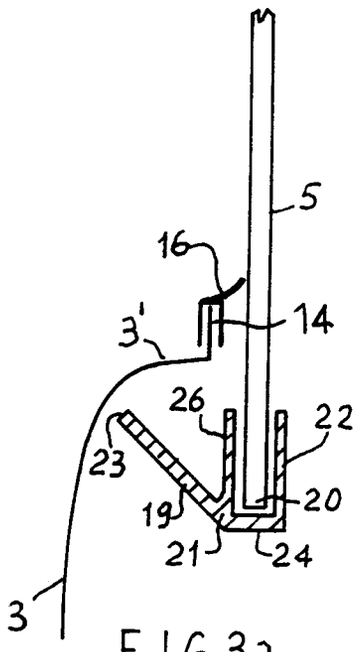

FIG.3a

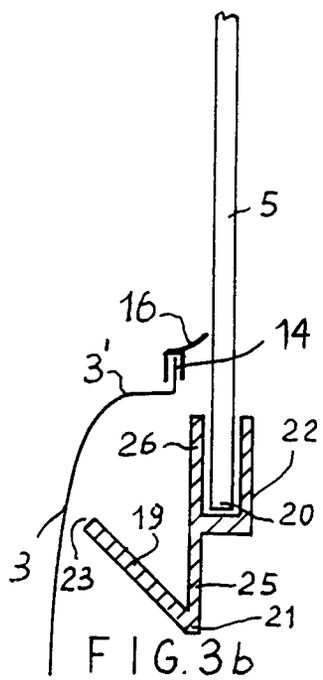

FIG.3b

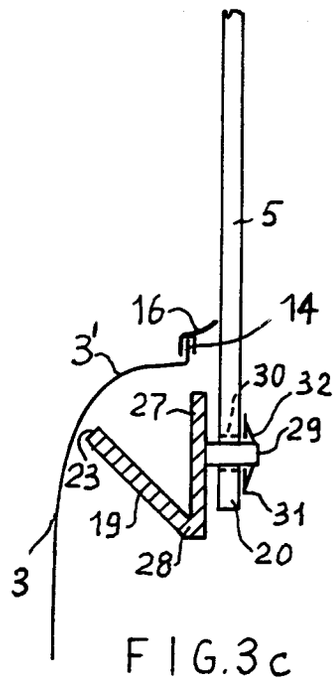

FIG.3c

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EUROPEAN SEARCH REPORT

Application Number
EP 98 11 3807

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	EP 0 486 163 A (DRAFTEX INDUSTRIES LIMITED) 20 May 1992 * column 6, line 17 - column 7, line 25; figures 4-6 *	1-3,5,6	E05B17/20
X	US 4 628 300 A (LOUIS AMATO) 9 December 1986	1,4,6	
A	* column 2, line 64 - column 5, line 60; figures *	2	
X	DE 41 24 505 A (MERCEDES-BENZ AKTIENGESELLSCHAFT) 15 October 1992	1-3	
A	* column 2, line 42 - column 3, line 56; figures *	5	

TECHNICAL FIELDS SEARCHED (Int.Cl.6)
E05B B60J B60R

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
MUNICH	17 November 1998	Vacca, R

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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