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(54) **STRIKE PLATE WITH SIMPLIFIED ASSEMBLY FOR DOORS AND HATCHES OF MOTOR VEHICLES SUCH AS VANS, CARAVANS, MOTOR CARAVANS AND SIMILAR**

(57) A simplified assembly plate for doors and hatches of motor vehicles, such as vans, caravans, motor homes and the like. The plate can be fastened with only one screw, or similar fastening means, arranged in a position hidden from sight when the plate is in place. The plate is adapted to allow a rapid positioning and a rapid installation on the frame of the wall accommodating a door or a hatch.

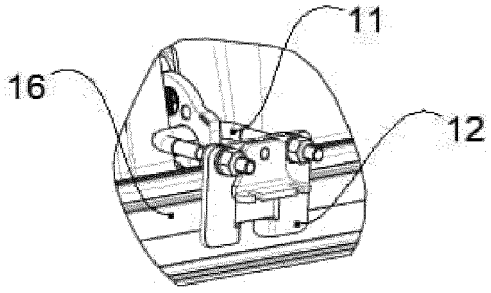

Fig. 1

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Description

FIELD OF THE INVENTION

[0001] The present invention relates to the field of safety locks and closing devices for doors and hatches, in further detail, the present invention relates to the technical field of closing devices and locks for doors, tailgates and hatches, in particular for motor vehicles, such as vans, caravans, motor homes and the like.

BACKGROUND ART

[0002] In the field of safety locks and closing devices for doors and hatches, lock blocks and blocks containing the strike plate of the lock that is adapted to engage with the block leverage of a lock are available on the market.

[0003] The lock block and the corresponding block containing the strike plate adapted to engage with the block leverage must be fastened to the door and to the frame, respectively, the latter being fastened to the wall accommodating the door.

[0004] In the case of vans, caravans, motorhomes and the like, both the door and the wall accommodating the door are often made by means of composite-material panels, comprising two outer sheets, which are rigid, but made of a relatively lightweight material, such as aluminum, for example (on the outer side of the door) and wood (on the inner side of the door), and a thick inner layer of lightweight insulating material, such as polystyrene, for example.

[0005] Thermally insulating and lightweight materials are used to increase the thermal insulation of the passenger compartment inside the vehicle with respect to the outside while simultaneously limiting the weight of the vehicle itself.

[0006] The frame fastened to the wall accommodating the door is made by means of a metal section bar, which is also exploited to offer a solid anchoring to the block containing the plate. To provide the necessary stability, it is usually chosen to provide the plate with an anchoring header adapted to be fastened to the aforesaid frame by means of screws.

[0007] The plate is generally fastened by means of a plurality of holes made on the frame, on the part covering the thickness of the composite panel of the wall and by means of using a plurality of screws, which tighten on the plate on crossing said holes.

[0008] This type of fastening is laborious and time-consuming. Furthermore, it involves the perforation of the frame and the use of different screws, which are visible and anti-esthetic.

[0009] Therefore, it is an object of the present patent application to introduce a simplified assembly plate for doors of motor vehicles, such as vans, caravans, motorhomes and the like.

[0010] The plate according to the invention is adapted to allow the door to be quickly and efficiently fastened to the frame, minimizing the number of screws - or similar fastening means - used, allowing the fastening without needing to make holes on the frame.

BRIEF DESCRIPTION OF THE INVENTION

[0011] The invention achieves the predetermined object with a strike plate provided with an assembly header adapted to easily engage with the frame of the door, which is fastened to a wall of a van, a caravan, a motor home or similar vehicles, at the opening accommodating a door or a hatch.

[0012] The assembly header of the plate according to the invention is made of a rigid and resistant material, preferably of metal, and comprises at least one tongue, preferably a first and a second tongue, which is inclined or which are both inclined with respect to the lying plane of the header and which is, or which are provided with a tooth adapted to engage with the profile of the aforesaid frame in the zone covering the thickness of the wall.

[0013] The header also comprises a further tongue, preferably oriented so as to be substantially orthogonal to the lying plane of the header and provided with at least one slot - or with at least one hole - for fastening, for example by means of a screw, to the profile of the aforesaid frame of the door in the zone corresponding to the panel of the wall.

[0014] The application of the plate according to the invention provides the positioning of the header of the plate on the profile of the frame of the door, which is aligned with the corresponding lock block mounted onto the door, so that said tongue or said first tongue and said second tongue engage with the profile of the aforesaid frame. Then, said header is tightened to the frame by means of a screw, or similar fastening means, inserted into the at least one slot of said further tongue and is preferably tightened in the seat usually present on the frame and normally intended to accommodate the screws needed to lock the frame to the wall of the caravan, van, motor home or the like.

[0015] Said further tongue can preferably rest against an adaptor, usually made of a plastic material, which serves as a connection between the frame and the panel of the plate.

[0016] Advantageously, in a preferred embodiment, the plate according to the invention can be reversibly fastened to the header thereof. For example, the ends of the metal "U" forming the plate can be threaded and provided with a stop so as to engage the header and then be locked using nuts. This gives further flexibility and convenience for installation.

[0017] Advantageously, the plate can be provided with a further bracket, preferably an "L"-shaped bracket, of which one side is locked to the header of the plate by means of a screw or other similar fastening means, and the other side, fastened to the wall of the caravan, van, motor home or similar in order to give greater stability and resistance to the whole striking plate.

[0018] The plate according to the present description is thus easy to install and can avoid the described drawbacks associated with the plates currently in use.

BRIEF DESCRIPTION OF THE FIGURES

[0019] Further objects, features and advantages of the present invention will be more apparent from the following detailed description provided by way of non-limiting example and illustrated in the accompanying figures, in which:

Fig. 1 illustrates a perspective view of a preferred embodiment of the plate according to the present description;
Fig. 2 illustrates a front view of a preferred embodiment of the plate according to the present description;
Fig. 3 illustrates a sectional view of a preferred embodiment of the plate according to the present description;
Fig. 4 illustrates a detail of a sectional view of a preferred embodiment of the plate according to the present description;
Fig. 5 illustrates an exploded view of a preferred embodiment of the plate according to the present description;
Fig. 6 illustrates an exploded view of another preferred embodiment of the plate according to the present description;
Fig. 7 illustrates a side view of a preferred embodiment of the plate according to the present description;
Fig. 8 illustrates a front view of a preferred embodiment of the plate according to the present description;
Fig. 9 illustrates a sectional view of a preferred embodiment of the plate according to the present description;
Fig. 10 illustrates a sectional view of a preferred embodiment of the profile of a typical frame for doors of caravans, vans, motor homes or similar, and
Fig. 11 illustrates a sectional view of a preferred embodiment of the plate according to the present description.

[0020] The following description of exemplary embodiments relates to the accompanying drawings. The same reference numerals in various drawings identify the same elements or similar elements. The following detailed description does not limit the invention. The scope of the invention is defined by the accompanying claims.

DETAILED DESCRIPTION OF THE INVENTION

[0021] In reference to the accompanying figures, the plate 10 according to the present description comprises a main body 11 and an assembly header 12.

[0022] The header base 12 of the plate 10 according to the invention is adapted to engage with the frame 16, which is fastened to a wall of a van, a caravan, a motor home or similar vehicles, at the opening accommodating a door or a hatch. Said assembly header 12 is made of a rigid and resistant material, preferably of metal, and comprises at least one tongue, preferably a first tongue 13 and a second tongue 14, which is inclined or which are both inclined with respect to the lying plane of the header 12 and which is, or which are both provided with a tooth 15 adapted to engage with the profile of the aforesaid frame of the wall, in the zone corresponding to the thickness of the wall. Said tooth 15 can also be obtained from a further component applied to the header 12 e.g. it can be made from the head of a screw, which is partially screwed to the same header 12.

[0023] The assembly header 12 also comprises a further tongue 17, which is preferably oriented so as to be substantially orthogonal to the lying plane of the header 12, and provided with at least one slot 19 or with at least one hole for fastening by means of a screw, for example, which preferably engages in the seat 20, which is usually intended for the screws locking the brackets used for fastening the frame 16 to the vehicle wall. In a preferred embodiment of the invention, said further tongue 17 is resting on an adaptor 21, preferably made of a plastic material, which serves as a connection element between the frame 16 and the assembly header 12.

[0024] Advantageously, in a preferred, detailed embodiment in the illustration of the accompanying Fig. 5, the plate 10 can be provided with a further bracket 22, preferably made by means of an "L"-shaped bracket, of which one side is configured to be locked to the header of the plate 10 by means of a screw or other similar fastening means and the other side is configured to be fastened to the wall in order to give greater stability and resistance to the whole strike plate 10.

[0025] The main body 11 of the plate 10 preferably comprises a "U" made of a metal material, which is integral with the header 12 and adapted to engage with the block leverage of the corresponding lock, fastened to the door. Said block leverage will be provided with a hook, which will be actuated to lock the door in order to engage with said main body of the plate.

[0026] In other embodiments, the main body 11 of the plate 10 can comprise, instead of, or in addition to said "U" made of a metal material, other accessories, such as a coupling pin, for example for a gas shock-absorber, or a support for a door stop.

[0027] In a preferred embodiment of the invention, said "U" made of a metal material is removably joined to the header 12 of the plate. To this end, the ends of the "U" can be threaded and provided with a stop so as to engage with the assembly header 12 and then be locked using nuts 18.

[0028] The metal materials used for making the plate according to the invention are preferably iron superficially treated with galvanization or cataphoresis, and the main

body of the plate is preferably coated with a plastic material in order to reduce the noise caused by the closing of the door.

[0029] The assembly of the plate 10 according to the invention is very simple. The assembly header 12 of the plate 10 is initially placed on the profile of the frame 16, in the position aligned with the corresponding lock block, mounted on the door, so that said at least one tongue or said first tongue 13 and said second tongue 14 engage with the profile of said frame 16. Then, said header 12 is tightened to the frame 16 by means of a screw, or similar fastening means, which is inserted into the slot 19 of said further tongue 17 and it is fastened in the seat 20 of the frame 16 on the side covering the end of the panel of the wall when put in place.

[0030] Thereby, the plate is fastened to the frame 16 and the main body 11 of the plate 12, preferably made with a "U" made of a metal material, is positioned so as to form the counterparty of a corresponding lock mounted to the door of said wall and provide the necessary means for engaging with the block leverage of said lock.

Claims

1. A strike plate (10) for locks adapted to be applied to a frame (16) associated with an opening of a wall adapted to accommodate a door, said plate (10) comprising a header (12) in turn comprising a tongue, which is inclined with respect to the lying plane of the header (12) and provided with a tooth (15) adapted to engage with the profile of said frame (16) and a further tongue (17), provided with at least one slot (19) or at least one hole for fastening to the profile of said frame (16).

2. A strike plate (10) according to the preceding claim, **characterized in that** said at least one tongue comprises a first tongue (13) and a second tongue (14), both inclined with respect to the lying plane of the header (12) and both provided with a tooth (15) adapted to engage with the profile of said frame (16).

3. A strike plate (10) according to one or more of the preceding claims, **characterized in that** it comprises an adaptor (21), which serves to join said frame (16) to the header (12) and provide said further tongue (17) with a support.

4. A strike plate (10) according to one or more of the preceding claims, **characterized in that** said tooth (15) is made of a further component applied to the header (12).

5. A strike plate (10) according to one or more of the preceding claims, **characterized in that** it comprises a further bracket (22), of which one side is configured to be locked to the header (12) of the plate (10) and the other side is configured to be fastened to the wall in order to give greater stability and resistance to the whole strike plate (10).

6. A strike plate (10) according to the preceding claim, **characterized in that** it is made by means of an "L"-shaped bracket.

7. A strike plate (10) according to one or more of the preceding claims, **characterized in that** the main body (11) of the plate (10) comprises a "U" made of a metal material, which is integral with the header (12) and adapted to engage with the block leverage of the lock.

8. A strike plate (10) according to the preceding claim, **characterized in that** said "U" made of a metal material is removably joined to the header 12 of the plate.

9. A strike plate (10) according to one or more of claims 7 to 8, **characterized in that** the ends of said "U" made of a metal material are threaded and provided with a stop so as to engage with the assembly header (12) and then be locked using nuts (18).

10. A strike plate (10) according to one or more of the preceding claims, **characterized in that** it is made of iron, superficially treated with galvanization or cataphoresis.

11. A strike plate (10) according to one or more of claims 7 to 10, **characterized in that** the main body (11) of the plate (10) is coated with a plastic material to reduce the noise caused by the closing of the door.

12. A strike plate (10) according to one or more of the preceding claims, **characterized in that** the main body (11) comprises a coupling pin for a gas damper, or a support for a doorstop.

13. A strike plate (10) according to one or more of the preceding claims, **characterized in that** said at least one slot (19) or at least one hole are adapted to engage with screws or rivets to provide the fastening to the profile of said frame (16).

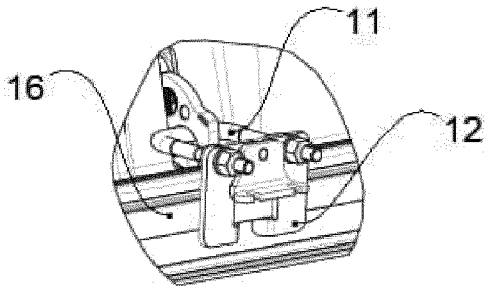

Fig. 1

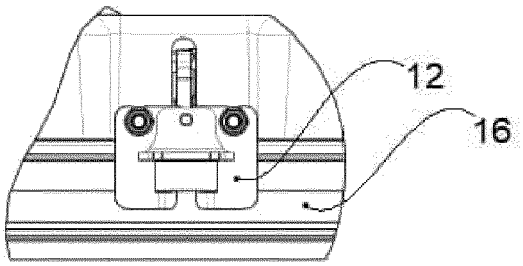

Fig. 2

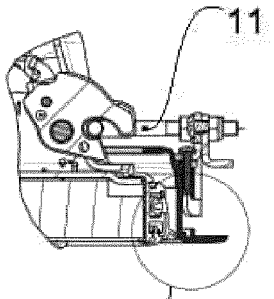

Fig. 3

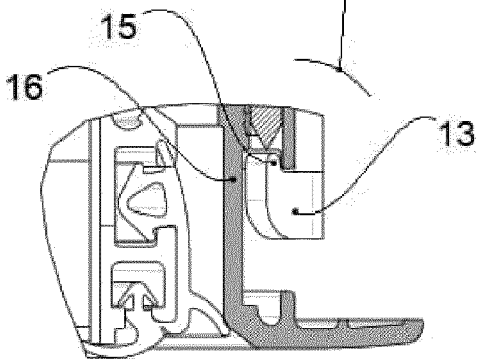

Fig. 4

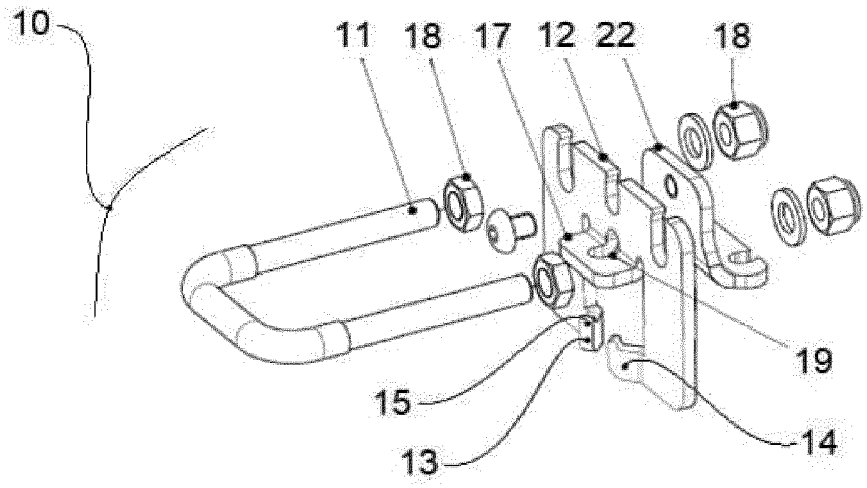

Fig. 5

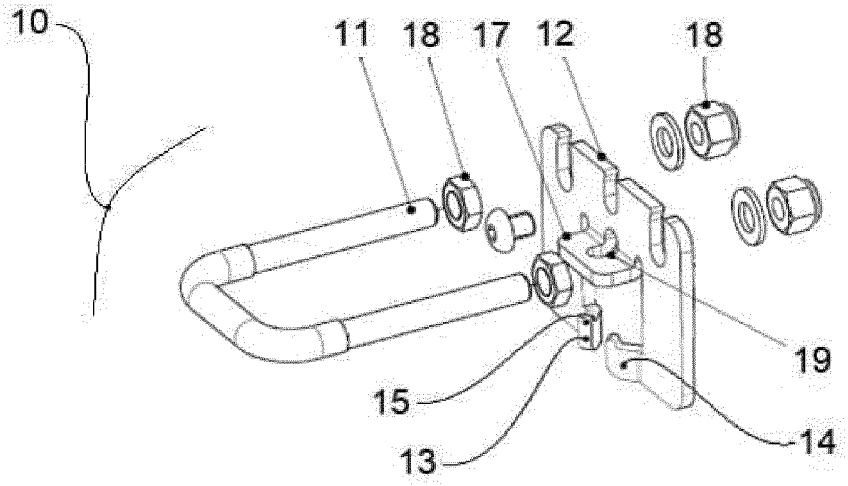

Fig. 6

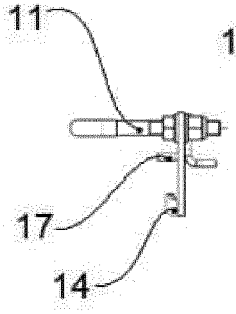

Fig. 7

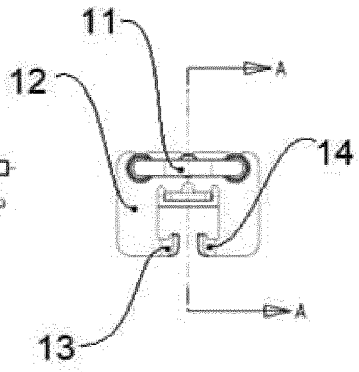

Fig. 8

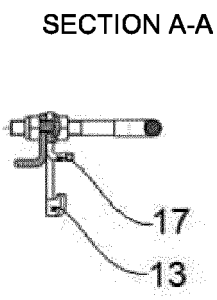

Fig. 9

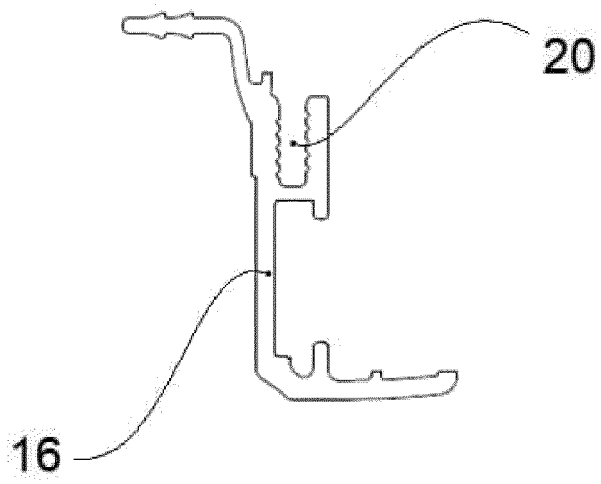

Fig. 10

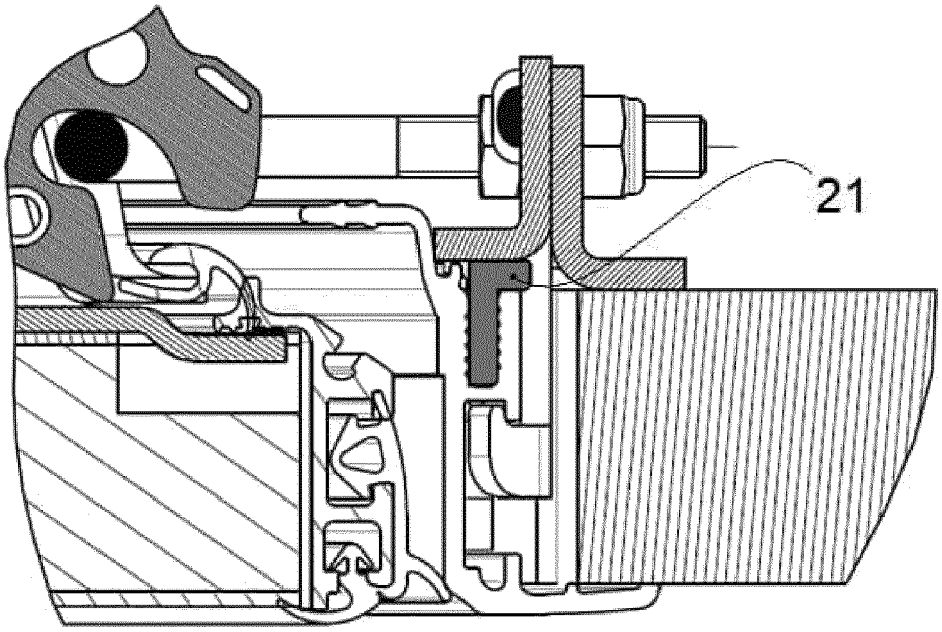

Fig. 11

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EUROPEAN SEARCH REPORT

Application Number
EP 24 16 2435

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	EP 3 061 894 A1 (FAP S R L [IT]) 31 August 2016 (2016-08-31) * the whole document *	1-13	INV. E05B85/04 E05B15/02 E05B83/44
A	KR 101 915 250 B1 (DUAL MECH CO LTD [KR]) 5 November 2018 (2018-11-05) * the whole document *	1	
A	DE 10 2013 013937 B3 (AUDI AG [DE]) 26 February 2015 (2015-02-26) * the whole document *	1	
A	DE 10 2010 049567 A1 (HAPPICH GMBH GEBR [DE]) 26 April 2012 (2012-04-26) * the whole document *	1	

TECHNICAL FIELDS SEARCHED (IPC)

E05B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	13 May 2024	Westin, Kenneth

CATEGORY OF CITED DOCUMENTS

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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KR 101915250 B1	05-11-2018	NONE	
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