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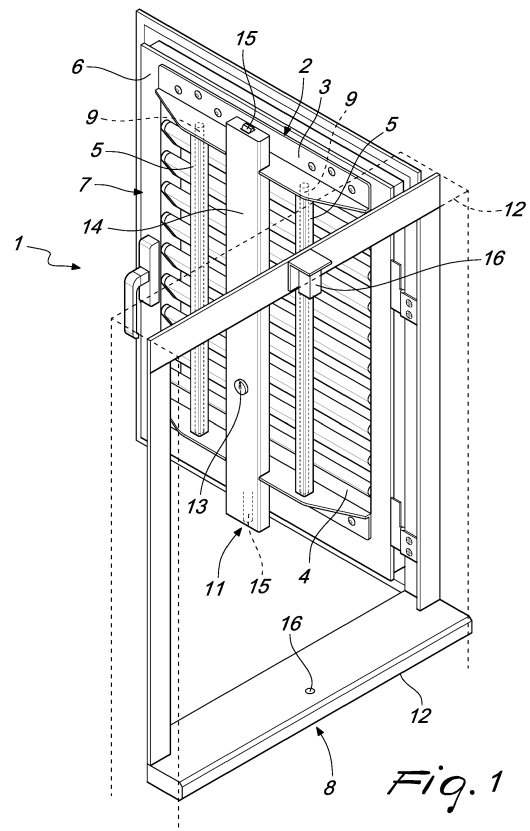
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(54) **SECURITY DEVICE, PARTICULARLY FOR EXTERNAL OR INTERNAL DOORS OR WINDOWS AND THE LIKE**

(57) A security device (1), particularly for external or internal doors or windows and the like, which comprises a supporting frame (2) that can be associated with an opening (8) to be secured and is provided at least partially by a plurality of hollow bars (5) which accommodate with play inside them bars having a circular cross-section (9); in this way, the free rotation is allowed of each bar having a circular cross-section (9) about its own longitudinal axis (10), with respect to the respective hollow bar (5) that it accommodates.



Description

[0001] The present invention relates to a security device, particularly for external or internal doors or windows and the like.

[0002] Nowadays, numberless security devices are known which are adapted to prevent break-ins to areas that are private or which are in any case protected from unauthorized persons.

[0003] Such conventional security devices consist substantially of gratings that can be installed on the opening that it is desired to make secure, parallel to the door or window that closes the opening, if there is one.

[0004] For example, the latter is the case when making secure a window provided with a shutter, where the grating is generally installed between the shutter and the walled frame of the window.

[0005] In this specific case, the installation of the grating can involve fixing, to the walls that delimit the window, a counter frame that is provided with one or more openable leaves or with a bellows structure.

[0006] From the foregoing description it is evident that such solution occupies uninterrupted part of the opening afforded by the window, in so doing reducing the effective area of the opening, and thus presenting a cumbersome element in the daily use of the window, as well as being unattractive.

[0007] Moreover, such conventional security devices are not devoid of other drawbacks, including the fact that they can be easily forced.

[0008] In fact, it is sufficient to have a hacksaw in order to cut through one or more bars of the grating and create an opening sufficiently large for a person to pass through.

[0009] The aim of the present invention is to provide a security device, particularly for external or internal doors or windows and the like, which overcomes the above mentioned drawbacks.

[0010] Within this aim, an object of the present invention is to provide a security device that, owing to its peculiar implementation characteristics, is capable of offering the widest guarantees of reliability.

[0011] Another object of the invention is to provide a security device in which materials are used that are easily sourced on the market and which therefore is easy to implement and thus economically competitive when compared to conventional security devices.

[0012] This aim and these and other objects which will become better apparent hereinafter are achieved by a security device, particularly for external or internal doors or windows and the like, characterized in that it comprises a supporting frame that can be associated with an opening to be secured and is provided at least partially by a plurality of hollow bars which accommodate with play inside them bars having a circular cross-section, so as to allow the free rotation of each one of said bars having a circular cross-section about its own longitudinal axis with respect to the respective one of said hollow bars that accommodates said bar having a circular cross-section.

[0013] Further characteristics and advantages of the invention will become better apparent from the detailed description of a preferred, but not exclusive, embodiment of a security device, particularly for external or internal doors or windows and the like, according to the invention, which is illustrated by way of non-limiting example in the accompanying drawings, wherein:

Figure 1 is a perspective view of the security device, according to the present invention, removed from the opening on which it is applied;

Figure 2 is a perspective view of the security device shown in Figure 1 in its operational configuration;

Figure 3 is a front elevation view of the security device shown in figures 1 and 2, in its operational configuration;

Figure 4 is a front elevation view of the security device shown in the figures 1-3, in its non-operational configuration;

Figure 5 is a schematic view in cross-section of part of the security device shown in figures 1-4, showing an attempt to cut through it.

[0014] With reference to the figures, the security device, particularly for external or internal doors or windows and the like, generally designated by the reference numeral 1, comprises a supporting frame 2, made for example of steel, which comprises an upper crossmember 3 and a lower crossmember 4 which are rigidly mutually interconnected by way of a plurality of hollow bars 5.

[0015] More specifically, the crossmembers 3 and 4 can be associated detachably with a leaf 6 of a door or window 7 installed on an opening 8 to be secured, so as to allow, upon the opening of the leaf 6, the complete removal of the supporting frame 2 from the opening 8.

[0016] According to the invention, bars having a circular cross-section 9 are accommodated inside the hollow bars 5 with play, in such a manner as to allow the free rotation of each bar having a circular cross-section 9 about its own longitudinal axis 10 with respect to the respective hollow bar 5 that accommodates it.

[0017] In this way, as shown in Figure 5, in the event of an attempt to cut through the hollow bars 5, when the blade 20 comes into contact with the bar having a circular cross-section 9, the latter starts rotating about itself owing to the alternating motion of the blade 20, as if it were a bearing, preventing the blade 20 from cutting and, therefore, from creating a gap in the supporting frame 2.

[0018] Advantageously, in order to prevent the extraction of the bars having a circular cross-section 9 along a direction that is coaxial to the hollow bars 5, the latter have blind ends, which are closed by the crossmembers 3 and 4.

[0019] In order to make the security device 1 even more secure, the bars having a circular cross-section 9 are made of a cutting-resistant material such as, for example, hardened or case-hardened steel.

[0020] Moreover, there are selectively activatable

means 11 of engagement of the supporting frame 2 to at least two walls 11 and 12 that delimit the opening 8 in such a manner as to prevent the removal of the supporting frame 2 from the opening 8 when they are activated and to allow the leaf 6 to be opened when they are deactivated.

[0021] In the embodiment proposed, the engagement means 10 comprise a double lock 13 associated with the supporting frame 2 inside a security casing 14 that is integrally fixed to the supporting frame 2.

[0022] As shown in the figures, bolts 15 of the double lock 13 are engageable in respective seats 16 which are associated with the two walls 12 which, in the embodiment proposed, are in fact the threshold and lintel, respectively, of a window.

[0023] Conveniently, the hollow bars 5, the crossmembers 3 and 4 and the security casing 14, which define the supporting frame 2, are mutually welded in such a manner as to define a single supporting structure.

[0024] Operation of the security device 1, particularly for external or internal doors or windows and the like, is clear and evident from the foregoing description.

[0025] In particular, it should be noted that during normal use of the security device 1, it can be completely removed from the opening 8 that it protects, since it is supported by the leaf 6 of the door or window that normally closes the opening 8.

[0026] In the configuration of being made secure, the security device 1 is instead firmly anchored to the masonry walls 12 that delimit the opening 8, and therefore it is undetachable from the opening 8 even in the event that the leaf 6, with which the supporting frame 2 is associated, is forced.

[0027] Moreover, as previously mentioned, in the event of an attempt to cut the bars that constitute the supporting frame 2, for example by way of a hacksaw, the bars having a circular cross-section 9 which are accommodated in the hollow bars 5, and are free to rotate about their own longitudinal axes 10, prevent the cutting blade 20 from getting a grip on them and effecting the cut.

[0028] In practice it has been found that the security device, particularly for external or internal doors or windows and the like, according to the invention, fully achieves the set aim and objects, in that it makes it possible to render an opening or, more generally, a gap, totally secure, being anti-cut and completely detachable as needed.

[0029] Another advantage of the security device, according to the invention, consists in that it is extremely flexible and versatile so as to be capable of being applied to any type of gap, be it a window, a door, a gate or the like.

[0030] The security device, particularly for external or internal doors or windows and the like, thus conceived, is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims.

[0031] Moreover, all the details may be substituted by other, technically equivalent elements.

[0032] In practice the materials employed, and the con-

tingent dimensions and shapes, may be any according to requirements and to the state of the art.

[0033] The disclosures in Italian Patent Application No. AR2014A000019 from which this application claims priority are incorporated herein by reference.

[0034] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

15 Claims

1. A security device (1), particularly for external or internal doors or windows and the like, **characterized in that** it comprises a supporting frame (2) that can be associated with an opening (8) to be secured and is provided at least partially by a plurality of hollow bars (5) which accommodate with play inside them bars (9) having a circular cross-section, so as to allow the free rotation of each one of said bars having a circular cross-section (9) about its own longitudinal axis (10) with respect to the respective one of said hollow bars (5) that accommodates said bar having a circular cross-section (9).
2. The security device (1) according to claim 1, **characterized in that** it comprises selectively activatable means (11) for the engagement of said supporting frame (2) with at least two walls (12) that delimit said opening (8) so as to prevent the removal of said supporting frame (2) from said opening (8) when they are activated.
3. The security device (1) according to claim 2, **characterized in that** said engagement means (11) comprise a double lock (13) associated with said supporting frame (2), the bolts (15) of said double lock (13) being engageable in respective seats (16) associated with said at least two walls (12).
4. The security device (1) according to one or more of the preceding claims, **characterized in that** said supporting frame (2) comprises an upper crossmember (3) and a lower crossmember (4) that are rigidly mutually interconnected by way of said hollow bars (5) and support a security casing (14) that accommodates said double lock (13).
5. The security device (1) according to one or more of the preceding claims, **characterized in that** said crossmembers (3, 4) can be associated detachably with a leaf (6) of a door or window (7) installed on said opening (8) so as to allow, upon the opening of said leaf (6) when said engagement means (11) are

deactivated, the complete removal of said supporting frame (2) from said opening (8).

6. The security device (1) according to one or more of the preceding claims, **characterized in that** said at least two walls (12) are respectively the threshold and the lintel of a window. 5
7. The security device (1) according to one or more of the preceding claims, **characterized in that** said hollow bars (5) have blind ends, which are closed by said crossmembers (3, 4) so as to prevent the extraction of said bars having a circular cross-section (9) along a direction that is coaxial to said hollow bars (5). 10 15
8. The security device (1) according to one or more of the preceding claims, **characterized in that** said supporting frame (2) is made of steel. 20
9. The security device (1) according to one or more of the preceding claims, **characterized in that** said hollow bars (5), said crossmembers (3, 4) and said security casing (14), which define said supporting frame (2), are mutually welded so as to define a single supporting structure. 25
10. The security device (1) according to one or more of the preceding claims, **characterized in that** said bars having a circular cross-section (9) are made of case-hardened or hardened steel. 30

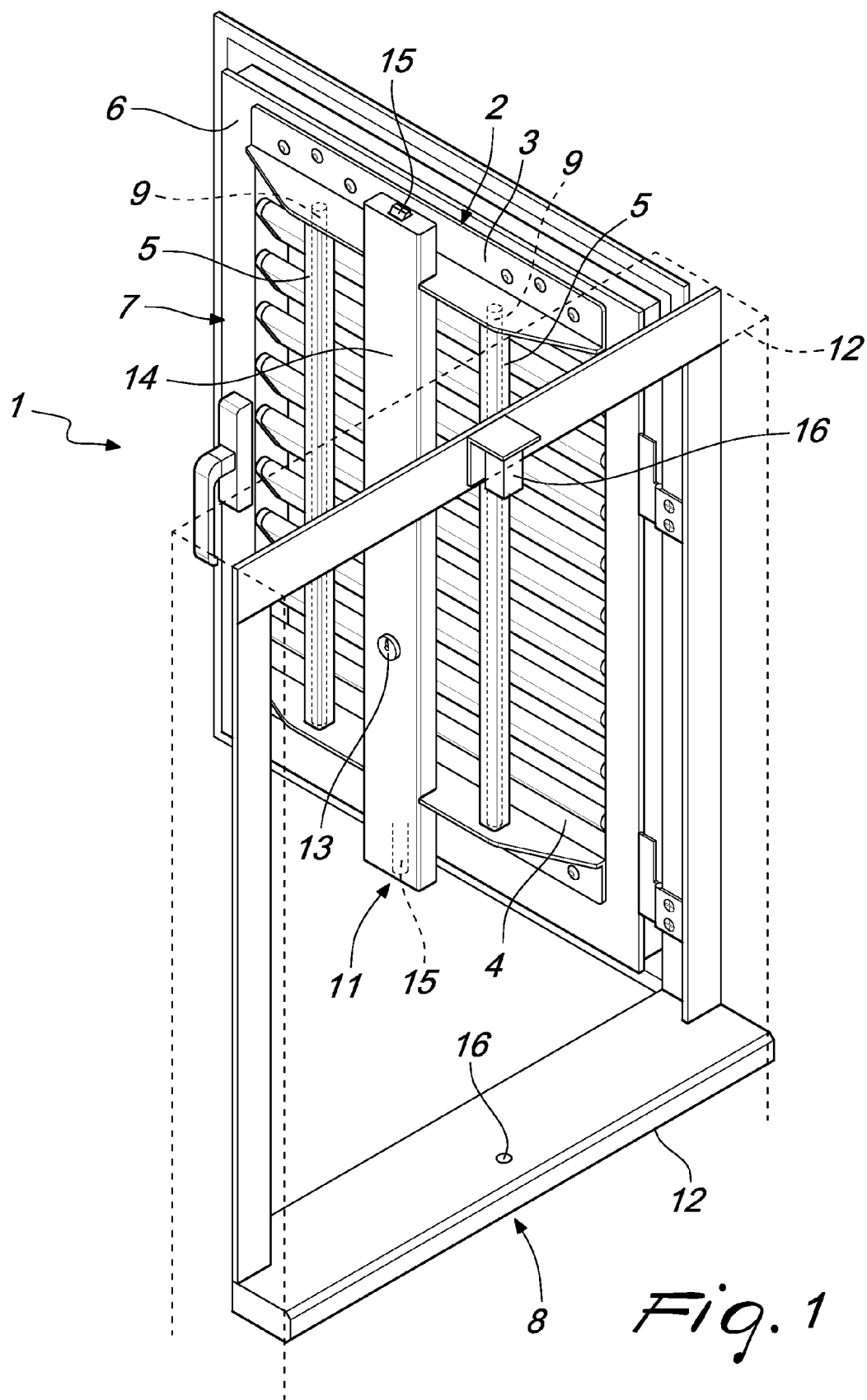
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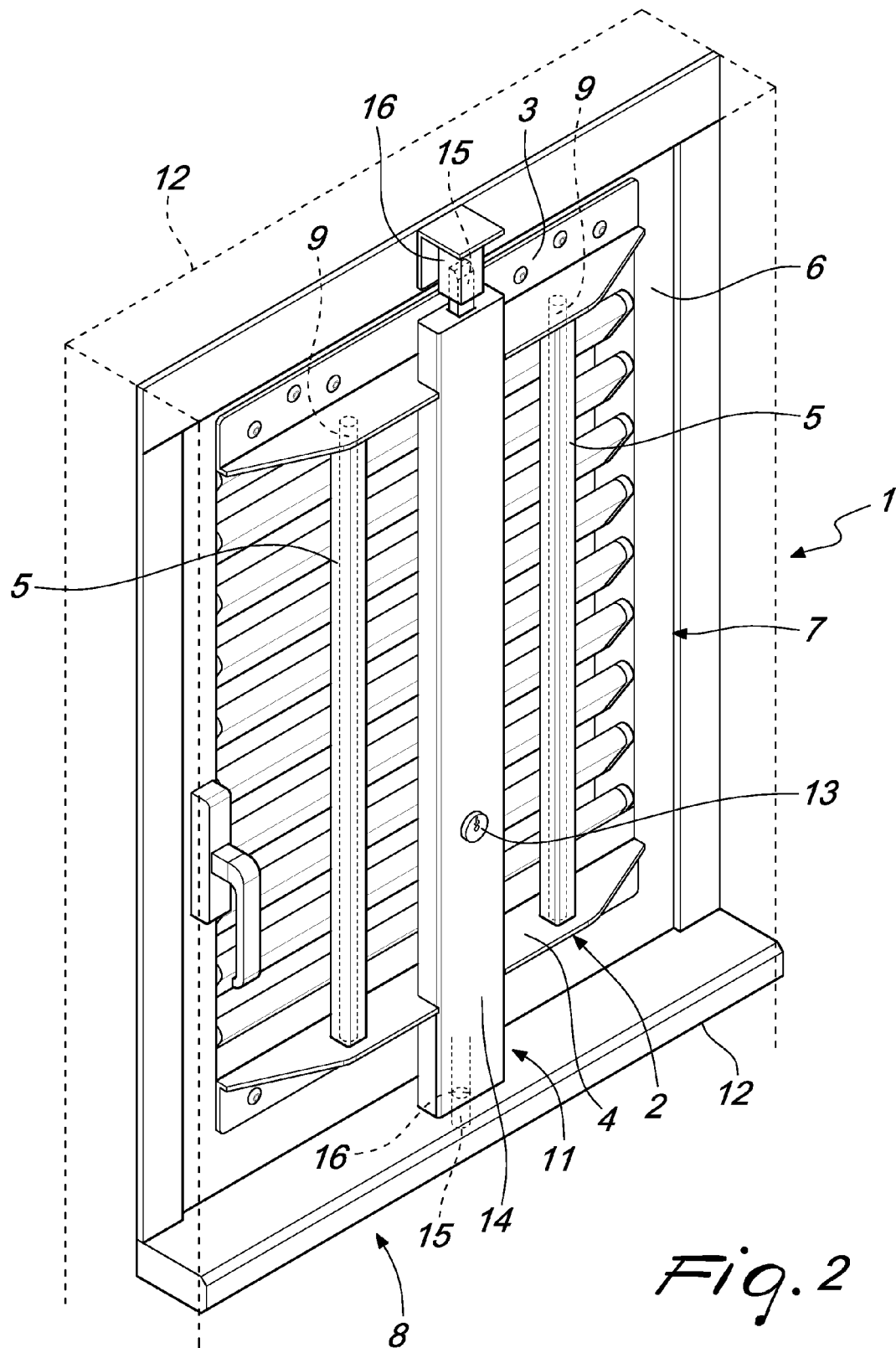
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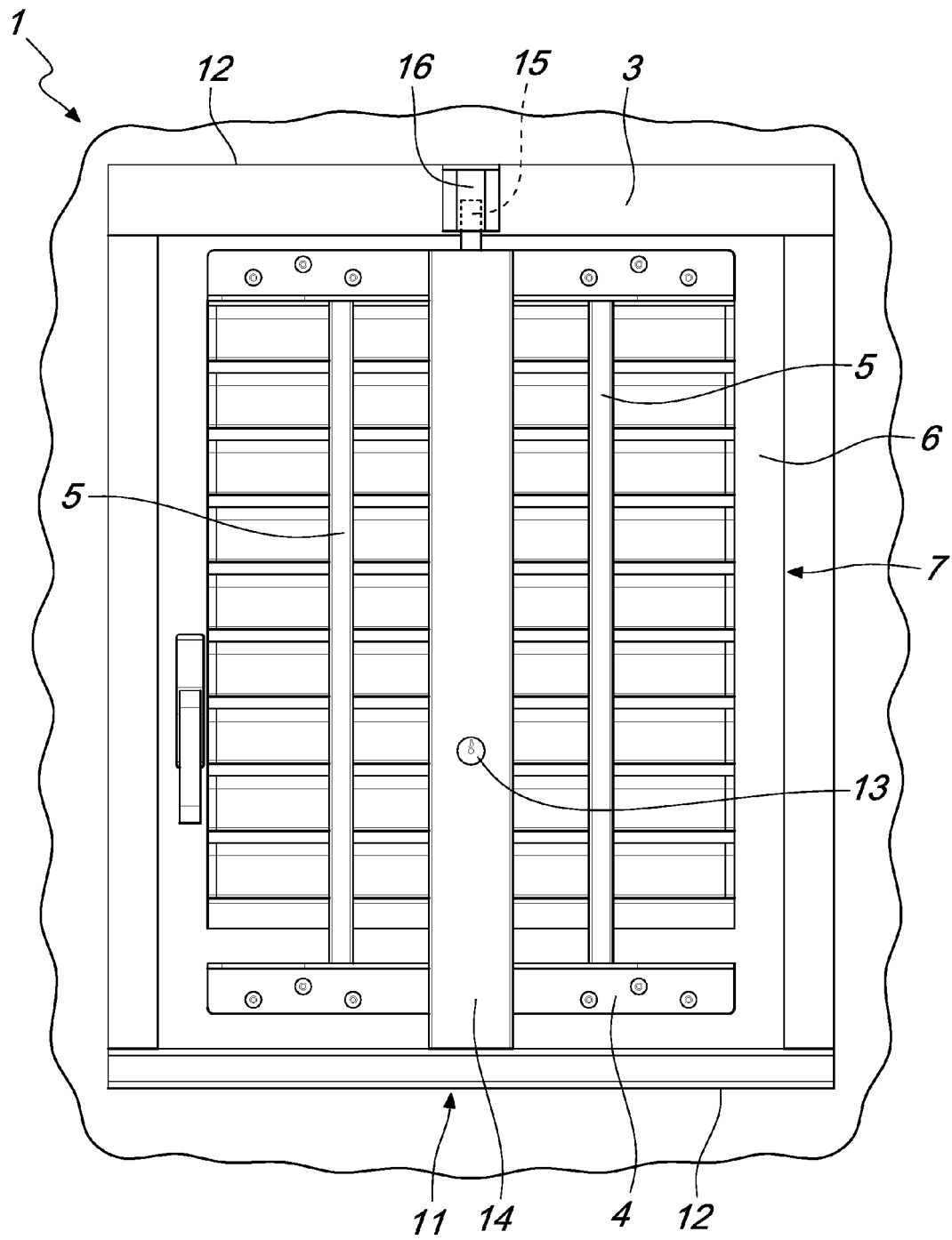


Fig. 3

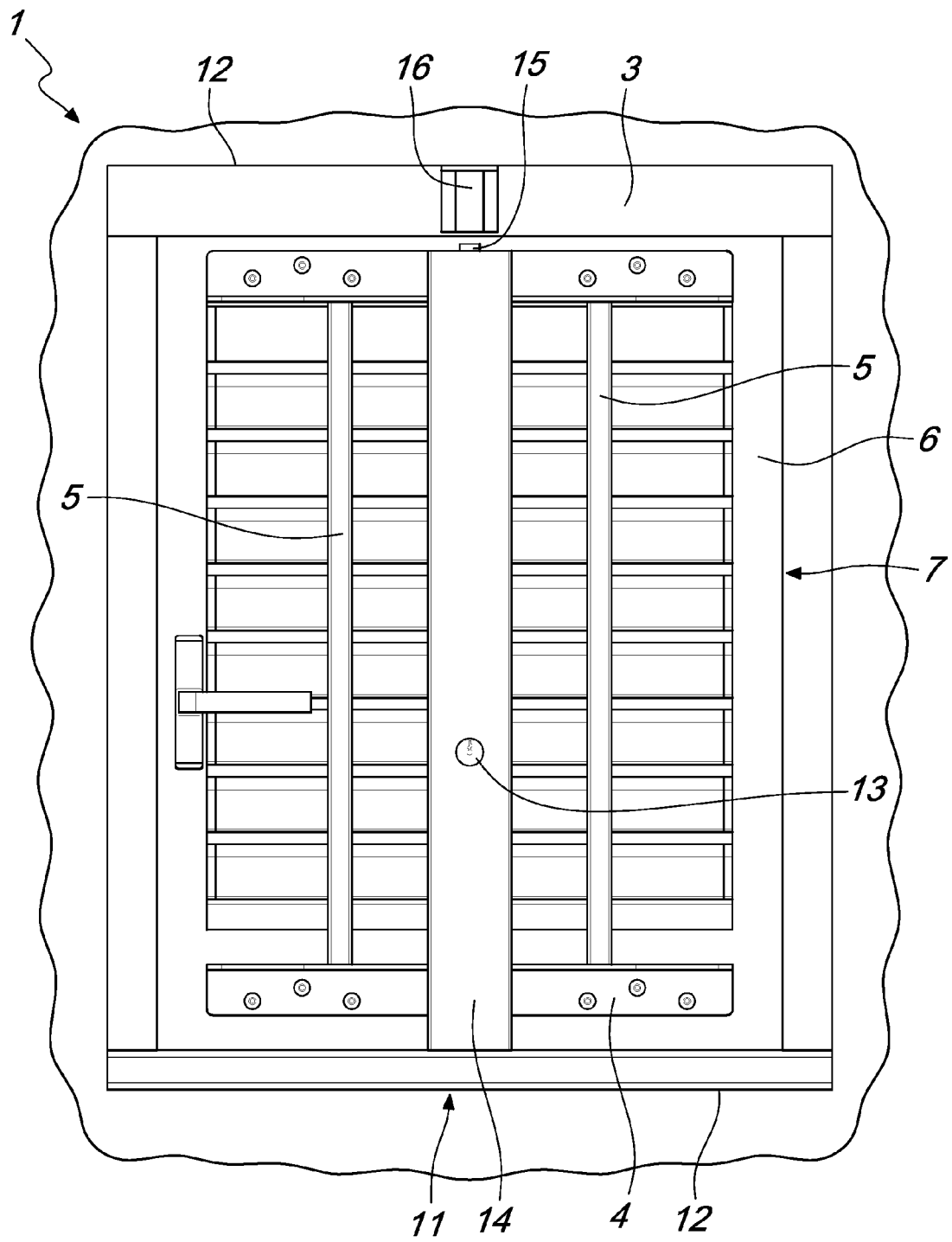
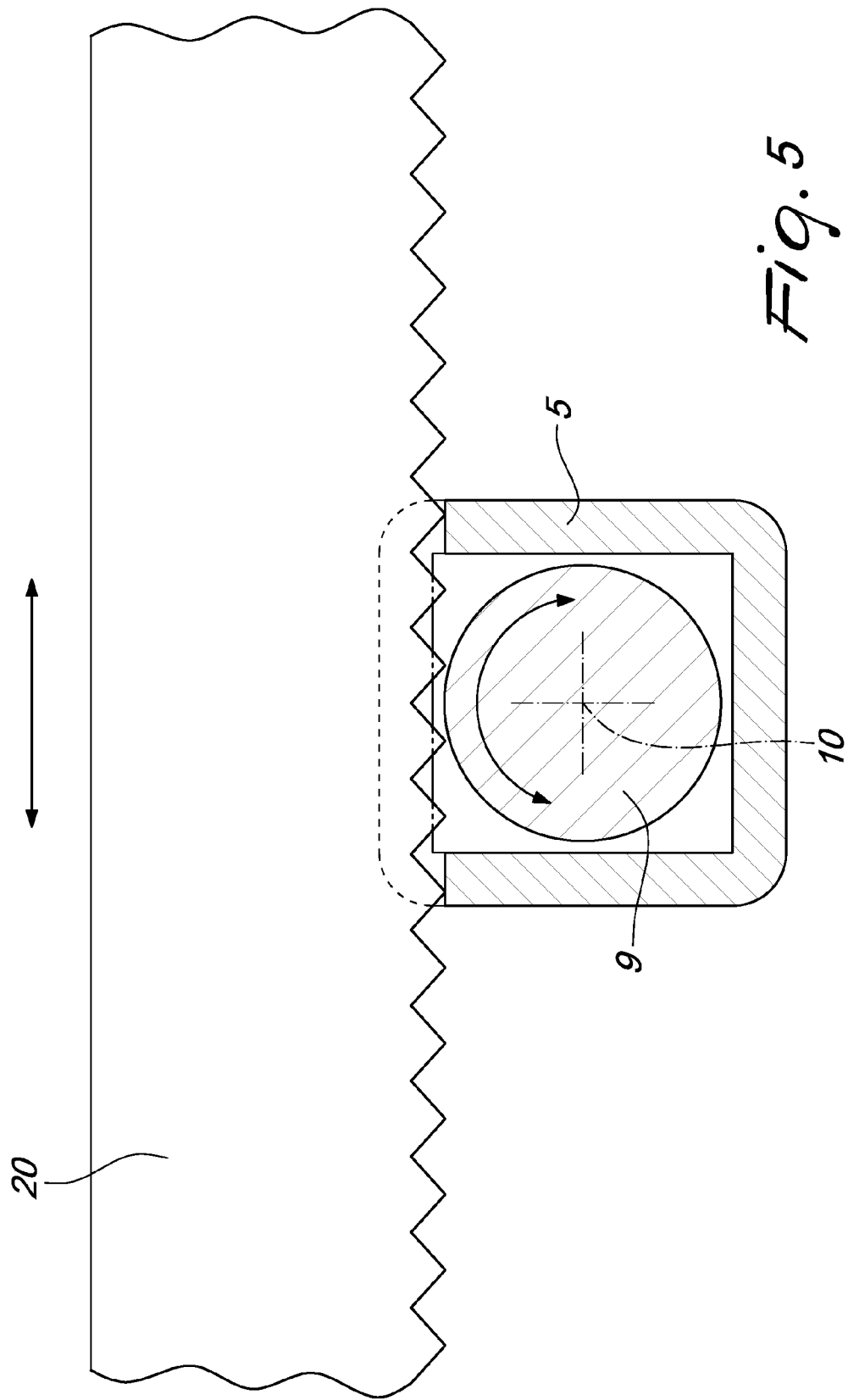


Fig. 4





EUROPEAN SEARCH REPORT

Application Number
EP 15 16 2019

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	DE 89 10 321 U1 (STIELS, HANS) 28 December 1989 (1989-12-28)	1,6-10	INV. E06B7/08
A	* page 4, paragraphs 4, 5 * * page 6, paragraph 2; figures 1, 2 *	2-5	E06B9/01
A	WO 2010/007641 A2 (KAPLAN WALTER [IT]) 21 January 2010 (2010-01-21) * abstract; figures 1-4 *	3-6	ADD. E05C9/00 E05C9/04 E06B5/11 E06B9/04
A	US 2009/300990 A1 (MAROCCO MARIO M [CA]) 10 December 2009 (2009-12-10) * abstract; figure 1 *	3-6	
A	WO 2013/015592 A2 (YOU DONG HO [KR]) 31 January 2013 (2013-01-31) * abstract; figure 2 *	3-6	
A	US 4 912 877 A (STRYDOM NICOLAAS J H [ZA]) 3 April 1990 (1990-04-03) * abstract; figure 1 *	1-10	
A	US 6 968 660 B1 (NOVOA PABLO RABA [US]) 29 November 2005 (2005-11-29) * column 8, lines 14-48; figures 1, 2, 5 *	1-10	TECHNICAL FIELDS SEARCHED (IPC) E06B E05C
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 14 August 2015	Examiner Weißbach, Mark
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	

EPO FORM 1503 03/82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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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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14-08-2015

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 8910321 U1	28-12-1989	NONE	
WO 2010007641 A2	21-01-2010	NONE	
US 2009300990 A1	10-12-2009	NONE	
WO 2013015592 A2	31-01-2013	NONE	
US 4912877 A	03-04-1990	NONE	
US 6968660 B1	29-11-2005	NONE	

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- IT AR20140019 A [0033]