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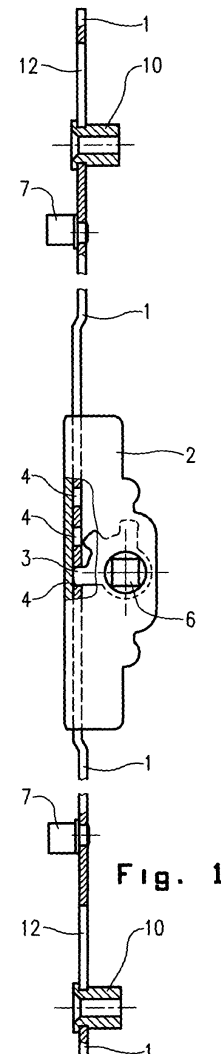
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(54) Locking closure with a driving bar for windows and/or doors

(57) The present invention refers to a locking closure with a driving bar (1) for a window and door, respectively, that can be open and/or tilted, in particular the window and door, respectively, a frame (5) thereof is made of plastic or wood, said locking closure comprises the driving bar (1) with locking members (7) that is movable by means of a handle of the window and door, respectively. According to the invention, it is provided that with regard to each locking member (7) which is arranged on a driving bar (1) at a longitudinal distance from a casing (2) and in longitudinal direction on both sides with regard to said casing (2), said driving bar (1) is formed with a plurality of oblong through-holes (12) cooperating with a plurality of respective guides (10) fixed in a groove (9) in a frame (5) of the window and door, respectively.



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Description

[0001] The present invention refers to fittings for windows and doors, respectively, that can be open and/or tilted and in particular for such windows and doors, respectively, the frames thereof are made of plastic material or wood. The invention refers in particular to a locking closure comprising a driving bar with locking members which is movable by means of a handle of a window and door, respectively.

[0002] A locking closure of the aforementioned kind is generally known in the field of window and door, respectively, which can be open and/or tilted and the frame of which is made of plastic material or wood. Said closure which is normally built-in in a respective vertical groove of a frame consists of a flat front bar screwed to the frame of the window and door, respectively, to which, is on the side facing the frame, attached a driving bar which is movable along the front bar. In the area of the window and door handle, respectively, a driving unit is attached to the front bar which transforms the rotational movement of the handle to the longitudinal movement of the driving bar. A plurality of locking members are attached to said driving bar at a certain mutual distance, said locking members, with the closed window and door, respectively, engage with the respective set of receivers arranged on the frame of the window and door, respectively. Assembly of such a known locking closure is rather intricate and time consuming and represents a serious disadvantage. Also the weight of such a locking closure cannot be neglected, thus increasing the weight of the entire window and door, respectively.

[0003] It is the object of the present invention to create a locking closure comprising a driving bar with locking members that is movable by means of a handle of a window and door, respectively, which is simple to assemble and to attach to the frame of the window and door, respectively.

[0004] The object as set above is solved by that with regard to each locking member which is arranged on a driving bar at a longitudinal distance from a casing and in a longitudinal direction on both sides with regard to said casing the said driving bar is formed with a plurality of oblong through-holes cooperating with a plurality of respective guides fixed in a groove in a frame of a window and door, respectively. Here, said guide is formed as a cuboid, the length thereof corresponds approximately to the width of the groove and is slightly bigger, respectively, and the width thereof corresponds approximately to the width of the through-hole in the driving bar and is slightly smaller, respectively. A press fit is attained therewith between the guide and the groove in the frame, and a slip fit is attained between the guide and the through-hole in the driving bar. Furthermore, the guide is formed at the first end thereof with a flange and a circular groove is formed directly below said flange, said circular groove being intended for cooperation with the oblong through-hole in the driving bar. The guide also comprises a

through-hole for the receiving of a fixing means.

[0005] With respect to the driving bar, said guides are arranged in a manner that they are positioned in a longitudinal direction at least one on the left side and/or one on the right side with respect to the each locking member. Said oblong through-holes are here arranged in the driving bar in a longitudinal direction at least one on the left side and/or one on the right side of the each locking member. In order to secure an appropriate operation of the locking closure according to the invention, it is provided for that the driving bar is arranged with a slip fit in a transversal widening of the groove. Furthermore, it is provided for that the driving bar is arranged with a slip fit in the circular groove of the guide while the guide is arranged with a press fit in the groove of the frame.

[0006] The invention will be more readily understood on reading the following description with reference to the accompanying drawings, in which:

- Fig. 1 shows a side view of a locking closure according to the invention,
- Fig. 2 shows a front view of a locking closure according to the invention incorporated in a frame,
- Fig. 3 shows a sectional view along the line III-III of Fig. 2, and
- Fig. 4 shows a perspective view of a driving bar guide.

[0007] A locking closure according to the invention consists of a driving bar 1 which extends with a slip fit through a multi-part and take-apart casing 2 in which there is placed a driving gear wheel 3. The latter engages the respective cutouts 4 in the driving bar 1. Said casing 2 with the driving bar 1 is arranged in a frame 5 of a window and door wing, respectively, and in the area were a handle is placed for closing and opening, respectively, not shown in the Fig. For this purpose, said gear wheel 3 is formed in its central part with a suitable multi-sided hole 6 cooperating with said handle not shown. Longitudinally spaced from the casing 2 there is a plurality of locking members 7 arranged on the driving bar 1, each said locking member 7 cooperates with a respective receiver (not shown) on the frame of a window and door, respectively. The number of said locking members 7 depends on the height of the window and door rabbet, respectively, so that said number consists of at least two locking members.

[0008] When completely assembled, the driving bar 1 is arranged longitudinally movable with a slip fit in a transversal widening 8 of a groove 9 of the window and door frame 5, respectively. Typically, said widening 8 and groove 9 are standardised and equal for all kinds of the respective closure, therefore they are not described in detail. A plurality of guides 10 for the driving bar 1 are placed in said groove 9, said guides being fixed in the frame 5 by means of screws 11 cooperating with the bottom of the groove 9. With respect to the driving bar 1 said guides 10 are arranged in a manner that they are located, longitudinally to the driving bar 1, at least one on the left

side and/or one on the right side with regard to the locking member 7. The driving bar 1 is formed in the area of each guide 10 with an oblong through-hole 12 cooperating with said guide 10.

[0009] According to the invention, said guide 10 is formed as a cuboid, the length 10a thereof equals approximately the width of the groove 9 and is slightly bigger, respectively, and the length 10b thereof equals approximately the width of the through-hole 12 in the driving bar 1 and is slightly smaller, respectively. The guide 10 is formed at the top end thereof with a rectangular flange 13 extending only in the direction of the length 10a of the guide 10. A circular groove 14 is formed directly under said flange 13 and is intended for cooperation with the oblong through-hole 12 in the driving bar 1 and for that very reason the width thereof is slightly bigger than the width of the driving bar 1. Furthermore, said guide 10 comprises a through-hole 15 extending towards the free end thereof to receive said screw 11.

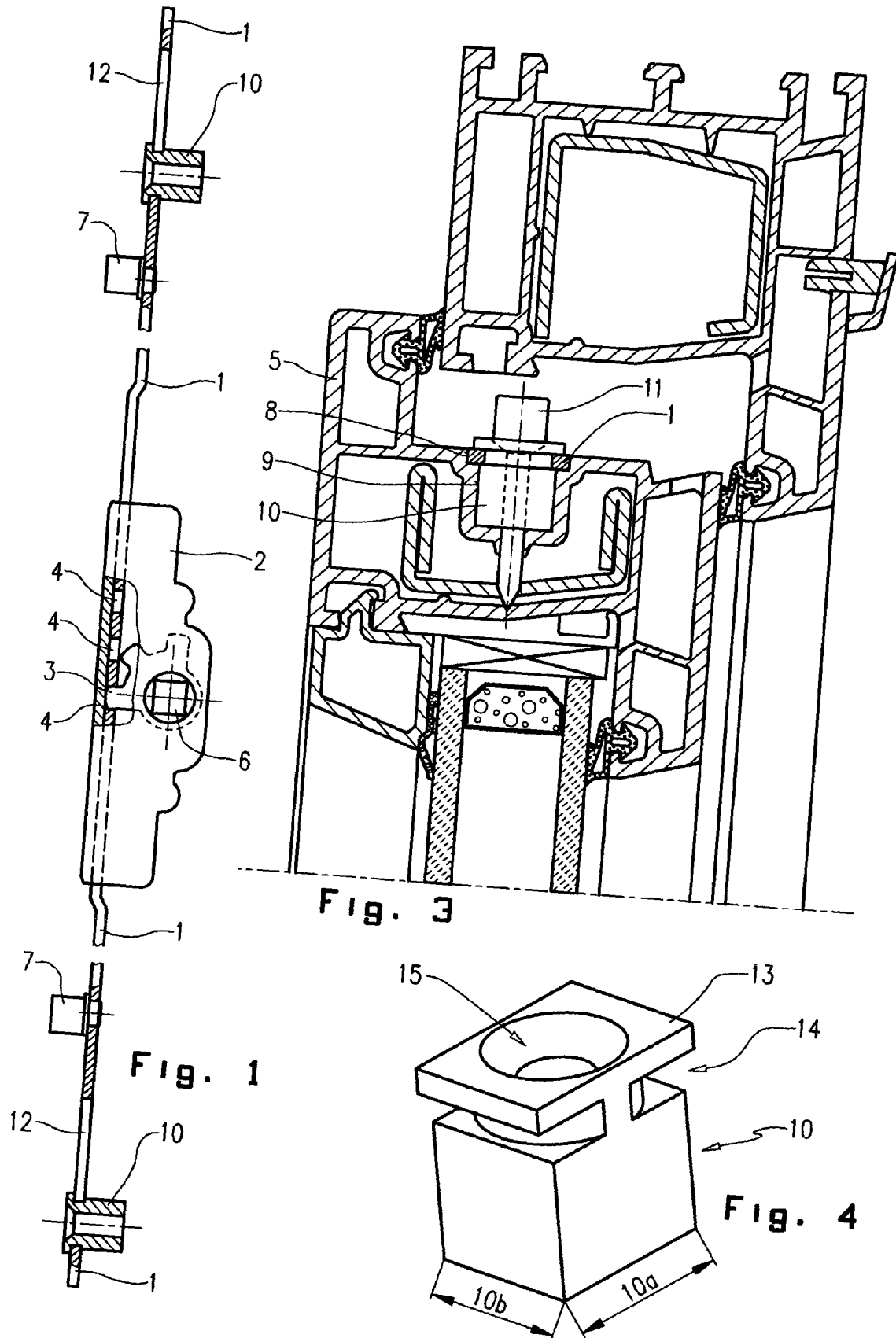
[0010] The driving bar 1 and the guides 10 are assembled before inserting into the frame 5 of a window and door, respectively, i.e. in a manner that each guide 10, with its shorter side 10b, is positioned lengthwise with respect to the through-hole 12 and pushed through so as the driving bar 1 is located with its thickness within the area of the circular groove 14, and afterwards the guide 10 is turned about its vertical axis by 90 degrees in order that the flange 13 with its bottom surface rests on the upper surface of the driving bar 1. The entire assembly of the driving bar 1 and the guides 10 is then inserted in the groove 9 and fixed by means of the screws 11. The guides 10 rest here on the bottom of the groove 9 while the driving bar 1 is sliding movably arranged in the circular groove 14 of the guide 10 and in the groove 8. Afterwards, the entire unit of the driving bar 1 and the guides 10 is inserted in the groove 9 and fixed by means of the screws 11. Here, the guide 10 rests on the bottom of the groove 9 while the driving bar 1 is arranged in a sliding movable manner in the circular groove 14 of the guide 10 and in the groove 8. Said guide 10 is formed in a manner that the bottom surface of the groove 14 is aligned, when said guide is fixed in the groove 9, with the bottom surface of the groove 8.

Claims

1. A locking closure with a driving bar (1) for a window and door, respectively, that can be open and/or tilted, in particular the window and door, respectively, a frame (5) thereof is made of plastic or wood, said locking closure comprises the driving bar (1) with locking members (7) that is movable by means of a handle of the window and door, respectively, **characterised in that** with regard to each locking member (7) which is arranged on a driving bar (1) at a longitudinal distance from a casing (2) and in longitudinal direction on both sides with regard to said

casing (2), said driving bar (1) is formed with a plurality of oblong through-holes (12) cooperating with a plurality of respective guides (10) fixed in a groove (9) in a frame (5) of a window and door, respectively.

2. A locking closure according to claim 1, **characterised in that** said guide (10) is formed as a cuboid, the length (10a) thereof corresponds approximately to the width of the groove (9) and is slightly bigger, respectively, and the width (10b) thereof corresponds approximately to the width of the through-hole (12) in the driving bar (1) and is slightly smaller, respectively, said guide (10) is formed at the first end thereof with a flange (13) and a circular groove (14) is formed directly below said flange (13), said circular groove (14) being intended for cooperation with the oblong through-hole (12) in the driving bar (1), and that the guide (10) also comprises a through-hole (15) for the receiving of a fixing means (11).
3. A locking closure according to any of the preceding claims, **characterised in that** with regard to the driving bar (1) said guides (10) are arranged in a manner that they are positioned in a longitudinal direction at least one on the left side and/or one on the right side with respect to each locking member (7).
4. A locking closure according to any of the preceding claims, **characterised in that** said oblong through-holes (12) are arranged in the driving bar (1) in a longitudinal direction at least one on the left side and/or one on the right side of the each locking member (7).
5. A locking closure according to any of the preceding claims, **characterised in that** the driving bar (1) is arranged with a slip fit in a transversal widening (8) of the groove (9).
6. A locking closure according to any of the preceding claims, **characterised in that** the driving bar (1) is arranged with a slip fit in a circular groove (14) of the guide (10).
7. A locking closure according to any of the preceding claims, **characterised in that** the guide (10) is arranged with a press fit in the groove (9) of the frame (5).



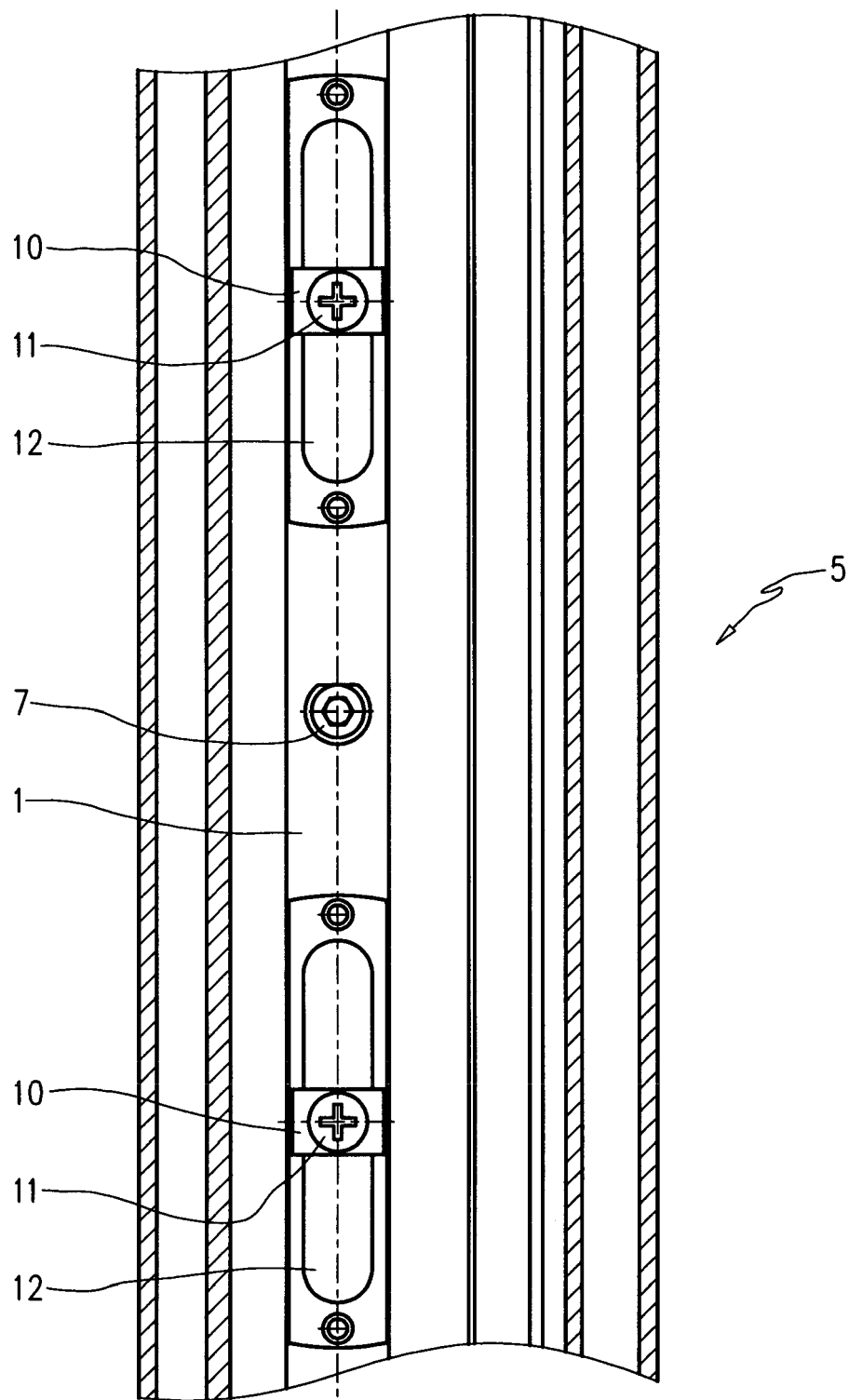


Fig. 2



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 0 538 562 A (SIEGENIA-FRANK KG) 28 April 1993 (1993-04-28) * column 5, line 27 - column 6, line 36 * * figures 1-3 *	1-7	E05C9/00
X	GB 2 304 793 A (* BRUNEL COMPONENTS LIMITED) 26 March 1997 (1997-03-26) * page 4, paragraph 2 - page 6, paragraph 2 * * figures 1-4,6 *	1,3-6	
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X	DE 103 45 758 A1 (WICONA BAUSYSTEME GMBH) 21 April 2005 (2005-04-21) * page 4, paragraph 32 - paragraph 33 * * figures 5,6 *	1,3,4,6	
			TECHNICAL FIELDS SEARCHED (IPC)
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The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		17 November 2005	Bitton, 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			

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

EP 05 46 8011

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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