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(54) A window with a ventilation cover and a burglary preventing member

(57) In a window comprising a pivotable sash (6) arranged in a main frame (7) and being provided with an adjustable ventilation cover (2) for providing ventilation in a closed position of the sash through a ventilation passage (3) between opposed members of the sash (6) and the main frame (7) and sash locking means (8) connected with the ventilation cover (2), one or more burglary preventing members (4) are arranged in the ventilation passage to prevent manual access to the ventilation cover (2) and/or the locking means (8) from the external side of the window

Preferably, a burglary preventing member (4) is formed as s shield having openings (9) for the ventilation air and being firmly connected to the top member of the main frame (7) and covering the ventilation passage (3) by closely fitting an upper edge part (6a) of the top member of the sash (6).

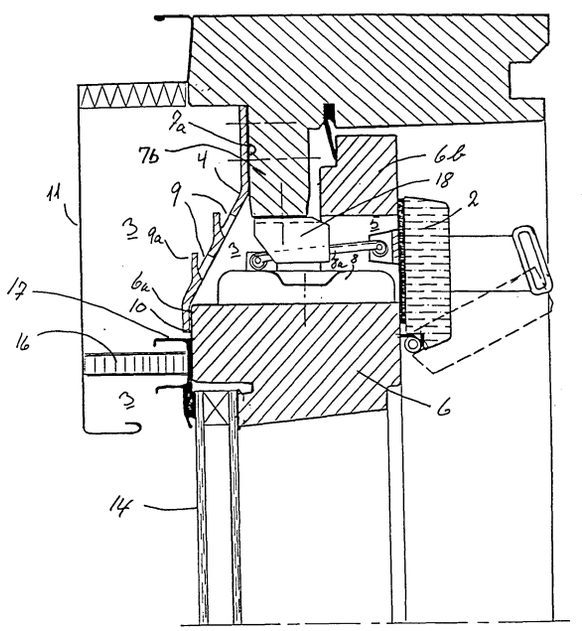

FIG. 3

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Description

[0001] The invention relates to a window comprising a sash arranged in a main frame to be pivotable around a centre axis, the window being provided with an adjustable ventilation cover for providing ventilation through a ventilation passage between opposed members of the sash and the main frame in a closed position of the sash, said ventilation cover being connected with locking means for the sash to control the locking engagement thereof.

[0002] Windows of this kind are known, e.g. from SE-C-226 152 and are typically used as roof windows.

[0003] The use of such windows in exposed places, e.g. in relatively flat roof structures or close to landings or similar building parts, from the window is easily accessible from the outside may be problematic due to the risk of burglary by operating the ventilation cover or the locking means by an instrument introduced through the ventilation passage from the outside and thereby opening the window.

[0004] For handle-operated windows of the kind, in which the sash may assume a slightly open ventilation position it is known, e.g. from E-A-0 380 440 to provide locking of the sash in the ventilation position with the aim of preventing easy access to the handle in this position of the sash. Although operation of the handle from the outside is made more difficult, locking of the sash in this way does not provide any efficient safety against burglary, since it is not very difficult to operate the handle by introduction of a suitable instrument through the ventilation opening between the sash and the main frame. In the closed position of the sash of such a window, no ventilation possibility is available.

[0005] It is further well.known, e.g. from E-A-0 297 016 to provide improved safety against burglary through a window by arrangement of an additional grid member or the like on the inside of main frame.

[0006] To counteract the problem mentioned above it is the object of the invention to provide a window of the kind set forth, in which unauthorized access to open the window by operation of the ventilation cover or the locking means from the outside in the closed position of the sash is made substantially impossible.

[0007] To meet this object a window of the kind defined is characterized, according to the invention in that one or more burglary preventing members are arranged in the ventilation passage to prevent manual access to the ventilation cover and/or the locking means from the external side of the window.

[0008] The burglary preventing member or members of the invention must provide a covering of the ventilation passage, since it is exactly through this passage that burglars may obtain access to operation of the ventilation cover or the locking means and at the same time provide suitable ventilation openings to meet the demand for ventilation, which is effected by adjustment of the ventilation cover to a ventilation position, in which the locking means is not yet operated for release of the locking engagement.

[0009] To meet these functional requirements the burglary preventing member is formed, in a preferred embodiment, as s shield having openings for the ventilation air, said shield being firmly connected to the top member of the main frame and covering the ventilation passage by closely fitting an upper edge part of the top member of the sash throughout the length of the flow area of the ventilation passage in the closed position of the window. As a result of the firm connection of the shield with the main frame and the close fit against the sash in the closed position thereof a very reliable security against attempts of burglary through windows of kind concerned is obtained.

[0010] Other designs of such a shield are possible, however, e.g. as a two-part shield having a first external part firmly connected with the main frame an a second internal part, which is firmly connected with the sash to be positioned inside the first part, but on the external side of the locking means and the ventilation cover in the closed position of the sash. By suitable design of the overlap between the two parts a slit for the ventilation air may be formed between the two parts.

[0011] To further improve the safety against introduction of special tools through the openings in the shield necessary for the ventilation air these openings may advantageously be shielded in a horizontal outwards direction by shielding sections coherent with the shield, said shielding sections extending either from lower edge parts of the openings in an outwards and upwards direction or from upper edge parts of the openings in an inwards and downwards direction. Thereby, any possibility of introduction of a tool behind the external shielding typically provided by main frame covering panels for the window, such as a top casing and through the ventilation openings in the shield will be impossible since the ventilation openings can only be passed by movement of a tool in a downwards direction substantially parallel to the shield.

[0012] The firm connection of the shield with the main frame by fastening the upper part of the shield to an outwards or inwards facing surface of top member of the main frame. In windows of the kind concerned the main frame top member is typically provided with a downwards directed flange member to which the strike members for the locking means are secured and such a flange member will provide suitable external and internal surfaces for connection of the shield. The shield may also be secured, however, to an underside of such a flange member.

[0013] To obtain a close fit of the shield to an upper edge part of the sash to impede introduction of a tool between the shield and the sash in the closed position of the latter, a downwards facing edge part of the shield fits closely to the upper side of a strip secured externally at the upper edge part of the sash.

[0014] Alternatively, the downwards directed edge

part of the shield may fit closely in a recess formed in the upper edge part of the top member of the sash. Other possibilities for the fit between the downwards directed edge part of the shield and the sash may include adaption of the edge part to match the upper side of the sash on the external side of the locking means.

[0015] The shield may advantageously be made of metal with punched slit-like openings for the ventilation air, the material being bent out of the plane of the shield to form said shielding sections.

[0016] Alternatively, the shield may comprise an impact-proof material such as a plastic material.

[0017] In the following the invention will be explained in further detail with reference to the schematical drawings, in which

fig. 1 is a perspective view of a roof window known per se, to which the invention may be applied,
fig. 2 a sectional view of the upper part of a roof window as shown in fig. 1 along the line A - A
fig. 3 is a corresponding sectional view of the roof window with application of the invention, and
fig. 4 is a similar sectional view of an other embodiment of the roof window according to the invention.

[0018] The example of a known window shown in fig. 1 comprises an openable roof window having a main frame structure and a sash structure pivotally journalled therein with a pivot axis 13. At its upper side the window is finished by a mainly hood-like covering member 11. The covering member 11 is of relatively thin-walled material and extends, as shown in figs. 2 to 4 from the external upper edge of the window down to the transition between the upper sash member and the insulating pane 14.

[0019] A ventilation passage extends behind the covering member and through an opening in upper part of the sash, which is formed by two sash parts 6 and 6b disposed one above the other.

[0020] The opening in the upper part of the sash forming the internal part of the ventilation passage can be closed by a ventilation cover 2, which is hinged at its lower side and adapted to assume three well-defined positions, i.e. a first position, shown in solid lines, in which the ventilation opening is closed by the cover and the sash is locked, and a second position, shown in dashed lines, in which the ventilation passage is open and the sash continues to be locked. By further pivoting of the ventilation cover around the hinge the third position will be occupied, in which the locking means of the window are activated and the window is released for opening.

[0021] As shown in fig. 2 known window designs of the type shown in fig. 1 may incorporate the arrangement of a member 6c with ventilation openings between the two sash parts 6 and 6b, but in a position between the ventilation cover 2 and the locking means 8.

[0022] In the embodiment of the invention shown in fig. 3 the burglary preventing member is designed as a shield 4 extending along and covering the ventilation passage between sash parts 6 and 6b.

[0023] Upwardly, the shield is secured to the main frame 7 on the external side 7a of a flange member 7b projecting downwards from the top member of the main frame. The shield may be secured by means of throughgoing bolts, by screws having a slot operable only in the direction of screwing into the flange member or screws engaging introduced from the internal side of the flange member and engaging threaded bores in the shield or in other way effective to prevent dismantling of the shield 4 from the external side.

[0024] In the mounted position of the shield 4 it will no longer be possible to get access through the ventilation passage, e.g. by lifting of the covering member 11, to the ventilation cover 2, the lock casing 8 and the locking means arranged therein or the connection member 8a between the ventilation cover 2 and the lock casing 8.

[0025] As shown in the embodiment in fig. 4 the shield 4 may also be secured to the internal side 7c of the downwards directed flange. In this embodiment there is no requirement to provide any safeguard against demounting of fastening members, since these will not be accessible from the external side.

[0026] In its lower end the shield 4 is adapted for engaging the external side of the upper edge part of the sash 6a such that the lower edge part of the shield is positioned close to the upper side of the strip 17 in the closed position of the window.

[0027] The shield 4 is provided with openings 9 for ventilation air.

[0028] As shown the openings 9 are shielded by shielding sections 9a shown to extend from lower edge parts of the openings in an upwards and outwards direction. The shielding sections serve to make it further difficult to obtain access through the ventilation passage for opening of the window may alternatively be designed and arranged to extend from upper edge parts of openings 9 in a downwards and inwards direction.

Claims

1. A window comprising a sash (6) arranged in a main frame (7) to be pivotable around a centre axis, the window being provided with an adjustable ventilation cover (2) for providing ventilation through a ventilation passage (3) between opposed members of the sash (6) and the main frame (7) in a closed position of the sash, said ventilation cover (2) being connected with locking means (8) for the sash (6) to control the locking engagement thereof, **characterized** in that one or more burglary preventing members (4) are arranged in the ventilation passage to prevent manual access to the ventilation cover (2) and/or the locking means (8) from the external side of the window.

2. A window as claimed in claim 1, **characterized** in that the burglary preventing member (4) is formed as s shield having openings (9) for the ventilation air, said shield (4) being firmly connected to the top member of the main frame (7) and covering the ventilation passage (3) by closely fitting an upper edge part (6a) of the top member of the sash (6) throughout the length of the flow area of the ventilation passage in the closed position of the window.

3. A window as claimed in claim 2, **characterized** in that the openings (9) for ventilation air in the shield (4) are shielded in a horizontal outwards direction by shielding sections coherent with the shield, said shielding sections extending either from lower edge parts of the openings (9) in an outwards and up wards direction or from upper edge parts of the openings in an inwards and downwards direction.

4. A window as claimed in claim 2 or 3, **characterized** in that at its upper part the shield (4) is fastened to an outwards or inwards facing surface (7a, 7b) of the top member of the main frame (7).

5. A window as claimed in claim 2, 3 or 4, **characterized** in that in the closed position of the sash a downwards facing edge part (10) of the shield (4) fits closely to the upper side of a strip (17) secured externally at the upper edge part of the sash (6).

6. A window as claimed in claim 2, 3 or 4, **characterized** in that in the closed position of the sash the downwards directed edge part (10) of the shield (4) fits closely in a recess (12) formed in the upper edge part of the top member of the sash (6).

7. A window as claimed in any of claims 2 to 6, **characterized** in that the shield (4) is of metal with punched slit-like openings (9) for the ventilation air, the material being bent out of the plane of the shield to form said shielding sections (9a).

8. A window as claimed in any of claims 2 to 6, **characterized** in that the shield (4) comprises an impact-proof material, such as a plastic material.

9. A burglary preventing member for use in a window comprising a sash (6) arranged in a main frame (7) to be pivotable around a centre axis, the window being provided with an adjustable ventilation cover (2) for providing ventilation through a ventilation passage (3) between opposed members of the sash (6) and the main frame (7) in a closed position of the sash, said ventilation cover (2) being connected with locking means (8) for the sash (6) to control the locking engagement thereof, **characterized** in that said member is designed as a shield (4) for arrangement in the ventilation passage (3) to prevent manual access to the ventilation cover (2) and/or the locking means (8) from the external side of the window.

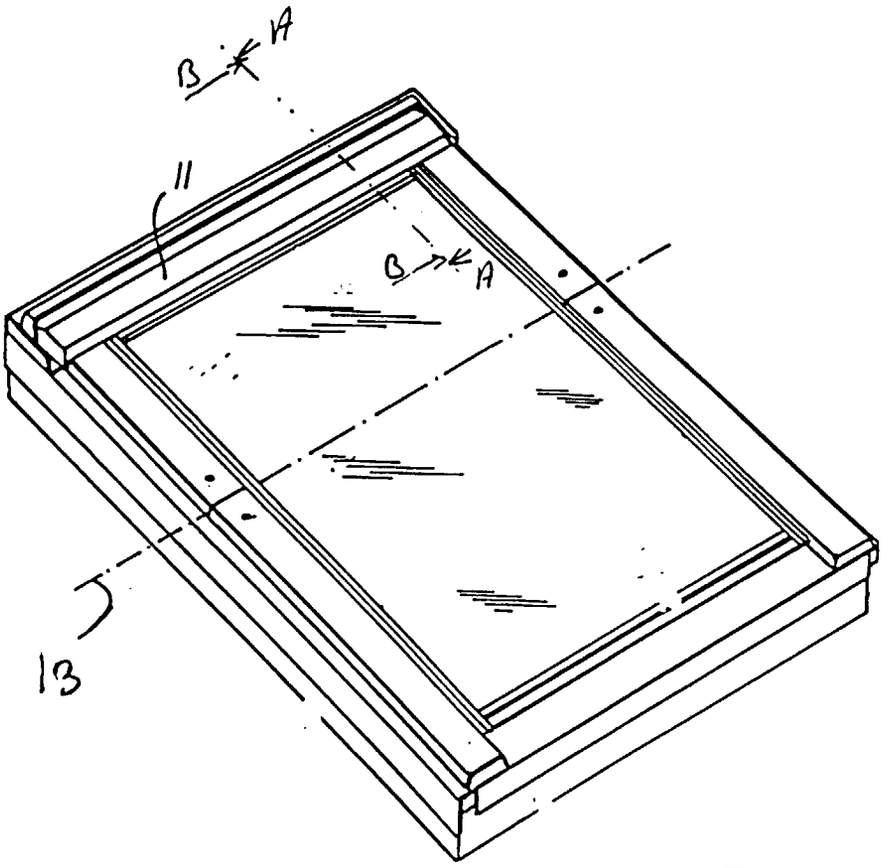

FIG. 1

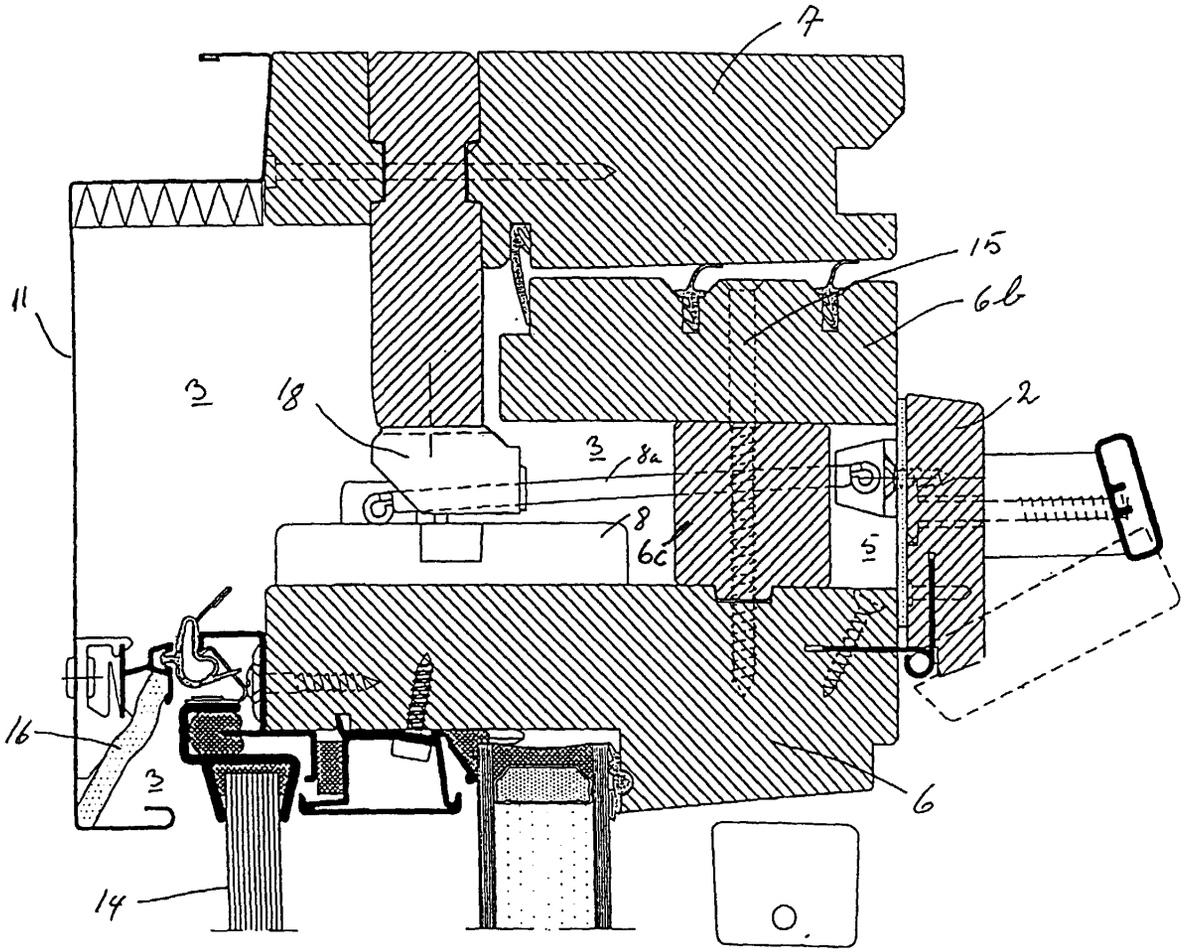

FIG. 2

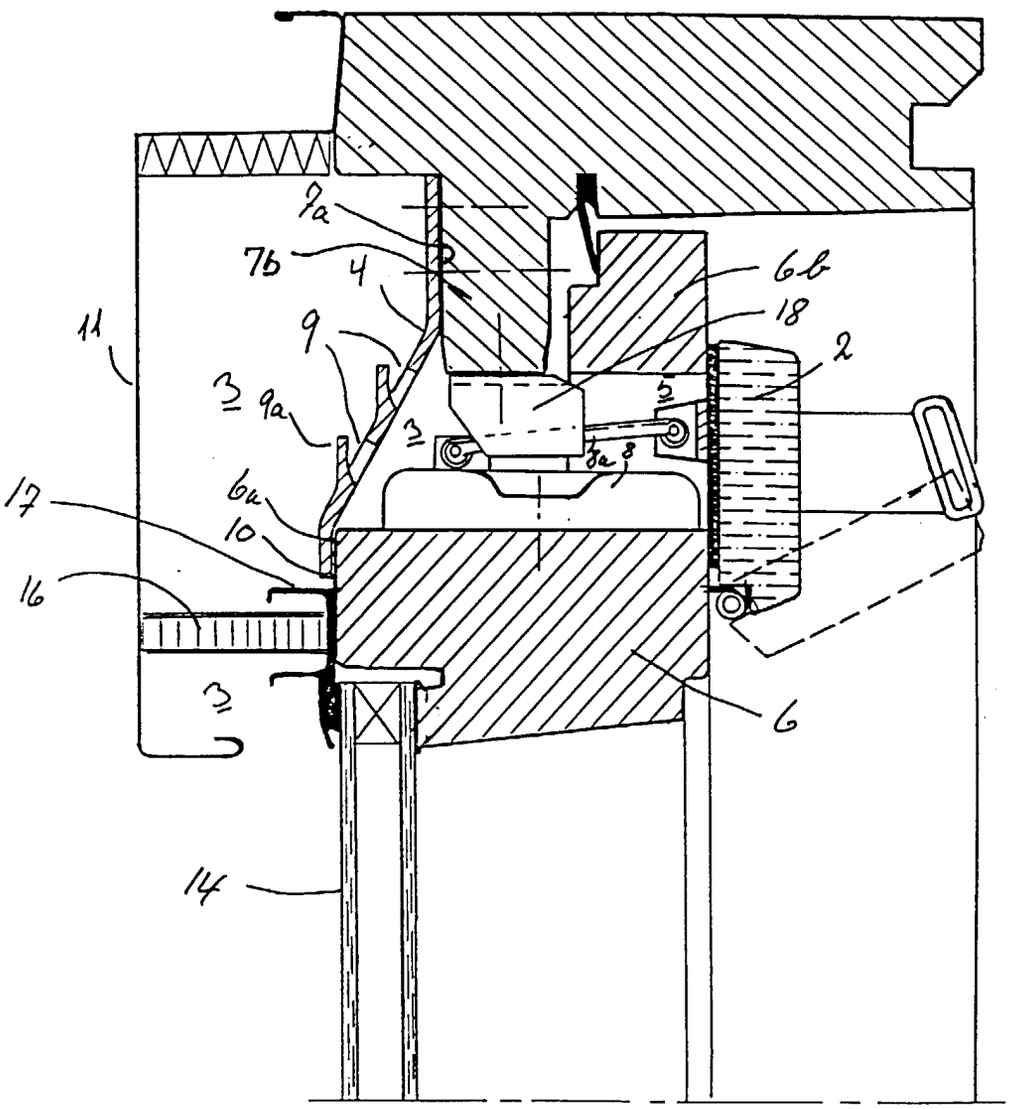

FIG. 3

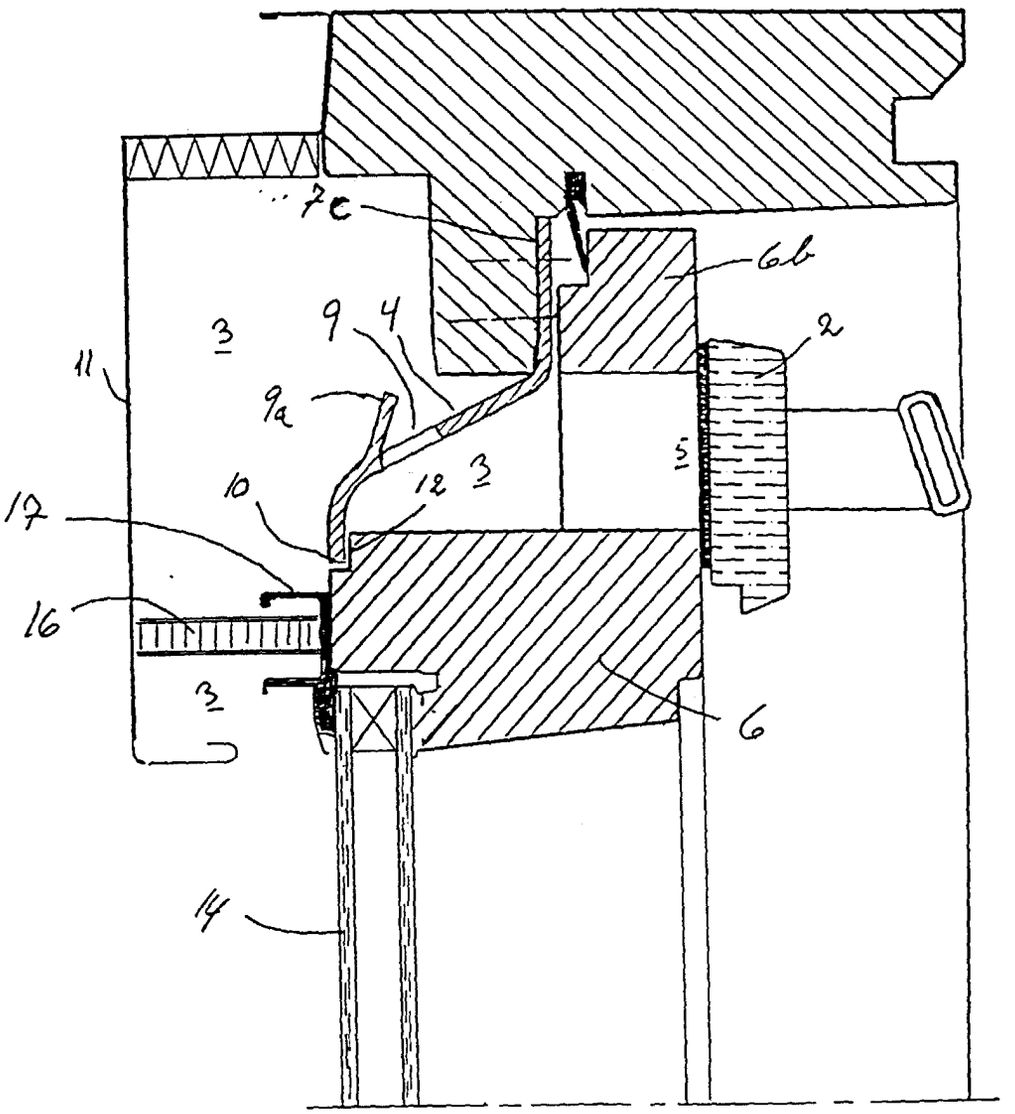

FIG. 4

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EUROPEAN SEARCH REPORT

Application Number
EP 99 61 0035

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
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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
MUNICH	28 October 1999	Henkes, R

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