

(19)



(11)

EP 1 593 807 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:
07.12.2016 Bulletin 2016/49

(51) Int Cl.:
E06B 3/30 (2006.01)

(21) Application number: **04076327.8**

(22) Date of filing: **03.05.2004**

(54) **Window assembly**

Fensteranordnung

Ensemble fenêtre

(84) Designated Contracting States:
BE GB NL

(43) Date of publication of application:
09.11.2005 Bulletin 2005/45

(73) Proprietor: **BUVA RATIONELE
BOUWPRODUKTEN BV**
2993 LJ Barendrecht (NL)

(72) Inventors:
• **Steller, Jan Pieter**
3181 BG Rozenburg (NL)

• **Wisse, Marinus**
2991 AP Barendrecht (NL)

(74) Representative: **Nederlandsch Octrooibureau**
P.O. Box 29720
2502 LS The Hague (NL)

(56) References cited:
DE-A- 10 157 646 DE-U- 29 818 846
US-A- 4 604 840

EP 1 593 807 B1

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

Description

[0001] The present invention relates to a window assembly comprising:

- a multiple glazing unit with an outside pane and an inside pane;
- a frame extending around the periphery of the glazing unit;
- a wooden casing with a rebate in which the frame with the glazing unit can be accommodated;

the frame being fixed to the wooden casing by means of fixing means.

[0002] Such an assembly is known. In the case of the usual window assembly the window concerned is a side-hung window. The known window assembly relates to a so-called inward-swinging casement. The known window assembly comprises a double glazing unit with an outside pane situated on the outside and an inside pane situated on the inside. This double glazing unit is accommodated in a frame running around the peripheral edge of the glazing unit and engaging both on the outside, in other words upon the outward-facing outside surface of the outside pane, and upon the inside, in other words upon the inward-facing outside surface of the inside pane, of the glazing unit. The peripheral edge of the window assembly is consequently recessed in a frame rebate formed in the frame and extending in the peripheral direction. As such, this is a known construction for fixing a glazing unit in an aluminium frame. The known window assembly further comprises a wooden casing with a rebate in which the frame can be accommodated together with the glazing unit. The known frame is further provided all the way round with a sealing strip, which provides a seal between the frame and the casing when the window is closed. The known frame is further fixed to the wooden casing by means of fixing means. Said fixing means comprise, on the one hand, hinges that in each case are fixed with one hinge part on the wooden casing and with the other hinge part on the frame and comprise, on the other hand, a closure fixed on the frame, which closure has a locking part, which when the window is closed engages in a locking manner in a recess formed in the casing.

[0003] Such a window assembly has the disadvantage that the frame is bulky. A further disadvantage is that the frame is situated not only on the inside of the glazing, but also on the outside and consequently, viewed from the outside, fills up the frame from the inside, with generally a stepped appearance, in other words the frame provides a stepped transition from the casing to the outside of the outside pane of the glazing unit. This not only objectively reduces the passage of light through the pane, since the frame transmits no light and therefore reduces the remaining light-transmitting surface in the wooden casing, but it also mars the appearance of the exterior wall. Viewed from the outside wall, the windows appear relatively small. This plays a role, for example, in the case

of so-called renovation building, where wooden casings have been there right from the beginning - which does not rule out replacing them with new wooden casings during the renovation -. The aim here is to keep the original front appearance intact and still renew the windows.

[0004] A further disadvantage of aluminium casings generally is that aluminium casings are susceptible to corrosion from a salty environment and environmental pollution. A salty environment is found in the Netherlands in, for example, coastal areas, where the air coming from the sea contains salty constituents. Environmental pollution essentially occurs everywhere, and very particularly in industrial areas and at busy traffic junctions. Salty constituents and other aggressive environmental pollutants present in the air attack the aluminium, even when it is provided with an enameled coating. Another problem here is that the fitting parts are generally made of a different type of metal from aluminium and that galvanic corrosion phenomena occur as a result. This galvanic corrosion is aggravated by salt particles and aggressive environmental pollutant particles present in the air. Such corrosion of aluminium casings occurs particularly on the outward-facing sides of aluminium casings. On the side facing inwards, in other words on the inside of the building, this corrosion occurs to a much lesser degree, and in so far as it does occur it can be treated by cleaning the casing regularly with a damp cloth.

[0005] Plastic casings generally have the disadvantage that the plastic is subject to aging and discoloration. Plastic casings are also often seen as being cheap.

[0006] In the case of wooden casings it is further known not to suspend the glazing of a moving window in the casing by way of a frame, but by fixing the hinges, more generally the window furniture, directly to the glazing, without frame. The fixing of the hinges and also the operating locks etc. is generally carried out in this case by means of holes formed in the glazing. The advantage of this construction is that the wooden window casing can be made substantially slimmer, in particular in the case of so-called moving windows. The glazing can be connected in an entirely flat manner, without the interposition of any frame, to the wooden surrounding casing. The glazing here is generally double glazing. At the position of the fixing holes through the glazing, spacers are then provided in the glazing between the inside pane and the outside pane. A disadvantage of this construction is that it leaves something to be desired in terms of susceptibility to burglary.

[0007] In the case of exterior wall cladding panels it is also known to fix a sheet of glass on a frame of aluminium sections extending around the periphery of the sheet of glass, for example by gluing the sheet of glass on the frame. This frame serves to fix the panel on the underlying exterior wall construction. The underlying exterior wall construction is provided with aluminium bearing sections for this purpose.

[0008] The object of the present invention is to provide an assembly of the type mentioned in the preamble, with

a slim appearance which, viewed from the exterior wall leaves the exterior wall profile unchanged, apart from the shape of the casing, which is burglar-proof, and which has high light transmission. Such an assembly must, of course, also be waterproof and windproof.

[0009] The abovementioned object is achieved according to the invention by a window assembly according to claim 1.

[0010] The term multiple glazing unit according to the invention is understood as meaning a unit which in a separate form forms a multiple glazing. In the case of a double glazing therefore the inside pane and the outside pane together with the spacers, in the case of which the plenum between the panes can be filled with a special gas composition. The term 'unit' therefore in this case in particular signifies that it is a part that can be handled as a whole. It will also be clear to the person skilled in the art that multiple glazing means not only double glazing, but can equally well be triple or quadruple glazing. The person skilled in the art is in fact aware that there is also multiple glazing with three or more pane surfaces. It is known to the person skilled in the art, for example, to design glass in lead in the form of double glazing by placing single glass in lead glazing between the inside planes and the outside pane.

[0011] By providing an arrangement in which, viewed from the exterior wall, the frame rests behind the outside of the glazing and the outside of the glazing rests with an edge zone along a contact face of the rebate, it is ensured that there is a direct transition from the wooden casing to the pane, which results in a slim appearance and also means that there are no parts of the frame exposed to the direct action of weather influences. The entire frame in fact lies on the inside of the double glazing or at any rate, viewed in a direction perpendicular to the plane of the glazing, behind the outside pane. As will be clear from the exemplary embodiment shown in the figure, the frame in this case can project laterally relative to the multiple glazing. By making the rebate of a stepped design with a second contact face, called the inside contact face on account of the relative position in relation to the other contact face, and providing the frame all the way round with a sealing strip for resting in a sealing manner on said inside contact face, it is ensured that a good waterproof and windproof seal is obtained, without the glazing itself resting in a sealing manner against the window casing. The seal is not in fact obtained at the glazing, but elsewhere by the fact that the sealing strip rests against the inside contact face. In this way it is not necessary to provide sealing strips on the glazing, and it will suffice to have a glass glazing sheet in practice generally not resting in a sealing manner against a wooden contact face of the rebate.

[0012] It is advantageous according to the invention if the frame comprises a framework of aluminium tubular sections. Aluminium tubular sections are relatively light, sturdy and burglar-proof.

[0013] The window assembly according to the inven-

tion can be used very advantageously as a moving window. It is therefore advantageous according to the invention if the frame and the glazing unit together form a moving window and if the fixing means comprise fittings. In this context the term fittings is understood as meaning in particular so-called window furniture.

[0014] It is further advantageous according to the invention if the fixing means comprise a metal strip, such as an aluminium or a steel casing strip, if the casing strip, facing an opposite casing part, is fixed in the rebate, and if at least a part of the fittings is fixed on the casing strip. Such a casing strip can facilitate the fixing to a wooden casing. Such a casing strip can also reinforce a fixing to the casing, which provides greater security against burglary.

[0015] It is further advantageous according to the invention if the casing strip is provided with an undercut first groove extending in the longitudinal direction of the casing strip, and if, at least when the window is closed, the frame comprises an undercut second groove extending parallel to the first groove, and if the first and second groove interact to fix at least a part of the fittings. Such undercut grooves are known and in practice are also commonly used for fixing fittings. The fittings can be fixed by means of such an undercut groove at essentially any desired place along the frame. Such an undercut groove also makes it possible to accommodate operating means for the fittings.

[0016] The fittings according to the invention can comprise one or more hinges or one or more scissor mechanisms or one or more stay mechanisms.

[0017] The fittings according to the invention can also comprise casing locking means fixed to the wooden frame, such as locking lugs or recesses for locking lugs, and also frame locking means provided on the frame and interacting with the casing locking means, such as recesses for locking lugs and locking lugs respectively. Such fittings are known in particular for increasing security against burglary. By means of such fittings the window can be fixed to the casing at several points, for example all the way round along the entire frame.

[0018] It is further advantageous according to the invention if the casing locking means and frame locking means are slidable relative to each other.

[0019] According to the invention, the fixing means can be fixed directly to the wooden casing, but can also be fixed indirectly to the wooden casing. A combination of the two is also conceivable.

[0020] According to the invention, when the window is closed, the rebate defines a pressure relief space between the outside and inside contact faces, and the pressure relief space is connected to the outside of the casing in such a draining manner that outside pressure prevails in the pressure relief space. This ensures that water that has penetrated between the glazing and the outside contact face is reliably drained away to the outside of the glazing - back towards the exterior wall - instead of being able to penetrate inside by way of the sealing strip. Keep-

ing the pressure relief space at the same pressure as the exterior wall pressure also prevents a pressure that is lower than the outside pressure from prevailing in the pressure relief space, which would tend to draw in that water. With regard to the inside of the building, it should be pointed out that underpressure will often prevail there, and that the draining connection of the pressure relief space to the outside of the casing has the additional advantage that in so far as a draft flow is produced by way of the sealing strip and the relative underpressure on the inside of the building, this draft flow extracts air mainly by way of the amply proportioned drainage channel, and that the extracted air provides pressure equalization. This therefore prevents water droplets from being sucked in.

[0021] In order to ensure good insulation, it is advantageous according to the invention if the outside of the glazing unit is insulated relative to the inside of the frame by means of one or more cold bridges.

[0022] The present invention will be explained in greater detail below with reference to the exemplary embodiment illustrated in the drawings, in which:

Figure 1 shows a cross section of a part of an assembly according to the invention;

Figure 2 shows a front view, from the inside of a building, of an assembly according to the invention; and

Figure 3 shows an example of casing locking means and frame locking means.

[0023] Corresponding parts are provided with the same reference numeral in the figures.

[0024] Fig. 1 shows a cross section of an assembly 1 according to the invention, which assembly is provided with a wooden casing 2 and an aluminium frame 3, in the case of which the outside 36 of the glazing - or the outward-facing surface of the outside pane 31 - is insulated relative to the inside of the frame 37 by means of one or more cold bridges, and on which the glazing 30 is glued by means of adhesive layers 5, 6. Adhesive layer 5 in particular prevents burglary here, since the glazing will simply fall out of the frame when the outside pane 31 of the glazing is broken, if there is no adhesive connection 5. The frame 3 comprises a tubular section 7, which is connected by way of hinges 9 to a fixing means 8, which is fixed to the wooden casing 2. The hinge 9 and the fixing means 8 together form a flat face 38, which, depending on the measurements of the rebate, can ultimately lie in its entirety against the wooden casing 39. The tubular section 7 comprises a slot 12 in which a metal strip, such as an aluminium strip or a steel strip, can be placed, which strip comprises frame locking means. The fixing means 8 comprises a slot 13 in which a metal strip, such as an aluminium strip or a steel strip, can be placed, which strip comprises casing locking means. A draft strip 10 is present between the tubular section 7 and the wooden window 2.

[0025] The glazing 30 is double glazing here. The dou-

ble glazing 30 here comprises an outside pane 31 and an inside pane 32. The inside pane 32 is of a laminated or float glass or some toughened or untoughened construction. The outside pane 31 and inside pane 32 are held mutually spaced by a spacing assembly 33. This spacing assembly 33 can also be a cold bridge, which counteracts heat transfer from the outside pane 31 to the inside pane 32.

[0026] The frame 3 also comprises, in addition to the tubular section 7, an aluminium section 34 situated more towards the outside. This section 34 is connected to the tubular section 7 by means of plastic strips 35, which form a cold bridge. The outside glazing is glued to the section 34 by means of an adhesive connection 6. The inside pane 32 is glued to the tubular section 7 by means of the adhesive connection 5. If the adhesive connections 5 and 6 possess sufficient heat insulating properties, it may be possible to omit the cold bridges 35.

[0027] Fig. 2 shows a front view - from the inside of a building - of the assembly 1. It can be seen clearly here that the frame 3 runs around the entire periphery of the glazing 4. In this example of the invention the hinges 9 are situated to the right of the glazing 4, while on the left side of the glazing 4 there is a handle 14, by means of which the locking means can be opened and closed.

[0028] Fig. 3 shows an example of frame locking means and casing locking means, which can be placed in the slots 12 and 13 respectively (see Fig. 1). The bottom strip 15 contains locking lugs 16, which can move through the slots 17 by means of control of the handle 14 (see Fig. 2). The top strip 18 comprises recesses for locking lugs 19.

[0029] It will be clear to the person skilled in the art that yet further variants are conceivable within the scope of protection defined by the claims. For example, it is possible to omit the section 34 and the cold bridges 35 entirely. The inside pane 32 in that case can extend outwards as far as the outside pane 31. It will then suffice to glue only the inside pane 32 on the tubular section 7. It will also be clear here that the draft strip 10 will preferably be fixed at another point on the tubular section 7, for example by moving the fixing point shown in Fig. 1 through 90° to a plane running parallel to that of the inside pane 32. The advantage of gluing of the inside pane on the tubular section 7 in connection with burglary prevention is then fully retained.

Claims

1. Window assembly (1) comprising:

- a multiple glazing unit (4, 30) with an outside pane (31) and an inside pane (32);
- a frame (3) extending around the periphery of the glazing unit (4);
- a wooden casing (2) with a rebate in which the frame (3) with the glazing unit (4) can be accom-

modated;

the frame (3) being fixed to the wooden casing (2) by means of fixing means (8); wherein the glazing unit (4, 30) is glued on the frame (3) with the outside pane (31) facing outwards in such a way that, viewed from the outside, the frame (3) lies behind said outside pane (31);

at least when the window is closed, the outside of the outside pane (31) resting with an edge zone along an outside contact face of the rebate, which outside contact face, at least when the window is closed, extends parallel to the glazing unit (4, 30) and faces the inside of the casing (2);

the rebate being of a stepped design with an inside contact face situated further inwards relative to the outside contact face and facing the inside of the casing (2); **characterized in that**

all the way round the frame (3) bears a sealing strip (10), which rests in a sealing manner on the inside contact face, at least when the window is closed and **in that**, when the window is closed the rebate between the outside and the inside contact face defines a pressure relief space, that is connected to the outside of the casing (2) in such a draining manner that the outside pressure prevails in the pressure relief space.

2. Window assembly (1) according to Claim 1, in which the frame (3) comprises a framework of tubular sections (7).
3. Window assembly (1) according to one of the preceding claims, in which the frame (3) and the glazing unit (4, 30) together form a moving window, and in which the fixing means (8) comprise fittings.
4. Window assembly (1) according to Claim 3, in which the fixing means (8) further comprise a metal casing strip, such as an aluminium or a steel casing strip, in which the casing strip, facing an opposite casing part, is fixed in the rebate, and in which at least a part of the fittings are fixed on the casing strip.
5. Window assembly (1) according to Claim 4, in which the casing strip is provided with an undercut first groove extending in the longitudinal direction of the casing strip, and in which, at least when the window is closed, the frame (3) comprises an undercut second groove extending parallel to the first groove, and in which the first and second groove interact to fix at least a part of the fittings.
6. Window assembly (1) according to one of Claims 3 - 5, in which the fittings comprise one or more hinges or one or more scissor mechanisms or one or more window stays.

7. Window assembly (1) according to one of Claims 3 - 6, in which the fittings comprise casing locking means fixed to the wooden frame (2, 39), such as locking lugs or recesses for locking lugs, and also frame locking means provided on the frame (3) and interacting with the casing locking means, such as recesses for locking lugs and locking lugs respectively.
8. Window assembly (1) according to Claim 7, in which the casing locking means and frame locking means are slidable relative to each other.
9. Window assembly (1) according to one of the preceding claims, in which the fixing means (8) are fixed indirectly, such as by way of a casing strip, to the wooden casing (2, 39).
10. Window assembly (1) according to one of the preceding claims, in which the fixing means (8) are fixed directly to the wooden casing (2, 39).
11. Window assembly (1) according to one of the preceding claims, in which the outside of the glazing unit (4, 30) is insulated relative to the inside of the frame (3) by means of one or more cold bridges (35).
12. Window assembly (1) according to one of the preceding claims, in which the outside pane (31) projects all the way round relative to the inside pane (32), and in which the frame (3) is glued both to the rear side of the projecting part of the outside pane (31) and to the edge zone of the inside of the inside pane (32).
13. Window assembly (1) according to Claim 11, in which the part of the frame (3) glued to the inside pane (32) is connected by way of a cold bridge (35) to the remainder of the frame (3).

Patentansprüche

1. Fensteranordnung (1), umfassend:
 - eine Mehrfachverglasungseinheit (4, 30) mit einer Außenscheibe (31) und einer Innenscheibe (32);
 - einen Rahmen (3), der um den Rand der Verglasungseinheit (4) herum verläuft;
 - einen Holzblendrahmen (2) mit einem Falz, in dem der Rahmen (3) mit der Verglasungseinheit (4) aufgenommen werden kann;
- wobei der Rahmen (3) an dem Holzblendrahmen (2) mit Befestigungsmitteln (8) befestigt ist;
- wobei die Verglasungseinheit (4, 30) an dem Rahmen (3) angeklebt ist, wobei die Außenscheibe (31)

- derart nach außen zeigt, dass der Rahmen (3), von außen betrachtet, hinter der Außenscheibe (31) liegt;
- wobei die Außenseite der Außenscheibe (31), zumindest, wenn das Fenster geschlossen ist, mit einem Randbereich an einer äußeren Kontaktfläche des Falzes entlang anliegt,
- wobei die äußere Kontaktfläche, zumindest, wenn das Fenster geschlossen ist, parallel zu der Verglasungseinheit (4, 30) verläuft und der Innenseite des Blendrahmens (2) zugewandt ist;
- wobei der Falz abgestuft ausgestaltet ist, wobei eine innere Kontaktfläche bezogen auf die äußere Kontaktfläche weiter innen befindlich ist und der Innenseite des Blendrahmens (2) zugewandt ist; **dadurch gekennzeichnet, dass** der Rahmen (3) umlaufend einen Dichtungsstreifen (10) trägt, der abdichtend an der inneren Kontaktfläche aufliegt, zumindest, wenn das Fenster geschlossen ist, und
- dadurch dass, wenn das Fenster geschlossen ist, der Falz zwischen der äußeren und der inneren Kontaktfläche einen Druckausgleichsraum definiert, der mit der Außenseite des Blendrahmens (2) derart ableitend verbunden ist, dass der Außendruck in dem Druckausgleichsraum vorherrscht.
2. Fensteranordnung (1) nach Anspruch 1, bei der der Rahmen (3) eine Rahmenkonstruktion aus röhrenförmigen Abschnitten (7) umfasst.
 3. Fensteranordnung (1) nach einem der vorhergehenden Ansprüche, bei der der Rahmen (3) und die Verglasungseinheit (4, 30) gemeinsam ein bewegliches Fenster bilden, und bei der die Befestigungsmittel (8) Beschläge umfassen.
 4. Fensteranordnung (1) nach Anspruch 3, bei der die Befestigungsmittel (8) ferner einen Metall-Blendrahmenstreifen, beispielsweise einen Aluminium- oder einen Stahl-Blendrahmenstreifen, umfassen, bei der der Blendrahmenstreifen, der einem gegenüberliegenden Blendrahmenteil zugewandt ist, in dem Falz befestigt ist, und bei der zumindest ein Teil der Beschläge an dem Blendrahmenstreifen befestigt ist.
 5. Fensteranordnung (1) nach Anspruch 4, bei der der Blendrahmenstreifen mit einer ersten Rille mit Unterschnitt versehen ist, die in der Längsrichtung des Blendrahmenstreifens verläuft, und bei der, zumindest, wenn das Fenster geschlossen ist, der Rahmen (3) eine zweite Rille mit Unterschnitt umfasst, die parallel zur ersten Rille verläuft, und bei der die erste und die zweite Rille aufeinander so einwirken, dass zumindest ein Teil der Beschläge befestigt wird.
 6. Fensteranordnung (1) nach einem der Ansprüche 3 bis 5, bei der die Beschläge ein oder mehrere Schar-

niere oder einen oder mehrere Scherenmechanismen oder einen oder mehrere Fensterstellstangen umfassen.

7. Fensteranordnung (1) nach einem der Ansprüche 3 bis 6, bei der die Beschläge Blendrahmenverriegelungsmittel umfassen, die an dem Holzrahmen (2, 39) befestigt sind, beispielsweise Verriegelungsnasen oder Aussparungen für Verriegelungsnasen, und auch Rahmenverriegelungsmittel, die an dem Rahmen (3) vorgesehen sind und mit den Blendrahmenverriegelungsmitteln wechselwirken, beispielsweise Aussparungen für Verriegelungsnasen beziehungsweise Verriegelungsnasen.
8. Fensteranordnung (1) nach Anspruch 7, bei der die Blendrahmenverriegelungsmittel und Rahmenverriegelungsmittel zueinander verschiebbar sind.
9. Fensteranordnung (1) nach einem der vorhergehenden Ansprüche, bei der die Befestigungsmittel (8) indirekt, beispielsweise mittels eines Blendrahmenstreifens, an dem Holzblendrahmen (2, 39) befestigt sind.
10. Fensteranordnung (1) nach einem der vorhergehenden Ansprüche, bei der die Befestigungsmittel (8) direkt an dem Holzblendrahmen (2, 39) befestigt sind.
11. Fensteranordnung (1) nach einem der vorhergehenden Ansprüche, bei der die Außenseite der Verglasungseinheit (4, 30) bezogen auf die Innenseite des Rahmens (3) mit einer oder mehreren Kältebrücken (35) isoliert ist.
12. Fensteranordnung (1) nach einem der vorhergehenden Ansprüche, bei der die Außenscheibe (31) bezogen auf die Innenscheibe (32) umlaufend vorsteht, und bei der der Rahmen (3) sowohl an der Rückseite des vorstehenden Teils der Außenscheibe (31) als auch am Randbereich der Innenseite der Innenscheibe (32) angeklebt ist.
13. Fensteranordnung (1) nach Anspruch 11, bei der der Teil des Rahmens (3), der an der Innenscheibe (32) angeklebt ist, mittels einer Kältebrücke (35) mit dem übrigen Rahmen (3) verbunden ist.

Revendications

1. Ensemble de fenêtre (1) comprenant :

une unité de vitrage multiple (4, 30) avec une vitre extérieure (31) et une vitre intérieure (32) ;
un cadre (3) s'étendant autour de la périphérie de l'unité de vitrage (4) ;

un contre-chambranle en bois (2) avec une feuillure dans laquelle le cadre (3) avec l'unité de vitrage (4) peut être logé ;

le cadre (3) étant fixé sur le contre-chambranle en bois (2) au moyen de moyens de fixation (8) ; dans lequel l'unité de vitrage (4, 30) est collée sur le cadre (3) avec la vitre extérieure (31) orientée vers l'extérieur de sorte que, lorsqu'elle est observée de l'extérieur, le cadre (3) est derrière ladite vitre extérieure (31) ;

au moins lorsque la fenêtre est fermée, l'extérieur de la vitre extérieure (31) s'appuyant contre une zone de bord le long d'une face de contact externe de la feuillure, ladite face de contact externe, au moins lorsque la vitre est fermée, s'étend parallèlement à l'unité de vitrage (4, 30) et fait face à l'intérieur du contre-chambranle (2) ;

la feuillure ayant une conception étagée avec une face de contact interne située davantage vers l'intérieur par rapport à la face de contact externe et faisant face à l'intérieur du contre-chambranle (2) ; **caractérisé en ce que :**

sur toute la circonférence du cadre (3), on trouve un caoutchouc d'étanchéité (10) qui s'appuie d'une manière étanche sur la face de contact interne, au moins lorsque la fenêtre est fermée et

en ce que, lorsque la fenêtre est fermée, la feuillure entre la face de contact externe et la face de contact interne définit un espace de dégagement de pression qui est raccordé à l'extérieur du contre-chambranle (2) d'une manière drainante de sorte que la pression extérieure soit prédominante dans l'espace de dégagement de pression.

2. Ensemble de fenêtre (1) selon la revendication 1, dans lequel le cadre (3) comprend un châssis de sections tubulaires (7).
3. Ensemble de fenêtre (1) selon l'une quelconque des revendications précédentes, dans lequel le cadre (3) et l'unité de vitrage (4, 30) forment ensemble une fenêtre mobile, et dans lequel les moyens de fixation (8) comprennent des ferrures d'assemblage.
4. Ensemble de fenêtre (1) selon la revendication 3, dans lequel les moyens de fixation (8) comprennent en outre un joint de contre-chambranle métallique, tel qu'un joint en aluminium ou un acier, dans lequel joint de contre-chambranle, faisant face à une partie de contre-chambranle opposée, est fixé dans la feuillure, et dans lequel au moins une partie des ferrures d'assemblage est fixée sur le joint de contre-chambranle.

5. Ensemble de fenêtre (1) selon la revendication 4, dans lequel le joint de contre-chambranle est prévu avec une première rainure de dégagement s'étendant dans la direction longitudinale du joint de contre-chambranle, et dans lequel, au moins lorsque la fenêtre est fermée, le cadre (3) comprend une seconde rainure de dégagement s'étendant parallèlement à la première rainure, et dans lequel les première et seconde rainures interagissent pour fixer au moins une partie des ferrures d'assemblage.

6. Ensemble de fenêtre (1) selon l'une des revendications 3 à 5, dans lequel les ferrures d'assemblage comprennent une ou plusieurs charnières ou un ou plusieurs mécanismes de ciseau ou un ou plusieurs supports de fenêtre.

7. Ensemble de fenêtre (1) selon l'une quelconque des revendications 3 à 6, dans lequel les ferrures d'assemblage comprennent des moyens de blocage de contre-chambranle fixés sur le cadre en bois (2, 39), tels que des pattes de blocage ou évidements pour bloquer les pattes, et également des moyens de blocage de cadre prévus sur le cadre (3) et interagissant avec les moyens de blocage de contre-chambranle, tels que des évidements pour bloquer les pattes et des pattes de blocage, respectivement.

8. Ensemble de fenêtre (1) selon la revendication 7, dans lequel les moyens de blocage de contre-chambranle et les moyens de blocage de cadre peuvent coulisser les uns par rapport aux autres.

9. Ensemble de fenêtre (1) selon l'une des revendications précédentes, dans lequel les moyens de fixation (8) sont fixés indirectement, comme au moyen d'un joint de contre-chambranle, au contre-chambranle en bois (2, 39).

10. Ensemble de fenêtre (1) selon l'une des revendications précédentes, dans lequel les moyens de fixation (8) sont directement fixés sur le contre-chambranle en bois (2, 39).

11. Ensemble de fenêtre (1) selon l'une des revendications précédentes, dans lequel l'extérieur de l'unité de vitrage (4, 30) est isolé par rapport à l'intérieur du cadre (3) au moyen d'un ou de plusieurs ponts thermiques (35).

12. Ensemble de fenêtre (1) selon l'une des revendications précédentes, dans lequel la vitre extérieure (31) fait saillie sur toute la circonférence par rapport à la vitre intérieure (32) et en ce que le cadre (3) est collé à la fois sur le côté arrière de la partie en saillie de la vitre extérieure (31) et sur la zone de bord de l'intérieur de la vitre intérieure (32).

13. Ensemble de fenêtre (1) selon la revendication 11, dans lequel la partie du cadre (3) collée sur la vitre intérieure (32) est raccordée au moyen d'un pont thermique (35) au reste du cadre (3).

5

10

15

20

25

30

35

40

45

50

55

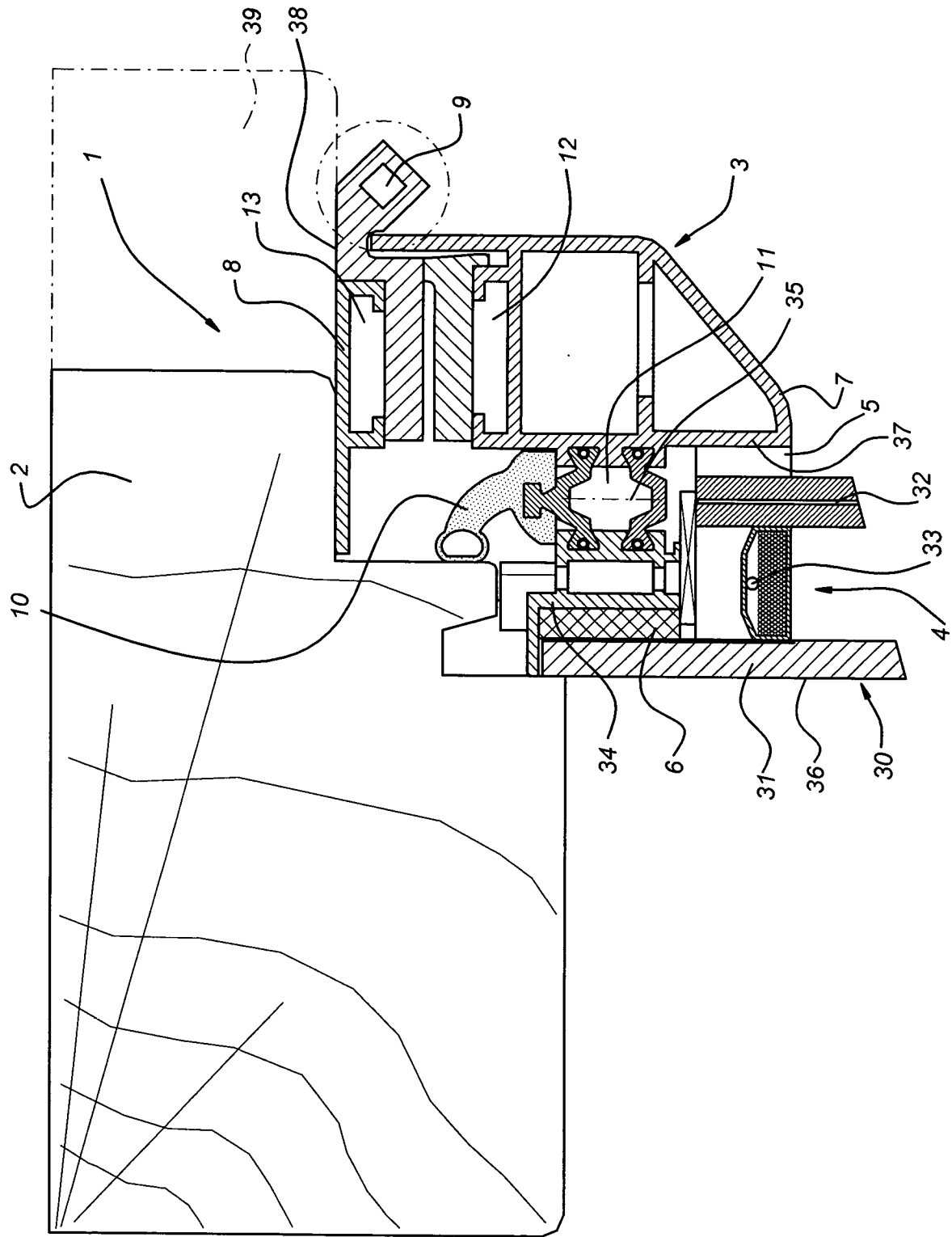


Fig 2

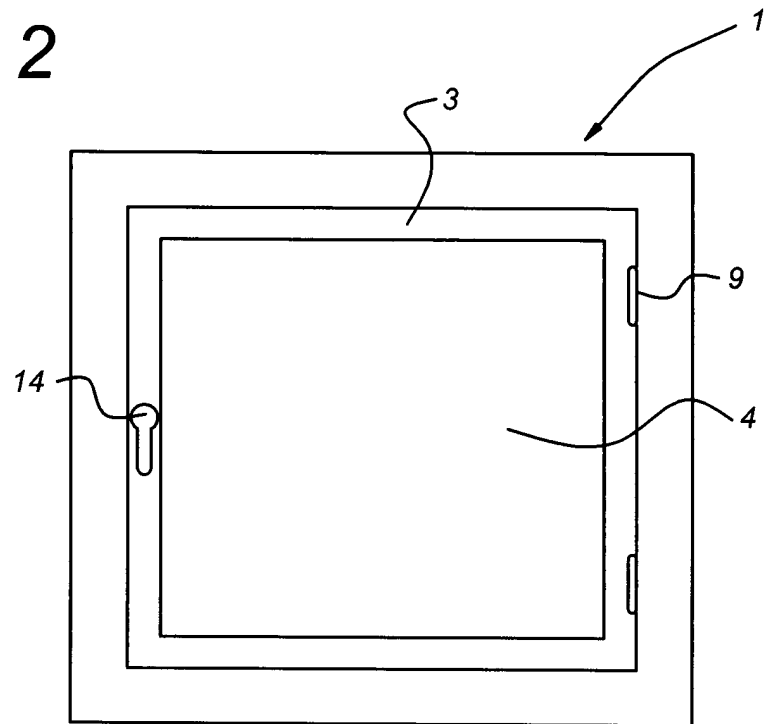


Fig 3

