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(54) Corner piece and joinery which is provided with such a corner piece

(57) Corner piece which can be provided between two hinge jambs (10 and 11) of the joinery of a door, window or the like, standing one on the other, whereby this joinery is provided with a locking mechanism having at least one transmission element at the angle joint, characterised in that the corner piece (1) is provided with at least one bent wall (5) forming a guide for the above-mentioned transmission element of the locking mechanism.

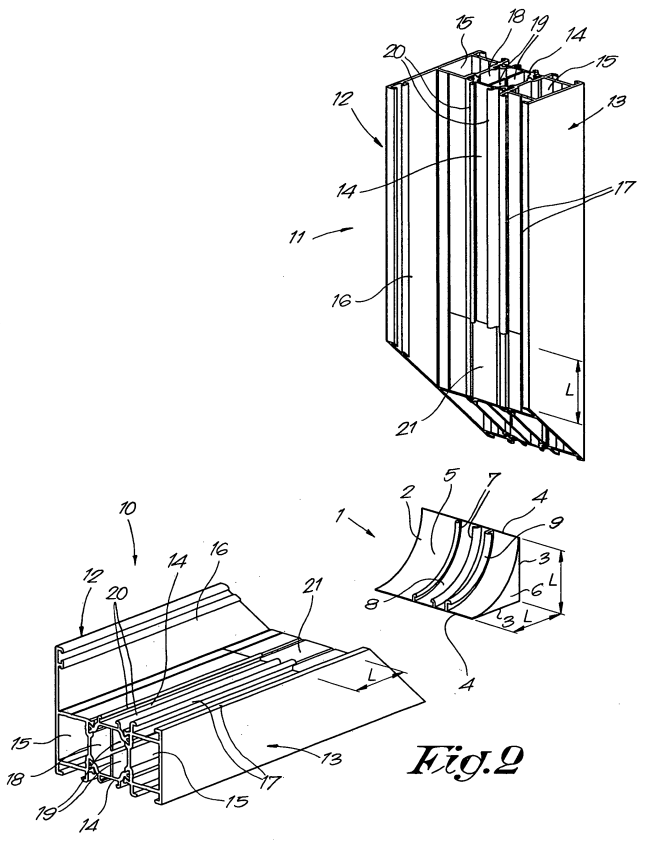

Fig.2

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Description

[0001] The present invention concerns a corner piece which can be provided on two hinge jambs of the joinery of a door, window or the like, standing one on the other, and on a joinery which is provided with such a corner piece.

[0002] A corner piece for connecting two hinge jambs standing one on the other is already known, whereby this corner piece is provided with two legs standing one on the other, which are provided in cavities in the far ends of the respective hinge jambs to be connected.

[0003] In order to make the above-mentioned hinge jambs fit up well to each other, the far ends of said jambs that are to be put against each other should be mitred first in the known manner, after which they are pushed over the above-mentioned legs of the corner piece and are attached to the latter, for example by means of screws or by pushing in an aluminium lip of the hinge jamb working in conjunction with a part of the above-mentioned legs of the corner piece, such that a fixed connection is obtained.

[0004] A disadvantage of the use of such a known corner piece is that the metalwork of the locking mechanism of such a known window jamb or the like must be provided with a transmission element between the sliding parts of this locking mechanism which are provided on the hinge jambs, at the angle joints, which transmission element is complex and expensive.

[0005] Another disadvantage of such a known corner piece is that the sealings which are provided for example in the joinery of a window, must also be mitred and must be glued at the mitre joint. This is a laborious job which must be done with great precision, which makes it time-consuming and expensive. If the job is not done with sufficient accuracy, an opening may be created between the connecting parts of the sealings, which may result in local heat losses and even leaks.

[0006] In certain cases, these sealings are not mitred at the angles of the joinery, but they are bent and provided in this manner on the joinery, which is disadvantageous in that the material of these sealings is upset somewhat, such that a good sealing cannot be guaranteed and the risk of water intrusion increases.

[0007] An additional disadvantage of the use of such known corner pieces is that dewatering orifices must be provided in the above-mentioned hinge jambs, such that rainwater and/or condensate can be carried off, as a result of which the strength of these jambs decreases and the required processing time increases.

[0008] The present invention aims to remedy one or several of the above-mentioned and other disadvantages.

[0009] To this end, the present invention concerns a corner piece which can be provided between two hinge jambs of the joinery of a door, window or the like standing one on the other, whereby this joinery is provided with a locking mechanism having at least one transmission element at the angle joint, whereby the corner piece is provided with at least one bent wall forming a guide for the above-mentioned transmission element of the locking mechanism.

[0010] An advantage of the use of such an angle piece in the joinery of a window or the like is that the accompanying locking mechanism can be provided with a flexible transmission between the sliding parts of this locking mechanism, which can be guided over the above-mentioned bent wall of the corner element.

[0011] The above-mentioned hinge jambs are preferably provided on at least one of their outer walls with at least one rib for fixing a sealing, and the above-mentioned corner piece according to the invention is also provided with at least one rib which, when the corner piece is mounted, is situated in the extension of the above-mentioned ribs on the hinge jambs and which has a bent shape in its longitudinal direction, such that a sealing can be mounted in a continuous and overlapping manner over the corner piece and the connecting hinge jambs.

[0012] An advantage of such a corner piece according to the invention is that it makes it possible to provide a sealing in a simple manner, for example for a window, which sealing must not be mitred, but can be mounted on the above-mentioned corner piece in a bent manner, which saves time and money, and whereby a good sealing without any cracks is nevertheless always obtained.

[0013] In a preferred embodiment of a corner piece according to the invention, the corner piece is provided with at least two legs which enclose an angle and which can be pushed at least partly in fitting hinge jambs.

[0014] An advantage of such an embodiment of a corner piece according to the invention is that the far ends of the hinge jambs to be connected must not be mitred, since they do not connect directly, but via the above-mentioned corner piece.

[0015] A corner piece according to the invention is preferably provided with one or several dewatering orifices, which make it possible to carry off rain water or condensate.

[0016] This is advantageous in that dewatering orifices no longer have to be provided in the above-mentioned hinge jambs, as a result of which the processing time decreases and the mechanical strength of these jambs increases.

[0017] The present invention also concerns the joinery of a window, door or the like which is provided with two or several hinge jambs in between which a corner piece according to the invention is provided.

[0018] In order to better explain the characteristics of the present invention, the following preferred embodiment of a corner piece according to the invention is given as an example only without being limitative in any way, with reference to the accompanying drawings, in which:

figure 1 schematically represents a corner piece according to the invention in perspective;
figure 2 is a disassembled view of a part of the joinery

of a window or the like, which joinery is provided with a corner piece according to the invention;
figure 3 represents a variant of a corner piece according to the invention to a larger scale;
figure 4 represents a section according to line IV-IV in figure 3;
figure 5 represents a part of the joinery of a window or the like when disassembled, which joinery is provided with a corner piece according to figure 3;
figure 6 is a disassembled view of the part of the joinery according to figure 5;
figure 7 represents another variant of a corner piece according to figure 6 in a joinery, but from another point of view;
figure 8 represents another variant of a corner piece in a joinery according to figure 7.

[0019] Figure 1 represents a corner piece 1 according to the invention which consists of a corner element 2 which is either or not hollow, which in this case consists of two standing walls 3 standing at right angles towards each other, having in this case a length L, which are provided with a crosswise standing wall 4 at their respective free ends, and whereby the above-mentioned crosswise standing walls 4 are connected to each other by means of a bent wall 5 which is made concave, and whereby the corner element 2 is sealed by means of two side walls 6.

[0020] According to the invention, the corner piece 1 is provided with at least one rib which has a bent shape in its longitudinal direction.

[0021] In this case, three parallel, standing ribs are provided on the bent wall 5, two ribs 7 of which are provided with edges which are bent towards each other at their free ends, such that a groove 8 is formed between these two ribs 7, in which a sealing can be provided which is not represented in the figures 10.

[0022] The third rib 9 is provided at a distance from the above-mentioned two ribs 7 and parallel to them, and the free end of this third rib 9 is provided with an edge bent away from the above-mentioned two ribs 7.

[0023] A corner piece 1 according to the invention may for example be formed by means of injection moulding or the like.

[0024] Figure 2 illustrates how a corner piece 1 according to the invention can be applied in the jamb or joinery of a window, door or the like.

[0025] This figure represents a part of the joinery of a window, in particular a horizontal and a vertical hinge jamb 10 and 11 respectively of this joinery, which are entirely mitred at least on one of their free ends and must be provided against each other.

[0026] Each of the above-mentioned hinge jambs 10 and 11 is in this case composed of two jambs made of metal or the like, an outer jamb 12 and an inner jamb 13 respectively, which are mutually connected by means of two connecting jambs 14, preferably made of insulating material.

[0027] Every outer jamb 12 is in this case mainly formed of a rectangular, tubular jamb which defines an inner channel 15 and which is additionally provided with a lath 16 which extends in the longitudinal direction of the above-mentioned tubular jamb and which is situated in the extension of a side wall thereof.

[0028] Every inner jamb 13 is made as a predominantly rectangular, tubular jamb which also encloses a channel 15 with two walls which are parallel to the above-mentioned lath 16 of the outer jamb 12, and which are mutually connected by two diagonal walls.

[0029] On the above-mentioned diagonal walls of the inner jamb 13 are in this case provided two standing ribs 17 which are provided with edges bent towards each other at their respective free ends.

[0030] The above-mentioned thermally insulating connecting jambs 14 are made in the known manner, such that their free ends are connected to an inner jamb 13, outer jamb 12 respectively, by means of known clamping means, for example in the shape of a dovetail joint, and such that they are situated at a distance from each other, as a result of which they define an additional channel 18 which is situated between the above-mentioned channels 15.

[0031] On each of the inner walls directed towards each other of the connecting jambs 14 is provided a standing wall 19, and every connecting jamb 14 is provided, on its respective outer wall, with two standing ribs 20 having far ends bent towards each other.

[0032] The rib 17 on the diagonal wall of the inner jamb 13 on the inside of the joinery which is bent away from the above-mentioned connecting jambs 14 with its far end, and the ribs 20 on the connecting jambs 14 in this case extend up to a certain distance from the far ends of the respective hinge jambs 10 and 11 to be connected, which distance is preferably equal to the length L of the above-mentioned walls 3.

[0033] As a result, a surface 21 is formed on the inside of the joinery, in particular on each of the far ends of the hinge jambs 10 and 11.

[0034] Every surface 21 is preferably deepened somewhat in relation to the diagonal walls of the outer and inner jamb, 12 and 13 respectively, in relation to the connecting jamb 14 on the inside of the joinery.

[0035] The use of a corner piece 1 according to the invention is very simple and as follows.

[0036] In order to connect the above-mentioned hinge jambs 10 and 11, they are pushed over the legs of a corner piece which is not represented in the figures and which is known as such and attached to the latter, for example by means of screws or by pushing in an aluminium lip.

[0037] During the assembly, the corner piece 1 according to the invention is mounted between the hinge joints 10 and 11, as the walls 3 of the corner element 2 standing on each other are each provided on a surface 21 of a hinge jamb 10 or 11 to be connected, such that the bent wall 5 of the corner element 2, on the inside of the joinery,

is situated practically in the extension of the diagonal walls of the outer jambs 12, the inner jambs 13 and the connecting jambs 14 respectively.

[0038] It is known that the moving parts of such a locking mechanism are connected to each other in the corners of the joinery by means of a transmission element.

[0039] By making use of a corner piece 1 according to the invention, it is possible to make this transmission element in the shape of a relatively simple, flexible element, for example a metal strip, which can be guided over the bent wall 5, as a result of which the use of known complex and expensive transmission elements is excluded.

[0040] According to a preferred characteristic of the invention, the above-mentioned ribs 7 and 9, when assembled, are situated in the extension of the ribs 20 on the connecting jambs 14 and the ribs 17 on the inner jambs 13 respectively, such that a sealing can be mounted in a continuous and overlapping manner over the corner piece 1 and the connecting hinge jambs 10 and 11.

[0041] This offers as a major advantage that the sealing must no longer be mitred, which is time-saving and which always guarantees a good sealing.

[0042] Figures 3 and 4 represent a variant of a corner piece 1 according to the invention which is additionally provided with at least one pair of legs which encloses an angle, and which is in this case made with two pairs of legs 22 situated at a distance from each other, which are parallel to each other and which, in this case, are situated in the extension of a respective side wall 6 of the corner element 2 with their outer wall 6.

[0043] The free ends 23 of the above-mentioned outer legs 22 are in this case tapered in a narrowed manner.

[0044] Between the above-mentioned two outer pairs of legs 22 is in this case provided a third pair of legs 24, whose legs 24 are shorter than the above-mentioned outer legs 22.

[0045] The above-mentioned middle legs 24 are provided with a groove 25 over their length, and they also have a narrowed far end 26.

[0046] In this case, the corner piece 1 is made hollow, such that, as represented in figure 4, a channel is defined which opens at the free ends of the above-mentioned outer legs 22.

[0047] A corner piece 1 according to the invention is preferably provided with at least one dewatering orifice.

[0048] In this case, a dewatering orifice 27, 28 respectively is provided in the bent wall 5 and in the side wall 6, as is represented in the figures by means of a dashed line.

[0049] The use of a corner piece 1 according to the invention is very simple and is represented in figures 5 and 6.

[0050] In order to mount the joinery by means of a corner piece 1 according to the invention, the above-mentioned legs 22 and 24 are in this case pushed in the channels 15, 18 respectively of the hinge jambs 10, 11 respectively, such that the outer walls of the above-mentioned legs 22 and 24 work in conjunction with the inner walls of the respective channels 15 and 18.

[0051] Since the free ends 23 and 26 of the above-mentioned legs 22 and 24 are narrowed, they can be easily pushed in said channels 15 and 18 in the hinge jambs 10 and 11.

[0052] The above-mentioned standing wall 19, when mounted, meshes in the groove 25 of the middle leg 24.

[0053] In this case, the connection between the corner piece 1 and the hinge jambs 10 and 11 is provided for as one or several of the above-mentioned legs 22 and/or 24 are provided in a channel 15 and/or 18 of an above-mentioned jamb 10 and 11 by means of a wringing fit.

[0054] Naturally, an additional connection can be provided, for example, but not restricted to, by screwing the above-mentioned jambs 10 and 11 to the corner piece 1 or by connecting them to the latter by means of rivets or the like.

[0055] When mounted, the above-mentioned ribs 20 of the connecting jamb 14 are situated in the extension of the ribs 7 of the corner piece 1.

[0056] Between these ribs 7 and 20 is preferably provided a sealing which is not represented in the figures, which simply follows the curve of the corner piece 1, in particular the bent wall 5 of the corner piece 1.

[0057] On either side of the above-mentioned corner piece 1 is preferably provided a cover plate 29 and 30, for example made of aluminium, which is provided against the above-mentioned corner piece 1.

[0058] The first cover plate 29 which is provided on the side of the outer jambs 12 has a square shape and fits up to a side wall of said outer jamb 12 and against the above-mentioned lath 16 which is situated in the extension of said wall.

[0059] The second cover plate 30 which is situated on the side of the inner jambs 13 is made practically square-shaped as well, whereby one corner is cut off, however, such that a bent part is formed.

[0060] On the side of the second cover plate 30 which is directed towards the corner piece 1 is preferably provided a standing rib 31 which, when mounted, is situated in the extension of the bent edge of an above-mentioned rib 17 of the inner jambs 13, such that the above-mentioned rib 31 is situated opposite the far end of the third standing rib 9 of the corner piece 1 when mounted.

[0061] Between the third rib 9 of the corner piece 1 and the rib 31 of the cover plate may for example be clamped a glazing bead which is not represented in the figures, which may anchor a sheet of glass in the joinery in the known manner.

[0062] The metalwork which is provided around the joinery, such as for example the locking mechanism of a window jamb, is already known and is not represented in the figures for clarity's sake.

[0063] As a result, the locking mechanism of the joinery can be provided with a flexible transmission element between the sliding parts of this locking mechanism, which can be guided over the above-mentioned bent wall 5 of the corner element 2.

[0064] It goes without saying that a corner piece 1 according to the invention can be provided with any random number of dewatering orifices 27 and/or 28, and that they can also be provided in other places in the corner piece 1. Preferably, at least one dewatering orifice is always provided on the inside of the joinery and at least one on the outside of the joinery.

[0065] Figure 7 represents another variant of a corner piece 1 according to the invention which also mainly consists of a corner element 2 onto which legs 22A, 22B respectively are provided which can be pushed in a channel 15A and 15B, 18 respectively of the hinge jambs 10 and 11 to be connected.

[0066] The shapes of the outer legs 22A and 22B and of the respective channels 15A and 15B are somewhat different from the above-described embodiment, but this has no influence on its use.

[0067] In this case, the corner piece 1 is made such that the above-mentioned bent wall 5 is spherical and is situated on the outside of the joinery when mounted.

[0068] The cover plates 29 and 30 are in this case provided with lips 32 at each of their free ends which can be pushed in the above-mentioned channels 15A and 15B together with the legs 22A and 22B of the corner piece 1.

[0069] The use of such a corner piece 1 is analogous to that of the above-described embodiment, whereby it is possible in this case as well for the metalwork or locking mechanism of for example the leaf of a window to be provided with one or several simple transmission elements at the angle joints of the joinery, which can be guided over the above-mentioned bent wall 5.

[0070] It is clear that a joinery, which is provided with a corner piece 1 according to the invention, can also be provided with only one cover plate 29 or 30.

[0071] Figure 8 represents yet another embodiment of a corner piece 1 according to figure 7, whose standing walls 4 fit up.

[0072] In this case, the far ends of the hinge jambs 10 and 11 to be connected, in particular the lath 16 of every outer jamb 12 and the corresponding lath 33 of every inner jamb 13 are mitred.

[0073] The other walls of the respective outer jambs 12 and inner jambs 13 on the one hand, and of the connecting jambs 14 on the other hand, are sawn straight or practically straight.

[0074] The use of such a variant is similar to that of the above-described embodiment, whereby the legs 22A, 22B and 24 must each be provided in a respective channel 15A, 15B and 18 of a hinge jamb 10 and 11 to be connected.

[0075] Since the standing walls 4 of the corner element 2 fit up, the hinge jambs 10 and 11 to be connected can be pushed up to each other, such that the above-mentioned laths 16 and 33 fit up.

[0076] This is advantageous in that a joinery which is provided with a corner piece 1 according to figure 8 must not be provided with cover plates 29 and 30.

[0077] It is clear that a corner piece 1 according to the invention must not be provided with three pairs of legs 22 and 24 standing on each other, but that it can be made with random pairs of legs which are parallel to one another, such that, preferably, each pair of legs can work in conjunction with the hinge jambs 10 and 11 to be connected.

[0078] It also goes without saying that a corner piece 1 according to the invention cannot only be used in combination with hinge jambs 10 and 11 which are provided with internal channels 15 and 18, but that they can also be used in combination with for example U-shaped hinge jambs, such that the above-mentioned legs 24 on the one hand, and 22 or 22A and 22B on the other hand, can be pushed in the jambs 10 and 11.

[0079] It is clear that a corner piece 1 according to the invention is not restricted to the use in the metalwork of a window, but that it can be used for all sorts of joineries, such as for example for door cases and the like, and that it can be applied to the moving parts as well as the rigid parts of a joinery, such as in the leaf or frame of a window.

[0080] The present invention is by no means restricted to the embodiments given as an example and represented in the figures; on the contrary, such a corner piece according to the invention and a joinery which makes use of such a corner piece can be made in all sorts of shapes and dimensions while still remaining within the scope of the invention.

Claims

1. Corner piece which can be provided between two hinge jambs (10 and 11) of the joinery of a door, window or the like, standing one on the other, whereby this joinery is provided with a locking mechanism having at least one transmission element at the angle joint, **characterised in that** the corner piece (1) is provided with at least one bent wall (5) forming a guide for the above-mentioned transmission element of the locking mechanism.

2. Corner piece according to claim 1, whereby the above-mentioned hinge jambs (10 and 11) are provided on at least one of the outer walls with at least one rib (20) for fixing a sealing, **characterised in that** the corner piece (1) is provided with at least one rib (7) which, when the corner piece (1) is mounted, is situated in the extension of the above-mentioned rib (20) on each of the hinge jambs (10 and 11), and which has a bent shape in its longitudinal direction, such that a sealing can be mounted in a continuous and overlapping manner over the corner piece (1) and the connecting hinge jambs (10 and 11).

3. Corner piece according to claim 1, **characterised in that** it is provided with two parallel ribs (7) in between which is provided a groove (8) in which can be provided a sealing.

4. Corner piece according to any one of claims 2 or 3, **characterised in that** the above-mentioned rib (7) is provided on the above-mentioned bent wall (5) of the corner piece (1) .

5. Corner piece according to any one of claims 1 to 4, **characterised in that** the above-mentioned bent wall (5) of the corner piece (1) is provided on the inside of the joinery.

6. Corner piece according to any one of claims 1 to 4, **characterised in that** the above-mentioned bent wall (5) of the corner piece (1) is provided on the outside of the joinery.

7. Corner piece according to claim 2, **characterised in that** it is provided with a third standing rib (9) provided at a distance from the above-mentioned two ribs (7) and parallel thereto, whereby the free end of this third rib (9) is provided with an edge bent away from the above-mentioned two ribs (7).

8. Corner piece according to any one of the preceding claims, **characterised in that** it is provided with at least two legs (22 and/or 24) which enclose an angle and which can be pushed at least partly in fitting hinge jambs (10 and 11) .

9. Corner piece according to claim 8, **characterised in that** the above-mentioned corner piece (1) defines a continuous channel which opens at both free ends of the legs (22).

10. Corner piece according to any one of claims 8 and 9, **characterised in that** it is provided with several pairs of legs (22 and 24) which are parallel to each other and which can be pushed in the fitting hinge jambs (10 and 11) so as to connect the hinge jambs (10 and 11) concerned.

11. Corner piece according to any one of claims 8 to 10, **characterised in that** the free ends (23 and/or 26) of the above-mentioned legs (22 and/or 24) are tapered in a narrowed manner.

12. Corner piece according to any one of claims 8 to 11, **characterised in that** each leg of at least one pair of legs (22 and/or 24) is provided with a groove (25) which can work in conjunction with a standing wall (19) which is provided in the channel (18) of a respective hinge jamb (10 and 11) .

13. Corner piece according to any one of the preceding claims, **characterised in that** it is provided with at least one dewatering orifice (27 and/or 28).

14. Joinery of a window, door or the like, **characterised in that** it is provided with two or several hinge jambs (10 and 11) standing one on the other, in between which a corner piece (1) according to one or several of the above-mentioned claims is provided.

15. Joinery according to claim 14, **characterised in that** it is provided with a cover plate (29 and/or 30) for the corner piece (1) on one or both sides.

16. Joinery according to claim 15, **characterised in that** the corner piece (1) is provided with a third standing rib (9) provided at a distance from the above-mentioned two ribs (7) and parallel thereto, and **in that** at least one cover plate (30) is provided with a standing rib (31) situated opposite the far end of the above-mentioned third rib (9) on the corner piece (1).

17. Joinery according to claim 14, **characterised in that** the above-mentioned hinge jambs (10 and 11) are provided on at least one of their outside walls with at least one rib (20) for fixing a sealing, which rib (20), when mounted, is situated in the extension of a rib (7) on the bent wall (5) of the corner piece (1).

18. Joinery according to claim 17, **characterised in that** each above-mentioned rib (20) extends up to a distance (L) from the far end to be connected of the respective hinge jamb (10 and 11), such that a surface (21) is formed on which a wall (3) of the corner piece (1) can be placed.

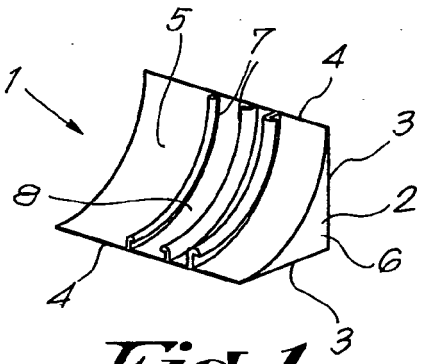
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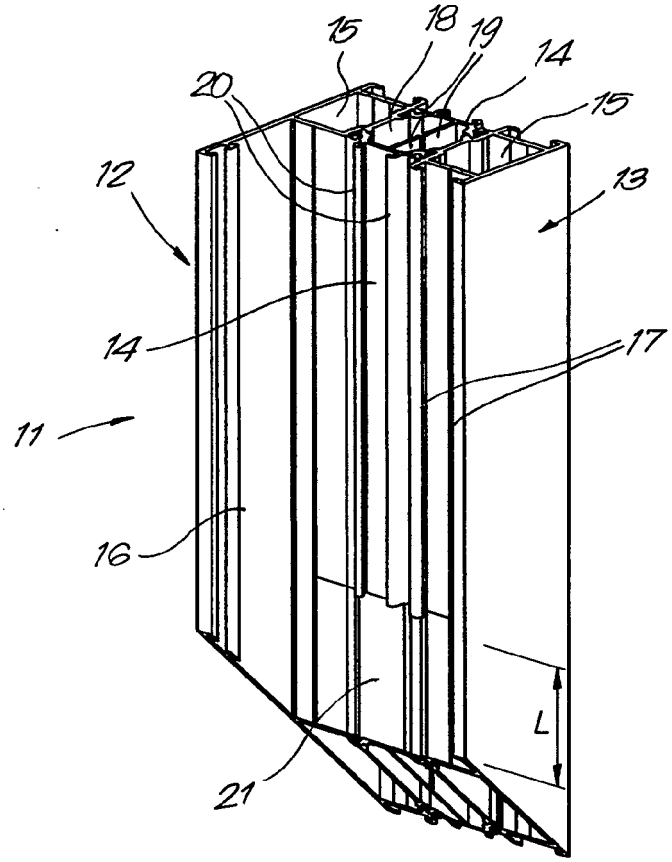
Fig.1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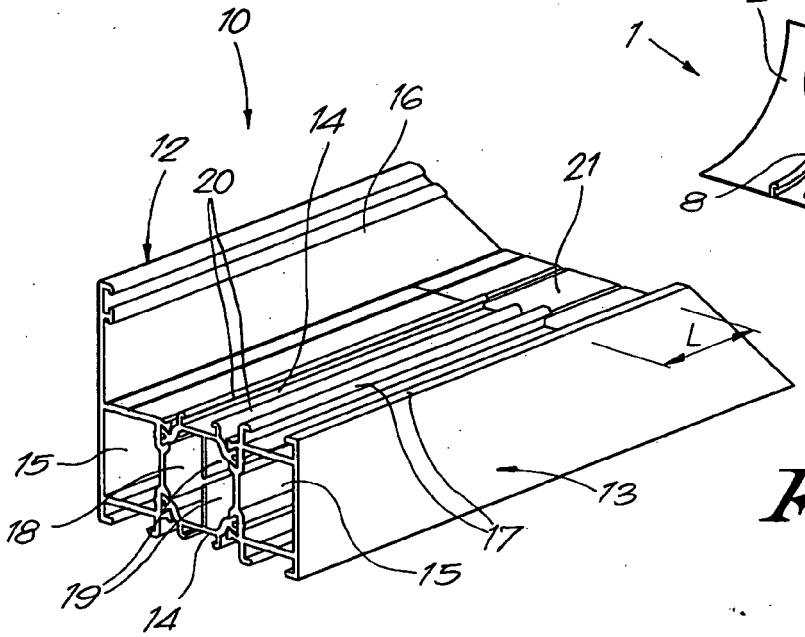
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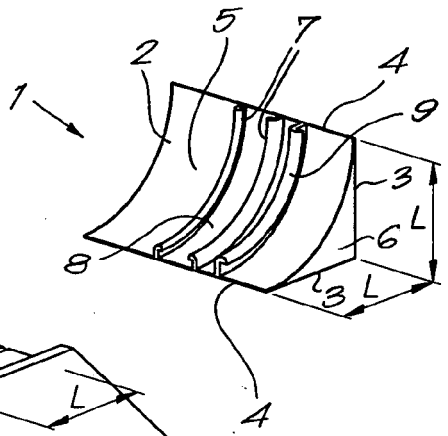
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Fig.2

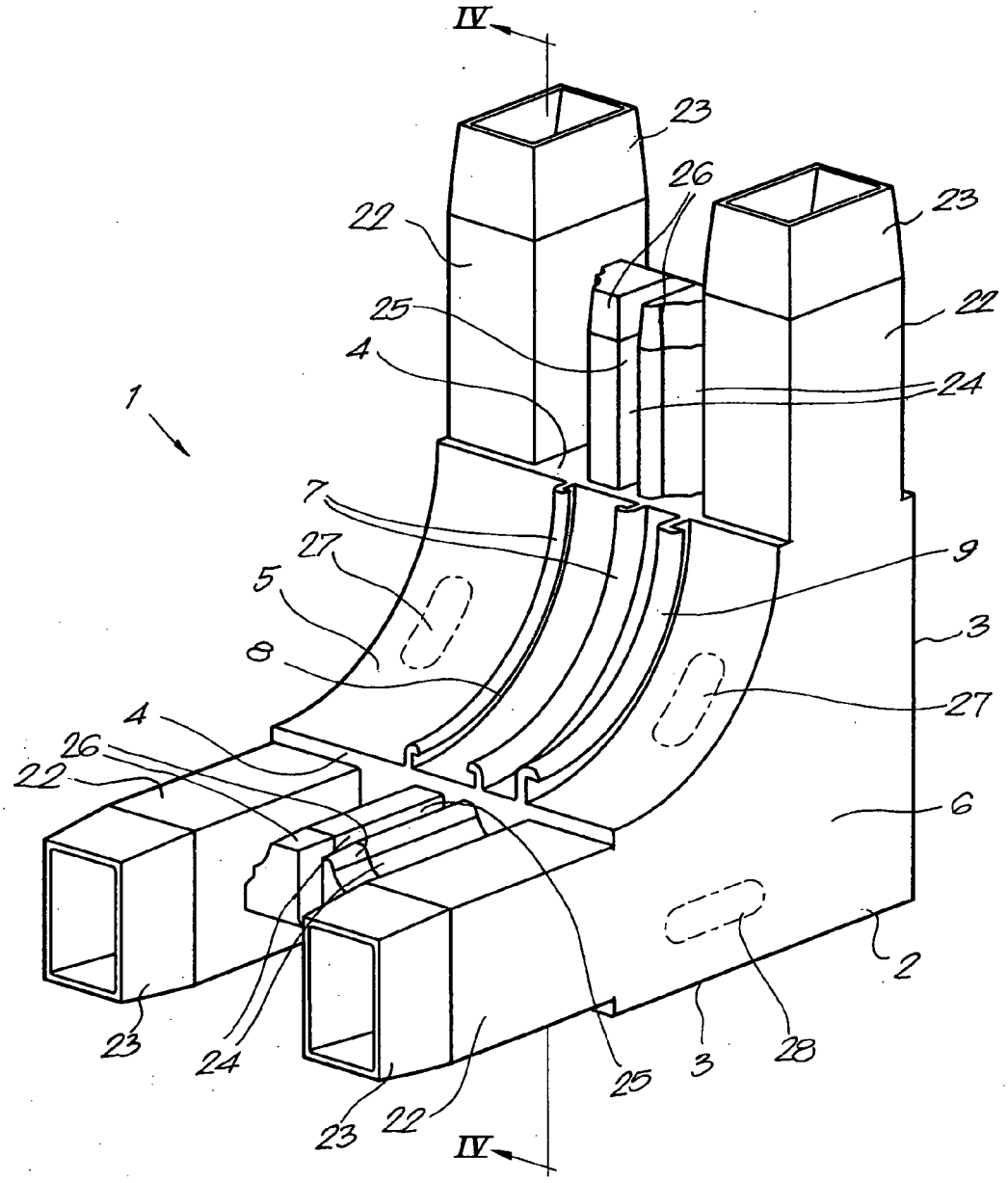

Fig.3

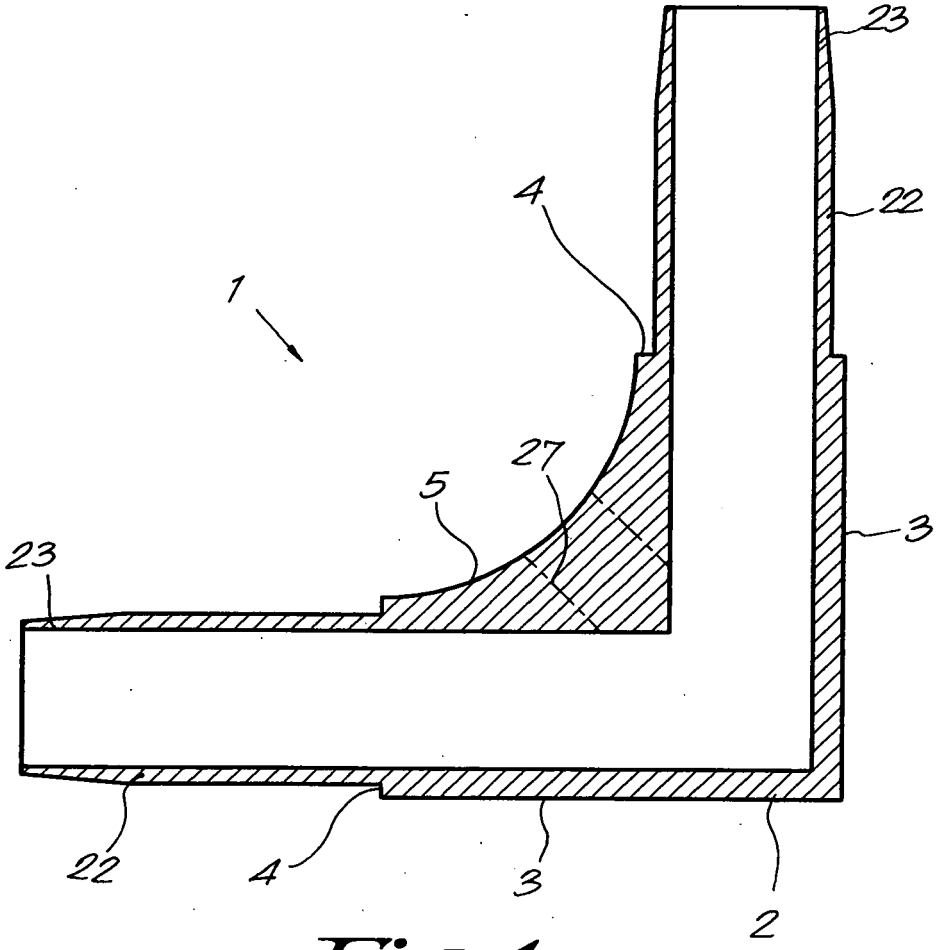

Fig.4

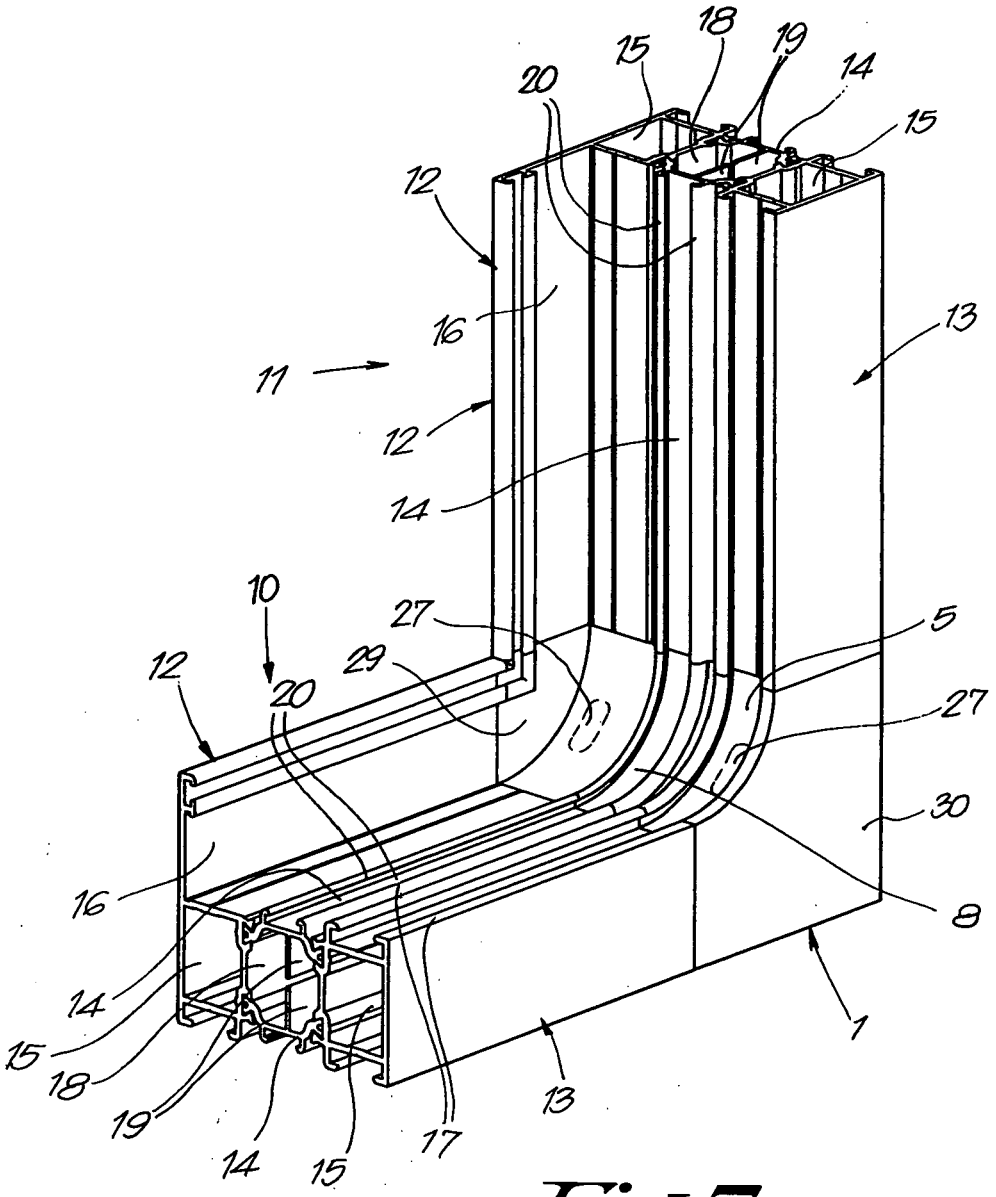
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Fig.5

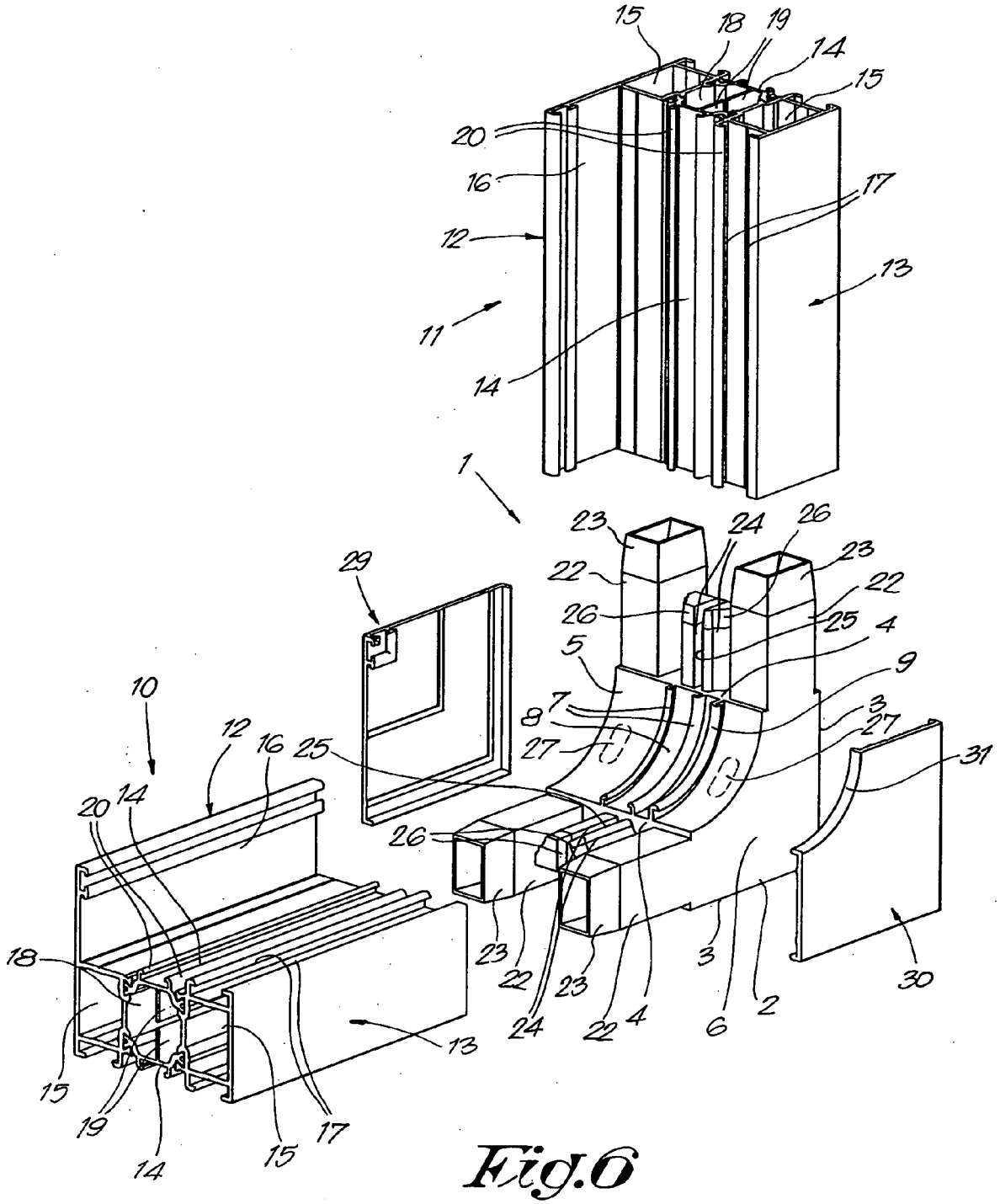
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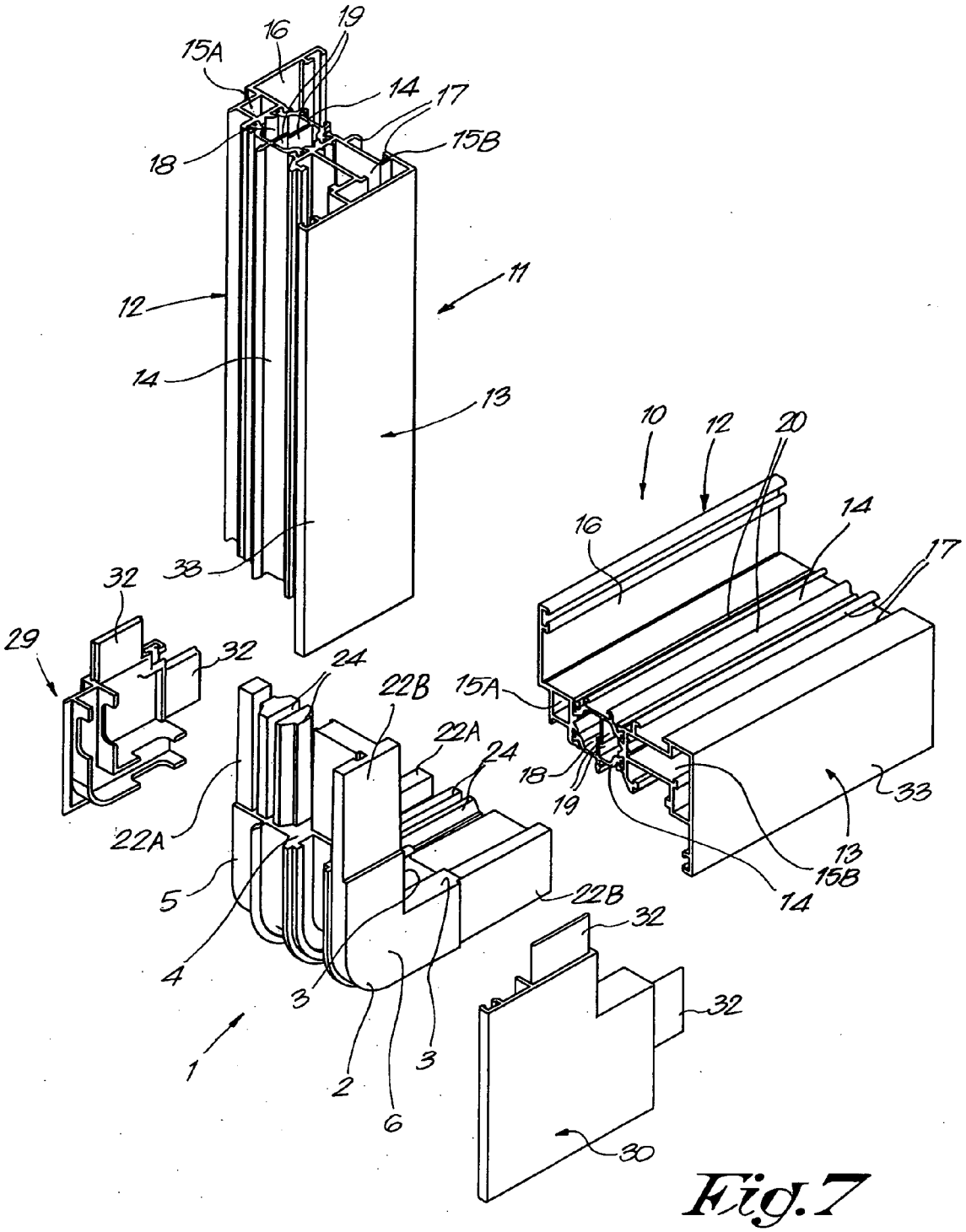
Fig.6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22B
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Fig.7

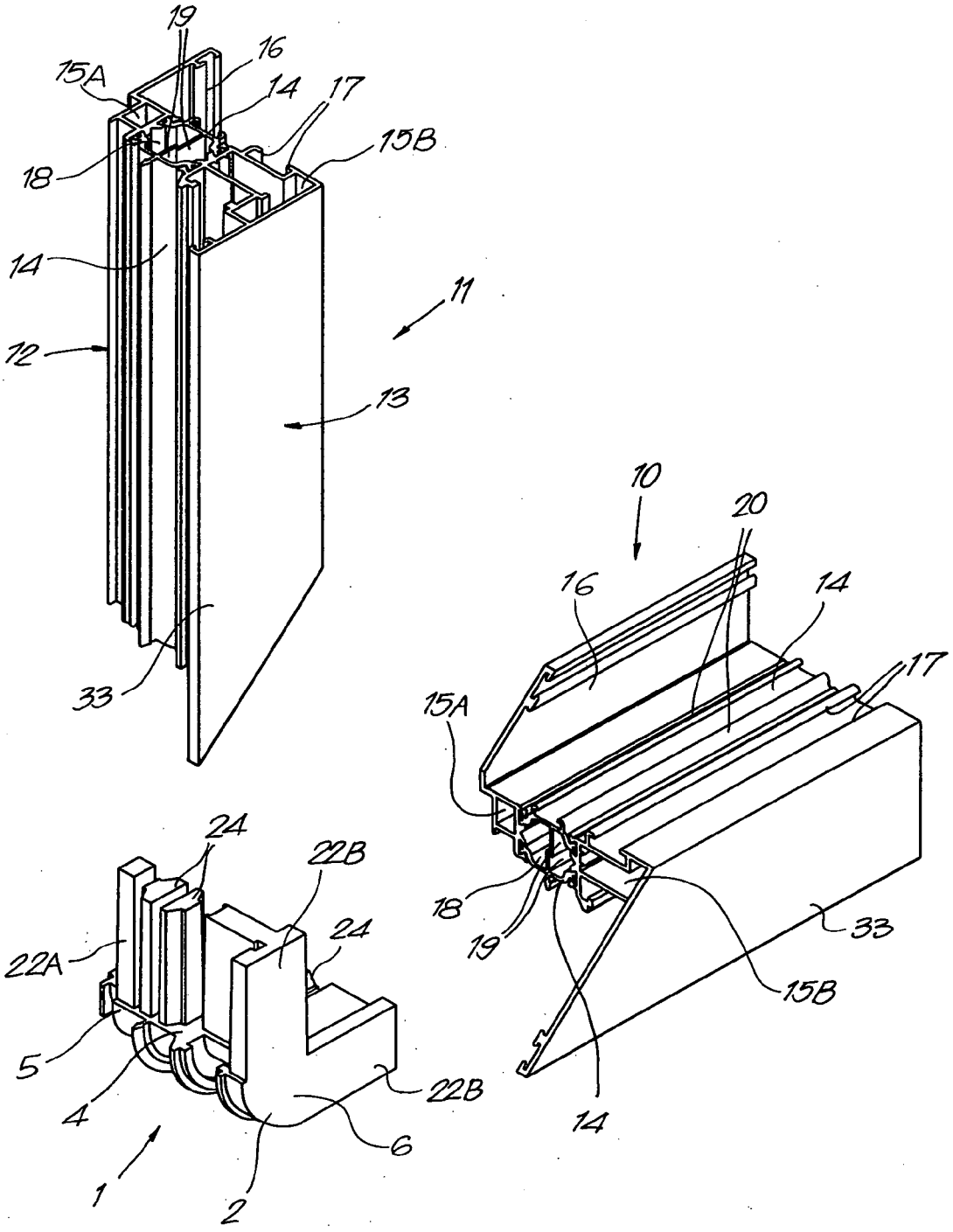
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Fig.8