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(71) Applicant: **Vermeulen, Chris Medard Gustaaf**
8930 Lauwe (BE)

(72) Inventor: **Vermeulen, Chris Medard Gustaaf**
8930 Lauwe (BE)

(74) Representative: **Ostyn, Frans**
K.O.B. NV
Kennedypark 31 c
8500 Kortrijk (BE)

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(54) **Door frame set and door assembly**

(57) The present invention relates to a door frame set for hanging a door (1) in a wall opening (2), comprising a stop profile (3), which comprises, at one end, a stop (3a), and comprises, at another end, a face (3b) which is at right angles to the stop face and securing means by means of which the stop profile (3) can be secured in the

wall opening (2) both in a first position, in which the stop (3a) forms a stop face for a door (1) which can be pulled open, and in a second position, in which the stop (3a) forms a stop face for a door (1) which can be pushed open. The present invention also relates to a door assembly comprising such a door frame set.

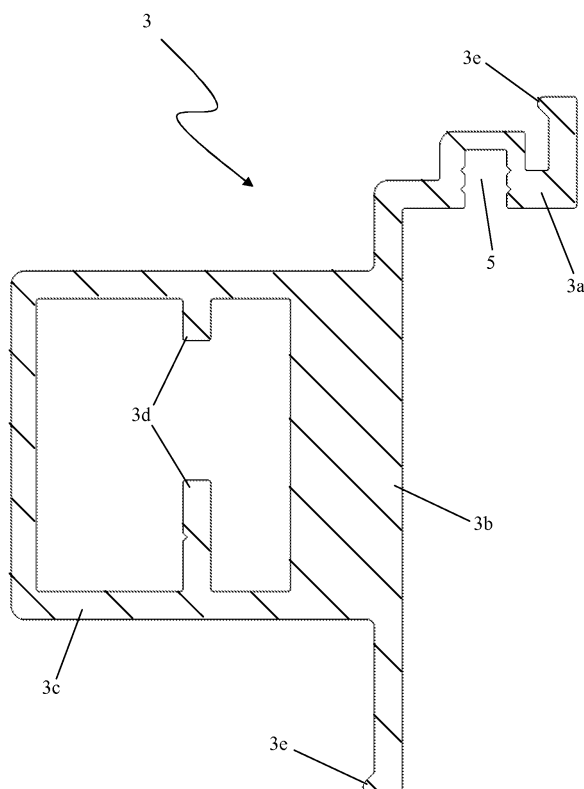


FIG. 1

Description

[0001] The present invention relates to a door frame set for surrounding a door in a wall opening, comprising a stop profile, in which said stop profile comprises, at one end, a stop with a stop face for the door, comprises, at another end, a face which is at right angles to the stop face and forms at least a part of a doorpost, and comprises securing means by means of which the stop profile can be secured in the wall opening.

[0002] The present invention also relates to a door assembly.

[0003] The term door frame set is understood to refer to all elements by means of which a door is surrounded in a wall opening. Hanging a door is understood to mean positioning a door in a wall opening. A doorpost is a flat part of the surround of the door which adjoins the wall in the wall opening.

[0004] In the case of such a door frame set, a stop is fitted so that a door provided with the latter can only be opened in one direction, in order to prevent draughts, etc.

[0005] By means of such a door frame set, doors are always hung in a wall opening in such a manner that they are visually in the plane of the wall on one side thereof. Viewed from this side of the door, a distinction is then made between doors which can be pulled open and doors which can be pushed open. A door which can be pulled open by a person, viewed from the side where it is situated in the plane of the wall, is pulled open towards the person. A door which can be pushed open by a person, viewed from the side where it is situated in the plane of the wall, is pushed away from the person. A distinction is also made between a door which opens to the left and a door which opens to the right. Viewed from the side in which the door is situated in the plane of the wall, the hinges of a door which opens to the left are situated on the left and the hinges of a door which opens to the right are situated on the right.

[0006] A conventional door frame set comprises wooden profiles by means of which the door can be hung in the wall opening. A more recent door frame set often comprises aluminium or plastic profiles by means of which the door is hung in the wall opening.

[0007] Often, with such a door frame set, securing a door in a door opening still requires individual tailor-made solutions. A wide range of door frame sets is required in order to cater for walls of different thicknesses, door openings of different sizes and doors which can be pushed or pulled open. Specifically, for example, in the case of door frame sets with aluminium or plastic profiles, it always has to be determined beforehand whether a door which can be pulled or pushed open is desired, since each of them requires a different kind of door frame set. With door frame sets with a wooden stop, this can possibly still be changed in the case of tailor-made solutions. However, such tailor-made solutions quickly become very expensive.

[0008] It is an object of the present invention to provide

a door frame set which can be used more widely than the prior-art door frame sets.

[0009] A partial solution to this problem has already been achieved with a door frame set according to the preamble of the first claim as described in EP 2 050 914 A2. Such a door frame set can be used both for doors which can be pulled open and for doors which can be pushed open. In order to secure this door frame set, screws have to be inserted into the door frame set. To this end, the door frame set can first be positioned into the wall opening using flexible positioning means which are secured to the door frame set. Furthermore, an additional lip can be provided on the door frame set if plaster is to continue right up to the door frame set. However, such a door frame set is not very flexible with regard to positioning, since, depending on the positioning, other positioning means are required or an additional lip is required to allow plaster to continue right up to it. In many cases, introducing screws into the door frame set is undesirable. Covering elements have to be provided in order to obscure these screws from view and/or to cover the holes produced by these screws, so that they cannot collect any dust.

[0010] It is therefore an object of the present invention to provide a door frame set which can be positioned more flexibly than the door frame set known from EP 2 050 914 A2 and can be used more widely than the latter door frame set.

[0011] This object of the invention is achieved by providing a door frame set for surrounding a door in a wall opening, comprising a stop profile, in which said stop profile comprises, at one end, a stop with a stop face for the door, comprises, at another end, a face which is at right angles to the stop face and forms at least a part of a doorpost, and comprises securing means by means of which the stop profile can be secured in the wall opening, in which, by means of these securing means, the stop profile can be secured in the wall opening both in a first position, in which the stop forms a stop face for a door which can be pulled open, and in a second position, in which the stop forms a stop face for a door which can be pushed open, and in which the securing means comprise a securing profile and the stop profile comprises a securing body which is designed such that the securing profile can be secured to said securing body, both in a first position on the side of the stop and in a second position on the side of the face which forms at least a part of a doorpost, in which the securing profile can be secured in the wall opening in order to secure the stop profile in said first position thereof or in said second position thereof in the wall opening respectively.

[0012] With existing door frame sets, in the installed state, the position of the stop is predetermined. Using the door frame set according to the present invention, it is simple to secure the stop profile, by means of said securing means, either in the first position in which the stop forms a stop face for a door which can be pulled open, or in the second position, in which the stop forms

a stop face for a door which can be pushed open.

[0013] With doors where the hinges and the lock have been positioned symmetrically with respect to the doorposts in the profiles of this door frame set, it is possible, if these profiles of the door frame set are sawn off straight (and thus not mitred) at their ends, to use such profiles which are modified for a door which opens to the right for a door which opens to the left in a simple manner by reversing these and securing them in the other of the two doorposts.

[0014] Such a door frame set according to the invention can be used together with the usual commercially available door fittings. This door frame set can also be used with commercially available door panels. Such a door frame set can, however, be used equally well with door fittings and door panels which have been tailor-made. Furthermore, due to the securing profile, this door frame set can be positioned more flexibly than a door frame set as described in EP 2 050 914 A2 and can therefore also be used more widely. By means of this securing profile, the door frame set can be positioned and secured in a wall opening in a more simple manner. Due to the fact that this securing profile is secured in the wall opening and the door frame set is secured to this securing profile, it is no longer necessary to insert screws into the door frame set in order to secure this door frame set in the wall opening.

[0015] Preferably, the securing means in this case comprise one or more screws for securing the securing profile to the stop profile and/or for securing the securing profile in the wall opening. The securing body and/or the securing profile are then preferably provided with drill holes for securing these screws.

[0016] In order to be able to produce the door frame set in a simple manner and to make it possible to saw it to any length so that it can be used for doors of any dimension, the stop profile is preferably in the form of an extruded aluminium profile.

[0017] The securing profile is preferably also in the form of an extruded aluminium profile.

[0018] Furthermore, this securing profile is preferably substantially beam-shaped. The securing body of the stop profile is preferably also substantially beam-shaped.

[0019] Still more preferably, the securing profile is then substantially hollow. The securing body of the stop profile too is then preferably substantially hollow.

[0020] In a further preferred embodiment of a door frame set according to the present invention, the stop face comprises a groove for attaching a strip of elastic material.

[0021] In this way, the door is always closed against this strip of elastic material, as a result of which it is always closed softly.

[0022] The object of the present invention is also achieved by providing a door assembly, comprising a door frame set according to the present invention, in which this door frame set is secured on one side to a door and is secured on the other side in a wall opening.

[0023] The present invention will now be explained in more detail with reference to the following detailed description of a preferred embodiment of a door frame set according to the present invention and of some door assemblies according to the present invention. The aim of this description is solely to give illustrative examples and to indicate further advantages and features of this door frame set and these door assemblies, and can therefore by no means be interpreted as limiting the area of application of the invention or of the patent rights laid down in the claims.

[0024] In this detailed description, reference numerals are used to refer to the attached drawings, in which

- **Fig. 1** shows a stop profile of a preferred embodiment of a door frame set according to the present invention in cross section;
- **Fig. 2** diagrammatically shows a cross section of a door assembly, comprising a door which can be pulled open and which is secured to a plastered wall by means of the preferred embodiment of a door frame set according to the present invention;
- **Fig. 3** diagrammatically shows a cross section of a door assembly, comprising a door which can be pulled open and which is secured to a plasterboard wall by means of the preferred embodiment of a door frame set according to the present invention;
- **Fig. 4** diagrammatically shows a cross section of a door assembly, comprising a door which can be pushed open and which is secured to a plastered wall by means of the preferred embodiment of a door frame set according to the present invention;
- **Fig. 5** diagrammatically shows a cross section of a door assembly, comprising a door which can be pushed open and which is secured to a plasterboard wall by means of the preferred embodiment of a door frame set according to the present invention.

[0025] The preferred embodiment according to the present invention which is accommodated in the door assemblies as illustrated in Figs. 2 to 5 comprises a stop profile (3), a securing profile (4a) and screws (4b, 4c). This door frame set is provided in these door assemblies for surrounding a door (1) in a wall opening (2). This door (1) may be a conventional, commercially available door panel or may equally be a tailor-made door panel.

[0026] The stop profile (3) of this door frame set is illustrated in more detail in Fig. 1. This stop profile (3) comprises a stop (3a) with a stop face for the door (1) at one end. At the other end, it comprises a face (3b) which is at right angles to the stop face and forms at least a part of a doorpost. Furthermore, this stop profile (3) comprises a securing body (3c).

[0027] This stop profile (3) is in the form of an extruded aluminium profile. This profile can be produced in a similar way to the existing aluminium profiles which form part of existing door frame sets. The securing body (3c) of this stop profile (3) is in this case designed substantially

as a hollow beam. Some reinforcing ribs (3d) in the space of this securing body (3c) form supporting points for mitring an upper jamb for the door (1) on this stop profile (3).

[0028] Raised edges (3e) are provided on the ends of the stop (3a) and of the face (3b) which forms at least a part of a doorpost, on the side of the securing body (3c). These raised edges (3e) are provided in order to make it possible for any finishing layers (7, 8) of the wall in which the door (1) is incorporated to adjoin this stop profile (3) in a seamless fashion, in which case a good bond between the finishing layer (7, 8) and the stop profile (3) can be ensured.

[0029] Furthermore, a groove (5) is provided in the stop face of the stop (3b) for attaching a strip of elastic material (6). In the assemblies from Figs. 2 to 5, such a strip of elastic material (6) is provided in this groove (5). In this way, the door (1) is always closed against this strip of elastic material (6), as a result of which it is always closed softly.

[0030] The securing body (3c) of the stop profile (3) is designed such that said securing profile (4a) of the door frame set can be attached to this securing body (3c) both in a first position, on the side of the stop (3a), in which the stop (3a) forms a stop face for a door which can be pulled open (1), as is illustrated in Figs. 2 and 3, and in a second position, on the side of the face (3b) which forms at least a part of a doorpost, in which the stop (3a) forms a stop face for a door which can be pushed open (1), as is illustrated in Figs. 4 and 5.

[0031] The securing profile (4a) of this door frame set is also manufactured as an extruded profile and is substantially designed as a hollow beam.

[0032] In the illustrated door assemblies, the securing profile (4a) is in each case attached to the securing body (3c) of the stop profile (3) by means of a screw (4b). For the remainder, the attachment of the door (1) and of this door frame set is entirely in accordance with the prior art. This offers the significant advantage that a fitter of doors (1) is already familiar with this method of attachment, so that fitting a door (1) using this new door frame set does not require any additional efforts on the part of the fitter.

[0033] As can be seen in Figs. 2 to 5, the securing profile (4a) itself can still be tilted, both in the first position and in the second position, in order to attach it to the securing body (3c). In this way, one and the same stop profile (3) and one and the same securing profile (4a) can be used for different wall thicknesses.

[0034] When the door frame set is placed in the wall opening (2), the securing profile (4a) is attached to the wall using a second screw (4c). To this end, it can, just as in the prior art, for example be attached to a wooden block (9) which is provided in the wall or to a profile (10) to which the plasterboards (7) of a plasterboard wall are attached, etc. The empty space between the door frame set and the wall is then filled with PUR foam (11), for example, in a manner which is known per se. In a manner which is likewise known, the wall around the door frame

set can then be finished further by providing it with a plaster coat (8), if desired by means of the usual finishing profiles or by means of plasterboards (7), in which case the transition between the plasterboards (7) and the door frame set can then be further finished in a seamless manner using a plaster (8) which has been modified for the purpose.

[0035] The illustrated door assemblies are all door assemblies without doorcases. This door frame set according to the invention can be used very advantageously for door assemblies in which doorcases are omitted. However, it is equally well possible to conceive an embodiment of a door frame set according to the present invention for hanging doors (1) which does use doorcases.

[0036] As indicated, this door frame set can be used for hanging doors (1) in wall openings (2) in walls of different thicknesses. It can also readily be used for wall openings (2) of different height by simply sawing the profiles (3, 4a) to size.

[0037] In each case, only one side of the wall opening (2) has been shown here. On the other side, the door (1) is attached to the face (3b), which forms a part of the doorpost, in a known manner using one or more hinges on the stop profile (3). To this end, any suitable kind of hinge can be used, which may be visible or invisible after fitting. In that case, the door frame sets according to the present invention can also be used in combination with the usual commercially available door fittings.

[0038] On the illustrated side of the door assemblies, the stop profile (3) can be provided with any type of lock. It may, for example, also be provided with a fitted door-closing mechanism.

[0039] With doors (1) where the hinges and the lock are placed symmetrically with respect to the doorposts in the stop profiles (3) of this door frame set, it is possible to use such stop profiles both for a door which opens to the right (1) and for a door which opens to the left (1) if the ends of these stop profiles (3) are sawn off straight (and thus not mitred). Compared to a door which opens to the right (1), these stop profiles (3) are attached to the other of the two doorposts with a door which opens to the left (1).

[0040] This door frame set according to the present invention is eminently suitable for supplying tailor-made solutions when hanging doors (1). However, the stop profile (3) and the securing profile (4a) are preferably designed in such a manner that they can also be used together for hanging standard doors of 830 x 2015 mm in a wall opening of 900 x 2050 mm. In this manner, they can be very widely used.

Claims

1. Door frame set for surrounding a door (1) in a wall opening (2), comprising a stop profile (3), in which said stop profile (3) comprises, at one end, a stop (3a) with a stop face for the door (1), comprises, at

another end, a face (3b) which is at right angles to the stop face and forms at least a part of a doorpost, and comprises securing means (4a, 4b, 4c) by means of which the stop profile (3) can be secured in the wall opening (2), in which, by means of these securing means (4a, 4b, 4c), the stop profile (3) can be secured in the wall opening (2) both in a first position, in which the stop (3a) forms a stop face for a door (1) which can be pulled open, and in a second position, in which the stop (3a) forms a stop face for a door (1) which can be pushed open, **characterized in that** the securing means (4a, 4b, 4c) comprise a securing profile (4a) and **in that** the stop profile (3) comprises a securing body (3c) which is designed such that the securing profile (4a) can be secured to said securing body (3c), both in a first position on the side of the stop (3a) and in a second position on the side of the face (3b) which forms at least a part of a doorpost, in which the securing profile (4a) can be secured in the wall opening (2) in order to secure the stop profile (3) in said first position thereof or in said second position thereof in the wall opening (2), respectively.

2. Door frame set according to Claim 1, **characterized in that** the securing means (4a, 4b, 4c) comprise one or more screws (4b, 4c) for securing the securing profile (4a) to the stop profile (3) and/or for securing the securing profile (4a) in the wall opening (2). 25
3. Door frame set according to Claim 2, **characterized in that** the securing profile (4a) and/or the securing body (3c) are provided with drill holes for securing said screws (4b, 4c). 30
4. Door frame set according to one of the preceding claims, **characterized in that** the stop profile (3) is in the form of an extruded aluminium profile. 35
5. Door frame set according to one of the preceding claims, **characterized in that** the securing profile (4a) is in the form of an extruded aluminium profile. 40
6. Door frame set according to one of the preceding claims, **characterized in that** the securing profile (4a) is substantially beam-shaped. 45
7. Door frame set according to one of the preceding claims, **characterized in that** the securing body (3c) of the stop profile (3) is substantially beam-shaped. 50
8. Door frame set according to one of the preceding claims, **characterized in that** the securing profile (4a) and/or the securing body of the stop profile (3) are substantially hollow. 55
9. Door frame set according to one of the preceding claims, **characterized in that** the stop face compris-

es a groove (5) for attaching a strip of elastic material (6).

10. Door assembly, **characterized in that** it comprises a door frame set according to one of Claims 1 to 9, in which said door frame set is secured on one side to a door (1) and is secured on the other side in a wall opening (2).

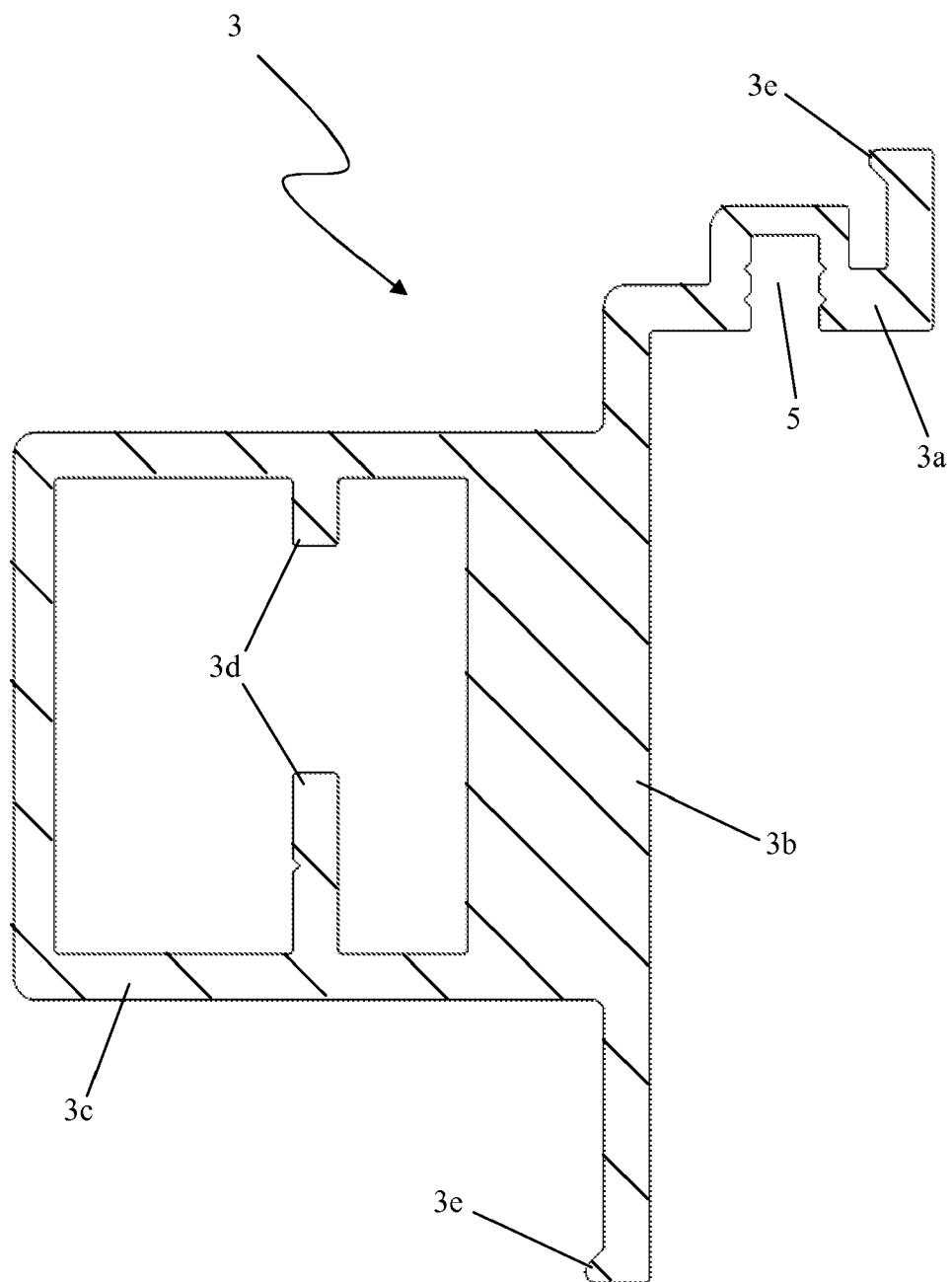
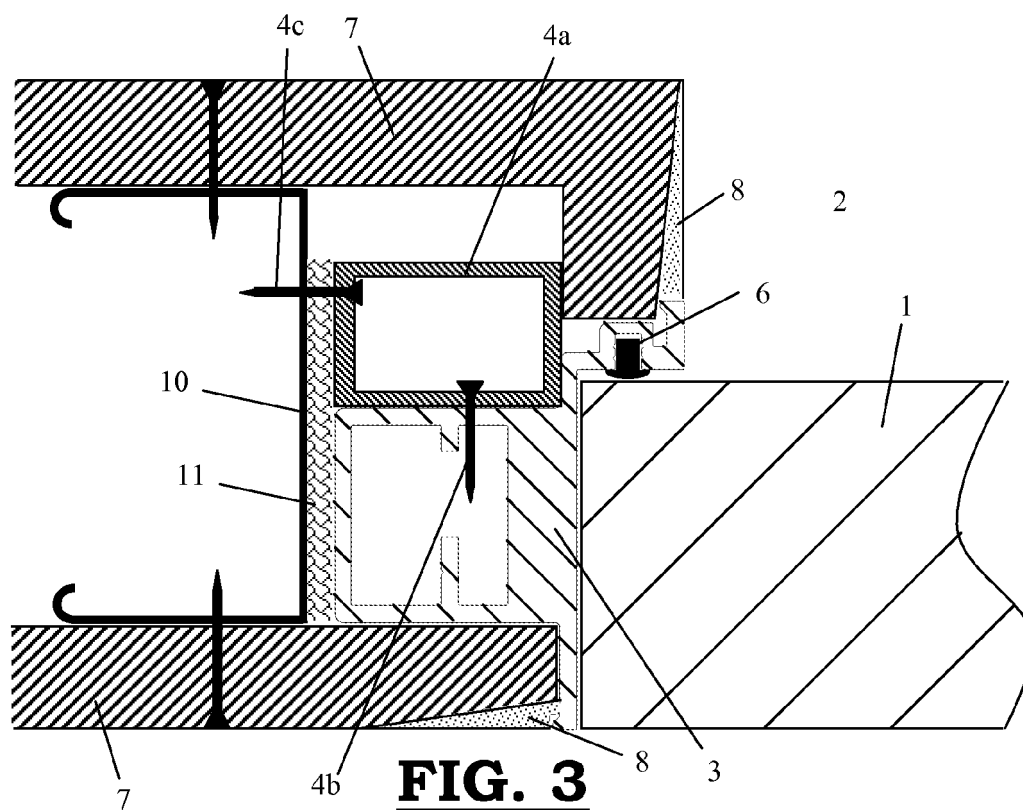
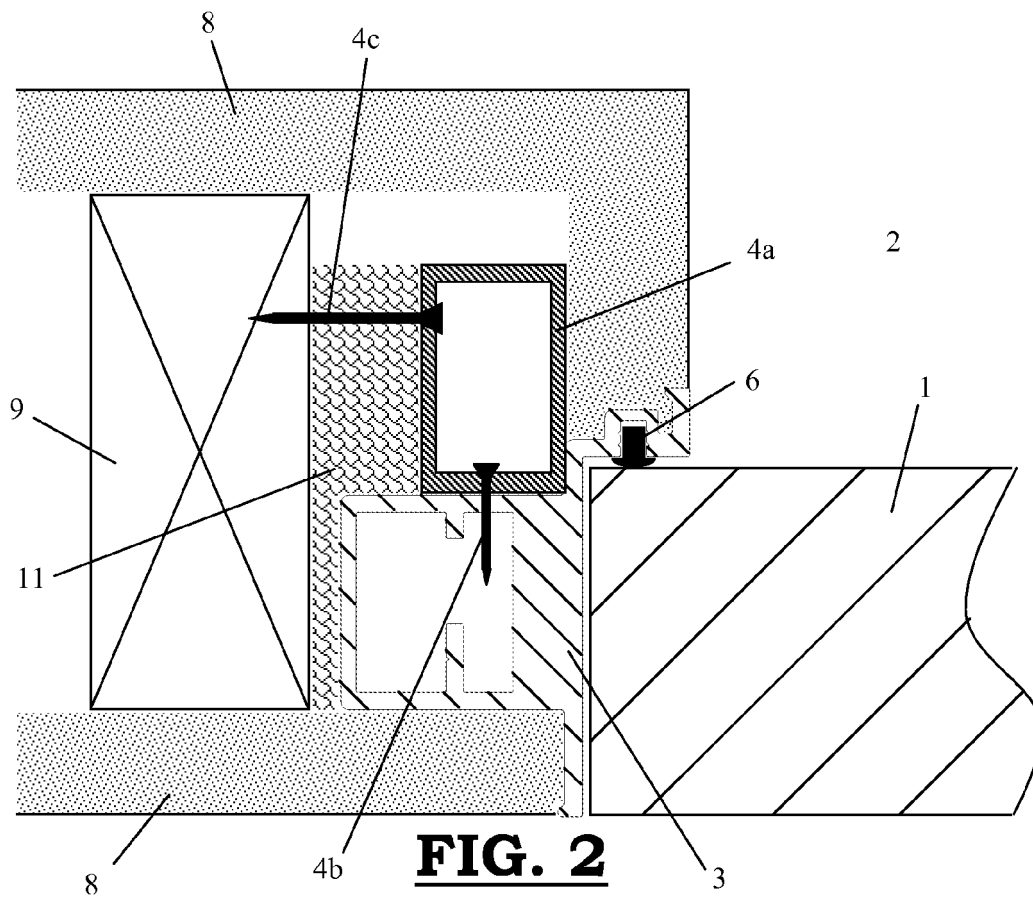
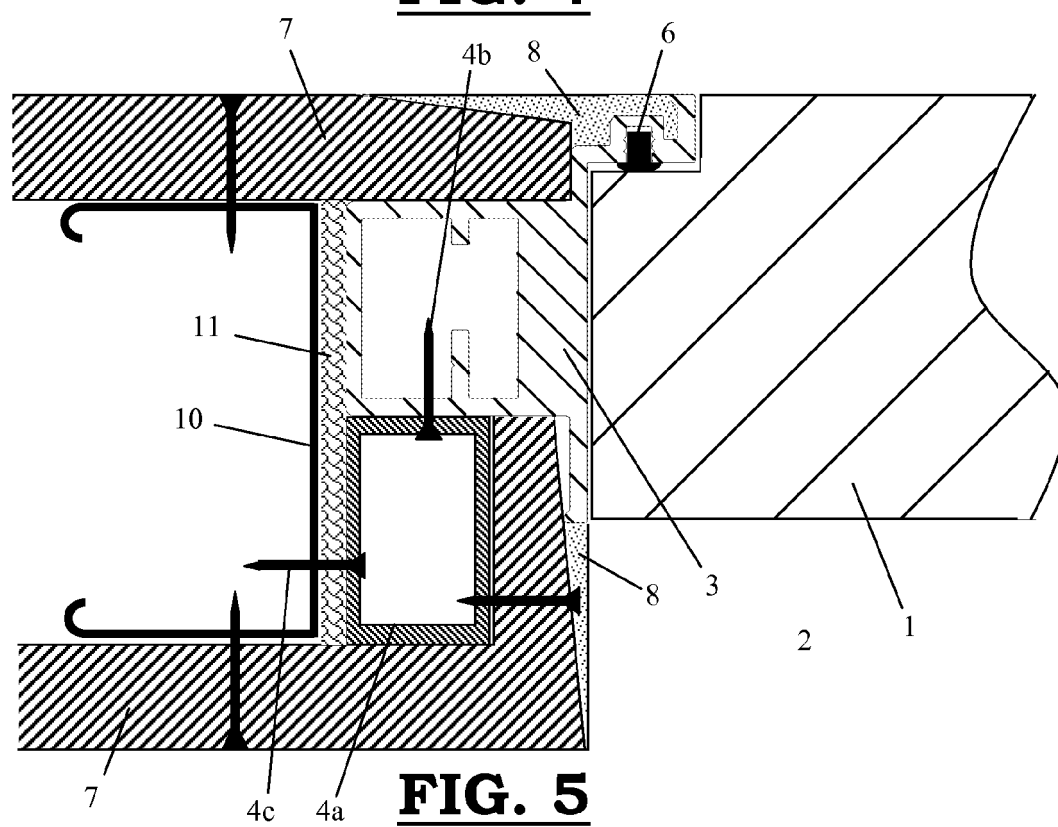
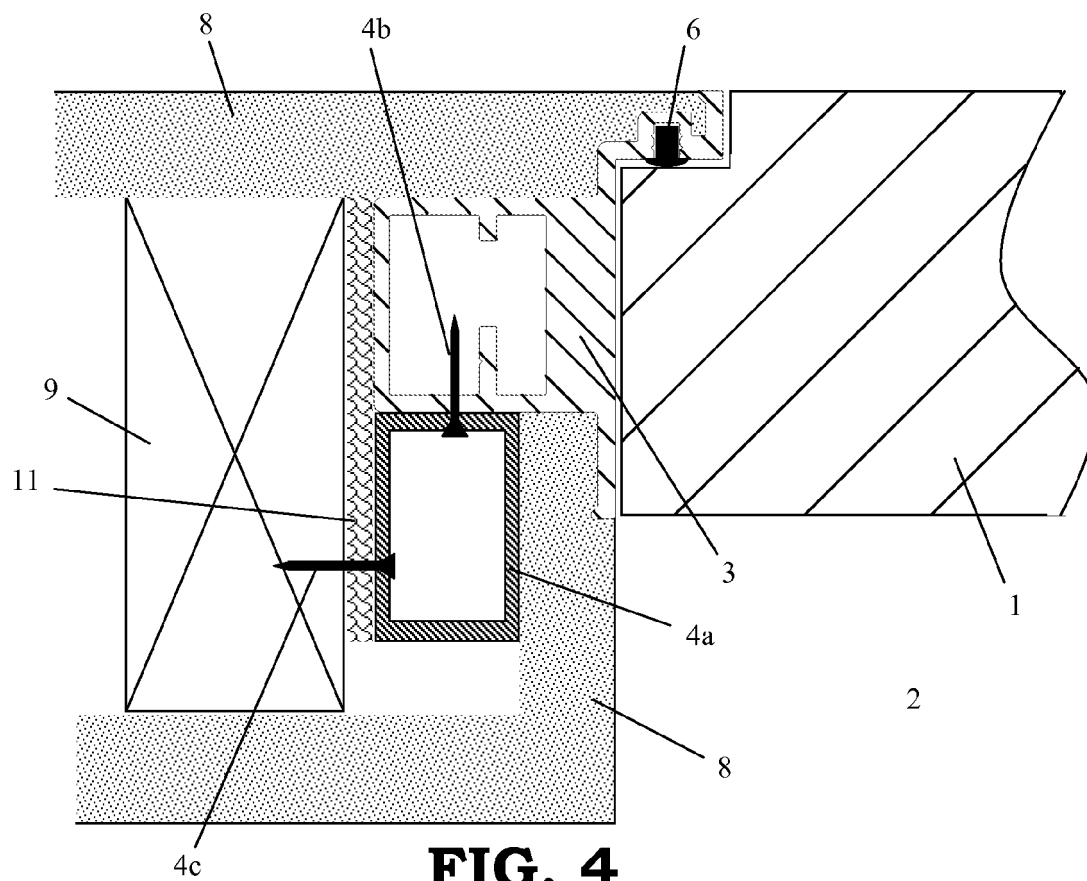


FIG. 1







EUROPEAN SEARCH REPORT

Application Number
EP 10 17 3504

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A,D	EP 2 050 914 A2 (JOSKO FENSTER UND TUEREN GMBH [AT]) 22 April 2009 (2009-04-22) * abstract; figures 1,2 * * paragraphs [0024], [0 36] * -----	1,10	INV. E04B1/12 E06B1/52 E06B1/12
			TECHNICAL FIELDS SEARCHED (IPC)
			E04B E06B
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 28 December 2010	Examiner Peschel, Gerhard
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REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- EP 2050914 A2 [0009] [0010] [0014]