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(54) **A FASTENING ELEMENT FOR FIXING A PLURALITY OF SOUND- ABSORBENT AND/OR SOUND-INSULATING PANELS TO AN UPRIGHT FOR REALISING A SOUND-ABSORBENT AND/OR SOUND-INSULATING BARRIER ALONG A COMMUNICATION PATHWAY, AND A RELATIVE SOUND-ABSORBENT AND/OR SOUND-INSULATING BARRIER**

BEFESTIGUNGSELEMENT ZUR BEFESTIGUNG MEHRERER SCHALLSCHLUCK- UND/ODER SCHALLISOLIERPLATTEN AN EINEM PFOSTEN ZUR HERSTELLUNG EINER SCHALLSCHLUCK- UND/ODER SCHALLISOLIERBARRIERE ENTLANG EINES KOMMUNIKATIONSWEGES UND ZUGEHÖRIGE SCHALLSCHLUCK- UND/ODER SCHALLISOLIERBARRIERE

ÉLÉMENT DE FIXATION DESTINÉ À LA FIXATION D'UNE PLURALITÉ DE PANNEAUX D'ABSORPTION ET/OU D'ISOLATION SONORE SUR UN MONTANT POUR RÉALISER UNE BARRIÈRE D'ABSORPTION ET/OU D'ISOLATION SONORE LE LONG D'UNE VOIE DE COMMUNICATION, BARRIÈRE D'ABSORPTION ET/OU D'ISOLATION SONORE CORRESPONDANTE

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Description

FIELD OF THE INVENTION

[0001] The present invention relates to the technical sector relating to sound-absorbent and sound-insulating barriers arranged along communication pathways such as, for example, motorways or railways.

[0002] In particular, the present invention relates to a fastening element for fixing a plurality of sound-absorbent and/or sound-insulating panels to an upright, for realising a sound-absorbent and/or sound-insulating barrier along a communication pathway, and to a relative sound-absorbent and/or sound-insulating barrier.

DESCRIPTION OF THE PRIOR ART

[0003] The prior art contains sound-absorbent and sound-insulating barriers arranged along communication pathways, known also as noise-abating barriers, which are constituted by a plurality of uprights arranged along the communication pathway, at a certain distance from one another, and a plurality of sound-absorbent and/or sound-insulating panels which are fixed to the uprights. There is a progressively greater demand for sound-absorbent and sound-insulating barriers the sound-absorbent and/or sound-insulating panels of which are arranged in front of the uprights so that the uprights are not visible to those travelling along the communication pathway.

[0004] With the aim of satisfying the above-mentioned demand, a solution might be to arrange the sound-absorbent and/or sound-insulating panels frontally of the uprights and to fix them to the uprights using nut and bolt systems.

[0005] However the assembly of the above-mentioned sound-absorbent and/or sound-insulating barrier would not be flexible and easy and consequently would require a considerable time.

[0006] Document WO2015/019207 discloses a fastening element for fixing a plurality of sound-absorbent and/or sound insulating panels to an upright, for realising a sound-absorbent and/or insulating barrier along a communication pathway according to the preamble of claim 1.

[0007] Document WO2015/089586 discloses a noise barrier with a different structure wherein the barrier has a clamping structure having a clamping plate and a U-bolt.

SUMMARY OF THE INVENTION

[0008] In the light of the above, the aim of the present invention consists in providing a fastening element which enables flexibly and easily fixing a plurality of sound-absorbent and/or sound-insulating panels to an upright, for realising a sound-absorbent and/or sound-insulating barrier, and also consists in providing a relative sound-absorbent and/or sound-insulating barrier.

[0009] The above aim is attained with a fastening ele-

ment for fixing a plurality of sound-absorbent and/or sound-insulating panels to an upright, according to figure 1, and with a sound-absorbent and/or sound-insulating barrier according to claim 10.

[0010] The fastening element of the invention advantageously enables obtaining a flexible and easy assembly of the relative sound-absorbent and/or sound-insulating barrier which further has a good aesthetic impact as the relative sound-absorbent and/or sound-insulating panels are arranged frontally with respect to the uprights, so that the uprights are not visible by persons travelling along the communication pathway.

[0011] In particular, the assembly of the sound-absorbent and/or sound-insulating barrier includes constraining the fastening element to the upright, through the opening afforded in the plate of the fastening element, and constraining the fastening element to a sound-absorbent and/or sound-insulating panel by means of the anchoring portion.

[0012] The fastening element of the invention enables, during the assembly of the sound-absorbent and/or sound-insulating barrier, always maintaining a certain relative degree of freedom between the sound-absorbent and/or sound-insulating panel and the upright, consequently ensuring a flexible and easy assembly of a sound-absorbent and/or sound-insulating barrier that stable, secure and aesthetically appealing.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] Specific embodiments of the invention will be described in the following part of the present description, according to what is set down in the claims and with the aid of the accompanying tables of drawings, in which:

- figures 1, 4, 7 and 10 illustrate, in a view from above, respective embodiments of the fastening element of the present invention in which the fastening element is constrained to an upright and anchored to at least a sound-absorbent and/or sound-insulating panel;
- figures 2 and 3 illustrate respective perspective views of the fastening element of figure 1;
- figures 5 and 6 illustrate respective perspective views of the fastening element of figure 4;
- figures 8 and 9 illustrate respective perspective views of the fastening element of figure 7;
- figures 11 and 12 illustrate respective perspective views of the fastening element of figure 10;
- figures 13, and 14 illustrate, in perspective views, respective embodiments of a sound-absorbent and/or sound-insulating barrier according to the present invention;
- figure 15 illustrates a larger-scale section view of the sound-absorbent and/or sound-insulating barrier of figure 13 along section A-A;
- figure 16 illustrates, in a larger-scale perspective view, detail K of figure 13;
- figure 17 illustrates, in a larger-scale perspective

view, detail J of figure 14.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0014] With reference to the accompanying tables of drawings, reference numeral (1) denotes in its entirety a fastening element for fixing a plurality (2) of sound-absorbent panels to an upright (3) of the present invention. Further, reference number (100) denotes in its entirety a sound-absorbent barrier for a communication pathway, also an object of the present invention.

[0015] The fastening element (1) is suitable for fixing a plurality (2) of sound-absorbent panels to an upright (3), for realising a sound-absorbent barrier (100) along a communication pathway.

[0016] With particular reference to figures 15-17, the upright (3) comprises a coupling portion (4) which is conformed as a bar and a sound-absorbent and/or sound-insulating panel (5, 6) of the plurality (2) of sound-absorbent and/or sound-insulating panels comprises a lateral wall (50, 60) which is provided with a projection (51) or a recess (61).

[0017] With reference to figures 1-12, the fastening element (1) comprises: a plate (10) which affords a through-opening (11), which through-opening (11) originates from a first flank (10a) of the plate (10) and is conformed for receiving a coupling portion (4) of the upright (3) so as to constrain the plate (10) to the upright (3); an anchoring portion (12) which is C-shaped, which originates from a second flank (10b) of the plate (10) and which is dimensioned such that when the fastening element (1) and the sound-absorbent and/or sound-insulating panel (5, 6) are assembled, it internally contains the projection (51) or is contained internally of the recess (61) of the sound-absorbent and/or sound-insulating panel (5, 6) so that the sound-absorbent and/or sound-insulating panel (5, 6) is fixed to the upright (3). Therefore the fastening element (1) of the present invention enables a rapid and flexible fixing of a sound-absorbent and/or sound-insulating panel (5, 6) to an upright (3) (see figure 16).

[0018] However, the fastening element (1) is able to fix more than one sound-absorbent and/or sound-insulating panel (5, 6) to an upright (3).

[0019] In fact, in a case in which a first sound-absorbent and/or sound-insulating panel (5) of the plurality (2) of sound-absorbent and/or sound-insulating panels comprises a lateral wall (50) which is provided with a projection (51), a second sound-absorbent and/or sound-insulating panel (6) of the plurality (2) of sound-absorbent and/or sound-insulating panels comprises a lateral wall (60) which is provided with a recess (61) and the first sound-absorbent and/or sound-insulating panel (5) and the second sound-absorbent and/or sound-insulating panel (6) are conformed in such a way then when assembled to one another, the projection (51) is contained internally of the recess (61) and therefore the disclosed fastening element (1) is able to fix both the first sound-

absorbent and/or sound-insulating panel (5) and the second sound-absorbent and/or sound-insulating panel (6) to the upright. In particular, the anchoring portion (12) is dimensioned so that when the fastening element (1), the first sound-absorbent and/or sound-insulating panel (5) and the second sound-absorbent and/or sound-insulating panel (6) are assembled, it internally contains the projection (51) of the first sound-absorbent and/or sound-insulating panel (5) and is contained internally of the recess (61) of the second sound-absorbent and/or sound-insulating panel (6), so that the first sound-absorbent and/or sound-insulating panel (5) and the second sound-absorbent and/or sound-insulating panel (6) are both fixed to the upright (3) (see figure 15).

[0020] The anchoring portion (12) is C-shaped and identifies, therefore, an internal surface (120) of the anchoring portion (12) and an external surface (121) of the anchoring portion (12) (figure 15).

[0021] It is specified that, with reference to figures 15-17, when the fastening element (1), the first sound-absorbent and/or sound-insulating panel (5) and the second sound-absorbent and/or sound-insulating panel (6) are assembled, the fact that the C-shaped anchoring portion (12) internally contains the projection (51) of the first sound-absorbent and/or sound-insulating panel (5) means that the anchoring portion (12) embraces the projection (51), i.e. that the internal surface (120) of the anchoring portion (12) faces the projection (51). The internal surface (120) of the anchoring portion (12) can contact the projection (51).

[0022] It is further specified that, with reference to figure 15, when the fastening element (1), the first sound-absorbent and/or sound-insulating panel (5) and the second sound-absorbent and/or sound-insulating panel (6) are assembled, the fact that the C-shaped anchoring portion (12) is contained internally of the recess (61) of the second sound-absorbent and/or sound-insulating panel (6) means that the anchoring portion (12) embraces the projection (12), i.e. that the external surface (121) of the anchoring portion (12) faces the projection (61). The external surface (121) of the anchoring portion (12) can contact the recess (61).

[0023] The anchoring portion (12) preferably comprises: a first fin (12a) which originates perpendicularly from the second flank (10b) of the plate (10); a second fin (12b) which originates perpendicularly from the first fin (12a) and which develops externally with respect to the plate (10); and a third fin (12c) which originates perpendicularly from the second fin (12b) and which faces the first fin (12a).

[0024] The projection (51) of the sound-absorbent and/or sound-insulating panel (5, 6), or the recess (61) of the sound-absorbent and/or sound-insulating panel (5, 6) can have a complementary shape to the anchoring portion (12).

[0025] The coupling portion (4) of the upright (3) and the through-opening (11) made in the plate (10) are preferably reciprocally conformed so as to realise, when the

plate (10) and the upright (3) are constrained, a form coupling.

[0026] For example, with reference to figures 1 and 2, the coupling portion (4) of the upright (3) comprises a first lateral wall (40), a second lateral wall (41) and a third lateral wall (42). Likewise, the through-opening (11) is delimited by a first abutment wall (11a), a second abutment wall (11b) and a third abutment wall (11c) and receives the coupling portion (4) in such a way that the first abutment wall (11a) can abut the first lateral wall (40), the second abutment wall (11b) can abut the second lateral wall (41) and the third abutment wall (11c) can abut the third lateral wall (42).

[0027] Likewise, also with reference to the embodiments of the fastening element (1) of figures from 3 to 12, the coupling portion (4) of the upright (3) has a complementary shape to the walls that delimit the through-opening (11). Further, in accordance with the embodiments illustrated in the figures, the through-opening (11) can be delimited by a projecting wall which originates from the plate (10) and projects from the plate (10).

[0028] The constraint between the coupling portion (4) of the upright (3) and the plate (10) is advantageously more stable.

[0029] The coupling portion (4) of the upright (3) and the through-opening (11) made in the plate (10) are preferably reciprocally conformed so that when the fastening element (1) and the upright (3) are constrained, the plate (10) can slide along the extension direction of the upright (3).

[0030] The assembly is advantageously easier and more flexible.

[0031] The fastening element (1) comprises an abutting portion (13) for abutting the coupling portion (4) of the upright (3), which abutting portion (13) originates from a flank of the plate (10) which is opposite the second flank (10b) of the plate (10) (figures 15-17).

[0032] The abutting portion (13) advantageously increases the fixing stability of the sound-absorbent and/or sound-insulating panel (5, 6) to the upright (3), when the fastening element (1) and the sound-absorbent and/or sound-insulating panel (5, 6) are assembled.

[0033] In accordance with the embodiments illustrated in figures 4-6 and 10-12, the first flank (10a) of the plate (10) and the second flank (10b) of the plate (10) are opposite one another and the abutting portion (13) originates from the first flank (10a) of the plate (10).

[0034] Alternatively, according to the illustrated embodiments in figure 1-3 and 7-9, the first flank (10a) of the plate (10) and the second flank (10b) of the plate (10) are adjacent and the abutting portion (13) originates from a third flank (10c) of the plate (10), which third flank (10c) of the plate (10) is opposite the second flank (10b) of the plate (10) and is adjacent to the first flank (10a) of the plate (10).

[0035] The abutting portion (13), in accordance with the figures of the drawings, can comprise: a first fin (13a) which originates perpendicularly from a flank of the plate

(10); a second fin (13b) which originates perpendicularly from the first fin (13a) and which develops internally towards the plate (10); an abutting fin (13c) which originates perpendicularly from the second fin (13b).

[0036] This conformation of the abutting portion (13) advantageously gives greater rigidity to the structure of the fastening element (1).

[0037] The abutting fin (13c) of the abutting portion (13) preferably develops externally with respect to the plate (10).

[0038] With reference to the embodiments of the fastening element (1), illustrated in figures 1-3 and 7-9, it is specified that the fastening element (1) enables fixing of at most two sound-absorbent and/or sound-insulating panels to the upright (3). In particular, the fastening element (1) can fix one only sound-absorbent and/or sound-insulating panel (5, 6) to the upright (3) (for example if the panel is located at the top of the barrier) or can fix the first sound-absorbent (5) panel and the second sound-absorbent panel (6) to the upright (3), arranged one superiorly of the other.

[0039] With reference to the embodiments of the fastening element (1), illustrated in figures 4-6 and 10-12, it is specified that the fastening element (1) enables fixing of at most four sound-absorbent and/or sound-insulating panels to the upright (3). In particular, the fastening element (1) can fix the first sound-absorbent and/or sound-insulating panel (5) and a further first sound-absorbent and/or sound-insulating panel (5') to the upright (3) arranged flanked (for example they are positioned at the top of the barrier). Otherwise, the fastening element (1) can fix, to the upright (3), the first sound-absorbent and/or sound-insulating panel (5), a further first sound-absorbent and/or sound-insulating panel (5') arranged flanked to the first sound-absorbent and/or sound-insulating panel (5), the second sound-absorbent and/or sound-insulating panel (6) arranged above or below the first sound-absorbent and/or sound-insulating panel (5) and a further second sound-absorbent and/or sound-insulating panel arranged flanked to the second sound-absorbent and/or sound-insulating panel (6) and arranged above or below the further first sound-absorbent and/or sound-insulating panel (5').

[0040] The fastening element (1) can further comprise a through-hole (15) fashioned in the abutting portion (13) (for example, fashioned in the abutting fin (13c)). The through-hole (15) has a function only in a case in which the sound-absorbent and/or sound-insulating panel to be fixed is arranged at the top of the sound-absorbent barrier (100). In this case, in fact, the through-hole (15) serves for stabilising the fixture by means of a system of nuts and bolts which engages the through-hole (15) and is fixed to the upright (3).

[0041] The fastening element (1), according to any one of the embodiments thereof, can be obtained by moulding.

[0042] The fastening element (1) is, preferably, made of a metal material.

[0043] With reference to figures 13, and 14, different embodiments are illustrated of a sound-absorbent and/or sound-insulating barrier (100) for a communication pathway of the present invention. In particular, the sound-absorbent and/or sound-insulating barrier (100) comprises: a plurality (30) of uprights fixable along a communication pathway; a plurality (2) of sound-absorbent and/or sound-insulating panels; a plurality (50) of fastening elements in which each fastening element (1) is in accordance with one of the above-described embodiments.

[0044] The sound-absorbent and/or sound-insulating barrier (100) of the invention is advantageously easy and simple to assemble, is stable and is such as to have a good aesthetic impact as the plurality (30) of uprights are not visible to persons travelling along the communication pathway, being covered by the plurality (2) of sound-absorbent and/or sound-insulating panels.

[0045] The sound-absorbent and/or sound-insulating panels of the plurality (2) of sound-absorbent and sound-insulating panels can be of a type comprising an external metal sheet (for example steel or aluminium) internally containing a layer of sound-absorbent and/or sound-absorbent material (figure 15) or can be of a type made of concrete, or of other materials (for example plastic, wood or glass).

[0046] In particular, in a case in which the sound-absorbent and/or sound-insulating panels are made of glass, they will be such as to comprise a lateral wall that is provided with a recess.

[0047] The sound-absorbent and/or sound-insulating barrier (100) can comprise sound-absorbent and/or sound-insulating panels all made of the same material, or of different materials.

Claims

1. A fastening element (1) for assembling a sound-absorbent and/or sound-insulating barrier (100) along a communication pathway, the barrier comprising a plurality (2) of sound-absorbent and/or sound-insulating panels frontally fixed to an upright (3) by the fastening element, wherein the upright (3) comprises a coupling portion (4) which is conformed as an upright bar, wherein a sound-absorbent and/or sound-insulating panel (5, 6) of the plurality (2) of sound-absorbent and/or sound-insulating panels comprises a lateral wall (50, 60) which is provided above or below it with a projection (51) or a recess (61), wherein the fastening element (1) is to be constrained between the upright (3) and the sound-absorbent and/or sound-insulating panel (5, 6) for fixing the panel (5,6) frontally to the upright (3); **characterised in that** the fastening element comprises:

a plate (10) which affords a through-opening (11), which through-opening (11) originates from a first flank (10a) of the plate (10) and an

anchoring portion (12) which is C-shaped and originates from a second flank (10b) of the plate (10), and an abutting portion (13) which originates from a flank of the plate (10) which is opposite the second flank (10b) of the plate, wherein the through-opening (11) is conformed for receiving the coupling portion (4) of the upright (3) so that the fastening element (1) is constrained in horizontal position of the plate to the upright (3) through the opening (11) afforded in the plate (10) which receives the coupling portion (4) of the upright (3); wherein the anchoring portion (12) is dimensioned such that when the fastening element (1) and the sound-absorbent and/or sound-insulating panel (5, 6) are assembled, the C-shaped anchoring portion internally contains the projection (51) or is contained internally of the recess (61) of the lateral wall (50,60) of the sound-absorbent and/or sound-insulating panel (5, 6) so that the sound-absorbent and/or sound-insulating panel (5, 6) is fixed to the upright (3) by means of the anchoring portion (12) of the fastening element (1); and wherein the abutting portion (13) is conformed for abutting the coupling portion (4) of the upright (3) when the fastening element is constrained to the upright.

2. The fastening element (1) of the preceding claim, wherein the anchoring portion (12) is dimensioned so that, when the fastening element (1), a first sound-absorbent and/or sound-insulating panel (5) and a second sound-absorbent and/or sound-insulating panel (6) are assembled, the C-shaped anchoring portion internally contains a projection (51) of the first sound-absorbent and/or sound-insulating panel (5) and is contained internally of a recess (61) of the second sound-absorbent and/or sound-insulating panel (6), so that the first sound-absorbent and/or sound-insulating panel (5) and the second sound-absorbent and/or sound-insulating panel (6) are both fixed to the upright (3)
3. The fastening element (1) of any one of the preceding claims, wherein the anchoring portion (12) comprises: a first fin (12a) which originates perpendicularly from the second flank (10b) of the plate (10); a second fin (12b) which originates perpendicularly from the first fin (12a) and which develops externally with respect to the plate (10); and a third fin (12c) which originates perpendicularly from the second fin (12b) and which faces the first fin (12a).
4. The fastening element (1) of any one of the preceding claims, wherein the through-opening (11) made in the plate (10) is conformed with respect to the coupling portion (4) of the upright (3) so as to realise,

when the plate (10) and the upright (3) are constrained, a form coupling.

5. The fastening element (1) of any one of the preceding claims, wherein the through-opening (11) made in the plate (10) is conformed with respect to the coupling portion (4) of the upright (3) so that when the fastening element (1) and the upright (3) are constrained, the plate (10) can slide along the extension direction of the upright (3). 5 10
6. The fastening element (1) of claim 1, wherein the first flank (10a) of the plate (10) and the second flank (10b) of the plate (10) are opposite one another and wherein the abutting portion (13) originates from the first flank (10a) of the plate (10). 15
7. The fastening element (1) of claim 1, wherein: the first flank (10a) of the plate (10) and the second flank (10b) of the plate (10) are adjacent; the abutting portion (13) originates from a third flank (10c) of the plate (10), which third flank (10c) of the plate (10) is opposite the second flank (10b) of the plate (10) and is adjacent to the first flank (10a) of the plate (10). 20 25
8. The fastening element (1) of any one of the preceding claims from 6 to 7, wherein the abutting portion (13) comprises: a first fin (13a) which originates perpendicularly from a flank of the plate (10); a second fin (13b) which originates perpendicularly from the first fin (13a) and which develops internally towards the plate (10); an abutting fin (13c) which originates perpendicularly from the second fin (13b). 30
9. The fastening element (1) of the preceding claim, wherein the abutting fin (13c) of the abutting portion (13) develops externally with respect to the plate (10). 35
10. A sound-absorbent and/or sound-insulating barrier (100) for a communication pathway, comprising: 40
 - a plurality (30) of uprights fixable along a communication pathway;
 - a plurality (2) of sound-absorbent and/or sound-insulating panels; 45
 - a plurality (50) of fastening elements constrained between the uprights and the sound-absorbent and/or sound-insulating panels fixing the panels frontally to the uprights in which each fastening element (1) is according to any one of the preceding claims. 50

Patentansprüche 55

1. Befestigungselement (1) zur Montage einer schallabsorbierenden und/oder schalldämmenden Barriere

ere (100) entlang eines Verbindungsweges, wobei die Barriere eine Vielzahl (2) von schallabsorbierenden und/oder schalldämmenden Paneelen umfasst, die durch das Befestigungselement frontal an einem Pfosten (3) befestigt sind, wobei der Pfosten (3) einen Kopplungsabschnitt (4) umfasst, der als aufrechte Stange ausgebildet ist, wobei ein schallabsorbierendes und/oder schalldämmendes Paneel (5, 6) der Vielzahl (2) von schallabsorbierenden und/oder schalldämmenden Paneelen eine Seitenwand (50, 60) umfasst, die oberhalb oder unterhalb mit einem Vorsprung (51) oder einer Aussparung (61) versehen ist, wobei das Befestigungselement (1) zwischen dem Pfosten (3) und dem schallabsorbierenden und/oder schalldämmenden Paneel (5, 6) festgelegt ist, um das Paneel (5, 6) frontal an dem Pfosten (3) zu befestigen;

dadurch gekennzeichnet, dass das Befestigungselement Folgendes umfasst:

eine Platte (10), die eine Durchgangsöffnung (11) aufweist, wobei die Durchgangsöffnung (11) von einer ersten Flanke (10a) der Platte (10) ausgeht, und einen Verankerungsabschnitt (12) aufweist, der C-förmig ist und von einer zweiten Flanke (10b) der Platte (10) ausgeht, und einen Anschlagabschnitt (13) aufweist, der von einer Flanke der Platte (10) ausgeht, die der zweiten Flanke (10b) der Platte gegenüberliegt, wobei die Durchgangsöffnung (11) derart für die Aufnahme des Kopplungsabschnitts (4) des Pfostens (3) ausgeformt ist, dass das Befestigungselement (1) in horizontaler Position der Platte über die in der Platte (10) ausgefertigte Öffnung (11), die den Kopplungsabschnitt (4) des Pfostens (3) aufnimmt, an dem Pfosten (3) festgelegt ist; wobei der Verankerungsabschnitt (12) derart bemessen ist, dass, wenn das Befestigungselement (1) und das schallabsorbierende und/oder schalldämmende Paneel (5, 6) zusammengebaut sind, der C-förmige Verankerungsabschnitt in seinem Inneren den Vorsprung (51) aufnimmt oder im Inneren der Aussparung (61) der Seitenwand (50, 60) des schallabsorbierenden und/oder schalldämmenden Paneels (5, 6) aufgenommen ist, so dass das schallabsorbierende und/oder schalldämmende Paneel (5, 6) durch den Verankerungsabschnitt (12) des Befestigungselements (1) an dem Pfosten (3) befestigt ist; und wobei der Anschlagabschnitt (13) derart ausgeformt ist, dass er gegen den Kopplungsabschnitt (4) des Pfostens (3) anschlägt, wenn das Befestigungselement an dem Pfosten festgelegt ist.

2. Befestigungselement (1) nach dem vorhergehenden Anspruch, wobei der Verankerungsabschnitt (12)

- derart bemessen ist, dass, wenn das Befestigungselement (1), ein erstes schallabsorbierendes und/oder schalldämmendes Paneel (5) und ein zweites schallabsorbierendes und/oder schalldämmendes Paneel (6) zusammengebaut sind, der C-förmige Verankerungsabschnitt in seinem Inneren einen Vorsprung (51) des ersten schallabsorbierenden und/oder schalldämmenden Paneels (5) aufnimmt und im Inneren einer Aussparung (61) des zweiten schallabsorbierenden und/oder schalldämmenden Paneels (6) aufgenommen ist, so dass das erste schallabsorbierende und/oder schalldämmende Paneel (5) und das zweite schallabsorbierende und/oder schalldämmende Paneel (6) beide an dem Pfosten (3) befestigt sind.
3. Befestigungselement (1) nach einem der vorhergehenden Ansprüche, wobei der Verankerungsabschnitt (12) umfasst: eine erste Rippe (12a), die sich orthogonal von der zweiten Flanke (10b) der Platte (10) ausgehend erstreckt; eine zweite Rippe (12b), die sich orthogonal von der ersten Rippe (12a) ausgehend und relativ zur Platte (10) nach außen hin erstreckt; und eine dritte Rippe (12c), die sich orthogonal von der zweiten Rippe (12b) ausgehend erstreckt und der ersten Rippe (12a) zugewandt ist.
4. Befestigungselement (1) nach einem der vorhergehenden Ansprüche, wobei die in der Platte (10) ausgefertigte Durchgangsöffnung (11) derart relativ zu dem Kopplungsabschnitt (4) des Pfostens (3) ausgeformt ist, dass sie, wenn die Platte (10) und der Pfosten (3) aneinander festgelegt sind, eine form-schlüssige Kupplung bildet.
5. Befestigungselement (1) nach einem der vorhergehenden Ansprüche, wobei die Durchgangsöffnung (11), die in der Platte (10) ausgefertigt ist, derart relativ zu dem Kopplungsabschnitt (4) des Pfostens (3) geformt ist, dass, wenn das Befestigungselement (1) und der Pfosten (3) aneinander festgelegt sind, die Platte (10) entlang der Längsausdehnungsrichtung des Pfostens (3) gleiten kann.
6. Befestigungselement (1) nach Anspruch 1, wobei die erste Flanke (10a) der Platte (10) und die zweite Flanke (10b) der Platte (10) einander gegenüberliegen und wobei der Anschlagabschnitt (13) von der ersten Flanke (10a) der Platte (10) ausgeht.
7. Befestigungselement (1) nach Anspruch 1, wobei: die erste Flanke (10a) der Platte (10) und die zweite Flanke (10b) der Platte (10) aneinander angrenzend sind; der Anschlagabschnitt (13) von einer dritten Flanke (10c) der Platte (10) ausgeht, wobei die dritte Flanke (10c) der Platte (10) der zweiten Flanke (10b) der Platte (10) gegenüberliegt und an die erste Flanke (10a) der Platte (10) angrenzt.
8. Befestigungselement (1) nach einem der vorhergehenden Ansprüche von 6 bis 7, wobei der Anschlagabschnitt (13) umfasst: eine erste Rippe (13a), die sich orthogonal von einer Flanke der Platte (10) ausgehend erstreckt; eine zweite Rippe (13b), die sich orthogonal von der ersten Rippe (13a) ausgehend und relativ zur Platte (10) nach innen hin erstreckt; eine Anschlagrippe (13c), die sich orthogonal von der zweiten Rippe (13b) ausgehend erstreckt.
9. Befestigungselement (1) nach dem vorhergehenden Anspruch, wobei sich die Anschlagrippe (13c) des Anschlagabschnitts (13) relativ zur Platte (10) nach außen hin erstreckt.
10. Schallabsorbierende und/oder schalldämmende Barriere (100) für einen Verbindungsweg, umfassend:
- eine Vielzahl (30) von Pfosten, die entlang eines Verbindungsweges befestigt werden können;
- eine Vielzahl (2) schallabsorbierender und/oder schalldämmender Paneele;
- eine Vielzahl (50) von Befestigungselementen, die zwischen den Pfosten und den schallabsorbierenden und/oder schalldämmenden Paneelen festgelegt sind und die Paneele frontal an den Pfosten befestigen, wobei jedes Befestigungselement (1) einem der vorhergehenden Patentansprüche entspricht.

Revendications

1. Un élément de fixation (1) pour assembler une barrière d'absorption et/ou d'isolation acoustique (100) le long d'une voie de communication, la barrière comprenant une pluralité (2) de panneaux d'absorption et/ou d'isolation acoustique frontalement fixés à un montant (3) par l'élément de fixation, où le montant (3) comprend une portion d'accouplement (4) qui est conformée comme une barre verticale, où un panneau d'absorption et/ou d'isolation acoustique (5, 6) de la pluralité (2) de panneaux d'absorption et/ou d'isolation acoustique comprend une paroi latérale (50, 60) qui est munie, supérieurement ou intérieurement, d'une saillie (51) ou d'un renforcement (61), où l'élément de fixation (1) doit être assujéti entre le montant (3) et le panneau d'absorption et/ou d'isolation acoustique (5, 6) pour fixer le panneau (5, 6) frontalement sur le montant (3) ; **caractérisé en ce que** l'élément de fixation comprend :
- une plaque (10) qui présente une ouverture traversante (11), ladite ouverture traversante (11) part d'un premier côté (10a) de la plaque (10), et une portion d'ancrage (12) qui a la forme d'un « C » et part d'un deuxième côté (10b) de la plaque (10).

- que (10), et une portion de butée (13) qui part d'un côté de la plaque (10) qui est opposé au deuxième côté (10b) de la plaque, où l'ouverture traversante (11) est conformée pour recevoir la portion d'accouplement (4) du montant (3) de manière à ce que l'élément de fixation (1) soit assujéti dans la position horizontale de la plaque au montant (3) à travers l'ouverture (11) présente dans la plaque (10) qui reçoit la portion d'accouplement (4) du montant (3) ; où la portion d'ancrage (12) est dimensionnée de manière à ce que, lorsque l'élément de fixation (1) et le panneau d'absorption et/ou d'isolation acoustique (5, 6) sont assemblés, la portion d'ancrage en « C » contiennent à l'intérieur la saillie (51) ou soit contenue à l'intérieur du renforcement (61) de la paroi latérale (50, 60) du panneau d'absorption et/ou d'isolation acoustique (5, 6) afin que le panneau d'absorption et/ou d'isolation acoustique (5, 6) soit fixé au montant (3) par le biais de la portion d'ancrage (12) de l'élément de fixation (1) ; et où la portion de butée (13) est conformée pour rencontrer la portion d'accouplement (4) du montant (3) lorsque l'élément de fixation est assujéti au montant.
2. L'élément de fixation (1) selon la revendication précédente, dans lequel la portion d'ancrage (12) est dimensionnée de manière à ce que, lorsque l'élément de fixation (1), un premier panneau d'absorption et/ou d'isolation acoustique (5) et un deuxième panneau d'absorption et/ou d'isolation acoustique (6) sont assemblés, la portion d'ancrage en « C » contienne à l'intérieur une saillie (51) du premier panneau d'absorption et/ou d'isolation acoustique (5) et soit contenue à l'intérieur d'un renforcement (61) du deuxième panneau d'absorption et/ou d'isolation acoustique (6), afin que le premier panneau d'absorption et/ou d'isolation acoustique (5) et le deuxième panneau d'absorption et/ou d'isolation acoustique (6) soient tous les deux fixés au montant (3).
 3. L'élément de fixation (1) selon l'une quelconque des revendications précédentes, dans lequel la portion d'ancrage (12) comprend : une première ailette (12a) qui part perpendiculairement du deuxième côté (10b) de la plaque (10) ; une deuxième ailette (12b) qui part perpendiculairement de la première ailette (12a) et qui se développe extérieurement par rapport à la plaque (10) ; et une troisième ailette (12c) qui part perpendiculairement de la deuxième ailette (12b) et qui fait face à la première ailette (12a).
 4. L'élément de fixation (1) selon l'une quelconque des revendications précédentes, dans lequel l'ouverture traversante (11) pratiquée dans la plaque (10) est conformée par rapport à la portion d'accouplement (4) du montant (3) de manière à réaliser, lorsque la plaque (10) et le montant (3) sont assujéti, un accouplement de forme.
 5. L'élément de fixation (1) selon l'une quelconque des revendications précédentes, dans lequel l'ouverture traversante (11) pratiquée dans la plaque (10) est conformée par rapport à la portion d'accouplement (4) du montant (3) de manière à ce que, lorsque l'élément de fixation (1) et le montant (3) sont assujéti, la plaque (10) puisse coulisser le long de la direction d'extension du montant (3).
 6. L'élément de fixation (1) selon la revendication 1, dans lequel le premier côté (10a) de la plaque (10) et le deuxième côté (10b) de la plaque (10) sont opposés l'un par rapport à l'autre et dans lequel la portion de butée (13) part du premier côté (10a) de la plaque (10).
 7. L'élément de fixation (1) selon la revendication 1, dans lequel : le premier côté (10a) de la plaque (10) et le deuxième côté (10b) de la plaque (10) sont adjacents ; la portion de butée (13) part d'un troisième côté (10c) de la plaque (10), ledit troisième côté (10c) de la plaque (10) est opposé au deuxième côté (10b) de la plaque (10) et est adjacent au premier côté (10a) de la plaque (10).
 8. L'élément de fixation (1) selon l'une quelconque des revendications précédentes de 6 à 7, dans lequel la portion de butée (13) comprend : une première ailette (13a) qui part perpendiculairement d'un côté de la plaque (10) ; une deuxième ailette (13b) qui part perpendiculairement de la première ailette (13a) et qui se développe intérieurement vers la plaque (10) ; une ailette de butée (13c) qui part perpendiculairement de la deuxième ailette (13b).
 9. L'élément de fixation (1) selon la revendication précédente, dans lequel l'ailette de butée (13c) de la portion de butée (13) se développe extérieurement par rapport à la plaque (10).
 10. Une barrière d'absorption et/ou d'isolation acoustique (100) pour une voie de communication, comprenant :
 - une pluralité (30) de montants pouvant être fixés le long d'une voie de communication ;
 - une pluralité (2) de panneaux d'absorption et/ou d'isolation acoustique ;
 - une pluralité (50) d'éléments de fixation assujéti entre les montants et les panneaux d'absorption et/ou d'isolation acoustique, fixant les panneaux frontalement aux montants, où chaque élément de fixation (1) est selon l'une quel-

conque des revendications précédentes.

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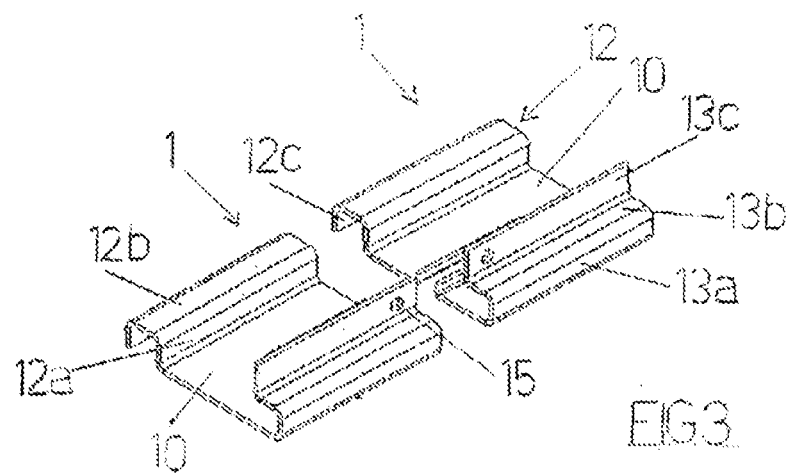
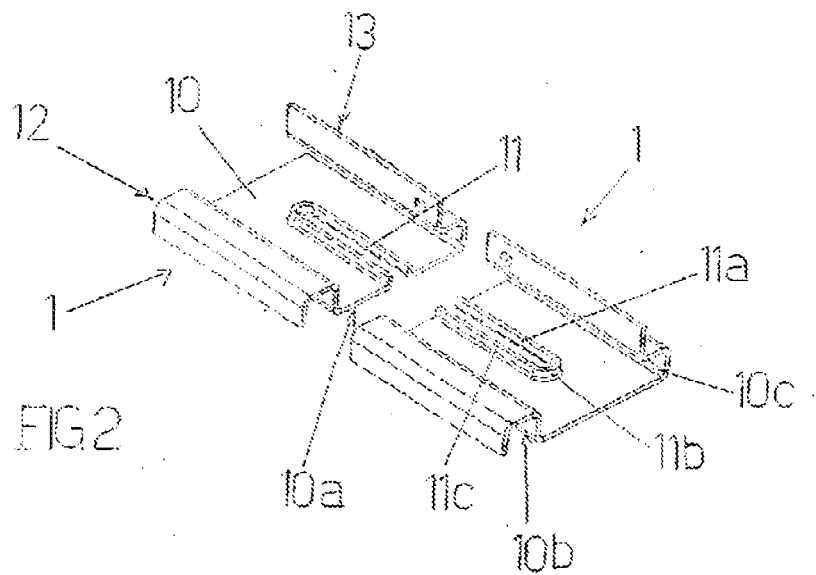
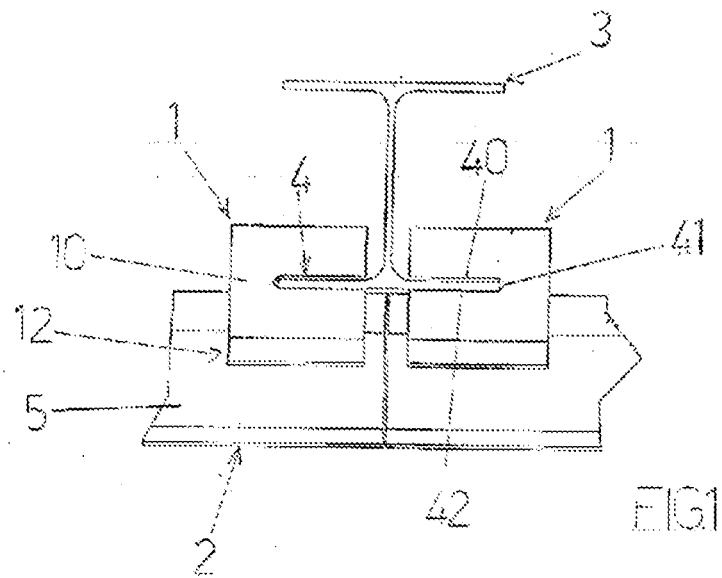
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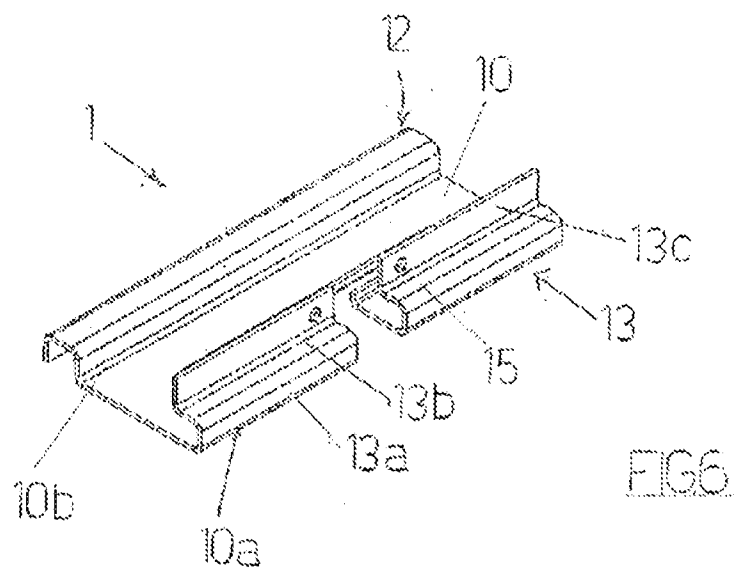
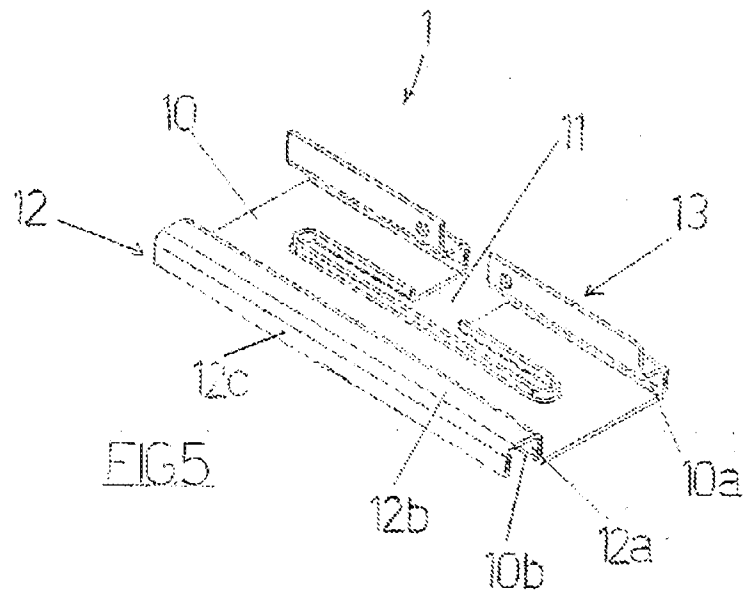
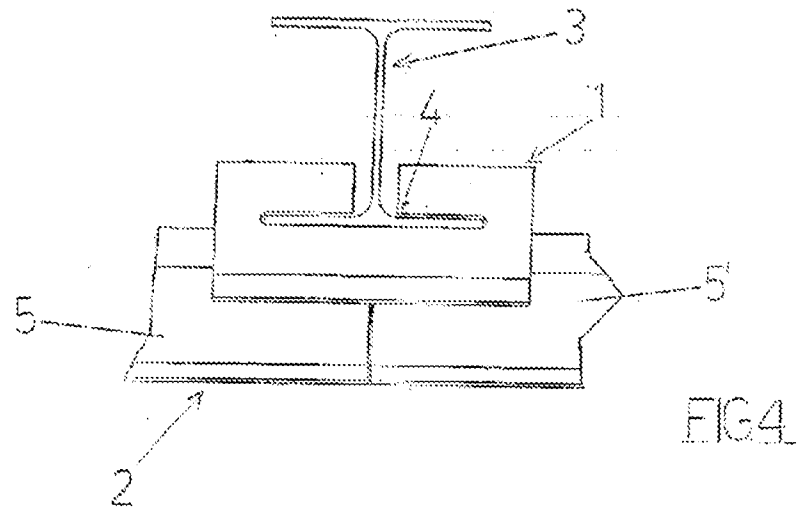
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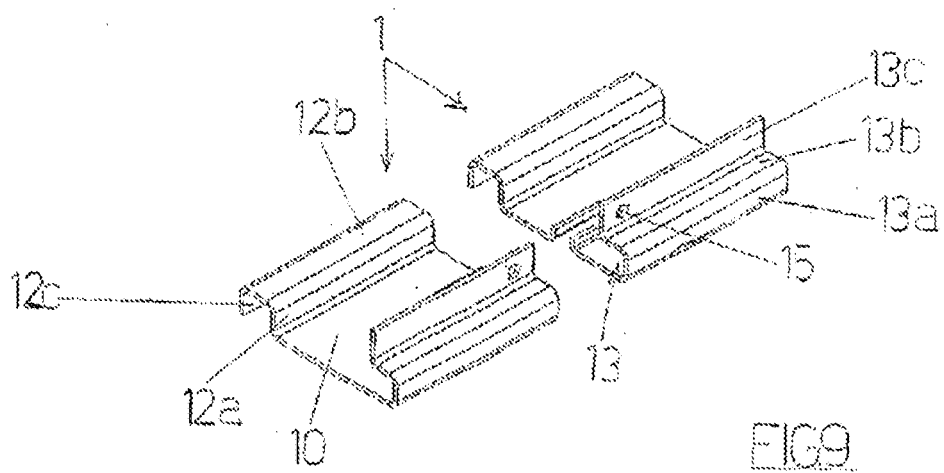
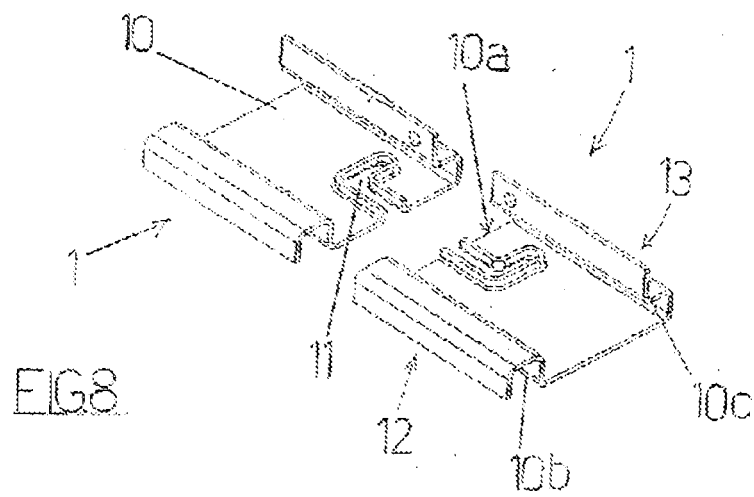
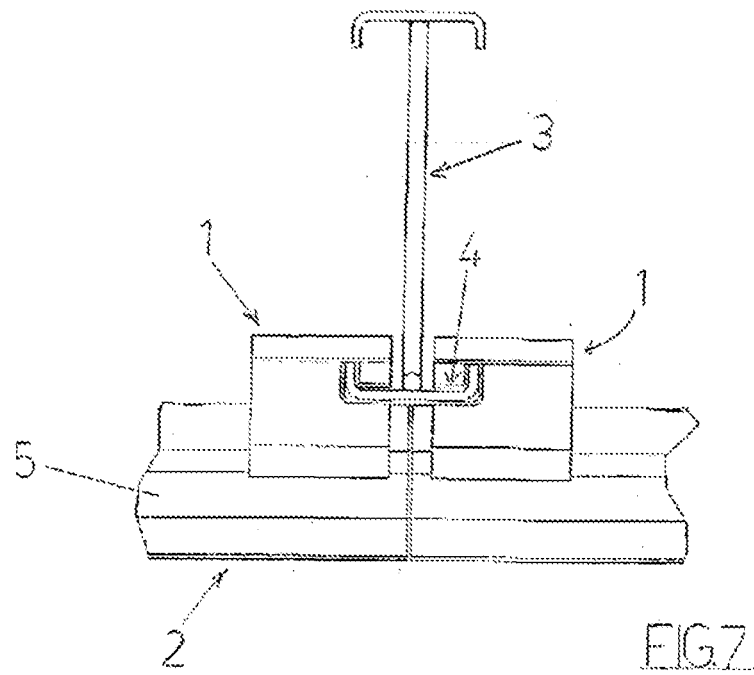


FIG 10

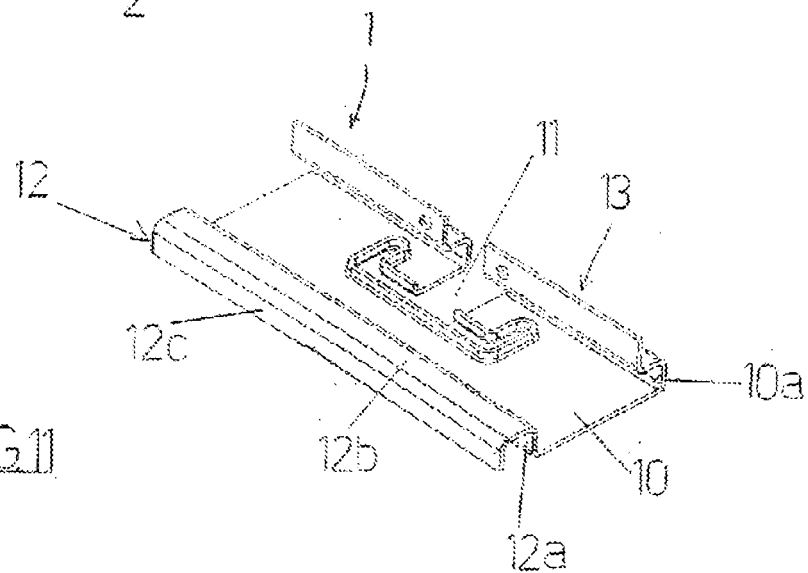
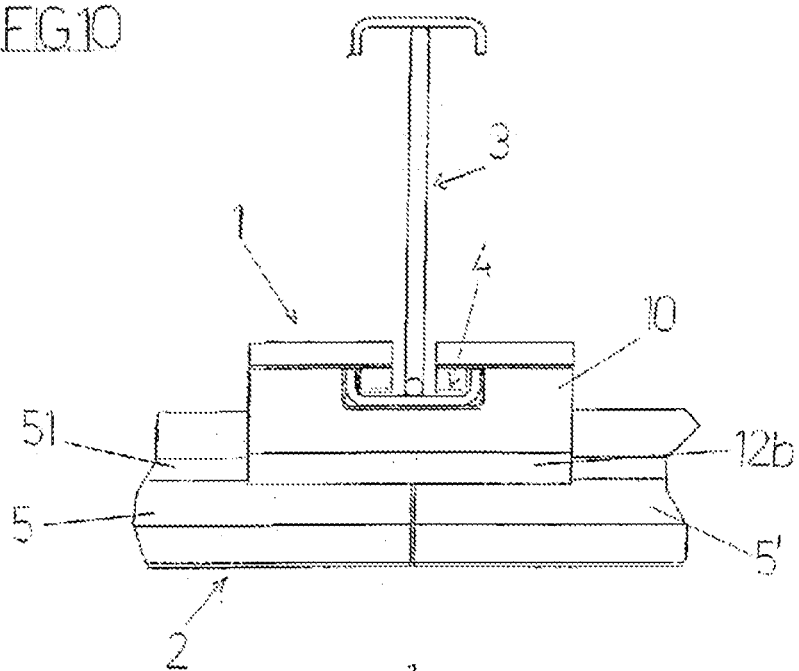


FIG 11

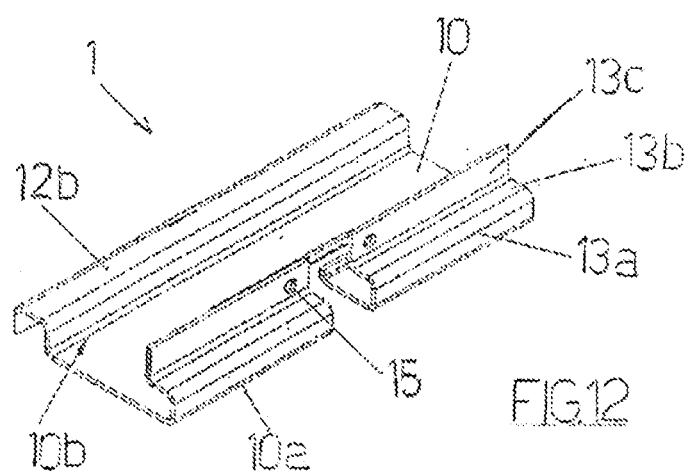
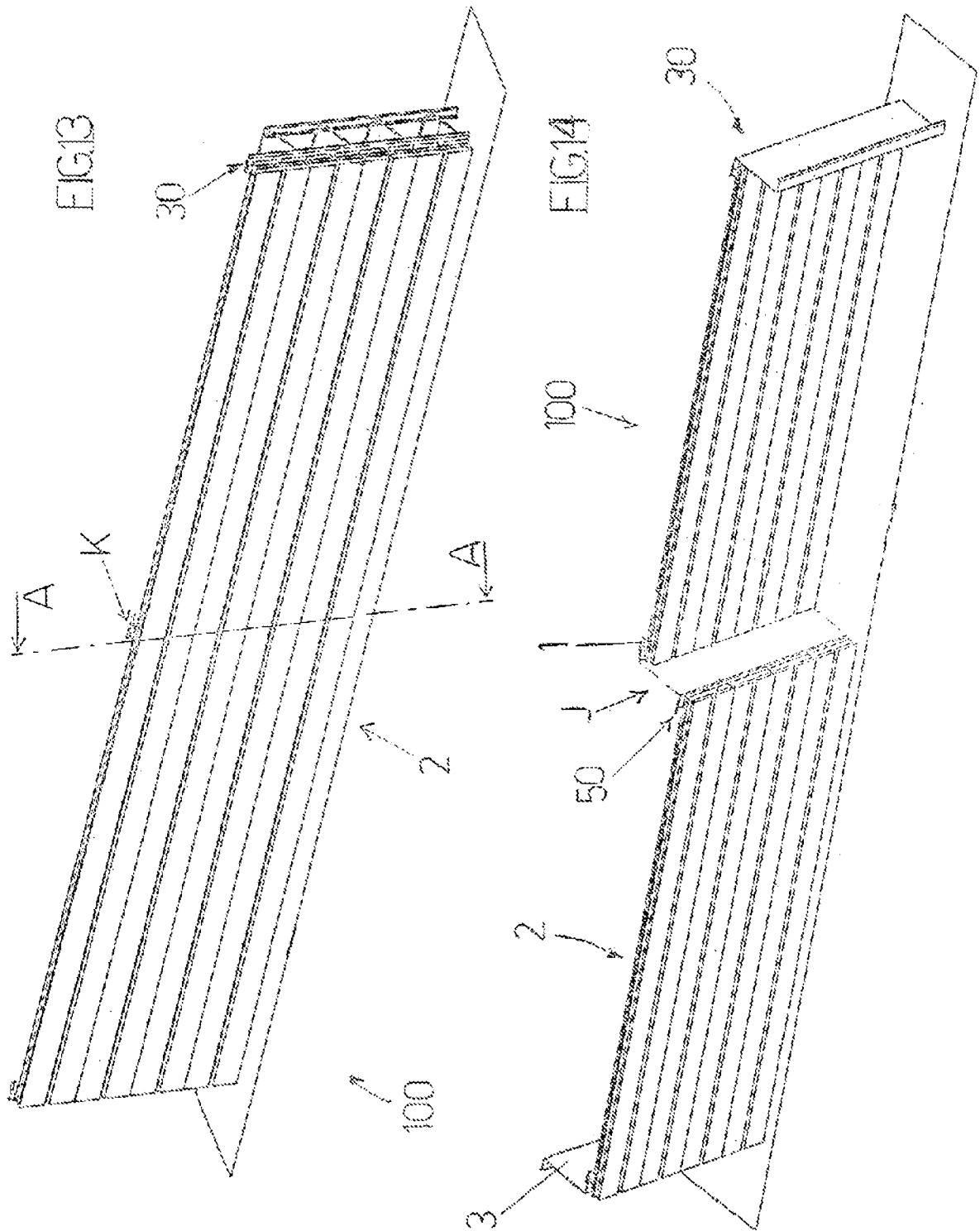


FIG 12



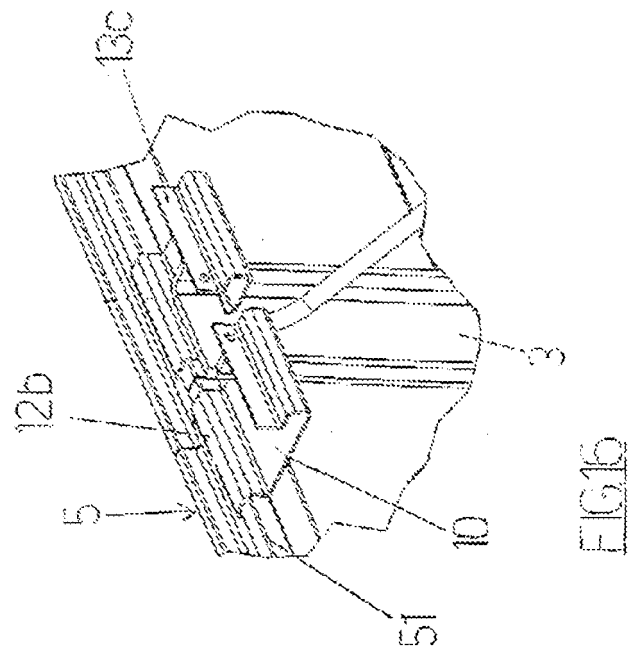
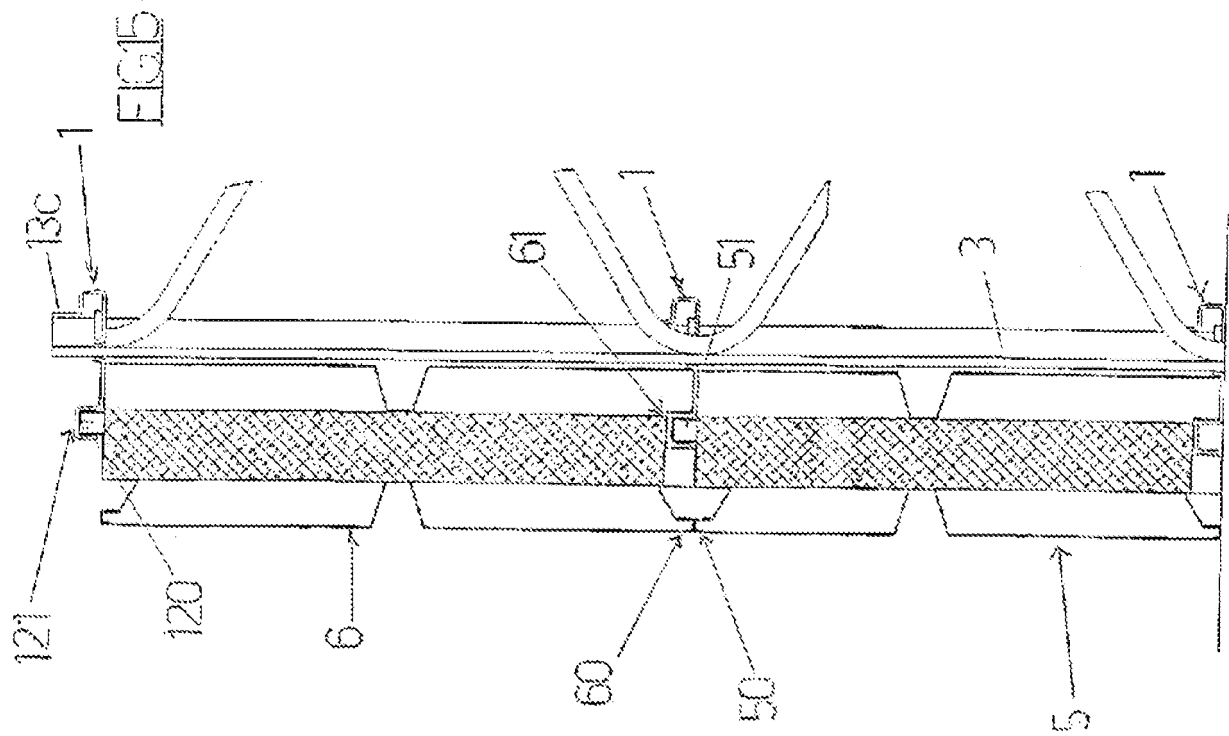
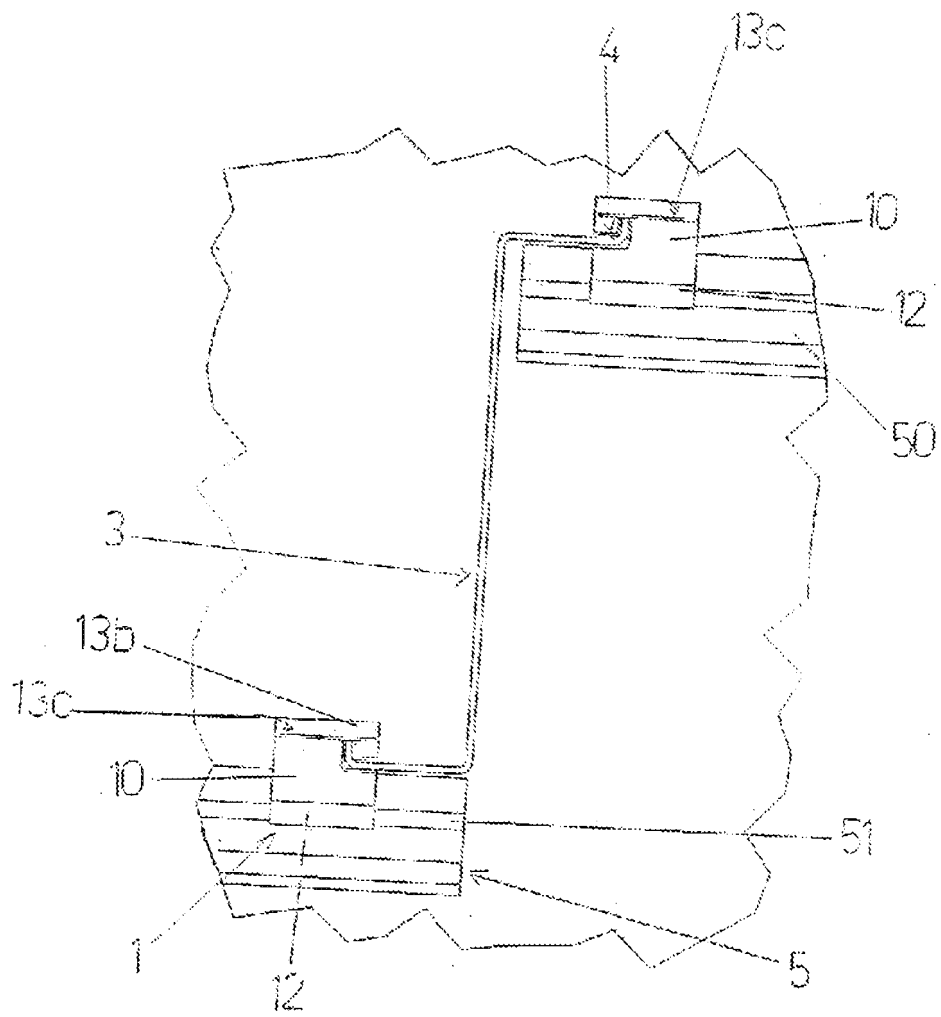


FIG17



REFERENCES CITED IN THE DESCRIPTION

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