

(19)



(11)

EP 2 503 073 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:
22.04.2015 Bulletin 2015/17

(51) Int Cl.:
E04F 13/08 (2006.01)

(21) Application number: **12160879.8**

(22) Date of filing: **22.03.2012**

(54) Cladding structure of a wall and panel for cladding a wall

Verkleidungsstruktur einer Wand und Paneel zum Verkleiden einer Wand

Structure de bardage d'un mur et panneau pour bardage d'un mur

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO RS SE SI SK SM TR**

(30) Priority: **24.03.2011 IT BS20110034**

(43) Date of publication of application:
26.09.2012 Bulletin 2012/39

(73) Proprietor: **Tecnofacciate di Penazzi Francesco
25127 Brescia (IT)**

(72) Inventor: **Penazzi, Francesco
25127 Brescia (IT)**

(74) Representative: **Chimini, Francesco
Jacobacci & Partners S.p.A.
Piazza della Vittoria 11
25122 Brescia (IT)**

(56) References cited:
**EP-A2- 1 764 455 WO-A-2007/039743
DE-U1- 8 621 152 FR-A- 2 231 829
US-A- 1 940 141**

EP 2 503 073 B1

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

Description

[0001] The present invention relates to a cladding structure of a wall using panels or slabs, such as mineral slabs of ceramic, hard stone, marble, granite and the like, in particular for the realisation of ventilated facades.

[0002] As is known, a ventilated facade is taken to mean a cladding of a vertical wall, for example in brick, generally achieved with panels mounted at a certain distance from such wall, so as to create an air space between the wall and the cladding. The space between the cladding and the wall is designed in such a way that the air present in it can flow by means of a natural chimney effect and/or in an artificially controlled manner, depending on seasonal/daily requirements, so to improve overall thermo-energetic performance.

[0003] Ventilated facades are generally mounted by means of a framework which comprises upright profiled bars which are fixed to the brick wall in a vertical arrangement, for example by means of brackets. The cladding panels are anchored to said uprights in various ways. For example, it is known of to fix the panels to the uprights by means of structural glues. Despite such glues being specifically designed for applications of this kind, their properties are greatly influenced by the environmental conditions present at the moment of the gluing step, particularly the temperature and degree of humidity. For this reason, favourable environmental condition, not always present and varying within the same working day, are required for the laying of the panels. The installation of the panels may therefore take a very long time given the impossibility of working continuously in any environmental condition.

[0004] Attempts have been made to overcome this drawback by eliminating entirely the use of glue and fixing the panels to the uprights using solely mechanical means. For example, an alternative method of attachment envisages retaining the panels by means of support brackets fixed to the uprights with bolts and/or rivets. This technical solution, as well as having the drawback that the continuity of the outer cladding surface is interrupted by the presence of hooks, at least from close-up, also proves complex and awkward for the installer. To facilitate the work of the installer, the bolts and rivets have been entirely replaced by springs and hooks fixed to the special profiles. One example of an attachment system of this type is described in EP1764455A2. But even this technical solution is not without drawbacks, in particular consisting of the presence of visible hooks and the large number and complexity of the components making up the facade.

[0005] Another cladding is known from US 1 940 141.

[0006] The purpose of the present invention is to propose a cladding structure, in particular a ventilated facade, able to overcome the drawbacks of the attachment systems complained of above.

[0007] Such purpose is achieved by a cladding structure according to claim 1 and by a cladding panel accord-

ing to claim 10. The dependent claims show preferred or advantageous embodiments of the cladding structure.

[0008] Further characteristics and advantages of the structure according to the invention will be more clearly comprehensible from the description given below of its preferred and non-limiting embodiments, with reference to the appended drawings, wherein figures 10 to 12 show the invention, whereas figures 1 to 9 are to support the understanding of the invention.

[0009] - Figure 1 shows a front view of a lower portion of a cladding structure of a wall, at the last two panels of a vertical row of panels, with the latter seen in transparency.

[0010] - Figure 2 shows a perspective view of a cladding panel and the pair of upright profiled bars to which it is anchored, before their coupling;

[0011] - figure 3 is a perspective view of a panel seen from the back;

[0012] - Figure 4 shows a front view of a corner portion of a cladding structure of a wall, with the four panels composing it seen in transparency;

[0013] - Figure 5 is a side view of the portion of structure in figure 4;

[0014] - Figure 6 is a transversal cross-section of the structure according to the line A-A in figure 5;

[0015] - Figure 6a is a transversal cross-section of the structure according to the line B-B in figure 5;

[0016] - Figure 6b is a transversal cross-section of the structure according to the line C-C in figure 5;

[0017] - Figure 6c is a transversal cross-section of the structure according to the line D-D in figure 5;

[0018] - Figure 7 shows a perspective view of a cladding panel in an embodiment variation and the pair of upright profiled bars to which it is to be anchored, before their coupling;

[0019] - Figure 8 shows a front view of a corner portion of a cladding structure of a wall, with the four panels composing it in the embodiment of figure 7 and seen in transparency;

[0020] - Figure 9 is a side view of the portion of structure in figure 8;

[0021] - Figure 10 shows a perspective view of a cladding panel and the pair of upright profiled bars to which it is to be anchored, before their coupling, according to the invention.

[0022] - Figure 11 shows a front view of a lower portion of a cladding structure of a wall using the panels in figure 10, at the last two panels of a vertical row of panels; and

[0023] - Figure 12 shows a front view of a lower portion of a cladding structure of a wall using the panels in figure 10, at the last four panels of two adjacent vertical rows of panels.

[0024] In said drawings reference numeral 1 denotes a part, in particular a lower part, of a cladding structure of a wall. Hereinafter in the description, the term "vertical" and "upper/lower" will refer, save as specified otherwise, to planes parallel to that of the wall to be clad; the terms "rear" or "inner" and "front" or "outer" will refer, save as

specified otherwise, to sides or surfaces of the panels or of other elements of the cladding structure respectively facing the wall to be clad or facing outwards.

[0025] The structure comprises a support frame 10 suitable for being fixed to a wall to be clad and a plurality of cladding panels 20 suitable for being anchored to said support frame. The frame 10 comprises at least two vertical upright profiled bars 12. For example said upright profiled bars 12 can be anchored to the wall by anchorage brackets (not shown).

[0026] In one embodiment, the upright profiled bars 12 have a "T", "L", "H" or similar shape section, so as to define, on the side opposite the wall, a vertical abutment plane 14. The depth of the upright profiled bars 12, that is to say the perpendicular extension to the vertical abutment plane 14, substantially defines the depth or breadth of the cavity or air space which is created between the cladding panels and the wall.

[0027] A vertical row of cladding panels 20 is fixed to a pair of upright profiled bars 12 (figure 1). A frame, composed therefore of a plurality of upright profiled bars 12 parallel to each other, permits the assembly of various vertical rows of panels 20, next to each other (figure 4). The panels 20 of two adjacent vertical rows, as shown in figure 4, can be fixed to the vertical abutment plane 14 of a single upright profiled bar 12.

[0028] A pair of upper anchorage plates 22 and a pair of lower retention plates 24 are fixed to the inner side of each cladding panel 20. Said upper 22 and lower plates 24, for example metallic plates, are fixed near the lateral rims of the panel 20, at the abutment plane 14 of the upright profiled bars 12.

[0029] The upper anchorage plates 22 have respective end portions 22' projecting from the upper rim of the panel 20 and suitable for being each fixed to a respective upright profiled bar 12 by means of mechanical anchorage means. For example such end portions 22' have a hole 23 for the attachment of the upper plates 22 to the frame by rivets 26.

[0030] The lower retention plates 24 project from the lower rim of the panel 20 so as to be engaged by an underlying panel. In other words, the lower retention plates 24 have respective end portions 24' which, once the panel has been fixed to the support frame 10, extend behind the inner side of the underlying panel, that is to say are surmounted by the upper rim of said panel.

[0031] While the upper plates 22 perform the function of anchoring the panel to the support frame 10, the lower plates 24 have a function of resistance to the pressure/negative pressure load of the air circulating in the cavity or air space between the panels and the wall. In other words, the interaction of the lower plates 24 and the underlying panel counters the tendency of the panel to detach from the support frame in the lower part which is not mechanically fixed to the frame but merely rests on the vertical abutment plane 14.

[0032] The lower plates 24 may be horizontally staggered in relation to the upper plates 22 so as not to in-

terfere with the upper plates 22 of the underlying panel.

[0033] The vertically adjacent cladding panels 20 may be fitted on the support frame in such a way as to be separated by a horizontal clearance channel 11. The upper anchorage plates 22 may be fixed to the respective uprights 12 at said clearance channel 11. This way, in fact, it proves easy to access the mechanical anchorage means, such as the rivets 26, to release or remove them and thereby dismantle a single panel without having to remove those above it.

[0034] To such purpose, the lower retention plates 24 of one panel overlap the underlying panel to a lesser extent than the height of the clearance channel 11, in such a way that the lower plates of a panel released from the upright profiled bars and pushed towards the upper panel disengage from the underlying panel. The panel can thus be conveniently extracted from a row of panels.

[0035] The facade thereby proves entirely and conveniently accessible for inspection, for example so as to perform maintenance, and single panels may be easily replaced in case of deterioration.

[0036] The upper 22 and lower plates 24 may be glued to the inner side of the panel 20. To such purpose a structural glue 50 is used, for example of the polyurethane type.

[0037] The upper anchorage plates 22 and lower retention plates 24 may be glued to the respective panels before transport of the panels to the building site where the cladding structure is being installed, so as to guarantee all the panels, optimal thermo-hygrometric conditions during the gluing phase.

[0038] Consequently, the installer receives the panels on site already pre-assembled with their anchorage and retention plates and once the support frame has been mounted, his work consists merely of positioning the panels along the uprights and in fixing them mechanically by means of the anchorage plates only. The only possible use of the glue on site is envisaged for the corner panels, the uprights of which are completed concealed and to which mechanical connection is therefore not possible. The assembly of the panels is therefore rapid and easy, but above all is not influenced by environmental conditions.

[0039] It should be emphasised that the attachment system shown does not require the use of upright profiled bars having a specific cross-section, nor of support hooks of the panels, nor of other specific anchorage devices. In the example illustrated, the upright profiled bars have a traditional "T" section and the anchorage and retention plates are normal metal plates of a rectangular shape. Consequently, both the production costs of the attachment system of the panels and the installation times of the cladding structure are less than the costs and times envisaged for other attachment systems.

[0040] It should also be noted that the structural glue 50 is able to absorb not only any vibrations of the panels but also all the dilations of the uprights, which are for example in aluminium, caused by the temperature range.

[0041] As shown in figure 3, on the rear side of the cladding panel a safety net 60 may be attached, for example in fibre glass, suitable for retaining any pieces of panel which could otherwise detach and fall in the event of accidental breakage of a panel, using for example a bicomponent polyurethane glue.

[0042] In figures 7-9, for example envisaged for particularly extensive and therefore heavy panels, the upper anchorage plates 220 are fixed, as well as by the glue 50, also mechanically to the inner side of the panel 20, for example by means of rivets or bolts. To such purpose, so as not to influence the dimensions of the structure, each upper anchorage plate 220 comprises a transversal portion 221 which extends horizontally towards the median vertical axis of the panel so as to terminate externally in relation to the space occupied by the upright profiled bar 12. The end of said transversal portion 221 being fixed to the panel, for example by a bolt 224 which screws onto a plug 225 embedded in the thickness of the panel.

[0043] The panels 100 of the lowest horizontal row of the facade may have the lower retention panels 240 not protruding from the lower rim of the panel, there being no underlying panel which can retain them. These lower plates 240 can be glued or mechanically fixed to the upright profiled bars. In this second case, at least one of the lower plates 240 is horizontally orientated and has an end portion 240' protruding from the lateral rim of the panel to be mechanically anchored to the respective upright profiled bar 12, for example by means of a rivet 26, as shown in figures 1,4,5 and 6c. Figures 1 and 4 for example show a lower panel 100 with both lower retention plates 240 orientated horizontally and projecting from the lateral rim of the panel 100 for their attachment by means of rivets 26 to the upright profiled bars 12. Note how the two lower plates 24 are horizontally staggered in relation to each other so as not to interfere with the upper plates 240 of the horizontally adjacent panels. Figure 4 shows how, for these horizontally positioned lower retention plates 240 too, the rivet 26 is applied at the horizontal clearance channel 11' which separates vertical rows of panels.

[0044] Such figure 4 also shows a corner panel 101. As may be noted, the left rim of such panel 101 fully conceals the relative upright profiled bar 12. In this case, the lower left corner of said panel 101 may be directly anchored to the upright profiled bar 12 by means of the structural glue 50.

[0045] In the invention illustrated in figures 10-12, the panel 20 differs from the panel shown in figure 2 in that, in place of the two upper anchorage plates 22, a single upper anchorage plate 322 having a horizontal end portion 322' projecting from the upper rim of the panel 20 and suitable for being fixed to the upright profiled bars 12 by means of mechanical anchoring means, such as rivets 26, is used.

[0046] At the bottom, the panel is fitted with the same lower retention plates described in the previous figures.

[0047] The anchorage plate 322 has a pair of vertical

slits 323 at the top in each of which the lower end portion of a respective lower retention plate 24 is inserted, so as to permit said lower retention plates 24 to be engaged by an underlying panel.

[0048] In one embodiment, the anchorage plate 322 is fixed to the respective panel 20 by glue and/or by mechanical attachment means, such as screws 325.

[0049] Compared to figures 1-9, the variant with anchorage plate 322 makes it possible, thanks to the horizontal end portion 322', to close the horizontal clearance channel 11 separating vertically adjacent cladding panels, at the back. This way dirt, insects or other foreign bodies can be prevented from getting inside the cavity between the wall and the cladding through said clearance channel.

[0050] In short, the idea of the present invention is to combine the advantages of using glue, making it possible to use few, simple structural elements, with those of mechanical attachment, which ensures maximum safety and reliability over time, having eliminated however the aforementioned drawbacks of using glue on site and at the same time limiting the use of mechanical attachments, such as rivets, to the bare minimum and concealing such attachments means from sight.

[0051] A person skilled in the art may make modifications, adaptations and replacements of elements with others functionally equivalent to the embodiments of the cladding structure according to the invention so as to satisfy contingent requirements, while remaining within the sphere of protection as defined by the following claims. Each of the characteristics described as belonging to a possible embodiment may be realised independently of the other embodiments described.

Claims

1. Cladding structure of a wall, in particular for the realisation of ventilated facades, comprising a support frame (10) suitable for being fixed to a wall and comprising at least two vertical upright profiled bars (12), and a plurality of cladding panels (20) anchored to said support frame, a single upper anchorage plate (22; 220; 322) being fixed to the inner side of each cladding panel facing the wall to be clad in the mounted state, said upper anchorage plate (322) having a horizontal end portion projecting from the upper rim of the panel and suitable for being fixed to the vertical upright profiled bars (12) by means of mechanical anchorage means, and a pair of lower retention plates (24) which project from the lower rim of each panel so as to be engageable by a lower vertically adjacent panel, **characterised by** said anchorage plate (32) being fitted with a pair of vertical slits (323) at the top, in each of which a lower end portion of a respective lower retention plate (24) of an upper vertically adjacent cladding panel is insertable, so as to permit said lower retention plates (24) to be engaged

by a lower vertical adjacent panel.

2. Structure according to claim 1, wherein vertically adjacent cladding panels are separated by a horizontal clearance channel (11), and wherein the upper anchorage plate is fixed to the respective uprights at said clearance channel. 5
3. Structure according to the previous claim, wherein the horizontal end portion (322') of the anchorage plate (322), extends so as to close the horizontal clearance channel (11) at the back. 10
4. Structure according to claim 2 or 3, wherein the lower retention plates (24) of one panel overlap the lower vertically adjacent panel to a lesser extent than the height of the clearance channel, in such a way that the lower retention plates of a panel released from the upright profiled bars and pushed towards the upper panel disengage from the lower vertically adjacent panel. 15
5. Structure according to any of the previous claims, wherein the end portion of the upper anchorage plate (22; 220; 320) projecting from the rim of the panel bear a through hole so as to be fixed to a respective upright profiled bar by means of a rivet (26). 20
6. Structure according to any of the previous claims, wherein the upper anchorage plate and lower retention plates are glued to the inner side of the panel. 25
7. Structure according to any of the previous claims, wherein the upper anchorage plate (220; 320) is fixed in a mechanical manner to the inner side of the panel. 30
8. Structure according to any of the previous claims, wherein the lower retention plates (240) of the lowest panel (100) of a vertical row of panels do not project from the lower rim of said lowest panel, and wherein at least one of said lower plates (240) is orientated horizontally and has a terminal portion projecting from the lateral rim of the panel so as to be anchored in a mechanical manner to the respective upright profiled bar. 35
9. Structure according to any of the previous claims, wherein the upright profiled bars (12) have a "T", "L", "H" or similar shape section, so as to define, on the side opposite the wall, a vertical abutment plane (14) at least for the anchorage plates. 40
10. Panel (20) for cladding a wall, in particular for the realisation of ventilated facades, to the inner side of which facing the wall to be clad in the mounted state upper anchorage plate (22; 220; 322) is fixed a single, having a horizontal end portion projecting from 45

the upper rim of the panel and suitable for being fixed to upright profiled bars (12) by means of mechanical anchoring means, and a pair of lower retention plates (24) which project from the lower rim of the panel so as to be engageable by a lower vertically adjacent panel, **characterised in that** said anchorage plate (322) is fitted with a pair of vertical slits (323) at the top, each of which is suitable to receive an end portion of a respective lower retention plate (24) of an upper vertically adjacent panel, so as to permit said lower retention plates (24) to be engaged by a lower vertical adjacent panel. 50

15 Patentansprüche

1. Verkleidungsstruktur einer Wand, insbesondere für die Realisierung belüfteter Fassaden, die einen Halterahmen (10) umfasst, der geeignet ist, an einer Wand befestigt zu werden, und wenigstens zwei vertikale aufrechte Profilstangen (12) und eine Vielzahl von Verkleidungspaneele (20), die an dem Halterahmen verankert sind, eine einzelne obere Verankerungsplatte (22; 220; 322), die an der Innenseite jedes Verkleidungspaneele befestigt ist, das in dem montierten Zustand der Wand zugewandt ist, die verkleidet werden soll, umfasst, wobei die obere Verankerungsplatte (322) einen horizontalen Endabschnitt, der von dem oberen Rand des Paneels vorsteht und geeignet ist, mittels mechanischer Verankerungsmittel an den vertikalen aufrechten Profilstangen (12) befestigt zu werden, und ein Paar unterer Rückhalteplatten (24) hat, die von dem unteren Rand jedes Paneels vorstehen, um durch ein unteres vertikal benachbartes Paneel in Eingriff bringbar zu sein, **gekennzeichnet durch** die Verankerungsplatte (32), die mit einem Paar vertikaler Schlitzes (323) auf der Oberseite ausgestattet ist, wobei in jedem davon ein unterer Endabschnitt einer jeweiligen unteren Rückhalteplatte (24) eines oberen vertikal benachbarten Paneels einsetzbar ist, um zuzulassen, dass in die unteren Rückhalteplatten (24) von einem unteren vertikal benachbarten Paneel eingegriffen wird. 55
2. Struktur nach Anspruch 1, wobei vertikal benachbarte Verkleidungspaneele durch einen horizontalen Freiraumkanal (11) getrennt sind, und wobei die obere Verankerungsplatte an den jeweiligen Pfosten in dem Freiraumkanal befestigt ist.
3. Struktur nach dem vorhergehenden Anspruch, wobei der horizontale Endabschnitt (322') der Verankerungsplatte (322) sich erstreckt, um den horizontalen Freiraumkanal (11) auf der Rückseite zu schließen.
4. Struktur nach Anspruch 2 oder 3, wobei die unteren

Rückhalteplatten (24) eines Paneels das untere vertikal benachbarte Paneel in einem geringeren Maß als die Höhe des Freiraumkanal in einer derartigen Weise überlappen, dass die unteren Rückhalteplatten eines Paneels, die von den aufrechten Profilstangen gelöst und in Richtung des oberen Paneels gedrückt werden, sich von dem unteren vertikal benachbarten Paneel lösen.

5. Struktur nach einem der vorhergehenden Ansprüche, wobei der Endabschnitt der oberen Verankerungsplatte (22; 220; 320), der von dem Rand des Paneels vorsteht, ein Durchgangsloch trägt, um mittels einer Niete (26) an einer jeweiligen aufrechten Profilstange befestigt zu werden. 10
6. Struktur nach einem der vorhergehenden Ansprüche, wobei die obere Verankerungsplatte und untere Rückhalteplatten an die Innenseite des Paneels ge- 15
leimt sind. 20
7. Struktur nach einem der vorhergehenden Ansprüche, wobei die obere Verankerungsplatte (220; 320) in einer mechanischen Weise an der Innenseite des Paneels befestigt ist. 25
8. Struktur nach einem der vorangehenden Ansprüche, wobei die unteren Rückhalteplatten (240) des untersten Paneels (100) einer vertikalen Reihe von Paneelen nicht von dem unteren Rand des untersten Paneels vorstehen, und wobei wenigstens eine der unteren Platten (240) horizontal ausgerichtet ist und einen abschließenden Abschnitt hat, der von dem seitlichen Rand des Paneels vorsteht, um in einer mechanischen Weise an der jeweiligen aufrechten Profilstange verankert zu werden. 30
35
9. Struktur nach einem der vorangehenden Ansprüche, wobei die aufrechten Profilstangen (12) eine "T"- , "L"- , "H"- oder ähnlichen Formschnitt haben, um auf der Seite entgegengesetzt zu der Wand wenigstens für die Verankerungsplatten eine vertikale Auflage- 40
ebene (14) zu definieren.
10. Paneel (20) zum Verkleiden einer Wand, insbesondere für die Realisierung belüfteter Fassaden, an deren Innenseite, die in dem montierten Zustand der Wand zugewandt ist, die verkleidet werden soll, eine einzelne obere Verankerungsplatte (22; 220; 322) befestigt ist, die einen horizontalen Endabschnitt, der von dem oberen Rand des Paneels vorsteht und geeignet ist, um mittels mechanischer Verankerungsmittel an aufrechten Profilstangen (12) befestigt zu werden, und ein Paar unterer Rückhalteplatten (24) hat, die von dem unteren Rand des Paneels vorstehen, um von einem unteren vertikal benachbarten Paneel in Eingriff bringbar zu sein, **dadurch gekennzeichnet, dass** die Verankerungsplatte 45
50

(322) mit einem Paar vertikaler Schlitze (323) auf der Oberseite ausgestattet ist, von denen jeder geeignet ist, einen Endabschnitt einer jeweiligen unteren Rückhalteplatte (24) eines oberen vertikal benachbarten Paneels aufzunehmen, um zuzulassen, dass von dem unteren vertikal benachbarten Paneel in die unteren Rückhalteplatten (24) eingegriffen wird.

Revendications

1. Structure de bardage d'un mur, en particulier pour la réalisation de façades ventilées, comprenant un cadre de support (10) approprié pour être fixé à un mur et comprenant au moins deux barres profilées droites verticales (12), et une pluralité de panneaux de bardage (20) ancrés audit cadre de support, une unique plaque d'ancrage supérieure (22 ; 220 ; 322) étant fixée au côté intérieur de chaque panneau de bardage faisant face, lorsqu'il est monté, au mur à barder, ladite plaque d'ancrage supérieure (322) ayant au moins une portion d'extrémité faisant saillie à partir du bord supérieur de chaque panneau et appropriée pour être fixée aux barres profilées droites verticales (12) grâce à des moyens d'ancrage mécaniques, et une paire de plaques de retenue inférieures (24) qui font saillie à partir du bord inférieur de chaque panneau de manière engageable par un panneau inférieur verticalement adjacent, **caractérisée en ce que** ladite plaque d'ancrage (32) est pourvue d'une paire de fentes verticales (323) en haut, dans chacune desquelles est insérable une portion d'extrémité inférieure d'une plaque de retenue inférieure correspondante (24) d'un panneau de bardage supérieur verticalement adjacent, de manière à permettre à aux dites plaques de retenue inférieure (24) d'être engagée par un panneau inférieur vertical adjacent.
2. Structure selon la revendication 1, dans laquelle des panneaux de bardage verticalement adjacents sont séparés par un canal d'espacement horizontal (11), et dans laquelle la plaque d'ancrage supérieure est fixée aux montants respectifs au niveau dudit canal d'espacement.
3. Structure selon la revendication précédente, dans laquelle la portion d'extrémité horizontale (322') de la plaque d'ancrage (322) s'étend de manière à fermer le canal d'espacement horizontal (11) à l'arrière.
4. Structure selon la revendication 2 ou 3, dans laquelle les plaques de retenue inférieures (24) d'un panneau chevauchent le panneau inférieur verticalement adjacent dans une moindre mesure que la hauteur du canal d'espacement, d'une manière telle que les plaques de retenue inférieures d'un panneau libérées 55

des barres profilées droites et poussées en direction du panneau supérieur se désaccouplent du panneau inférieur verticalement adjacent.

de retenue inférieures (24) d'être engagées par un panneau inférieur verticalement adjacent.

5. Structure selon l'une quelconque des revendications précédentes, dans laquelle la portion d'extrémité de la plaque d'ancrage supérieure (22 ; 220 ; 320) faisant saillie à partir du bord du panneau comporte un trou traversant de manière à être fixée à une barre profilée droite respective au moyen d'un rivet (26). 5
10
6. Structure selon l'une quelconque des revendications précédentes, dans laquelle la plaque d'ancrage supérieure et les plaques de retenue inférieures sont collées au côté intérieur du panneau. 15
7. Structure selon l'une quelconque des revendications précédentes, dans laquelle la plaque d'ancrage supérieure (220 ; 320) est fixée d'une manière mécanique au côté intérieur du panneau. 20
8. Structure selon l'une quelconque des revendications précédentes, dans laquelle les plaques de retenue inférieures (240) du panneau le plus bas (100) d'une rangée verticale de panneaux ne font pas saillie à 25
partir du bord inférieur dudit panneau le plus bas, et dans laquelle au moins l'une desdites plaques inférieures (240) est orientée horizontalement et a une portion terminale faisant saillie à partir du bord latéral du panneau de manière à être ancrée d'une manière 30
mécanique à la barre profilée droite respective.
9. Structure selon l'une quelconque des revendications précédentes, dans laquelle les barres profilées droites (12) ont une forme de section en « T », en « L », 35
en « H » ou similaire, de manière à définir, sur le côté opposé au mur, un plan de butée vertical (14) au moins pour les plaques d'ancrage.
10. Panneau (20) pour le bardage d'un mur, en particulier pour la réalisation de façades ventilées, sur la 40
face intérieure, faisant face à l'état monté au mur à barder, duquel une unique plaque d'ancrage supérieure (22 ; 220 ; 322) est fixée, ayant une portion horizontale d'extrémité faisant saillie à partir du bord 45
supérieur du panneau et appropriée pour être fixée à des barres profilées droites verticales (12) grâce à des moyens d'ancrage mécaniques, et une paire de plaques de retenue inférieures (24) qui font saillie à partir du bord inférieur du panneau de manière à 50
pouvoir être engagées par un panneau inférieur verticalement adjacent, **caractérisé en ce que** ladite plaque d'ancrage (322) est pourvue d'une paire de fentes verticales (323) en haut, chacune d'entre elles étant appropriée pour recevoir une portion d'extrémité d'une plaque de retenue inférieure correspondante (24) d'un panneau supérieur verticalement adjacente, de manière à permettre auxdites plaques 55

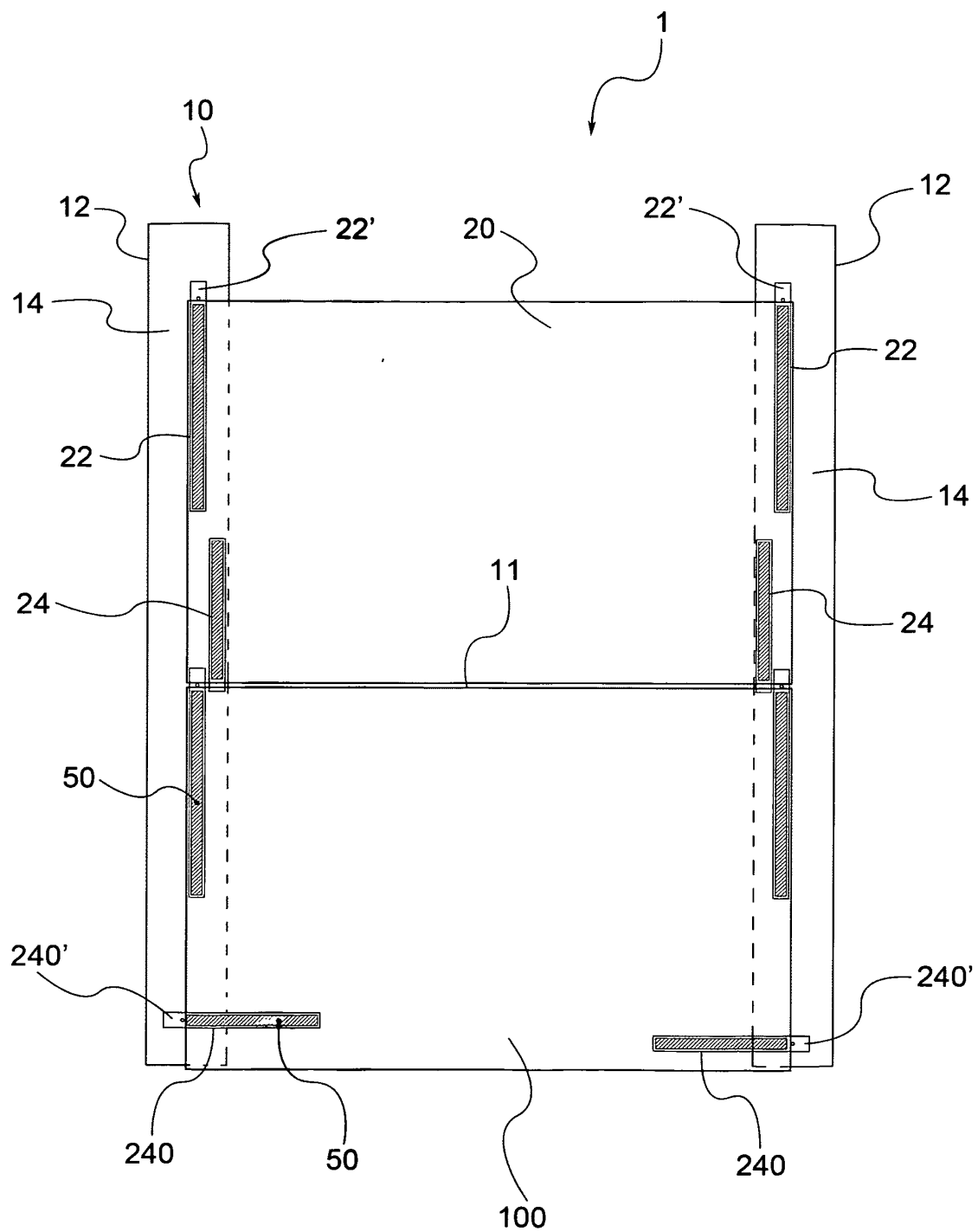


Fig. 1

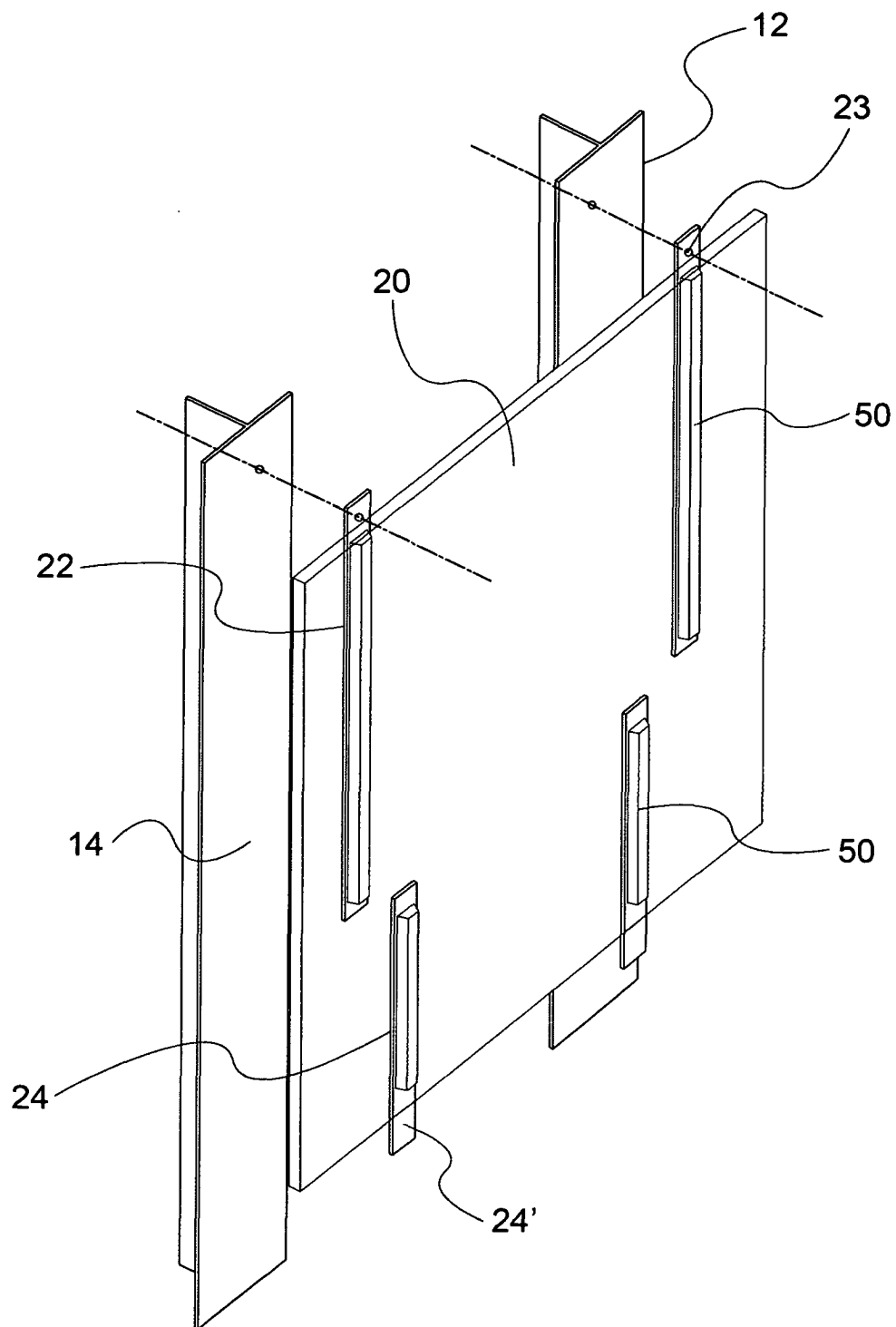


Fig. 2

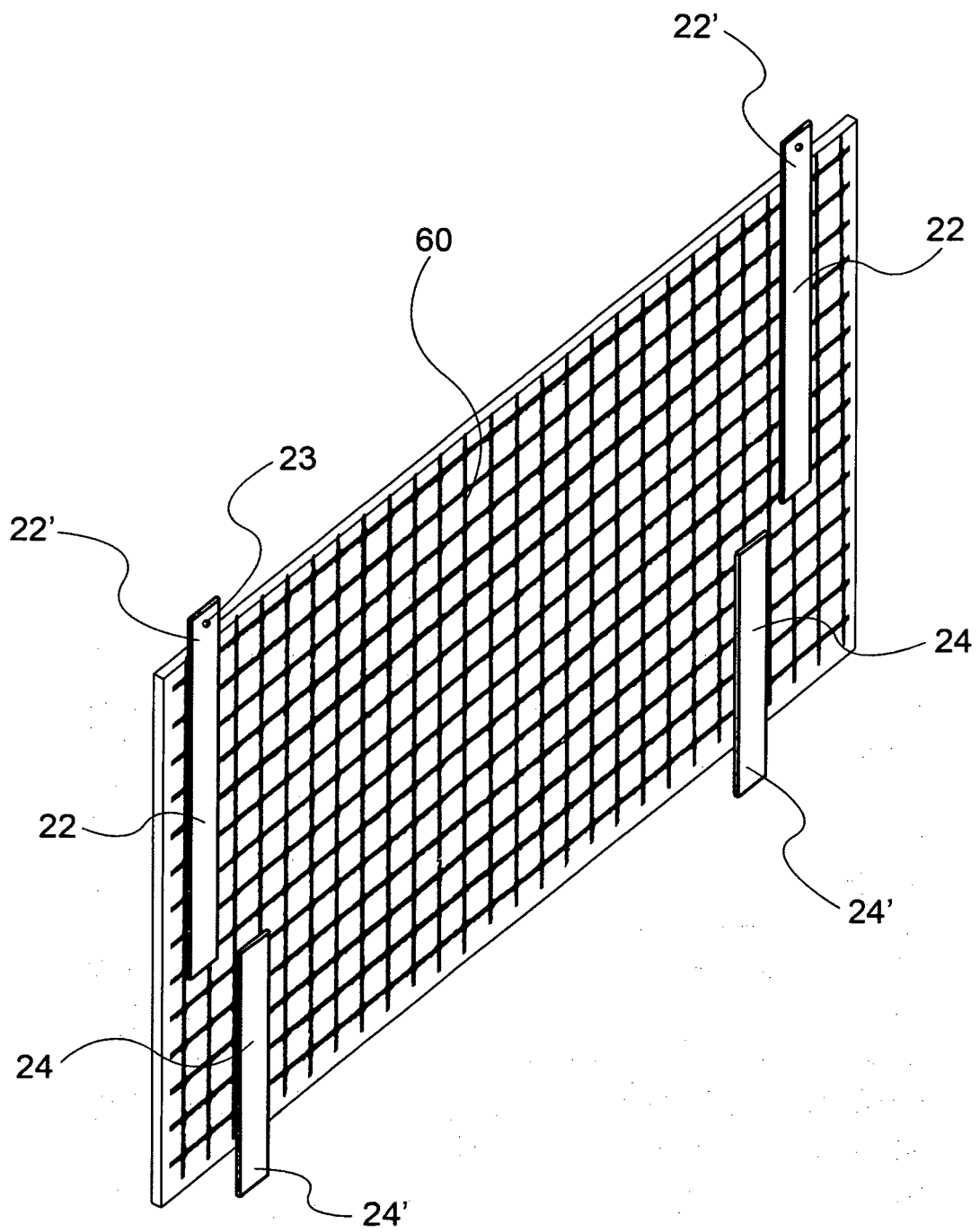


Fig.3

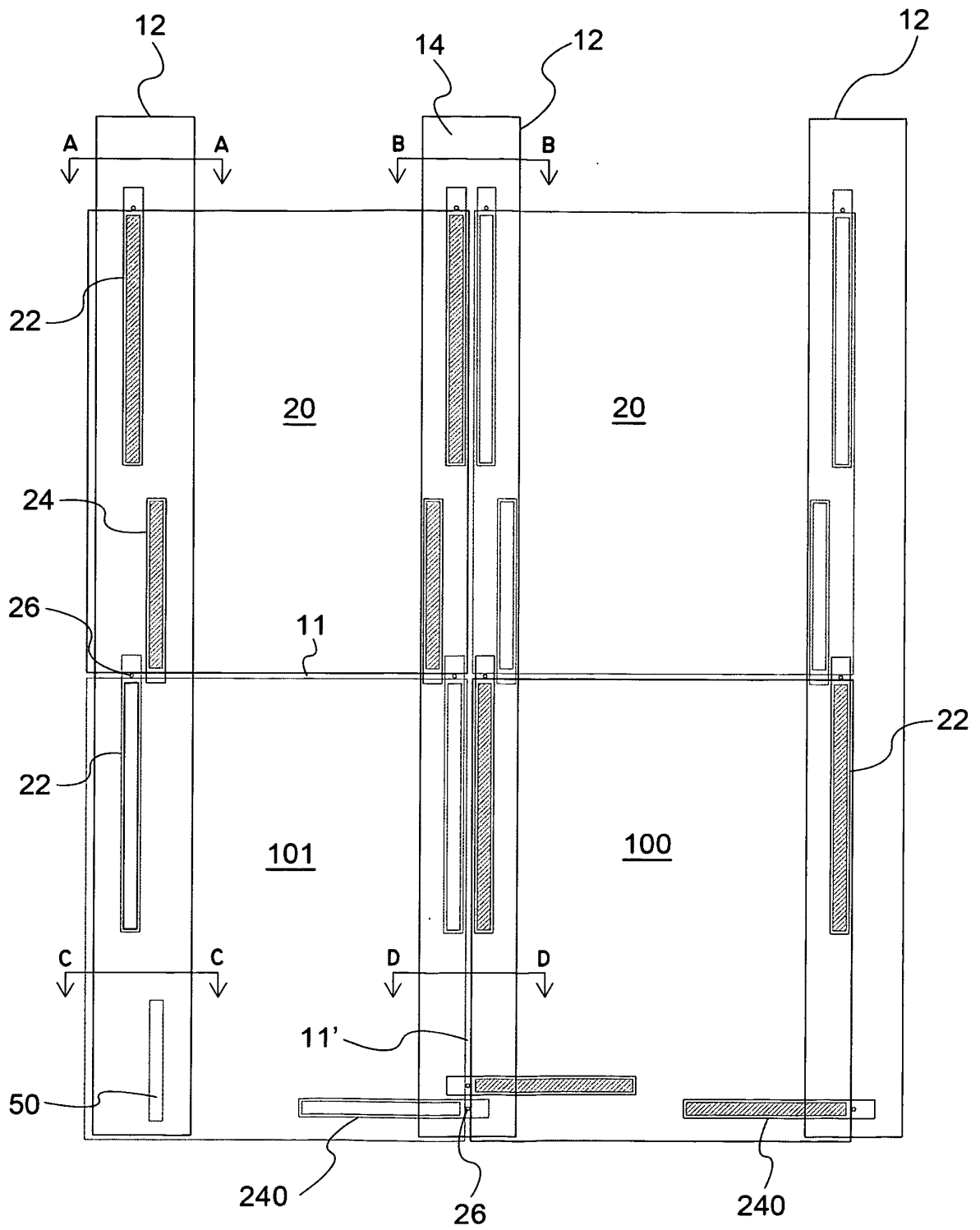


Fig. 4

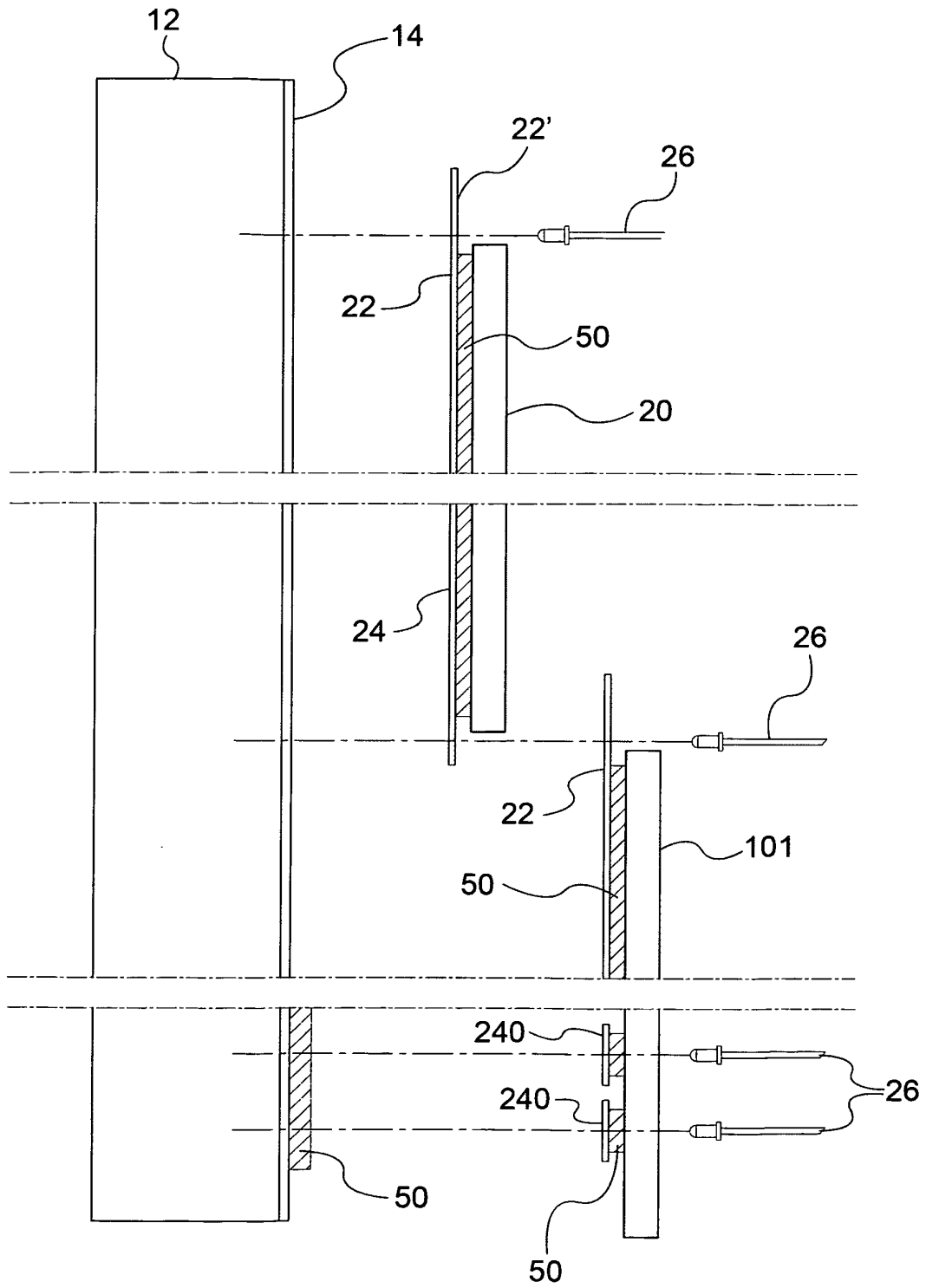


Fig. 5

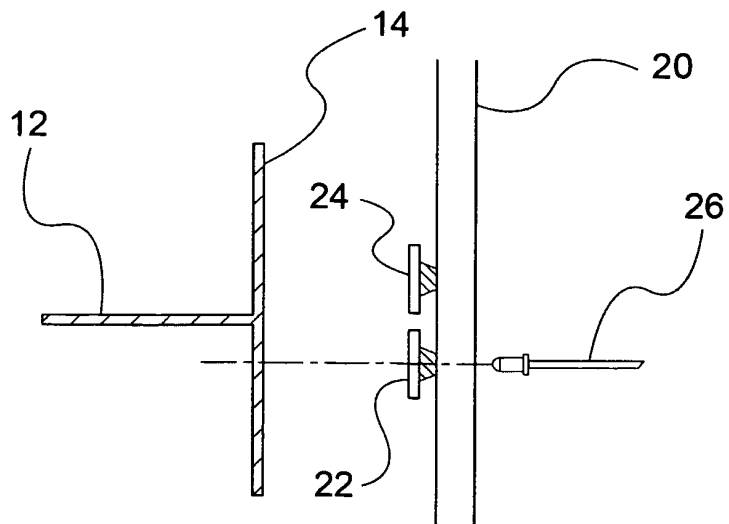


Fig. 6

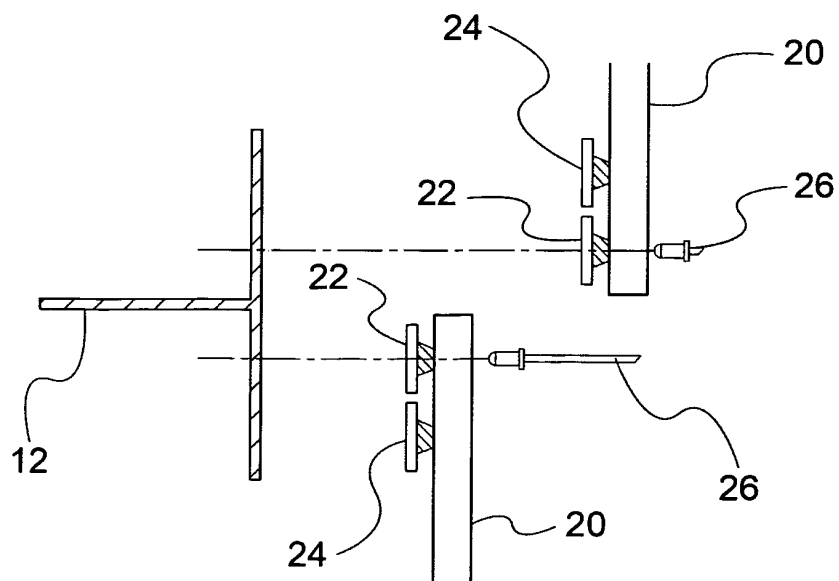


Fig. 6a

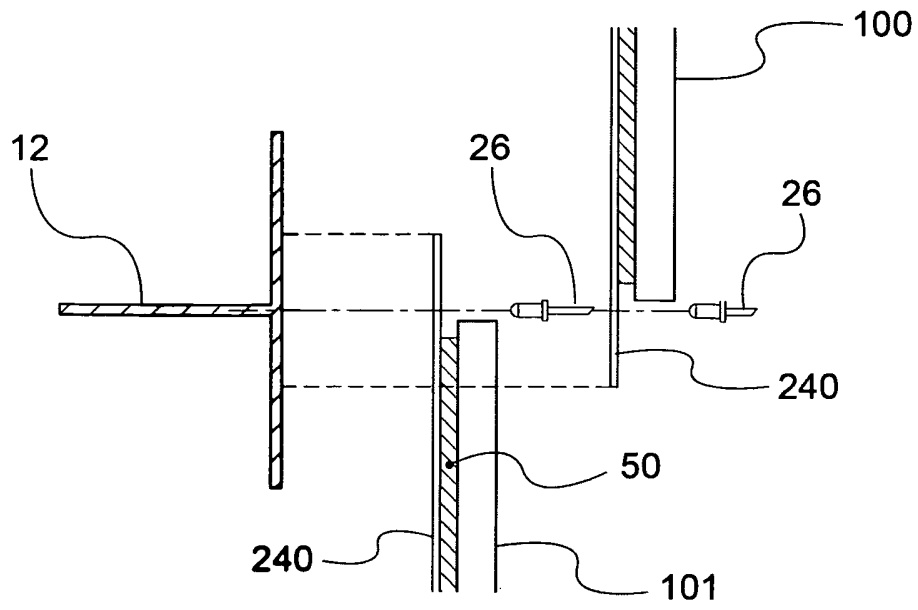


Fig. 6c

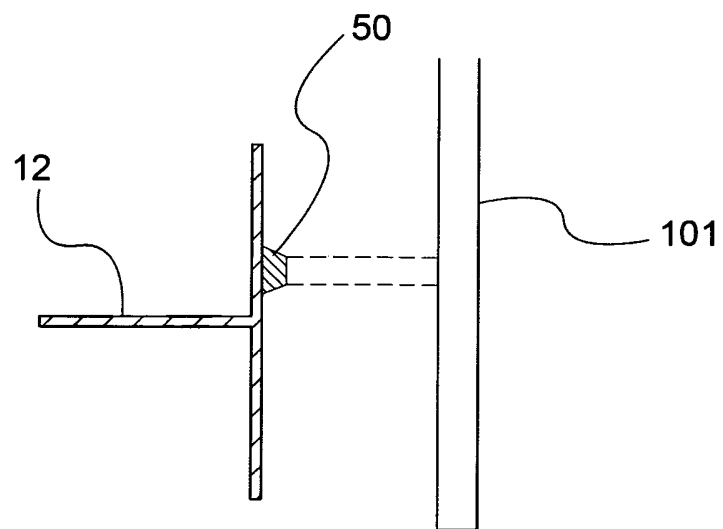


Fig. 6b

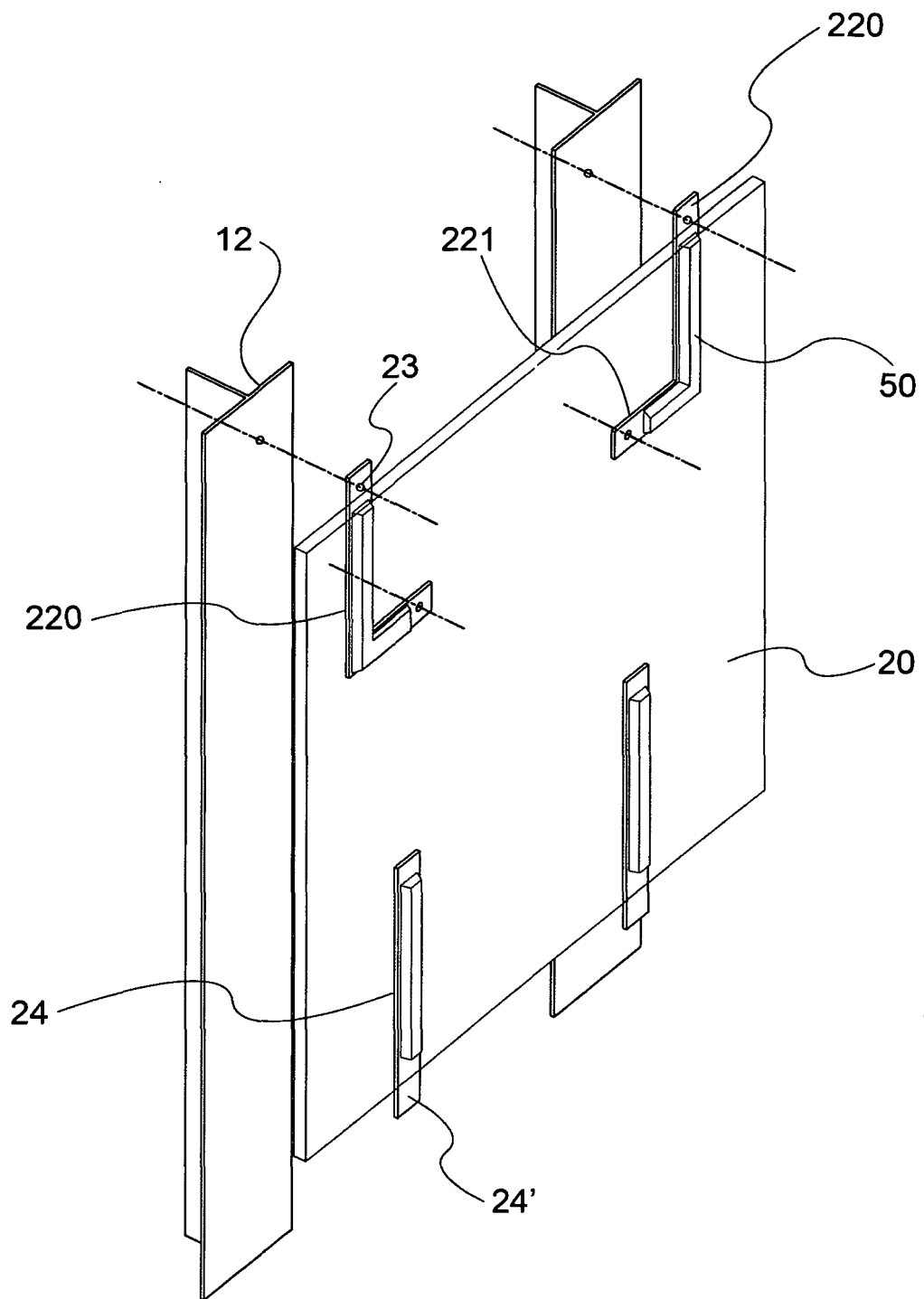


Fig. 7

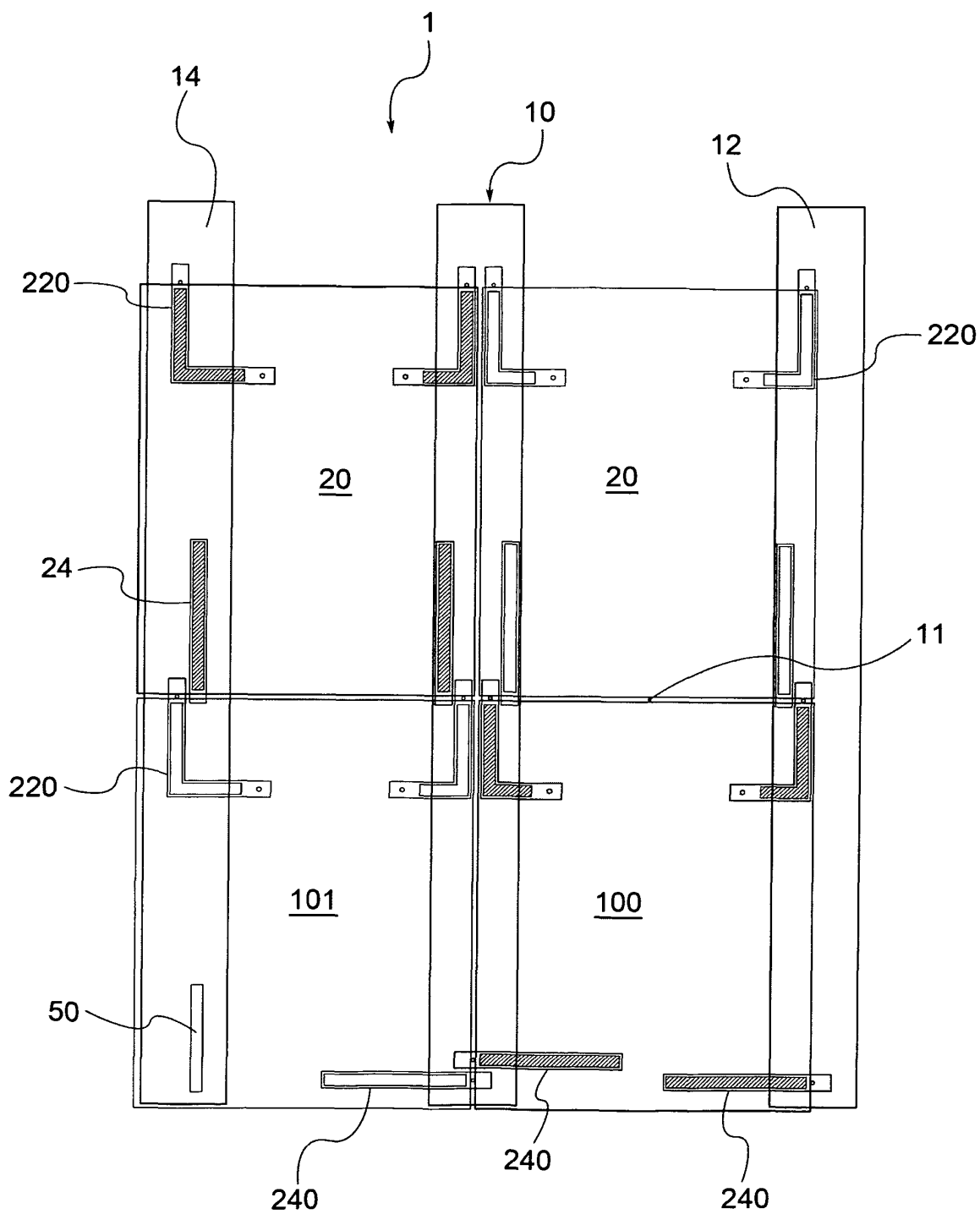


Fig. 8

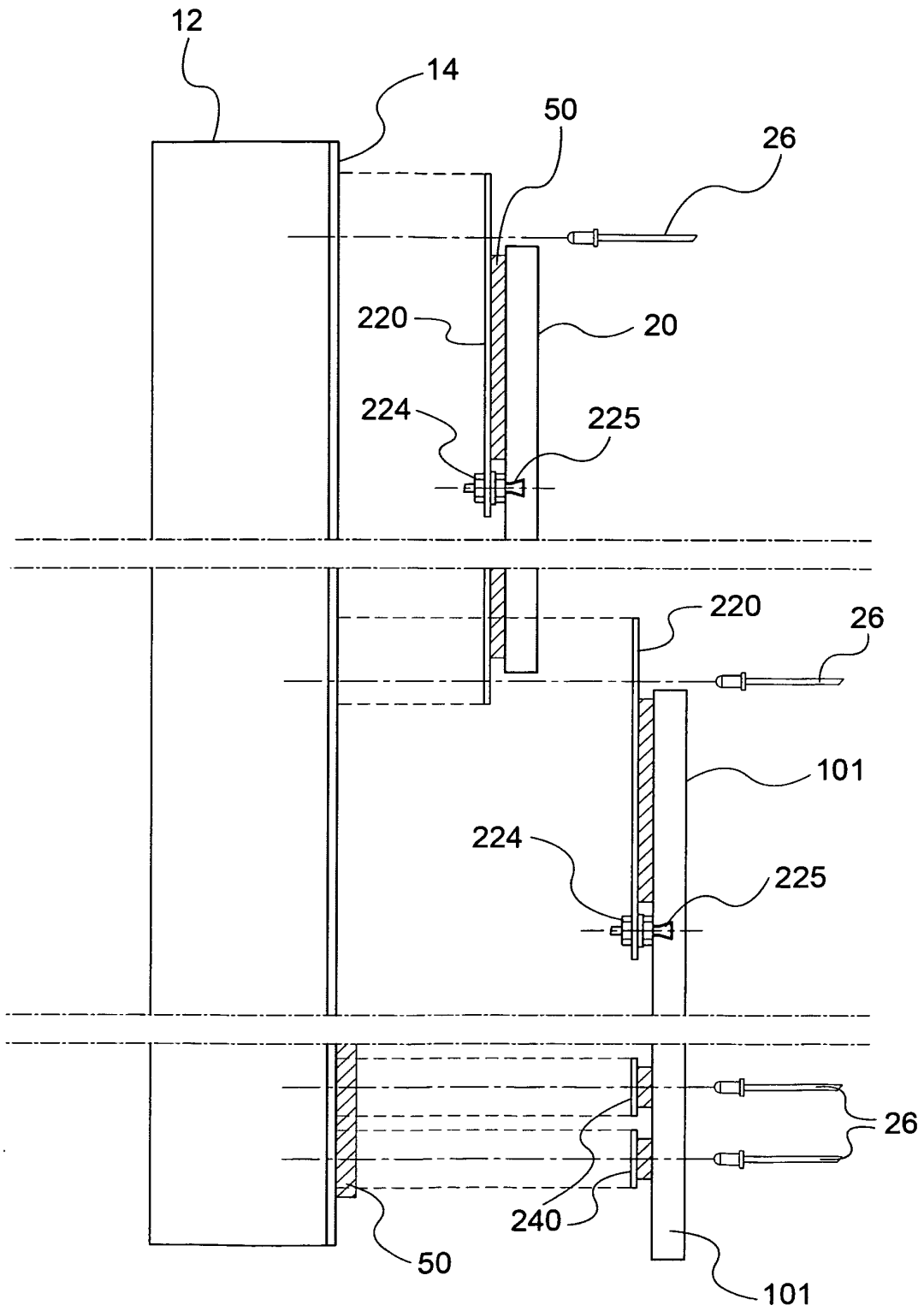


Fig. 9

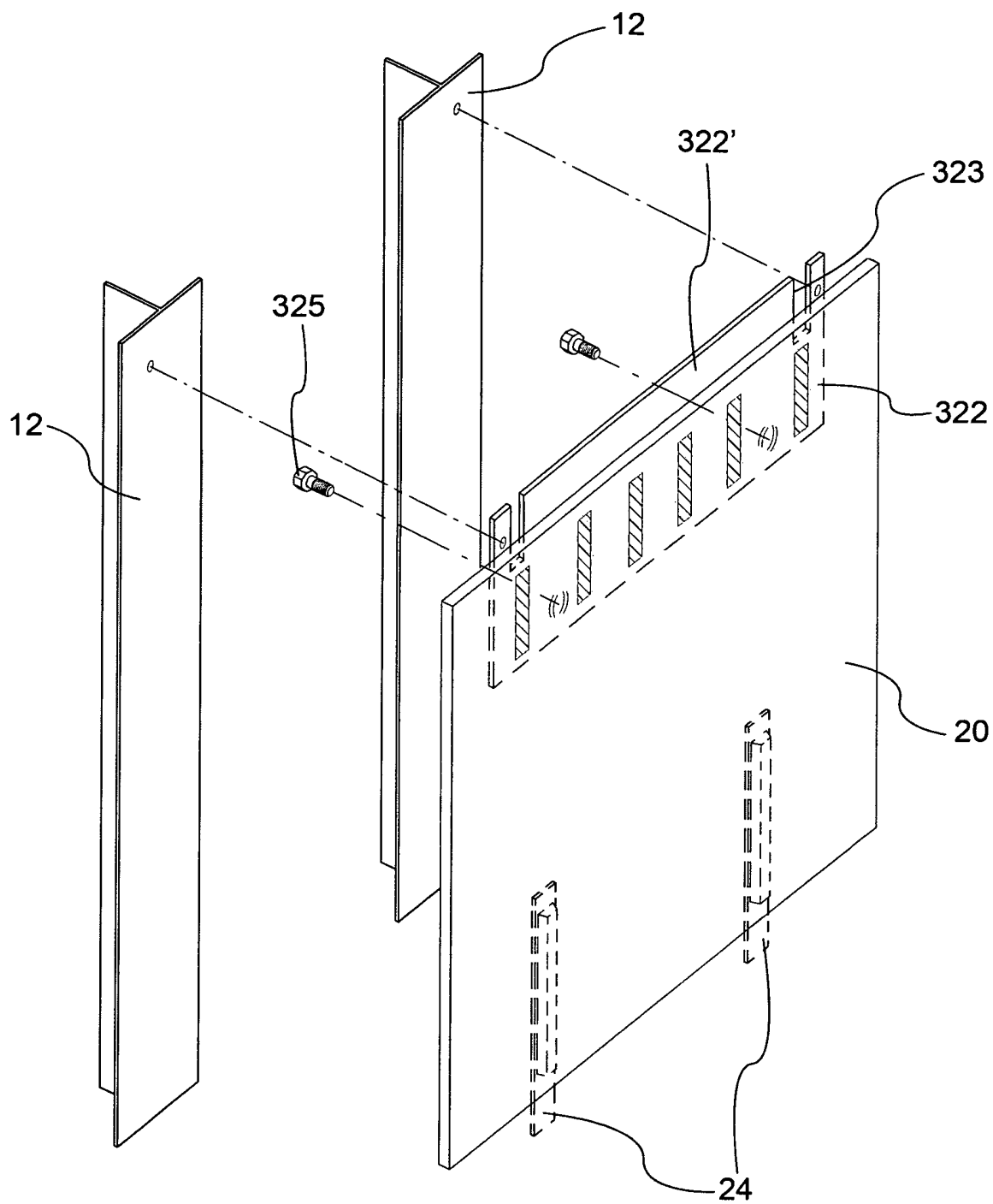


Fig. 10

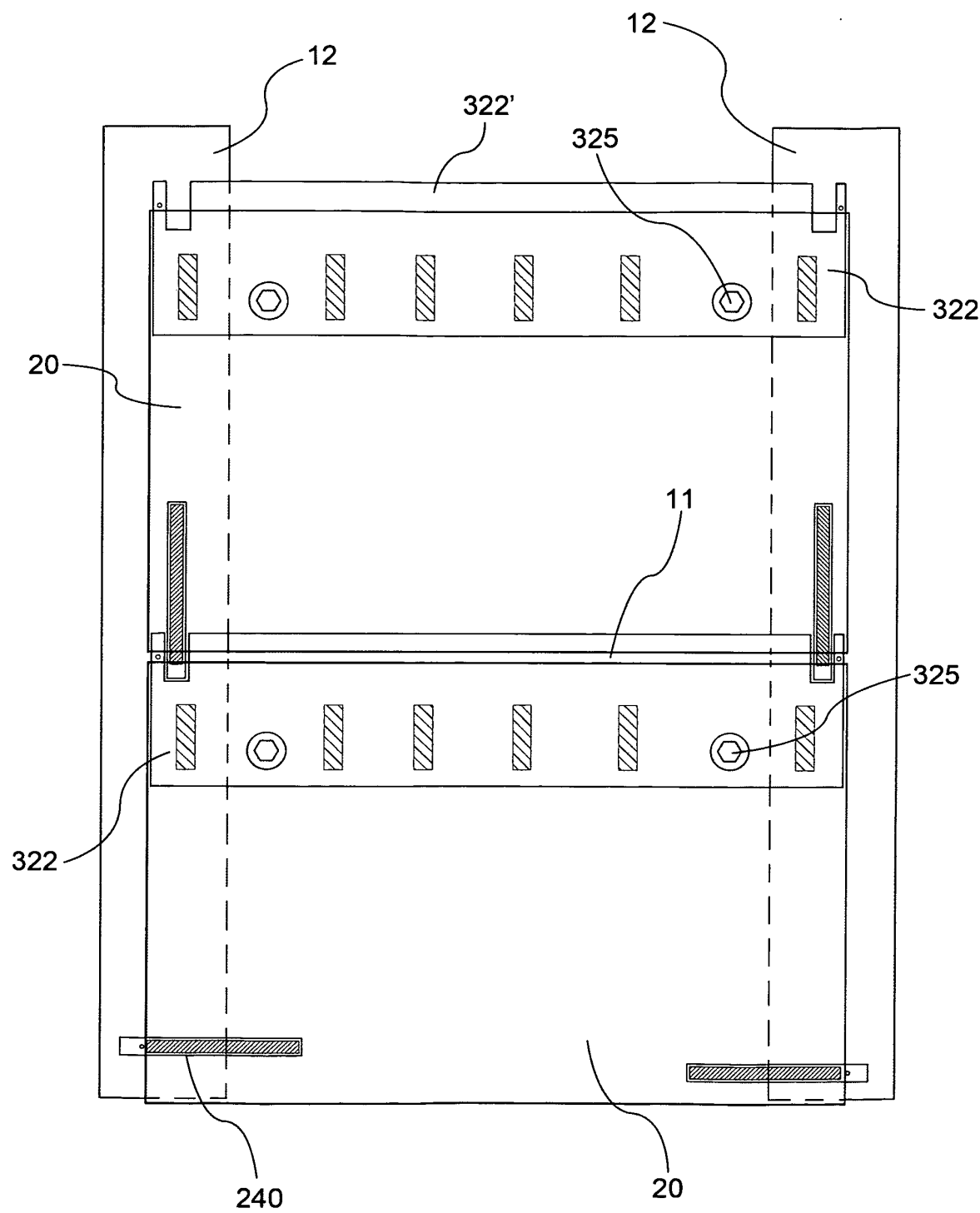


Fig. 11

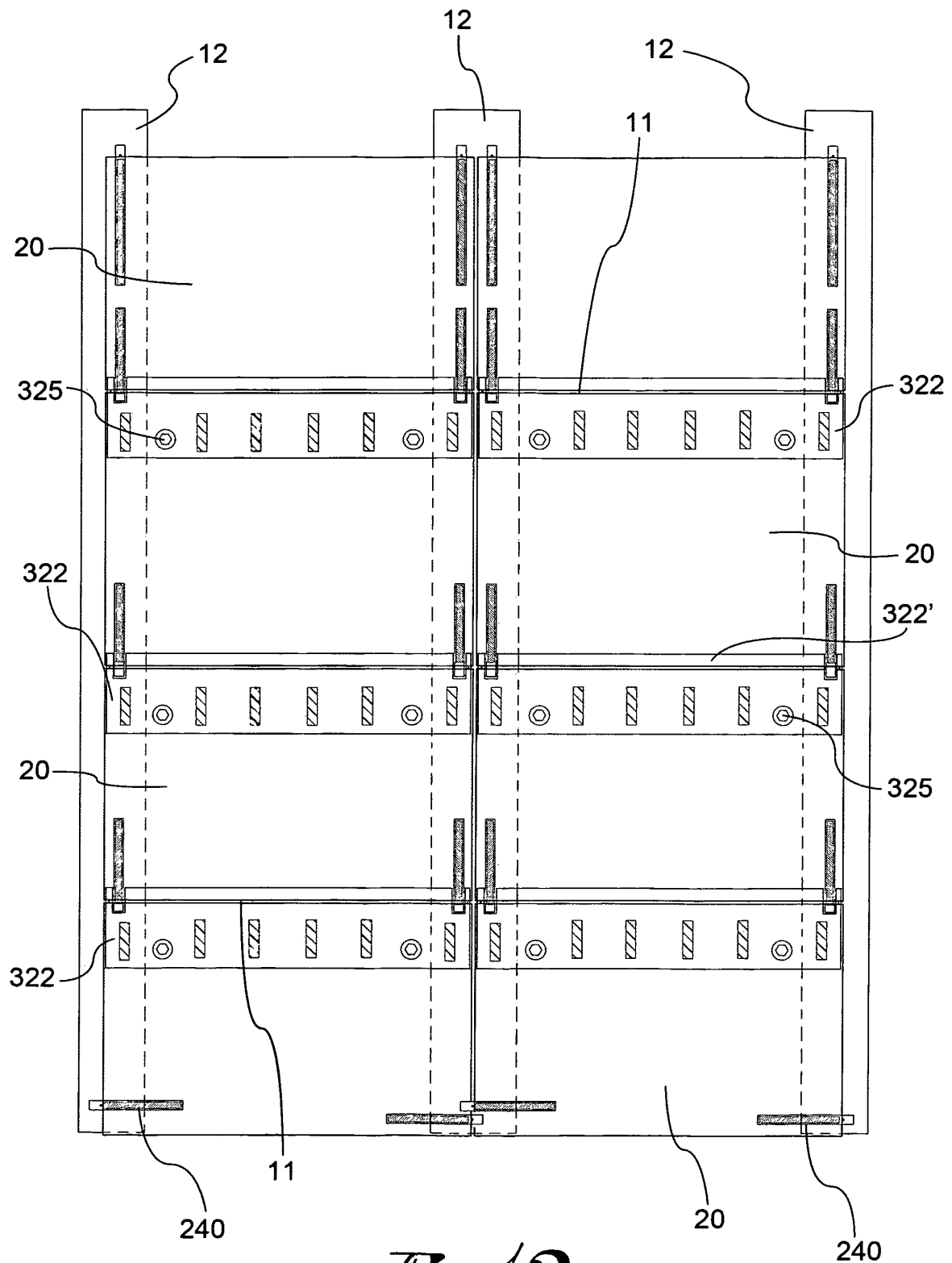


Fig. 12

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- EP 1764455 A2 [0004]
- US 1940141 A [0005]