

Fig. 1

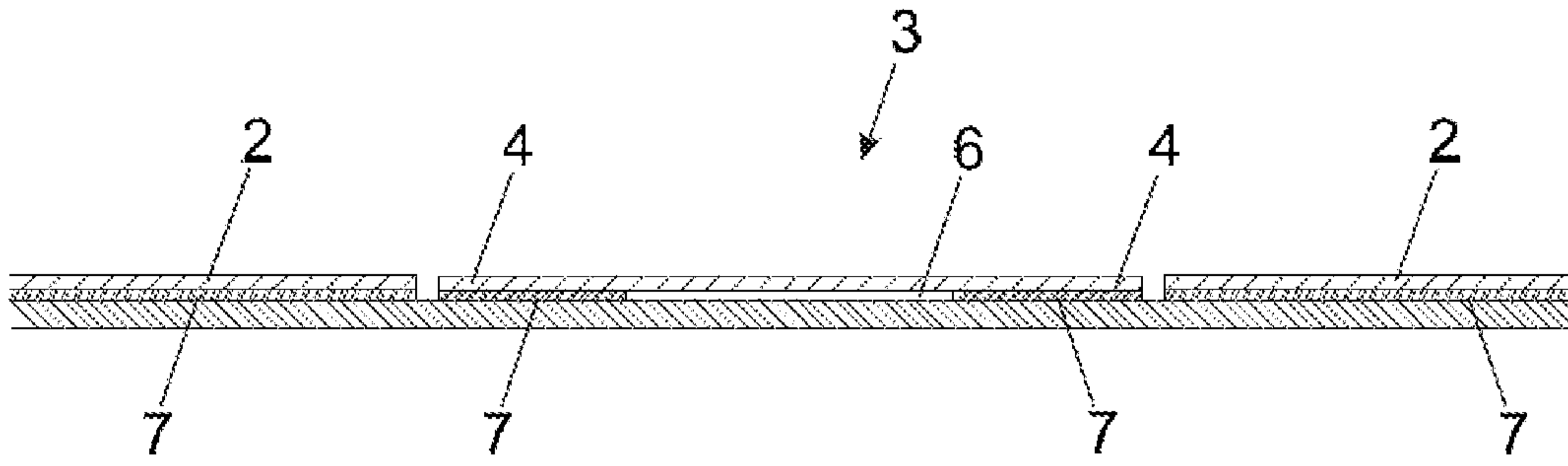


Fig. 2

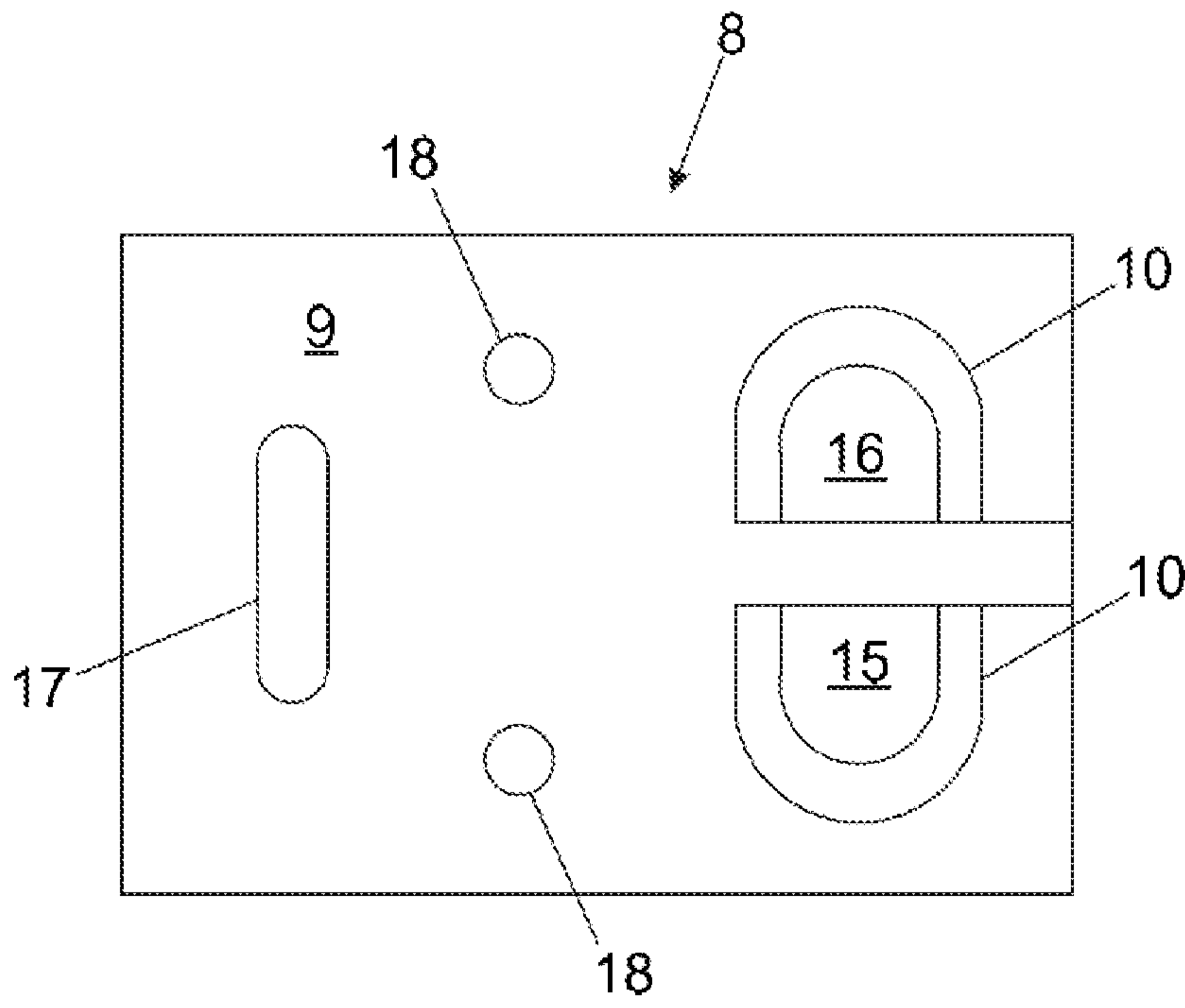


Fig. 3

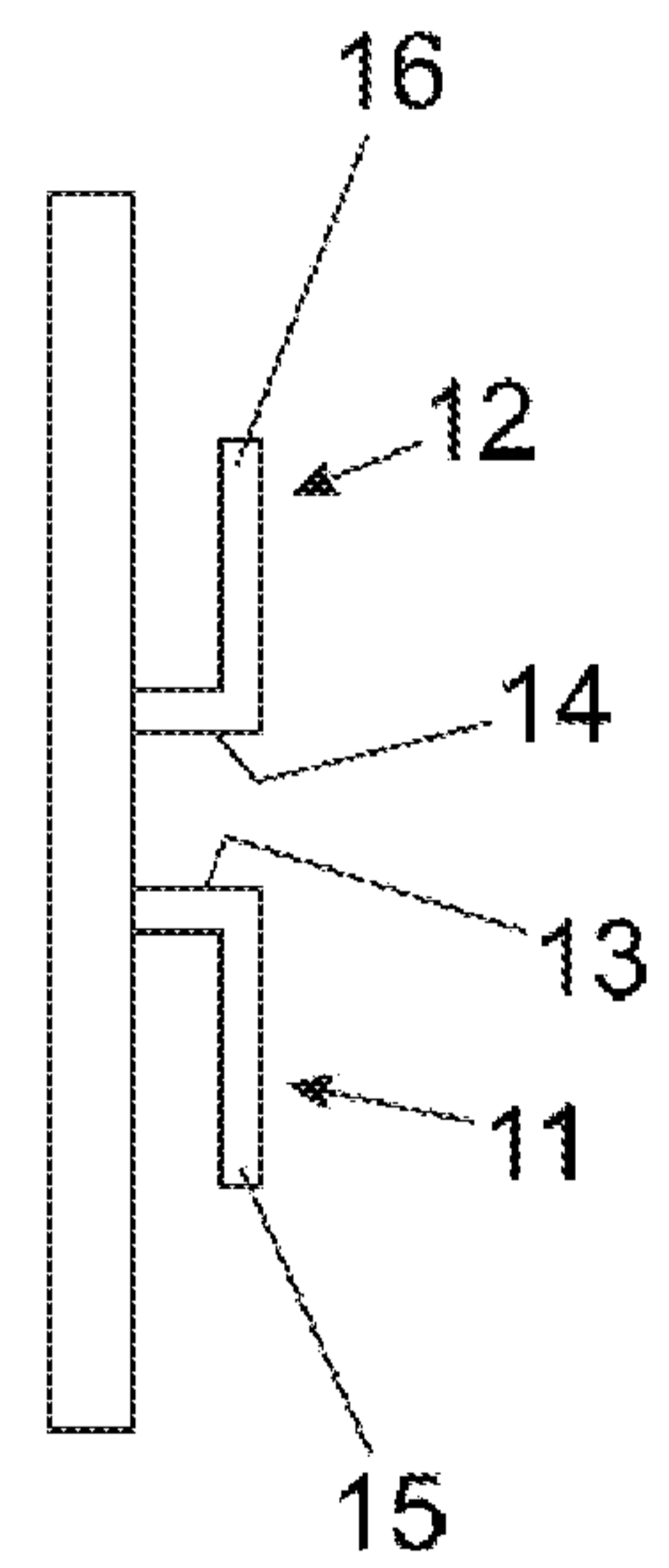


Fig. 4

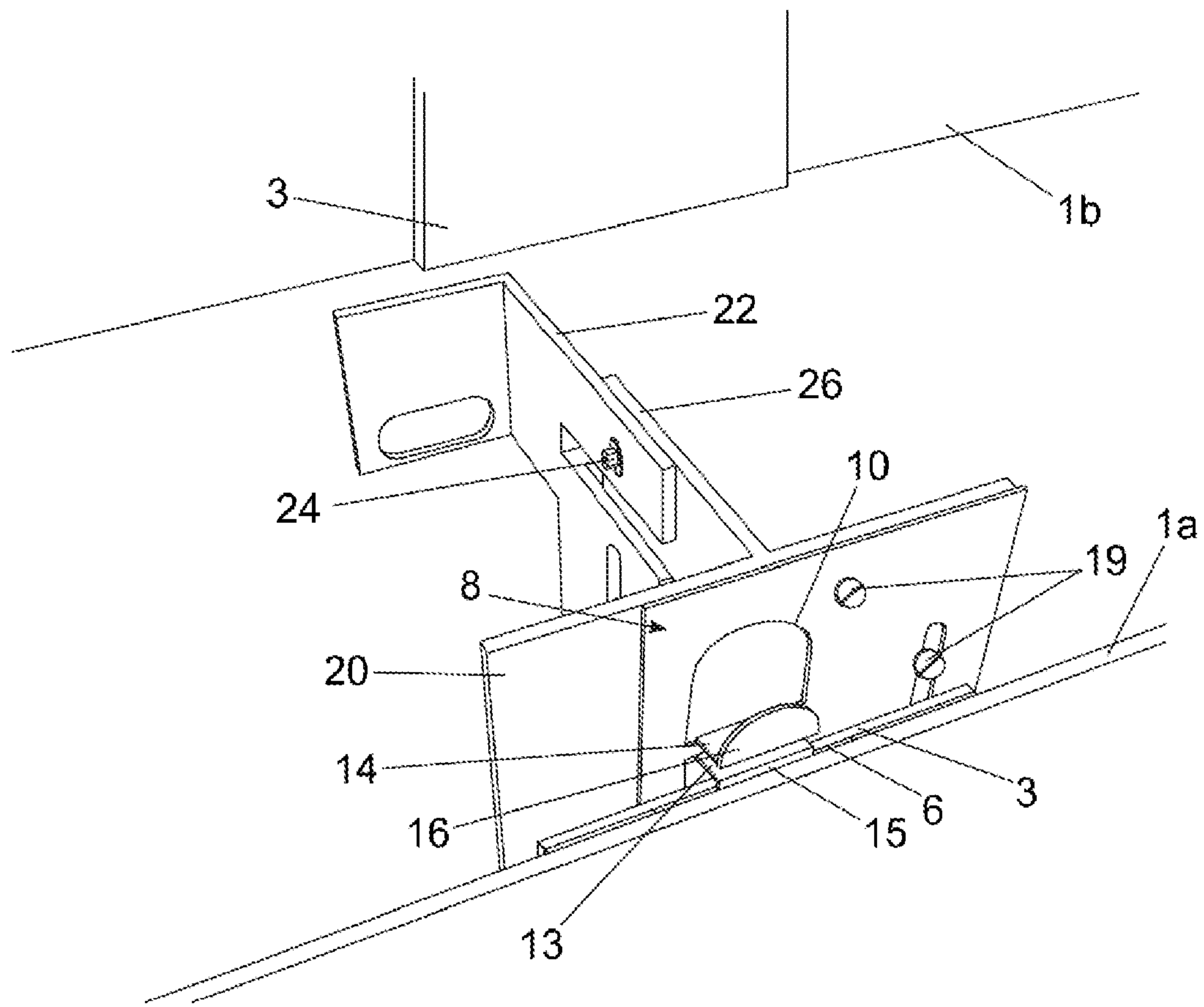


Fig. 5

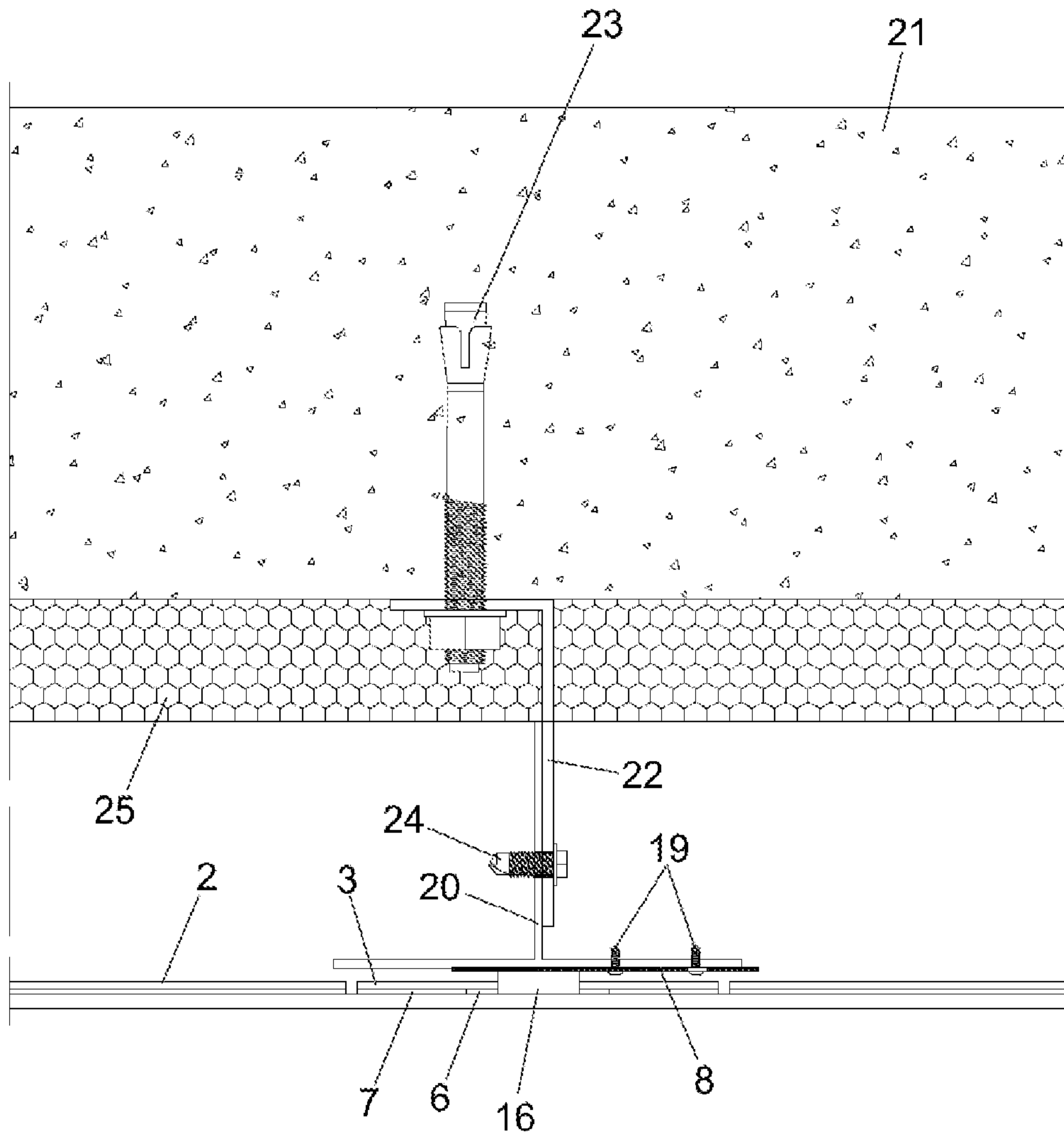


Fig. 6

VENTILATED FAÇADE

Field of the invention

5 The present invention refers to a ventilated façade, made up of panels which are fixed onto the structure or enclosure of a building through vertical profiles anchored to said structure or enclosure.

The enclosure, with the constitution being described, defines a light envelope for the
10 construction which delimits a ventilation chamber therewith.

Background of the invention

The ventilated façades having the constitution set forth are widely known and used,
15 essentially differing from each other in the mounting system of the panels, being possible to use panels of different nature, for example ceramic, glass, precast concrete, plastic materials, etc.

As background of the invention document ES2315173 can be cited which relates to a
20 ventilated façade system comprising loading brackets anchored onto the slabs, to which vertical profiles are fixed having, in turn, horizontal profiles fixed thereto, with notches used as hooks for safety profiles and anchoring profiles of the plates to be suspended therein.

25 From document ES2315107 a ventilated façade is known comprising a plurality of vertical profiles being fixed to the façade by means of angle brackets and being provided with side windows into which horizontal profiles are introduced, which are provided, at the upper face thereof, with slots into which plate integral legs are introduced. The horizontal profiles have screws for retaining and fixing plate integral
30 engagement elements.

In all cases, mounting the panels or plates requires a high number of intermediate components which demand a relatively high amount of labour force.

35 Description of the invention

The object of the present invention is to provide a ventilated façade the mounting of which can be carried out partly in factory and partly at the building site, which results in a considerably decrease of mounting times and the required labour force, while achieving at the same time greater building safety.

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Also in the façade of the invention the number of components being required for mounting thereof is reduced as compared to the conventional systems.

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The ventilated façade of the invention is made up of panels, generally having a rectangular contour, which are fixed onto the enclosure or structure of a construction by means of vertical profiles anchored to said enclosure.

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According to the invention, the ventilated façade is made up of ceramic panels which have a series of flat bars adhered at the rear side thereof, being arranged according to two directions, perpendicular to the panel edges. The mounting of the panels onto the vertical profiles being anchored to the enclosure, is carried out through these flat bars.

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These flat bars are fixed to the panels by means of an adhesive, an operation which can be performed in factory, thus providing the panels all ready for mounting thereof.

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The flat bars are fixed to the panels in such a way that between the panel surface and the flat bar there is a central longitudinal passage which opens into coincidence with the transversal edges of the flat bars. The flat bars may be completely planar and interpose, between the flat bar and the panel surface, a central longitudinal strip of lesser width than the flat bar, based on a compressible filling material, at both sides of which adhesive beads are provided which fix the flat bar and between which the central longitudinal passage will be delimited, being filled with said compressible material.

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In any case, the flat bar does not adhere to the panel along a central longitudinal slot.

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The panels with the constitution described are arranged, in the façade assembly, with the flat bars in horizontal and vertical position, with at least part of the vertical flat bars from vertically consecutive panels, aligned in such a way that the mouths of the vertical aligned flat bars face each other.

The panels are fixed onto the vertical profiles anchored to the enclosure by means of

connectors being screwed to said vertical profiles. These connectors are provided with pairs of legs forming two horizontal seats, for the transversal edges of the flat bars from vertically consecutive panels, and two vertical tabs, being coplanar and opposite to each other, intended to be introduced through the facing mouths of each two aligned longitudinal passages from vertically consecutive panels. The tabs are introduced in the central longitudinal passages delimited between flat bars and panels, until said flat bars rest through the transversal edges thereof onto the horizontal seats of the connectors.

In order to achieve this, each connector can comprise a metallic plate which is fixed with screws to the vertical profiles. This plate is provided with intermediate cuts delimiting portions that, by being folded towards the same side, form legs directed to the same side of the plate, each of them having a first section being perpendicular to the plate which forms the support for the flat bars, and a second section being parallel to the plate, which constitutes the anchoring tab for the panels. The first sections of the legs are parallel and two vertically consecutive panels rest thereon, through the transversal edges of facing flat bars. The second sections of the two legs of each connector are coplanar and directed to opposite sides, so as to be introduced through the facing mouths in adjacent horizontal edges from vertically consecutive panels.

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The vertical profiles are anchored to the enclosure through brackets or spacers.

The vertical profiles may feature either a "T" or an "L" section, in the first case being anchored to the brackets or spacers through the central branch, while the connectors are attached and fixed on the outer surface of the coplanar wings. In the second case the vertical profiles are anchored to the brackets through one of the branches thereof, while the connectors are attached and fixed on the outer surface of the other branch.

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Brief description of the drawings

The attached drawings show a non-limiting embodiment, where:

- Figure 1 is a rear elevation view of one of the panels forming the façade of the invention.
- Figure 2 is a section of the panel according to the cutting line II-II of figure 1, at a bigger scale.
- Figures 3 and 4 are a front elevation view and a profile view, respectively, of the

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connector for mounting the panels.

- Figure 5 is a perspective view of the mounting process of the panels.
- Figure 6 is a horizontal section of the façade being mounted.

5 Detailed description of an embodiment

As it is shown in figure 1, the ceramic panels (1) forming the façade of the invention have longitudinal (2) and transversal (3) flat bars at the rear side thereof, being perpendicular to the edges of the panel. The flat bars (2 and 3) can be totally planar, and can be attached to the panel (1) by means of adhesive beads (7), in such a way that a central longitudinal passage (6) is formed between said beads, without bonding between the flat bar and the panel.

The panels are mounted by means of connectors (8), figures 3 and 4, made up of a metallic plate (9) where two cuts (10) are realized, for example with an arcuate profile, being symmetrical, from which and by folding them 90° in the same direction, two symmetrical legs (11-12) are obtained, each of them comprising a first section (13-14) being perpendicular to the plate (9), and a second section (15-16) parallel to said plate. The second sections (15-16) of both flat bars are coplanar and directed to opposing directions.

The plate (9) is provided with orifices (17 and 18) for them to be fixed, by means of screws (19), figures 5 and 6, to vertical profiles (20) which are fixed to the structure or enclosure (21) of a construction, for example, through brackets (22) or spacers that can be fixed, in turn, to the enclosure by means of anchoring elements (23).

The vertical profiles (20) can be fixed to the brackets (22) by means of screws (24).

As it can be observed in figure 5, the connectors (8) are fixed to the vertical profiles (20) by means of screws (19), wherein the second section (15) of the leg (11) runs in the vertical direction, in the opposite direction to the second section (16) of the leg (12).

Two panels (1a and 1b), from two consecutive rows of panels, are coupled on each connector (8). In order to achieve this, the second section (15), being directed downwards, is introduced through the passage (6) mouth, being delimited between a transversal flat bar (3) and the panel (1a), until the transversal edge of said flat bar rests against the first section (13) of the flat bar (11). Likewise, the panel (1b) couples onto the connector (8), by introducing the second section (16), directed upwards,

through the facing mouth of a transversal profile (3) of the panel (1b), from an upper row of panels.

Figure 6 shows a horizontal section, through the second section (16) of the leg (12) of a connector (8), of the mounting of the façade of the invention, with a thermal-insulating layer (25), using the same references as in figure 5 to designate similar or equivalent elements.

Profiles (20) can feature a "T" section and are anchored at its central branch (26) to the brackets (22), while the connectors (8) are attached and fixed on the outer surface of the coplanar wings thereof.

10 Also the vertical profile can feature an "L" section, with one of the branches thereof being fixed to the brackets (22) and the connectors (8) being fixed to the outer surface of the other branch.

CLAIMS

1.- Ventilated façade, consisting of panels (1a-1b) which are fixed onto the enclosure or structure (21) of a building through vertical profiles (20) anchored to said enclosure,

5 **characterized in that:**

- The panels have flat bars (2-3) fixed at the rear side thereof, run according to two directions perpendicular to the edges of the panel and delimit with the panel surface a central longitudinal passage, which opens into coincidence with said panel edges;

10 - The panels are arranged with the flat bars (2-3) in a horizontal and vertical position, with the vertical flat bars from vertically consecutive panels being aligned;

15 - The panels are fixed on the vertical profiles by means of connectors (8) which are fixed with screws (19) to said vertical profiles and are provided with pairs of legs (11-12) forming two horizontal seats, for the adjacent edges of the flat bars (3) being vertically aligned, from vertically consecutive panels (1a-1b), and two opposing vertical tabs, for anchoring said panels; the tabs being introduced through the opposing mouths of each of the aligned central longitudinal passages (6), from vertically consecutive panels (1a-1b).

20 2.- Façade according to claim 1, **characterized in that** the vertical profiles (20) are anchored to the enclosure (21) through brackets (22) or intermediate spacers.

25 3.- Façade according to claim 1, **characterized in that** the vertical profiles (20) have a "T" section and are anchored through the central branch (26) to the brackets (22) or spacers, whereas the connectors (8) are fixed on the outer surface of the wings thereof.

4.- Façade according to claim 1, **characterized in that** the vertical profiles have an "L" section and are anchored through on the branches thereof to the brackets (22) or spacers, whereas the connectors (8) are fixed on the outer surface of the other branch.

30 5.- Façade according to any of claims 2 to 4, **characterized in that** the brackets (22) have an "L" profile and are fixed through one of the branches thereof to the enclosure of structure of the building, whereas the vertical profiles are attached and fixed on the other branch.

6.- Façade according to claim 1, **characterized in that** the connectors are made up of a plate (9) which is attached and fixed by means of screws (19) to the vertical profile (20), and are provided with intermediate cuts (10) delimiting portions that, by folding in a right angle, delimit legs (11-12) comprising first sections (13-14) perpendicular to the plate, which form the horizontal seats for the transversal edges of the flat bars (3), and
5 second sections (15-16) being coplanar, parallel to the plates and vertically directed into opposite directions, forming the anchoring tabs for the panels (1a) y (1b).

7.- Façade according to claim 1, **characterized in that** the flat bars are fixed on the rear side of the panels by means of an adhesive (7) layer.