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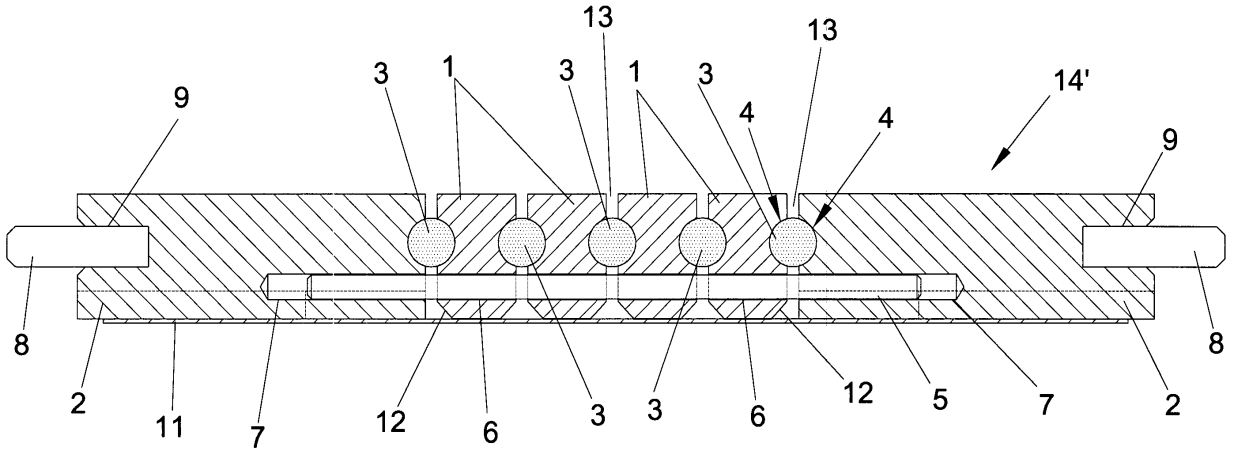
(54) **Dilation joint for flooring**

(57) It relates to a dilation joint (14,14') for flooring designed to be placed between the tiles (10) that make up a flooring.

It is characterised in that it comprises sections (1,2) which are close to each other and whose opposing faces include channels where elastomeric elements (3) are fitted that maintain the narrow separation between said sections, further including means (5) for joining said sections that allow movement thereof during the dilation of the flooring.

Another feature of the invention is that the end confluence sections of the dilation joints include centred notches, in such a way that when juxtaposing said end portions in the confluence areas and in the crossing areas of the dilation joints, small gaps are generated in which additional parts are inserted.



A-B

FIG. 3

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Description

OBJECT OF THE INVENTION

[0001] As stated in the title of this descriptive specification, the present invention relates to a dilation joint for flooring, designed to be placed between the tiles which make up a flooring.

[0002] Thus, the object of the invention is to create a joint which allows a large degree of dilation and play between flooring tiles, whilst also allowing the flooring to be laid easily.

[0003] Another objective of the invention is the inclusion of an characteristic additional part which is integrated in end sections of the joint - where the joints overlap and meet. This additional part allows the installed flooring to maintain its elastic qualities, compensating for the compression caused by dilation in the flooring in different directions (depending on the shape of the tiles).

[0004] One advantage, which the invention offers, is to avoid generation of spaces or gaps in the joint area and said spaces or gaps could constitute a risk, potentially trapping heels of shoes or other objects.

PRIOR ART OF THE INVENTION

[0005] At present there are several different means of creating dilation joints for flooring where the effect of dilation is of relevance (as is the case in parquet-style flooring, for example).

[0006] Dilation can potentially ruin flooring of this type, causing the flooring to break, or even resulting in the tiles which form part of the flooring buckling and lifting.

[0007] This is normally a result of changes in the dimensions of the tiles, due to physical causes, such as changes of temperature, humidity, etc.

[0008] Normally in this type of flooring separation joints are employed which are then covered with appropriate sections, thus allowing play between the tiles. Alternatively, special sections are used.

DESCRIPTION OF THE INVENTION

[0009] The dilation joint for flooring object of this invention, comprises at least one narrow central section and another two lateral sections, all being associated by means of elastomeric elements which are fitted in facing channels located in the longitudinal faces of said sections, at the same time the elastomeric elements also maintain a small separation gap between each pair of adjoining sections, this means, that their are not in contact with each other, because of the small separation gap maintained by the corresponding elastomeric element for counteract any possible dilations which may occur in the flooring. Normally, several centred sections are arranged.

[0010] The possibility of using just the two lateral sections with one single elastomeric element also exists.

[0011] Another feature of the invention is that the sections are joined together by means of transversal pins that associate all of the sections perpendicularly in their parallel directions.

[0012] To achieve this each pin is fitted in holes that are aligned in the same direction for all of the sections.

[0013] These pins effectively guide the movements which occur during dilations, whilst also providing the joints with extra rigidity.

[0014] Another feature of the invention is that the lateral sections also have means for anchoring the dilation joints to the adjacent tiles conforming the flooring, when the joint is not integrated into the flooring tiles.

[0015] Therefore, obtaining a characteristic dilation joint with practically the same design as the rest of the flooring, except for a minimal aesthetic difference in relation to the narrow separations between the joint sections, whilst also allowing the structure to adapt to any variation caused by the contraction or dilation of the section of flooring which incorporates the dilation joints.

[0016] The invention also includes a mesh which covers the lower side of the joint, at least partially, thus preventing dirt from entering the joint and interfering with, or blocking, the joint, which could prevent it from dilating when required. The mesh also provides cohesion to all of the elements of the joint and allows a better handling and fitting.

[0017] In addition, the end confluence sections of the dilation joints include a series of centred notches, in such a way that when the end sections are juxtaposed in areas where dilation joints meet and overlap, small gaps are generated where some additional parts are inserted.

[0018] As mentioned above, these additional parts allow the installed flooring to maintain its elastic qualities of compensating the compression in the different directions, caused by dilation of the flooring.

[0019] One advantage that the invention offers is that it avoids generation of spaces or gaps in the joint areas, these gaps could constitute a risk due to the potential trapping of heels of shoes or due to any other reason.

[0020] The dilation joints of the present invention normally converge by its ends in angular portions corresponding to the confluence of various corners of adjacent tiles, in such a way that in the confluence of these angular portions a corresponding gap is generated where the additional part is inserted. The arms of the additional part extend out in the direction of the lines of separation between the angular portions of the dilation joints.

[0021] This description of the invention is done for square or rectangular tiles, nevertheless the invention may also be used for hexagonal tiles, or tiles with other shapes.

[0022] Hence, the additional part comprises a thin flat base structure, on the upper face of which a centred elastic element is placed, while its lower face includes another body that rests on the floor surface being covered

[0023] The elastic body adapts to the configuration of the outer confluence edges of the end portions of the

joints. The elastic body although it has a radial branch for each arm of the base structure of the additional part, it may have a different configuration, adapted to the upper gap which is generated in the confluence of the cited joints.

[0024] In order to facilitate the understanding of the present invention and forming an integral part of this descriptive specification, some sheets of drawings are attached containing figures in which, on an illustrative rather than limiting basis, the following have been represented.

BRIEF DESCRIPTION OF THE FIGURES

[0025]

Figure 1.- Shows a top perspective view of a flooring which includes the dilation joint for flooring, object of the invention.

Figure 2.- Shows a plan view of the dilation joint.

Figure 3.- Shows a sectional view along the section A-B of the previous figure.

Figure 4.- Shows a plan view of flooring which includes the dilation joint of the invention.

Figure 5.- Shows a plan view of a detail of Figure 1.

Figure 6.- Shows a top perspective view of an additional part which is inserted in the confluence of several joints.

Figure 7.- Shows an underside perspective view of the additional part.

Figure 8.- Shows a sectional view of the additional part.

DESCRIPTION OF THE PREFERRED FORM OF THE EMBODIMENT

[0026] In accordance with the numbering used in the figures, the dilation joint for flooring is determined from portions of joint 14, 14' formed by several centred narrow sections 1, and other wider lateral sections, all these positioned on the same plane in parallel directions, existing a small separation 13 between them, which is obtained due to the use of solid elastomeric elements 3 which fit into pairs of channels 4 located on the opposing faces of the different sections 1 and 2.

[0027] Sections 1 and 2, which are components of the portions of joint 14, 14^1 sections, are joined together by means of transversal pins 5 which are fitted in aligned transversal holes 6 and 7 located in the central section 1 and the lateral sections 2 respectively.

[0028] These pins 5 are also used to guide the small movements of the sections 1 and 2 caused by the dilation and/or contraction of the flooring which incorporates the dilation joints of the present invention, with the elastomeric elements 3 perfectly absorbing the potential dilations.

[0029] In addition, the lateral sections have on its free edges male 8 and female 9 elements to connect to adjacent tiles 10 forming part of the flooring.

[0030] Meshes 11 have been included for covering the lower face of the joints, at least partially, thus preventing dirt from entering the joint and interfering with, or blocking the joints of the present invention, which could prevent it from dilating when required. The mesh also provides cohesion to all of the elements in the joints and allows a better handling and fitting.

[0031] The centred sections 1 also include bevelled cuts 12 on their lower edges thereof.

[0032] The dilation joints could be integrated with the tiles 10.

[0033] At the point where the joint sections 14 meet (confluence point), a series of gaps 22 are generated where the additional parts 15 are fitted. The portions of joints 14, 14' separate removable tile groups 10, which together with the joints portions 14, 14' and the additional parts 15, make up the flooring.

[0034] The end angular confluence sections of the dilation joints 14 include characteristic centred notches 21, in such a way that when these portions are juxtaposed at the outer areas and cross areas of the joints 14 a series of gaps 22 are generated where the additional parts 15 are inserted. These notches 21 affect at least the centred sections 1 of the dilation joints 14.

[0035] Each additional part 15 comprises a flat base 16 with several arms for the pairs of adjacent separating edges 17 of the outer portions of the joints 14, in such a way that said arms are fit by its side edges into grooved female elements 18 established in the outer portions of the joints 14.

[0036] In addition, the upper face of the flat base 16 has an elastomeric body 19 which acts as a stopper for the upper part of the outer portions of the joints 14.

[0037] The elastomeric body 19 is coupled into upper ribs 20' integral to the flat base 16, having other lower ribs 20" which rest on the surface being covered, as do the rest of the tiles 10 and separating joints 14.

[0038] The upper ribs 20' and the lower ribs 20 " comprise a cross structure 20 integral to the flat base 16, being fitted into passing slots of the base 16, thus ensuring that said cross structure is firmly attached to the flat base 16, with no possible play.

[0039] The additional part 15 may comprise a single in one piece body or may be formed by several interrelated elements, as referred to above.

Claims

1. **DILATION JOINT FOR FLOORING** designed to counteract dilations in floorings and interposed between adjacent edges of flooring tiles is **characterised in that** it comprises portions of joints (14, 14') made from sections which are close to each other and whose opposing faces include channels (4) in which elastomeric elements (3) are fitted, these elements maintain a narrow separation (13) between

said sections, further including means for joining together said sections that allow guided movement thereof during dilation/contraction of the floorings.

2. **DILATION JOINT FOR FLOORING,** according to claim 1, **characterised in that** the means for joining together the sections of the portions of joints (14, 14') consist of pins (5) tightened in respective holes alignments established in said sections.

3. **DILATION JOINT FOR FLOORING,** according to any one of the above claims, **characterised in that** it comprises at least one narrow central section (1) and two wider side sections (2).

4. **DILATION JOINT FOR FLOORING,** according to claim 3, **characterised in that** the side sections (2) include connecting means with parts of a tile and/or with adjacent tiles (10) which make up the flooring.

5. **DILATION JOINT FOR FLOORING,** according to any one of the above claims, **characterised in that** it includes meshes (12) which cover, at least partially, the lower side of the portions of joints (14, 14 ') in order to prevent dirt from entering into the elastomeric elements (3) and also into the narrow spaces existing between the different sections of the portions of joints (14, 14 '), further providing cohesion to all elements of the portions of joints and allowing a better handling and fitting.

6. **DILATION JOINT FOR FLOORING,** according to any one of claims 3 to 5, **characterised in that** the central sections (1) comprise bevelled cuts (13) in the lower edges of said central sections (1).

7. **DILATION JOINT FOR FLOORING,** according to any one of the above claims, **characterised in that** the end confluence portions of the portions of dilation joints (14) include centred notches (21), in such a way that when juxtaposing said end portions in the confluence areas and in the crossing areas of the portions of dilation joints (14), a series of small gaps (22) are generated where additional parts (15) are inserted.

8. **DILATION JOINT FOR FLOORING,** according to the claim 7, **characterised in that** the additional parts (15) comprise at least:

   - a flat base (16) which fits, by means of a part of its edges, into grooved female elements (18) established on the outer edges of the portions of dilation joints (14);
   - an elastomeric body (19) located on an upper base of the flat base (16), and which acts as a stopper for at least a part of the upper base of the outer edges of the portions of dilation joints (14).

9. **DILATION JOINT FOR FLOORING,** according to claim 8, **characterised in that** the additional parts (15) include in its lower face centred support elements (20") which rest on the surface to be covered.

10. **DILATION JOINT FOR FLOORING,** according to any one claims 8 or 9, **characterised in that** the elastomeric body (19) of the additional parts (15) is fixed to the flat base (16) by means of a centred rib (20').

11. **DILATION JOINT FOR FLOORING,** according to claims 9 and 10, **characterised in that** the centred support elements (20") and the centred upper ribs (20') comprise cross structure (20) fitted in complementary slots of the flat base (16), appearing a part of said structure above the flat base (16) and another part appearing below said flat base (16).

12. **DILATION JOINT FOR FLOORING,** according to any one of the above claims, **characterised in that** the notches (21) of the outer sections of the portions of dilation joints (14) affect at least the centred sections (1) of the aforementioned portions of dilation joints (14),

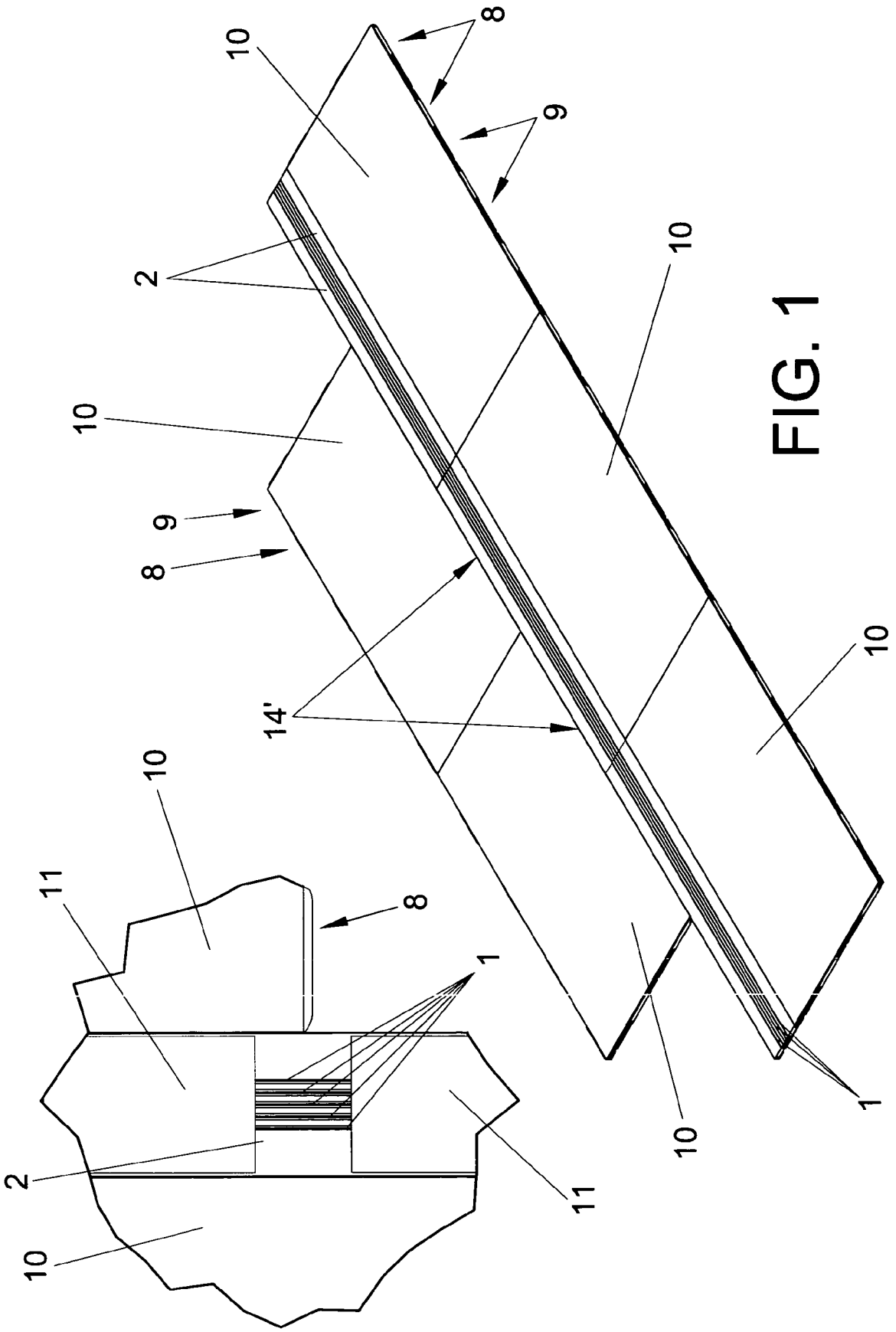


FIG. 1

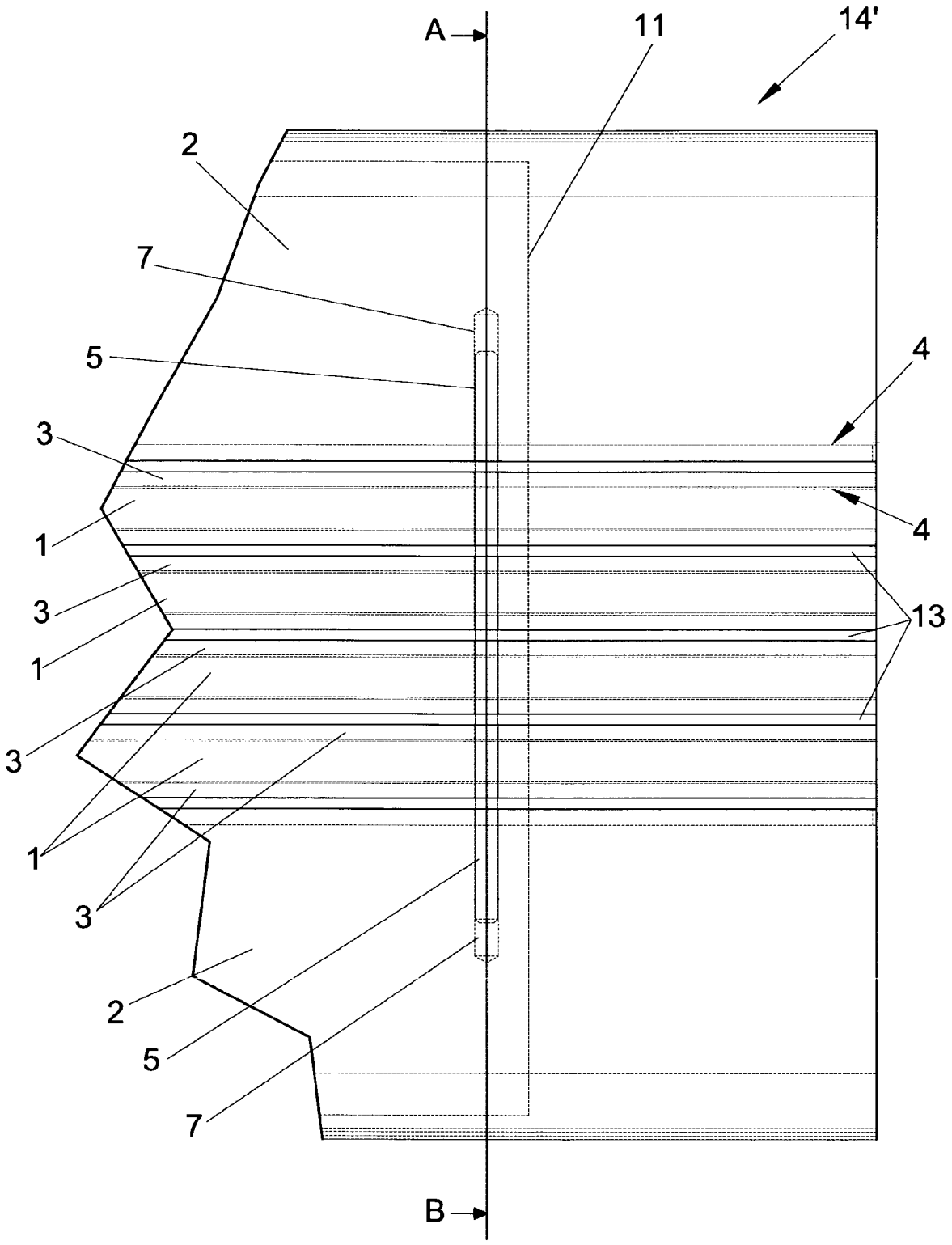
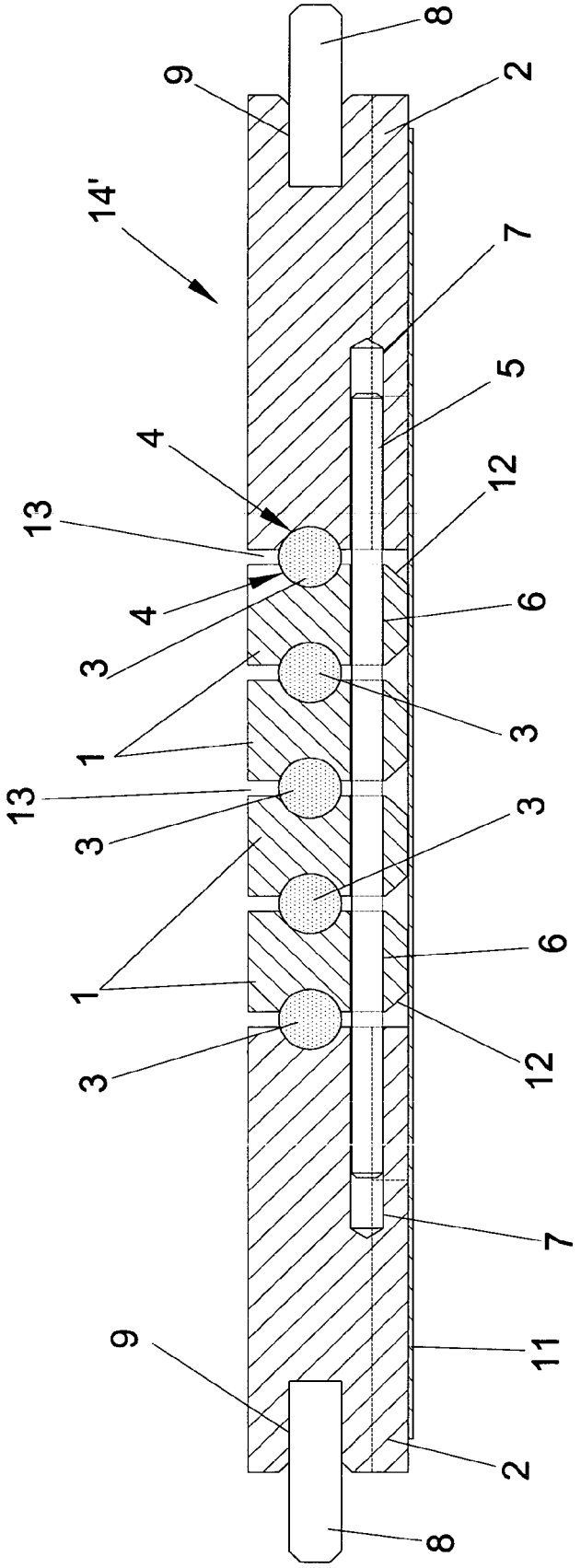


FIG. 2



A-B

FIG. 3

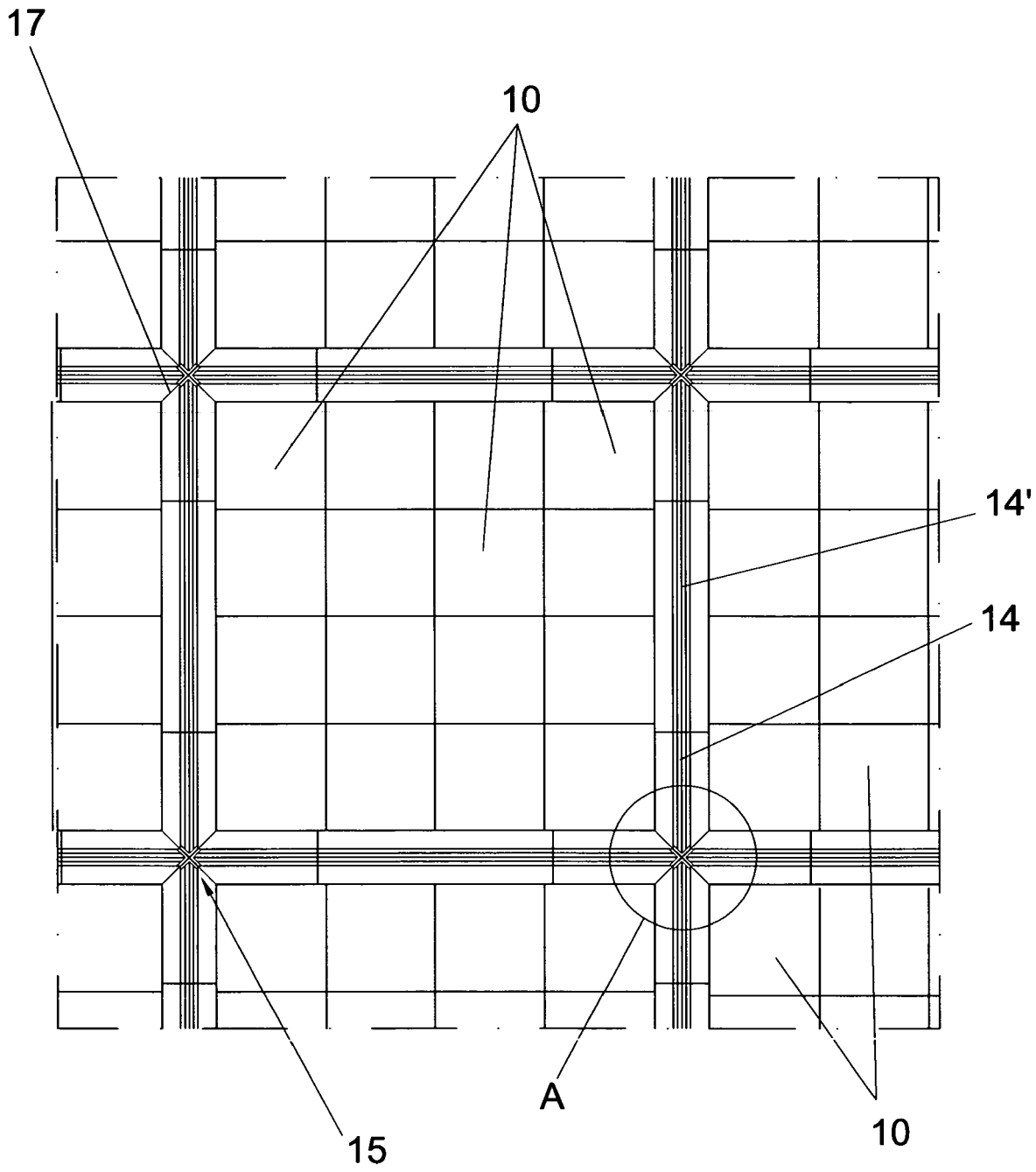


FIG. 4

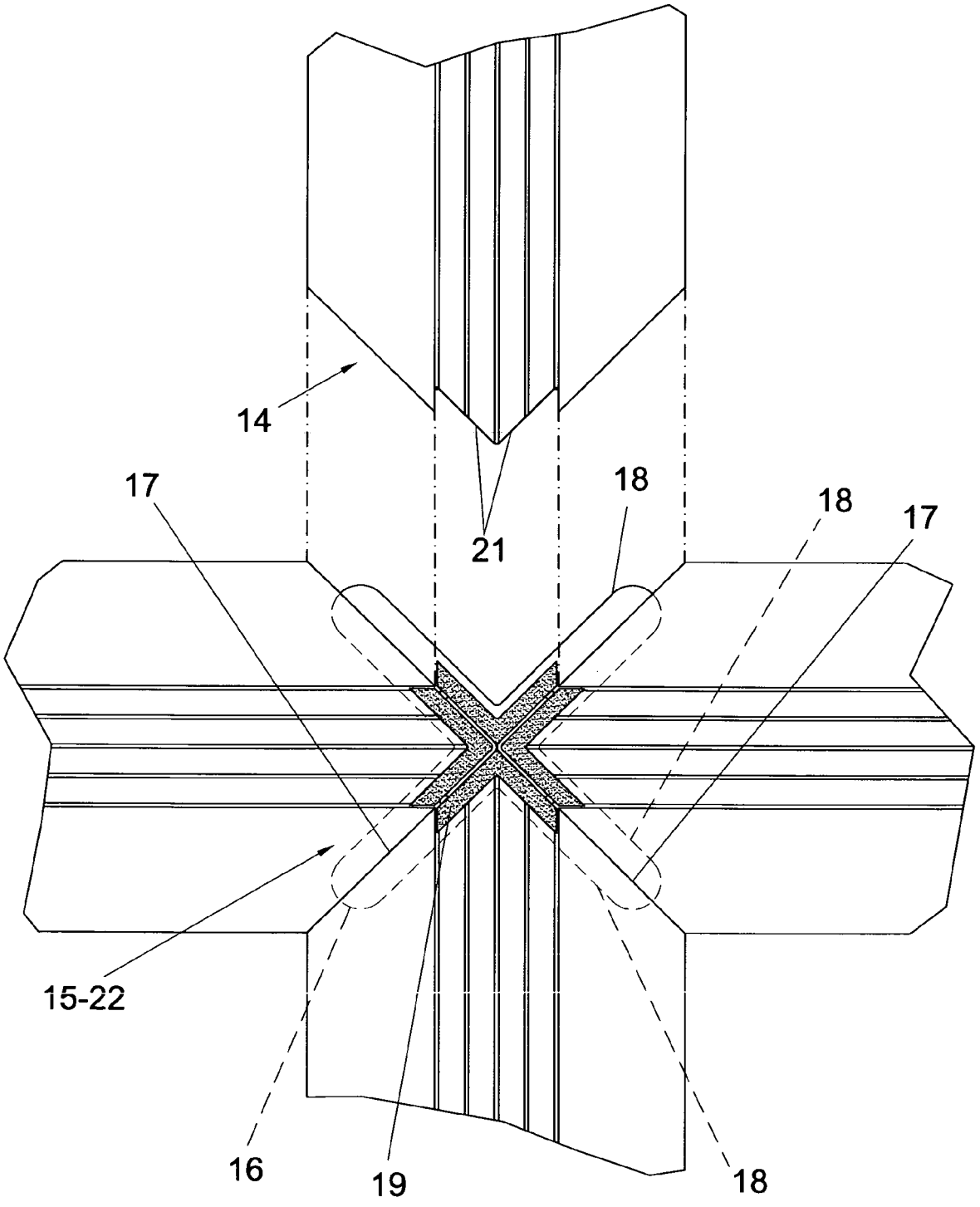


FIG. 5
A

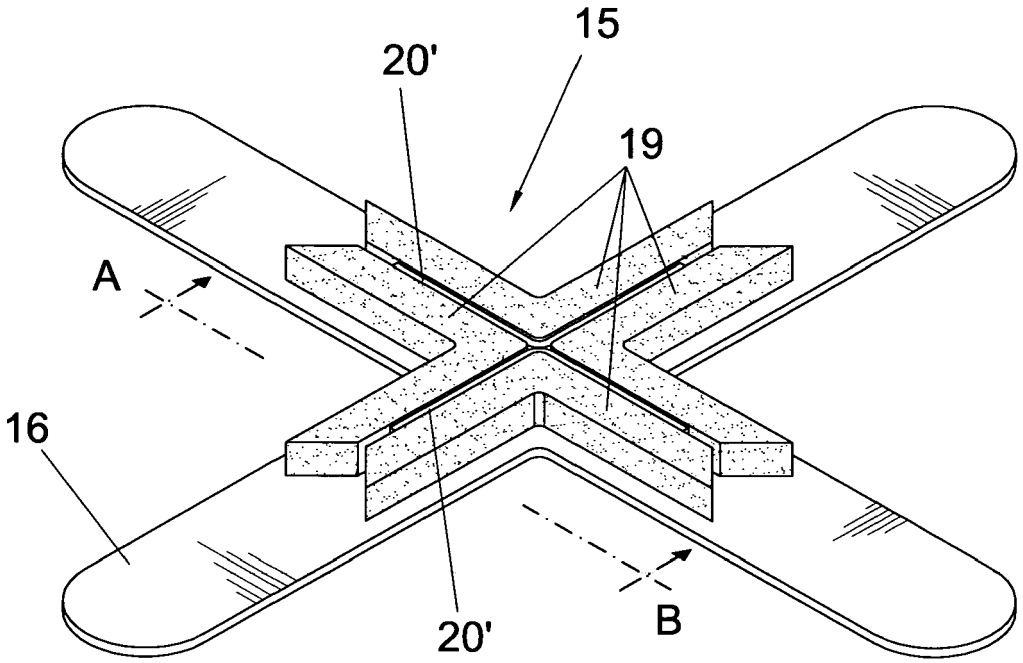


FIG. 6

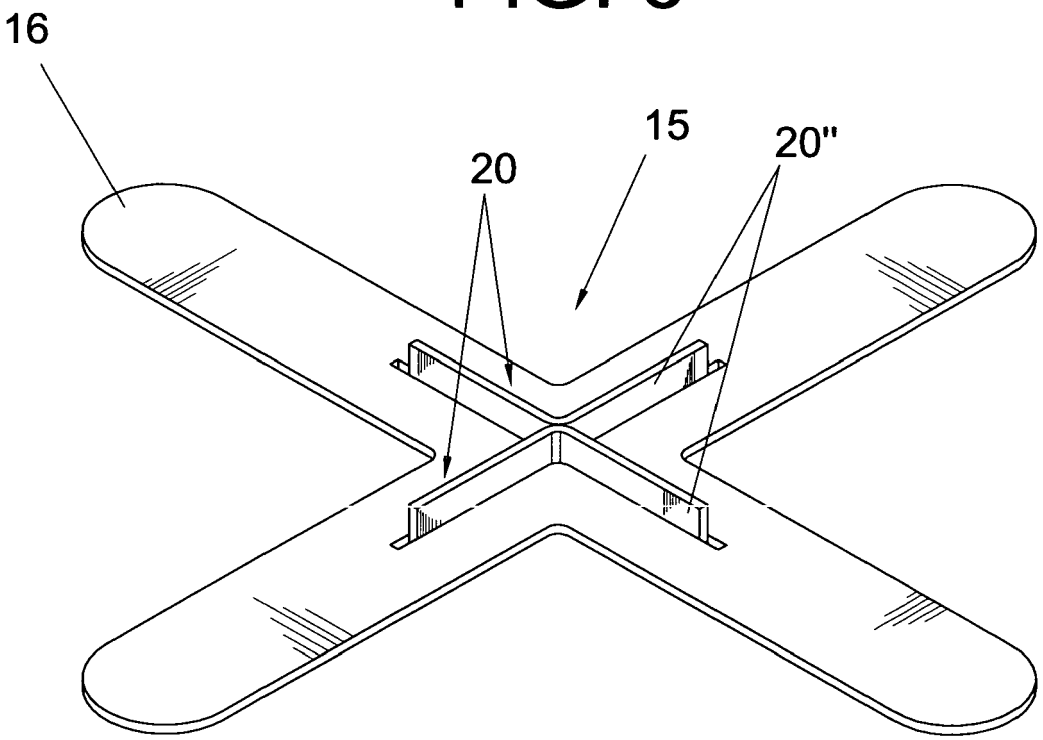


FIG. 7

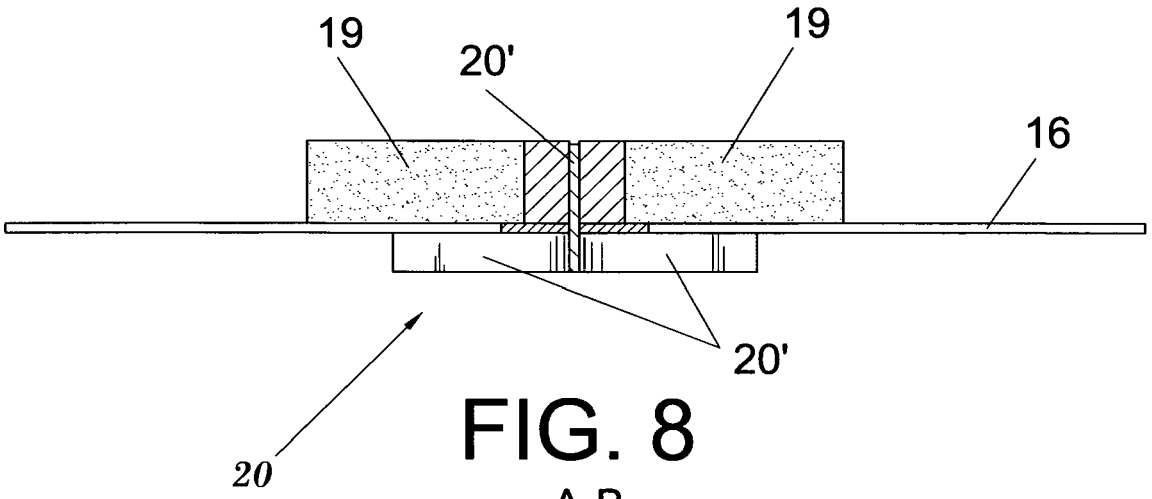


FIG. 8
A-B