



(86) Date de dépôt PCT/PCT Filing Date: 2002/01/24

(87) Date publication PCT/PCT Publication Date: 2002/09/12

(45) Date de délivrance/Issue Date: 2010/07/06

(85) Entrée phase nationale/National Entry: 2003/07/22

(86) N° demande PCT/PCT Application No.: EP 2002/000679

(87) N° publication PCT/PCT Publication No.: 2002/070830

(30) Priorités/Priorities: 2001/02/17 (DE101 07 536.7);
2001/09/13 (DE101 45 082.6)

(51) Cl.Int./Int.Cl. *E04B 2/70* (2006.01)

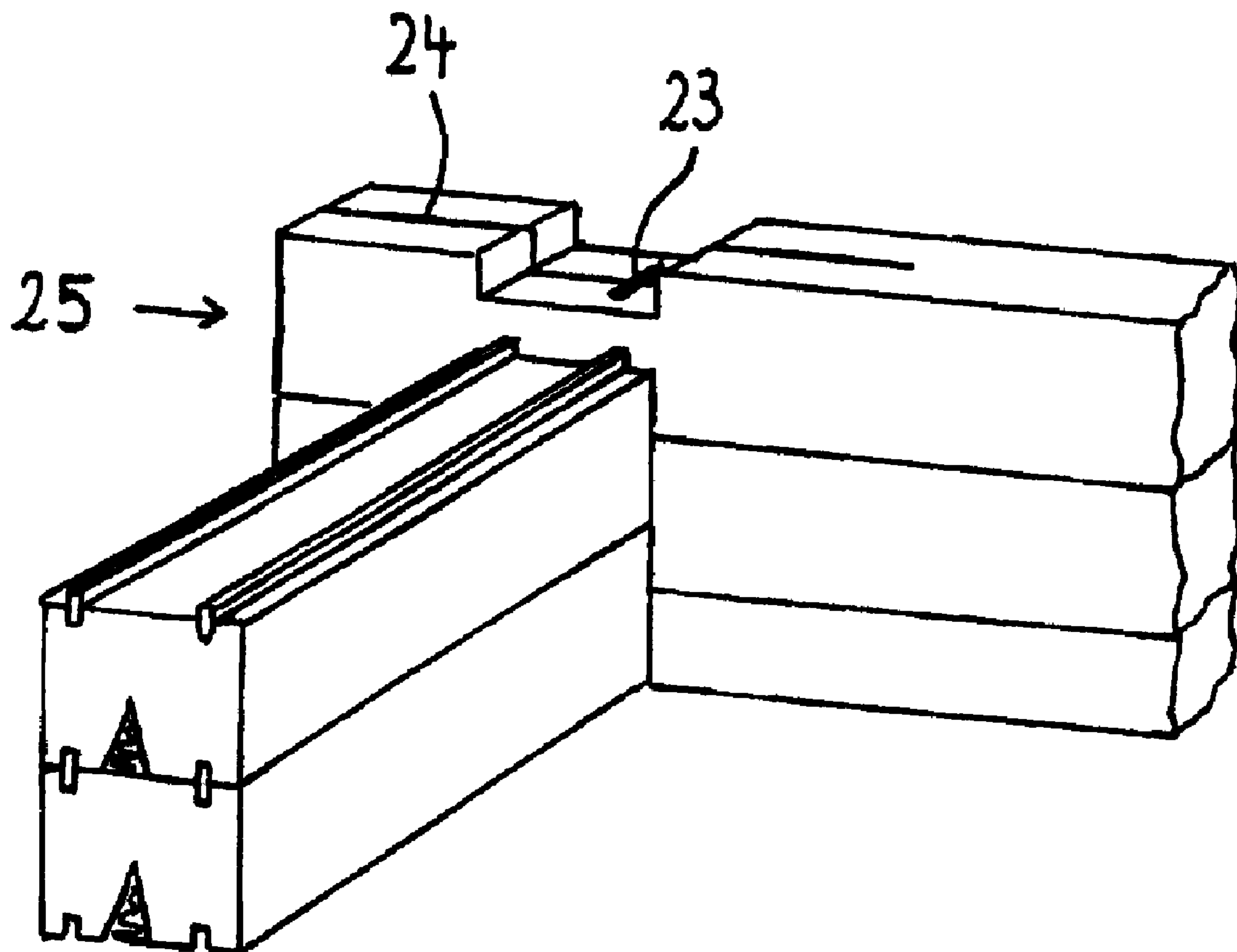
(72) Inventeur/Inventor:
DUFFNER, ALEXANDRA, DE

(73) Propriétaire/Owner:
DUFFNER, ALEXANDRA, DE

(74) Agent: OGILVY RENAULT LLP/S.E.N.C.R.L.,S.R.L.

(54) Titre : MADRIER ET SON PROCEDE DE PRODUCTION

(54) Title: BLOCK PLANK AND METHOD FOR THE PRODUCTION THEREOF



(57) Abrégé/Abstract:

A block plank for building wooden walls, formed of a plurality of block planks (6, 7) located horizontally one above the other, of houses and other buildings is proposed which on its lower bearing face (8) has a wedge-shaped longitudinal slit (3) that tapers

(57) **Abrégé(suite)/Abstract(continued):**

toward the heart (2) of the block plank (6, 7). The method of the invention for producing such block planks (6, 7) with a low wood moisture provides that the logs (1) used, before the drying operation, are provided with at least one longitudinal slit (3) extending as far as the heart (2) of the respective log (1); that the logs (1) are then dried in a drying chamber to a moisture content of less than 15%, preferably to a moisture content of 11%; and that the logs (1) are then sawn to the desired size of block plank.

Abstract

BLOCK PLANK AND METHOD FOR THE PRODUCTION THEREOF

A block plank for building wooden walls, formed of a plurality of block planks (6, 7) located horizontally one above the other, of houses and other buildings is proposed which on its lower bearing face (8) has a wedge-shaped longitudinal slit (3) that tapers toward the heart (2) of the block plank (6, 7). The method of the invention for producing such block planks (6, 7) with a low wood moisture provides that the logs (1) used, before the drying operation, are provided with at least one longitudinal slit (3) extending as far as the heart (2) of the respective log (1); that the logs (1) are then dried in a drying chamber to a moisture content of less than 15%, preferably to a moisture content of 11%; and that the logs (1) are then sawn to the desired size of block plank.

Specification**BLOCK PLANK AND METHOD FOR THE PRODUCTION THEREOF**

The invention relates to a block plank for building wooden walls.

5

For building wooden houses and other buildings, block planks are used, which can have an essentially rectangular cross section, or a rounded cross section, with flat faces. In walls constructed of block planks, one problem is that the walls settle from shrinkage, and warping can also occur in the wood. This can make the wooden walls constructed with conventional block planks leaky.

10

The object of the invention is to create a block plank for building wooden walls that even after a relatively long time maintains high dimensional accuracy.

15

The block plank of the invention, at least on its lower bearing face, has a wedge-shaped longitudinal slit that narrows toward the heart of the log. An elastic insulating material with which the block planks, stacked one above the other to make a wall, rest sealingly on one another can be inserted into this longitudinal slit.

20

The wedge shape of the longitudinal slit is created on the one hand during the drying operation, since the log, previously slit longitudinally,

25

contracts in such a way that a longitudinal slit initially made in straight form widens into a V. If before the drying operation, other longitudinal notches are provided in the region of the later top side of the block plank, then it is especially advantageous to position them in such a way that they are located in the region of tongue-and-groove joints that are embodied between the bearing faces of the block planks. A refinement of the invention provides that longitudinal notches are located in the ribs embodied on the top side of the block planks, and precisely these ribs are part of the aforementioned tongue-and-groove joints. Because the additional longitudinal notches are located in the ribs at the top, the properties of the finished wooden wall are practically unimpaired.

The longitudinal slit extended to the heart of the log and the other longitudinal notches at the top have the great advantage that uncontrolled development of cracks in the later drying operation is avoided. The logs sawn to size after the drying operation result in block planks with side faces that are free of cracks, and as a result, suitably high-quality block plank walls can be constructed.

The object of the invention is also to create a method for producing the highest possible quality block planks for constructing wooden walls.

The logs used can, with or without the bark, be dried, preferably in a vacuum drying operation, to a wood moisture of 11%, for example, and the longitudinal cuts made

beforehand prevent uncontrolled cracking of the logs that would otherwise occur. After the drying operation, the logs can be cut to the finished size of the block planks, and the longitudinal cut extended to the heart of the log can also be milled out to a predetermined size. In this way, block planks are obtained which have high dimensional accuracy and with which sealing problems can be reliably avoided. Optimal sealing off of the finished block plank wall is obtained by means of the insulating materials placed in the V-shaped longitudinal cut, and ecologically unobjectionable insulating materials can be used.

The invention will be described in further detail below in terms of an exemplary embodiment shown in the drawings.

Fig. 1, a log with a longitudinal cut, made all the way to the heart, before drying;

Fig. 2, the log of Fig. 1 after drying;

Fig. 3, a plurality of logs stacked for drying;

Fig. 4, block planks cut to their final size, as part of a block plank wall;

Fig. 5, a block plank wall seen from above in the region of one face end;

Fig. 6, a log sawn to size as a model, before drying;

Fig. 7, seams, sealed off with adjusting tongues, of block planks located one above the other;

Fig. 8, a perspective view, and Fig. 9, a plan view of a corner halving of a block plank house.

In Fig. 2, the end view is shown of a log 1 that has a longitudinal slit 3 made all the way to the heart 2. If this log is dried to less than 15% wood moisture, for instance, the wood shrinks in such a way that the cross section, or the end view as shown in Fig. 2, changes. The longitudinal slit 3 narrows in wedgelike fashion toward the heart 2, so that it can now be said to be a V-shaped longitudinal slit 3.

To make it possible for a plurality of logs to be stacked one above another in a vacuum drying chamber in a space-saving way, the logs 1 are flattened, as shown in Fig. 3, on their lower bearing face, where the longitudinal slit 3 is located. The logs 1 shown in Fig. 3 are additionally provided with longitudinal notches 4, 5 in the upper region, in order to assure that in the drying operation, uncontrolled cracking will not occur in the log.

In Fig. 3 and in Fig. 4, unlike Figs. 1 and 2, the annual rings are not shown, for the sake of simplicity.

After the drying operation, the logs 1 of Fig. 3 are cut to the finished block plank size, for instance to block planks of the kind shown in part in Fig. 4. The block planks 6, 7 have an essentially square cross section, and on their lower bearing face 8 and on their top faces 9, they are provided with longitudinal grooves 10 and with parallel-extending ribs 11 corresponding to the longitudinal grooves. On the adjoining sides of the two block planks 7, 8, the longitudinal grooves 10 and ribs 11 form tongue-and-groove joints 12.

As can also be seen in Fig. 4, the longitudinal slit 3, after the drying operation, has widened to a V shape, as

shown in Fig. 2. The V-shaped longitudinal slits 3 are milled out to a uniform size in the block planks 6, 7, so that insulating material 13 can be inserted uniformly in each of the longitudinal slits 3.

5 The longitudinal slits 3 can also be milled out to some other cross-sectional shape, not shown here. That cross section can for instance be rectangular or in the form of a half oval.

10 It can be seen from the lower block plank 6 that the insulating material 13, in the unstressed state, protrudes slightly past the lower bearing face 8, while it is elastically compressed from the top side of the block plank 6 between the tongue-and-groove joints 12, thus assuring secure sealing between the two block planks 6, 7.

15 The longitudinal notches 4, 5 provided in Fig. 3 are positioned, in the finished block planks 6, 7, in the region of the ribs 11. In principle, still other longitudinal slits or longitudinal notches could be made on the top side 9 and on the lower bearing face 8, should that be expedient because
20 of the nature of the wood or other requirements.

25 In Fig. 5, the end covering 14 of a block plank wall 15 can be seen. The covering 14 comprises 2 glued-together solid planks 16, 17, shown shaded in the drawing, which are joined to the block planks 6, 7 with screw or nail fastenings 18, 19. The face ends 20 of the block planks 6, 7 are notched in a wedge shape. In the free space between the covering 14 and the face end 20, there is a threaded rod 21, with which the block planks are braced. The wall thickness in the exemplary embodiment is 36 cm.

Fig. 6 shows the preferred form of a log intended for drying, because such models are optimally stackable.

The block planks 6, 7 used in Fig. 7, on the top side 9 facing away from the lower bearing face 8, have longitudinal grooves 21, extending parallel to and spaced apart from one another, which correspond to longitudinal grooves 10 embodied on the lower bearing face 8. Highly predried adjusting tongues 22 of wood are inserted into each two longitudinal grooves located directly one above the other, so that between block planks 6, 7 located one above the other, press fits are created at the adjusting tongues 22 as the moisture increases. Before insertion into the longitudinal grooves, the adjusting tongues 22 have a degree of drying of preferably less than 10% moisture.

For the corner halving, shown in Figs. 8 and 9, of outside walls of a block plank house, a tightening tongue 23 vertically penetrating the block plank is inserted into the block planks in the region of the corner halving, transversely to the longitudinal direction of the block plank. From its outward-pointing face end 25, the block plank has a spline 24, which is oriented toward the tightening tongue 23 and into which a wedge 26 that can be driven farther in is inserted at the face end of the plank. When shrinkage occurs, the wedge can be driven farther in, and the corner halving can be further tightened and made windproof. For reasons of appearance, the wedge 26 can be covered by a removable cover plate.

The block planks for the corner halving of outside walls of a block plank house can each have a vertical, spreadable longitudinal slit, preferably embodied as a spline

24, extending from their outward-pointing face end to beyond
the region of the corner halving. What is important is the
possibility of driving the block planks apart in order to
compensate for the attendant shrinkage, and driving the block
5 planks to the size sawn out in the region of the corner
halving and to seal them off from one another.

I CLAIM:

1. A block plank for the construction of timber walls in houses and other buildings, the said timber walls being formed from a plurality of block planks located horizontally one on top of the other, wherein the block plank is suitable for corner halving of outside walls of a block plank cabin and has a wedge-shaped elongate slit that tapers towards the heart of the block plank on its bottom contact surface, wherein from its end face facing outwards, the block plank has a vertical, spreadable elongate slit to a region of the corner halving.

2. The block plank according to claim 1, wherein a tightening tongue penetrates the block plank vertically, the tongue being inserted transversely, relative to the longitudinal direction of the block plank, into the block planks in the region of the corner halving.

3. The block plank according to any one of claims 1 and 2, wherein, from its end face that faces outwards, the block plank has a tapered groove, which is directed towards the tightening tongue and into which a wedge that can be driven further is disposed at the end face of the plank.

4. The block plank according to any one of claims 1-3, wherein a resiliently compressible insulating material is inserted into the elongate slit, the said insulating material protruding slightly at the bottom contact surface of the block plank.

5. The block plank according to any one of claims 1-4, wherein longitudinal parallel webs that are laterally spaced apart are provided on the top side of the block plank opposite the bottom contact face, the said webs corresponding with elongate grooves that are provided on the bottom contact face such that a groove and tongue connection is created between block planks that are located one on top of the other.

6. The block plank according to any one of claims 1-5, wherein longitudinal incisions are formed on the top side opposite the contact surface.

7. The block plank according to claim 6, wherein the longitudinal incisions are disposed adjacent the webs formed on the top side (9).

8. The block plank according to any one of claims 1-7, wherein free end faces of several block planks lying one on top of the

other to form a block plank wall are notched in a wedge-shaped manner and are covered by means of a cover adapted to a form.

9. The block plank according to claim 1, wherein longitudinal parallel spaced apart grooves are provided on the top side of the block plank opposite the bottom contact surface, the said longitudinal grooves corresponding with longitudinal grooves that are formed on the bottom contact surface, and a highly pre-dried spline is inserted in each of two longitudinal grooves lying directly one on top of the other such that between the block planks lying one on top of the other press fits are created between the said block planks lying one on top of the other at the splines.

10. The block plank according to claim 9, wherein, before being inserted into the longitudinal grooves, the degree of dryness of the splines is less 8% moisture.

11. A method for producing a block plank with a low timber moisture content for the construction of timber walls, in accordance with any one of claims 1-10, wherein the timber logs used are provided before the drying process with at least one elongate slot that extends as far as the heart (2) of the

respective timber log, and wherein the timber logs are then dried in a drying chamber to a moisture content of less than 11%, and in that the timber logs are then sawn to the desired block plank size, wherein a predetermined finished size is then cut after the elongate slit (3) has dried.

12. The method according to claim 11, wherein, before the drying process, the timber logs are flattened over their entire length on the side where the elongate slit is to be admitted.

13. The method according to claim 12, wherein, symmetrically disposed longitudinal incisions are disposed offset by more than 90 degrees, with reference to the elongate slit that extends to the heart.

1/3

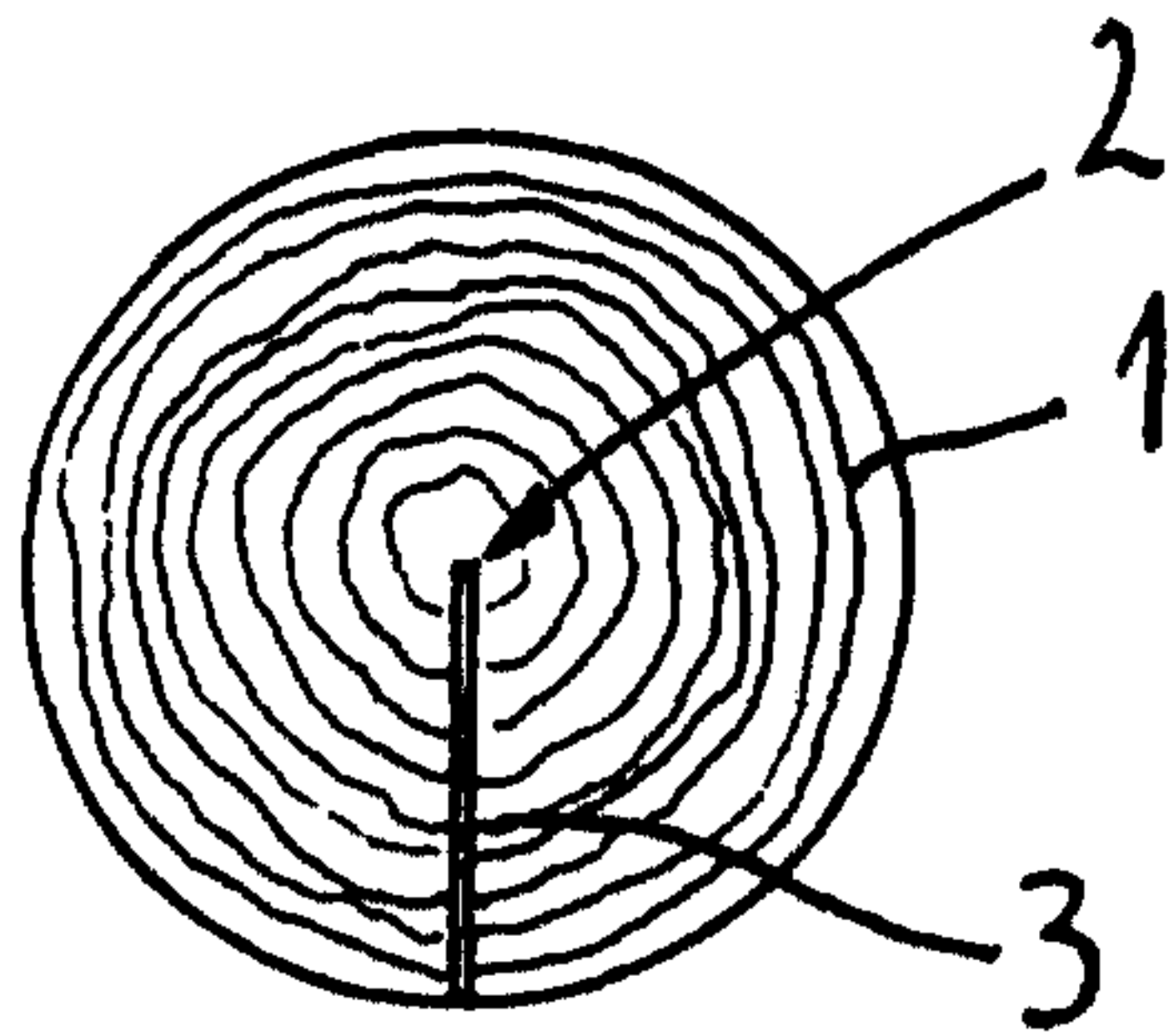


FIG. 1

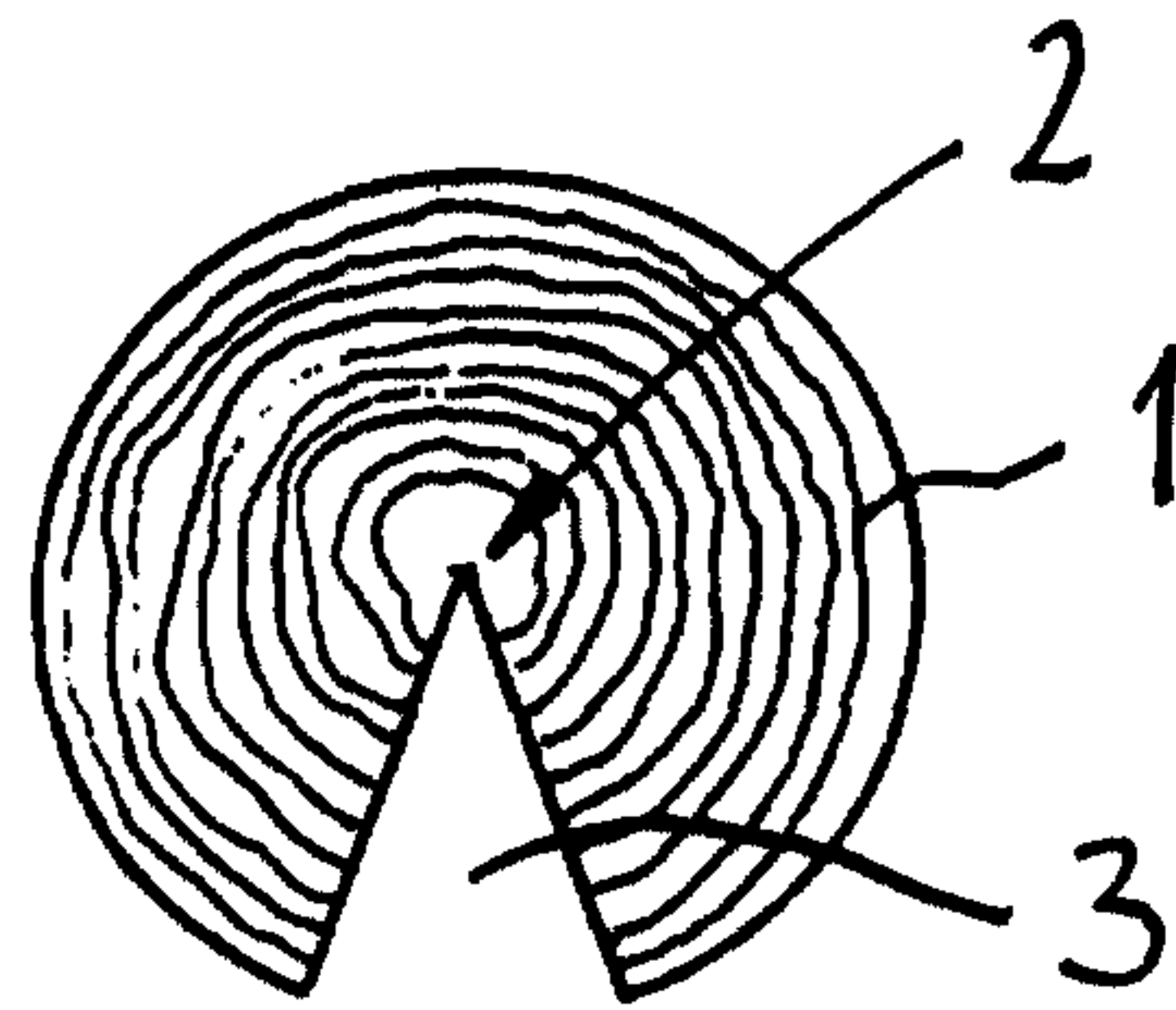


FIG. 2

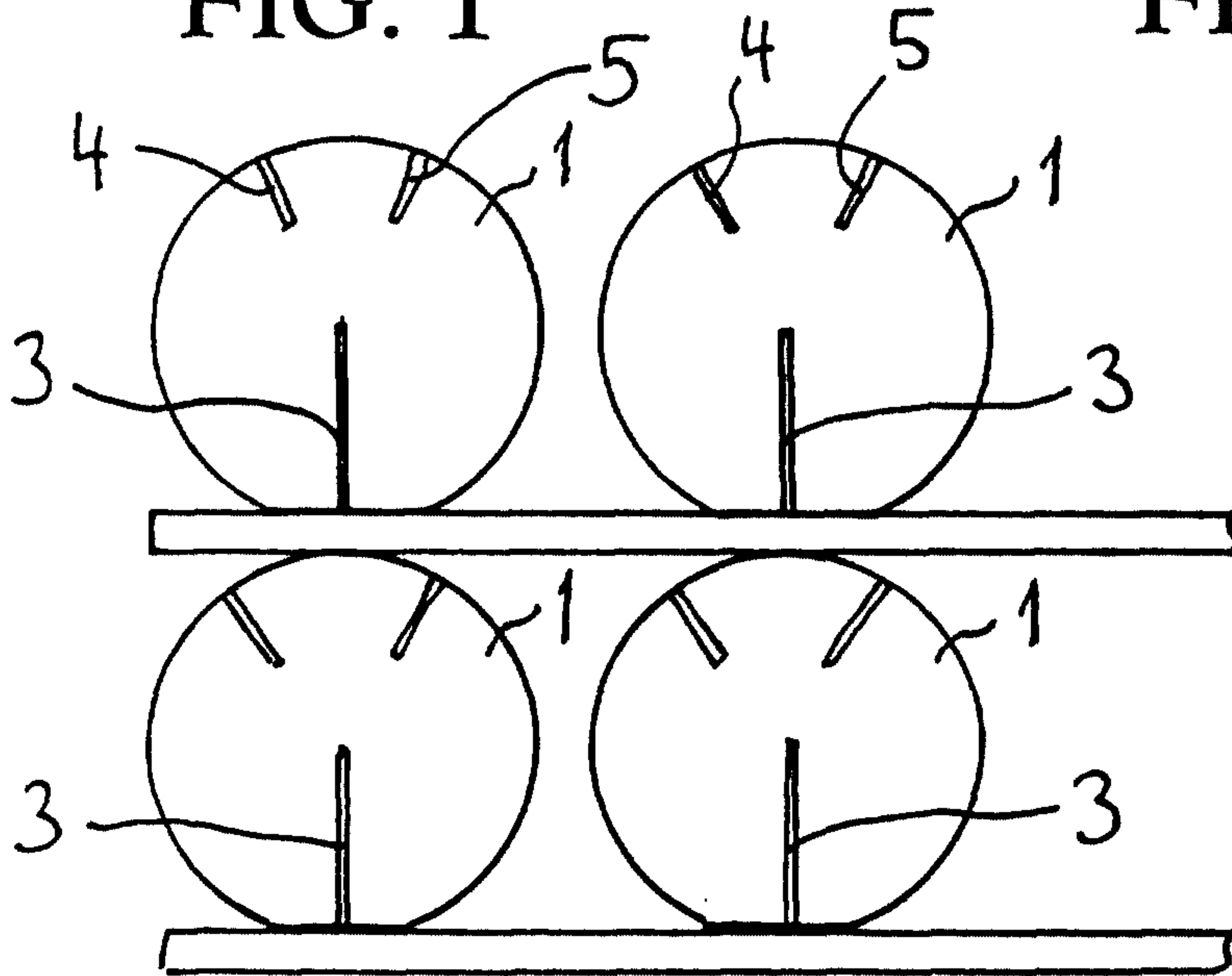


FIG. 3

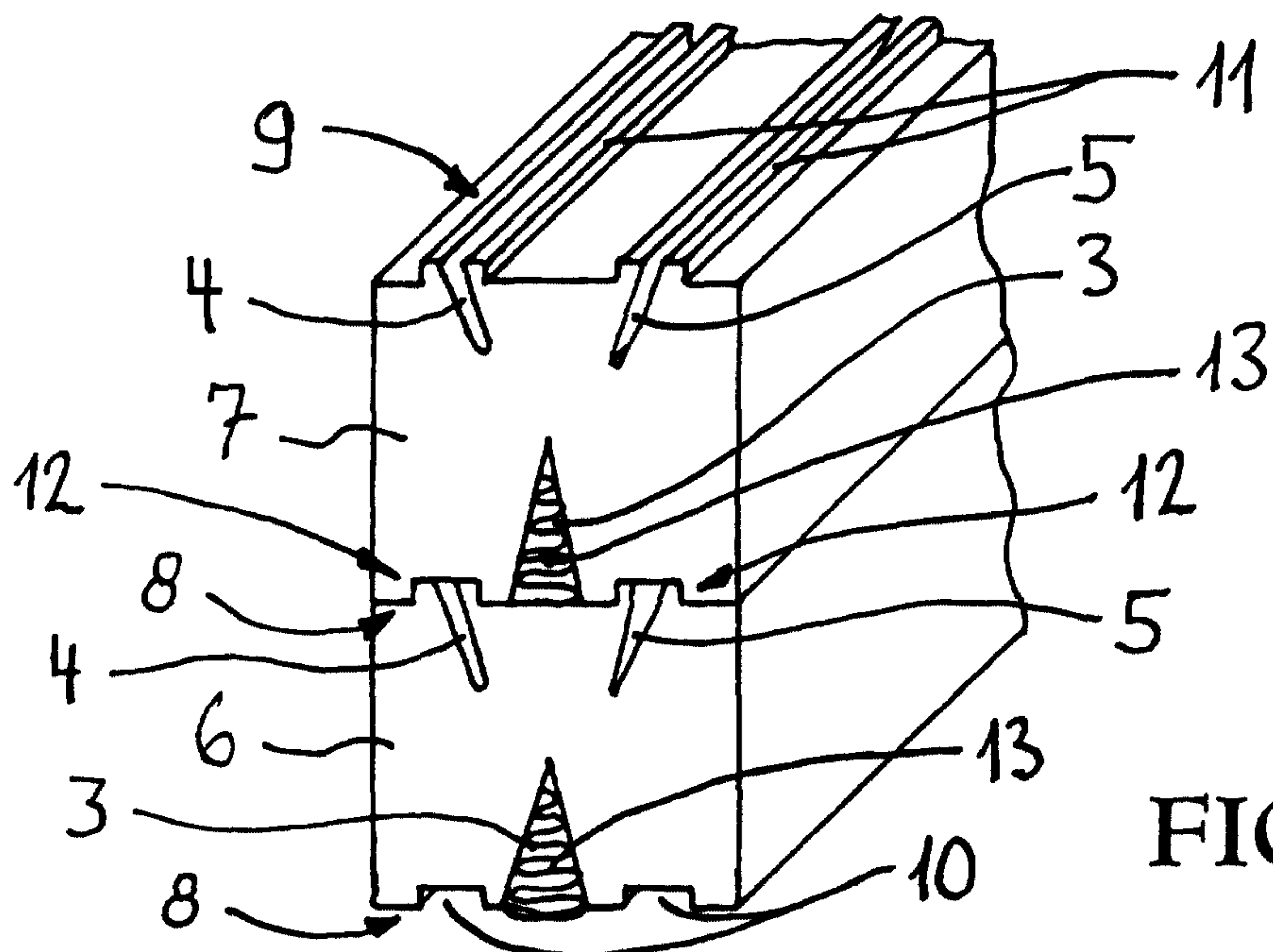


FIG. 4

2/3

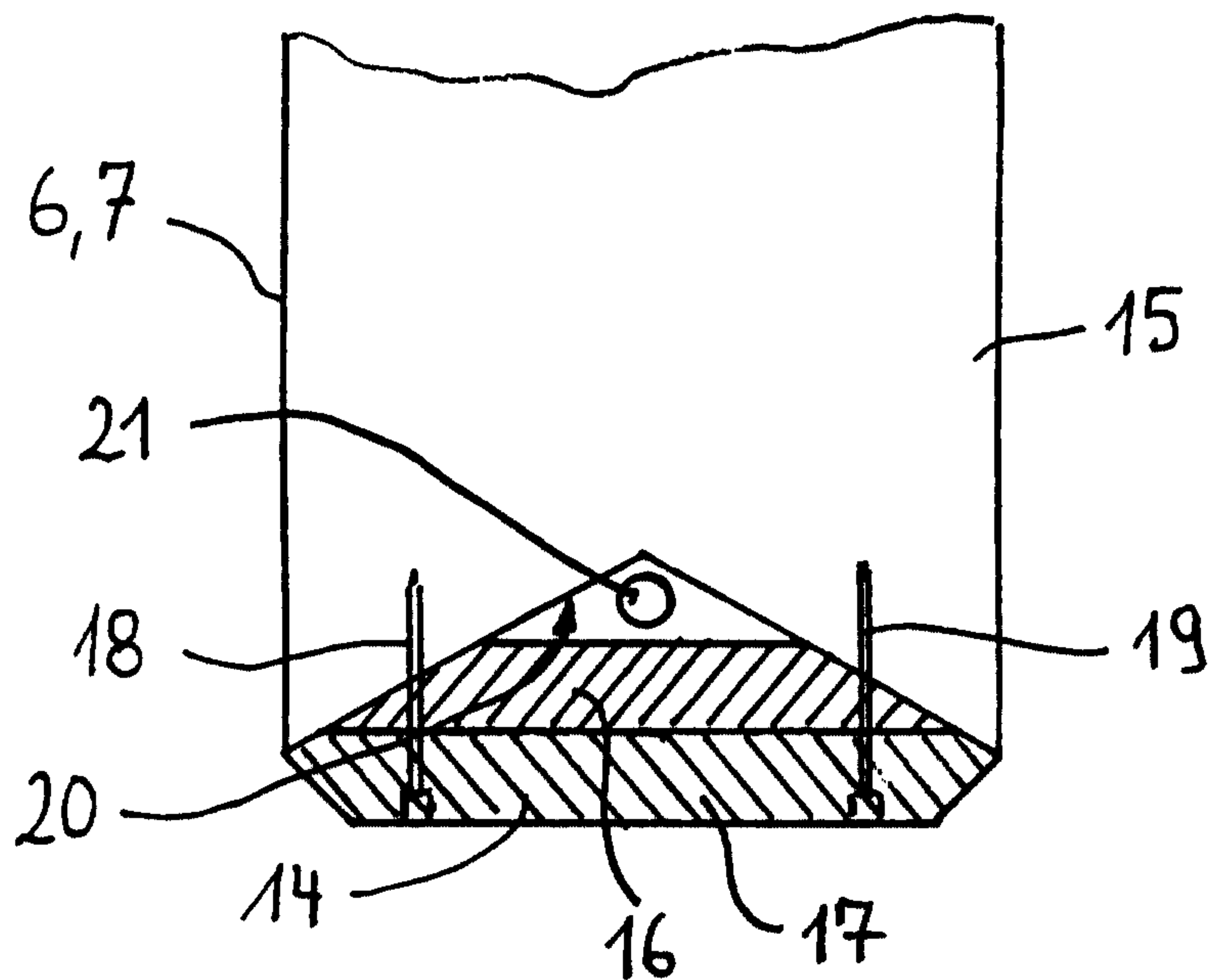


FIG. 5

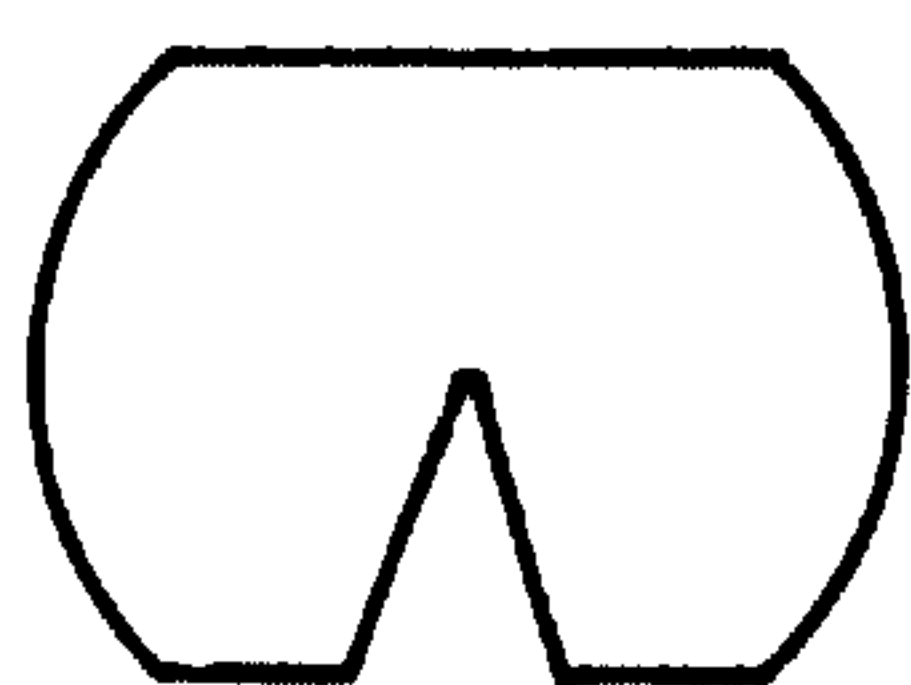


FIG. 6

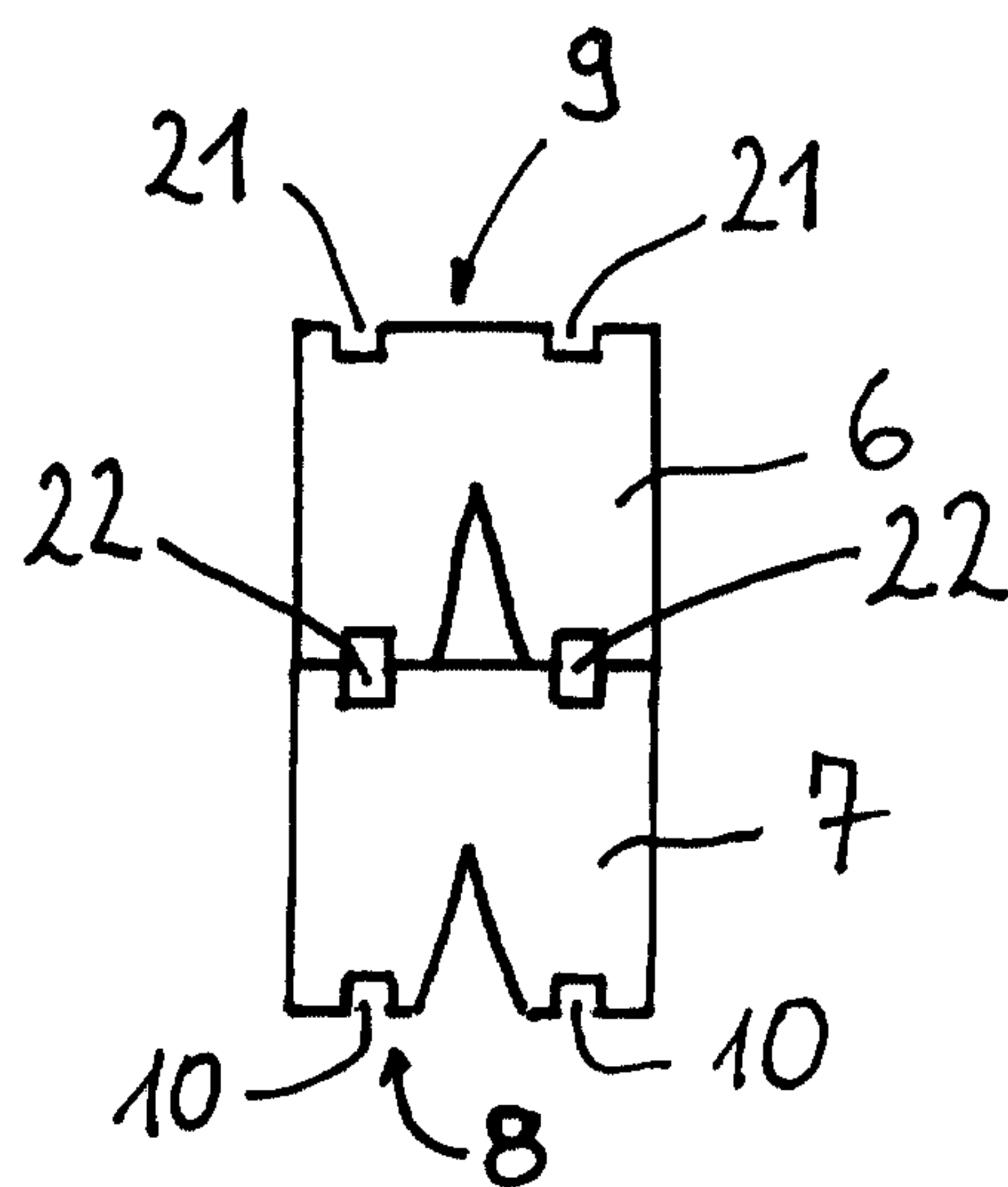


FIG. 7

3/3

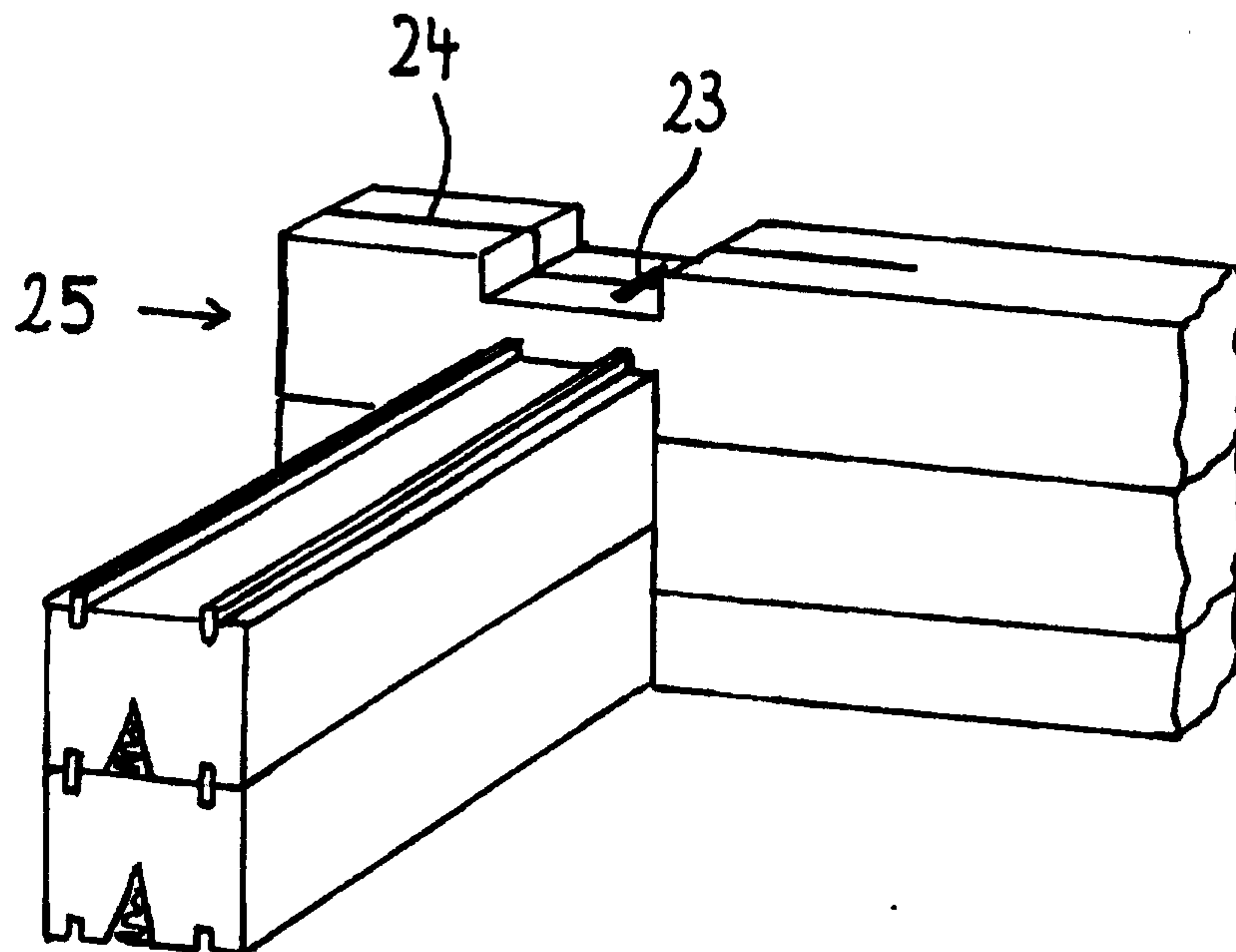


FIG. 8

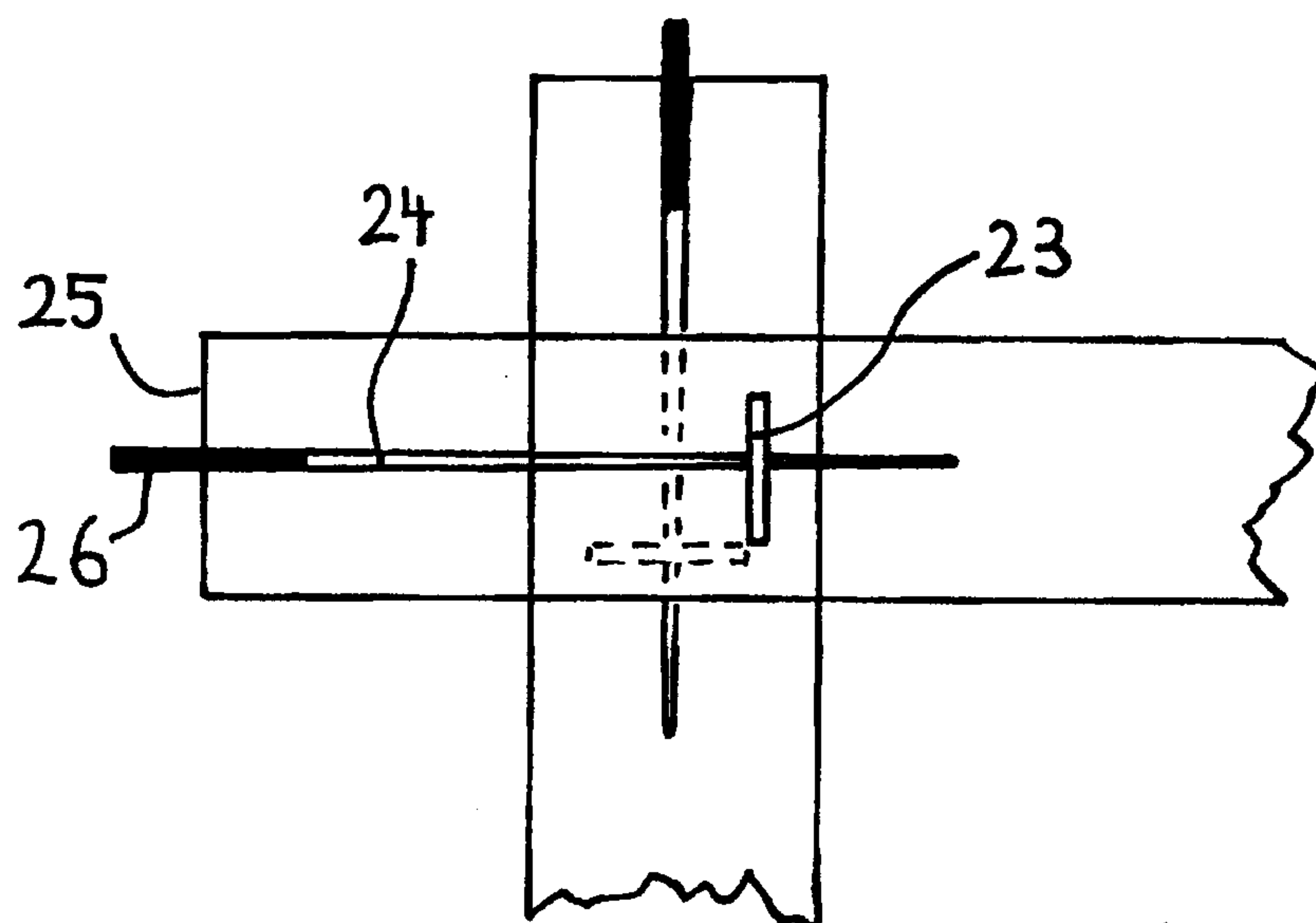


FIG. 9

