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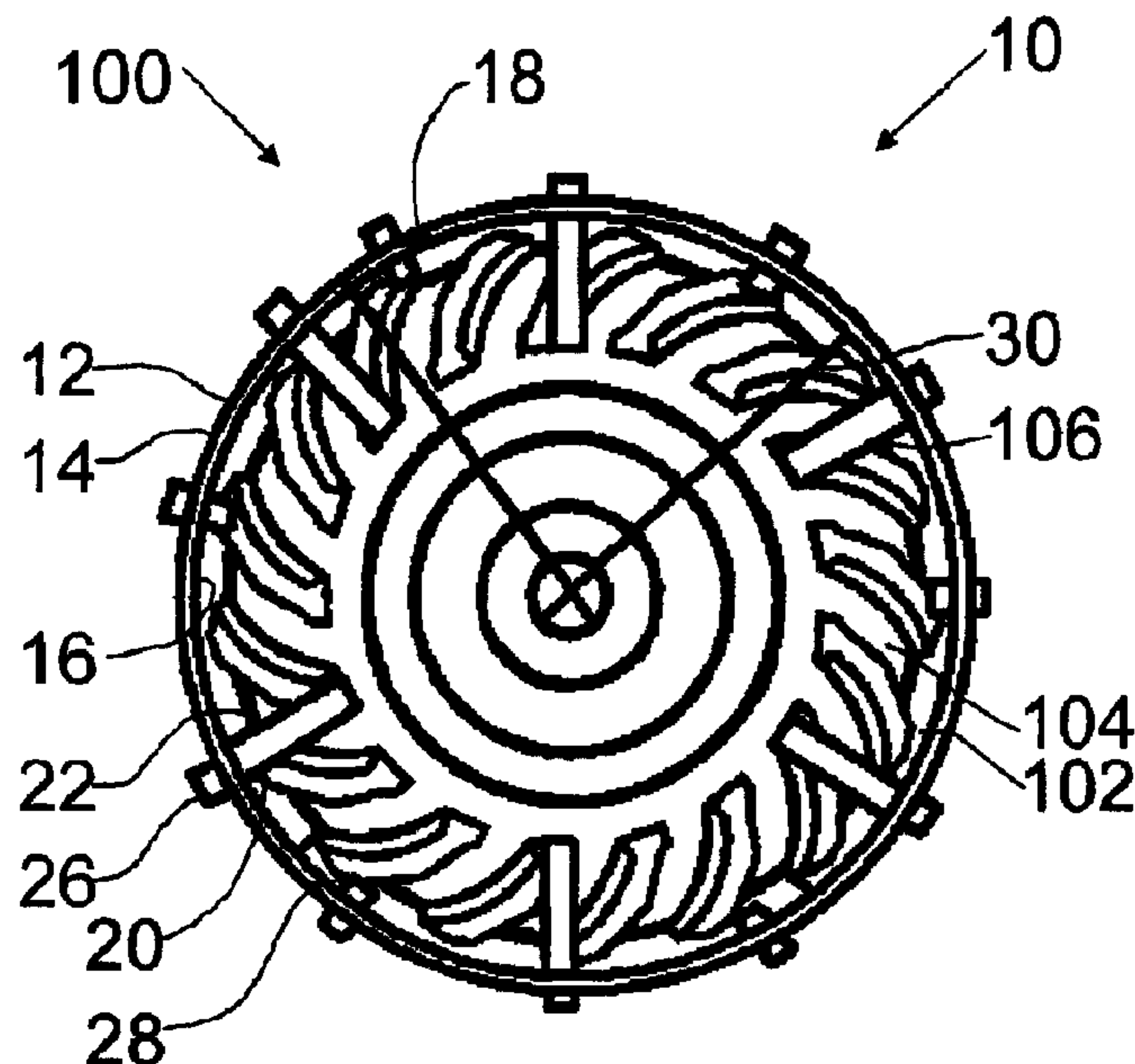
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(54) **Titre : BANDE DE ROULEMENT DE PNEU AMOVIBLE**

(54) **Title: REMOVABLE TIRE TREAD**



(57) **Abrégé/Abstract:**

A removable tire tread has a tread body having a tread surface, a tire engaging surface, and an attachment for attaching the tread body around an outer circumference of a tire having spaced tread members on an outer surface. The tire engaging surface has



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

saddles that retain the outer surface of the tire. Each saddle has a bottom support, opposed upstanding members adjacent to the outer surface of the tire that engage the sidewalls of the tire, a gusset between each opposed upstanding member and the bottom support, each gusset engaging the outer surface of the tire, and a tread engagement member carried by the bottom support that engages the tire between the spaced tread members.

ABSTRACT OF THE DISCLOSURE

A removable tire tread has a tread body having a tread surface, a tire engaging surface, and an attachment for attaching the tread body around an outer circumference of a tire having spaced tread members on an outer surface. The tire engaging surface has saddles that retain
5 the outer surface of the tire. Each saddle has a bottom support, opposed upstanding members adjacent to the outer surface of the tire that engage the sidewalls of the tire, a gusset between each opposed upstanding member and the bottom support, each gusset engaging the outer surface of the tire, and a tread engagement member carried by the bottom support that engages the tire between the spaced tread members.

TITLE

[0001] Removable tire tread

FIELD

- 5 [0002] This relates to a removable tire tread that may be used with, for example tires with a coarse tread.

BACKGROUND

- 10 [0003] Tires with a coarse tread pattern are often used in agriculture, such as on tractors or irrigators. The tires have generally rounded outer surface with treads that are thick and spaced apart. An example of such a tire is shown in FIG. 1 and 2. This provides the tire with grip, but can also damage sensitive ground as it passes over it.

SUMMARY

- 15 [0004] According to an aspect, there is provided a removable tire tread, comprising a tread body having a tread surface, a tire engaging surface, and an attachment for attaching the tread body around an outer circumference of a tire having spaced tread members. The tire engaging surface comprises saddles that engage the tire. Each saddle comprises a bottom support, opposed upstanding members adjacent to the outer surface of the tire that engage the
20 sidewalls of the tire, a gusset between each opposed upstanding member and the bottom support that engages the outer surface of the tire, and a tread engagement member carried by the bottom support that engages the tire between the spaced tread members.

- [0005] According to another aspect, the tread surface may comprise removable treads.
25 The saddles may be attached to the tread body using a pin connection through the removable treads and the tread body. The attachment may be a piano hinge. There may be an attachment line that secures the tread body to the tire.

- [0006] According to another aspect, there may be support bars mounted to the tire
30 engaging surface between the saddles. The support bars may comprise tread spacer engagement members that engages the tire between the spaced tread members.

- [0007] According to another aspect, the tread body is wider than the tire, or substantially

the same width.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] These and other features will become more apparent from the following
 5 description in which reference is made to the appended drawings, the drawings are for the purpose of illustration only and are not intended to be in any way limiting, wherein:

FIG. 1 is a side elevation view of a prior art tire with a coarse tread pattern.

FIG. 2 is a end elevation view of the tire with a coarse tread pattern.

FIG. 3 is a side elevation view of a saddle for a removable tire tread.

10 **FIG. 4** is a top plan view of the saddle.

FIG. 5 is a side elevation view of a support bar for a removable tire tread.

FIG. 6 is a top plan view of the clamp bar.

FIG. 7 is a top plan view of an open removable tire tread.

FIG. 8 is a bottom plan view of an open removable tire tread.

15 **FIG. 9** is a side elevation view of the removable tire tread installed on a tire.

FIG. 10 is an end elevation view in partial section of the removable tire installed on a tire.

DETAILED DESCRIPTION

20 [0009] A removable tire tread generally identified by reference numeral 10, will now be described with reference to **FIG. 1** through 10.

Structure and Relationship of Parts:

[0010] Referring to **FIG. 1** and 2, there is shown a tire 100 that may be used, for
 25 example, on a tractor, irrigator, or other equipment used in off-road areas. Tire 100 has a coarse tread pattern with thick treads 102 having spaces 104 between treads 102. Treads 102 are generally in a herringbone pattern around an outer circumference 106 of tire 100.

[0011] Referring to **FIG. 9**, removable tire tread 10 has a tread body 12 with a tread
 30 surface 14, a tire engaging surface 16, and an attachment 18 for attaching tread body 12 around outer circumference 106 of tire 100, such as a piano hinge as shown in **FIG. 7** and 8.

As can be seen in FIG. 10, tread body 12 may be wider than tire 100. Alternatively, it may be the same width as tire 100.

[0012] Referring to FIG. 8, tire engaging surface 16 has saddles 20 that engage tire 100 as shown in FIG. 10. Referring to FIG. 3, saddles 20 are generally U-shaped and are defined by a bottom support 21 connected to opposed upstanding members 22, and gussets 25 connected between upstanding members 22 and bottom support 21. Gussets 25 are angled to engage tire 100 and upstanding members 22 are positioned on either side of tire 100 as shown in FIG. 10. While tires 100 with rounded outer surfaces are shown, it will be understood that removable tire tread 10 could also be used on tires with a flat outer surface. Removable tire tread 10 is particularly useful for tires 100 with a coarse tread pattern, as it allows a suitable engagement to provide sufficient support to tread body 12, and to properly engage tire 100 to avoid slippage and undue wear.

[0013] Preferably, upstanding members 22 do not directly engage the sidewalls of tire 100 to avoid wear. During operation, tire 100 is maintained in a central position by gussets 25, which directly engage the tread surface of tire 100, and act to keep tire 100 centralized within saddles 20 and therefore removable tread 10. As gussets 25 engage the treaded portion of tire 100, wear is not of particular concern, as that portion of tire 100 is designed and intended for such contact. Upstanding members are used to prevent tire 100 from working its way out of saddles 20 if, for example, tire 100 is traversing a slope. on a Saddles 20 also include a tread engagement member 24 that engages tire 100 between spaced tread members 102. Tread engagement member 24 provides a larger engagement surface area to provide more even support across the width of tire 100, and also helps prevent slippage between tire 100 and removable tire tread 10 as tire is driven 100. In addition, referring to FIG. 9, attachment lines 30, such as chains, may be provided that cross tire 100 to help secure tread body 10 to tire 100 and prevent slippage during use.

[0014] It will be understood that saddles 20 may be formed differently, as long as it is designed to securely grip tire 100 along its outer surface. It will also be understood that tread engagement members 24 may be designed differently than the block that is depicted. For

example, tread engagement members 24 may be a moulded piece that corresponds to the shape and contour of one or more space 104 on tire 100. Tread engagement members may be removable or integrally formed with saddles 20.

5 [0015] Referring to FIG. 3, bottom supports 21 of saddles 20 also act as tread supports. Saddles 20 also may include upstanding member supports 23. Tread supports 21 helps prevent tread body 12 from bending around tire 100 when weight is applied to maintain a generally flat tread surface. Upstanding member supports 23 help maintain upstanding members 22 in contact with tire 100, and are particularly useful when used with wider treads.

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[0016] Preferably, tread engagement member 24 is designed to be the same size and shape as space 104 that it will engage. Referring to FIG. 7, tread surface 14 has removable treads 26. Treads 26 are preferably attached such that there is always at least one touching the
15 ground at a time. Referring to FIG. 9, saddles may be attached using a pin connection through removable treads 26 and tread body 12. As such, treads 26 are preferably positioned immediately opposite saddles 20. Referring to FIG. 8, in some circumstances, it may be beneficial to provide support bars 28 mounted to tire engaging surface 16 between saddles 20. Referring to FIG. 5 and 6, support bars 28 may also have tread engagement members 24 that
20 engage the tire between the spaced tread members.

Operation:

[0017] Referring to FIG. 7 and 8, removable tread 10 is first assembled based on the tire that is to be used, which requires the appropriate spacing of saddles 20 and support bars 28.
25 The number of saddles 20 and support bars 28 and their configuration on body 12 will depend on the preferences of the user and the intended use. Generally speaking, treads 26 are attached along with saddles 20 and support bars 28, and are preferably made from a tough polymer. This provides a suitable anchor for both treads 26 on one side of body 12, and saddles 20 or support bars 28 on the other.

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[0018] To install removable tread 10 on a tire, the tire is first deflated slightly to reduce

the diameter and allow for some play. Body 12 is then wrapped around tire 100 as shown in FIG. 9 and 10 such that tread engagement members 24 are positioned in spaces 104 between treads 102, and such that upstanding members 22 of saddles 20 are on either side of tire 100. Connection 18 is then made, and the tire is inflated to the desired operating pressure. The length of body 12 is designed such that, when inflated, tire 100 applies pressure to tire engaging surface 14 to ensure a tight fit.

[0019] During use, removable tread 10 increases the contact area of tire 100 on ground, which is particularly useful for environmentally sensitive areas, or particularly soft ground. The width of body 12 can be varied, depending on the preferences of the user. Saddles 20 ensure that body 12 does not move axially, and tread supports 21 along with support bars 28 help keep tread surface flat under pressure. Tread engagement members 24 are used to increase the contact surface between tire 100 and tire engaging surface 14 to provide additional support to body 12, and also to prevent slippage as tire 100 is driven during use.

[0020] In this patent document, the word "comprising" is used in its non-limiting sense to mean that items following the word are included, but items not specifically mentioned are not excluded. A reference to an element by the indefinite article "a" does not exclude the possibility that more than one of the element is present, unless the context clearly requires that there be one and only one of the elements.

[0021] The following claims are to be understood to include what is specifically illustrated and described above, what is conceptually equivalent, and what can be obviously substituted. Those skilled in the art will appreciate that various adaptations and modifications of the described embodiments can be configured without departing from the scope of the claims. The illustrated embodiments have been set forth only as examples and should not be taken as limiting the invention. It is to be understood that, within the scope of the following claims, the invention may be practiced other than as specifically illustrated and described.

What is Claimed is:

1. A removable tire tread, comprising:

5 a tread body having a tread surface, a tire engaging surface, and an attachment for attaching the tread body around an outer circumference of a tire having spaced tread members on an outer surface;

 the tire engaging surface comprising saddles that retains the outer surface of the tire, each saddle comprising:

10 a bottom support;

 opposed upstanding members adjacent to the outer surface of the tire that engage the sidewalls of the tire;

 a gusset between each opposed upstanding member and the bottom support, each gusset engaging the outer surface of the tire; and

15 a tread engagement member carried by the bottom support that engages the tire between the spaced tread members.

2. The removable tire tread of claim 1, wherein the tread surface comprises removable treads.

20 3. The removable tire tread of claim 1, wherein the saddles are attached using a pin connection through the removable treads and the tread body.

4. The removable tire tread of claim 1, further comprising support bars mounted to the tire engaging surface between the saddles,

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5. The removable tire tread of claim 4, wherein the support bars comprise tread spacer engagement members that engages the tire between the spaced tread members.

6. The removable tire tread of claim 1, wherein the tread body is wider than the tire.

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7. The removable tire tread of claim 1, wherein the tread body is substantially the same width

as the tire.

8. The removable tire tread of claim 1, wherein the attachment is a piano hinge.

5 9. The removable tire tread of claim 1, further comprising an attachment line connected to the tread body that traverses the tire.

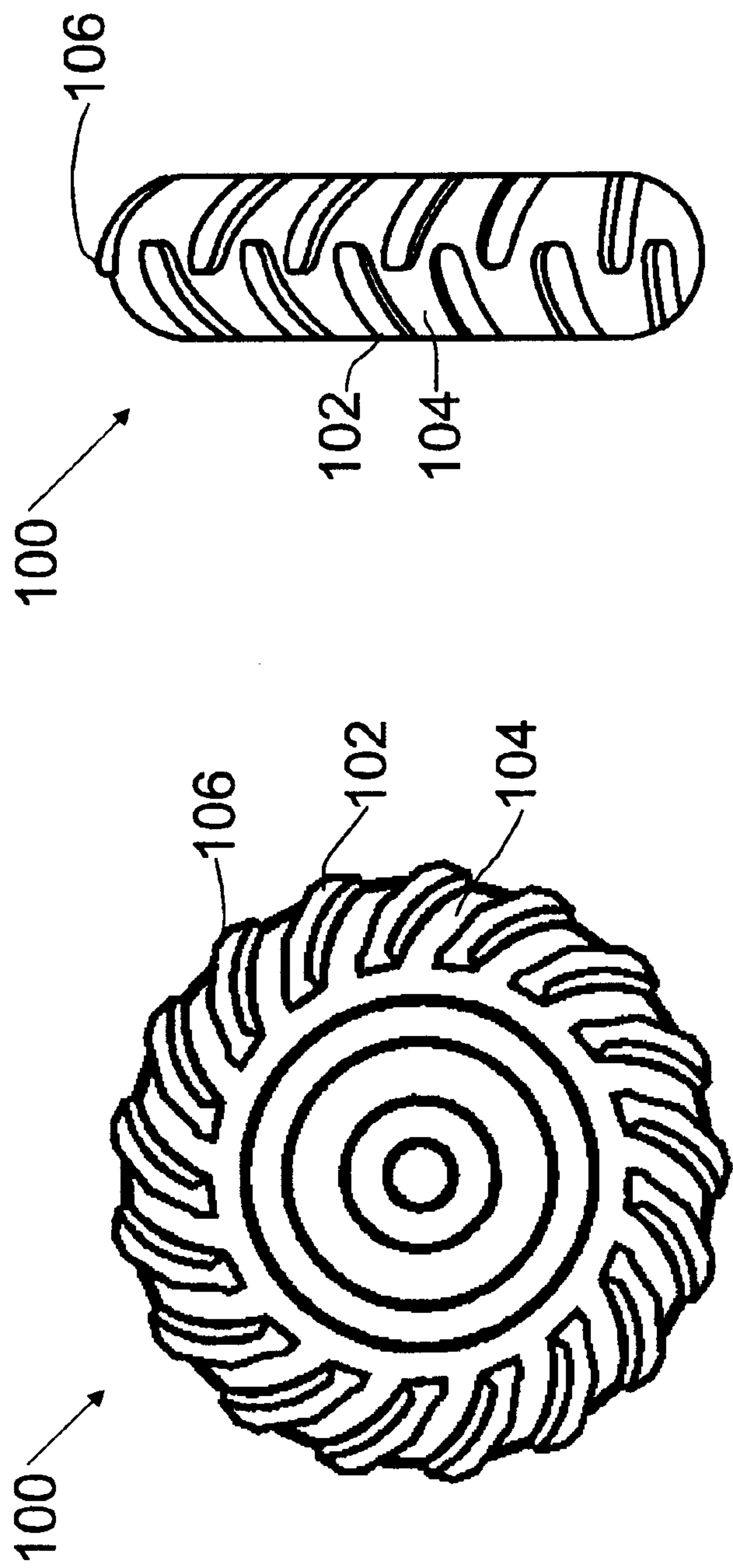


FIG. 1
PRIOR ART

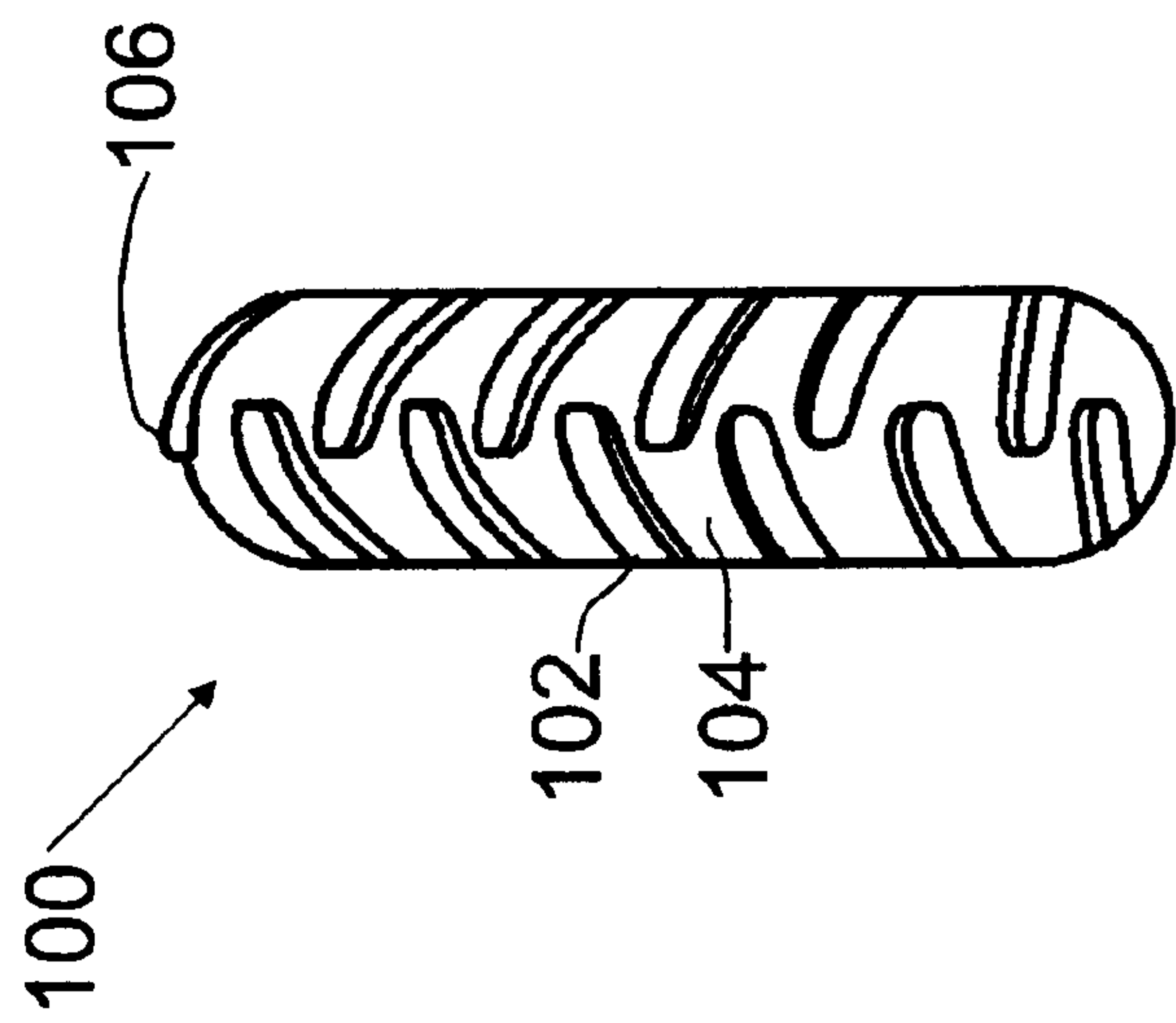


FIG. 2
PRIOR ART

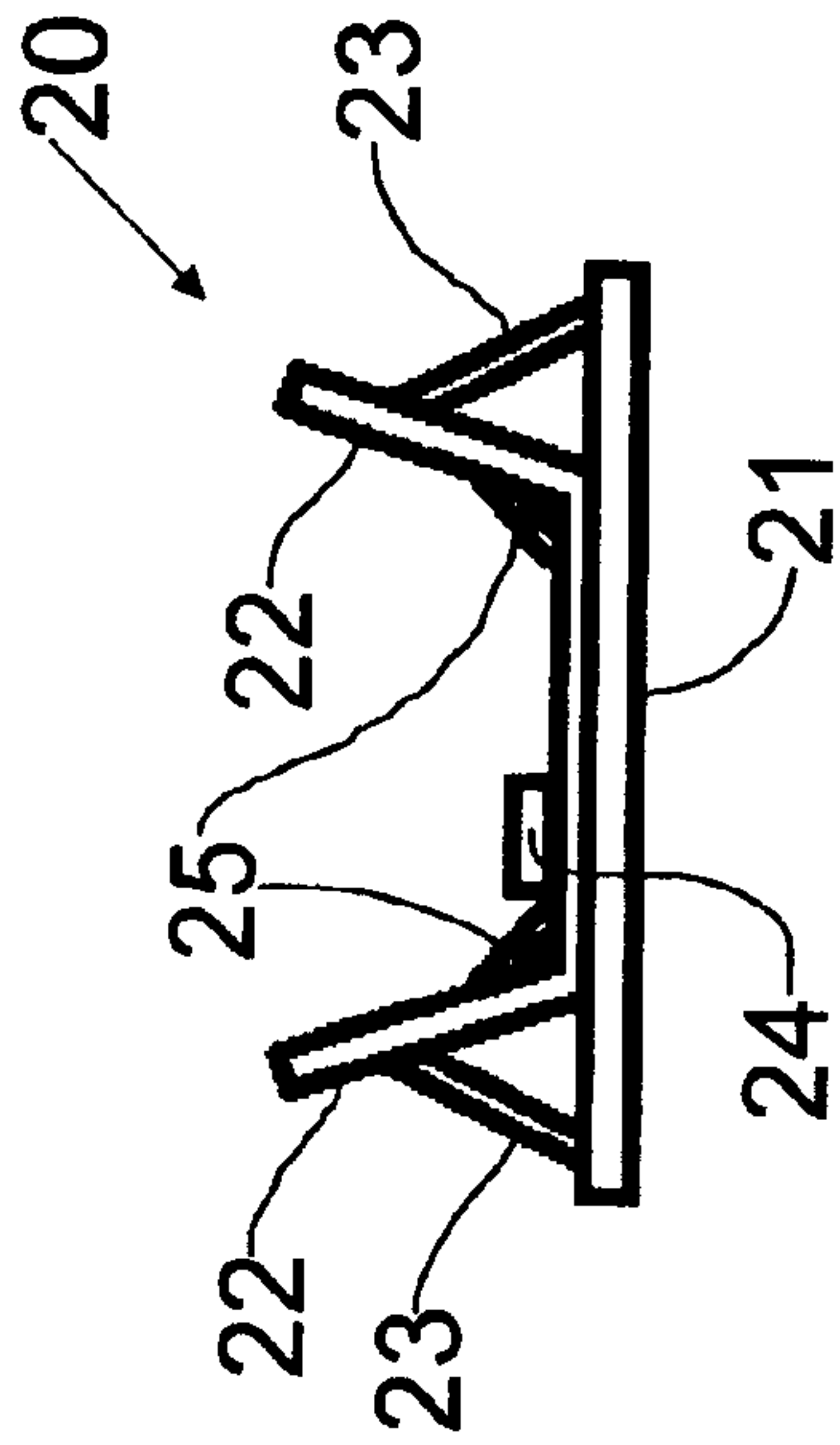


FIG. 3

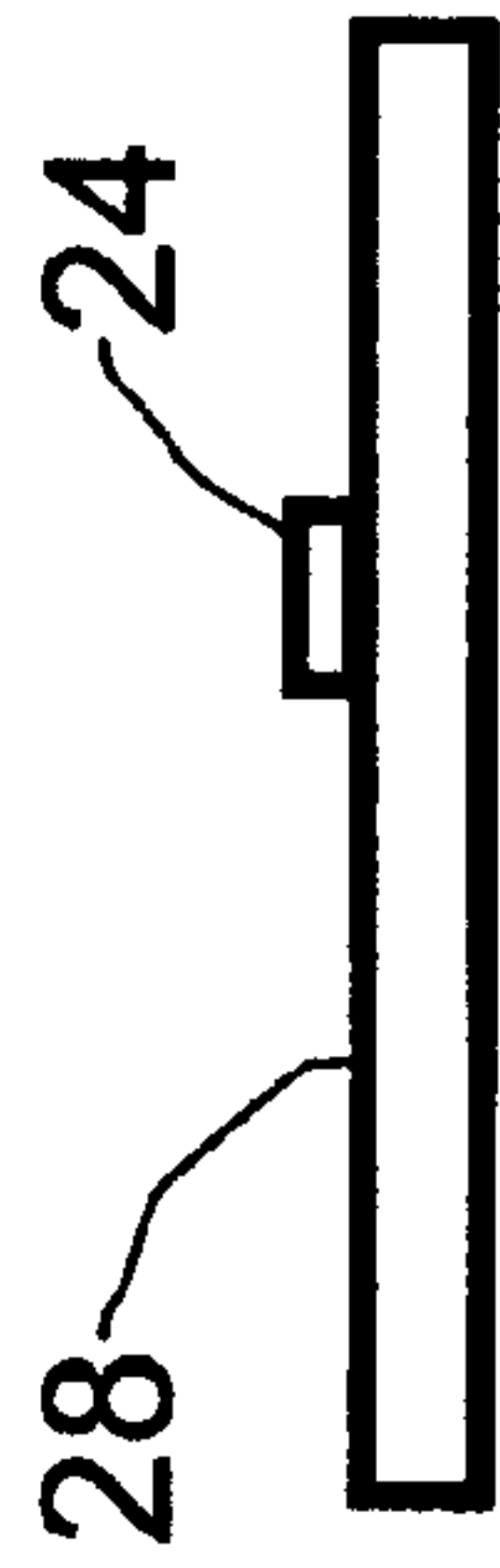


FIG. 5

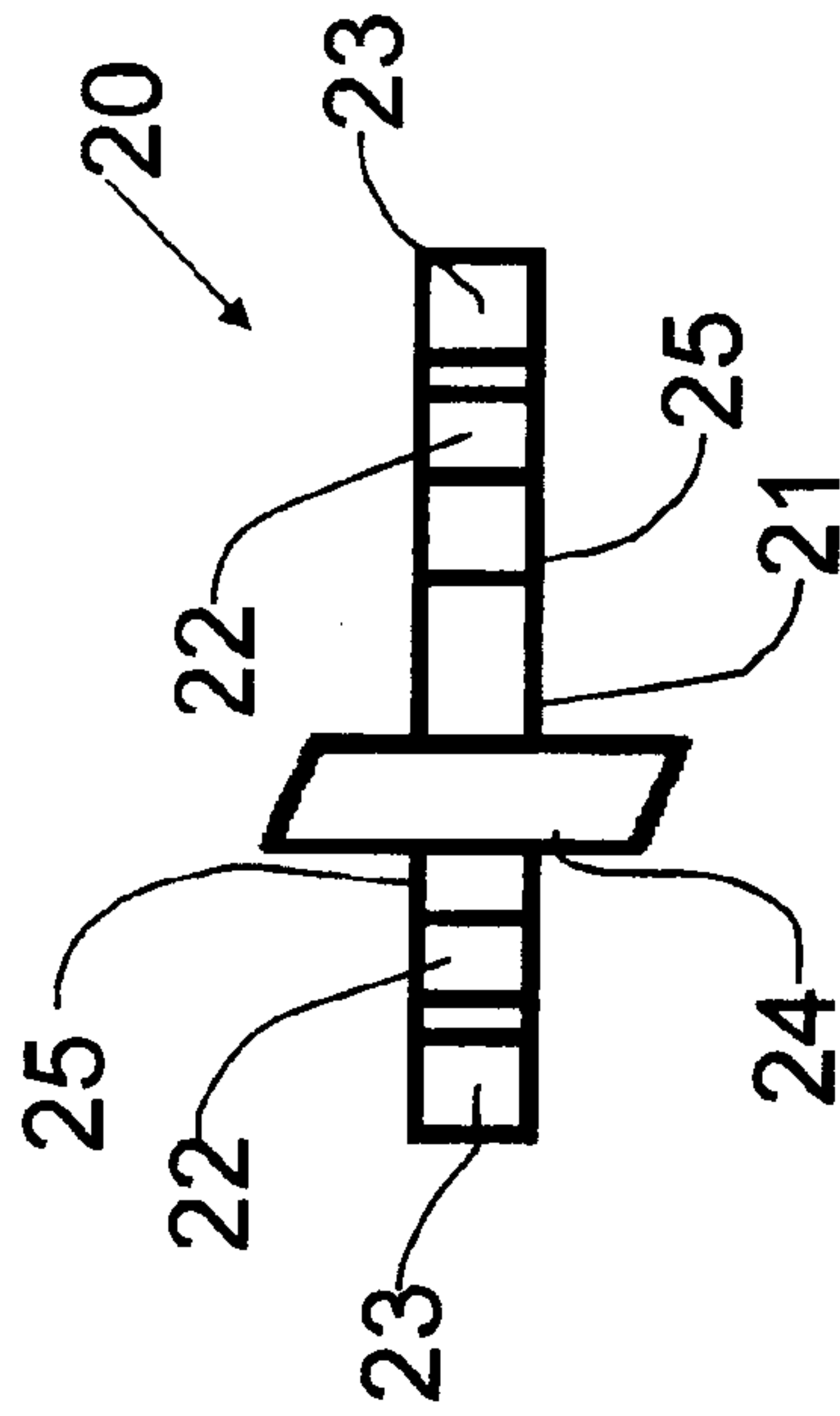


FIG. 4

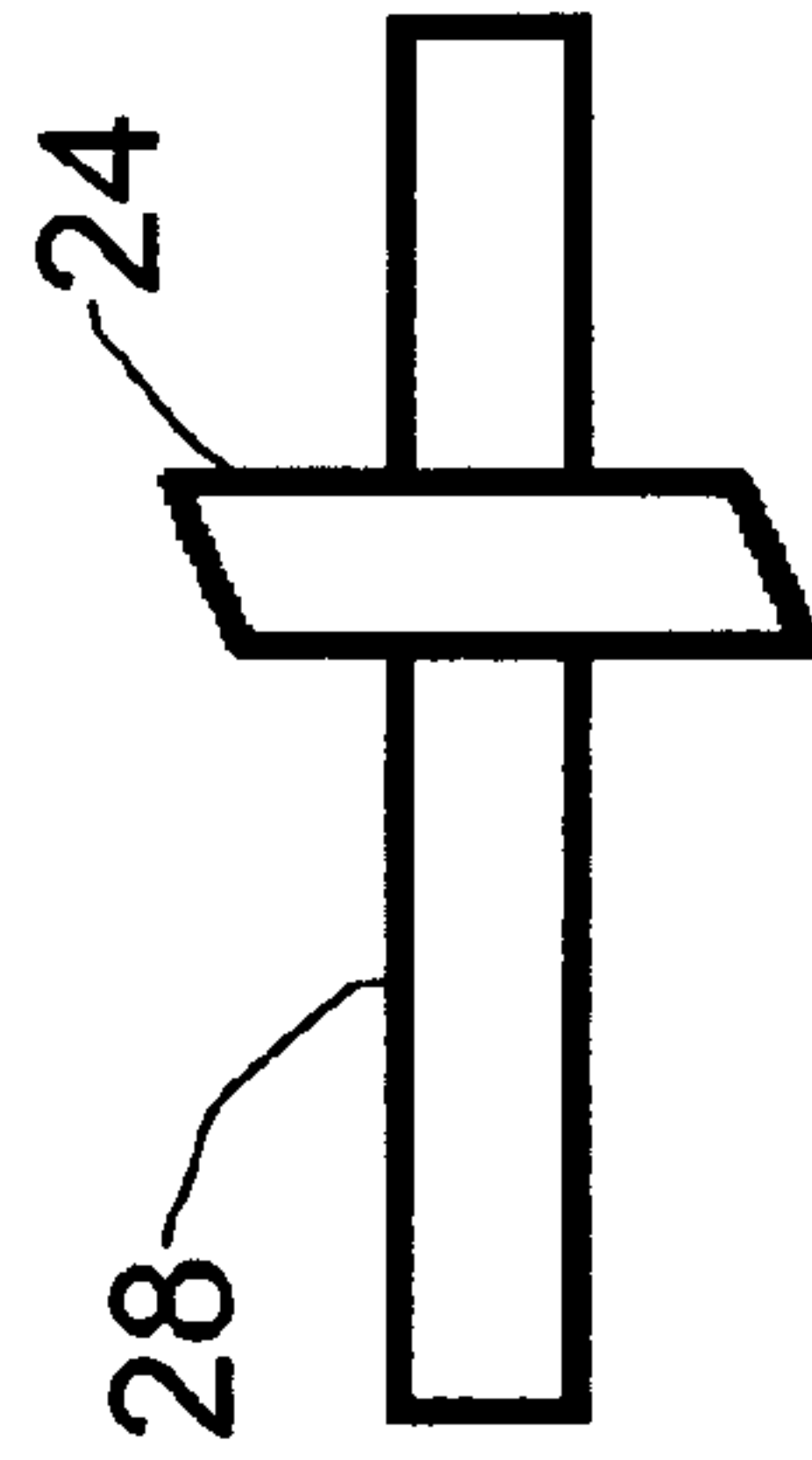


FIG. 6

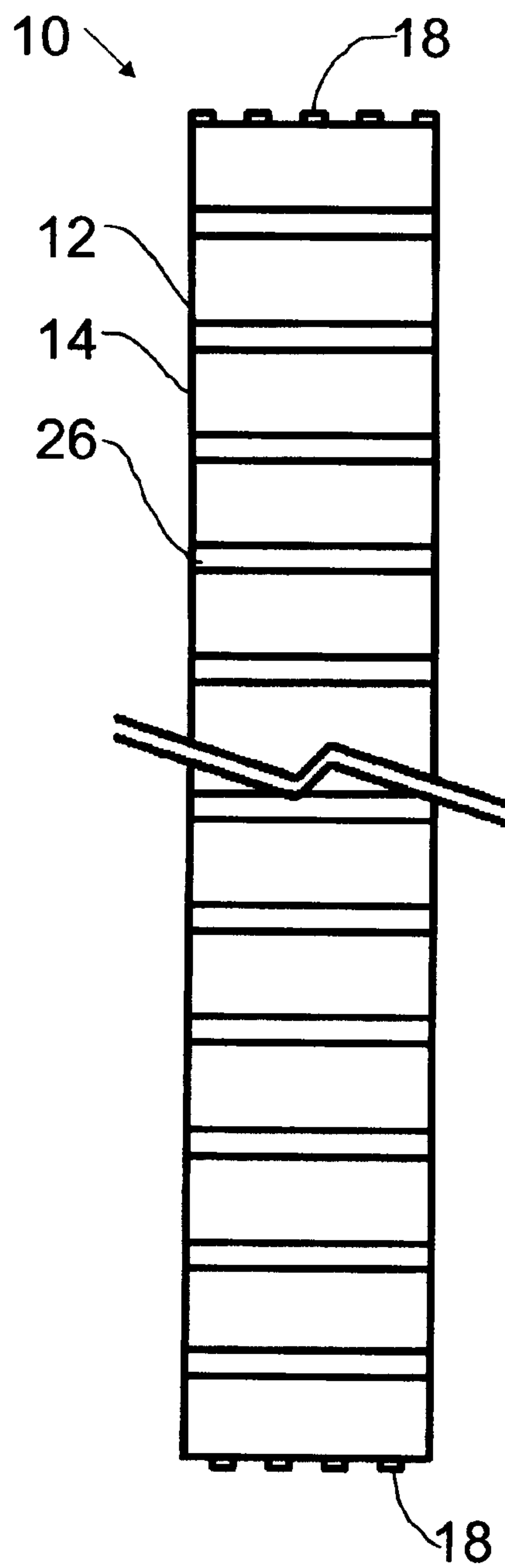


FIG. 7

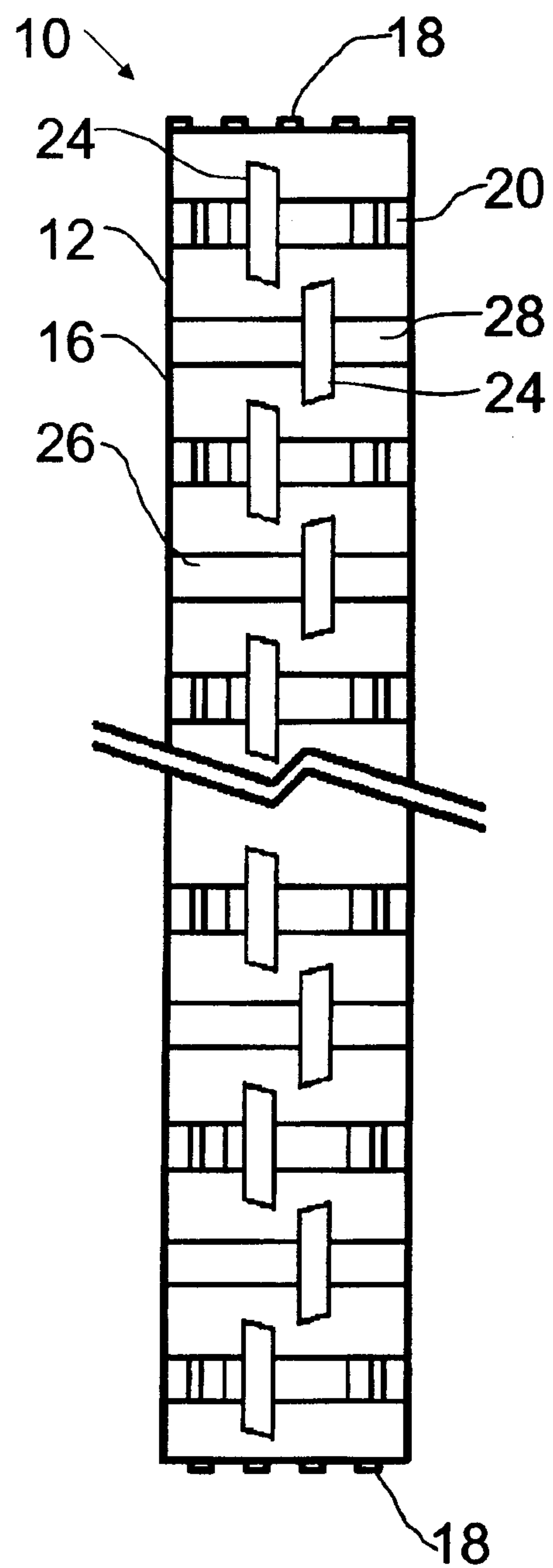


FIG. 8

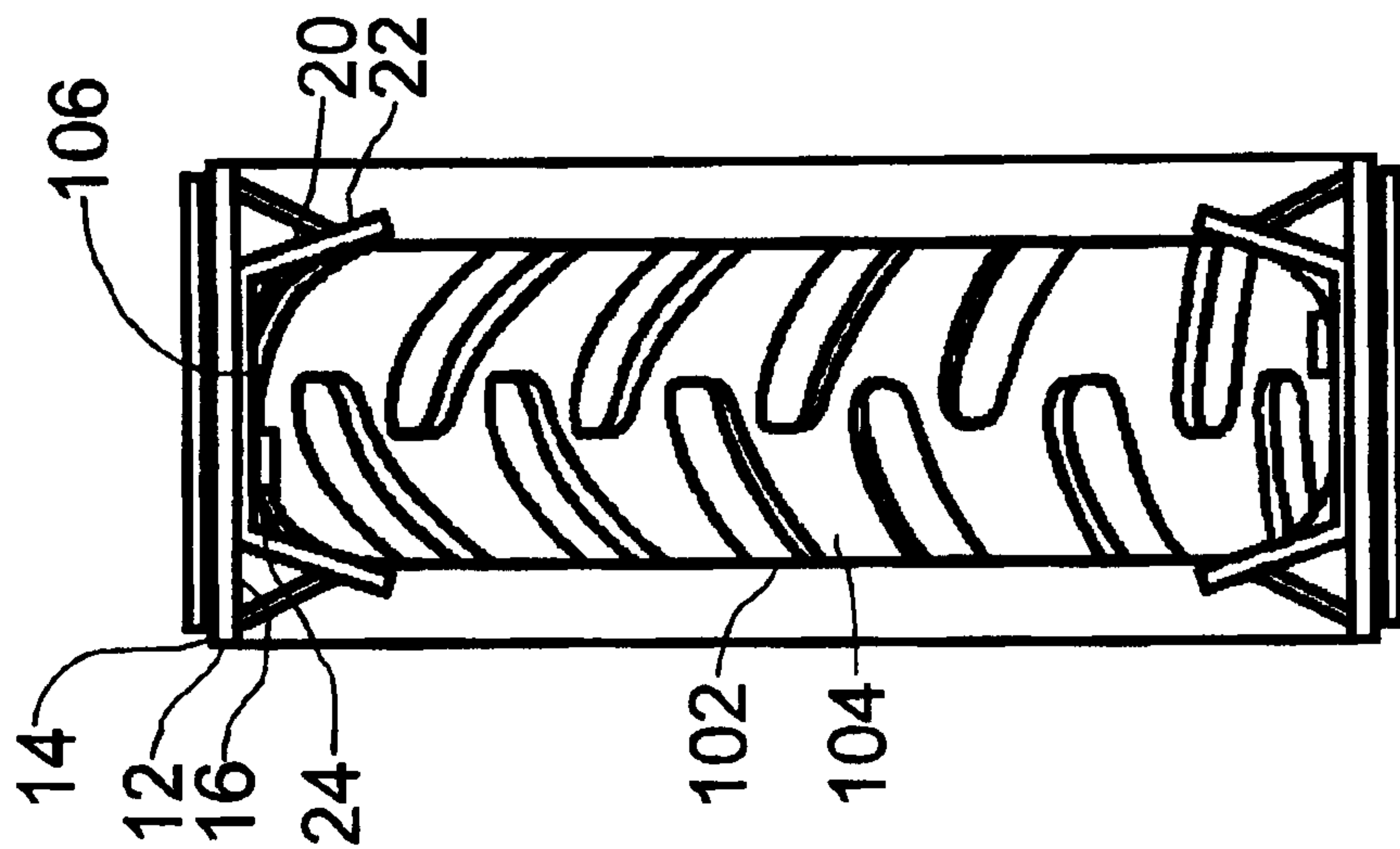


FIG. 10

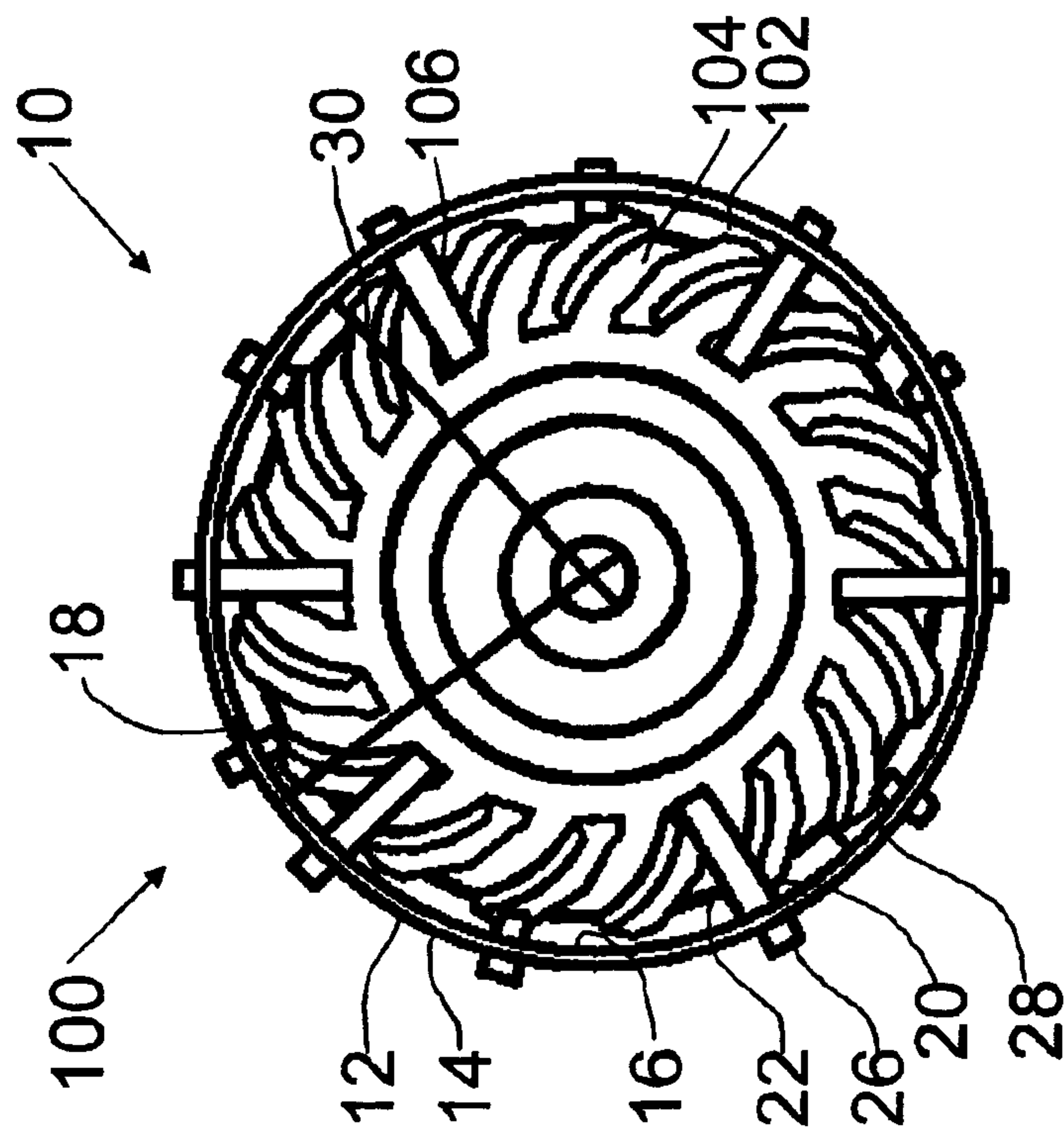


FIG. 9

