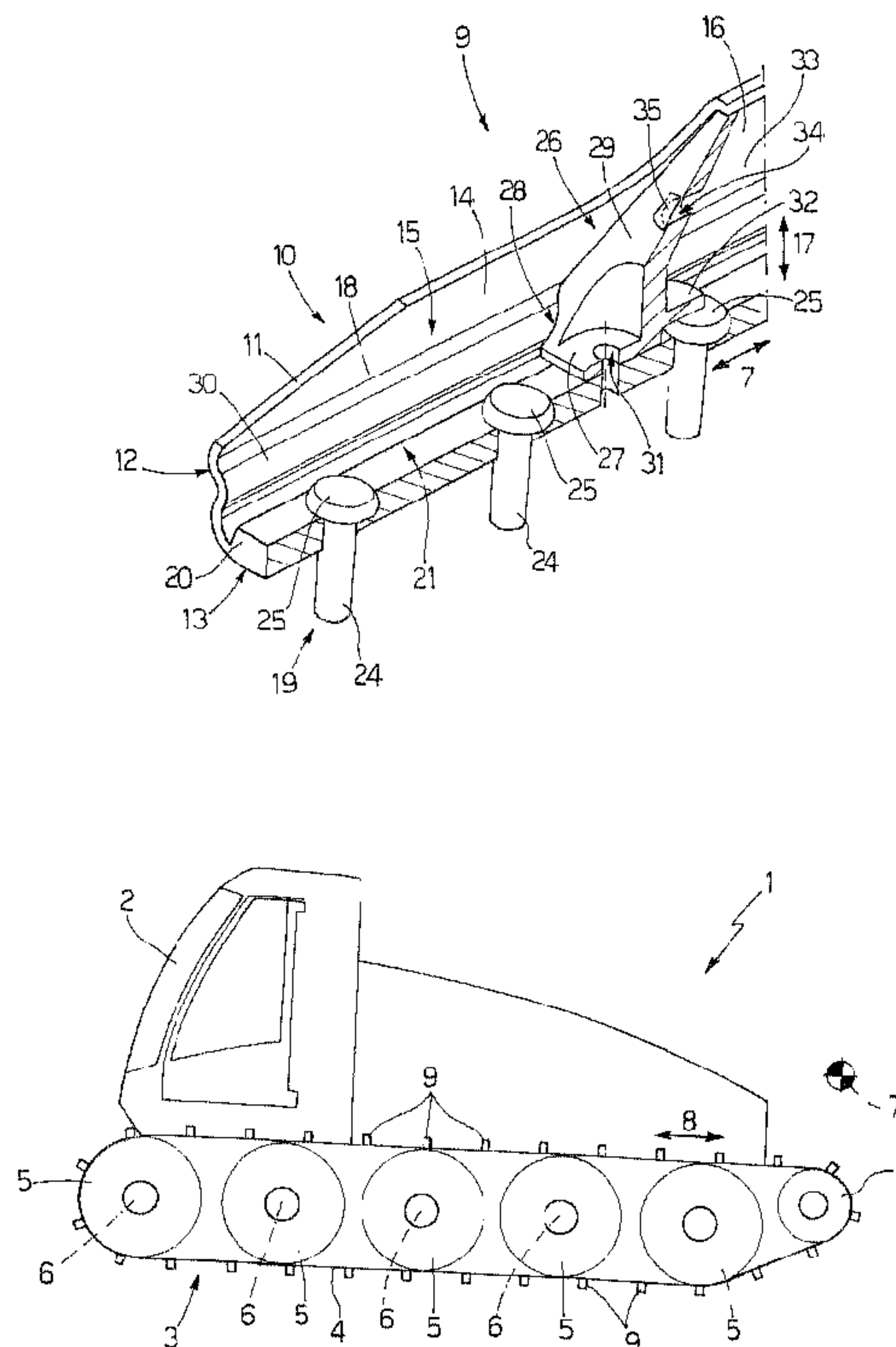




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(54) **Titre : CRAMPON POUR CHENILLE DE VEHICULE A CHENILLES, EN PARTICULIER POUR DAMEUSES**
(54) **Title: CRAWLER VEHICLE TRACK GROUSER, PARTICULARLY FOR SNOW GROOMERS**



(57) **Abrégé/Abstract:**

A grouser (9) for crawler vehicle tracks (3) is defined by a fastening member (10) which extends in a first direction (7) substantially crosswise to a second travelling direction (8) of a track (3), is fixed to at least one supporting belt (4) of the track (3), and has an inner cavity (14) open laterally in the first direction (7); by a toothed gripping member (23) projecting from the fastening member (10), and by which the grouser (9) grips the terrain; and by two plugs (26) for closing the inner cavity (14) laterally in the first direction (7).



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(54) Title: CRAWLER VEHICLE TRACK GROUSER, PARTICULARLY FOR SNOW GROOMERS

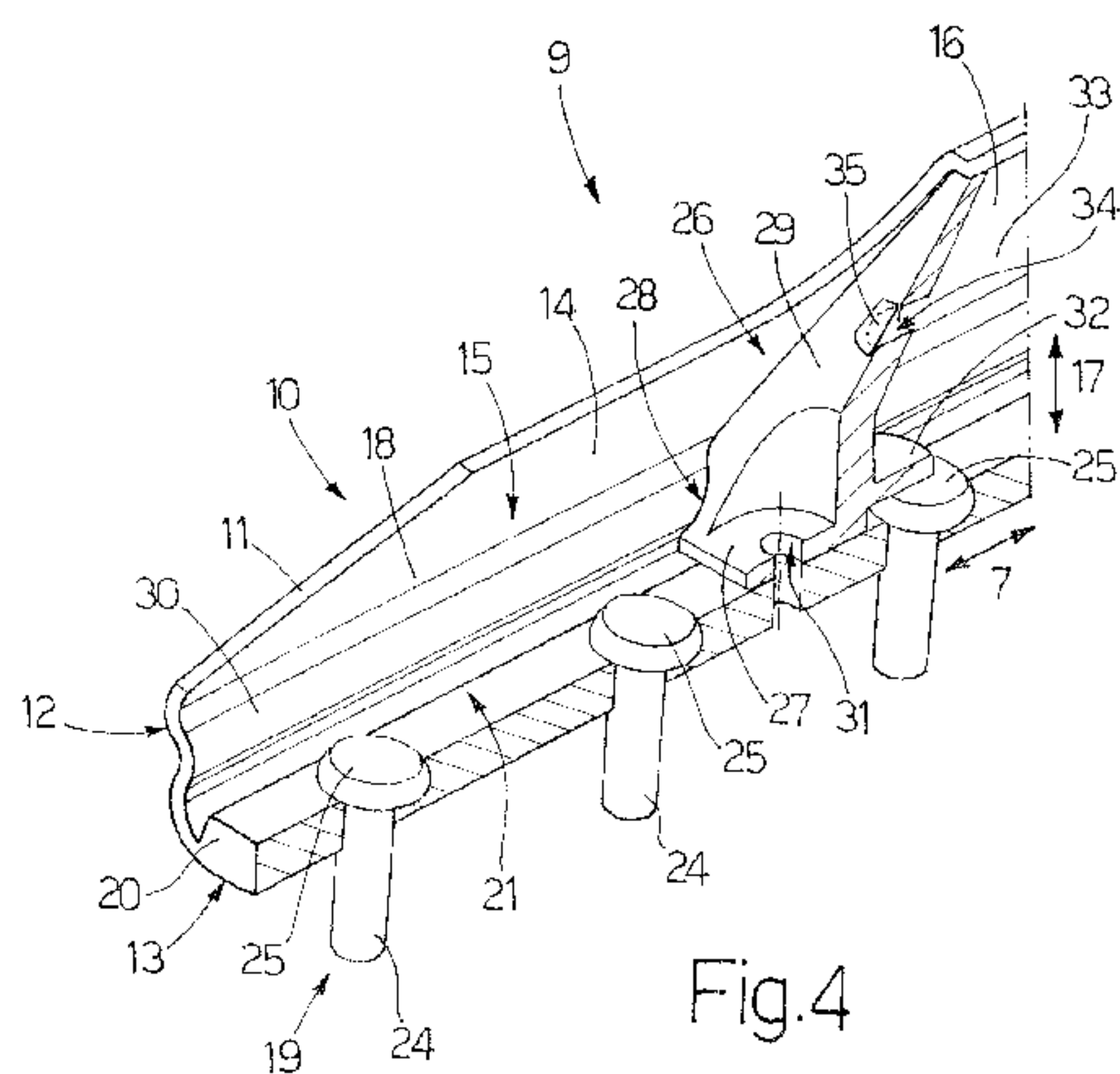


Fig.4

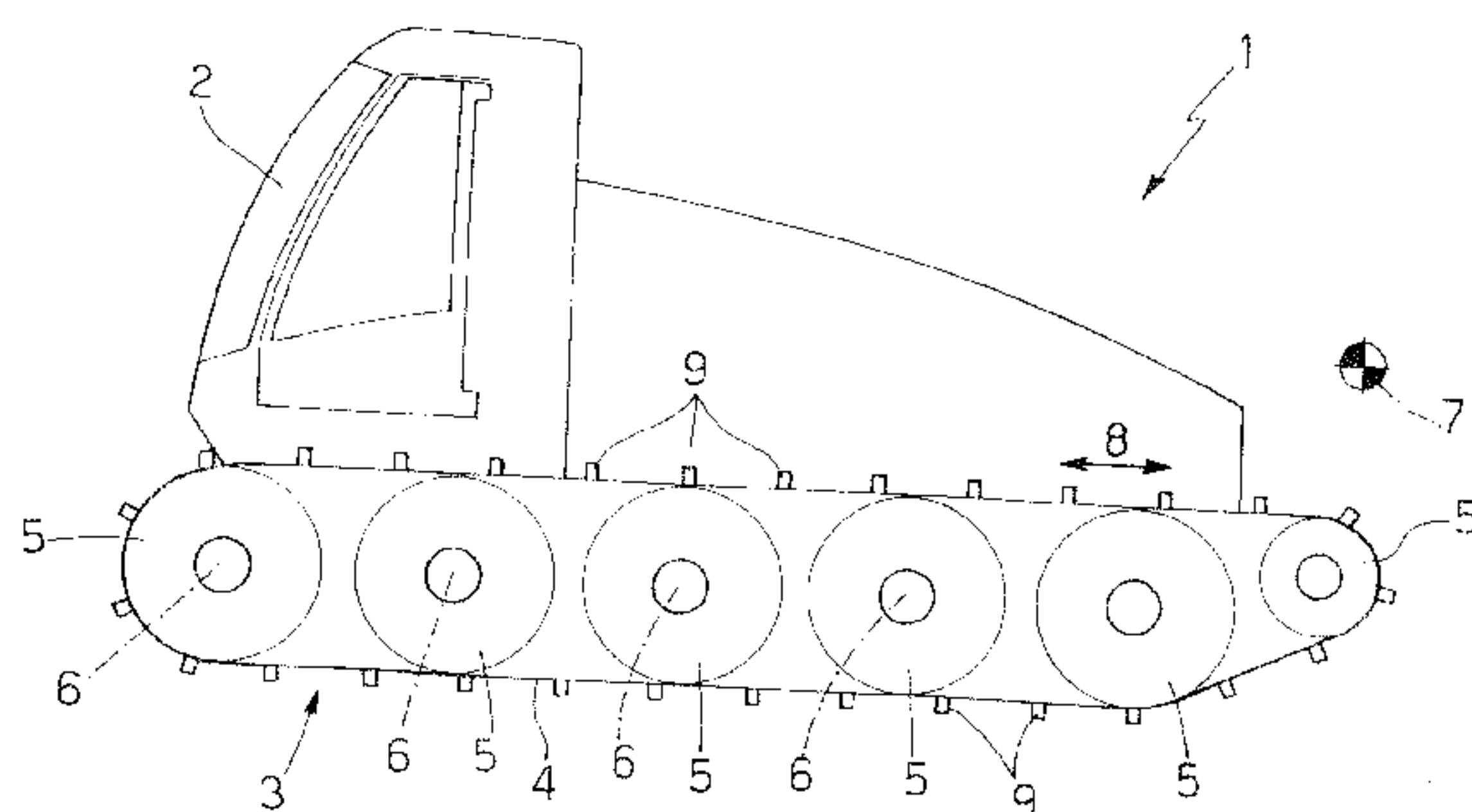


Fig.1

(57) Abstract: A grouser (9) for crawler vehicle tracks (3) is defined by a fastening member (10) which extends in a first direction (7) substantially crosswise to a second travelling direction (8) of a track (3), is fixed to at least one supporting belt (4) of the track (3), and has an inner cavity (14) open laterally in the first direction (7); by a toothed gripping member (23) projecting from the fastening member (10), and by which the grouser (9) grips the terrain; and by two plugs (26) for closing the inner cavity (14) laterally in the first direction (7).

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CRAWLER VEHICLE TRACK GROUSER, PARTICULARLY FOR SNOW
GROOMERS

TECHNICAL FIELD

5 The present invention relates to a crawler vehicle
track grouser, particularly for snow groomers.

BACKGROUND ART

 Snow groomers are known to comprise a track in turn
comprising a number of grousers extending in a first
10 direction substantially crosswise to a second travelling
direction of the track, and fixed to a number of
parallel flexible supporting belts looped about a number
of pulleys.

 Each grouser comprises a fastening member extending
15 in the first direction, fixed to at least one supporting
belt, and having an inner cavity open laterally in the
first direction; and a toothed gripping member extending
along at least part of, and projecting from, the
fastening member, and by which the grouser grips the
20 terrain.

 Known tracks of the above type have various
drawbacks, mainly due to the inner cavities of the
fastening members filling with snow and/or ice on the
ski runs, thus increasing the weight of the grousers and
25 impairing operation of the tracks.

 Moreover, when the fastening members are made of
steel, known tracks of the above type have the further
drawback of the snow and/or ice inside the inner

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cavities of the fastening members corroding the grousers, and so fouling the ski runs with rust-coloured liquid.

DISCLOSURE OF INVENTION

5 It is an object of the present invention to provide a crawler vehicle track grouser, particularly for snow groomers, designed to eliminate the above drawbacks, and which is cheap and easy to produce.

According to the present invention, there is
10 provided a crawler vehicle track grouser, particularly for snow groomers.

BRIEF DESCRIPTION OF THE DRAWINGS

A non-limiting embodiment of the present invention
15 will be described by way of example with reference to the accompanying drawings, in which:

Figure 1 shows a schematic side view of a snow groomer featuring a preferred embodiment of the track grouser according to the present invention;

20 Figure 2 shows a schematic cross section of a detail in Figure 1;

Figure 3 shows a first schematic view in perspective of a detail in Figure 2;

Figure 4 shows a partly sectioned second schematic
25 view in perspective of the Figure 3 detail;

Figure 5 shows a view in perspective of a detail in Figure 3.

BEST MODE FOR CARRYING OUT THE INVENTION

Number 1 in Figure 1 indicates as a whole a snow groomer comprising a cab 2, and a track 3 by which to propel groomer 1.

Track 3 comprises a number of flexible supporting
5 belts 4 (only one shown in Figure 1), which are normally made of rubber, extend in respective substantially parallel vertical planes, and are looped about a number of pulleys 5 rotated, by a known drive device not shown, about respective axes 6 parallel to one another and to a
10 direction 7 substantially crosswise to the travelling direction 8 of track 3.

Track 3 also comprises a number of substantially parallel grouzers 9, which extend in direction 7, and are equally spaced along and fastened to belts 4.

15 As shown in Figures 2, 3 and 4, each grouser 9 comprises an elongated fastening member 10 defined by a contoured bar 11, which extends in direction 7, is normally made of steel or aluminium, is bounded by an outer surface 12 comprising a substantially flat portion
20 13 resting on a number of belts 4, depending on the length of bar 11, and has an inner cavity 14 open laterally in direction 7 and bounded by a contoured inner surface 15.

Cavity 14 comprises a central portion 16 closed in
25 a direction 17 substantially perpendicular to portion 13 and to directions 7 and 8; and two lateral portions 18 located on opposite sides of central portion 16 in direction 7 and open in direction 17.

Bar 11 is fixed to belts 4 by a fastening device 19 comprising an elongated tooth 20, which extends inside cavity 14, at portion 13 and in direction 7, projects in direction 17 from surface 15, is formed in one piece
5 with bar 11 in the example shown, is bounded by a substantially flat free surface 21 parallel to and opposite portion 13, and has a number of knurled holes 22 formed through tooth 20 in direction 17.

Device 19 also comprises a plate 23 resting on
10 belts 4, on the opposite side to bar 11, and which is secured to belts 4 and bar 11 by a number of bolts 24 locked axially inside knurled holes 22 in direction 17 and having respective heads 25 substantially contacting surface 21.

15 With reference to Figures 4 and 5, cavity 14 is closed laterally in direction 7 by two plugs 26, each of which comprises a substantially parallelepiped-shaped portion 27 with two opposite grooves 28 parallel to direction 7; and a substantially triangular sloping
20 portion 29 projecting from portion 27 at an angle of other than 90°.

The two grooves 28 engage and slide along respective runners 30 formed parallel to direction 7 on surface 15, to slide relative plug 26 into a closed
25 position (Figure 4) in which plug 26 is positioned between central portion 16 and a relative lateral portion 18 to close cavity 14.

Each plug 26 is locked in the closed position by a

screw (not shown) engaging a hole 31 formed through portion 27 and parallel to direction 17, and has a flat flange 32 which rests on head 25 of a bolt 24.

Central portion 16 and the two plugs 26 define a
5 substantially closed chamber 33 communicating with the outside via two relief conduits 34, each of which is formed through portion 29 of a relative plug 26 in direction 7, and communicates externally with the interposition of a flap 35 formed on portion 29 and
10 movable into an open position opening conduit 34 by the air inside chamber 33.

In a variation not shown, the open lateral portions 18 are eliminated, cavity 14 is defined solely by closed central portion 16, and plugs 26 are fitted to the free
15 ends of central portion 16.

Bar 11 also has a cavity 36, which is located opposite the portion fastening bar 11 to belts 4, extends along central portion 16 in direction 7, opens outwards at surface 12, and is bounded laterally in
20 direction 8 by two flat ribs 37 substantially parallel to each other and to direction 7.

Cavity 36 houses an elongated gripping member 38 defined in the example shown by a substantially flat plate 39, which is connected in known manner to bar 11,
25 projects outwards of cavity 36, and has a toothed edge 40 for improving grip of grouser 9 to the terrain.

In variations not shown, cavity 36 is replaced by a seat formed directly on surface 12, or fastening member

10 and gripping member 38 are formed in one piece.

Plugs 26 prevent cavity 14 from filling with snow and/or ice on the ski runs, and so prevent increasing the weight of grouser 9, as well as corrosion of grouser
5 9 resulting in fouling of the ski runs with rust-coloured liquid.

CLAIMS

1) A grouser for crawler vehicle, in particular snow groomer, tracks, the grouser comprising a fastening member which is fixed to at least one supporting belt of a track, extends in a first direction substantially crosswise to a second travelling direction of the track, and has an inner cavity open laterally in said first direction; and a toothed gripping member which extends along at least part of the fastening member and projects from the fastening member, and by which the grouser grips the terrain; wherein the grouser comprises two plugs for closing the inner cavity laterally in said first direction, wherein the plugs and the inner cavity define a substantially closed chamber; at least one plug having a relief conduit for exhausting air from the chamber, and a cover movable by the air inside the chamber into an open position opening the relief conduit.

2) the grouser as claimed in Claim 1, wherein the inner cavity has at least one runner extending in said first direction; each plug comprising engaging means for engaging the runner in sliding manner.

3) The grouser as claimed in Claim 1 or 2, wherein each plug comprises a substantially parallelepiped-shaped first portion, and a substantially triangular second portion projecting from the first portion.

4) The grouser as claimed in any of claims 1 to 3 of the foregoing Claims, and also comprising locking means for locking each plug along the inner cavity in said first direction.

5) The grouser as claimed in any one of claims 1 to 4, wherein the inner cavity comprises a central portion closed in a third direction substantially perpendicular to said first and said second direction; and two lateral portions open in the third direction; each plug being located between the central portion and a relative said lateral portion.

6) The grouser as claimed in any one of Claims 1 to 4, wherein the inner cavity has two lateral ends open in said first direction; each plug being located at a relative said lateral end.

7) The grouser as claimed in any one of claims 1 to 6, wherein the fastening member has a number of holes, each for receiving and housing a respective bolt for fastening the fastening member to said supporting belt; each plug comprising a flange which projects from the plug in said first direction to rest on a head of a respective bolt.

8) The track for crawler vehicles, in particular snow groomers, the track comprising at least one supporting belt looped about a number of pulleys; and at least one grouser as claimed in any one of the claims from 1 to 7.

9) A grouser for crawler vehicle, in particular snow groomer, tracks, the grouser comprising a fastening member which is fixed to at least one supporting belt of a track, extends in a first direction substantially crosswise to a second travelling direction of the track, and has an inner cavity open laterally in said first direction; and a toothed gripping member which extends along at least part of the fastening member and projects from the fastening member, and by which the grouser grips the terrain; wherein the grouser comprises two plugs for closing the inner cavity laterally in said first direction, wherein the fastening member has a number of holes, each for receiving and housing a respective bolt for fastening the fastening member to said supporting belt; each plug comprising a flange which projects from the plug in said first direction to rest on a head of a respective bolt.

10) A grouser for crawler vehicle, in particular snow groomer, tracks, the grouser comprising a fastening member which is fixed to at least one supporting belt of a track, extends in a first direction substantially crosswise to a second travelling direction of the track, and has an inner cavity open laterally in said first direction; and a toothed gripping member which extends along at least part of the fastening member and projects from the fastening member, and by which the grouser grips the terrain; wherein the grouser comprises two plugs for closing the inner cavity laterally in said first direction, wherein the inner cavity comprises a central portion closed in a third direction substantially perpendicular to said first and said second direction; and two lateral portions open in the third direction; each plug being located between the central portion and a relative said lateral portion.

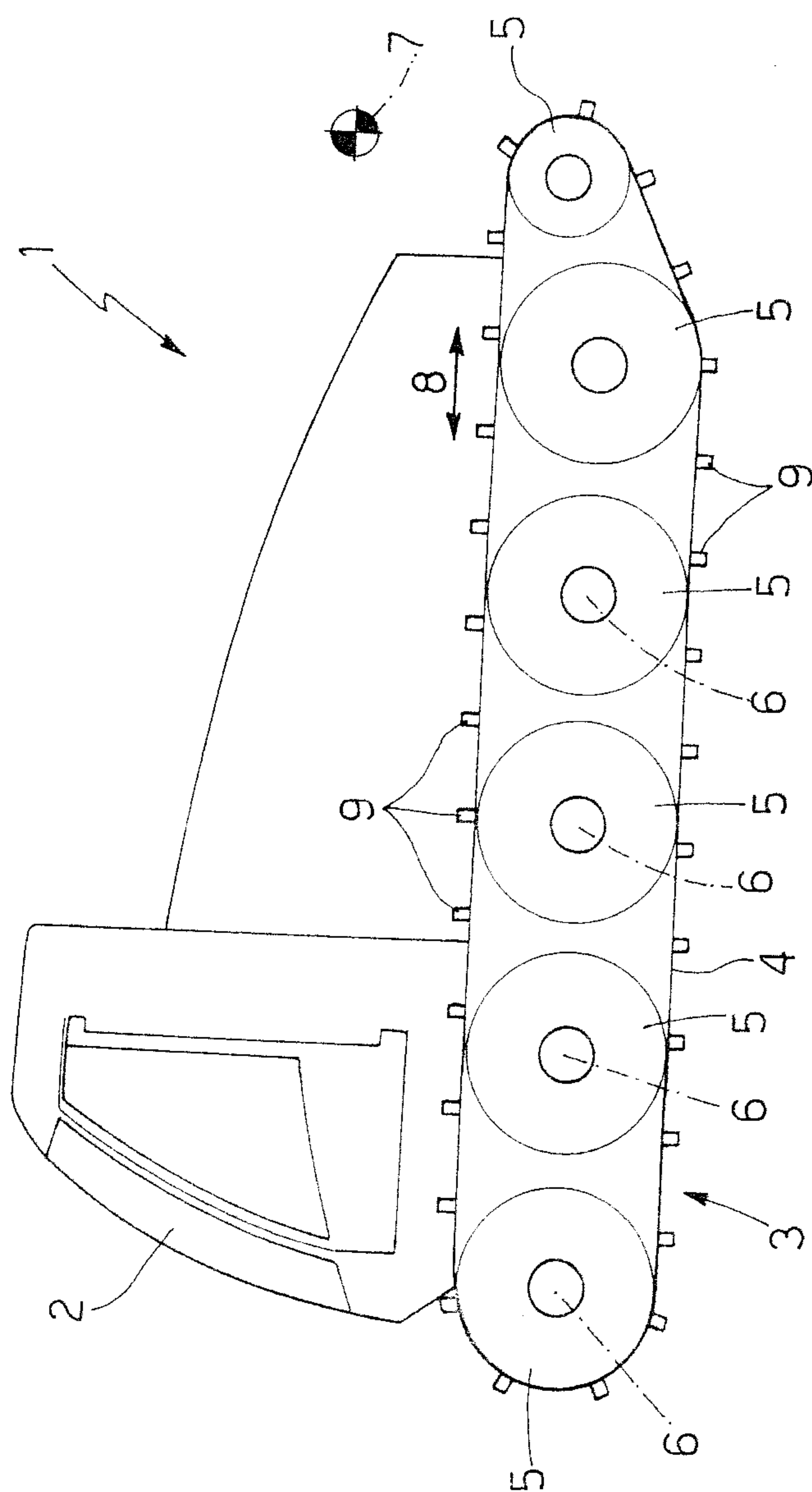


Fig.1

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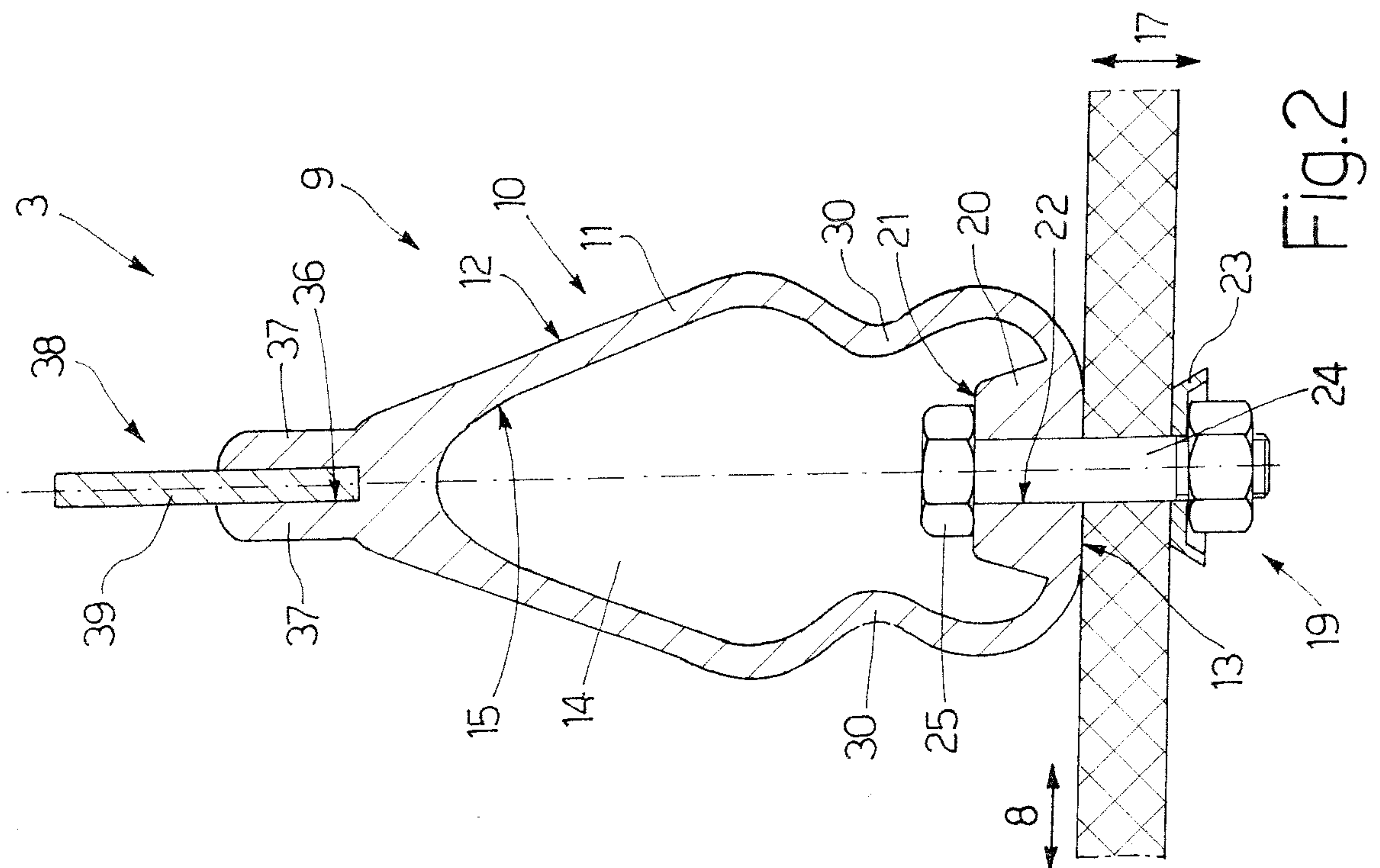


Fig. 2

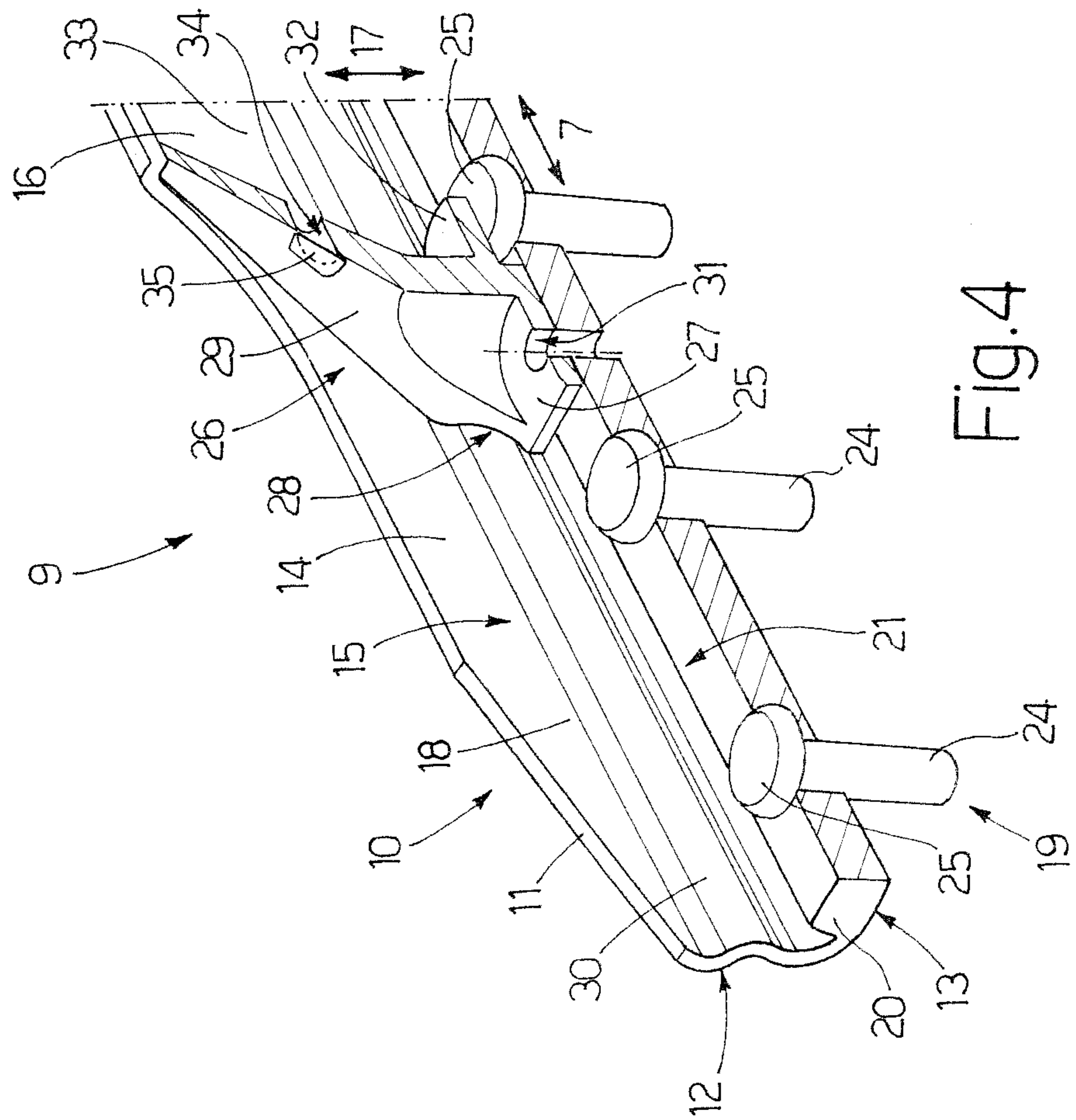


Fig. 4

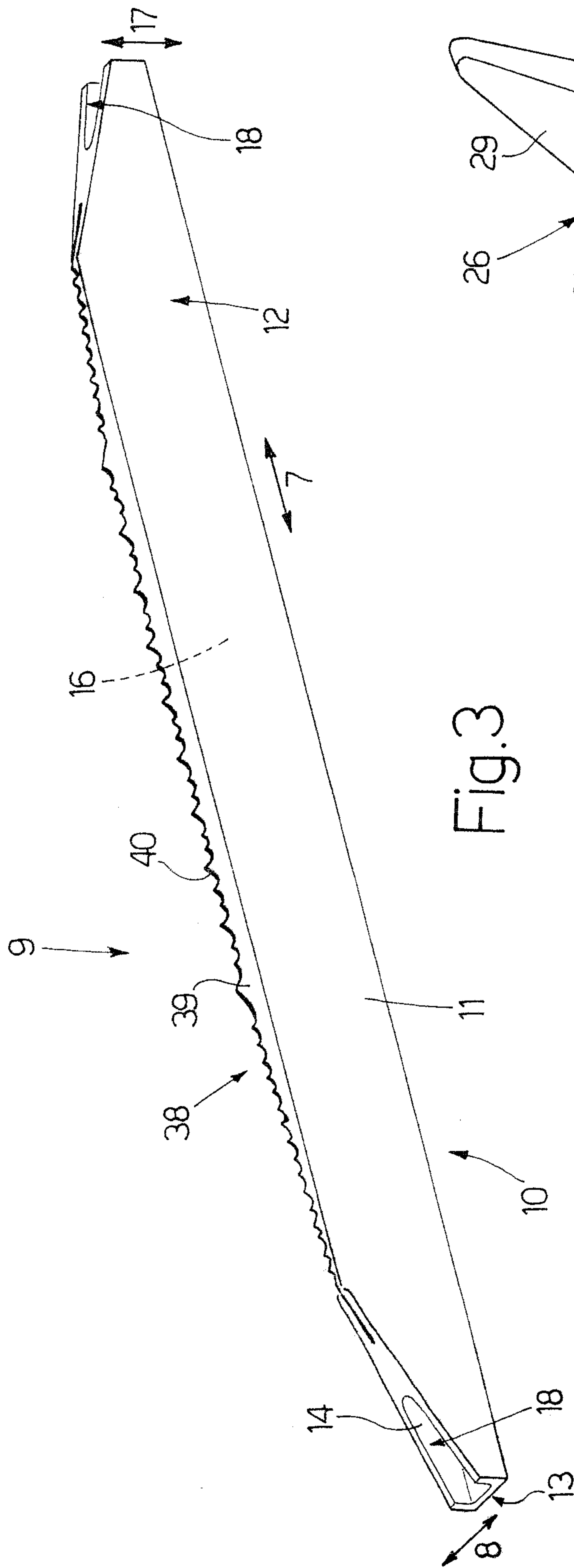


Fig. 3

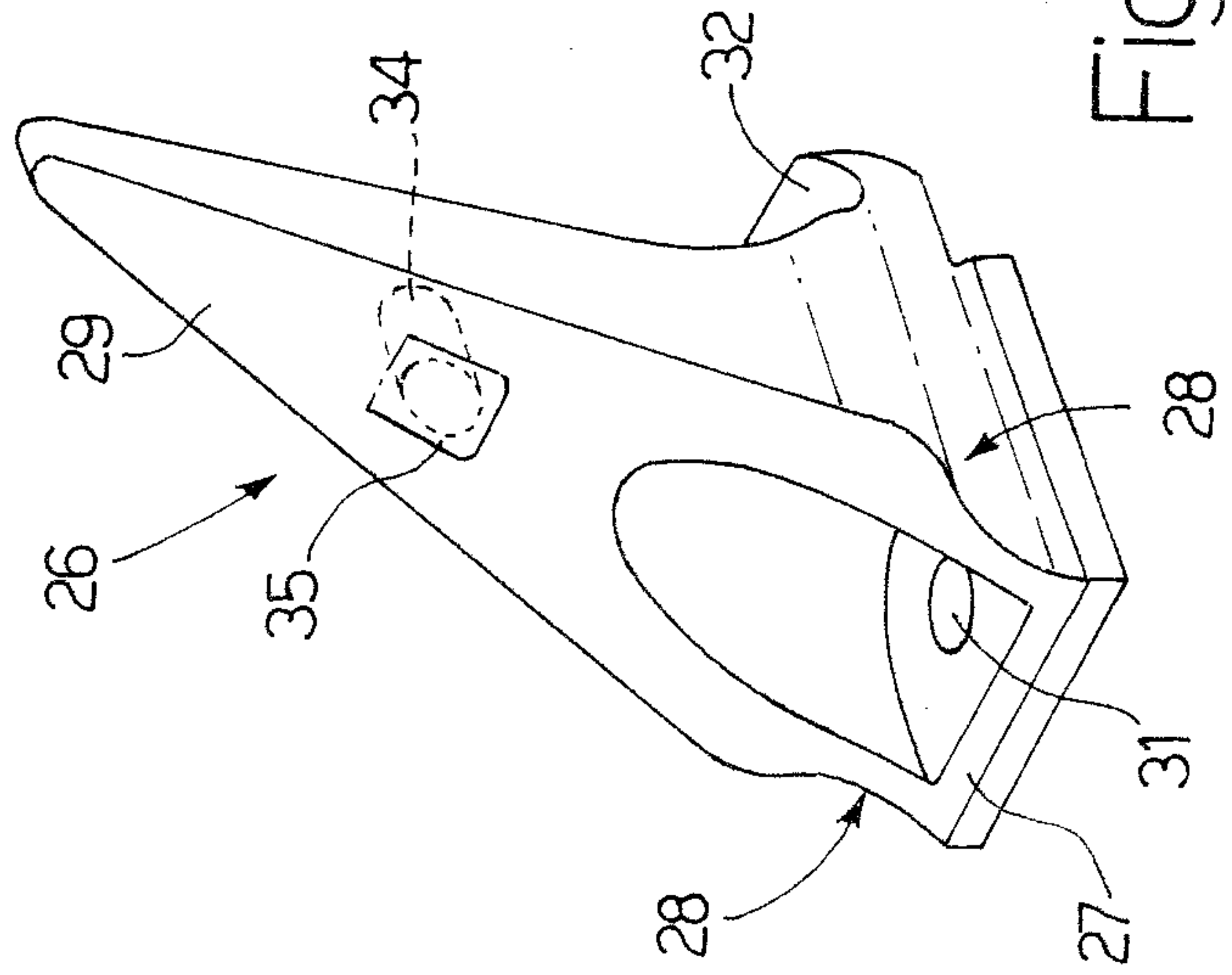


Fig. 5

