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## (54) Snowboard binding with improved deck connection

(57) A snowboard binding (1), comprising a base plate (2) which has a cavity (4) for accommodating a disk (5) adapted to allow the connection between the base plate (2) and the snowboard deck (3), the disk (5) having an elongated shape with the central regions provided with recesses (6, 7), the cavity (4) of the base plate (2) having complementary protrusions (17, 18) adapted to mate with the recesses of the disk (5).

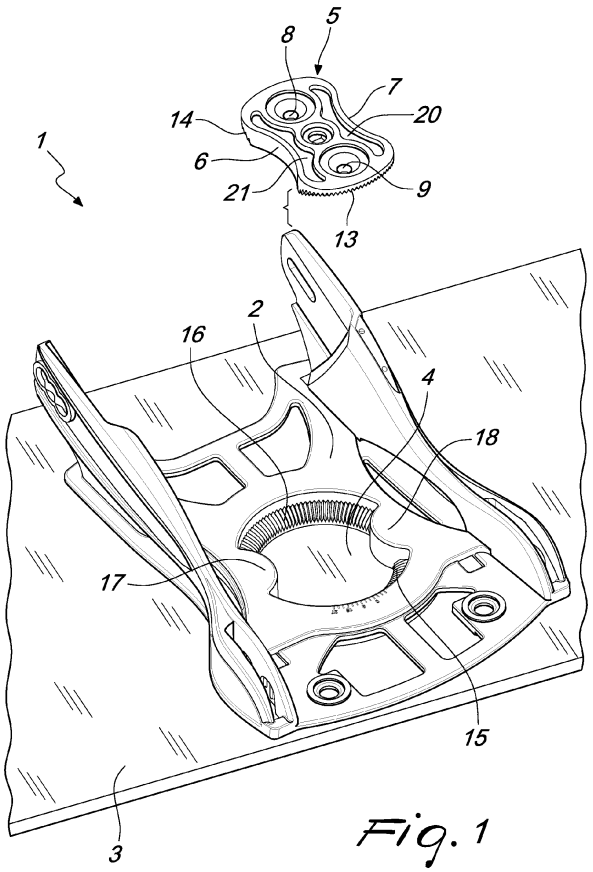


Fig. 1

EP 2 716 335 A1

## Description

**[0001]** The present invention relates to a snowboard binding with improved deck connection. More particularly, the invention relates to a snowboard binding that can be connected to the deck while maintaining its natural flexing.

**[0002]** As is known, snowboard decks are used with what is called a soft binding and are constituted by a base that is fixed to the deck and by a spoiler that is connected to the base. The foot of the user is accommodated within the base and is fixed by means of straps.

**[0003]** The base of the binding is fixed to the deck by using a disk that is accommodated in a circular opening formed within the base of the binding, the disk being fixed to the deck by means of screws and at the same time locking the base of the binding to the deck.

**[0004]** The disk is normally provided with a set of teeth that allows positioning the base in different angular positions so as to be able to provide the user with the position that he desires.

**[0005]** The drawback observed with ordinary binding types is that most of them have an extensive contact surface between the binding and the snowboard deck; this is due mainly to the mounting system with circular disks, which uses four screws to fix the base of the binding to the deck.

**[0006]** This extensive contact surface of the base of the binding or base plate and the deck blocks the natural flexing of the deck, i.e., the flex of the deck.

**[0007]** Essentially, the larger the surface of the disk and of the base of the binding that rests on the deck, the larger the so called "dead" zone thereon, i.e., the region where flex is eliminated.

**[0008]** The aim of the present invention is to provide a snowboard binding that has such a deck fixing system as to make it possible to maintain natural flexing as much as possible.

**[0009]** Within this aim, an object of the present invention is to provide a snowboard binding that has the smallest possible contact surface with the deck.

**[0010]** Another object of the present invention is to provide a snowboard binding that has a deck fixing system which uses the smallest possible number of screws.

**[0011]** Another object of the present invention is to provide a snowboard binding that allows the user to adjust the angle of the binding, like bindings of the known type.

**[0012]** Another object of the present invention is to provide a snowboard binding that is highly reliable, relatively simple to provide and has competitive costs.

**[0013]** This aim, as well as these and other objects that will become more apparent hereinafter, are achieved by a snowboard binding, comprising a base plate which has a cavity for accommodating a disk adapted to allow the connection between said base plate and the snowboard deck, **characterized in that** said disk has an elongated shape with the central regions provided with recesses, said cavity of the base plate having complementary protrusions adapted to mate with said recesses of the disk.

**[0014]** Further characteristics and advantages of the invention will become more apparent from the description of a preferred but not exclusive embodiment of the snowboard binding according to the present invention, illustrated by way of non-limiting example in the accompanying drawings, wherein:

Figure 1 is an exploded perspective view of a snowboard binding according to the present invention;
Figure 2 is a perspective view of the snowboard binding according to the present invention;
Figure 3 is a top plan view of the snowboard binding according to the invention;
Figure 4 is a bottom plan view of the snowboard binding according to the invention;
Figure 5 is a perspective view of the disk for connection of the snowboard binding to the deck according to the invention;
Figure 6 is a top plan view of the disk of Figure 5;
Figure 7 is a lateral elevation view of the disk of Figures 5 and 6; and
Figure 8 is a bottom plan view of the disk of Figures 5, 6 and 7.

**[0015]** With reference to the figures, the snowboard binding according to the invention, generally designated by the reference numeral 1, comprises a base plate 2 that is adapted to be connected to a snowboard deck 3. Conveniently, the base plate has a central cavity 4 that is adapted to accommodate a disk that makes it possible to fix the binding to the deck by fixing said disk to the deck.

**[0016]** Conveniently, the disk, designated by the reference numeral 5, has a generally elongated shape, with recessed central regions 6 and 7, so as to form a flattened elongated portion.

**[0017]** The disk 5 has a pair of holes 8 and 9 adapted to allow the fixing, by means of respective screws 10 and 11, of the disk 5 within the cavity 4 to the deck 3.

**[0018]** Conveniently, the disk 5 is provided, at its front and rear ends, with a knurling or set of teeth 13 and 14 that is adapted to engage a corresponding set of teeth 15 and 16, respectively, formed at the cavity 4.

**[0019]** Conveniently, the cavity 4 is shaped complementary to the disk 5 and therefore, at the regions 6 and 7 of the disk, which are recessed, there are protruding regions 17 and 18 adapted to allow the disk 5 to be accommodated perfectly within the cavity 4.

**[0020]** The fixing of the disk to the base plate 2 and therefore to the deck 3 occurs by using only two screws 10 and 11 arranged substantially along a line that crosses transversely the base 2 of the binding and the deck 3.

**[0021]** The region for fixing the disk 5 to the deck 3 is therefore reduced to the minimum indispensable size by providing the recessed regions 6 and 7 and by limiting the set of teeth 13 and 14 at the front and rear ends of the elongated disk 5, i.e., at the regions where the the user normally performs the adjustment.

**[0022]** The protruding regions 17 and 18 of the base plate 2 act as stiffening for the base plate 2 of the regions that are not kept under pressure by the disk 5 and also act as rotation limiters for the disk 5.

**[0023]** Essentially, therefore, the disk cannot rotate beyond the region defined by the sets of teeth 15 and 16 formed on the base plate 2 of the snowboard binding, without limiting however the choice of the angular position of the base plate within the normal positions for use.

**[0024]** In practice it has been found that the snowboard binding according to the present invention achieves fully the intended aim and objects, since it makes it possible to maintain, despite being fixed to the deck, the natural flexing of said deck, since the binding fixing region is limited to the smallest possible size, and the connection of the binding to the deck occurs by using substantially two screws arranged substantially in axial alignment with the transverse axis of the deck.

**[0025]** The so-called "dead zone" that is thus normally created as a consequence of the connection of the snowboard binding to the deck itself is absolutely limited to the minimum possible size with respect to what instead occurs in the connection of snowboard bindings of the known type to snowboard decks.

**[0026]** The invention thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the accompanying claims; all the details may furthermore be replaced with other technically equivalent elements.

**[0027]** In practice, the materials used, as well as the contingent shapes and dimensions, may be any according to the requirements and the state of the art.

**[0028]** The disclosures in Italian Patent Application No. MI2012A001680 from which this application claims priority are incorporated herein by reference.

**[0029]** Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

## Claims

1. A snowboard binding (1), comprising a base plate (2) which has a cavity (4) for accommodating a disk (5) adapted to allow the connection between said base plate (2) and the snowboard deck (3), **characterized in that** said disk (5) has an elongated shape with the central regions provided with recesses (6, 7), said cavity (4) of the base plate (2) having complementary protrusions (17, 18) adapted to mate with said recesses (6, 7) of the disk (5).

2. The snowboard binding according to claim 1, **characterized in that** said disk (5) has a pair of holes (8, 9) adapted to allow the fixing of the disk, within the cavity (4) of the base plate (2), to the snowboard deck (3) by means of a pair of screws (10, 11).

3. The snowboard binding according to claim 1, **characterized in that** said disk (5) has, at its front and rear ends, toothed regions (13, 14) adapted to mesh with corresponding toothed regions formed at the front and rear regions (15, 16) of the cavity (4) of said base plate (2), thus allowing a broad choice of angular placements of the base plate of the binding on the deck.

4. The snowboard binding according to one or more of the preceding claims, **characterized in that** said disk (5) has lightening regions that are formed by cavities (20, 21) arranged substantially along the original extension of the disk (5).

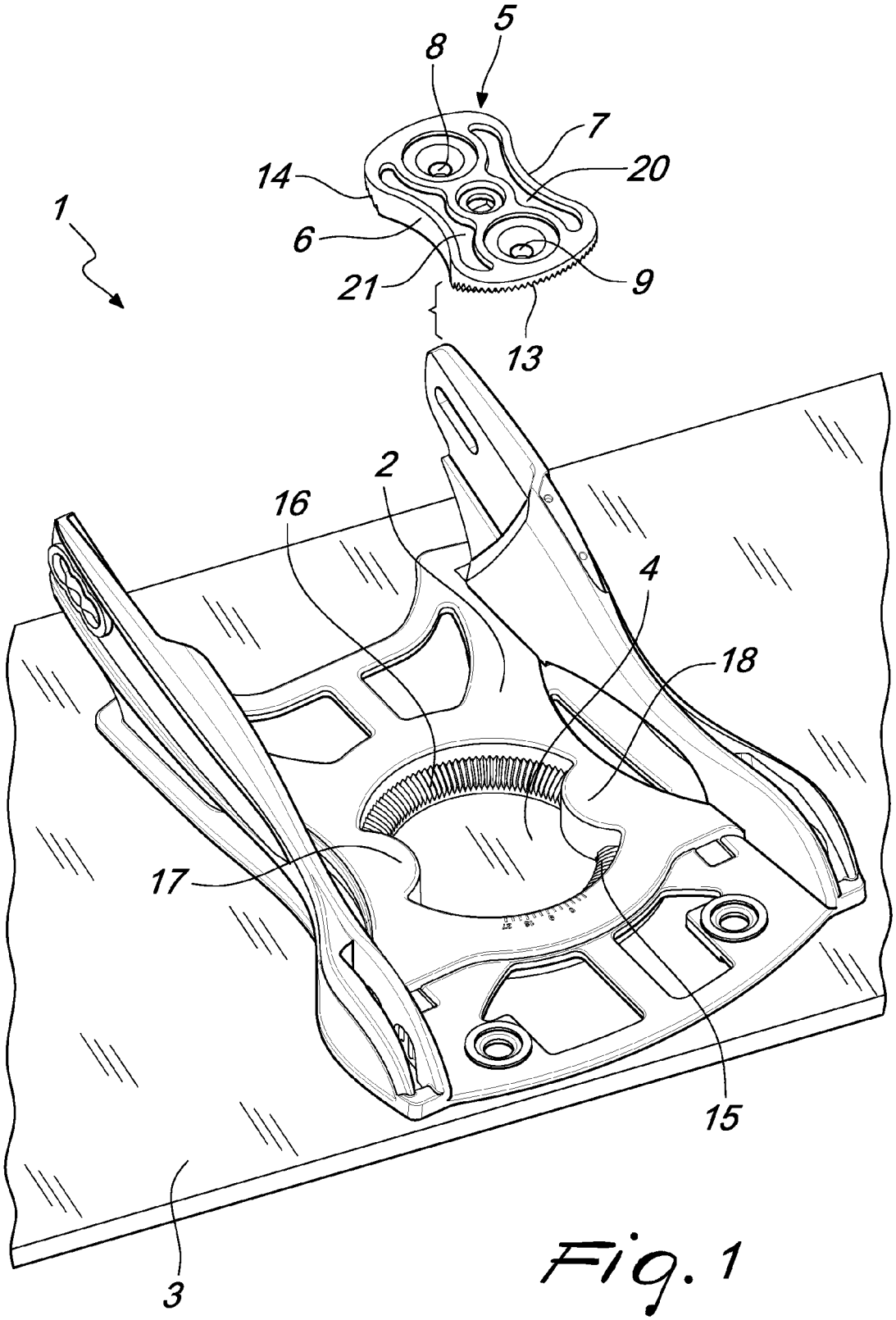


Fig. 1

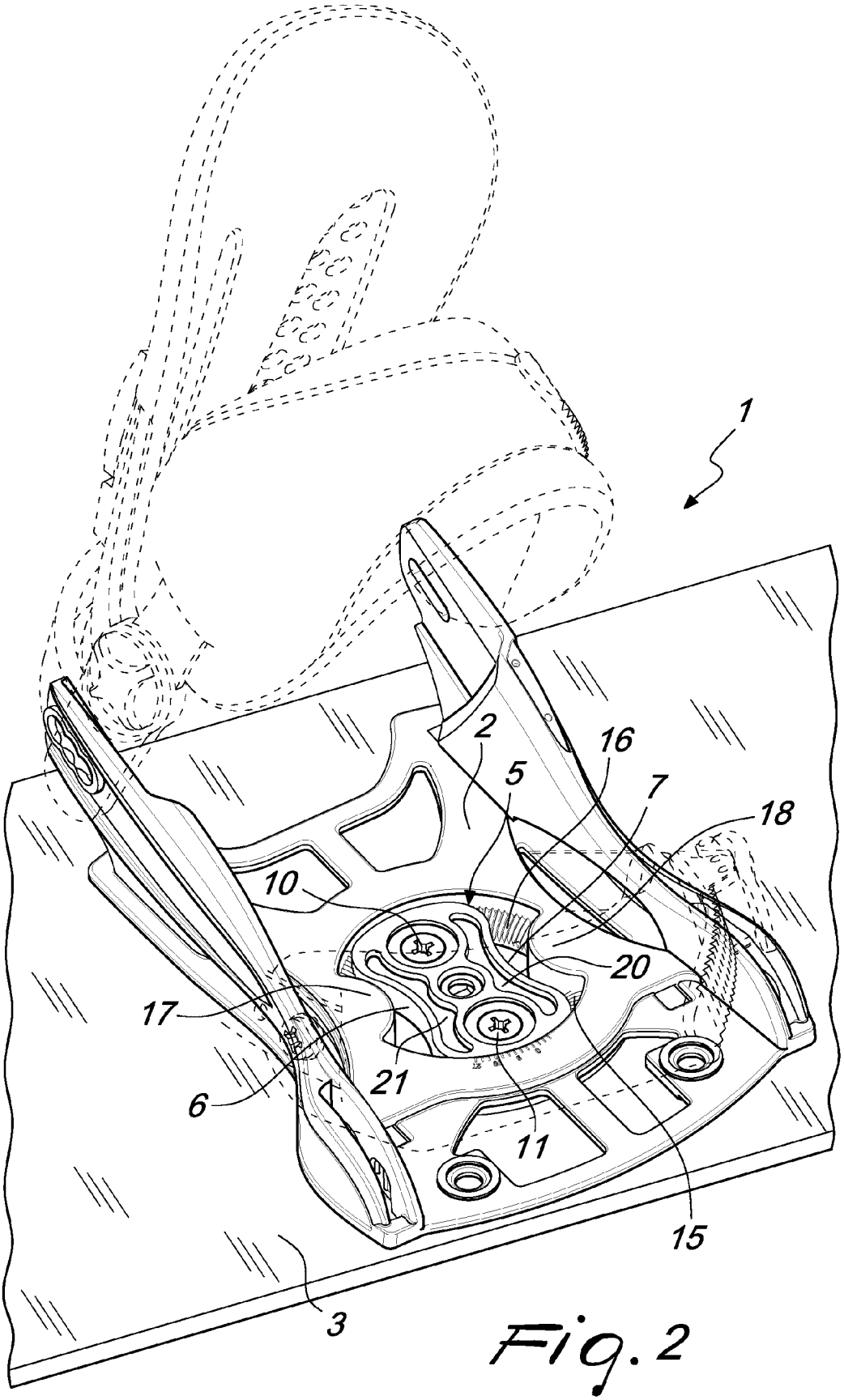


Fig. 2

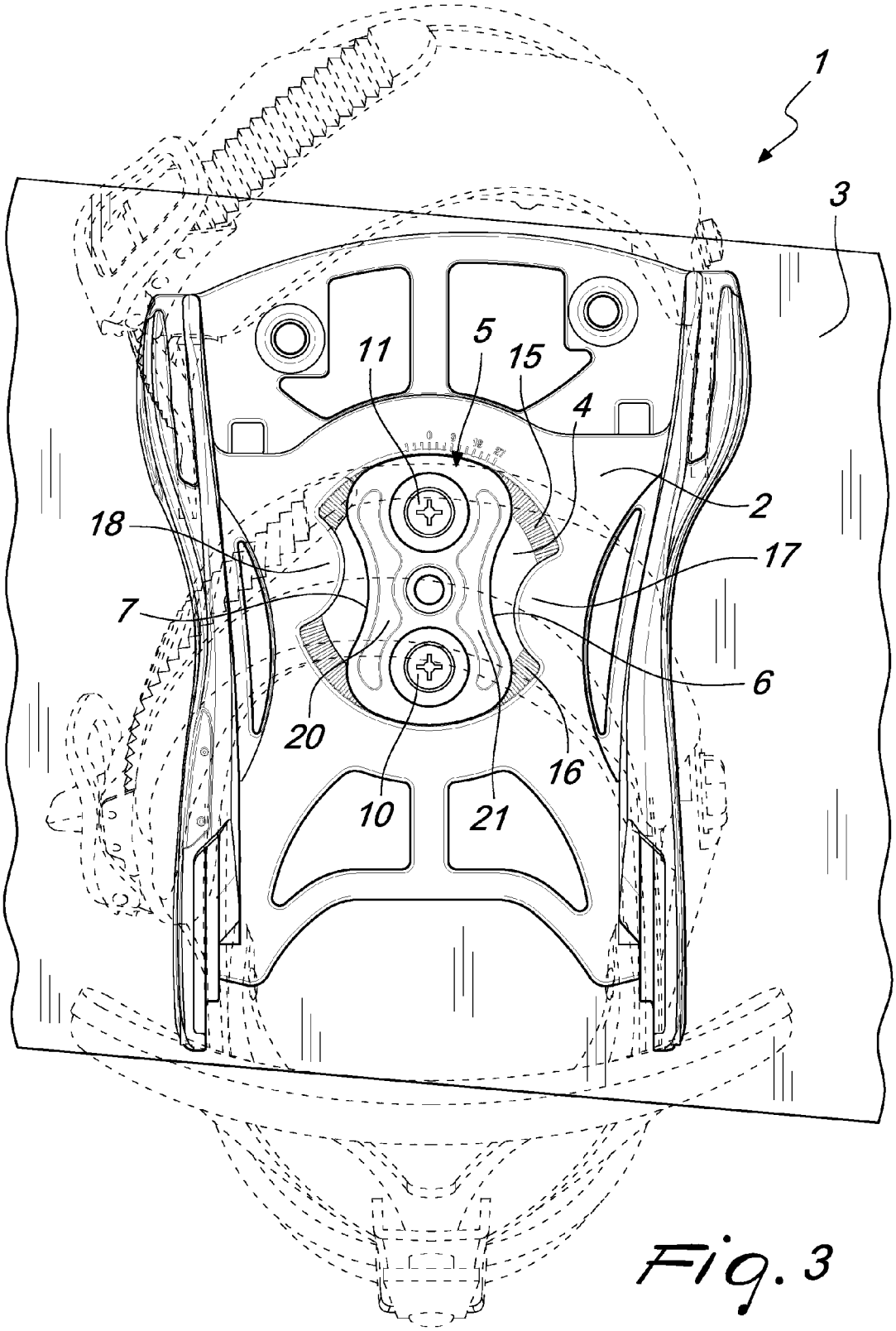


Fig. 3

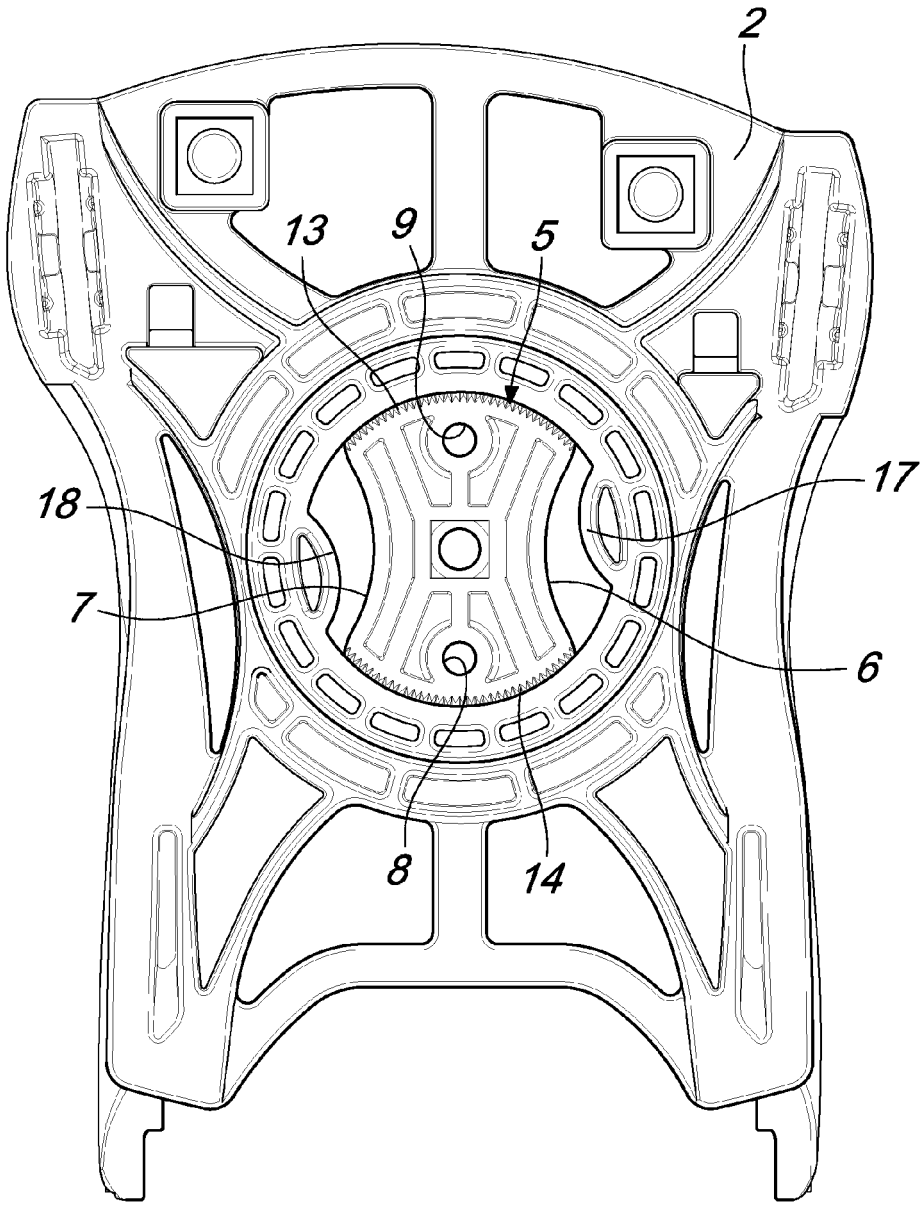


Fig. 4

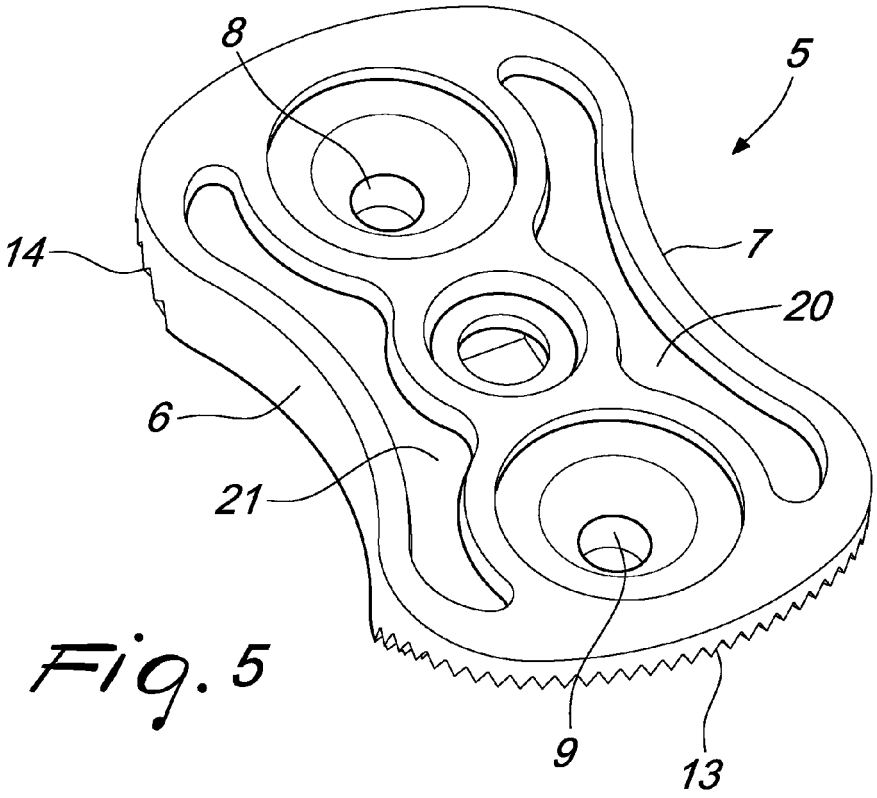


Fig. 5

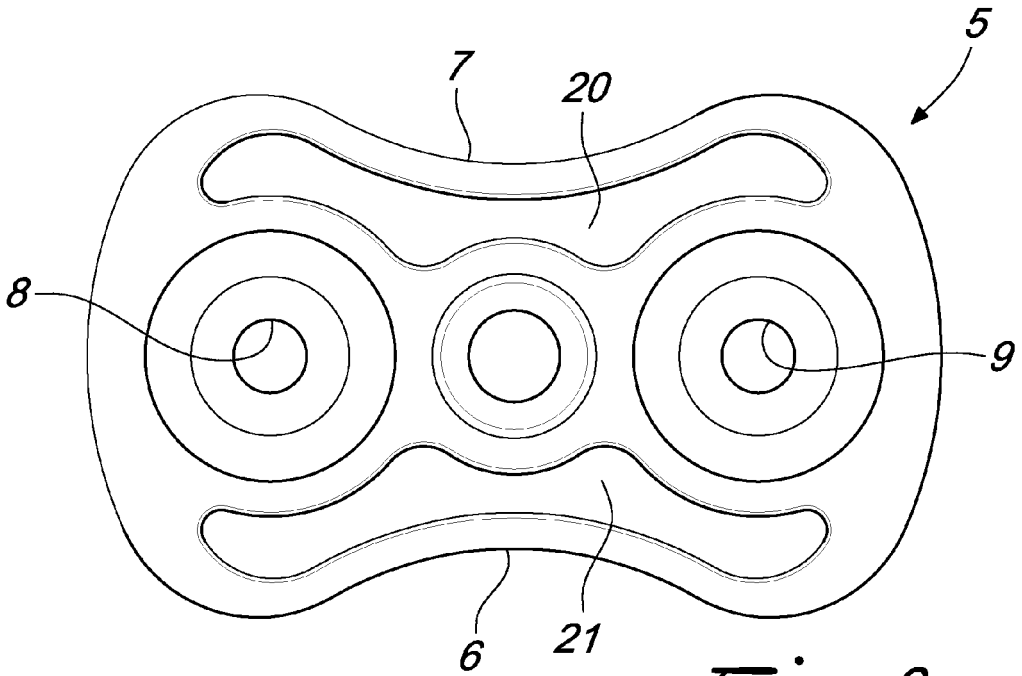


Fig. 6

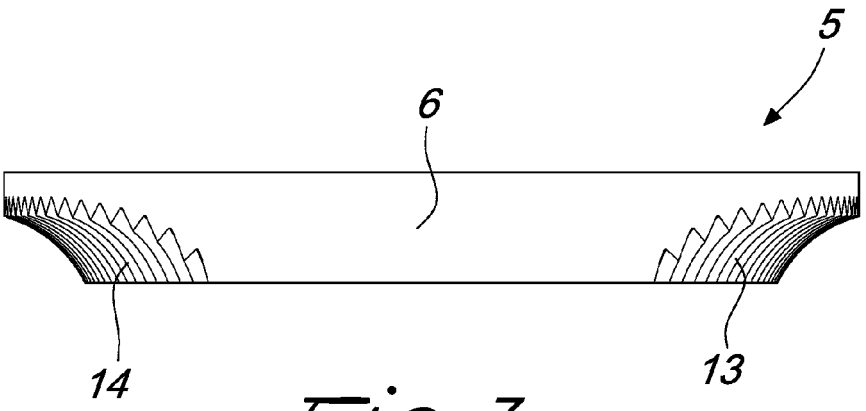


Fig. 7

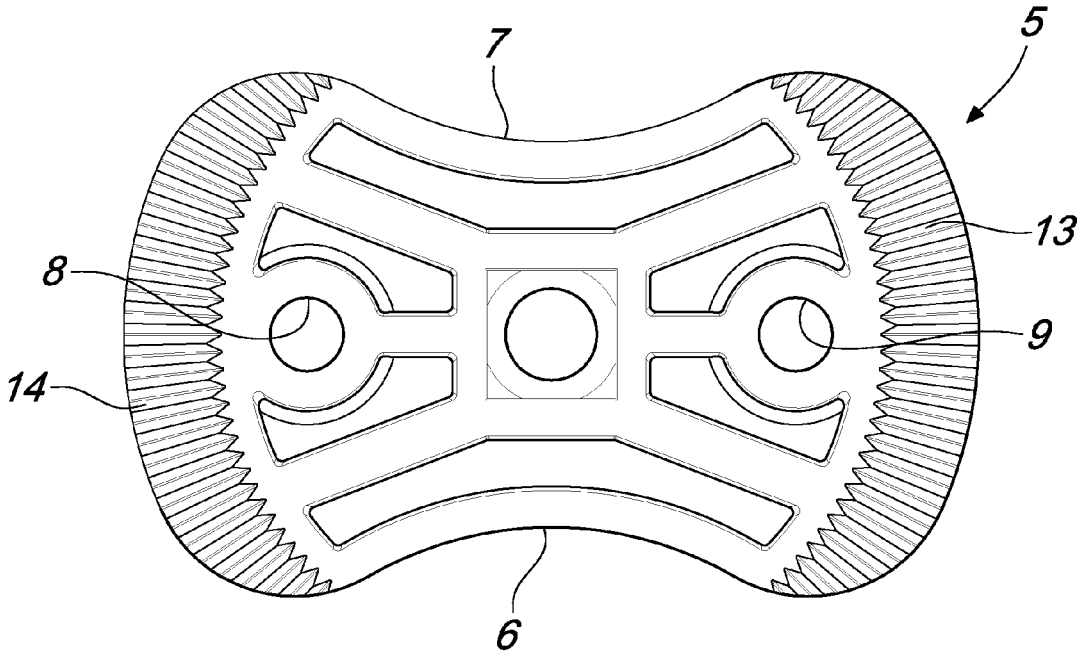


Fig. 8

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# EUROPEAN SEARCH REPORT

Application Number
EP 13 18 6115

## DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (IPC) |
|---|---|---|---|
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TECHNICAL FIELDS SEARCHED (IPC)

A63C

The present search report has been drawn up for all claims

| Place of search | Date of completion of the search | Examiner |
|---|---|---|
| Munich | 20 December 2013 | Murer, Michael |

CATEGORY OF CITED DOCUMENTS

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## ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 13 18 6115

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