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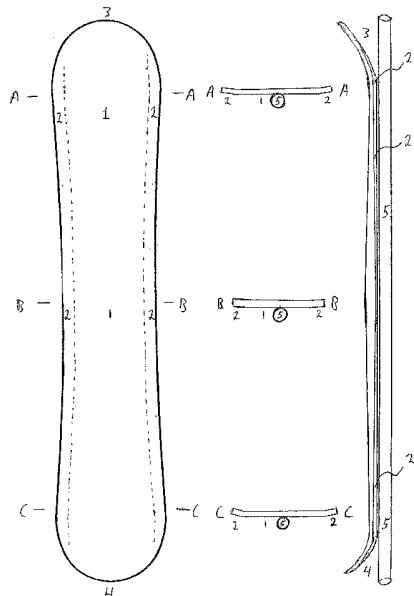
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SNOWBOARD FOR RAILS



(57) Abstract: A snowboard consisting of a board on which two bindings are mounted on the surface of the board, at a distance apart approximately corresponding to 1/3 of the board's length. The board is designed with inwardly curved edge portions and has upwardly curved tips (3), possibly with a more moderate tip at one end. According to the invention a board of this kind for use on rails and installations found in snowboard parks is provided with a combination of features specially adapted for rails, and other known per se features from boards with three running surfaces, selected and employed on snowboards so as to achieve greater stability on rails, with a substantially reduced risk of catching the steel edge in irregularities, while retaining many of the good running characteristics of boards with 3 running surfaces, these features being: a) that more than 70% of the snowboard's base is composed of a flat central portion - the first base surface (1) along the entire length of the board between (A-A) and (C-C), b) that there are secondary running surfaces (2) from the steel edges and inwards, either along the entire length of the board or at any rate in the front and rear portions of the snowboard, i.e. from lines (A-A) and (C-C) and inwards towards the middle, c) that in an arbitrary cross section where there are secondary running surfaces (2), these will substantially extend 1-4 cm inwards from the steel edges, preferably 2-3 cm inwards, before the angle of the running surface changes, and continue in the flat central portion (1). Only a shorter portion nearest lines (A-A) and (C-C) can have secondary running surfaces that are wider than 4 cm, d) that the secondary lateral areas (2) in cross section will form substantially straight lines, e) that the

secondary areas are rigid and not in contact with the ground if the board is not being edged, f)-t-hat-the-angle which the secondary lateral areas forms -with the, first base surface, viewed in cross section, will substantially be increasing when moving from the transversal lines where the secondary lateral areas begin, or in (B-B) towards the transition to the tips (A-A or C-C), where the angle is always greater than 1 degree, and preferably greater than 2 degrees, particularly greater than 3 degrees, and g) that the secondary lateral areas (2) substantially twist up from the plane of the first base surface (1) as the distance to the board's central transversal axis (B-B) increases.

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Snowboard for rails

The invention relates to a snowboard consisting of a board on which two bindings are mounted on the surface of the board, at a distance apart approximately corresponding to 1/3 of the board's length. The board is designed with inwardly curved edge portions, the board having a greater width at both ends at the transition to the tips. The board has upwardly curved tips, possibly with a more moderate tip at one end.

Snowboards today are normally designed with a flat base surface between the tips at the two ends. For steering the board is edged and the weight is distributed between the feet in the two bindings.

From Norwegian patent application no. 981056 a snowboard is known which has a base completely or partly divided into three running surfaces. The object of this patent, however, is to give optimum dynamic when riding the boards on snow. A minimum width is therefore indicated on the sloping lateral surfaces.

The present invention is based on testing of snowboards with bases according to the described patent, when the surprising discovery was made that the first base surface of the regulation bases was too narrow to be optimal for rails. It was found that there was a substantial potential for improvement for use on rails if the flat middle base surface is made much wider, with the result that the secondary running surfaces become correspondingly narrow. The advantage is that the wide central portion is wide enough to form a stable base both for sideways and parallel sliding on rails. At the same time the upwardly sloping secondary base surfaces will prevent the steel edges from catching in small irregularities on the rail that cause the rider to land on his head on the ground.

For use on rails the flat central portion of the base should be as wide as possible, in order to achieve maximum stability, while the secondary base surfaces must be wide enough for the steel edge to be raised slightly over the rail, thereby preventing it from becoming caught.

A good deal of testing has shown that the optimal width for the secondary base surfaces is 2-3 cm, but very good results are also obtained within the interval 1-4 cm, and right at the ends at the transition to the tips where the board is widest, some shorter portions wider than 4 cm may even be contemplated. By means of this design a board is obtained which is both ideal for rails, while at the same time retaining most of the dynamic characteristics of tripartite bases for riding on snow.

However, no snowboard is used only on rails, since after all most of the running takes place on snow. This board therefore has secondary running surfaces which twist up from the middle towards the tip/the rear tip. Over its entire length, or over

substantial parts of its length, the board has running surfaces called secondary lateral areas (2) on both sides of the central flat running surface (1) called the first base surface.

5 On this basis, therefore, it is the object of the invention to provide an improved snowboard specially adapted to achieve increased safety on rails. This is achieved by a snowboard which is characterised by the features which will become apparent from the patent claims.

The invention solves this special problem for snowboards by means of the special design of a raised lateral area from the following criteria:

- 10 1. The secondary lateral area (2) must have a certain minimum width which is large enough for the steel edge to be raised far enough above the rail to avoid becoming caught in irregularities.
2. The first base surface (1) must be as wide as possible when sliding with the board along the rail in order to avoid skidding due to running on a sloping lateral area, and when sliding sideways a wider central portion will give
15 greater stability.
3. The cross section shows the base as three substantially straight lines in those parts of the board where there are secondary lateral areas, and the angle formed by the secondary lateral areas with the first base surface is
20 substantially increasing from the middle towards the front and rear tips.

The invention will now be illustrated in greater detail by means of the embodiments which are depicted in the drawings, where the cross sections either show the boards along or across tubes, which are a common type of rail. In both these positions it is
25 easy to understand that a wider first base surface gives greater stability, while it is only when riding across the rail that any positive safety effect is obtained by the raised steel edges, which are raised on account of the secondary lateral areas (2).

Fig. 1 illustrates a snowboard viewed from above according to the invention, where the transition under the board between the first base surface 1 and the secondary lateral areas 2 is depicted by a dot-and-dash line. At the side are illustrated the
30 associated cross sections with the board located along a tube. On the right the board is shown viewed from the side, still on a tube, and pressed down against the tube as the board is when in use. There are secondary lateral areas 2 along the whole of the first base surface 1, and the secondary lateral areas have a constant width. The cross sections show the board along the rail.

35 Fig. 2 illustrates a snowboard where there are secondary lateral areas 2 along the whole of the first base surface 1, and where the first base surface has a reasonably constant width. The cross sections depict the board across the rail. There is

normally only one rail, so when a rail is illustrated here under both the front, central and rear portions, this is to show different ways of positioning oneself on the rail. The arrow shows the direction of travel. Viewed from the side the board will closely resemble the board in fig. 1 if it is pressed flat against the ground (the spring is removed).

Fig. 3 illustrates a snowboard where there are secondary lateral areas 2 only at the front and rear, while the board is flat along its entire width in the central portion, and the secondary base areas have a decreasing width from the tips in towards the middle. The cross sections show the board along the rail.

Fig. 4 illustrates two further possibilities for the location of the secondary lateral areas 2.

Designations in the figures:

1. First base surface (= central running surface)
2. Secondary lateral areas (= bases outside the first base)
3. Front tip
4. Rear tip
5. Tube (= a type of rail)

It is obvious that most types of known shapes for the top of the board may be combined with this invention. We may mention that it may be of interest to have a flat top on the board round the bindings, thus preventing the shape of the board from being influenced by the bindings being mounted on the board.

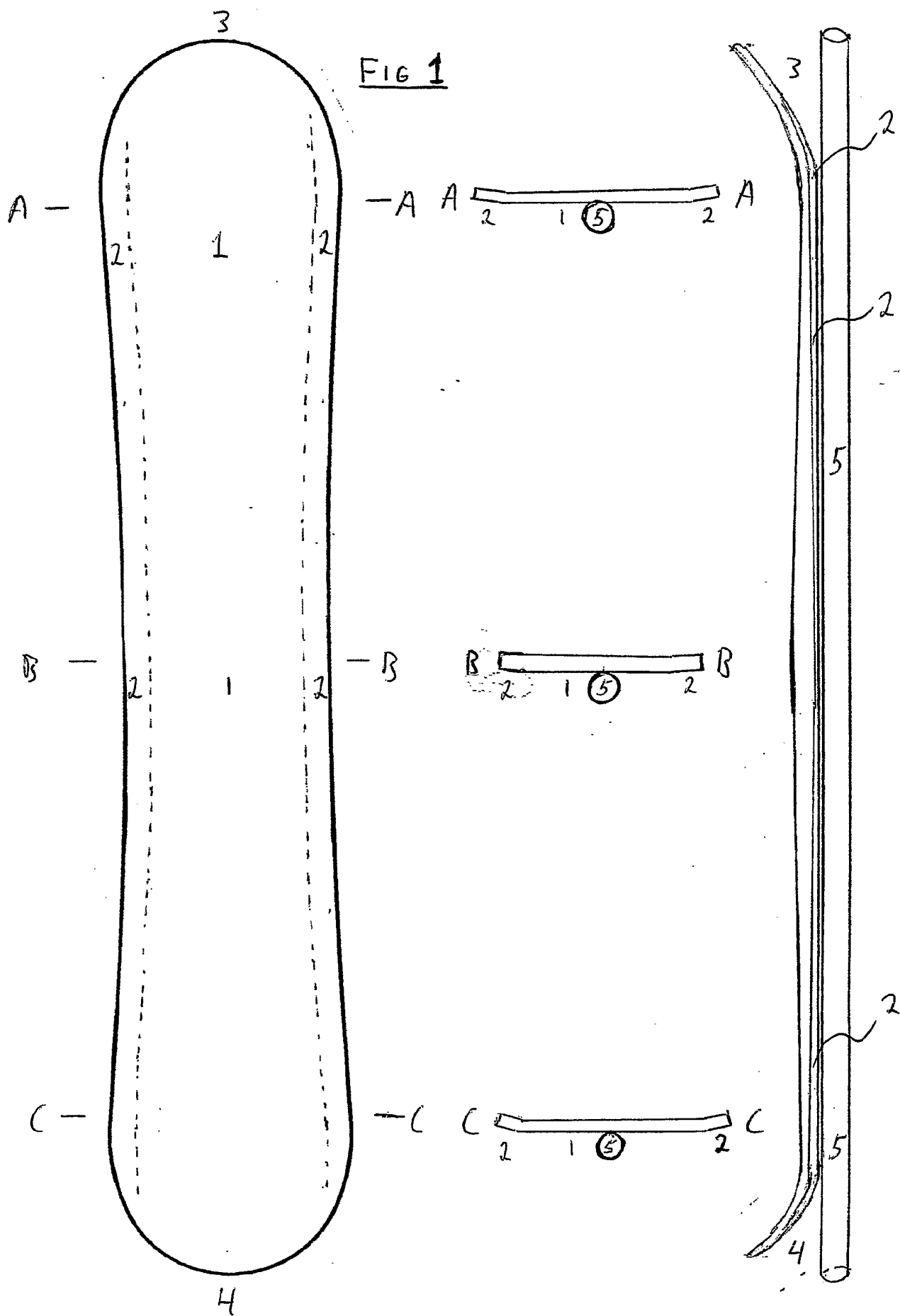
Further development according to the invention is based on combining selected features so as to produce a result which is uniquely adapted for a snowboard on rails. By means of the invention a selection of features and dimensions has been made which together provide an improvement.

CLAIMS

1. A snowboard comprising a board on which two bindings are mounted on the surface of the board, at a distance apart approximately corresponding to around 1/3 of the board's length, where the board is designed with inwardly curved edge portions, the board having a greater width at both ends at the transition to the tips (A-A and C-C) than in the middle (B-B), with upwardly curved tips (3, 4), possibly with a more moderate tip at one end,
- characterised by the combination of features known from other snowboards with a tripartite base, and new specific features that have been found to be highly favourable for boards that are to be used on rails, these features being:
- a) that more than 70% of the snowboard's base is composed of a flat central portion – the first base surface (1) – along the entire length of the board between (A-A) and (C-C),
- b) that there are secondary running surfaces (2) from the steel edges and inwards, either along the entire length of the board or at any rate in the front and rear portions of the snowboard, i.e. from lines (A-A) and (C-C) and inwards towards the middle,
- c) that in an arbitrary cross section where there are secondary running surfaces (2), these will substantially extend 1-4 cm inwards from the steel edges, preferably 2-3 cm inwards, before the angle of the running surface changes, and continue in the flat central portion (1). Only a shorter portion nearest lines (A-A) and (C-C) can have secondary running surfaces wider than 4 cm,
- d) that the secondary lateral areas (2) in the cross sections will form substantially straight lines,
- e) that the secondary areas are rigid and not in contact with the ground if the board is not being edged,
- f) that the angle which the secondary lateral areas form with the first base, viewed in cross section, will substantially be increasing when moving from the transversal lines where the secondary lateral areas begin, or if they are continuous from (B-B) towards the transition to the tips (A-A and C-C), where the angle is always greater than 1 degree, and preferably greater than 2 degrees, particularly greater than 3 degrees, and
- g) that the secondary lateral areas (2) substantially twist up from the plane of the first base surface (1) as the distance to the board's central transversal axis (B-B) increases.
2. A snowboard according to claim 1,
- characterised in that the width of the secondary base surface (2) should

be 1-4 cm overall between the lines (A-A) and (C-C), i.e. all the way on the outside of the first running surface (1).

3. A snowboard according to one of the preceding claims,
characterised in that the length of the secondary lateral areas (2) on one
5 side should be at least 1/5 of the length of the first base surface (1) on the
same side.
4. A snowboard according to one of the preceding claims,
characterised in that the closest transition to the tips is a shorter area,
where the secondary lateral areas are wider than 4 cm.
- 10 5. A snowboard according to one of the preceding claims,
characterised in that the board is symmetrical about the longitudinal axis.
6. A snowboard according to one of the preceding claims,
characterised in that the board is asymmetrical about the longitudinal
axis.
- 15 7. A snowboard according to one of the preceding claims,
characterised in that the board is symmetrical about the central
transversal axis.
8. A snowboard according to one of the preceding claims,
characterised in that the board is asymmetrical about the central
20 transversal axis.



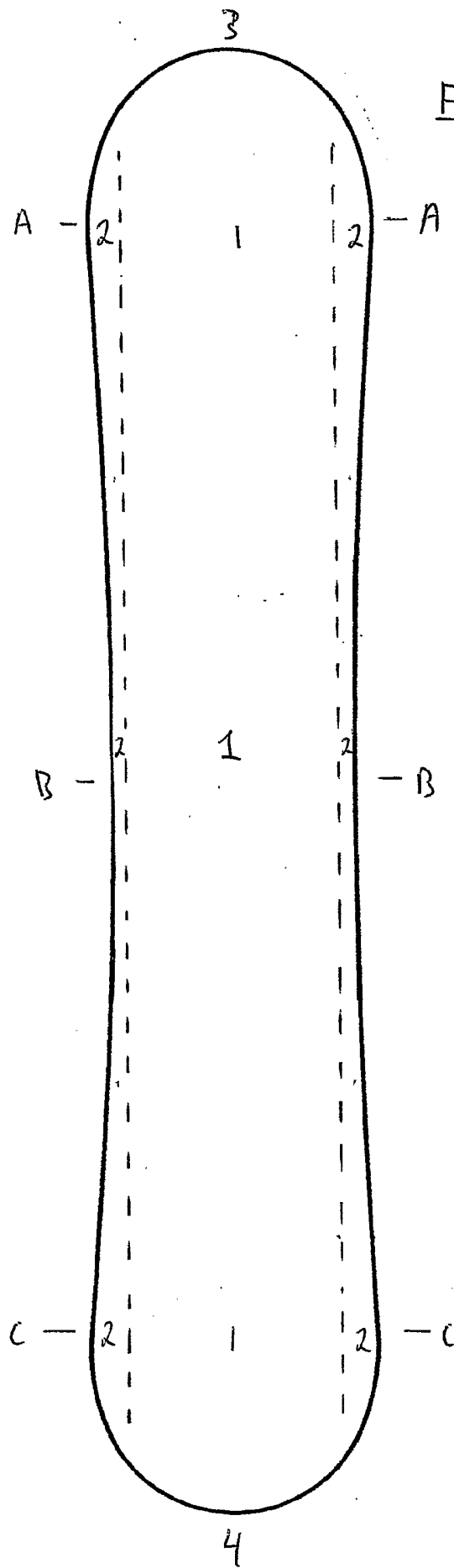


FIG 2

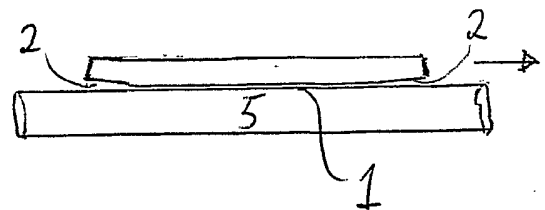
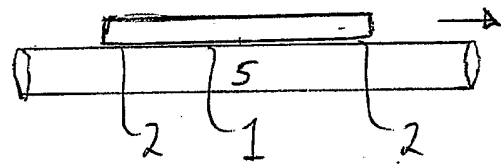
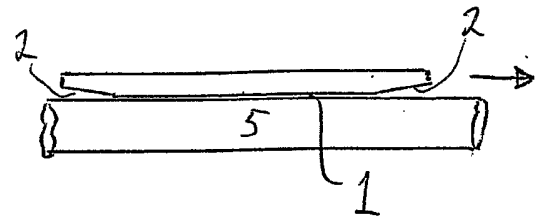
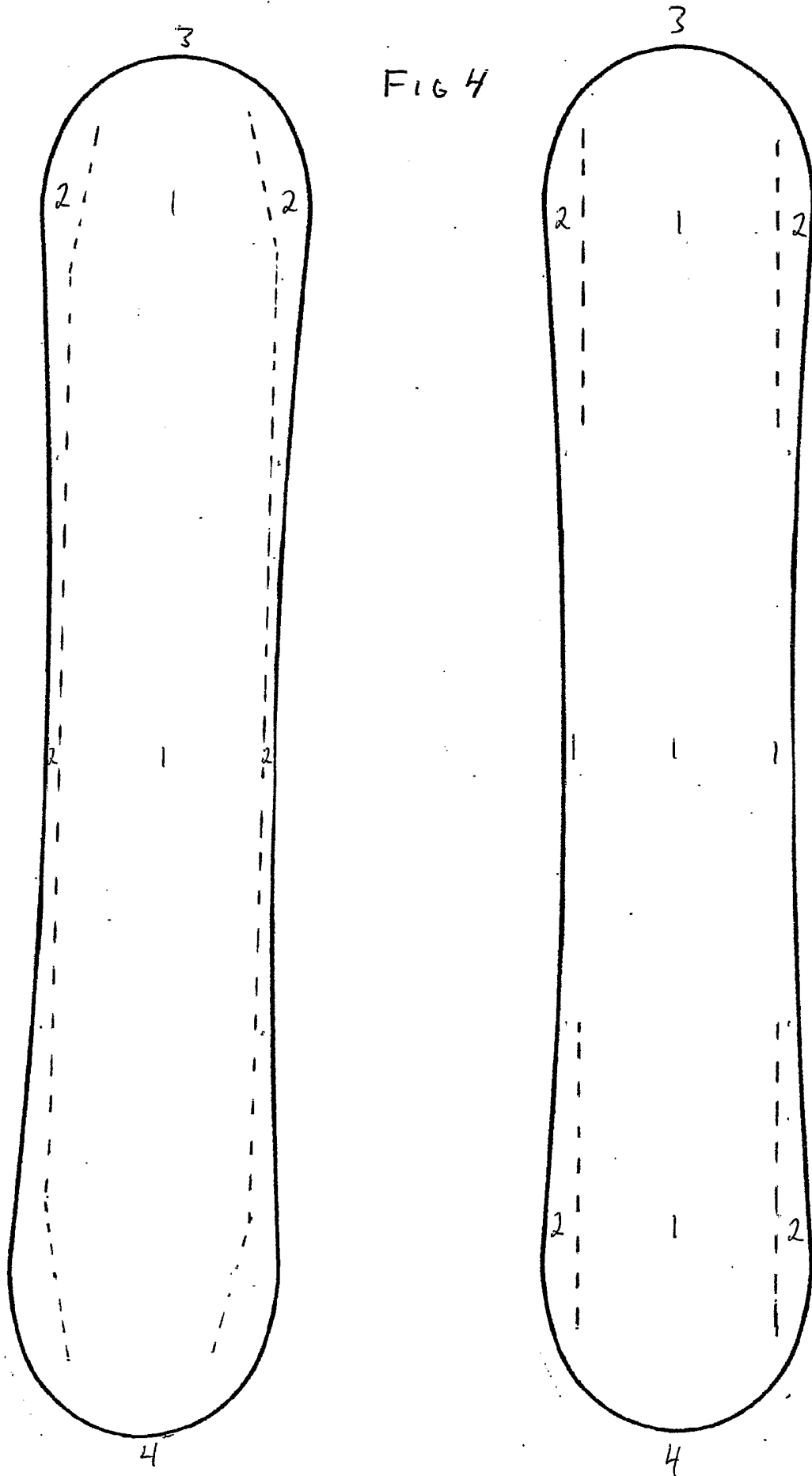


FIG 4



INTERNATIONAL SEARCH REPORT

International application No.

PCT/NO2006/000014

A. CLASSIFICATION OF SUBJECT MATTER

IPC: see extra sheet

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC: A63C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-INTERNAL, WPI DATA, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 20020195780 A1 (KARLSEN), 26 December 2002 (26.12.2002), figure 1, abstract --	1-8
A	US 5876056 A (KARLSEN), 2 March 1999 (02.03.1999), figure 1, abstract --	1-8
A	US 5580078 A (VANCE), 3 December 1996 (03.12.1996), figure 1, abstract --	1-8
A	US 5303949 A (HARPER ET AL), 19 April 1994 (19.04.1994), figures 1-5, abstract -- -----	1-8

Further documents are listed in the continuation of Box C.

See patent family annex.

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INTERNATIONAL SEARCH REPORT

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Cited literature, if any, will be enclosed in paper form.

INTERNATIONAL SEARCH REPORT
Information on patent family members

04/03/2006

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