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(54) **Ice skate**

(57) The present invention relates to an ice skate including a shoe (2) and a blade supporting frame (3) associated below the shoe. The blade edge (4) in contact with ice has gaps (8) suitable to limit the edge sec-

tion in contact with the ice surface. This allows better and easier skating especially when curving.

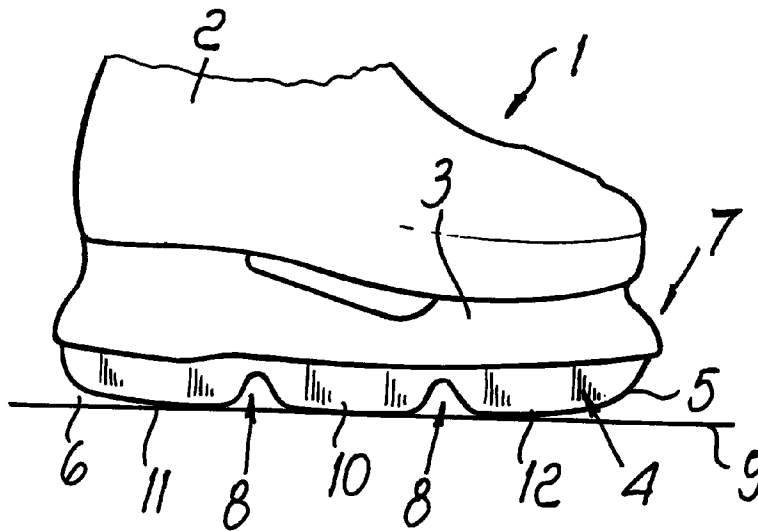


Fig. 1

Description

The present invention relates to an ice skate.

Conventional ice skates are usually constituted by a shoe, which is usually made of a plastic shell and has an articulated quarter in order to contain a soft inner boot.

A frame for supporting a blade is associated below the shoe shell. The blade has an edge which is substantially straight in the central region and is curved in the rear and front end regions of the frame.

Accordingly, in the known art the blade edge interacts with the ice in a substantially straight central region which is radiused in a curved shape at the ends of the frame.

This shape of the blade allows an optimum contact with the ice while skating and also allows tilting of the skate back or forwards to perform various maneuvers.

However, these conventional skates have drawbacks: although the flat, or straight, portion of the blade that interacts with the ice allows optimum stability during skating, for example to cover essentially straight paths or paths with few curves, it does not allow to quickly and easily change direction due to considerable friction with the ice during this maneuver.

Furthermore, this leads to non-optimum transmission of efforts from the foot to the surface of the ice, with consequent poor sensitivity for the athlete, especially in a competitive context.

The aim of the present invention is to overcome the drawbacks described above by a skate that provides the user with optimum sensitivity as regards direction changes.

An additional object is to provide an ice skate in which this direction changing, even if performed sharply, can occur with limited friction.

Another object is to provide an ice skate that associates with the preceding characteristics that of allowing optimum skating with good stability even for straight paths.

Another object is to provide an ice skate that is structurally simple and has low manufacturing costs.

This aim, these objects, and others which will become apparent from the description that follows are achieved by an ice skate as claimed in the accompanying claims.

Additional objects will become apparent from the following description, together with the accompanying drawings, wherein:

FIG. 1 is an elevated side view of a first embodiment of the blade according to the invention;

FIG. 2 is an elevated side view of a second embodiment of the blade according to the invention;

FIG. 3 is an elevated side view of a third embodiment;

FIG. 4 is an elevated side view of a fourth embodiment;

FIG. 5 is an elevated side view of a fifth embodiment;

FIG. 6 is an elevated side view of a sixth embodiment.

With reference to the above figures, the reference numeral 1 designates the ice skate, which includes a shoe 2, constituted for example by a plastic shell, below the shoe a frame 3 is associated for supporting a blade 4.

As an alternative, it is possible to consider a shoe made of leather below which a support for the blade, or a blade directly coupled below the sole, is associated, for example by riveting or another conventional means.

The blade has an edge 5 which curves, starting from the rear end 6, towards the front end 7. At least one gap 8 is formed at this edge and is suitable to limit the surface of the edge 5 that interacts with the ice 9.

This gap 8 can be obtained for example by a suitable milling provided on the blade, or by a notch formed on the blade during manufacture or by subsequently machining the part.

There may be two gaps 8, as shown in Figure 1; this allows to obtain a central portion 10 of the blade 4 which directly interacts with the ice 9, whereas the remaining rear and front portions 11 and 12 are slightly spaced from the ice 9.

These gaps allow to perform curves very easily, because the surface of the blade that interacts with the ice is limited and friction with the ice is therefore also limited.

Contact for the user is in any case optimum, because during normal skating, and therefore for straight paths, contact can occur not only at the central portion but also, optionally, at the rear portion or at the front portion by tilting the skate very slightly.

The possibility to perform curves on a small central portion of the blade also allows the user to improve the sensitivity of the skate, because even slight movements of the foot can lead, very quickly and easily, to movements or rotations of the blade, with consequent quick direction changes.

It is also possible to provide just one gap 108 on the blade 104, as shown in Figure 2, preferably obtained approximately at the central region of the blade.

As an alternative, it is possible to again form two gaps 208 on the blade 204, as shown in Figure 3, which have a given inclination with respect to the underlying ice surface 9.

As shown in Figure 4, the blade may optionally have a wavelike shape so as to still form a central portion 310 that interacts directly with the surface of the ice 9 as well as rear and front portions 311 and 312 which are raised with respect to the central portion so as to further limit the surface that interacts with the ice.

Figure 5 illustrates a further embodiment, in which the blade 404 is shaped so as to form a series of sequentially arranged semicircles that accordingly allow localized interaction with the tangent points for example of a central semicircle 413 and optionally with one or both of the adjacent semicircles 414a and 414b.

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Figure 6 illustrates another embodiment, in which the gap 508 affects the entire edge 505 of the blade 504 starting from regions which are adjacent to the rear end 506 and to the front end 507 so as to form, at these ends, a first protrusion 515 and a second protrusion 516 which do not interact directly with the ice 9, whereas a curved central portion 510 that connects the first and second protrusions interacts with the ice.

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It has thus been observed that the skate has achieved the intended aim and all the stated objects, allowing to rapidly and easily change direction during skating, limiting friction with the ice even to a considerable extent.

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The materials of which the blades are made, as well as their dimensions, such as for example their height and width, as well as the number of gaps and their shape, may of course vary according to multiple requirements.

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Claims

1. Ice skate comprising a frame supporting a blade and associated below a shoe, said blade having an edge, characterized in that at least one gap is formed on said blade at said edge, said at least one gap being adapted to limit the portion of said edge interacting with the ice.

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2. Skate according to claim 1, wherein said gap is formed approximately in the median region of said blade.

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3. Skate according to claim 1, wherein at least two gaps are formed on said blade so as to produce a central portion that interacts with the ice and rear and front portions that are slightly spaced from the ice.

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4. Skate according to claim 3, wherein said at least two gaps are formed along an axis that lies at right angles or is tilted with respect to the flat surface of the ice.

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5. Skate according to claim 3, wherein said two gaps are have a wavelike shape.

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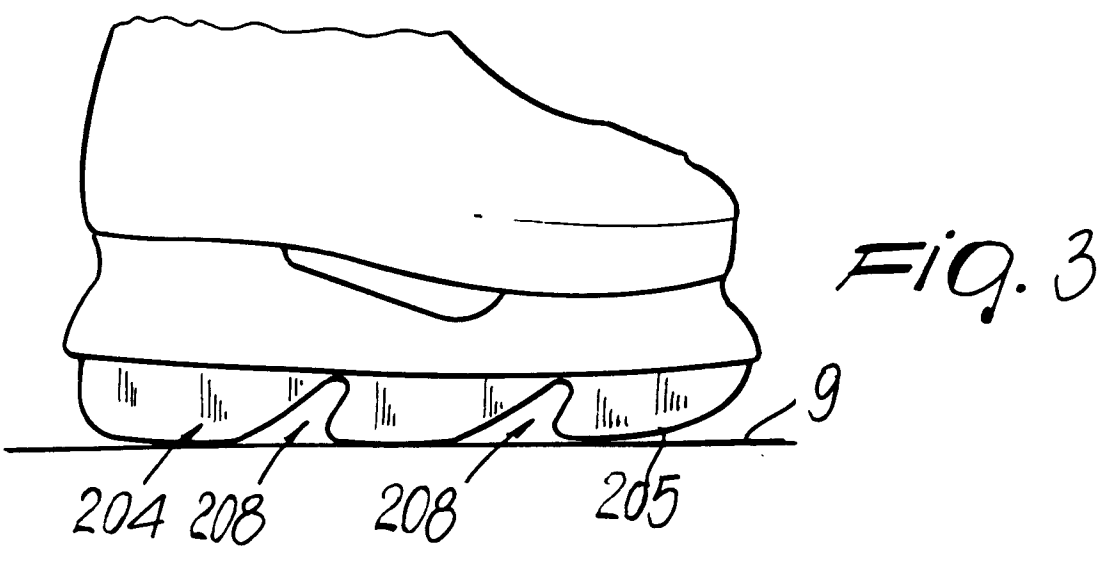
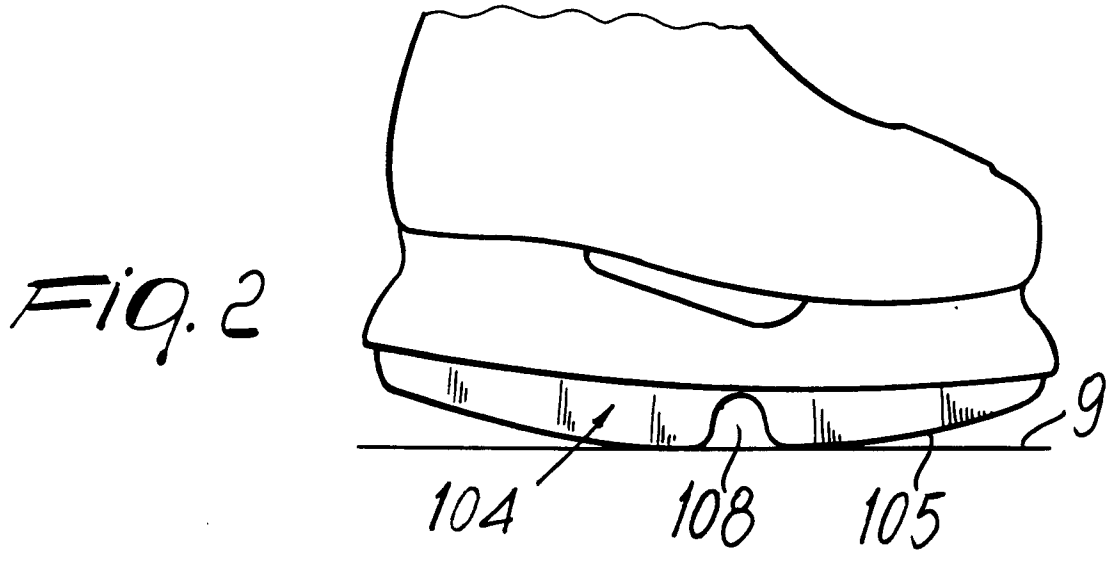
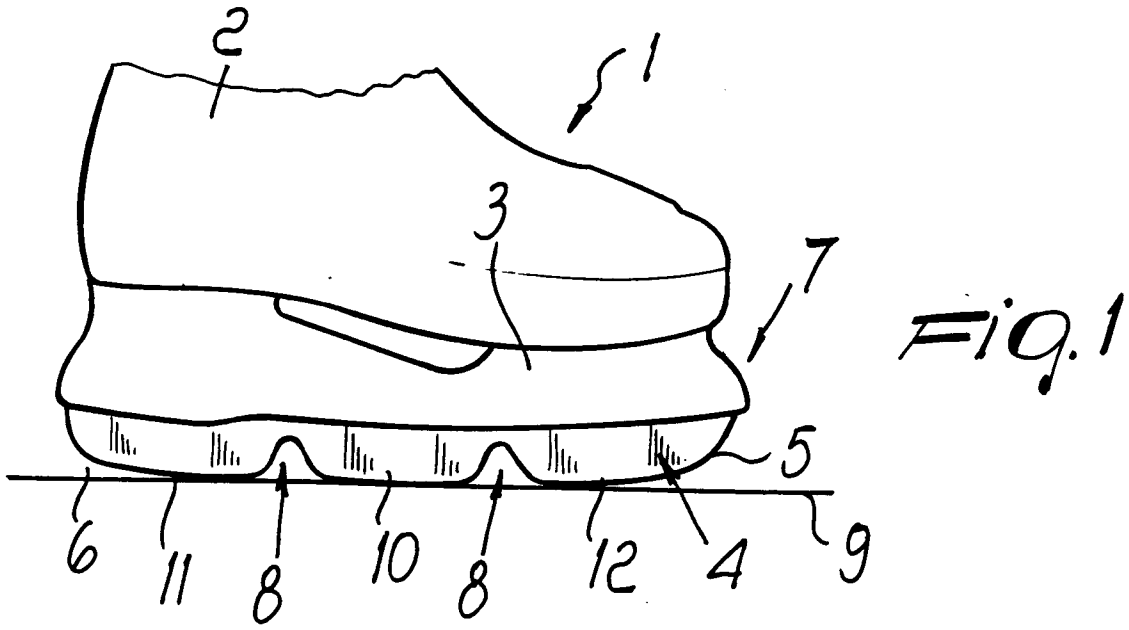
6. Skate according to claim 1, wherein a plurality of gaps is formed on said blade and forms a pattern of semicircles arranged sequentially so that their tangent points are arranged along an arc that connects the outer semicircles.

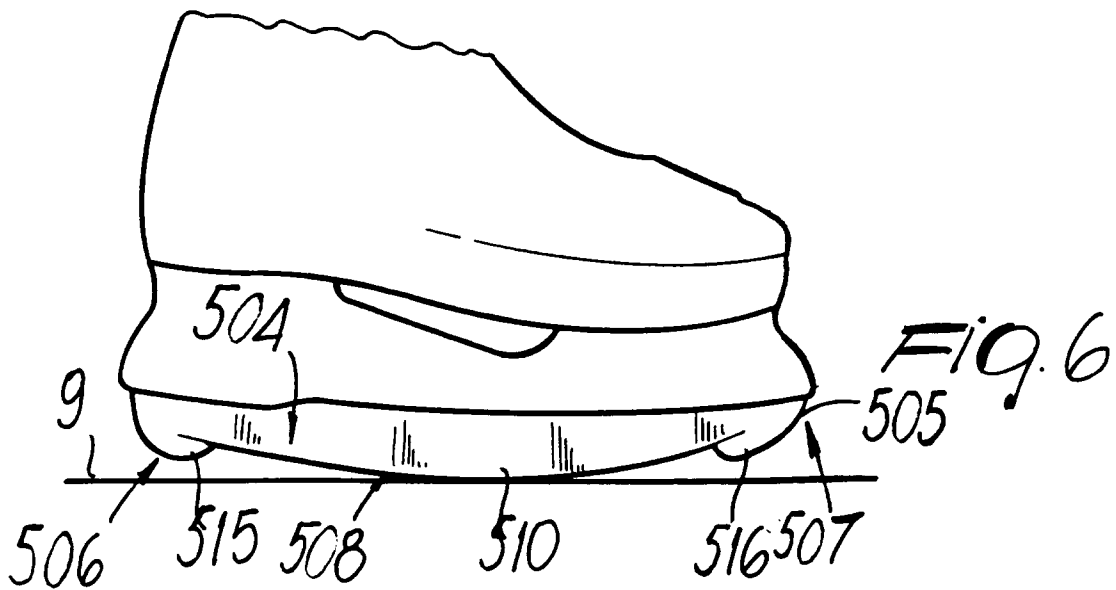
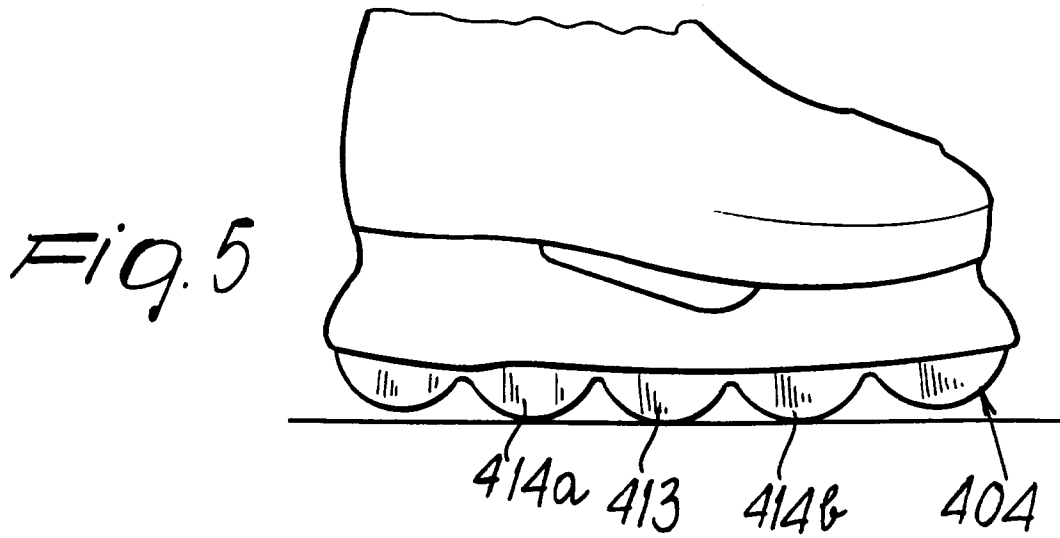
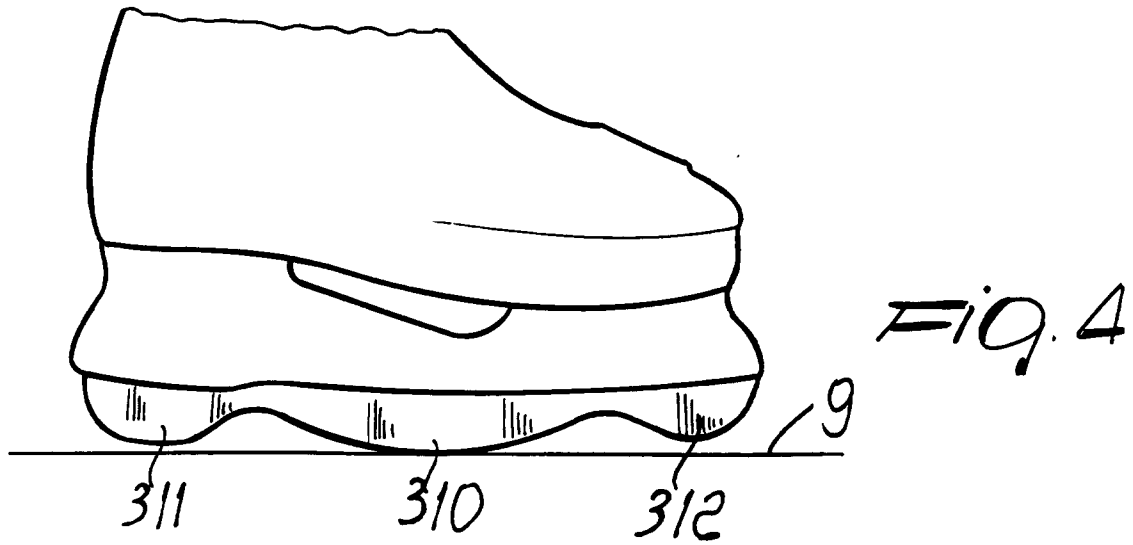
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7. Skate according to claim 6, wherein a central one of said semicircles interacts with the ice, optionally together with one or both of the semicircles that are adjacent to said central semicircle.

8. Skate according to claim 1, wherein said gap affects almost the entire length of said edge so as to form a curved central portion that connects a first protrusion and a second protrusion which are formed below said frame at its rear and front edges.

9. Skate according to claim 1, wherein said at least one gap is obtained by milling said blade.







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EUROPEAN SEARCH REPORT

Application Number
EP 95 10 0674

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X A	DE-A-34 40 313 (KINKEL) * page 8, paragraph 4 - page 9, paragraph 1; figures 1,2 * ---	1,2 3,4,7	A63C1/00 A63C1/30 A63C1/34
X A	WO-A-94 16782 (ÖREBROSKENAN AB) * figure 1 * ---	1,2 5,9	
X A	DE-A-22 00 135 (OPITZ) * page 4, line 12 - line 19; figure 4 * -----	1 3	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			A63C
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 29 May 1995	Examiner Steezman, R
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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