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## (54) Roller skate, particularly for stunts

(57) A roller skate, particularly for stunts, includes a supporting frame (3) for two pairs of paired wheels (8,9). The skate comprises, at least one plate (10) provided with longitudinal and transverse guides (12) allowing the sliding of the skate both longitudinally and transversely at surfaces such as handrails, curbs or in any case other surfaces with which the wheels do not interact.

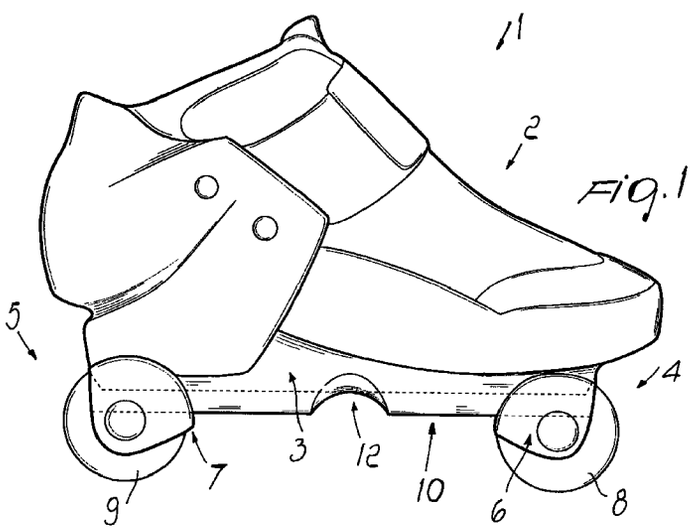


Fig.1

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## Description

**[0001]** The present invention relates to a roller skate, particularly for stunts.

**[0002]** A particularly popular stunt performed on skates is the so-called "grinding" which consists in sliding with the skate along pipes or curbs or wood edges by arranging the skate either transversely or longitudinally with respect of the direction of motion.

**[0003]** Grinding is generally performed by sliding on handrails constituted by metal pipes or tubes, because the tubes have a smooth sliding surface.

**[0004]** Grinding is usually performed by using skates constituted by a shoe below which a usually U-shaped frame is associated, a plurality of wheels being associated between the ground-facing wings of the frame and being arranged mutually in-line.

**[0005]** If the conventional skate is arranged approximately transversely to the direction of motion, the lower end of the wheel supporting frame interacts for example at the pipe, particularly at a median region between two mutually adjacent wheels.

**[0006]** If the skater wishes to practice grinding by arranging the skate longitudinally to the direction of motion, since he cannot slide on the pipe with a wheel for a matter of balance, he is forced to rest on said pipe the part of the sole of the shoe forming the skate which protrudes laterally beyond the wings of the frame to which the wheels are pivoted.

**[0007]** In both cases, however, the sliding of the frame or of the sole of the shoe on handrails or curbs causes fast and gradual wear of the respective surfaces and this dangerously weakens their structure.

**[0008]** As a partial solution to these drawbacks, accessories are commercially known which are adapted to protect the skate frame, such as, for example, plates which are associated below the wings of the wheel supporting frame and which have, toward the edge directed away from the shoe, grooves adapted to facilitate sliding, for example, on curved surfaces.

**[0009]** Other products are likewise commercially known which arrange, at the surface of the shoe that protrudes beyond the wings of the wheel supporting frame, a strengthening plate which allows sliding longitudinally to the direction of motion.

**[0010]** All these solutions, however, entail the need to associate additional elements either at the sole of the shoe or at the wheel supporting frame.

**[0011]** In any case, in grinding performed with currently commercially available skates the stability of the skater is very limited, particularly in longitudinal sliding, due to the small surfaces in mutual contact.

**[0012]** In any case, grinding cannot be currently performed with skates having a different structure and therefore for example with skates having paired wheels.

**[0013]** The aim of the present invention is therefore to solve the mentioned problems, eliminating the drawbacks of the prior art by providing a skate with which it is possible to practice grinding.

**[0014]** Within the scope of the above aim, an important object is to provide a skate with paired wheels which allows to practice grinding both by arranging the skate longitudinally to the direction of motion and by arranging it transversely thereto.

**[0015]** Another important object is to provide a skate with paired wheels in which the structural regions thereof are protected from abrasion against pipes or curbs or any other element used to practice grinding.

**[0016]** Another important object is to allow the user to achieve more balance and stability during grinding.

**[0017]** Another object is to provide a skate with paired wheels which is structurally simple and has low manufacturing costs.

**[0018]** This aim and these objects, as well as others which will become apparent hereinafter, are achieved by a roller skate, particularly for stunts, comprising a frame member supporting at least two pairs of wheels, characterized in that said frame member comprises sliding means adapted to allow said skate to slide either longitudinally or transversely on a surface without interacting with said wheels.

**[0019]** Further characteristics and advantages of the invention will become apparent from the detailed description of some particular but not exclusive embodiments, illustrated by way of non-limitative example in the accompanying drawings, wherein:

Figure 1 is a side view of the skate;
Figure 2 is a front view of the skate;
Figure 3 is a view, similar to Figure 1, of a further embodiment;
Figures 4 and 5 are front views of the embodiment of Figure 3, respectively shown without the plate and with the plate associated therewith;
Figure 6 is a plan view of the embodiment of Figure 4 without the plate;
Figure 7 is a plan view of the plate.

**[0020]** With reference to the above figures, the reference numeral 1 designates a skate of the type constituted by a shoe 2, associated with a frame 3 which has a substantially rectangular plan and has two front supports 6 and two rear supports 7, respectively, at the front transverse end 4 and at the rear transverse end 5. Supports 6 and 7 are advantageously shaped substantially like an inverted U and support two front wheels 8 and two rear wheels 9, respectively.

**[0021]** A skate with paired wheels is accordingly formed.

**[0022]** A longitudinal guide 11 is formed along an approximately median longitudinal axis at the lower surface 10 of the frame 3, or at the sole of the shoe. Alternatively or additionally a transverse guide 12 is formed along an axis which lies transversely to said frame or to the shoe. The guides 11, 12 are respectively shaped complementarily to the surface at which grinding is per-

formed, and in particular said guides can have a concave shape in order to facilitate the skater in grinding, allowing in this case more balance during sliding.

**[0023]** A region is accordingly obtained below the skate which allows sliding in a longitudinal or transverse direction.

**[0024]** Figures 3 to 7 illustrate a further embodiment in which the skate 101 is again constituted by a shoe 102 associated with a frame 103. Front supports 106 and rear supports 107 for pairs of front wheels 108 and rear wheels 109 are associated at the front transverse end 104 and rear transverse end 105.

**[0025]** Adapted holes 113 are provided at the lower surface 110 of the frame 103 for removably fastening a plate 114 which is substantially cross-shaped and is provided with second holes 115 for coupling to the frame.

**[0026]** Plate 114 accordingly forms a pair of transverse wings 116 lying at the interspace between the pair of front supports 106, and a pair of longitudinal wings 117, arranged approximately in the interspace between a front support 106 and a rear support 107.

**[0027]** At the transverse and longitudinal wings, the plate 114 has locking means adapted to lock the plate with respect to the frame. The locking means is constituted by a pair of first transverse teeth 118 and second longitudinal teeth 119 formed at the transverse wings 116 and longitudinal wings 117. The first and second teeth are accommodated at adapted and complementarily shaped seats 120 formed in the interspace between the pairs of front supports 106 and rear supports 107 and at the longitudinal edges 121 of the frame in the region interposed between a front support and a rear support.

**[0028]** At the lower surface of the plate 114, a longitudinal guide 111 is formed along the median longitudinal axis. A second transverse guide 112 is formed along a median axis which lies transversely to the plate.

**[0029]** It has thus been observed that the invention has achieved the intended aim and objects, a skate with paired wheels having been obtained which allows the user to easily practice grinding without damaging the structural elements of the skate.

**[0030]** Furthermore, the arrangement of the first and second guides allows optimum resting contact during grinding, accordingly giving the skater more balance.

**[0031]** Furthermore, the possibility to remove the plate, optionally replacing it, allows to keep the skate intact.

**[0032]** The roller skate according to the invention is of course susceptible of numerous modifications and variations, all of which are within the scope of the same inventive concept.

**[0033]** Likewise, the materials and the dimensions that constitute the individual components of the skate may also be the most pertinent according to specific requirements.

**[0034]** The disclosures in Italian Patent Application No. TV98A000013 from which this application claims priority are incorporated herein by reference.

**[0035]** 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 roller skate, particularly for stunts, comprising a frame member (2,102,3,103) supporting at least two pairs of wheels (8,9,108,109), characterized in that said frame member comprises sliding means (11,12,111,112) adapted to allow said skate to slide either longitudinally or transversely on a surface without interacting with said wheels.

2. The skate according to claim 1, charaterized in that front (104) and rear (105) transverse ends of said frame (103) are respectively provided with two front supports (106) and two rear supports (107), two front wheels (108) and two rear wheels (109) being freely pivoted to said supports, at the lower surface of said frame member (103) a longitudinal guide (111) is formed along a median longitudinal axis and/or a transverse guide (112) is formed along an axis which is approximately transverse with respect to said frame member (103).

3. The skate according to claim 2, characterized in that said first and second guides (111,112) are shaped complementarily with respect to the surface at which grinding is practiced.

4. The skate according to claim 2, characterized in that said first and second guides (111,112) have a concave shape.

5. The skate according to one or more of the preceding claims, characterized in that at the lower surface of said frame member there are adapted holes (113) for removably fastening at least one plate (114) which is substantially cross-shaped and is provided with second holes (115) for coupling to said frame member (103).

6. The skate according to claim 5, characterized in that said plate (114) forms a pair of transverse wings (116), lying at the interspace formed between said pair of front supports (106), and a pair of longitudinal wings (117), which are approximately interposed in the interspace between said front and rear supports (106,107).

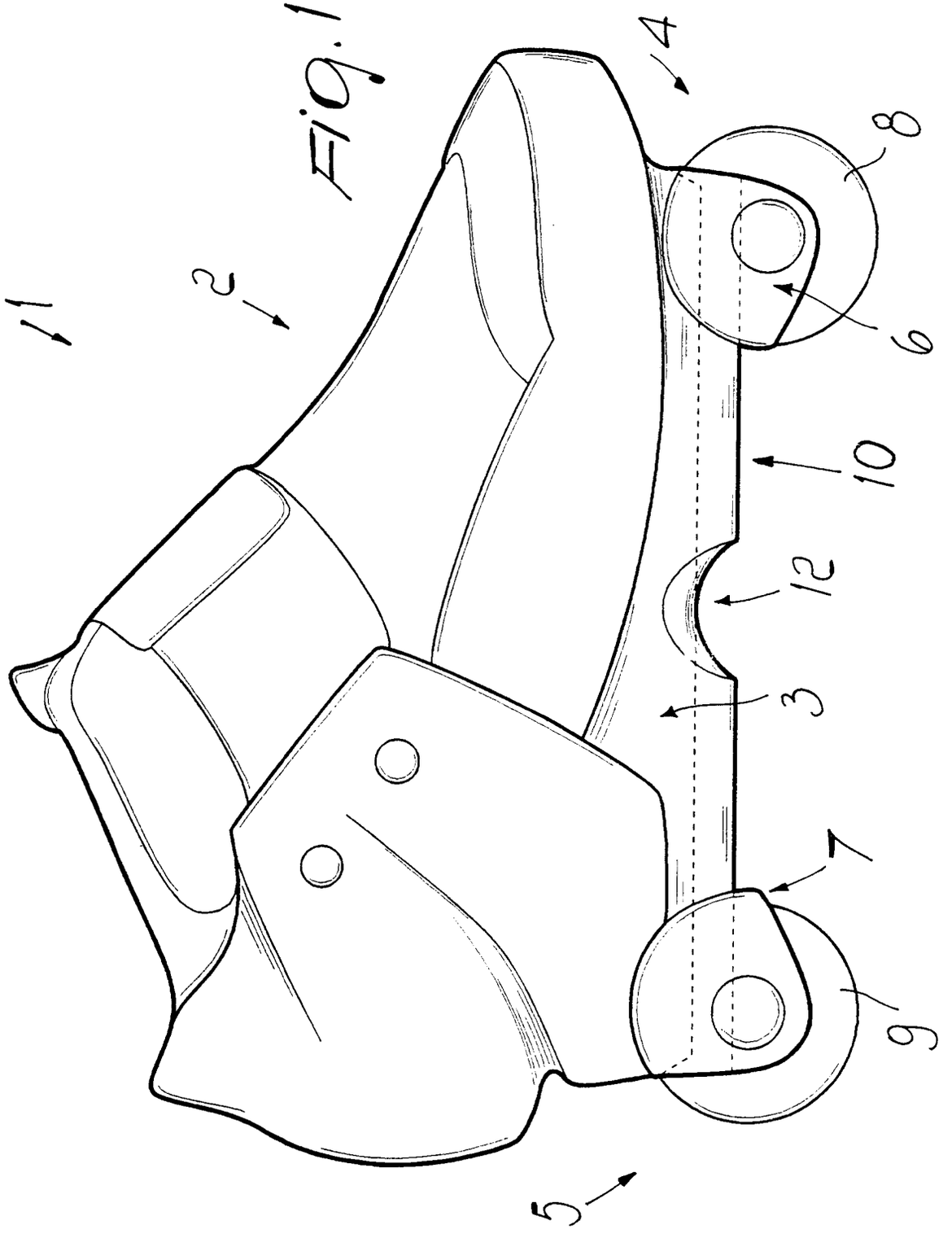
7. The skate according to claim 6, characterized in

that at said transverse and longitudinal wings (116,117), said plate (114) has locking means for locking said plate with respect to said frame member, said locking means being constituted by first transverse teeth (118) and by second longitudinal teeth (119) formed at said transverse and longitudinal wings.

**8.** The skate according to claim 7, characterized in that said first and second teeth (118,119) are accommodated at adapted complementarily shaped seats (120) formed in an interspace between said front and rear supports (106,107) and at the longitudinal edges of said frame in the region interposed between said front and rear supports (106,107).

**9.** The skate according to one or more of the preceding claims, characterized in that at the lower surface (110) of said plate (114) there is said longitudinal guide (111), which is formed along the median longitudinal axis, and/or there is said second transverse guide (112), which is formed along a median axis which lies transversely to said plate.

Fig. 1



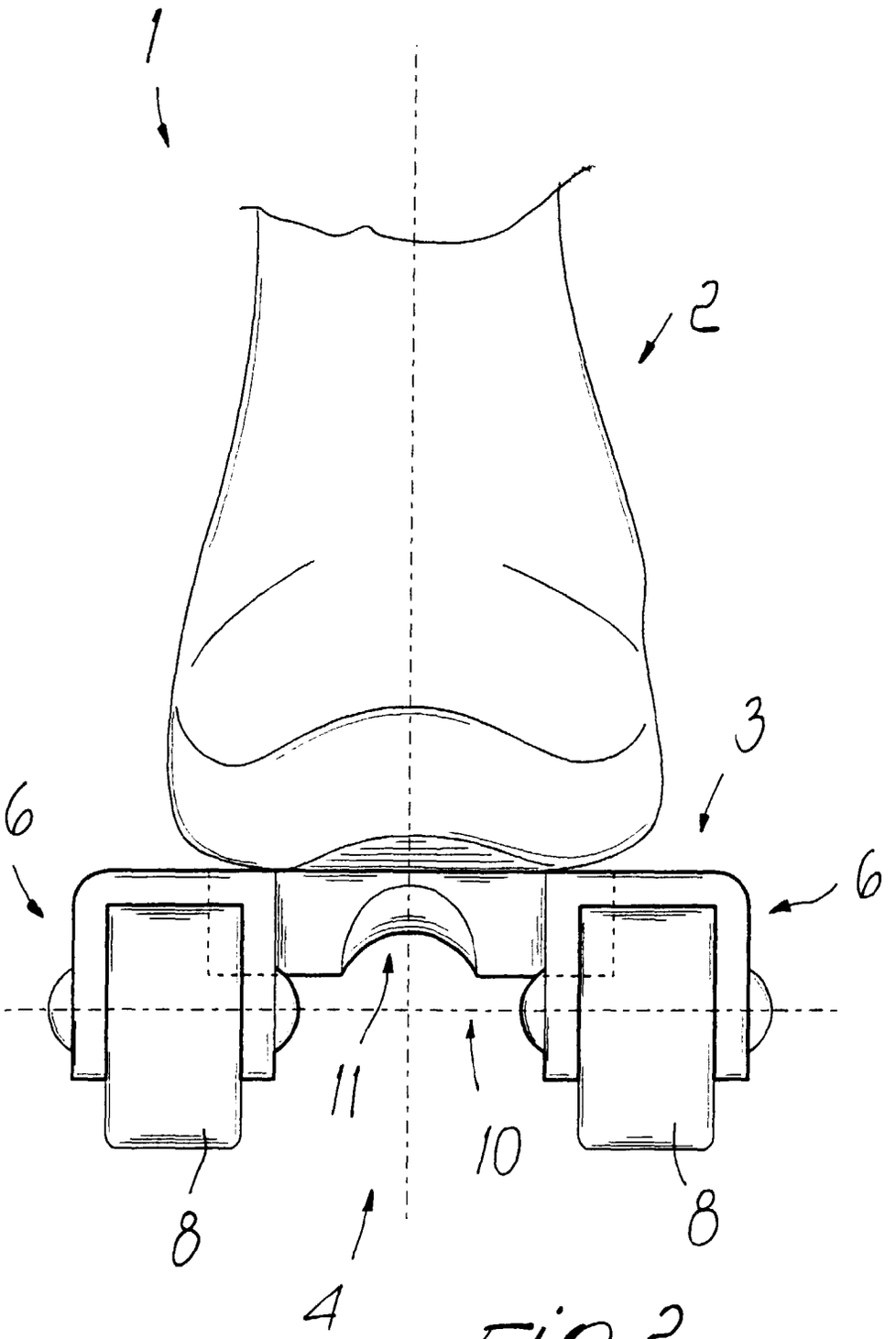
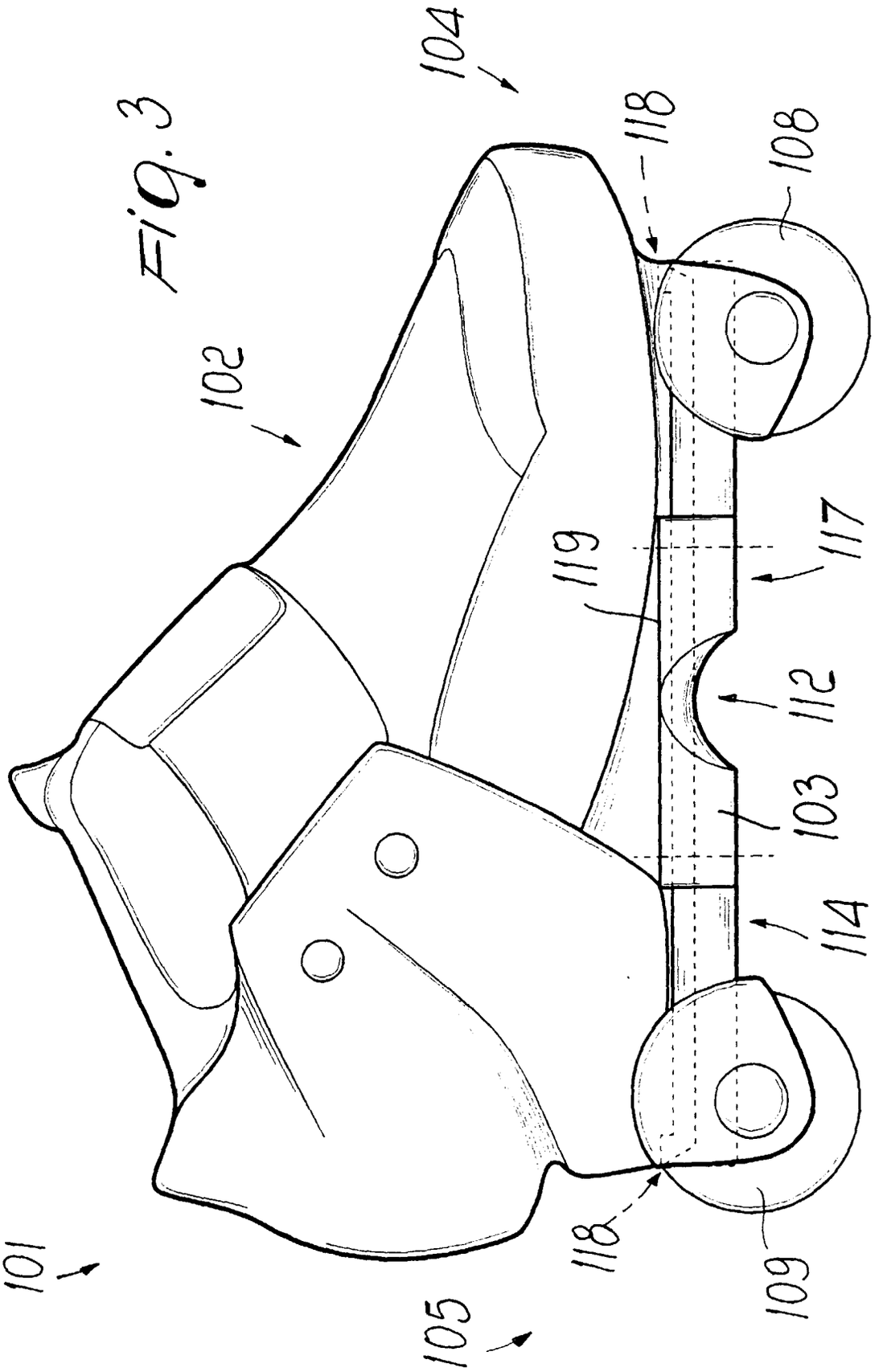



Fig. 2

Fig. 3



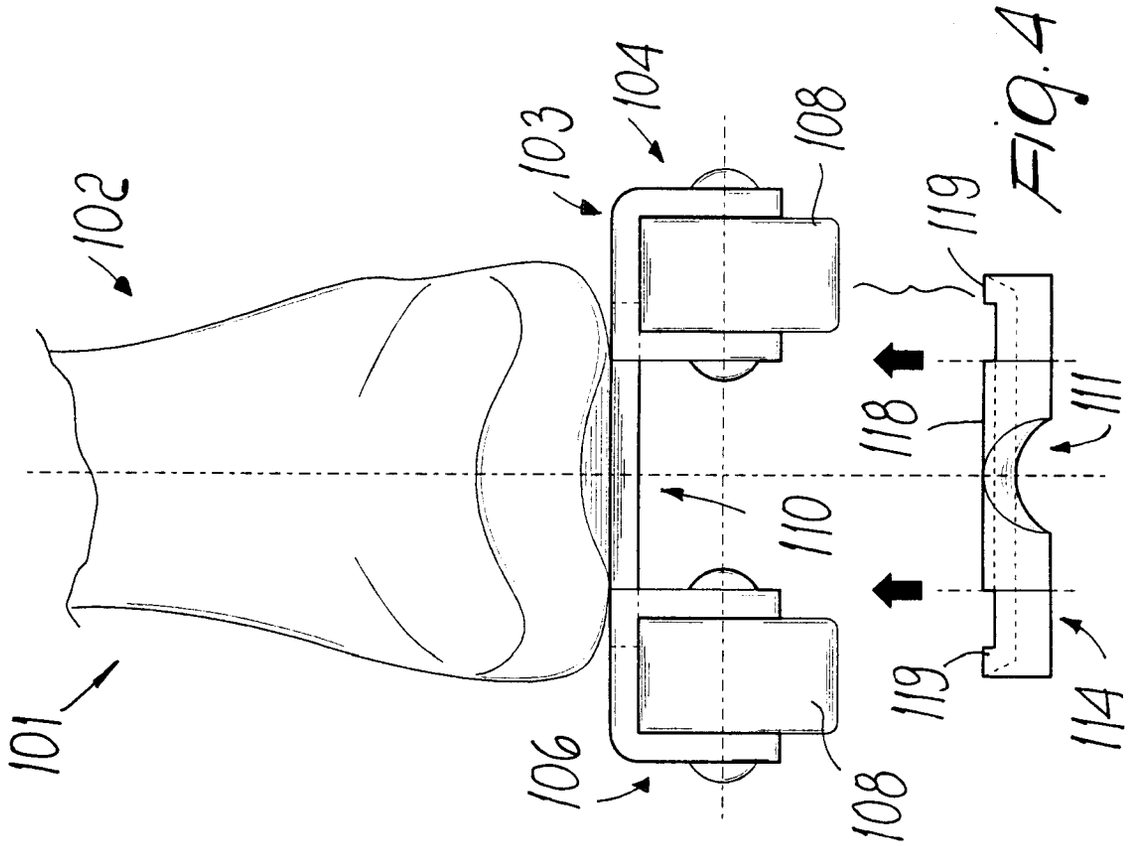

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Fig. 4

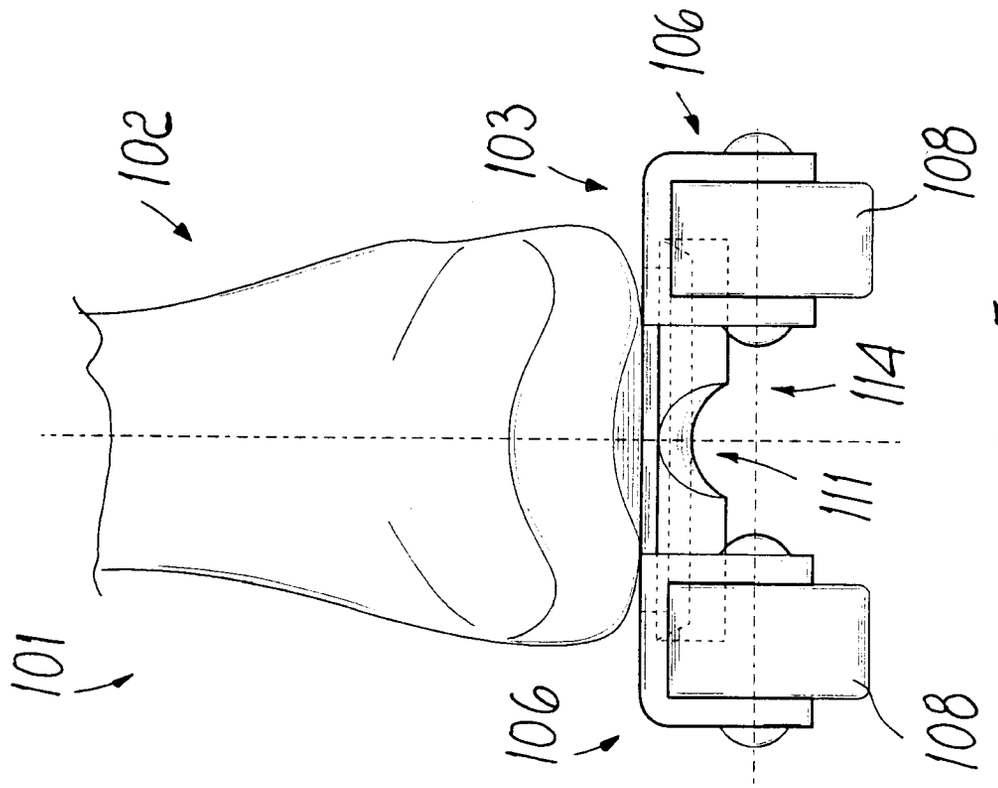
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Fig. 5

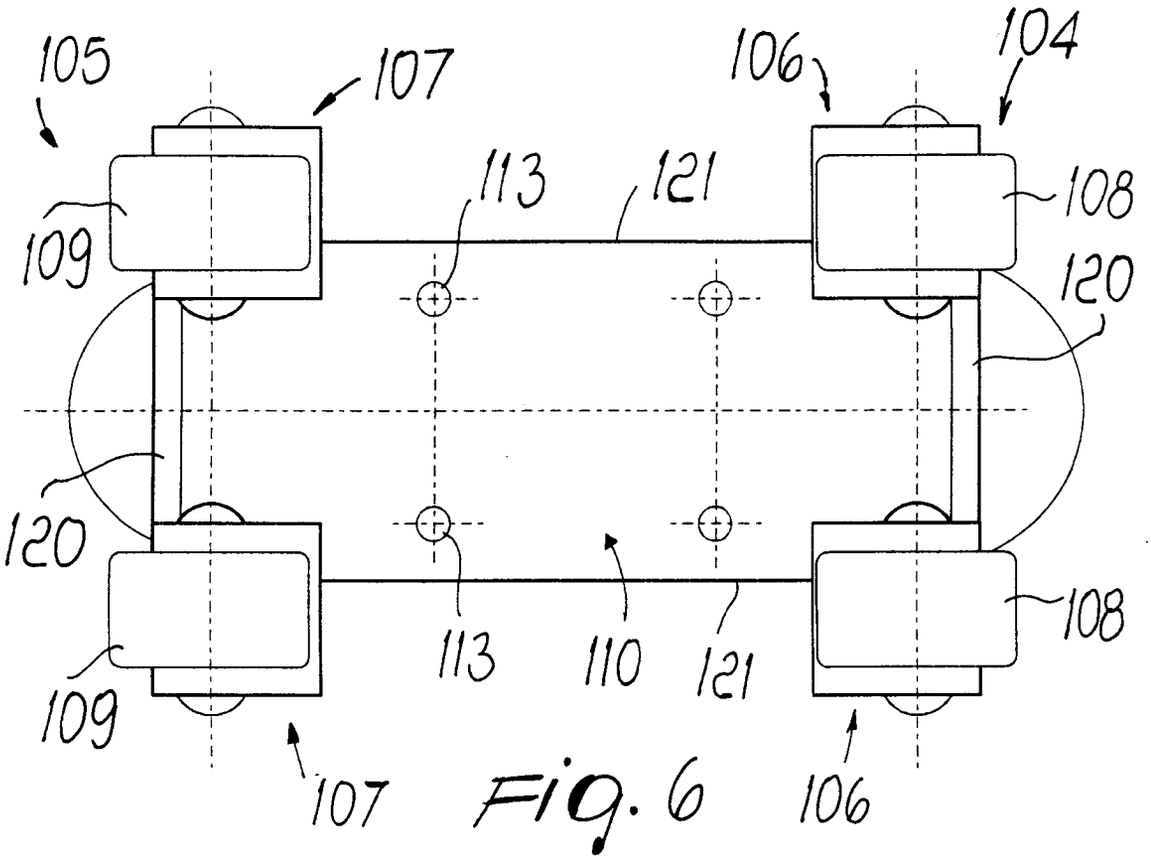
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Fig. 6

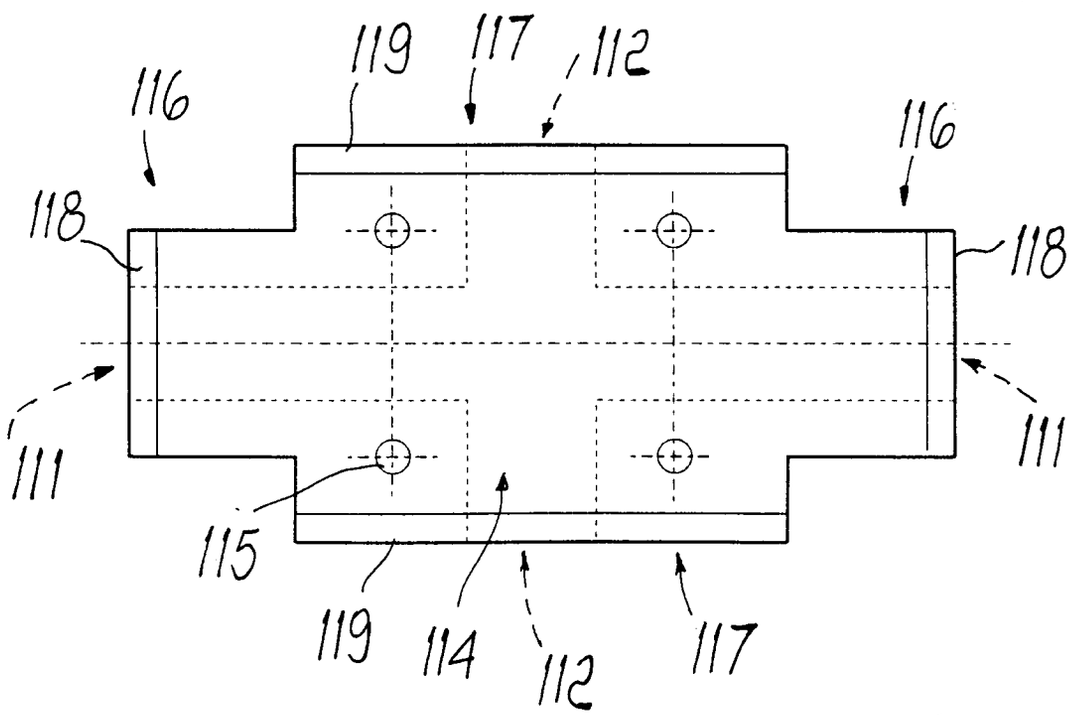
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Fig. 7

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# EUROPEAN SEARCH REPORT

Application Number
EP 99 10 1053

## 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<br>A | US 5 494 304 A (LEVY RICHARD C ET AL) 27 February 1996<br>* figures 8,9 * | 1<br>2 | A63C17/00<br>A63C17/02<br>A63C17/16<br>A63C17/26 |
| X | WO 98 00206 A (ROCES SRL ;CONTE GINO (IT)) 8 January 1998<br>* page 1, line 3 - page 2, line 16; figures 1-3 * | 1 | |
| A | US 5 630 624 A (GOODMAN SCOTT A) 20 May 1997<br>* figure 15 * | 1,5-7,9 | |
| A | DE 196 42 011 A (SUNSHINE PRODUCTS WINDSURFING) 15 January 1998<br>* column 2, line 11 - column 3, line 25; figure 1 * | 1 | |

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

A63C

The present search report has been drawn up for all claims

| Place of search | Date of completion of the search | Examiner |
|---|---|---|
| MUNICH | 31 March 1999 | Feber, L |

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## ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 99 10 1053

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31-03-1999

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|---|---|---|---|
| US 5494304 A | 27-02-1996 | US 5372534 A | 13-12-1994 |
| WO 9800206 A | 08-01-1998 | IT VE960024 U<br>AU 3437797 A | 29-12-1997<br>21-01-1998 |
| US 5630624 A | 20-05-1997 | NONE | |
| DE 19642011 A | 15-01-1998 | DE 29612211 U | 07-11-1996 |