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(54) **IN-LINE ROLLER-SKATE, PARTICULARLY FOR RACING**

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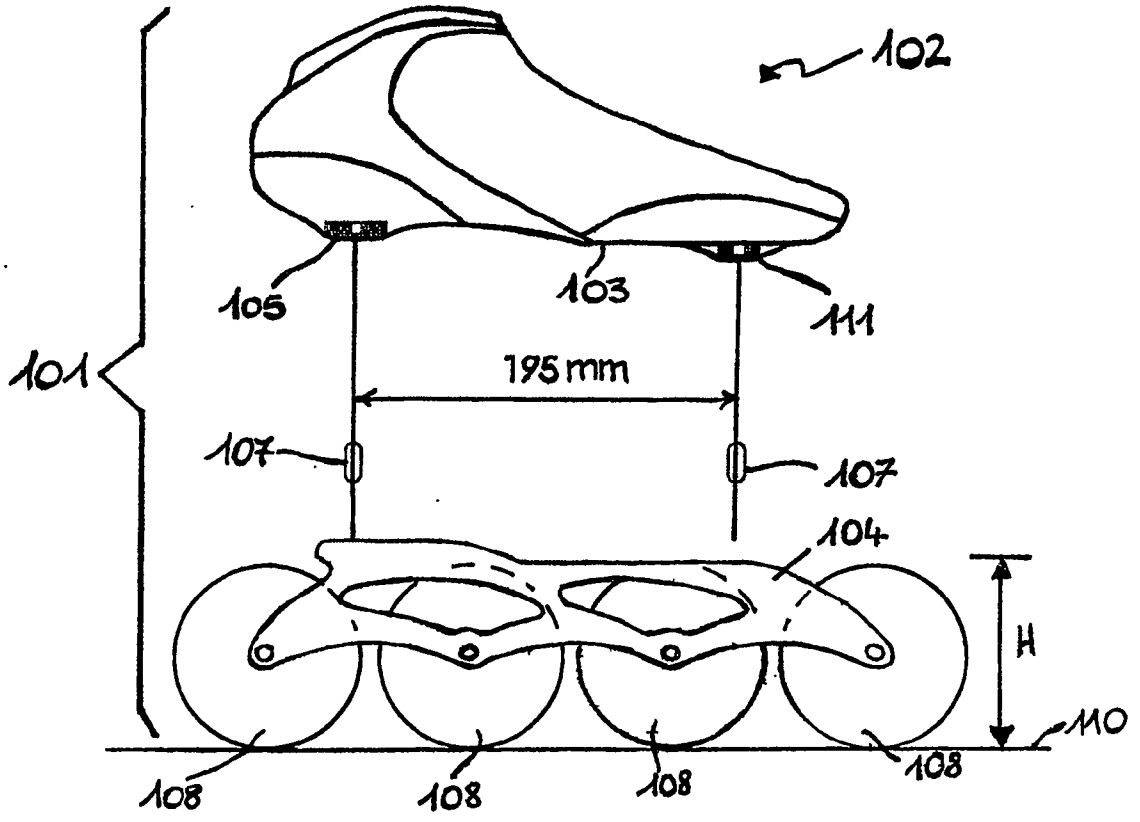
(57) **ABSTRACT**

The present invention refers to an in-line roller-skate, in particular a roller-skate for racing, comprising a footwear (**102**) and a chassis (**104**) supporting a train of wheels (**108**); the footwear (**102**) is provided on the bottom with a sole (**103**), which is in turn provided with at least a first and a second binding point (**105, 111**) for attachment to the chassis (**104**). The first binding point (**105**) is positioned in the heel-piece zone of the sole (**103**), whereas the second binding point (**111**) is positioned in proximity of the foot toe, approximately in the area in which the juncture of the toes lies. The train of wheels (**108**) comprises solely wheels (**108**) having a diameter of 100 mm, while the chassis (**104**) is adapted to accommodate in its interior fastening means (**107**) for joining the footwear (**102**) to the chassis (**104**).



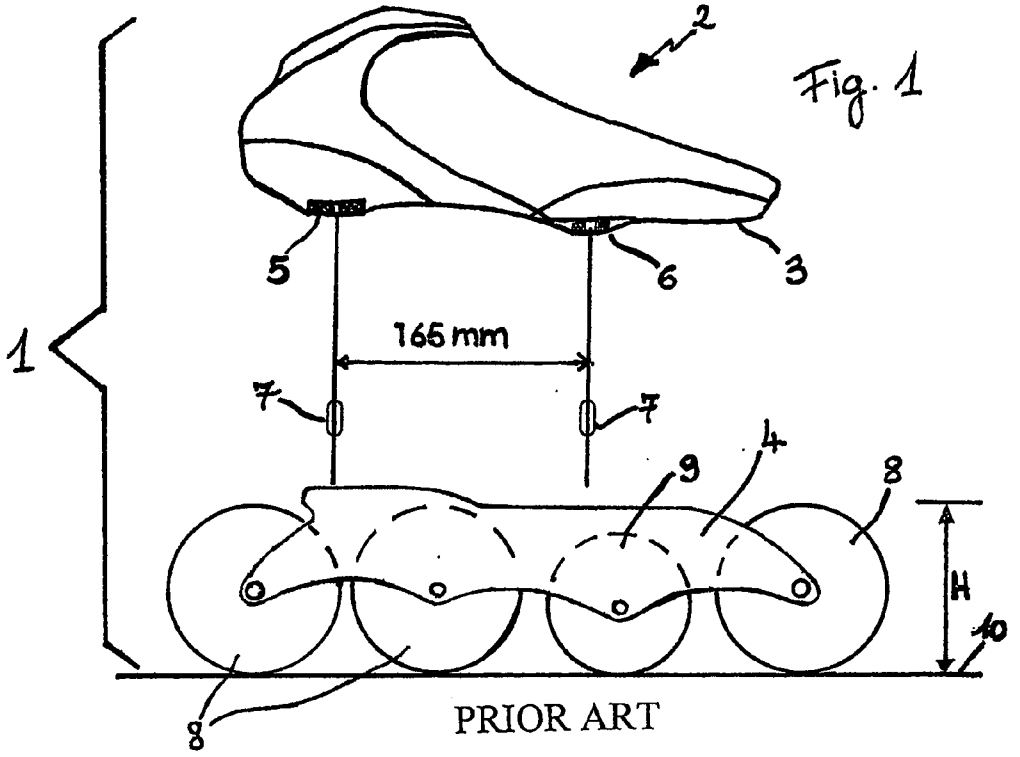


Fig. 1

PRIOR ART

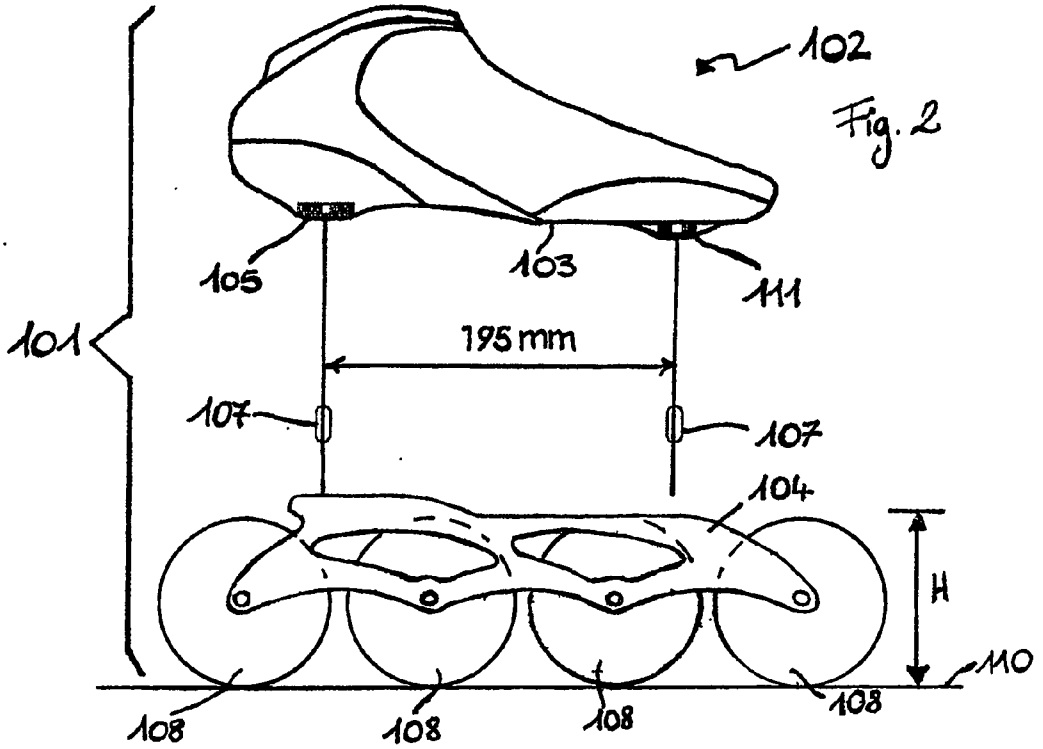


Fig. 2

IN-LINE ROLLER-SKATE, PARTICULARLY FOR RACING

[0001] The present invention refers to an in-line roller-skate, in particular a racing skate, provided with wheels featuring an oversized diameter.

[0002] Racing-type in-line roller-skates, as they are currently used to competitive purposes, are generally provided with wheels having standard-sized diameters of either 80 mm or 84 mm, depending on the characteristics of the skate and the particular needs of the user, while the connection of the sole of the footwear to the chassis of the skate takes place with a pre-defined centre-to-centre distance of 165 mm.

[0003] Such a need for unified sizes to be defined arises from the necessity for different wheels and different footwear to be coupled to the chassis; this in fact enables both manufacturers to mass produce the concerned items and the skate to be personalized by the user through the replacement of the wheels or the footwear with similar component parts available on the market in the form of individual items or kits.

[0004] These standardized sizes of the wheels and the centre-to-centre distance for the connection between footwear and chassis are used also in competition, i.e. racing skates.

[0005] As far as racing skates are concerned, however, the need is particularly felt for the possibility to be given of using wheels featuring an oversized, i.e. larger diameter, generally in the order of 100 mm, in view of boosting the performance capabilities of the skate in a race.

[0006] A solution that is currently adopted by manufacturers in view of at least partially solve the above-cited problem, and illustrated in **FIG. 1**, lies in providing a skate with four or five wheels, three or four wheels of which, respectively, have a larger diameter, whereas the wheel situated immediately behind the front wheel (called also "second wheel") has a smaller diameter. Such a contrivance is necessary in order to be able to keep the height of the chassis in relation to the rolling plane within acceptable limits: in correspondence of the place in which said second wheel is accommodated, in fact, the chassis must also be capable of accommodating in its interior the screws or the rivets for the connection of the toe of the footwear to the same chassis.

[0007] As it can on the other hand be readily appreciated, this is much of a compromise solution that fails to fully meeting the particular high-performance requirements in terms of stability, speed and accuracy in leading and running the skate, which a competition or racing skate should desirably comply with. As a matter of fact, the smaller-diameter second wheel may give rise to problems of instability or vibrations and, as a result, may be the cause of a poorer control of the skate when the latter is being used under most demanding conditions, such as for example in racing contests, thereby determining, among other things, even a poorer efficiency in terms of power or driving force.

[0008] It therefore is a main object of the present invention to do away with the above-cited drawbacks of prior-art solutions by providing an in-line roller-skate, in particular for racing, which is provided with wheels featuring oversized diameter and is capable of ensuring high-level performance capabilities as generally required and desired in racing contests.

[0009] Within the above general object, an important purpose of the present invention is to provide a skate with oversize-diameter wheels, which has such features as high stability, high leading and running precision and speed, while keeping the height of the chassis in relation to the rolling plane substantially unaltered.

[0010] Another purpose of the present invention is to provide an in-line roller-skate, in which the footwear and chassis assembly has a greater torsional rigidity.

[0011] A further, equally important purpose of the present invention is to provide an in-line roller-skate at competitive costs, which is in addition capable of being manufactured with the use of existing techniques and tools.

[0012] According to the present invention, these aims, along with further ones that will be apparent in the following description, are reached in an in-line roller-skate, particularly for racing, which incorporates the characteristics as recited in the appended claim **1**.

[0013] Anyway, features and advantages of the skate according to the present invention will be more readily understood from the description of a particular, although not sole embodiment that is given below by way of non-limiting example with reference to the accompanying drawings, in which:

[0014] **FIG. 1** is a side elevational view of a racing roller-skate with oversize-diameter in-line wheels according to the prior art;

[0015] **FIG. 2** is a side elevational view, similar to the one appearing in **FIG. 1**, of a racing roller-skate with oversize-diameter in-line wheels according to the present invention.

[0016] With reference to **FIG. 1**, the reference numeral **1** is used there to generally indicate a racing skate with oversize-diameter in-line wheels according to the prior art; this skate **1** comprises a footwear **2**, which is provided with a sole **3** featuring binding points **5** and **6** for attachment to the chassis **4**, which are provided in the heel-piece zone and in the metatarsal area of the foot, respectively. The connection of the footwear **2** with the chassis **4** is carried out by means of such known fastening means **7** as screws or rivets.

[0017] Rotatably associated to the chassis **4** are three larger-diameter wheels **8**, generally with a diameter sized to 100 mm, and a wheel **9**, or second wheel, having a standard diameter (i.e. 80 mm or 84 mm) and positioned behind the front wheel. As already stated earlier in this description, in order to be able to keep the height H of the chassis **4** unchanged in relation to the rolling plane **10**, the second wheel **9** must have a smaller diameter than the remaining wheels of the skate, so as to allow for the accommodation, inside the chassis **4**, of the fastening means **7** needed to secure the footwear **2** to the same chassis **4** in correspondence of the second binding point **6**. This prior-art solution entails the drawbacks that have already been elucidated earlier in the introductory part of this description.

[0018] On the contrary, **FIG. 2** illustrates a racing roller-skate with oversize-diameter in-line wheels according to the present invention. In this case, the skate **101** comprises a

footwear **102** provided with a sole **103**, which feature at least two binding points **105** and **111** for attachment to the chassis **104**; the first of such binding point **105** is positioned in the heel-piece zone of the sole, whereas the second binding point **111** is positioned in proximity of the toe zone of the foot, approximately in the area in which the juncture of the toes lies. The connection of the footwear **102** with the chassis **104** is carried out by means of such known fastening means **107** as screws or rivets. The second binding point **111**, i.e. the front one, turns therefore out as being situated at a greater distance from the first binding point **105**, i.e. the rear one, as compared with the prior-art solution. In an advantageous manner, the centre-to-centre distance between the first binding point **105** and the second binding point **111** is comprised between 170 mm and 210 mm, or shows an increase comprised between 3% and 27% over currently used centre-to-centre distance values; a preferred value for such a centre-to-centre distance is 195 mm.

[**0019**] Thanks to the above-illustrated arrangement, the chassis **104** is capable of accommodating a train of wheels **108** comprising solely oversize-diameter wheels, while at the same time accommodating the fastening means **107** for the footwear **102** in its interior, wherein the height H of the front zone of the chassis **104** in relation to the sliding plane **110** is kept unaltered. In the embodiment illustrated in **FIG. 2** there are provided four wheels **108** having an oversized diameter, advantageously a diameter of 100 mm, in an in-line arrangement. It will be readily appreciated, however, that skates according to the present invention can equally well be provided with in-line arrangements of even five wheels.

[**0020**] Fully apparent from the above description is therefore the ability of the in-line roller-skate according to the present invention to effectively reach the afore cited aims and advantages: in fact, the skate provided with a chassis of an unaltered height H in relation to the sliding plane, and supporting a complete train of unvaryingly oversize-diameter wheels, enables high performance levels to be obtained, while at the same time keeping the height of the centre of gravity of the skater unaltered.

[**0021**] Therefore, the skate according to the present invention has characteristics of high stability, high leading and running precision, as well as increased speed thanks to the greater propelling power deriving, among other things, from a lower loss of energy due to vibrations and instability of the skate.

[**0022**] Such an improvement of the performance level of the skate is also due to a greater torsional rigidity of the footwear-chassis assembly, which are in fact assembled together with a greater arm owing to the increased centre-to-centre distance between the binding points joining the two parts together. Such a feature also contributes to a faster response of the skate to leading commands during running, and is effective in reducing vibrations coming from the chassis.

[**0023**] It shall be appreciated that the above-described skate may of course be the subject of a number of modifications and variants, also in connection with different applications, without departing from the scope of the present invention. Furthermore, the materials used to manufacture the skate of the present invention, as well as the shapes and the sizing of the individual component parts thereof, may each time be selected so as to more appropriately meet the particular requirements or suit the particular application, again without departing from the scope of the present invention.

1. In-line roller-skate, in particular for racing, comprising a footwear (**102**) and a chassis (**104**) supporting a plurality of wheels (**108**), said footwear (**102**) being provided on the bottom with a sole (**103**), which is in turn provided with at least a first and a second binding point (**105**, **111**) for attachment to the chassis (**104**), said first binding point (**105**) being positioned in the heel-piece zone of the sole (**103**), characterized in that said second binding point (**111**) is positioned in proximity of the foot toe, approximately in the area in which the juncture of the toes lies; in that said plurality of wheels (**108**) comprise solely wheels (**108**) having an oversized diameter; and in that said chassis (**104**) is adapted to accommodate in its interior fastening means (**107**) for joining said footwear (**102**) to said chassis (**104**) at said first and said second binding points (**105**, **111**).

2. In-line roller-skate according to claim 1, in which the centre-to-centre distance between said first and said second binding points (**105**, **111**) lies anywhere between 170 mm and 210 mm.

3. In-line roller-skate according to claim 1, in which the centre-to-centre distance between said first and said second binding points (**105**, **111**) shows an increase comprised between 3% and 27% over prior-art centre-to-centre distance values.

4. In-line roller-skate according to claim 1, in which said plurality of wheels (**108**) is constituted by at least four wheels having a diameter of 100 mm.

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