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(71) Applicant *(for all designated States except US)*: NORDICA S.P.A. [IT/IT]; Via Piave, 33, I-31044 Montebelluna (IT).

(72) Inventor; and
(75) Inventor/Applicant *(for US only)* : GONELLA, Mario [IT/IT]; Via Trevisani nel Mondo, 27, I-31015 Conegliano (IT).

(74) Agent: MODIANO, Guido; Modiano, Josif, Pisanty & Staub, Via Meravigli, 16, I-20123 Milan (IT).

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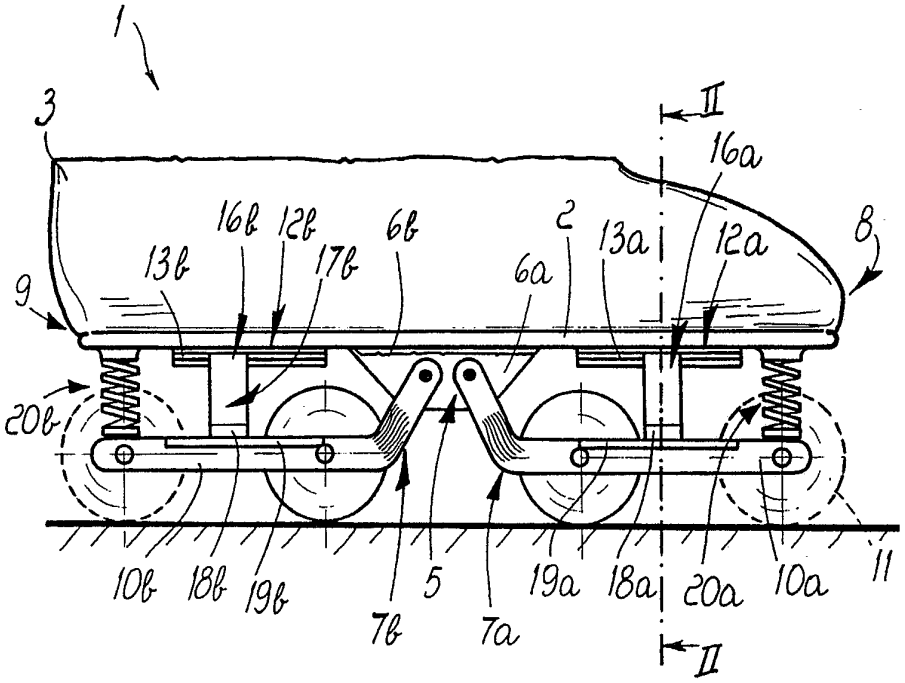

(57) Abstract

A skate with aligned wheels, comprising a support (2) for an item of footgear (3) from which a frame (5) protrudes downward. The ends of respective wheel supporting trucks (7a, 7b) are pivoted to the frame. The peculiarity of the invention resides in the fact that two movable sliders are interposed between the trucks and the respective supports. Advantageously, at least one rubber pad (18a, 18b) is interposed between each truck and support. The skate allows the user to preset the degree of shock-absorption during skating by varying the position of the slider.

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SKATE WITH ALIGNED WHEELS

Technical field

The present invention relates to a skate with aligned wheels.

Background Art

A first conventional type of skate with aligned wheels has a support for an item of footgear from which a pair of longitudinal shoulders protrudes. A plurality of aligned wheels is freely pivoted transversely between the longitudinal shoulders.

This first known type of skate has some problems: the fact that the aligned wheels are pivoted in a fixed manner to the pair of wings entails direct transmission to the item of footgear of all the stresses due to the bumps which occur on the ground and encountered during sports practice, with consequent discomfort for the user.

The structural rigidity of this known solution also entails the transmission of vibrations to the item of footgear, and thus to the legs of the user, which penalize his sports performance.

A sports implement predominantly used by skiers for summer practice on roads is also known; it is constituted by a support for an item of footgear from which a frame protrudes downward and centrally. The ends of two pairs of wheel supporting trucks are independently pivoted to the frame, and the head of a screw with a threaded stem is connected to the support in the interspace between two adjacent wheels. A complementarily threaded nut is associated with the stem and abuts on the ground-facing surface of a connecting element which is arranged

transversely to each pair of trucks. A cylindrical helical compression spring is arranged coaxially to the stem.

This known type, illustrated in the Italian patent application No. 21821 B/85, allows, by adjusting the spring compression, to vary the angle formed between each pair of wheel supporting trucks and the ground.

In this type, the adjustment of the degree of compression of the spring allows only to vary the condition of use of the implement while practicing slalom: in fact, when the spring is at its minimum setting, i.e. when the spring is not compressed, it is possible to achieve easy use for the practice of slalom, but while pushing forward and while covering straight stretches the implement yields causing a considerable deterioration of the athletic performance.

When the spring is gradually compressed, the outermost wheels of the truck pairs rise and thus separate from the ground by a more or less significant distance. This condition can improve the use of the implement while practicing slalom, but this again entails a non-optimum and thus unstable condition during straight stretches and therefore in the practice of speed skating, and in any case all the vibrations due to impacts against bumps which protrude from the ground or due to uneven parts thereof are transmitted to the item of footgear and thus to the legs of the user.

Disclosure of the Invention

The aim of the present invention is to eliminate the above described problems in known types by providing a skate which allows to attenuate the stresses transmitted to the

legs of the user in relation to travel over uneven or rough ground, keeping constant the arrangement of the wheels with respect to the ground.

Within the scope of the above aim, an important object is to provide a skate which allows the user to preset the degree of attenuation of said stresses.

Another object is to provide a skate which can be easily activated by the user.

Another object is to provide a skate wherein the user can immediately be aware of the degree of attenuation which has been set.

A further object is to provide a skate which is simple, easy to industrialize, reliable and safe in use and has low manufacturing costs.

This aim, these objects and others which will become apparent hereinafter are achieved by a skate with aligned wheels, comprising a support for an item of footgear from which a frame protrudes downward, the end of at least one wheel supporting truck being pivoted to said frame, characterized in that at least one movable slider is interposed between said at least one truck and said support.

Preferably, a further resilient member is provided between said at least one slider and said at least one truck.

Brief description of the drawings

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

figure 1 is a partially sectional side view of the skate;

figure 2 is a sectional view, taken along the plane II-II of figure 1.

Ways of carrying out the Invention

With reference to the above figures, the skate, generally designated by the reference numeral 1, comprises a support 2 for an item of footgear 3 from which a frame 5 protrudes downward. The frame is composed of two mutually parallel shoulders 6a and 6b.

The end of at least one wheel supporting truck, shaped like a fork in plan view, is pivoted to the frame.

In the embodiment of figure 1, the terminal ends of two trucks 7a and 7b are independently pivoted. The two trucks are arranged mutually opposite, with their free ends directed toward the tip 8 and the heel 9 of the item of footgear 3.

Each of said two trucks has a substantially L-shaped lateral profile with the longer arm 10a, 10b arranged approximately parallel to the ground. A plurality of wheels 11 are pivoted between the arms of the trucks, and are thus arranged in a line.

In the illustrated embodiment, two wheels pivoted at the longer arm of each truck have been considered by way of example.

A first plate and a second plate, designated by the reference numerals 12a and 12b, protrude below and longitudinally with respect to the support 2, approximately at the respective longer arm 10a and 10b.

Each one of said plates is laterally provided with a

pair of longitudinal seats 13a and 13b, each of which guides a pair of complementarily shaped tabs 14 formed at the base 15 of a slider, designated by the reference numerals 16a and 16b, which is substantially C-shaped.

Each one of said sliders 16a and 16b therefore has a pair of wings, designated by the reference numerals 17a and 17b, with the free ground-facing ends of which a first resilient member, such as a rubber pad, designated by the reference numerals 18a and 18b, is preferably associated.

The pads face and interact with abutment flaps, designated by the reference numerals 19a and 19b, which protrude laterally and externally to each one of the trucks 7a and 7b at a region underlying said first and second plates 12a and 12b. The abutment flaps have a substantially L-shaped transverse cross-section.

At least one second resilient member, preferably constituted by two pairs of springs, designated by the reference numerals 20a and 20b, is advantageously interposed between the free end of the trucks 7a and 7b and the support 2.

The use of the skate is as follows: prior to the beginning of sports activity, the user arranges the sliders 17a and 17b in the required position with respect to the first plate 12a and the second plate 12b. In this manner he can adjust the degree of maximum oscillation to which the two trucks can be subjected. The pairs of springs 20a and 20b, arranged at the free end of the trucks, ensure that the trucks 7a and 7b stay close to the support 2 and that they are shock-absorbed.

The pads 18a and 18b allow to further contain any

sudden stresses due to the presence of bumps on the ground.

The length of the wings 17a and 17b may be the most appropriate according to the specific requirements of the user.

It has thus been observed that the invention has achieved the above described aim and objects, a skate with aligned wheels having been obtained wherein it is possible for the user to rapidly and easily adjust the degree of shock-absorption of at least one truck to which the aligned wheels are pivoted, without varying their arrangement in any way.

The use of the sliders also allows the user to be immediately aware of the set degree of attenuation.

The skate thus conceived is susceptible to numerous modifications and variations, all of which are within the scope of the inventive concept.

The materials and the dimensions of the individual elements which constitute the skate structure may naturally be the most appropriate according to the specific requirements.

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 scope of each element identified by way of example by such reference signs.

CLAIMS

1. Skate with aligned wheels, comprising a support (2) for an item of footgear (3) from which a frame (5) protrudes downward, the end of at least one wheel supporting truck (7a,7b) being pivoted to said frame, characterized in that at least one movable slider (16a,16b) is interposed between said at least one truck and said support.

2. Skate according to claim 1, characterized in that a first resilient member (18a,18b) is provided between said at least one slider and said at least one truck.

3. Skate according to claim 1, characterized in that said trucks are arranged mutually opposite with their free ends directed toward the tip (8) and the heel (9) of said item of footgear, the end of each truck being pivoted to said frame.

4. Skate according to claim 3, characterized in that said trucks are substantially L-shaped, having the longer arm (10a,10b) arranged approximately parallel to the ground, a first plate (12a) and a second plate (12b) protruding below and longitudinally to said support approximately at the respective longer arm.

5. Skate according to claim 4, characterized in that each one of said plates is laterally provided with a pair of longitudinal seats (13a,13b), each seat guiding a pair of complementarily shaped tabs (14) formed at the base of said slider.

6. Skate according to claim 5, characterized in that each one of said sliders is substantially C-shaped and has a pair of wings (17a,17b), said first resilient member being

associated with the end of said slider facing the ground.

7. Skate according to claim 6, characterized in that said resilient members are constituted by rubber pads, said pads interacting with abutment flaps (19a,19b) which protrude laterally and externally to each one of said trucks at a region underlying said first and second plates (12a,12b), said abutment flaps being substantially L-shaped in transverse cross-section.

8. Skate according to claim 7, characterized in that at least one second resilient member (20a,20b) is constituted by at least a pair of springs and is interposed between the free end of said trucks and said support.

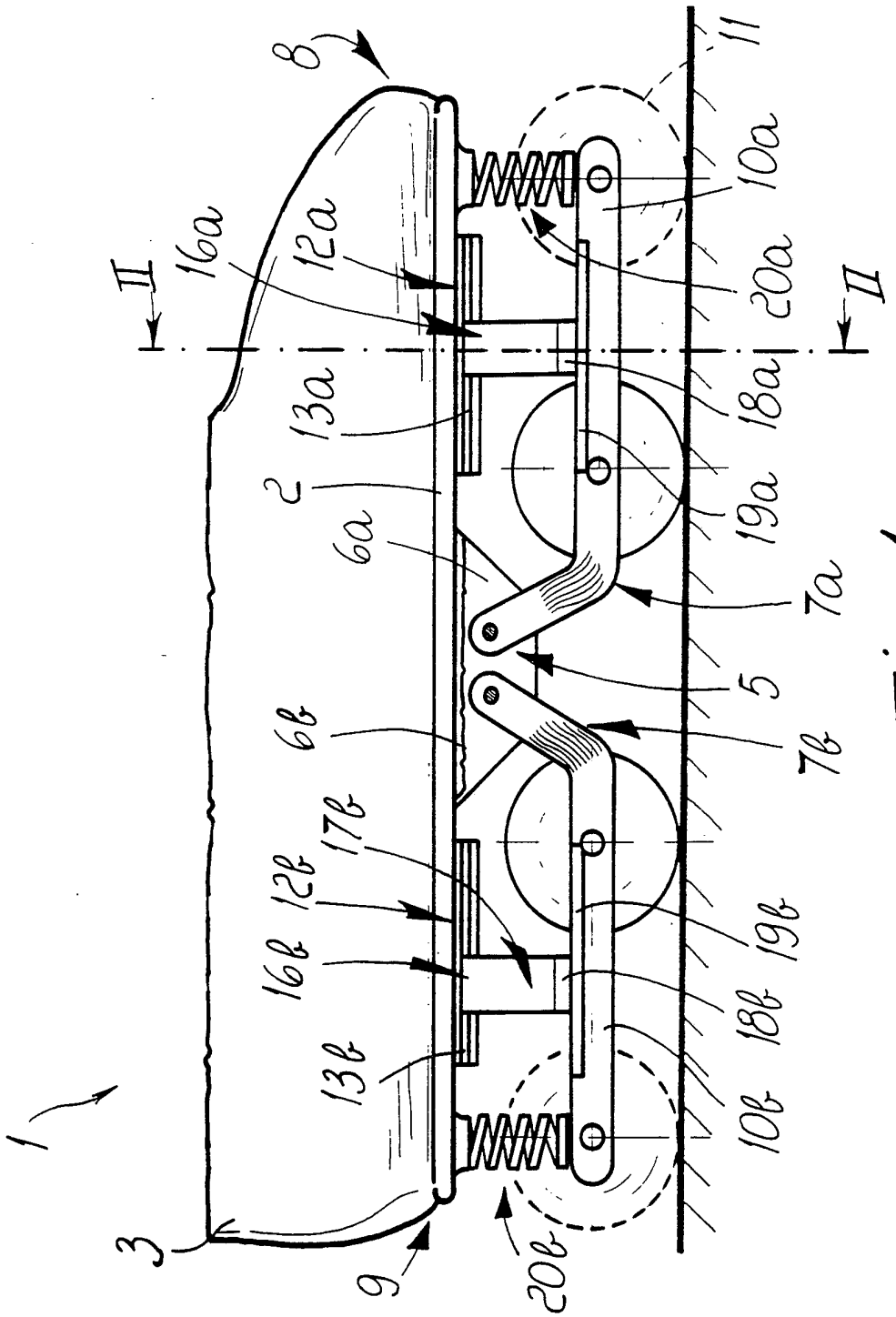
8
11
10a
16a
12a
II
II
20a
13a
18a
2
19a
6a
7a
5
6b
7b
17b
12b
16b
19b
18b
13b
10b
1
3
9
20b

Fig. 1

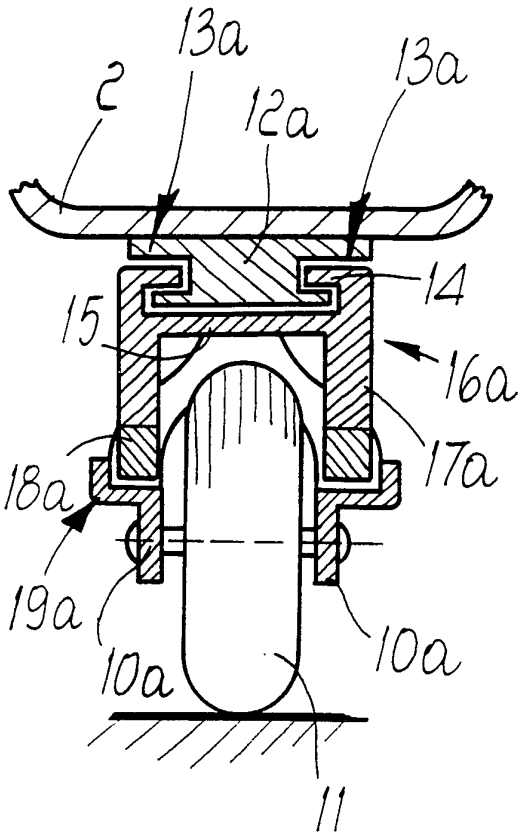

Fig. 2

INTERNATIONAL SEARCH REPORT

International Application No PCT/EP 93/00125

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all)[6]

According to International Patent Classification (IPC) or to both National Classification and IPC

Int.Cl. 5 A63C17/06

II. FIELDS SEARCHED

Minimum Documentation Searched[7]

Classification System	Classification Symbols
Int.Cl. 5	A63C

Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched[8]

III. DOCUMENTS CONSIDERED TO BE RELEVANT[9]

Category °	Citation of Document,[11] with indication, where appropriate, of the relevant passages[12]	Relevant to Claim No.[13]
X	FR,A,461 506 (RUSS) 31 December 1913	1-3
A	*the whole document*	4
X	FR,A,2 660 205 (PICARD) 4 October 1991 see figure 8	1,2
A	US,A,4 155 565 (DE CAUSSIN ET AL.) 22 May 1979 see figures 10,11	1

° Special categories of cited documents :[10]

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IV. CERTIFICATION

Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report
24 MAY 1993	01. 06. 93
International Searching Authority	**Signature of Authorized Officer**
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ANNEX TO THE INTERNATIONAL SEARCH REPORT ON INTERNATIONAL PATENT APPLICATION NO.

EP 9300125
SA 70447

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report.
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
FR-A-461506		None	
FR-A-2660205	04-10-91	None	
US-A-4155565	22-05-79	None	