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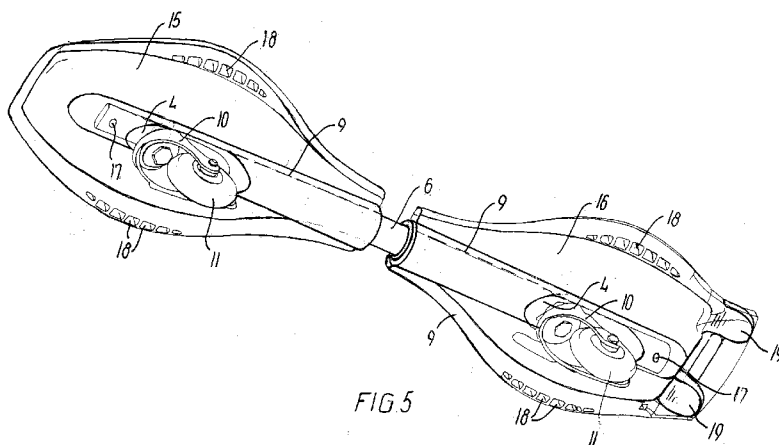
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(54) Title: A SKATEBOARD



(57) Abstract: A skateboard with two wheels (11), said skateboard having a front plate (15) and a rear plate (16) which are connected with each other by a spring element (3), which is secured to a rod (1 and 2) at both ends of the spring element (3). The two wheels (11), the front plate (15) and the rear plate (16) are secured inclined (4) to the rod (8, 11) by means of screw connections (4, 12) to form an angle relative to the upper sides of the plates (15 and 16). In this manner, the front plate (15) and the rear plate (16) are protected against breaks, as the wheels (11) are not secured directly to the front plate (15) and the rear plate (16), but to the rods (1 and 2) with the spring element (13).

## A SKATEBOARD

### The prior art

5       The invention relates to a skateboard comprising a front plate and a rear plate which have one wheel each, and which are connected by means of a spring element.

10       Such a skateboard is known e.g. from US Patent No. 5,540,455. The skateboard according to the US patent has a front plate and a rear plate, which are connected with each other by a spring element.

15       Further, EP 1 511 541 B1 discloses a skateboard of the same type, but having wheels whose axes are inclined and secured directly to the front plate and the rear plate, respectively.

20       However, it has been found that the front plate and/or the rear plate may crack, if they are subjected to too great loads which are caused by the wheels, as impacts from the wheels are transferred directly to the front plate and the rear plate.

### The object of the invention

25       It is an object of the invention to remedy this defect.

30       This is achieved according to the invention in that the skateboard is characterized in that the spring element is formed by an elongated torsional spring, which is secured at each end to a rod, to which the wheels are secured.

In this manner, impacts from the wheels will be transferred to the respective

rods thereof and not to the front plate and the rear plate.

5 When, as stated in claim 2, the spring is configured as a leaf spring, a suitable spring characteristic and thereby control of the mutual movability of the plates are achieved.

10 An expedient way of securing the wheels to the rod is, as stated in claim 3, that the two wheels, each of which comprises a bracket as well as a rotary shaft, are secured to their respective threads in their respective rods.

When, as stated in claim 4, the wheels are mounted inclined, it is ensured that the wheels are aligned in the travelling direction in use.

15 When, as stated in claim 5, the front plate and the rear plate are provided with bushings into which the rods may be inserted and to which they may be secured, a firm assembly of the board without any risk of breaks is ensured.

20 When, as stated in claim 6, the spring is enclosed in a pipe, it is protected, and its function is ensured.

When, as stated in claim 7, the wheels are cushioned, the board and thereby the user are not exposed to direct stresses.

25 Finally, it is expedient, as stated in claim 8, to construct the boards so as to allow for the mounting of brake blocks and/or support wheels, as this will protect the boards themselves against wear and moreover facilitate the use.

30

The drawing

The invention will be described more fully below with reference to the drawing, in which

5

fig. 1 shows the spring element mounted between two rods, seen from the side,

fig. 2 shows the spring element, seen from above,

10

fig. 3 shows the skateboard of fig. 1, seen in a partially sectional view with mounted front plate, rear plate and wheels,

fig. 4 shows a wheel with a bracket and an attachment element, and

15

fig. 5 shows an assembled skateboard, seen in perspective toward the lower side of the board.

Description of an exemplary embodiment

20

The assembled skateboard, which is shown in fig. 5, will be described below on the basis of the spring arrangement shown in figs. 1 and 2.

25

This spring arrangement comprises a leaf spring 3, which is preferably constructed as a laminate comprising two or more spring members. These spring members are held together, e.g. by a plurality of spot welds 8, and are moreover secured to a rod 1 and 2 at each end by means of a rivet or a screw 7.

30

This arrangement is preferably enclosed in a pipe member 6, which protects the spring against dust and water.

The rods 1 and 2 are preferably made of aluminium, which is partly light and partly does not corrode.

5 As shown in fig. 1, the rods 1 and 2 are provided with a milled-out portion on the lower side, whose one end is inclined 4 in the travelling direction, thereby allowing for the provision of threads 5 in which the wheels may be secured, as will be explained later.

10 Finally, the outermost parts of the rods are provided with transverse threaded holes 14 into which a screw 17 may be screwed, so that the rods and thereby the entire spring arrangement may be secured to the boards 15 and 16, as shown in fig. 5.

15 The two boards 15 and 16 are shown in section in fig. 3. They are preferably made of plastics, which may be reinforced, as needed.

20 A bushing or bore 9 is provided in the longitudinal direction of the boards, so that each board may be inserted on to a rod 1 and 2 with the spring element 3 in the pipe 6 between them, as shown in fig. 3.

Then, the rods 1 and 2 may be locked to the boards by means of the previously mentioned bolt or screw 17.

25 After this, the board is mounted, it being noted that each board may be twisted and moved individually, since they are each secured to a rod 1 and 2 with the spring member 3 between them.

30 The wheels are shown in fig. 4. They comprise the wheel 11 itself, which is mounted in a bracket 10, which, in turn, is mounted on an attachment element 12.

A spring 13 may be incorporated, in the event that cushioning of the wheels should be needed.

5 As shown in fig. 3, the attachment element 12 is screwed into the threaded holes 5 in the rods, so that the wheels extend obliquely relative to the plates and thereby act self-aligning. It should be noted that the wheels are secured to the rods and not to the boards, whereby the transfer of forces remains between wheel and rod and only affects the boards 15 and 16 indirectly, which are thereby protected against being overloaded with the consequent risk of formation of cracks.

10

One or more projections or blocks 19 are shown on the rear edge of the rear board 16, which serve as brake blocks when the board is tilted upwards at the front.

15 Depressions or recesses 18, as shown in fig. 5, may be provided on the lower side along the side edges of the boards. Brake blocks and/or support wheels (not shown) may be secured in these.

20 The skateboard according to the invention may easily be assembled and disassembled by the removal of a few bolts 17, just as the wheels may be easily be removed by screwing out the stay 12.

Hereby, the board may easily be repaired, and the parts may be exchanged, as needed.

25

**PATENT CLAIMS**

1. A skateboard comprising a front plate and a rear plate which have a wheel each, and which are connected by means of a spring element,  
5 c h a r a c t e r i z e d in that the spring element is formed by an elongated torsional spring (3), which is secured (7) at each end to a rod (1 and 2), to which the wheels (10, 11, 12) are secured.
2. A skateboard according to claim 1, c h a r a c t e r i z e d in that the tor-  
10 sional spring (3) is a leaf spring.
3. A skateboard according to claims 1 and 2, c h a r a c t e r i z e d in that each wheel (11) is mounted in a bracket (10), which is mounted on an at-  
15 tachment element (12), which is mounted in its respective rod (1 and 2).
4. A skateboard according to claim 3, c h a r a c t e r i z e d in that the at-  
tachment element (12) is mounted inclined relative to the upper sides of the front plate (15) and the rear plate (16).
- 20 5. A skateboard according to claims 1 – 4, c h a r a c t e r i z e d in that both the front plate (15) and the rear plate (16) are provided with longitudinal holes, bushings (9) for receiving their respective rods (1 and 2), said rods (1 and 2) being secured (14) to the plates (15 and 16).
- 25 6. A skateboard according to claims 1 and 2, c h a r a c t e r i z e d in that the spring element (3) is completely and the rods (1 and 2) are partly enclosed in a pipe (6).
- 30 7. A skateboard according to claims 3 and 4, c h a r a c t e r i z e d in that a shock absorber in the form of a spring (13) is mounted in the bracket (10) and/or around the attachment element (12).

8. A skateboard according to claim 5, characterized in that depressions or recesses (18) are provided on the lower sides of the plates (15 and 16) for receiving brake blocks and/or support wheels.



**AMENDED CLAIMS**  
**received by the International Bureau on**  
**07 JULY 2009 (07.07.2009)**

1. A skateboard comprising a front plate and a rear plate which have a wheel each, where each of the wheels comprises a wheel, a bracket and a rotary shaft and where both wheels are placed under the front and rear plates obliquely in relation to the plates, and where the front and rear plates are connected by means of a spring element, which is formed by an elongated torsional spring being secured at each end to a rod, characterized in that both the front plate (15) and the rear plate (16) are provided with longitudinal holes, bushings (9) for receiving their respective rods (1 and 2), said rods (1 and 2) being firmly secured (14) to the plates (15 and 16) and that each of the wheels (10, 11, 12) are secured directly to each of the rods (1 and 2).
2. A skateboard according to claim 1, characterized in that the torsional spring (3) is a leaf spring.
3. A skateboard according to claims 1 and 2, characterized in that each wheel (11) is mounted in a bracket (10), which is mounted on an attachment element (12), which is mounted in its respective rod (1 and 2).
4. A skateboard according to claim 3, characterized in that the attachment element (12) is mounted inclined relative to the upper sides of the front plate (15) and the rear plate (16).
5. A skateboard according to claims 1 and 2, characterized in that the spring element (3) is completely and the rods (1 and 2) are partly enclosed in a pipe (6).
6. A skateboard according to claims 3 and 4, characterized in that a shock absorber in the form of a spring (13) is mounted in the bracket (10)

7. A skateboard according to claim 5, c h a r a c t e r i z e d in that depressions or recesses (18) are provided on the lower sides of the plates (15 and  
5 16) for receiving brake blocks and/or support wheels.

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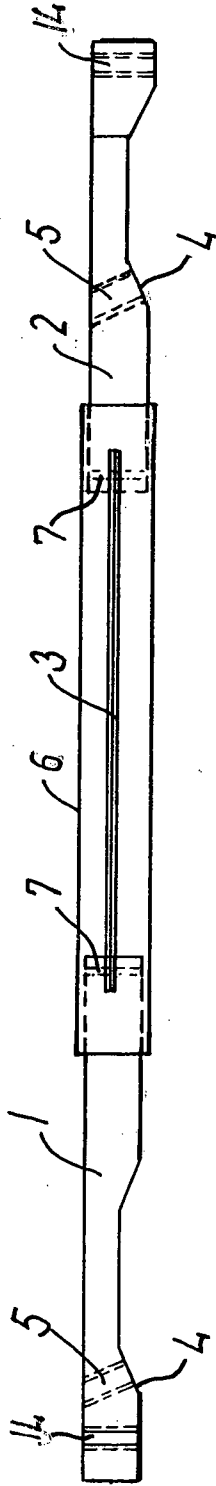


FIG. 1



FIG. 2

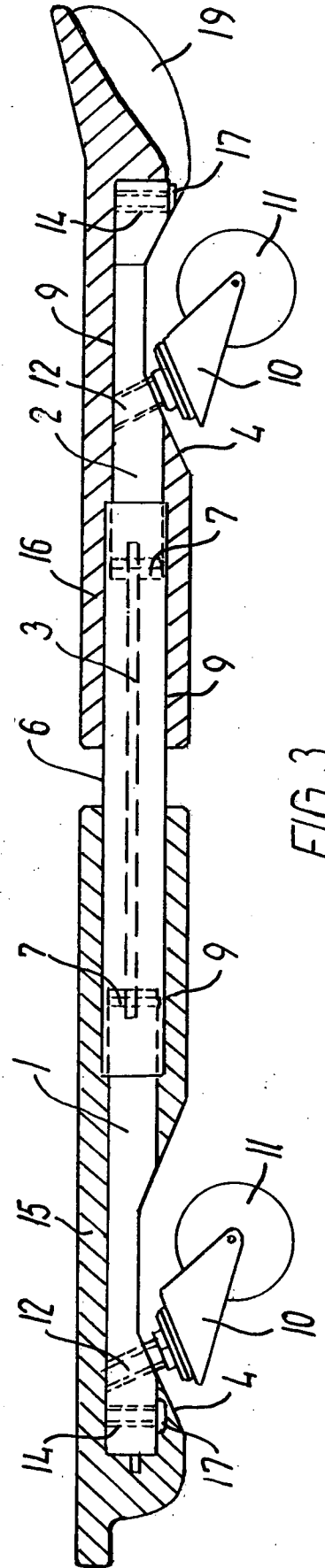
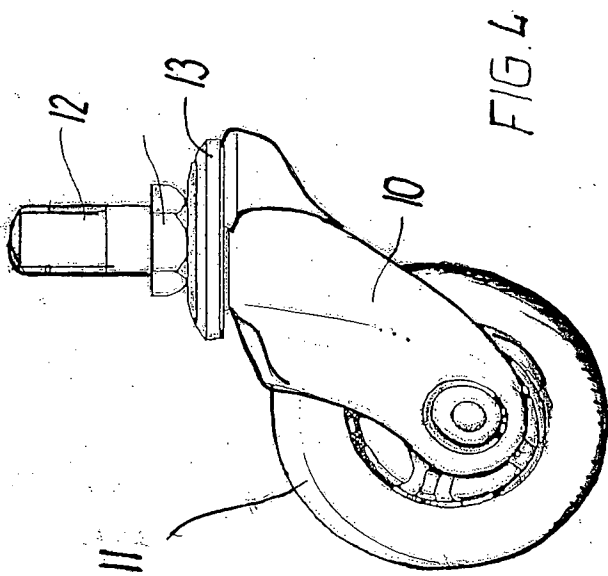


FIG. 3

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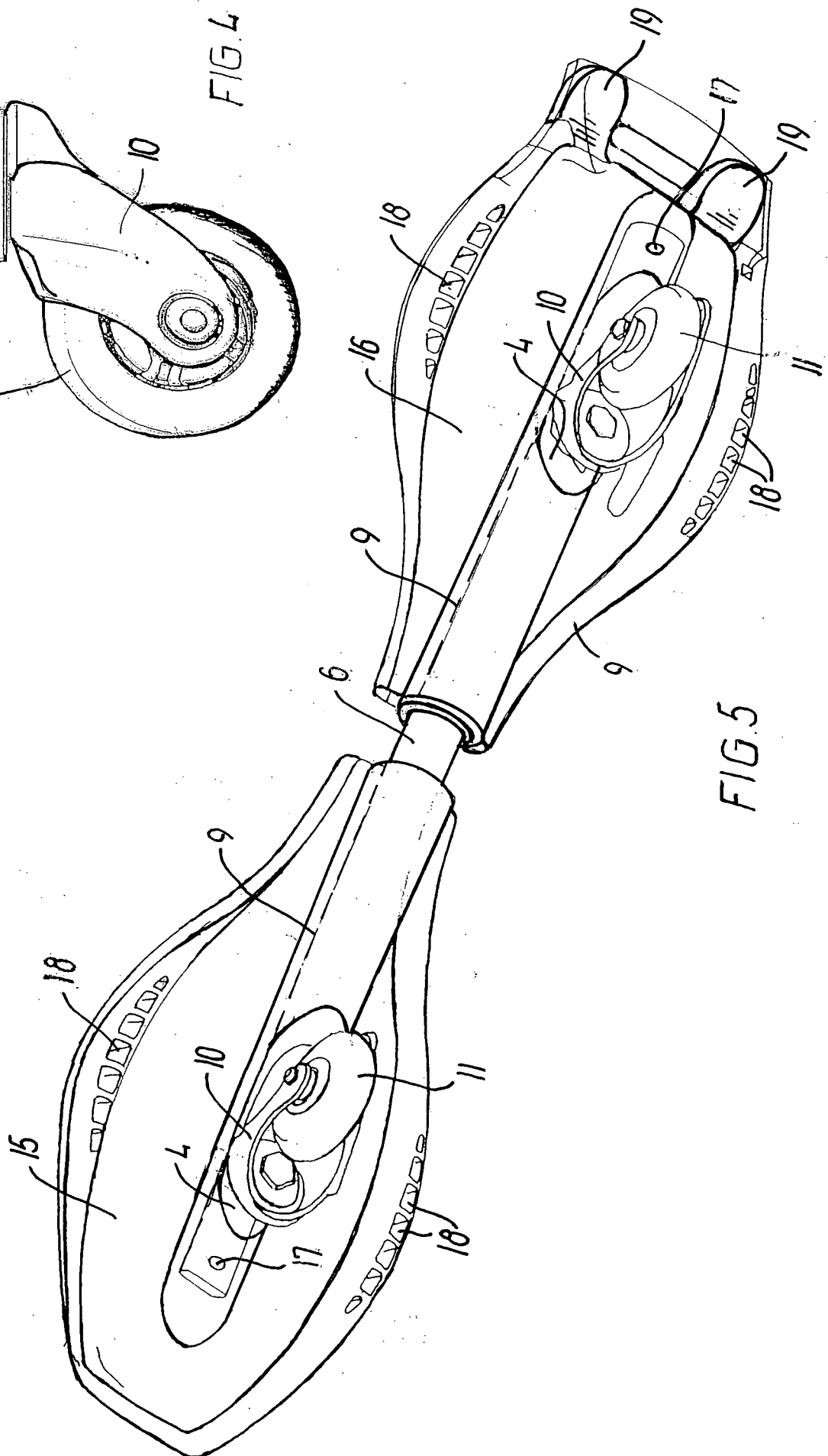


FIG. 5

## INTERNATIONAL SEARCH REPORT

International application No  
PCT/DK2009/000028

**A. CLASSIFICATION OF SUBJECT MATTER**  
INV. A63C17/08

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)  
A63C

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

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

EPO-Internal

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 082 306 A (SHELDON GREGG) 4 April 1978 (1978-04-04) the whole document	1-8
X	SU 1 405 865 A1 (GNILOKVAS KONSTANTIN D [SU]) 30 June 1988 (1988-06-30) figure 1	1-8
A	EP 1 679 101 A (FRANKLIN & GROEP B V [NL]) 12 July 2006 (2006-07-12) the whole document	1-8
A	US 2006/055137 A1 (JIANG XIANCAN [CN]) 16 March 2006 (2006-03-16) the whole document	1-8
P, X	WO 2008/152365 A (HMT HOLDINGS LTD [GB]) 18 December 2008 (2008-12-18) the whole document	1-8

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

\* Special categories of cited documents:

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- \*O\* document referring to an oral disclosure, use, exhibition or other means
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- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*G\* document member of the same patent family

Date of the actual completion of the international search

20 May 2009

Date of mailing of the international search report

02/06/2009

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/DK2009/000028

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