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(71) Applicant: **Bartolucci, Francesco**
61010 Tavullia (IT)

(72) Inventors:
• **Bartolucci, Francesco**
61010 Tavullia (PU) (IT)
• **Stocchi, Mariagrazia**
61010 Tavullia (PU) (IT)
• **Barduagni, Daniele**
61100 Pesaro (IT)

(74) Representative: **Baldi, Claudio**
Viale Cavallotti, 13
60035 Jesi (AN) (IT)

(54) **Stilts capable of maintaining the user in static balance**

(57) The present invention refers to a stilt provided with an oscillating footrest (3) and a small oscillating boot (4) aligned with the footrest, to which it is connected by suitable connection and return means that transmit the footrest oscillations to the boot.

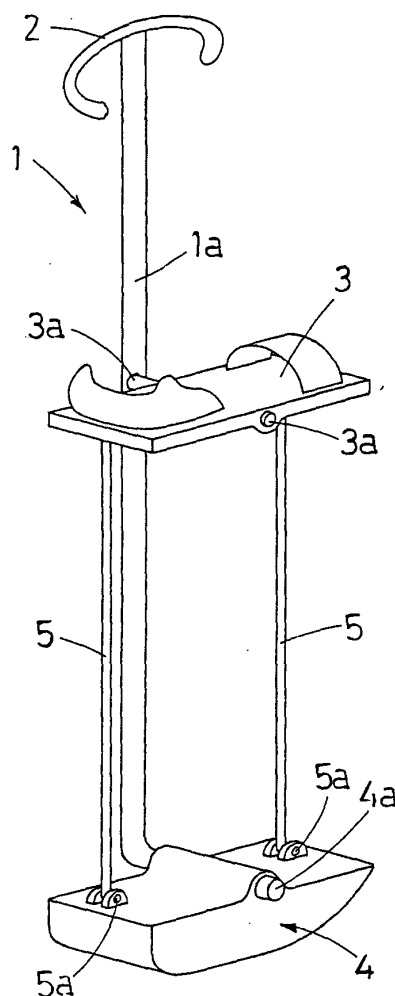


FIG. 1

Description

[0001] The present patent application refers to a pair of stilts capable of maintaining the user in static balance.

[0002] As it is known, traditional stilts used for entertainment activities have a standardised structure that allows the user to stand on top of the stilt and move around.

[0003] In order to allow the user to maintain the vertical position on top of the stilts, each stilt basically consists in a long wooden pole provided with a peg that projects inwards horizontally, on which the user's foot is laid and tied, ending on top with a special C-shaped support with basically horizontal direction suitable to embrace the user's leg slightly below the knee.

[0004] It appears evident that the distance between the top support and the peg is basically equal to the distance between the user's knee and foot.

[0005] It is easily understood that, because of the stable union between the user's leg and the stilt, the stilt basically becomes an extension of the leg, thus allowing a skilled user to move on the stilts in a natural, safe way.

[0006] However, although extremely popular, traditional stilts are impaired by a drawback that so far has found no remedy.

[0007] The said drawback is especially evident when the user interrupts walking and stops.

[0008] In this case traditional stilts are totally incapable of maintaining static balance, so that in order to remain in the same position the user is obliged to continue on walking on the spot.

[0009] The expression "on the spot" indicates that the user needs to continuously make small steps without changing the position where he has stopped.

[0010] The "on the spot" movement is indispensable in view of the very small supporting base (generally coated with a sort of cover made of anti-slip rubber) of traditional stilts.

[0011] This is basically a similar situation of two-wheel vehicles (such as bicycles or motorcycles), which are not able to stand when not moving.

[0012] The purpose of the present invention is to provide stilts that are able to maintain perfect static balance, without forcing the user to continuously make small steps on the spot.

[0013] As illustrated in details below, the need to pursue the said goal has resulted in a substantial innovation of the technology traditionally used for stilts.

[0014] The result that has been achieved is extremely satisfactory, since the stilts of the invention are very stable and safe in static position, thus increasing potential use not only to entertainment-artistic activities, but also to working activities, when it is necessary to perform operations or actions at a certain height from the ground.

[0015] Another significant advantage of the stilts of the invention refers to the fact that, thanks to higher stability, the stilts of the invention require lower skill and lower practice, while still ensuring total safety for the user.

[0016] The present invention is based on the fact that

the stilts with traditional structure are provided with an oscillating footrest that replaces the traditional supporting peg and a small oscillating boot that replaces the traditional anti-slip rubber cover of traditional stilts.

[0017] In particular, each footrest is centrally pivoted with respect to a pin with horizontal axis that projects inwards; each boot occupies a perfectly aligned position with the footrest and is provided with a rounded lower profile, shaped like a cradle and connected (by means of suitable connection and return means) with the user's footrest is rested.

[0018] In order to move the stilts forward, the user can follow the same operating logic principle as traditional stilts.

[0019] The user's leg is connected with the oscillating footrest and with the traditional C-shaped support provided on the stilt of the invention; this fact allows the user to use the stilts as leg extension when walking.

[0020] When the user stops (and remains in a fixed position), it will be simply necessary to actuate the two oscillating footrests with the feet, imposing pressure alternatively towards the front or the back, with the toes or the heel, respectively.

[0021] The pressure towards the front or the back of the footrests is transmitted to the boots, thus imposing them a sort of continuous alternative oscillation - first forward and then backward - as if each boot was a sort of cradle.

[0022] The continuous oscillation of the boots on the spot allows the stilts of the invention to maintain perfect balance, without the need to make the small steps that are typical of traditional stilts.

[0023] Going back to the comparison with two-wheel vehicles, the stilts of the invention basically work as the motorcycles that are usually used in circuses or bicycles used in "sur place", which are able to maintain a basically static balance thanks to the very small backward and forward movements permitted by the special alternative motion of pedals and by the use of the so called "fixed wheel".

[0024] Finally, it must be noted that, although the stilts of the invention are provided with oscillating footrests able to oscillate forward and backwards, the same stilts of the invention can be provided with footrests pivoted on spherical joints, capable of making oscillations to the right or the left, in addition to forward and backward oscillations.

[0025] The use of the latter type of footrests, which certainly allows to improve the control of the stilts in static balance, requires that the boots are pivoted on spherical joints.

[0026] In such a way, they are able to reproduce the specific movements imposed by the user's foot to the footrests from time to time.

[0027] The stilt of the invention is characterised by easier use during walking:

the user loses the typical unpleasant feeling of walk-

ing on heels, thanks to the fact that the foot articulation is no longer blocked.

[0028] For purposes of clarity the description of the invention continues with reference to the enclosed drawings, which are intended for purposes of illustrations only and not in a limiting sense, whereby:

- figure 1 is an axonometric view of the stilt of the invention;
- figure 2 is an axonometric view of an alternative embodiment of the stilt of the invention.

[0029] With reference to figure 1, the stilt of the invention (1) normally consists in a long pole (1 a) with a top C-shaped horizontal support (2) that embraces the user's leg slightly below the knee.

[0030] An oscillating footrest (3) with preferably rectangular shape is provided right below the C-shaped support (2) to support the user's foot; the footrest (3) is centrally pivoted with respect to an horizontal pin (3a) that projects inwards.

[0031] Due to the pivoting mode, the footrest (3) can oscillate forward and backward, under the pressure of the toe or heel of the user's foot, respectively.

[0032] A boot (4) with rectangular shape is pivoted at the base of the stilt (1), in perfectly aligned position with the footrest (3), it being provided with a lower rounded profile, which preferably includes a rounded toe and heel, connected by a central flat section.

[0033] In particular, the boot (4) is pivoted with respect to a pin (4a) that projects inwards; in this way it can oscillate forward and backward in contact with the ground.

[0034] As mentioned earlier, the oscillations of the footrest (3) and the boot (4) are simultaneously produced under the pressure of the user's foot, due to the fact that these two elements are connected by suitable return means.

[0035] In view of the above, the pressure of the toe on the front of the footrest (3) causes the forward oscillation of the boot (4), and likewise the pressure of the heel on the back of the footrest (3) causes the backward oscillation of the boot (4).

[0036] In the embodiment of the invention shown in figure 1, the return means consist in two metal rods (5) fixed in symmetrical position with respect to the pins (3a, 4a), between the lower side of the footrest (3) and the upper side of the boot (4); it being provided that the upper and lower ends of the rods (5) are pivoted with respect to suitable pins with horizontal axis (5a).

[0037] The suitable connection between the footrest (3) and the boot (4) may also be obtained with alternative means, possibly using metal cables in the place of the rods (5) or by means of a chain or toothed belts coupled with gears inserted on the pins (3a and 4a) and fixed on the footrest (3) and the boot (4).

[0038] The stilt of the invention (1) is preferably characterised by the telescopic structure of the pole (1 a),

which allows to change the height of the stilt (1) as desired, according to the physical structure of each user.

[0039] In this case, a similar telescopic structure must be given to the connection rods (5).

[0040] Figure 2 shows an alternative embodiment of the invention (10), which differs in the fact that the footrest (30) and the boot (40) are pivoted in perfectly centred position onto corresponding spherical joints (30a, 40a).

[0041] Because of the presence of the spherical joints (30a, 40a), the footrest (30) and the boot (40) can oscillate forward and backward, as well as to the right and to the left simultaneously: that is to say for 360°.

[0042] As mentioned earlier, this allows the user to adjust the movements of the boot (40) with respect to the ground, thus acquiring a finer control of the static balance of the entire stilt (10).

[0043] Naturally, the second embodiment of the stilt of the invention requires the presence of four rods (50) pivoted at the four corners of the footrest (30) and the boot (40) by means of corresponding spherical joints (50a).

Claims

1. Stilt of the type composed of a long pole (1 a) with a top C-shaped support (2), **characterised in that** it is provided with an oscillating footrest (3, 30) slightly below the C-shaped support (2), pivoted in lower inward position on the pole (1a) and joined by means of suitable connection means to a boot (4, 40), whose upper side is pivoted in internal position on the pole (1a) in perfectly aligned position with the footrest (3, 30) and whose lower side is provided with rounded profile.
2. Stilt as defined in claim 1, **characterised in that** the footrest (3) and the boot (4) are centrally pivoted with respect to horizontal pins (3a, 4a) projecting inwards on the pole (1a) able to oscillate forward and backward; it being also provided that the lower side of the boot (4) has a rounded profile.
3. Stilt as defined in claim 1, **characterised in that** the footrest (30) and the boot (40) are centrally pivoted with respect to spherical joints (30a, 40a) projecting inwards on the pole (10a) able to oscillate for 360°; it being also provided that the lower side of the boot (40) has a rounded profile.
4. Stilt as defined in one or more of the above claims, **characterised in that** the connection between the lower side of the footrest (3, 30) and the upper side of the boot (4, 40) is made by means of suitable rods (5, 50), whose upper and lower sides are suitably pivoted in order to follow the combined oscillations of the footrest (3, 30) and the boot (4, 40).
5. Stilt as defined in claims 2 and 4, **characterised in**

that the ends of the rods (5) are hinged with respect to pins with horizontal axis (5a) provided on the lower side of the footrest (3) and on the upper side of the boot (4).

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6. Stilt as defined in claims 3 and 4, **characterised in that** the ends of the rods (50) are hinged with respect to spherical joints (50a) provided on the lower side of the footrest (30) and on the upper side of the boot (40).

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7. Stilt as defined in one or more of claims 1 to 3, **characterised in that** the connection between the lower side of the footrest (3, 30) and the upper side of the boot (4, 40) is obtained by means of metal cables.

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8. Stilt as defined in one or more claims 1 to 3, **characterised in that** the connection between the footrest (3, 30) and the boot (4, 40) is obtained by means of one or more chains cooperating with suitable gears mounted on the footrest (3, 30) and the boot (4, 40).

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9. Stilt as defined in one or more claims 1 to 3, **characterised in that** the connection between the footrest (3, 30) and the boot (4, 40) is obtained by means of one or more toothed belts cooperating with suitable toothed reels mounted on the footrest (3, 30) and the boot (4, 40).

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10. Stilt as defined in one or more claims 1 to 3, **characterised in that** the pole (1a) has a telescopic structure; it being provided that in this case also the means used to connect the footrest (3, 30) and the boot (4, 40) are capable of adjusting their length.

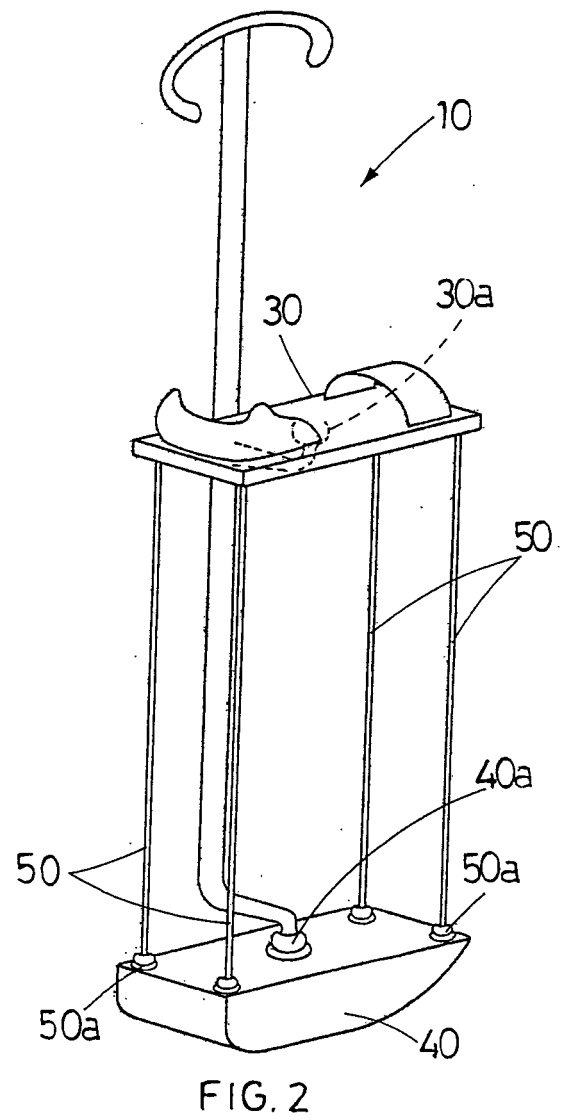
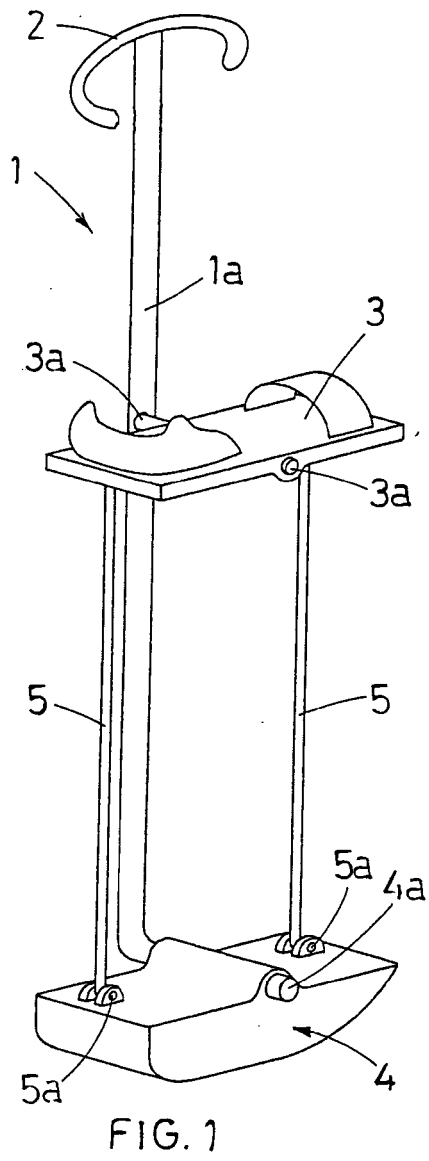
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European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 06 42 5117

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	FR 2 594 344 A (CHAMPEL ROBERT) 21 August 1987 (1987-08-21) * page 2, line 26 - page 4, line 13; figures 1-4 *	1-10	INV. A63B25/00
X	US 4 570 926 A (ENSMENGER ET AL) 18 February 1986 (1986-02-18) * the whole document *	1	
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X	US 3 902 199 A (EMMERT ET AL) 2 September 1975 (1975-09-02) * the whole document *	1	
			TECHNICAL FIELDS SEARCHED (IPC)
			A63B A61F
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 25 August 2006	Examiner Lundblad, H
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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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25-08-2006

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