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(54) **Inline Skate**

(57) A frame for an inline skate, comprising two spaced apart sidewalls connected by an upper horizontal interconnection means, said sidewalls adapted to support a plurality of wheels in an inline configuration, characterized in that the upper horizontal interconnection means comprises three spaced apart web members, and each web member is provided with a respective mounting aperture for securing a boot thereto.

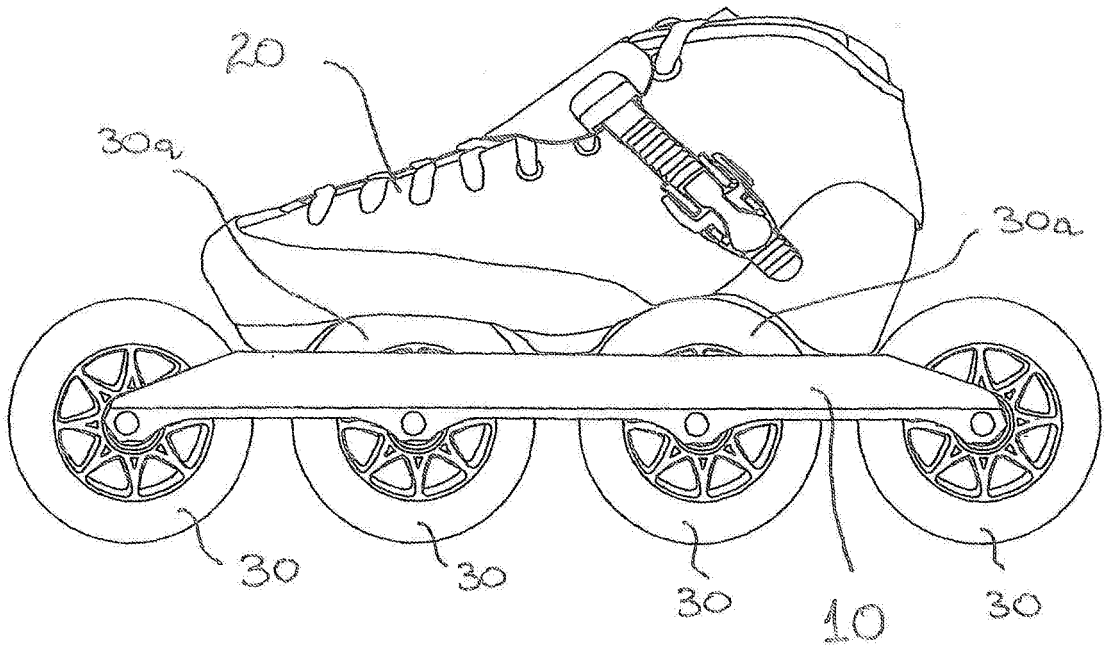

FIG. 3

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Description

Technical Field

[0001] The present invention relates to an inline skate comprising a frame and a boot. In particular it relates to a boot having three mounting points adapted to be mounted to three respective mounting apertures on the frame.

Background

[0002] Generally, an inline skate includes a plurality of wheels installed in a frame in series. The frame of an inline skate is designed to be fixed to the lower side of the boots and to support a user's weight. In addition, it is designed to effectively absorb an impact from a contact between the ground and the wheels, and impact due to collision with obstacles when the inline skates are being used. Conventionally, inline skate frames as shown in Figure 4 of WO2004/096385 (Sam Ming CHO) have a horizontal upper wall interconnecting two side walls which are adapted to support a plurality of wheels in an inline configuration. In recent times attempts have been made to make high speed (or high performance) inline skate frames which are of relatively low mass in which the frame comprises two side support walls that are interconnected and which have two spaced apart mounting points in the form of elongate apertures at raised spaced apart locations. An example of this design is shown in the applicant's own U.S. Design Patent No. 470208 entitled "Inline Skate Frame". In such a frame the boot is mounted to the two spaced apart mounting points.

[0003] In recent times larger skating wheels have been introduced and skaters have desired that their boots be as low as possible to the ground. As a result of this, the traditional gap between the two frame mounting points has increased from about 165mm to 195mm. This increase in the distance of the gap allows the boot mounted to such a frame to flex, which is undesirable.

[0004] The present invention attempts to overcome at least some of the disadvantages of the prior art inline skate frames.

Summary of the Invention

[0005] In accordance with a first aspect the present invention consists of a frame for an inline skate, comprising two spaced apart sidewalls connected by an upper horizontal interconnection means, said sidewalls adapted to support a plurality of wheels in an inline configuration, characterized in that the upper horizontal interconnection means comprises three spaced apart web members, and each web member is provided with a respective mounting aperture for securing a boot thereto.

[0006] Preferably, said three spaced apart web members are equally spaced apart.

[0007] Preferably, two of said three web members are disposed at or near opposite ends of said frame, and the remaining said web member is disposed there between.

[0008] Preferably, said mounting apertures are elongate slots.

[0009] Preferably, each of said elongate slots is disposed lengthwise substantially at 90° to the intended line of travel of the wheels when fitted.

[0010] Preferably, each of said web members is flush with the upper edges of said sidewalls.

[0011] Preferably, said boot has three spaced apart mounting points disposed axially on the sole region in a heel to toe direction.

[0012] Preferably, when said boot is fitted to said frame, said mounting points of said boot align with said mounting apertures.

[0013] Preferably, said portion of the sole region on said boot between at least two of said mounting points is concavely shaped.

[0014] Preferably, at least one of the wheels supported by said frame projects through an opening between two of the spaced apart web members such that a portion of the wheel is disposed within said concavely shaped portion of said sole region.

[0015] Preferably, at least one spacer is disposed between one of said mounting apertures and the adjacent one of said mounting points.

[0016] Preferably, said at least one spacer is disposed adjacent the central web member of said three web members.

[0017] In accordance with a second aspect the present invention consists of a boot for an inline skate, said boot comprising at least three spaced apart mounting points disposed axially in a heel to toe direction, said mounting points allowing said boots to be mounted to an inline skate frame by fasteners.

[0018] Preferably, a sole region between at least two of said three spaced apart mounting points is concavely shape.

[0019] Preferably, said frame has three spaced apart mounting apertures.

[0020] In accordance with a third aspect the present invention consists of an inline skate comprising a boot and frame in combination, said frame adapted to support a plurality of wheels and having three spaced apart mounting apertures disposed thereon, and said boot having at least three spaced apart mounting points disposed axially in a heel to toe direction, said mounting points allowing said boot to be mounted to said frame by fasteners.

[0021] Preferably, a sole region of said boot between at least two of said three spaced apart mounting points is concavely shaped.

[0022] Preferably, said frame has an interconnection means having three spaced apart mounting apertures disposed thereon.

[0023] Preferably, said interconnection means is three spaced apart web members.

Description of Drawings

[0024]

Fig. 1 is a perspective front view of the inline skate frame in accordance with a first embodiment of the present invention.

Fig. 2 is a perspective rear view of the boot for use with the inline skate frame of Fig. 1.

Fig. 3 is a schematic elevation view of an inline skate which comprises the frame of Fig. 1 and the boot of Fig. 2.

Best Mode of Carrying Out the Invention

[0025] Figs. 1 to 3 depicts a frame 10 and boot 20, which in combination form an inline skate in accordance with a first embodiment of the present invention. Frame 10 comprises two spaced apart sidewalls 11 that are connected by upper horizontal interconnection means in the form of three spaced apart web members 12, 12a. The sidewalls 11 in this embodiment are each provided with four inline holes 13 allowing four wheels (not shown) to be mounted to the frame 11 in a conventional manner.

[0026] Two of the three spaced apart web members 12 are located near the opposed aft and fore ends of the frame 11, whilst the third central web member 12a is disposed there between. Each of the web members 12 is provided with a mounting aperture 14 in the form of an elongate slot. Each of the elongate slots is disposed lengthwise such that they are substantially at right angles (90°) to the intended line of travel of the wheels (when they are fitted to the frame).

[0027] Each of the three web members 12, 12a are at the same height as each other, and connected to the upper edges of the sidewalls 11, so that the web members 12, 12a and their respective mounting apertures 14 are flush with the sidewalls 11. This feature differs from the prior art inline skate frame in US Design 470208, where the mounting apertures are raised above the sidewalls.

[0028] The boot 20 has three spaced apart mounting points 21, 21a disposed axially in a heel to toe direction. The mounting points 21, 21a allow the boot 20 to be mounted to frame 10 by fasteners (not shown) passing through apertures 14. The mounting points 21 are located near the opposed heel and toe ends of the boot, whilst mounting point 21a is disposed therebetween.

[0029] The boot has two sole regions 22, each disposed between two of the three spaced apart mounting points. Both these sole regions 22 are concavely shaped. When the boot 20 is mounted to the frame 10, each of the concavely shaped sole regions 22 is disposed immediately over a respective wheel 30, such that they act as "wheel arches". As shown in Fig. 3, the upper portion 30a of the two central wheels 30 project through openings between web members 12, 12a, thereby being disposed above the frame 10.

[0030] This means that whilst larger skating wheels may be used with frame 11, the boot 20 mounted to frame 10 is disposed as low as possible to the ground when in use. In addition the use of three mounting points 21 secured to the respective spaced apart web members 12 on frame 10 results in the boot 20 becoming stiffer and giving the skater a stronger platform to push off.

[0031] It is understood that the above has been given by way of an illustrative embodiment of the invention. All modifications and variations thereto as would be apparent to persons skilled in the art are deemed to fall within the broad scope of and ambit of the invention as described herein. For example, in a not shown embodiment the central mounting point 21a on the boot that aligns with the central web member 12a of frame 10 may lie in a plane closes to the top of the boot than the other two "heel" and "toe" mounting points. In such an embodiment a spacer may be fitted between the central web member 12a of frame 10 and the central mounting point 21a of the boot. It should also be understood that in other not shown embodiments spacers of various kinds may be used between any of the mounting points and web members.

[0032] Whilst the above described embodiment depicts a frame 10 having two side walls 11, it should be understood that in another not shown embodiment the invention may comprise a frame having a single side wall to which the wheels are connected and three cantilevered (or projecting) members each having a mounting aperture would act as the horizontal interconnection means for securing to a boot.

[0033] Also in another not shown embodiment the mount slots or apertures may have a shape and orientation that differ to the slots 14 shown in the above described embodiment.

[0034] Furthermore, whist the abovementioned embodiment depicts the boot 20 having concavely shaped sole regions 22, it should be understood that in other not shown embodiments the shape of the sole region may differ.

[0035] The term "comprising" (and its grammatical variations) as used herein is used in the inclusive sense of "having" or "including" and not in the exclusive sense of "consisting only of".

Claims

1. A frame for an inline skate, comprising two spaced apart sidewalls connected by an upper horizontal interconnection means, said sidewalls adapted to support a plurality of wheels in an inline configuration, **characterized in that** the upper horizontal interconnection means comprises three spaced apart web members, and each web member is provided with a respective mounting aperture for securing a boot

thereto.

2. A frame for an inline skate as claimed in claim 1, wherein said three spaced apart web members are equally spaced apart.

3. A frame for an inline skate as claimed in claim 1, wherein two of said three web members are disposed at or near opposite ends of said frame, and the remaining said web member is disposed there between.

4. A frame for an inline skate as claimed in claim 1, wherein said mounting apertures are elongate slots.

5. A frame for an inline skate as claimed in claim 4, wherein each of said elongate slots is disposed lengthwise substantially at 90° to the intended line of travel of the wheels when fitted.

6. A frame for an inline skate as claimed in claim 1, wherein each of said web members is flush with the upper edges of said sidewalls.

7. A frame for an inline skate as claimed in claim 1, wherein said boot has three spaced apart mounting points disposed axially on the sole region in a heel to toe direction.

8. A frame for an inline skate as claimed in claim 7, wherein when said boot is fitted to said frame, said mounting points of said boot align with said mounting apertures.

9. A frame for an inline skate as claimed in claim 8, wherein a portion of the sole region on said boot between at least two of said mounting points is concavely shaped.

10. A frame for an inline skate as claimed in claim 9, wherein at least one of the wheels supported by said frame projects through an opening between two of the spaced apart web members such that a portion of the wheel is disposed within said concavely shaped portion of said sole region.

11. A frame for an inline skate as claimed in claim 10, wherein at least one spacer is disposed between one of said mounting apertures and the adjacent one of said mounting points.

12. A frame for an inline skate as claimed in claim 11, wherein said at least one spacer is disposed adjacent the central web member of said three web members.

13. A boot for an inline skate, said boot comprising at least three spaced apart mounting points disposed axially in a heel to toe direction, said mounting points allowing said boot to be mounted to an inline skate frame by fasteners.

14. A boot for an inline skate as claimed in claim 13, wherein the sole region between at least two of said three spaced apart mounting points is concavely shape.

15. A boot for an inline skate as claimed in claim 13, wherein said frame has three spaced apart mounting apertures.

16. An inline skate comprising a boot and frame in combination, said frame adapted to support a plurality of wheels and having three spaced apart mounting apertures disposed thereon, and said boot having at least three spaced apart mounting points disposed axially in a heel to toe direction, said mounting points allowing said boot to be mounted to said frame by fasteners.

17. An inline skate as claimed in claim 16, wherein a sole region of said boot between at least two of said three spaced apart mounting points is concavely shaped.

18. An inline skate as claimed in claim 16, wherein said frame has an interconnection means having three spaced apart mounting apertures disposed thereon.

19. An inline skate as claimed in claim 18, wherein said interconnection means is three spaced apart web members.

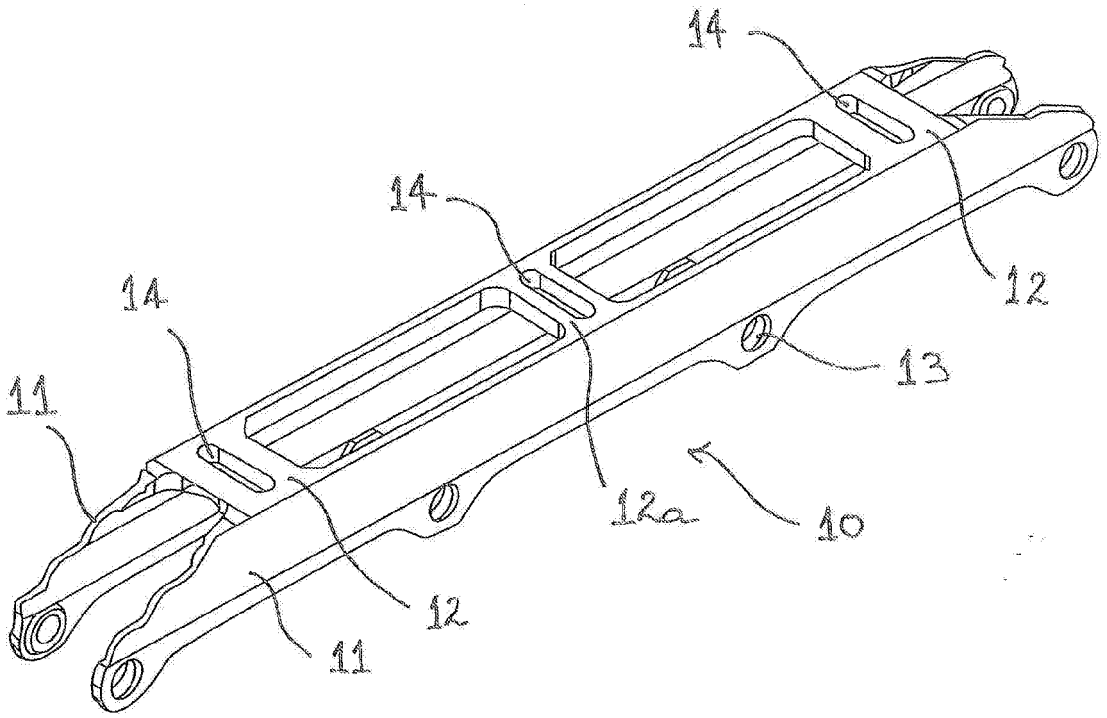

FIG. 1

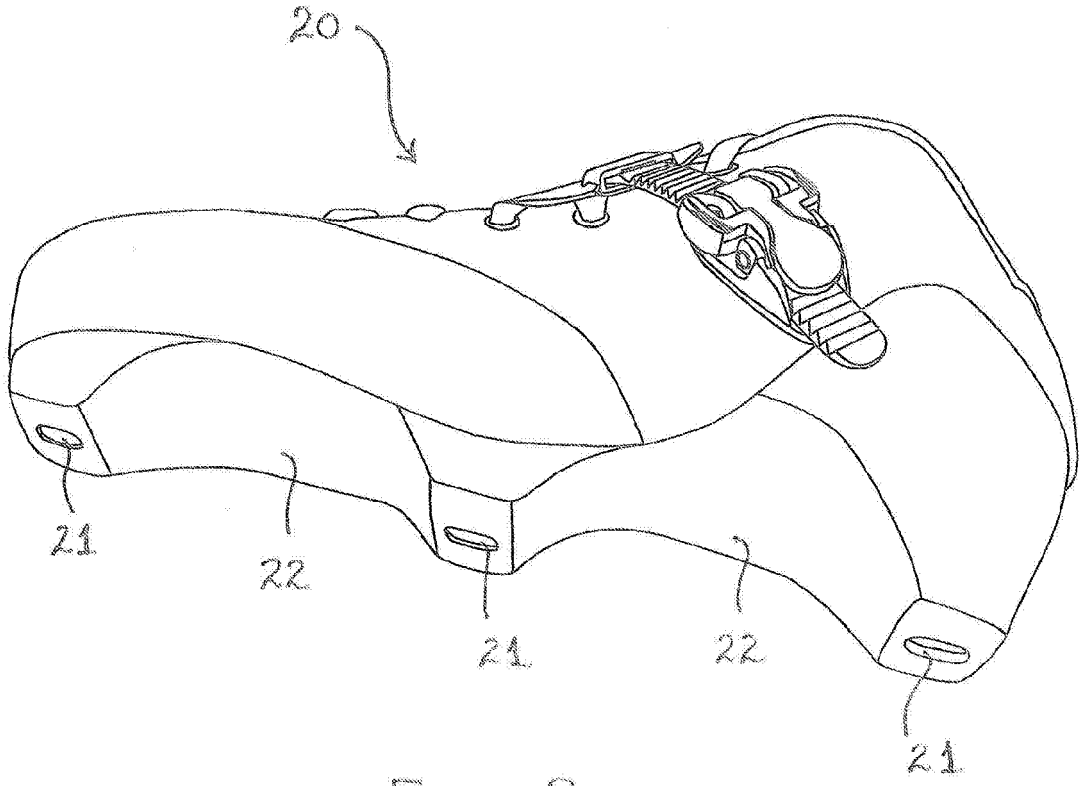

FIG. 2

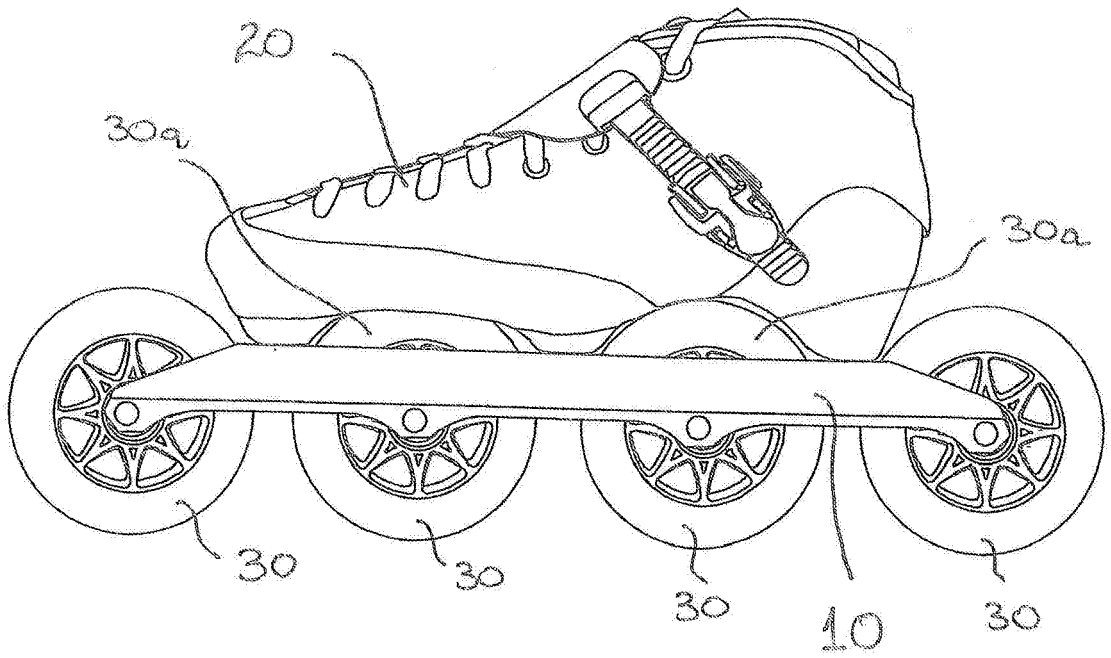

FIG. 3

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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- US 470208 A **[0002]**