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(54) **A SKATE, PARTICULARLY FOR AGGRESSIVE SKATING**

ROLLSCHUH, INSBESONDERE FÜR "AGGRESSIVES" SKATING

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DescriptionTechnical Field

[0001] The present invention relates to an improved skate, which is particularly suitable for the practice of so-called "aggressive" skating.

Background Art

[0002] Nowadays, "aggressive" skating is quite known and widespread. Basically, this kind of sports practice consists of a series of acrobatics movements such as, for example, the so-called "grinding" (i.e. a crosswise passage along kerbs or handrails) or other stunt movements. Known skates, used for this sports practice, comprise a frame which supports a plurality of in-line wheels and a sports shoe associated to the frame. The sports shoe comprises a rigid sole and a shell, which is usually connected to a cuff. The shell and the cuff surround an internal liner for accommodating the user's foot. The shell and the cuff are fitted with a pair of opposing flaps that may be fastened together through suitable fastening buckles arranged transversely to these flaps.

[0003] However, the skates of the known type suffer some drawbacks.

[0004] A first shortcoming consists in that the walls of the shell and/or cuff are relatively thick, since their function is to ensure a satisfactory transmission of forces to the frame and, overall, ensure protection for the foot and the lower portion of the user's leg. This fact entails that the skate is often cumbersome, heavy and unattractive from the aesthetic point of view. This problem is worsened by the fact that the acrobatic sport activity causes damages to the outer surface of the skate, which thus shortly appears somewhat scratched and ruined. A further problem consists in that the plastic shell and/or cuff do not allow a satisfactory transpiration of the user's foot. This fact, combined with the relatively high sturdiness of the shell, implies that known skates are often uncomfortable and present high levels of internal moisture and temperature. Document WO 99/43400 discloses a skate according to the preamble of claim 1.

Disclosure of the Invention

[0005] Therefore, the aim of the present invention is to provide a skate, particularly suitable for "aggressive" sports practice, which ensures a suitable protection for the foot and the lower portion of the user's leg against impacts and other accidental events and which ensures, at the same time, a relatively high level of comfort for the user and a pleasing aesthetic appearance.

[0006] Within this aim, an object of the present invention is to provide a skate which has reduced weight and overall size.

[0007] Another object of the present invention is to provide a skate which is structurally simple and has low man-

ufacturing costs.

[0008] Therefore, the present invention provides a skate, which comprises:

a frame supporting a plurality of wheels; and a sports shoe comprising a rigid sole, which is connected to the frame and a soft upper, which is downwardly connected to the sole, the sports shoe comprising a shell, which is removably associated to the sole and an internal liner, which is removably associated to the shell, the liner being aimed at accommodating the foot and/or the lower portion of the user's leg, characterised in that it comprises a toe plate and a heel plate, which are inserted between the frame and the rigid sole and are separated between them, the toe plate and the heel plate being arranged so as to co-operate with the sole for improving the sturdiness of the structure of the skate.

20 Brief description of the drawings

[0009] Further characteristics and advantages of the skate, according to the present invention, will become better apparent from the following detailed description of some particular embodiments thereof, illustrated by way of non-limitative example in the accompanying drawings, wherein:

Figure 1 is an exploded perspective view of the skate, according to the present invention;

Figure 2 is an exploded perspective view of a detail of the skate, according to the present invention.

35 Ways of carrying out the invention

[0010] The skate, according to the present invention, will be described hereinafter with particular reference to its use in "aggressive" skating. This is only for sake of simplicity and it does not imply any limitation of the scope of the present invention. In fact, the present gliding device can be advantageously used without distinction in many other gliding sports such as traditional or speed skating, rolling and the like.

[0011] With reference to the figures, the skate 1, according to the present invention, comprises a frame 2 supporting a plurality of wheels 3. The frame 2 is connected, at the top, to a rigid sole 4, through the insertion of a toe plate 5a and a heel plate 5b. The sole 4 is in turn connected to the sports shoe 6. Preferably, the sole 4 is arranged so as to wrap around a lower portion 61 of the sports shoe 2. The plates 5a and 5b are preferably made of a shockproof and wearproof material. It should be noticed that the presence of the plates 5a and 5b, by co-operating with sole 4, allows making the structure of the skate 1 particularly sturdy and resistant to impacts or other accidental events.

[0012] According to a preferred embodiment of the present invention shown in Figure 1, the interconnection

between the frame 2 and the sports shoe 6 is preferably accomplished by means of first screws (not illustrated), which are arranged with the head towards the ground and the shank towards the sports shoe 6. Such first screws pass advantageously through a pair of first holes 7a and 7b, made in the frame 2. Moreover, such first screws are arranged to pass through second holes 8a and 8b, through an advantageously rectangular opening 9a and a third hole 9b. The second holes 8a and 8b are provided on the respective toe plate 5a and heel plate 5b while the opening 9a and the third hole 9b are made at the bottom of the sole 4. The first screws are advantageously connected to counter-threaded first dead holes (not illustrated), which are provided at the bottom portion 61 of the sports shoe 6. According to the needs, such first dead holes may advantageously house counter-threaded bushes (not shown). The interconnection between the plates 5a and 5b, the sole 4 and the sports shoe 6 is also guaranteed by second screws (not shown), which are arranged to pass through the plates 5a and 5b and the sole 4. Such second screws are advantageously connected with counter-threaded second dead holes, which are provided at the bottom portion 61 of the sports shoe 6, approximately around said first dead holes.

[0013] The plates 5a and 5b comprise advantageously a plurality of dowel pins 10, which are axially perforated to allow the passage of the second screws. The dowel pins 10 project from the top of the plates 5a and 5b, towards the sports shoe 6. The dowel pins 10 may be positioned in counter-shaped fourth holes 11 made in the sole 4. In this manner, a more precise and stable interconnection of the plates 5a and 5b to the sports shoe 6 is achieved.

[0014] The sports shoe 6 comprises a soft upper 12, which is suitably connected at the bottom to the sole 4. The upper 12 is fitted with a first pair of flaps 13a and 13b on which a succession of eyelets 14 are advantageously provided to allow the passage of a fastening lace 15. The soft upper 12 is advantageously made of soft materials, such as fabric, leather or similar materials. The soft upper may be arranged to surround the bottom portion 61 of the sports shoe 6. In this case, it is provided with a plurality of fifth holes (not shown), which are suitable for allow the passage of said first screws and second screws (or the dowel pins 10).

[0015] The sports shoe 6 comprises a rigid or semi-rigid shell 16, which is advantageously open on the upper surface of the foot. Preferably, the shell 16 is removably connected internally to the soft upper 12. The sports shoe comprises advantageously a cuff 17, suitable for supporting the lower leg of the user, in particular the calf region. The cuff 17 is mounted on the shell 16. The shell 16 is made of rigid or semi-rigid material, such as plastics, thereby permitting an excellent transmission of the forces to the frame 2 by the user. Thus, it can be adopted for fixing on a solid base said first screws and second screws. For this aim, the mentioned first dead holes and second dead holes can be provided at the bottom of the

shell 16.

[0016] An internal liner 18 is removably associated to the shell 16 and the cuff 17 for accommodating the user's foot, thereby guaranteeing an excellent comfort. The liner 18 and the cuff 17 are preferably fitted respectively with a second pair of opposing flaps 19a and 19b and with a third pair of opposing flaps 20a and 20b. The second pair and the third pair of flaps are closable over each other once the skate 1 has been put on. To ensure excellent closure, at least one fastening buckle 21 is arranged transversely to the cuff 17. The soft upper 12 is preferably arranged to fully wrap around both the shell 16 and the cuff 17. In this manner, the soft upper 12 provides the skate 1 with an appealing appearance, which is equivalent to that offered by lightweight, traditional types of speeding skates.

[0017] Advantageously, the soft upper 12 is provided with a pair of strap ends 22a and 22b, which project at the front of the sports shoe 6 from opposite sides, approximately close to the ends of the fastening buckle 21. The strap ends 22a and 22b are advantageously designed to fit over the buckle 21. Advantageously, they comprise interconnection means 25, which allow them to be temporarily joined together, thereby forming a covering and protective element for the fastening buckle 21, against wear, impacts and/or accidental openings.

[0018] To provide the upper 12 with an adequate protection against impact, friction or rubbing, one or more rigid strips 23 are connected laterally to the soft upper 12. The strips 23 are suitably made of materials resistant to rubbing and provided with adequate thickness to project from the upper 12, thereby acting as a protection for the same. This means that the shell 16 and the cuff 17 may be suitably designed for ensuring a good transmission of forces only and not for having necessarily protection purposes. Therefore, the thickness of the walls of the shell 16 and the cuff 17 can be remarkably reduced and provided with suitable opening to allow a good transpiration of the user's foot, with consequent increase of comfort for the user. Thus, the shell 16 and the cuff 17 may even be reduced to an essential frame structure, provided with few supporting elements and having the sole purpose of transmitting forces to the frame 2.

[0019] The user can put on the skate 1, according to the present invention, very easily.

[0020] Operation is as follows: the user, by opening the straps 22a and 22b and the fastening buckle 21, may pull apart the second pair of flaps 19a, 19b and the third pair of flaps 20a and 20b, thus being able to introduce the foot into the sports shoe 6. The sports shoe 6 may subsequently be closed by means of the fastening buckle 21, acting near the instep, and also by means of the lace 15, passing through the eyelets 14 of the first pair of flaps 13a and 13b. The protection of the fastening buckle 21 may be guaranteed by positioning the strap ends 22a and 22b over it and fastening them together by way of the interconnection means 25.

[0021] It has thus been shown that the skate 1, accord-

ing to the present invention, achieves the above aim and objects.

[0022] In fact, the skate 1 is provided with a particularly sturdy structure, which makes it particularly suitable for aggressive skating. Nevertheless, the soft upper 12 provides the skate 1 with a pleasant appearance and it allows arranging the shell and/or cuff in order to permit a suitable transpiration level of the user's foot. Moreover, the presence of the liner 18 improves the comfort for the user. Thus, sport practice, particularly aggressive skating, can be accomplished with maximum effectiveness and in total safety and comfort for the user, with a skate 1, which is provided also with a relevant aesthetic impact.

[0023] Finally, the structural simplicity of the skate 1, according to the present invention, allows it to be manufactured at relatively low time and costs.

Claims

1. A skate (1) comprising:

a frame (2) supporting a plurality of wheels (3); a sports shoe (6) comprising a rigid sole (4), which is connected to said frame, and a soft upper (12), which is downwardly connected to said sole, said sports shoe further comprising a shell (16), which is removably associated to said sole (4), said sports shoe further comprising an internal liner (18), which is removably associated to said shell (16), said liner accommodating the foot and/or the lower leg of the user;

characterised in that it comprises a toe plate (5a) and a heel plate (5b), which are inserted between said frame and said rigid sole and are separated between them, said toe plate (5a) and said heel plate (5b) being arranged so as to co-operate with said sole for improving the sturdiness of said skate.

2. The skate according to claim 1, **characterised in that** a cuff (17) is pivotally connected to said rigid shell (16).

3. The skate according to claim 1, **characterised in that** said sole (4) is arranged so as to wrap around at least a bottom portion (61) of said sports shoe.

4. The skate according to one or more of the preceding claims, **characterised in that** said frame and said sports shoe are connected by means of first screws, which are positioned with the head towards the ground and the shank towards the sports shoe, said first screws passing through first holes (7a, 7b) obtained on said frame (2).

5. The skate according to claim 4, **characterised in**

that said first screws pass through second holes (8a, 8b), which are obtained on said toe plate and/or said heel plate, said first screws passing also through at least a front opening (9a) and a third hole (9b), which are provided on said sole, said first screws being connectable to counter-threaded first dead holes, which are provided at the bottom portion of said sports shoe.

6. The skate according to one or more of the preceding claims,

characterised in that said sole, said toe plate, said heel plate and said bottom portion of said sports shoe are connected by means of second screws which pass through said toe plate and/or said heel plate and/or said sole, said second screws being connectable to counter-threaded second dead holes which are provided at the bottom portion (61) of said sports shoe, approximately around said first dead holes.

7. The skate according to claim 6, **characterised in that** said first plate and said second plate comprise a plurality of axially perforated dowel pins (10), which project upwardly of said toe plate and said heel plate, said dowel pins passing through counter-shaped fourth holes (11) which are provided on said sole, said second screws passing through said dowel pins (10).

8. The skate according to one or more of the preceding claims,

characterised in that said soft upper (12) comprises a first pair of flaps (13a,13b), on which a plurality of eyelets (14) are advantageously arranged, said eyelets being suitable for the passage of a fastening lace (15).

9. The skate according to one or more of the preceding claims,

characterised in that said cuff (17) and said liner (18) comprise respectively a second pair of flaps and a third pair of flaps, said second pair of flaps (19a, 19b) and said third pair of flaps (20a,20b) being arranged, so as to be closable over each other by means of at least a fastening buckle (21), which is arranged transversely to said second pair of flaps.

10. The skate according to claim 9, **characterised in that** said soft upper (12) comprises at least a protection strap end (22a;22b) which is positioned over said fastening buckle (21) for protecting said fastening buckle from wear, impacts and/or accidental openings.

11. The skate according to one or more of the preceding claims,

characterised in that said upper (12) is arranged so as to wrap around said shell (16) and said cuff

(17).

12. The skate according to one or more of the preceding claims,
characterised in that said upper (12) comprises at least a protection strip (23) which projects from said upper, so as to protect said upper from wear, impacts and other accidental events.

Patentansprüche

1. Ein Rollschuh (1) umfasst:

einen eine Vielzahl von Rollen (3) abstützenden Rahmen (2);
 einen Sportschuh (6), mit einer steifen, mit dem Rahmen verbundenen Sohle (4) und einem weichen unten mit der Sohle verbundenen Obermaterial (12) und mit einer lösbar mit der Sohle (4) vorgebundenen Schale (16) sowie mit einem lösbar mit der Schale (16) verbundenen Innenfutter (18), das den Fuß und/oder den Unterschenkel des Benutzers umgibt,

dadurch gekennzeichnet, dass er eine Zehenplatte (5a) und eine Fersenplatte (5b) aufweist, die zwischen dem Rahmen und der steifen Sohle eingesetzt und voneinander getrennt sind und dass die Zehenplatte (5a) und die Fersenplatte (5b) so angeordnet sind, dass sie mit der Sohle zur Verbesserung der Standfestigkeit des Rollschuhs zusammenwirken.

2. Rollschuh nach Anspruch 1,
dadurch gekennzeichnet, dass mit der steifen Schale (16) eine Manschette (17) gelenkig verbunden ist.
3. Rollschuh nach Anspruch 1,
dadurch gekennzeichnet, dass die Sohle (4) so angeordnet ist, dass sie mindestens einen Basisbereich (61) des Sportschuhs umschließt.
4. Rollschuh nach einem oder mehreren der vorhergehenden Ansprüche,
dadurch gekennzeichnet, dass der Rahmen und der Sportschuh durch erste Schrauben miteinander verbunden sind, die mit dem Kopf zum Boden und mit dem Schaft zum Sportschuh angeordnet sind und dass diese ersten Schrauben durch erste, auf dem Rahmen (2) vorgesehene Löcher (7a, 7b) ragen.
5. Rollschuh nach Anspruch 4,
dadurch gekennzeichnet, dass die ersten Schrauben durch zweite Löcher (8a, 8b) ragen, die auf der Zehenplatte und/oder der Fersenplatte vorgesehen sind, dass ferner die ersten Schrauben durch wenig-

stens eine vordere Öffnung (9a) und eine dritte Öffnung (9b) ragen, die auf der Sohle vorgesehen sind und dass die ersten Schrauben mit ersten Sacklochgewinden verbindbar sind, die im Basisbereich des Sportschuhs vorgesehen sind.

6. Rollschuh nach einem oder mehreren der vorhergehenden Ansprüche,
dadurch gekennzeichnet, dass Sohle, Zehenplatte, Fersenplatte und Basisbereich des Sportschuhs mit zweiten Schrauben verbunden sind, die durch die Zehenplatte und/oder die Fersenplatte und/oder die Sohle ragen und dass die zweiten Schrauben mit zweiten Sacklochgewinden verbindbar sind, die im Basisbereich (61) des Sportschuhs, etwa um die ersten Sacklochbohrungen herum, vorgesehen sind.
7. Rollschuh nach Anspruch 6,
dadurch gekennzeichnet, dass die erste und zweite Platte eine Vielzahl von axial perforierten Dübelbolzen (10) aufweisen, die sich von der Zehenplatte und der Fersenplatte nach oben erstrecken, dass die Dübelbolzen durch entsprechend geformte vierte Bohrungen (11) ragen, die auf der Sohle vorgesehen sind, und dass die zweiten Schrauben durch die Dübelbolzen (10) ragen.
8. Rollschuh nach einem oder mehreren der vorhergehenden Ansprüche,
dadurch gekennzeichnet, dass das weiche Obermaterial (12) ein erstes Paar von Laschen (13a, 13b) aufweist, auf denen vorteilhaft eine Vielzahl von Ösen (14) angeordnet sind, die für den Durchgang eines Schnürsenkels (15) geeignet sind.
9. Rollschuh nach einem oder mehreren der vorhergehenden Ansprüche,
dadurch gekennzeichnet, dass jeweils die Manschette (17) und das Futter (18) ein zweites Laschenpaar sowie ein drittes Paar Laschen aufweisen, wobei das zweite Laschenpaar (19a, 19b) und das dritte Laschenpaar (20a, 20b) zum überlappenden Verschließen mittels mindestens einer, quer zum zweiten Laschenpaar angeordneten Befestigungsschnalle (21) ausgebildet sind.
10. Rollschuh nach Anspruch 9,
dadurch gekennzeichnet, dass das weiche Obermaterial (12) mindestens ein Ende eines Schutzlappens (22a, 22b) aufweist, der über der Befestigungsschnalle (21) zu ihrem Schutz vor Abnutzung, Stößen und/oder zufälligem Öffnen platziert ist.
11. Rollschuh nach einem oder mehreren der vorhergehenden Ansprüche,
dadurch gekennzeichnet, dass das Obermaterial (12) zum Einhüllen der Schale (16) und der Manschette (17) angeordnet ist.

12. Rollschuh nach einem oder mehreren der vorhergehenden Ansprüche,
dadurch gekennzeichnet, dass das Oberteil (12) mindestens einen aus dem Oberteil ragenden Schutzstreifen (23) aufweist, um das Oberteil vor Verschleiß, Stößen und anderen zufälligen Vorkommnissen zu bewahren.

Revendications

1. Patin (1) comprenant :

une structure (2) supportant une pluralité de roues (3) ;
 une chaussure de sport (6) comportant une semelle rigide (4), laquelle est raccordée à ladite structure, et une partie supérieure souple (12), laquelle est raccordée vers le bas à ladite semelle, ladite chaussure de sport comprenant, de plus, une coque (16), laquelle est associée de façon amovible à ladite semelle (4), ladite chaussure de sport comprenant, de plus, une doublure intérieure (18) qui est associée, de façon amovible, à ladite coque (16), ladite doublure recevant le pied et/ou la partie inférieure de la jambe de l'utilisateur ;

caractérisé en ce qu'il comporte une plaque pour les orteils (5a) et une plaque pour le talon (5b), lesquelles sont insérées entre ladite structure et ladite semelle rigide et sont séparées entre elles, ladite plaque pour les orteils (5a) et ladite plaque pour le talon (5b) étant agencées de façon à coopérer avec ladite semelle en vue d'améliorer la stabilité dudit patin.

2. Patin selon la revendication 1, **caractérisé en ce qu'un** revers (17) est connecté à pivotement à ladite coque rigide (16).
3. Patin selon la revendication 1, **caractérisé en ce que** ladite semelle (4) est agencée de façon à envelopper au moins une partie inférieure (61) de ladite chaussure de sport.
4. Patin selon l'une ou plusieurs des revendications précédentes, **caractérisé en ce que** ladite structure et ladite chaussure de sport sont raccordées au moyen de premières vis, lesquelles sont placées avec la tête tournée vers le sol et la tige vers la chaussure de sport, lesdites premières vis passant à travers des premiers trous (7a, 7b) formés dans ladite structure (2).
5. Patin selon la revendication 4, **caractérisé en ce que** lesdites premières vis passent à travers des deuxièmes trous (8a, 8b), lesquels sont formés sur

ladite plaque pour les orteils et/ou ladite plaque pour le talon , lesdites premières vis passant également à travers au moins une ouverture avant (9a) et un troisième trou (9b), lesquels sont prévus sur ladite semelle, lesdites premières vis pouvant être connectées aux premiers logements à fond plein à filetage inverse, lesquels sont prévus au niveau de la partie inférieure de ladite chaussure de sport.

6. Patin selon l'une ou plusieurs des revendications précédentes, **caractérisé en ce que** ladite semelle, ladite plaque pour les orteils, ladite plaque pour le talon et ladite partie inférieure de ladite chaussure de sport sont raccordées au moyen de secondes vis qui passent à travers ladite plaque pour les orteils et/ou ladite plaque pour le talon et/ou ladite semelle, lesdites secondes vis pouvant être connectées à des seconds logements à fond plein à filetage inverse qui sont prévus au niveau de la partie inférieure (61) de ladite chaussure de sport, approximativement autour desdits premiers logements à fond plein.
7. Patin selon la revendication 6, **caractérisé en ce que** ladite première plaque et ladite seconde plaque comportent une pluralité de goupilles de positionnement percées axialement (10), lesquelles s'avancent vers le haut de ladite plaque pour les orteils et de ladite plaque pour le talon, lesdites goupilles de positionnement passant à travers des quatrièmes trous de configuration contraire (11) qui sont prévus sur ladite semelle, lesdites secondes vis passant à travers lesdites goupilles de positionnement (10).
8. Patin selon l'une ou plusieurs des revendications précédentes, **caractérisé en ce que** ladite partie supérieure souple (12) comporte une première paire de rabats (13a, 13b) sur lesquels une pluralité d'oeillets (14) est disposée de façon avantageuse, lesdits oeillelets étant appropriés pour permettre le passage d'un lacet de serrage (15).
9. Patin selon l'une ou plusieurs des revendications précédentes, **caractérisé en ce que** ledit revers (17) et ladite doublure (18) comportent, respectivement, une deuxième paire de rabats et une troisième paire de rabats, ladite deuxième paire de rabats (19a, 19b) et ladite troisième paire de rabats (20a, 20b) étant disposées de façon à pouvoir être fermées l'une sur l'autre au moyen d'une boucle de fixation (21), laquelle est agencée de façon transverse à ladite deuxième paire de rabats.
10. Patin selon la revendication 9, **caractérisé en ce que** ladite partie supérieure souple (12) comprend au moins une extrémité en forme de patte de protection (22a ; 22b) qui est positionnée sur ladite boucle de fixation (21) pour protéger ladite boucle de fixation de l'usure, des chocs et/ou des ouvertures

accidentelles.

11. Patin selon l'une ou plusieurs des revendications précédentes, **caractérisé en ce que** ladite partie supérieure (12) est agencée de façon à envelopper ladite coque (16) et ledit revers (17). 5

12. Patin selon l'une ou plusieurs des revendications précédentes, **caractérisé en ce que** ladite partie supérieure (12) comprend au moins une bande de protection (23) qui s'avance à partir de ladite partie supérieure, de façon à protéger ladite partie supérieure de l'usure, des chocs et d'autres phénomènes accidentels. 10

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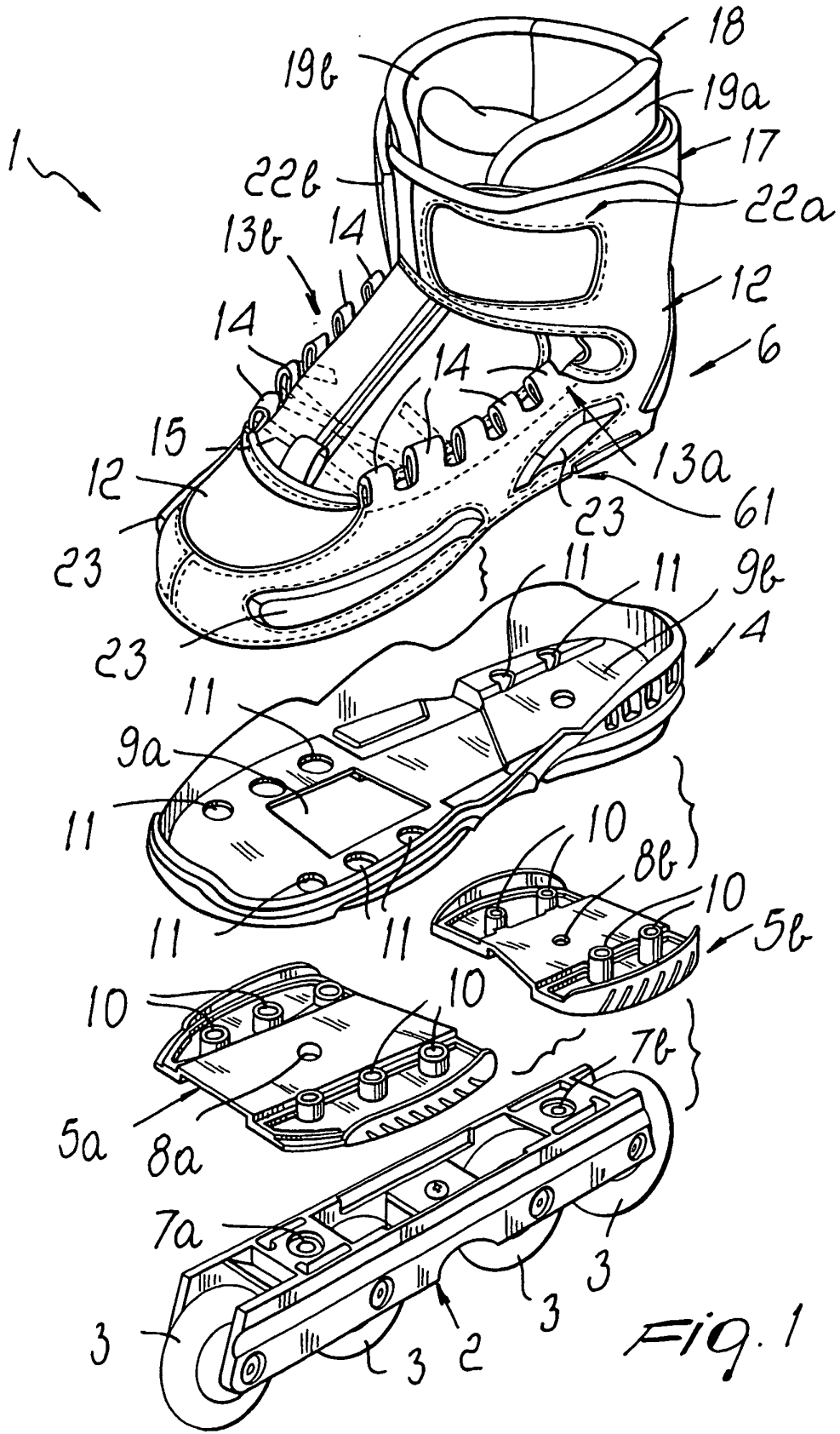


Fig. 1

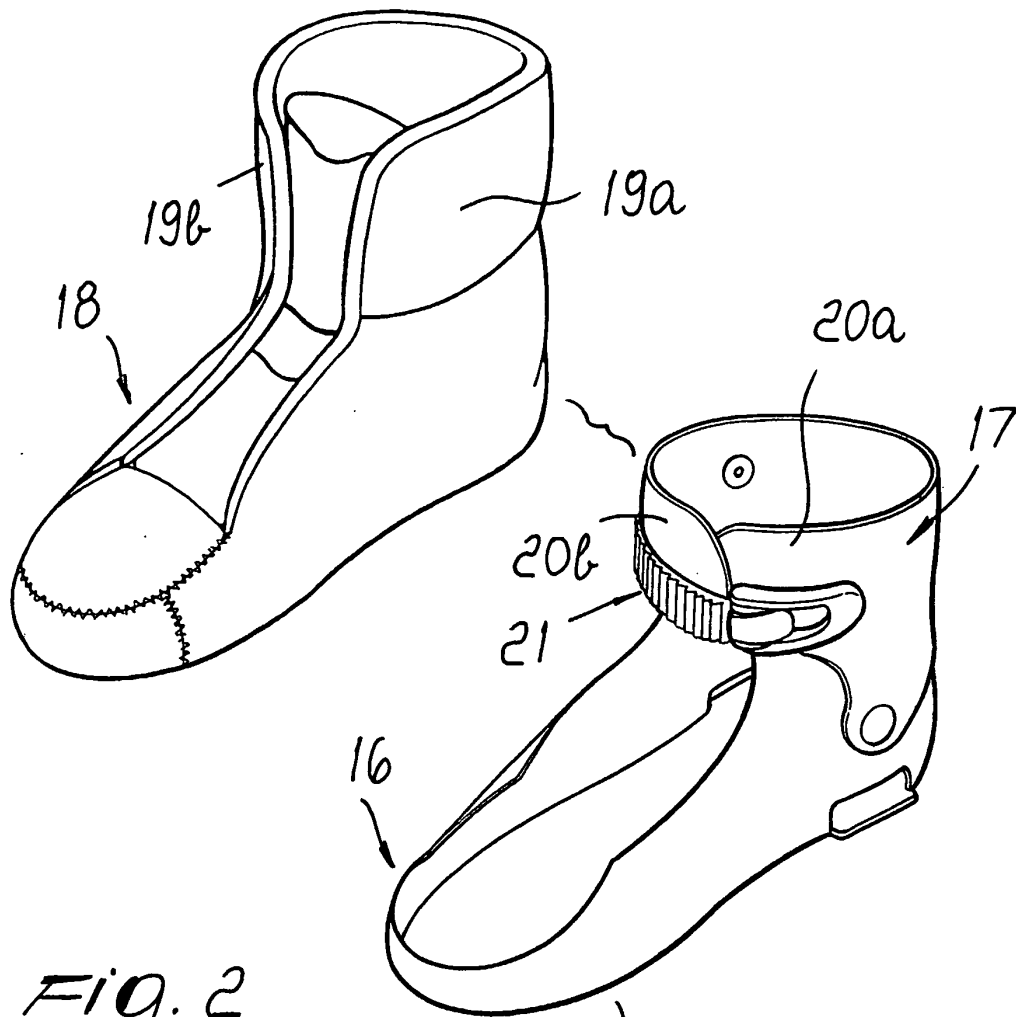
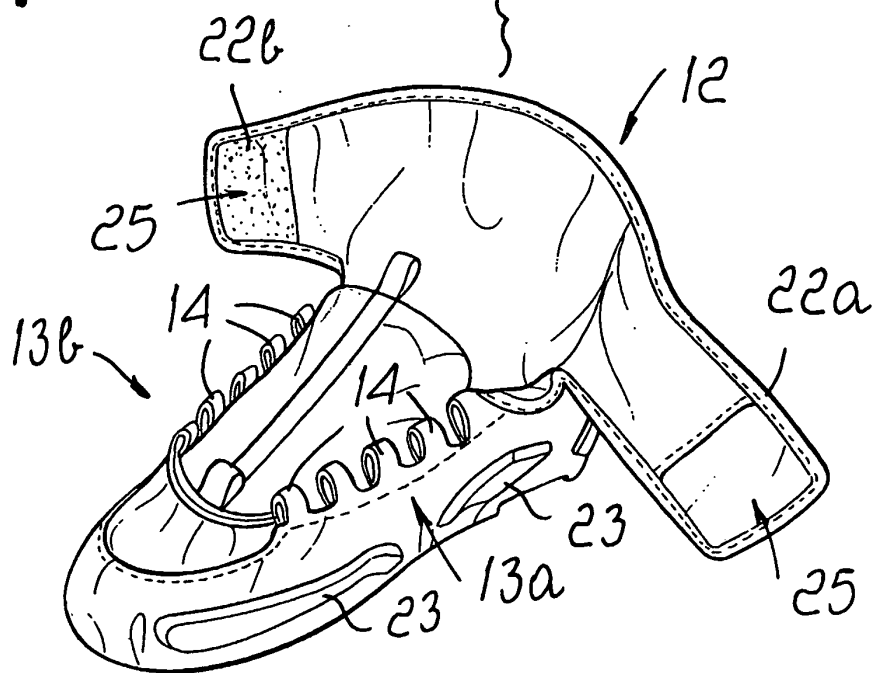


FIG. 2



REFERENCES CITED IN THE DESCRIPTION

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