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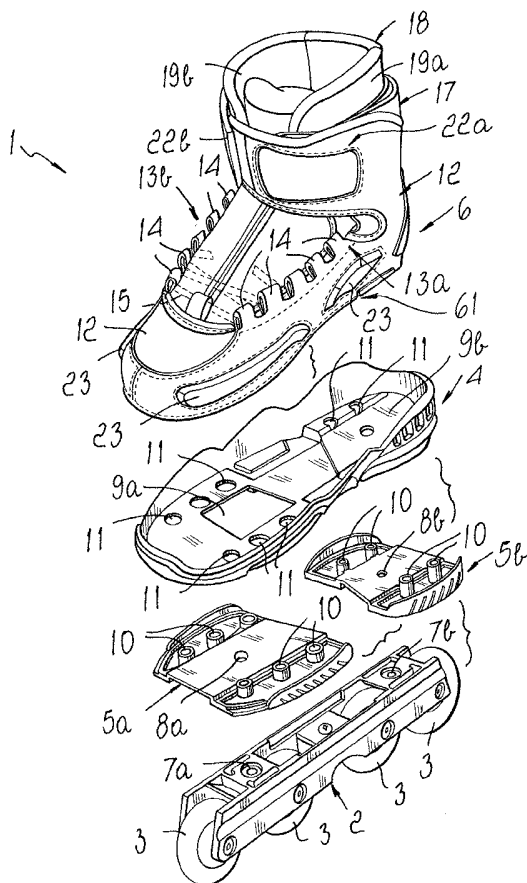
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[Continued on next page]

(54) Title: A SKATE, PARTICULARLY FOR AGGRESSIVE SKATING

(57) Abstract: A skate, particularly suitable for aggressive skating, comprising a frame (2) supporting a plurality of wheels (3) and a sports shoe (6), the sports shoe (6) comprising a sole (4), a shell (16) and an internal liner (18) for accommodating the foot and/or the lower portion of the user's leg, the skate comprising also a toe plate (5a) and a heel plate (5b), which are inserted between the frame (2) and the rigid sole (4).



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A SKATE, PARTICULARLY FOR AGGRESSIVE SKATING

Technical Field

The present invention relates to an improved skate, which is particularly suitable for the practice of so-called “aggressive” skating.

5 Background Art

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,
10 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
15 be fastened together through suitable fastening buckles arranged transversely to these flaps.

However, the skates of the known type suffer some drawbacks.

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
20 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
25 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.

30 Disclosure of the Invention

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.

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

Another object of the present invention is to provide a skate which is structurally simple and has low manufacturing costs.

Therefore, the present invention provides a skate, which comprises:

a frame supporting a plurality of wheels; and

a sports shoe comprising a 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 a 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.

Brief description of the drawings

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.

Ways of carrying out the invention

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
5 used without distinction in many other gliding sports such as traditional or speed skating, rolling and the like.

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
10 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
15 1 particularly sturdy and resistant to impacts or other accidental events.

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
20 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
25 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
30 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.

5 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
10 interconnection of the plates 5a and 5b to the sports shoe 6 is achieved.

 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
15 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).

20 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.
25 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.

30 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
5 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,
10 traditional types of speeding skates.

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.
15 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.

To provide the upper 12 with an adequate protection against impact,
20 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
25 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,
30 provided with few supporting elements and having the sole purpose of

transmitting forces to the frame 2.

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

Operation is as follows: the user, by opening the straps 22a and 22b and
5 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
10 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.

It has thus been shown that the skate 1, according to the present invention,
achieves the above aim and objects.

15 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
20 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.

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

The disclosures in Italian Patent Application No. TV2001A000070 from
which this application claims priority are incorporated herein by reference.

CLAIMS

1. A skate comprising:
a frame supporting a plurality of wheels;
a sports shoe comprising a sole, which is connected to said frame, and a
5 soft upper, which is downwardly connected to said sole, said sports shoe
further comprising a shell, which is removably associated to said sole, said
sports shoe further comprising an internal liner, which is removably
associated to said shell, said liner accommodating the foot and/or the lower
leg of the user;
10 characterised in that it comprises a toe plate and a heel plate, which are
inserted between said frame and said rigid sole and are separated between
them, said toe plate and said heel plate 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 is pivotally
15 connected to said rigid shell.
3. The skate according to claim 1, characterised in that said sole is
arranged so as to wrap around at least a bottom portion 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
20 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 obtained on said frame.
5. The skate according to claim 4, characterised in that said first screws
pass through second holes, which are obtained on said first plate and/or said
25 second plate, said first screws passing also through at least a front opening
and a third hole, 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,
30 characterised in that said sole, said first plate, said second plate and said

bottom portion of said sports shoe are connected by means of second screws which pass through said first plate and/or said second plate and/or said sole, said second screws being connectable to counter-threaded second dead holes which are provided at the bottom portion of said sports shoe, approximately
5 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, which project upwardly of said first plate and said second plate, said dowel pins passing through counter-shaped fourth holes which are provided on said sole,
10 said second screws passing through said dowel pins.

8. The skate according to one or more of the preceding claims, characterised in that said soft upper comprises a first pair of flaps, on which a plurality of eyelets 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 and said liner comprise respectively a second pair of flaps and a third pair of flaps, said second pair of flaps and said third pair of flaps being arranged, so as to be closable over each other by means of at least a fastening buckle, which is arranged transversely to said second pair
20 of flaps.

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

25 11. The skate according to one or more of the preceding claims, characterised in that said upper is arranged so as to wrap around said shell and said cuff.

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

other accidental events.

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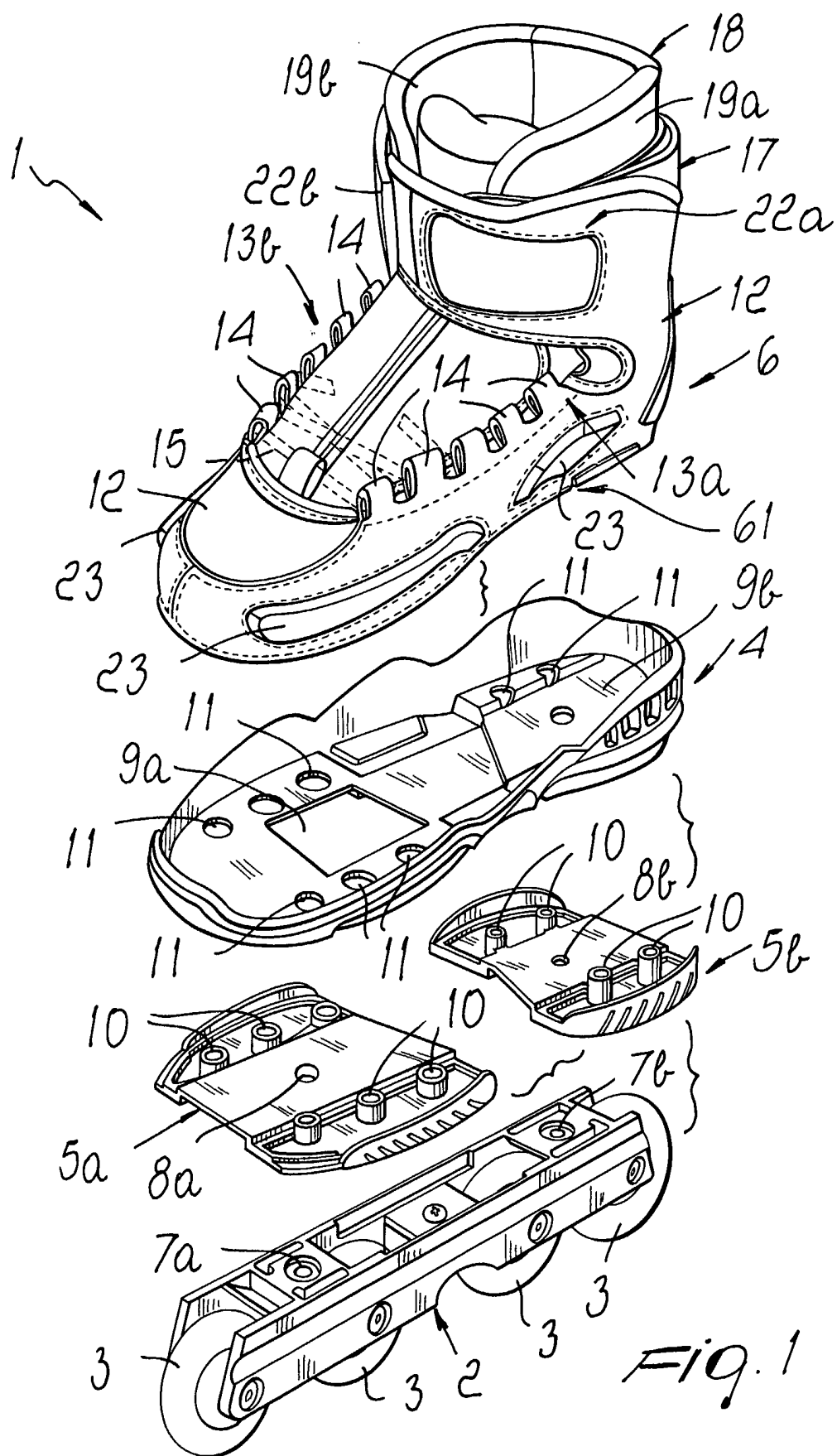


Fig. 1

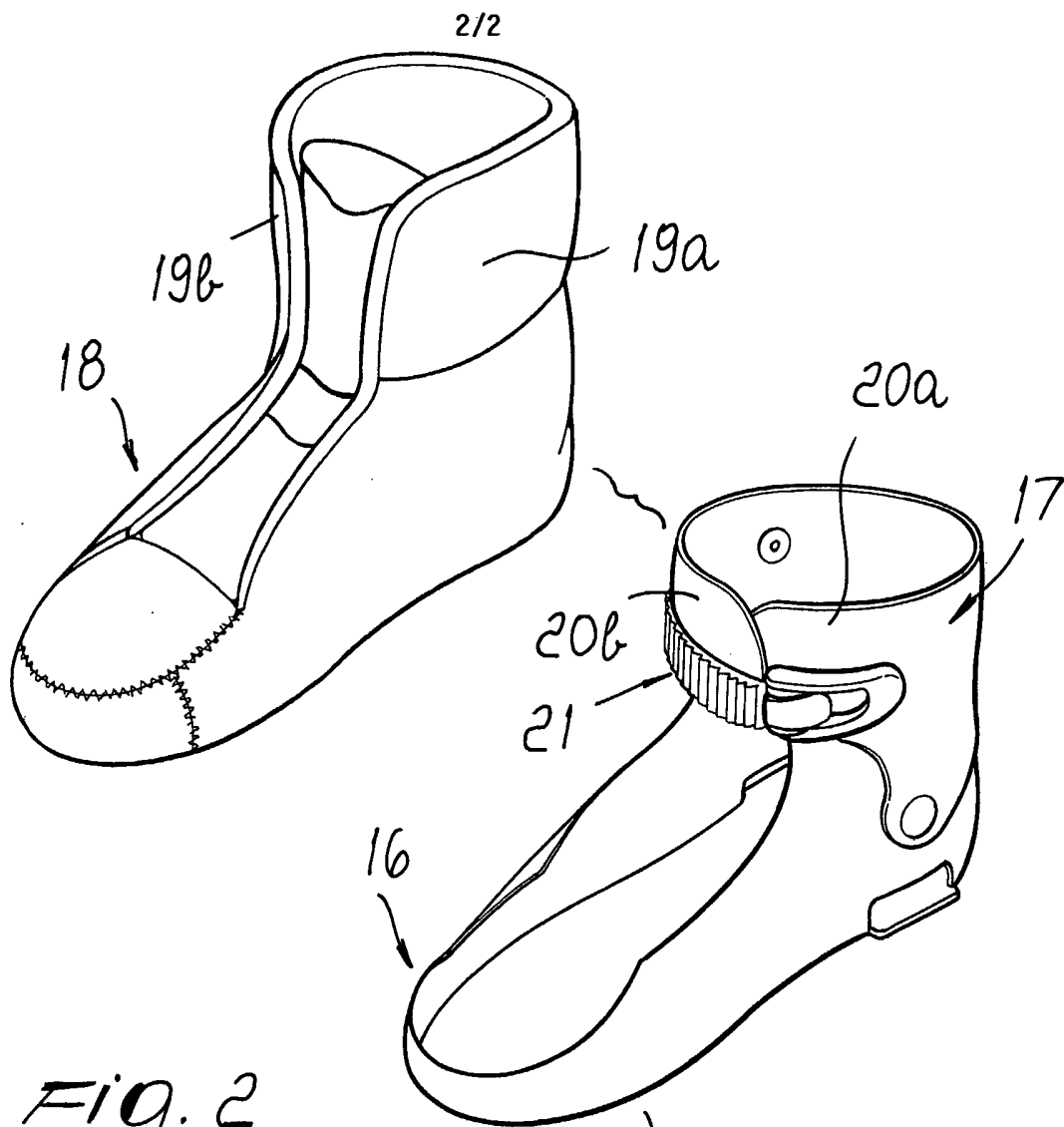


Fig. 2

