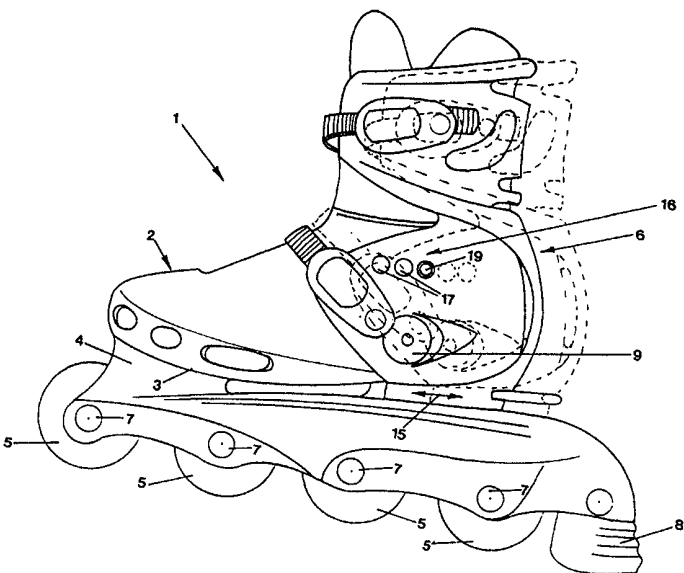


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(54) Title: SKATE WITH INLINE WHEELS  (57) Abstract The finding is a skate (1) with inline wheels (5) composed of: a shell (2) with a sole (3) on which the sole of the foot rests; a bootleg (6) fixed with pins to the rear part of the shell (2) which houses the heel of the foot and supports the ankle; a number of wheels (5) aligned along a support (4) fixed to the sole (3); sliding coupling means (12) that connect the bootleg (6) to the shell (2) to adjust the shoe size and locking devices (16) to fix the bootleg (6) selectively to the shell (2). The sole (3) has a projection (21) at the rear incorporated with the sole (3), this slides into a through aperture (22) in the bootleg (6) so that the sole (3) extends uninterruptedly for the entire length of the foot of the skater in any position adopted by the bootleg (6) in relation to the shell (2).		

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SKATE WITH INLINE WHEELS

The present finding relates to the sector of sporting equipment and specifically concerns a skate with inline wheels.

It is known that skates with inline wheels are composed mainly of footgear,
5 fixed to the sole of which is a U-shaped support with wings facing downwards. Connected to the support are a number of wheels aligned, one after another, each of which pivots around an axis of rotation.

The footgear, fitted internally with a soft liner used to house the foot of the skater, is incorporated in a single rigid body with the wheel support, so as to
10 produce a component with a rigid structure that follows the variations in direction transmitted by the foot of the skater to the skate.

As the footgear is produced in a single rigid body incorporated with the wheel support, its length and therefore its size are fixed, which is a drawback for young skaters who are growing rapidly, as skates must be continually replaced
15 to adapt the shoe size to the length of the foot.

This obviously leads to an increase in costs.

In the attempt to obviate this drawback, skates have been designed in which the footgear is composed of a shell comprising a single rigid body incorporated with the wheel support and a bootleg connected at the rear of the shell to
20 house the heel and support the ankle of the skater and which is connected to the shell by means of sliding coupling means. These sliding coupling means allow the bootleg to be moved in relation to the shell in the longitudinal direction of the footgear in order to adjust the length and thus the shoe size of this.

25 Fastenings are used to lock the bootleg to the shell selectively in different positions, each corresponding to a different shoe size.

For young skaters whose feet are therefore growing rapidly, the advantage of this finding is that the same pair of skates can be used for longer periods of time.

30 The drawback of hitherto known types of skates provided with footgear with a bootleg which can be adjusted in position in relation to the shell lies in is the fact that the sole on which the foot rests is composed of two parts, the first of which is part of the shell and the second which is part of the bootleg. The two parts are set one after the other and produce an uninterrupted sole only when
35 the bootleg is in the position nearest to the shell. When the bootleg is moved to

extend the shoe size, the two parts of which the sole is composed are moved reciprocally apart, producing a interruption in which the sole of the foot is not supported.

It is evident that this reduces the level of comfort of the footgear and, even if to a limited extent, reduces the level of control over the skate during use.

The present finding is aimed at overcoming the drawback mentioned above by producing a skate with inline wheels provided with footgear which can be adjusted in length, in which the sole on which the foot rests has no interruptions when the length of the footgear is adjusted.

The above aim is obtained by producing a skate with inline wheels which, in agreement with the main claim, comprises:

- a shell with an aperture through which the skater's foot is inserted and a sole on which the sole of the foot rests;
- a bootleg fixed with pins to the rear part of the shell, used to house the heel of the foot and support the ankle;
- a number of wheels aligned with one another along a support on the outside of the lower part of the sole, these wheels being connected to the support by means of individual revolving pins;
- sliding coupling means used to connect the bootleg to the shell to adjust the shoe size;
- locking devices used to fix the bootleg to the shell selectively in different positions each corresponding to a different shoe size, and characterised in that there is a projection at the rear of the sole which is incorporated with the sole itself, which slides into a corresponding through aperture in the bootleg, the sole extending uninterruptedly for the entire length of the foot of the skater in any position adopted by the bootleg in relation to the shell.

Unlike known equivalent skates, the advantage is that the skate of the finding remains just as comfort to wear, notwithstanding the length to which the footgear is adjusted.

The skate of the finding is particularly useful for young skaters who can increase the length of the footgear in relation to the growth of the foot without changing skates and with their foot always resting completely on the sole.

The aims and advantages mentioned shall be highlighted in more detail during the description of a preferred shape of production of the finding referring to the tables of drawings attached, in which:

- Fig. 1 shows a side view of the skate of the finding;
- Fig. 2 shows an exploded view of the skate in Fig. 1;
- Fig. 3 shows the axonometric representation of a part of the skate of the finding;
- 5 - Fig. 4 shows the axonometric representation of another part of the skate of the finding;
- Fig- 5 shows the rear view of the part of the skate shown in Fig. 3;
- Fig. 6 shows the front view of the part of the skate shown in Fig. 4.

As can be seen in the attached Figures and particularly in Figs. 1 and 2, the skate of the finding, indicated as a whole with 1, is of the type with inline wheels and is composed mainly of a shell 2, the lower part of which has a sole 3, fixed to which is a support 4 provided with wheels 5 and a bootleg 6 at the rear.

At the top of the shell 2, as can be seen particularly in Fig. 3, is an aperture 2a to insert the foot of the skater which is housed in a flexible lining, not represented, housed inside the shell 2 and the bootleg 6.

The support 4 which carries the wheels 5, is fixed externally to the lower part of the sole 3 and preferably composed of a single body incorporated with both the sole 3 and the shell 2.

20 This is in the shape of a U with wings 4a and 4b facing downwards; these support a number of pins 7 fitted horizontally, around each of which a relative wheel 5 rotates freely.

Naturally, the support 4 may be produced in shapes that differ from a U and any number of wheels 5 may be fitted, provided that these are aligned with one another.

At the rear of the support 4, as can be seen in detail in figs. 1 and 2, is a brake 8 which may also be excluded in different applications.

With regard to the bootleg 6, this is hinged to the rear part of the shell 2 with pins 9 fitted on either side of the skate, each of which is fitted through a connecting hole 10 provided in the bootleg 6 and a corresponding slot 11 provided in the shell 2.

The bootleg 6 is also connected to the shell 2 by coupling means, both indicated with 12 and shown in figures 3 to 6, composed of a pair of raised edges 13 facing and parallel to each other, provided on the bootleg 6 which slide inside a pair of relevant guideways 14 provided underneath the sole 3.

These coupling means allow the bootleg 6 to slide in relation to the shell 2 in either of the directions indicated by the arrow 15 in figure 1 to adjust the shoe size.

Appropriate locking devices, indicated with 16 and shown in Fig. 1, are used to
5 fix the bootleg 6 selectively in different positions in relation to the shell 2. In detail, these connecting devices 16 comprise a number of through holes 17 made on each side surface 18 of the bootleg 6 and a projecting pin 19 fitted on each side surface 20 of the shell 2, which fits selectively into any of the through
10 holes 17 to fix the bootleg 6 and shell 2 in the position relevant to the size required. For this purpose, the size that is obtained when the relevant projecting pin 19 is fitted into that through hole 17 can be marked at the side of each hole.

According to the finding there is a projection 21 at the rear of the sole 3, incorporated with the sole, which slides into a relevant through aperture 22 in
15 the bootleg 6, the sole 3 extending uninterruptedly for the entire length of the foot of the skater in any position adopted by the bootleg 6 in relation to the shell 2.

Therefore, there is the advantage that the foot of the skater always remains in contact with the sole in all positions of adjustment, thus guaranteeing a higher
20 degree of comfort for the skater and also greater level of control over the skate, contrary to what occurs in skates that are equivalent to those of the finding.

The through aperture 22 in the bootleg 6, as can be seen in detail in Fig. 4, is composed of a through hole.

25 Obviously the skate may be given any overall shape which therefore may also differ from the shape represented in the figures.

In particular instead of being the type with inline wheels, the skate may also be of the type with a blade for ice.

Even if the finding has been described with reference to the figures
30 represented in the tables of drawings attached, it is evident that it may be subjected to numerous modifications and executive variants, all coming within the concept of the finding expressed in the claims attached.

CLAIMS

1) Skate (1) with inline wheels (5) comprising:

- a shell (2) with an aperture (2a) through which to insert the foot of the skater and a sole (3) on which the sole of the foot rests;
- 5 - a bootleg (6) fixed with pins to the rear part of said shell (2) to house the heel of the foot and support the ankle;
- a number of wheels (5) aligned one after another along a support (4) on the outside of the underneath part of said sole (3), said wheels (5) are connected to the support (4) by means of relative rotating pins (7);
- 10 - sliding coupling means (12) that connect said bootleg (6) to said shell (2) in order to adjust the shoe size;
- locking devices (16) that fix said bootleg (6) selectively to said shell (2) in different positions, each corresponding to a different shoe size, **characterised in that** at the rear of said sole (3) and incorporated with it is a projection (21)
- 15 which slides into a relevant through aperture (22) in said bootleg (6), said sole (3) extending uninterruptedly for the entire length of the foot of the skater in any position adopted by said bootleg (6) in relation to said shell (2).

2) Skate (1) according to claim 1) **characterised in that** said rear aperture in said bootleg is a through hole (22).

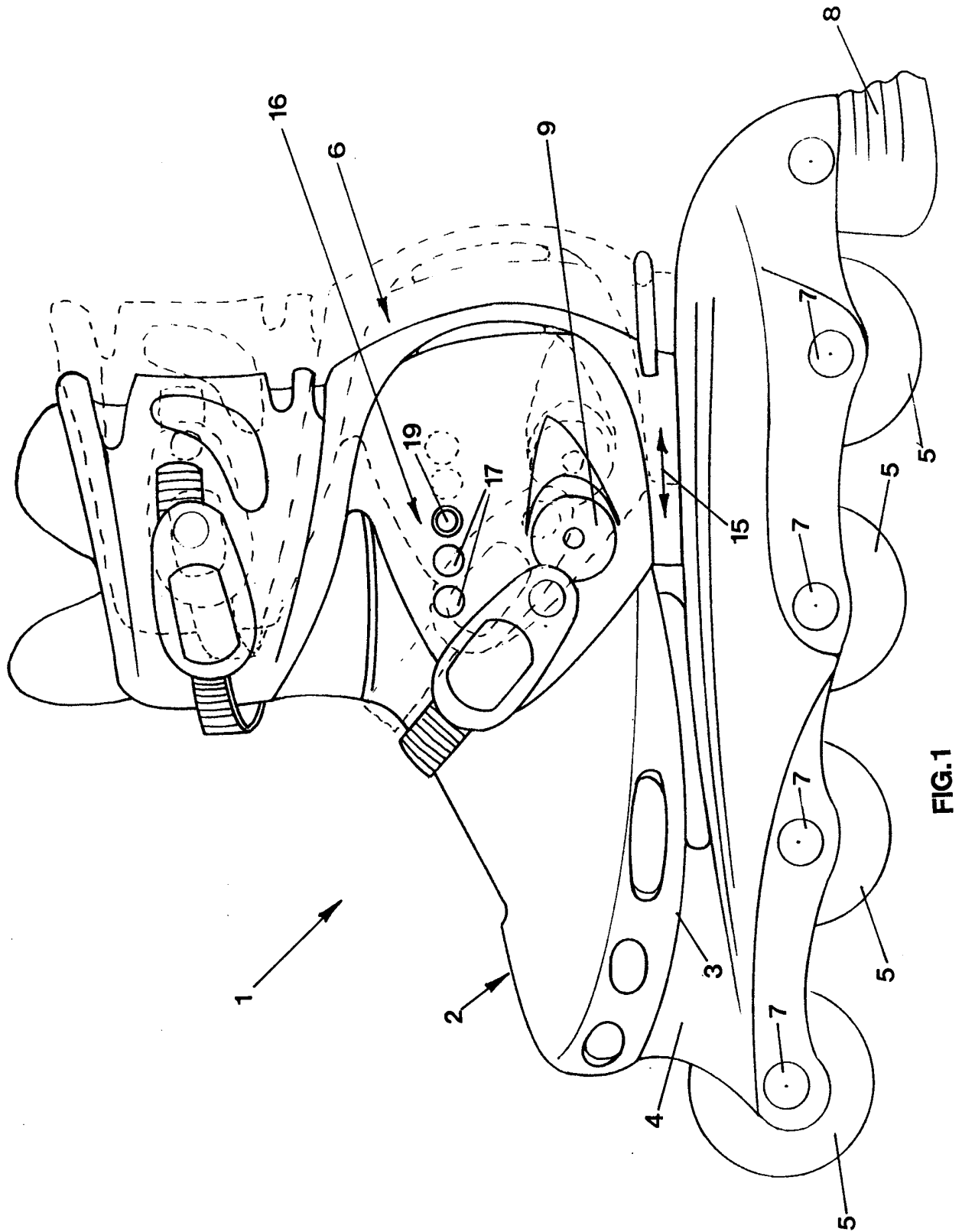
- 20 3) Skate (1) according to claim 1) **characterised in that** said connecting devices (16) comprise a number of through holes (17) on each side surface (18) of said bootleg (6) and a projecting pin (19) fitted on each side surface (20) of said shell (2) that can fit selectively into any of said through holes (17) to lock said bootleg (6) and said shell (2) in the position corresponding to the
- 25 size required.

4) Skate (1) according to claim 1) **characterised in that** said coupling means (12) are composed of a pair of raised edges (13) facing and parallel to each other, provided on said bootleg (6) which slide inside a pair of relevant guideways (14) to house these provided underneath said sole (3).

- 30 5) Skate (1) according to claim 4) **characterised in that** said raised edges (13) and said corresponding guideways (14) have edges in a cross section that join together in the shape of a U.

- 6) Skate (1) according to claim 1) **characterised in that** said bootleg (6) is hinged to the rear part of said shell (2) by means of a pair of pins (9) fitted on
- 35 each side of the skate, each of which is fitted through a joining hole (10)

provided in the bootleg (6) and a corresponding slot (11) provided in the shell (2).



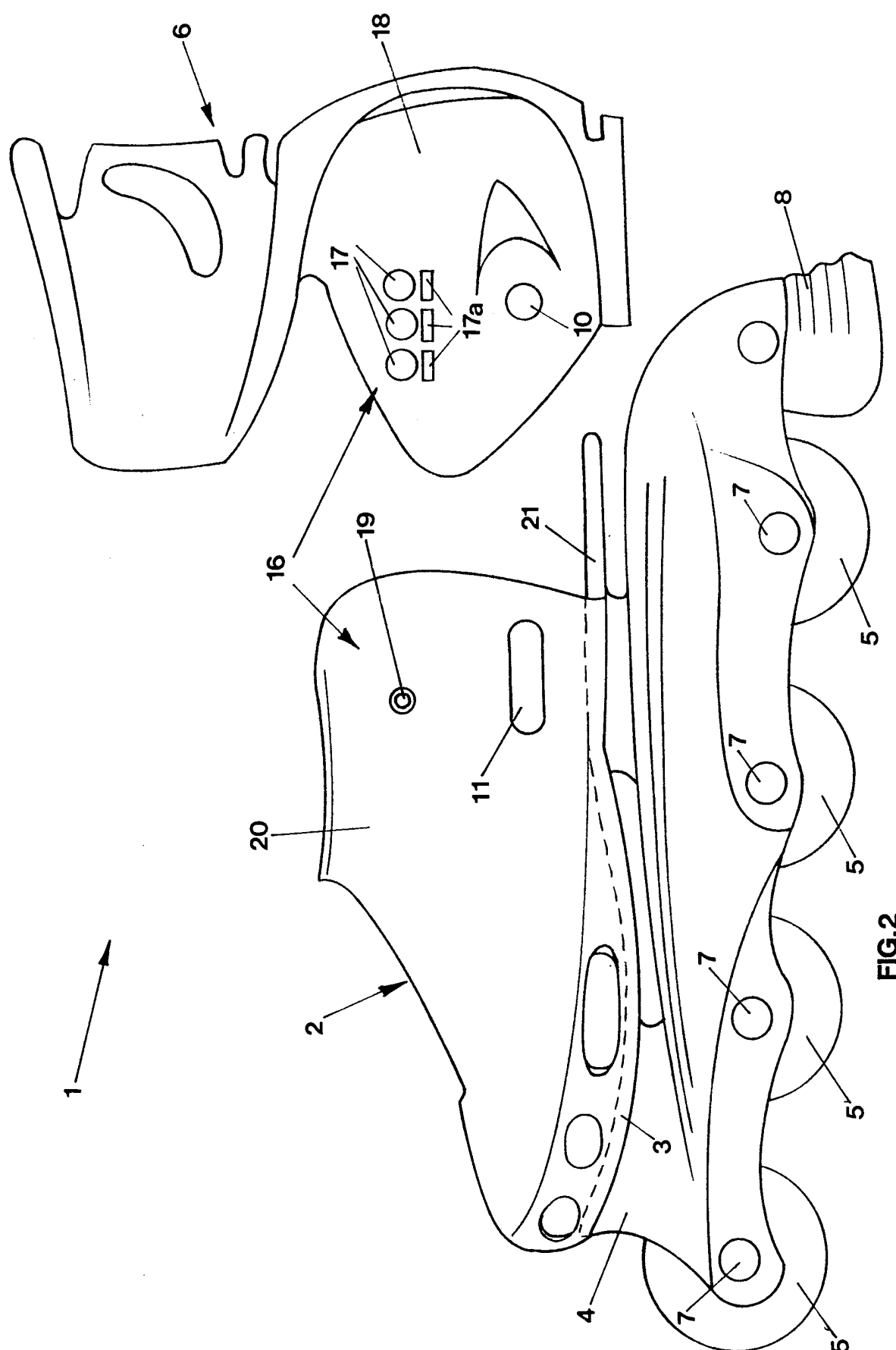
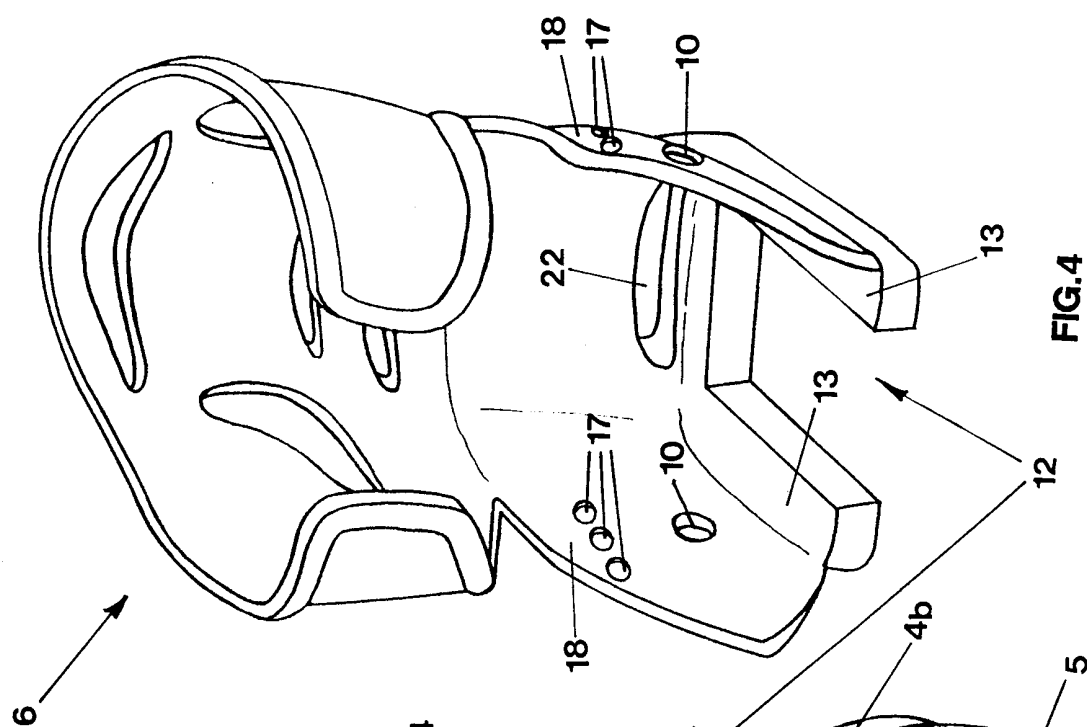
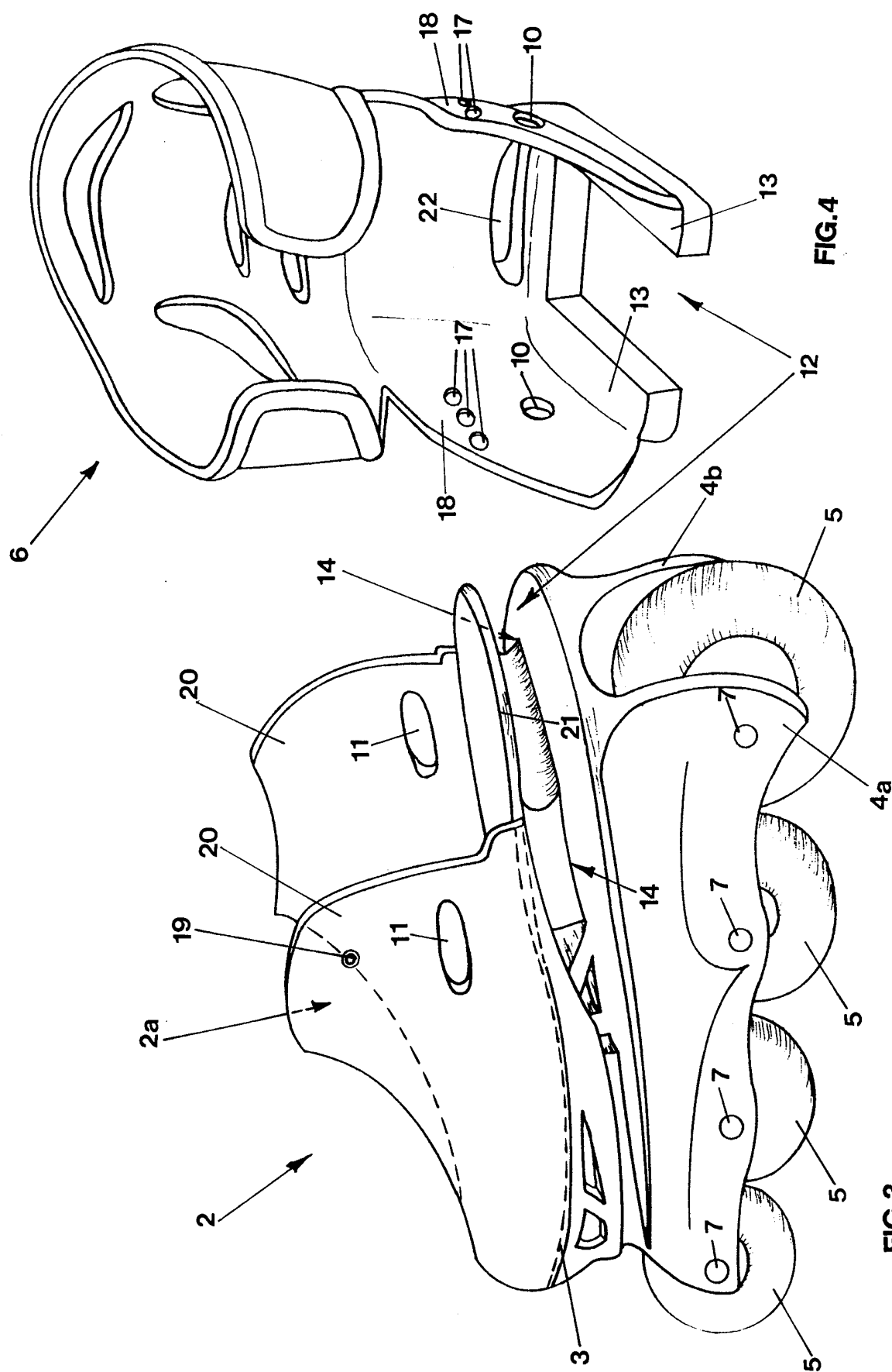


FIG. 2



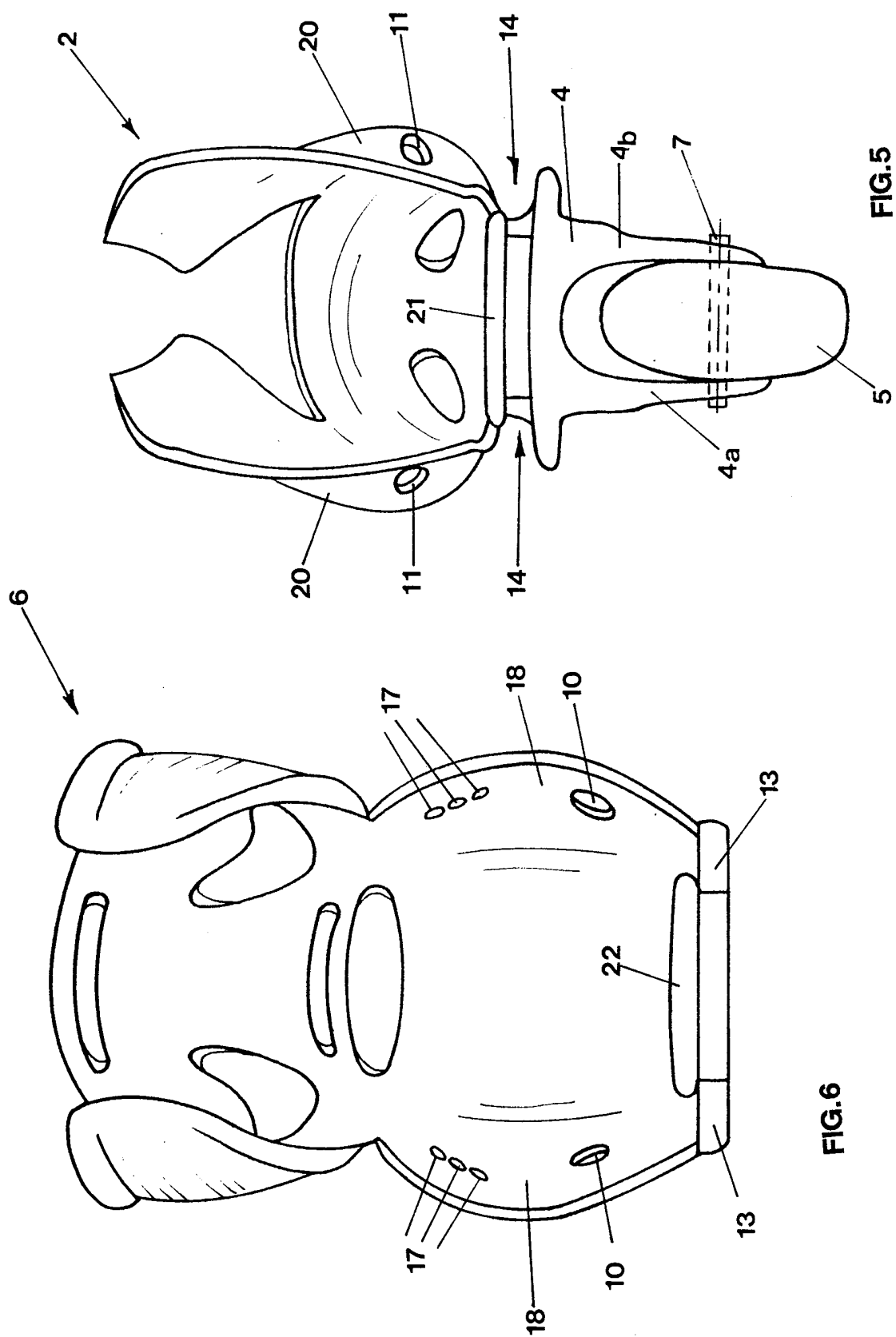


FIG.5

FIG.6

INTERNATIONAL SEARCH REPORT

International Application No

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A43B5/16 A43B3/26

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)

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 96 40391 A (ROLLERBLADE INC.) 19 December 1996 (1996-12-19) the whole document	1
P, A	EP 0 878 141 A (SALOMON) 18 November 1998 (1998-11-18) the whole document	1
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Information on patent family members

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