(11) **EP 1 358 811 A1**

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:

05.11.2003 Bulletin 2003/45

(51) Int Cl.7: **A43B 5/08**

(21) Application number: 03008838.9

(22) Date of filing: 25.04.2003

(84) Designated Contracting States:

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR Designated Extension States:

AL LT LV MK

(30) Priority: 30.04.2002 IT TV20020052

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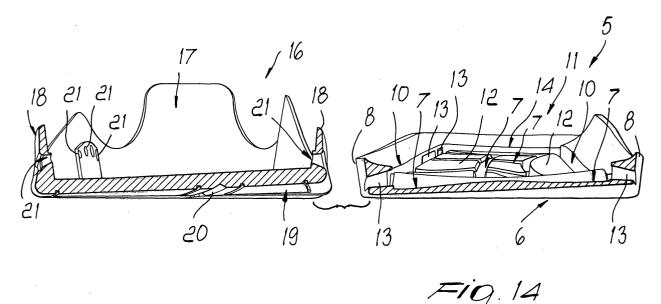
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(54) Sport shoe, particularly boat shoe

(57) A sports shoe, particularly a boat shoe, comprising a perforated upper (2) that is associated in a lower region with a mid-sole, which is provided with a plurality of first channels that lie on planes that are inclined toward the lateral edge of the mid-sole; the channels allowing to convey the liquids, such as water and/or per-

spiration, at at least one second perimetric channel for collecting the liquids, which is connected to lateral drainage openings. Advantageously, the second channel is formed proximate to the perimetric edge of a sole (16) that is associated with the mid-sole in a lower region and is in turn provided with holes (21).



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Description

[0001] The present invention relates to a sports shoe, particularly for use on board watercraft and in particularly wet conditions.

[0002] Currently it has been noted that one considerable problem in the use of sports shoes on board watercraft is that waves often break over the deck, and this is a particularly common situation on sailboats in certain points of sailing with respect to the sea and wind; this fact entails the flooding of the areas of the boat occupied by the crew, with consequent penetration of the water inside the shoes.

[0003] Such water then remains inside the shoes, causing discomfort and inconveniencies for the skin of the user.

[0004] In order to prevent the penetration of water in shoes, it is known to use boots which, by way of the nature of the material used to manufacture them or by way of the additional use of gaiters, help to keep the water outside the boot.

[0005] Besides the fact that water may still enter the boots, in this type of footwear there is no outlet for the water, and this fact makes the above-mentioned problems even more important.

[0006] Solutions are also known which allow drainage of water in shoes in which the upper is perforated and therefore allows water to enter and exit the upper through suitable through holes.

[0007] This solution, too, has drawbacks, since the shoe is light and therefore more suitable for summer and spring conditions, therefore for recreational and competitive sailing in non-extreme conditions; moreover, a film of water still remains inside the shoe.

[0008] A shoe by the US firm The Timberland Company, the model marketed under the trade name "Break Away", is also known; this shoe includes an upper inside which there is a perforated insole below which a sole is associated; through holes are formed in the sole and are connected to the inside of the shoe, face the ground, and are suitable to allow the outflow of any water that enters the shoe.

[0009] Although this known solution allows to solve partially the problems noted above, it still has a residual problem, since the water tends to remain partially inside it; moreover, although the holes are formed in the sole in a region that is slightly raised with respect to the tread, due to the high compressibility of the material of which the tread is made the holes may become blocked when the sole is in direct contact with the ground or with the deck of the boat, and therefore the water can still remain inside the shoe; therefore potential discomfort may still occur, and such discomfort would be increased during long sailing periods, in which the crew assumes a static sitting or standing position and the holes would remain blocked.

[0010] Moreover, due to the compression of the rubber-like materials of which the soles are made, this solution potentially has an additional residual problem, which is constituted by the potential tendency to aspirate water, as occurs in a membrane pump.

[0011] This additional residual problem is particularly relevant in situations in which the water taken onboard forms a film, even only a few millimeters thick, on which one is forced to walk until complete drainage occurs by means of suitable discharge holes, known as scuppers, which are formed in watercraft above the waterline.

[0012] In these known solutions, however, there are other residual problems, such as the possibility that blunt objects possibly present on the ground or deck may penetrate through the sole, and most of all the loss of grip, which is a critical factor in boating and therefore is a factor of insecurity for the user owing to the possible formation of "water cushions" at the discharge holes of the shoe, which can potentially trigger aquaplaning.

[0013] US-4,438,573 discloses a ventilated sports shoe that has an outsole, or tread, on which a wedge-shaped heel is associated; a grid of longitudinal and transverse grooves or seats is in turn formed on the upper surface of the heel, and these grooves or seats affect the entire width of the heel and are therefore connected to the outside of the heel.

[0014] A mid-sole is associated above the wedge-shaped heel and is provided with vertical holes that allow the passage of air from the inside of the shoe, which in turn has a vertically perforated partition and a shallow insole, which is again provided with a longitudinal channel and with a plurality of vertical holes for the passage of air.

[0015] However, even this known solution cannot be used on board watercraft, since water enters the transverse and longitudinal grooves or seats through the holes provided laterally in the wedge-shaped heel and can therefore be pumped, like the air, into the shoe; moreover, any water that enters the upper in any case stagnates inside the grooves or seats formed transversely and longitudinally to the wedge-shaped heel when the user remains seated or standing on the deck or hull of the watercraft.

[0016] A shoe is also known which is marketed by the US company Sperry and is designated as the BILGE H2O model (viewed on the Website www.sperrytopsider.com/new.asp even today), which is constituted by an upper that is closed downward and has thereat, at the heel and upper metatarsal region, perforated regions that allow the outflow of any water that enters it.

[0017] The upper is associated, in a lower region, at a sole, which has, in the regions below said perforated regions formed in the upper, respectively two vertical holes and three transverse channels.

[0018] The Applicant believes that the two vertical holes are connected to two scuppers for the outflow of the water laterally with respect to the sole, while the transverse channels affect the entire width of the sole and have an identical and constant depth, like the two scuppers.

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[0019] Even this solution has a residual problem, since the water that has entered through the upper still remains partly at the vertical holes, at the scuppers and at the transverse channels and therefore can, during walking, be sucked into the shoe due a pump effect.

[0020] Therefore, a film of water may still remain inside the upper, especially at the parts where the perforated regions that act as a reservoir are not present.

[0021] The aim of the present invention is to solve the problems noted in the cited prior art, eliminating the drawbacks noted in known types, by providing a shoe, particularly for use on board watercraft and in particularly wet conditions, that allows the water that enters the upper also to exit rapidly from the shoe, so as to allow rapid drying of the inside of the upper.

[0022] Within this aim, an object of the invention is to provide a shoe for use on board watercraft that allows the continuous outflow of the water that has entered through the upper out of the shoe even when the user is sitting or standing.

[0023] Another object is to provide a shoe for use on board watercraft that allows to prevent possible suction of water drained from the upper due to a pump effect while walking.

[0024] A further object is to provide a shoe for use on board watercraft that can ensure good grip on the ground or deck of the boat even if it is flooded or in the presence of a film of water.

[0025] A still further object is to provide a shoe for use on board watercraft that allows the user to move in full safety even if blunt objects are accidentally present on the ground.

[0026] A still further object is to provide a shoe for use on board watercraft that associates with the preceding characteristics that of being structurally simple, lightweight, not susceptible to increasing in weight in the presence of water, and of having low manufacturing costs.

[0027] A still further object is to provide a shoe for use on board watercraft that associates with the preceding characteristics that of having low manufacturing costs and of being obtainable with conventional and known machines and equipment.

[0028] This aim and these and other objects that will become better apparent hereinafter are achieved by a sports shoe, particularly a boat shoe, which comprises an upper that is perforated in one or more regions and is characterized in that it is associated with a mid-sole, which is closed in a lower region and is provided in an upper region with a plurality of first channels that lie on planes that are inclined toward the lateral edge of the mid-sole in order to convey the liquids at at least one second perimetric channel for collecting the liquids, which is connected to lateral drainage openings.

[0029] Advantageously, the lateral drainage openings are arranged at suitable through holes formed on the lateral edge of a sole that is associated with the midsole.

[0030] Further characteristics and advantages of the invention will become better apparent from the following detailed description of a particular embodiment thereof, illustrated by way of non-limitative example in the accompanying drawings, wherein:

Figure 1 is a first side view of a shoe;

Figure 2 is a first side view of the mid-sole;

Figure 3 is a first side view of the sole;

Figure 4 is a second side view of the mid-sole;

Figure 5 is a top plan view of the mid-sole;

Figure 6 is a second side view of the sole;

Figure 7 is a bottom plan view of the sole;

Figures 8 and 9 are a top perspective view and a bottom perspective view of the mid-sole;

Figures 10 and 11 are a top perspective view and a bottom perspective view of the sole;

Figure 12 is a sectional view of the invention, taken along the line XII-XII of Figure 5;

Figure 13 is a sectional view of the shoe in the assembled condition, taken along the line XIII-XIII of Figure 5, in which the mid-sole and the sole have been uncoupled for the sake of clarity;

Figure 14 is a sectional view of the shoe in the assembled condition, taken along the line XIV-XIV of Figure 5, in which the mid-sole and the sole have been uncoupled for the sake of clarity, arranging them side by side.

[0031] With reference to the figures, the reference numeral 1 designates a sports shoe used in particular on a boat, which comprises an upper 2 in which one or more perforated regions, designated by the reference numeral 3, are formed.

[0032] The upper 2 can be constituted, particularly in the perforated regions 3, by a perforated or mesh-like material, or it is possible to use highly breathable materials such as meshes and/or perforated membranes.

[0033] The upper 2 is provided, preferably but not exclusively, by using an inner sock 4 that is perforated and is sewn perimetrically and externally to a mid-sole 5.

[0034] Said mid-sole is closed in a lower region and has a first lower surface 6 that has no openings and is advantageously smooth.

[0035] The mid-sole 5 is provided in an upper region with a plurality of first channels 7, which are arranged both longitudinally and transversely to the mid-sole and whose particularity is that they are arranged on planes that are inclined transversely toward a lateral edge 8 and longitudinally, preferably toward a toe region 9 of said mid-sole.

[0036] The first channels 7 can have, in the transverse arrangement as shown in Figure 12, mutually opposite inclinations from their central region toward the right and left sides of the lateral edge 8, with a same angle or with different angles, as shown in Figure 14.

[0037] As an alternative, as shown instead in Figure 13, the inclination can be chosen to have a single orien-

tation and therefore be directed toward a chosen side of the lateral edge 8.

[0038] Since the toe region 9 is usually slightly raised with respect to the ground, the inclination of the first channels 7 in said region can also be modified.

[0039] The first channels 7 force the conveyance by gravity of the liquids that arrive from the upper through the inner sock 4 and the perforated regions 3 at at least one second perimetric channel 10 for collecting the liquids; said second channel is therefore formed adjacent to the lateral edge 8 and affects the entire inner region that is adjacent to the perimeter of said mid-sole.

[0040] The second channel 10 therefore acts as a drainage duct for the liquids conveyed by the first channels 7.

[0041] Advantageously, the second perimetric channel 9 also has a surface that is inclined toward the lateral edge 8 in order to facilitate the outflow of liquids.

[0042] The presence of the first channels 7 and of the second perimetric channel 10 produces, at the second internal surface 11 of the mid-sole 5, a plurality of raised portions 12, which have a chosen plan shape.

[0043] The second perimetric channel 10 is further connected to suitable lateral openings 13 formed at the lateral edge 8 of the mid-sole 5, said lateral openings preferably having a drainage plane that is inclined toward the first lower surface 6 of said mid-sole.

[0044] Said lateral openings may have the intended shape, for example slotted and arranged on an axis that is approximately longitudinal to the lateral edge 8, and can be provided in a chosen number and arranged in one or more points of the lateral edge 8.

[0045] The particular illustrated embodiment shows two lateral openings 13 provided on the inner side of the foot in regions that are adjacent to the toe region 9 and the heel region 14, while at the outer side of the foot there are two openings approximately at the heel region 14 and there is another lateral opening proximate to the forefoot.

[0046] The position of the lateral openings 13 with respect to the first lower surface 6 of the mid-sole 5 may of course vary according to the chosen inclination given in the respective regions to the second perimetric channel 10.

[0047] If the upper 2 wraps around the mid-sole 5 so as to also affect the first lower surface 6 thereof, at each lateral opening 13 there are, in said upper, suitable openings 15 that allow the outward passage of liquids.

[0048] The combination of upper and mid-sole is therefore associable with a suitable sole 16 by way of a mutual nondetachable connection.

[0049] The sole 16 wraps around the mid-sole 5 and contains it and has a third upper surface 17 that is shaped approximately complementarily to the first lower surface 6 of the mid-sole 5; a perimetric ridge 18 protrudes from the third upper surface 17 and partially wraps around the upper.

[0050] The sole 16 has a fourth lower surface 19, on

which a chosen tread is provided in order to improve friction with the ground.

[0051] In the particular embodiment shown, the fourth lower surface 19 has a groove 20 that is approximately cross-shaped and allows to avoid aquaplaning.

[0052] Advantageously, the groove 20 is slightly arcshaped both longitudinally and transversely.

[0053] One or more through holes 21 are provided on the perimetric ridge 18 of the sole 16, at the lateral openings 13 of the mid-sole 5 and optionally at the openings 15 of the upper 2, if provided.

[0054] The holes 21 have an axis that is advantageously inclined toward the ground in order to further facilitate the evacuation of the liquids that have entered the upper and are in any case spaced from the fourth lower surface 19.

[0055] Advantageously, the one or more holes 21 are provided at suitable recesses 22 formed in the lateral edge 18.

[0056] The particular embodiment shown illustrates two holes 21 formed on the inner side of the foot in a region that is adjacent to the heel region 14 and a single hole in the toe region 9; at the outer side of the foot there are instead four holes approximately at the heel region 14 and there is a single hole proximate to the toe region 9.

[0057] It has thus been found that the invention has achieved the intended aim and objects, a shoe particularly for use on board watercraft and in particularly wet conditions having been provided which allows the water that enters the upper also to exit rapidly from the shoe, so as to allow rapid drying of the inside of the upper, the outflow, out of the shoe, of the water that has entered from the upper occurring continuously even when the user is sitting or standing motionless.

[0058] The invention allows continuous outflow also by way of the inclined arrangement of the first channels 7, which allow to collect the water at the second perimetric channel 9, which is in turn connected to inclined lateral drainage openings 13.

[0059] The openings 15, if provided, allow the fluids to pass, again by gravity, at the holes 21, thus being discharged outside the shoe.

[0060] This configuration allows to prevent any suction of water drained from the upper due to a pump effect while walking, and is adapted to ensure good adhesion to the ground or boat deck even if it is flooded or in the presence of a film of water.

[0061] The invention therefore allows to have a shoe that drains water in an optimum manner, allows optimum fit, protects against blunt bodies that are present on the ground, and allows to hold an excellent balance, since the sole 16 is shaped so as to prevent slipping.

[0062] The invention is of course susceptible of numerous modifications and variations, all of which are within the scope of the appended claims.

[0063] The materials employed, as well as the dimensions that constitute the individual components of the

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invention, may of course be more pertinent according to specific requirements.

[0064] The disclosures in Italian Patent Application No. TV2002A000052 from which this application claims priority are incorporated herein by reference.

[0065] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

- 1. A sports shoe, particularly a boat shoe, comprising an upper that is perforated in one or more regions and characterized in that it is associated with a mid-sole, which is closed in a lower region and is provided in an upper region with a plurality of first channels that lie on planes that are inclined toward the lateral edge of said mid-sole in order to convey the liquids at at least one second perimetric channel for collecting said liquids, which is connected to lateral drainage openings.
- 2. A sports shoe, particularly a boat shoe, comprising an upper that is perforated in one or more regions and characterized in that it is associated with a mid-sole, which is closed in a lower region and is provided in an upper region with a plurality of first channels that lie on planes that are inclined toward the lateral edge of said mid-sole in order to convey the liquids at at least one second perimetric channel for collecting said liquids, which is connected to lateral drainage openings arranged at through holes formed on the lateral edge of a sole that is associated with said mid-sole.
- 3. The sports shoe according to claims 1 or 2, **characterized in that** said lateral drainage openings are inclined toward the ground.
- 4. The sports shoe according to claims 1 or 2, characterized in that said suitable through holes formed in said lateral edge of said sole associated with said mid-sole are inclined toward the ground.
- 5. The sports shoe according to claims 1 or 2, comprising an upper that has one or more perforated regions and is provided by using a perforated inner sock that is sewn perimetrically and externally to a mid-sole, **characterized in that** said mid-sole is closed in a lower region and has a first lower surface that has no openings and is smooth, said mid-sole being provided with a plurality of first channels in an upper region.

- 6. The shoe according to claims 1 or 2 and 5, characterized in that said first channels are arranged both longitudinally and transversely to said mid-sole.
- 7. The shoe according to claims 1 or 2 and 6, characterized in that said first channels lie on planes that are inclined transversely toward the lateral edge of said mid-sole.
- 8. The shoe according to claims 1 or 2 and 6, characterized in that said first channels lie on planes that are inclined longitudinally to said mid-sole, preferably toward the toe region of said mid-sole.
- 9. The shoe according to claims 1 or 2 and 5, characterized in that said first channels have mutually opposite transverse inclinations directed from their central region toward the right and left sides of the lateral edge of said mid-sole with a same angle.
 - 10. The shoe according to claims 1 or 2 and 5, characterized in that said first channels have opposite transverse inclinations directed from their central region toward the right and left sides of the lateral edge of said mid-sole with different angles of inclination.
 - 11. The shoe according to claims 1 or 2 and 5, **characterized in that** said first channels have the same orientation of their transverse inclination, which is therefore directed toward a chosen side of the lateral edge of said mid-sole.
 - 12. The shoe according to one or more of the preceding claims, characterized in that said first channels force the conveyance, at least by gravity, of the liquids that arrive from said upper through said inner sock and said perforated regions, at at least one second perimetric channel, for collecting said liquids.
 - 13. The shoe according to claims 1 or 2 and 12, characterized in that said second channel is formed adjacent to said lateral edge and affects the entire internal region adjacent to the perimeter of said midsole.
 - 14. The shoe according to claims 1 or 2 and 12, characterized in that said second channel acts as a drainage duct for the liquids conveyed by said first channels.
 - **15.** The shoe according to claims 1 or 2 and 12, **characterized in that** said second perimetric channel has a surface that is inclined toward said lateral edge in order to facilitate the outflow of the liquids.
 - 16. The shoe according to claims 1 or 2, 5 and 12, char-

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acterized in that said first channels and said second perimetric channel form a plurality of raised portions at the second inner surface of said mid-sole.

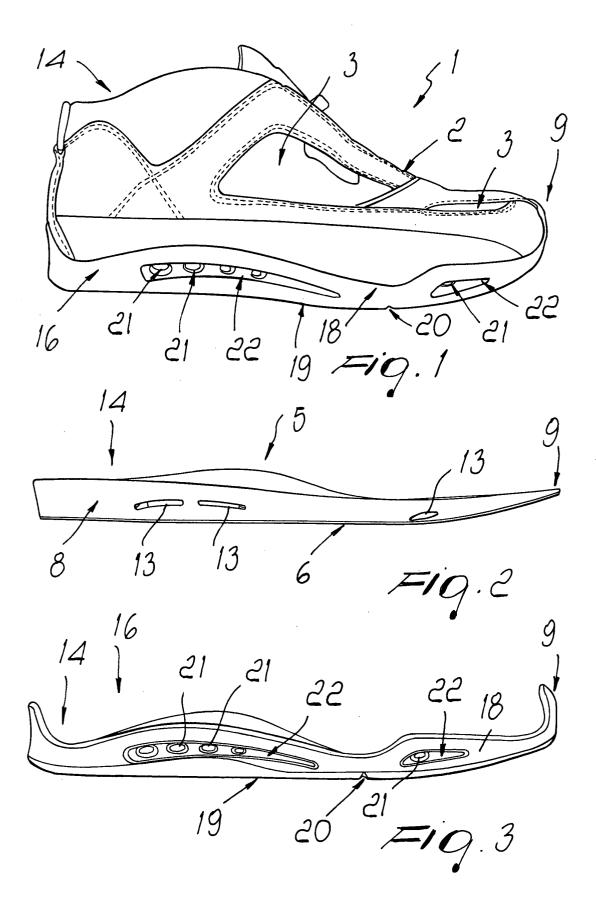
- 17. The shoe according to claims 1 or 2 and 12, **characterized in that** said second perimetric channel is connected to lateral openings provided at said lateral edge of said mid-sole.
- **18.** The shoe according to claims 1 or 2 and 17, **characterized in that** said lateral openings have a drainage plane that is inclined toward said first lower surface of said mid-sole.
- **19.** The shoe according to claims 1 or 2 and 17, **characterized in that** said lateral openings have a slotted shape and are arranged along an axis that is approximately longitudinal to said lateral edge.
- **20.** The shoe according to claims 1 or 2 and 17, **characterized in that** said lateral openings are arranged in one or more points of said lateral edge.
- 21. The shoe according to claims 1 or 2 and 17, characterized in that said lateral openings are two and are formed on the inner side of the foot in regions that are adjacent to the toe and heel regions.
- 22. The shoe according to claims 1 or 2 and 17, **characterized in that** said lateral openings are two and are formed on the outer side of the foot approximately at the heel region, and **in that** an additional lateral opening is formed proximate to the forefoot region.
- 23. The shoe according to claims 1 or 2 and 17, characterized in that on said upper, at each one of said lateral openings provided in said mid-sole, there are openings that allow the passage of the liquids.
- **24.** The shoe according to claims 1 or 2 and 17, **characterized in that** said upper and said mid-sole are associable with a suitable underlying sole.
- 25. The shoe according to claims 1 or 2 and 24, **characterized in that** said sole surrounds and contains said mid-sole and has a third upper surface that is shaped approximately complementarily to said first lower surface of said mid-sole, a perimetric ridge protruding from said third upper surface and partially wrapping around said upper.
- 26. The shoe according to claim 25, characterized in that said sole has a fourth lower surface on which a chosen tread is formed in order to improve friction with the ground.
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- 27. The shoe according to claim 25, characterized in

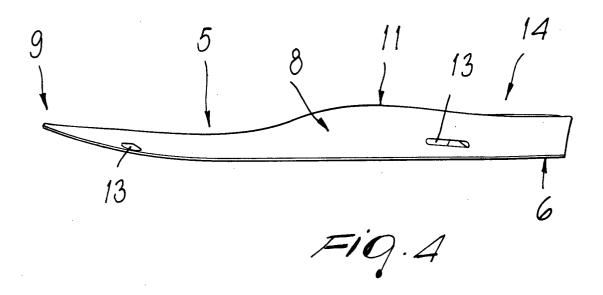
that said sole has a fourth lower surface on which there is an approximately cross-shaped groove, which is slightly arc-shaped both longitudinally and transversely.

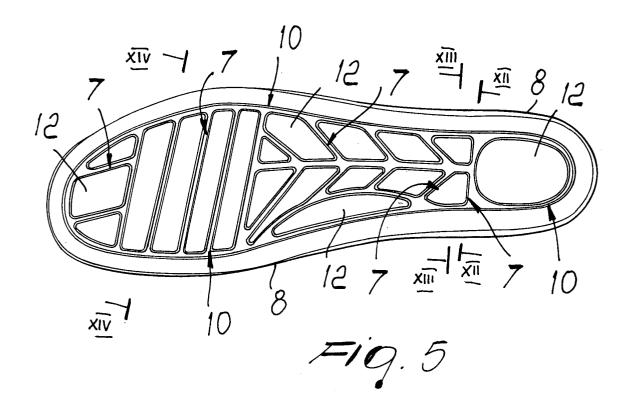
- 28. The shoe according to claim 25, characterized in that on said perimetric ridge of said sole there are one or more through holes at said lateral openings of said mid-sole and optionally at said openings of said upper, if provided.
- **29.** The shoe according to claim 28, **characterized in that** said holes have an axis that is inclined toward the ground.
- **30.** The shoe according to claim 28, **characterized in that** said holes are spaced from said fourth lower surface.
- 31. The shoe according to claim 28, **characterized in that** said one or more holes are formed at recesses provided on said lateral edge.
 - **32.** The shoe according to claim 28, **characterized in that** on the inner side of the foot there are two holes in a region that is adjacent to the heel region, another hole being formed in the toe region.
- **33.** The shoe according to claim 28, **characterized in that** on the outer side of the foot there are four holes in a region that is adjacent to the heel region, another hole being formed proximate to the toe region.

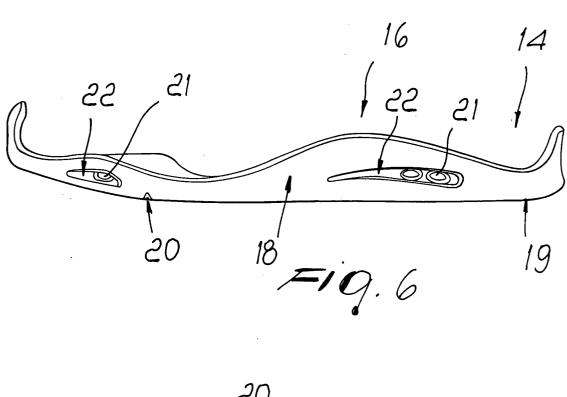
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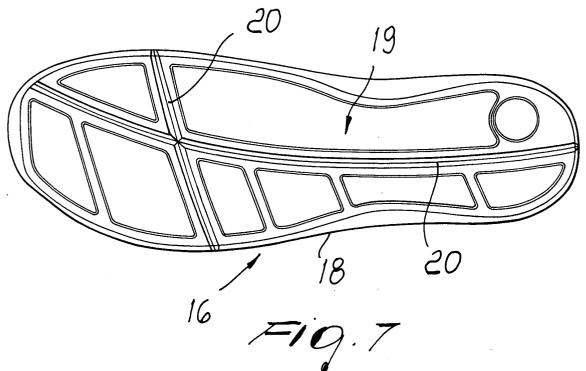
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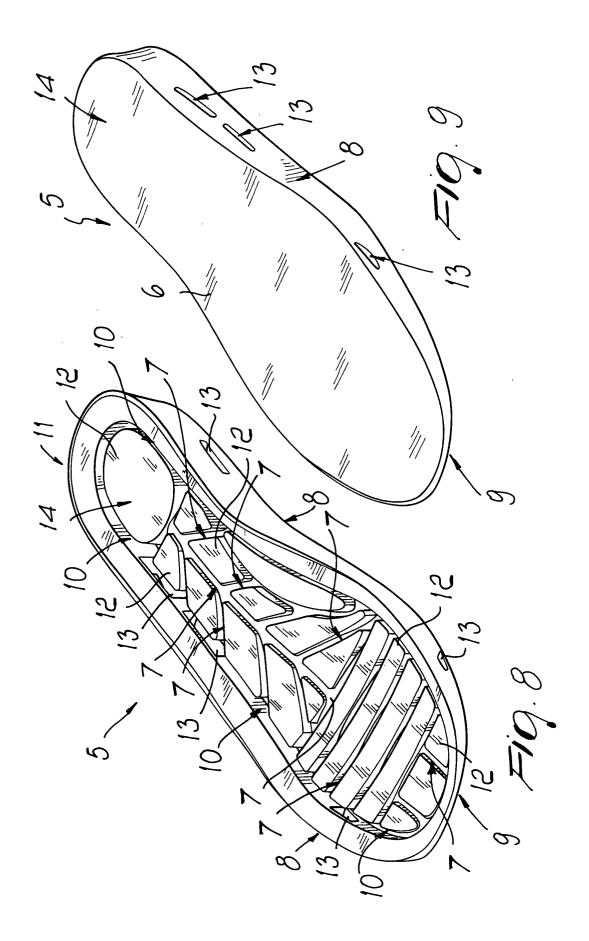


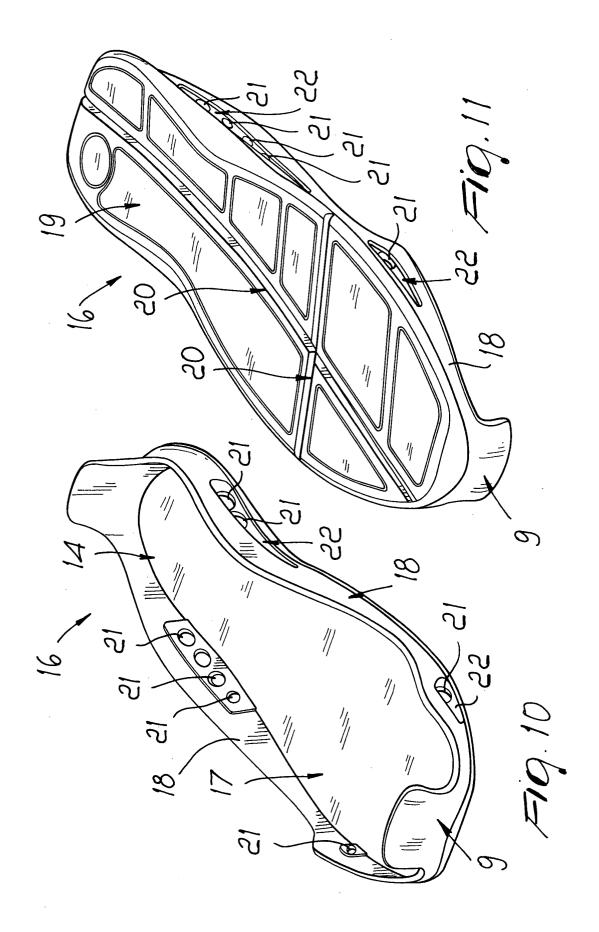


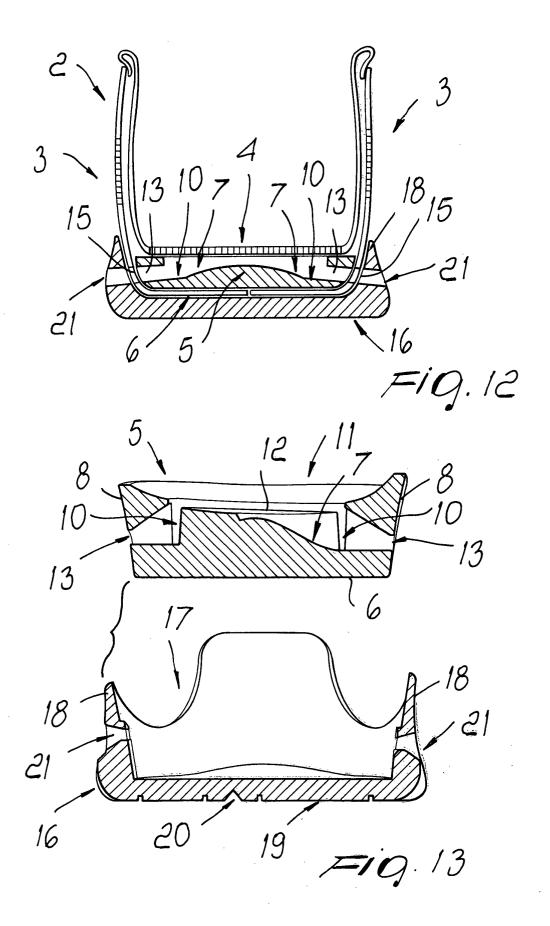


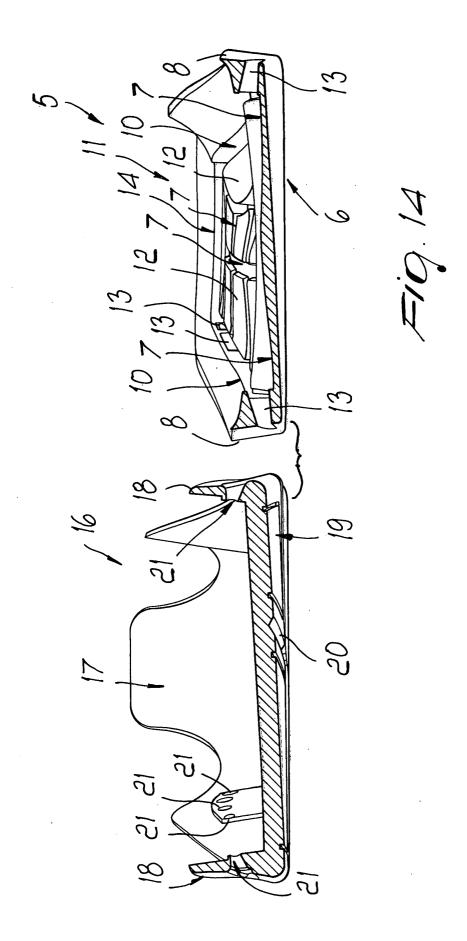














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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

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