



(22) Date de dépôt/Filing Date: 2014/02/10

(41) Mise à la disp. pub./Open to Public Insp.: 2015/08/10

(45) Date de délivrance/Issue Date: 2022/07/12

(51) Cl.Int./Int.Cl. *A43B 3/12* (2006.01),
A43B 9/00 (2006.01)

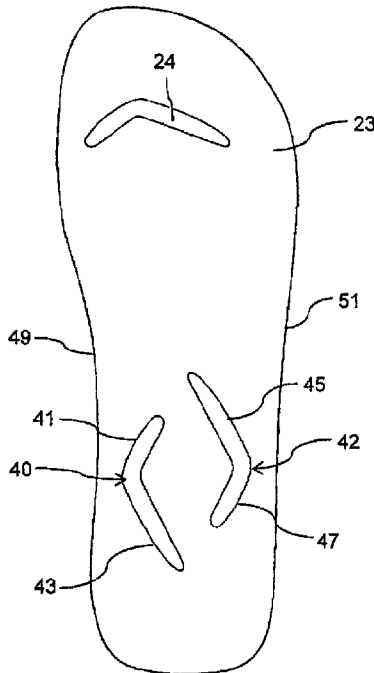
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(54) Title: FOOTWEAR



(57) Abrégé/Abstract:

The present invention generally relates to footwear. The footwear comprising a sole able to be located under the foot of a user, the sole having three holes passing through the sole and a front channel and first and second rear channels formed in an underside of the sole. The footwear also consists of a strap able to locate the sole under the foot of a user, the strap having three plugs; and wherein each of the three holes in the sole are aligned with respective channels so as to allow the three respective plugs to pass through each respective hole to be located in each of the respective channels to secure the strap to the sole.

ABSTRACT

FOOTWEAR

5 The present invention generally relates to footwear. The footwear comprising a sole able to be located under the foot of a user, the sole having three holes passing through the sole and a front channel and first and second rear channels formed in an underside of the sole. The footwear also consists of a strap able to locate the sole under the foot of a user, the strap having three
10 plugs; and wherein each of the three holes in the sole are aligned with respective channels so as to allow the three respective plugs to pass through each respective hole to be located in each of the respective channels to secure the strap to the sole.

FOOTWEAR

FIELD OF THE INVENTION

5 This invention generally relates to footwear. In particular, the invention relates to footwear including flip-flops, sandals, slippers, scuffs and the like.

BACKGROUND OF THE INVENTION

10 It should be noted that reference to the prior art herein is not to be taken as an acknowledgement that such prior art constitutes common general knowledge in the art.

15 Flip flops are one of the most common types of sandals, where two ends of a Y-shaped strap are attached to the sole of the sandal on the opposite sides of the sole where a wearer's foot would rest, with the two ends intersecting at a thong or toe piece extending from the sole for placement between the big or first toe and the second toe of the wearer's feet. This configuration of sandal straps contributes to the common name of "flip-flops" due to the slapping of the sole
20 against the heel that occurs while walking.

25 Flip-flops are a very popular form of footwear due to their ease of placement and removal on a person's foot. Historically, flip-flops have been used as casual wear, especially in warmer climates. However, in recent times, flip-flops have become an essential footwear fashion item with a variety of different patterns, styles and colours being used to enhance the visual characteristics of flip-flops.

30 In order to produce a flip-flop, three holes are normally located through the sole with circular recesses located on the underside of the sole adjacent each of the holes. The strap has a central portion and two side portions with an end of each of the portions terminating in a circular head. The heads are forced through respective holes and are located within the circular recesses to hold the strap and the sole together.

The problem with the manufacture of a flip-flop is that it is relatively difficult to pull the circular heads through the respective holes in the sole. A special tool must be used and considerable physical strength is required. Also, in general use, the circular heads can be pulled through the holes leaving an individual to try and force the circular head back through the hole without the use of the tool.

It has also been proposed in the past to manufacture sandals and shoes with interchangeable and removable elements, but these prior art devices are normally quite complicated and difficult to provide for the interlocking of the elements

Clearly it would be advantageous if footwear could be devised that helped to at least ameliorate some of the shortcomings described above or provide the consumer with a useful or commercial choice.

SUMMARY OF THE INVENTION

In one form, although not necessarily the only or broadest form, the invention resides in footwear comprising:

a sole able to be located under the foot of a user the sole having three holes passing through the sole;

a front channel and a first rear channel and a second rear channel formed in an underside of the sole;

a strap of unitary construction having two side portions which join to form a central portion, the strap having a front plug, a first rear plug and a second rear plug connected to the two side portions and integrally formed with the strap, the front plug, the first rear plug and the second rear plug are tapered and have two sections unequally spaced from either side of a central plug portion and formed at an angle with respect to the central plug portion, the three plugs are releasably attached to the sole and configured to allow the foot of the user to be located between the strap and the sole; and

wherein each of the three holes in the sole are aligned with one of the front channel, the first rear channel and the second rear channel so as to allow the

front plug, the first rear plug and the second rear plug to pass and be threaded through each respective hole, the first rear plug which when located in the first rear channel and the second rear plug when located in the second rear channel extend partially along a length of the sole, and each respective plug is completely
5 located within each of the respective channels such that each respective plug sits flush with the underside of the sole to secure the strap to the sole, the three channels and the three plugs are of complementary size and shape, and the strap, three plugs and sole are interchangeable or configured to be changed without the use of tools.

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Preferably, the front plug when located in the front channel may extend partially across the width of the sole. The two sections of each respective plug may form an apex at the central plug portion. Each plug may have a long section and a short section.

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Preferably, the long section and the short section of each plug may be shaped as flat elongate, longitudinally curvilinear strips which are joined to form an apex at the central plug portion. Each plug may be formed in the shape of an irregular concave curvilinear quadrilateral.

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Preferably, each plug may have an inner surface and an outer surface separated and spaced apart by a wall joining the inner surface to the outer surface.

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Preferably, the front channel, the first rear channel and the second rear channel formed in the underside of the sole may have a long section and a short section joined at a central channel portion.

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Preferably, the long section and the short section may have a bottom surface spaced a distance from the underside of the sole and forming a wall extending around and between the bottom surface and the underside of the sole.

Preferably, when each complementary shaped plug is inserted into each channel, the inner surface of each plug and the plug wall may be frictionally

engaged with the bottom surface and the channel wall of each channel and the outer surface of each plug is so aligned to sit flush with the underside of the sole.

Preferably, when each complementary shaped plug is inserted into each
5 channel, the inner surface of each plug and the plug wall may be frictionally engaged with the bottom surface and the channel wall of each channel, allows each plug to be retained within each channel without the need for any secondary retention means, and the integral connection between the strap and each plug being frictionally engaged with each channel, allows the strap and plugs to be
10 interchangeable without the need for tools.

Preferably, the first rear channel may extend partially along a long axis of the sole and adjacent a side of the sole. The second rear channel may extend partially along a long axis of the sole and adjacent a side of the sole.

15 Preferably, the long section of the first rear channel and the short section of the second rear channel may be located in adjacent positions on opposing sides of the sole. The short section of the first rear channel and the long section of the second rear channel may be located in adjacent positions on opposing
20 sides of the sole.

The invention also provides a method of producing footwear, the method including:

obtaining a sole that has at least one located recess located in an
25 underside of the sole; and obtaining at least one strap having at least one plug that is complementary in shape and size to the channel for snug location within the channel, the strap attached to at least one side portion;

assembling the sole and the strap by locating the plug into the channel so that the side portion extends outside the sole.

30 The method may include the step of forming a sole having at least two channels at an underside of the sole.

The method may also include the step of forming a strap that includes two plug formations for locating within respective channels.

In accordance with a further embodiment, the present invention provides a footwear comprising: a sole able to be located under the foot of a user, the sole having three holes passing through the sole; a front channel and first and second rear channels formed in an underside of the sole; a strap able to locate the sole under the foot of a user, the strap having three plugs; and wherein each of the three holes in the sole are aligned with respective channels so as to allow the three respective plugs to pass through each respective hole to be located in each of the respective channels to secure the strap to the sole.

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Preferably, the strap may be of unitary construction. The strap and three plugs connected to the strap may be formed integrally with the strap. The three plugs and three channels may be shaped and sized such that the three plugs sit flush with the underside of the sole when located in respective channels. Alternatively, the three channels and the three plugs may have complementary size and shape such that the three plugs are frictionally retained in the three channels.

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Preferably, the strap may include at least two side portions. The two side portions may be connected to the front plug and the respective rear plugs, and the two side portions join to form a central plug portion. The plugs may be tapered so as to allow the plugs to be threaded through their respective holes.

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Preferably, the front plug when located in said front channel may extend partially across the width of the sole, and the first rear plug and second rear plug when located in said channels may extend partially along the length of the sole.

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Preferably, each plug may have two sections equally spaced either side of a central plug portion. Alternatively, each plug may have two sections unequally spaced either side of a central plug portion. Each plug may have two sections which are formed at an angle with respect to a central plug portion. The two sections may form an apex at the central plug portion, and each plug has a long section and a short section.

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In accordance with a still further aspect, the present invention provides a method for assembling footwear without the use of tools, the method comprising the steps of a) providing a strap of unitary construction having two side portions which join to form a central portion, the strap comprising a front plug, a first rear
 5 plug and a second rear plug, connected to the two side portions and integrally formed with the strap, the front plug, the first rear plug and the second rear plug are tapered and have a first section and a second section unequally spaced from either side of a central plug portion and formed at an angle with respect to the central plug portion; b) providing a sole comprising a front hole, a first rear hole,
 10 a second rear hole, a front channel, a first rear channel and a second rear channel, wherein the channels are formed in an underside of the sole, each of the holes are aligned with the respective channels; c) inserting the first sections of each of the plugs through the respective holes of a topside of the sole until each of the plugs pass completely through the sole; and d) locating each of the
 15 plugs into their respective channels such that each plug is completely received within each respective channel and sits flush with the underside of the sole to secure the strap to the sole.

In accordance with a still further aspect, the present invention provides a
 20 method for disassembling footwear without the use of tools, the method comprising the steps of: a) providing an assembled footwear in accordance with the previous aspect b) removing each plug from their respective channels; c) inserting the second sections of each of plugs through their respective holes in the underside of the sole until each of the plugs pass completely through the sole
 25 to disengage the strap from the sole.

BRIEF DESCRIPTION OF THE DRAWINGS

An embodiment of the invention, by way of example only, will be described
 30 with reference to the accompanying drawings in which:

FIG. 1 shows a top perspective view of an embodiment of the present invention in the form of an assembled flip-flop;

FIG. 2 shows a bottom plan view of the footwear according to FIG. 1;

FIG. 3 shows a top perspective view of a sole of the footwear according to FIG. 1;

FIG. 4 shows a top perspective view of a strap of the footwear according to FIG. 1;

5 FIG. 5 illustrates a bottom plan view of a further embodiment of the present invention in the form of a flip-flop; and

FIG. 6 shows a top perspective view of a strap of the footwear according to FIG. 5.

10 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The following description, given by way of example only, is described in order to provide a more precise understanding of the subject matter of a preferred embodiment or embodiments.

15

FIGS. 1 to 4 show views of an embodiment of footwear in the form of a flip-flop 10. The figures show variations of both a left foot flip flop in FIG. 2 and a right foot flip flop in FIGS. 1 and 3. FIG 4 shows the strap 30 for the flip flop 10. FIG 1 shows the assembled flip flop 10 having a sole 20 and a strap 30.

20

The sole 20 is shaped in a standard sole shape. However, it should be appreciated that the sole may be formed in any number of different shapes and sizes. It should also be appreciated that the materials used for the sole can include any standard material that is currently used on footwear, such as rubber, cork and a variety of plastics.

25

The sole 20 is formed from a main body that has a top side 22 and an underside 23. A front channel 24 extends partially along the width of the underside 23 of the sole 20. A front hole 26 extends through the top side 22 of the sole 20 through to the underside 23 of the sole 20. The front hole 26 is rectangular in shape and is positioned so that the front hole 26 is in alignment with the front channel 24. It should be appreciated, however, that the front hole 26 may form any suitable shape, such as square or circular.

30

The strap 30 as shown in FIG 4 is formed from two side portions 31 which are joined to form a central portion 32. Rear plugs 48, 50 extend from one end of either side portion 31. A front plug 34 is connected to and located adjacent an end of the central portion 32. Both the front plug 34 and rear plugs 48, 50 are shaped and sized to commensurate with the respective front channel 24 and rear channels 40, 42 of the sole 20. The strap 30 is integrally formed. That is, the strap 30 is unitary in construction. Accordingly, any suitable material can be used, including rubber or plastics such as polyurethane. The strap 30 of FIG 4 comprises a first rear plug 48 and a second rear plug 50. Both the first rear plug 48 and second rear plug 50 are similar in both size and shape to the front plug 34.

FIG 2 shows a front channel 24 which partially extends along the width of the underside 23 of the sole 20. The front plug 34 comprises a long section 35 and a short section 36. The long section 35 and the short section 36 are tapered to allow the front plug 34 to be easily threaded through front hole 26. The long section 35 and the short section 36 intersect at a central portion 32, the sections 35, 36 forming an angle with the central portion 32 and extending away from the central portion 32. It should be appreciated, however, that the long section 35 and the short section 36 may not form an angle at the intersection of the long section 35 and the short section 36.

A first rear channel 40 is located adjacent to a first side 49 and a second rear channel 42 adjacent to a second side 51 extend essentially parallel to the long axis of the sole 20 and along the underside 23 of the sole 20. It should be appreciated that the two rear channels 40 and 42 need not be essentially parallel to the long axis of the sole 20, but should be configured on the underside 23 such that the two rear channels 40 and 42 do not intersect. In this embodiment a long section 43 of the first rear channel 40 is adjacent to a short section 47 of the second rear channel 42. Further a short section 41 of the first rear channel 40 is adjacent to a long section 45 of the second rear channel 42. This configuration provides a means to separate the two channels 40 and 42 maximally.

In order to assemble a flip-flop 10, the front plug 34 is placed within the front hole 26 in the sole 20. The front plug 34 is then pulled through the front hole 26. As the front plug 34 is pulled through the front hole 26, a part of the central portion 32 will also be pulled through the front hole 26. Once the front
 5 plug 34 is pulled entirely through the front hole 26, the front plug 34 is located within the front channel 24. The method of engagement of the rear plugs 48 and 50 with the channels 40 and 42 is the same as described above for the front plug 34 engaging with front channel 24. The rear plugs 48 and 50 are inserted into their respective channels through respective holes, a first rear hole 44 and a
 10 second rear hole 46, in the sole 20. The rear plugs 48 and 50 comprise long sections 58 and 60 respectively and short sections 56 and 62 respectively. Both rear plugs 48 and 50 of the strap 30 are shaped complementarily to the rear channels 40 and 42 to provide a means for engagement for the rear plugs 48 and 50 to the rear channels 40 and 42 of the sole 20.

15

In order to remove the strap 30 from the sole 20, the steps are simply followed in reverse. For example, removal is achieved by reversing the assembly method but by inserting short sections 36, 56, 62 through holes 26, 44, 46 and pushing until the plugs 34, 48, 50 disengage from the sole 20.

20

To facilitate the assembly and disassembly of the flip flop 10 the long sections 35, 58 and 60 may be labeled "IN" indicating to a user that the long section is used to insert the plugs 34, 48 and 50. Likewise, the short sections 36, 56, 62 may be labeled "OUT" indicating to the user that this end is threaded first
 25 to disassemble the flip-flop 10. The short sections and the long sections on the plugs makes the flip-flop 10 easier to assemble and disassemble.

FIGS 5 and 6 show views of a further embodiment of footwear in the form of a flip-flop. Like the previous embodiment the sole 20 is shaped in a standard
 30 sole shape and formed from a main body that has a top side 22 and an underside 23. A front channel 24 extends partially along the width of the underside 23 of the sole 20. A front hole 26 extends through the top side 22 of the sole 20 through to the underside 23 of the sole 20. The front hole 26 is rectangular in shape and is positioned so that the front hole 26 is in alignment with the front channel 24. It

should be appreciated, however, that the front hole 26 may form any suitable shape, such as square or circular.

5 The strap 30 as shown in FIG 6 is formed from two side portions 31 which are joined to form a central portion 32. Rear plugs 48, 50 extend from one end of either side portion 31. A front plug 34 is connected to and located adjacent an end of the central portion 32. Both the front plug 34 and rear plugs 48, 50 are shaped and sized to commensurate with the respective front channel 24 and rear channels 40, 42 of the sole 20. The strap 30 is integrally formed. That is, the
10 strap 30 is unitary in construction. Accordingly, any suitable material can be used, including rubber or plastics such as polyurethane. The strap 30 of FIG 4 comprises a first rear plug 48 and a second rear plug 50. Both the first rear plug 48 and second rear plug 50 are similar in both size and shape to the front plug 34.

15

In the present embodiment the front plug 34 when located in the front channel 24 extends partially across the width of the sole 20. Likewise the first and second rear plugs 48, 50 when located in their respective rear channels 40, 42 extend partially along the length of the sole 20 and adjacent to their respective
20 sides 49, 51 of the sole 20. In FIG 6 each plug 48, 50 consist of two sections 56, 58 and 60, 62 which are equally spaced either side of a central portion 52, 54. Alternatively, each plug 48, 50 may consist of two sections 56, 58 and 60, 62 which are unequally spaced either side of a central portion 52, 54. That is the portions 56, 58 and 60, 62 may be of different lengths on either side of the central
25 portions 52, 54.

In order to disassemble and assemble the flip flop, the same process is used as was explained above for the previous embodiment.

30

ADVANTAGES

The advantage of the footwear embodiments described above is that the strap 30 can be placed within a sole 20 very easily. This allows for quicker assembly time. Further, as the strap can also be removed from the sole quickly

without the use of tools, different straps are able to be used with different soles to create a variety of different looks. It will also be appreciated that various other changes and modifications may be made to the embodiment described without departing from the scope of the invention.

5

VARIATIONS

It will be realized that the foregoing has been given by way of illustrative example only and that all other modifications and variations as would be apparent to persons skilled in the art are deemed to fall within the broad scope and ambit of the invention as herein set forth.

In the specification the term "comprising" shall be understood to have a broad meaning similar to the term "including" and will be understood to imply the inclusion of a stated integer or step or group of integers or steps but not the exclusion of any other integer or step or group of integers or steps. This definition also applies to variations on the term "comprising" such as "comprise" and "comprises".

CLAIMS

1. A footwear comprising:
 - a sole able to be located under the foot of a user, the sole having three
 - 5 holes passing through the sole;
 - a front channel and a first rear channel and a second rear channel
 - formed in an underside of the sole;
 - a strap of unitary construction having two side portions which join to form
 - a central portion, the strap having a front plug, a first rear plug and a second
 - 10 rear plug connected to the two side portions and integrally formed with the
 - strap, the front plug, the first rear plug and the second rear plug are tapered
 - and have two sections unequally spaced from either side of a central plug
 - portion and formed at an angle with respect to the central plug portion, the three
 - plugs are releasably attached to the sole and configured to allow the foot of the
 - 15 user to be located between the strap and the sole; and
 - wherein each of the three holes in the sole are aligned with one of the
 - front channel, the first rear channel and the second rear channel so as to allow
 - the front plug, the first rear plug and the second rear plug to pass and be
 - threaded through each respective hole, the first rear plug which when located in
 - 20 the first rear channel and the second rear plug when located in the second rear
 - channel extend partially along a length of the sole, and each respective plug is
 - completely located within each of the respective channels such that each
 - respective plug sits flush with the underside of the sole to secure the strap to
 - the sole, the three channels and the three plugs are of complementary size and
 - 25 shape, and the strap, three plugs and sole are interchangeable or configured to
 - be changed without the use of tools.
2. The footwear as claimed in claim 1, wherein the front plug when located
- in the front channel extends partially across the width of the sole.
- 30
3. The footwear as claimed in claim 1 or 2, wherein the two sections of
- each respective plug form an apex at the central plug portion.

4. The footwear as claimed in any one of claim 1 to 3, wherein each plug has a long section and a short section.
5. The footwear as claimed in claim 4, wherein the long section and the short section of each plug is shaped as flat elongate, longitudinally curvilinear strips which are joined to form an apex at the central plug portion.
6. The footwear as claimed in claim 4 or 5, wherein each plug is formed in the shape of an irregular concave curvilinear quadrilateral.
7. The footwear as claimed in any one of claims 4 to 6, wherein each plug has an inner surface and an outer surface separated and spaced apart by a wall joining the inner surface to the outer surface.
8. The footwear as claimed in claim 1, wherein the front channel, the first rear channel and the second rear channel formed in the underside of the sole have a long section and a short section joined at a central channel portion.
9. The footwear as claimed in claim 8, wherein the long section and the short section have a bottom surface spaced a distance from the underside of the sole and forming a wall extending around and between the bottom surface and the underside of the sole.
10. The footwear as claimed in claim 8 or 9, wherein when each complementary shaped plug is inserted into each channel, the inner surface of each plug and the plug wall is frictionally engaged with the bottom surface and the channel wall of each channel and the outer surface of each plug is so aligned to sit flush with the underside of the sole.
11. The footwear as claimed in any one of claims 8 to 10, wherein when each complementary shaped plug is inserted into each channel, the inner surface of each plug and the plug wall is frictionally engaged with the bottom surface and the channel wall of each channel, allows each plug to be retained within each channel without the need for any secondary retention means, and

the integral connection between the strap and each plug being frictionally engaged with each channel, allows the strap and plugs to be interchangeable without the need for tools.

5 12. The footwear as claimed in any one of claims 8 to 11, wherein the first rear channel extends partially along a long axis of the sole and adjacent a side of the sole.

10 13. The footwear as claimed in any one of claims 8 to 12, wherein the second rear channel extends partially along a long axis of the sole and adjacent a side of the sole.

15 14. The footwear as claimed in any one of claims 8 to 13, wherein the long section of the first rear channel and the short section of the second rear channel are located in adjacent positions on opposing sides of the sole.

20 15. The footwear as claimed in any one of claims 8 to 14, wherein the short section of the first rear channel and the long section of the second rear channel are located in adjacent positions on opposing sides of the sole.

25 16. A method for assembling footwear without the use of tools, the method comprising the steps of:

- 30 a) providing a strap of unitary construction having two side portions which join to form a central portion, the strap comprising a front plug, a first rear plug and a second rear plug, connected to the two side portions and integrally formed with the strap, the front plug, the first rear plug and the second rear plug are tapered and have a first and a second section unequally spaced from either side of a central plug portion and formed at an angle with respect to the central plug portion;
- b) providing a sole comprising a front hole, a first rear hole, a second rear hole with each hole passing through the sole, a front channel, a first rear channel and a second rear channel, wherein the channels

are formed in an underside of the sole, each of the holes are aligned with the respective channels;

- c) inserting the first sections of each of the plugs through the respective holes of a topside of the sole until each of the plugs pass completely through the sole; and
- d) locating each of the plugs into their respective channels such that each plug is completely received within each respective channel and sits flush with the underside of the sole to secure the strap to the sole.

17. A method for disassembling footwear without the use of tools, the method comprising the steps of:

- a) providing the assembled footwear as claimed in claim 16;
- b) removing each plug from their respective channels;
- c) inserting the second sections of each of plugs through their respective holes in the underside of the sole until each of the plugs pass completely through the sole to disengage the strap from the sole.

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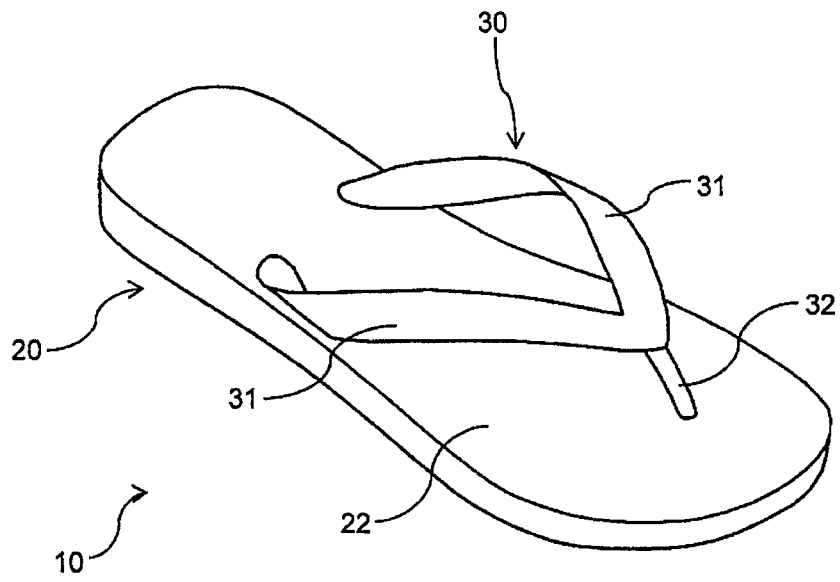


FIG. 1

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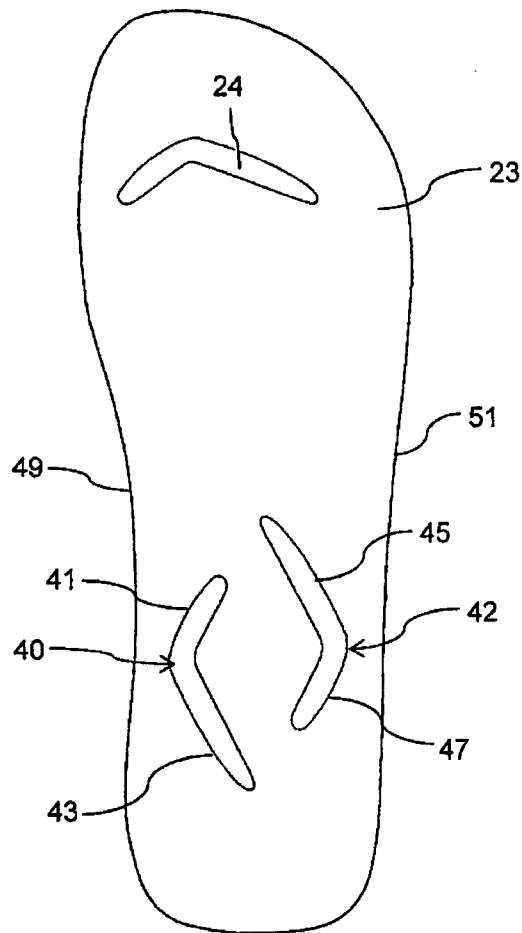


FIG. 2

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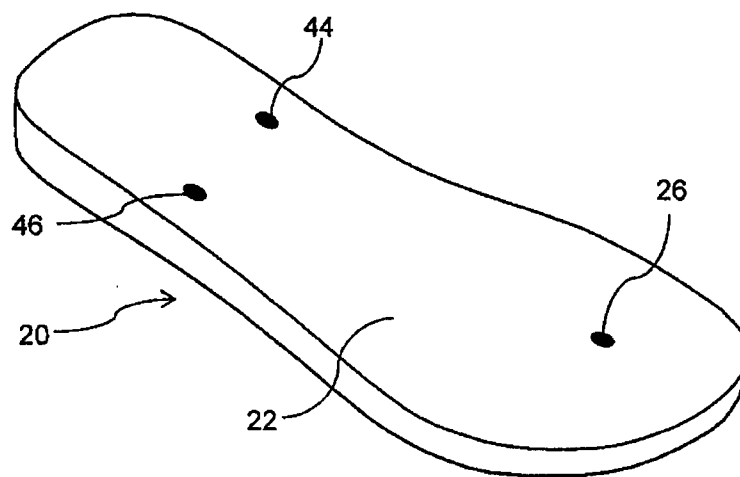


FIG. 3

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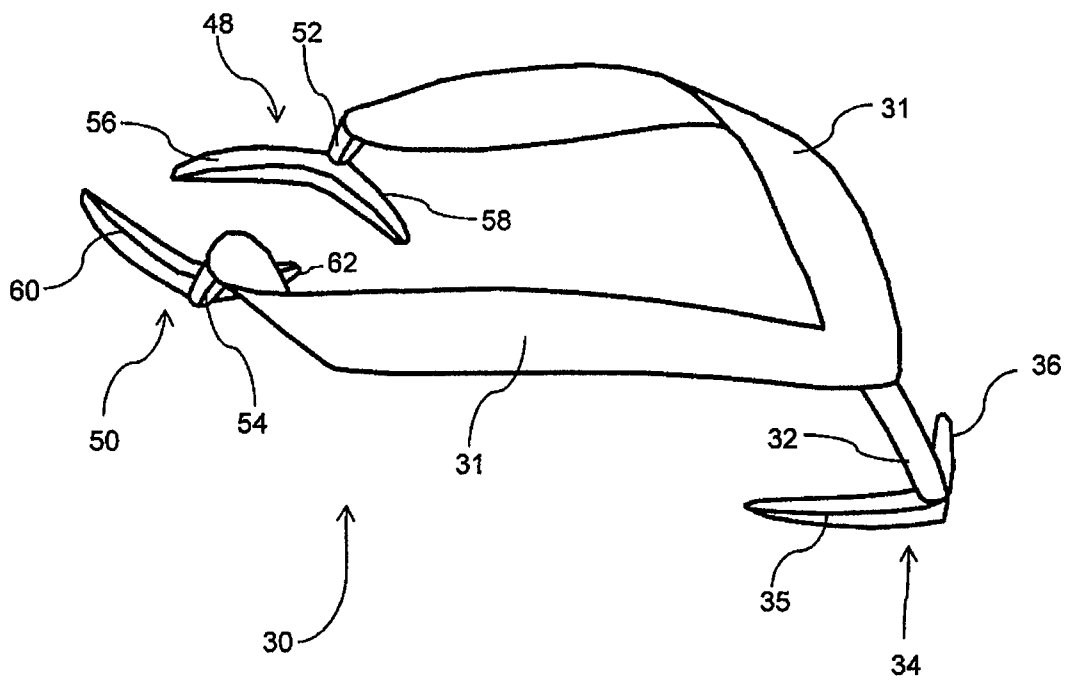


FIG. 4

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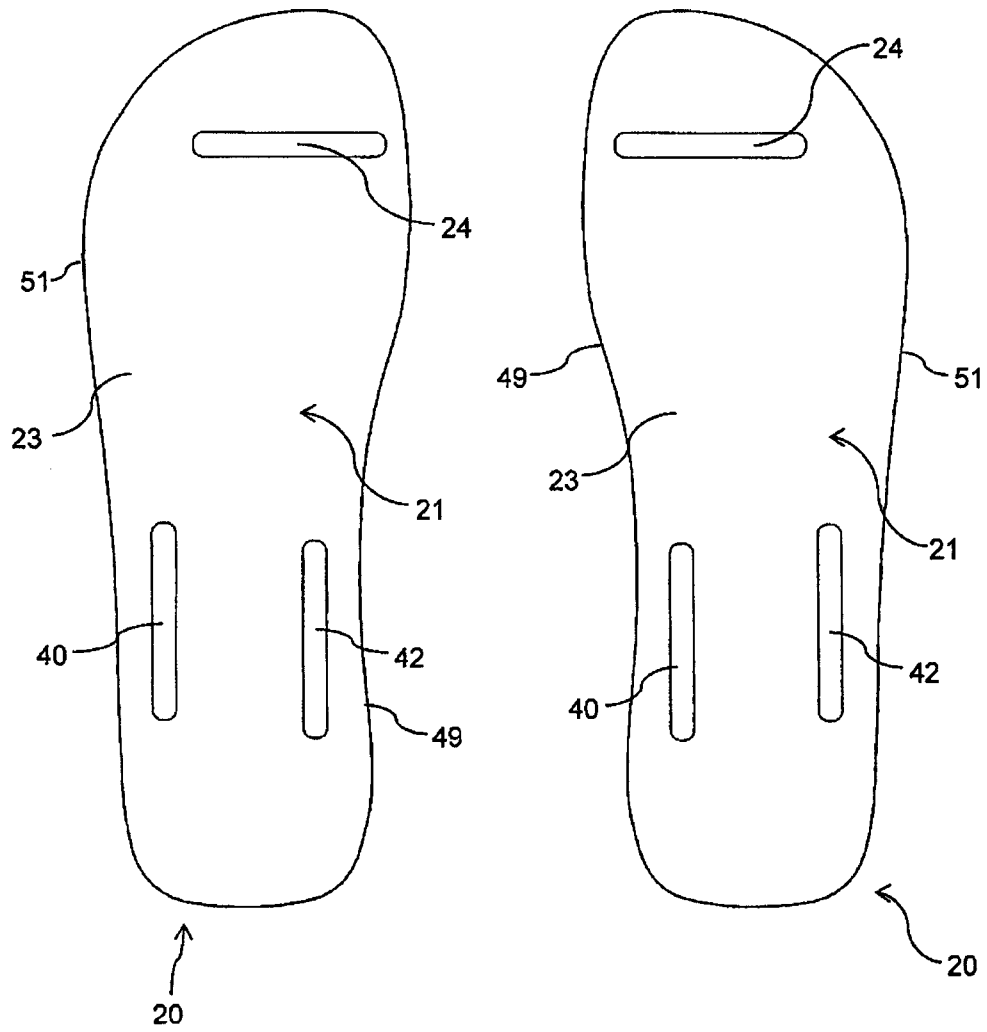


FIG. 5

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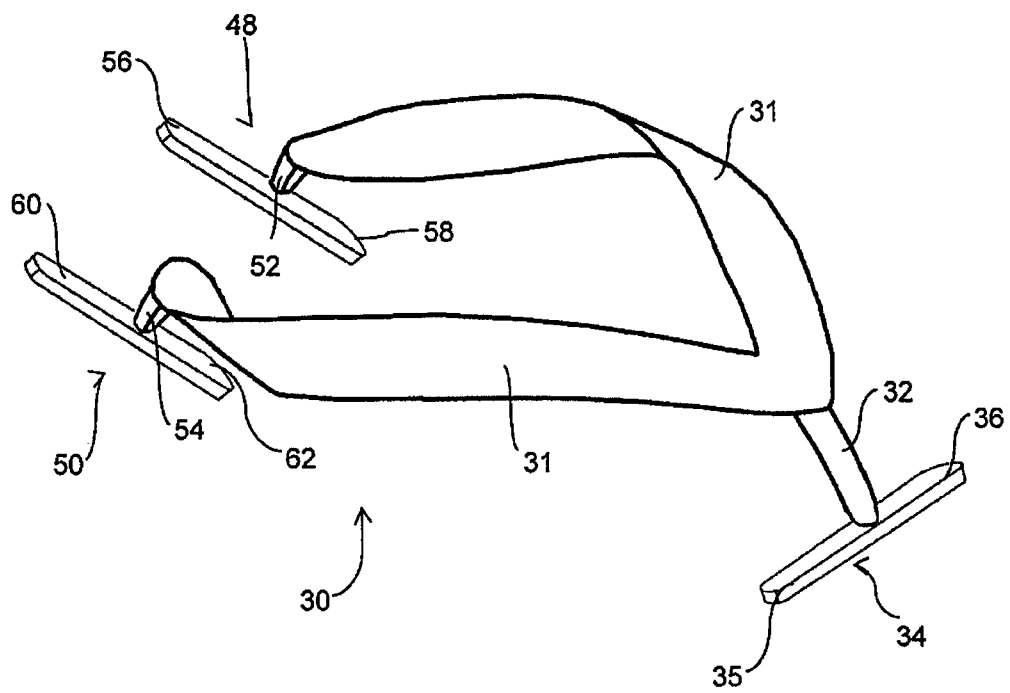


FIG. 6

