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(72) Inventeur/Inventor:
HUCKLE, KEVIN D., CA

(73) Propriétaire/Owner:
HUCKLE, KEVIN D., CA

(74) Agent: SCHNURR, DARYL W.

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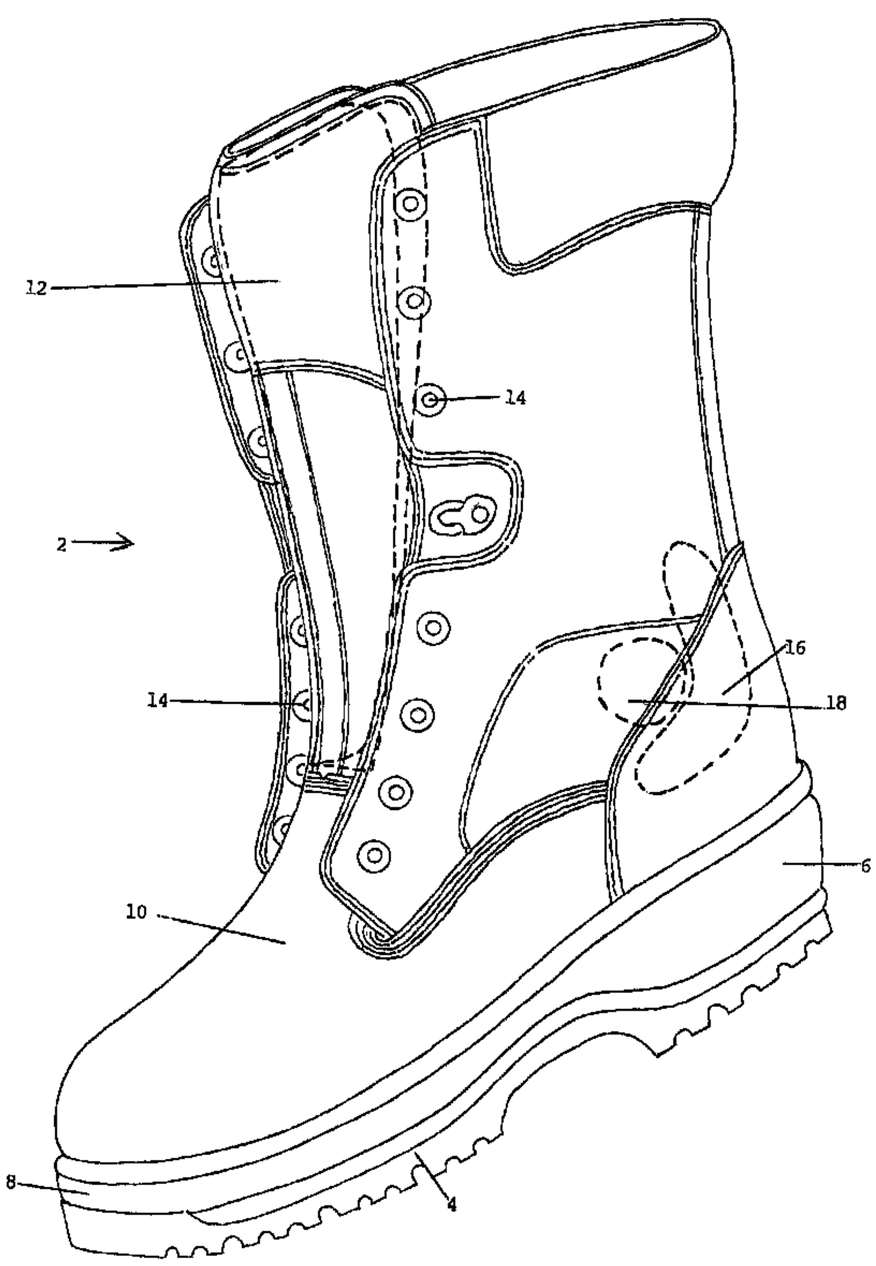



(57) Abrégé/Abstract:
A work boot has an anatomical tongue that is asymmetrical about a longitudinal line of the tongue extending vertically upward from a mid-point of a bottom of said tongue. The tongue contains memory foam and shapes itself to a particular user. The memory foam causes the tongue to retain its shape. The side walls of the boot have J-bars extending inward therefrom. The J-bars also contain memory foam to comfortably fit the foot of a particular user.

ABSTRACT

A work boot has an anatomical tongue that is asymmetrical about a longitudinal line of the tongue extending vertically upward from a mid-point of a bottom of said tongue. The tongue contains memory foam and shapes itself to a particular user. The memory foam causes the tongue to retain its shape. The side walls of the boot have J-bars extending inward therefrom. The J-bars also contain memory foam to comfortably fit the foot of a particular user.

# WORK BOOT WITH ANATOMICAL TONGUE

This invention relates to a work boot having an anatomical tongue that contains memory material that conforms to the foot and shin of a user. Further, this invention relates to J-bars that are located on either side of the boot above a heel. The J-bars also contain memory material and are located and shaped to extend beneath and to a rear of an ankle bone of the user.

Work boots are known. Difficulty has been encountered in designing a work boot that is comfortable, yet fits snugly and has a reasonable cost. In order to achieve a reasonable cost, work boots must be designed to fit various users. If work boots are too snug, they can be difficult to put on and to remove. They can also be extremely uncomfortable. If a work boot is too loose, it can be unsafe and can cause the user to slip, stumble or fall. Work boots are usually worn for long periods of time and are subject to significant stress. With time, a tongue of the work boot which may be centrally located at the beginning of a work day, will move toward one side. The movement of the tongue can expose the user to injury and also make the wearing of the work boot uncomfortable. The tongue will often deteriorate with time and move more quickly to a deformed position.

Difficulty has also been encountered in sizing the heel portion of the upper. If the heel portion is too small, while the heel portion will fit snugly, it will be extremely uncomfortable to wear the work boot, especially for a long period of time. Further, if the heel portion is too large, the heel of the user will readily lift off the sole as the work boot is worn. This can be unsafe for the user and can result in difficulty in walking.

It is an object of the present invention to provide a work boot having an anatomical tongue that is asymmetrical about a longitudinal centre line and contains a memory material that results in the tongue conforming to a shape of a foot and shin of the user. It is a further object of the present invention to provide a tongue on a work boot where the tongue will remain in a centrally located position throughout the workday. It is still a further object of the present invention to provide a work boot having J-bars on either side of the upper above a heel. The J-bars are formed of memory material and extend inward to provide a snug yet comfortable fit to the user.

A work boot for use by a user has a sole, heel and upper. The upper has an anatomical tongue, the tongue having a top, bottom, medial side and lateral side. The bottom has a mid-point between the two sides of the tongue. The tongue is asymmetrical about an imaginary longitudinal line extending upward from the mid-point of the bottom along the tongue in a vertical plane. The vertical plane extends to the mid-point of the bottom and through a

longitudinal centre access of the sole. The tongue contains a layer of memory material, the memory material being located to cause the tongue to conform to a shape of a foot and shin of the user through the use of the tongue. The memory material causes a tongue to retain the shape for subsequent use. An area of a tongue on the lateral side of the imaginary longitudinal line is much larger than an area of the tongue on the medial side of the imaginary longitudinal line.

A work boot for use by a user comprises a sole heel and upper, the upper having an anatomical tongue. The tongue has a top, bottom, medial side and lateral side. The bottom has a mid-point between the two sides. When the tongue is in a vertical position, the tongue has an imaginary longitudinal line extending upward from the mid-point to the top. The imaginary longitudinal line lines in a vertical plane, the vertical plane being aligned with an ankle in step molding line of the boot.

A work boot for user by a user has a sole, heel and upper. The upper has a lateral sidewall and a medial sidewall. The upper has a tongue with two sides. The two sides each have a J-bar located above the heel. Each J-bar has an apex with a substantially horizontal arm and a substantially vertical arm extending from the apex. The horizontal arm is located at a level that is just beneath an ankle bone of the user. The vertical arm is located to a rear of the ankle bone. The J-bars extend inward from the side walls of the upper and are formed from memory material.

Figure 1 is a partially schematic perspective view of a work boot having an anatomical tongue and a J-bar located in an upper.

Figure 2 is a front view of an anatomical tongue for a left foot;

Figure 3 is a front view of an anatomical tongue for a right foot;

Figure 4 is a side view of an anatomical tongue for the left foot when viewed from a lateral side for a left foot;

Figure 5 is a side view of an anatomical tongue for a left foot when viewed from a medial side;

Figure 6 is a prospective view of an anatomical tongue for a left foot when viewed from a lateral side;

Figure 7 is a prospective view of an anatomical tongue for a left foot when viewed from a medial side;

Figure 8 is a top view of a tongue for the left foot;

Figure 9 is a schematic partial side view of an outside of a left foot of a user with a J-bar superimposed thereon;

Figure 10 is a schematic side view of an inside of a left foot of a user with a J-bar superimposed thereon;

Figure 11 is a schematic rear view of two J-bars when viewed from a heel;

Figure 12 is a schematic front view of two J-bars when viewed from a toe;

Figure 13 is a partial side view of a work boot for the inside of a left foot with the J-bar and ankle bone superimposed thereon;

Figure 14 is a partial side view of a work boot for an outside of a left foot with the J-bar and ankle bone superimposed thereon;

Figure 15 is a rear view of a work boot for a left foot with the J-bars superimposed thereon.

In Figure 1, a work boot 2 has a sole 4, heel 6, toe 8 and upper 10. The upper is affixed to the sole in a conventional manner. The upper has an anatomical tongue 12 installed therein. Eyelets 14 for laces (not shown) extend along each side of the tongue 12 and are conventional.

By dotted lines, there is shown a J-bar 16 and an imaginary location of an ankle bone 18.

In Figure 2, there is shown a front view of the tongue 12 of Figure 1. The tongue has a top 20, bottom 22, medial side 24 and lateral side 26. A dotted line 28 represents an imaginary centre line of the tongue and extends from a mid-point of the bottom 22 vertically upward to the top 20. The centre line 28 is aligned with an ankle in-step molding line of the boot (not shown in Figure 2). The top 20 slopes downward from the lateral side 26 to the medial side 24 and the corners between the top and the two sides are rounded. The lateral side is much larger relative to the centre line then the medial side. The lateral side 26 extends outside and the medial side extends inside of a foot and shin (not shown) of a user (not shown) when the work boot is worn.

In Figure 3, there is shown a front view of an anatomical tongue 30 that is used for the right work boot (not shown). It can be seen that the tongue 30 is a mirror image of the tongue 12, which is for the left foot, shown in Figure 2. The same reference numerals are used to refer to those components of Figure 3 that are identical to the components of Figure 2.

In Figure 4, there is shown a side view of the anatomical tongue 12 folded along the centre line 28 when viewed from the lateral side 26. In Figure 5, there is shown a side view of the tongue 12 folded along the centre line 28 when viewed from the medial side 24. It can

be seen that the lateral side 26 is significantly larger than the medial side 24. In Figure 6, there is shown a prospective view of the tongue 12 when viewed from the lateral side 26 and in Figure 7 there is shown a prospective view of the tongue 12 when viewed from the medial side 24. In Figure 8, there is shown a top view of the tongue 12. It can be seen that the tongue 12 has an outer layer 32 and an inner layer 34. Both layers, smoothly taper to the sides 24, 26. The inside layer 32 is preferably made from memory material and is preferably memory foam. The memory foam will substantially retain its shape when used repeatedly in a particular manner. Figures 4 to 8 inclusive, show the tongue 12 for the left work boot (not shown in Figures 4 to 8) for use with the left foot of the user. The tongue for the right work boot is the tongue 30 shown in Figure 3. Corresponding drawings to Figures 4 to 8 for the right tongue are not shown, but the right tongue is a mirror image of the drawings shown in Figures 4 to 8, inclusive. The same reference numerals are used in Figures 4 to 8 as those used in Figure 2 to describe those components that are identical.

In Figure 9, there is shown a partial side view of an outside 36 of a left foot 38 of a user with the J-bar 16 superimposed thereon. A location of the ankle bone 18 is schematically designated by a dotted circle. The left foot 38 has an instep 40. By way of example only, a centre of the ankle bone is approximately 63 mm vertically downward to a bottom of the foot 38. The distance of a bottom of the J-bar to the bottom of the foot is approximately 23 mm. Similarly, a distance from a centre of the ankle bone to a rear of the foot 38 is approximately 50 mm. A distance from a rear of the J-bar to the rear of the foot is approximately 6 mm. These distances are provided as an example only and actual distances will vary both for work boots of the same size and for work boots of different sizes.

In Figure 10, there is shown a partial schematic side view of an inside 42 of the left foot 38 with a J-bar 44 superimposed thereon relative to an ankle bone 46, which is represented by a dotted circle. The distance from a centre of the ankle bone 46 to a bottom of the foot is approximately 72 mm and a distance from the bottom of the J-bar 44 to the bottom of the foot is approximately 32 mm. Similarly, a distance from a centre of the ankle bone 46 to a rear of the foot 38 is approximately 54 mm and a distance from a rear of the J-bar to a rear of the foot is approximately 10 mm. These distances are provided as an example only and actual distances will vary both for work boots of the same size and for work boots of different sizes.

From Figures 9 and 10, it can be seen that the J-bar 16 on the outside of the foot 38 is located at a lower level than the J-bar 44 on the inside of the foot 38. Similarly, the J-bar 16 on the outside of the foot 38 is located closer to a rear of the foot than the J-bar 44 located on

the inside of the foot 38. Each of the J-bars 16, 44 have an apex 48 with a substantially horizontal arm 50 and a substantially vertical arm 52. Each J-bar is preferably located so that the horizontal arm is just beneath the ankle bone and that the vertical arm is just to the rear of the ankle bone. The J-bars on the inside and outside of the left foot are located in different locations as the ankle bone of the user on the inside of the foot is located differently from the ankle bone of the user on the outside of the foot. The foot 38 has a heel 41.

In Figure 11, there is shown a schematic rear view of J-bars 16, 44 of the left work boot (not shown). The J-bar 16 would be located on the outer side of the left work boot and the J-bar 44 would be located on the inside of the left work boot (not shown). Both J-bars 16, 44 extend inward within a cavity defined by the upper above the heel (not shown). The purpose of Figure 12 is to show the shape of the J-bars when viewed from the rear. The J-bars 16, 44 are located at the same height in Figure 12 but when the J-bars are included within a boot, the two J-bars are located at different heights.

In Figure 12, there is shown a front view of the J-bars 16, 44 when viewed from a toe of the work boot (not shown) the vertical arm 52 can be distinguished from the horizontal arm 50 of each of the J-bars 16, 44. In Figures 11 and 12 the height of the J-bars 16, 44 relative to one another should be ignored. It can be seen from Figures 11 and 12, that the J-bars will assist in making the boot fit better, making the boot more comfortable and will also assist in supporting the ankle of a user.

In Figure 13, there is shown a partial side view of the work boot 2 with a location of the J-bar 44 and ankle bone 36 imposed thereon by dotted lines. The J-bar 44 is located on the inside of the boot as it is the left work boot that is shown.

In Figure 14, there is shown a partial side view of the work boot 2 with the J-bar 16 and ankle bone 18 superimposed thereon. Since the work boot 2 is the left boot, the J-bar 16 would be on the outer side of the boot.

In Figure 15, there is shown a rear view of the work boot 2 for the left foot. It can be seen that the J-bar 16 is located on the lateral side 54 of the work boot 2 and the J-bar 44 is located on a medial side 56 of the work boot 2. The ankle bones 18, 46 are shown by dotted lines within the work boot 2. It can also be seen that the J-bar 16 is located at a lower level than the J-bar 44 within the work boot 2. The same reference numerals are used in Figures 13 to15 as those used in Figures 1 to 9 for those components that are identical.

While it is the left work boot or left tongue that is shown in all of the drawings except for Figure 3, the right work boot is simply a mirror image of the left work boot and left tongue. The J-bars 16, 44 will be switched around on the right work boot so that the medial

side J-bar is still located above the lateral side J-bar. The J-bars for the right work boot will also be the mirror image of the J-bars for the left work boot. The J-bars can have a J-shape or an L-shape that is similar to a J-shape or L-shape. Preferably, the J-bars have an L-shape.

I CLAIM:

1. A work boot for use by a user, said work boot comprising a sole, heel and upper, said upper having an anatomical tongue, said tongue having a top, bottom, medial side and lateral side, said bottom having a mid-point between said two sides, said tongue being asymmetrical about an imaginary longitudinal line extending upward along said tongue in a vertical plane through said mid-point of said bottom, said vertical plane extending through a longitudinal center axis of said sole, said tongue containing a layer of memory material, said memory material being located to cause said tongue to conform to a shape of a foot and shin of said user through use of said tongue, said memory material causing said tongue to retain said shape for subsequent use, an area of said tongue on said lateral side of said imaginary longitudinal line being much larger than an area of said tongue on said medial side of said imaginary longitudinal line.

2. A work boot as claimed in claim 1 wherein said upper of said work boot has two side walls above said heel with J-bars thereon, each side wall having a J-bar extending inward into a cavity of said upper, each J-bar having a substantially horizontal arm and a substantially vertical arm extending from an apex of said ankle support, said horizontal arm being located at a level that is just beneath an ankle bone of said user, said vertical arm being located just behind an ankle bone of said user, said J-bar extending inward from said side walls with one J-bar on each side wall and being formed from memory material, said J-bars conforming to an ankle of said user.

3. A work boot as claimed in claim 2 wherein said J-bar on said lateral side is located at a lower level than said J-bar on said medial side.

4. A work boot as claimed in claim 3 wherein said memory material and said J-bar is memory foam.

5. A work boot as claimed in claim 2 wherein each J-bar has an L-shape or a J-shape.

6. A work boot for use by a user, said work boot comprising a sole, heel and upper, said upper having an anatomical tongue, said tongue having a top, bottom, medial side

and lateral side, said bottom having a mid-point between said two sides, when said tongue is in a vertical position, said tongue having an imaginary longitudinal line extending vertically upward from said mid-point of said bottom to said top, said tongue containing a layer of memory material, said memory material being located to cause said tongue to conform to a shape of a foot and shin of said user through use of said tongue, said memory material causing said tongue to retain said shape for subsequent use, an area of said tongue on said lateral side of said imaginary longitudinal line being much larger than an area of said tongue on said medial side of said imaginary longitudinal line.

7. A work boot as claimed in claim 6 wherein a top of said tongue slopes downward from said lateral side to said medial side.

8. A work boot as claimed in claim 7 wherein said tongue has rounded corners extending between said top and said sides.

9. A work boot as claimed in claim 8 wherein there are two work boots, one work boot being shaped to receive a left foot of said user, a second work boot being shaped to receive a right foot of said user, each of said work boots having an anatomical tongue, said tongues being mirror images of one another.

10. A work boot as claimed in claim 8 wherein said memory material is memory foam.

11. A work boot for use by a user, said work boot comprising a sole, heel and upper, said upper having an anatomical tongue, said tongue having a top, bottom, medial side and lateral side, said bottom having a mid-point between said two sides, when said tongue is in a vertical position, said tongue having an imaginary longitudinal line extending vertically upward from said mid-point to said top, said imaginary longitudinal line lying in a vertical plane, said vertical plane being aligned with an ankle instep molding line of said boot, said tongue containing a layer of memory material, said memory material being located to cause said tongue to conform to a shape of a foot and shin of said user through use of said tongue, said memory material causing said tongue to retain said shape for subsequent use, an area of said tongue on said lateral side of said

imaginary longitudinal line being much larger than an area of said tongue on said medial side of said imaginary longitudinal line.

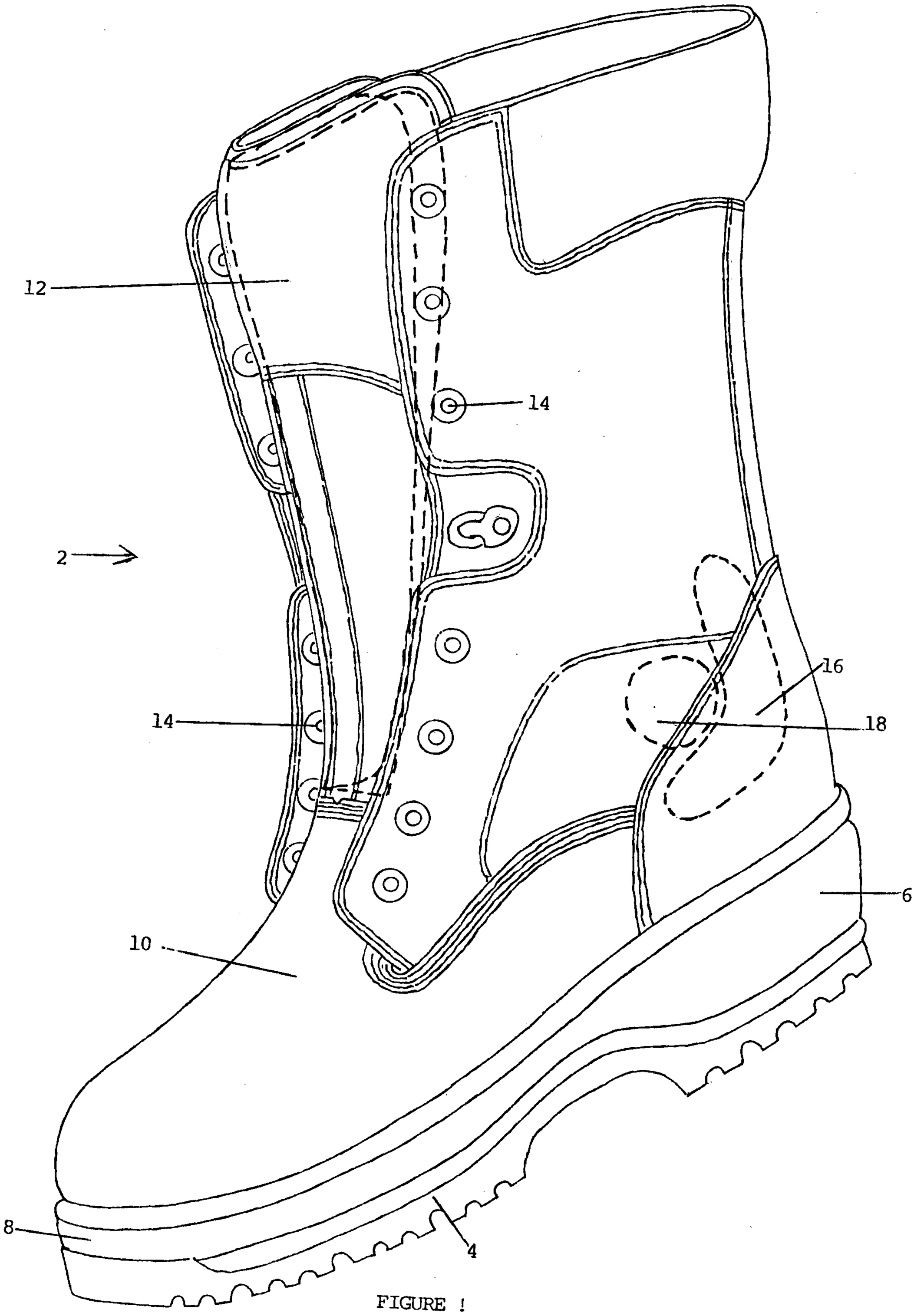



FIGURE !

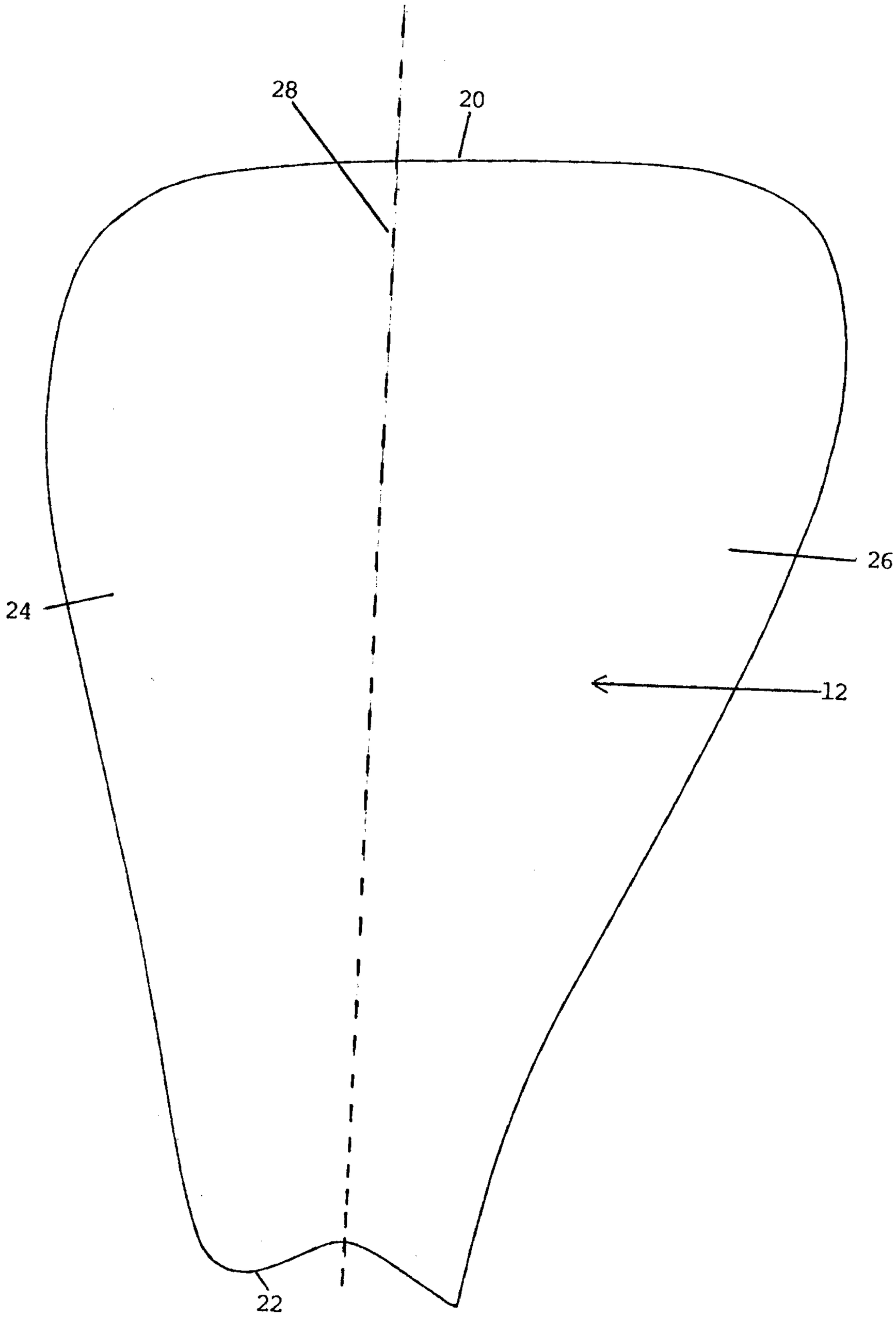



FIGURE 2

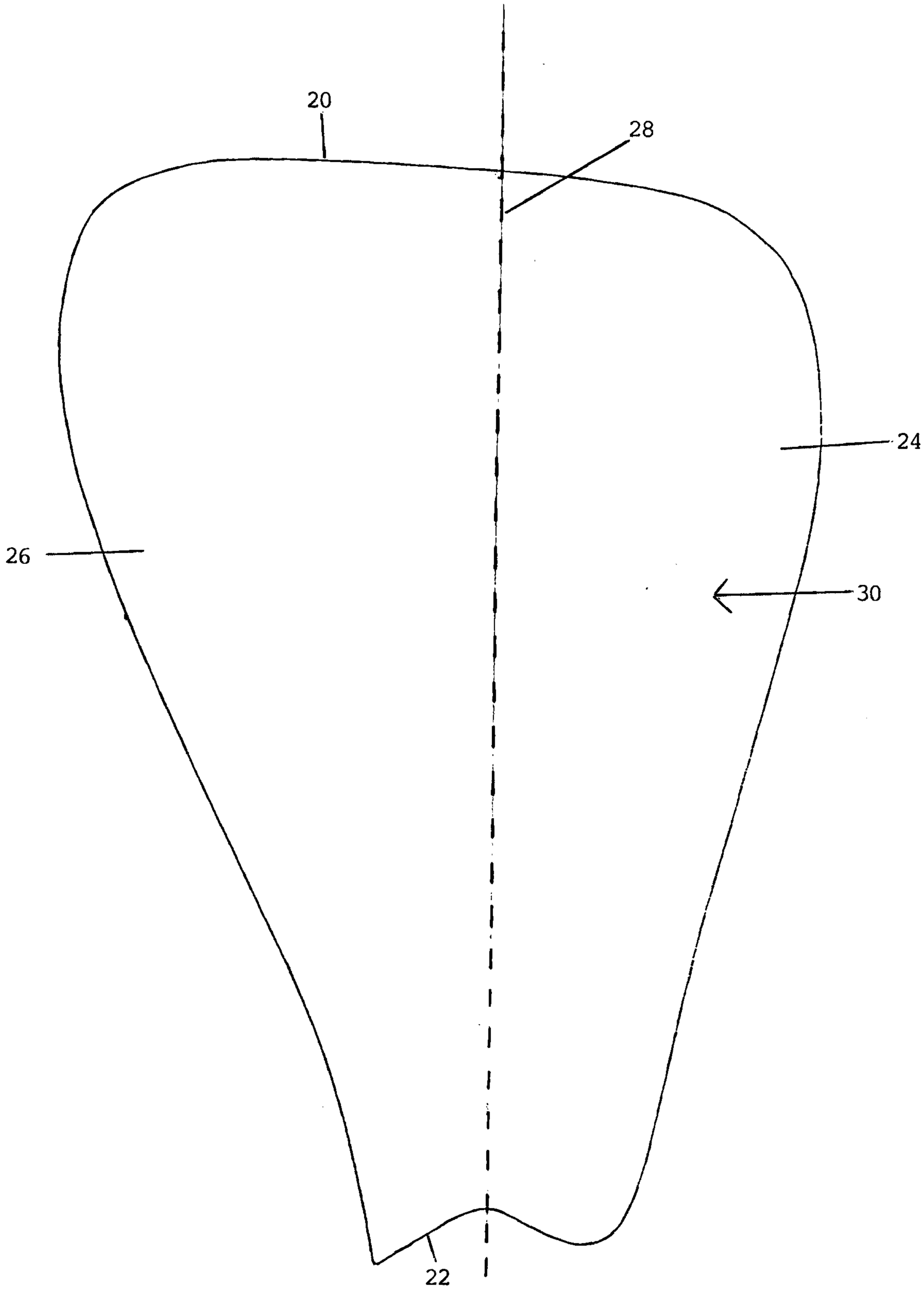



FIGURE 3

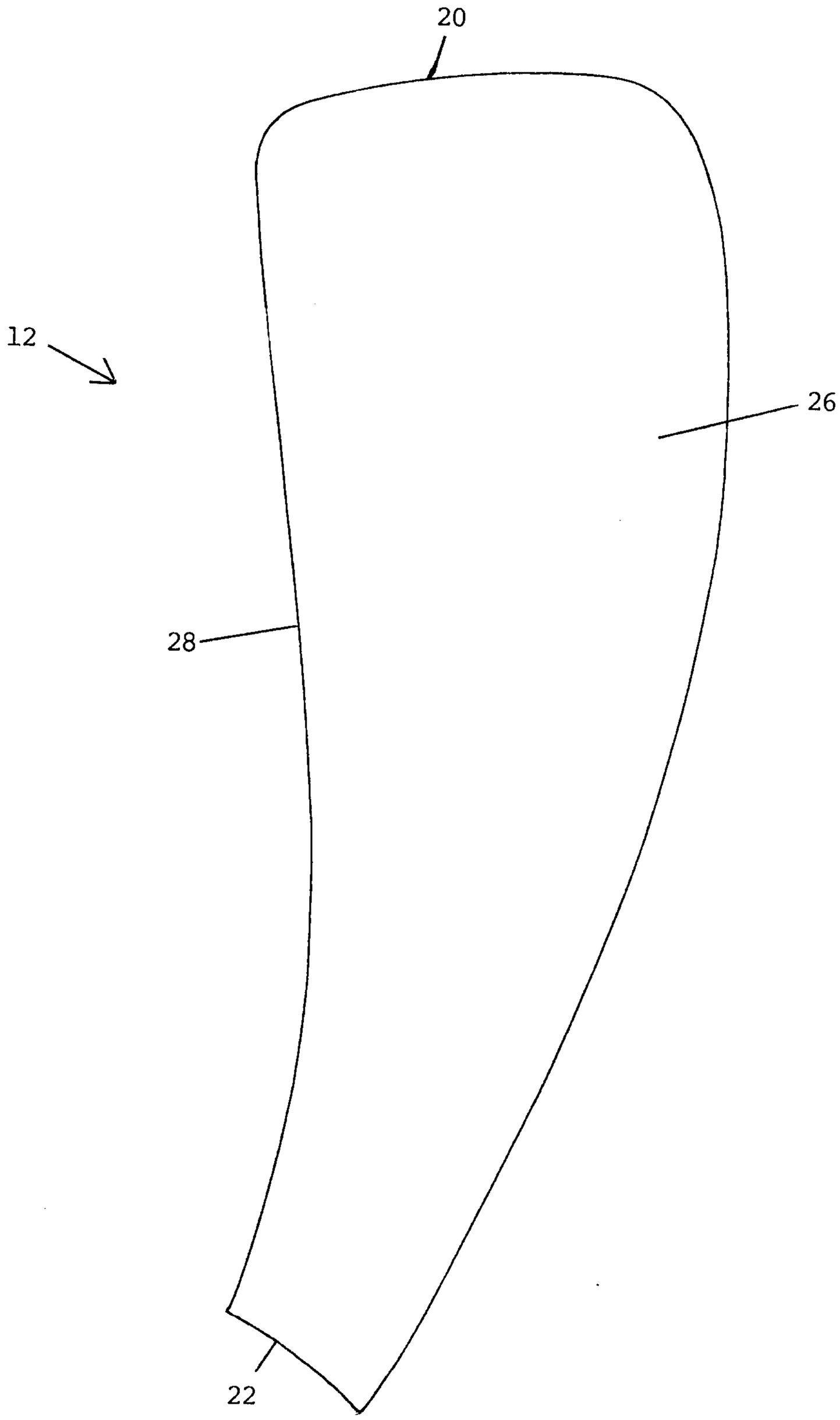



FIGURE 4

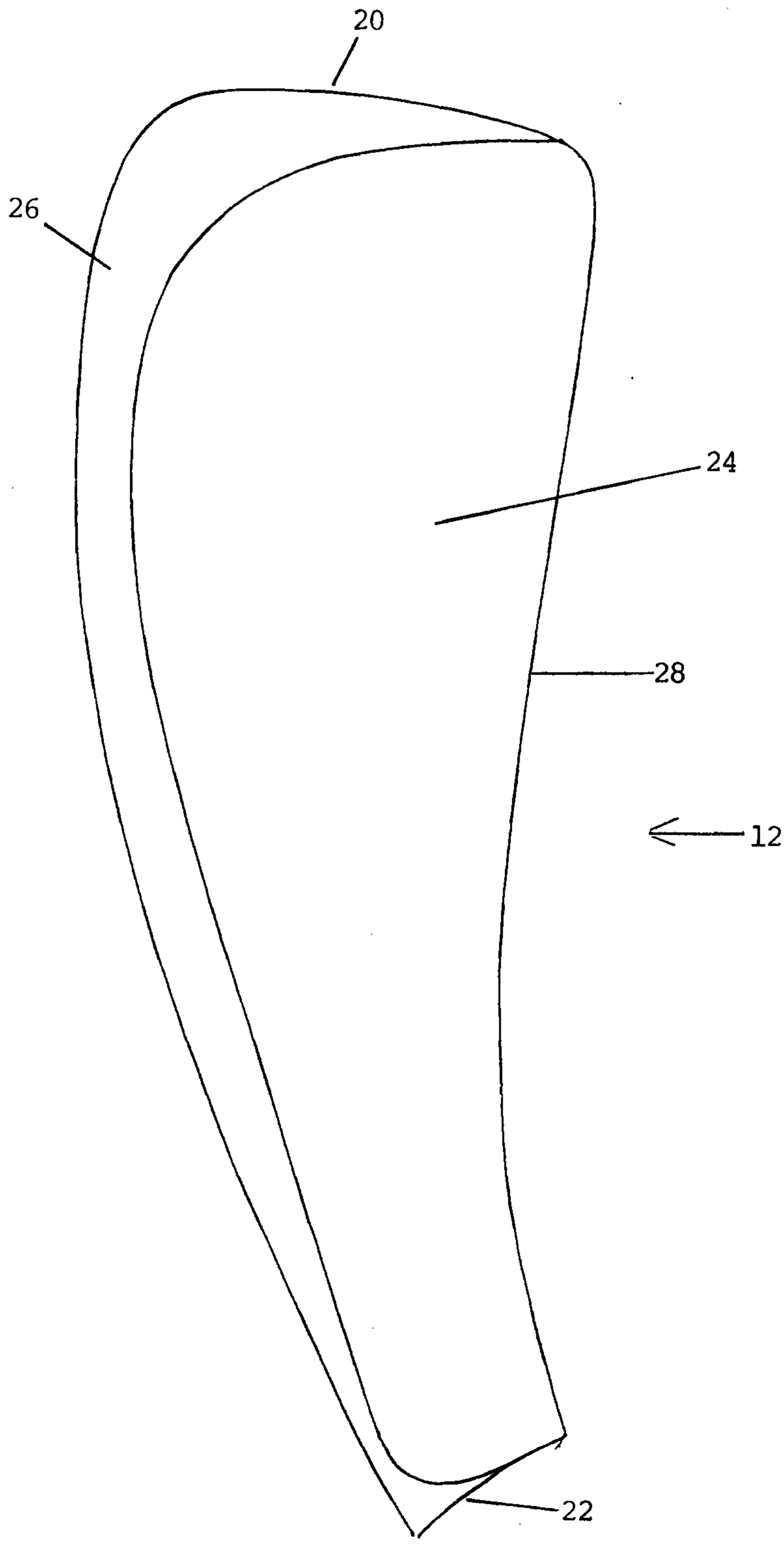



FIGURE 5

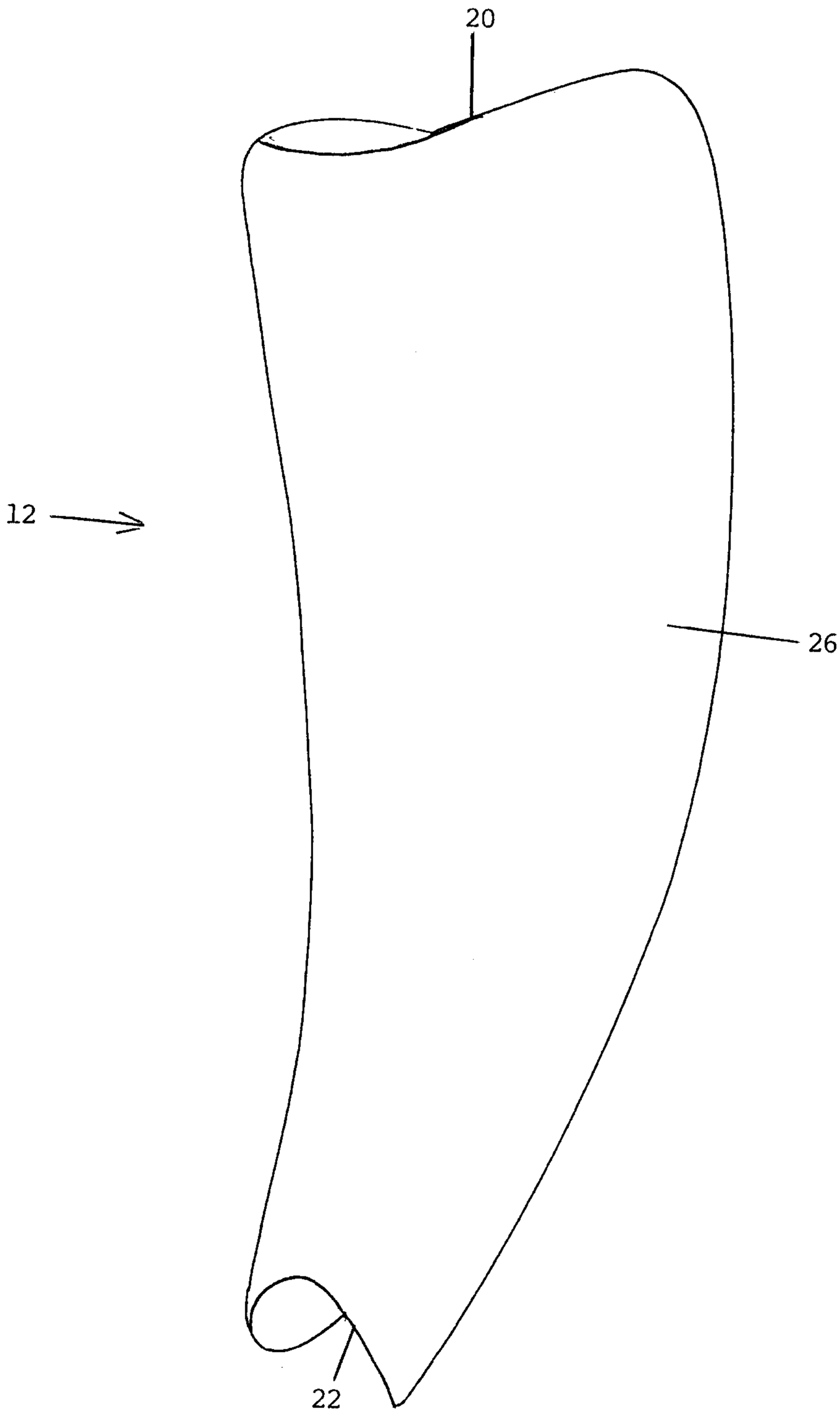



FIGURE 6

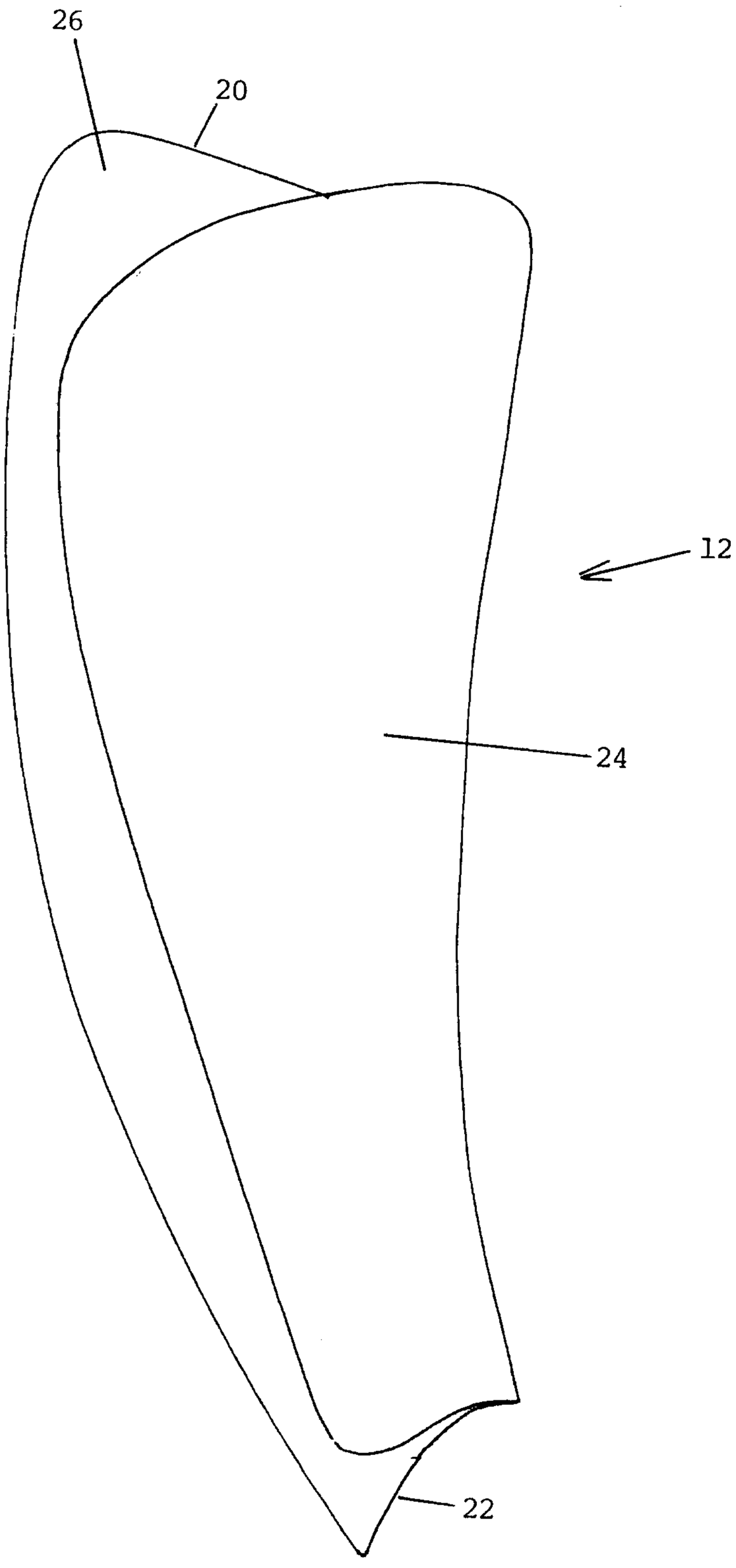



FIGURE 7

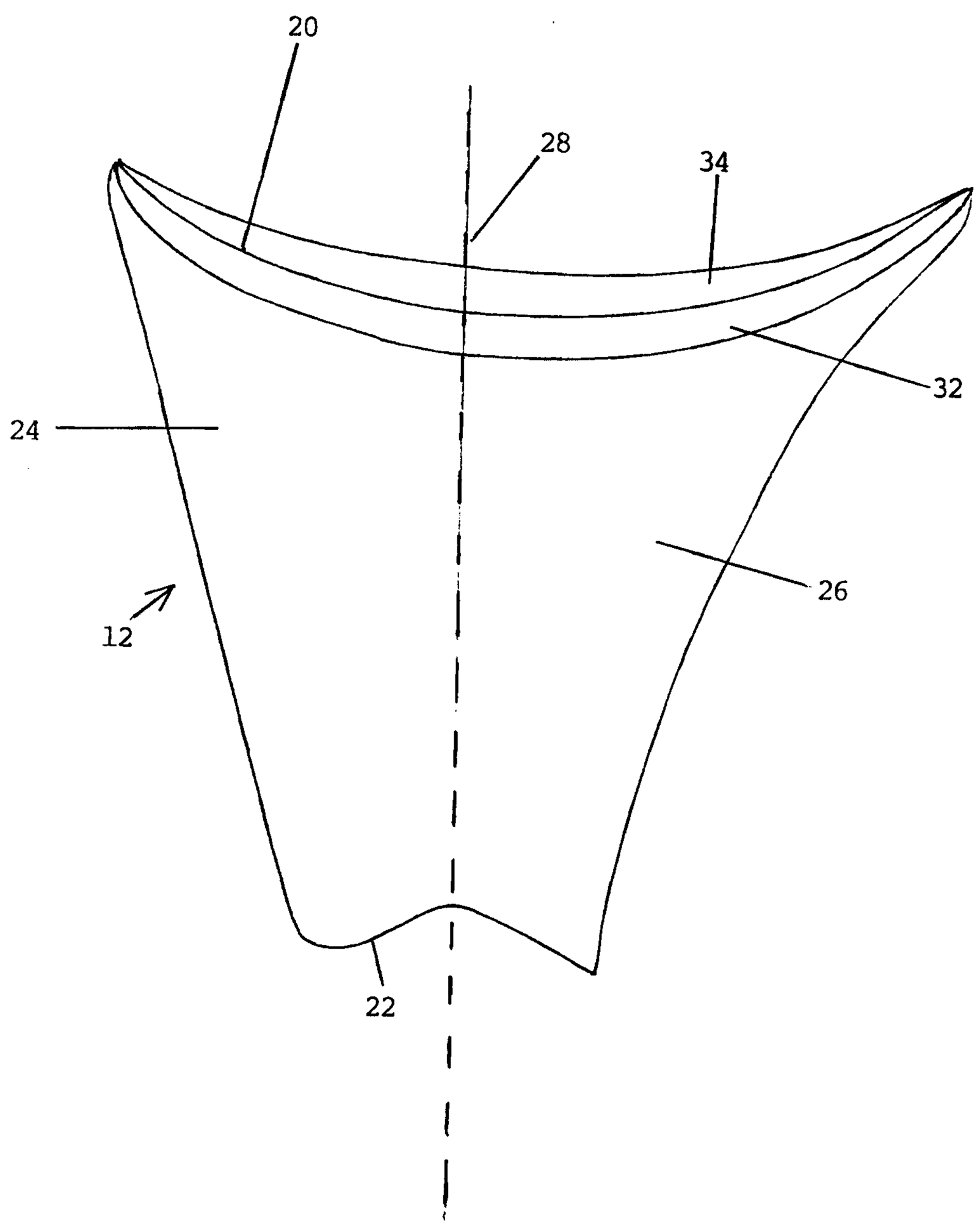



FIGURE 8

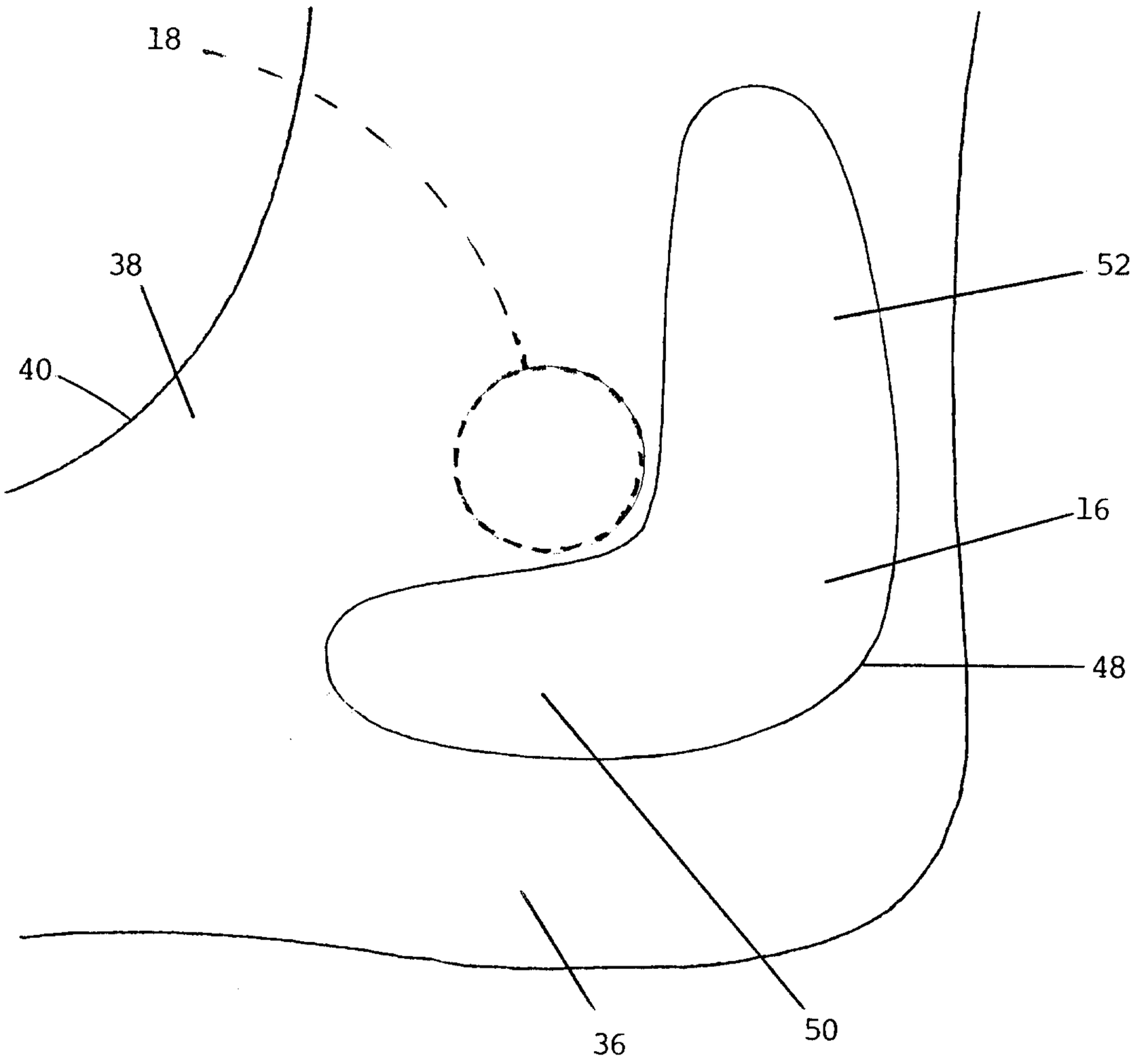



FIGURE 9

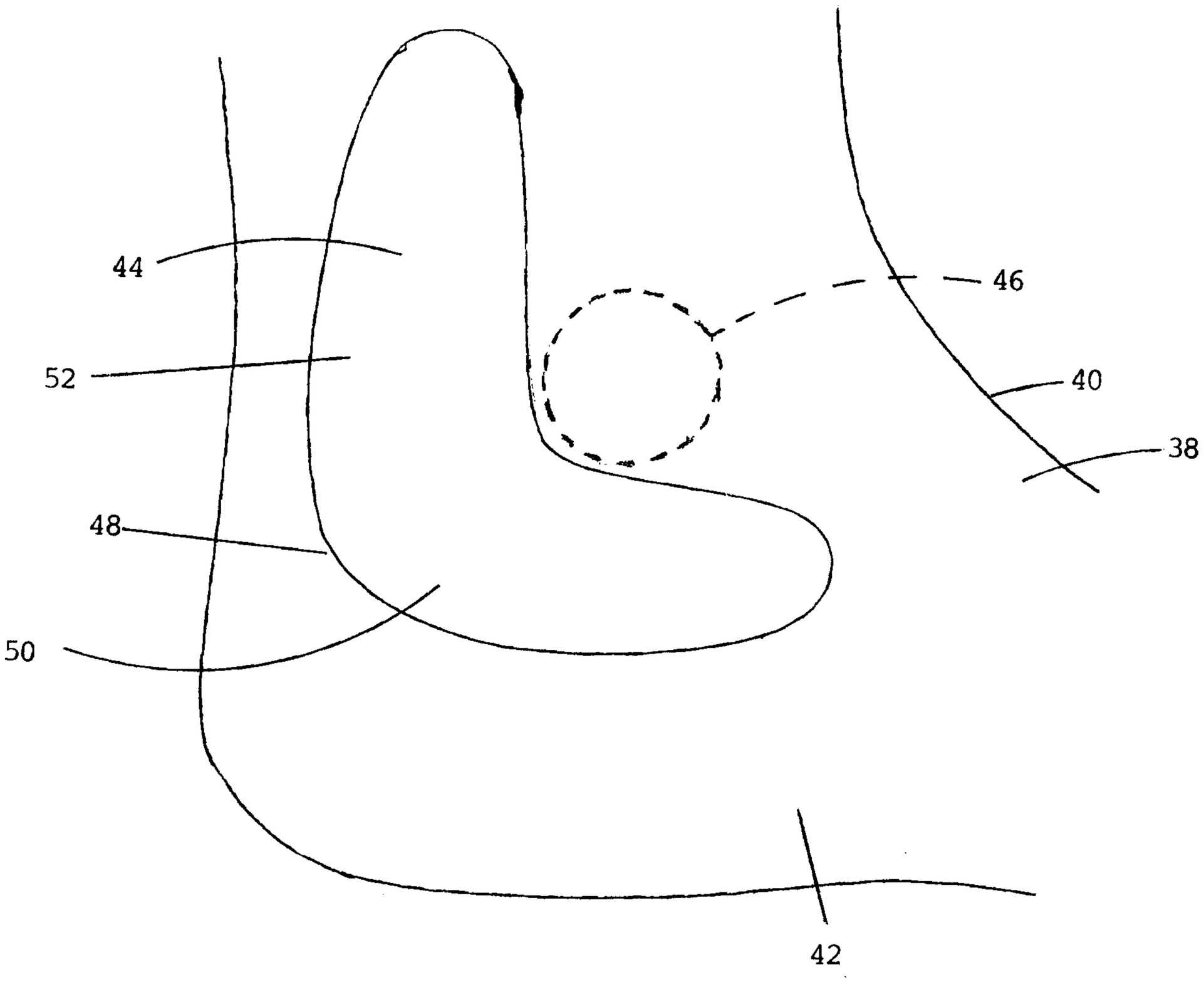



FIGURE 10

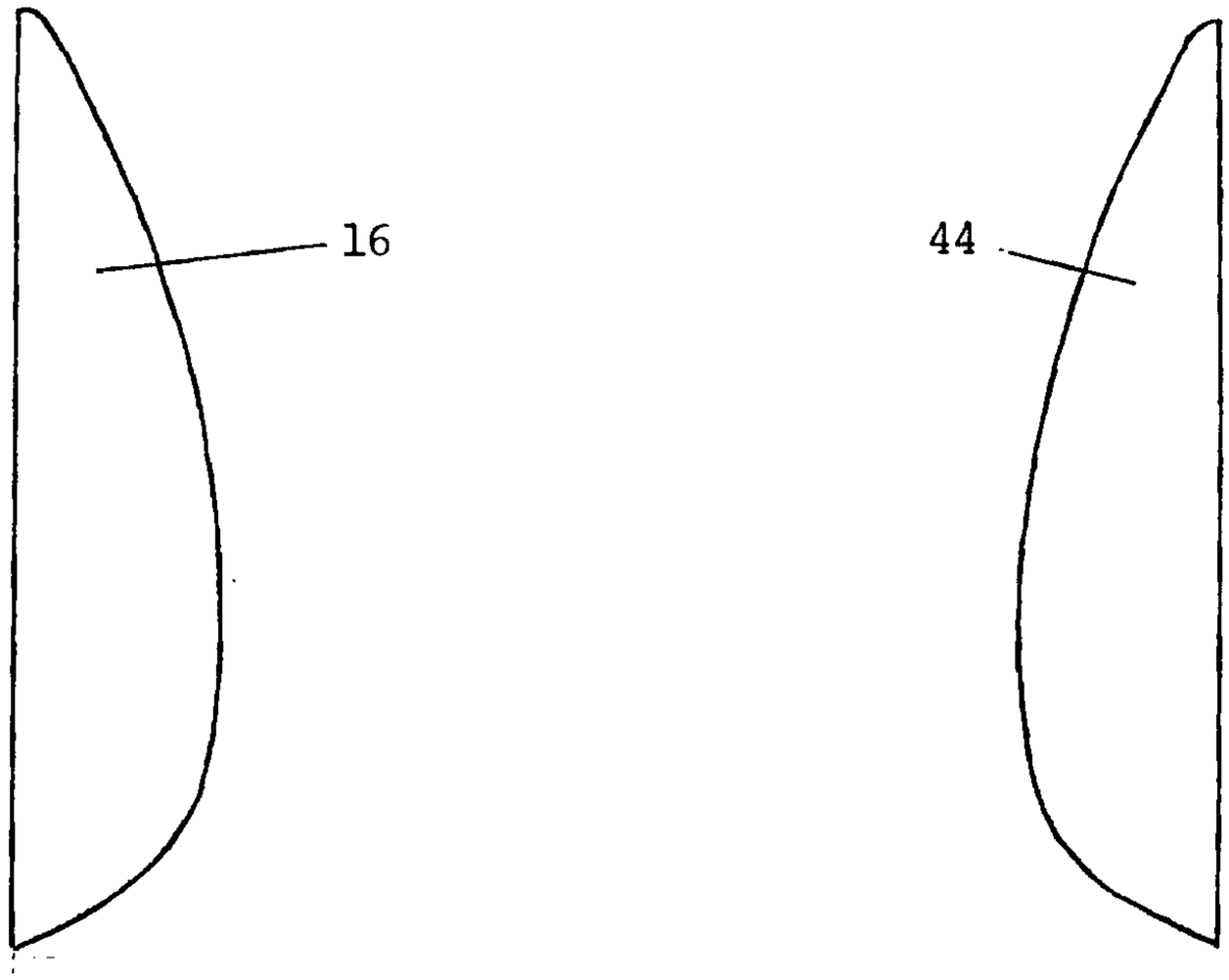



FIGURE 11

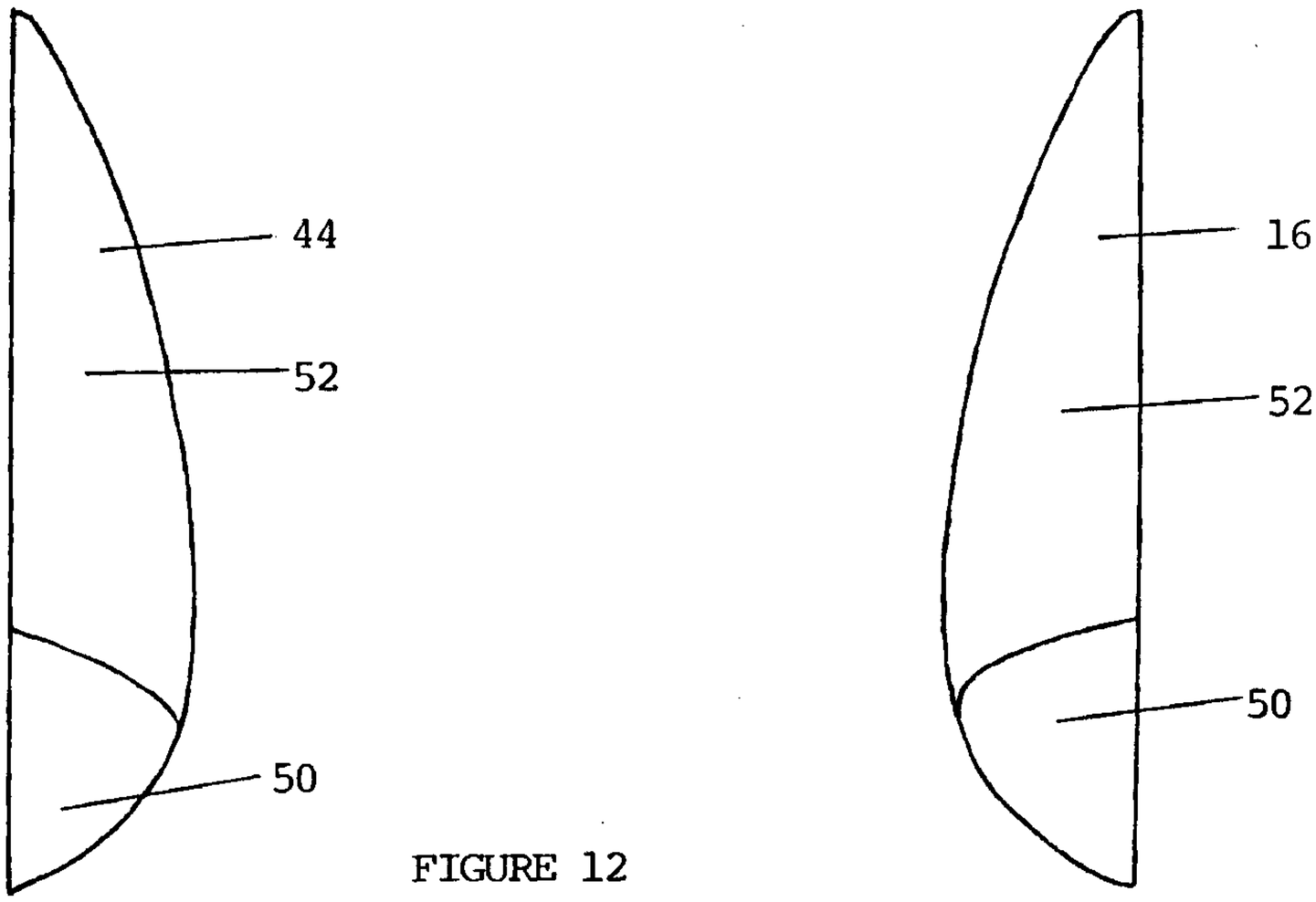



FIGURE 12

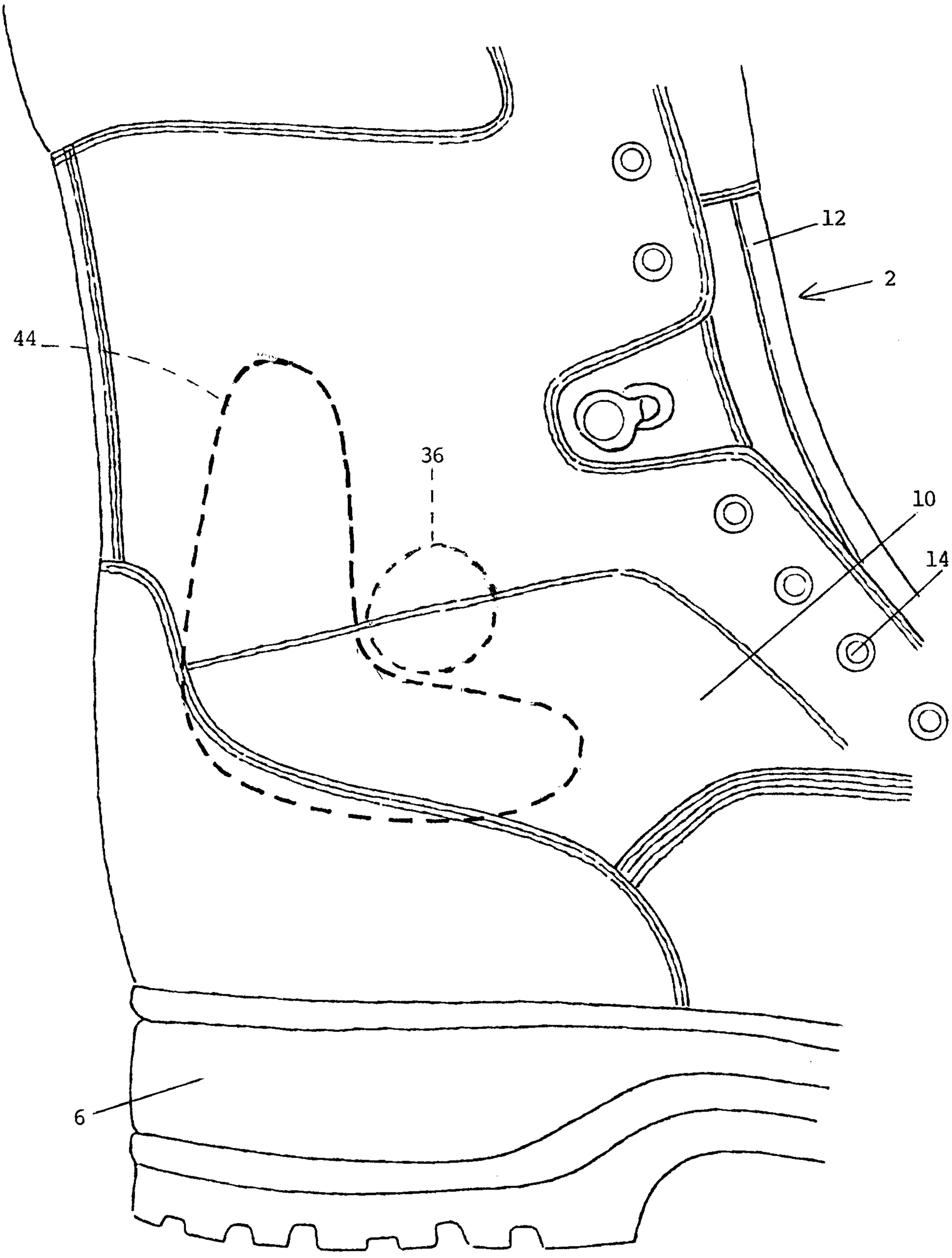



FIGURE 13

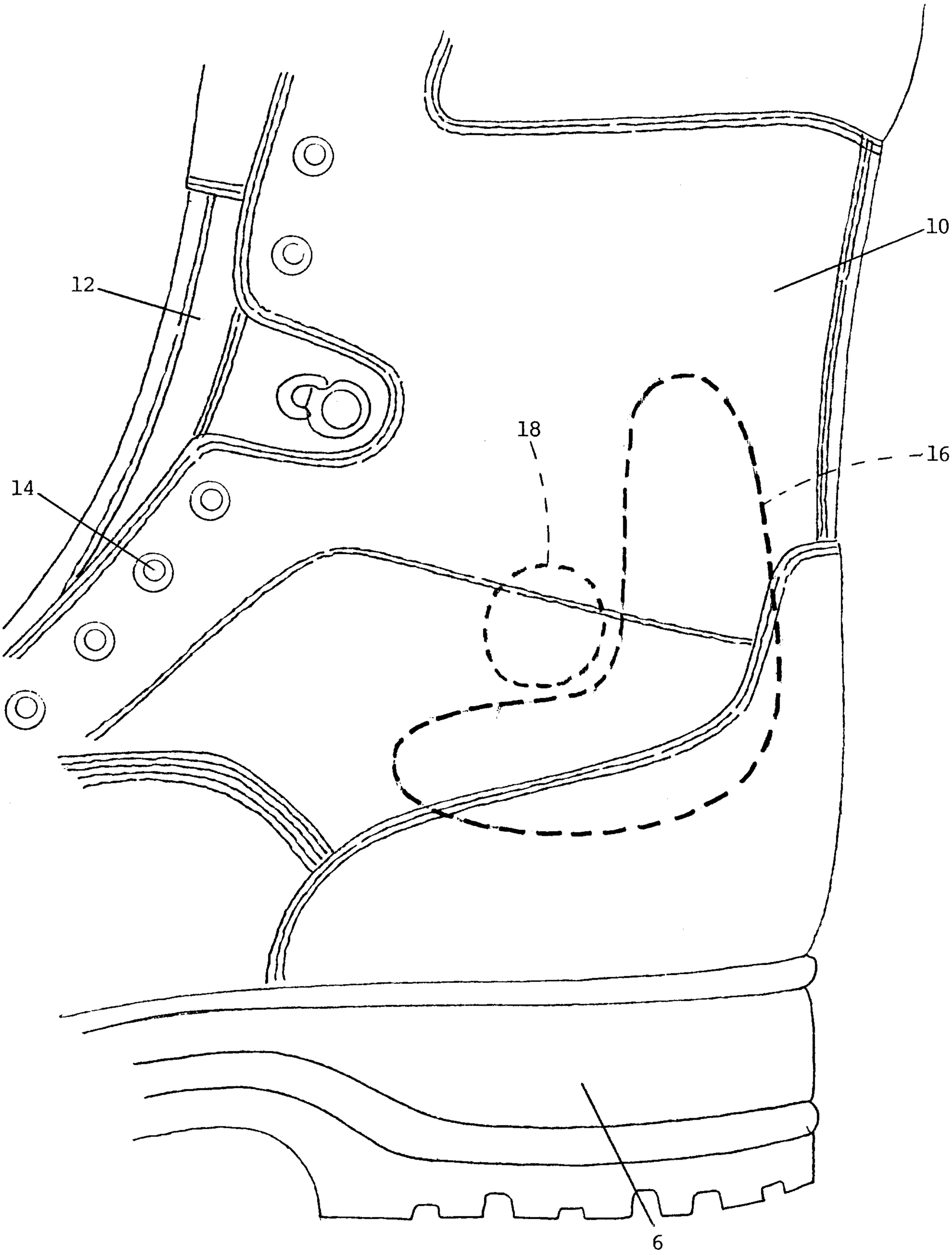



FIGURE 14

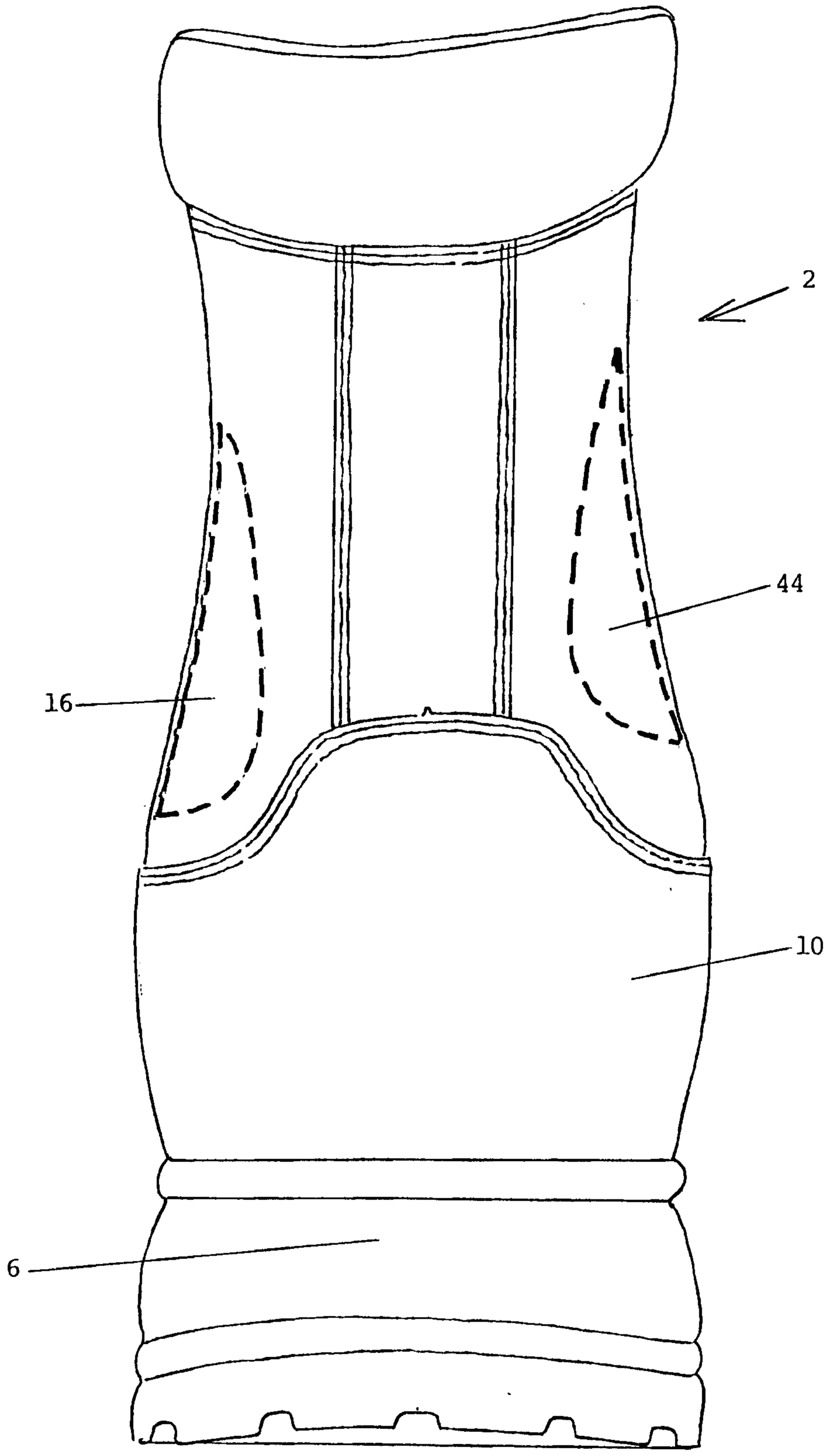
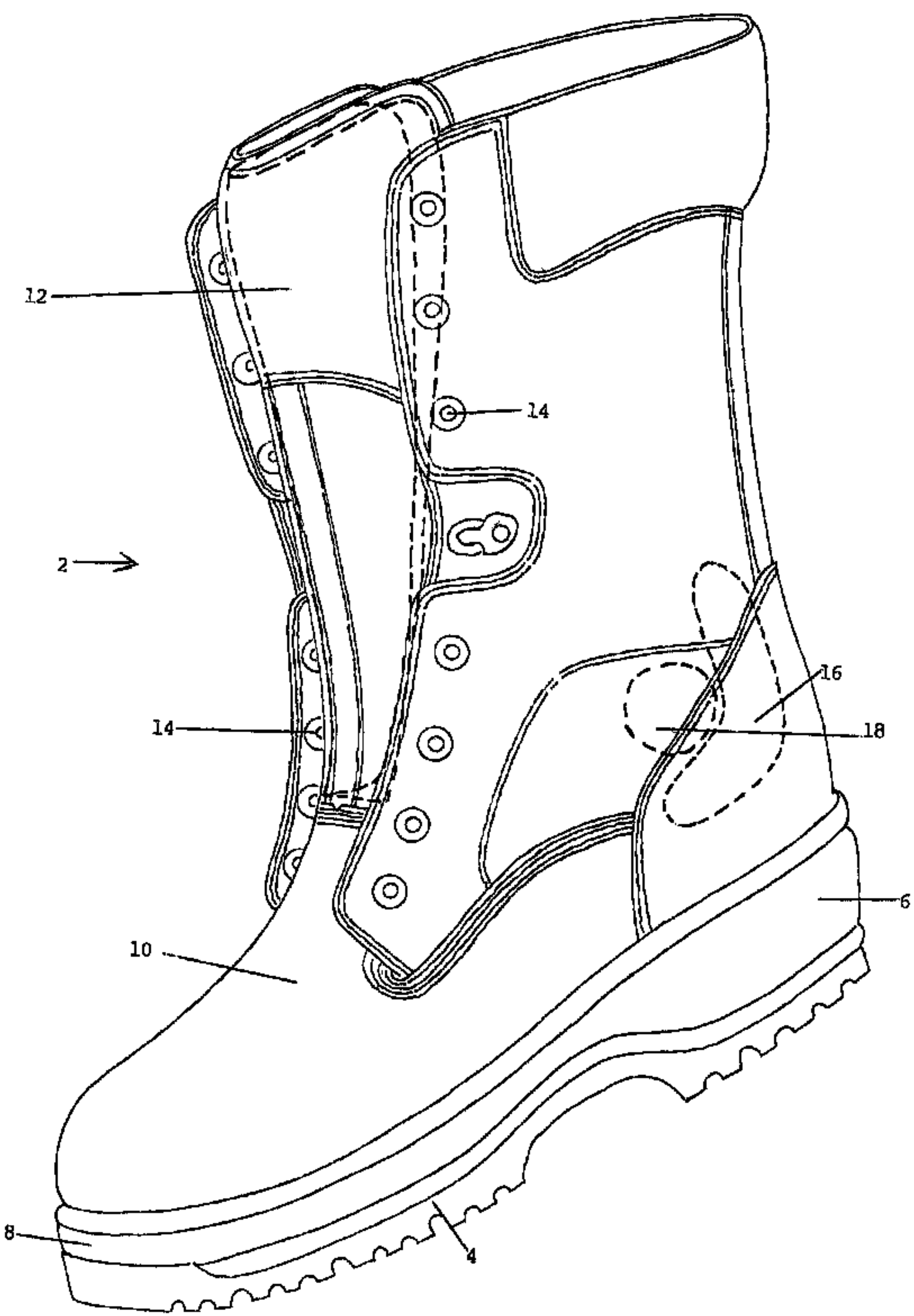



FIGURE 15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