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(54) Title: AUDIO EAR BUD HEADPHONE WITH EXTENDED CURVATURE

(57) Abstract: Ear bud headphones configured for use with a portable media player include a main body portion with an extended curvature configuration. In one example implementation, the ear bud headphones include a speaker housing and an extension that form a gap between the speaker housing and the extension. A user can secure a portion of the user's outer ear in the gap (i.e., between the extension and speaker housing) such that the ear bud is securely and comfortably held in place within a user's ear. Additionally, the ear bud headphones can be interchangeable such that a user can customize the size, fit, and style of the ear bud headphone.

## AUDIO EAR BUD HEADPHONE WITH EXTENDED CURVATURE

The Field of the Invention

The present disclosure is generally related to audio headphones.

5 Background and Relevant Art

Conventional portable audio systems often include a pair of headphones that are connected to a portable media player (e.g., with one or more wires). As the headphone industry has expanded, the style range of headphones from which a user may choose has increased. One popular style or configuration of headphones is known as ear bud style  
10 headphones (e.g., headphones designed to fit within a user's ear). Ear bud style headphones are popular among users because ear bud headphones are generally small and portable. Moreover, when a user is participating in various activities, ear bud headphones may cooperate better with the user's other accessories or equipment, such as helmets, ski goggles, ear protectors, beanies, and headbands.

15 Although a user may gain portability with conventional ear bud style headphones, a user may sacrifice comfort because conventional ear bud style headphones typically do not fit comfortably in every user's ear the same. Manufacturers/Designers of conventional ear buds typically design ear buds headphones to be held in place within a user's ear by sizing the ear bud to be slightly larger than the outer ear of the user. As can be appreciated, users generally  
20 have wide ranges of outer ear sizes and configurations, which make it difficult for one size of ear bud to comfortably fit all users' ears.

For example, in many circumstances a user's outer ear may be too small for the conventional ear bud style headphone to comfortably fit in the user's outer ear. If the ear bud is too large, then the ear bud may fall out of the user's ear during use, or the ear bud may  
25 cause discomfort to the user, thus frustrating the user and preventing the user from enjoying the portable audio system. On the other hand, the ear bud style headphone may be too small,

thus preventing the ear bud from remaining in place adjacent to the user's ear canal. If the ear bud is too small, then the sound quality may decrease and the ear bud may tend to frequently fall out of the user's ear.

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## BRIEF SUMMARY OF THE INVENTION

Implementations of the present invention comprise devices, systems, and methods, for ear bud-style headphones with an extended curvature configuration. For example, implementations of the invention provide an ear bud headphone that includes a speaker housing and an extension that forms a gap between the speaker housing and the extension. In one implementation, the extension allows a user to secure a portion of the user's outer ear in the gap (i.e., between the extension and speaker housing) such that the ear bud headphone maintains a secure and comfortable position within a user's ear.

For example, an implementation of an ear bud headphone includes a speaker assembly capable of converting an audio signal into a sound wave audible to the human ear. The ear bud headphone further can include a main body portion that at least partially encloses the speaker assembly. In addition, an extension can extend out from the main body portion and away from the speaker assembly such that a gap is formed between the speaker assembly and the extension. Thus, a user can position at least a portion of the user's ear in the gap between the extension and the speaker assembly to securely hold the ear bud headphone within the user's ear.

In addition, a personal audio speaker system for use with a portable media playing device can include a wire that connects to the portable media playing device and a set of ear bud headphones. The set of ear bud headphones can be configured to securely fit within a user's ear such that the ear bud headphones remain within the user's ear during use. The ear bud headphones can include a speaker assembly that is connected to the wire, and a speaker

housing that is attached to a back portion of the speaker assembly. A main body portion can at least partially enclose the speaker assembly and speaker housing. Additionally, an extension can extend out from the main body portion and away from the speaker housing forming a gap between the extension and the speaker housing.

5           Furthermore, an implementation of an interchangeable ear bud headphone kit can include an ear bud headphone that has a main body portion. The main body portion includes a retainer portion and an extension that extends away from the retainer portion such that a gap is formed between the retainer portion and the extension. Moreover, the interchangeable ear bud headphone kit can include a retainer ring that is removably connected to the retainer  
10           portion. Additionally, the interchangeable ear bud headphone kit can include interchangeable components. In one example, the retainer ring is operatively associated with the retainer portion to secure the interchangeable components to the main body portion as desired by a user. Thus, a user can remove the retainer ring from the retainer portion to exchange  
15           components of the ear bud headphones to customize the size, configuration, and aesthetic of the ear bud headphones. For example, the user can exchange the speaker assembly, the speaker housing, and/or the main body portion.

          Additional features and advantages of exemplary implementations of the invention will be set forth in the description which follows, and in part will be obvious from the description, or may be learned by the practice of such exemplary implementations. The  
20           features and advantages of such implementations may be realized and obtained by means of the instruments and combinations particularly pointed out in the appended claims. These and other features will become more fully apparent from the following description and appended claims, or may be learned by the practice of such exemplary implementations as set forth hereinafter.

25

## BRIEF DESCRIPTION OF THE DRAWINGS

In order to describe the manner in which the above-recited and other advantages and features of the invention can be obtained, a more particular description of the invention briefly described above will be rendered by reference to specific embodiments thereof which are illustrated in the appended drawings. Understanding that these drawings depict only typical embodiments of the invention and are not therefore to be considered to be limiting of its scope, the invention will be described and explained with additional specificity and detail through the use of the accompanying drawings in which:

Figure 1 illustrates a side view of an ear bud headphone in accordance with an implementation of the present invention;

Figure 2 illustrates a back, perspective view thereof;

Figure 3 illustrates a front, perspective view thereof;

Figure 4 illustrates a back view thereof;

Figure 5 illustrates an exploded view thereof; and

Figures 6A and 6B illustrate an example implementation of an ear bud headphone with an in-ear protrusion.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Implementations of the present invention comprise devices, systems, and methods, for ear bud-style headphones with an extended curvature configuration. For example, implementations of the invention provide an ear bud headphone that includes a speaker housing and an extension that forms a gap between the speaker housing and the extension. In one implementation, the extension allows a user to secure a portion of the user's outer ear in the gap (i.e., between the extension and speaker housing) such that the ear bud headphone maintains a secure and comfortable position within a user's ear.

For example, implementations of the present invention provide an ear bud headphone that is securely held in place no matter the size or shape of the user's ear. For example, unlike many conventional ear bud headphones, implementations of the present invention provide an ear bud headphone that is secured within a user's ear by using various elements and features that directly engage the user's ear. Thus, implementations of the present invention provide an ear bud headphone that is far less likely to fall out of the user's ear compared to conventional ear bud style headphones.

Moreover, implementations of the present invention thus provide an ear bud headphone that is comfortable to wear no matter the size or configuration of a user's ear. For example, notwithstanding the size or shape of a user's ears, implementations of the present invention provide an ear bud that is comfortable to wear. Therefore, unlike many conventional ear bud headphones, a user's ear does not experience discomfort or pain while a user is wearing the ear bud.

In addition, implementations of the present invention provide an ear bud headphone with improved acoustic properties. In particular, due to the configuration of the ear bud headphone disclosed herein, the ear bud headphone acoustics are clearer and richer. For example, the bass tones can be deeper, the tenor tones can be crisper, and the mid-range tones can be clearer compared to ear bud headphones that lack the same configuration.

As mentioned, implementations of the present invention provide an ear bud headphone that can include various features and characteristics. Figure 1 illustrates one example implementation of an ear bud headphone 100. Figure 1 shows that the exemplary ear bud headphone 100 can comprise various components, each having various characteristics and configurations. For example, Figure 1 shows that the ear bud headphone 100 can include a speaker assembly 102. The speaker assembly 102 comprises various internal speaker components that are configured to convert an audio signal into an audible sound wave that

can be heard by human ears. Example internal speaker components can include coils, magnets, drivers, cones, electronics, and electrical connections that provide the speaker assembly 102 the capability of converting the audio signal into the audible sound wave.

In addition to the internal components, Figure 1 shows that the speaker assembly 102  
5 can also include various configurations of external components. For example, Figure 1 shows that at least one implementation of the speaker assembly 102 includes a mesh speaker cover 104 (see Figure 3). In one implementation, a manufacturer/designer can make the mesh speaker cover 104 from a variety of materials (e.g., aluminum or plastics). In alternative implementations, the speaker cover 104 can have various configurations. For  
10 example, instead of having the mesh speaker cover 104, the speaker assembly 102 could include a speaker port or other configuration that allows the audible sound wave to leave the speaker assembly and enter a user's ear.

In addition to the speaker cover 104, Figure 1 shows that the speaker assembly 102 can further include a speaker housing 106. In one implementation, the speaker housing 106 can  
15 cover the back portion of the speaker assembly 102 to help protect the internal components of the speaker assembly 102 (see also Figure 2).

Notably, in one example implementation, the speaker assembly 102, including the speaker cover 104 and speaker housing 106, is made from separate components from a main body portion 110 (see Figure 5 for example). Due to the fact that the speaker assembly 102 is  
20 separate from the housing, the bud headphone 100 can have an ergonomic configuration that is more comfortable to wear compared to traditional ear bud headphones where the speaker assembly and the main body portion may be formed from a single integrated component.

As Figure 1 illustrates, because the speaker assembly 102 and the main body portion 110 are separate components, a manufacturer can connect a wire 118 to the main body  
25 portion 110 at a wire interface 116, extend the wire 118 through the main body portion 110,

and then connect the wire 118 to the speaker assembly 102 near the top of the main body portion (see Figure 5). Thus, the bud headphone 100 can include a top entry wire 118 configuration, which in turn allows for an ergonomic gap 120 between the speaker housing 106 and the main body portion 110. Several other features and characteristics that relate to the top entry configuration will be discussed further below.

For example, a manufacturer/designer can configure the speaker housing 106 to have various acoustic properties to enhance the sound created by the speaker assembly 102. For example, the speaker housing 106 can include a port that extends through the speaker housing 106 (see Figure 2 and Figure 5). In alternative implementations, the speaker housing 106 may include more or fewer ports depending on how the manufacturer/designer desires to affect the acoustics of the speaker assembly 102. The speaker housing can also include additional acoustic elements that a manufacturer/designer can use to control the acoustics of the speaker assembly 102.

In addition to various acoustical functions, one will appreciate that various other features of the speaker housing 106 can also assist to secure the ear bud headphone 100 in a user's ear by interfacing or engaging with a portion of a user's ear. Specifically, a manufacturer/designer can configure the speaker housing 106 such that the speaker housing 106 comfortably interfaces with the user's ear. For example, Figure 1 illustrates the speaker housing 106 having substantially semi-spherical configuration with a flat end (see Figure 2). The substantially semi-spherical configuration provides a smooth and comfortable interface surface for fitting within the outer portions of the user's ear canal.

Despite the configuration of the speaker housing 106, a manufacturer/designer can make the speaker housing 106 out of various materials. In one example implementation, the speaker housing 106 can be made from a soft elastic material, such as rubber. In other



implementations, a manufacturer/designer can make the speaker housing 106 from foam, silicon, plastic, metal, composites, and/or any combination thereof.

Notwithstanding the various configurations, materials, and components of the speaker assembly 102, a manufacturer/designer can couple the speaker assembly 102 to the ear bud  
5 headphone 100 in various manners with a number of functional ends in mind. For example, Figure 1 shows that the ear bud headphone 100 can include a front retainer 108 and a main body portion 110. The main body portion 110 can further include a back retainer 112. As shown in Figure 1, a manufacturer/designer can configure the front retainer 108 and the back  
10 retainer 112 to couple together and secure the speaker assembly 102 in place between the front retainer 108 and the back retainer 112.

For example, in one implementation, the front retainer 108 and the back retainer 112 have a substantially ring-type configuration corresponding to the circumferential configuration of the speaker assembly 102 (see Figure 5). One will appreciate that the manufacturer/designer can make the cross-sectional dimension of both the front retainer 108  
15 and the back retainer 112 smaller than a cross-sectional dimension of the speaker assembly 102, such that a portion of the speaker assembly 102 cannot pass through either the front retainer 108 or the back retainer 112. Thus, and as Figure 1 illustrates, a manufacturer/designer can configure the front retainer 108 and the back retainer 112 to securely hold the speaker assembly 102 in place when the front retainer 108 and the back  
20 retainer 112 are coupled together.

The front retainer 108 and the back retainer 112 can couple together in various manners. For example, in one implementation the front retainer 108 and the back retainer 112 can include a snap fit connection. In particular, the front retainer 108 can include one or more tabs (not shown) that engage one or more corresponding slots (not shown) located on  
25 the back retainer 112. In alternative implementations, the front retainer 108 can couple to the

back retainer 112 using threads, slip-fit connection, adhesives, and/or other fasteners. In at least one implementation, a manufacturer/designer can configure the front retainer 108 and the back retainer 112 to be coupled and decoupled by the user in order to exchange components of the ear bud headphone 100, such as the speaker assembly 102, as will be explained in more detail below.

In addition to including the back retainer 112, Figure 1 shows that, to secure the speaker assembly 102, the main body portion 110 can also include features to guide electrical connections. For example, Figure 1 illustrates the main body portion 110 with an extension 114 that extends away from the speaker assembly 102. Figure 1 shows, for example, that the extension 114 can connect to a wire interface 116, which couples a wire 118 to the extension 114 (see Figure 4). A manufacturer/designer can then use the extension to guide the wire 118 through the extension 114 to connect with the speaker assembly 102. In alternative implementations, a manufacturer/designer can make the ear bud headphone 100 a wireless headphone, and therefore, the wireless ear bud headphone 100 may not include the wire interface 116 or the wire 118.

Not only can the extension 114 guide the wire 118 to the speaker assembly 102, but the extension 114 can also assist in securing the ear bud headphone 100 within a user's ear. For example, Figure 1 illustrates that the extension 114 can extend away from the speaker assembly 102 such that the extension 114 creates a gap 120 between the extension 114 and the speaker housing 106 (see also Figure 2 and Figure 3). Thus, when a user is wearing the ear bud headphone 100, the speaker assembly 102, including the speaker housing 106, can go inside the user's outer ear. The extension 114 extends away from the user's ear and thereby allows the user to secure at least a portion of the user's ear in the gap 120 between the speaker housing 106 and the extension 114. Thus, the ear bud headphone 100 actively engages at least a portion of the user's ear.

To further secure the ear bud headphone 100 within a user's ear, a manufacturer/designer can form the extension 114 from various materials. In one example implementation, the extension 114 material can be a bendable material that substantially holds a position after a user bends the extension 114 to conform to the user's ear shape. For example, a manufacturer/designer can make the extension 114 out of a bendable inelastic material, such as a metal rod (e.g. aluminum or copper), or one or more memory metals. In one implementation, the extension 114 can take the form of a metal rod covered in rubber or bendable plastic such that the extension is bendable, but also comfortable on the user's ear. The bendable extension 114 provides for an adjustable gap 120 width that allows a user to secure at least a portion of the user's ear securely in the gap 120 regardless of the size or shape of the user's ear.

In further implementations, a manufacturer/designer can make the extension 114 from non-bendable materials, such as hard plastics or composites. When the extension 114 is made from non-bendable materials, a manufacturer can choose to make the speaker housing 106 out of an elastic material, as discussed above. Therefore, because the speaker housing 106 is elastic, the speaker housing 106 can deflect slightly as a user positions a portion of the user's ear within the gap 120. Once the user has positioned the ear bud headphone 100 in a comfortable position, the speaker housing 106 expands to gently clamp a portion of the user's ear between the speaker housing 106 and the extension 114, thus providing a secure and comfortable fit.

As can be appreciated, the extension 114 illustrated in Figures 1 through 5 is only one implementation of the extension 114, and the extension 114 configuration can vary from one implementation to the next. For example, Figure 1 through Figure 5 illustrate various views of the ear bud headphone 100 that show the extension 114 as having a sweeping curved configuration extending away from the speaker assembly 102 (see Figure 2 and Figure 5). In

alternative implementations, the extension 114 configuration can take almost any form. For example, a manufacturer/designer can configure the extension 114 with a substantially square configuration (not shown). In such a configuration, the extension 114 can extend substantially perpendicular from the speaker assembly 102 and then make about a ninety degree angle downward to create the gap 120 between the extension 114 and the speaker assembly 102.

Notwithstanding the configuration of the extension 114, a manufacturer/designer can configure the ear bud headphone 100 with interchangeable components such that a user can customize the size, look, and fit of the ear bud headphone 100. For example, Figure 5 illustrates one implementation of the ear bud headphones 100 with various interchangeable components. In particular, Figure 5 illustrates an exploded view of an example ear bud headphone 100 that can include interchangeable components that a user can exchange to customize the ear bud headphone 100.

For example, the interchangeable components can include the speaker assembly 102, the speaker cover 104, the speaker housing 106, and even the main body portion 110. Thus, for example, if the user desires to change the acoustic properties of the ear bud headphone 100, the user can exchange the speaker assembly 102 and/or the speaker housing 106 to create a customized sound. Similarly, if the user desires to change the fit of the ear bud headphone 100, then the user can exchange the speaker housing 106 and/or the main body portion 110 with different sizes or configurations. Of course, a user can change the look and style of the ear bud headphones 100 by exchanging any component of the ear bud headphone 100.

In one implementation, a manufacturer/designer can produce kits that include various interchangeable components. In particular, a manufacturer/designer can provide a kit that includes one or more components that replace, or couple to, the front retainer 108 to change

the size or geometric configuration of the portion of the ear bud headphone 100 that is adjacent to the ear canal (or in some cases partially extending into the ear canal). For example, the kit can provide components that increase/decrease the diameter of the front retainer 108, and/or provide various configurations of cushions, extensions, or similar features to the ear bud headphone 100 such that a user can customize the way in which the ear bud headphone 100 interfaces with the user's ear.

As explained above, a manufacturer/designer can make the front retainer 108 be removably coupled to the back retainer 112 allowing a user to separate the front retainer 108 from the back retainer 112 to exchange one or more components. For example, Figures 6A and 6B illustrate one example implementation that is possible for a user to create upon removing the front retainer 108 from the back retainer 112 and exchanging components. In particular, Figures 6B and 6A illustrate a right-ear ear bud headphone 100a and a left-ear bud headphone 100b that include an in-ear protrusion 130 that can replace the speaker cover 104 illustrated in Figures 1 through 5.

As Figures 6A and 6B show, a user can secure the in-ear protrusion 130 between the front retainer 108 and the back retainer 112. In addition, a user can customize the direction in which the in-ear protrusion extends by rotating the in-ear protrusion 130 with respect to the front retainer 108 and back retainer 112, thus creating a customized look and fit for an individual user. For example, Figures 6A and 6B illustrate that the in-ear protrusion 130 in the right-ear bud headphone 100a is positioned in a substantially mirrored position with respect to the in-ear protrusion 130 in the left-ear bud headphone 100b to accommodate the generally mirrored characteristics between a user's right and left ears.

To further accommodate a particular user's ear, various features and characteristics of the in-ear protrusion can vary. For example the length, shape, and cross-sectional dimension(s) of the in-ear protrusion 130 can vary from one implementation to the next, allowing a user to

change from one in-ear protrusion 130 configuration to another. For example, a user can use one configuration of the in-ear protrusion 130 in the right-ear bud headphone 100a and a different in-ear protrusion 130 configuration in the left-ear bud headphone 100b to accommodate even subtle differences between a user's right ear and left ear.

5           In order to further customize the in-ear protrusion 130, Figures 6A and 6B illustrate that the in-ear protrusion 130 can include a recess 132 that allows a user to mount a protrusion cover 134 to the end of the protrusion. In one implementation, the protrusion cover 134 is a soft and formable rubber-like material that can conform to the shape of a user's inner ear. As with the configuration of the in-ear protrusion 130, the size and shape of the  
10 protrusion cover 134 can vary from one implementation to the next to allow a user to specifically customize the fit of the protrusion cover 134 within the user's ear.

          In addition to the protrusion cover 134, the in-ear protrusion 130 can include various other features and characteristics. For example, Figures 6A and 6B illustrate that the in-ear protrusion 130 can include a protrusion mesh 136 that protects the speaker assembly from  
15 dust and other contaminants. In an alternative implementation, the in-ear protrusion 130 does not include the protrusion mesh 136.

          Regardless of the various characteristics of the in-ear protrusion 130, Figures 6A and 6B illustrate that the ear bud headphones 100 (i.e. 100a and 100b) can utilize both the in-ear protrusion 130 and the gap 120 to secure the ear bud headphones in the ear of a user. For  
20 example, the in-ear protrusion 130 secures the ear bud headphone 100 within the inner portion of a user's ear, while the gap 120 interfaces with an outer portion of a user's ear. In this manner, the ear bud headphone 100 can provide an extremely comfortable and secure fit compared to conventional headphones.

          Figures 1 through 6B, however, illustrates only example implementation of the  
25 interchangeable ear bud headphone 100. One will appreciate, therefore, that other

implementations can have more, fewer, or different components depending on the particular implementation of the ear bud headphone 100. Example implementations of the present invention can therefore include ear bud headphones that provide a comfortable and secure fit within a user's ear. Thus, implementations of the present invention allow a user to enjoy the portability and size of the ear bud headphone, while enjoying a comfortable fit that does not easily fall out of the user's ear. Moreover, implementations of the present invention provide for a customizable ear bud headphone in which a user can customize one or more components of the ear bud headphone to tailor the fit, look and/or acoustics of the ear bud headphone 100.

The present invention thus can be embodied in other specific forms without departing from its spirit or essential characteristics. The described embodiments are to be considered in all respects only as illustrative and not restrictive. The scope of the invention is, therefore, indicated by the appended claims rather than by the foregoing description. All changes that come within the meaning and range of equivalency of the claims are to be embraced within their scope.

## CLAIMS

1. An ear bud headphone configured to provide a user with a comfortable and secure fit such that the ear bud does not easily fall out of the user's ear while in use, comprising:

a speaker assembly capable of converting an audio signal into a sound wave audible to the human ear;

a main body portion made from a separate component from the speaker assembly and wherein the main body portion at least partially encloses the speaker assembly; and

an extension extending out from the main body portion and away from the speaker assembly, wherein the user can position at least a portion of the user's ear in a gap formed between the extension and the speaker assembly.

2. The ear bud headphone as recited in claim 1, wherein the speaker assembly further comprises a speaker housing that extends into the gap between the extension and the speaker assembly.

3. The ear bud headphone as recited in claim 2, wherein the speaker housing is made from an elastic material.

4. The ear bud headphone as recited in claim 3, wherein the extension is made from a bendable material, such that the user can adjust the width of the gap between the extension and the speaker assembly.

5. The ear bud headphone as recited in claim 4, comprising:

a front retainer; and

a back retainer that is formed on the main body portion, wherein the speaker assembly is secured between the front retainer and the back retainer.

6. The ear bud headphone as recited in claim 5, wherein the front retainer and the back retainer are removably coupled together.

7. The ear bud headphone as recited in claim 6, wherein the ear bud headphone is configured to be interchangeable, such that the user can uncouple the front retainer from the back retainer and exchange one or more of the following components to customize the size, fit, and aesthetic of the ear bud headphone:

the speaker assembly;

the speaker housing; and/or

the main body portion.



8. The ear bud headphone as recited in claim 7, further comprising an in-ear protrusion that is secured between the front retainer and the back retainer and extends at least partially into the user's ear.

9. The ear bud headphone as recited in claim 7, wherein the in-ear protrusion is rotatable with respect to the front retainer and the back retainer to allow the user to adjust the angle at which the in-ear protrusion extends into the user's ear.

10. A personal audio speaker system for use with a portable media playing device, comprising:

at least one wire that communicably connects to a portable media playing device; and

a set of one or more ear bud headphones coupled to the wire and configured to securely fit within a user's ear such that the ear bud headphones securely remain within the user's ear during use, each of the one or more ear bud headphones comprising:

a speaker assembly communicably connected to the wire;

a speaker housing attached to the speaker assembly and at least partially covering a back portion of the speaker assembly;

a main body portion that at least partially encloses the speaker assembly and speaker housing; and

an extension extending out from the main body portion and away from the speaker housing such that a gap is formed between the extension and the speaker housing.

11. The personal audio speaker system of claim 10, wherein the speaker housing is made from an elastic material such that the speaker housing can hold a portion of the user's ear in compression between the speaker housing and the extension.

12. The personal audio speaker system of claim 11, wherein the extension is made from a bendable material that a user can displace to adjust the width of the gap between the speaker housing and the extension.

13. The personal audio speaker system of claim 12, further comprising a front retainer that cooperates with the main body portion to hold the speaker assembly and speaker housing in place within the main body portion.

14. The personal audio speaker system of claim 13, wherein the front retainer is removably coupled to the main body portion, such that a user can remove the front retainer and exchange one or more of the following components to customize the size, fit, and aesthetic of the personal audio speaker system:

the speaker assembly;

the speaker housing; and/or

the body portion.

15. A interchangeable ear bud headphone kit for use with a portable media playing device, the interchangeable ear bud headphone kit providing a user the ability to customize the size, configuration, fit, and style of ear bud headphones, the interchangeable ear bud headphone kit comprising:

an ear bud headphone, comprising:

a main body portion having a retainer portion and an extension extending away from the retainer portion such that a gap is formed between the retainer portion and the extension; and

a retainer ring that is removably connected to the retainer portion of the main body portion; and

one or more interchangeable components, wherein the retainer ring is operatively associated with the retainer portion to secure the interchangeable components to the main body portion as desired by the user.

16. The interchangeable ear bud headphone kit in claim 15, wherein the interchangeable components comprise one or more speaker assemblies of varying sizes, configurations, and/or acoustic properties.

17. The interchangeable ear bud headphone kit in claim 16, wherein:

the interchangeable components comprise one or more speaker housings of varying sizes, or configurations; and

each of the one or more the speaker housings is configured to couple to a rear portion of the corresponding one or more speaker assemblies.

18. The interchangeable ear bud headphone kit in claim 17, wherein:

the speaker housing extends through the retainer portion of the main body portion and into the gap created between the extension and the retainer portion; and

the size of the speaker housing can vary the width of the gap between the extension and the speaker housing such that a user can customize the fit of the ear bud headphone.

19. The interchangeable ear bud headphone kit in claim 18, wherein:

the retainer ring comprises one or more tabs; and

the retainer portion comprises slots that correspond to the one or more tabs on the retainer ring, such that the retainer ring and retainer portion are removably connected together when the tabs engage the corresponding slots.

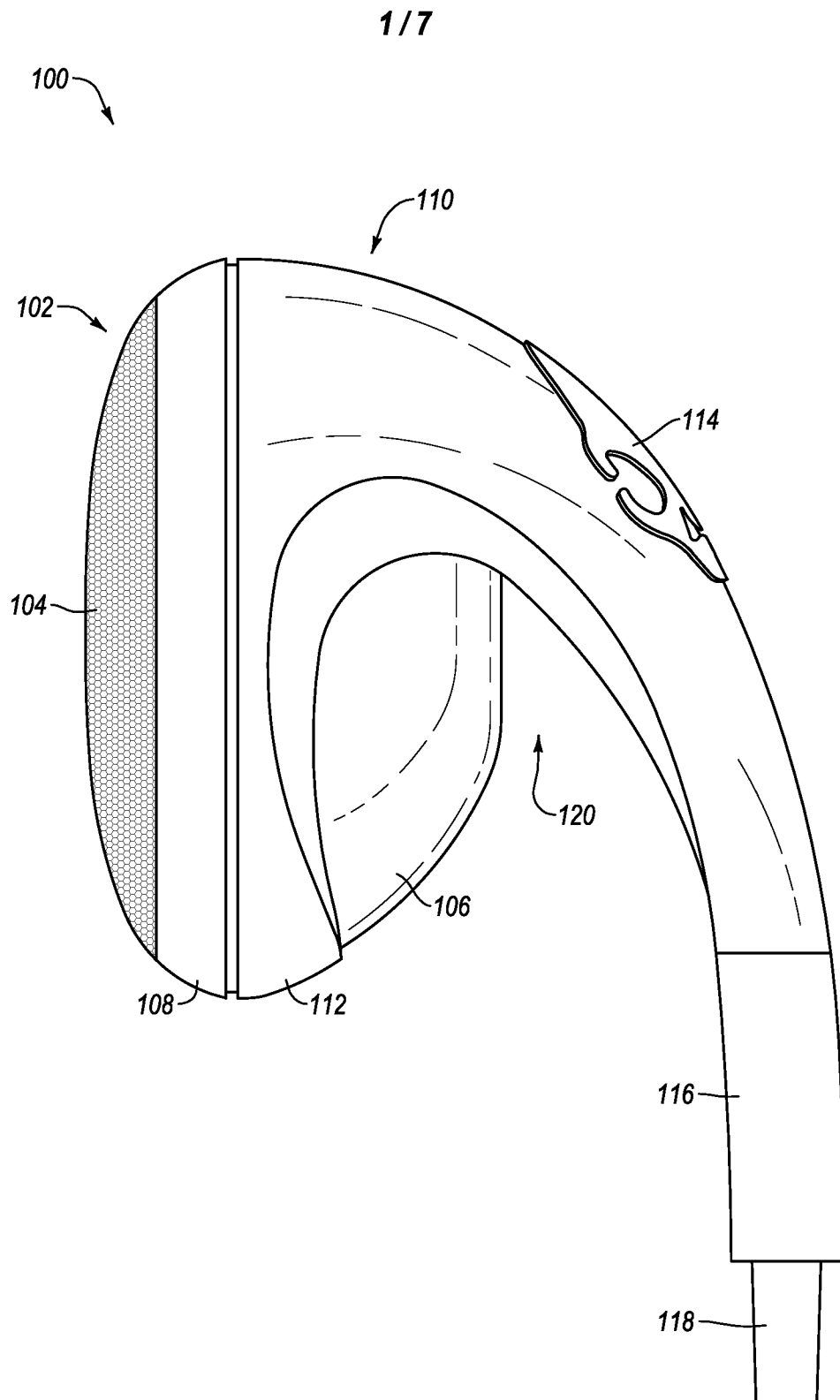


Fig. 1

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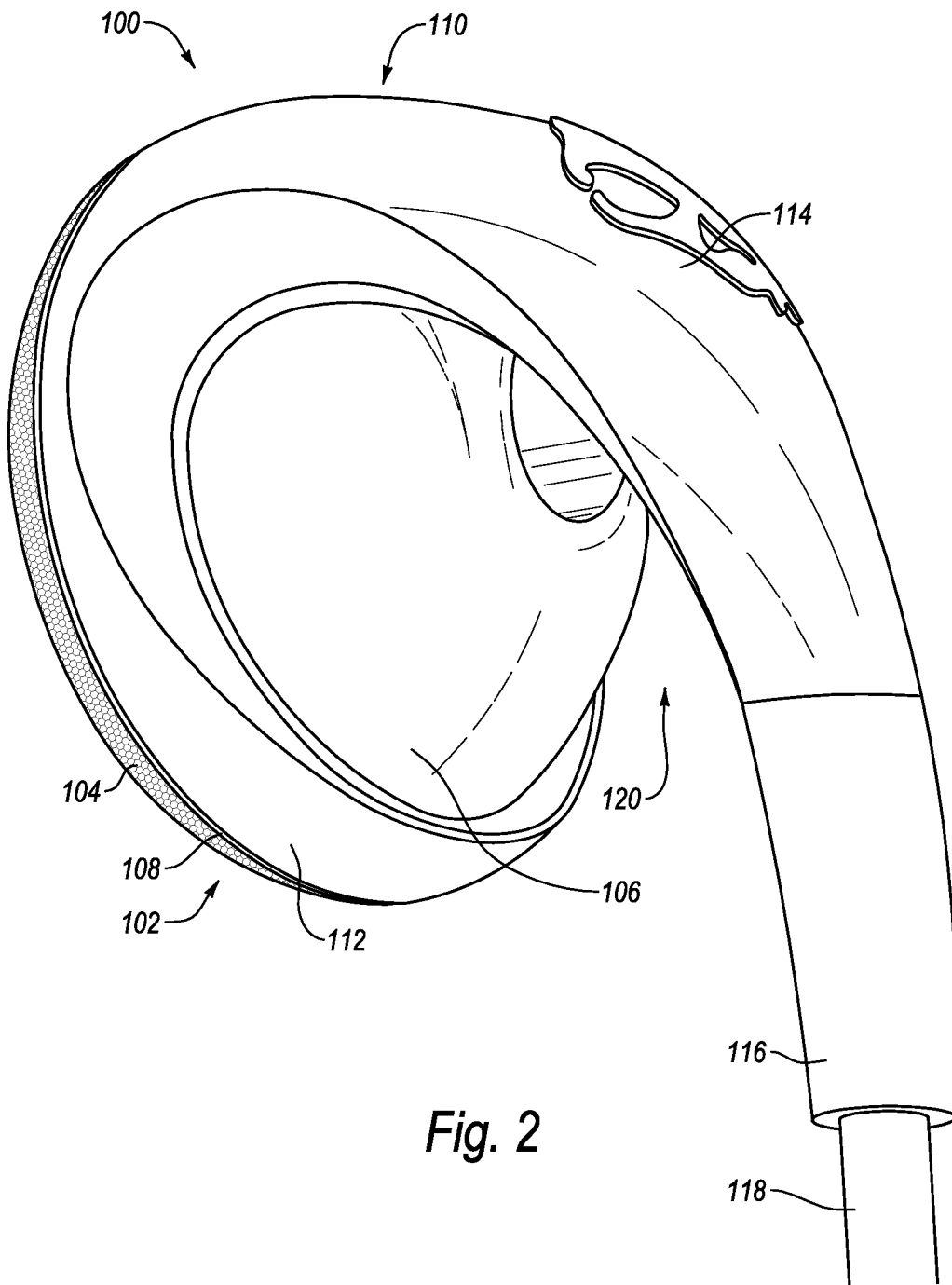


Fig. 2

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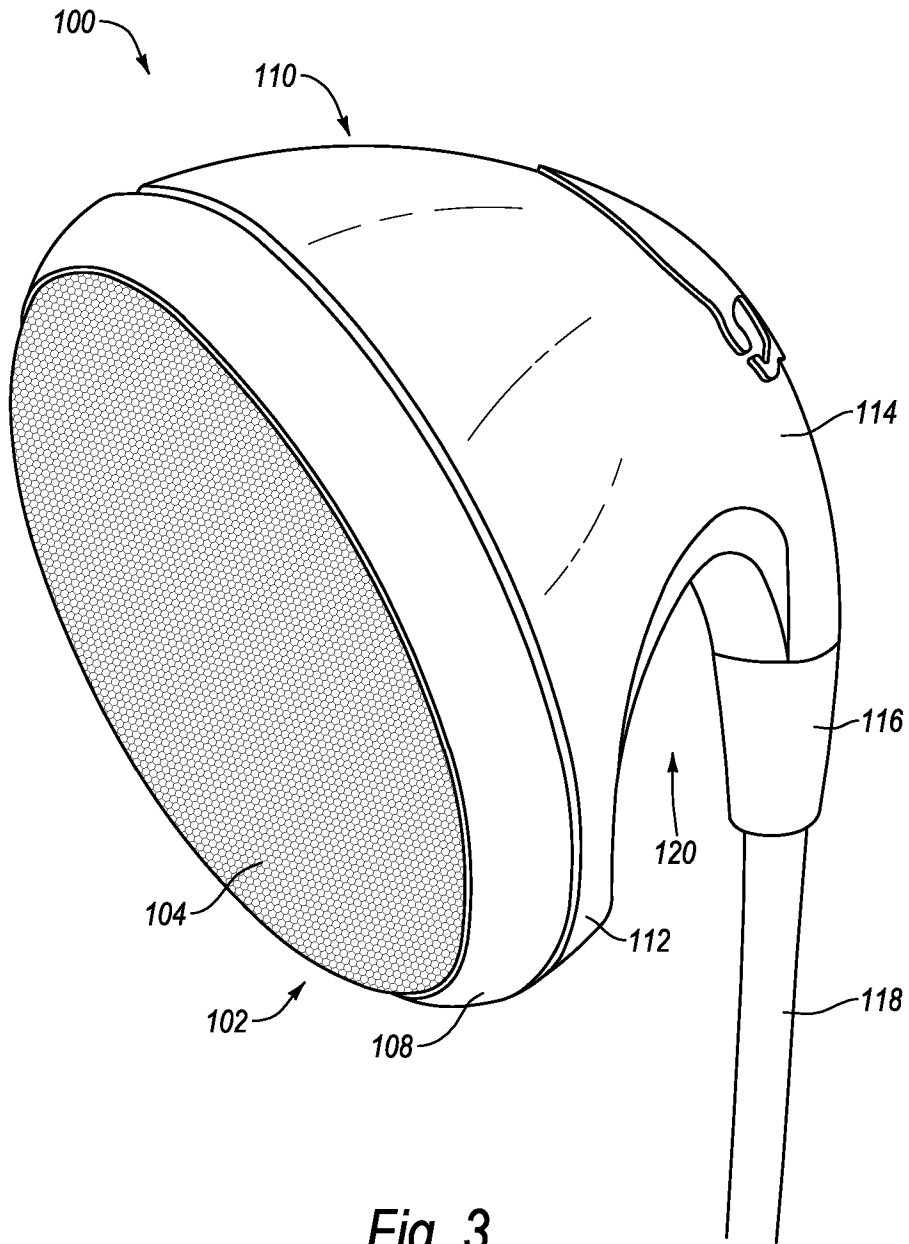


Fig. 3

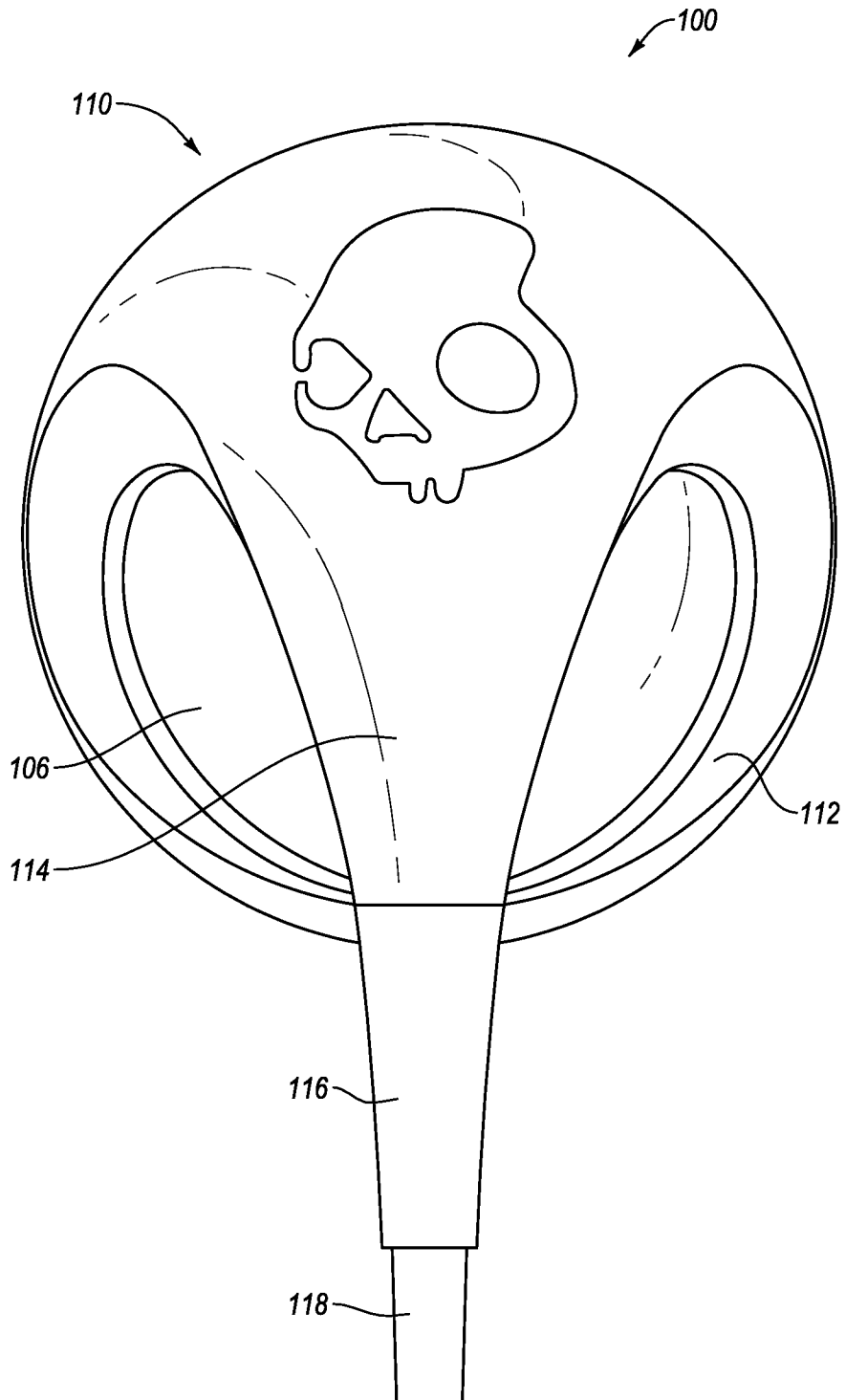


Fig. 4

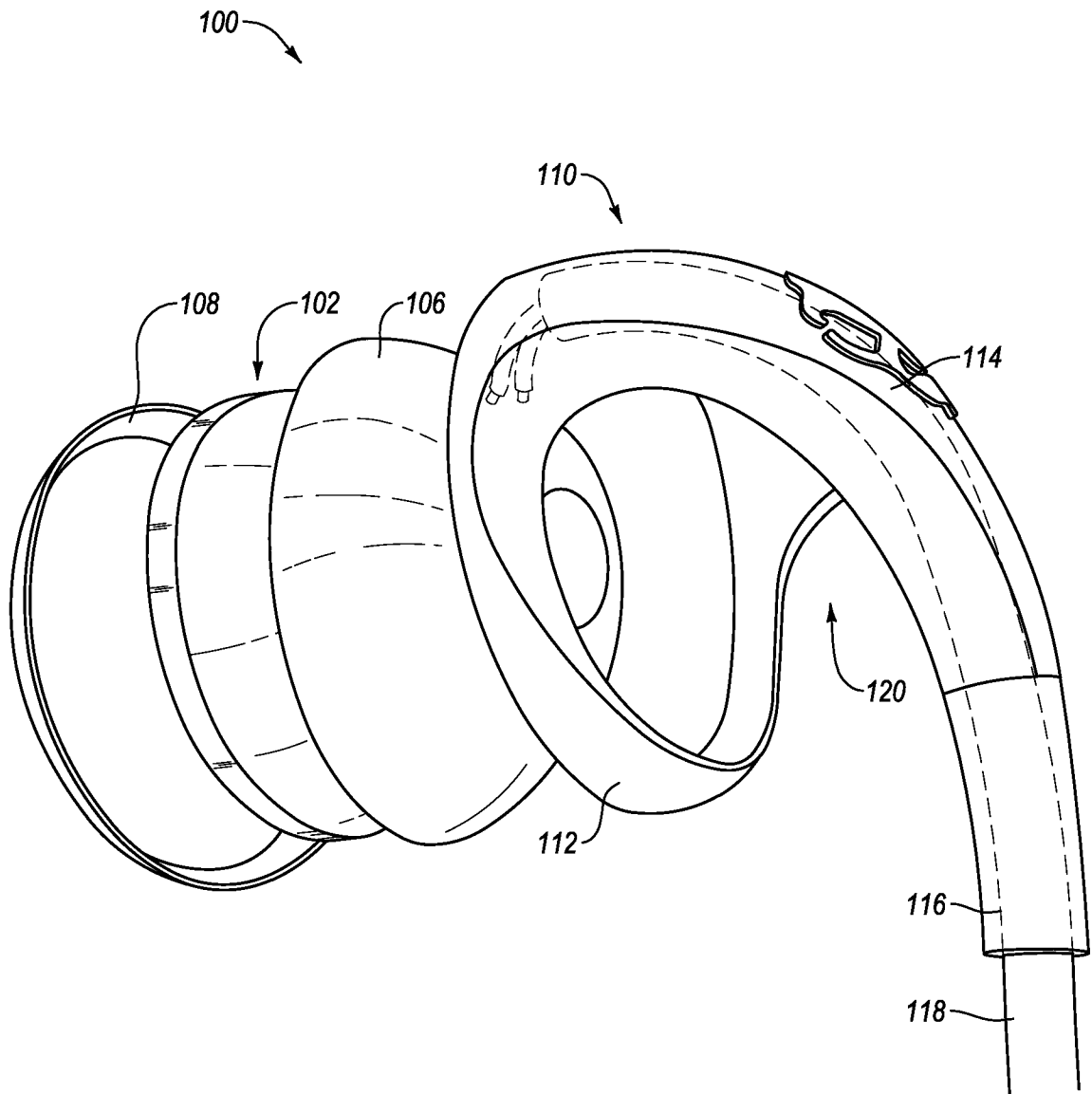


Fig. 5



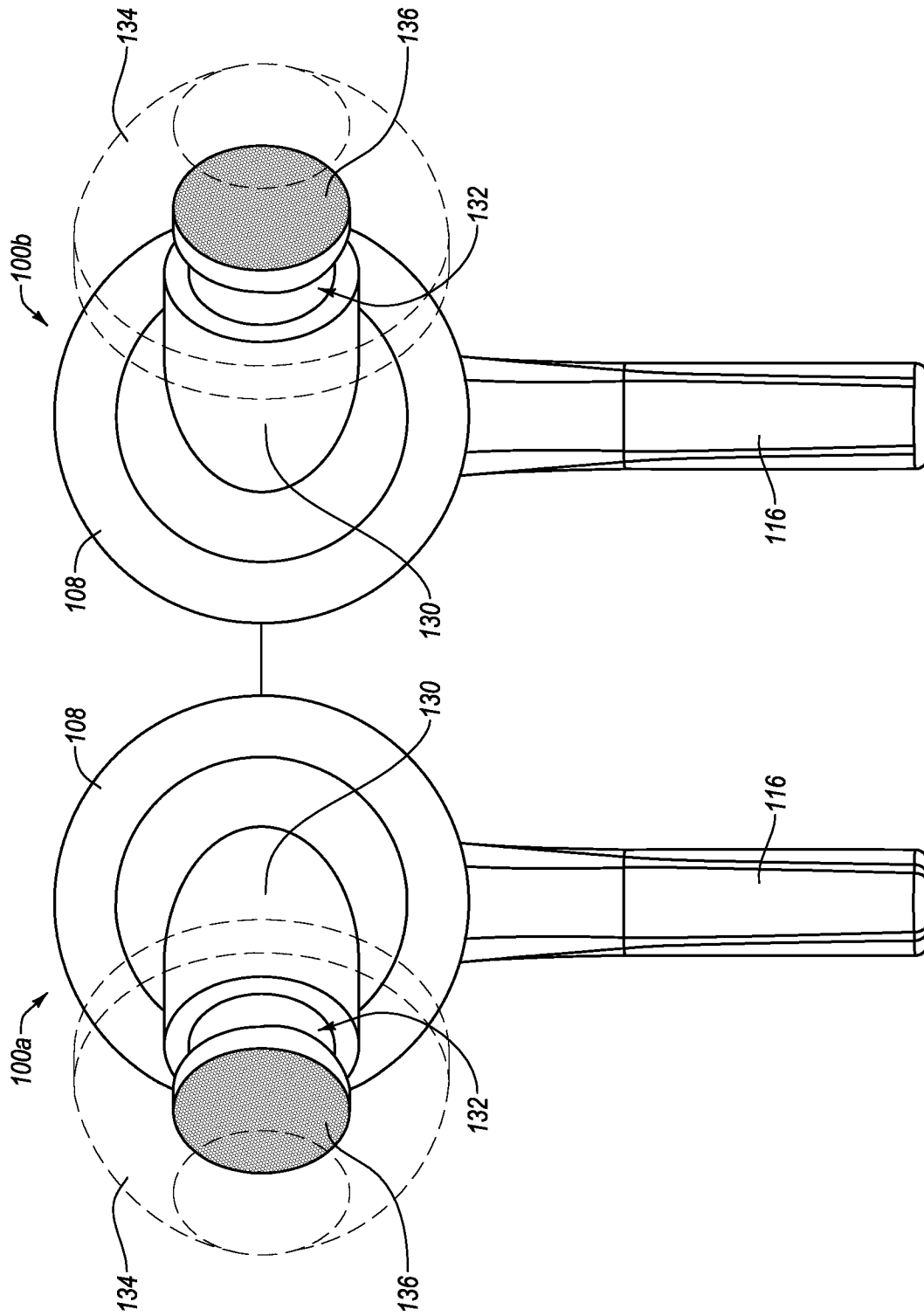


Fig. 6A

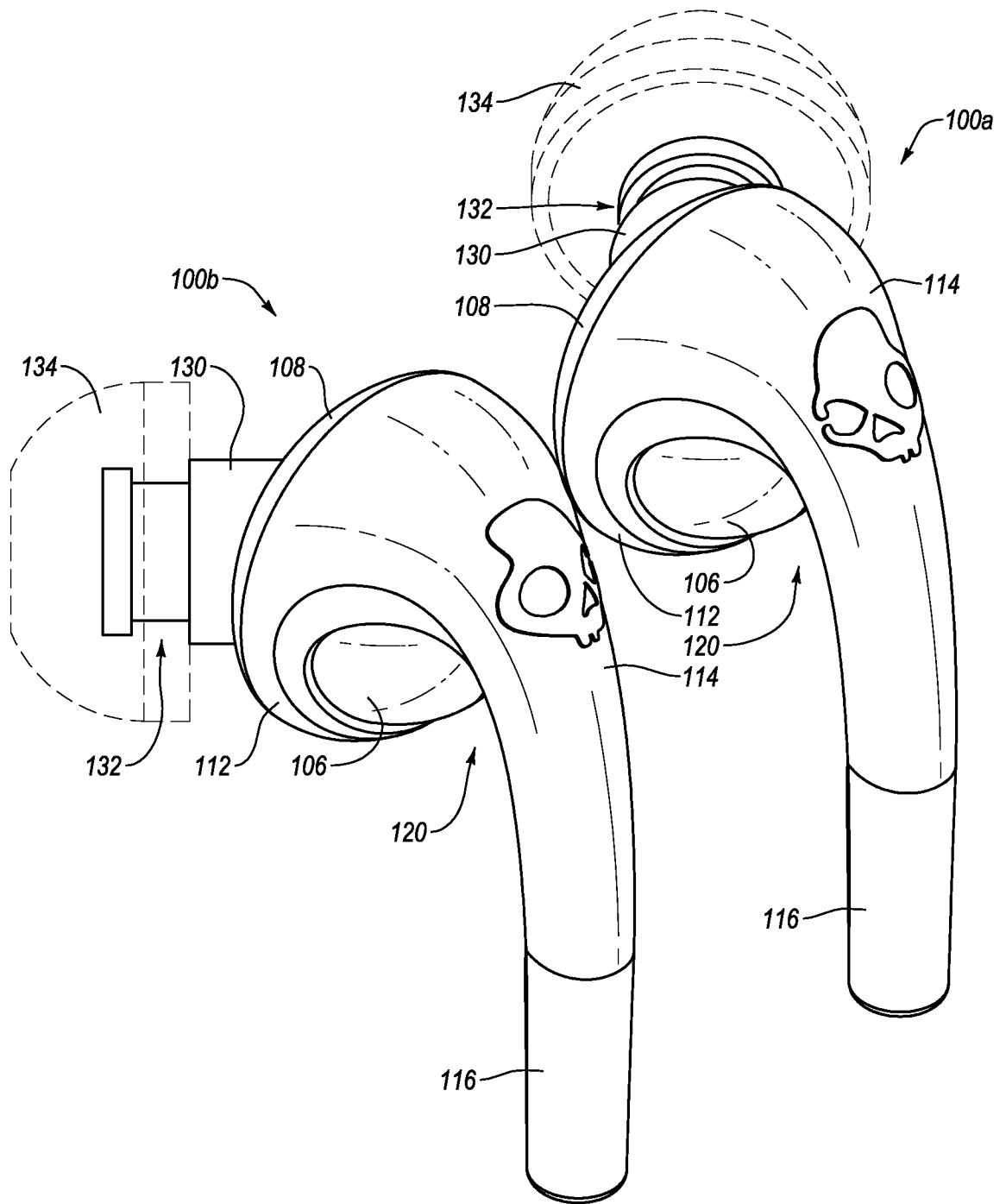


Fig. 6B