Integrated earphone / earbud lobe clip

The earphone/earbud includes a fully integrated hinged clip attachment mechanism that enables secure attachment to the earbud to the user's earlobe. The length, angle and material of the earbud may be changed so as to provide properties that ensure secure attachment of the earbud to the user's earlobe.
Drawings

Integrated Earphone / Earbud Lobe Clip

Figure A  Figure B

Figure C
**Integrated earphone / earbud lobe clip**

This invention relates to an earphone / earbud with fully integrated hinged earlobe clip, hereafter called the ‘earbud lobe clip’ which attaches to the user’s earlobe / lower ear, hereafter called the ‘earlobe’.

When people use earphones / earbuds, hereafter called ‘earbuds’, they find that the earbuds frequently work loose and can often fall out, especially during any significant movement such as exercise. This creates a high level of discomfort and frustration for the user.

Currently earbuds have either have no means of holding them to the user’s ear or they use a means of either a tight fit in the earhole (outer ear canal) or they use an extended arm that rises up and over the top of the ear, often referred to today as a clip. These and other methods of retaining earbuds in place continue to provide a level of discomfort, especially when wearing glasses as well as introducing negative hygiene issues and a significant drop in aesthetic appeal.

To overcome these concerns the present invention proposes a fully integrated audio earbud with a hinged lobe clip that attaches on to the users earlobe thus holding the earbud securely, comfortably and discretely in place.

As a result the integral hinged lobe clip, the earbud secures tightly to the most appropriate comfortable location that being the user’s earlobe. The earlobe contains fewer nerve endings thus not being as sensitive to clips as other parts of the ear. This invention enables the user to move freely without fear of the earbud dropping out of the user’s ear.

The earbud lobe clip is essentially one single component for each ear, each ear requiring either a left or right hand of the earbud lobe clip. The earbud lobe clip can be made of a combination of molded, flexible plastic, metals or any other materials with similar properties.

The earbud lobe clip has two main features:

Firstly, by use of the properties of the hinged attachment mechanism, material with which it is made and the ergonomically designed shape, it can be securely attached to the earlobe or lower ear.

Secondly, because the earbud lobe clip contains standard audio earbud features it is fully compatible with standard audio equipment, such as MP3 players and mobile phones thus providing all the audio functionality of a conventional earbud.

These features together provide a unique and innovative solution to the constant problem of earbuds becoming loose and dropping out of the users ear.
An example of the invention will now be described by referring to the accompanying drawings.

The drawings contain five figures, Figure A, B, C, D and Figure E. Each figure shows a different aspect of the invention.

Figure A shows how the invention 1 will look on the user’s ear 2 when attached using the attachment means 4 to the user’s earlobe 3.

Figure B shows the rear view of the user’s ear 2 which demonstrates the attachment means 4 in the closed position on the user’s earlobe 3.

Figure C shows the earbud lobe clip 1 situated on the user’s ear with the earbud in position and the attachment means 4 shown closed onto the user’s earlobe.

Figures D and E show the invention 1 with the attachment means 4 in the open position on Figure D and the closed position on Figure E.

The angle of the main body 5 of the earbud lobe clip is such that it allows the wearer to retain the typical location of the earbud as they would be without the attachment means whilst the sweeping back and down of the main body provides the maximum attachment efficiency to the earlobe in terms of height and comfort adjustment. 5 is found in Figures A, C, D and E.

The design of the curve of the main body 5 of the earbud lobe clip is such that it may be manufactured from plastic or metal so that it can benefit from the properties of those materials. The main properties of those materials provide a combination of strength and flexibility to the invention. 5 is found in Figures A, C, D and E.

The invention is designed with a curvature for specifically the left or right ear with an “L” or an “R” 6 to indicate the correct ear for the user. 6 is found in Figures D and E.

The attachment means 4 has a bobble 7 on its end which provides further purchase on the user’s earlobe. 7 is found on Figures B, C, D and E.
Claims:

Integrated earphone / earbud lobe clip

This invention relates to an earbud with fully integrated hinged earlobe clip that attaches the earbud to the users earlobe.

1. A one piece audio earbud and lobe clip compromising attachment means which allows the secure attachment of the invention to the user's earlobe.

2. A one piece earbud lobe clip according to claim 1 where the attachment means has a hinge mechanism which is designed to create tension within the hinge mechanism so that the attachment means closes tightly onto the users earlobe.

2. A one piece earbud lobe clip according to claim 1 where the attachment means hinge mechanism is designed to spring open and closed.

4. A one piece earbud lobe clip according to claim 1 where the angle and length of the earbud down to the earlobe attachment means provides strength and tension in the main body to ensure the user can open the earlobe hinged attachment means to position the clip on the earlobe and then push the hinged attachment mechanism back to its closed position such that the attachment means clamps either side of the earlobe to make sure the earbud lobe clip does not come loose.

5. A one piece earbud lobe clip according to claim 1 with a bobble on the end of the earlobe attachment means which provides further purchase on the user's earlobe, the length of stem behind ear allowing for use on different ear types and sizes.
Application No: GB0823643.2  
Claims searched: 1 to 5  
Examiner: Peter Easterfield  
Date of search: 8 April 2009

**Patents Act 1977: Search Report under Section 17**

**Documents considered to be relevant:**

<table>
<thead>
<tr>
<th>Category</th>
<th>Relevant to claims</th>
<th>Identity of document and passage or figure of particular relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>1-5</td>
<td>EP 0758107 A1 (HONDA)</td>
</tr>
<tr>
<td>X</td>
<td>1-5</td>
<td>JP 09298792 A (HARA)</td>
</tr>
<tr>
<td>X</td>
<td>1-5</td>
<td>US 2004/0101151 A1 (WEBBER)</td>
</tr>
<tr>
<td>X</td>
<td>1-5</td>
<td>WO 2007/027467 A2 (RYANN)</td>
</tr>
<tr>
<td>X</td>
<td>1-5</td>
<td>WO 2005/053352 A1 (YANG)</td>
</tr>
<tr>
<td>X</td>
<td>1-5</td>
<td>WO 03/069951 A1 (PLANTRONICS)</td>
</tr>
</tbody>
</table>

Categories:

<table>
<thead>
<tr>
<th>X</th>
<th>Document indicating lack of novelty or inventive step</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>Document indicating lack of inventive step if combined with one or more other documents of same category. &amp;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A</th>
<th>Document indicating technological background and/or state of the art.</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>Document published on or after the declared priority date but before the filing date of this invention.</td>
</tr>
<tr>
<td>E</td>
<td>Patent document published on or after, but with priority date earlier than, the filing date of this application.</td>
</tr>
</tbody>
</table>

**Field of Search:**

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC:

Worldwide search of patent documents classified in the following areas of the IPC:

H04R

The following online and other databases have been used in the preparation of this search report:

WPI, EPODOC

**International Classification:**
<table>
<thead>
<tr>
<th>Subclass</th>
<th>Subgroup</th>
<th>Valid From</th>
</tr>
</thead>
<tbody>
<tr>
<td>H04R</td>
<td>0001/10</td>
<td>01/01/2006</td>
</tr>
</tbody>
</table>