

(12) UK Patent Application (19) GB (11) 2484069 (13) A

(43) Date of A Publication

04.04.2012

(21) Application No: 1015968.9  
(22) Date of Filing: 23.09.2010

(51) INT CL: H04R 5/033 (2006.01) H04R 1/10 (2006.01)

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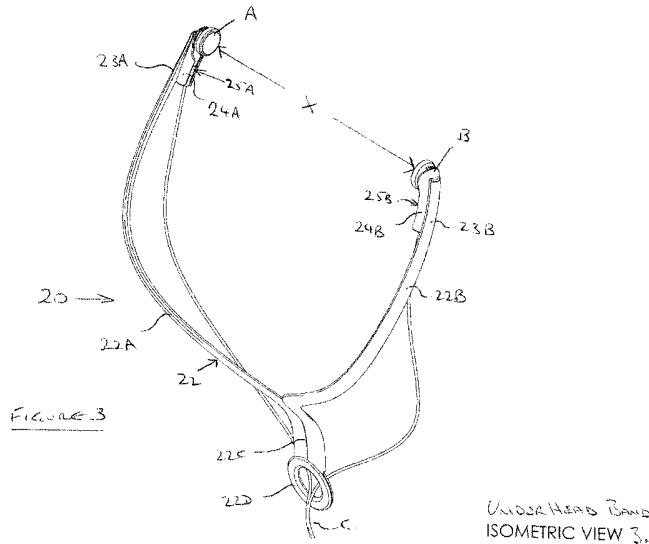
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(58) Field of Search:  
INT CL H04R  
Other: WPI, EPODOC

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(54) Title of the Invention: Support frame for earphones  
Abstract Title: Resilient headband includes releasable means to secure earphones

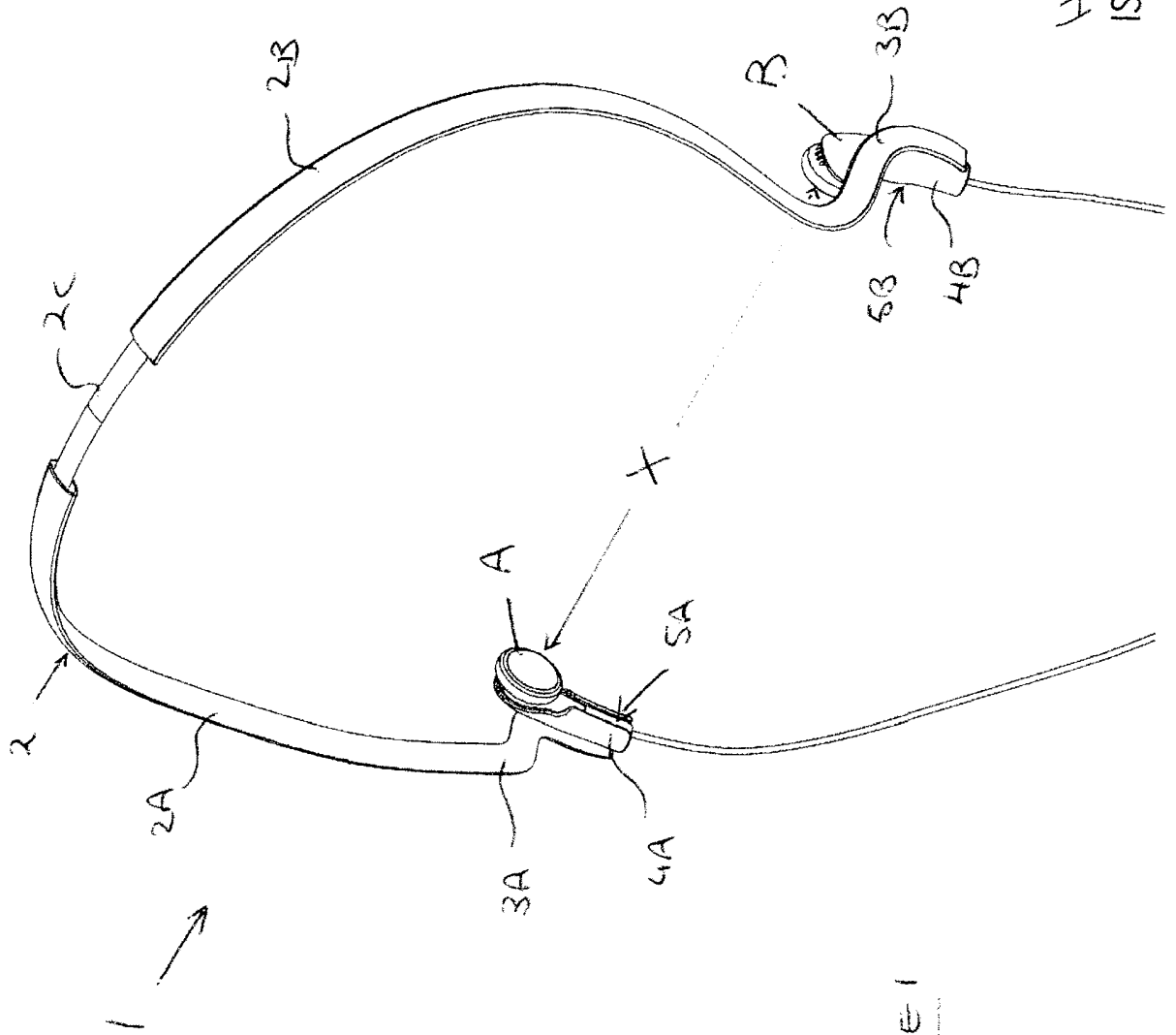
(57) A support frame or headband 1 for earphones A,B comprises a resilient band 22 having first and second opposing ends 23A,23B spaced apart by a distance less than the distance between ears of a person, and releasable means 24A,24B at each of the first and second ends to support an earphone. The releasable means each comprise a slotted sleeve 24A, 25A, 24B, 25B. A guide 22D for the electrical lead C is formed at the centre of the headband. In this embodiment the resilient band is worn under the user's chin, but other embodiments (figs 1 & 2) show the band worn over- or behind-the-head.



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At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date but within the period prescribed by Rule 22(1) of the Patents Rules 2007.



Head Band  
ISOMETRIC VIEW I

FIGURE I

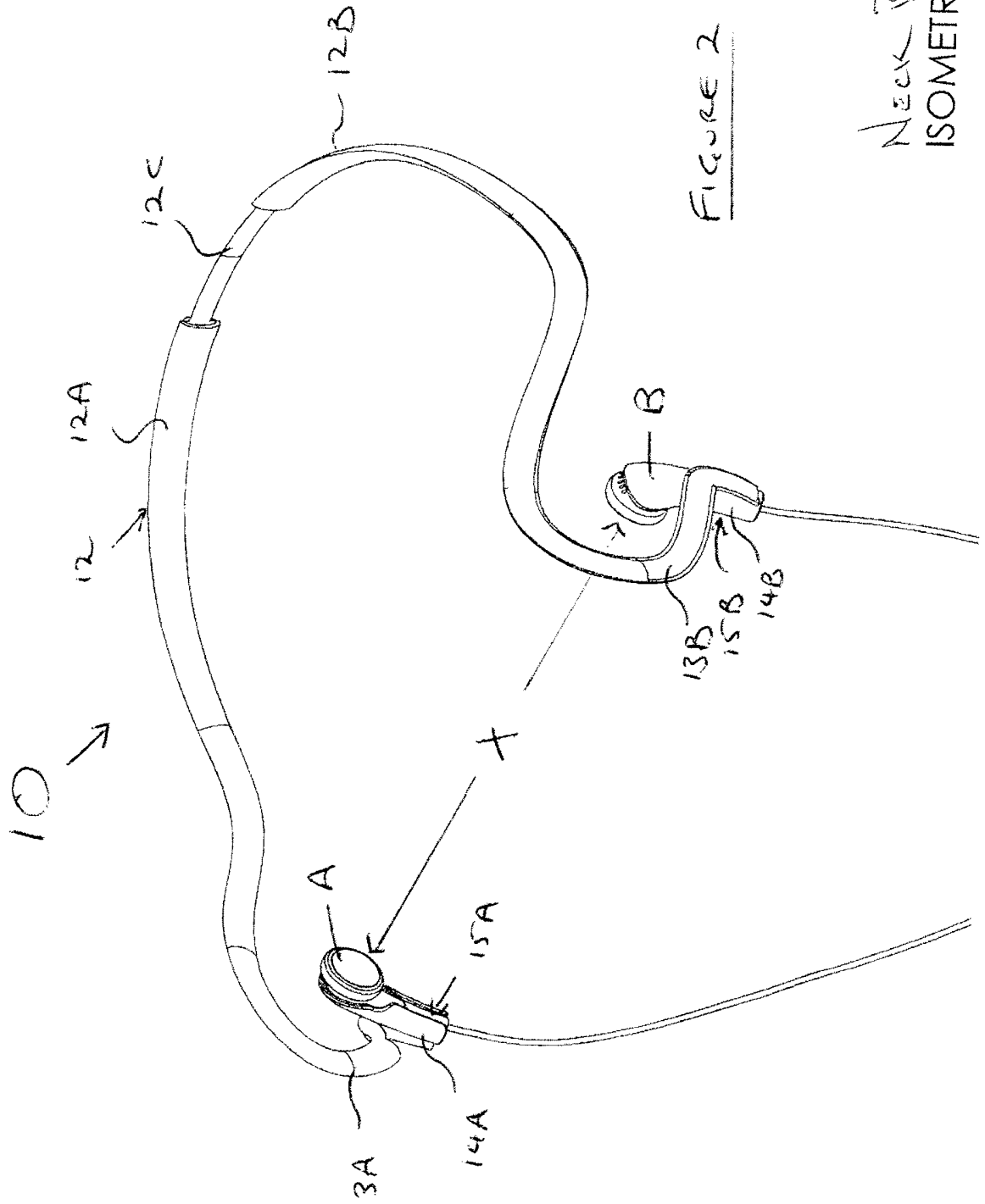


FIGURE 2

NECK BAND  
ISOMETRIC VIEW 2

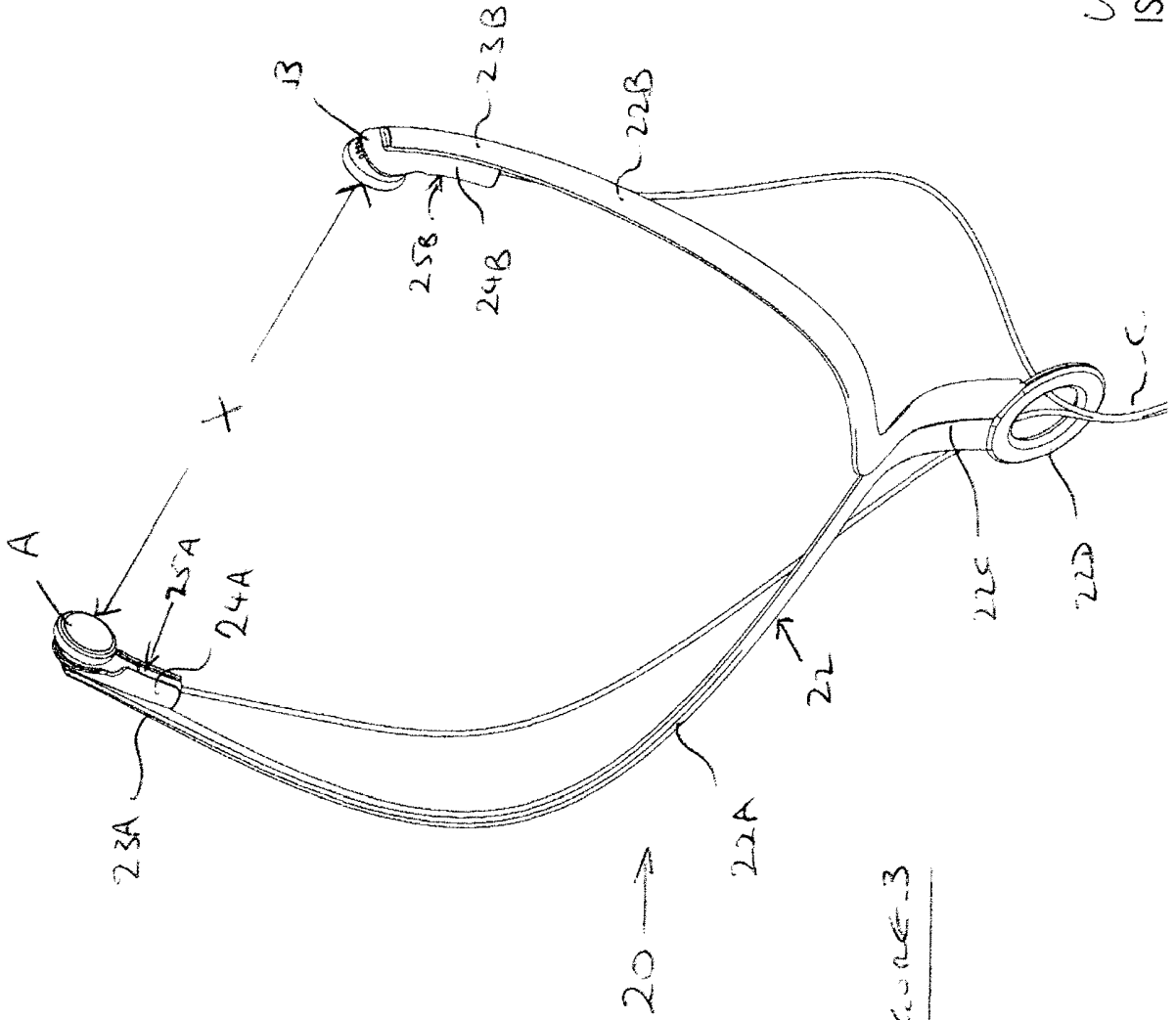


FIGURE 3

UNDERHEAD BAND  
ISOMETRIC VIEW 3.

Title: Support Frame for Earphones

The present invention relates to a support frame for earphones.

Many people use portable music players such as IPODs, MP3 players and the like when participating in a sport, e.g. running or cycling. Such music players include a pair of earphones which can be inserted into the ear. When participating in a sport, the earphones can easily fall out of the ears.

The invention seeks to provide a solution to this problem.

According to the present invention there is provided a support frame for earphones comprising a resilient band having first and second opposing ends spaced apart by a distance less than the distance between ears of person, and releasable securement means at each of the first and second ends to support an earphone.

Preferably the resilient band is generally u-shaped.

Preferably the resilient band is adjustable in length to accommodate different distances between ears of a person.

In one embodiment the resilient band is adapted to pass over the top of a head of a person. Preferably a curve is provided in the band adjacent each first and second end to support the earphones to the rear of the plane of the band whereby the band is forward of ears of a wearer.

In another embodiment the resilient band is adapted to pass around the rear of a head of a person. Preferably a curve is provided in the band adjacent each first and second end to pass between the top of the ear and the head.

In another embodiment the resilient band is adapted to pass under the chin of a person. The U-shaped band may support a projection extending, in use, downward from the centre of the band, said projection supporting a guide for an electrical lead leading to the earphones.

Preferably the releasable securement means at each of the first and second ends is in the form of a sleeve in which the earphone can slide. Preferably the sleeve includes a slot along its length allowing the sleeve to expand as the earphone slides in the sleeve.

Embodiments of the invention will now be described with reference to the accompanying drawings in which:

Figure 1 shows a first embodiment adapted to pass over the top of a head of a person,

Figure 2 shows a second embodiment adapted to pass around the rear of a head of a person,

and

Figure 3 shows a third embodiment adapted to pass under the chin of a person.

Referring to Figure 1 there is shown a support frame 1 for a pair of earphones A and B.

Earphones A and B are of a type well know in the art such as sold with an IPOD (trade mark of Apple).

Support frame 1 has comprising a generally U-shaped resilient band 2 moulded from plastic material. Band 2 is made up from two parts 2A,2B joined by a plate 2C which can slide in and out of the two parts 2A,2B to adjust the length and hence size of the band 2. Band 2 is adapted to pass over the top of the head of a person.

Band 2 has first and second opposing ends 3A,3B spaced apart by a distance "X" less than the distance between ears of person (as adjusted by plate 2C).

Releasable securement means are provided at each of the first and second ends in the form of sleeves 4A,4B in which earphones A and B can slide. Sleeves 4A,4B each include a slot 5A,5B along its length allowing the sleeve to expand as an earphone slides in the sleeve, so gripping the earphone and also allowing an earphone to be removed from a sleeve. Each first and second end 3A,3B is curved to support the earphones to the rear of the plane of the band whereby the band is forward of ears of a wearer.

Referring to Figure 2 there is shown a support frame 10 for a pair of earphones A and B.

Earphones A and B are of a type well know in the art such as sold with an IPOD (trade mark of Apple).

Support frame 10 has comprising a generally U-shaped resilient band 12 moulded from plastic material. Band 12 is made up from two parts 12A,12B joined by a plate 12C which can slide in and out of the two parts 12A,12B to adjust the length and hence size of the band 12. Band 12 is adapted to pass around the rear of a head of a person.

Band 12 has first and second opposing ends 13A,13B spaced apart by a distance "X" less than the distance between ears of person (as adjusted by plate 12C).

Releasable securement means are provided at each of the first and second ends in the form of sleeves 14A,14B in which earphones A and B can slide. Sleeves 14A,14B each include a slot 15A,15B along its length allowing the sleeve to expand as an earphone slides in the sleeve, so gripping the earphone and also allowing an earphone to be removed from a sleeve. Each first and second end 13A,13B is curved to pass between the top of the ear and the head.

Referring to Figure 3 there is shown a support frame 20 for a pair of earphones A and B.

Earphones A and B are of a type well know in the art such as sold with an IPOD (trade mark of Apple).



Support frame 20 has comprising a generally U-shaped resilient band 22 moulded from plastic material. Band 22 is made up from two parts 22A,22B joined at the centre of the band by a projection 22C supporting an annular guide 22D for an electrical lead C leading to the earphones. Band 22 is adapted to pass under the chin of a person.

Band 22 has first and second opposing ends 23A,23B spaced apart by a distance less than the distance "X" between ears of person.

Releasable securement means are provided at each of the first and second ends in the form of sleeves 24A,24B in which earphones A and B can slide. Sleeves 24A,24B each include a slot 25A,25B along its length allowing the sleeve to expand as an earphone slides in the sleeve, so gripping the earphone and also allowing an earphone to be removed from a sleeve.

In use, earphones can be fitted to a band of the type described above. The band can be flexed open and the earphones are biased into the ears of a person by the resilient band. The band keeps the earphones in place in the ears e.g. when playing sport. When not required, the band can be removed and the earphones used without a band.

It is envisaged that the band could be made of any suitable material such as plastics or metal.

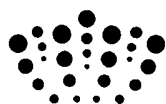
The invention may take a form different to that specifically described above.

Further modifications will be apparent to those skilled in the art without departing from the scope of the present invention.

CLAIMS

1. A support frame for earphones comprising a resilient band having first and second opposing ends spaced apart by a distance less than the distance between ears of person, and releasable securement means at each of the first and second ends to support an earphone.
2. A support frame according to claim 1, wherein the resilient band is generally U-shaped.
3. A support frame according to claim 1 or 2, wherein the resilient band is adjustable in length to accommodate different distances between ears of a person.
4. A support frame according to any preceding claim, wherein the resilient band is adapted to pass over the top of a head of a person.
5. A support frame according to any preceding claim, wherein a curve is provided in the band adjacent each first and second end to support the earphones to the rear of the plane of the band whereby the band is forward of ears of a wearer.
6. A support frame according to any of claims 1 to 3, wherein the resilient band is adapted to pass around the rear of a head of a person.

7. A support frame according to claim 6, wherein a curve is provided in the band adjacent each first and second end to pass between the top of the ear and the head.
8. A support frame according to any of claims 1 to 3, wherein the resilient band is adapted to pass under the chin of a person.
9. A support frame according to claim 8, wherein the U-shaped band supports a projection extending, in use, downward from the centre of the band, said projection supporting a guide for an electrical lead leading to the earphones.
10. A support frame according to any preceding claim, wherein the releasable securement means at each of the first and second ends is in the form of a sleeve in which the earphone can slide.
11. A support frame according to claim 10, wherein the sleeve includes a slot along its length allowing the sleeve to expand as the earphone slides in the sleeve.
12. A support frame for earphones substantially as hereinbefore described with reference to and as shown in the accompanying drawings.



**Application No:** GB1015968.9

**Examiner:** Peter Easterfield

**Claims searched:** 1 to 10

**Date of search:** 27 January 2012

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

**Documents considered to be relevant:**

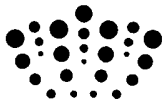
Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X,Y	X: 1,2,4,6,8, 10,11 Y: 7	US 2009/0123016 A1 (RISE) see figs 1-10
X,Y	X: 1-4 Y:7	GB 2397459 A (DATA FOUNTAIN) see fig 5
X,Y	X: 1-4 Y: 7	JP 08047075 A (SONY) see abstract and fig 1
X,Y	X: 1,2,4 Y: 7	GB 2309351 A (CHAN) see figs 1-4
Y	5	US 2007/165899 A1 (GARIN) see fig 5
Y	7	US 2010/0189303 A1 (DANIELSON et al)
Y	7	US 6195441 A (ITO)
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**Categories:**

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

**Field of Search:**

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC<sup>X</sup> :



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:**

<b>Subclass</b>	<b>Subgroup</b>	<b>Valid From</b>
H04R	0005/033	01/01/2006
H04R	0001/10	01/01/2006