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- (74) Agent: SOMERVELL, Thomas; Marks & Clerk LLP, Alpha Tower, Suffolk Street Queensway, Birmingham B1 1TT (GB).
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24 August 2017

(54) Title: ISOLATION DEVICE

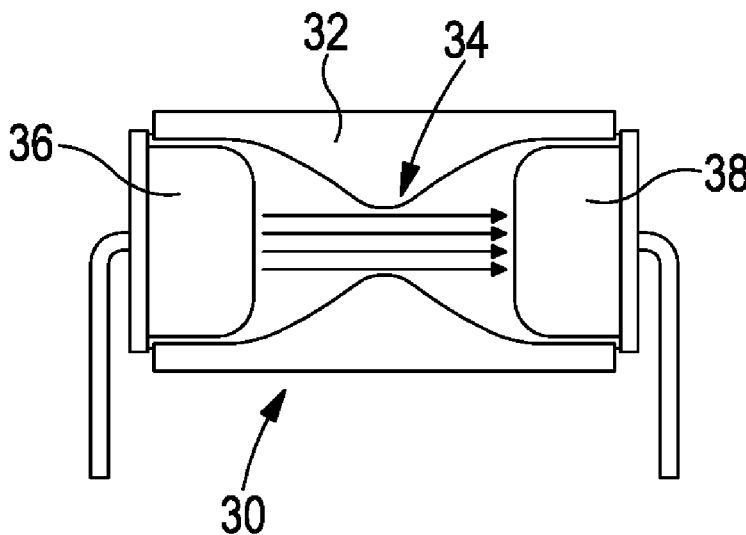


Figure 3a

(57) Abstract: An isolation device comprises a plug (26) to be connected to an audio output of a cell phone (12), in use, an isolation unit (30) electrically connected to a conductor of the plug (26) and, in use, to a conductor of a cable (42), the opposite end of which is connected to a speaker (40) for outputting a sound signal generated, in use, by the cell phone (12), wherein the isolation unit (30) is operable to prevent or restrict the transmission of microwave frequency signals from the cell phone (12) to the cable (42) and speakers (40).

WO 2017/122003 A3

INTERNATIONAL SEARCH REPORT

International application No  
PCT/GB2017/050054

A. CLASSIFICATION OF SUBJECT MATTER  
INV. H04B1/3827 H01L25/16  
ADD.  
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED  
Minimum documentation searched (classification system followed by classification symbols)  
H04B H01L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 399 703 A2 (HEWLETT PACKARD CO [US]) 28 November 1990 (1990-11-28)	1-5,7,8
Y	abstract column 3, line 55 - column 10, line 19 figures 1-8	6
X	US 2005/116145 A1 (AKI MOTONARI [JP] ET AL) 2 June 2005 (2005-06-02)	1-5,7,8
Y	abstract paragraphs [0047] - [0088] figures 1-16	6
X	US 5 296 715 A (KRONBERG JAMES W [US]) 22 March 1994 (1994-03-22)	1-5,7,8
Y	abstract column 3, line 15 - column 6, line 27 figures 1-4	6
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Further documents are listed in the continuation of Box C.

See patent family annex.

\* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search  8 May 2017	Date of mailing of the international search report  11/07/2017
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer  Aquilani, Dario
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INTERNATIONAL SEARCH REPORT

International application No  
PCT/GB2017/050054

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 2009 021333 A (NEC ELECTRONICS CORP) 29 January 2009 (2009-01-29)	1-5,7,8
Y	abstract figures 1-8 -----	6

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/GB2017/050054

## Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
  
2.  As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
  
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-8

### Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-8

Optical isolation unit

Problem: how to physically implement an optical isolation unit

Solution: Optical transmitter and optical receiver are held in a spaced relation by the housing

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2. claims: 9-23

Cell phone with an isolation device

Problem: How to reduce user electromagnetic exposure

Solution: insert an isolation device in the audio channel

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/GB2017/050054

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0399703	A2	28-11-1990	EP 0399703 A2
			JP H036062 A
			US 4980568 A
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US 2005116145	A1	02-06-2005	CN 1622327 A
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JP 2009021333	A	29-01-2009	NONE
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