## CPC COOPERATIVE PATENT CLASSIFICATION

### G PHYSICS

(NOTES omitted)

### **INSTRUMENTS**

## G10 MUSICAL INSTRUMENTS; ACOUSTICS

(NOTES omitted)

# G10K SOUND-PRODUCING DEVICES; METHODS OR DEVICES FOR PROTECTING AGAINST, OR FOR DAMPING, NOISE OR OTHER ACOUSTIC WAVES IN GENERAL; ACOUSTICS NOT OTHERWISE PROVIDED FOR

### NOTES

1. This subclass covers:

per cycle}

- · arrangements for generating mechanical vibrations in fluids;
- the production of sounds which may not be audible to human beings but which are audible to animals.
- 2. In this subclass, the following terms are used with the meanings indicated:
  - "acoustics" and "sound" <u>cover</u> the technical field dealing with mechanical vibrations at all infrasonic -, sonic and ultrasonic frequencies. However, generation or transmission of mechanical waves, in general, is covered by subclass <u>B06B</u>, subject to the exception specified in Note (1) above.

#### WARNING

{In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.}

1/00	Devices in which sound is produced by striking a resonating body, e.g. bells, chimes or gongs (multitoned musical instruments <u>G10D 13/08</u> ; automatic carillons <u>G10F 1/10</u> )	1/345 1/347 1/348	<ul> <li> {electrically operated}</li> <li> {for an oscillating bell which is driven twice per cycle}</li> <li> {electrically operated}</li> </ul>
1/06	<ul> <li>the resonating devices having the shape of a bell, plate, rod, or tube (bells for towers G10K 1/28)</li> </ul>	1/36 1/38	<ul><li> Means for silencing or damping</li><li> Supports; Mountings</li></ul>
1/062 1/063 1/064	<ul> <li>electrically operated</li> <li>the sounding member being a bell</li> <li>Operating or striking mechanisms therefor</li> </ul>	3/00	Rattles or like noise-producing devices {, e.g. door-knockers}
1/0645 1/065	<ul><li> {provided with loudness adjustment}</li><li> for timed or repeated operation</li></ul>	<b>5/00</b> 5/02	Whistles Ultrasonic whistles
1/066 1/067 1/068 1/07	<ul> <li>the sounding member being a tube, plate or rod</li> <li>Operating or striking mechanisms therefor</li> <li>hydraulically operated; pneumatically operated</li> <li>mechanically operated; Hand bells; Bells for animals</li> </ul>	<b>7/00</b> 7/005 7/02	<ul> <li>Sirens</li> <li>{Ultrasonic sirens}</li> <li>in which the sound-producing member is rotated manually or by a motor (G10K 7/06 takes</li> </ul>
1/071 1/072 1/074 1/076	<ul> <li> Hand bells; Bells for animals</li> <li> Operating or striking mechanisms therefor</li> <li> with rotary clappers or shells</li> <li> for timed or repeated operation</li> </ul>	7/04 7/06	<ul> <li>precedence)</li> <li>by an electric motor</li> <li>in which the sound-producing member is driven by a fluid, e.g. by a compressed gas</li> </ul>
1/08 1/10 1/26	<ul> <li>Details or accessories of general applicability</li> <li>Sounding members; Mounting thereof; Clappers or other strikers</li> <li>Mountings; Casings</li> </ul>	9/00	Devices in which sound is produced by vibrating a diaphragm or analogous element, e.g. fog horns, vehicle hooters or buzzers (loudspeakers or like acoustic electromechanical transducers HO4R)
1/28 1/30	Bells for towers or the like     Details or accessories	9/02 9/04	<ul><li>driven by gas; e.g. suction operated</li><li>by compressed gases, e.g. compressed air</li></ul>
1/32 1/34	<ul> <li>. Details of accessories</li> <li> Sounding members; Clappers or other strikers</li> <li> Operating mechanisms</li> </ul>	9/06 9/08	produced by detonation     driven by water or other liquids
1/341 1/342 1/344	<ul> <li> (for a still-standing bell)</li> <li> (electrically operated)</li> <li> (for an oscillating bell which is driven once</li> </ul>	9/10	driven by mechanical means only

CPC - 2024.01

9/12	electrically operated	11/161 • • {in systems with fluid flow (G10K 11/162 takes precedured; one flow silencers or exhaust
	<u>NOTE</u>	takes precedence; gas flow silencers or exhaust
		apparatus for machines or engines in general
	This group does not cover the construction of,	or for internal combustion engine <u>F01N</u> , noise
	or circuits for, broadband-transducers such as	absorbers in pipes or pipe systems <u>F16L 55/02</u> ;
	loudspeakers or microphones, which are covered	noise absorption in air conditioning and
	by subclass <u>H04R</u> .	ventilation <u>F24F 13/24</u> ; silencing exhaust or
		propulsion jets in aircraft <u>B64D 33/06</u> )}
9/121	• • {Flextensional transducers}	11/162 • • Selection of materials
9/122	• using piezoelectric driving means {(G10K 9/121)	11/165 Particles in a matrix
	takes precedence)}	11/168 Plural layers of different materials, e.g.
9/125	with a plurality of active elements	sandwiches
9/128	using magnetostrictive driving means	sandwiches
	$\{(G10K 9/121 \text{ takes precedence})\}$	<u>NOTE</u>
9/13	using electromagnetic driving means	When classifying in this group,
<i>71</i> 10		classification is also made in subclass
	<u>NOTE</u>	B32B, in so far as any layered product is
	see provisionally also G10K 9/12	concerned.
	gov provisionally also great y 12	concerned.
9/15	Self-interrupting arrangements	11/172 using resonance effects
9/16	with means for generating current by muscle	11/175 using interference effects; Masking sound
	power	11/1/5 using interference effects, ividsking sound
9/18	• Details, e.g. bulbs, pumps, pistons, switches or	<u>NOTES</u>
<i>71</i> 10	casings	1. Sound/noise masking, classified in
9/20	Sounding members	G10K 11/1752 - G10K 11/1754,
9/22		2. Acoustic noise cancellation, classified in
9/22	Mountings; Casings	G10K 11/178
11/00	Methods or devices for transmitting, conducting or	<u>G10K 11/1/8</u>
	directing sound in general; Methods or devices for	11/1752 {Masking}
	protecting against, or for damping, noise or other	11/1754 {Speech masking}
	acoustic waves in general	11/178 by electro-acoustically regenerating the original
11/002	• {Devices for damping, suppressing, obstructing	acoustic waves in anti-phase
	or conducting sound in acoustic devices	
	( <u>G10K 1/06</u> - <u>G10K 1/10</u> take precedence; for	<u>NOTE</u>
	electro-mechanical transducers for communication	{When classifying in any of the groups
	H04R 3/002)}	G10K 11/1781 - G10K 11/17861,
11/004	• {Mounting transducers, e.g. provided with	classification is also made in at least one
11/001	mechanical moving or orienting device	subgroup of G10K 11/1787.}
	(mountings specially adapted to a particular	subgroup of <u>store in the form</u>
	sound-producing device, see the preceding	11/1781 {characterised by the analysis of input or
	groups <u>G10K 1/00</u> - <u>G10K 9/00</u> , e.g. <u>G10K 1/26</u> ,	output signals, e.g. frequency range, modes,
	G10K 1/28, G10K 9/22; arrangements of sonic	transfer functions}
	watch equipment on submarines <u>B63G 8/39</u> ; buoys	11/17813 {characterised by the analysis of the
	B63B 22/00)}	acoustic paths, e.g. estimating, calibrating
11/006	Transducer mounting in underwater equipment,	or testing of transfer functions or cross-
11/000	e.g. sonobuoys}	terms}
11/000		11/17815 {between the reference signals and the
11/008	• • • {Arrays of transducers (seismic streamers, see	error signals, i.e. primary path}
11/02	<u>G01V 1/20</u> )}	11/17817 {between the output signals and the
11/02	Mechanical acoustic impedances; Impedance	error signals, i.e. secondary path}
	matching, e.g. by horns; Acoustic resonators	11/17819 {between the output signals and the
11/025	• • {horns for impedance matching (see provisionally	reference signals, e.g. to prevent
	also <u>G10K 11/28</u> )}	
11/04	<ul><li>Acoustic filters {; Acoustic resonators}</li></ul>	howling}
11/08	<ul> <li>Non-electric sound-amplifying devices, e.g.</li> </ul>	11/17821 {characterised by the analysis of the input
	non-electric megaphones (amplifying by horns	signals only}
	<u>G10K 11/02</u> ; amplifying by focusing <u>G10K 11/26</u> )	11/17823 {Reference signals, e.g. ambient
11/16	<ul> <li>Methods or devices for protecting against, or for</li> </ul>	acoustic environment}
	damping, noise or other acoustic waves in general	11/17825 {Error signals}
	(G10K 11/36 takes precedence)	11/17827 {Desired external signals, e.g. pass-
		through audio such as music or speech}
	NOTE	11/1783 {handling or detecting of non-standard
	This group does not cover protecting against,	events or conditions, e.g. changing operating
	or damping of, acoustic waves adapted for	modes under specific operating conditions}
	particular applications, which are covered by the	11/17833 {by using a self-diagnostic function or
	subclasses for these applications, provided that	a malfunction prevention function, e.g.
	there is a specific provision for this aspect.	detecting abnormal output levels}

CPC - 2024.01 2

signal, e.g. recorded with a microphone?  11/17883 {the reference signal being derived from a machine operating condition, e.g. engine RPM or vehicle speed}  11/17885 {additionally using a desired external signal, e.g. pass-through audio such as music or speech}  NOTE  sound {(modifying acoustic properties to change reverberation time G10K 11/002)}  using time-delay networks comprising electromechanical or electro-acoustic devices  using electronic time-delay networks  Details of methods or devices for transmitting, conducting or directing sound in general	1/1837
environment, e.g. speech or alarm signals that the user needs to hear}  11/1785	environment, e.g. speech or alarm signals that the user needs to hear}  11/36  11/36  11/36  Devices for manipulating acoustic surface waves (electro-acoustic amplifiers H03F 13/00; networks comprising electro-acoustic elements H03H 9/00)  (1785)  (1785)  (1786)  (1786)  (1787)
that the user needs to hear}  (Methods, e.g. algorithms; Devices (G10K 11/1781, G10K 11/1783 take precedence)}  11/17853	that the user needs to hear}  (lectro-acoustic amplifiers H03F 13/00; networks comprising electro-acoustic elements H03H 9/00)  (location of the filter)  (location of the like, for emitting or receiving sound in general (for electromechanical transducers H04R 7/00)  (location of the filter)  (location of the like, for emitting or receiving sound in general (for electromechanical transducers H04R 7/00)  (location of the like, for emitting or receiving sound in general (for electromechanical transducers H04R 7/00)  (location of the filter)  (location of the like, for emitting or receiving sound in general (for electromechanical transducers H04R 7/00)  (location of the filter)  (location
11/1785   Methods, e.g. algorithms; Devices (G10K 11/1781, G10K 11/1783 take precedence)   13/00   Cones, diaphragms, or the like, for emitting or receiving sound in general (for electromechanical transducers H04R 7/00)   11/17854   { (the filter being an adaptive filter}   15/00   15/00   Acoustics not otherwise provided for requirements   15/00   MOTE   15/00   Acoustics not otherwise provided for requirements   15/00   MOTE   15/00   Acoustics not otherwise provided for   Synthesis of acoustic waves (synthesis of speech G10L 13/00)   NOTE   Sound-producing devices (G10K 15/02 takes precedence)   15/04   Sound-producing devices (G10K 15/02 takes precedence)   15/04   Sound-producing devices (G10K 15/046, G10K 15/06 take precedence)   15/04   Sound-producing shock waves (G10K 15/046, G10K 15/06 take precedence)   15/04   Sound-producing shock waves (G10K 15/046, G10K 15/06 take precedence)   15/04   Sound-producing shock waves (G10K 15/046, G10K 15/06 take precedence)   15/04   Sound-producing shock waves (G10K 15/046, G10K 15/06 take precedence)   15/04   Sound-producing shock waves (G10K 15/046, G10K 15/06 take precedence)   15/04   Sound-producing shock waves (G10K 15/046, G10K 15/06 take precedence)   15/04   Sound-producing shock waves (G10K 15/046, G10K 15/06 take precedence)   15/04   Sound-producing shock waves (G10K 15/046, G10K 15/06 take precedence)   15/04   Sound-producing shock waves (G10K 15/046, G10K 15/06 take precedence)   15/04   Sound-producing shock waves (G10K 15/046, G10K 15/06 take precedence)   15/04   Sound-producing shock waves (G10K 15/046, G10K 15/06 take precedence)   15/04   Sound-producing shock waves (G10K 15/046, G10K 15/06 take precedence)   15/04   Sound-producing shock waves (G10K 15/046, G10K 15	/1785 {Methods, e.g. algorithms; Devices (G10K 11/1781, G10K 11/1783 take precedence)} /17853 {of the filter} /17854 {the filter being an adaptive filter} /17855 {for improving speed or power requirements} /17857 {Geometric disposition, e.g. placement of microphones} /17861 {using additional means for damping sound, e.g. using sound absorbing panels} /17873 {General system configurations} /17875 {using a reference signal without an error signal, e.g. pure feedforward} /17875 {using an error signal without a reference signal, e.g. pure feedback} /17879 {using both a reference signal and an error signal} /17879 {using both a reference signal and an error signal} /17879 {using both a reference signal and an error signal} /17879 {using both a reference signal and an error signal} /17879 {using both a reference signal and an error signal} /17879 {using both a reference signal and an error signal} /17879 {using both a reference signal and an error signal} /17879 {using both a reference signal and an error signal} /17879 {using both a reference signal and an error signal} /17879 {using both a reference signal and an error signal} /17879 {using both a reference signal and an error signal} /17879 {using optical excitation, e.g. laser bundle}
11/1785   Giok 11/1781, Giok 11/1783 take precedence)   13/00   Cones, diaphragms, or the like, for emitting or receiving sound in general (for electromechanical transducers Ho4R 7/00)   11/17854   { the filter being an adaptive filter}   15/00   Acoustics not otherwise provided for requirements}   15/00   Acoustics not otherwise provided for requirements}   11/17857   { Geometric disposition, e.g. placement of microphones}   11/17861   { using additional means for damping sound, e.g. using sound absorbing panels}   11/1787   { General system configurations}   11/17873   { using a reference signal without an error signal, e.g. pure feedback}   11/17875   { using an error signal without a reference signal, e.g. pure feedback}   11/17881   { the reference signal being an acoustic signal, e.g. recorded with a microphone}   11/17881   { the reference signal being an acoustic signal, e.g. pass-through audio such as music or speech}   15/12   using electronic time Giok 11/202}   using electronic time delay networks   15/12   using electronic time-delay networks   15/12	(G10K 11/1781, G10K 11/1783 take precedence)}  (17853 { of the filter }  (17854 { the filter being an adaptive filter }  (17855 { for improving speed or power requirements }  (17857 { Geometric disposition, e.g. placement of microphones }  (17861 { using additional means for damping sound, e.g. using sound absorbing panels }  (1787 { General system configurations }  (1787 { Gusing a reference signal without an error signal, e.g. pure feedforward }  (1787 { using a reference signal without a reference signal and an error signal without a ref
11/17853	13/00   Cones, diaphragms, or the like, for emitting or receiving sound in general (for electromechanical transducers H04R 7/00)
11/17853 {of the filter} 11/17854 {the filter being an adaptive filter} 11/17855 {for improving speed or power requirements} 11/17857 {Geometric disposition, e.g. placement of microphones} 11/17861 {using additional means for damping sound, e.g. using sound absorbing panels} 11/1787 {General system configurations} 11/1787 {using a reference signal without an error signal, e.g. pure feedforward} 11/1787 {using a reference signal without a reference signal, e.g. pure feedback} 11/1787 {using both a reference signal and an error signal} 11/17881 {the reference signal being an acoustic signal, e.g. recorded with a microphone} 11/17883 {the reference signal being derived from a machine operating condition, e.g. engine RPM or vehicle speed} 11/17885 {additionally using a desired external signal, e.g. pass-through audio such as music or speech}  NOTE  receiving sound in general (for electromechanical transducers H04R 7/00)  Acoustics not otherwise provided for Synthesis of speech G10L 13/00)  NOTE  Sound-producing devices (G10K 15/02 takes precedence)  15/04 Sound-producing devices (G10K 15/02 takes precedence)  15/04 (producing shock waves (G10K 15/046. G10K 15/06 take precedence; generating seismic energy G01V 1/02)}  11/17881 {the reference signal being an acoustic signal, e.g. recorded with a microphone} 11/17883 {the reference signal being derived from a machine operating condition, e.g. engine RPM or vehicle speed}  15/05 using electric discharge  15/10 . using electric discharge  15/10 . using time-delay networks comprising electromechanical or electro-acoustic devices  15/12 . using electronic time-delay networks  Details of methods or devices for transmitting, conducting or directing sound in general	/17853 {of the filter}  /17854 {the filter being an adaptive filter}  /17855 {for improving speed or power requirements}  /17857 {Geometric disposition, e.g. placement of microphones}  /17861 {using additional means for damping sound, e.g. using sound absorbing panels}  /17873 {General system configurations}  /17875 {using a reference signal without an error signal, e.g. pure feedback}  /17879 {using both a reference signal and an error signal}  /17879 {using both a reference signal and an error signal}  /17879 {using both a reference signal and an error signal}  /17870 {using both a reference signal and an error signal}  /17871 {using both a reference signal and an error signal}  /17872 {using both a reference signal and an error signal}  /17873 {using both a reference signal and an error signal}  /17874 {using both a reference signal and an error signal}  /17875 {using optical excitation, e.g. laser bundle}  /17876 {using optical excitation, e.g. laser bundle}
11/17854 { (for improving speed or power requirements}	transducers H04R 7/00)  transducers H04R 7/00)  transducers H04R 7/00)  transducers H04R 7/00)  Acoustics not otherwise provided for requirements}  15/00 Synthesis of acoustic waves (synthesis of speech G10L 13/00)  NOTE  (General system configurations) (17873 {General system configurations} (17875 {using a reference signal without an error signal, e.g. pure feedforward} (17875 {using an error signal without a reference signal, e.g. pure feedback}  (17879 {using both a reference signal and an error signal}  15/04 {producing shock waves (G10K 15/046, G10K 15/06 take precedence; generating seismic energy G01V 1/02)}  15/046 {using optical excitation, e.g. laser bundle}
11/17855 {for improving speed or power requirements} 15/00	15/00 Acoustics not otherwise provided for requirements} 15/02 Synthesis of acoustic waves (synthesis of speech G10L 13/00)  NOTE  15/04 See provisionally G10H e.g. G10H 1/26  Sound-producing devices (G10K 15/02 takes precedence)  15/04 Sound-producing shock waves (G10K 15/046, G10K 15/06 take precedence; generating seismic energy G01V 1/02)}  15/04 Lusing optical excitation, e.g. laser bundle}
requirements}  15/02 . Synthesis of acoustic waves (synthesis of speech G10L 13/00)  11/17861 {Geometric disposition, e.g. placement of microphones}  11/17861 {using additional means for damping sound, e.g. using sound absorbing panels}  11/1787 {General system configurations}  11/1787 {using a reference signal without an error signal, e.g. pure feedforward}  11/1787 {using a reference signal without an error signal, e.g. pure feedforward}  11/1787 {using a reference signal without a reference signal, e.g. pure feedback}  11/1788 {using both a reference signal and an error signal}  11/1788 {the reference signal being an acoustic signal, e.g. recorded with a microphone}  11/1788 {the reference signal being derived from a machine operating condition, e.g. engine RPM or vehicle speed}  11/1788 {additionally using a desired external signal, e.g. pass-through audio such as music or speech}  NOTE  11/1788 {additionally using a desired external signal, e.g. pass-through audio such as music or speech}  NOTE  11/1788 {additionally using a desired external signal, e.g. pass-through audio such as music or speech}  NOTE  11/1788 {additionally using a desired external signal, e.g. pass-through audio such as music or speech}  NOTE  11/1788 {additionally using a desired external signal, e.g. pass-through audio such as music or speech}  11/1788 {additionally using a desired external signal, e.g. pass-through audio such as music or speech}  11/1788	requirements}  15/02  Synthesis of acoustic waves (synthesis of speech G10L 13/00)  NOTE  See provisionally G10H e.g. G10H 1/26  Sound-producing devices (G10K 15/02 takes precedence)  Sound-producing shock waves (G10K 15/046, G10K 15/046 take precedence; generating seismic energy G01V 1/02)  (synthesis of acoustic waves (synthesis of speech G10L 13/00)  NOTE  See provisionally G10H e.g. G10H 1/26  Sound-producing devices (G10K 15/02 takes precedence)  Sound-producing shock waves (G10K 15/046, G10K 15/046, G10K 15/046 take precedence; generating seismic energy G01V 1/02)  Synthesis of acoustic waves (synthesis of speech G10L 13/00)  NOTE  Sound-producing devices (G10K 15/02 takes precedence)  Sound-producing devices (G10K 15/046, G10K 15/046, G10K 15/046 take precedence; generating seismic energy G01V 1/02)  Sound-producing devices (G10K 15/046, G10K 15/046 take precedence; generating seismic energy G01V 1/02)  Sound-producing devices (G10K 15/046, G10K 15/046 take precedence; generating seismic energy G01V 1/02)  Sound-producing devices (G10K 15/046, G10K 15/046, G10K 15/046 take precedence; generating seismic energy G01V 1/02)  Sound-producing devices (G10K 15/046, G10K 15/046, G10
11/17857	/17857 {Geometric disposition, e.g. placement of microphones} /17861 {using additional means for damping sound, e.g. using sound absorbing panels} /1787 {General system configurations} /1787 {using a reference signal without an error signal, e.g. pure feedforward} /17875 {using an error signal without a reference signal, e.g. pure feedback} /17879 {using both a reference signal and an error signal} /17879 {using both a reference signal and an error signal} /17879 {using both a reference signal and an error signal} /17879 {using both a reference signal and an error signal} /17879 {using both a reference signal and an error signal} /17879 {using both a reference signal and an error signal} /17879 {using both a reference signal and an error signal} /17879 {using optical excitation, e.g. laser bundle}
microphones }  11/17861 {using additional means for damping sound, e.g. using sound absorbing panels}  11/1787 {General system configurations} 11/17873 {using a reference signal without an error signal, e.g. pure feedforward} 11/17875 {using an error signal without a reference signal, e.g. pure feedback} 11/17879 {using both a reference signal and an error signal} 11/17881 {the reference signal being an acoustic signal, e.g. recorded with a microphone} 11/17883 {the reference signal being derived from a machine operating condition, e.g. engine RPM or vehicle speed} 11/17885 {additionally using a desired external signal, e.g. pass-through audio such as music or speech}  NOTE  NOTE  NOTE  NOTE  NOTE  NOTE  NOTE	microphones   NOTE
11/17861 {using additional means for damping sound, e.g. using sound absorbing panels}  11/1787 {General system configurations} 11/17873 {using a reference signal without an error signal, e.g. pure feedforward}  11/17875 {using an error signal without a reference signal, e.g. pure feedback}  11/17879 {using both a reference signal and an error signal}  11/17881 {the reference signal being an acoustic signal, e.g. recorded with a microphone}  11/17883 {the reference signal being derived from a machine operating condition, e.g. engine RPM or vehicle speed}  11/17885 {additionally using a desired external signal, e.g. pass-through audio such as music or speech}  NOTE  Sound-producing devices (G10K 15/02 takes precedence)  15/04 . {producing shock waves (G10K 15/046, G10K 15/06 take precedence; generating seismic energy G01V 1/02)}  15/04 {using optical excitation, e.g. laser bundle}  15/06 . using electric discharge  15/08 . Arrangements for producing a reverberation or echo sound {(modifying acoustic properties to change reverberation time G10K 11/002)}  15/10 . using time-delay networks comprising electromechanical or electro-acoustic devices  15/12 . using electronic time-delay networks  Details of methods or devices for transmitting, conducting or directing sound in general	NOTE   See provisionally G10H e.g. G10H 1/26   See provisionally G10H e.g. G10H 1/26
sound, e.g. using sound absorbing panels}  11/1787	sound, e.g. using sound absorbing panels}  See provisionally G10H e.g. G10H 1/26  Sound-producing devices (G10K 15/02 takes precedence)  Sound-producing devices (G10K 15/046, G10K 15/046, G10K 15/046, G10K 15/046, G10K 15/06 take precedence; generating seismic energy G01V 1/02)}  Sound-producing devices (G10K 15/02 takes precedence)  Sound-producing devices (G10K 15/046, G10K 15/046, G1
11/17873 {General system configurations} 11/17873 {using a reference signal without an error signal, e.g. pure feedforward} 11/17875 {using an error signal without a reference signal, e.g. pure feedback} 11/17879 {using both a reference signal and an error signal} 11/17881 {the reference signal being an acoustic signal, e.g. recorded with a microphone} 11/17883 {the reference signal being derived from a machine operating condition, e.g. engine RPM or vehicle speed} 11/17885 {additionally using a desired external signal, e.g. pass-through audio such as music or speech}  NOTE  15/04 . Sound-producing devices (G10K 15/02 takes precedence) 15/045 {producing shock waves (G10K 15/046, G10K 15/06 take precedence; generating seismic energy G01V 1/02)} 15/046 . {using optical excitation, e.g. laser bundle} 15/080 . Arrangements for producing a reverberation or echo sound {(modifying acoustic properties to change reverberation time G10K 11/002)} 15/101 . using time-delay networks comprising electromechanical or electro-acoustic devices 15/102 . using electronic time-delay networks  15/103 Details of methods or devices for transmitting, conducting or directing sound in general	<ul> <li>(1787 {General system configurations}</li> <li>(17873 {using a reference signal without an error signal, e.g. pure feedforward}</li> <li>(17875 {using an error signal without a reference signal, e.g. pure feedback}</li> <li>(17879 {using both a reference signal and an error signal}</li> <li>(17879 {using both a reference signal and an error signal}</li> <li>(17879 {using both a reference signal and an error signal}</li> <li>(17879 {using both a reference signal and an error signal}</li> <li>(17879 {using both a reference signal and an error signal}</li> <li>(17870 {using optical excitation, e.g. laser bundle}</li> </ul>
11/17873 {using a reference signal without an error signal, e.g. pure feedforward}  11/17875 {using an error signal without a reference signal, e.g. pure feedback}  11/17879 {using both a reference signal and an error signal}  11/17881 {the reference signal being an acoustic signal, e.g. recorded with a microphone}  11/17883 {the reference signal being derived from a machine operating condition, e.g. engine RPM or vehicle speed}  11/17885 {additionally using a desired external signal, e.g. pass-through audio such as music or speech}  NOTE  11/17875 {using a reference signal without an error signal without a reference signal being an acoustic energy GolV 1/02)}  15/046	17873 {using a reference signal without an error signal, e.g. pure feedforward}  15/04 {using a reference signal without an error signal, e.g. pure feedforward}  15/04 {using an error signal without a reference signal, e.g. pure feedback}  15/04 {using both a reference signal and an error signal}  15/04 {using both a reference signal and an error signal}  15/04 {using both a reference signal and an error signal}  15/04 {using optical excitation, e.g. laser bundle}
signal, e.g. pure feedforward}  11/17875 {using an error signal without a reference signal, e.g. pure feedback}  11/17879 {using both a reference signal and an error signal}  11/17881 {the reference signal being an acoustic signal, e.g. recorded with a microphone}  11/17883 {the reference signal being derived from a machine operating condition, e.g. engine RPM or vehicle speed}  11/17885 {additionally using a desired external signal, e.g. pass-through audio such as music or speech}  NOTE  15/043 {producing shock waves (G10K 15/046, G10K 15/06 take precedence; generating seismic energy G01V 1/02)}  . {using electric discharge  . Arrangements for producing a reverberation or echosound {(modifying acoustic properties to change reverberation time G10K 11/002)}  . using time-delay networks comprising electromechanical or electro-acoustic devices  . using electronic time-delay networks  Details of methods or devices for transmitting, conducting or directing sound in general	signal, e.g. pure feedforward}  /17875 {using an error signal without a reference signal, e.g. pure feedback}  15/043 {using both a reference signal and an error signal}  15/045 {using both a reference signal and an error signal}  15/046 {using both a reference signal and an error signal}  15/046 {using optical excitation, e.g. laser bundle}
11/17875 {using an error signal without a reference signal, e.g. pure feedback}  11/17879 {using both a reference signal and an error signal}  11/17881 {the reference signal being an acoustic signal, e.g. recorded with a microphone}  11/17883 {the reference signal being derived from a machine operating condition, e.g. engine RPM or vehicle speed}  11/17885 {additionally using a desired external signal, e.g. pass-through audio such as music or speech}  NOTE  15/046 {producing shock waves (G10K 15/046). G10K 15/06 take precedence; generating seismic energy G01V 1/02)}  {using optical excitation, e.g. laser bundle}  using electric discharge  . Arrangements for producing a reverberation or echo sound {(modifying acoustic properties to change reverberation time G10K 11/002)}  . using time-delay networks comprising electromechanical or electro-acoustic devices  . using electronic time-delay networks  15/12 . using electronic time-delay networks  Details of methods or devices for transmitting, conducting or directing sound in general	/17875 {using an error signal without a reference signal, e.g. pure feedback}  /17879 {using both a reference signal and an error signal}  15/043 {producing shock waves (G10K 15/046, G10K 15/06 take precedence; generating seismic energy G01V 1/02)}  15/046 {using optical excitation, e.g. laser bundle}
signal, e.g. pure feedback}  11/17879 {using both a reference signal and an error signal}  11/17881 {the reference signal being an acoustic signal, e.g. recorded with a microphone}  11/17883 {the reference signal being derived from a machine operating condition, e.g. engine RPM or vehicle speed}  11/17885 {additionally using a desired external signal, e.g. pass-through audio such as music or speech}  NOTE  Standard Reference; generating seismic energy G01V 1/02)}  15/046 {using optical excitation, e.g. using electric discharge  15/08	signal, e.g. pure feedback}  (17879 {using both a reference signal and an error signal}  (1879 {using both a reference signal and an error signal}  (1879 {using optical excitation, e.g. laser bundle}
11/17879 { using both a reference signal and an error signal }  11/17881 { the reference signal being an acoustic signal, e.g. recorded with a microphone }  11/17883 { the reference signal being derived from a machine operating condition, e.g. engine RPM or vehicle speed }  11/17885 { additionally using a desired external signal, e.g. pass-through audio such as music or speech }  NOTE  15/046 {using optical excitation, e.g. laser bundle }  15/08 {using electric discharge }  15/08 Arrangements for producing a reverberation or echo sound {(modifying acoustic properties to change reverberation time G10K 11/002)}  15/10 using time-delay networks comprising electromechanical or electro-acoustic devices }  15/12 using electric discharge  15/08	/17879 · · · · · { using both a reference signal and an error signal }  15/046 · · · · { using optical excitation, e.g. laser bundle }
11/17881 {the reference signal being an acoustic signal, e.g. recorded with a microphone}  11/17883 {the reference signal being derived from a machine operating condition, e.g. engine RPM or vehicle speed}  11/17885 {additionally using a desired external signal, e.g. pass-through audio such as music or speech}  NOTE  15/06  15/06  15/08  Arrangements for producing a reverberation or echosound {(modifying acoustic properties to change reverberation time G10K 11/002)}  using time-delay networks comprising electromechanical or electro-acoustic devices  15/12  using electric discharge  Arrangements for producing a reverberation or echosound {(modifying acoustic properties to change reverberation time G10K 11/002)}  . using time-delay networks comprising electromechanical or electro-acoustic devices  15/12  . using electric discharge  Details of methods or devices for transmitting, conducting or directing sound in general	signal si
11/17881 {the reference signal being an acoustic signal, e.g. recorded with a microphone}  11/17883 {the reference signal being derived from a machine operating condition, e.g. engine RPM or vehicle speed}  11/17885 {additionally using a desired external signal, e.g. pass-through audio such as music or speech}  NOTE  15/08 using electric discharge  Arrangements for producing a reverberation or echosound {(modifying acoustic properties to change reverberation time G10K 11/002)}  . using time-delay networks comprising electromechanical or electro-acoustic devices  15/12 . using electric discharge  Arrangements for producing a reverberation or echosound {(modifying acoustic properties to change reverberation time G10K 11/002)}  . using electric discharge  Arrangements for producing a reverberation or echosound {(modifying acoustic properties to change reverberation time G10K 11/002)}  . using time-delay networks comprising electromechanical or electro-acoustic devices  15/12 . using electric discharge  Arrangements for producing a reverberation or echosound {(modifying acoustic properties to change reverberation time G10K 11/002)}  . using electric discharge	
signal, e.g. recorded with a microphone signal, e.g. recorded with a microphone sound {(modifying acoustic properties to change reverberation time G10K 11/002)}  11/17885 {additionally using a desired external signal, e.g. pass-through audio such as music or speech}  NOTE  15/08  Arrangements for producing a reverberation or echo sound {(modifying acoustic properties to change reverberation time G10K 11/002)}  . using time-delay networks comprising electromechanical or electro-acoustic devices  . using electronic time-delay networks  Details of methods or devices for transmitting, conducting or directing sound in general	15/06 using alactric discharge
11/17883 {the reference signal being derived from a machine operating condition, e.g. engine RPM or vehicle speed}  11/17885 {additionally using a desired external signal, e.g. pass-through audio such as music or speech}  NOTE  15/10 sound {(modifying acoustic properties to change reverberation time G10K 11/002)}  . using time-delay networks comprising electromechanical or electro-acoustic devices  . using electronic time-delay networks  Details of methods or devices for transmitting, conducting or directing sound in general	signal e.g. recorded with a microphone. 15/08 • Arrangements for producing a reverberation or echo
a machine operating condition, e.g. engine RPM or vehicle speed}  11/17885 {additionally using a desired external signal, e.g. pass-through audio such as music or speech}  NOTE  15/10 using time-delay networks comprising electromechanical or electro-acoustic devices using electronic time-delay networks  15/12 using electronic time-delay networks  Details of methods or devices for transmitting, conducting or directing sound in general	/17883
engine RPM or vehicle speed}  11/17885 {additionally using a desired external signal, e.g. pass-through audio such as music or speech}  NOTE  15/10 using time-delay networks comprising electromechanical or electro-acoustic devices using electronic time-delay networks  15/12 using time-delay networks comprising electromechanical or electro-acoustic devices  . using electromechanical or electro-acoustic devices  Details of methods or devices for transmitting, conducting or directing sound in general	a machine operating condition, e.g. reverberation time <u>G10K 11/002</u> )}
11/17885 {additionally using a desired external signal, e.g. pass-through audio such as music or speech}  NOTE  additionally using a desired external signal, e.g. pass-through audio such as music or speech}  2200/00  Details of methods or devices for transmitting, conducting or directing sound in general	engine RPM or vehicle speed 15/10 . using time-delay networks comprising
signal, e.g. pass-through audio such as music or speech}  NOTE  15/12  . using electronic time-delay networks  Details of methods or devices for transmitting, conducting or directing sound in general	/17885 {additionally using a desired external electromechanical or electro-acoustic devices
music or speech 2200/00 Details of methods or devices for transmitting, conducting or directing sound in general	
NOTE Details of methods or devices for transmitting, conducting or directing sound in general	music or speech)
	2000/10
(when classifying in this group,	(which classifying in this group,
classification is also made in the	classification is also made in the
1	other appropriate groups under
<u>G10K 11/1787.</u> } waves underwater	<u>G10K 11/1/87.</u> }
11/18 . Methods or devices for transmitting, conducting 2210/00 Details of active noise control [ANC] covered by	
or directing sound (G10K 11/02, G10K 11/36 take G10K 11/178 but not provided for in any of its	or directing sound (G10K 11/02, G10K 11/36 take G10K 11/178 but not provided for in any of its
precedence) subgroups	
	r/
procedures)	/20 . Reflecting arrangements (G10K 11/28 takes 2210/10 . Applications
11/205 • • (10) under water use)	2210/10 . Reflecting arrangements (G10K 11/28 takes precedence) 2210/10 . Applications . One dimensional
11/22 for conducting sound through hollow pipes, e.g. 2210/103 Three dimensional	2210/10  Reflecting arrangements (G10K 11/28 takes precedence)  2210/10  Applications  One dimensional
11/22 V V Tot conducting sound into agni nono v pipes, e.g.	. Reflecting arrangements (G10K 11/28 takes precedence)  2210/10  Applications  One dimensional  2210/10  Two dimensional
speaking tubes 2210/104 . Aircos	. Reflecting arrangements (G10K 11/28 takes precedence)  2210/10  2210/10  2210/10  2210/10  2210/102  Two dimensional  2210/103  Three dimensional
speaking tubes 2210/104 . Aircos 11/24 . for conducting sound through solid bodies, e.g. 2210/105 . Appliances, e.g. washing machines or	<ul> <li>Reflecting arrangements (G10K 11/28 takes precedence)</li> <li>(205</li></ul>
speaking tubes 2210/104 • Aircos 11/24 • for conducting sound through solid bodies, e.g. wires 2210/105 • Appliances, e.g. washing machines or dishwashers	. Reflecting arrangements (G10K 11/28 takes precedence)  2210/10  . One dimensional  2210/102  . Two dimensional  2210/103  . Three dimensional  2210/104  . Applications  2210/109  . Two dimensional  2210/100  . Three dimensional  2210/104  . Applications  2210/100  . Two dimensional  2210/103  . Three dimensional  2210/104  . Applications  2210/100  . Two dimensional  2210/103  . Three dimensional  2210/104  . Applications  2210/100  . Two dimensional  2210/103  . Applications
speaking tubes 2210/104 • Aircos  11/24 • for conducting sound through solid bodies, e.g. 2210/105 • Appliances, e.g. washing machines or	<ul> <li>Reflecting arrangements (G10K 11/28 takes precedence)</li> <li>(205) {for underwater use}</li> <li>(22) for conducting sound through hollow pipes, e.g. speaking tubes</li> <li>(24) for conducting sound through solid bodies, e.g. wires</li> <li>(25) (Applications point in the precedence)</li> <li>(26) (Two dimensional point in the precedence)</li> <li>(210/102) Two dimensional point in the precedence precedence</li> <li>(210/103) . Three dimensional point in the precedence precedence precedence</li> <li>(210/104) . Applications procedence precedence precedence</li> <li>(210/105) . Two dimensional point in the precedence precedence</li></ul>
speaking tubes 2210/104 • Aircos 11/24 • for conducting sound through solid bodies, e.g. wires 2210/105 • Appliances, e.g. washing machines or dishwashers	<ul> <li>Reflecting arrangements (G10K 11/28 takes precedence)</li> <li>(205 {for underwater use}</li> <li>(210/102 . Two dimensional)</li> <li>(22 . for conducting sound through hollow pipes, e.g. speaking tubes</li> <li>(24 . for conducting sound through solid bodies, e.g. wires</li> <li>(25 . Sound-focusing or directing, e.g. scanning)</li> <li>(210/101 . Applications)</li> <li>(210/102 . Two dimensional)</li> <li>(210/103 . Three dimensional)</li> <li>(210/104 . Aircos)</li> <li>(210/105 . Appliances, e.g. washing machines or dishwashers)</li> <li>(26 . Sound-focusing or directing, e.g. scanning)</li> <li>(210/1051 . Camcorder)</li> </ul>
speaking tubes 2210/104 . Aircos 11/24 . for conducting sound through solid bodies, e.g. wires 2210/105 . Appliances, e.g. washing machines or dishwashers 11/26 . Sound-focusing or directing, e.g. scanning 2210/1051 . Camcorder	<ul> <li>Reflecting arrangements (G10K 11/28 takes precedence)</li> <li>(205 {for underwater use}</li> <li>(210/102 . Two dimensional)</li> <li>(2210/103 . Three dimensional)</li> <li>(2210/104 . Applications)</li> <li>(2210/105 . Two dimensional)</li> <li>(210/107 . Three dimensional)</li> <li>(210/108 . Aircos)</li> <li>(210/109 . Applications)</li> <li>(210/109 . Two dimensional)</li> <li>(210/109 . Applications)</li> <li>(210/109 . Two dimensional)</li> <li>(210/109 . Applications)</li> <li>(210/109 . Two dimensional)</li> <li>(210/109 . Aircos)</li> <li>(210/109 . Applications)</li> <li>(210/109 . Two dimensional)</li> <li>(210/109 . Aircos)</li> <li>(210/109 . Applications)</li> <li>(210/109 . Two dimensional)</li> <li>(210/109 . Aircos)</li> <li>(210/109 . Applications)</li> <li>(210/109 . Two dimensional)</li> <li>(210/109 . Aircos)</li> <li>(210/109 . Applications)</li> <li>(210/109 . Two dimensional)</li> <li>(210/109 . Aircos)</li> <li>(210/109 . Applications)</li> <li>(210/109 . Two dimensional)</li> <li>(210/109 . Aircos)</li> <li>(2</li></ul>
speaking tubes  11/24  • for conducting sound through solid bodies, e.g. wires  11/26  • Sound-focusing or directing, e.g. scanning  11/28  • using reflection, e.g. parabolic reflectors  11/30  • characterised by the shape of the source  2210/105  • Appliances, e.g. washing machines or dishwashers  2210/1051  • Camcorder  2210/1052  • Copiers or other image-forming apparatus, e.g. laser printer  2210/1053  • Hi-fi, i.e. anything involving music, radios or	. Reflecting arrangements (G10K 11/28 takes precedence)  2210/101 . One dimensional  2210/102 . Two dimensional  2210/103 . Three dimensional  2210/104 . Aircos  2210/105 . Applications  2210/100 . One dimensional  2210/102 . Two dimensional  2210/103 . Three dimensional  2210/104 . Aircos  2210/105 . Appliances, e.g. washing machines or dishwashers  2210/105 . Camcorder  2210/105 . Copiers or other image-forming apparatus, e.g. laser printer  2210/105 . Copiers or other image-forming apparatus, e.g. laser printer  2210/105 . Hi-fi, i.e. anything involving music, radios or
speaking tubes  11/24  • for conducting sound through solid bodies, e.g. wires  11/26  • Sound-focusing or directing, e.g. scanning  11/28  • using reflection, e.g. parabolic reflectors  11/30  • characterised by the shape of the source  11/34  • using electrical steering of transducer arrays,  2210/105  • Appliances, e.g. washing machines or dishwashers  2210/1051  • Camcorder  2210/1052  • Copiers or other image-forming apparatus, e.g. laser printer  2210/1053  • Hi-fi, i.e. anything involving music, radios or loudspeakers	. Reflecting arrangements (G10K 11/28 takes precedence)  2210/10  . One dimensional  2210/102  . Two dimensional  2210/103  . Three dimensional  2210/104  . Aircos  2210/105  . Applications  2210/100  . Two dimensional  2210/103  . Three dimensional  2210/104  . Aircos  2210/105  . Appliances, e.g. washing machines or dishwashers  2210/105  . Camcorder  2210/1051  . Camcorder  2210/1052  . Copiers or other image-forming apparatus, e.g. laser printer  2210/1053  . Hi-fi, i.e. anything involving music, radios or loudspeakers
speaking tubes  11/24  • for conducting sound through solid bodies, e.g. wires  11/26  • Sound-focusing or directing, e.g. scanning  11/28  • using reflection, e.g. parabolic reflectors  11/30  • characterised by the shape of the source  2210/1051  • Appliances, e.g. washing machines or dishwashers  2210/1051  • Camcorder  2210/1052  • Copiers or other image-forming apparatus, e.g. laser printer  2210/1053  • Hi-fi, i.e. anything involving music, radios or	. Reflecting arrangements (G10K 11/28 takes precedence)  205 {for underwater use}  210/10 . One dimensional  2210/102 . Two dimensional  2210/103 . Three dimensional  2210/104 . Aircos  2210/105 . Appliances, e.g. washing machines or dishwashers  2210/105 . Camcorder  2210/105 . Copiers or other image-forming apparatus, e.g. laser printer  2210/105 . Hi-fi, i.e. anything involving music, radios or loudspeakers
speaking tubes  11/24  • for conducting sound through solid bodies, e.g. wires  11/26  • Sound-focusing or directing, e.g. scanning  11/28  • using reflection, e.g. parabolic reflectors  11/30  • characterised by the shape of the source  11/34  • using electrical steering of transducer arrays,  2210/105  • Appliances, e.g. washing machines or dishwashers  2210/1051  • Camcorder  2210/1052  • Copiers or other image-forming apparatus, e.g. laser printer  2210/1053  • Hi-fi, i.e. anything involving music, radios or loudspeakers	2210/10 . Reflecting arrangements (G10K 11/28 takes precedence)  2210/101 . One dimensional  2210/102 . Two dimensional  2210/103 . Three dimensional  2210/104 . Aircos  2210/105 . Applications  2210/107 . Two dimensional  2210/108 . Three dimensional  2210/109 . Applications  2210/109 . Two dimensional  2210/100 . Applications  2210/100 . Applications  2210/100 . Applications  2210/100 . Applications  2210/100 . Two dimensional  2210/100 . Applications  2210/100 . Applications  2210/100 . Applications  2210/100 . Applications  2210/100 . Two dimensional  2210/100 . Applications  2210/100 . Applications  2210/100 . Applications  2210/100 . Applications  2210/100 . Two dimensional  2210/100 . Applications  2210/100 . Applications  2210/100 . Applications  2210/100 . Applications  2210/100 . Two dimensional  2210/100 . Applications  2210/100 . Applications  2210/100 . Two dimensional  2210/100 . Applications  2210/100 . Applications  2210/100 . Two dimensional  2210/100 . Aircos  2210/100 . Applications  2210/100 . Two dimensional  2210/100 . Aircos  2210/100 . Applications  2210/100 . Aircos  2210/100 . Aircos  2210/100 . Aircos  2210/100 . Applications  2210/100 . Aircos  2210/100 . Aircos  2210/100 . Applications  2210/100 . Aircos  2210
speaking tubes  11/24 for conducting sound through solid bodies, e.g. wires  11/26 Sound-focusing or directing, e.g. scanning  11/28 using reflection, e.g. parabolic reflectors  11/30 using refraction, e.g. acoustic lenses  11/31 Characterised by the shape of the source  11/34 (Circuits therefor)  2210/1051 Appliances, e.g. washing machines or dishwashers  2210/1051 Camcorder  2210/1052 Copiers or other image-forming apparatus, e.g. laser printer  2210/1053 Hi-fi, i.e. anything involving music, radios or loudspeakers  2210/1054 Refrigerators  2210/1054 Refrigerators  2210/1055 Appliances, e.g. washing machines or dishwashers  2210/1052 Camcorder  2210/1052 Copiers or other image-forming apparatus, e.g. laser printer  2210/1053 Hi-fi, i.e. anything involving music, radios or loudspeakers  2210/1054 Refrigerators  2210/1054 Refrigerators  2210/1054 Refrigerators  2210/1055 . Enclosures	2210/101 . Applications precedence) {for underwater use} {for underwater use} {for conducting sound through hollow pipes, e.g. speaking tubes for conducting sound through solid bodies, e.g. wires Sound-focusing or directing, e.g. scanning
speaking tubes  11/24 . for conducting sound through solid bodies, e.g. wires  11/26 . Sound-focusing or directing, e.g. scanning  11/28 using reflection, e.g. parabolic reflectors  11/30 using refraction, e.g. acoustic lenses  11/31 characterised by the shape of the source  11/34 using electrical steering of transducer arrays, e.g. beam steering {(constructional aspects B06B 1/0607, B06B 1/085)}  11/341 {Circuits therefor}  11/343 {using frequency variation or different}  2210/105 . Appliances, e.g. washing machines or dishwashers  2210/1051 Camcorder  2210/1052 Copiers or other image-forming apparatus, e.g. laser printer  2210/1053 Hi-fi, i.e. anything involving music, radios or loudspeakers  2210/1054 Refrigerators  2210/1054 Refrigerators  2210/1055 Refrigerators  2210/1050 Refrigerators  2210/1050 Combustion, e.g. burner noise control of	20 . Reflecting arrangements (G10K 11/28 takes precedence)  210/101 . One dimensional  2210/102 . Two dimensional  2210/103 . Three dimensional  2210/104 . Aircos  2210/105 . Appliances, e.g. washing machines or dishwashers  2210/105 . Camcorder  2210/105 . Copiers or other image-forming apparatus, e.g. laser printer  2210/105 . Hi-fi, i.e. anything involving music, radios or loudspeakers  2210/105 . Boxes, i.e. active box covering a noise source; Enclosures  2210/106 . Boxes, i.e. active box covering a noise source; Enclosures  2210/107 . Combustion, e.g. burner noise control of
speaking tubes  11/24 . for conducting sound through solid bodies, e.g. wires  11/26 . Sound-focusing or directing, e.g. scanning  11/28 . using reflection, e.g. parabolic reflectors  11/30 . using refraction, e.g. acoustic lenses  11/31 . using electrical steering of transducer arrays, e.g. beam steering {(constructional aspects B06B 1/0607, B06B 1/085)}  11/34 . Quality of the state of the source of the	20 . Reflecting arrangements (G10K 11/28 takes precedence)  210/101 . One dimensional  2210/102 . Two dimensional  2210/103 . Three dimensional  2210/104 . Aircos  2210/104 . Aircos  2210/105 . Applications  2210/106 . Two dimensional  2210/107 . Aircos  2210/108 . Three dimensional  2210/109 . Applications  2210/109 . Two dimensional  2210/109 . Aircos  2210/100 . Three dimensional  2210/100 . Applications  2210/100 . Two dimensional  2210/100 . Applications  2210/100 . Two dimensional  2210/100 . Applications  2210/100 . Aircos  2210/105 . Applications  2210/105
speaking tubes  11/24 . for conducting sound through solid bodies, e.g. wires  11/26 . Sound-focusing or directing, e.g. scanning  11/28 using reflection, e.g. parabolic reflectors  11/30 using refraction, e.g. acoustic lenses  11/31 characterised by the shape of the source  11/34 using electrical steering of transducer arrays, e.g. beam steering {(constructional aspects B06B 1/0607, B06B 1/085)}  11/34 {Circuits therefor}  11/34 {Circuits therefor}  11/34 {Using frequency variation or different frequencies}  11/34 {using energy switching from one active}  2210/105 Appliances, e.g. washing machines or dishwashers  2210/1051 Camcorder  2210/1052 Copiers or other image-forming apparatus, e.g. laser printer  2210/1053 Hi-fi, i.e. anything involving music, radios or loudspeakers  2210/1054 Refrigerators  2210/1055 Refrigerators  2210/1050 Refrigerators  2210/1051 Combustion, e.g. burner noise control of jet engines (internal combustion engines)  11/341 {using energy switching from one active}  11/343 {using energy switching from one active}	20 . Reflecting arrangements (G10K 11/28 takes precedence)  210/10 . One dimensional  2210/102 . Two dimensional  2210/103 . Three dimensional  2210/104 . Aircos  2210/105 . Applications  2210/105 . Two dimensional  2210/106 . Aircos  2210/107 . Three dimensional  2210/108 . Aircos  2210/109 . Three dimensional  2210/109 . Aircos  2210/100 . Applications  2210/100 . Two dimensional  2210/100 . Aircos  2210/10
speaking tubes  11/24 . for conducting sound through solid bodies, e.g. wires  11/26 . Sound-focusing or directing, e.g. scanning  11/28 . using reflection, e.g. parabolic reflectors  11/30 . using refraction, e.g. acoustic lenses  11/31 . using electrical steering of transducer arrays, e.g. beam steering {(constructional aspects B06B 1/0607, B06B 1/085)}  11/34 . Quint frequency variation or different frequencies}  11/345 . Using energy switching from one active element to another}  2210/105 . Appliances, e.g. washing machines or dishwashers  2210/105 . Commcorder  2210/105 . Comjets or other image-forming apparatus, e.g. laser printer  2210/105 . Hi-fi, i.e. anything involving music, radios or loudspeakers  2210/105 . Refrigerators  2210/105 . Refrigerators  2210/106 . Boxes, i.e. active box covering a noise source;  2210/107 . Combustion, e.g. burner noise control of jet engines (internal combustion engines G10K 2210/121)  2210/108 . Communication systems, e.g. where useful sound	2210/10
speaking tubes  11/24 . for conducting sound through solid bodies, e.g. wires  11/26 . Sound-focusing or directing, e.g. scanning  11/28 . using reflection, e.g. parabolic reflectors  11/30 . using refraction, e.g. acoustic lenses  11/32 . characterised by the shape of the source  11/34 . using electrical steering of transducer arrays, e.g. beam steering {(constructional aspects B06B 1/0607, B06B 1/085)}  11/34 {Circuits therefor}  11/34 {Circuits therefor}  11/34 {using frequency variation or different frequencies}  11/34 {using energy switching from one active element to another}  11/346 {using phase variation}  2210/105 . Appliances, e.g. washing machines or dishwashers  12210/1051 Camcorder  2210/1052 Copiers or other image-forming apparatus, e.g. laser printer  1210/1053 Hi-fi, i.e. anything involving music, radios or loudspeakers  2210/1054 Refrigerators  2210/1055 Refrigerators  2210/1050 Boxes, i.e. active box covering a noise source;  Enclosures  11/345 {using energy switching from one active element to another}  11/346 {using energy switching from one active element to another}  11/346 {using phase variation}	2210/10 . Reflecting arrangements (G10K 11/28 takes precedence)  2210/10 . One dimensional  2210/102 . Two dimensional  2210/103 . Three dimensional  2210/104 . Aircos  2210/105 . Applications  2210/106 . Two dimensional  2210/107 . Aircos  2210/108 . Three dimensional  2210/109 . Applications  2210/100 . Two dimensional  2210/100 . Applications  2210/100 . Applications  2210/100 . Two dimensional  2210/100 . Applications  2210/100 . Aircos  2210/100 . Applications  2210/100 . Aircos  2210/100 . Aircos  2210/100 . Aircos  2210/100 . Aircos  2210/100 . Applications  2210/100 . Aircos  2210/100 . Aircos  2210/100 . Aircos  2210/100 . Aircos
speaking tubes  11/24 . for conducting sound through solid bodies, e.g. wires  11/26 . Sound-focusing or directing, e.g. scanning 11/28 . using reflection, e.g. parabolic reflectors 11/30 . using refraction, e.g. acoustic lenses 11/31 . characterised by the shape of the source 11/34 . using electrical steering of transducer arrays, e.g. beam steering {(constructional aspects B06B 1/0607, B06B 1/085)}  11/341 {Circuits therefor} 11/343 {using frequencies} 11/345 {using energy switching from one active element to another} 11/346 {using phase variation} 11/348 {using amplitude variation}  2210/105 . Appliances, e.g. washing machines or dishwashers  2210/1051 Camcorder  2210/1052 Copiers or other image-forming apparatus, e.g. laser printer  2210/1053 Hi-fi, i.e. anything involving music, radios or loudspeakers  2210/1054 Refrigerators  2210/106 . Boxes, i.e. active box covering a noise source;  Enclosures  2210/107 . Combustion, e.g. burner noise control of jet engines (internal combustion engines G10K 2210/121)  2210/108 Communication systems, e.g. where useful sound is kept and noise is cancelled  11/348 {using amplitude variation}  2210/108 Earphones, e.g. for telephones, ear protectors o	220 . Reflecting arrangements (G10K 11/28 takes precedence)  2210/101 . One dimensional  2210/102 . Two dimensional  2210/103 . Three dimensional  2210/104 . Appliances, e.g. washing machines or dishwashers  2210/105 . Appliances, e.g. washing machines or dishwashers  2210/105 . Appliances, e.g. washing machines or dishwashers  2210/105 . Camcorder  2210/105 . Camcorder  2210/105 . Copiers or other image-forming apparatus, e.g. laser printer  2210/105 . Hi-fi, i.e. anything involving music, radios or loudspeakers  2210/105 . Refrigerators  2210/105 . Combustion, e.g. does not engines or dishwashers  2210/105 . Combustion, e.g. does not engines or dishwashers  2210/105 . Combustion, e.g. washing machines or dishwashers  2210/105 . Refrigerator or other image-forming apparatus, e.g. laser printer  2210/105 . Refrigerators  2210/105 . Or odiuctions  2210/105 . Appliances, e.g. washing machines or dishwashers  2210/105 . Composition or dishwashers  2210/105 . Composition or dishwashers  2210/105 . Composition or disperation or dis
speaking tubes  1/24 . for conducting sound through solid bodies, e.g. wires  1/26 . Sound-focusing or directing, e.g. scanning  1/28 . using reflection, e.g. parabolic reflectors  1/30 . using refraction, e.g. acoustic lenses  1/32 . characterised by the shape of the source  1/34 . using electrical steering of transducer arrays, e.g. beam steering {(constructional aspects B06B 1/0607, B06B 1/085)}  1/34 {Circuits therefor}  1/34 {Circuits therefor}  1/345 {using energy switching from one active element to another}  1/346 {using maphitude variation}  1/347 {using mechanical steering of transducers {or headsets}  1/348 {using mechanical steering of transducers {or headsets}  1/35 using mechanical steering of transducers {or headsets}  2210/1051 Appliances, e.g. washing machines or dishwashers  2210/1052 Camcorder  2210/1052 Copiers or other image-forming apparatus, e.g. laser printer  2210/1053 Hi-fi, i.e. anything involving music, radios or loudspeakers  2210/1054 Refrigerators  2210/1055 Refrigerators  2210/1056 Refrigerators  2210/1057 Combustion, e.g. burner noise control of jet engines (internal combustion engines G10K 2210/121)  2210/108 Communication systems, e.g. where useful sound is kept and noise is cancelled  11/348 {using maphitude variation}  11/35 using mechanical steering of transducers {or headsets}	2210/10
speaking tubes  1/24 . for conducting sound through solid bodies, e.g. wires  1/26 . Sound-focusing or directing, e.g. scanning  1/28 . using reflection, e.g. parabolic reflectors  1/30 . using refraction, e.g. acoustic lenses  1/32 . characterised by the shape of the source  1/34 . using electrical steering of transducer arrays, e.g. beam steering {(constructional aspects B06B 1/0607, B06B 1/085)}  1/341 {Circuits therefor}  1/342 {Sing frequency variation or different frequencies}  1/343 {using energy switching from one active element to another}  1/345 {using energy switching from one active element to another}  1/346 {using amplitude variation}  2/210/1081 . Aircos  2/210/1051 . Appliances, e.g. washing machines or dishwashers  2/210/1052 . Comercoder  2/210/1052 . Copiers or other image-forming apparatus, e.g. laser printer  2/210/1053 . Hi-fi, i.e. anything involving music, radios or loudspeakers  2/210/1054 . Refrigerators  2/210/1055 . Appliances, e.g. washing machines or dishwashers  2/210/1052 . Comercoder  2/210/1052 . Copiers or other image-forming apparatus, e.g. laser printer  2/210/1053 . Hi-fi, i.e. anything involving music, radios or loudspeakers  2/210/1054 . Refrigerators  2/210/1055 . Romorcoder  2/210/1052 . Copiers or other image-forming apparatus, e.g. laser printer  2/210/1053 . Hi-fi, i.e. anything involving music, radios or loudspeakers  2/210/1054 . Refrigerators  2/210/1055 . Romorcoder  2/210/1050 . Hi-fi, i.e. anything involving music, radios or loudspeakers  2/210/1050 . Boxes, i.e. active box covering a noise source;  2/210/106 . Boxes, i.e. active box covering a noise source;  2/210/107 . Combustion, e.g. burner noise control of jet engines (internal combustion engines)  3/210/107 . Communication systems, e.g. where useful sound is kept and noise is cancelled  3/210/108 . Earphones, e.g. for telephones, ear protectors or loudspeakers  2/210/108 . Earphones, e.g. for telephones, ear protectors or dishwashers	200 . Reflecting arrangements (G10K 11/28 takes precedence) 2010 {for underwater use} 2020 {for underwater use} 20210/102 Two dimensional 20210/103 Three dimensional 20210/103 Three dimensional 20210/104 . Aircos 20210/105 . Appliances, e.g. washing machines or 20210/105 . Camcorder 20210/105 . Copiers or other image-forming apparatus, e.g. 20210/105 . Characterised by the shape of the source 20210/105 . Characterised by the shape of the source 20210/105 . Characterised by the shape of the source 20210/105 . Characterised by the shape of the source 20210/105 . Characterised by the shape of the source 20210/105 . Characterised by the shape of the source 20210/105 . Copiers or other image-forming apparatus, e.g. 20210/105 . Hi-fi, i.e. anything involving music, radios or 20210/105 . Refrigerators 20210/105 . Refrigerators 20210/105 . Refrigerators 20210/105 . Combustion, e.g. burner noise control of 20210/105 . Refrigerators 20210/105 .

CPC - 2024.01 3

2210/109 Compresso	_	2210/3025		Determination of spectrum characteristics, e.g.
	, i.e. ANC of the noise created by			FFT
	, hard drive or the like	2210/3026		Feedback
2210/111 . Directivity	control or beam pattern	2210/3027		Feedforward
2210/112 Ducts (veh	icle exhausts <u>G10K 2210/12822</u> )	2210/3028		Filtering, e.g. Kalman filters or special
2210/113 Elevators				analogue or digital filters
2210/114 Feeders, i.e	e. of the vibrating kind	2210/30281		. Lattice filters
	se, e.g. from typewriter or printer	2210/3029		Fuzzy logic; Genetic algorithms
2210/116 . Medical; D				Hardware, e.g. architecture
2210/1161 NMR or				Harmonics or sub-harmonics
	WIKI			Information contained in memory, e.g. stored
		2210/3033	• • •	signals or transfer functions
	. active sound-absorption panels or	2210/2024		_
noise barri				Integrators
	control, e.g. control of sound radiated			Models, e.g. of the acoustic system
	g structures	2210/30351	• • •	Identification of the environment for
	g. ANC inside a room, office, concert			applying appropriate model characteristics
	omobile cabin			Modes, e.g. vibrational or spatial modes
	achines, e.g. engines, turbines, motors;	2210/3037		Monitoring various blocks in the flow chart
Periodic or	quasi-periodic signals in general	2210/3038		Neural networks
2210/122 • • Seismics		2210/3039		Nonlinear, e.g. clipping, numerical truncation,
2210/123 Synchroph	asors or other applications where			thresholding or variable input and output gain
multiple no	oise sources are driven with a particular	2210/30391		. Resetting of the filter parameters or changing
phase relat	_			the algorithm according to prevailing
2210/124 • Traffic	•			conditions
2210/125 • Transform	ers	2210/3041		
2210/126 • Transients				Parallel processing
	·			
	r acoustics, e.g. for submarine			Phase locked loops [PLL]
2210/128 Vehicles				Phase shift, e.g. complex envelope processing
	e.g. spacecraft, airplane or helicopter			Multiple acoustic inputs, single acoustic output
2210/1282 Automo	biles	2210/3046		Multiple acoustic inputs, multiple acoustic
2210/12821 Rollin	g noise; Wind and body noise			outputs
2210/12822 Exhau	st pipes or mufflers	2210/3047		Prediction, e.g. of future values of noise
2210/1283 Trains, t		2210/3048		Pretraining, e.g. to identify transfer functions
	e.g. instead of, or in addition to,			Random noise used, e.g. in model identification
acoustic no				Sampling, e.g. variable rate, synchronous,
2210/1291 Anti-Vib		2210/3031		decimated or interpolated
	ns in panels or beams	2210/3052		Simulation
	is in panets of beams			Speeding up computation or convergence, or
	1	2210/3053	• • •	
2210/301 Computation		2210/2054		decreasing the computational load
2210/3011 Single a	•			Stepsize variation
2210/3012 Algorith				Transfer function of the acoustic system
2210/3013 Analogu	e, i.e. using analogue computers or			Variable gain
circuits		2210/3057		Variation of parameters to test for optimisation
2210/3014 Adaptive	e noise equalizers [ANE], i.e. where	2210/321	P	hysical
part of the	ne unwanted sound is retained	2210/3211		Active mounts for vibrating structures with
2210/3015 Averagin	ng, e.g. exponential			means to actively suppress the vibration, e.g.
	strategies, e.g. energy minimization or			for vehicles
	measurements	2210/3212		Actuator details, e.g. composition or
-	e. whereby an estimated transfer	2210/0212		microstructure
	in one functional block is copied to	2210/32121		Fluid amplifiers, e.g. modulated gas flow
another	-	2210/32121	• • •	speaker using electrovalves
		2210/2212		Automatic gain control [AGC]
2210/3018 Correlate calculate	ors, e.g. convolvers or coherence			
		2210/3214	• • •	Architectures, e.g. special constructional
	rms between multiple in's and out's	2010/2017		features or arrangements of features
	quencies; Eigenvalues, e.g. used to			Arrays, e.g. for beamforming
· · · · · · · · · · · · · · · · · · ·	most significant couplings between	2210/3216		Cancellation means disposed in the vicinity of
	s and sensors			the source
2210/3022 Error pa		2210/3217		Collocated sensor and cancelling actuator, e.g.
2210/3023 • • • Estimati	on of noise, e.g. on error signals			"virtual earth" designs
	es, e.g. identifying noisy processes or	2210/3218		Filters other than the algorithm-related filters
Compo	onents	2210/3219		Geometry of the configuration
				Geometry of the configuration Headrests, seats or the like, for personal ANC
2210/30232 Trans	onents fer functions, e.g. impulse response ystems, e.g. artificial intelligence			Geometry of the configuration Headrests, seats or the like, for personal ANC systems

CPC - 2024.01

## G10K

2210/3222	Manual tuning
2210/3223	Materials, e.g. special compositions or gases
2210/3224	Passive absorbers
2210/3225	<ul> <li>Radio or other sources used in ANC for transfer function estimation; Means to avoid interference between desired signals, e.g. from a car stereo, and the ANC signal</li> </ul>
2210/3226	• • Sensor details, e.g. for producing a reference or error signal
2210/3227	Resonators
2210/32271	Active resonators
2210/32272	Helmholtz resonators
2210/3228	Shunts
2210/3229	Transducers
2210/32291	, 5
	piezoelectric elements <u>B06B 1/0688</u> )
2210/50	Miscellaneous
2210/501	. Acceleration, e.g. for accelerometers
2210/502	. Ageing, e.g. of the control system
2210/503	Diagnostics; Stability; Alarms; Failsafe
2210/504	Calibration
2210/505	Echo cancellation, e.g. multipath-, ghost- or reverberation-cancellation
2210/506	Feedback, e.g. howling
2210/507	Flow or turbulence
2210/508	Reviews on ANC in general, e.g. literature
2210/509	• Hybrid, i.e. combining different technologies, e.g. passive and active
2210/51	• Improving tonal quality, e.g. mimicking sports cars
2210/511	• Narrow band, e.g. implementations for single frequency cancellation
2210/512	• Wide band, e.g. non-recurring signals

CPC - 2024.01 5