

## SECTION H — ELECTRICITY

### H04 ELECTRIC COMMUNICATION TECHNIQUE

**H04R LOUDSPEAKERS, MICROPHONES, GRAMOPHONE PICK-UPS OR LIKE ACOUSTIC ELECTROMECHANICAL TRANSDUCERS; DEAF-AID SETS; PUBLIC ADDRESS SYSTEMS** (producing sounds with frequency not determined by supply frequency G10K) [6]

#### Note(s) [7]

- This subclass covers:
  - loudspeakers, microphones, gramophone pick-ups or like transducers producing acoustic waves or variations of electric current or voltage;
  - arrangements actuated by variations of electric current or voltage for cutting grooves in records;
  - circuits for the above-mentioned arrangements;
  - monitoring or testing the above-mentioned equipment.
- Attention is drawn to the Notes following the titles of class B81 and subclass B81B relating to "micro-structural devices" and "micro-structural systems".

#### Subclass index

##### TYPES OF TRANSDUCER

With magnetic circuit:

moving coil; moving armature; magnetisable diaphragm; magnetostriction.....9/00, 11/00, 13/00, 15/00

Without magnetic circuit:

piezo-electric; electrostatic; with variable resistance.....17/00, 19/00, 21/00

Other types.....23/00

Details

general; circuits; diaphragms and cones.....1/00, 3/00, 7/00

##### APPLICATIONS

Stereophonic arrangements; deaf-aid; public address systems.....5/00, 25/00, 27/00

MONITORING, TESTING; MANUFACTURE.....29/00, 31/00

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| <p><b>1/00 Details of transducers</b> (diaphragms H04R 7/00; characterised by the nature of the transducer, <u>see</u> the relevant group of main groups H04R 9/00-H04R 23/00; mountings specially adapted for telephone equipment H04M 1/02) [1, 2006.01]</p> <p>1/02 • Casings; Cabinets; Mountings therein (H04R 1/28 takes precedence) [1, 2006.01]</p> <p>1/04 • • Structural association of microphone with electric circuitry therefor (in deaf-aid sets H04R 25/00) [1, 2006.01]</p> <p>1/06 • Arranging circuit leads; Relieving strain on circuit leads [1, 2006.01]</p> <p>1/08 • Mouthpieces; Attachments therefor [1, 2006.01]</p> <p>1/10 • Earpieces; Attachments therefor [1, 2006.01]</p> <p>1/12 • Sanitary or hygienic devices for mouthpieces or earpieces, e.g. for protecting against infection [1, 2006.01]</p> <p>1/14 • Throat mountings for microphones [1, 2006.01]</p> <p>1/16 • Mounting or connecting stylus to transducer with or without damping means [1, 2006.01]</p> <p>1/18 • • Holders for styli; Mounting holders on transducers [1, 2006.01]</p> <p>1/20 • Arrangements for obtaining desired frequency or directional characteristics (for stereophonic purposes H04R 5/00) [1, 2006.01]</p> | <p>1/22 • • for obtaining desired frequency characteristic only [1, 2006.01]</p> <p>1/24 • • • Structural combinations of separate transducers or of parts of the same transducer and responsive respectively to two or more frequency ranges [1, 2006.01]</p> <p>1/26 • • • Spatial arrangement of separate transducers responsive to two or more frequency ranges [1, 2006.01]</p> <p>1/28 • • • Transducer mountings or enclosures designed for specific frequency response; Transducer enclosures modified by provision of mechanical or acoustic impedances, e.g. resonator, damping means [1, 2006.01]</p> <p>1/30 • • • Combinations of transducers with horns, e.g. with mechanical matching means [1, 2006.01]</p> <p>1/32 • • for obtaining desired directional characteristic only [1, 2006.01]</p> <p>1/34 • • • by using a single transducer with sound reflecting, diffracting, directing or guiding means [1, 2006.01]</p> <p>1/36 • • • by using a single aperture of dimensions not greater than the shortest operating wavelength [1, 2006.01]</p> |
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- 1/38 • • • in which sound waves act upon both sides of a diaphragm and incorporating acoustic phase-shifting means, e.g. pressure-gradient microphone [1, 2006.01]
- 1/40 • • • by combining a number of identical transducers [1, 2006.01]
- 1/42 • Combinations of transducers with fluid-pressure or other non-electrical amplifying means [1, 2006.01]
- 1/44 • Special adaptations for subaqueous use, e.g. for hydrophone [1, 2006.01]
- 1/46 • Special adaptations for use as contact microphones, e.g. on musical instrument, on stethoscope (throat mountings H04R 1/14) [1, 2006.01]
- 3/00 Circuits for transducers** (arrangements for producing a reverberation or echo sound G10K 15/08; amplifiers H03F) [1, 2006.01]
  - 3/02 • for preventing acoustic reaction [1, 2006.01]
  - 3/04 • for correcting frequency response [1, 2006.01]
  - 3/06 • • of electrostatic transducers [1, 2006.01]
  - 3/08 • • of electromagnetic transducers [1, 2006.01]
  - 3/10 • • of variable-resistance microphones [1, 2006.01]
  - 3/12 • for distributing signals to two or more loudspeakers [1, 2006.01]
  - 3/14 • • Cross-over networks [1, 2006.01]
- 5/00 Stereophonic arrangements** (stereophonic pick-ups H04R 9/16, H04R 11/12, H04R 17/08, H04R 19/10) [1, 2006.01]
 

Note(s) [3]

In this group, the following expression is used with the meaning indicated:

  - "stereophonic arrangements" covers quadraphonic or similar arrangements.
  - 5/02 • Spatial or constructional arrangements of loudspeakers [1, 2006.01]
  - 5/027 • Spatial or constructional arrangements of microphones, e.g. in dummy heads [3, 2006.01]
  - 5/033 • Headphones for stereophonic communication [3, 2006.01]
  - 5/04 • Circuit arrangements (stereophonic systems H04S) [1, 2006.01]
- 7/00 Diaphragms for electromechanical transducers; Cones** [1, 2006.01]
  - 7/02 • characterised by the construction [1, 2006.01]
  - 7/04 • • Plane diaphragms [1, 2006.01]
  - 7/06 • • • comprising a plurality of sections or layers [1, 2006.01]
  - 7/08 • • • comprising superposed layers separated by air or other fluid [1, 2006.01]
  - 7/10 • • • comprising superposed layers in contact [1, 2006.01]
  - 7/12 • • Non-planar diaphragms or cones [1, 2006.01]
  - 7/14 • • • corrugated, pleated, or ribbed [1, 2006.01]
  - 7/16 • Mounting or tensioning of diaphragms or cones [1, 2006.01]
  - 7/18 • • at the periphery [1, 2006.01]
  - 7/20 • • • Securing diaphragm or cone resiliently to support by flexible material, springs, cords, or strands [1, 2006.01]
  - 7/22 • • • Clamping rim of diaphragm or cone against seating [1, 2006.01]
  - 7/24 • • Tensioning by means acting directly on free portion of diaphragm or cone [1, 2006.01]
- 7/26 • Damping by means acting directly on free portion of diaphragm or cone [1, 2006.01]
- 9/00 Transducers of moving-coil, moving-strip, or moving-wire type** [1, 2006.01]
  - 9/02 • Details [1, 2006.01]
  - 9/04 • • Construction, mounting, or centering of coil [1, 2006.01]
  - 9/06 • Loudspeakers [1, 2006.01]
  - 9/08 • Microphones [1, 2006.01]
  - 9/10 • Telephone receivers [1, 2006.01]
  - 9/12 • Gramophone pick-ups using a stylus; Recorders using a stylus [1, 2006.01]
  - 9/14 • • comprising two or more styli or transducers (H04R 9/16 takes precedence) [1, 2006.01]
  - 9/16 • • signals being recorded or played-back by vibration of a stylus in two orthogonal directions simultaneously [1, 2006.01]
  - 9/18 • Resonant transducers, i.e. adapted to produce maximum output at a predetermined frequency [1, 2006.01]
- 11/00 Transducers of moving-armature or moving-core type** [1, 2006.01]
  - 11/02 • Loudspeakers [1, 2006.01]
  - 11/04 • Microphones [1, 2006.01]
  - 11/06 • Telephone receivers [1, 2006.01]
  - 11/08 • Gramophone pick-ups using a stylus; Recorders using a stylus [1, 2006.01]
  - 11/10 • • comprising two or more styli or transducers (H04R 11/12 takes precedence) [1, 2006.01]
  - 11/12 • • signals being recorded or played-back by vibration of a stylus in two orthogonal directions simultaneously [1, 2006.01]
  - 11/14 • Resonant transducers, i.e. adapted to produce maximum output at a predetermined frequency [1, 2006.01]
- 13/00 Transducers having an acoustic diaphragm of magnetisable material directly co-acting with electromagnet** [1, 2006.01]
  - 13/02 • Telephone receivers [1, 2006.01]
- 15/00 Magnetostrictive transducers** [1, 2006.01]
  - 15/02 • Resonant transducers, i.e. adapted to produce maximum output at a predetermined frequency [1, 2006.01]
- 17/00 Piezo-electric transducers; Electrostrictive transducers** [1, 2006.01]
  - 17/02 • Microphones [1, 2006.01]
  - 17/04 • Gramophone pick-ups using a stylus; Recorders using a stylus [1, 2006.01]
  - 17/06 • • comprising two or more styli or transducers (H04R 17/08 takes precedence) [1, 2006.01]
  - 17/08 • • signals being recorded or played-back by vibration of a stylus in two orthogonal directions simultaneously [1, 2006.01]
  - 17/10 • Resonant transducers, i.e. adapted to produce maximum output at a predetermined frequency [1, 2006.01]
- 19/00 Electrostatic transducers** [1, 2006.01]
  - 19/01 • characterised by the use of electrets [3, 2006.01]
  - 19/02 • Loudspeakers (H04R 19/01 takes precedence) [1, 3, 2006.01]
  - 19/04 • Microphones (H04R 19/01 takes precedence) [1, 3, 2006.01]

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| <p>19/06 • Gramophone pick-ups using a stylus; Recorders using a stylus (H04R 19/01 takes precedence) [1, 3, 2006.01]</p> <p>19/08 • • comprising two or more styli or transducers (H04R 19/10 takes precedence) [1, 2006.01]</p> <p>19/10 • • signals being recorded or played-back by vibration of a stylus in two orthogonal directions simultaneously [1, 2006.01]</p> <p><b>21/00 Variable-resistance transducers</b> (gaseous-resistance transducers H04R 23/00; magneto-resistive transducers H04R 23/00) [1, 2006.01]</p> <p>21/02 • Microphones [1, 2006.01]</p> <p>21/04 • Gramophone pick-ups using a stylus; Recorders using a stylus [1, 2006.01]</p> <p><b>23/00 Transducers other than those covered by groups H04R 9/00-H04R 21/00</b> [1, 2006.01]</p> | <p>23/02 • Transducers using more than one principle simultaneously [1, 2006.01]</p> <p><b>25/00 Deaf-aid sets</b> [1, 2006.01]</p> <p>25/02 • adapted to be supported entirely by ear [1, 2006.01]</p> <p>25/04 • comprising pocket amplifiers [1, 2006.01]</p> <p><b>27/00 Public address systems</b> (circuits for preventing acoustic reaction H04R 3/02) [1, 2006.01]</p> <p>27/02 • Amplifying systems for the deaf [1, 2006.01]</p> <p>27/04 • Electric megaphones [1, 2006.01]</p> <p><b>29/00 Monitoring arrangements; Testing arrangements</b> [1, 2006.01]</p> <p><b>31/00 Apparatus or processes specially adapted for the manufacture of transducers or diaphragms therefor</b> [1, 2006.01]</p> |
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