SECTION G — PHYSICS

G10 MUSICAL INSTRUMENTS; ACOUSTICS

G10H ELECTROPHONIC MUSICAL INSTRUMENTS; INSTRUMENTS IN WHICH THE TONES ARE GENERATED BY ELECTROMECHANICAL MEANS OR ELECTRONIC GENERATORS, OR IN WHICH THE TONES ARE SYNTHESISED FROM A DATA STORE

Note(s)

This subclass covers musical instruments in which individual notes are constituted as electric oscillations under the control of a performer and the oscillations are converted to sound-vibrations by a loudspeaker or equivalent device.

1/00 Details of electrophonic musical instruments [1, 5, 2006.01]

1/02 • Means for controlling the tone frequencies, e.g. attack or decay; Means for producing special musical effects, e.g. vibratos or glissandos **[1, 2006.01]**

1/04 • • by additional modulation **[1, 2006.01]**

1/043 • • • Continuous modulation **[3, 2006.01]**

1/045 • • • • by electromechanical means **[3, 2006.01]**

1/047 • • • • by acousto-mechanical means, e.g. rotating speakers or sound deflectors **[3, 2006.01]**

1/053 • • • during execution only **[3, 2006.01]**

1/055 • • • • by switches with variable impedance elements **[3, 2006.01]**

1/057 • • • • by envelope-forming circuits **[3, 2006.01]**

1/06 • • Circuits for establishing the harmonic content of tones **[1, 2006.01]**

1/08 • • • by combining tones (G10H 1/14, G10H 1/16 take precedence; chord G10H 1/38) **[3, 2006.01]**

1/10 • • • • for obtaining chorus, celeste or ensemble effects (continuous modulation G10H 1/043) **[3, 2006.01]**

1/12 • • • by filtering complex waveforms (G10H 1/14, G10H 1/16 take precedence) **[3, 2006.01]**

1/14 • • • during execution **[3, 2006.01]**

1/16 • • • by non-linear elements (G10H 1/14 takes precedence) **[3, 2006.01]**

1/18 • Selecting circuits **[3, 2006.01]**

1/20 • • for transposition **[3, 2006.01]**

1/22 • • for suppressing tones; Preference networks **[3, 2006.01]**

1/24 • • for selecting plural preset register stops **[3, 2006.01]**

1/26 • • for automatically producing a series of tones **[3, 2006.01]**

1/28 • • • to produce arpeggios **[3, 2006.01]**

1/30 • • • to reiteratively sound two tones **[3, 2006.01]**

1/32 • Constructional details **[3, 2006.01]**

1/34 • • Switch arrangements, e.g. keyboards or mechanical switches specially adapted for electrophonic musical instruments **[3, 2006.01]**

1/36 • Accompaniment arrangements **[3, 2006.01]**

1/38 • • Chord **[3, 2006.01]**

1/40 • • Rhythm **[3, 2006.01]**

1/42 • • • comprising tone forming circuits **[3, 2006.01]**

1/44 • Tuning means **[3, 2006.01]**

1/46 • Volume control **[3, 2006.01]**

3/00 Instruments in which the tones are generated by electromechanical means [1, 2006.01]

3/02 • using mechanical interrupters **[1, 2006.01]**

3/03 • using pick-up means for reading recorded waves, e.g. on rotating discs **[3, 2006.01]**

3/06 • • using photoelectric pick-up means **[1, 2006.01]**

3/08 • • using inductive pick-up means **[1, 2006.01]**

3/09 • • • using tapes or wires **[3, 2006.01]**

3/10 • • using capacitive pick-up means **[1, 2006.01]**

3/12 • using mechanical resonant generators, e.g. strings or percussion instruments, the tones of which are picked up by electromechanical transducers, the electrical signals being further manipulated or amplified and subsequently converted to sound by a loudspeaker or equivalent device **[3, 2006.01]**

3/14 • • using mechanically actuated vibrators with pick-up means (G10H 3/24 takes precedence) **[3, 2006.01]**

3/16 • • • using a reed **[3, 2006.01]**

3/18 • • • using strings, e.g. electric guitars **[3, 2006.01]**

3/20 • • • using a tuning fork, rod or tube **[3, 2006.01]**

3/22 • • using electromechanically actuated vibrators with pick-up means (G10H 3/24 takes precedence) **[3, 2006.01]**

3/24 • • incorporating feedback means, e.g. acoustic **[3, 2006.01]**

3/26 • • • using electric feedback **[3, 2006.01]**

5/00 Instruments in which the tones are generated by means of electronic generators (G10H 7/00 takes precedence) **[1, 3, 2006.01]**

5/02 • using generation of basic tones **[1, 2006.01]**

5/04 • • with semiconductor devices as active elements (G10H 5/10, G10H 5/12 take precedence) **[1, 2006.01]**

5/06 • • tones generated by frequency multiplication or division of a basic tone **[1, 2006.01]**

5/07 • • • resulting in complex waveforms **[3, 2006.01]**

5/08 • • tones generated by heterodyning **[1, 2006.01]**

5/10 • using generation of non-sinusoidal basic tones, e.g. sawtooth **[1, 2006.01]**

5/12 • • using semiconductor devices as active elements **[1, 2006.01]**

5/14 • using electromechanical resonators, e.g. quartz crystals, as frequency-determining elements **[3, 2006.01]**

5/16 • using cathode ray tubes **[3, 2006.01]**

7/00 Instruments in which the tones are synthesised from a data store, e.g. computer organs [3, 5, 2006.01]

7/02 • in which amplitudes at successive sample points of a tone waveform are stored in one or more memories **[5, 2006.01]**

7/04 • • in which amplitudes are read at varying rates, e.g. according to pitch **[5, 2006.01]**

7/06 • • in which amplitudes are read at a fixed rate, the read-out address varying stepwise by a given value, e.g. according to pitch **[5, 2006.01]**

7/08 • by calculating functions or polynomial approximations to evaluate amplitudes at successive sample points of a tone waveform **[5, 2006.01]**

7/10 • • using coefficients or parameters stored in a memory, e.g. Fourier coefficients (G10H 7/12 takes precedence) **[5, 2006.01]**

7/12 • • by means of a recursive algorithm using one or more sets of parameters stored in a memory and the calculated amplitudes of one or more preceding sample points **[5, 2006.01]**