

CPC COOPERATIVE PATENT CLASSIFICATION

B PERFORMING OPERATIONS; TRANSPORTING

(NOTES omitted)

SEPARATING; MIXING

B06 GENERATING OR TRANSMITTING MECHANICAL VIBRATIONS IN GENERAL

B06B METHODS OR APPARATUS FOR GENERATING OR TRANSMITTING MECHANICAL VIBRATIONS OF INFRASONIC, SONIC, OR ULTRASONIC FREQUENCY, {e.g.} FOR PERFORMING MECHANICAL WORK IN GENERAL (for particular applications, see the relevant subclasses, e.g. [B07B 1/40](#), [B23Q 17/12](#), [B24B 31/06](#); measurement of mechanical vibrations [G01H](#); in direction finding, locating, distance or velocity measuring [G01S](#); {generating seismic energy [G01V 1/02](#)}; control of mechanical vibrations in general [G05D](#); sound-producing devices, e.g. bells, sirens, whistles [G10K](#), {e.g. methods or devices for transmitting, conducting, or directing sound in general [G10K 11/00](#)}; generation of electrical oscillations [H03B](#); electromechanical resonators in general [H03H](#); electromechanical transducers {for communication techniques, e.g. microphones, speakers} [H04R](#))

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	Methods or apparatus for generating mechanical vibrations of infrasonic, sonic, or ultrasonic frequency	1/0603	. . . {using a piezo-electric bender, e.g. bimorph}
		1/0607	. . . {using multiple elements (B06B 1/064 and B06B 1/0688 take precedence)}
1/02	. making use of electrical energy (B06B 1/18 , B06B 1/20 take precedence)	1/0611	. . . . {in a pile}
1/0207	. . {Driving circuits (specially adapted for particular applications, see the relevant subclass, e.g. G01 ; circuits for steering transducer arrays G10K 11/34 ; basic circuits H03)}	1/0614	. . . . . {for generating several frequencies}
1/0215	. . . {for generating pulses, e.g. bursts of oscillations, envelopes}	1/0618	. . . . . {of piezo- and non-piezo-electric elements, e.g. "Tonpilz"}
1/0223	. . . {for generating signals continuous in time}	1/0622	. . . . . {on one surface}
1/023	. . . . {and stepped in amplitude, e.g. square wave, 2-level signal}	1/0625	. . . . . {Annular array}
1/0238	. . . . . {of a single frequency, e.g. a sine-wave}	1/0629	. . . . . {Square array}
1/0246	. . . . . {with a feedback signal}	1/0633	. . . . . {Cylindrical array}
1/0253	. . . . . {taken directly from the generator circuit}	1/0637	. . . . . {Spherical array}
1/0261	. . . . . {taken from a transducer or electrode connected to the driving transducer}	1/064	. . . . . {with multiple active layers}
1/0269	. . . . . {for generating multiple frequencies}	1/0644	. . . {using a single piezo-electric element (B06B 1/0688 takes precedence)}
1/0276	. . . . . {with simultaneous generation, e.g. with modulation, harmonics}	1/0648	. . . . . {of rectangular shape}
1/0284	. . . . . {with consecutive, i.e. sequential generation, e.g. with frequency sweep}	1/0651	. . . . . {of circular shape}
1/0292	. . {Electrostatic transducers, e.g. electret-type}	1/0655	. . . . . {of cylindrical shape}
1/04	. . operating with electromagnetism (dynamo-electric motors with vibrating magnet, armature or coil system H02K 33/00)	1/0659	. . . . . {of U-shape}
1/045	. . . {using vibrating magnet, armature or coil system}	1/0662	. . . . . {with an electrode on the sensitive surface}
1/06	. . operating with piezo-electric effect or with electrostriction (piezo-electric or electrostrictive devices per se H01L 41/00)	1/0666	. . . . . {used as a diaphragm}
		1/067	. . . . . {which is used as, or combined with, an impedance matching layer}
		1/0674	. . . . . {and a low impedance backing, e.g. air}
		1/0677	. . . . . {and a high impedance backing}
		1/0681	. . . . . {and a damping structure}
		1/0685	. . . . . {on the back only of piezo-electric elements}
		1/0688	. . . {with foil-type piezo-electric elements, e.g. PVDF}
		1/0692	. . . . . {with a continuous electrode on one side and a plurality of electrodes on the other side}
		1/0696	. . . . . {with a plurality of electrodes on both sides}

- 1/08 . . operating with magnetostriction ([magnetostrictive devices per se H01L 41/00](#))
- 1/085 . . . {using multiple elements, e.g. arrays}
- 1/10 . making use of mechanical energy ([B06B 1/18, B06B 1/20 take precedence](#))
- 1/12 . . operating with systems involving reciprocating masses
- 1/14 . . . the masses being elastically coupled
- 1/16 . . operating with systems involving rotary unbalanced masses ({[electrical motors using rotary unbalanced masses in general H02K 7/061](#)})
- 1/161 . . . {Adjustable systems, i.e. where amplitude or direction of frequency of vibration can be varied}
- 1/162 {Making use of masses with adjustable amount of eccentricity}
- 1/163 {the amount of eccentricity being only adjustable when the system is stationary ([B06B 1/165 takes precedence](#))}
- 1/164 {the amount of eccentricity being automatically variable as a function of the running condition, e.g. speed, direction ([B06B 1/165 takes precedence](#))}
- 1/165 {with fluid masses or the like}
- 1/166 {Where the phase-angle of masses mounted on counter-rotating shafts can be varied, e.g. variation of the vibration phase}
- 1/167 . . . {Orbital vibrators having masses being driven by planetary gearings, rotating cranks or the like}
- 1/168 {Rotary pendulum vibrators}
- 1/18 . wherein the vibrator is actuated by pressure fluid ([B06B 1/20 takes precedence](#))
- 1/183 . . {operating with reciprocating masses}
- 1/186 . . {operating with rotary unbalanced masses}
- 1/20 . making use of a vibrating fluid ({[whistles or sirens per se G10K](#)})
- 3/00 Methods or apparatus specially adapted for transmitting mechanical vibrations of infrasonic, sonic, or ultrasonic frequency**
- 3/02 . involving a change of amplitude
- 3/04 . involving focusing or reflecting

2201/00 Indexing scheme associated with [B06B 1/0207](#) for details covered by [B06B 1/0207](#) but not provided for in any of its subgroups

- 2201/20 . Application to multi-element transducer
- 2201/30 . with electronic damping
- 2201/40 . with testing, calibrating, safety devices, built-in protection, construction details
- 2201/50 . Application to a particular transducer type
- 2201/51 . . Electrostatic transducer
- 2201/52 . . Electrodynamic transducer
- 2201/53 . . . with vibrating magnet or coil
- 2201/54 . . . Electromagnetic acoustic transducers [EMAT]
- 2201/55 . . Piezoelectric transducer
- 2201/56 . . . Foil type, e.g. PVDF
- 2201/57 . . Electrostrictive transducer
- 2201/58 . . Magnetostrictive transducer
- 2201/70 . Specific application
- 2201/71 . . Cleaning in a tank
- 2201/72 . . Welding, joining, soldering

- 2201/73 . . Drilling
- 2201/74 . . Underwater
- 2201/75 . . Repelling animals, insects, humans
- 2201/76 . . Medical, dental
- 2201/77 . . Atomizers