

# 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.

<b>1/00</b>	<b>Methods or apparatus for generating mechanical vibrations of infrasonic, sonic, or ultrasonic frequency</b>	1/0603	. . . {using a piezoelectric bender, e.g. bimorph}
		1/0607	. . . {using multiple elements ( <a href="#">B06B 1/064</a> and <a href="#">B06B 1/0688</a> take precedence)}
1/02	. making use of electrical energy ( <a href="#">B06B 1/18</a> , <a href="#">B06B 1/20</a> take precedence)	1/0611	. . . . {in a pile}
1/0207	. . {Driving circuits (specially adapted for particular applications, see the relevant subclass, e.g. <a href="#">G01</a> ; circuits for steering transducer arrays <a href="#">G10K 11/34</a> ; basic circuits <a href="#">H03</a> )}	1/0614	. . . . . {for generating several frequencies}
		1/0618	. . . . . {of piezo- and non-piezoelectric elements, e.g. 'Tonpilz'}
1/0215	. . . {for generating pulses, e.g. bursts of oscillations, envelopes}	1/0622	. . . . . {on one surface}
1/0223	. . . {for generating signals continuous in time}	1/0625	. . . . . {Annular array}
1/023	. . . . {and stepped in amplitude, e.g. square wave, 2-level signal}	1/0629	. . . . . {Square array}
1/0238	. . . . . {of a single frequency, e.g. a sine-wave}	1/0633	. . . . . {Cylindrical array}
1/0246	. . . . . {with a feedback signal}	1/0637	. . . . . {Spherical array}
1/0253	. . . . . {taken directly from the generator circuit}	1/064	. . . . . {with multiple active layers}
1/0261	. . . . . {taken from a transducer or electrode connected to the driving transducer}	1/0644	. . . {using a single piezoelectric element ( <a href="#">B06B 1/0688</a> takes precedence)}
1/0269	. . . . . {for generating multiple frequencies}	1/0648	. . . . . {of rectangular shape}
1/0276	. . . . . {with simultaneous generation, e.g. with modulation, harmonics}	1/0651	. . . . . {of circular shape}
1/0284	. . . . . {with consecutive, i.e. sequential generation, e.g. with frequency sweep}	1/0655	. . . . . {of cylindrical shape}
1/0292	. . {Electrostatic transducers, e.g. electret-type}	1/0659	. . . . . {of U-shape}
1/04	. . operating with electromagnetism (dynamo-electric motors with vibrating magnet, armature or coil system <a href="#">H02K 33/00</a> )	1/0662	. . . . . {with an electrode on the sensitive surface}
		1/0666	. . . . . {used as a diaphragm}
1/045	. . . {using vibrating magnet, armature or coil system}	1/067	. . . . . {which is used as, or combined with, an impedance matching layer}
1/06	. . operating with piezoelectric effect or with electrostriction (piezoelectric or electrostrictive devices per se <a href="#">H10N 30/00</a> )	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 piezoelectric elements}
		1/0688	. . . {with foil-type piezoelectric 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 ( <a href="#">magnetostrictive devices per se H10N 30/00</a> )	2201/75	. . Repelling animals, insects, humans
1/085	. . . {using multiple elements, e.g. arrays}	2201/76	. . Medical, dental
1/10	. making use of mechanical energy ( <a href="#">B06B 1/18</a> , <a href="#">B06B 1/20 take precedence</a> )	2201/77	. . Atomizers
1/12	. . operating with systems involving reciprocating masses		
1/14	. . . the masses being elastically coupled		
1/16	. . operating with systems involving rotary unbalanced masses		
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 ( <a href="#">B06B 1/165 takes precedence</a> )}		
1/164	. . . . . {the amount of eccentricity being automatically variable as a function of the running condition, e.g. speed, direction ( <a href="#">B06B 1/165 takes precedence</a> )}		
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 ( <a href="#">B06B 1/20 takes precedence</a> )		
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)}		
<b>3/00</b>	<b>Methods or apparatus specially adapted for transmitting mechanical vibrations of infrasonic, sonic, or ultrasonic frequency</b>		
3/02	. involving a change of amplitude		
3/04	. involving focusing or reflecting		
<b>2201/00</b>	<b>Indexing scheme associated with <a href="#">B06B 1/0207</a> for details covered by <a href="#">B06B 1/0207</a> but not provided for in any of its subgroups</b>		
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		