

## SECTION G — PHYSICS

## G10 MUSICAL INSTRUMENTS; ACOUSTICS

**G10K SOUND-PRODUCING DEVICES** (sound-producing toys A63H 5/00); **METHODS OR DEVICES FOR PROTECTING AGAINST, OR FOR DAMPING, NOISE OR OTHER ACOUSTIC WAVES IN GENERAL; ACOUSTICS NOT OTHERWISE PROVIDED FOR [6]**

**Note(s)**

1. This subclass covers arrangements for generating mechanical vibrations in fluids.
2. This subclass covers also the production of sounds which may not be audible to human beings but which are audible to animals.
3. In this subclass, the following terms are used with the meanings indicated:
  - "acoustics" and "sound" cover 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 B06B, subject to the exception specified in Note (1) above.

**1/00 Devices in which sound is produced by striking a resonating body, e.g. bells, chimes or gongs** (combinations with clocks or watches G04B, G04C; multi-toned musical instruments G10D 13/08; automatic carillons G10F 1/10)

- 1/06 • the resonating device having the shape of a bell, plate, rod, or tube (bells for towers G10K 1/28)
- 1/062 • • electrically operated
- 1/063 • • • the sounding member being a bell
- 1/064 • • • • Operating or striking mechanisms therefor
- 1/065 • • • • • for timed or repeated operation
- 1/066 • • • • the sounding member being a tube, plate, or rod
- 1/067 • • • • • Operating or striking mechanisms therefor
- 1/068 • • • hydraulically operated; pneumatically operated
- 1/07 • • mechanically operated; Hand bells; Bells for animals
- 1/071 • • • Hand bells; Bells for animals
- 1/072 • • • • Operating or striking mechanisms therefor
- 1/074 • • • • • with rotary clappers or shells
- 1/076 • • • • • for timed or repeated operation
- 1/08 • • Details or accessories of general applicability
- 1/10 • • • Sounding members; Mounting thereof; Clappers or other strikers
- 1/26 • • • Mountings; Casings
- 1/28 • Bells for towers or the like
- 1/30 • • Details or accessories
- 1/32 • • • Sounding members; Clappers or other strikers
- 1/34 • • • Operating mechanisms
- 1/36 • • • Means for silencing or damping (means or arrangements for avoiding or reducing out-of-balance forces due to motion F16F 15/00)
- 1/38 • • • Supports; Mountings

**3/00 Rattles or like noise-producing devices**

**5/00 Whistles**

- 5/02 • Ultrasonic whistles [3]

**7/00 Sirens**

- 7/02 • in which the sound-producing member is rotated manually or by a motor (G10K 7/06 takes precedence)

- 7/04 • • by an electric motor
- 7/06 • in which the sound-producing member is driven by a fluid, e.g. by a compressed gas

**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 H04R)

- 9/02 • driven by gas, e.g. suction operated
- 9/04 • • by compressed gases, e.g. compressed air
- 9/06 • • produced by detonation
- 9/08 • driven by water or other liquids
- 9/10 • driven by mechanical means only
- 9/12 • electrically operated

**Note(s)**

This group does not cover the construction of, or circuits for, broadband-transducers such as loudspeakers or microphones, which are covered by subclass H04R.

- 9/122 • • using piezo-electric driving means [6]
- 9/125 • • • with a plurality of active elements [6]
- 9/128 • • using magnetostrictive driving means [6]
- 9/13 • • using electromagnetic driving means [3]
- 9/15 • • • Self-interrupting arrangements [3]
- 9/16 • • with means for generating the current by muscle power
- 9/18 • Details, e.g. bulbs, pumps, pistons, switches or casings
- 9/20 • • Sounding members
- 9/22 • • Mountings; Casings

**11/00 Methods or devices for transmitting, conducting or directing sound in general; Methods or devices for protecting against, or for damping, noise or other acoustic waves in general**

- 11/02 • Mechanical acoustic impedances; Impedance matching, e.g. by horns; Acoustic resonators [3]
- 11/04 • • Acoustic filters [3]
- 11/08 • Non-electric sound-amplifying devices, e.g. non-electric megaphones (amplifying by horns G10K 11/02; amplifying by focusing G10K 11/26)

## G10K

- 11/16 • Methods or devices for protecting against, or for damping, noise or other acoustic waves in general (G10K 11/36 takes precedence) [3]
- 11/162 • • Selection of materials [6]
- 11/165 • • • Particles in a matrix [6]
- 11/168 • • • Plural layers of different materials, e.g. sandwiches [6]

### Note(s)

When classifying in this group, classification is also made in subclass B32B, insofar as any layered product is concerned.

- 11/172 • • using resonance effects [6]
- 11/175 • • using interference effects; Masking sound [6]
- 11/178 • • • by electro-acoustically regenerating the original acoustic waves in anti-phase [6]
- 11/18 • Methods or devices for transmitting, conducting or directing sound (G10K 11/02, G10K 11/36 take precedence; medical stethoscopes A61B 7/02) [3]
- 11/20 • • Reflecting arrangements (G10K 11/28 takes precedence) [3]
- 11/22 • • for conducting sound through hollow pipes, e.g. speaking tubes [3]
- 11/24 • • for conducting sound through solid bodies, e.g. wires [3]

- 11/26 • • Sound-focusing or directing, e.g. scanning [3]
- 11/28 • • • using reflection, e.g. parabolic reflectors [3]
- 11/30 • • • using refraction, e.g. acoustic lenses [3]
- 11/32 • • • characterised by shape of the source [3]
- 11/34 • • • using electrical steering of transducer arrays, e.g. beam steering [3]
- 11/35 • • • using mechanical steering of transducers [6]
- 11/36 • Devices for manipulating acoustic surface waves (electro-acoustic amplifiers H03F 13/00; networks comprising electro-acoustic elements H03H 9/00) [3]

**13/00 Cones, diaphragms, or the like, for emitting or receiving sound in general** (for electromechanical transducers H04R 7/00)

**15/00 Acoustics not otherwise provided for** [4]

- 15/02 • Synthesis of acoustic waves (synthesis of speech G10L 13/00) [4]
- 15/04 • Sound-producing devices (G10K 15/02 takes precedence) [4]
- 15/06 • • using electric discharge [4]
- 15/08 • Arrangements for producing a reverberation or echo sound [5]
- 15/10 • • using time-delay networks comprising electromechanical or electro-acoustic devices [5]
- 15/12 • • using electronic time-delay networks [5]