CROSS-REFERENCE ART COLLECTIONS

1 **ORGANS; HARMONIUMS {MOUTH ORGANS OR ACCORDIONS SUBCLASSES 100+; ASPECTS OF AUTOMATIC ACTUATION SUBCLASSES 200+; COMBINATIONS OF MICROPHONES, PICK-UPS OR AMPLIFIERS WITH MUSICAL INSTRUMENTS, ELECTRIC ORGANS SUBCLASSES 300+} {G10B}**

2 .General design of organs, harmoniums, or like wind-actuated musical instruments {G10B 1/00}

3 ..Of organs {G10B 1/02}

4 ...Electrically operated {G10B 1/04}

5 ...Fluid operated {G10B 1/06}

6 ..Of harmoniums {G10B 1/08}

7 .Details of, accessories for, organs, harmoniums, or the like {G10B 3/00}

8 ..Blowers {G10B 3/02}

9 ..Reservoirs {G10B 3/04}

10 ..Valves; Sleeves {G10B 3/06}

11 ..Pipes, e.g., open end, reed pipe, etc. {G10B 3/08}

12 ..Actions, e.g., coupler, etc. {G10B 3/10}

13 ..Keys or keyboards; Manuals {keyboards for musical instruments in general subclass 60} {G10B 3/12}

14 ..Pedals or pedal boards {G10B 3/14}

15 ..Swell chambers; Accentuating means {G10B 3/16}

16 ..Tremolo-producing devices {G10B 3/18}

17 ..Transposing devices {G10B 3/20}

18 ..Details peculiar to electrically-operated organs, e.g., contacts therefor, etc. {G10B 3/22}

50 **PIANOS {NONMUSICAL ASPECTS OF TOY PIANOS A63H 5/00; ASPECTS OF AUTOMATIC ACTUATION SUBCLASSES 200+; COMBINATIONS OF MICROPHONES, PICK-UPS OR AMPLIFIERS WITH MUSICAL INSTRUMENTS SUBCLASSES 300+} {G10C}**

51 .General design of pianos or like stringed musical instruments with keyboards {G10C 1/00}

52 ..Of upright pianos {G10C 1/02}

53 ..Of grand pianofortes {G10C 1/04}

54 ..Of cembaloes, spinets, or similar stringed instruments {G10C 1/06}

55 .Details of, accesories for, pianos or the like {G10C 3/00}

56 ..Cases {G10C 3/02}

57 ..Frames; Bridges; Bars {G10C 3/04}

58 ..Resonating means, e.g., resonant strings, soundboards, etc.; fastening of the resonating strings {G10C 3/06}

59 ..Arrangements of strings {G10C 3/08}

60 ..Tuning pins or straining devices {G10C 3/10}

61 ..Keyboards; Keys {G10C 3/12}

62 ...For actuation by the feet {G10C 3/14}

63 ..Actions {G10C 3/16}

64 ...Hammers {G10C 3/18}

65 ...Involving the use of hydraulic, pneumatic, or electromagnetic means {G10C 3/20}

66 ...For grand pianofortes {G10C 3/22}

67 ...For reciprocating of tremolo {G10C 3/24}

68 ..Pedals or pedal mechanisms for half-blow or similar sound modifying {G10C 3/26}

69 ..Transposing devices {G10C 3/28}

70 ..Couplers, e.g., for playing octaves, etc. {G10C 3/30}

71 .Combinations of pianos with other musical instruments, e.g., with bells, with xylophone, etc. {G10C 5/00}

72 .Special tools or methods for the manufacture and maintenance of pianos {G10C 9/00}

100 **MUSICAL INSTRUMENTS NOT OTHERWISE PROVIDED FOR {ASPECTS OF AUTOMATIC ACTUATION SUBCLASSES 200+; COMBINATIONS OF MICROPHONES, PICK-UPS OR AMPLIFIERS WITH MUSICAL INSTRUMENTS SUBCLASSES 300+; SOUND-PRODUCING DEVICES NOT REGARDED AS MUSICAL INSTRUMENTS OR PARTS THEREOF G10K} {G10D}**

101 .General design of stringed musical instruments {pianos or similar instruments with keyboard subclasses 50+} {G10D 1/00}

102 ..Materials or treatment of materials for the manufacturing of stringed instruments {G10D 1/00B}

103 ..Of violins, violas, violoncellos, basses {G10D 1/02}

104 ..Of harps, lyres {G10D 1/04}

105 ..Of mandolins {G10D 1/06}

106 ..Of guitars {G10D 1/08}

107 ...Mechanical design of electric-guitars {electrical or electromechanical features subclasses 368+} {G10D 1/08B}

108 ..Of banjos {G10D 1/10}

109 ..Of zithers, e.g., autoharp, etc. {G10D 1/12}

110 .Details of, or accessories for, stringed musical instruments {G10D 3/00}

111 ..Cellopins and accessories therefore {G10D 3/00B}

112 ..Resonating means, horns, or diaphragms {G10D 3/02}

113 ..Bridges, mutes, or capo-tastos {G10D 3/04}

114 ...Capo-tastos {G10D 3/04B}

115 ..Fingerboards {G10D 3/06}

116 ...In the form of keyboards {keyboards for musical instruments in general subclass 61} {G10D 3/08}

117 ..String {G10D 3/10}

118 ..Anchoring devices for strings, e.g., tail piece, hitchpin, etc. {G10D 3/12}

119 ..Tuning devices, e.g., pegs, pins, friction discs, etc. {G10D 3/14}

120 ...Devices for altering the string tension during playing {G10D 3/14B}

121 ....Tremolo devices {G10D 3/14B2}

122 ..Bows; Guides for bows; Plectra and like playing means {G10D 3/16}

123 ...Plectra and like playing means {G10D 3/16B}

124 ..Chin-rests, hand-rests or guards as part of the instruments {separate auxillary devices or supports subclasses 250+} {G10D 3/18}

125 .General design of wind-actuated musical instruments {accordions subclass 148; Organs, harmoniums subclasses 1+; Whistles G10K} {G10D 7/00}

126 ..Materials or treatment of materials for the manufacturing of wind-actuated instruments {G10D 7/00B}

127 ..Of the type wherein an air current is directed against a ramp edge, e.g., flute, recorder, etc. {G10D 7/02}

128 ...Recorders {G10D 7/02B}

129 ...Flutes, piccolos, fifes {G10D 7/02C}

130 ...Ocarinas {G10D 7/04}

131 ..Of the type with a beating reed {Rohrblatt) or reeds, e.g., oboe, clarinet, bassoon, bagpipe, etc. {G10D 7/06}

132 ...Oboes; Bassoons; Bagpipes {G10D 7/06B}

133 ...Clarinets {G10D 7/06C}

134 ...Saxophones {G10D 7/08}

135 ..Of the type with a cupped mouthpiece, e.g., cornet, orchestral trumpet, trombone, etc. {G10D 7/10}

136 ..Of the type with free reeds (Zunge), e.g., trumpet for children, etc. {G10D 7/12}

137 ...Mouth organs {G10D 7/12B}

138 ....With movable mouthpiece {G10D 7/12B2}
139 .Details of, or accessories for, wind-actuated musical instruments {G10D 9/00}
140 ..Tuning devices {G10D 9/00B}
141 ..Mouthpieces; Reeds {G10D 9/02}
142 ...Reeds {G10D 9/02B}
143 ...Cupped mouthpieces {G10D 9/02C}
144 ..Valves; Valve controls {G10D 9/04}
145 ...For woodwind instruments {G10D 9/04B}
146 ....With continuous change of tonal pitch {G10D 9/04B2}
147 ..Mutes {G10D 9/06}
148 .Accordions, concertinas, or the like; Keyboards therefor (keyboards for musical instruments in general subclass 61) {G10D 11/00}
149 ..Actions {G10D 11/02}
150 .Percussive musical instruments {G10D 13/00}
151 ..Drums, tambourines {G10D 13/02}
152 ...Pedal operated bass-drum beaters {G10D 13/02B}
153 ..Timpani {G10D 13/04}
154 ..Castanets, cymbals, triangles, or other single-toned percussive musical instruments {bells G10K} {G10D 13/06}
155 ..Multitoned musical instruments, with sonorous bars, blocks, forks, gongs, plates, rods, or teeth {G10D 13/08}
156 ...Keyboard operated {keyboards for pianos or the like subclasses 50+} {G10D 13/08B}
157 .Combinations of different musical instruments {combinations with pianos subclasses 50+} {G10D 15/00}
158 .Musical instruments not provided for in any of the preceding groups, e.g., Aeolian harp, singing-flame musical instrument, etc. {G10D 17/00}

200 **AUTOMATIC MUSICAL INSTRUMENTS NONMUSICAL ASPECTS OF TOY INSTRUMENTS A63 5/00; SOUND RECORDING AND REPRODUCING G11B; ASSOCIATED WORKING WITH RECORDING OR REPRODUCING APPARATUS G11B 31/02 {G10F}**
201 .Automatic musical instruments {G10F 1/00}
202 ..Pianofortes with keyboard {G10F 1/02}
203 ..Pianofortes which have no keyboard {G10F 1/04}
204 ..Musical boxes with plucked teeth, blades, or the like {combinations with other articles, see the relevant classes for the articles} {G10F 1/06}
205 ..Percussive musical instruments {G10F 1/08}
206 ...Carillons {G10F 1/10}
207 ..Wind-actuated instruments {G10F 1/12}
208 ...Barrel-organs {G10F 1/14}
209 ..Stringed musical instruments {pianofortes subclass 202 and 203} {G10F 1/16}
210 ...To be played by a bow {G10F 1/18}
211 ...To be plucked {G10F 1/20}
212 ..Combinations of two or more instruments {G10F 1/22}
213 .Independent players for keyboard instruments {G10F 3/00}
214 .Details of, or accesories for, automatic musical instruments {G10F 5/00}
215 ..Actions {G10F 5/02}
216 ..Tune barrels, sheets, rollers, spools, or the like {G10F 5/04}
217 ...Driving or setting of tune barrels, discs, or the like; Winding, rewinding, or guiding of tune sheets or the like {handling webs or sheets in general B65H} {G10F 5/06}

250 **AIDS FOR MUSIC (METRONOMES G04F 5/02; TEACHING MUSIC G09B 15/00) {G10G}**
251 .Means for the representation of music {G10G 1/00}

252 ..Chord or note indicators, fixed or adjustable, for keyboard or fingerboards {G10G 1/02}
253 ..Transposing, transcribing {G10G 1/04}
254 .Recording music in notation form, e.g., recording the mechanical operation of a musical instrument {performing, per se, B26F} {G10G 3/00}
255 ..Using mechanical means only {G10G 3/02}
256 ..Using electrical means {G10G 3/04}
257 .Supports for musical instruments {cellopins and components therefor subclass 111} {G10G 5/00}
258 .Other auxillary devices, e.g., separate holders for resin, strings, conductor's batons, etc. {G10G 7/00}
259 ..Carrying cases for musical instruments {interior fittings for trunks A45C 5/12} {G10G 7/00B}
260 ..Tuning forks or like devices {G10G 7/02}

300 **ELECTRONIC MUSICAL INSTRUMENTS {STRUCTURAL COMBINATIONS OF MICROPHONES, PICK-UPS, OR AMPLIFIERS WITH MUSICAL INSTRUMENTS SUBCLASSES 1+, 50+, AND 100+; INSTRUMENTS IN WHICH EACH NOTE IS GENERATED BY A DIFFERENT INDIVIDUALLY-ACTUATED MECHANICAL RESONATING STRUCTURE AND IS AMPLIFIED ELECTRICALLY SUBCLASSES 50+; INSTRUMENTS IN WHICH EACH NOTE IS PRODUCED BY A DIFFERENT ELECTRICALLY-VIBRATED SOUNDING ELEMENT SUBCLASSES 100+; ELECTRONIC CIRCUITS IN GENERAL H03. {G10H}**

301 .Details of electrophonic musical instruments {keyboards applicable also to other musical instruments subclasses 1+ and 50+} {G10H 1/00}
302 ..Associated control or indicating means {teaching of music, per se, {G09B 15/00} {G10H 1/00M}
303 ..Recording/reproducing or transmission of music for electrophonic musical instruments {G10H 1/00R}
304 ...In coded form {see also subclasses 375+} {G10H 1/00R2}
305 ....On magnetic tape {G10H 1/00R2B}
306 ....Transmission between separate instruments or between individual components of a musical system {G10H 1/00R2C}
307 .....Using a MIDI interface {G10H 1/00R2CO}
308 ..Means for obtaining special acoustic effects {combined with modulation subclasses 311+} {G10H 1/00S}
309 ..Means for controlling the tone frequencies, e.g., attack, decay, etc.; Means for producing special musical effects, e.g., vibrato, glissado {for instruments using voltage controlled oscillators and amplifiers or voltage controlled oscillations and filters, etc., see subclass 381} {G10H 1/02}
310 ...By additional modulation {G10H 1/04}
311 ....Continuous modulation {G10H 1/043}
312 .....By electromechanical means {G10H 1/045}
313 .....By acousto-mechanical means, e.g., rotating speakers or sound deflectors, etc. {G10H 1/047}
314 ....During execution only {voice controlled instruments subclass 388} {G10H 1/053}
315 .....By switches incorporating a mechanical vibrator, the envelope of the mechanical vibration being used as modulating signal {G10H 1/053B}
316 .....By switches with variable impedance elements {G10H 1/055}
317 ......Using variable capacitors {G10H 1/055C}
318 ......Using optical or light-responsive means {G10H 1/055L}

319 ......Using magnetic or electromagnetic means {G10H 1/055M}
320 ......Using piezo-electric means {G10H 1/055P}
321 ......Using variable resistors {G10H 1/055R}
322 .....By envelope-forming circuits {G10H 1/057}
323 ......Using a data store from which the envelope is synthesized (tones synthesized from a data store subclasses 375+) {G10H 1/057B}
324 ...Circuits for establishing the harmonic content of tones; other arrangements for changing the tone color {G10H 1/06}
325 ....By combining tones {subclasses 325 and 326 take precedence} {chord subclass 347; Analysis or synthesis of sound waves, per se, G10L} {G10H 1/08}
326 .....For obtaining chorus, celeste or ensemble effects {continuous modulation subclass 311} {G10H 1/10}
327 ....By filtering complex wave forms {G10H 1/12}
328 ....During execution {modulation during execution {subclass 315; Voice controlled instruments subclass 388} {G10H 1/14}
329 ....By nonliner elements (generation of nonsinusosidal basic tones subclass 394) {G10H 1/16}
330 ..Selecting circuits {G10H 1/18}
331 ...Suppresion of switching-noise {G10H 1/18B}
332 ...Key multiplexing {subclass 333 takes precedence} {G10H 1/18C}
333 ...Channel-assigning means for polyphonic instruments {G10H 1/18D}
334 ....Associated with key multiplexing {G10H 1/18D2}
335 .....Microprocessor-controlled keyboard and assigning means {G10H 1/18D2B}
336 ....Using multiplexed channel processors {subclass 334 takes precedence} {G10H 1/18D3}
337 ....With means to assign more than one channel to any single key {G10H 1/18D4}
338 ...For transposition {G10H 1/20}
339 ...For suppressing tones; Preference networks {G10H 1/22}
340 ...For selecting plural preset register stops {G10H 1/24}
341 ...For automatically producing a series of tones {G10H 1/26}
342 ....To produce arpeggios {G10H 1/28}
343 ....To reiteratively sound two tones {G10H 1/30}
344 ..Constructional details {G10H 1/32}
345 ...Switch arrangements, e.g., keyboards or mechanical swicthes peculiar to electrophonic musical instruments, etc. {keyboards applicable also to other musical instruments Subclasses 1+ and 50+} subclasses 316+ takes precedence} {G10H 1/34}
346 ....For guitar-like instruments with or without strings and with a neck on which switches or string-fret contacts are used to detect the notes being played {electric guitars in which the tones are generated by the vibration of strings subclasses 368+} {G10H 1/34B}
347 ..Accompaniment arrangements {G10H 1/36}
348 ...Chord {G10H 1/38}
349 ....Chord detection and/or recognition, e.g., for correction, etc., or automatic bass generation {G10H 1/38B}
350 ....One-finger or one-key chord systems {G10H 1/38C}
351 ...Rhythm {metronomes G04F 5/02} {G10H 1/40}
352 ....Comprising tone forming circuits {G10H 1/42}
353 ..Tuning means {G10H 1/44}
354 ..Volume control {G10H 1/46}
355 .Instruments in which the tones are generated by electromechanical means {G10H 3/00}
356 ..Using mechanical interrupters {G10H 3/02}

357 ..Using pick-up means for reading recorded waves, e.g., on rotating discs, drums, tapes, or wires, etc. {G10H 3/03}
358 ...Using photoelectric pick-up means {G10H 3/06}
359 ...Using inductive pick-up means {G10H 3/08}
360 ....Using tapes or wires {G10H 3/09}
361 ...Using capacitative pick-up means {G10H 3/10}
362 ..Using mechanical resonant generators, e.g., strings or percussive 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 instrument {G10H 3/12}
363 ...Using mechanically actuated vibrators with pick-up means {G10H 3/14}
364 ....Characterized by the use of a piezo-electric or magneto-strictive transducer {piezo-electric or magneto-strictive transducers in general, e.g., microphones H04R 15/00, 17/00, etc.} {G10H 3/14B}
365 ....Using a membrane, e.g., a drum, etc.; Pick-up means for vibrating surfaces, e.g, housing of an instrument, etc. {G10H 3/14D}
366 ....Using a reed {G10H 3/16}
367 ....Using a string, e.g., electric guitar, etc. {mechanical features subclass 107} {G10H 3/18}
368 .....Details of pick-up assemblies {G10H 3/18B}
369 .....Using two or more pick-up means for each string {G10H 3/18C}
370 .....In which the postions of the pick-up means is adjustable {G10H 3/18D}
371 .....In which the tones are picked up through the bridge structure {G10H 3/18E}
372 ....Using a tuning fork, rod, or tube {G10H 3/20}
373 ...Using electromechanically actuated vibrators with pick-up means {subclass 374 takes precedence} {G10H 3/22}
374 ...Incorporating feed-back means, e.g., acoustic, etc. {G10H 3/24}
375 ....Using electric feed-back {G10H 3/26}
376 .Instruments in which the tones are generated by means of electronic generators {subclass 388 takes precedence} {G10H 5/00}
377 ..Instruments using voltage controlled oscillators and amplifiers or voltage controlled oscillators or filters, e.g., synthesizers, etc. {G10H 5/00B}
378 ..Voice controlled instruments {G10H 5/00C}
379 ..Using generation of basic tones {G10H 5/02}
380 ...With semiconductor devices as active elements {subclasses 384 and 385 take precedence} {G10H 5/04}
381 ...Tones generated by frequency multiplication or division of a basic tone {G10H 5/06}
382 ....Resulting in complex waveforms {G10H 5/07}
383 ...Tones generated by heterodyning {G10H 5/08}
384 ..Using generation of nonsinusoidal basic tones, e.g., saw-tooth, etc. {subclass 381 takes precedence} {G10H 5/10}
385 ...Using semiconductor devices as active elements {G10H 5/12}
386 ..Using electromechanical resonator, e.g., quartz crystal, as frequency determining element {subclasses 379 and 383 take precedence} {G10H 5/14}
387 ..Using cathode ray tube {G10H 5/16}

388 .Instruments in which the tones are synthesized from a data store, e.g., computer organs,etc. {synthesis of acoustic waves not specific to musical instruments G10K 15/02, G10L} {G10H 7/00}

389 ..Using a common processing for different operations or calculations, and a set of micro-instructions {programs} to control the sequence thereof {G10H 7/00C}

390 ..Means for controlling the transition from one tone waveform to another {glissando or legato, per se, subclasses 309+} {G10H 7/00T}

391 ..In which amplitudes at sucessive sample points of a tone waveform are stored in one or more memories {G10H 7/02}

392 ...In which amplitudes are read at varying rates, e.g., according to pitch, etc. {G10H 7/04}

393 ....Using an auxillary register or set of registers, e.g., a shift-register, etc., in which the amplitudes are transferred before being read, etc. {G10H 7/04B}

394 ...In which amplitudes are read at a fixed rate, the read-out address varying stepwise by a given value, e.g., acoording to pitch, etc. {G10H 7/06}

395 ..By calculating functions or polynomial approximations to evaluate amplitudes at sucessive sample points of a tone waveform {G10H 7/08}

396 ...Using coefficients or parameters stored in a memory, e.g., Fourier coefficients, etc. {subclass 398 takes precedence} {G10H 7/10}

397 ....Using Fourier coefficients {G10H 7/10B}

398 ...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 {G10H 7/12}

FOREIGN ART COLLECTIONS

FOR **CLASS-RELATED FOREIGN DOCUMENTS**

DIGESTS

DIG 1 **PAPER COPIES IN NUMERICAL ORDER OF ALL U.S. PATENTS IN SUBCLASSES 1-398**