

Title (en)  
STRING CHORUS CIRCUIT

Publication  
**EP 0031019 B1 19840321 (DE)**

Application  
**EP 80106892 A 19801108**

Priority  
DE 2952113 A 19791222

Abstract (en)  
[origin: US4354415A] An electronic musical instrument comprises a sound generator connected to a loudspeaker by way of several parallel channels including respective delay lines constituted by charge-transfer devices of the bucket-brigade type stepped by different high-frequency pulse generators. Each pulse generator comprises a voltage-controlled oscillator whose output frequency is varied by a composite periodic signal obtained from a respective stage of a chain of operational amplifiers each provided, except possibly for the first stage, with an RC network acting as a frequency-dependent phase shifter for a nonsinusoidal modulating signal consisting of at least two sub-audio-frequency components. The modulating signal may be synthesized from a plurality of stepped waveforms generated by the concurrent readout, at different sampling rates, of a set of amplitude values stored in a read-only memory.

IPC 1-7  
**G10H 1/10**

IPC 8 full level  
**G10H 1/00** (2006.01); **G10H 1/10** (2006.01)

CPC (source: EP US)  
**G10H 1/10** (2013.01 - EP US); **Y10S 84/04** (2013.01 - EP US)

Citation (examination)

- DE 2337041 A1 19740131 - NIPPON MUSICAL INSTRUMENTS MFG
- DE 2607136 A1 19770825 - WERSI ELECTRONIC GMBH & CO KG
- DE 2814402 A1 19781012 - NIPPON MUSICAL INSTRUMENTS MFG
- US 4080861 A 19780328 - WHOLAHAN JOHN DOUGLAS
- DE 2309321 A1 19730913 - EMINENT NV

Designated contracting state (EPC)  
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DOCDB simple family (publication)  
**EP 0031019 A1 19810701; EP 0031019 B1 19840321**; DE 2952113 A1 19810702; DE 2952113 C2 19830519; JP S56102892 A 19810817;  
US 4354415 A 19821019

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