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(54) **STRINGED INSTRUMENT WITH EMBEDDED DSP MODELING**

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(57) **ABSTRACT**

Disclosed is a stringed instrument with embedded digital signal processing (DSP) modeling capabilities. The stringed instrument has a body and a plurality of strings and each of the plurality of strings is respectively coupled to a pickup of a polyphonic pickup. The polyphonic pickup is used to detect a vibration signal for each string. An A/D converter converts the detected vibration signal of a string into a digital string vibration signal. Further, a digital signal processor is located within the body of the stringed instrument to process the digital string vibration signal. Particularly, the digital signal processor is used to process the digital string vibration signal such that the corresponding string tone of one of a plurality of selectable stringed instruments may be emulated. The emulated digital tone signal is then converted to analog form to create an emulated analog tone signal for output to an amplification device.

45 Claims, 7 Drawing Sheets