

6,740,805

**43.38.Md SOUND SYSTEM AND METHOD FOR  
CREATING A SOUND EVENT BASED ON  
A MODELED SOUND FIELD**

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25 May 2004 (Class 84/723); filed 30 August 2002

Most musical instruments are small, stationary sound sources. A trumpet, for example, might be modeled as a directional source producing sound waves that radiate outwardly from a single point, keeping in mind that its directional pattern may change with frequency and time. This patent teaches that such characteristics can be captured by a quasispherical array of pickup locations in the far field. Sound pressure and direction are sensed and recorded at each location during a performance ("sound event"). Instead of replacing microphones with loudspeakers to re-create the sound field, the method described here uses the recorded information to re-create the sound source. Let us assume that an array of tiny loudspeakers could be designed to reproduce the required frequency range and directionality. It seems reasonable that a finite number of such arrays could then be assembled to model a more complicated source such as a jazz combo or a choir. Numerous combinations and permutations of this approach are included in the patent, which is the latest in a series of continuations going back to United States Patent 6,239,348, filed in 1999.—GLA

Reviews of Acoustical Patents

3352 J. Acoust. Soc. Am., Vol. 117, No. 6, June 2005