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(54) **SOUND RECORDING AND REPRODUCTION SYSTEM FOR MODEL TRAIN USING INTEGRATED DIGITAL COMMAND CONTROL**

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(52) **U.S. Cl.** **704/272; 105/1.5; 318/51; 704/201**

(58) **Field of Search** **704/272, 201; 105/1.5; 318/51**

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(57) **ABSTRACT**

A system is provided for recording, storing and reproducing sound for playing back in an environment requiring simulated sounds, voices, and/or sound effects. Sounds are recorded on a chip and played back in an asynchronous manner from the chip as a result of activation of a switch or inertial movement within the system. A Hall-effect sensor, reed switch or momentary switch or the like may be implemented for enabling activation of the recorded sound from the chip for broadcasting. A compander compresses the sound on the chip and expands the compressed sound for playback. Employing the above system for audio storage, a sound, motor and special effects controller may be created for model train applications as well. The different functions of the sound unit are controlled through a discrete bi-polar digital command control signal using a unique address for each unit. A synchronous means of play back may also be employed when the system is used with the bi-polar signal using a sensor. In addition to the analog sound storage, the same concepts and ideas may be applied to a digital sound recording and play back device as well.

23 Claims, 20 Drawing Sheets

