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(54) Title: IN-HOME THEATER SURROUND SOUND SPEAKER SYSTEM**(57) Abstract**

An apparatus (10) for realistically reproducing sound, particularly for sound based on a stereophonic signal having dialog and effects and associated with an accompanying video image. The apparatus includes a front speaker (20) located in proximity to the video image for providing acoustic output based upon a summation signal of the component left and right (L+R) channels of the audio signal. A rear speaker (26) located to the rear of the viewing area provides acoustic output based upon a difference signal, (L-R) or (R-L), between the left and right channels. Left and right speakers (22 and 24) are located to the respective left and right sides of the viewing area.

The left and right channels speakers (22 and 24) reproduce in one embodiment the respective left and right channels of the audio signal and in a second embodiment reproduce a difference signal, (L-BR) or (R-BL), where B is a gain which may vary or may be a value fixed between zero and unity. Output to the left and right speakers (22 and 24) is band limited to substantially filter out frequency components below a predetermined threshold. A bass speaker (18) may also be provided to output the low frequency components of a (L+R) summation signal. The (L+R) summation signal input to the front speaker assists in localizing dialog to the video image. The (L-BR) or (R-BL) difference signal substantially removes dialog sound so that the side and rear speaker output primarily comprises sonic ambience and surround sound effects. Band limiting the left and right speakers further assists in localizing dialog to the video image. Alternatively, in yet another embodiment, a monophonic signal may be applied to at least one embodiment of the system to enable production of a spatially enhanced surround sound effect.

