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(54) **MICROPHONE DEVICE AND AUDIO  
PLAYER**

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(57) **ABSTRACT**

A signal generating section generates a main signal and a noise reference signal. A determining section determines whether a level ratio is larger than a predetermined value. An adaptive filter section generates a signal indicative of a signal component of a target sound included in the noise reference signal generated by the signal generating section, and learns a filter coefficient only when the determining section determines that the level ratio is larger than the predetermined value. A subtracting section subtracts the signal generated by the adaptive filter section from the noise reference signal. A noise suppressing section suppresses a signal component of noise included in the main signal by using the main signal and the noise reference signal after subtraction by the subtracting section.

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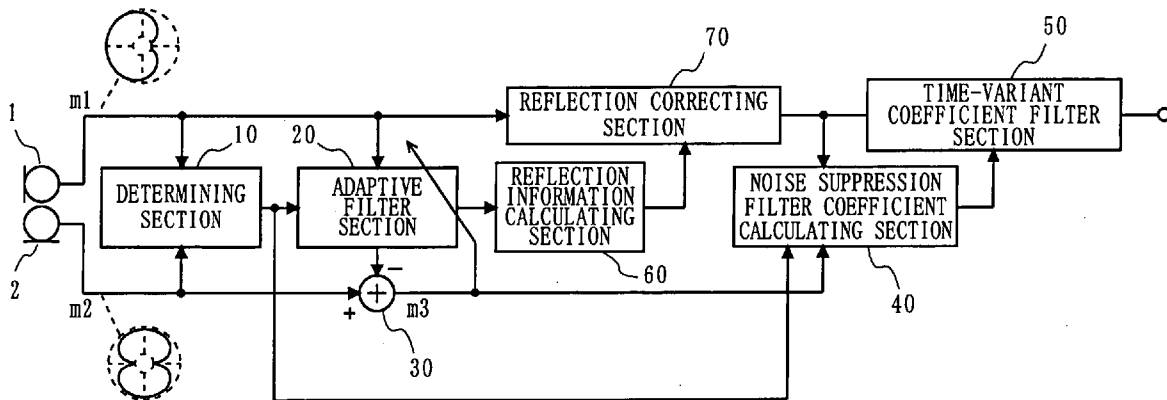


FIG. 1

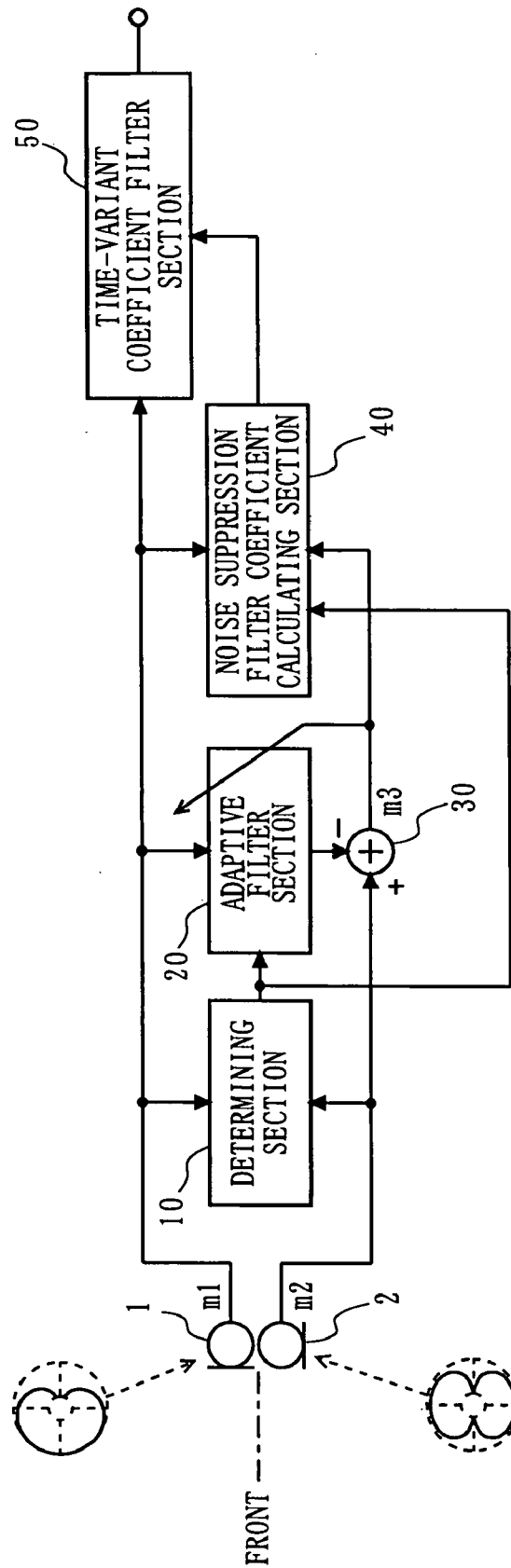


FIG. 2

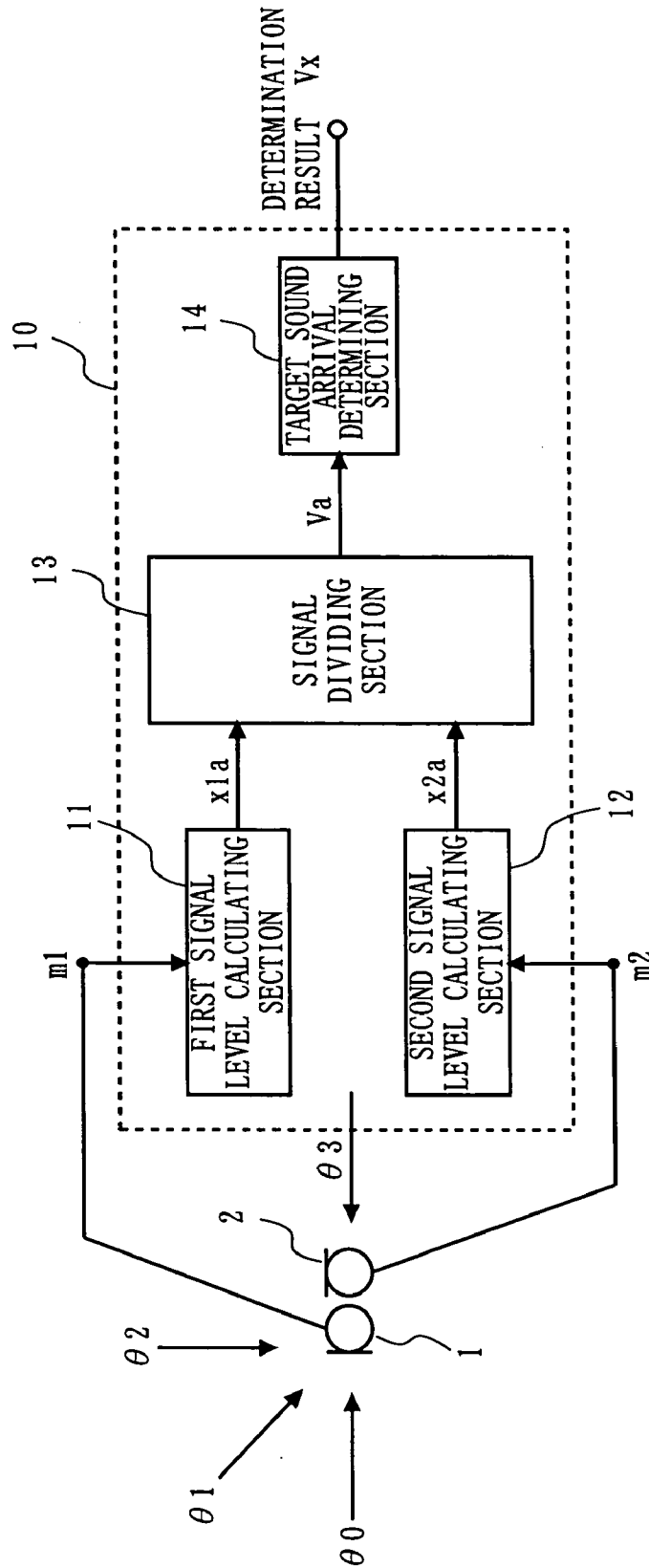


FIG. 3

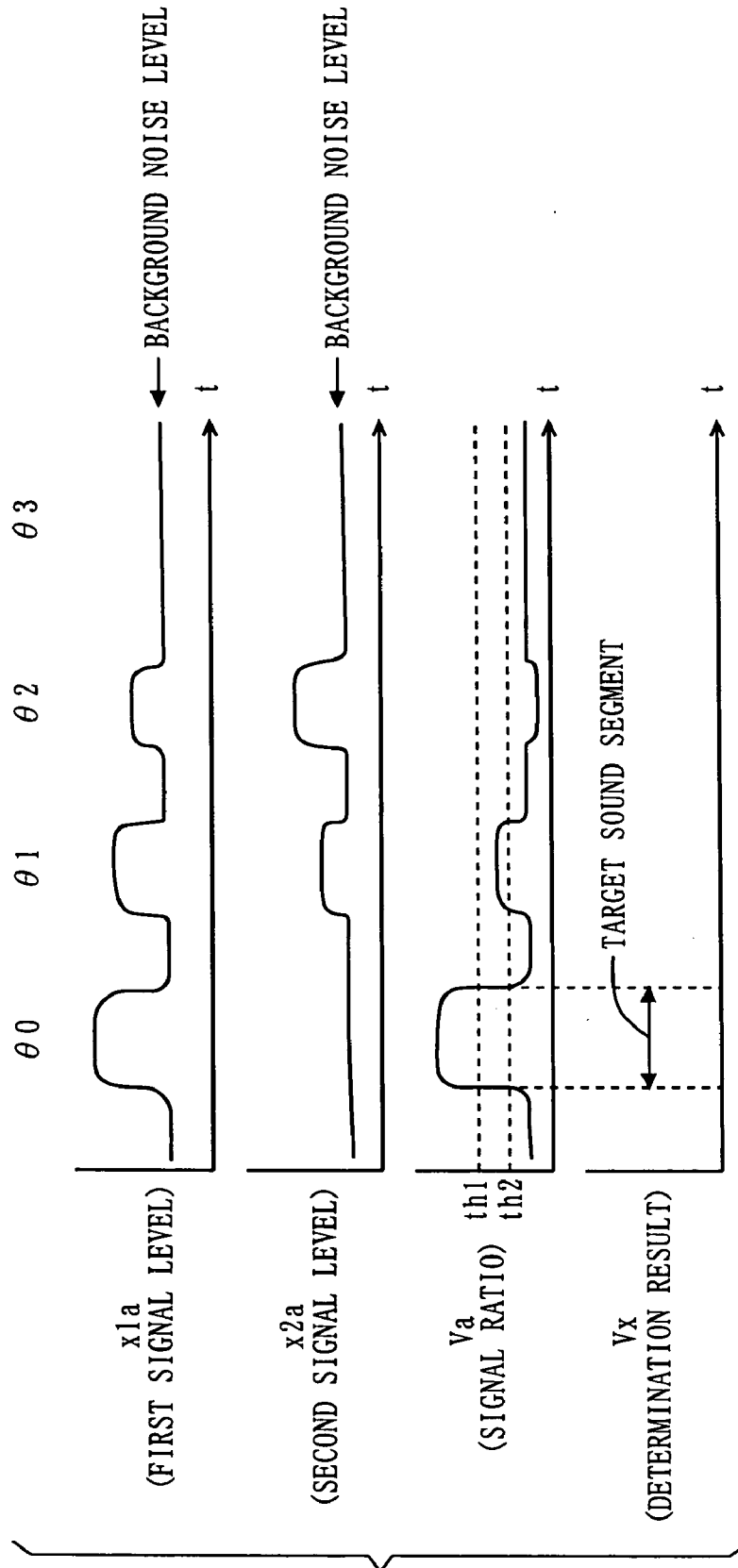
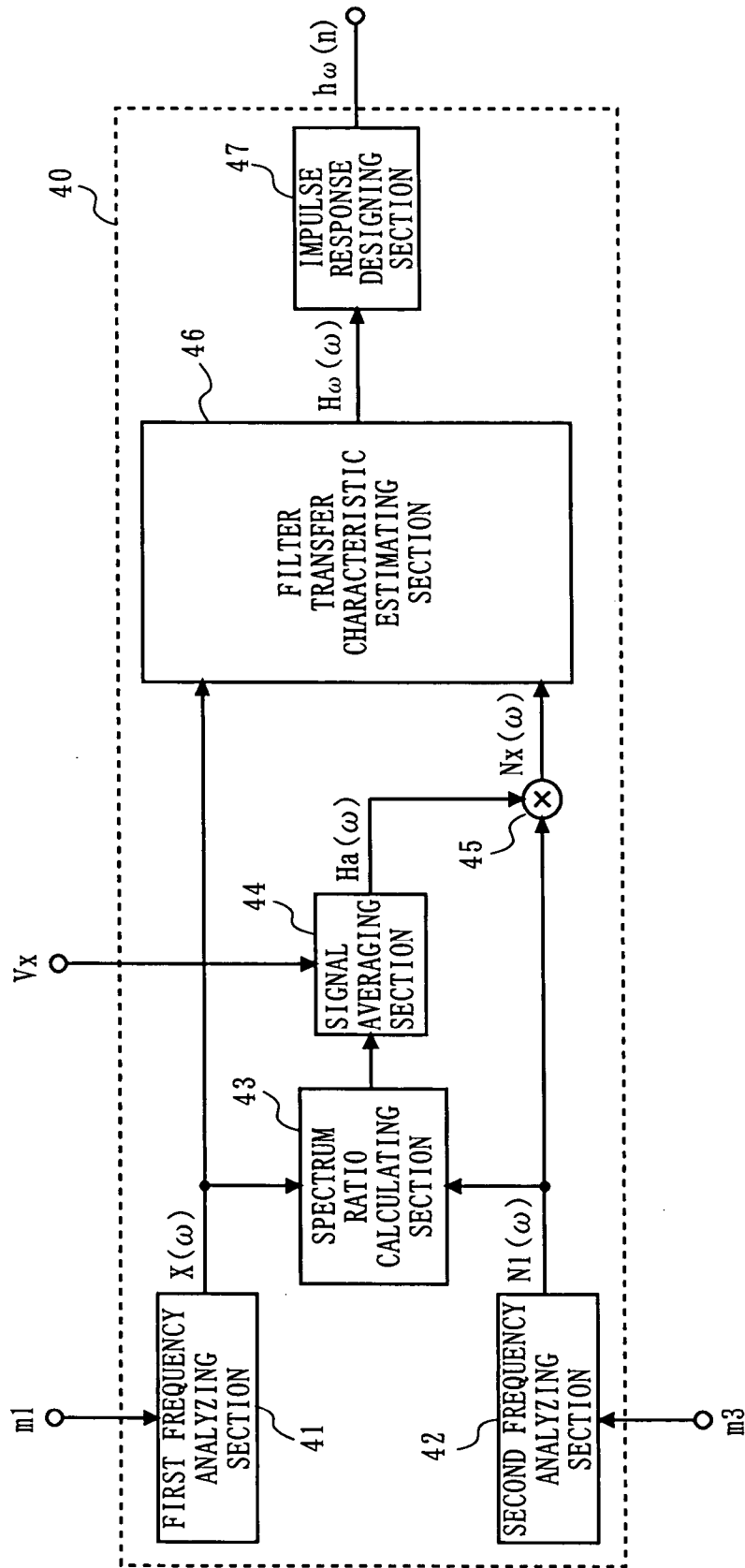


FIG. 4



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