

(57) **Abrégé(suite)/Abstract(continued):**

receives a front microphone acoustical signal and generates a front microphone analog signal. The rear microphone receives a rear microphone acoustical signal and generates a rear microphone analog signal. The front and rear microphone analog signals are converted into the digital domain, and at least the front microphone signal is coupled to the sound processor. The sound processor selectively modifies the signal characteristics and generates a processed signal. The processed signal is coupled to the speaker which converts the signal to an acoustical hearing aid output signal that is directed into the ear canal of the digital hearing aid user. The occlusion sub-system compensates for amplification of the digital hearing aid user's own voice within the ear canal. The directional processor and headroom expander optimizes the gain applied to the acoustical signals received by the digital hearing aid and combine the amplified signals into a directionally-sensitive response.

