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(54) **Title**: HEARING AID WITH ADAPTIVE BULK BIASING POWER MANAGEMENT

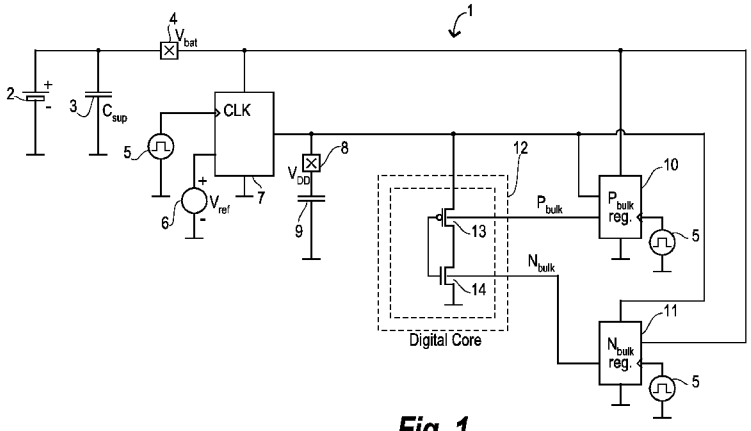

Fig. 1

(57) **Abstract**: A power management system (1) for a digital processing core (12) of a battery-powered hearing aid is adapted for providing power to the hearing aid circuit in a particularly efficient manner. The power management system (1) comprises a first linear voltage regulator (25, 26, 28), and a second linear voltage regulator (25, 27) in series with a switched-capacitor 2:1 SC converter (21), a positive bulk biasing voltage supply (10), and a negative bulk biasing voltage supply (11), for controlling the switching speed, threshold voltage, and current leak from the semiconductor elements (13, 14) of the digital processing core (12) when the core (12) is operated at the reduced voltage provided by the power management system (1). The power management system (1) may save between 50% and 70% of the power consumed by the digital processing core (12) of the hearing aid circuit when compared to existing hearing aids, and may thus prolong the battery life. The invention further provides a method for providing a supply voltage to a digital hearing aid.

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