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(12) **United States Patent**
Lam

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(54) **SINGLE STAGE BALANCED VOLTAGE AMPLIFIER**

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(57) **ABSTRACT**

(30) **Foreign Application Priority Data**

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(52) **U.S. Cl.** 330/69; 330/252

(58) **Field of Classification Search** 330/69, 330/252, 260, 261, 41, 42, 43, 44
See application file for complete search history.

A balanced voltage amplifier is disclosed as comprising a single stage containing three pairs of vacuum tube triodes configured to amplify two input signals (+INPUT, -INPUT) and to generate two output signals (+OUTPUT, -OUTPUT). The balanced voltage amplifier offers high voltage gain, wide bandwidth and low output impedance. Local feedback may be applied between the outputs and the second pair of triodes. Overall feedback may be applied between the outputs and the first pair of triodes. If local or overall feedback is used, it will further broaden the bandwidth, lower the output impedance and improve the overall balancing.

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14 Claims, 5 Drawing Sheets

