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RAI et al. (43) **Pub. Date: Dec. 15, 2022**(54) **AMPLIFIER WITH MULTIPLE,
DIFFERENTIAL INPUT PAIRS**(71) Applicant: **TEXAS INSTRUMENTS
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ABSTRACT

An amplifier includes a first differential input pair of transistors having a first input terminal, a second input terminal, a first output terminal, and a second output terminal. A second differential input pair of transistors has a third input terminal, a fourth input terminal, a third output terminal, and a fourth output terminal. The first input terminal is coupled to the third input terminal, the second input terminal is coupled to the fourth input terminal, the first output terminal is coupled to the third output terminal, and the second output terminal is coupled to the fourth output terminal. A cross-over circuit has a control input coupled to the second fourth input terminals. The cross-over circuit is configured to vary an amount of bias current through the second differential input pair of transistors based on a magnitude of a voltage on the second and fourth input terminals.

