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(54) **AMPLIFIER DEVICE WITH REITERABLE ERROR CORRECTION SCHEME WITH BALANCED NEGATIVE FEEDBACK**

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See application file for complete search history.

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(57) **ABSTRACT**

A very low distortion amplifier using one or more error correction loops based on a balanced error negative feedback scheme intrinsically and easily reiterable. Such loops are applied to a generic amplifier block A_1 in order to reduce its error in a wide frequency band, without substantially interfering, in the correction process, with the main path of the useful signal V_i, to amplify, whereby the corrected amplifier preserves the same response, in time and frequency, the same dynamic behavior and the same stability margins in amplitude and phase, of the not corrected amplifier A_1. This result is obtained by means of a balance and reference block A_2, capable to decouple the error correction loop from the main path of the useful signal V_i, in a very wide frequency band.

30 Claims, 13 Drawing Sheets

$A_1 = $ Amplifier to be corrected

$V_o \cong V_i N_1 A_1 + V_{eo}$

$V_{eo} = V_e / [1 + A_3 A_1 N_2]$

$A_2 \cong A_1 N_1 N_2$

$V_d = (V_+ - V_-) \cong -V_{eo}/N_2$

$N_2 \cong 1/A_{10}$