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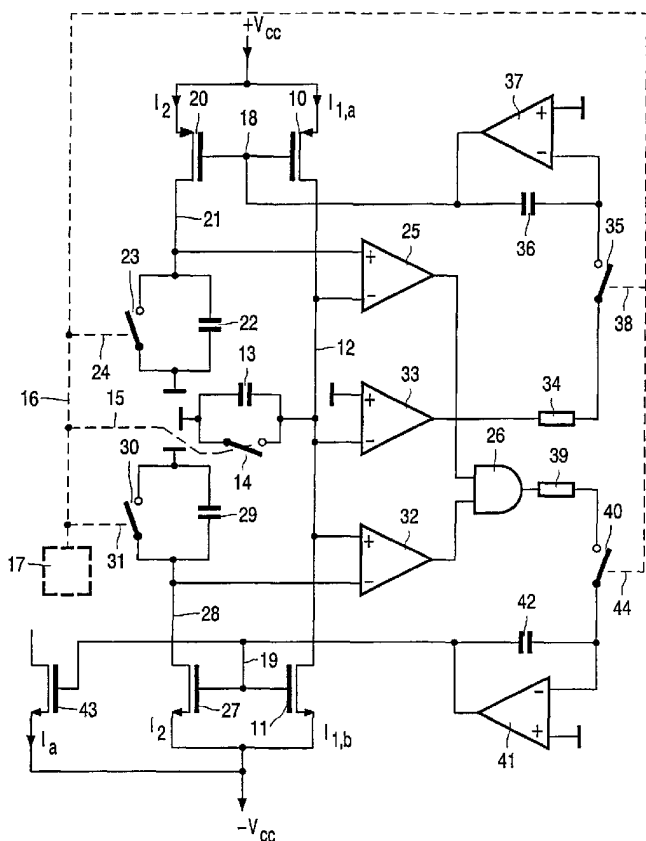
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(54) Title: CIRCUIT FOR PROVIDING A CONSTANT CURRENT



(57) Abstract: Two substantially identical currents ($I_{1,a}$, $I_{1,b}$) are subtracted from each other, while being generated by elements (10, 11) in such a way that noise in the current value of said two currents ($I_{1,a}$, $I_{1,b}$) is determined by shot noise. The differential current, determined only by shot noise, is supplied to a capacitor (13). A second current (I_2) is used to charge a second capacitor (22, 29). It is periodically determined whether the value of a voltage across the first capacitor (13) is within or outside a range bounded by the (negative and positive values of the) voltage of the second capacitor (22, 29) which has been charged over the same period of time. The currents ($I_{1,b}$, I_b) are set in dependence on the result of the comparison. The signal to set the currents ($I_{1,b}$, I_b) also serves as control signal for an element (43) connected as a constant current source. The setting signal and thus the constant current (I_0) delivered by the element (43) connected as a current source is to a high degree independent of the temperature sensitivity of different components of the circuit and is determined essentially solely by the ratio of values of similar components (10, 11, 20, 27, 43) of the circuit. By choosing components whose ratio appears in a value of the constant current (I_0) delivered by the circuit and which have the same temperature dependence, it is achieved that the temperature dependence disappears completely or substantially completely from the constant current (I_0) delivered by the circuit.



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