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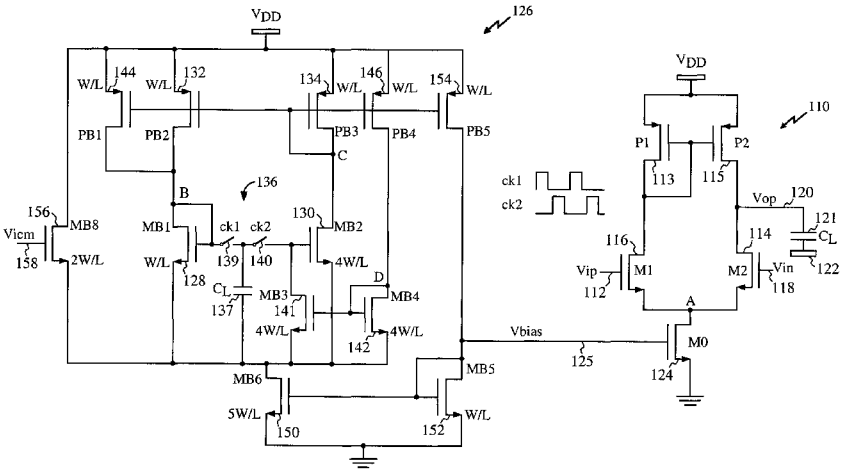
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(54) Title: BIAS CIRCUIT FOR MAINTAINING A CONSTANT VALUE OF TRANSCONDUCTANCE DIVIDED BY LOAD CAPACITANCE



(57) Abstract: A bias circuit (126) is described for use in biasing an operational amplifier (110) to maintain a constant transconductance divided by load capacitance (i.e. a constant g_m/C_L) despite temperature and process variations and despite body effects. The bias circuit (126) includes a pair of current source devices and a switched capacitor (SC) equivalent resistor circuit (136) for developing an equivalent resistance between the current source devices. By providing an SC equivalent resistor circuit clocked by non-overlapping fixed clock signals, the g_m/C_L of the bias circuit is maintained substantially constant. Hence, a fixed bandwidth is maintained within the operation amplifier being biased. When employed in connection with operationa amplifiers of an SC circuit, the constant bandwidth enables the SC circuit to operate at a constant switching speed despite temp and process variation. Furthermore, by positioning the resistance quivalent circuit (136) between the current source devices of the bias circuit, voltage differentials between the sources are eliminated thereby removing any threshold voltage mismatch and thus compensating for body effect variations.

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