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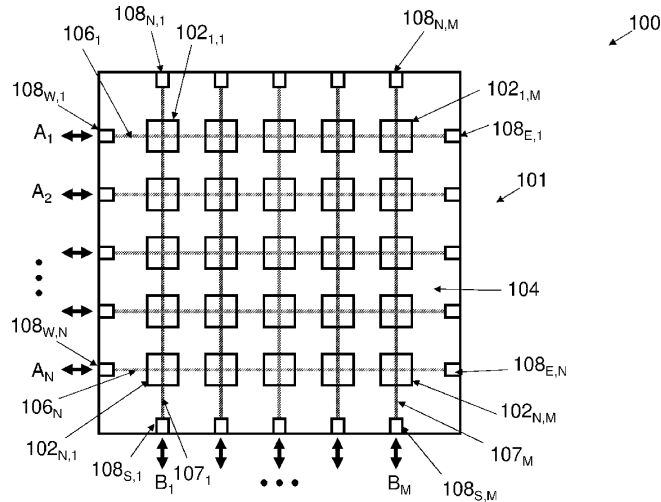
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(54) Title: POLARIZATION-DIVERSE INTEGRATED PHOTONIC SWITCH WITH MULTI-LAYER WAVEGUIDES

FIG. 1A



(57) Abstract: Photonic integrated circuits (PICs) are provided and include polarization-diverse silicon photonic switches with multi-layer waveguides. The PICs of the present disclosure can be applied or used in a wide variety of fields including but not limited to fiber-optic communication, photonic computing, and light detection and ranging (LiDAR). The proposed PICs can include switches having two polarization-decomposed channels that propagate in closely spaced dual-channel waveguides, achieving polarization diverse operation without increasing the PIC area. By using two-layer waveguides and dual-channel micro-electro-mechanical-system (MEMS)-actuated switching elements to couple light from one layer to the other, the proposed scheme also eliminates waveguide crossings found in the prior arts.

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