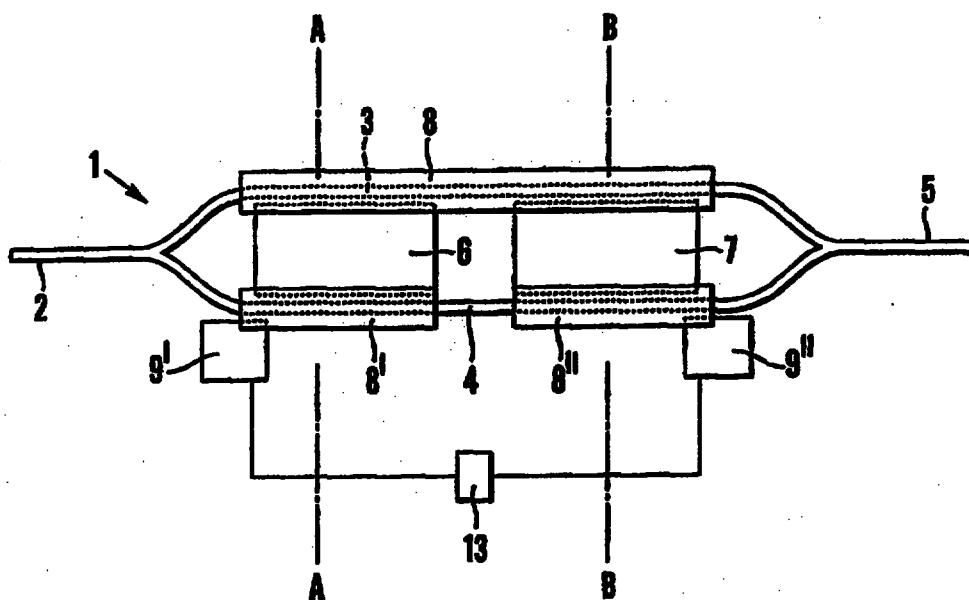




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(54) Title: BRANCHED OPTICAL WAVEGUIDE, AND ITS METHOD OF USE



(57) Abstract

The device comprises an upper silicon layer (10) including two optically connected rib waveguides (3, 4) formed in the upper silicon layer (10); a pair of dissimilar materials (6, 7) each positioned between the two waveguides (3, 4); and an electrical circuit (8, 9, 13) through the pair of dissimilar materials (6, 7), so that an electrical current can be passed through the dissimilar materials (6, 7) in both forward and reverse directions, so as to simultaneously heat one waveguide and cool the other waveguide by virtue of the Peltier effect.