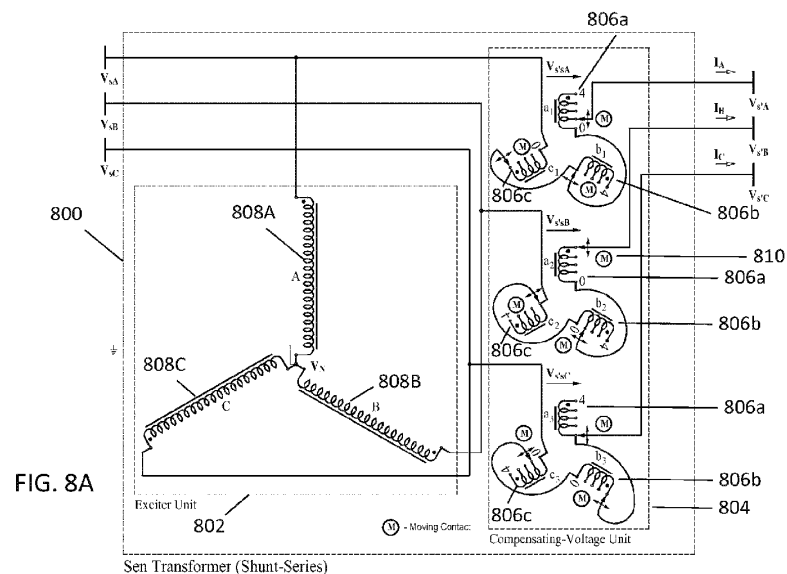




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(54) Title: TRANSFORMER FOR CONTROLLING INDEPENDENT ACTIVE AND REACTIVE POWER FLOWS IN A TRANSMISSION LINE



(57) Abstract: An exemplary transformer includes an exciter unit (EU) and a compensating voltage unit (CVU). The EU including a three-phase transformer with shunt Y-connected primary windings. The CVU includes plural series-connected secondary windings having one secondary winding from each phase of the EU, and plural load tap changers. Each load tap changer is associated with a group of secondary windings that includes one secondary winding from each phase of the EU. Each secondary winding in a group of secondary windings is located at a same distance from an associated primary winding of the EU. All secondary windings, sub-windings between two consecutive taps, and primary windings have similar heights. Sub-windings may or may not be interleaved. Each load tap changer can vary an effective number of turns of the associated group of secondary windings by connecting to one of plural taps associated with each secondary winding according to a selected operating point.

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