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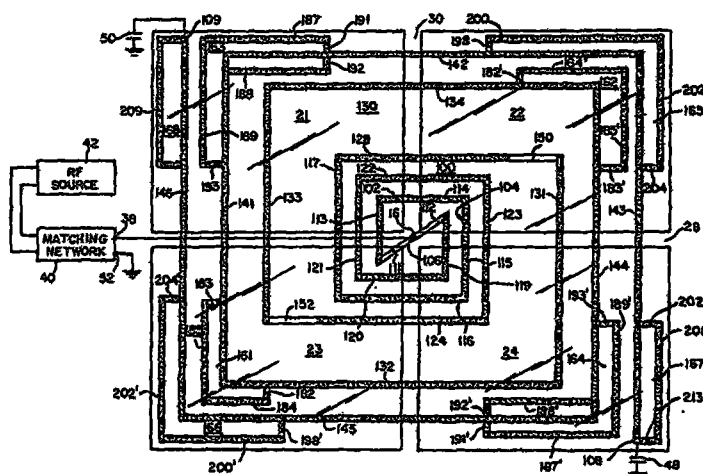
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amendments.(54) Title: VACUUM PLASMA PROCESSOR HAVING COIL WITH INTERMEDIATE PORTION COUPLING LOWER MAGNETIC
FLUX DENSITY TO PLASMA THAN CENTER AND PERIPHERAL PORTIONS OF THE COIL

(57) Abstract

A vacuum plasma processor for treating a workpiece with an RF plasma has a plasma excitation coil including interior, intermediate and peripheral portions. The interior and peripheral portions have turns connected to each other and arranged so the magnetic flux density coupled to the plasma by each of the interior and peripheral coil portions exceeds the magnetic flux density coupled to the plasma by the intermediate coil portion. The coil includes two electrically parallel, spiral like windings, each with an interior terminal connected to one output terminal of a matching network and an output terminal connected via a capacitor to another output terminal of the matching network. The capacitor values and the lengths of the windings relative to the plasma RF excitation wavelength are such that current flowing in the coil has maximum and minimum standing wave values in the peripheral and interior coil portions, respectively. The coil and workpiece peripheries have similar rectangular dimensions and geometries.