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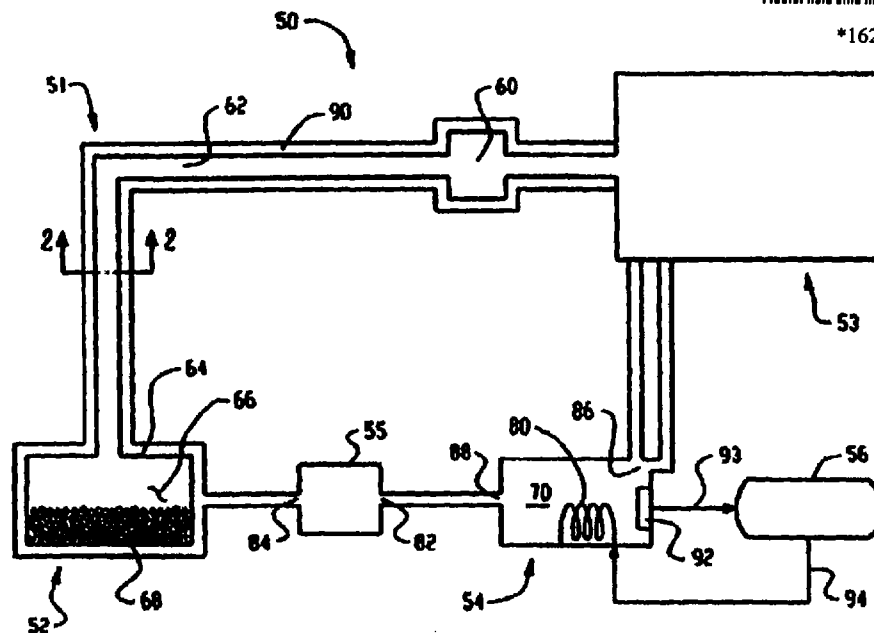
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(54) Title: **METHOD AND SYSTEM FOR ICOSABORANE IMPLANTATION**



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(57) Abstract: A method of implanting ionized icosaborane ($B_{20}H_x$), triantaborane ($B_{30}H_x$), and sarantaborane ($B_{40}H_x$) into a workpiece is provided, comprising the steps of (i) vaporizing and ionizing decaborane in an ion source (50) to create a plasma; (ii) extracting ionized icosaborane, triantaborane, and sarantaborane (collectively "higher order boranes") within the plasma through a source aperture (126) to form an ion beam; (iii) mass analyzing the ion beam with a mass analysis magnet (127) to permit ionized icosaborane ($B_{20}H_x^+$) or one of the other higher order boranes to pass therethrough; and (iv) implanting the ionized icosaborane ($B_{20}H_x^+$) or one of the other higher order boranes into a workpiece. The step of vaporizing and ionizing the decaborane comprises the substeps of (i) vaporizing decaborane in a vaporizer (51) and (ii) ionizing the vaporized decaborane in an ionizer (53).

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