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(54) **SHIELDED POWER COUPLING DEVICE**

(52) **U.S. Cl. 336/120**

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(57) **ABSTRACT**

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Related U.S. Application Data

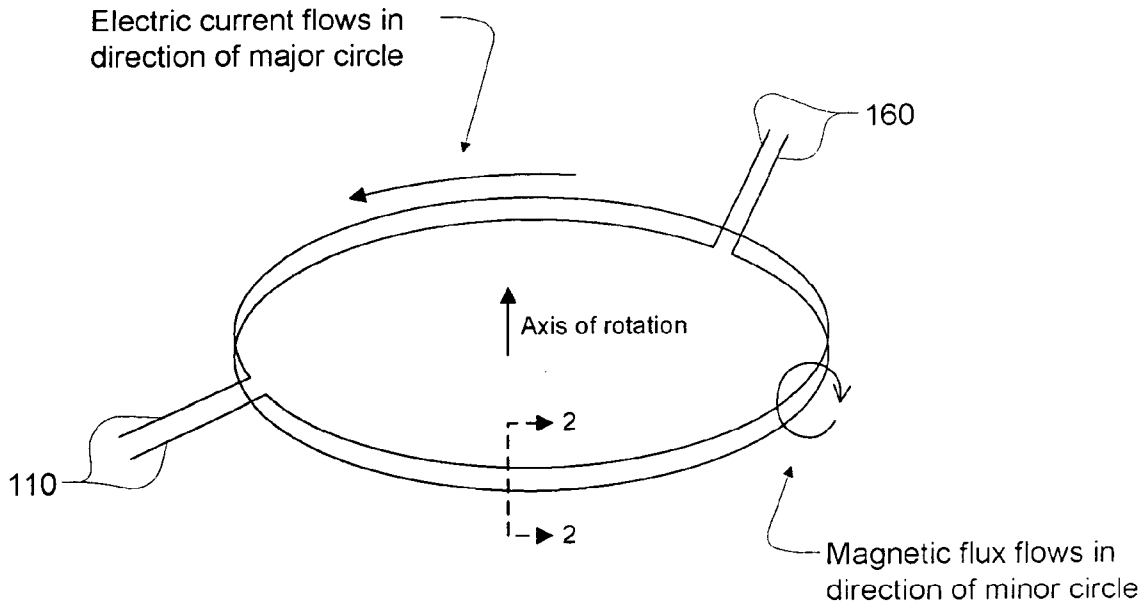
(63) Continuation-in-part of application No. 10/787,270, filed on Feb. 26, 2004.

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H01F 21/06 (2006.01)

Axisymmetric solid of revolution derivable from section at FIG. 5 is generally toroidal with electric current(s) in windings **110, 160** preferably flowing circumferentially along major circle(s) during power coupling device operation. Current(s) in windings **110, 160**; current(s) in half-shields **120, 170**; and the volume of space swept out by shield airgap(s) **101** emerge from plane of paper perpendicularly at FIG. 5 but as these emerge therefrom they curve to follow toroidal major circle(s). Cores **115, 165** preferably shunt and align magnetic flux such that magnetic field lines escape therefrom primarily only in region(s) of core air-gap(s) and such that magnetic flux loops lie in planes of toroidal minor circle(s). Half-shield(s) **120, 170** preferably have electrically conductive material(s) distributed therein as is sufficient to substantially cancel magnetic flux lines impinging thereon before effects of such impinging magnetic flux lines would reach shield airgap(s) **101** and/or outer surface(s) of half-shields **120, 170**.



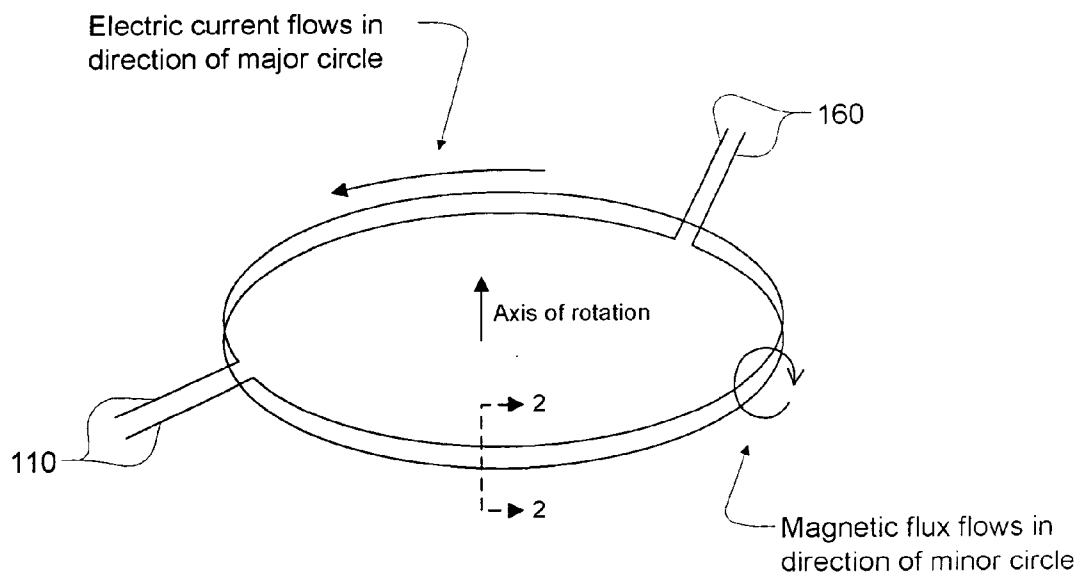


FIG. 1

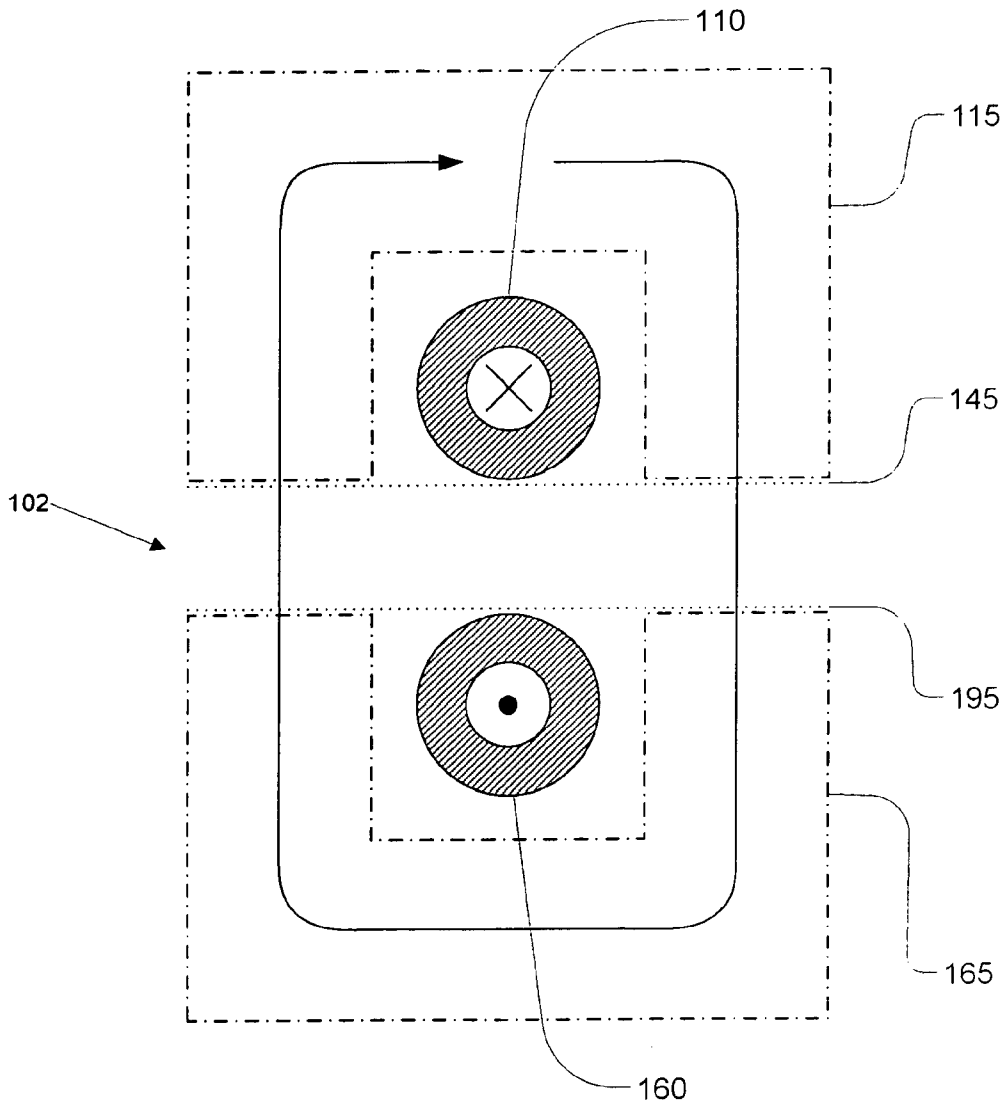


FIG. 2

Ampere's Circuital Law

$$\oint \mathbf{H} \cdot d\mathbf{l} = NI$$

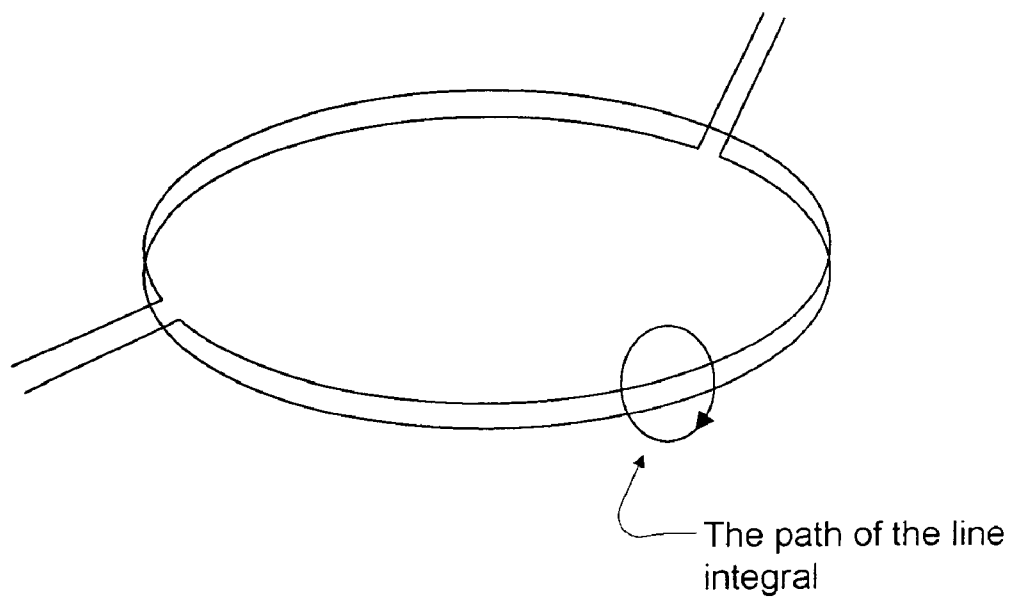


FIG. 3

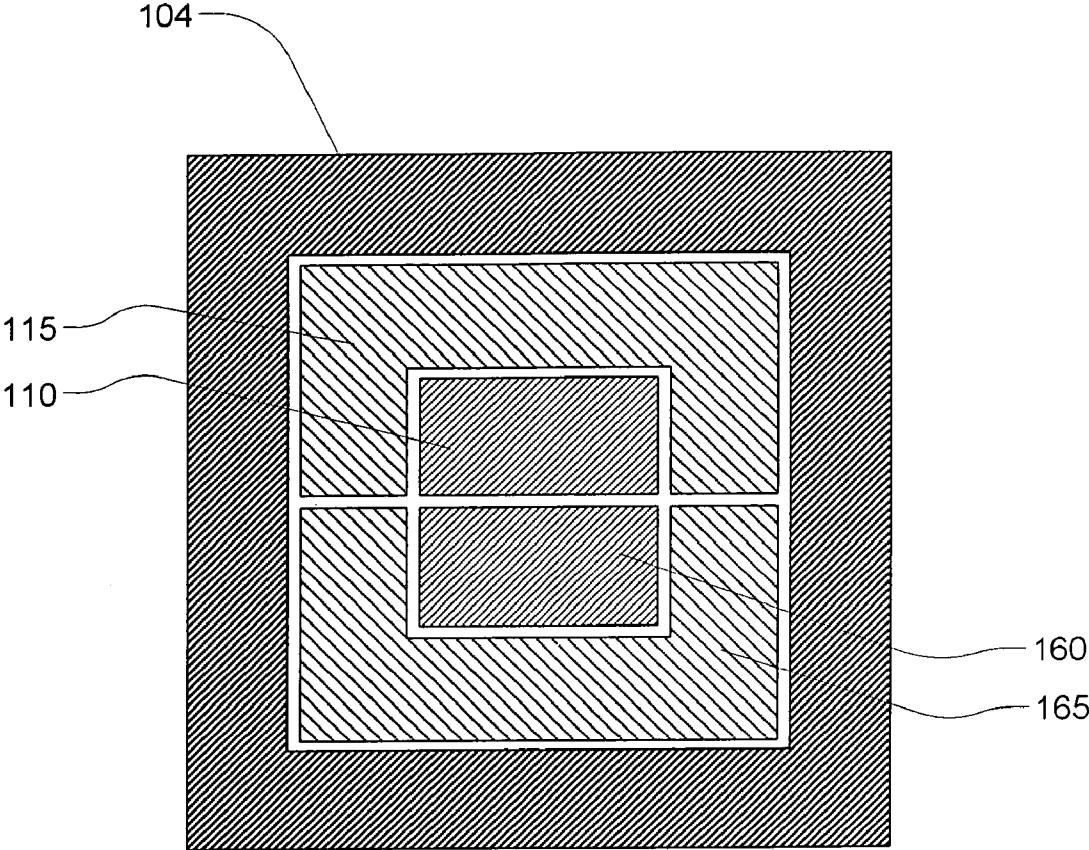


FIG. 4

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