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**Suzuki et al.**

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(54) **CONTACTLESS POWER TRANSMISSION APPARATUS AND A METHOD OF MANUFACTURING A SECONDARY SIDE THEREOF**

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**H01F 27/24** (2006.01)

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USPC ..... **336/200**; 336/232; 336/233

(58) **Field of Classification Search** ..... 336/200,  
336/232, 233

See application file for complete search history.

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*Primary Examiner* — Mohamad Musleh

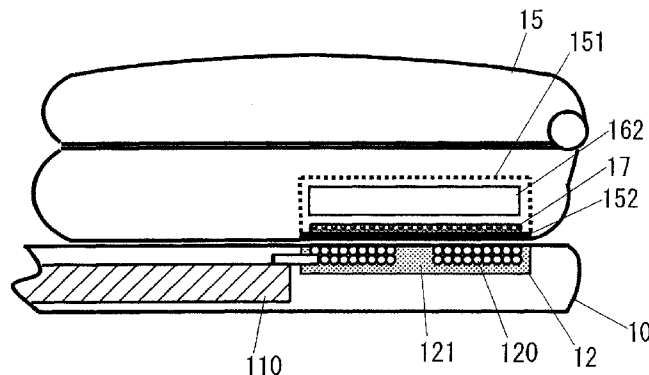
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(57) **ABSTRACT**

According to a first aspect, a secondary side of contactless power transmission apparatus includes: a holding member which is physically separated from a primary side; a magnetic layer; a shield layer for shielding electromagnetic noise; and a heat insulation layer. The secondary coil is a planar coil and supported by the holding member, and at least the magnetic layer is laminated on one side of the planar coil and unified with the planar coil. According to a second aspect, the secondary side of the apparatus includes a plurality of magnetic layers. Each permeability of the magnetic layers is different from each other, and each of the magnetic layers forms a magnetic path with the primary side.

**20 Claims, 12 Drawing Sheets**



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FIG. 1A

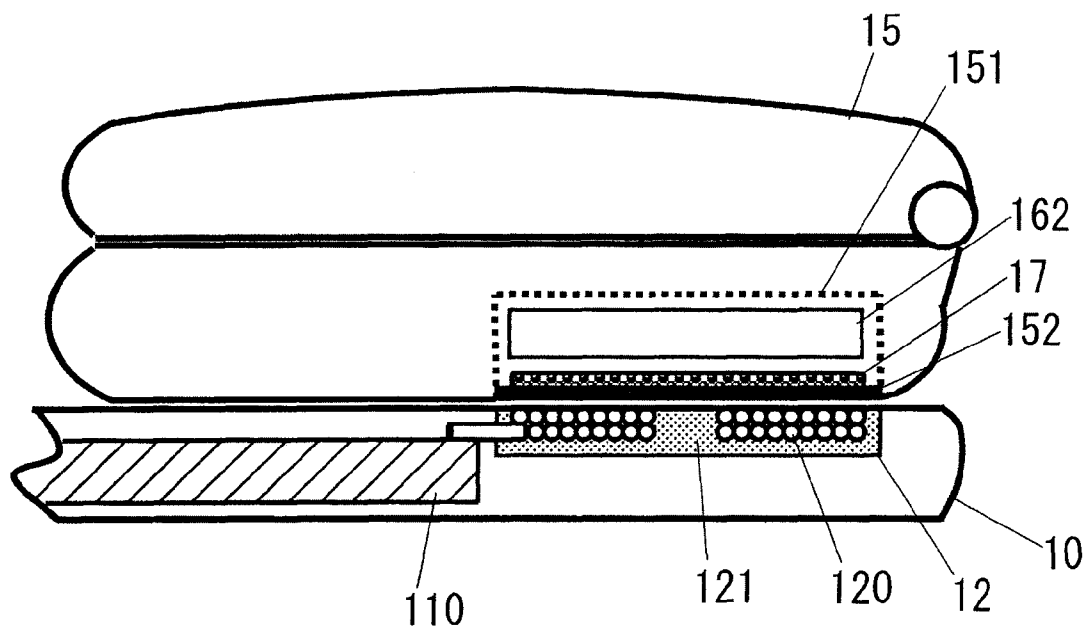


FIG. 1B

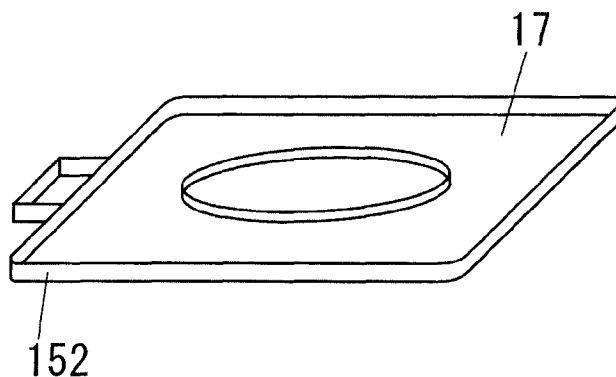


FIG. 2

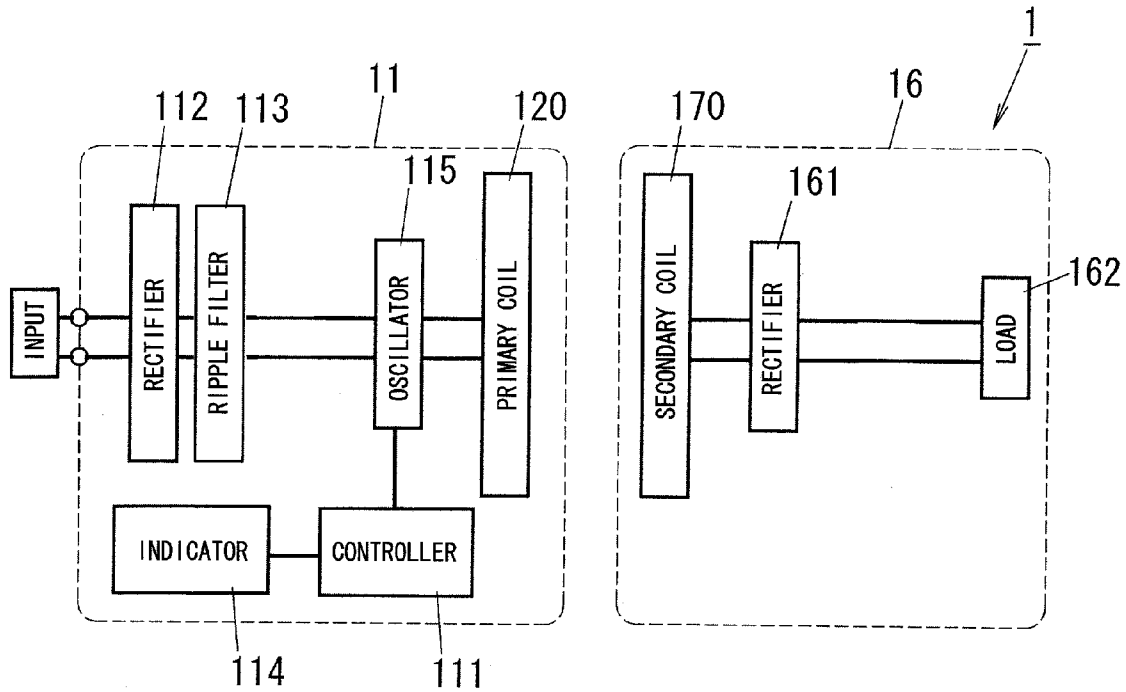
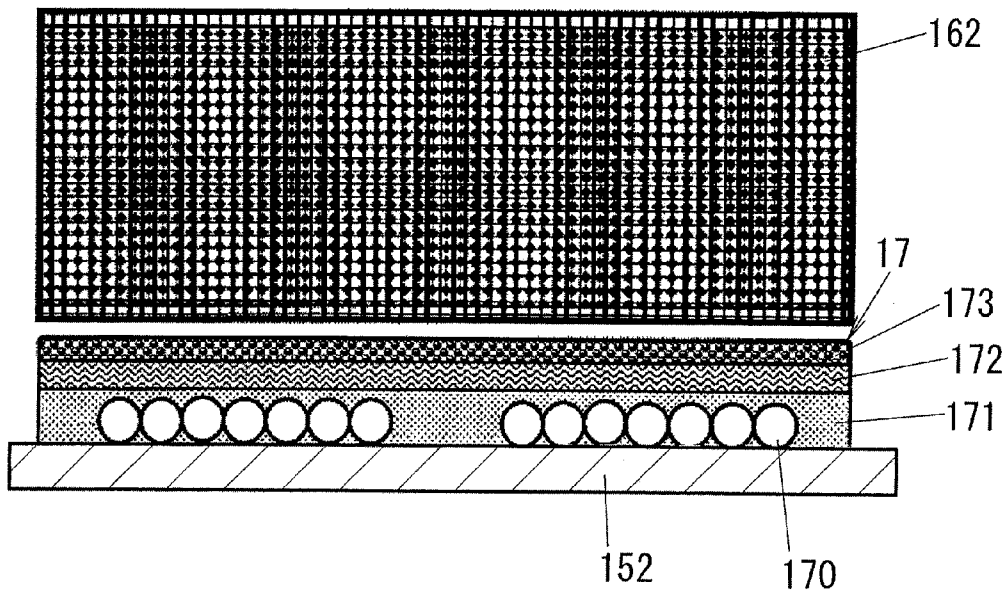


FIG. 3



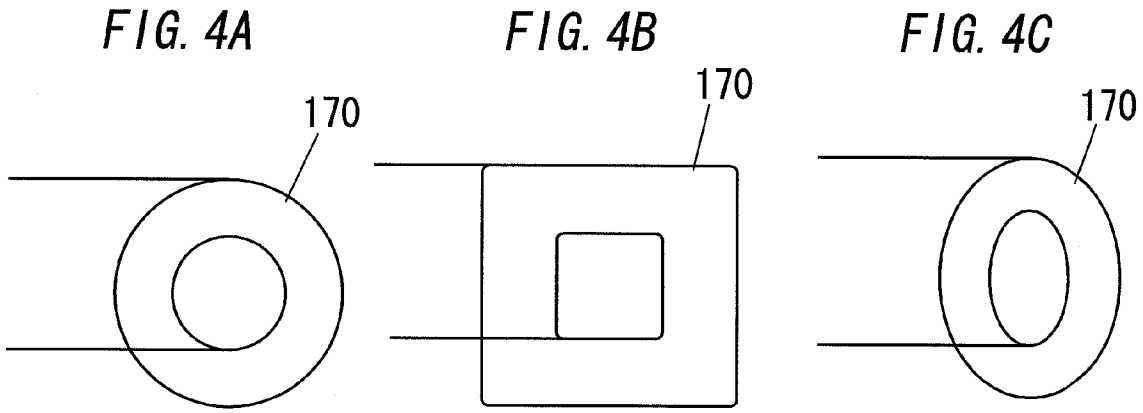
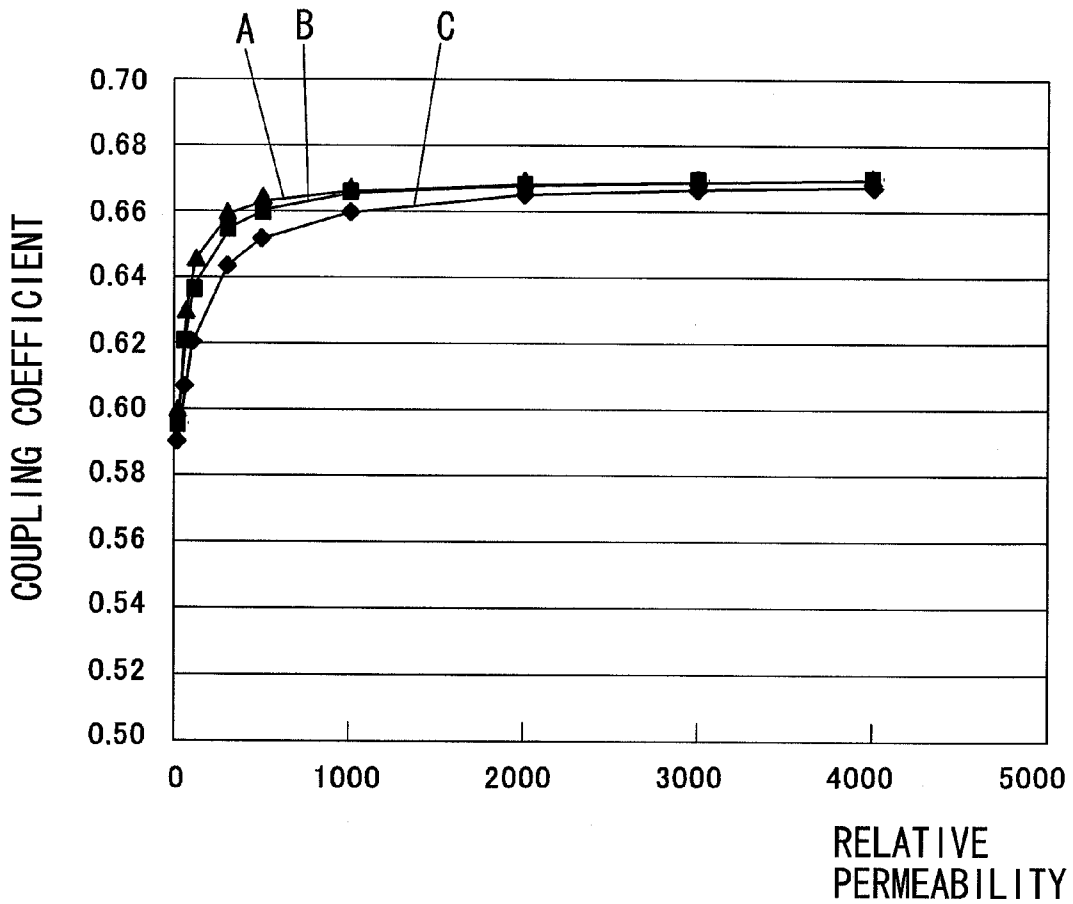


FIG. 5



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