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- (81) 指定国(除另有指明, 要求每一种可提供的国家保护): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW。
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(54) Title: WIRELESS CHARGING SYSTEM BASED ON MAGNETIC COUPLING RESONANCE MODE

(54) 发明名称: 一种基于磁耦合共振模式的无线充电系统

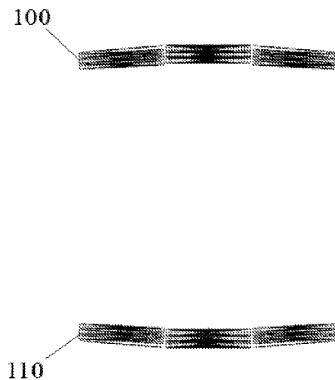


图 1

(57) Abstract: A wireless charging system based on a magnetic coupling resonance mode, relating to the field of wireless charging. The wireless charging system based on a magnetic coupling resonance mode comprises a transmitting coil and a receiving coil which are arranged opposite to each other; the transmitting coil and the receiving coil each comprise at least one layer of coil array; each layer of coil array comprises a plurality of coil units arranged in a matrix; each coil unit comprises a spiral coil and an annular feed coil sleeved on the spiral coil; the middle of one side of the feed coil is cut off to form an input port and an output port, and the middle of the other side is connected to an adjustable capacitor; the spiraling directions of the spiral coils of two adjacent coil units in the coil array are opposite to each other; the rows of coil units in each layer of coil array are all arranged along a curved surface; and each row of coil units are arranged in parallel, and the input ports and the output ports of the feed coils comprised in each row of coil units are connected in parallel. The wireless charging system based on a magnetic coupling resonance mode can achieve high system transmission efficiency and power under a condition of a medium-range or remote transmission distance.

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CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE,
SN, TD, TG)。

本国际公布：

— 包括国际检索报告(条约第21条(3))。

(57) 摘要：一种基于磁耦合共振模式的无线充电系统，涉及无线充电领域。该基于磁耦合共振模式的无线充电系统包括相对布置的发射线圈和接收线圈；发射线圈和接收线圈均包括至少一层线圈阵列，每层线圈阵列均包括多个呈矩阵布置的线圈单元，每个线圈单元均包括螺旋线圈及套设于螺旋线圈上的环形的馈电线圈，馈电线圈的一侧中部断开形成输入端口和输出端口，另一侧中部连接有可调电容，线圈阵列中两个相邻线圈单元的螺旋线圈的旋向相反，每层线圈阵列中的各行线圈单元均沿一曲面布置，每行线圈单元相互平行布置且包含的馈电线圈的输入端口和输出端口并联连接。基于磁耦合共振模式的无线充电系统能够在中、远程传输距离条件下获得较高的系统传输效率与功率。