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(54) **WIRELESS CHARGING ADAPTER
COMPATIBLE WITH WALL CHARGER AND
WIRELESS CHARGING PLATE**

(52) **U.S. Cl. 320/108; 307/104**

(57) **ABSTRACT**

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Example embodiments are disclosed for wirelessly charging batteries of relatively small devices, such as wireless headsets, using a relatively large wireless charging plate. In example embodiments of the invention, a high permeability magnetic field concentrator has a generally frusto-conical shape with a base at one end, tapering down to a pole at the opposite end. The concentrator is configured to concentrate magnetic flux at a lower flux density incident at the base from a proximate power transmitting coil having a relatively large surface area in a wireless charger. The magnetic flux exits at a higher flux density at the pole end proximate to a power receiving coil having a relatively small surface area in a utilization device. The higher density magnetic flux couples with the power receiving coil, using contact-less electromagnetic induction. The wireless charger may be a charging plate and the utilization device may be a wireless headset. The magnetic field concentrator enables gathering sufficient power by the relatively small power receiving coil to charge the headset's batteries within a reasonable time.

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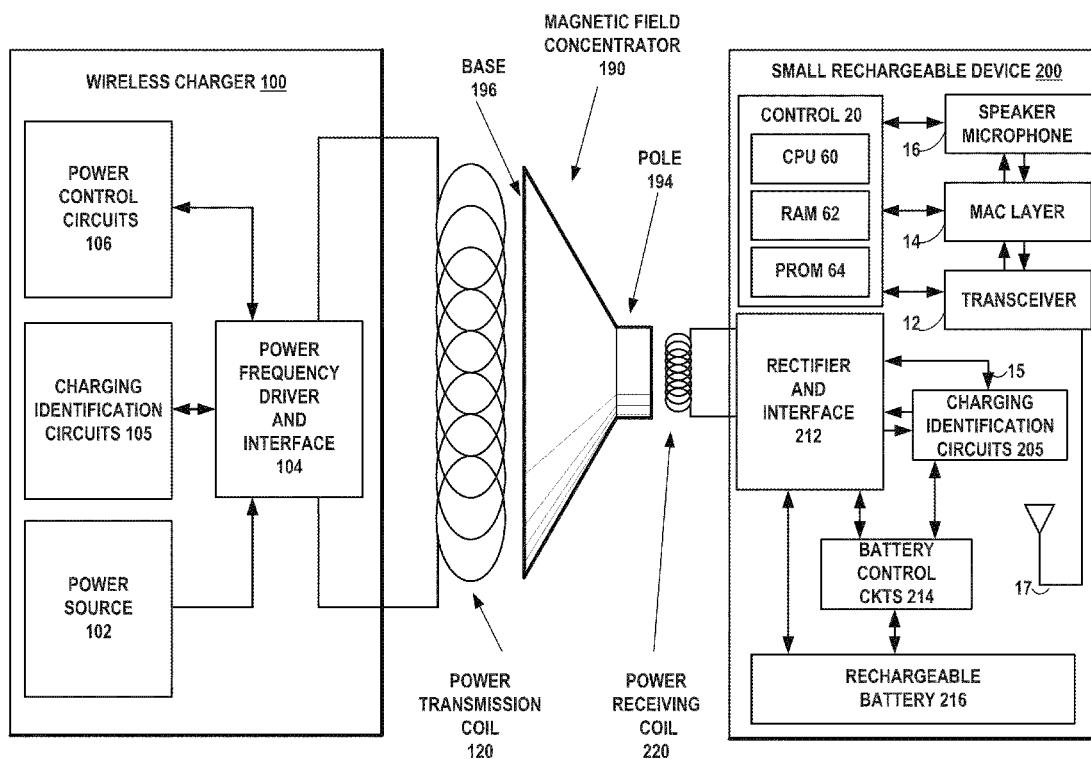
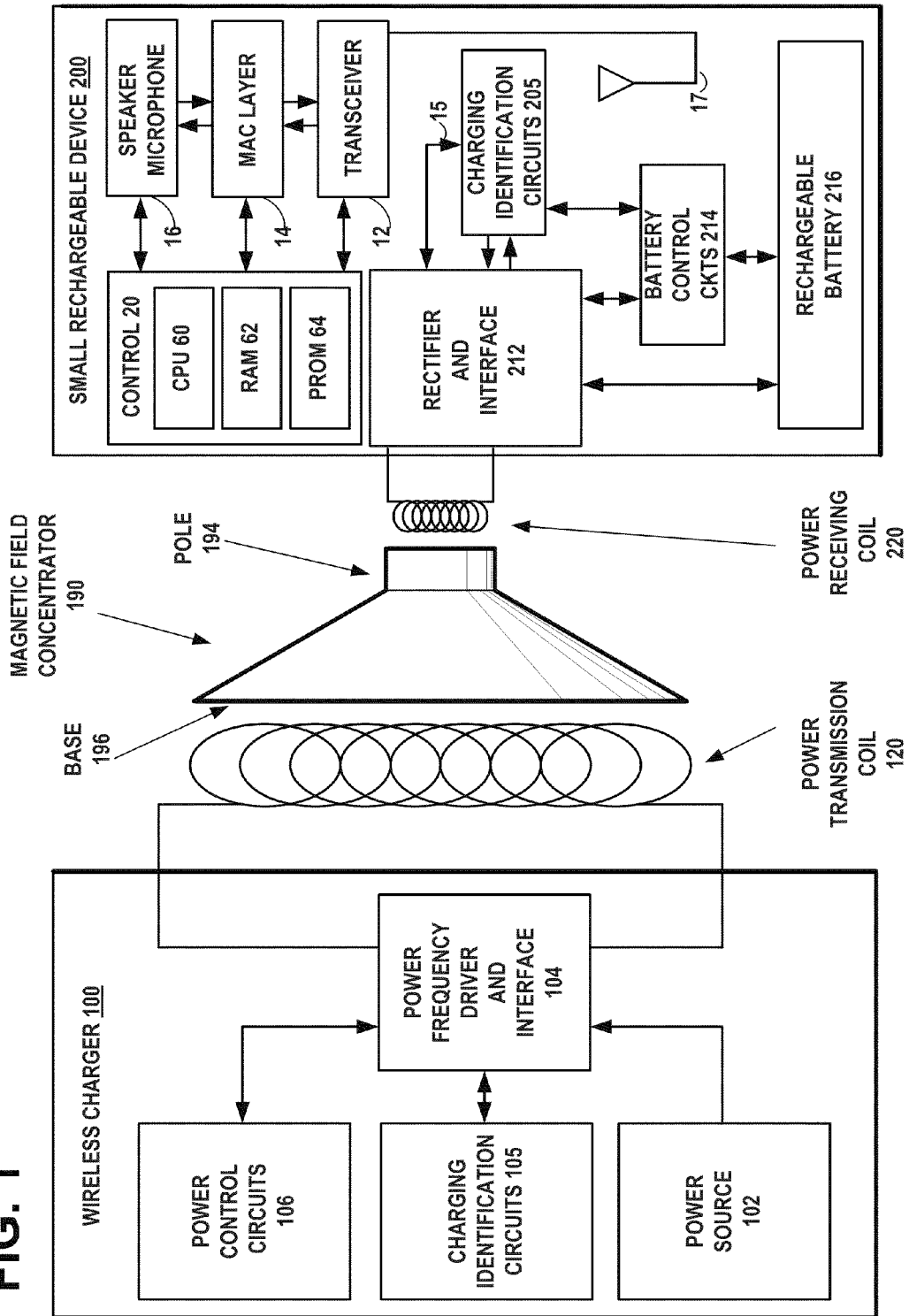
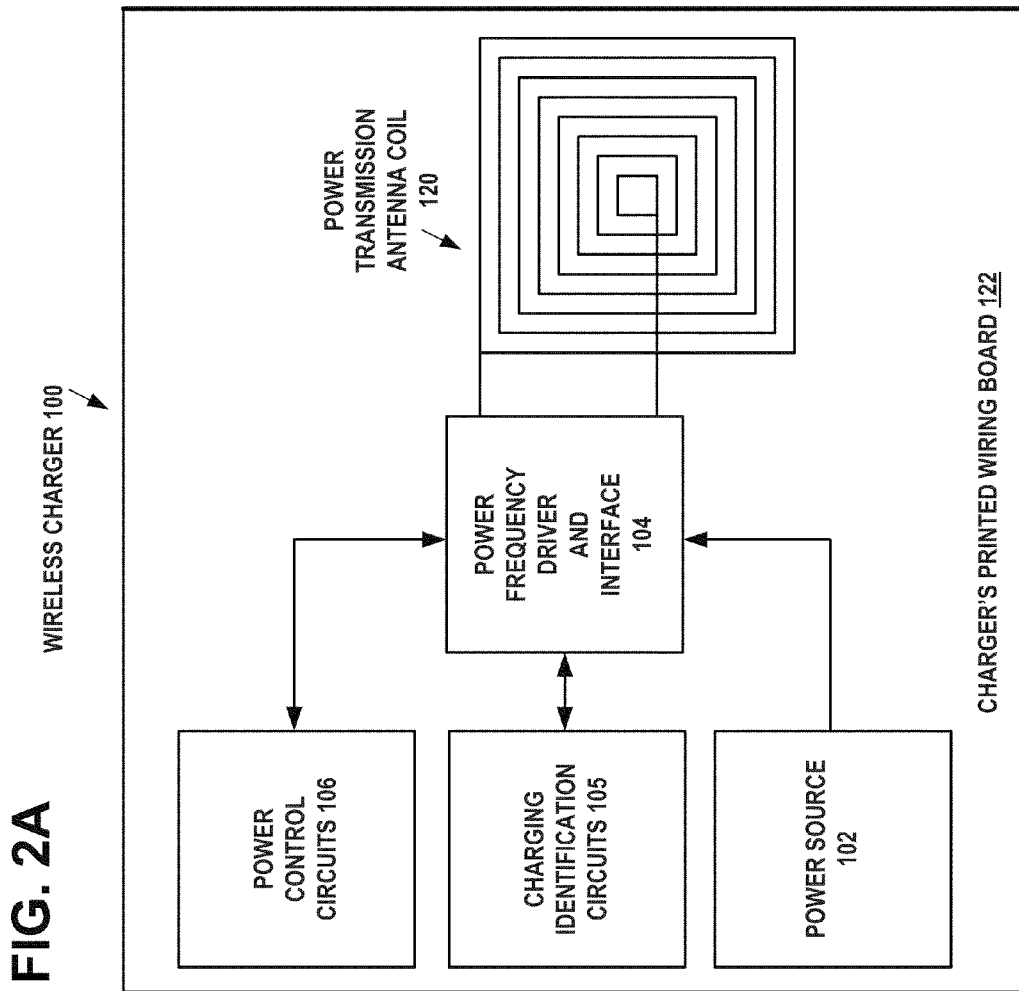


FIG. 1





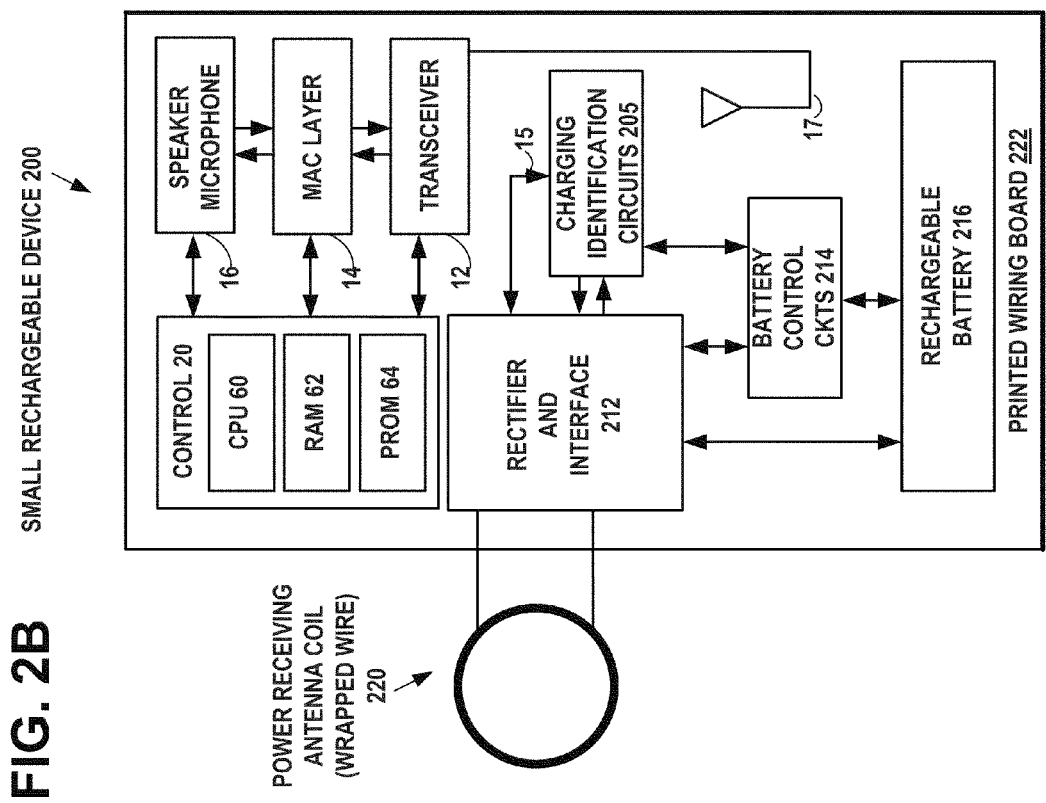
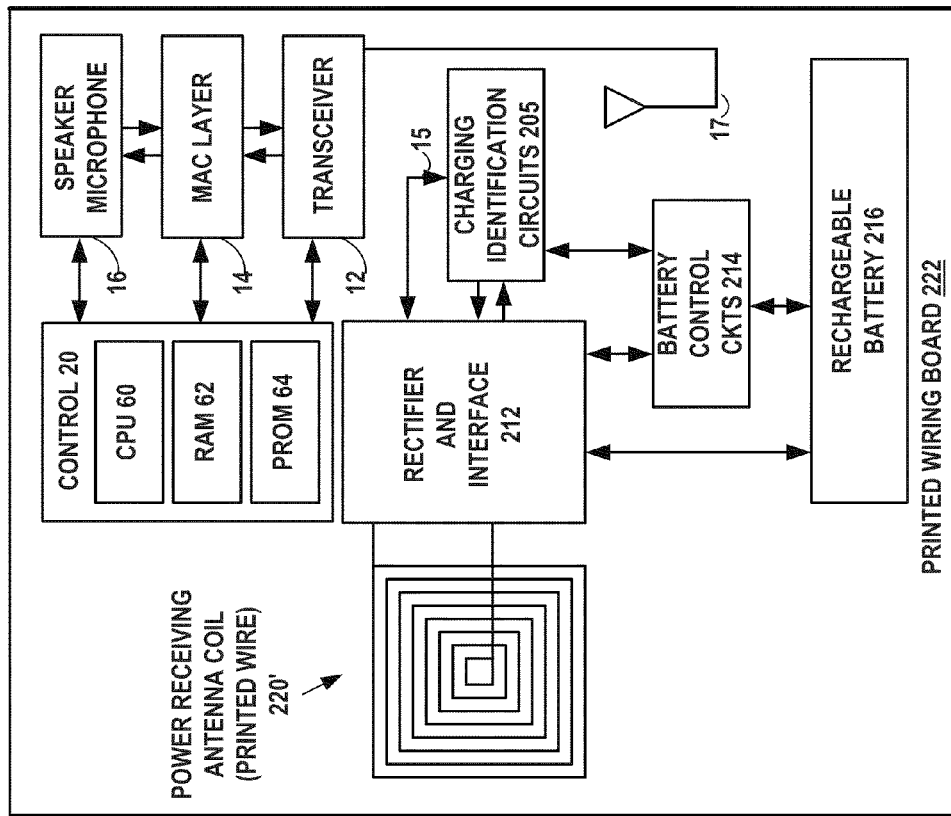


FIG. 2B

SMALL RECHARGEABLE DEVICE 200

POWER RECEIVING ANTENNA COIL (WRAPPED WIRE) 220

FIG. 2C SMALL RECHARGEABLE DEVICE 200



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