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### (12) United States Patent

Flowerdew et al.

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(54)	INDUCTIVE CHARGING SYSTEM				
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(73)	Assignee:	Plantronics, Inc., Santa Cruz, CA (US)			
(*)	Notice:	Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 106 days.			
(21)	Appl. No.:	10/882,961			

- (22) Filed: Jul. 1, 2004
- (51) Int. Cl. H02J 7/00

(2006.01)

- 320/108, 110, 112, 113, 114, 115, 116 See application file for complete search history.

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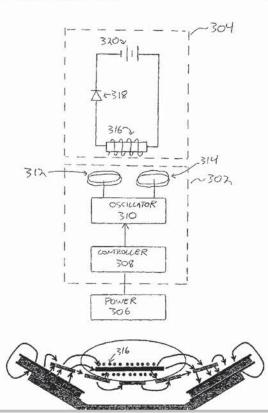
### \* cited by examiner

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### (57) ABSTRACT

An apparatus for inductive charging a battery. The apparatus includes a housing with a lower surface and a charging surface. A rechargeable device with a rechargeable battery may be placed on the charging surface. The apparatus further includes a controller for driving an oscillator, wherein the controller receives power from a power source. A first charger coil and second charger coil are disposed within the housing and are coupled to the oscillator. The first charger coil and second charger coil create a substantially horizontal magnetic field in the volume of space above the charging surface.

#### 52 Claims, 12 Drawing Sheets





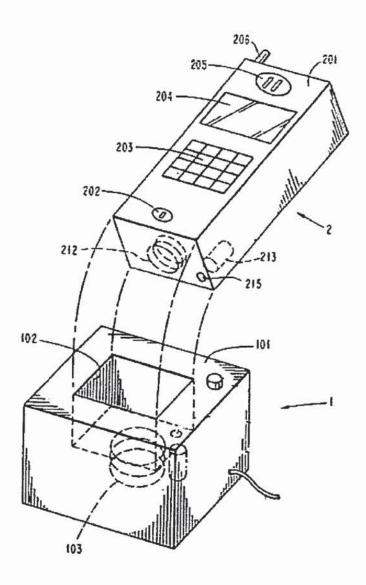
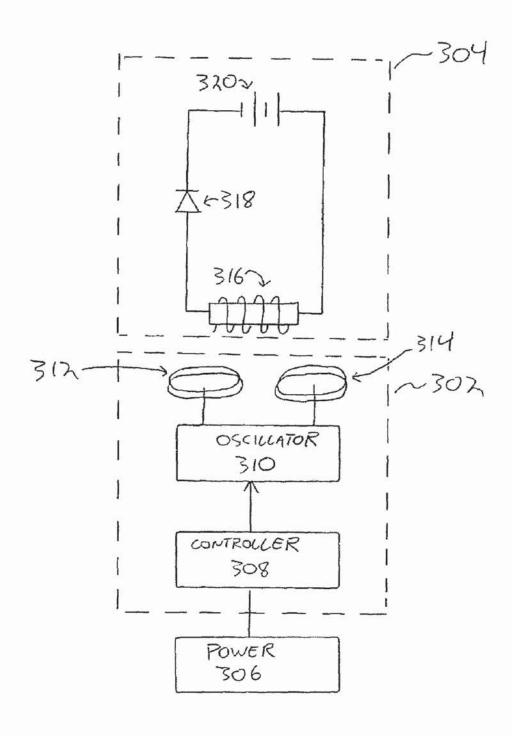


FIGURE I



May 1, 2007





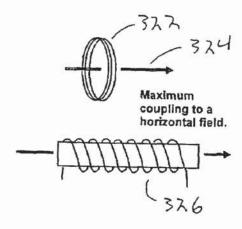


FIGURE 3A

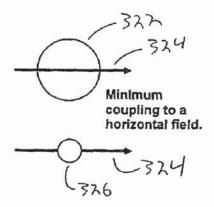


FIGURE 35

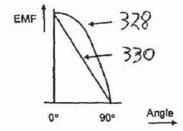
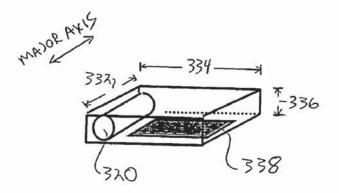


FIGURE 3C





May 1, 2007

FIGURE 4A

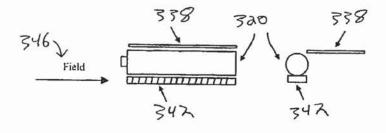


FIGURE 4B

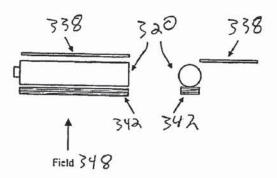


FIGURE 4C



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