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**Vorenkamp et al.**

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- (54) **INCREASING EFFICIENCY OF WIRELESS POWER TRANSFER**
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- (73) Assignee: **Broadcom Corporation**, Irvine, CA (US)
- (\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 447 days.

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**Related U.S. Application Data**

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(51) **Int. Cl.**  
**H02J 7/04** (2006.01)  
**H02J 7/00** (2006.01)

(52) **U.S. Cl.**  
USPC ..... **320/108**; 320/107; 320/114; 320/156;  
320/158; 320/162

(58) **Field of Classification Search** ..... 320/108,  
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320/163, 164, 165

See application file for complete search history.

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*Primary Examiner* — Edward Tso

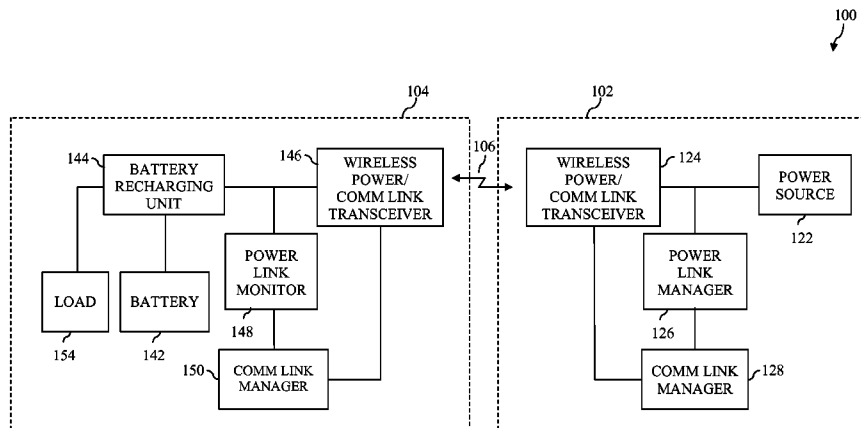
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(57) **ABSTRACT**

Techniques are described herein that are capable of increasing efficiency of wireless power transfer. A wireless power transfer system includes features that allow the system to be deployed in public spaces such as airports or in commercial establishments such as restaurants or hotels to allow a user to recharge one or more portable electronic devices while away from home. To accommodate wireless recharging of a variety of device types and states, the system may receive parameters and/or state information associated with a portable electronic device to be recharged and may control the wireless power transfer in accordance with such parameters and/or state information. For instance, the system may increase efficiency of the wireless power transfer based on such parameters and/or state information. The system may also provide a secure and efficient means for obtaining required payment information from the user prior to the wireless power transfer, thereby facilitating fee-based recharging.

**21 Claims, 25 Drawing Sheets**



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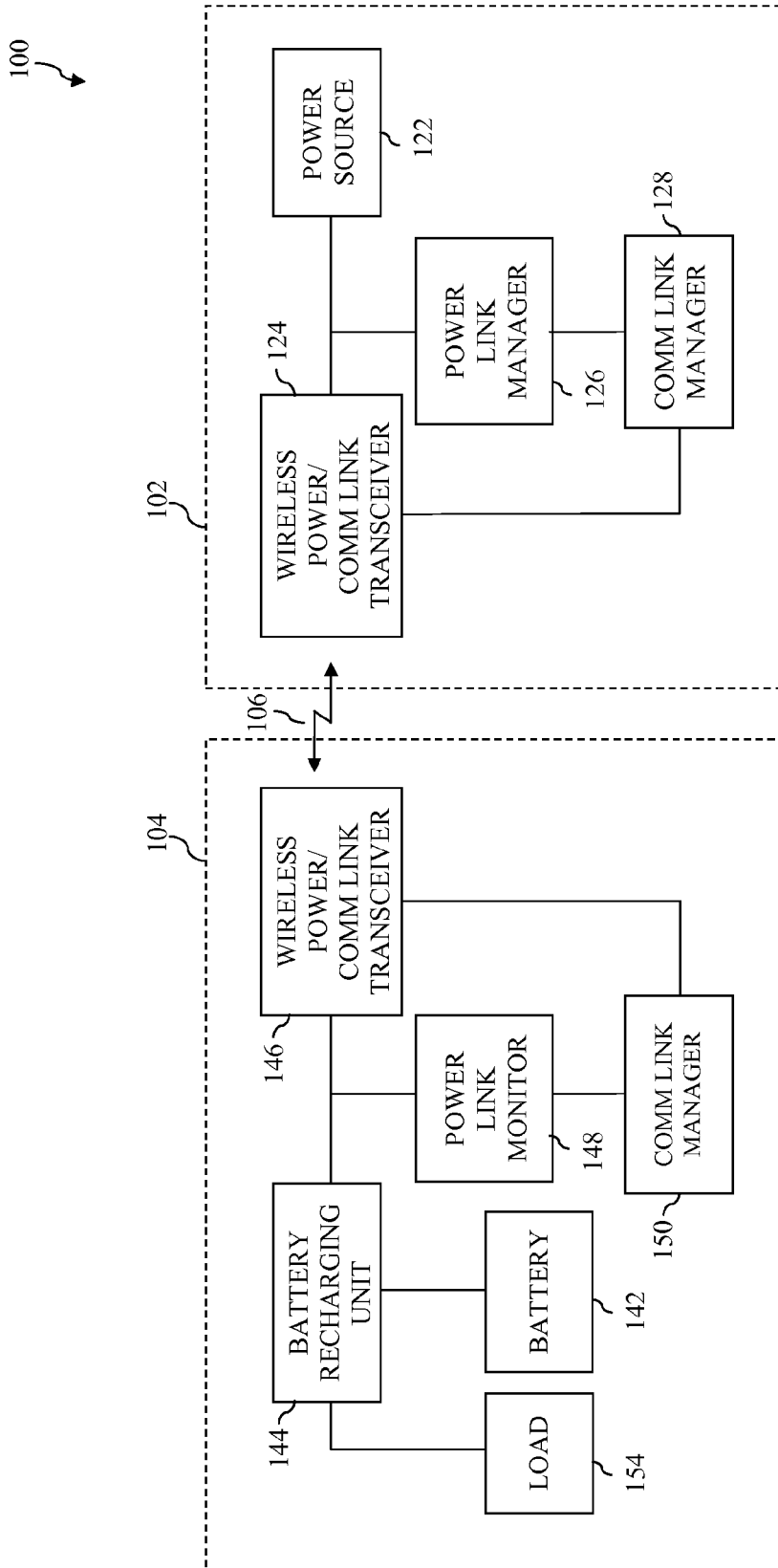


FIG. 1

200  
↙

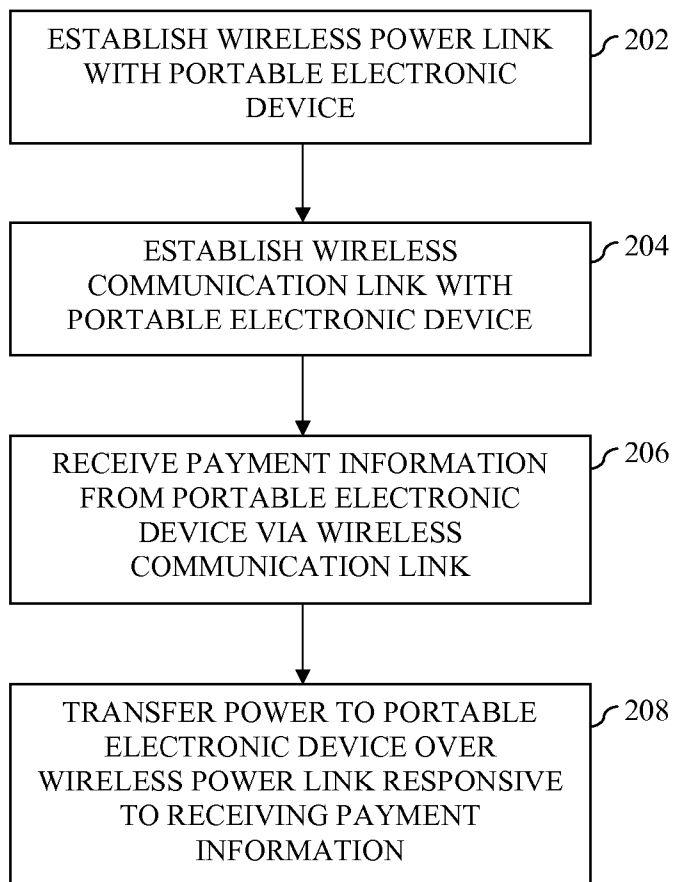


FIG. 2

300  
↙

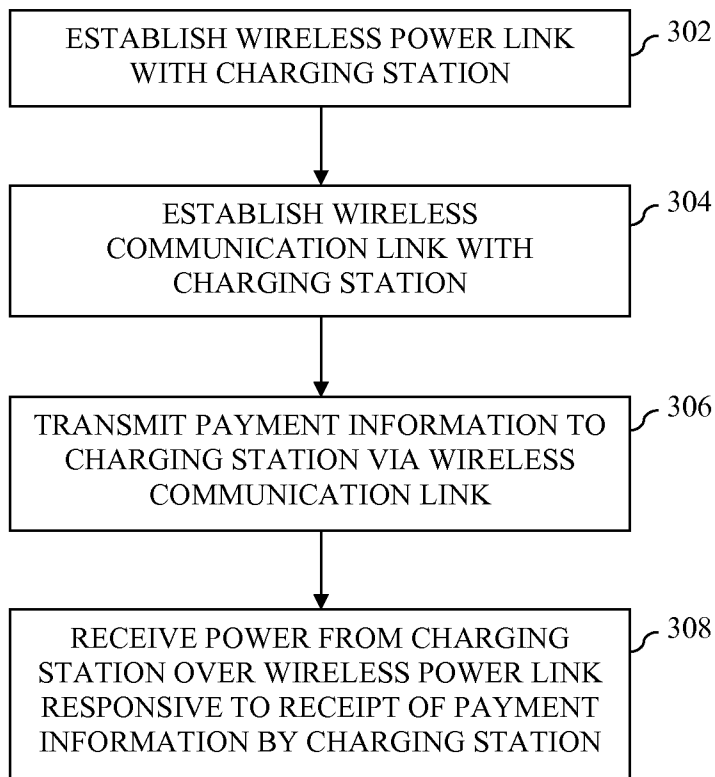


FIG. 3

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