

(12) **United States Patent**  
**Leem**

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(54) **WIRELESS ANTENNA FOR WIRELESS CHARGING AND NFC COMMUNICATION AND WIRELESS TERMINAL TO WHICH SAME IS APPLIED**

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(30) **Foreign Application Priority Data**  
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**H01Q 1/38** (2006.01)  
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CPC ..... **H01Q 7/00** (2013.01); **H01Q 1/22** (2013.01); **H01Q 1/24** (2013.01); **H01Q 1/38** (2013.01); **H04B 5/00** (2013.01)

(58) **Field of Classification Search**  
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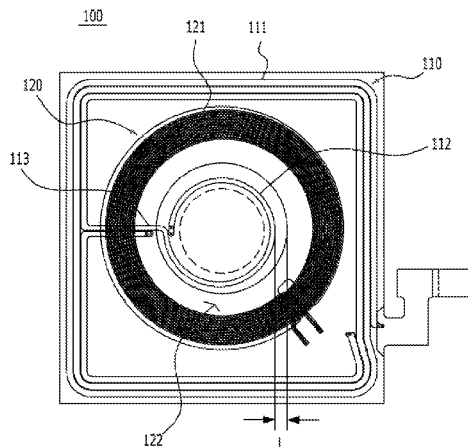
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(57) **ABSTRACT**

A wireless antenna including a wireless communication antenna including a first wireless communication coil and a second wireless communication coil; and a wireless charging antenna including a wireless charging coil. In addition, the wireless charging coil is disposed inside the first wireless communication coil, and the second wireless communication coil is disposed inside the wireless charging coil; the wireless communication antenna further includes a coil connection member traversing the wireless charging coil so as to interconnect the first wireless communication coil and the second wireless communication coil; and a number of windings of the second wireless communication coil is less than a number of windings of the first wireless communication coil.

**55 Claims, 7 Drawing Sheets**



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(58)	<b>Field of Classification Search</b>		EP	2804290	A1	11/2014
	CPC .... H04B 5/0037; H04B 5/005; H04B 5/0075;		EP	2830152	A1	1/2015
	H04B 5/0081; H04B 5/0087; H04B		KR	10-2013-0015618	A	2/2013
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	See application file for complete search history.		KR	10-2013-0045306	A	5/2013
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FIG. 1

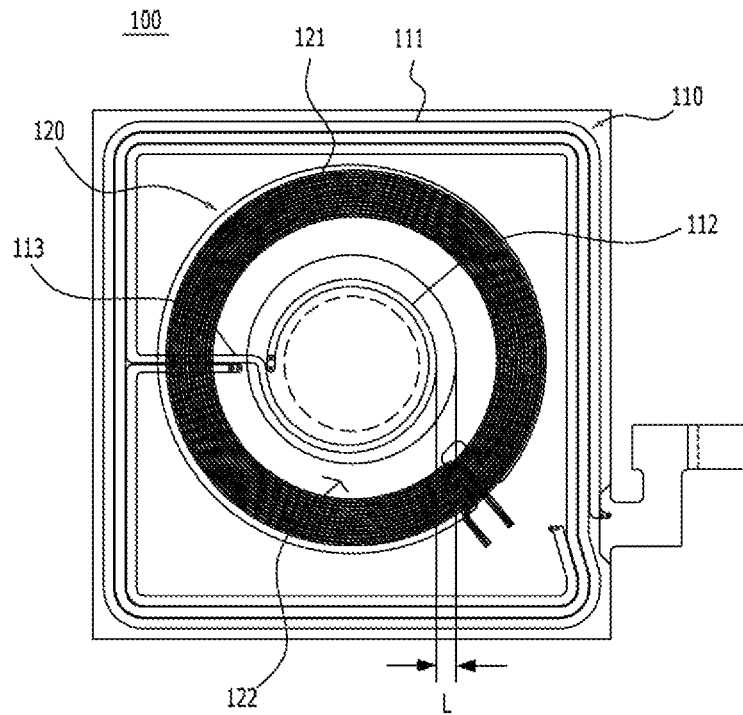


FIG. 2

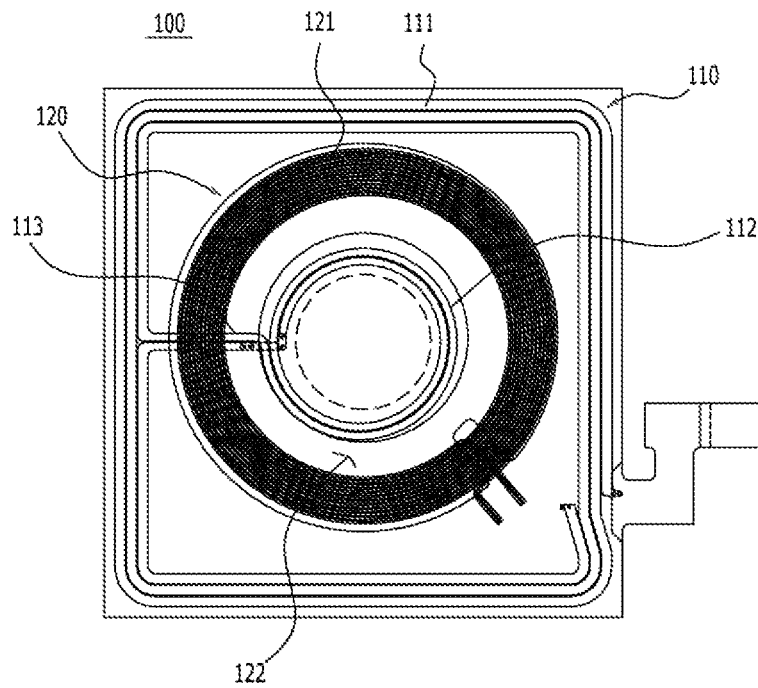
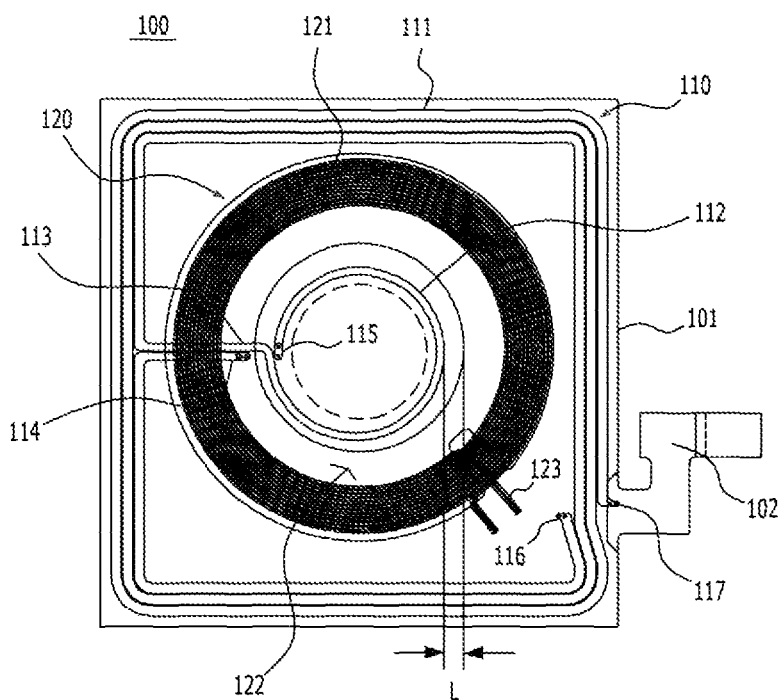


FIG. 3



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