



US009252611B2

(12) **United States Patent**
Lee et al.

(10) **Patent No.:** **US 9,252,611 B2**
(45) **Date of Patent:** **Feb. 2, 2016**

(54) **MAGNETIC FIELD SHIELDING SHEET FOR A WIRELESS CHARGER, METHOD FOR MANUFACTURING SAME, AND RECEIVING APPARATUS FOR A WIRELESS CHARGER USING THE SHEET**

(58) **Field of Classification Search**
CPC H02J 5/005; H02J 7/025; H02J 7/0042; H02J 7/355; H01F 27/362; H01F 27/365
USPC 320/107, 108, 114; 336/84 R, 84 C
See application file for complete search history.

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(73) Assignee: **AMONSENSE CO., LTD.** (KR)

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 36 days.

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(21) Appl. No.: **14/366,439**

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(22) PCT Filed: **Dec. 21, 2012**

(Continued)

(86) PCT No.: **PCT/KR2012/011256**

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§ 371 (c)(1),
(2) Date: **Jun. 18, 2014**

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(87) PCT Pub. No.: **WO2013/095036**

Primary Examiner — Edward Tso

PCT Pub. Date: **Jun. 27, 2013**

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(65) **Prior Publication Data**

US 2015/0123604 A1 May 7, 2015

(57) **ABSTRACT**

(30) **Foreign Application Priority Data**

Dec. 21, 2011 (KR) 10-2011-0138987

Provided are a magnetic field shield sheet for a wireless charger, which blocks an effect of an alternating-current magnetic field generated when a charger function for a portable mobile terminal device is implemented in a non-contact wireless manner on a main body of the portable mobile terminal device and exhibits excellent electric power transmission efficiency, a method of manufacturing the sheet, and a receiver for the wireless charger by using the sheet. The sheet includes: at least one layer thin magnetic sheet made of an amorphous ribbon separated into a plurality of fine pieces; a protective film that is adhered on one surface of the thin magnetic sheet via a first adhesive layer provided on one side of the protective film; and a double-sided tape that is adhered on the other surface of the thin magnetic sheet via a second adhesive layer provided on one side of the double-sided adhesive tape, wherein gaps among the plurality of fine pieces are filled by some parts of the first and second adhesive layers, to thereby isolate the plurality of fine pieces.

(51) **Int. Cl.**

H01M 10/44 (2006.01)
H01M 10/46 (2006.01)

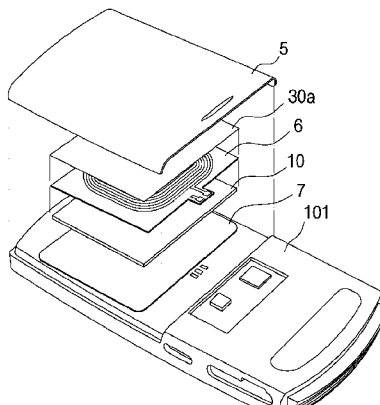
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(52) **U.S. Cl.**

CPC **H02J 7/0042** (2013.01); **B32B 37/12** (2013.01); **B32B 37/18** (2013.01);

(Continued)

18 Claims, 11 Drawing Sheets



- (51) **Int. Cl.**
H02J 7/00 (2006.01)
H01F 38/14 (2006.01)
H01F 27/36 (2006.01)
B32B 37/12 (2006.01)
B32B 37/18 (2006.01)
B32B 38/00 (2006.01)
H02J 7/02 (2006.01)
H02J 5/00 (2006.01)
- (52) **U.S. Cl.**
 CPC *B32B 38/0004* (2013.01); *H01F 27/365*
 (2013.01); *H01F 38/14* (2013.01); *H02J 5/005*
 (2013.01); *H02J 7/025* (2013.01)

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FIG. 1

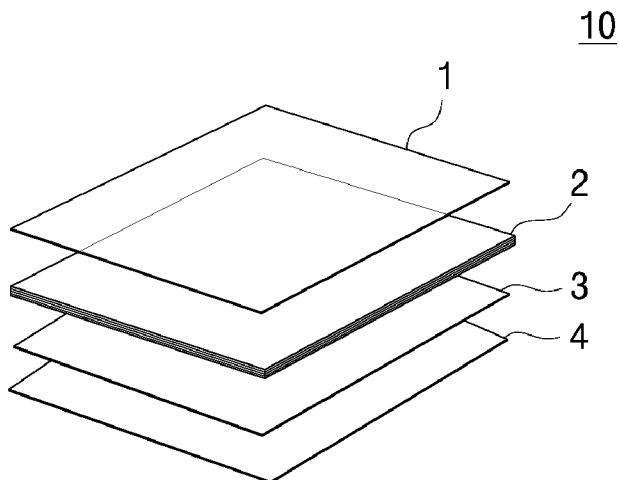


FIG. 2

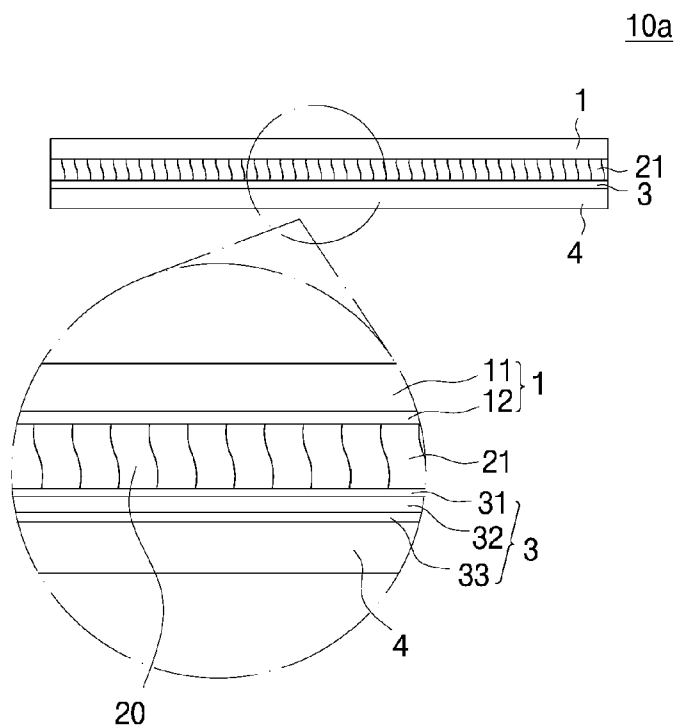


FIG. 3

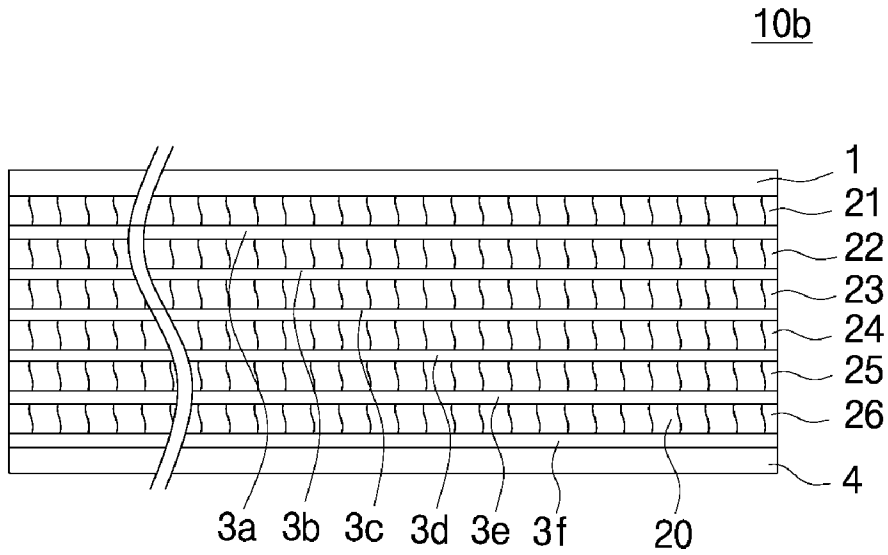


FIG. 4

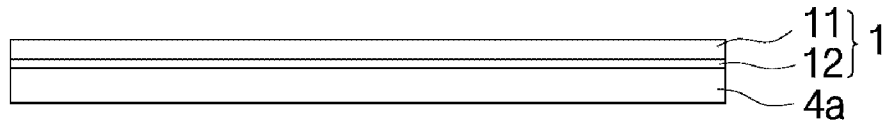


FIG. 5

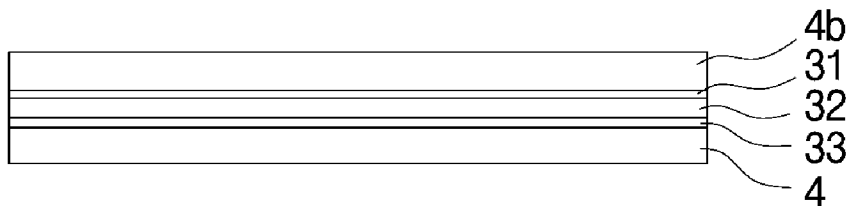
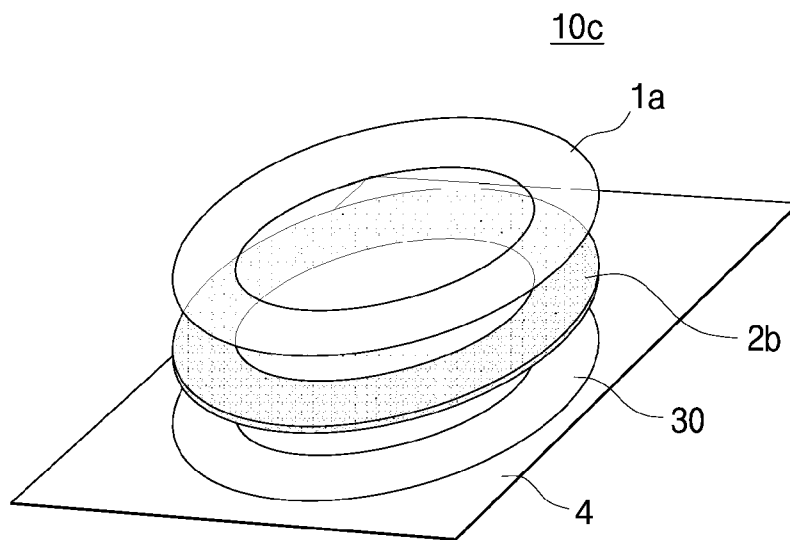


FIG. 6



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