



- (51) **International Patent Classification:**
E04F 19/02 (2006.01) *F21V 33/00* (2006.01)
A47B 96/00 (2006.01)
- (21) **International Application Number:**
PCT/US2016/024819
- (22) **International Filing Date:**
30 March 2016 (30.03.2016)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
10-2015-0053098 15 April 2015 (15.04.2015) KR
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- (81) **Designated States** (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.
- (84) **Designated States** (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(54) **Title:** CORNER PROTECTOR

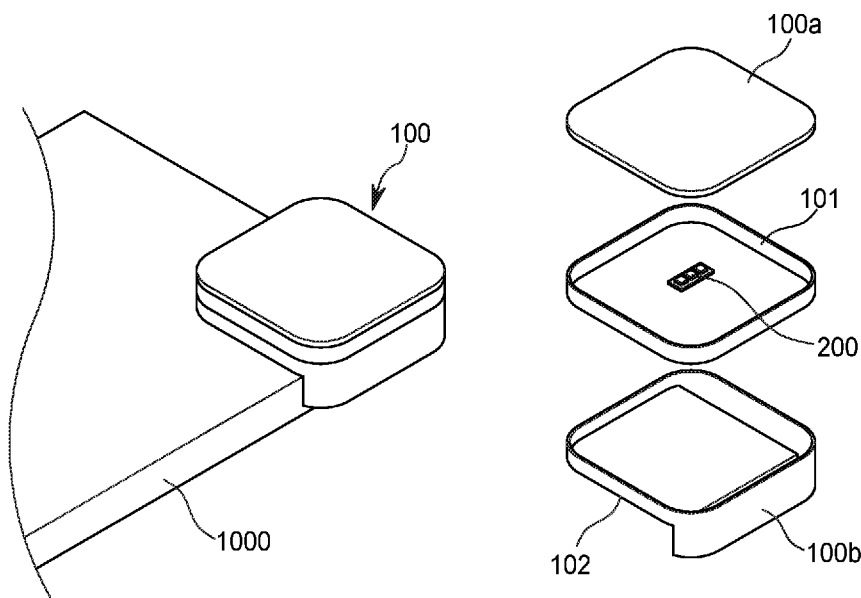


FIG. 1

(57) **Abstract:** Provided herein is a corner protector that includes a flexible body, and a light source disposed in the body, wherein at least a portion of the body is transparent or semitransparent, light generated from the light source may be emanated to outside of the body, a seating groove that may seat the body on an object having angular corners is formed at the body, and the light source may be turned on or off. The corner protector may further include an attachment means, and the corner protector may be fixed to the object having angular corners by the attachment means.

CORNER PROTECTOR

Technical Field

The present disclosure relates to a corner protector, and more particularly, to a corner protector
5 that covers corners of various types of structures or pieces of furniture to prevent accidents involving a user.

Background

As is well-known, corners closely resembling an “L” shape that form right angles generally are
10 formed on columns of buildings, home appliances, pieces of furniture, and the like.

Corner protectors that may mitigate an impact are attached to the corners to prevent a person from
being injured due to colliding with the corners. However, due to being unidentifiable at night,
conventional corner protectors cannot prevent a person from colliding with corners and cause some
injuries when the person collides with the corners despite its impact mitigating function.

Summary

The present disclosure is directed to providing an improved corner protector. In some
embodiments, the cube corner protector is identifiable day and/or night without light to prevent accidents
in which a person collides with corners. Also, the present disclosure is directed to providing a corner
20 protector in which power supplied to the corner protector identifiable at night is automatically or
manually controlled to efficiently manage power.

According to the present disclosure, provided is a corner protector that includes a flexible body,
and a light source disposed in the body, wherein at least a portion of the flexible body is transparent or
semitransparent, light generated from the light source may be emanated to outside of the body, a seating
25 groove that may seat the body on an object having angular corners is formed at its body, and the light
source may be turned on or off.

According to an embodiment of the present disclosure, the corner protector may further include an
attachment means, and the corner protector may be fixed to the object having angular corners by the
attachment means. According to an embodiment of the present disclosure, the attachment means may be,
30 for example, a double-sided tape.

According to another embodiment of the present disclosure, the light source may be turned on or
off by a user, the light source may be turned on when the user applies a pressure of a predetermined
magnitude to the body while the light source is off, and the light source may be turned off when the user
applies the pressure of the predetermined magnitude to the body while the light source is on.

According to still another embodiment of the present disclosure, the corner protector may further
include an optical sensor, such that the light source may be turned off when the optical sensor detects
35 light of an intensity equal to or higher than a predetermined intensity from surroundings, and the light

source may be turned on when the optical sensor detects light of a lower intensity than the predetermined intensity from the surroundings.

According to an embodiment of the present disclosure, the body may be formed of, for example, acrylonitrile-butadiene rubber (NBR), silicone, thermoplastic rubber (TPR), PU, PVC, or PE. Also, at least a portion of the body may be formed of transparent silicone, TPR, PVC, or PE.

According to an embodiment of the present disclosure, the corner protector may further include a battery disposed in the body, and the battery may supply power to the light source.

According to the present disclosure, a light source is disposed in a corner protector such that a user may be prevented from colliding with corners even at night. Also, according to the present disclosure, the user freely turns on or off the light source installed in the corner protector or the light source is turned on or off by automatically detecting an intensity of surrounding light such that power may be efficiently managed.

Brief Description of Drawings

FIG. 1 illustrates a corner protector according to a first embodiment of the present disclosure.

FIG. 2 illustrates a corner protector according to a second embodiment of the present disclosure.

FIG. 3 illustrates a corner protector according to a third embodiment of the present disclosure.

Detailed Description

Hereinafter embodiments according to the present disclosure will be described in detail with reference to the accompanying drawings. The embodiments described below are just examples, and it should not be construed that the scope of the present disclosure is limited by the embodiments.

In this specification, the meaning of the term “corner” not only encompasses a common “side” of two joined surfaces of a planar polygon but also a “vertex” of the polygon.

FIG. 1 illustrates a corner protector having an overall regular hexahedral shape according to a first embodiment of the present disclosure. In the embodiment of FIG. 1, a body 100 of the corner protector is formed of an upper body 100a, a lower body 100b, and a transparent portion 101. The body is formed of a flexible material to absorb an impact when a person collides therewith. The flexible material may be, for example, acrylonitrile-butadiene rubber (NBR), silicone, thermoplastic rubber (TPR), PU, PVC, or PE.

The transparent portion 101 of the body 100 may be formed of, for example, transparent silicone, TPR, PVC, and PE. Also, corners of the body may be rounded to further improve its impact absorbing ability.

Preferably, a light source 200 is installed in the body 100 such that a person may easily identify the corners at night. The light source 200 may be, for example, a light emitting diode (LED) lamp. The transparent portion 101 of the body 100 may be formed of a transparent or semitransparent material such that light generated from the light source 200 may be emanated to the outside of the body.

A power supply that supplies electrical energy to the light source may be located inside or outside the corner protector. In some embodiments where an external power supply is used, an ordinary

household power supply can be used. An inner power supply may be a battery disposed inside the body. In this case, to replace the battery, it is preferable that the body has a structure that may be easily disassembled. For example, in the embodiment of FIG. 1, the battery may be replaced by disassembling the upper body 100a.

5 In at least some embodiments, the corner protector includes a seating groove 102 capable of seating the body on an object 1000, such as a piece of furniture, having angular corners formed at its body. The seating groove 102 may have two surfaces to be mounted on a "side" that is common to two joined surfaces of the piece of furniture, and may have three surfaces to be mounted on a "vertex" that is common to three surfaces of the piece of furniture. In the embodiment of FIG. 1, the seating groove in a
10 form capable of being mounted on the "vertex" is formed.

According to the present disclosure, the corner protector may further include an attachment means to firmly fix the corner protector to the object, such as the piece of furniture, having angular corners. The attachment means is preferably a generally known double-sided tape. The corner protector may be easily installed on the object having angular corners by attaching the attachment means to at least a portion of
15 the seating groove 102.

The light source 200 mounted in the corner protector of the present disclosure may be, for example, manually or automatically turned on or off. The light source may be turned on or off by a user's intention, or an optical sensor to detect intensity of surrounding light may be additionally installed for the light source to be automatically turned on or off depending on brightness of the surroundings.
20 According to an embodiment of the present disclosure, when the light source is manually turned on or off, the light source may be turned on when the user touches the body or applies a pressure of a predetermined magnitude to the body while the light source is off, and the light source may be turned off when the user touches the body or applies the pressure of the predetermined magnitude to the body while the light source is on. Although a capacitive touch sensor, a pressure touch sensor, and the like may be used to
25 manually turn the light source on or off, using the pressure touch sensor is more preferable since the light source may be turned on or off using various objects. According to an embodiment of the present disclosure, for the case where the light source is automatically turned on or off, the corner protector may further include the optical sensor such that the light source may be set to be turned off when the optical sensor detects light of an intensity equal to or higher than a predetermined intensity from surroundings,
30 and the light source may be set to be turned on when the optical sensor detects light of a lower intensity than the predetermined intensity from the surroundings. When the light source is automatically turned on or off as described above, the light source is automatically turned on even when, for example, the user has forgotten to turn on the light source at night since the user does not have to manipulate the light source each time, thereby preventing an accident in which the user collides with corners.

35 FIG. 2 illustrates a corner protector having an overall cylindrical shape according to a second embodiment of the present disclosure. The embodiment of FIG. 2 mostly shares the characteristics of the above-mentioned first embodiment. In the embodiment of FIG. 2, the body 100 of the corner protector

is formed of the upper body 100a, the lower body 100b, and the transparent portion 101, and the seating groove 102 is formed all over the upper body 100a, lower body 100b, and transparent portion 101. Since the body 100 of the second embodiment is overall formed in the cylindrical shape, the impact absorbing ability thereof is further improved.

5 FIG. 3 illustrates a corner protector having an overall spherical shape according to a third embodiment of the present disclosure. The embodiment of FIG. 3 mostly shares the characteristics of the above-mentioned first embodiment and second embodiment, and thus the characteristics of the embodiment of FIG. 3 will not be described in detail unless it is insufficient to completely understand the present disclosure.

10 In the third embodiment, the body 100 is formed of the upper body 100a in a hemispherical shape and the lower body 100b in a hemispherical shape likewise, thus being spherical as a whole. By this, the body 100 may absorb an impact well regardless of an angle of collision. As illustrated in FIG. 3, when, in order to form the corner protector in a shape of a character, the transparent portion 101 is, for example, formed in shapes of eyes or lips, it may bring a decorative effect and enable users such as infants or
15 children to more easily recognize the presence of the corners.

Although the embodiments according to the present disclosure have been described in the above, these are merely illustrative, and those of ordinary skill in the art will understand that embodiments modified in various ways within the equivalent range are possible. Consequently, it should be construed that the scope of the present disclosure not only includes the claims below but also a range equivalent
20 thereto.

What is claimed is:

1. A corner protector comprising:
a flexible body; and
a light source disposed in the body, wherein:

5 at least a portion of the flexible body is transparent or semitransparent for light generated from the light source to be emanated to outside of the body;

 a seating groove that may seat the body on an object having angular corners is formed on at least a portion of the body; and

 the light source may be turned on or off.

10 2. The corner protector according to claim 1, further comprising an attachment means disposed at least a portion of the seating groove,

 wherein the corner protector is fixed to the object having angular corners by the attachment means.

15 3. The corner protector according to claim 1 or claim 2, wherein the light source is turned on when a user applies a pressure of a predetermined magnitude to the body while the light source is off, and the light source is turned off when the user applies the pressure of the predetermined magnitude to the body while the light source is on.

20 4. The corner protector according to claim 1 or claim 2, further comprising an optical sensor, wherein the light source is turned off when the optical sensor detects light of an intensity equal to or higher than a predetermined intensity from surroundings, and the light source is turned on when the optical sensor detects light of a lower intensity than the predetermined intensity from the surroundings.

25 5. The corner protector according to claim 1 or claim 2, wherein the body includes at least one of acrylonitrile-butadiene rubber (NBR), silicone, thermoplastic rubber (TPR), PU, PVC, or PE.

 6. The corner protector according to claim 2, wherein the attachment means is a double-sided tape.

30 7. The corner protector according to claim 1 or claim 2, further comprising a battery disposed in the body to supply power to the light source.

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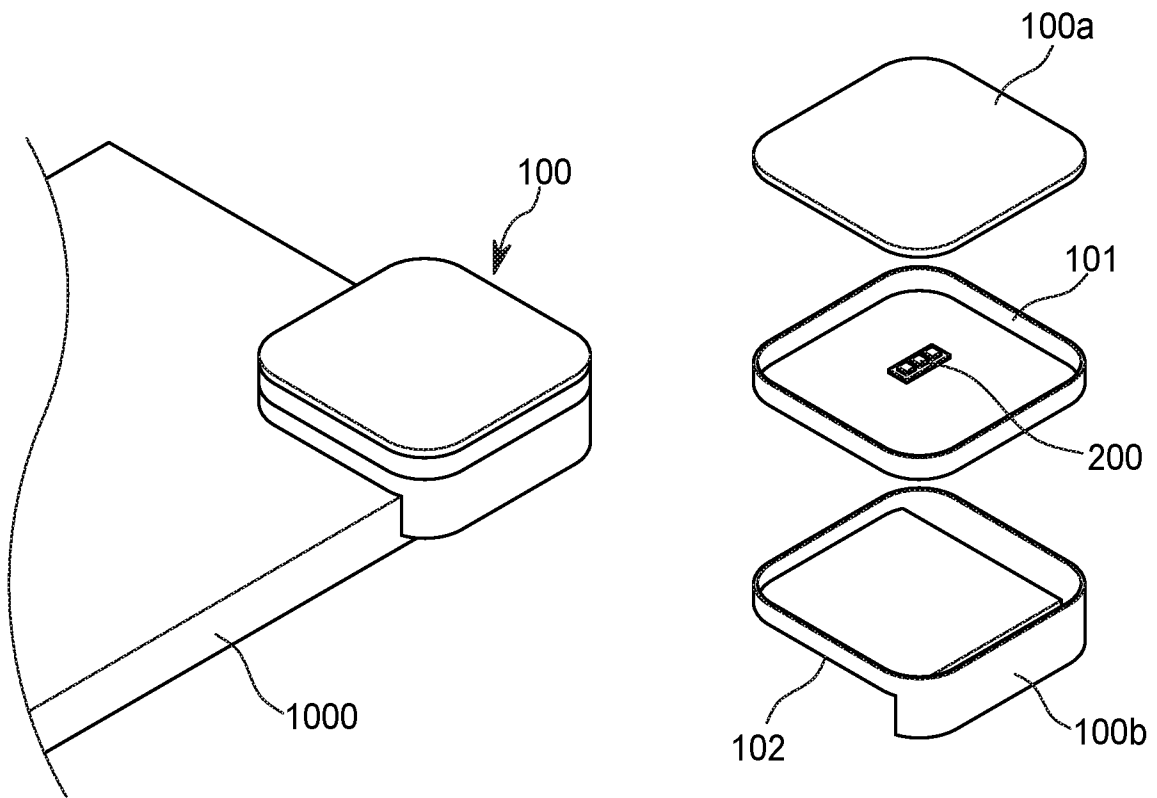


FIG. 1

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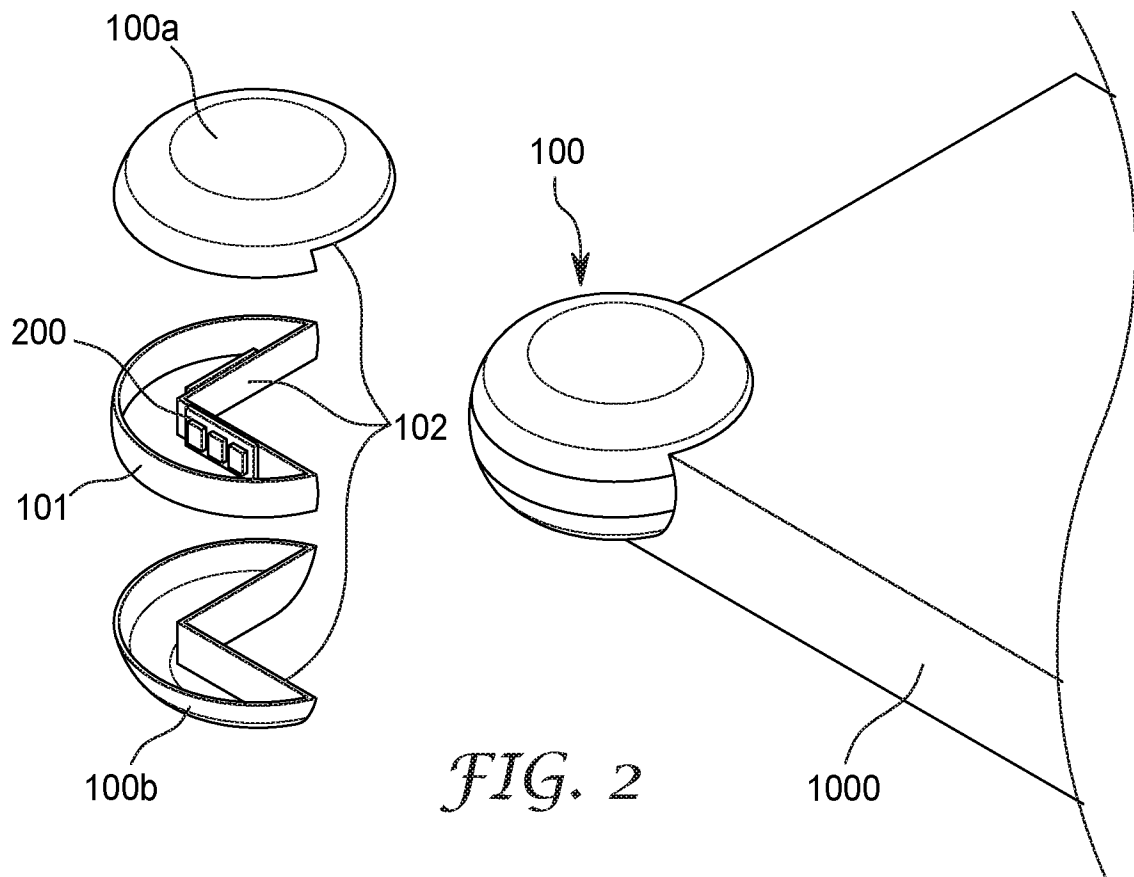


FIG. 2

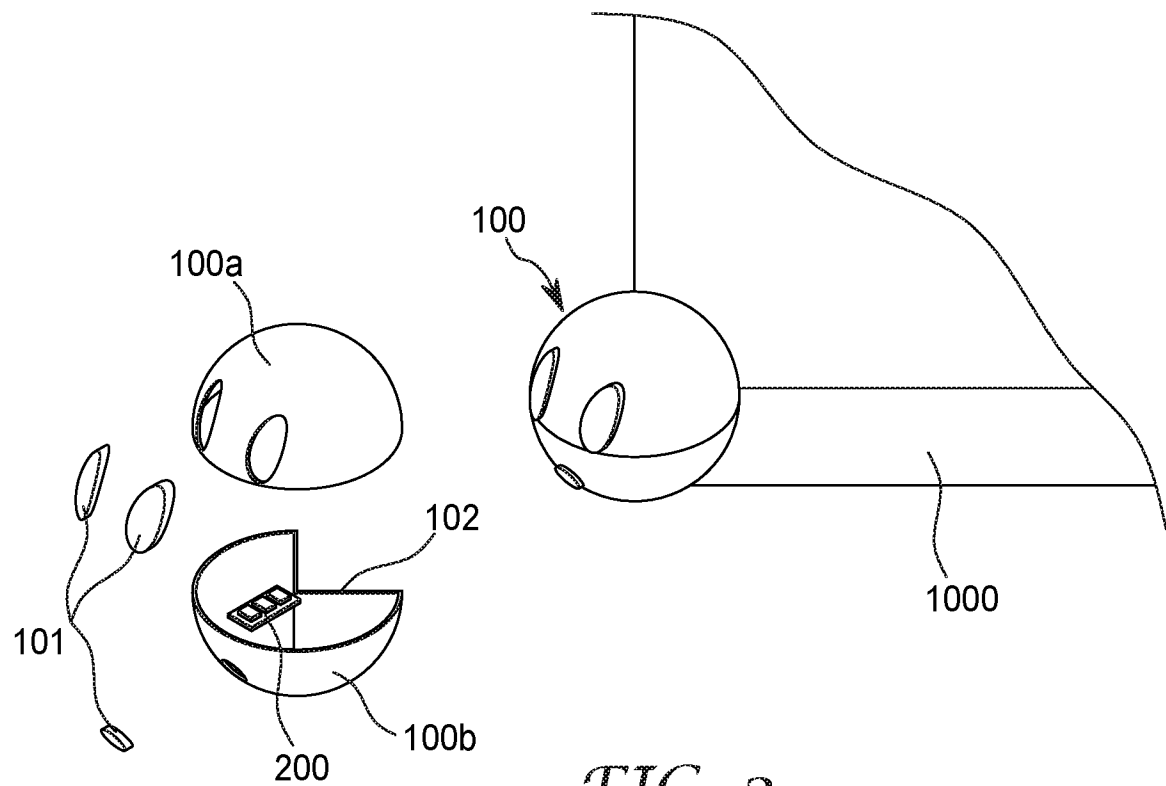


FIG. 3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2016/024819**A. CLASSIFICATION OF SUBJECT MATTER****E04F 19/02(2006.01)i, A47B 96/00(2006.01)i, F21V 33/00(2006.01)i**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

E04F 19/02; B65D 85/48; B63B 21/00; F21V 23/00; A47B 95/00; E02B 3/20; E04F 11/18; A47B 96/00; F21V 33/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: corner protector, flexible body, light source, transparent, seating roove, and optical sensor

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4817902 A (MASON, DONALD R.) 04 April 1989 See column 3, lines 14-44 and figures 1-2.	1-7
Y	JP 2004-143924 A (NAKAZAWA CHUZO HANBAI K.K.) 20 May 2004 See paragraphs [0015]-[0023], [0026] and figures 1-2.	1-7
A	KR 20-0397336 Y1 (ALLCARE KOREA CO., LTD.) 04 October 2005 See claim 1 and figure 6.	1-7
A	KR 10-0779268 B1 (HALLAMS CO., LTD.) 23 November 2007 See paragraphs [0020]-[0029] and figures 1-3.	1-7
A	US 4072231 A (HELMS, HOSEA W.) 07 February 1978 See column 2, lines 23-49 and figure 1.	1-7



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

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"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

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Date of the actual completion of the international search

26 June 2016 (26.06.2016)

Date of mailing of the international search report

30 June 2016 (30.06.2016)

Name and mailing address of the ISA/KR

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2016/024819Patent document
cited in search reportPublication
datePatent family
member(s)Publication
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