### (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

# (19) World Intellectual Property Organization

International Bureau

MPC

OMP





# (10) International Publication Number WO 2010/028221 A3

(43) International Publication Date 11 March 2010 (11.03.2010)

(51) International Patent Classification: H04R 1/02 (2006.01) H04R 1/00 (2006.01)

(21) International Application Number:

PCT/US2009/055998

(22) International Filing Date:

4 September 2009 (04.09.2009)

(25) Filing Language:

English

(26) Publication Language:

English

US

(30) Priority Data:

61/094,112 4 September 2008 (04.09.2008)

- (72) Inventor; and
- (71) Applicant: MURRAY, Jim, Lee [US/US]; P.O. Box 46, Concordia, MO 64020 (US).
- (74) Agents: DICKEY, Lara, S. et al.; Husch Blackwell Sanders LLP, 4801 Main Street, Suite 1000, Kansas City, MO 64112 (US).
- (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, 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,

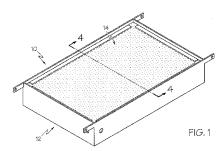
HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (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, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

#### Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))
- (88) Date of publication of the international search report: 1 July 2010

(54) Title: UNIVERSAL BACK BOX FOR MOUNTING IN WALL COMPONENTS AND METHOD OF USE



(57) Abstract: The present invention provides a universal back box that allows installation of differently sized in-wall or in-ceiling components in a finished wall or ceiling. Such a configuration allows differently-sized speakers and other in-wall or in-ceiling equipment to be easily and accurately positioned at multiple locations between wall or ceiling supports. The present invention also provides a method for mounting of an in-wall or in-ceiling component between two supports using the back box of the present invention. The method generally includes coupling the back box to two wall or ceiling supports, installing drywall over the back box, forming an aperture in the drywall, and removing at least a portion of the filler material to receive the in-wall component therein.





International application No. **PCT/US2009/055998** 

### A. CLASSIFICATION OF SUBJECT MATTER

#### H04R 1/02(2006.01)i, H04R 1/00(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)

 $H04R\ 1/02;\ B42D\ 15/10;\ G05B\ 23/02;\ G06K\ 19/077;\ H04R\ 17/00;\ H05K\ 5/00$ 

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

(Chinese Patents and application for patent)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) eKOMPASS(KIPO internal) & Keywords: 'back box', 'housing', 'enclosure', 'mount\*'.'wall'

#### C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2005-0135068 A1 (BRIAN HUFF) 23 June 2005 See the abstract, figs. 2 to 5b	1-20
Y	US 5719824 A (BOUCHER; STEPHEN G.) 17 February 1998 See the abstract, fig. 4	1-20
Y	US 4903300 A (POLK; MATTHEW S.) 20 February 1990 See the abstract, figs. 5, 12 to 13	1-20
Y	JP 03152033 B2 (TOPPAN PRINTING CO LTD) 26 January 2001 See the abstract, figs.1, 2	1-20
A	KR 10-0500794 B1 (JEONG, SUK YUN, MA, BOK RYEOL) 12 July 2005 See the abstract, fig. 5	1-20
A	JP 05-007389 A (SEIDENKOU:KK) 14 January 1993 See the abstract, fig. 1	1-20
A	KR 10-2004-0023754 A (ARMSTRONG WORLD INDUSTRIES INC.) 18 March 2004 See the abstract, figs.1, 2, claims 1 to 41	1-20

$\mathbb{X}$	Further	documents	are	listed	in	the	continuation	of	Box	C.
--------------	---------	-----------	-----	--------	----	-----	--------------	----	-----	----

See patent family annex.

- \* Special categories of cited documents:
- "A" document defining the general state of the art which is not considered to be of particular relevance
- 'E" earlier application or patent but published on or after the international filing date
- 'L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "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
- "&" document member of the same patent family

Date of the actual completion of the international search

16 APRIL 2010 (16.04.2010)

Date of mailing of the international search report

19 APRIL 2010 (19.04.2010)

Name and mailing address of the ISA/KR



Korean Intellectual Property Office Government Complex-Daejeon, 139 Seonsa-ro, Seogu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

CHO, Ji Eun

Telephone No. 82-42-481-5753



# INTERNATIONAL SEARCH REPORT

International application No.

# PCT/US2009/055998

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT						
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.				
		Relevant to claim No.				

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

# PCT/US2009/055998

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2005-0135068 A1	23.06.2005	None	
US 5719824 A	17.02.1998	WO 97-42624 A1	13.11.1997
US 4903300 A	20.02.1990	None	
JP 03152033 B2	26.01.2001	JP 7089279 A	04.04.1995
KR 10-0500794 B1	12.07.2005	None	
JP 05-007389 A	14.01.1993	EP 0474167 A2 EP 0474167 A3	11.03.1992 14.10.1992
KR 10-2004-0023754 A	18.03.2004	AU 2003-235086 A1 CA 2438002-A1 EP 1398990 A2 JP 2004-120744 A US 2004-0045764 A1 US 6779627 B2	01.04.2004 11.03.2004 17.03.2004 15.04.2004 11.03.2004 24.08.2004
KR 10-2006-0008746 A	27.01.2006	None	