



US00D774024S

(12) **United States Design Patent** (10) **Patent No.:** **US D774,024 S**
Lee et al. (45) **Date of Patent:** **** Dec. 13, 2016**

(54) **ANTENNA**

(56) **References Cited**

(71) Applicants: **AGC AUTOMOTIVE AMERICAS R&D, INC.**, Ypsilanti, MI (US); **AGC Flat Glass North America, Inc.**, Alpharetta, GA (US)
(72) Inventors: **Ming Lee**, Ypsilanti, MI (US); **Jesus Gedde, Dexter**, MI (US); **Frederick M. Schaible, III**, Grosse Pointe Park, MI (US); **Yasutaka Horiki**, Ypsilanti, MI (US); **Jun Noda**, Canton, MI (US)
(73) Assignees: **AGC AUTOMOTIVE AMERICAS R&D, INC.**, Ypsilanti, MI (US); **AGC FLAT GLASS NORTH AMERICA, INC.**, Alpharetta, GA (US)

U.S. PATENT DOCUMENTS

3,728,732 A 4/1973 Igarashi
3,945,014 A 3/1976 Kunert et al.
4,072,955 A 2/1978 Comastri et al.
4,768,037 A 8/1988 Inaba et al.
4,849,766 A 7/1989 Inaba et al.
5,005,020 A 4/1991 Ogawa et al.
5,132,161 A 7/1992 Shibata

(Continued)

FOREIGN PATENT DOCUMENTS

CN 3660226 6/2007
EP 0 720 249 A2 7/1996

(Continued)

OTHER PUBLICATIONS

Welcome to the Model R230 SL Class!, online, wayback date Mar. 18, 2015, [site visited Feb. 25, 2016 9:05:20 PM] http://web.archive.org/web/20150318223746/http://bayhas.com/mercedes/r230/contents/electrical/elect_antenna.htm.*

(Continued)

(**) Term: **15 Years**
(21) Appl. No.: **29/546,483**
(22) Filed: **Nov. 23, 2015**

Primary Examiner — John Windmuller
Assistant Examiner — John R Yeh
(74) *Attorney, Agent, or Firm* — Howard & Howard Attorneys PLLC

Related U.S. Application Data

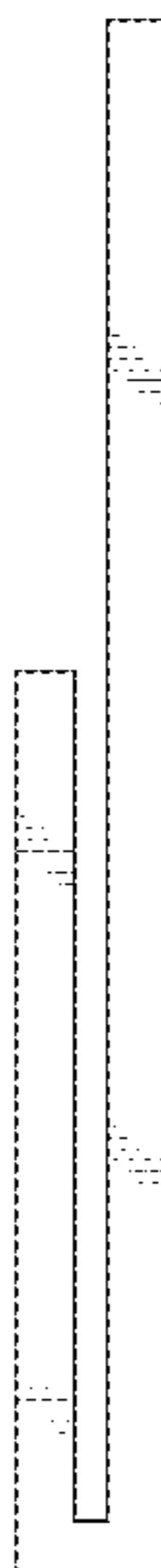
(63) Continuation of application No. 29/480,024, filed on Jan. 22, 2014, and a continuation of application No. 29/480,027, filed on Jan. 22, 2014, now Pat. No. Des. 747,298.
(51) **LOC (10) Cl.** **14-03**
(52) **U.S. Cl.**
USPC **D14/230**
(58) **Field of Classification Search**
USPC D14/230, 299, 358, 234–236
CPC H01Q 13/10; H01Q 1/243; H01Q 1/12; H01Q 19/30; H01Q 19/12; H01Q 1/38
See application file for complete search history.

(57) **CLAIM**
The ornamental design for an antenna, as substantially shown and described.

DESCRIPTION

FIG. 1 is a front plan view of an antenna according to the present invention;
FIG. 2 is a rear plan view thereof; and,
FIG. 3 is a front plan view of the antenna of FIG. 1 in use. The broken lines in FIG. 3 illustrate environment and form no part of the claimed design.

1 Claim, 2 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

5,142,460 A 8/1992 McAtee
 5,670,966 A 9/1997 Dishart et al.
 5,790,080 A 8/1998 Apostolos
 5,856,035 A 1/1999 Khandkar et al.
 5,898,407 A 4/1999 Paulus et al.
 5,973,648 A 10/1999 Lindenmeier et al.
 5,999,136 A 12/1999 Winter et al.
 6,150,985 A * 11/2000 Pritchard H01Q 1/1271
 343/713
 D434,752 S 12/2000 Kudo
 6,211,831 B1 4/2001 Nagy et al.
 6,239,758 B1 5/2001 Fuchs et al.
 6,320,276 B1 11/2001 Sauer
 6,417,811 B1 7/2002 Adrian
 D490,801 S 6/2004 Iwai et al.
 6,870,506 B2 * 3/2005 Chen H01Q 1/243
 343/700 MS
 6,906,287 B2 6/2005 Sol
 D535,290 S * 1/2007 Su D14/230
 D543,974 S 6/2007 Oshima et al.
 D544,469 S 6/2007 Oshima
 7,333,067 B2 * 2/2008 Hung H01Q 1/36
 343/700 MS
 7,405,704 B1 * 7/2008 Lin H01Q 1/2266
 343/700 MS
 D588,586 S 3/2009 Montgomery et al.
 7,508,345 B2 3/2009 Pan et al.
 7,518,558 B2 4/2009 Kato et al.
 D602,010 S 10/2009 Yakubo
 7,656,357 B2 2/2010 Ishibashi et al.
 D615,966 S 5/2010 Shinkawa et al.
 D616,163 S 5/2010 Nam et al.
 D618,223 S 6/2010 Tsai et al.
 D620,857 S 8/2010 Noguchi et al.
 D620,858 S 8/2010 Noguchi et al.
 D621,819 S * 8/2010 Tsai D14/230
 7,847,745 B2 12/2010 Martin
 D635,560 S 4/2011 Tsai et al.
 D635,964 S * 4/2011 Podduturi D14/230
 D636,382 S 4/2011 Podduturi
 8,004,465 B2 8/2011 Schano
 D650,370 S * 12/2011 Huang D14/230
 8,081,130 B2 12/2011 Apostolos et al.
 8,134,505 B2 * 3/2012 Yamagajo G06K 19/07749
 340/572.1
 8,268,222 B2 9/2012 Aisenbrey
 8,269,676 B2 9/2012 Lin
 D675,195 S 1/2013 Huang et al.
 8,350,766 B2 1/2013 Hisaeda
 D676,429 S 2/2013 Gosalia et al.
 8,466,842 B2 6/2013 Dai
 D686,600 S 7/2013 Yang
 D689,474 S 9/2013 Yang et al.
 8,576,130 B2 11/2013 Dai
 8,590,797 B2 11/2013 Kato et al.
 D694,738 S 12/2013 Yang
 8,723,750 B2 * 5/2014 Podduturi H01Q 1/2233
 343/702
 8,830,128 B2 9/2014 Fuchs et al.
 8,906,523 B2 12/2014 Brantner
 D747,298 S * 1/2016 Lee D14/230
 D750,050 S * 2/2016 Podduturi D14/230
 2003/0034927 A1 2/2003 Deininger
 2004/0056805 A1 * 3/2004 Chen H01Q 1/243
 343/700 MS
 2004/0066341 A1 * 4/2004 Ito H01Q 1/243
 343/702
 2004/0183728 A1 * 9/2004 Zinanti H01Q 1/085
 343/700 MS
 2004/0200821 A1 10/2004 Voeltzel
 2004/0222936 A1 * 11/2004 Hung H01Q 1/38
 343/795
 2004/0257291 A1 * 12/2004 Man H01Q 1/243
 343/795

2005/0035919 A1 * 2/2005 Yang H01Q 1/38
 343/795
 2006/0055610 A1 * 3/2006 Borisov H01P 1/203
 343/719
 2006/0214863 A1 9/2006 Fujimoto et al.
 2007/0040028 A1 2/2007 Kawamata
 2008/0068276 A1 3/2008 Noro
 2008/0079639 A1 4/2008 Jen-Huan
 2008/0143630 A1 6/2008 Kato et al.
 2008/0143632 A1 6/2008 Apostolos
 2008/0158075 A1 7/2008 Villarroel et al.
 2008/0218417 A1 9/2008 Gillette
 2008/0258992 A1 10/2008 Tsai et al.
 2008/0283173 A1 11/2008 Hisaeda
 2009/0002244 A1 * 1/2009 Woo H01Q 1/38
 343/702
 2009/0267857 A1 * 10/2009 Liu H01Q 1/38
 343/812
 2010/0007567 A1 * 1/2010 Hilgers G06K 19/0724
 343/741
 2010/0060526 A1 * 3/2010 Cheng H01Q 1/38
 343/700 MS
 2010/0283694 A1 11/2010 Kato
 2011/0043412 A1 2/2011 Kim
 2011/0068986 A1 3/2011 Tezuka et al.
 2011/0241961 A1 10/2011 Aizawa
 2012/0256798 A1 10/2012 Paulus et al.
 2012/0268338 A1 * 10/2012 Yoo H01Q 9/26
 343/803
 2012/0280873 A1 11/2012 Rofougaran
 2012/0306704 A1 12/2012 Li et al.
 2013/0141297 A1 6/2013 Gomme et al.
 2014/0361948 A1 * 12/2014 Tanaka H01Q 1/38
 343/861
 2015/0207203 A1 7/2015 Lee et al.

FOREIGN PATENT DOCUMENTS

JP S 63-155805 A 6/1988
 JP D 1185796 9/2003
 JP D 1224231 12/2004
 JP D 1239259 5/2005
 JP D 1263798 2/2006
 JP D 1291197 1/2007
 JP D 1350409 2/2009
 JP D 1421524 8/2011
 KR 300413160.0000 * 5/2006
 KR 300552847 2/2010
 WO WO 2012/079002 A1 6/2012

OTHER PUBLICATIONS

International Search Report for Application No. PCT/US2014/012526 dated Oct. 9, 2014, 4 pages.
 English language abstract for JPS 63-155805 extracted from PAJ database on Oct. 16, 2014, 1 page.
 English language abstract/description for JPD 1185796 extracted from <https://www9.orbit.com/index.html?ticket=2ddf4357-c380-4cdc-ba25-4d0fe264c76d&locale=en&embedded=false> &locale=en#DesignFullPage on Jul. 29, 2015, 1 page.
 English language abstract/description for JPD 1224231 extracted from <https://www9.orbit.com/index.html?ticket=2ddf4357-c380-4cdc-ba25-4d0fe264c76d&locale=en&embedded=false> &locale=en#DesignFullPage on Jul. 29, 2015, 1 page.
 English language abstract/description for JPD 1291197 extracted from <https://www9.orbit.com/index.html?ticket=2ddf4357-c380-4cdc-ba25-4d0fe264c76d&locale=en&embedded=false> &locale=en#DesignFullPage on Jul. 29, 2015, 1 page.
 English language abstract/description for JPD 1421524 extracted from <https://www9.orbit.com/index.html?ticket=2ddf4357-c380-4cdc-ba25-4d0fe264c76d&locale=en&embedded=false> &locale=en#DesignFullPage on Jul. 29, 2015, 1 page.
 English language abstract/description for KR 300552847 extracted from <https://www9.orbit.com/index.html?ticket=2ddf4357-c380->

(56)

References Cited

OTHER PUBLICATIONS

4cdc-ba25-4d0fe264c76d&locale=en&embedded+false
&locale=en#DesignFullPage on Jul. 29, 2015, 1 page.
Gerrelt, "Windscreen Mount Antenna", updated Apr. 2011, down-
loaded from [http://www.gerrelt.nl/section-aerodynamics/aerody-
windscreen-antenna.html](http://www.gerrelt.nl/section-aerodynamics/aerody-
windscreen-antenna.html) on Jul. 29, 2015, 4 pages.
Design U.S. Appl. No. 29/480,027, filed Jan. 22, 2014, 16 pages.

* cited by examiner



FIG. 2



FIG. 1

FIG. 3

