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MacNeil et al.

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(54) **MANUFACTURING VEHICLE FLOOR TRAYS**

(56) **References Cited**

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U.S. PATENT DOCUMENTS

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2,188,342 A	1/1940	England
2,709,105 A	5/1955	Kramer
3,087,752 A	4/1963	Winchester
3,149,875 A	9/1964	Stata
3,288,187 A	11/1966	Wheaton
3,387,315 A	6/1968	Stata
3,390,912 A	7/1968	Stata
3,391,959 A	7/1968	Stata
3,401,975 A	9/1968	Oger

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(Continued)

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FOREIGN PATENT DOCUMENTS

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CA	1101016 A	5/1981
CA	1198466 A	12/1985

(Continued)

Related U.S. Application Data

OTHER PUBLICATIONS

(60) Continuation of application No. 13/773,706, filed on Feb. 22, 2013, which is a continuation of application No. 13/595,703, filed on Aug. 27, 2012, now Pat. No. 8,382,186, which is a continuation of application No. 12/879,899, filed on Sep. 10, 2010, now Pat. No. 8,267,459, which is a continuation of application No. 11/463,203, filed on Aug. 8, 2006, now abandoned, which is a division of application No. 10/976,441, filed on Oct. 29, 2004, now Pat. No. 7,316,847.

Husky Liner for 1999 Ford Super Duty, downloaded from <http://www.huskyliners.com/superduty.html> on Jan. 3, 2005.

(Continued)

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(51) **Int. Cl.**
B60N 3/04 (2006.01)
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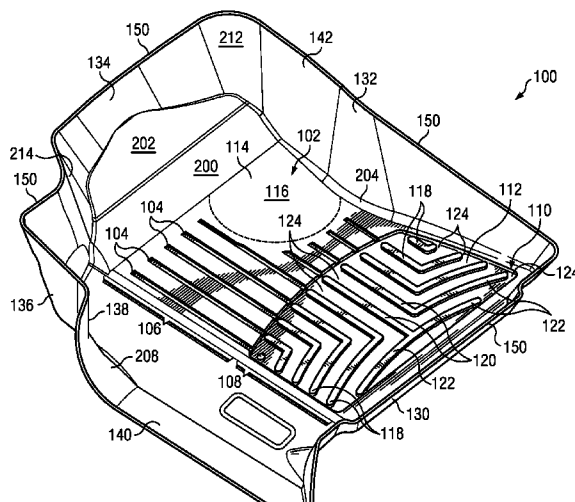
(57) **ABSTRACT**

(52) **U.S. Cl.**
CPC **B29C 45/76** (2013.01); **G06F 17/50** (2013.01); **B29K 2023/06** (2013.01)
USPC **296/97.23**

The three-dimensional positions of points on a surface of a vehicle foot well are digitally measured and are stored in a memory. The stored points are used to construct an electronic model of the vehicle foot well surface. The electronic model of the vehicle foot well surface in turn is used to construct an electronic three-dimensional image of the vehicle floor tray. A vehicle tray data file is created from the electronic three-dimensional image. The data file is in turn used to make a mold for a vehicle floor tray, and vehicle floor trays are manufactured by molding polymer material in the mold.

(58) **Field of Classification Search**
USPC 296/97.23; 15/215-217
See application file for complete search history.

6 Claims, 12 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

3,424,265 A 1/1969 Stata
 3,450,429 A 6/1969 Stata
 3,488,081 A 1/1970 Nolen
 3,557,654 A 1/1971 Weidner, Jr.
 3,605,166 A 9/1971 Chen
 D242,136 S 11/1976 Matlock
 4,211,447 A 7/1980 Divincenzo
 4,280,729 A 7/1981 Morawski
 4,382,986 A 5/1983 Reuben
 4,406,492 A 9/1983 Cackowski
 4,420,180 A 12/1983 Dupont et al.
 D278,525 S 4/1985 Morawski
 4,579,764 A 4/1986 Peoples, Jr. et al.
 4,591,532 A 5/1986 Tanaka
 D288,799 S 3/1987 Peress
 4,693,507 A 9/1987 Dresen et al.
 4,721,641 A 1/1988 Bailey
 4,828,898 A 5/1989 Bailey
 4,921,742 A 5/1990 Altus
 D313,789 S 1/1991 Thundercloud
 5,019,993 A 5/1991 Montalcini et al.
 5,208,995 A 5/1993 McKendrick
 5,254,384 A 10/1993 Gordon
 D342,932 S 1/1994 Primeau
 D358,571 S 5/1995 Thundercloud
 5,474,829 A 12/1995 Woosley
 5,482,759 A 1/1996 Primeau
 D372,011 S 7/1996 Tyler
 D377,780 S 2/1997 MacNeil
 5,725,926 A 3/1998 Wang
 D393,238 S 4/1998 Kraines
 D394,037 S 5/1998 Mauffette
 5,776,583 A 7/1998 Peyton
 5,830,560 A 11/1998 Koa
 5,856,828 A 1/1999 Letcher, Jr.
 D408,342 S 4/1999 Yang
 5,891,546 A 4/1999 Sherman
 5,919,540 A 7/1999 Bailey
 6,007,319 A 12/1999 Jacobson
 D420,965 S 2/2000 Iacovelli et al.
 6,022,503 A 2/2000 Hudkins et al.
 6,027,782 A 2/2000 Sherman
 D422,256 S 4/2000 Lu
 D425,005 S 5/2000 Rizvi
 6,058,618 A 5/2000 Hemmelgarn et al.
 D429,204 S 8/2000 Lu
 D432,478 S 10/2000 Lu
 6,155,629 A 12/2000 Sherman
 D442,530 S 5/2001 Lu
 6,261,667 B1 7/2001 Yang
 D454,323 S 3/2002 Lu
 D454,324 S 3/2002 Lu
 D457,845 S 5/2002 Kraines
 6,431,629 B1 8/2002 Emery
 D471,850 S 3/2003 Kraines
 6,534,146 B1 3/2003 Mentz, Jr.
 6,578,896 B1 6/2003 Peterson
 6,605,333 B2 8/2003 Ferreira et al.
 6,677,027 B1 1/2004 Lu
 D489,306 S 5/2004 Kraines
 6,732,030 B2 5/2004 Jones
 6,736,442 B2 5/2004 Gebreselassie et al.
 D491,122 S 6/2004 Kraines
 6,793,872 B1 9/2004 Buss
 6,794,013 B1 9/2004 Iacovelli et al.
 6,804,568 B1 10/2004 Miyazaki et al.
 D499,057 S 11/2004 Lafleur
 6,817,649 B1 11/2004 Stanesic
 6,953,545 B1 10/2005 Tyler
 D525,576 S 7/2006 Lu
 7,215,430 B2 5/2007 Kacyra et al.
 7,316,847 B2 1/2008 MacNeil
 7,401,837 B2 7/2008 MacNeil

2001/0020316 A1 9/2001 Ferreira et al.
 2002/0045029 A1 4/2002 Yung
 2003/0143358 A1 7/2003 Needles
 2004/0048036 A1 3/2004 Nakasuji et al.
 2004/0224130 A1 11/2004 Melucci et al.
 2005/0191459 A1 9/2005 Ferreira et al.
 2006/0091694 A1 5/2006 MacNeil
 2006/0288578 A1 12/2006 MacNeil
 2008/0061580 A1 3/2008 MacNeil
 2009/0092795 A1 4/2009 MacNeil
 2009/0230717 A1 9/2009 MacNeil

FOREIGN PATENT DOCUMENTS

CA 1292028 A 11/1991
 CA 1302459 6/1992
 CA 2431099 A 1/2004
 DE 1863477 U 12/1962
 DE 8434890 U1 2/1985
 DE 19928720 A1 1/2001
 EP 0258162 A2 3/1988
 EP 0379630 A1 8/1990
 EP 0968875 B1 1/2000
 JP 1172040 A 7/1989
 JP H3-47245 5/1991
 JP 406227305 A 8/1994
 JP H8-85377 4/1996
 JP 8332976 A 12/1996
 JP H11-268570 10/1999
 JP 200052835 2/2000
 JP 2002-362209 A 12/2002
 JP 2002356124 12/2002
 WO 95/34443 A1 12/1995

OTHER PUBLICATIONS

Autofomi Trunk Liner, English web page, downloaded from http://www.autoform.se/eng/products_trunk_liners.htm on Oct. 20, 2004.
 "Installation Instructions for Your F-150/F-250 Ford Truck Front Floor Liners", Winfield Consumer Products, Feb. 1, 2001, downloaded from <http://www.huskyliners.com> on Jan. 3, 2005.
 Husky Deep Tray Floor Liner, downloaded from <http://www.truckstuffusa.com/cusfitdeeptr.html> on Jan. 3, 2005.
 Web pages featuring products from 3D Carpet Liners, Weatherboots, Nifty Products, Inc. and Husky, downloaded from <http://www.premiermotoring.net> on Aug. 11, 2004.
 WeatherTech Floor Mat and Cargo Liner Product Sheets, MacNeil Automotive Products Limited, Downers Grove, IL, Nov. 1994, 4 pp.
 Faro Laser ScanArm, downloaded from <http://www.faro.com/Products/ScanArm.asp> on Sep. 23, 2004.
 Faro ScanArm Product Techsheet, downloaded from http://www.faro.com/Products/Product_Techsheet.asp?techsheet_id=106 on Oct. 11, 2004.
 "CMM Produces Bikes With Custom-Look", downloaded from <http://manufacturingcenter.com/man/articles/0604/0604CMM.asp> on Oct. 11, 2004.
 "Stereolithography (SLA) for Rapid Precision Prototypes", p. 1, downloaded from <http://www.boedeker.com/sla.htm> on Oct. 12, 2004.
 "About Coordinate Measuring Machines (CMM)", downloaded from <http://cmm.globalspec.com> on Oct. 11, 2004.
 "Bagagerumsmattor", downloaded from http://www.autoform.se/sv/produkt_bagagerumsmattor.htm on Oct. 20, 2004.
 Strictly Catalog for Explorer/Mountaineer/Expedition/Navigator. MacNeil Automotive Products Limited, Downers Grove, IL, 1999, pp. 1-2 and 4-7.
 British Patent Office, Search Report on GB Patent Appln. No. GB 0522091.8, Claims 47-66, 77 and 78, Jun. 23, 2006.
 British Patent Office, Search Report on Patent Appln. No. GB 0522091.8, Claims 67-70, Jun. 26, 2006.
 British Patent Office, Search Report on Patent Appln. No. GB 0522091.8, Claims 71-73, Jun. 27, 2006.

(56)

References Cited

OTHER PUBLICATIONS

- British Patent Office, Search Report on Patent Appln. No. GB 522091.8, claims 85-100, Jun. 27, 2006.
- British Patent Office, Search Report on Patent Appln. No. GB 0522091.8, claims 1-46 and 74-76, Feb. 14, 2006.
- Canadian Intellectual Property Office, Requisition by Examiner issued on Canadian Application No. 2,524,795 on Apr. 23, 2008.
- U.S. Patent and Trademark Office, Office Action issued on U.S. Appl. No. 11/463,215 on Nov. 27, 2007.
- U.S. Patent and Trademark Office, Office Action issued on U.S. Appl. No. 11/463,215 on Jun. 6, 2007.
- British Patent Office, Search Report issued on GB Application No. 0625354.6 dated Nov. 6, 2007.
- British Patent Office, Search Report on GB Appln. No. 0625354.6 dated Mar. 3, 2008.
- Japanese Patent Office, Rejection issued in connection with Japanese Patent Application No. 2005-317635 dispatched on Jan. 5, 2011.
- Canadian Intellectual Property Office, Requisition by the Examiner issued in connection with Canadian Patent Application No. 2,672,095, Jan. 14, 2011.
- Photographs of Ford Windstar floor mat with unknown manufacture date, obtained by Applicant in 2010, and believed to be on sale and in public use prior to Oct. 29, 2003.
- Canadian Intellectual Property Office, Requisition by the Examiner issued in connection with Canadian Patent Application No. 2,672,423, Dec. 14, 2010.
- U.S. Patent and Trademark Office, Office Action issued on U.S. Appl. No. 11/463,203 on Aug. 13, 2009.
- U.S. Patent and Trademark Office, Office Action issued on U.S. Appl. No. 11/934,320 on Jun. 10, 2009.
- U.S. Patent and Trademark Office, Office Action issued on U.S. Appl. No. 12/332,757 on Jun. 11, 2009.
- Canadian Intellectual Property Office, Requisition by the Examiner dated Dec. 17, 2009 on Canadian Patent Application No. 2,672,116.
- Canadian Intellectual Property Office, Requisition on CA 2,672,095, dated Jan. 14, 2011.
- German Patent and Trademark Office, Official Action on DE 10 2005 063 533.4-21, dated Sep. 1, 2011.
- Canadian Intellectual Property Office, Requisition on CA 2,672,097, dated on Dec. 19, 2011.
- Photographs of a Highland Floor Guard with unknown date of manufacture, obtained by Applicant in 2010, and believed to be on sale and in public use prior to Oct. 29, 2003.
- American Specialty Equipment Corp., "Big Book" catalog for "Performance Parts, Truck Accessories, and Sport Compact Equipment," 2000, p. 366.
- Add-On 2002-2003 Automotive Accessory Catalog, 2002, pp. 192 and 447.
- Floor Mat Comparison Chart, Stylinconcepts.com, Jun. 2, 2002.
- Advertisement for Highland's Black Armor Floor Guard, Stylin Concepts "Custom Truck Accessories" catalog, 2003, pp. 1, 2 and 109.
- Image from advertisement for Black Armor Floor Guard, Stylinconcepts.com; Apr. 3, 2002, recovered from <http://web.archive.org/20020403230231/stylinconcepts.com/Images/BlackArmorWLogo.jpg>.
- List of "front custom auto floor mats", etrailer.com (as downloaded by web.archive.org), Jun. 4, 2004.
- Description and illustration of "Front Custom Auto floor Mats"; etrailer.com (as downloaded by web.archive.org), Jun. 4, 2004.
- Advertisement for Highland floor guards, Counterman Info Pages, prior to Nov. 2002, p. 27.
- Highland Catalog and Jobber sheet; prior to 2004.
- Highland Application Guide, 2004.
- Volvo Accessories brochure, 1990, pp. 1 and 23.
- Volvo 760 GLE Accessories Brochure, 1983, pp. 1-3.
- Volvo Accessories brochure, 1981, pp. 1, 27.
- Volvo Accessories brochure, 1983, p. 1, 11, 16.
- Photographs of Volvo floor mat with unknown manufacture date, obtained by Applicant in 2010, and believed to be on sale and in public use prior to Oct. 29, 2003.
- Photographs of a Husky Liner floor tray with unknown manufacture date, obtained by Applicant in 2010, and believed to be on sale and in public use prior to Oct. 29, 2003.
- Husky Liners Product Catalog, 2001, pp. 1-2.
- Husky Liners Product Catalog, 2002, selected pages.
- Husky Liners Product Catalog, 2003 1/2, SEMA Show Edition, selected pages.
- Photographs of Winfield's Husky Liner Model 3780 for 2000-2001 BMW X-5 possessed by Applicant, believed to be on sale and in public use prior to Oct. 29, 2003.
- 1998 Lund Product Catalog, p. 24, Lund SportMat Molded Floor Trays.
- Web advertisement for Fox Weatherboots, foxweatherboots.com (as downloaded by web.archive.org), Mar. 3, 2000.
- Nifty Products Catalog, 2003-2004, selected pages.
- Advertisement of unknown publication date for Husky Liner 3D Molded Carpeted Front Floor Liners, obtained by Applicant in 2010, and believed to be on sale and in public use prior to Oct. 29, 2003.
- Photographs of Husky Liner 3D Floor Liners manufactured Aug. 2010, in possession of Applicant, and believed to be on sale and in public use prior to Oct. 29, 2003.
- Geomagic Press Release, "Geomagic, Inc. Wins Second Computer Graphics World Innovation Award," Dec. 10, 1998.
- Geomagic Press Release, "Geomagic to Introduce Unique Solution for 3D Content Creation at SIGGRAPH '99," Aug. 3, 1999.
- Geomagic Press Release, "Geomagic Announces Geomagic Studio 2.0," Jan. 14, 2000.
- Geomagic Press Release, "Geomagic, QTE Offer RevQuick, Automatic Surface Generation for Mastercam," Sep. 25, 2000.
- Advertisement, "Third Party Options (Romer, A CimCore Company)," 2000.
- Son, Seokbae; Park, Hyunpung; and Lee, Kwan; "Automated laser scanning system for reverse engineering and inspection," Int. J. Machine Tools & Manufacture, 42, 889-897 (2002).
- "Competition Rising in Portable CMMs," Quality Magazine, May 5, 2003.
- Press Release by Brown and Sharpe, "Portable K Series Optical CMMs," Sep. 1, 2002.
- "CAM2 software," as downloaded from <http://web.archive.org/web/20040215065613/www.faro.com/Products> on Nov. 4, 2010.
- "Laser Scanner edges out CMM in the race to market," Machine Design.com, Feb. 5, 2004.
- "HighRes Delivers Complete Reverse Engineering Software Suite for SolidWorks 2001Plus," Reverse Engineering.com, Apr. 25, 2002.
- "HighRes Provides 3D Reverse Engineering Software to Higher Education Learning Institutions", ReverseEngineering.com, May 21, 2002.
- "HighRes Reverse Engineering Software now Ships with Every Romer 3000i and Stinger II Portable CMM in North America," ReverseEngineering.com, Oct. 14, 2002.
- Press Release, "FARO Debuts Affordable "Advantage" Line of Measurement Products," Sep. 4, 2003.
- Canadian Intellectual Property Office, Requisition by the Examiner in connection with Canadian Patent Application No. 2,672,423 dated Dec. 14, 2010.

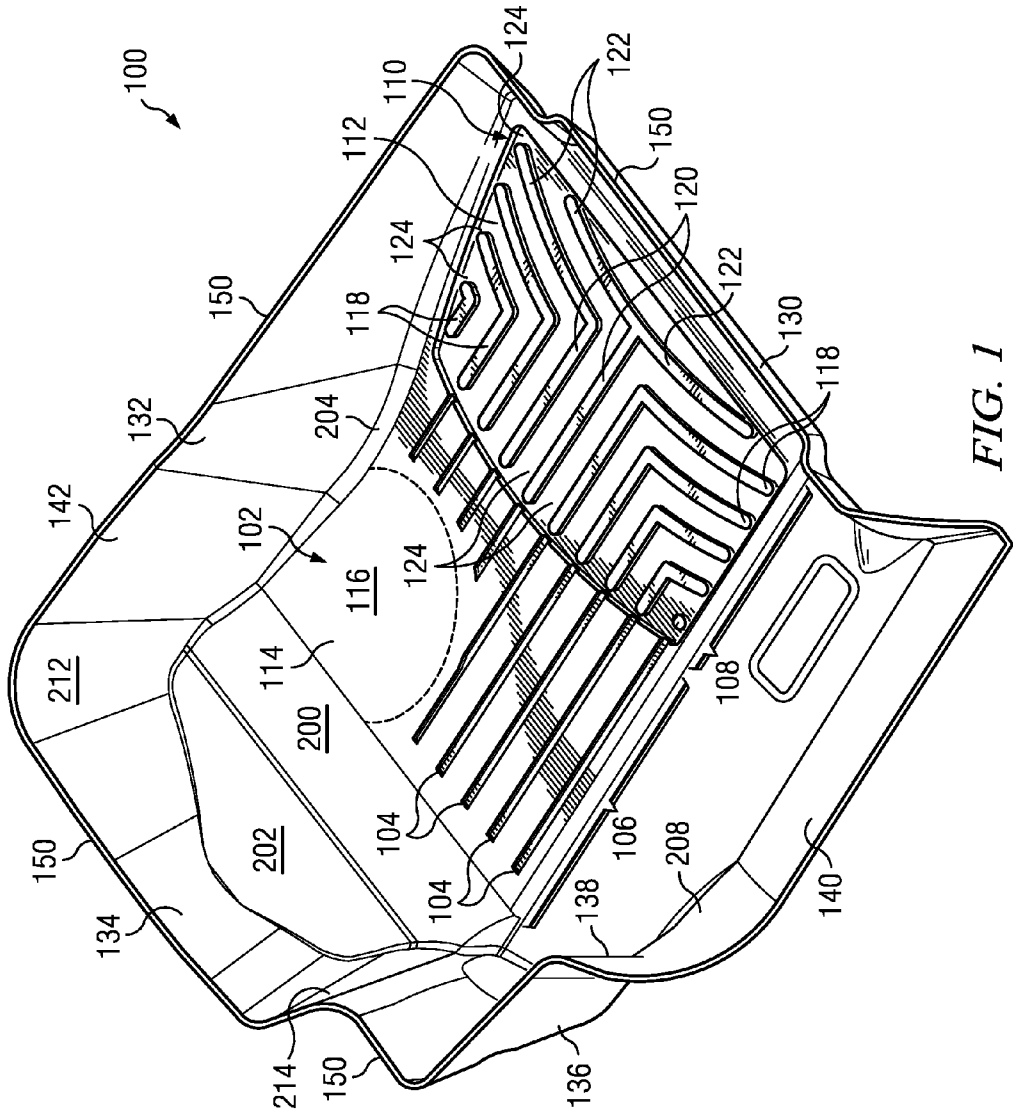
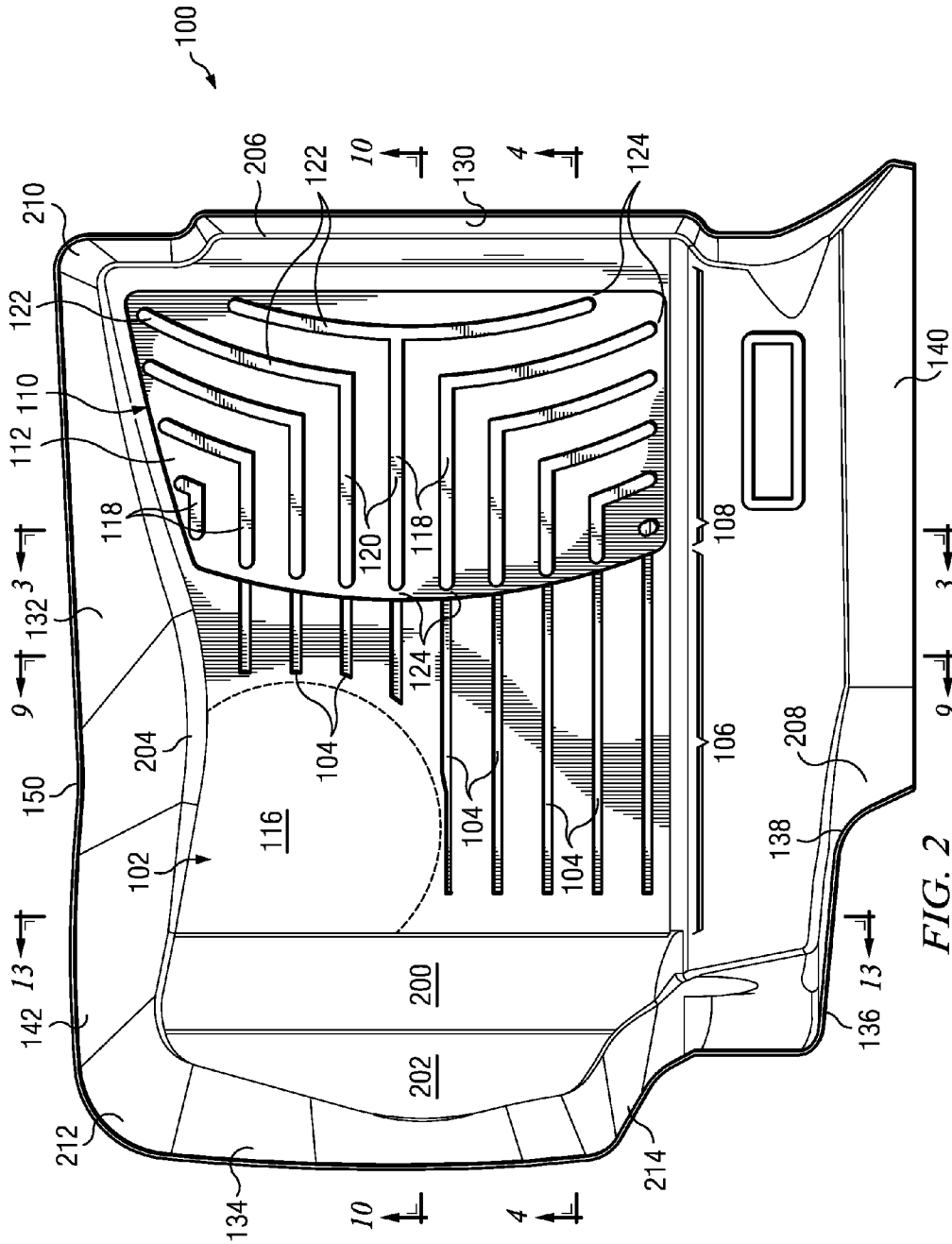


FIG. 1



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