

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

(10) **Patent No.:** **US 8,910,995 B2**  
(45) **Date of Patent:** **Dec. 16, 2014**

(54) **DESIGNING AND MANUFACTURING VEHICLE FLOOR TRAYS**

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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 0 days.

(21) Appl. No.: **13/773,706**

(22) Filed: **Feb. 22, 2013**

(65) **Prior Publication Data**

US 2013/0161863 A1 Jun. 27, 2013

**Related U.S. Application Data**

(60) 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.

(51) **Int. Cl.**  
**B60N 3/04** (2006.01)  
**G06F 17/50** (2006.01)  
**B60R 21/02** (2006.01)  
**B29D 99/00** (2010.01)

(52) **U.S. Cl.**  
CPC ..... **B29D 99/0057** (2013.01); **B60N 3/048** (2013.01); **G06F 17/5086** (2013.01); **B60R 21/02** (2013.01); **B60N 3/044** (2013.01)

USPC ..... **296/97.23**; 296/39.1

(58) **Field of Classification Search**

CPC ..... B60R 21/02; B29D 99/0057; B60N 3/044  
USPC ..... 296/97.23, 39.1; 29/527.1; 15/215;  
700/17, 98

See application file for complete search history.

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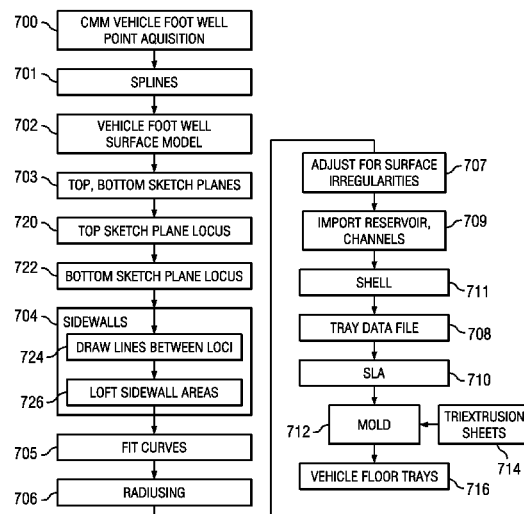
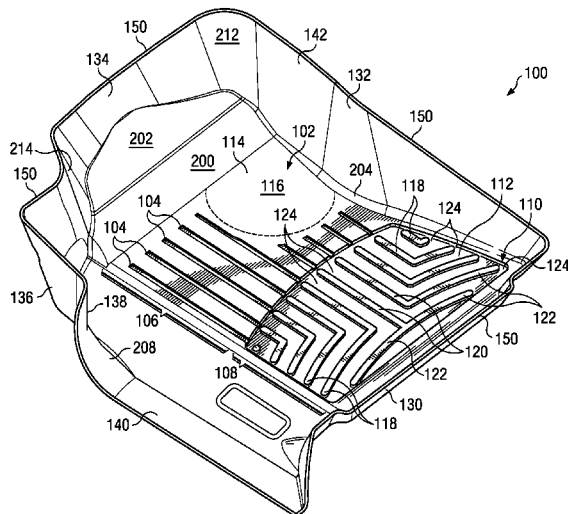
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(57) **ABSTRACT**

Points on a surface of a vehicle foot well are digitally measured with a coordinate measuring machine. A vehicle foot well surface model is recreated in an electronic memory to include these points. The foot well surface model is in turn used to construct a mold for a vehicle floor tray, which ensures a snug fit.

**3 Claims, 12 Drawing Sheets**



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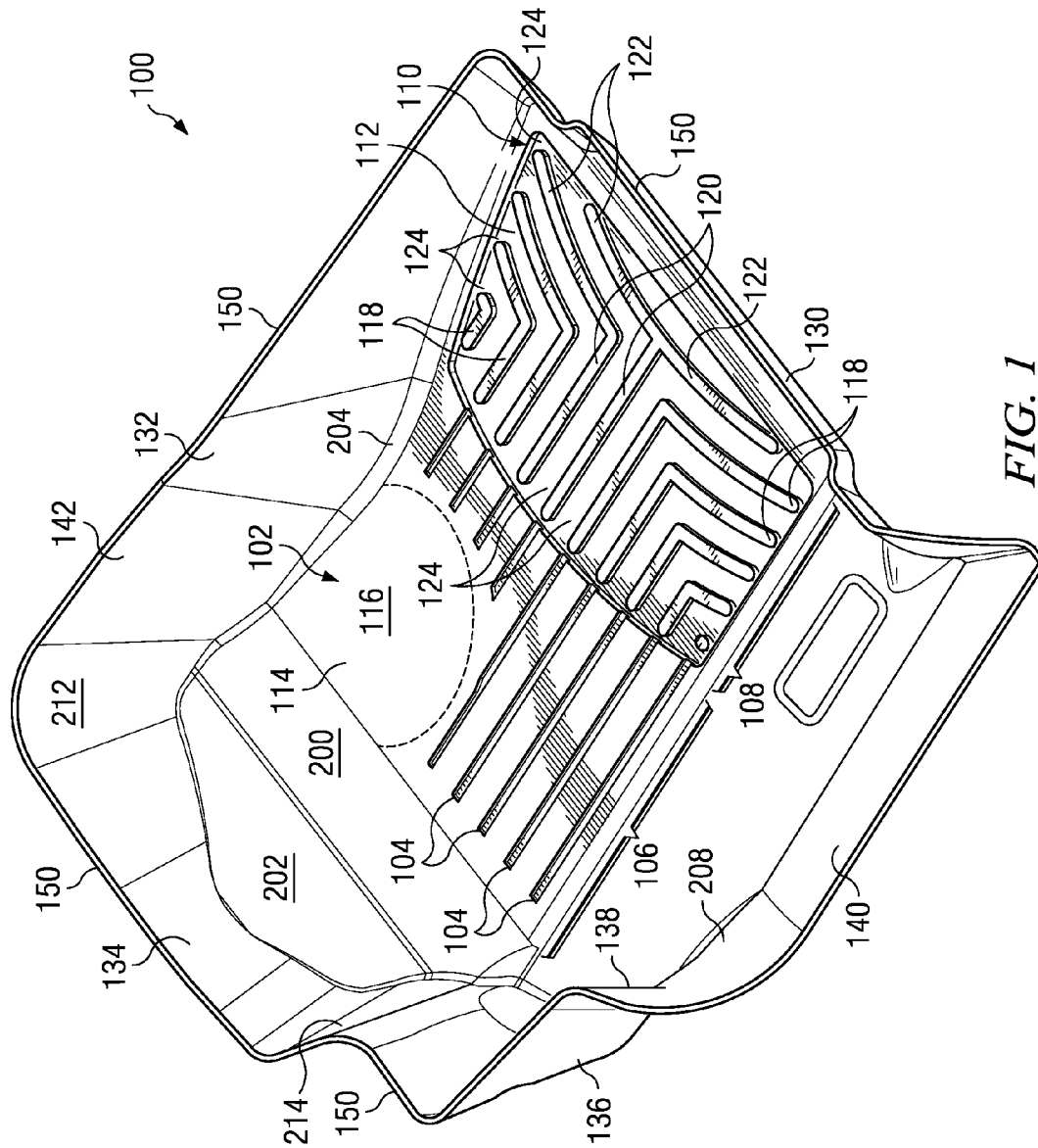


FIG. 1

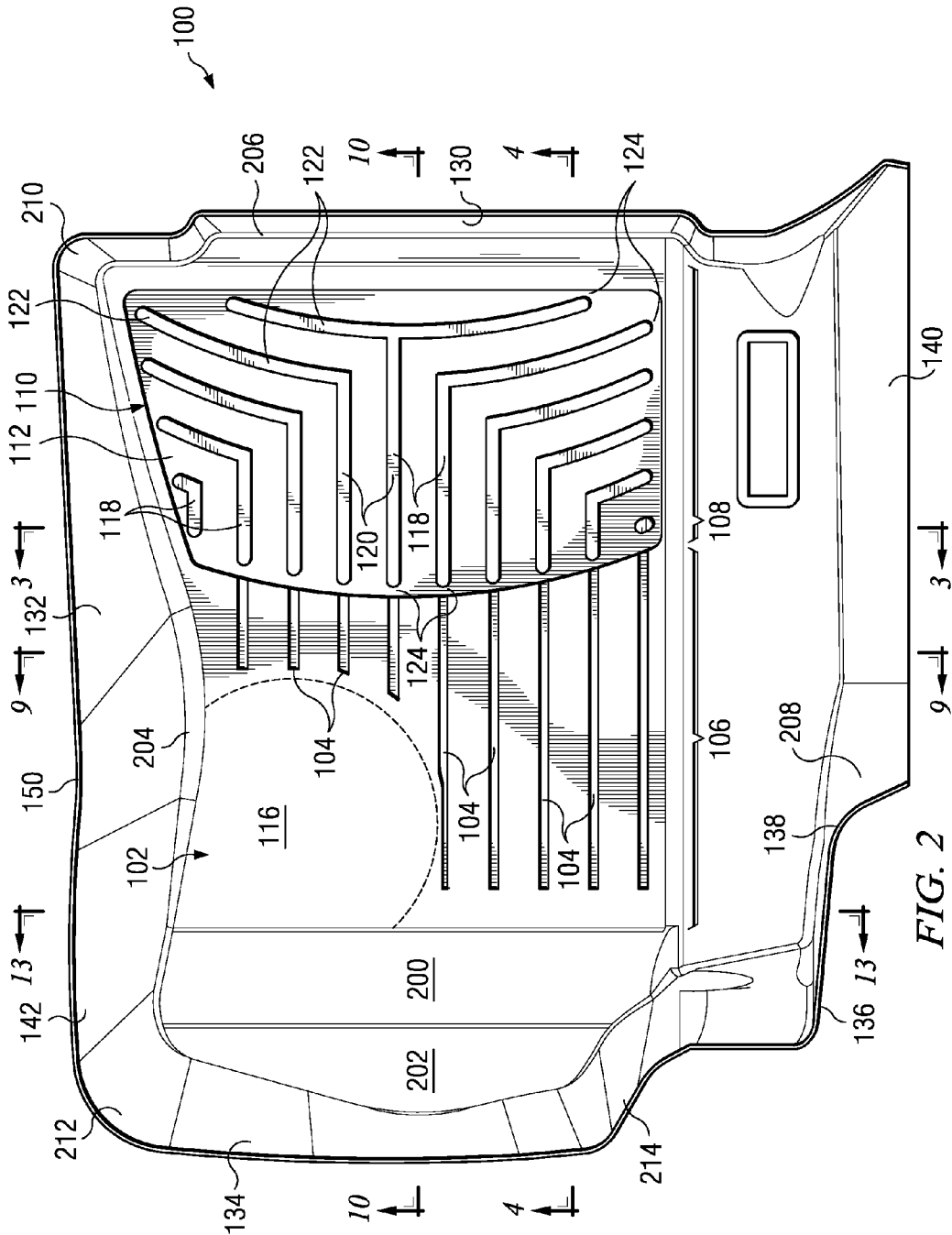


FIG. 2

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