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Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO. Includes details for Momkus McCluskey, LLC and examiner TAOUSAKIS, ALEXANDER P.

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Notice of Abandonment</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 11/463,203             | MACNEIL, DAVID F.   |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | ALEXANDER P. TAOUSAKIS | 3726                |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

This application is abandoned in view of:

- Applicant's failure to timely file a proper reply to the Office letter mailed on 11 March 2010.
  - A reply was received on \_\_\_\_\_ (with a Certificate of Mailing or Transmission dated \_\_\_\_\_), which is after the expiration of the period for reply (including a total extension of time of \_\_\_\_\_ month(s)) which expired on \_\_\_\_\_.
  - A proposed reply was received on \_\_\_\_\_, but it does not constitute a proper reply under 37 CFR 1.113 (a) to the final rejection. (A proper reply under 37 CFR 1.113 to a final rejection consists only of: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114).
  - A reply was received on \_\_\_\_\_ but it does not constitute a proper reply, or a bona fide attempt at a proper reply, to the non-final rejection. See 37 CFR 1.85(a) and 1.111. (See explanation in box 7 below).
  - No reply has been received.
- Applicant's failure to timely pay the required issue fee and publication fee, if applicable, within the statutory period of three months from the mailing date of the Notice of Allowance (PTOL-85).
  - The issue fee and publication fee, if applicable, was received on \_\_\_\_\_ (with a Certificate of Mailing or Transmission dated \_\_\_\_\_), which is after the expiration of the statutory period for payment of the issue fee (and publication fee) set in the Notice of Allowance (PTOL-85).
  - The submitted fee of \$\_\_\_\_\_ is insufficient. A balance of \$\_\_\_\_\_ is due.  
The issue fee required by 37 CFR 1.18 is \$\_\_\_\_\_. The publication fee, if required by 37 CFR 1.18(d), is \$\_\_\_\_\_.
  - The issue fee and publication fee, if applicable, has not been received.
- Applicant's failure to timely file corrected drawings as required by, and within the three-month period set in, the Notice of Allowability (PTO-37).
  - Proposed corrected drawings were received on \_\_\_\_\_ (with a Certificate of Mailing or Transmission dated \_\_\_\_\_), which is after the expiration of the period for reply.
  - No corrected drawings have been received.
- The letter of express abandonment which is signed by the attorney or agent of record, the assignee of the entire interest, or all of the applicants.
- The letter of express abandonment which is signed by an attorney or agent (acting in a representative capacity under 37 CFR 1.34(a)) upon the filing of a continuing application.
- The decision by the Board of Patent Appeals and Interference rendered on \_\_\_\_\_ and because the period for seeking court review of the decision has expired and there are no allowed claims.
- The reason(s) below:

/DAVID P. BRYANT/  
Supervisory Patent Examiner, Art Unit 3726

Petitions to revive under 37 CFR 1.137(a) or (b), or requests to withdraw the holding of abandonment under 37 CFR 1.181, should be promptly filed to minimize any negative effects on patent term.

| Electronic Patent Application Fee Transmittal  |   |          |        |                      |
|--|---|----------|--------|----------------------|
| <b>Application Number:</b>                     | 11463203  |          |        |                      |
| <b>Filing Date:</b>                            | 08-Aug-2006                                     |          |        |                      |
| <b>Title of Invention:</b>                     | DESIGNING AND MANUFACTURING VEHICLE FLOOR TRAYS |          |        |                      |
| <b>First Named Inventor/Applicant Name:</b>    | David F. MACNEIL                                |          |        |                      |
| <b>Filer:</b>                                  | Jefferson Perkins/Patricia Romanelli            |          |        |                      |
| <b>Attorney Docket Number:</b>                 | 301700-00106                                    |          |        |                      |
| Filed as Small Entity                          |   |          |        |                      |
| <b>Utility under 35 USC 111(a) Filing Fees</b> |   |          |        |                      |
| Description                                    | Fee Code  | Quantity | Amount | Sub-Total in USD(\$) |
| <b>Basic Filing:</b>                           |   |          |        |                      |
| <b>Pages:</b>                                  |   |          |        |                      |
| <b>Claims:</b>                                 |   |          |        |                      |
| <b>Miscellaneous-Filing:</b>                   |   |          |        |                      |
| <b>Petition:</b>                               |   |          |        |                      |
| <b>Patent-Appeals-and-Interference:</b>        |   |          |        |                      |
| <b>Post-Allowance-and-Post-Issuance:</b>       |   |          |        |                      |
| <b>Extension-of-Time:</b>                      |   |          |        |                      |
| Extension - 3 months with \$0 paid             | 2253  | 1        | 555    | 555                  |

| Description              | Fee Code | Quantity | Amount | Sub-Total in USD(\$) |
|--------------------------|----------|----------|--------|----------------------|
| <b>Miscellaneous:</b>    |          |          |        |                      |
| <b>Total in USD (\$)</b> |          |          |        | <b>555</b>           |

## Electronic Acknowledgement Receipt

|   |   |
|---|---|
| <b>EFS ID:</b>                              | 8389612   |
| <b>Application Number:</b>                  | 11463203  |
| <b>International Application Number:</b>    |   |
| <b>Confirmation Number:</b>                 | 6550  |
| <b>Title of Invention:</b>                  | DESIGNING AND MANUFACTURING VEHICLE FLOOR TRAYS |
| <b>First Named Inventor/Applicant Name:</b> | David F. MACNEIL                                |
| <b>Customer Number:</b>                     | 64770   |
| <b>Filer:</b>                               | Jefferson Perkins/Patricia Romanelli            |
| <b>Filer Authorized By:</b>                 | Jefferson Perkins                               |
| <b>Attorney Docket Number:</b>              | 301700-00106                                    |
| <b>Receipt Date:</b>                        | 10-SEP-2010                                     |
| <b>Filing Date:</b>                         | 08-AUG-2006                                     |
| <b>Time Stamp:</b>                          | 09:12:38  |
| <b>Application Type:</b>                    | Utility under 35 USC 111(a)                     |

### Payment information:

|   |                 |
|---|-----------------|
| Submitted with Payment  | yes             |
| Payment Type  | Deposit Account |
| Payment was successfully received in RAM  | \$ 555          |
| RAM confirmation Number   | 8898            |
| Deposit Account   | 503982          |
| Authorized User   |                 |
| The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:<br>Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges) |                 |

**File Listing:**

| Document Number | Document Description    | File Name    | File Size(Bytes)/<br>Message Digest                              | Multi Part /.zip | Pages (if appl.) |
|-----------------|-------------------------|--------------|--|------------------|------------------|
| 1               | Fee Worksheet (PTO-875) | fee-info.pdf | 30517<br><small>c75e676b419e3cc546aa57855e8004c14eb78763</small> | no               | 2                |

**Warnings:****Information:****Total Files Size (in bytes):**

30517

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

**New Applications Under 35 U.S.C. 111**

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

**National Stage of an International Application under 35 U.S.C. 371**

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

**New International Application Filed with the USPTO as a Receiving Office**

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.                | CONFIRMATION NO. |
|--|-------------|----------------------|------------------------------------|------------------|
| 11/463,203   | 08/08/2006  | David F. MACNEIL     | 301700-00106                       | 6550             |
| 64770  | 7590        | 03/11/2010           | EXAMINER<br>TAOUSAKIS, ALEXANDER P |                  |
| Momkus McCluskey, LLC<br>1001 Warrenville Road, Suite 500<br>Lisle, IL 60532 |             |                      | ART UNIT                           | PAPER NUMBER     |
|  |             |                      | 3726                               |                  |
|  |             |                      | MAIL DATE                          | DELIVERY MODE    |
|  |             |                      | 03/11/2010                         | PAPER            |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |   |  |  |
|------------------------------|---|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>11/463,203      | <b>Applicant(s)</b><br>MACNEIL, DAVID F. |  |
|                              | <b>Examiner</b><br>ALEXANDER P. TAOUSAKIS | <b>Art Unit</b><br>3726                  |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1)  Responsive to communication(s) filed on 12 November 2009.
- 2a)  This action is **FINAL**.                      2b)  This action is non-final.
- 3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4)  Claim(s) 1-6 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5)  Claim(s) \_\_\_\_\_ is/are allowed.
- 6)  Claim(s) 1-6 is/are rejected.
- 7)  Claim(s) \_\_\_\_\_ is/are objected to.
- 8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9)  The specification is objected to by the Examiner.
- 10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    - a)  All    b)  Some \*    c)  None of:
    - 1.  Certified copies of the priority documents have been received.
    - 2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    - 3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1)  Notice of References Cited (PTO-892)
- 2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3)  Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date 12/03/2009.
- 4)  Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.
- 5)  Notice of Informal Patent Application
- 6)  Other: \_\_\_\_\_.



## DETAILED ACTION

### ***Terminal Disclaimer***

The terminal disclaimer filed on 11/12/2009 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Patent No.: 7,444,748 has been reviewed and is accepted. The terminal disclaimer has been recorded.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claims 1-2, 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stanesic (6,817,649) in view of Kacyra et al (7,215,430).**

1.

Stanesic teaches process for manufacturing a vehicle floor tray, comprising the steps of: molding a layer of polymeric material in a mold to for conform to a carpeted vehicle floor (*see Figure 2 and column 2 lines 27-49*).

Stanesic fails to teach digitally measuring the surface of a vehicle foot well, converting the measured data into a three-dimensional image and creating a mold based on that image.

Kacyra et al teach digitally measuring the three-dimensional position of a plurality of points on a surface of a workpiece (*see column 2 lines 43-47*), storing said points in a memory (*see column 22 lines 44-55*), using the stored points to construct a model of the surface (*see column 2 lines 48-49*); using the model of the surface to construct a three-dimensional image of a vehicle floor tray (*see column 2 lines 50-51 and column 22 lines 57-64*) and constructing an image of something other than what was digitally captured (*see column 32, lines 44-52, where it discloses warping or adjusting the digitally captured image to account for errors and deviations, and note that these deviations can account for a carpeted surface*).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to create the mold of England based off a three-dimensional image of the vehicle floor obtained through digital measurement, as taught by Kacyra et al, because

it forms a more quickly formed and precisely contoured floor tray (*see Kacyra et al column 1 lines 16-20*).

2.

Stanesic/Kacyra et al teach the process of Claim 1, wherein said step of digitally measuring the three-dimensional position of the points on the surface of the vehicle foot well comprises using a coordinate measurement machine (CMM) (*see Kacyra et al column 8 lines 37-56*).

4.

Stanesic teaches process for manufacturing a vehicle floor tray, comprising the steps of: molding a layer of polymeric material in a mold to for conform to a carpeted vehicle floor (*see Figure 2 and column 2 lines 27-49*).

Stanesic fails to teach digitally measuring the surface of a vehicle foot well, converting the measured data into a three-dimensional image and creating a mold based on that image.

Kacyra et al teach digitally measuring the three-dimensional position of a plurality of points on a surface of a workpiece (*see column 2 lines 43-47*), storing said points in a memory (*see column 22 lines 44-55*), using the stored points to construct a model of the surface (*see column 2 lines 48-49*); using the model of the surface to construct a three-dimensional image of a vehicle floor tray (*see column 2 lines 50-51 and column 22 lines*

57-64) and constructing an image of something other than what was digitally captured (see column 32, lines 44-52, where it discloses warping or adjusting the digitally captured image to account for errors and deviations, and note that these deviations can account for a carpeted surface), establishing a top sketch plane to intersect the vehicle foot well model and to establish a top margin of the vehicle floor tray, establishing a bottom sketch plane to be at the lowest elevation of the vehicle floor tray image to be created and drawing sidewalls between the top sketch plane and the bottom sketch plane to approximate corresponding sidewalls of the vehicle foot well tray (see Kacyra et al column 3 lines 33-50, where it discloses determining points in three planes to create the three-dimensional model of the workpiece, and column 22 lines 60-65 – column 23 lines 1-19, where it discloses processing of the model using a CAD system which allows for manipulating the image including construction of multiple views).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to create the mold of England based off a three-dimensional image of the vehicle floor obtained through digital measurement and establishing top and bottom sketch planes, as taught by Kacyra et al, because it forms a more quickly formed and precisely contoured floor tray and allows for different viewing and adjustment of the image (see Kacyra et al column 1 lines 16-20).

5. Stanesic/Kacyra et al teach the process of Claim 4, including adjusting the digitally captured image (see column 32, lines 44-52, where it discloses warping or adjusting the

*digitally captured image to account for errors and deviations, and note that these deviations can account for a carpeted surface).*

Stanesic/Kacyra et al fail to teach tilting the top sketch plane of the vehicle foot well model to produce a tray that is deeper in a direction toward the vehicle firewall.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the digital model of the vehicle floor tray of Stanesic, including tilting the top sketch plane to produce a tray with more depth, in order to better conform to the surface of the floor tray, to provide more space for an occupants feet/shoes, to account for position of the brake/gas/clutch pedals, and for various other advantages.

6.

Stanesic /Kacyra et al teach the process of Claim 1, and further comprising the step of modifying the drawn sidewalls of the three-dimensional image of the vehicle floor tray to conform at least the upper two-thirds of the area of the outer surface of the sidewalls nearest to the top margin to respective surfaces of the vehicle foot well model, such that through those areas the sidewalls of the vehicle floor tray do not depart from the corresponding surfaces of the vehicle foot well by more than one-eighth of an inch (*see Kacyra et al column 2 lines 43-51, where it discloses determining the three-dimensional image of workpiece so that the image directly corresponds to the workpiece, and*

*column 32 lines 44-61, where it discloses modification of the three-dimensional image to account for and eliminate measurement errors).*

**Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stanestic (6,814,649) in view of Kacyra et al (7,215,430), further in view of Letcher, Jr. (5,856,828).**

3. Stanestic teaches process for manufacturing a vehicle floor tray, comprising the steps of:

molding a layer of polymeric material in a mold to conform to a carpeted vehicle floor (*see Figure 2 and column 2 lines 27-49*).

Stanestic fails to teach digitally measuring the surface of a vehicle foot well, converting the measured data into a three-dimensional image and creating a mold based on that image.

Kacyra et al teach digitally measuring the three-dimensional position of a plurality of points on a surface of a workpiece (*see column 2 lines 43-47*), storing said points in a memory (*see column 22 lines 44-55*), using the stored points to construct a model of the surface (*see column 2 lines 48-49*); using the model of the surface to construct a three-dimensional image of a vehicle floor tray (*see column 2 lines 50-51 and column 22 lines 57-64*) and constructing an image of something other than what was digitally captured (*see column 32, lines 44-52, where it discloses warping or adjusting the digitally*

*captured image to account for errors and deviations, and note that these deviations can account for a carpeted surface).*

Letcher, Jr. teaches that it is well known to connect together groups of points with B-splines and lofting between B-Splines to create areal segments (*see column 2 lines 61-67*).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to create the mold of England based off a three-dimensional image of the vehicle floor obtained through digital measurement, as taught by Kacyra et al, because it forms a more quickly formed and precisely contoured floor tray (*see Kacyra et al column 1 lines 16-20*). Furthermore, it would have been obvious to create B-splines, as taught by Letcher, Jr., because it provides support for a broader set of curve and surface types (*see Letcher, Jr. column 2 lines 7-9*).

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXANDER P. TAOUSAKIS whose telephone number is (571)272-3497. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bryant can be reached on (571) 272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Alexander P Taousakis  
Examiner  
Art Unit 3726

/Alexander P Taousakis/  
Examiner, Art Unit 3726

/DAVID P. BRYANT/  
Supervisory Patent Examiner, Art Unit 3726

|                                   |                                       |  |             |
|-----------------------------------|---------------------------------------|--|-------------|
| <b>Notice of References Cited</b> | Application/Control No.<br>11/463,203 | Applicant(s)/Patent Under Reexamination<br>MACNEIL, DAVID F. |             |
|                                   | Examiner<br>ALEXANDER P. TAOUSAKIS    | Art Unit<br>3726   | Page 1 of 1 |

**U.S. PATENT DOCUMENTS**

| * | Document Number<br>Country Code-Number-Kind Code | Date<br>MM-YYYY | Name                  | Classification |
|---|--|-----------------|-----------------------|----------------|
| * | A US-5,856,828                                   | 01-1999         | Letcher, Jr., John S. | 345/420        |
| B | US-  |                 |                       |                |
| C | US-  |                 |                       |                |
| D | US-  |                 |                       |                |
| E | US-  |                 |                       |                |
| F | US-  |                 |                       |                |
| G | US-  |                 |                       |                |
| H | US-  |                 |                       |                |
| I | US-  |                 |                       |                |
| J | US-  |                 |                       |                |
| K | US-  |                 |                       |                |
| L | US-  |                 |                       |                |
| M | US-  |                 |                       |                |


**FOREIGN PATENT DOCUMENTS**

| * | Document Number<br>Country Code-Number-Kind Code | Date<br>MM-YYYY | Country | Name | Classification |
|---|--|-----------------|---------|------|----------------|
| N |  |                 |         |      |                |
| O |  |                 |         |      |                |
| P |  |                 |         |      |                |
| Q |  |                 |         |      |                |
| R |  |                 |         |      |                |
| S |  |                 |         |      |                |
| T |  |                 |         |      |                |

**NON-PATENT DOCUMENTS**


| * | Document Number<br>Country Code-Number-Kind Code | Date<br>MM-YYYY   | Country | Name | Classification |
|---|--|---|---------|------|----------------|
|   |  | Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages) |         |      |                |
| U |  |   |         |      |                |
| V |  |   |         |      |                |
| W |  |   |         |      |                |
| X |  |   |         |      |                |

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

|   |   |   |
|---|---|---|
| <b>Index of Claims</b><br> | <b>Application/Control No.</b><br>111463203 | <b>Applicant(s)/Patent Under Reexamination</b><br>MACNEIL, DAVID F. |
|   | <b>Examiner</b><br>ALEXANDER P TAOUSAKIS    | <b>Art Unit</b><br>3726   |

|   |                 |   |                   |   |                     |   |                 |
|---|-----------------|---|-------------------|---|---------------------|---|-----------------|
| ✓ | <b>Rejected</b> | - | <b>Cancelled</b>  | N | <b>Non-Elected</b>  | A | <b>Appeal</b>   |
| = | <b>Allowed</b>  | ÷ | <b>Restricted</b> | I | <b>Interference</b> | O | <b>Objected</b> |

| <input type="checkbox"/> Claims renumbered in the same order as presented by applicant |          | <input type="checkbox"/> CPA |  | <input type="checkbox"/> T.D. |  | <input type="checkbox"/> R.1.47 |  |  |  |
|--|----------|------------------------------|--|-------------------------------|--|---------------------------------|--|--|--|
| CLAIM  |          | DATE                         |  |                               |  |                                 |  |  |  |
| Final  | Original | 08/10/2009                   |  |                               |  |                                 |  |  |  |
|  | 1        | ✓                            |  |                               |  |                                 |  |  |  |
|  | 2        | ✓                            |  |                               |  |                                 |  |  |  |
|  | 3        | O                            |  |                               |  |                                 |  |  |  |
|  | 4        | ✓                            |  |                               |  |                                 |  |  |  |
|  | 5        | ✓                            |  |                               |  |                                 |  |  |  |
|  | 6        | ✓                            |  |                               |  |                                 |  |  |  |

|  |  |   |
|--|--|---|
| <b>Search Notes</b><br><br> | <b>Application/Control No.</b><br>11463203 | <b>Applicant(s)/Patent Under Reexamination</b><br>MACNEIL, DAVID F. |
|  | <b>Examiner</b><br>ALEXANDER P TAOUSAKIS   | <b>Art Unit</b><br>3726   |

| SEARCHED |                      |           |          |
|----------|----------------------|-----------|----------|
| Class    | Subclass             | Date      | Examiner |
| 29       | 527.1, 407.05, 897.2 | 8/10/2009 | AT       |
| 33       | 503                  |           |          |
| 296      | 97.23                |           |          |
| 73       | 1.79                 |           |          |

| SEARCH NOTES            |           |          |
|-------------------------|-----------|----------|
| Search Notes            | Date      | Examiner |
| Updated previous search | 2/26/2010 | AT       |

| INTERFERENCE SEARCH |          |      |          |
|---------------------|----------|------|----------|
| Class               | Subclass | Date | Examiner |
|                     |          |      |          |

|   |  |
|---|--|
| /ALEXANDER P TAOUSAKIS/<br>Examiner.Art Unit 3726 |  |
|---|--|

EAST Search History

EAST Search History (Prior Art)

| Ref # | Hits  | Search Query  | DBs  | Default Operator | Plurals | Time Stamp       |
|-------|-------|---|--|------------------|---------|------------------|
| L1    | 2768  | (29/527.1 29/407.05 29/897.2).ccls.   | US-PGPUB; USPAT;<br>USOCR; FPRS;<br>EPO; JPO | OR               | ON      | 2010/02/26 12:14 |
| L2    | 983   | (33/503).ccls.  | US-PGPUB; USPAT;<br>USOCR; FPRS;<br>EPO; JPO | OR               | ON      | 2010/02/26 12:14 |
| L3    | 323   | (296/97.23).ccls.   | US-PGPUB; USPAT;<br>USOCR; FPRS;<br>EPO; JPO | OR               | ON      | 2010/02/26 12:14 |
| L4    | 412   | (73/1.79).ccls.   | US-PGPUB; USPAT;<br>USOCR; FPRS;<br>EPO; JPO | OR               | ON      | 2010/02/26 12:14 |
| L5    | 4467  | (1 2 3 4)   | US-PGPUB; USPAT;<br>USOCR; FPRS;<br>EPO; JPO | OR               | ON      | 2010/02/26 12:14 |
| S1    | 16    | (weir adj valve).ti.  | US-PGPUB; USPAT;<br>USOCR; EPO; JPO          | OR               | ON      | 2008/06/17 15:55 |
| S2    | 13301 | (vehicle) and floor and (three and dimensional)   | US-PGPUB; USPAT;<br>USOCR; EPO; JPO          | OR               | ON      | 2008/06/17 16:34 |
| S3    | 398   | (vehicle) and floor with (three and dimensional)  | US-PGPUB; USPAT;<br>USOCR; EPO; JPO          | OR               | ON      | 2008/06/17 16:34 |
| S4    | 398   | (vehicle) and (floor with (three and dimensional))  | US-PGPUB; USPAT;<br>USOCR; EPO; JPO          | OR               | ON      | 2008/06/17 16:34 |
| S5    | 160   | S4 and (measure measuring)  | US-PGPUB; USPAT;<br>USOCR; EPO; JPO          | OR               | ON      | 2008/06/17 16:35 |
| S6    | 2     | ((three adj dimensional) adj (model image)) and (vehicle)   | US-PGPUB; USPAT;<br>USOCR; EPO; JPO          | OR               | ON      | 2008/06/17 16:39 |
| S7    | 1     | ((three adj dimensional) adj (model image)) and mold\$3   | US-PGPUB; USPAT;<br>USOCR; EPO; JPO          | OR               | ON      | 2008/06/17 16:39 |
| S8    | 0     | (three adj dimensional) and mold\$3 and vehicle   | US-PGPUB; USPAT;<br>USOCR; EPO; JPO          | OR               | ON      | 2008/06/17 16:39 |
| S9    | 15    | (three adj dimensional) and vehicle   | US-PGPUB; USPAT;<br>USOCR; EPO; JPO          | OR               | ON      | 2008/06/17 16:39 |
| S10   | 7     | (three-dimensional) and vehicle   | US-PGPUB; USPAT;<br>USOCR; EPO; JPO          | OR               | ON      | 2008/06/17 16:39 |
| S11   | 8     | ("20040048036"   "4693507"   "4721641"   "4828898"   "6027782"   "6155629"   "6431629"   "D377780").<br>PN. | US-PGPUB; USPAT;<br>USOCR; EPO; JPO          | OR               | ON      | 2008/06/17 16:40 |
| S12   | 4     | (US-6155629-\$ or US-7316847-\$ or US-6027782-\$ or US-4828898-\$).did.                                     | USPAT  | OR               | ON      | 2008/06/17 16:41 |

|     |    |  |                                  |    |    |                  |
|-----|----|--|----------------------------------|----|----|------------------|
| S13 | 72 | ("20040048036"   "2651540"   "3042564"   "3391959"   "3804699"   "4016318"   "4101702"   "4230755"   "4382986"   "4399176"   "4465720"   "4529639"   "4579764"   "4588628"   "4591532"   "4693507"   "4721641"   "4828898"   "4921742"   "4984838"   "5034258"   "5082742"   "5207963"   "5288121"   "5362544"   "5474829"   "5848769"   "5891546"   "6027782"   "6155629"   "6431629"   "6953545"   "D377780").PN. OR ("4828898"   "6027782"   "6155629"   "7316847").URPN. | US-PGPUB; USPAT; USOCR           | OR | ON | 2008/06/17 16:41 |
| S14 | 2  | S12 and measur\$3  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/17 16:41 |
| S15 | 18 | S13 and measur\$3  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/17 16:41 |
| S16 | 39 | (floor adj mat).ti. and (measure measuring)  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/17 16:43 |
| S17 | 3  | ("20040048036"   "5848769"   "6431629").PN.  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 14:13 |
| S18 | 1  | ("5082742").PN.  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 14:13 |
| S19 | 1  | ("4101702").PN.  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 14:13 |
| S20 | 10 | ("20040048036"   "4101702"   "4591532"   "5082742"   "5848769"   "6027782"   "6155629"   "6431629"   "6953545"   "6953545"   "D377780").PN.  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 14:13 |
| S21 | 5  | (S17 S18 S19)  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 14:13 |
| S22 | 7  | ("3288187" "5254384" "5482759" "6261667" "6534146" "20010020316").pn.  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 14:19 |
| S23 | 11 | ("20040048036"   "20060091695"   "4591532"   "4280729"   "4406492"   "4591532"   "5776583"   "6027782"   "6155629"   "6793872"   "6953545"   "6027782"   "6155629"   "6793872"   "6953545"   "D377780"   "D377780").PN.  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 14:21 |
| S25 | 22 | (S20 S21 S22 S23)  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 14:23 |
| S26 | 6  | S25 and model  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 14:24 |
| S27 | 4  | S25 and (three adj dimension\$2)   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 14:25 |
| S28 | 25 | (US-20040048036-\$ or US-20010020316-\$ or US-20060091695-\$).did. or (US-7369978-\$ or US-7316847-\$ or US-7257467-\$ or US-6155629-\$ or US-6027782-\$ or US-4828898-\$ or US-3804699-\$ or US-6440525-\$ or US-6114014-\$ or US-6068908-\$ or US-5613332-\$ or US-4921742-\$ or US-6431629-\$ or US-5848769-\$ or US-5082742-\$ or US-4101702-\$ or US-6534146-\$ or US-6261667-\$ or US-5482759-\$ or US-5254384-\$ or US-3288187-\$ or US-6953545-\$).did.              | US-PGPUB; USPAT                  | OR | ON | 2008/06/24 14:25 |
| S29 | 10 | S28 and model  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 14:25 |

|     |       |  |                                  |    |    |                  |
|-----|-------|--|----------------------------------|----|----|------------------|
| S30 | 25728 | (measure measuring) and (model) and (construct fabricate manufacture make making) and mold   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 14:27 |
| S31 | 364   | (CMM (coordinate adj measuring adj machine)).ti.   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 14:27 |
| S32 | 644   | (CMM (coordinate adj measuring adj machine)).ab.   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 14:27 |
| S40 | 785   | S32 S31  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 14:35 |
| S41 | 19    | S40 and mold   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 14:35 |
| S42 | 622   | vehicle and floor and (three adj dimensional) and model and mold   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 15:22 |
| S43 | 45    | ("3668501"   "3698817"   "3930730"   "4370720"   "4543635"   "4612709"   "4621926"   "4628441"   "4815213"   "4892407"   "4919967"   "4928019"   "4932131"   "4976019"   "5021941"   "5055752"   "5340962"   "5390128"   "5428280"   "5446545"   "5459915"   "5507091"   "5691909").PN. OR ("5903459").URPN. | US-PGPUB; USPAT; USOCR           | OR | ON | 2008/06/24 15:34 |
| S44 | 128   | (CMM (coordinate adj measuring adj machine) and vehicle and (replicate duplicate reproduce)  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 15:38 |
| S45 | 36    | ("3032881"   "4174623"   "4242803"   "4319402"   "4321754"   "4329784"   "4442608"   "4463937"   "4490918"   "4534200"   "4557127"   "4574614"   "4586359"   "4603570"   "4621430"   "4660405"   "4719704"   "4731936"   "4756089"   "4811250"   "4934063"   "4997283"   "Re31636").PN. OR ("5341575").URPN. | US-PGPUB; USPAT; USOCR           | OR | ON | 2008/06/24 15:40 |
| S46 | 23    | ("20020152040"   "4811250"   "5054207"   "5278423"   "5321490"   "5341575"   "5561526"   "5589942"   "5767913"   "5852672"   "5870101"   "5913170"   "6006021"   "6052607"   "6115927"   "6130641"   "6160910"   "6236743"   "6285320"   "6288385"   "6304321"   "RE35816").PN. OR ("6732030").URPN.         | US-PGPUB; USPAT; USOCR           | OR | ON | 2008/06/24 15:48 |
| S47 | 2     | S46 and mold   | US-PGPUB; USPAT; USOCR           | OR | ON | 2008/06/24 15:50 |
| S48 | 949   | 29/897.2.ccls.   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 16:37 |
| S49 | 16    | S48 and (replicate duplicate reproduce)  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 16:39 |
| S50 | 23    | (floor adj tray) and (replicate duplicate reproduce)   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 16:39 |
| S51 | 39    | (replicate duplicate reproduce).ti. and vehicle  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 16:41 |
| S52 | 6675  | (image (carbon adj copy) duplicate replicate replication copy).ti. and vehicle   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 16:43 |
| S53 | 447   | ((carbon adj copy) duplicate replicate replication copy).ti. and vehicle   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 16:44 |
| S54 | 465   | (duplicate duplication replicate replication copy).ti. and vehicle   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 16:44 |
| S55 | 0     | (duplicate duplication replicate replication copy).clm. and "vehicle.clm"  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 16:45 |

EAST Search History

|     |        |  |                                  |    |     |                  |
|-----|--------|--|----------------------------------|----|-----|------------------|
| S56 | 917    | (duplicate duplication replicate replication copy).clm. and vehicle.clm.               | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON  | 2008/06/24 16:45 |
| S57 | 394    | S56 and (measure measuring)  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON  | 2008/06/24 16:45 |
| S58 | 917    | (duplicate duplication replicate replication copy).clm. and vehicle.clm.               | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON  | 2008/06/25 09:58 |
| S59 | 156    | S58 and (scan scanning)  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON  | 2008/06/25 09:58 |
| S60 | 376    | (floor adj mat).ti. and (making manufacturing manufacture)                             | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON  | 2008/06/25 10:00 |
| S61 | 95     | (floor adj mat).ti. and (making manufacturing manufacture).ti.                         | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON  | 2008/06/25 10:00 |
| S62 | 28     | S61 and mold   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON  | 2008/06/25 10:09 |
| S63 | 7      | S62 and conform  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON  | 2008/06/25 10:13 |
| S64 | 5      | ("2188342"   "2258238"   "2295099").URPN.  | USPAT                            | OR | ON  | 2008/06/25 10:14 |
| S65 | 380    | ((making manufacturing) adj mold\$1) and vehicle                                       | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON  | 2008/06/25 10:25 |
| S66 | 60     | S65 and ((three adj dimensional) (CMM) (coordinate adj measuring) (three-dimensional)) | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON  | 2008/06/25 10:26 |
| S67 | 0      | S65 and ((CMM) (coordinate adj measuring))   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON  | 2008/06/25 10:29 |
| S68 | 16     | S65 and ((CMM) (coordinate adj measuring) modeling mapping)                            | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON  | 2008/06/25 10:31 |
| S69 | 949    | 29/897.2.ccls.   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON  | 2008/06/25 10:38 |
| S70 | 201    | S69 and mold\$3  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON  | 2008/06/25 10:38 |
| S71 | 873    | 33/503.ccls.   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON  | 2008/06/25 10:51 |
| S72 | 115    | S71 and (car vehicle floor)  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON  | 2008/06/25 10:51 |
| S73 | 2      | S72 and prototype  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON  | 2008/06/25 10:54 |
| S74 | 50     | S71 and (car vehicle)  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON  | 2008/06/25 11:01 |
| S75 | 1581   | (29/407.05 29/527.1).ccls.   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON  | 2008/06/25 12:03 |
| S76 | 661    | (296/97.23 73/1.79).ccls.  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON  | 2008/06/25 12:31 |
| S77 | 25     | (296/97.23).ccls. and (model\$3)   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON  | 2008/06/25 12:37 |
| S78 | 300531 | vehicle car automobile   | US-PGPUB                         | OR | OFF | 2008/06/25 12:54 |
| S79 | 311213 | model  | US-PGPUB                         | OR | OFF | 2008/06/25 12:54 |
| S80 | 394685 | image  | US-PGPUB                         | OR | OFF | 2008/06/25 12:54 |
| S81 | 95963  | mold   | US-PGPUB                         | OR | OFF | 2008/06/25 12:54 |
| S82 | 463219 | measure measuring  | US-PGPUB                         | OR | OFF | 2008/06/25 12:54 |
| S83 | 3      | (S78 and S79 and S80 and S81 and S82).clm.   | US-PGPUB                         | OR | OFF | 2008/06/25 12:55 |
| S84 | 4      | (S78 and S79 and S81 and S82).clm.   | US-PGPUB                         | OR | OFF | 2008/06/25 12:55 |



EAST Search History

|      |      |  |  |    |    |                  |
|------|------|--|--|----|----|------------------|
| S85  | 3    | ("7444748" "7316847" "7401837").pn.  | US-PGPUB; USPAT;<br>USOCR; FPRS;<br>EPO; JPO | OR | ON | 2009/08/04 16:08 |
| S86  | 51   | (david near1 macneil).in.  | US-PGPUB; USPAT;<br>USOCR; FPRS;<br>EPO; JPO | OR | ON | 2009/08/04 16:10 |
| S87  | 11   | ("20040048036"   "20060091695"  <br>"4591532"   "4280729"   "4406492"  <br>"4591532"   "5776583"   "6027782"  <br>"6155629"   "6793872"   "6953545"  <br>"6027782"   "6155629"   "6793872"  <br>"6953545"   "D377780"   "D377780").<br>PN. | US-PGPUB; USPAT;<br>USOCR; EPO; JPO          | OR | ON | 2009/08/10 11:33 |
| S89  | 2722 | (vehicle) and (molding) and (image<br>model) and (three-dimensional)   | US-PGPUB; USPAT;<br>USOCR; FPRS;<br>EPO; JPO | OR | ON | 2009/08/10 11:42 |
| S90  | 1160 | (vehicle) and (molding) and (image<br>model) and (three-dimensional) and<br>(measuring)  | US-PGPUB; USPAT;<br>USOCR; FPRS;<br>EPO; JPO | OR | ON | 2009/08/10 11:42 |
| S91  | 121  | (vehicle) and (molding) and (image<br>model) and (three-dimensional).dm.<br>and (measuring)  | US-PGPUB; USPAT;<br>USOCR; FPRS;<br>EPO; JPO | OR | ON | 2009/08/10 11:42 |
| S92  | 73   | (mold molding) same (image model)<br>same (three-dimensional) same<br>(measure measuring)  | US-PGPUB; USPAT;<br>USOCR; FPRS;<br>EPO; JPO | OR | ON | 2009/08/10 11:46 |
| S93  | 7    | (mold molding) same (image model)<br>same (three-dimensional) same<br>(measure measuring) same polymer   | US-PGPUB; USPAT;<br>USOCR; FPRS;<br>EPO; JPO | OR | ON | 2009/08/10 11:47 |
| S94  | 20   | ("4937766"   "4939380"   "5109236"  <br>"5177349").PN. OR ("5402364").URPN.  | US-PGPUB; USPAT;<br>USOCR                    | OR | ON | 2009/08/10 11:50 |
| S95  | 2    | S94 and (mold molding)   | US-PGPUB; USPAT;<br>USOCR                    | OR | ON | 2009/08/10 11:51 |
| S96  | 12   | S90 and (b-splines)  | US-PGPUB; USPAT;<br>USOCR; FPRS;<br>EPO; JPO | OR | ON | 2009/08/10 11:52 |
| S97  | 800  | ((b-spline) (b adj spline)) and<br>(modeling) and (three-dimensional)  | US-PGPUB; USPAT;<br>USOCR; FPRS;<br>EPO; JPO | OR | ON | 2009/08/10 15:04 |
| S98  | 55   | ((b-spline) (b adj spline)) same<br>(modeling) same (three-dimensional)  | US-PGPUB; USPAT;<br>USOCR; FPRS;<br>EPO; JPO | OR | ON | 2009/08/10 15:04 |
| S99  | 6    | ("6732030" "6058618" "5208995"<br>"7401837" "7444748" "20060288578").<br>pn.   | US-PGPUB; USPAT;<br>USOCR; FPRS;<br>EPO; JPO | OR | ON | 2010/02/25 14:53 |
| S100 | 10   | ((floor adj tray) with carpet\$2   | US-PGPUB; USPAT;<br>USOCR; FPRS;<br>EPO; JPO | OR | ON | 2010/02/25 15:45 |
| S101 | 1    | "20090048059".pn.  | US-PGPUB; USPAT;<br>USOCR; FPRS;<br>EPO; JPO | OR | ON | 2010/02/25 15:46 |
| S102 | 3    | ("3288187").URPN.  | USPAT  | OR | ON | 2010/02/25 15:52 |
| S103 | 23   | (vehicle) and ((floor adj board) with<br>(carpet\$3))  | USPAT  | OR | ON | 2010/02/25 15:53 |
| S104 | 52   | ("2250669"   "2810672"   "3158893"  <br>"4012544"   "4033011"   "4262048"  <br>"4280729"   "4361610"   "4481240"  <br>"4588628"   "4671981"   "4673603"  <br>"4692364").PN. OR ("4748063"  <br>"4804567").URPN.                            | US-PGPUB; USPAT;<br>USOCR                    | OR | ON | 2010/02/25 16:07 |

EAST Search History

|      |     |  |  |    |    |                  |
|------|-----|--|--|----|----|------------------|
| S105 | 54  | ("2292103"   "2810672"   "2850423"   "3003576"   "3310422"   "3337258"   "3360422"   "3379560"   "3585099"   "3673034"   "4012544"   "4016318"   "4242395"   "4247756"   "4336293"   "4337614"   "4377614"   "4554995"   "4644592"   "4671981"   "4673603"   "4804567"   "4828898"   "5023433"   "5059474"   "5254384").PN. OR ("5439725").URPN.   | US-PGPUB; USPAT; USOCR                 | OR | ON | 2010/02/25 16:11 |
| S106 | 18  | (vehicle) and ((floor adj board) and (carpet\$3)) and mat  | USPAT                                  | OR | ON | 2010/02/25 16:25 |
| S107 | 90  | vehicle and (floor adj mat) and conform \$3  | USPAT                                  | OR | ON | 2010/02/25 16:26 |
| S108 | 48  | vehicle and (floor adj mat) and conform \$3 and carpet\$3  | USPAT                                  | OR | ON | 2010/02/25 16:26 |
| S109 | 114 | ("20010020316"   "20040048036"   "20060091695"   "2188342"   "2651540"   "3042564"   "3087752"   "3288187"   "3391959"   "3401975"   "3450429"   "3804699"   "4016318"   "4101702"   "4230755"   "4280729"   "4382986"   "4399176"   "4406492"   "4465720"   "4529639"   "4579764"   "4588628"   "4591532"   "4693507"   "4721641"   "4828898"   "4921742"   "4984838"   "5082742"   "5207963"   "5208995"   "5254384"   "5288121"   "5474829"   "5482759"   "5776583"   "5848769"   "5891546"   "5919540"   "6022503"   "6027782"   "6058618"   "6155629"   "6261667"   "6431629"   "6534146"   "6732030"   "6793872"   "6953545"   "D242136"   "D377780"   "D525576").PN. OR ("4721641"   "4828898"   "6155629"   "7316847"   "7401837"   "7444748"   "7607713").URPN. | US-PGPUB; USPAT; USOCR                 | OR | ON | 2010/02/25 16:28 |
| S110 | 12  | (CAD) and (b-spline) and (top adj sketch) and (bottom adj sketch)  | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2010/02/25 16:51 |
| S111 | 244 | (CAD) and (b-spline) and (top) and (bottom)  | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2010/02/25 16:52 |
| S114 | 515 | (CAD) and (b-spline) and model\$3 and (dimensional)  | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2010/02/25 16:54 |
| S115 | 63  | (CAD) and (b-spline) and model\$3 and (dimensional) and points and tilt\$3   | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2010/02/25 16:55 |
| S116 | 1   | "20070011987"  | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2010/02/25 17:58 |

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|   | Filing Date            | 2006-08-08             |
|   | First Named Inventor   | David F. MACNEIL       |
|   | Art Unit               | 3726                   |
|   | Examiner Name          | Alexander P. TAOUSAKIS |
|   | Attorney Docket Number | 31700.000106           |

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|  | 2       | 6058618            | A                      | 2000-05-09       | Hemmelgarn et al.                               |  |        |
|  | 3       | 5208995            | A                      | 1993-05-11       | McKendrick                                      |  |        |
|  | 4       | 7401837            | B2                     | 2008-07-22       | MacNeil   |  |        |
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|   | Filing Date            |                        | 2006-08-08 |                      |
|   | First Named Inventor   | David F. MACNEIL       |            |                      |
|   | Art Unit               | 3726                   |            |                      |
|   | Examiner Name          | Alexander P. TAOUSAKIS |            |                      |
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|  | 3       | 5208995            | A                      | 1993-05-11       | McKendrick                                      |  |        |
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|  | 1       | 6007319                              | A                           | 1999-12-28             | Jacobson  |  |  |
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|   | Art Unit               | 3726                   |
|   | Examiner Name          | Alexander P. TAOUSAKIS |
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| <b>Application Number:</b>                  | 11463203  |
| <b>International Application Number:</b>    |   |
| <b>Confirmation Number:</b>                 | 6550  |
| <b>Title of Invention:</b>                  | DESIGNING AND MANUFACTURING VEHICLE FLOOR TRAYS |
| <b>First Named Inventor/Applicant Name:</b> | David F. MACNEIL                                |
| <b>Customer Number:</b>                     | 64770   |
| <b>Filer:</b>                               | Jefferson Perkins/Patricia Romanelli            |
| <b>Filer Authorized By:</b>                 | Jefferson Perkins                               |
| <b>Attorney Docket Number:</b>              | 301700-00106                                    |
| <b>Receipt Date:</b>                        | 02-MAR-2010                                     |
| <b>Filing Date:</b>                         | 08-AUG-2006                                     |
| <b>Time Stamp:</b>                          | 17:46:45  |
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| <b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br>( Not for submission under 37 CFR 1.99) | Application Number     | 11463203               |
|   | Filing Date            | 2006-08-08             |
|   | First Named Inventor   | David F. MACNEIL       |
|   | Art Unit               | 3726                   |
|   | Examiner Name          | Alexander P. TAOUSAKIS |
|   | Attorney Docket Number | 31700.000106           |

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|  | 2       | 6058618            | A                      | 2000-05-09       | Hemmelgarn et al.                               |  |        |
|  | 3       | 5208995            | A                      | 1993-05-11       | McKendrick                                      |  |        |
|  | 4       | 7401837            | B2                     | 2008-07-22       | MacNeil   |  |        |
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|   | Filing Date            |                        | 2006-08-08   |  |
|   | First Named Inventor   | David F. MACNEIL       |              |  |
|   | Art Unit               |                        | 3726         |  |
|   | Examiner Name          | Alexander P. TAOUSAKIS |              |  |
|   | Attorney Docket Number |                        | 31700.000106 |  |

| Examiner Initial* | Cite No | Foreign Document Number <sup>3</sup> | Country Code <sup>2</sup> j | Kind Code <sup>4</sup> | Publication Date | Name of Patentee or Applicant of cited Document | Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear | T <sup>5</sup>           |
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|   |                        |                        |
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| <b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br>( Not for submission under 37 CFR 1.99) | Application Number     | 11463203               |
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|   | First Named Inventor   | David F. MACNEIL       |
|   | Art Unit               | 3726                   |
|   | Examiner Name          | Alexander P. TAOUSAKIS |
|   | Attorney Docket Number | 31700.000106           |

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Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

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See attached certification statement.

Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

None

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

|            |                     |                     |            |
|------------|---------------------|---------------------|------------|
| Signature  | /Jefferson Perkins/ | Date (YYYY-MM-DD)   | 2009-12-03 |
| Name/Print | Jefferson Perkins   | Registration Number | 31407      |

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| Electronic Patent Application Fee Transmittal  |   |          |        |                      |
|--|---|----------|--------|----------------------|
| <b>Application Number:</b>                     | 11463203  |          |        |                      |
| <b>Filing Date:</b>                            | 08-Aug-2006                                     |          |        |                      |
| <b>Title of Invention:</b>                     | DESIGNING AND MANUFACTURING VEHICLE FLOOR TRAYS |          |        |                      |
| <b>First Named Inventor/Applicant Name:</b>    | David F. MACNEIL                                |          |        |                      |
| <b>Filer:</b>                                  | Jefferson Perkins/Patricia Romanelli            |          |        |                      |
| <b>Attorney Docket Number:</b>                 | 301700-00106                                    |          |        |                      |
| Filed as Small Entity                          |   |          |        |                      |
| <b>Utility under 35 USC 111(a) Filing Fees</b> |   |          |        |                      |
| Description                                    | Fee Code  | Quantity | Amount | Sub-Total in USD(\$) |
| <b>Basic Filing:</b>                           |   |          |        |                      |
| <b>Pages:</b>                                  |   |          |        |                      |
| <b>Claims:</b>                                 |   |          |        |                      |
| <b>Miscellaneous-Filing:</b>                   |   |          |        |                      |
| <b>Petition:</b>                               |   |          |        |                      |
| <b>Patent-Appeals-and-Interference:</b>        |   |          |        |                      |
| <b>Post-Allowance-and-Post-Issuance:</b>       |   |          |        |                      |
| <b>Extension-of-Time:</b>                      |   |          |        |                      |

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| <b>EFS ID:</b>                              | 6566505   |
| <b>Application Number:</b>                  | 11463203  |
| <b>International Application Number:</b>    |   |
| <b>Confirmation Number:</b>                 | 6550  |
| <b>Title of Invention:</b>                  | DESIGNING AND MANUFACTURING VEHICLE FLOOR TRAYS |
| <b>First Named Inventor/Applicant Name:</b> | David F. MACNEIL                                |
| <b>Customer Number:</b>                     | 64770   |
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| <b>Filer Authorized By:</b>                 | Jefferson Perkins                               |
| <b>Attorney Docket Number:</b>              | 301700-00106                                    |
| <b>Receipt Date:</b>                        | 03-DEC-2009                                     |
| <b>Filing Date:</b>                         | 08-AUG-2006                                     |
| <b>Time Stamp:</b>                          | 15:02:01  |
| <b>Application Type:</b>                    | Utility under 35 USC 111(a)                     |

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| 1   | Information Disclosure Statement (IDS)<br>Filed (SB/08) | IDS.pdf          | 602243<br><small>6b37d39b63514857aa009e95d2f8fe23b3cc<br/>3421</small> | no                      | 4                       |
| <b>Warnings:</b>  |   |                  |  |                         |                         |
| <b>Information:</b>   |   |                  |  |                         |                         |
| 2   | Fee Worksheet (PTO-875)                                 | fee-info.pdf     | 30289<br><small>a067d399a49acd27d8686017b07f537071f<br/>c48e0</small>  | no                      | 2                       |
| <b>Warnings:</b>  |   |                  |  |                         |                         |
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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

In re the application of: David MacNeil  
Application Number: 11/463,203  
Filed: August 8, 2006  
Art Unit: 3726  
Examiner: TAOUSAKIS, Alexander P.  
Confirmation Number: 6550

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/Patricia Romanelli/  
Patricia Romanelli

For: DESIGNING AND MANUFACTURING VEHICLE FLOOR TRAYS

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**REPLY TO EXAMINER'S ACTION**

Dear Sir:

This communication is responsive to the Examiner's Action mailed August 13, 2009.

IN THE CLAIMS

Please amend the claims as shown in the following Claim Listing. In particular, Applicant amends Claims 1 and 3 -- 6.

**CLAIM LISTING**

1. (Currently amended) A process for manufacturing a vehicle floor tray, comprising the steps of:

digitally measuring the three-dimensional position of a plurality of points on a substantially carpeted surface of a vehicle foot well for which the vehicle floor tray is to be provided;

storing said points in a memory;

using the stored points to construct a model of the vehicle foot well surface;

using the model of the vehicle foot well surface to construct a three-dimensional image of a vehicle floor tray;

using the stored three-dimensional image to construct a mold for the vehicle floor tray; and

manufacturing the vehicle floor tray by molding polymer material in the mold.

2. (Original) The process of Claim 1, wherein said step of digitally measuring the three-dimensional position of the points on the surface of the vehicle foot well comprises using a coordinate measurement machine (CMM).

3. (Currently amended) ~~The process of Claim 1, and further comprising the steps of:~~  
A process for manufacturing a vehicle floor tray, comprising the steps of:

digitally measuring the three-dimensional position of a plurality of points on a surface of a vehicle foot well for which the vehicle floor tray is to be provided;

storing said points in a memory;  
using the stored points to construct a model of the vehicle foot well surface, said  
step of using the stored points including the steps of  
connecting together groups of the stored points with B-splines; and  
lofting between the B-splines to create areal segments of the surface of the vehicle  
foot well model;  
using the model of the vehicle foot well surface to construct a three-dimensional  
image of a vehicle floor tray; and  
manufacturing the vehicle floor tray by molding polymer material in the mold.

4. (Currently amended) ~~The process of Claim 1, and wherein said step of~~  
~~constructing the three-dimensional image of the vehicle floor tray further comprises the steps of~~  
A process for manufacturing a vehicle floor tray, comprising the steps of:

digitally measuring the three-dimensional position of a plurality of points on a  
surface of a vehicle foot well for which the vehicle floor tray is to be provided;  
storing said points in a memory;  
using the stored points to construct a model of the vehicle foot well surface;  
using the model of the vehicle foot well surface to construct a three-dimensional  
image of a vehicle floor tray, said step of using the model including the substeps of  
establishing a top sketch plane to intersect the vehicle foot well model and to  
establish a top margin of the vehicle floor tray;



establishing a bottom sketch plane to be at the lowest elevation of the vehicle floor tray image to be created; and

drawing sidewalls between the top sketch plane and the bottom sketch plane to approximate corresponding sidewalls of the vehicle foot well tray; and

using the stored three-dimensional image to construct a mold for the vehicle floor tray.

5. (Currently amended) The process of Claim ~~4~~ 4, and further comprising the step of:

tilting the top sketch plane so that it is at an angle to a floor of the vehicle foot well model, such that the produced vehicle floor tray is deeper in a direction toward the vehicle firewall than it is toward a seat of the occupant.

6. (Currently amended) The process of Claim ~~4~~ 4, and further comprising the step of modifying the drawn sidewalls of the three-dimensional image of the vehicle floor tray to conform at least the upper two-thirds of the area of the outer surface of the sidewalls nearest to the top margin to respective surfaces of the vehicle foot well model, such that through those areas the sidewalls of the vehicle floor tray do not depart from the corresponding surfaces of the vehicle foot well by more than one-eighth of an inch.

**REMARKS**

Applicant has amended Claim 1 to more particularly point out and distinctly claim what Applicant regards as his invention. Claims 3 and 4 have been amended to independent form to contain the limitations of Claim 1 as initially presented. Claims 5 and 6 have been amended to depend from now-independent Claim 4.

The Examiner rejected Claims 1–2, 4 and 6 as obvious in view of a combination of England US 2,188,342 (“England”) and Kacyra et al., US 7,215,430 B2 (“Kacyra”). Applicant respectfully traverses this ground for rejection.

Relative to Claim 1, the Examiner states (Office Action, p.2), “England teaches [a] process for manufacturing a vehicle floor tray, comprising the steps of: molding a layer of polymeric material in a mold to for [sic; in order to?] conform to a vehicle floor (*see column 1 lines 47-55 – column 2 lines 1-6*).” England actually teaches no such thing. As is made evident by the way the Applicant defines the term (see, e.g., Para. [0005] of Applicant’s Specification), a vehicle floor tray is a three-dimensional concave shape meant to conform a three-dimensional concave contour of at least one vehicle foot well. What England shows is a vehicle floor mat with a central portion that is meant, upon installation, to also cover a central transmission hump.

The application leading to the England patent was filed in 1936 and shows details of a vehicle interior that was current at that time. There was no original equipment manufacturer (OEM) – installed vehicle carpeting and, apart from the transmission hump itself, the lower front of the vehicle was made up of hard planar surfaces. The vehicle interior is shown in England’s Fig. 1. The driver’s and passenger’s sides are defined by floor boards 24 (p.2 Col. 1 line 14) and toe boards

(p.2 col. 2 line 50). The England mat is two-dimensional with the exception of the central transmission hump; to cover the forward-extending toe boards, the mat is simply bent at the junction of the floor board and the toe board and continues upward on a simple inclined plane from there. England does not disclose how a shape of a vehicle interior or a foot well could be captured or imaged, and of course there is no suggestion or disclosure in a reference this early of digital imaging.

In the one area of England's mat which is not two-dimensional (the transmission hump), England intentionally does not manufacture a mat with a shape which conforms to the surface of the vehicle interior. This reference actually teaches away from doing this. A sectional view of the mat as molded is seen in England's Figure 4. Instead of being molded to the convex shape of the transmission hump, England molds a mat with a hump portion 33 that has a "wavy or undulatory transverse contour" (p.2, Col. 2, lines 24-31). It is only after the mat is placed in the car that the hump portion "pops" outward to cover the convex transmission hump, as seen in England Figure 2. See England p. 2 col. 2 lines 36-39, "...the concave portion 33 will be readily distended by the floor projection and the hump portion of the mat will assume the shape of one large hollow bulge."

The Examiner has stated that Kacyra "...teach...using the model of the surface to construct a three-dimensional image of a vehicle floor tray (*see column 2 lines 50-51 and column 22 lines 57-64*).” Neither those cited passages nor anything in the rest of this reference even mentions constructing an image of something other than what was digitally captured. Kacyra concerns itself exclusively with capturing a point cloud consisting of points on a three-dimensional surface of an object, and producing a model *of that object*. Then Kacyra states, “A data file is generated, responsive to the first model, that can be inputted to a computer-aided design system.” Col. 2 lines

49–51. At Col. 22 lines 60–64, there is a description of “manual 3-D model construction; 3-D visualization; interaction with part and model databases; and the ability to export data in standard data exchange formats to other CAD systems for further processing.” There is no disclosure or suggestion here of using a 3D model to construct a mold for another part to fit that 3D model. And Kacyra has absolutely nothing to say about vehicles, vehicle interiors, the automotive aftermarket, or how to mold a polymer floor tray so that it adequately conforms to a carpeted vehicle foot well.

Prior to October 31, 2004 (Applicant's effective filing date), the conventional technique for designing a floor tray was to splash-mold a vehicle interior, as by using a bag full of plaster of Paris. The convex shape of this splash-mold was then used to construct a mold for the floor tray. This technique might have been adequate if the original surface was hard, but it does not take into account that most modern vehicle interiors are carpeted by the original equipment manufacturer (OEM). The OEM carpet typically is padded and has an upstanding, crushable pile. When a physical object of any weight is placed on it (such as a splash mold) it will crush and deform. The splash mold thus obtained therefore will not produce an accurate image of the typically curved, concave vehicle foot well.

Given the particular technical problems associated with acquiring an accurate model of a carpeted surface, Applicant's use of a coordinate measuring machine to capture digital 3D data, then constructing a model of the carpeted foot well so imaged, then using that model to construct a model of a floor tray, and then designing a mold to mold that floor tray, is inventive and would not have been obvious in view of England and Kacyra.

To further point out the technical problem which Applicant solved, Applicant has amended Claim 1 to recite that the vehicle foot well surface is substantially carpeted. Support for the

“carpeted” limitation can be found at Paras. [0095] and [0096], and more particularly at Paras. [0052] and [0054], of Applicant's Specification. Applicant adds the qualifier “substantially” because not all surfaces of the foot well have to be carpeted; typically, the sill curve 208 and the sill plate 140 (Fig. 3) are not carpeted, requiring that these surfaces be fit to even tighter tolerances. *See* Specification, Para. [0093]. England and Kacyra do not contemplate the problem posed by imaging a soft, yieldable surface, and therefore could not have rendered obvious a system to overcome it.

Claim 2 remains dependent on Claim 1 and is allowable at least for the reasons given for Claim 1 above.

Claim 4 has been amended to independent form. In addition to the limitations found in original Claim 1, it recites establishing a top sketch plane to intersect the vehicle foot well model and to establish a top margin of the vehicle floor tray, establishing a bottom sketch plane to be at the lowest elevation of the vehicle floor tray image to be created, and drawing sidewalls between the top sketch plane and the bottom sketch plane to approximate the corresponding sidewalls of the vehicle foot well tray. As allegedly meeting these limitations, the Examiner cites Kacyra, Col. 3 lines 33–50 (“where it discloses determining points in three planes to create the three-dimensional model of the workpiece”) and Col. 22 lines 60–65 – column 23 lines 1–19, (“where it discloses processing of the model using a CAD system which allows for manipulating the image including construction of multiple views.”)

Applicant uses top and bottom sketch planes to construct his vehicle floor tray model, once the model of the vehicle foot well surface has been digitally created. The use of these sketch planes is described at Para. 89 of Applicant's specification. Basically the sketch planes are extreme upper and lower bounds of the vehicle floor tray to be designed. Referring to FIGURE 1, the upper

margin 150 of the vehicle floor tray conforms to the upper sketch plane. The lower sketch plane is .0025" below the lower surface of the sill plate 140, which is the lowest portion of the floor tray model. Sidewalls of the floor tray model are drawn to extend between these sketch planes.

The only similarity between a description of the above technique and Kacyra Col. 3 lines 32–50 is the use of the word “planes”. The cited passage in Kacyra concerns attempting to fit “geometric primitives” to groups of points in the captured scene (lines 33–36) or determining a scanned object’s corner by fitting three planes to particular points in a point cloud (lines 37–44). Neither this passage nor anything else in Kacyra discloses or suggests how to use sketch planes, which are not fitted to points in the point cloud but rather are established in 3D space above and below the model of the floor tray to be constructed, not the model of the vehicle foot well to which the floor tray is to be fit.

Kacyra Col. 22 lines 61–65 and Col. 23 lines 1–19 does not disclose or suggest the use of sketch planes either. This passage describes “computer graphics perception software” (See Col. 44 line 43). The closest approach to the use of sketch planes is Kacyra’s description of “modeling by manipulating the geometry” (Col. 23 lines 3–4), a statement so general that nothing can be deduced concerning what techniques it might cover. Further, Kacyra says absolutely nothing about whether or how to model a part designed to fit an imaged surface; he is only concerned about modeling and displaying that surface itself.

Relative to Claim 6, this claim is allowable at least for the reasons given for Claim 4, from which it now depends. Claim 6 recites a further step of modifying the drawn sidewalls of the floor tray model so that they better conform to the vehicle foot well model. The Examiner cites Kacyra, Col. 2 lines 43–51 and Col. 32 lines 44–61 as allegedly teaching this step. The first passage, from

Kacyra's summary, merely recites generating a "first model" from a point cloud. Analogously, this would be a model of the vehicle foot well surface, not the floor tray. The second passage discusses a "warping" technique by which location errors in 3D data sets can be corrected. Neither passage discloses or suggests anything about how to more carefully conform a model of a thing to be molded, to a digital model of the environment to which it is intended to fit.

The Examiner rejected Claims 1–2 and 4–6 because of obviousness-type double patenting in view of US 7,444,748. To overcome this ground for rejection a duly executed terminal disclaimer is submitted herewith.

The Examiner indicated that Claim 3 would be allowable if rewritten to include the limitations of original Claim 1 from which it depended. Applicant has accordingly rewritten Claim 3 into independent form to accomplish this.

Claim 5, amended so that it now depends from allowable Claim 4, further recites that the top sketch plane is tilted, producing a floor tray which is deeper in its forward portion than its rearward portion. The Examiner had rejected this claim only as violative of obviousness-type double patenting, so Applicant presumes that this claim is now allowable also.

All rejections and objections of the Examiner now having been overcome, Applicant respectfully requests a Notice of Allowance on this application.

Reply to Examiner's Action

Attorney Docket No. 31700.000106

This Reply to Examiner's Action is being submitted within the initial three-month shortened statutory period, and Applicant's amendments do not necessitate the payment of additional claim fees. Therefore no fee is thought to be due in conjunction with this submission. Nonetheless, the Commissioner is hereby authorized to charge Deposit Account No. 503982 of Momkus McCluskey, LLC to cover any fee deficiency.

Respectfully submitted,

/Jefferson Perkins/  
Jefferson Perkins  
Registration No. 31,407

**CUSTOMER NO. 64770**

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-11/11-



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of: David F. MACNEIL  
Appln. No. 11/463,203  
Filed: August 8, 2006  
For: DESIGNING AND MANUFACTURING  
VEHICLE FLOOR TRAYS  
Art Unit 3726  
Examiner: Alexander P. TAOUSAKIS  
Confirmation No.: 6550

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**TERMINAL DISCLAIMER TO OBVIATE  
A DOUBLE PATENTING REJECTION OVER A PRIOR PATENT  
(37 CFR 1.321(c))**

Dear Sir:

The owner, David F. MacNeil, of a one hundred percent interest in the above-identified patent application (the "Present Application") hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the Present Application which would extend beyond the expiration date of the full statutory term of United States Patent No. 7,444,748 (the "Prior Patent") as the term of the Prior Patent is defined in 35 U.S.C. 154 and 173, as the term of the Prior Patent is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the Present Application shall be enforceable only for and during such period that it and the Prior Patent are commonly owned. This agreement runs with any patent granted on the Present Application and is binding on the grantee, its successors or assigns.

In making the above disclaimer, the owner does not disclaim the terminal part of any patent granted on the Present Application that would extend to the expiration date of the full statutory term as defined in 35 U.S.C. 154 and 173 of the Prior Patent, "as the term of the Prior Patent is presently shortened by any terminal disclaimer," in the event that the Prior Patent later:

expires for failure to pay a maintenance fee;  
is held unenforceable;  
is found invalid by a court of competent jurisdiction;  
is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;  
has all claims canceled by a reexamination certificate;  
is reissued; or  
is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

The undersigned is an attorney of record.

The fee for filing a Terminal Disclaimer (37 CFR 1.20 (d)) is being charged to Deposit Account No. 503982 concurrently with the submission of this Terminal Disclaimer. The Commissioner is hereby authorized to deduct any deficiency or credit any overpayment to Deposit Account No. 503982 of Momkus McCluskey, LLC.

Respectfully submitted,  
*/Jefferson Perkins/*  
Jefferson Perkins  
Registration No. 31,407

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**CUSTOMER NUMBER: 64770**

| Electronic Patent Application Fee Transmittal  |   |          |        |                      |
|--|---|----------|--------|----------------------|
| <b>Application Number:</b>                     | 11463203  |          |        |                      |
| <b>Filing Date:</b>                            | 08-Aug-2006                                     |          |        |                      |
| <b>Title of Invention:</b>                     | DESIGNING AND MANUFACTURING VEHICLE FLOOR TRAYS |          |        |                      |
| <b>First Named Inventor/Applicant Name:</b>    | David F. MACNEIL                                |          |        |                      |
| <b>Filer:</b>                                  | Jefferson Perkins/Patricia Romanelli            |          |        |                      |
| <b>Attorney Docket Number:</b>                 | 301700-00106                                    |          |        |                      |
| Filed as Small Entity                          |   |          |        |                      |
| <b>Utility under 35 USC 111(a) Filing Fees</b> |   |          |        |                      |
| Description                                    | Fee Code  | Quantity | Amount | Sub-Total in USD(\$) |
| <b>Basic Filing:</b>                           |   |          |        |                      |
| <b>Pages:</b>                                  |   |          |        |                      |
| <b>Claims:</b>                                 |   |          |        |                      |
| <b>Miscellaneous-Filing:</b>                   |   |          |        |                      |
| <b>Petition:</b>                               |   |          |        |                      |
| <b>Patent-Appeals-and-Interference:</b>        |   |          |        |                      |
| <b>Post-Allowance-and-Post-Issuance:</b>       |   |          |        |                      |
| <b>Extension-of-Time:</b>                      |   |          |        |                      |

| Description              | Fee Code | Quantity | Amount | Sub-Total in USD(\$) |
|--------------------------|----------|----------|--------|----------------------|
| <b>Miscellaneous:</b>    |          |          |        |                      |
| Statutory disclaimer     | 2814     | 1        | 70     | 70                   |
| <b>Total in USD (\$)</b> |          |          |        | <b>70</b>            |

## Electronic Acknowledgement Receipt

|   |   |
|---|---|
| <b>EFS ID:</b>                              | 6444987   |
| <b>Application Number:</b>                  | 11463203  |
| <b>International Application Number:</b>    |   |
| <b>Confirmation Number:</b>                 | 6550  |
| <b>Title of Invention:</b>                  | DESIGNING AND MANUFACTURING VEHICLE FLOOR TRAYS |
| <b>First Named Inventor/Applicant Name:</b> | David F. MACNEIL                                |
| <b>Customer Number:</b>                     | 64770   |
| <b>Filer:</b>                               | Jefferson Perkins/Patricia Romanelli            |
| <b>Filer Authorized By:</b>                 | Jefferson Perkins                               |
| <b>Attorney Docket Number:</b>              | 301700-00106                                    |
| <b>Receipt Date:</b>                        | 12-NOV-2009                                     |
| <b>Filing Date:</b>                         | 08-AUG-2006                                     |
| <b>Time Stamp:</b>                          | 17:59:13  |
| <b>Application Type:</b>                    | Utility under 35 USC 111(a)                     |

### Payment information:

|   |                 |
|---|-----------------|
| Submitted with Payment  | yes             |
| Payment Type  | Deposit Account |
| Payment was successfully received in RAM  | \$70            |
| RAM confirmation Number   | 4728            |
| Deposit Account   | 503982          |
| Authorized User   |                 |
| The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:<br>Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges) |                 |

| <b>File Listing:</b>  |                             |                        |  |                         |                         |
|---|-----------------------------|------------------------|--|-------------------------|-------------------------|
| <b>Document Number</b>  | <b>Document Description</b> | <b>File Name</b>       | <b>File Size(Bytes)/<br/>Message Digest</b>        | <b>Multi Part /.zip</b> | <b>Pages (if appl.)</b> |
| 1   |                             | ROA.pdf                | 139431<br>5028b7aa4da4fbc12667d4f61261ec93be043293 | yes                     | 11                      |
| <b>Multipart Description/PDF files in .zip description</b>  |                             |                        |  |                         |                         |
| <b>Document Description</b>   |                             |                        | <b>Start</b>                                       | <b>End</b>              |                         |
| Amendment/Req. Reconsideration-After Non-Final Reject   |                             |                        | 1  | 1                       |                         |
| Claims  |                             |                        | 2  | 4                       |                         |
| Applicant Arguments/Remarks Made in an Amendment  |                             |                        | 5  | 11                      |                         |
| <b>Warnings:</b>  |                             |                        |  |                         |                         |
| <b>Information:</b>   |                             |                        |  |                         |                         |
| 2   | Terminal Disclaimer Filed   | TerminalDisclaimer.pdf | 79421<br>84772285e0d65274cd789944dc6f005e6ec1e695  | no                      | 2                       |
| <b>Warnings:</b>  |                             |                        |  |                         |                         |
| <b>Information:</b>   |                             |                        |  |                         |                         |
| 3   | Fee Worksheet (PTO-875)     | fee-info.pdf           | 30070<br>70dae5913ab4855d95f06970c4e24395e0c3dfb5  | no                      | 2                       |
| <b>Warnings:</b>  |                             |                        |  |                         |                         |
| <b>Information:</b>   |                             |                        |  |                         |                         |
| <b>Total Files Size (in bytes):</b>   |                             |                        | 248922   |                         |                         |
| <p><b>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</b></p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b><br/> <b>If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</b></p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b><br/> <b>If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</b></p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b><br/> <b>If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</b></p> |                             |                        |  |                         |                         |

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|   |   |                                  |       |                                    |   |                 |                                  |    |                                       |                 |                     |
|---|---|----------------------------------|-------|------------------------------------|---|-----------------|----------------------------------|----|---------------------------------------|-----------------|---------------------|
| <b>PATENT APPLICATION FEE DETERMINATION RECORD</b><br>Substitute for Form PTO-875   |   |                                  |       |                                    | Application or Docket Number<br><b>11/463,203</b> |                 | Filing Date<br><b>08/08/2006</b> |    | <input type="checkbox"/> To be Mailed |                 |                     |
| <b>APPLICATION AS FILED – PART I</b>  |   |                                  |       |                                    | SMALL ENTITY <input checked="" type="checkbox"/>  |                 | OR                               |    | OTHER THAN SMALL ENTITY               |                 |                     |
| (Column 1)  |   | (Column 2)                       |       |                                    |   |                 |                                  |    |                                       |                 |                     |
| FOR   | NUMBER FILED  | NUMBER EXTRA                     |       |                                    | RATE (\$)   | FEE (\$)        |                                  |    | RATE (\$)                             | FEE (\$)        |                     |
| <input type="checkbox"/> BASIC FEE<br><small>(37 CFR 1.16(a), (b), or (c))</small>  | N/A   | N/A                              |       |                                    | N/A   |                 |                                  |    | N/A                                   |                 |                     |
| <input type="checkbox"/> SEARCH FEE<br><small>(37 CFR 1.16(k), (l), or (m))</small>   | N/A   | N/A                              |       |                                    | N/A   |                 |                                  |    | N/A                                   |                 |                     |
| <input type="checkbox"/> EXAMINATION FEE<br><small>(37 CFR 1.16(o), (p), or (q))</small>  | N/A   | N/A                              |       |                                    | N/A   |                 |                                  |    | N/A                                   |                 |                     |
| TOTAL CLAIMS<br><small>(37 CFR 1.16(j))</small>   | minus 20 =  | *                                |       |                                    | X \$ =  |                 | OR                               |    | X \$ =                                |                 |                     |
| INDEPENDENT CLAIMS<br><small>(37 CFR 1.16(h))</small>   | minus 3 =   | *                                |       |                                    | X \$ =  |                 |                                  |    | X \$ =                                |                 |                     |
| <input type="checkbox"/> APPLICATION SIZE FEE<br><small>(37 CFR 1.16(s))</small>  | If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). |                                  |       |                                    |   |                 |                                  |    |                                       |                 |                     |
| <input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT<br><small>(37 CFR 1.16(j))</small>                                    |   |                                  |       |                                    |   |                 |                                  |    |                                       |                 |                     |
| * If the difference in column 1 is less than zero, enter "0" in column 2.   |   |                                  |       |                                    |   |                 |                                  |    |                                       |                 |                     |
| <b>APPLICATION AS AMENDED – PART II</b>   |   |                                  |       |                                    | SMALL ENTITY                                      |                 | OR                               |    | OTHER THAN SMALL ENTITY               |                 |                     |
| (Column 1)  |   | (Column 2)                       |       | (Column 3)                         |   |                 |                                  |    |                                       |                 |                     |
| <b>AMENDMENT</b>  | <b>11/12/2009</b>   | CLAIMS REMAINING AFTER AMENDMENT |       | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA                                     | RATE (\$)       | ADDITIONAL FEE (\$)              |    |                                       | RATE (\$)       | ADDITIONAL FEE (\$) |
|   | Total <small>(37 CFR 1.16(i))</small>   | * 6                              | Minus | ** 20                              | = 0   | X \$26 =        | 0                                | OR |                                       | X \$ =          |                     |
|   | Independent <small>(37 CFR 1.16(b))</small>   | * 3                              | Minus | ***3                               | = 0   | X \$110 =       | 0                                | OR |                                       | X \$ =          |                     |
|   | <input type="checkbox"/> Application Size Fee <small>(37 CFR 1.16(s))</small>   |                                  |       |                                    |   |                 |                                  |    |                                       |                 |                     |
|   | <input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>   |                                  |       |                                    |   |                 |                                  |    |                                       |                 |                     |
|   |   |                                  |       |                                    |   | TOTAL ADD'L FEE | <b>0</b>                         | OR |                                       | TOTAL ADD'L FEE |                     |
| (Column 1)  |   | (Column 2)                       |       | (Column 3)                         |   |                 |                                  |    |                                       |                 |                     |
| <b>AMENDMENT</b>  |   | CLAIMS REMAINING AFTER AMENDMENT |       | HIGHEST NUMBER PREVIOUSLY PAID FOR | PRESENT EXTRA                                     | RATE (\$)       | ADDITIONAL FEE (\$)              |    |                                       | RATE (\$)       | ADDITIONAL FEE (\$) |
|   | Total <small>(37 CFR 1.16(i))</small>   | *                                | Minus | **                                 | =   | X \$ =          |                                  | OR |                                       | X \$ =          |                     |
|   | Independent <small>(37 CFR 1.16(b))</small>   | *                                | Minus | ***                                | =   | X \$ =          |                                  | OR |                                       | X \$ =          |                     |
|   | <input type="checkbox"/> Application Size Fee <small>(37 CFR 1.16(s))</small>   |                                  |       |                                    |   |                 |                                  |    |                                       |                 |                     |
|   | <input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>   |                                  |       |                                    |   |                 |                                  |    |                                       |                 |                     |
|   |   |                                  |       |                                    |   | TOTAL ADD'L FEE |                                  | OR |                                       | TOTAL ADD'L FEE |                     |
| * If the entry in column 1 is less than the entry in column 2, write "0" in column 3.   |   |                                  |       |                                    |   |                 |                                  |    |                                       |                 |                     |
| ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".                                       |   |                                  |       |                                    |   |                 |                                  |    |                                       |                 |                     |
| *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".  |   |                                  |       |                                    |   |                 |                                  |    |                                       |                 |                     |
| The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1. |   |                                  |       |                                    |   |                 |                                  |    |                                       |                 |                     |
| Legal Instrument Examiner:<br>/DEBRA a. SAVOY/  |   |                                  |       |                                    |   |                 |                                  |    |                                       |                 |                     |

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 11/463,203      | 08/08/2006  | David F. MACNEIL     | 301700-00106        | 6550             |

64770 7590 08/13/2009  
Momkus McCluskey, LLC  
1001 Warrenville Road, Suite 500  
Lisle, IL 60532

EXAMINER

TAOUSAKIS, ALEXANDER P

ART UNIT PAPER NUMBER

3726

MAIL DATE DELIVERY MODE

08/13/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



|                              |   |  |  |
|------------------------------|---|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>11/463,203      | <b>Applicant(s)</b><br>MACNEIL, DAVID F. |  |
|                              | <b>Examiner</b><br>ALEXANDER P. TAOUSAKIS | <b>Art Unit</b><br>3726                  |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1)  Responsive to communication(s) filed on 08 August 2006.  
2a)  This action is **FINAL**.                      2b)  This action is non-final.  
3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4)  Claim(s) 1-6 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5)  Claim(s) \_\_\_\_\_ is/are allowed.  
6)  Claim(s) 1, 2 and 4-6 is/are rejected.  
7)  Claim(s) 3 is/are objected to.  
8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9)  The specification is objected to by the Examiner.  
10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \*    c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>08/08/2006, 10/06/2006, 06/07/2007</u> . | 6) <input type="checkbox"/> Other: _____  |



## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claims 1-2, 4, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over England (2,118,342) in view of Kacyra et al (7,215,430).**

1.

England teaches process for manufacturing a vehicle floor tray, comprising the steps of: molding a layer of polymeric material in a mold to for conform to a vehicle floor (see *column 1 lines 47-55 – column 2 lines 1-6*).

England fails to teach digitally measuring the surface of a vehicle foot well, converting the measured data into a three-dimensional image and creating a mold based on that image.

Kacyra et al teach digitally measuring the three-dimensional position of a plurality of points on a surface of a workpiece (*see column 2 lines 43-47*), storing said points in a memory (*see column 22 lines 44-55*), using the stored points to construct a model of the surface (*see column 2 lines 48-49*); using the model of the surface to construct a three-dimensional image of a vehicle floor tray (*see column 2 lines 50-51 and column 22 lines 57-64*).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to create the mold of England based off a three-dimensional image of the vehicle floor obtained through digital measurement, as taught by Kacyra et al, because it forms a more quickly formed and precisely contoured floor tray (*see Kacyra et al column 1 lines 16-20*).

2.

England/Kacyra et al teach the process of Claim 1, wherein said step of digitally measuring the three-dimensional position of the points on the surface of the vehicle foot well comprises using a coordinate measurement machine (CMM) (*see Kacyra et al column 8 lines 37-56*).

4.

England/Kacyra et al teach the process of Claim 1, and wherein said step of constructing the three-dimensional image of the vehicle floor tray further comprises the steps of:

establishing a top sketch plane to intersect the vehicle foot well model and to establish a top margin of the vehicle floor tray, establishing a bottom sketch plane to be at the lowest elevation of the vehicle floor tray image to be created and drawing sidewalls between the top sketch plane and the bottom sketch plane to approximate corresponding sidewalls of the vehicle foot well tray (*see Kacyra et al column 3 lines 33-50, where it discloses determining points in three planes to create the three-dimensional model of the workpiece, and column 22 lines 60-65 – column 23 lines 1-19, where it discloses processing of the model using a CAD system which allows for manipulating the image including construction of multiple views*).

6.

England/Kacyra et al teach the process of Claim 1, and further comprising the step of modifying the drawn sidewalls of the three-dimensional image of the vehicle floor tray to conform at least the upper two-thirds of the area of the outer surface of the sidewalls nearest to the top margin to respective surfaces of the vehicle foot well model, such that through those areas the sidewalls of the vehicle floor tray do not depart from the corresponding surfaces of the vehicle foot well by more than one-eighth of an inch (*see Kacyra et al column 2 lines 43-51, where it discloses determining the three-dimensional*

*image of workpiece so that the image directly corresponds to the workpiece, and column 32 lines 44-61, where it discloses modification of the three-dimensional image to account for and eliminate measurement errors).*

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to

be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-2, 4-6 are rejected on the ground of nonstatutory double patenting over claims 1, 3 and 5 of U. S. Patent No. 7,444,748. Both the application claims and patent claims recite a process for manufacturing a vehicle floor tray comprising the steps of: digitally measuring the three-dimensional position of a plurality of points on a surface of a vehicle foot well for which the vehicle floor tray is to be provided, storing said points in a memory; using the stored points to construct a model of the vehicle foot well surface, using the model of the vehicle foot well surface to construct a three-dimensional image of a vehicle floor tray, using the stored three-dimensional image to construct a mold for the vehicle floor tray and manufacturing the vehicle floor tray by molding polymer material in the mold.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1 and 5 of the patent "anticipate" application claim 1. Accordingly, application claim 1 is not patentably distinct from patent claims 1 and 5. Since it is clear that the more specific patent claims 1 and 5 encompass the broader application claim 1, following the rational in *In re Goodman* cited in the preceding paragraph, where applicant has once been granted a patent containing a claims for the specific or narrower invention, applicant may not then obtain a second patent with a

claim for the generic or broader invention without first submitting an appropriate terminal disclaimer.

Depending claims 2 and 4-6 correspond to the following patent claims:

| Application claims | Patent claims |
|--------------------|---------------|
| 2                  | 3             |
| 4                  | 1, 5          |
| 5                  | 1, 5          |
| 6                  | 1, 5          |

***Allowable Subject Matter***

Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to teach the claimed process for manufacturing a vehicle floor tray comprising: digitally measuring the three-dimensional position of a plurality of points on a surface of a vehicle foot well, storing the points in a memory, connecting groups of stored points together with B-splines, lofting between B-splines to create areal segments of the surface of the foot well, using the points to produce an model and the model to create a three-dimensional image of the foot well.



**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXANDER P. TAOUSAKIS whose telephone number is (571)272-3497. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bryant can be reached on (571) 272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jermie E Cozart/  
Primary Examiner, Art Unit 3726

/Alexander P Taousakis/  
Examiner, Art Unit 3726

|                                   |                                       |   |             |
|-----------------------------------|---------------------------------------|---|-------------|
| <b>Notice of References Cited</b> | Application/Control No.<br>11/463,203 | Applicant(s)/Patent Under<br>Reexamination<br>MACNEIL, DAVID F. |             |
|                                   | Examiner<br>ALEXANDER P. TAOUSAKIS    | Art Unit<br>3726  | Page 1 of 1 |

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|   | E US-  |                 |                   |                |
|   | F US-  |                 |                   |                |
|   | G US-  |                 |                   |                |
|   | H US-  |                 |                   |                |
|   | I US-  |                 |                   |                |
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|   |  |   |
|---|--|---|
| <b>Index of Claims</b><br><br> | <b>Application/Control No.</b><br>11463203 | <b>Applicant(s)/Patent Under Reexamination</b><br>MACNEIL, DAVID F. |
|   | <b>Examiner</b><br>ALEXANDER P TAOUSAKIS   | <b>Art Unit</b><br>3726   |

|   |                 |   |                   |   |                     |   |                 |
|---|-----------------|---|-------------------|---|---------------------|---|-----------------|
| ✓ | <b>Rejected</b> | - | <b>Cancelled</b>  | N | <b>Non-Elected</b>  | A | <b>Appeal</b>   |
| = | <b>Allowed</b>  | ÷ | <b>Restricted</b> | I | <b>Interference</b> | O | <b>Objected</b> |

| <input type="checkbox"/> Claims renumbered in the same order as presented by applicant |          | <input type="checkbox"/> CPA |  | <input type="checkbox"/> T.D. |  | <input type="checkbox"/> R.1.47 |  |  |  |
|--|----------|------------------------------|--|-------------------------------|--|---------------------------------|--|--|--|
| CLAIM  |          | DATE                         |  |                               |  |                                 |  |  |  |
| Final  | Original | 08/10/2009                   |  |                               |  |                                 |  |  |  |
|  | 1        | ✓                            |  |                               |  |                                 |  |  |  |
|  | 2        | ✓                            |  |                               |  |                                 |  |  |  |
|  | 3        | O                            |  |                               |  |                                 |  |  |  |
|  | 4        | ✓                            |  |                               |  |                                 |  |  |  |
|  | 5        | ✓                            |  |                               |  |                                 |  |  |  |
|  | 6        | ✓                            |  |                               |  |                                 |  |  |  |

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|--|--|---|
| <b>Search Notes</b><br><br> | <b>Application/Control No.</b><br>11463203 | <b>Applicant(s)/Patent Under Reexamination</b><br>MACNEIL, DAVID F. |
|  | <b>Examiner</b><br>ALEXANDER P TAOUSAKIS   | <b>Art Unit</b><br>3726   |

| SEARCHED |                      |           |          |
|----------|----------------------|-----------|----------|
| Class    | Subclass             | Date      | Examiner |
| 29       | 527.1, 407.05, 897.2 | 8/10/2009 | AT       |
| 33       | 503                  |           |          |
| 296      | 97.23                |           |          |
| 73       | 1.79                 |           |          |

| SEARCH NOTES |      |          |
|--------------|------|----------|
| Search Notes | Date | Examiner |
|              |      |          |

| INTERFERENCE SEARCH |          |      |          |
|---------------------|----------|------|----------|
| Class               | Subclass | Date | Examiner |
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| <b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br>( Not for submission under 37 CFR 1.99) | Application Number     | 11463203 - GAU: 3726  |
|   | Filing Date            | 08/08/2006  |
|   | First Named Inventor   | David F. MacNEIL  |
|   | Art Unit               | <del>3642</del> 3726  |
|   | Examiner Name          | <del>Joseph P. P. Joseph P. P. P.</del> Alexander Taousakis |
|   | Attorney Docket Number | 301700-00106  |

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| Examiner Initial* | Cite No | Patent Number | Kind Code <sup>1</sup> | Issue Date | Name of Patentee or Applicant of cited Document | Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear |
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| <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b><br>(Not for submission under 37 CFR 1.99) | Application Number     |  | 11463203 - GAU: 3726 |  |
|  | Filing Date            |  | 08/08/2006           |  |
|  | First Named Inventor   | David F. MacNEIL                           |                      |  |
|  | Art Unit               | <del>3012</del> 3726                       |                      |  |
|  | Examiner Name          | <del>Joseph DAFE</del> Alexander Taousakis |                      |  |
|  | Attorney Docket Number | 301700-00106                               |                      |  |

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| <b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br>( Not for submission under 37 CFR 1.99) | Application Number     |                        | 11463203 - GAU: 3726 |
|   | Filing Date            |                        | 08/08/2006           |
|   | First Named Inventor   | David F. MacNEIL       |                      |
|   | Art Unit               | <del>3642</del>        | 3726                 |
|   | Examiner Name          | <del>Joseph DAPE</del> | Alexander Taousakis  |
|   | Attorney Docket Number | 301700-00106           |                      |

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| 5  | Web pages featuring products from 3D Carpet Liners, Weatherboots, Nifty Products, Inc. and Husky, downloaded from <a href="http://www.premiermotoring.net">http://www.premiermotoring.net</a> on August 11, 2004                 | <input type="checkbox"/> |
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| <b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br>( Not for submission under 37 CFR 1.99) | Application Number     |                        | 11463203 - GAU: 3726 |  |
|   | Filing Date            |                        | 08/08/2006           |  |
|   | First Named Inventor   | David F. MacNEIL       |                      |  |
|   | Art Unit               | <del>3612</del>        | 3726                 |  |
|   | Examiner Name          | <del>Joseph PATE</del> | Alexander Taousakis  |  |
|   | Attorney Docket Number | 301700-00106           |                      |  |

|    |  |                          |
|----|--|--------------------------|
| 13 | BRITISH PATENT OFFICE, Search Report on GB Patent Appln. No. GB 0522091.8, Claims 47 - 66, 77 and 78, 23 June 2006 | <input type="checkbox"/> |
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| 17 | BRITISH PATENT OFFICE, Search Report on Patent Appln. No. GB 0522091.8, Claims 85 - 100, 27 June 2006              | <input type="checkbox"/> |

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EAST Search History

EAST Search History (Prior Art)

| Ref # | Hits  | Search Query   | DBs                              | Default Operator | Plurals | Time Stamp       |
|-------|-------|--|----------------------------------|------------------|---------|------------------|
| S1    | 16    | (weir adj valve).ti.   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR               | ON      | 2008/06/17 15:55 |
| S2    | 13301 | (vehicle) and floor and (three and dimensional)  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR               | ON      | 2008/06/17 16:34 |
| S3    | 398   | (vehicle) and floor with (three and dimensional)   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR               | ON      | 2008/06/17 16:34 |
| S4    | 398   | (vehicle) and (floor with (three and dimensional))   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR               | ON      | 2008/06/17 16:34 |
| S5    | 160   | S4 and (measure measuring)   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR               | ON      | 2008/06/17 16:35 |
| S6    | 2     | ((three adj dimesional) adj (model image)) and (vehicle)   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR               | ON      | 2008/06/17 16:39 |
| S7    | 1     | ((three adj dimesional) adj (model image)) and mold\$3   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR               | ON      | 2008/06/17 16:39 |
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| S10   | 7     | (three-dimesional) and vehicle   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR               | ON      | 2008/06/17 16:39 |
| S11   | 8     | ("20040048036"   "4693507"   "4721641"   "4828898"   "6027782"   "6155629"   "6431629"   "D377780").PN.  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR               | ON      | 2008/06/17 16:40 |
| S12   | 4     | (US-6155629-\$ or US-7316847-\$ or US-6027782-\$ or US-4828898-\$).did.  | USPAT                            | OR               | ON      | 2008/06/17 16:41 |
| S13   | 72    | ("20040048036"   "2651540"   "3042564"   "3391959"   "3804699"   "4016318"   "4101702"   "4230755"   "4382986"   "4399176"   "4465720"   "4529639"   "4579764"   "4588628"   "4591532"   "4693507"   "4721641"   "4828898"   "4921742"   "4984838"   "5034258"   "5082742"   "5207963"   "5288121"   "5362544"   "5474829"   "5848769"   "5891546"   "6027782"   "6155629"   "6431629"   "6953545"   "D377780").PN. OR ("4828898"   "6027782"   "6155629"   "7316847").URPN. | US-PGPUB; USPAT; USOCR           | OR               | ON      | 2008/06/17 16:41 |
| S14   | 2     | S12 and measur\$3  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR               | ON      | 2008/06/17 16:41 |
| S15   | 18    | S13 and measur\$3  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR               | ON      | 2008/06/17 16:41 |
| S16   | 39    | (floor adj mat).ti. and (measure measuring)  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR               | ON      | 2008/06/17 16:43 |
| S17   | 3     | ("20040048036"   "5848769"   "6431629").PN.  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR               | ON      | 2008/06/24 14:13 |
| S18   | 1     | ("5082742").PN.  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR               | ON      | 2008/06/24 14:13 |
| S19   | 1     | ("4101702").PN.  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR               | ON      | 2008/06/24 14:13 |

|     |       |  |                                     |    |    |                  |
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| S20 | 10    | ("20040048036"   "4101702"   "4591532"   "5082742"   "5848769"   "6027782"   "6155629"   "6431629"   "6953545"   "6953545"   "D377780").<br>PN.  | US-PGPUB; USPAT;<br>USOCR; EPO; JPO | OR | ON | 2008/06/24 14:13 |
| S21 | 5     | (S17 S18 S19)  | US-PGPUB; USPAT;<br>USOCR; EPO; JPO | OR | ON | 2008/06/24 14:13 |
| S22 | 7     | ("3288187" "5254384" "5482759"<br>"6261667" "6534146" "20010020316").<br>pn.   | US-PGPUB; USPAT;<br>USOCR; EPO; JPO | OR | ON | 2008/06/24 14:19 |
| S23 | 11    | ("20040048036"   "20060091695"   "4591532"   "4280729"   "4406492"   "4591532"   "5776583"   "6027782"   "6155629"   "6793872"   "6953545"   "6027782"   "6155629"   "6793872"   "6953545"   "D377780"   "D377780").<br>PN.  | US-PGPUB; USPAT;<br>USOCR; EPO; JPO | OR | ON | 2008/06/24 14:21 |
| S25 | 22    | (S20 S21 S22 S23)  | US-PGPUB; USPAT;<br>USOCR; EPO; JPO | OR | ON | 2008/06/24 14:23 |
| S26 | 6     | S25 and model  | US-PGPUB; USPAT;<br>USOCR; EPO; JPO | OR | ON | 2008/06/24 14:24 |
| S27 | 4     | S25 and (three adj dimension\$2)   | US-PGPUB; USPAT;<br>USOCR; EPO; JPO | OR | ON | 2008/06/24 14:25 |
| S28 | 25    | (US-20040048036-\$ or US-20010020316-\$ or US-20060091695-\$).<br>did. or (US-7369978-\$ or US-7316847-\$<br>or US-7257467-\$ or US-6155629-\$ or<br>US-6027782-\$ or US-4828898-\$ or US-3804699-\$<br>or US-6440525-\$ or US-6114014-\$ or US-6068908-\$<br>or US-5613332-\$ or US-4921742-\$ or US-6431629-\$<br>or US-5848769-\$ or US-5082742-\$ or US-4101702-\$<br>or US-6534146-\$ or US-6261667-\$ or US-5482759-\$<br>or US-5254384-\$ or US-3288187-\$ or US-6953545-\$).<br>did. | US-PGPUB; USPAT                     | OR | ON | 2008/06/24 14:25 |
| S29 | 10    | S28 and model  | US-PGPUB; USPAT;<br>USOCR; EPO; JPO | OR | ON | 2008/06/24 14:25 |
| S30 | 25728 | (measure measuring) and (model) and (construct fabricate manufacture make making) and mold   | US-PGPUB; USPAT;<br>USOCR; EPO; JPO | OR | ON | 2008/06/24 14:27 |
| S31 | 364   | (CMM (coordinate adj measuring adj machine)).ti.   | US-PGPUB; USPAT;<br>USOCR; EPO; JPO | OR | ON | 2008/06/24 14:27 |
| S32 | 644   | (CMM (coordinate adj measuring adj machine)).ab.   | US-PGPUB; USPAT;<br>USOCR; EPO; JPO | OR | ON | 2008/06/24 14:27 |
| S40 | 785   | S32 S31  | US-PGPUB; USPAT;<br>USOCR; EPO; JPO | OR | ON | 2008/06/24 14:35 |
| S41 | 19    | S40 and mold   | US-PGPUB; USPAT;<br>USOCR; EPO; JPO | OR | ON | 2008/06/24 14:35 |
| S42 | 622   | vehicle and floor and (three adj dimensional) and model and mold   | US-PGPUB; USPAT;<br>USOCR; EPO; JPO | OR | ON | 2008/06/24 15:22 |
| S43 | 45    | ("3668501"   "3698817"   "3930730"   "4370720"   "4543635"   "4612709"   "4621926"   "4628441"   "4815213"   "4892407"   "4919967"   "4928019"   "4932131"   "4976019"   "5021941"   "5055752"   "5340962"   "5390128"   "5428280"   "5446545"   "5459915"   "5507091"   "5691909").PN. OR ("5903459").URPN.   | US-PGPUB; USPAT;<br>USOCR           | OR | ON | 2008/06/24 15:34 |
| S44 | 128   | (CMM (coordinate adj measuring adj machine)) and vehicle and (replicate duplicate reproduce)   | US-PGPUB; USPAT;<br>USOCR; EPO; JPO | OR | ON | 2008/06/24 15:38 |

|     |      |  |                                  |    |    |                  |
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| S45 | 36   | ("3032881"   "4174623"   "4242803"   "4319402"   "4321754"   "4329784"   "4442608"   "4463937"   "4490918"   "4534200"   "4557127"   "4574614"   "4586359"   "4603570"   "4621430"   "4660405"   "4719704"   "4731936"   "4756089"   "4811250"   "4934063"   "4997283"   "Re31636").PN. OR ("5341575").URPN. | US-PGPUB; USPAT; USOCR           | OR | ON | 2008/06/24 15:40 |
| S46 | 23   | ("20020152040"   "4811250"   "5054207"   "5278423"   "5321490"   "5341575"   "5561526"   "5589942"   "5767913"   "5852672"   "5870101"   "5913170"   "6006021"   "6052607"   "6115927"   "6130641"   "6160910"   "6236743"   "6285320"   "6288385"   "6304321"   "RE35816").PN. OR ("6732030").URPN.         | US-PGPUB; USPAT; USOCR           | OR | ON | 2008/06/24 15:48 |
| S47 | 2    | S46 and mold   | US-PGPUB; USPAT; USOCR           | OR | ON | 2008/06/24 15:50 |
| S48 | 949  | 29/897.2.ccls.   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 16:37 |
| S49 | 16   | S48 and (replicate duplicate reproduce)  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 16:39 |
| S50 | 23   | (floor adj tray) and (replicate duplicate reproduce)   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 16:39 |
| S51 | 39   | (replicate duplicate reproduce).ti. and vehicle  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 16:41 |
| S52 | 6675 | (image (carbon adj copy) duplicate replicate replication copy).ti. and vehicle   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 16:43 |
| S53 | 447  | ((carbon adj copy) duplicate replicate replication copy).ti. and vehicle   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 16:44 |
| S54 | 465  | (duplicate duplication replicate replication copy).ti. and vehicle   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 16:44 |
| S55 | 0    | (duplicate duplication replicate replication copy).clm. and "vehicle.clm"  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 16:45 |
| S56 | 917  | (duplicate duplication replicate replication copy).clm. and vehicle.clm.   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 16:45 |
| S57 | 394  | S56 and (measure measuring)  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/24 16:45 |
| S58 | 917  | (duplicate duplication replicate replication copy).clm. and vehicle.clm.   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/25 09:58 |
| S59 | 156  | S58 and (scan scanning)  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/25 09:58 |
| S60 | 376  | (floor adj mat).ti. and (making manufacturing manufacture)   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/25 10:00 |
| S61 | 95   | (floor adj mat).ti. and (making manufacturing manufacture).ti.   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/25 10:00 |
| S62 | 28   | S61 and mold   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/25 10:09 |
| S63 | 7    | S62 and conform  | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/25 10:13 |
| S64 | 5    | ("2188342"   "2258238"   "2295099").URPN.  | USPAT                            | OR | ON | 2008/06/25 10:14 |
| S65 | 380  | ((making manufacturing) adj mold\$1) and vehicle   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/25 10:25 |
| S66 | 60   | S65 and ((three adj dimensional) (CMM) (coordinate adj measuring) (three-dimensional))   | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2008/06/25 10:26 |

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|     |        |   |  |    |     |                  |
|-----|--------|---|--|----|-----|------------------|
| S67 | 0      | S65 and ((CMM) (coordinate adj measuring))  | US-PGPUB; USPAT; USOCR; EPO; JPO       | OR | ON  | 2008/06/25 10:29 |
| S68 | 16     | S65 and ((CMM) (coordinate adj measuring) modeling mapping)   | US-PGPUB; USPAT; USOCR; EPO; JPO       | OR | ON  | 2008/06/25 10:31 |
| S69 | 949    | 29/897.2.ccls.  | US-PGPUB; USPAT; USOCR; EPO; JPO       | OR | ON  | 2008/06/25 10:38 |
| S70 | 201    | S69 and mold\$3   | US-PGPUB; USPAT; USOCR; EPO; JPO       | OR | ON  | 2008/06/25 10:38 |
| S71 | 873    | 33/503.ccls.  | US-PGPUB; USPAT; USOCR; EPO; JPO       | OR | ON  | 2008/06/25 10:51 |
| S72 | 115    | S71 and (car vehide floor)  | US-PGPUB; USPAT; USOCR; EPO; JPO       | OR | ON  | 2008/06/25 10:51 |
| S73 | 2      | S72 and prototype   | US-PGPUB; USPAT; USOCR; EPO; JPO       | OR | ON  | 2008/06/25 10:54 |
| S74 | 50     | S71 and (car vehide)  | US-PGPUB; USPAT; USOCR; EPO; JPO       | OR | ON  | 2008/06/25 11:01 |
| S75 | 1581   | (29/407.05 29/527.1).ccls.  | US-PGPUB; USPAT; USOCR; EPO; JPO       | OR | ON  | 2008/06/25 12:03 |
| S76 | 661    | (296/97.23 73/1.79).ccls.   | US-PGPUB; USPAT; USOCR; EPO; JPO       | OR | ON  | 2008/06/25 12:31 |
| S77 | 25     | (296/97.23).ccls. and (model\$3)  | US-PGPUB; USPAT; USOCR; EPO; JPO       | OR | ON  | 2008/06/25 12:37 |
| S78 | 300531 | vehicle car automobile  | US-PGPUB                               | OR | OFF | 2008/06/25 12:54 |
| S79 | 311213 | model   | US-PGPUB                               | OR | OFF | 2008/06/25 12:54 |
| S80 | 394685 | image   | US-PGPUB                               | OR | OFF | 2008/06/25 12:54 |
| S81 | 95963  | mold  | US-PGPUB                               | OR | OFF | 2008/06/25 12:54 |
| S82 | 463219 | measure measuring   | US-PGPUB                               | OR | OFF | 2008/06/25 12:54 |
| S83 | 3      | (S78 and S79 and S80 and S81 and S82).clm.  | US-PGPUB                               | OR | OFF | 2008/06/25 12:55 |
| S84 | 4      | (S78 and S79 and S81 and S82).clm.  | US-PGPUB                               | OR | OFF | 2008/06/25 12:55 |
| S85 | 3      | ("7444748" "7316847" "7401837").pn.   | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON  | 2009/08/04 16:08 |
| S86 | 51     | (david near1 macneil).in.   | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON  | 2009/08/04 16:10 |
| S87 | 11     | ("20040048036"   "20060091695"   "4591532"   "4280729"   "4406492"   "4591532"   "5776583"   "6027782"   "6155629"   "6793872"   "6953545"   "6027782"   "6155629"   "6793872"   "6953545"   "D377780"   "D377780").PN. | US-PGPUB; USPAT; USOCR; EPO; JPO       | OR | ON  | 2009/08/10 11:33 |
| S89 | 2722   | (vehide) and (molding) and (image model) and (three-dimensional)  | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON  | 2009/08/10 11:42 |
| S90 | 1160   | (vehide) and (molding) and (image model) and (three-dimensional) and (measuring)  | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON  | 2009/08/10 11:42 |
| S91 | 121    | (vehide) and (molding) and (image model) and (three-dimensional).clm. and (measuring)   | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON  | 2009/08/10 11:42 |
| S92 | 73     | (mold molding) same (image model) same (three-dimensional) same (measure measuring)   | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON  | 2009/08/10 11:46 |
| S93 | 7      | (mold molding) same (image model) same (three-dimensional) same (measure measuring) same polymer  | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON  | 2009/08/10 11:47 |

EAST Search History

|     |     |  |  |    |    |                  |
|-----|-----|--|--|----|----|------------------|
| S94 | 20  | ("4937766"   "4939380"   "5109236"   "5177349").PN. OR ("5402364").URPN. | US-PGPUB; USPAT; USOCR                 | OR | ON | 2009/08/10 11:50 |
| S95 | 2   | S94 and (mold molding)   | US-PGPUB; USPAT; USOCR                 | OR | ON | 2009/08/10 11:51 |
| S96 | 12  | S90 and (b-splines)  | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2009/08/10 11:52 |
| S97 | 800 | ((b-spline) (b adj spline)) and (modeling) and (three-dimensional)       | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2009/08/10 15:04 |
| S98 | 55  | ((b-spline) (b adj spline)) same (modeling) same (three-dimensional)     | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO | OR | ON | 2009/08/10 15:04 |

8/10/2009 4:41:55 PM

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11463203 GAU: 3726

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| <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b><br>( Not for submission under 37 CFR 1.99) | Application Number     | 11463203  |
|   | Filing Date            | 2006-08-08                                      |
|   | First Named Inventor   | David F. MacNeil                                |
|   | Art Unit               | <del>3012</del> 3726                            |
|   | Examiner Name          | <del>Not Yet Assigned</del> Alexander Taousakis |
|   | Attorney Docket Number | 31700.000106                                    |

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|   | 1       | 4591532            | A                      | 1986-05-27       | Tanaka  |  |        |
|   | 2       | D377780            | S                      | 1997-02-04       | MacNeil   |  |        |
|   | 3       | 6027782            | A                      | 2000-02-22       | Sherman   |  |        |
|   | 4       | 6155629            | A                      | 2000-12-05       | Sherman   |  |        |
|   | 5       | 6793872            | B1                     | 2004-09-21       | Buss  |  |        |
|   | 6       | 6953545            | B1                     | 2005-10-11       | Tyler   |  |        |
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| <b>Receipt date: 10/06/2006</b><br><br><b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b><br>( Not for submission under 37 CFR 1.99) | Application Number     | 11463203                    | 11463203 - GAU: 3726 |  |
|  | Filing Date            | 2006-08-08                  |                      |  |
|  | First Named Inventor   | David F. MacNeil            |                      |  |
|  | Art Unit               | <del>3642</del>             | 3726                 |  |
|  | Examiner Name          | <del>Not Yet Assigned</del> | Alexander Taousakis  |  |
|  | Attorney Docket Number | 31700.000106                |                      |  |

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|-------------------|---------|--------------------------------------|-----------------------------|------------------------|------------------|---|--|-------------------------------------|
|                   | 1       | 0 968 875                            | EP                          | A1                     | 2006-10-06       | T. P. Chomarat                                  | Only abstract provided in English  | <input checked="" type="checkbox"/> |

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|--------------------|---------|---|--------------------------|
|                    | 1       | Husky Liner for 1999 Ford Super Duty, downloaded from <a href="http://www.huskyliners.com/superduty.html">http://www.huskyliners.com/superduty.html</a> on January 3, 2005  | <input type="checkbox"/> |
|                    | 2       | Autoform Trunk Liner, English web page, downloaded from <a href="http://www.autoform.se/eng/products_trunk_liners.htm">http://www.autoform.se/eng/products_trunk_liners.htm</a> on October 20, 2004   | <input type="checkbox"/> |
|                    | 3       | "Installation Instructions For Your F-150/F-250 Ford Truck Front Floor Liners", Winfield Consumer Products, February 1, 2001, downloaded from <a href="http://www.huskyliners.com">http://www.huskyliners.com</a> on January 3, 2005                            | <input type="checkbox"/> |
|                    | 4       | Husky Deep Tray Floor Liner, downloaded from <a href="http://www.truckstuffusa.com/cusfitdeepr.html">http://www.truckstuffusa.com/cusfitdeepr.html</a> on January 3, 2005   | <input type="checkbox"/> |
|                    | 5       | Web pages featuring products from 3D Carpet Liners, Weatherboots, Nifty Products, Inc. and Husky, downloaded from <a href="http://www.premiermotoring.net">http://www.premiermotoring.net</a> on August 11, 2004  | <input type="checkbox"/> |

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| <b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br>( Not for submission under 37 CFR 1.99) | Application Number     |   | 11463203   | 11463203 - GAU: 3726 |
|   | Filing Date            |   | 2006-08-08 |                      |
|   | First Named Inventor   | David F. MacNeil                                |            |                      |
|   | Art Unit               | <del>3642</del>                                 | 3726       |                      |
|   | Examiner Name          | <del>Not Yet Assigned</del> Alexander Taousakis |            |                      |
|   | Attorney Docket Number | 31700.000106                                    |            |                      |

|    |   |                          |
|----|---|--------------------------|
| 6  | WeatherTech Floor Mat and Cargo Liner Product Sheets, MacNeil Automotive Products Limited, Downers Grove, IL, Nov. 1994, 4 pp.  | <input type="checkbox"/> |
| 7  | Faro Laser ScanArm, downloaded from <a href="http://www.faro.com/Products/ScanArm.asp">http://www.faro.com/Products/ScanArm.asp</a> on September 23, 2004   | <input type="checkbox"/> |
| 8  | Faro ScanArm Product Techsheet, downloaded from <a href="http://www.faro.com/Products/Product_Techsheets.asp?techsheet_id=106">http://www.faro.com/Products/Product_Techsheets.asp?techsheet_id=106</a> on October 11, 2004 | <input type="checkbox"/> |
| 9  | "CMM Produces Bikes With Custom-Look", downloaded from <a href="http://manufacturingcenter.com/man/articles/0604/0604CMM.asp">http://manufacturingcenter.com/man/articles/0604/0604CMM.asp</a> on October 11, 2004          | <input type="checkbox"/> |
| 10 | "Stereolithography (SLA) for Rapid Precision Prototypes", p.1, downloaded from <a href="http://www.boedeker.com/sla.htm">http://www.boedeker.com/sla.htm</a> on October 12, 2004  | <input type="checkbox"/> |
| 11 | "About Coordinate Measuring Machines (CMM)", downloaded from <a href="http://cmm.globalspec.com">http://cmm.globalspec.com</a> on October 11, 2004  | <input type="checkbox"/> |
| 12 | "Bagagerumsmattor", downloaded from <a href="http://www.autoform.se/sv/produkter_bagagerumsmattor.htm">http://www.autoform.se/sv/produkter_bagagerumsmattor.htm</a> on October 20, 2004                                     | <input type="checkbox"/> |

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|   | Filing Date            | 2006-08-08             |
|   | First Named Inventor   | David F. MACNEIL       |
|   | Art Unit               | 3726                   |
|   | Examiner Name          | Alexander P. TAOUSAKIS |
|   | Attorney Docket Number | 31700.000106           |

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|                                      | 1       | 20040048036        | A1                     | 2004-03-11       | Nakasuji  |  |        |

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| <b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br>( Not for submission under 37 CFR 1.99) | Receipt date: 06/07/2007 |  | Application Number     | 11463203               | 11463203 - GAU: 3726 |  |
|   |                          |  | Filing Date            | 2006-08-08             |                      |  |
|   |                          |  | First Named Inventor   | David F. MACNEIL       |                      |  |
|   |                          |  | Art Unit               | 3726                   |                      |  |
|   |                          |  | Examiner Name          | Alexander P. TAOUSAKIS |                      |  |
|   |                          |  | Attorney Docket Number | 31700.000106           |                      |  |

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|--------------------|------------------------------------|-----------------|--|
| Examiner Signature | /Alexander Taousakis/ (08/10/2009) | Date Considered |  |
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<sup>1</sup> See Kind Codes of USPTO Patent Documents at [www.USPTO.GOV](http://www.USPTO.GOV) or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.

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| <b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br>( Not for submission under 37 CFR 1.99) | Application Number     | 11463203               |
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|   | First Named Inventor   | David F. MACNEIL       |
|   | Art Unit               | 3726                   |
|   | Examiner Name          | Alexander P. TAOUSAKIS |
|   | Attorney Docket Number | 31700.000106           |

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|  | 1       | 20040048036   | A1                          | 2004-03-11             | Nakasuji  |  |  |                          |
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|---|------------------------|------------------------|--------------|
| <b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br>( Not for submission under 37 CFR 1.99) | Application Number     |                        | 11463203     |
|   | Filing Date            |                        | 2006-08-08   |
|   | First Named Inventor   | David F. MACNEIL       |              |
|   | Art Unit               |                        | 3726         |
|   | Examiner Name          | Alexander P. TAOUSAKIS |              |
|   | Attorney Docket Number |                        | 31700.000106 |

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<sup>1</sup> See Kind Codes of USPTO Patent Documents at [www.USPTO.GOV](http://www.USPTO.GOV) or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.

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| <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b><br>( Not for submission under 37 CFR 1.99) | Application Number     | 11463203               |
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|   | Art Unit               | 3726                   |
|   | Examiner Name          | Alexander P. TAOUSAKIS |
|   | Attorney Docket Number | 31700.000106           |

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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See attached certification statement.

Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

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A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

|            |                     |                     |            |
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| Signature  | /Jefferson Perkins/ | Date (YYYY-MM-DD)   | 2007-06-07 |
| Name/Print | Jefferson Perkins   | Registration Number | 31,407     |

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| <b>EFS ID:</b>                              | 1848435   |
| <b>Application Number:</b>                  | 11463203  |
| <b>International Application Number:</b>    |   |
| <b>Confirmation Number:</b>                 | 6550  |
| <b>Title of Invention:</b>                  | DESIGNING AND MANUFACTURING VEHICLE FLOOR TRAYS |
| <b>First Named Inventor/Applicant Name:</b> | David F. MACNEIL                                |
| <b>Customer Number:</b>                     | 64770   |
| <b>Filer:</b>                               | Jefferson Perkins/Patricia Romanelli            |
| <b>Filer Authorized By:</b>                 | Jefferson Perkins                               |
| <b>Attorney Docket Number:</b>              | 301700-00106                                    |
| <b>Receipt Date:</b>                        | 07-JUN-2007                                     |
| <b>Filing Date:</b>                         | 08-AUG-2006                                     |
| <b>Time Stamp:</b>                          | 12:42:52  |
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| APPLICATION NUMBER | FILING OR 371(c) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|--------------------|-----------------------|-----------------------|------------------------|
| 11/463,203         | 08/08/2006            | David F. MACNEIL      | 301700-00106           |

**CONFIRMATION NO. 6550**

64770  
MOMKUS MCCLUSKEY MONROE MARSH & SPYRATOS, LLC  
3051 OAK GROVE ROAD  
SUITE 220  
DOWNERS GROVE, IL60515-1181

**Title:** DESIGNING AND MANUFACTURING VEHICLE FLOOR TRAYS

**Publication No.** US-2006-0288578-A1

**Publication Date:** 12/28/2006

**NOTICE OF PUBLICATION OF APPLICATION**

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

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|--------------------|------------------------|-----------------------|------------------------|
| 11/463,203         | 08/08/2006             | David F. MACNEIL      | 301700-00106           |

43138  
DASPIN & AUMENT, LLP  
210 WEST 22ND STREET, SUITE 102  
OAK BROOK, IL 60523

CONFIRMATION NO. 6550



\*OC000000020784560\*

Date Mailed: 10/11/2006

**NOTICE REGARDING CHANGE OF POWER OF ATTORNEY**

This is in response to the Power of Attorney filed 10/06/2006.

- The Power of Attorney to you in this application has been revoked by the applicant. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

---

ERIC A DANTZLER  
3600 (571) 272-6586

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|--------------------|------------------------|-----------------------|------------------------|
| 11/463,203         | 08/08/2006             | David F. MACNEIL      | 301700-00106           |

64770  
MOMKUS MCCLUSKEY MONROE MARSH & SPYRATOS, LLC  
3051 OAK GROVE ROAD  
SUITE 220  
DOWNERS GROVE, IL 60515-1181

CONFIRMATION NO. 6550



\*OC000000020784592\*

Date Mailed: 10/11/2006

**NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY**

This is in response to the Power of Attorney filed 10/06/2006.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

ERIC A DANTZLER  
3600 (571) 272-6586

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: David F. MACNEIL  
Application Number: 11/463,203  
Filing date: August 8, 2006  
Art Unit: 3612  
Examiner: Not Yet Assigned  
Confirmation Number: 6550

Title: DESIGNING AND MANUFACTURING VEHICLE FLOOR TRAYS

CUSTOMER NUMBER: **64770**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. §1.97(B)**

Dear Sir:

Pursuant to 37 C.F.R. §§ 1.56 and 1.97(b), Applicant brings to the attention of the Examiner the documents listed on the form PTO/SB/08A electronically filed herewith. This Information Disclosure Statement is being filed within three months of the application filing date and prior to receipt of the first Office Action on the merits. Applicant has not submitted copies of any of the listed documents, because all of the references have been made of record in an application upon which Applicant relies for a priority date under 35 USC § 120. 37 CFR § 1.97(d).

Applicant respectfully requests that the Examiner consider the listed documents, and evidence that consideration of relevant portions thereof by making appropriate notations on the attached forms.

It is believed that these references either taken alone or in combination do not disclose or suggest the invention claimed by the Applicant. However, it is the Applicant's desire to have these references available in the record for both the Examiner and the public to see. The Applicant specifically reserves all rights of privilege and confidence with respect to this matter and submission of this document is not to be construed as a waiver of those rights. Moreover, submission of this document should not be considered an admission that the references cited herein are proper prior art to the aforementioned application.

This submission does not represent that a search has been made or that no better art exists and does not constitute an admission that each or all of the listed documents are material or constitute "prior art." If it should be determined that any of the listed documents do not constitute "prior art" under United States law, Applicant reserves the right to present to the Office the relevant facts and law regarding the appropriate status of such documents.

Applicant further reserves the right to take appropriate action to establish the patentability of the disclosed invention over the listed documents, should one or more of the documents be applied against the claims of the present application.

No fee is thought to be due with this Information Disclosure Statement. However, if there is any fee due in connection with this submission, please charge the fee to Deposit Account No. 503982 of Momkus McCluskey Monroe Marsh & Spyratos, LLC.

Respectfully submitted,

/Jefferson Perkins/  
Jefferson Perkins  
Reg. No. 31,407

MOMKUS McCLUSKEY  
MONROE MARSH & SPYRATOS, LLC  
3051 Oak Grove Road, Suite 220  
Downers Grove, Illinois 60515-1181  
Telephone: (630) 434-0400  
Fax (630) 434-0444  
Email [jperkins@momlaw.com](mailto:jperkins@momlaw.com)

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| <b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br>( Not for submission under 37 CFR 1.99) | Application Number     | 11463203         |
|   | Filing Date            | 2006-08-08       |
|   | First Named Inventor   | David F. MacNeil |
|   | Art Unit               | 3612             |
|   | Examiner Name          | Not Yet Assigned |
|   | Attorney Docket Number | 31700.000106     |

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|   | 1       | 4591532            | A                      | 1986-05-27       | Tanaka  |  |        |
|   | 2       | D377780            | S                      | 1997-02-04       | MacNeil   |  |        |
|   | 3       | 6027782            | A                      | 2000-02-22       | Sherman   |  |        |
|   | 4       | 6155629            | A                      | 2000-12-05       | Sherman   |  |        |
|   | 5       | 6793872            | B1                     | 2004-09-21       | Buss  |  |        |
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|   | First Named Inventor   | David F. MacNeil |
|   | Art Unit               | 3612             |
|   | Examiner Name          | Not Yet Assigned |
|   | Attorney Docket Number | 31700.000106     |

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**FOREIGN PATENT DOCUMENTS**

| Examiner Initial* | Cite No | Foreign Document Number <sup>3</sup> | Country Code <sup>2</sup> j | Kind Code <sup>4</sup> | Publication Date | Name of Patentee or Applicant of cited Document | Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear | T <sup>5</sup>                      |
|-------------------|---------|--------------------------------------|-----------------------------|------------------------|------------------|---|--|-------------------------------------|
|                   | 1       | 0 968 875                            | EP                          | A1                     | 2006-10-06       | T. P. Chomarat                                  | Only abstract provided in English  | <input checked="" type="checkbox"/> |

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**NON-PATENT LITERATURE DOCUMENTS**

| Examiner Initials* | Cite No | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published. | T <sup>5</sup>           |
|--------------------|---------|---|--------------------------|
|                    | 1       | Husky Liner for 1999 Ford Super Duty, downloaded from <a href="http://www.huskyliners.com/superduty.html">http://www.huskyliners.com/superduty.html</a> on January 3, 2005  | <input type="checkbox"/> |
|                    | 2       | Autoform Trunk Liner, English web page, downloaded from <a href="http://www.autoform.se/eng/products_trunk_liners.htm">http://www.autoform.se/eng/products_trunk_liners.htm</a> on October 20, 2004   | <input type="checkbox"/> |
|                    | 3       | "Installation Instructions For Your F-150/F-250 Ford Truck Front Floor Liners", Winfield Consumer Products, February 1, 2001, downloaded from <a href="http://www.huskyliners.com">http://www.huskyliners.com</a> on January 3, 2005                            | <input type="checkbox"/> |
|                    | 4       | Husky Deep Tray Floor Liner, downloaded from <a href="http://www.truckstuffusa.com/cusfitdeepr.html">http://www.truckstuffusa.com/cusfitdeepr.html</a> on January 3, 2005   | <input type="checkbox"/> |
|                    | 5       | Web pages featuring products from 3D Carpet Liners, Weatherboots, Nifty Products, Inc. and Husky, downloaded from <a href="http://www.premiermotoring.net">http://www.premiermotoring.net</a> on August 11, 2004  | <input type="checkbox"/> |



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|--|------------------------|------------------|--------------|
| <b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT<br/>( Not for submission under 37 CFR 1.99)</b> | Application Number     |                  | 11463203     |
|  | Filing Date            |                  | 2006-08-08   |
|  | First Named Inventor   | David F. MacNeil |              |
|  | Art Unit               |                  | 3612         |
|  | Examiner Name          | Not Yet Assigned |              |
|  | Attorney Docket Number |                  | 31700.000106 |

|    |   |                          |
|----|---|--------------------------|
| 6  | WeatherTech Floor Mat and Cargo Liner Product Sheets, MacNeil Automotive Products Limited, Downers Grove, IL, Nov. 1994, 4 pp.  | <input type="checkbox"/> |
| 7  | Faro Laser ScanArm, downloaded from <a href="http://www.faro.com/Products/ScanArm.asp">http://www.faro.com/Products/ScanArm.asp</a> on September 23, 2004   | <input type="checkbox"/> |
| 8  | Faro ScanArm Product Techsheet, downloaded from <a href="http://www.faro.com/Products/Product_Techsheets.asp?techsheet_id=106">http://www.faro.com/Products/Product_Techsheets.asp?techsheet_id=106</a> on October 11, 2004 | <input type="checkbox"/> |
| 9  | "CMM Produces Bikes With Custom-Look", downloaded from <a href="http://manufacturingcenter.com/man/articles/0604/0604CMM.asp">http://manufacturingcenter.com/man/articles/0604/0604CMM.asp</a> on October 11, 2004          | <input type="checkbox"/> |
| 10 | "Stereolithography (SLA) for Rapid Precision Prototypes", p.1, downloaded from <a href="http://www.boedeker.com/sla.htm">http://www.boedeker.com/sla.htm</a> on October 12, 2004  | <input type="checkbox"/> |
| 11 | "About Coordinate Measuring Machines (CMM)", downloaded from <a href="http://cmm.globalspec.com">http://cmm.globalspec.com</a> on October 11, 2004  | <input type="checkbox"/> |
| 12 | "Bagagerumsmattor", downloaded from <a href="http://www.autoform.se/sv/produkter_bagagerumsmattor.htm">http://www.autoform.se/sv/produkter_bagagerumsmattor.htm</a> on October 20, 2004                                     | <input type="checkbox"/> |

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| Examiner Signature |  | Date Considered |  |
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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|   |                        |                  |
|---|------------------------|------------------|
| <b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br>( Not for submission under 37 CFR 1.99) | Application Number     | 11463203         |
|   | Filing Date            | 2006-08-08       |
|   | First Named Inventor   | David F. MacNeil |
|   | Art Unit               | 3612             |
|   | Examiner Name          | Not Yet Assigned |
|   | Attorney Docket Number | 31700.000106     |

**CERTIFICATION STATEMENT**

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

None

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

|            |                     |                     |            |
|------------|---------------------|---------------------|------------|
| Signature  | /Jefferson Perkins/ | Date (YYYY-MM-DD)   | 2006-10-06 |
| Name/Print | Jefferson Perkins   | Registration Number | 31407      |

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| <b>REVOCATION OF POWER OF ATTORNEY WITH<br/>NEW POWER OF ATTORNEY<br/>AND<br/>CHANGE OF CORRESPONDENCE ADDRESS</b> | Application Number     | 11463203         |
|  | Filing Date            | 2006-08-08       |
|  | First Named Inventor   | David F. MacNEIL |
|  | Art Unit               | 3612             |
|  | Examiner Name          | Not yet assigned |
|  | Attorney Docket Number | 31700.000106     |

**I hereby revoke all previous powers of attorney given in the above-identified application.**

A Power of Attorney is submitted herewith.

**OR**

I hereby appoint the practitioners associated with the Customer Number:

Please change the correspondence address for the above-identified application to:

The address associated with Customer Number:

**OR**

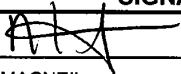
|  |       |     |  |
|--|-------|-----|--|
| <input type="checkbox"/> Firm or Individual Name |       |     |  |
| Address  |       |     |  |
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| Country  |       |     |  |
| Telephone  | Email |     |  |

I am the:

Applicant/Inventor.

Assignee of record of the entire interest. See 37 CFR 3.71.  
*Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)*

**SIGNATURE of Applicant or Assignee of Record**

|           |   |           |              |
|-----------|---|-----------|--------------|
| Signature |  |           |              |
| Name      | David F. MACNEIL  |           |              |
| Date      | <input type="text" value="9/29/2006"/>  | Telephone | 630 769 1500 |

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below\*.

\*Total of \_\_\_\_\_ forms are submitted.

This collection of information is required by 37 CFR 1.36. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: **Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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## Electronic Acknowledgement Receipt

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| <b>EFS ID:</b>                           | 1241071   |
| <b>Application Number:</b>               | 11463203  |
| <b>Confirmation Number:</b>              | 6550  |
| <b>Title of Invention:</b>               | DESIGNING AND MANUFACTURING VEHICLE FLOOR TRAYS |
| <b>First Named Inventor:</b>             | David F. MACNEIL                                |
| <b>Customer Number:</b>                  | 43138   |
| <b>Filer:</b>                            | Jefferson Perkins/Patricia Romanelli            |
| <b>Filer Authorized By:</b>              | Jefferson Perkins                               |
| <b>Attorney Docket Number:</b>           | 301700-00106                                    |
| <b>Receipt Date:</b>                     | 06-OCT-2006                                     |
| <b>Filing Date:</b>                      | 08-AUG-2006                                     |
| <b>Time Stamp:</b>                       | 17:11:14  |
| <b>Application Type:</b>                 | Utility   |
| <b>International Application Number:</b> |   |

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| 1               | Information Disclosure Statement (IDS) Filed | IDSTransmittal.pdf | 90929            | no         | 3     |

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| 3   | Power of Attorney                            | POA.pdf | 48761  | no | 1 |
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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Inventor(s): David F. MACNEIL

Title: DESIGNING AND MANUFACTURING VEHICLE FLOOR TRAYS

Filed: Herewith

**UTILITY PATENT APPLICATION TRANSMITTAL**

*New nonprovisional application under 37 CFR 1.53(b), Electronic Filing*

- 1.  Specification, including claims and abstract [Total Pages 40 ]
- 2.  Drawing(s) [Total Pages 12 ]
- 3.  Declaration of Inventor(s) [Total Pages 2 ]
  - a.  Unexecuted
  - b.  Newly executed
  - c.  Copy from a prior application (37 CFR 1.63(d))  
(for continuation/divisional with Box 15 completed)  
*[Note Box 4 below]*
    - i.  DELETION OF INVENTOR(S)  
Signed statement attached deleting inventor(s) named in the prior application  
(see 37 CFR 1.63(d)(2) and 1.33(b)).
- 4.  Incorporation By Reference (*useable if Box 3c is checked*). The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 3c, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.
- 5.  Application Data Sheet
- 6.  CD-ROM or CD-R in duplicate, large table or Computer Program (Appendix)

**DOCUMENTS ACCOMPANYING APPLICATION PARTS**

- 8.  Assignment Papers (cover sheet and documents)
- 9.  37 CFR 3.73(b) Statement and Power of Attorney  Power of Attorney  
(when there is an assignee)
- 10.  English Translation Document (*if applicable*)

11.  Information Disclosure Statement (IDS)/PTO/SB/08A,B  Copy of those cited references which are not US patents or US patent appln. publications and which have not been made of record in parent case
12.  Preliminary Amendment
13.  Certified Copy of Priority Document(s) (*if foreign priority is claimed*)
14.  Other: .....
15. If a CONTINUING APPLICATION, check the appropriate box and supply the requisite information.  
 Continuation  Divisional  Continuation-in-part (CIP) ...of prior application No.: 10/976,441

Examiner: Joseph PAPE Art Unit: 3612

16. Correspondence Address: **CUSTOMER NUMBER 43138**

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17. SIGNATURE OF ATTORNEY FOR APPLICANT:

NAME: Jefferson Perkins  
SIGNATURE: /Jefferson Perkins/  
REGISTRATION 31,407  
DATE August 8, 2006



**APPLICATION FOR UNITED STATES PATENT**

**INVENTOR: DAVID F. MACNEIL**

**TITLE: DESIGNING AND MANUFACTURING VEHICLE  
FLOOR TRAYS**

**DASPIN & AUMENT, LLP**  
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**DESIGNING AND MANUFACTURING VEHICLE FLOOR TRAYS**

**RELATED APPLICATIONS**

[0001] This application is a divisional of copending United States Nonprovisional Application No. 10/976,441 filed on October 29, 2004. The disclosure and drawings of that application are fully incorporated by reference herein.

**BACKGROUND OF THE INVENTION**

[0002] Motor vehicles are almost always operated in the out of doors and are frequently parked there. It is therefore very common for their occupants to have wet or muddy feet – if the occupants have not just finished an outdoor activity, at least they have had to walk across a possibly wet, snowy or muddy surface to access their vehicles. For decades, therefore, vehicle owners have been attempting to protect the enclosed interiors of their vehicles (cars, trucks, SUVs) from what they themselves track into them. The conventional solution to this has been to provide a vehicle floor mat which may be periodically removed by the owner and cleaned.

[0003] Human beings have a tendency to move their feet around, and foot motion is an absolute requirement in operating most vehicles. This has caused a problem, in that the occupants of a vehicle have a tendency to push around the floor mats with their feet. The floor mats end up not being centered on the area protected, or pushed up so as to occlude the gas, brake or clutch pedals, or bunched up or folded over – all undesirable conditions. One objective of floor mat manufacturers has therefore been to provide a floor mat that will stay put and which will not adversely affect vehicle operation.

[0004] The foot wells of cars, trucks and SUVs vary in size in shape from one model of vehicle to the next. Floor mat manufacturers have noticed that floor mats which at least approximately

conform to the shape of the bottom surface of the foot well stay in place better and offer more protection. It is also common for such floor mats, where provided for front seat foot wells, to have portions which are meant to lie against the firewalls or front surfaces of the foot wells. Even as so extended it is not too hard to provide a floor mat of flexible material that will approximately conform to these two surfaces, as the designer only has to mark a two-dimensional periphery of the mat in providing one which will fit reasonably well.

[0005] More recently, vehicle floor trays have come onto the market. Most front-seat vehicle foot wells are actually three-dimensional concave shapes, typically with complex curved surfaces. Floor trays have sidewalls that offer enhanced protection to the surfaces surrounding the vehicle floor, as might be needed against wearers with very muddy or snowy shoes. Conventional vehicle floor trays try to fit into these three-dimensional cavities, but so far their fit to the surfaces that they are supposed to protect has been less than optimum. A conventional vehicle floor tray is typically molded of a single-ply rubber or plastic material, exhibits enough stiffness to retain a three-dimensional shape, but is also at least somewhat flexible. Fitting such a tray to the complex three-dimensional surface of a vehicle foot well has proven to be difficult, and the products currently in the marketplace have limited consumer acceptance because of their loose fit inside the foot well. There is often, and in many places, a considerable space between the exterior wall of these conventional trays and the interior surface of the foot well. This causes the wall to noticeably deform when the occupant's foot contacts it. Vehicle owners have a tendency to dislike floor trays which rattle, deform, shift and flop about. A need therefore persists for a floor tray that will have a more exact fit to the vehicle foot well for which it is provided, that stays in place once it is installed, and that provides a more solid and certain feel to the occupants' feet.

[0006] Some vehicle floor mats that are now on the market have fluid reservoirs built into them. Particularly in cold or wet climates, dirty water has a tendency to be shed onto the floor mat, where it persists until it evaporates. If there is enough of it, it will leak off of the floor mat and stain the carpeting of the foot well that the mat was meant to protect. These reservoirs typically are recessed areas in the mats that provide the mats with an enhanced ability to retain snow-melt and the like, until the water evaporates or can be disposed of by the vehicle owner or user. One advanced design places treads in the middle of the reservoir, such that the feet of the occupant are held above any fluid that the reservoir collects. But including such a reservoir within a floor tray that otherwise has an acceptable fit to the surface of a vehicle foot well has not yet been done, since there are problems in incorporating a three-dimensional liquid-holding vessel into a product that ideally conforms, on its lower surface, to the surface of the foot well. Further, a reservoir which collects drip water from a large surface, such as a vehicle floor tray, will exhibit more problems in keeping the collected fluid from sloshing about in a moving vehicle.

[0007] Conventional vehicle floor mats and trays are molded from a single rubber or plastic material. The selection of this material is controlled by its cost, its resistance to shear forces, its tensile strength, its abrasion resistance, its ability to conform to the surface of the vehicle foot well, its sound-deadening properties and how slippery or nonslippery it is relative to the occupants' feet, with nonslipperiness (having a relatively high coefficient of friction) being advantageous. Often the designer must make tradeoffs among these different design constraints in specifying the material from which the tray or mat is to be made.

SUMMARY OF THE INVENTION

[0008] According to one aspect of the invention, there is provided a vehicle floor cover, mat or tray which is removably installable by a consumer and which is formed of at least three layers that are bonded together, preferably by coextrusion. The three layers include a central layer whose composition is distinct from a bottom layer and a top layer. Preferably, all three layers are formed of thermoplastic polymer materials. In another aspect of the invention, the top layer exhibits a kinetic coefficient of friction with respect to a sample meant to emulate a typical shoe outsole (neoprene rubber, Shore A Durometer 60) of at least about 0.82.

[0009] Preferably, a major portion of the central layer is a polyolefin. More preferably, the polyolefin is either a polypropylene or a polyethylene. Most preferably, the polyolefin is high molecular weight polyethylene (HMPE) as herein defined. In an alternative embodiment, the central layer can be a styrene-acrylonitrile copolymer (SAN) or an acrylonitrile-butadiene-styrene (ABS) polymer blend.

[0010] Preferably, a major portion of the top layer is a thermoplastic elastomer, such as one of the proprietary compositions sold under the trademarks SANTOPRENE®, GEOLAST® and VYRAM®. VYRAM® is particularly preferred. In another embodiment, a major portion of the top layer can be an ABS polymer blend. Where ABS is used in both the top and central layers, it is preferred that the amount of the polybutadiene phase in the top layer be greater than the amount of this phase in the central layer.

[0011] It is further preferred that a major portion of the bottom layer likewise be a thermoplastic elastomer, and conveniently it can be, but does not have to be, of the same composition as the major portion of the top layer.

[0012] Preferably one or more of the layers is actually a polymer blend, in which a minor portion is preselected for its coextrusion compatibility with the adjacent layer(s). Thus, a minor portion of the top and bottom layers can consist of a polyolefin, while a minor portion of the central layer can consist of a thermoplastic elastomer. In each case, it is preferred that the minor portion be no more than about one part in four by weight of each layer, or a weight ratio of 1:3. Where all three layers are preselected to be ABS blends, the amount of polybutadiene preferably is decreased in the central layer relative to the top and bottom layers.

[0013] While the preferred embodiment of the vehicle floor cover consists of three integral layers, any one of the recited layers can in fact be made up of two or more sublayers, such that the total number of sublayers in the resultant mat or tray can exceed three.

[0014] In another embodiment, the thermoplastic elastomer constituent of the top, central and/or bottom layers described above can be replaced with a natural or synthetic rubber, including styrene butadiene rubber, butadiene rubber, acrylonitrile butadiene rubber (NBR) or ethylene propylene rubber (EPDM).

[0015] According to a related aspect of the invention, a vehicle floor cover is provided that has three layers bonded together, preferably by coextrusion. Major portions of the top and bottom layer consist of thermoplastic elastomer(s). The top and bottom layers have compositions distinct from the central layer, which can be chosen for its relatively low expense. It is preferred that a major portion of the central layer be a polyolefin and that major portions of the top and bottom layers be one or more thermoplastic elastomers. The polyolefin may be selected from the group consisting of polypropylene and polyethylene, and preferably is a high molecular weight polyethylene (HMPE). The thermoplastic elastomer can, for example, be SANTOPRENE®,

GEOLAST® or VYRAM®, with VYRAM® being particularly preferred. It is also preferred that each of the layers be a polymer blend, with a minor portion of each layer being chosen for its coextrusion compatibility with adjacent layers. For example, the top and bottom layers can consist of a 3:1 weight ratio of VYRAM®/HMPE, and the central layer of a 3:1 weight ratio of HMPE/VYRAM®.

[0016] In an embodiment alternative to the one above, the top and bottom layers can consist of ABS polymer blends and the central layer can consist of SAN or an ABS in which the polybutadiene phase is present in a smaller concentration than in the top and bottom layers.

[0017] In yet another embodiment, the thermoplastic elastomer recited in this aspect of the invention may be replaced with a natural or synthetic rubber, such as styrene butadiene rubber (SBR), butadiene rubber, acrylonitrile butadiene rubber (NBR) or ethylene propylene rubber (EPDM).

[0018] In a further aspect of the invention, a vehicle floor tray or mat according to the invention is made of three layers, wherein a top layer and a bottom layer have composition(s) distinct from the central layer, and wherein at least one of the shear strength per cross-sectional area, tensile strength per cross-sectional area and stiffness per cross-sectional area is greater than any one of the layers from which the tray or mat is composed. It has been found that a triextruded vehicle mat or floor tray according to the invention exhibits a tensile strength at yield, a tensile stress at break, a tensile modulus, a shear strength and a flexural modulus (stiffness) which are superior to either a polyolefin-dominated single extrusion or a thermoplastic elastomer-dominated single extrusion. The triextrusion tray demonstrates these enhanced physical properties while at the same time affording an enhanced coefficient of friction to the feet of the occupant and improved

tactile properties. By presenting such a surface to the shoe of the driver or passenger, the footing of the driver or passenger will be more sure and comfortable.

[0019] In a further aspect of the invention, a vehicle foot well tray is provided as a part of a system that has the vehicle foot well as its other main component. The tray has a greatly enhanced conformance to the surface of the vehicle foot well for which it is provided. At least two upstanding walls of the tray, both extending from the tray floor to a top margin, conform to respective surfaces of the vehicle foot well such that at least within that one-third of the area of the outer surface of these upstanding walls of the tray which is adjacent the top margin, 90% of that top third area departs by no more than about one-eighth of an inch from the foot well surfaces to which they mate. These upstanding tray surfaces may be opposed surfaces or adjacent surfaces, and preferably are both. In a preferred embodiment, the tray departs from a door sill surface of the vehicle foot well, and/or a sill curve of the vehicle foot well, by about 0.025 inches. The upstanding sidewalls of the floor tray conform to the foot well surfaces which they cover, even where such foot well surfaces present both concave and convex surface elements.

[0020] In a still further aspect of the invention, a top margin of a vehicle floor tray is substantially coplanar on at least two upstanding sidewalls thereof. Preferably, the top margin of the tray is substantially coplanar through three or even four continuous upstanding sidewalls. This eases the design of the floor tray, increases hoop strength and assures that all upstanding surfaces of the vehicle foot well will receive adequate protection from muddy footwear. In a particularly preferred embodiment, the plane of the top margin is forwardly and upwardly tilted relative to a horizontal floor. This provides enhanced protection to the vehicle foot well



precisely in the place where muddy footwear are likely to be, near the accelerator, brake and clutch pedals or the firewall. In a preferred embodiment, the tray is at least five inches deep at its deepest part.

[0021] In a further aspect of the invention, the above mentioned tight tolerances are made possible by a novel vehicle floor tray manufacturing method. In a first step according to the invention, points on a surface of the vehicle foot well are digitally measured with a coordinate measuring machine (CMM). These points are stored in a computer memory. A foot well surface is generated which includes these points, preferably by connecting linear groups of the points together by using B-splines, and lofting between the B-splines to create areal portions of the foot well surface. Using this typically complex three-dimensional, predominately concave surface, which may have several concavely and convexly curved portions, a corresponding substantially convex outer floor tray surface is built up such that in many regions, the distance between the outer surface of the tray and the surface of the foot well is no more than about one eighth of an inch, insuring a snug fit.

[0022] In one embodiment of the invention, a reservoir is incorporated into the tray floor as a collection and evaporation area for drip water from the feet and legs of the occupant. Combination baffles/treads are provided in the reservoir to impede lateral movement of the collected fluid. Longitudinal and transverse portions of these baffles are joined together. Channels are cut into another portion of the central area of the tray to direct fluid to the reservoir, such that the bottom of the channels is beneath a general tray floor surface but above the bottom of the reservoir. In a preferred driver's side embodiment, the channels are omitted from a

portion of the floor tray upper surface to leave a blank space where the driver's heel will rest when operating the gas and brake pedals.

BRIEF DESCRIPTION OF THE DRAWINGS

[0023] Further aspects of the invention and their advantages can be discerned in the following detailed description, in which like characters denote like parts and in which:

[0024] FIGURE 1 is an isometric view of one embodiment of a vehicle floor tray according to the invention;

[0025] FIGURE 2 is a top view of the floor tray illustrated in FIGURE 1;

[0026] FIGURE 3 is an isometric and transverse sectional view of the floor tray seen in FIGURES 1 and 2, the section taken substantially along line 3 -3 of FIGURE 2;

[0027] FIGURE 4 is an isometric and longitudinal sectional view of the floor tray shown in FIGURES 1 and 2, the section taken substantially along line 4 – 4 of FIGURE 2;

[0028] FIGURE 5 is a side view of the tray illustrated in FIGURE 1, taken from the outer side;

[0029] FIGURE 6 is a highly magnified sectional view of a vehicle floor tray, showing triextruded layers;

[0030] FIGURE 7 is a schematic block diagram showing steps in a design and manufacturing process according to the invention; and

[0031] FIGURE 8 is an isometric and schematic view of a digitally acquired vehicle foot well floor surface from which the illustrated floor tray was made;

[0032] FIGURE 9 is a partly transverse sectional, partly isometric view of both the floor tray illustrated in FIGURE 2 and the vehicle foot well surface illustrated in FIGURE 8, taken substantially along line 9 – 9 of FIGURE 2 and substantially along line 9 - 9 of FIGURE 8;

[0033] FIGURE 10 is a partly transverse sectional, partly isometric view of both the floor tray illustrated in FIGURE 2 and the vehicle foot well surface illustrated in FIGURE 8, taken substantially along line 10 – 10 of FIGURE 2 and substantially along line 10 – 10 of FIGURE 8;

[0034] FIGURE 11 is a detail of a firewall region of FIGURE 10;

[0035] FIGURE 12 is a detail of a seat pedestal region of FIGURE 10;

[0036] FIGURE 13 is a partly longitudinal sectional, partly isometric view of both the floor tray illustrated in FIGURE 2 and the vehicle foot well surface illustrated in FIGURE 8, taken substantially along line 13 – 13 of FIGURE 2 and substantially along line 13 – 13 of FIGURE 8; and

[0037] FIGURE 14 is a detail of a kick plate region of FIGURE 13.

#### DETAILED DESCRIPTION

[0038] An isometric view of one commercial embodiment is shown in FIGURE 1. The illustrated vehicle floor tray indicated generally at 100 is preferably molded from a blank, in sheet form, of water-impervious thermoplastic polymer material having a uniform thickness, although the present invention could be fabricated from another process such as injection molding. The floor tray 100 is preferably formed of a triextruded thermoplastic material such that the properties of a central or core layer can be different than the properties of the external or

jacket layers, and such that the triextrusion is tougher and stiffer per unit thickness than any of the layers from which it is made, as will be described in more detail below.

[0039] The vehicle floor tray or cover 100 is meant to protect both the floor and at least the lower sides of a vehicle foot well, and thus takes on a much more three-dimensional shape than is typical of prior art floor mats. The floor tray 100 includes a floor or central panel 102, which in the illustrated embodiment includes a plurality of fore-to-aft or longitudinal parallel straight channels 104 that are disposed in a forward region 106 of the floor panel 102. Preferably these channels are about an eighth of an inch deep so that they will correctly channel runoff, and can be about one-quarter of an inch wide. In FIGURE 1, forward is a direction to the upper left, while rearward is the direction to the lower right, and the terms are used in conformance with the orientation of the vehicle in which the tray is designed to be placed. As used herein, “longitudinal” means for-and-aft or along the axis of vehicle travel, while “transverse” means at a ninety degree angle to such an axis, or side-to-side.

[0040] A rearward or back region 108 of the floor panel 102 is largely occupied by a reservoir 110, whose bottom is made up by a substantially planar general surface 112. General surface 112 is situated to be below a general surface 114 of the forward region 106. Preferably, the general bottom reservoir surface 112 is also below the bottommost points of the respective channels 104, as by about one-eighth of an inch, so that fluid in the channels 104 will empty into the reservoir 110.

[0041] The channels 104 are designed to channel liquid runoff from the user’s feet or footwear to the reservoir 110. In many vehicles, the portion of the vehicle floor (not shown in this Figure; see FIGURES 8 - 11) which underlies the forward region 106 slopes from front to rear, and thus

the tray 100, by simply conforming to the contour of the underlying vehicle floor portion, will channel fluid to the reservoir. For those vehicle designs in which the underlying vehicle floor is not pitched in this manner, the tray 100 can advantageously be designed to create this fluid flow, as by making the material thicker in portion 106 than in portion 108, or by giving the bottoms of channels 104 a front-to-rear slope.

[0042] The channels 104 occupy most of the forward region 106, although in this and other commercial embodiments a space 116 on the forward right hand side has been left open to receive the foot of the driver that operates the accelerator and brake pedals. In the illustrated embodiment, this space or clear area 116 is delimited by a 180 degree arc of a circle of about four inch radius (shown in dashed line). The clear area 116 is provided so that the relatively deep channels 104 do not catch the heel of the driver's shoe. In other embodiments, the clear area 116 can take other shapes or positions, so long as the heels of almost all drivers, while operating the brake and accelerator pedals of the vehicle for which the particular tray is designed, will rest within its confines.

[0043] The reservoir 110 has interspersed within it a plurality of tread surfaces or baffles 118, which have two purposes. The first purpose is to elevate the shoe or foot of the occupant above any fluid which may have collected in the reservoir 110. The second purpose is to prevent this accumulated fluid from sloshing around. To this end, most of the tread surfaces/baffles 118 have both fore-to-aft or longitudinal portions 120 and side-to-side or transverse portions 122. This prevents large fluid movement in a forward or rearward direction, as would otherwise happen during acceleration or braking of the vehicle, and also large fluid movement side-to-side, as when the vehicle is turning. Preferably, each or at least most of the fore-to-aft portions 120 are

joined to respective side-to-side portions. This further compartmentalizes and restricts the movement of collected fluid. Fluid in one portion of the reservoir 110 may make its way only slowly and through a complicated path to another distant portion of the reservoir 110, through channels 124 around the ends of the treads or baffles 118. The reservoir design thus creates a large surface area which promotes evaporation of the fluid, while at the same time restricts fluid movement prior to such evaporation.

[0044] Disposed around the central or floor panel 102 are a series of upstanding side panels, which will vary in number and configuration from one vehicle model to the next. In the illustrated embodiment these upstanding panels include a back panel 130 that is disposed adjacent the bottom of a vehicle front seat, or a vehicle pedestal for receiving same; an inner side panel 132 that closely fits a transmission tunnel or “hump” in this vehicle; a forward panel 134 that closely conforms to a vehicle firewall; and an outer side panel 136. In most embodiments, the outer side panel or kick plate panel 136 will only extend from its transition with panel 134 to a corner 138, at which point there begins a door sill curve 208 which transitions into a door sill panel 140. Unlike the other panels, the sill panel 140 is not generally upstanding but instead conforms to the sill of a vehicle door and lies in a substantially horizontal plane. In this way occupant ingress and egress is not occluded. In many embodiments, including the illustrated embodiment, the sill panel 140 is at an elevation below that of the general surface 114 of the floor forward region 106 and even below the general surface (bottom) 112 of the reservoir 110. Very large amounts of fluid (in excess of the reservoir capacity) may therefore flow right out of the vehicle without having the opportunity to damage the vehicle interior. It should be noted that in these FIGURES, the lines dividing the panels are conceptual only and do not appear in the

final part. As will be described in further detail below, the tray 100 preferably is integrally molded as a one-piece construction.

[0045] In one important aspect of the invention, the tray 100 is closely fitted to the vehicle foot well in which it is designed to be placed. Panels 130, 132, 134, 136 and 140 are all formed so as to as closely conform to the vehicle surfaces against which they are positioned, to an extent not found in prior art vehicle floor trays. In a preferred embodiment, at least throughout the top one-third of the areas of these panels that is adjacent a vehicle tray top margin 150, at least ninety percent of the points on the outer surface of the peripheral or side panels 130-136 are no more than about one-eighth of an inch from the corresponding points on the surfaces that they are formed to mate with. This close conformance occurs even where the underlying vehicular surface is complexly curved or angled. Certain portions of the vehicle foot well surface, such as kick plate transition plate 214, can have both convexly and concavely curved elements. The preferred tolerance of door sill curve 208 and sill plate 140 is even tighter, about 0.025 in.

[0046] The close conformance of the tray side panels to respective surfaces of the vehicle foot well produces a protective tray which will not be horizontally displaced under lateral forces created by the occupant's feet, or by the motion of the vehicle. Opposing pairs of the peripheral panels "nest" or "cage" the tray 100, preventing its lateral movement. Thus, outer side panel or kick plate panel 136, which closely conforms to a vehicle side wall at that position, has as its counterpart a portion 142 of the inner side panel 132. Any tendency of the tray 100 to shift leftward is stopped by panel 136; any tendency of the tray 100 to shift rightward is stopped by panel portion 142. In a similar manner, the upstanding rearward and forward panels 130 and 134 cooperate to "cage" any forward or rearward motion of the tray 100 within the vehicle foot well.

[0047] The close conformance of the outer or lower surfaces of panels 130-136, 218, 140 to their respective mating surfaces of the vehicle foot well also increases the frictional force which will oppose any lateral movement. The result of this close conformance is to provide a floor tray which will not undesirably shift position, and which will provide a steady and sure rest to the feet of the occupants.

[0048] In most commercial embodiments of the vehicle floor tray 100, the side panels 130 – 136, 140 will not be formed to abruptly extend from the bottom panel 102, but rather will be joined to the bottom or central panel 102 through transitions. These transitions may be sloped or curved and will have a varying degree of gradualness. According to the invention, the transitions between the outer and bottom surfaces of the tray 100 conform wherever possible to underlying surfaces of the vehicle foot adjacent these transitions.

[0049] In FIGURE 2, for example, there is seen a large transition or subpanel 200 which extends from forward portion 106. A further subpanel 202 joins transitional subpanel 202 to the forward sidewall 134. Inner or transmission tunnel sidewall 132 is joined to the pan 102 through a curved transitional fillet 204. The rear upstanding panel 130 is joined to the rear portion of bottom panel 102 through a small transition 206. A transition or sill curve 208 between the outer sidewall 136 and the sill panel 140 takes the form of a gradual curved surface.

[0050] The present invention also employs (typically) curved transitions between adjacent side panels. For example, a curved transition 210 joins the back panel 130 to the inner side panel 132. A curved transition 212 joins the transmission tunnel or inner side panel 132 to the front or firewall panel 134. A transition 214, which in this embodiment takes the shape of an S-curve and conforms to a portion of vehicle wheel well, joins the front panel 134 to the outer side panel



136. The close conformance (preferably to a tolerance of about 1/8 in.) wherever possible to the transitions of the vehicle foot well surface by the outer surface of the tray 100 enhances a close fit.

[0051] In the illustrated embodiment, the tray according to the invention has been made by placing a sheet of substantially uniformly thick triextruded thermoplastic material into a mold and heating the mold. When this process is used, discrete layers having different characteristics can persist into the final product, as will be described in more detail below. On the other hand, as using this manufacturing process it is difficult to provide the channels and reservoir structure according to one aspect of the invention while closely conforming the bottom surface 300 (FIGURES 3 and 4) to a mating surface of the vehicle foot well. In this central area, and according to the preferred manufacturing process, a departure away from 1/8 in. tolerance must be made in order to obtain the above-described benefits of fluid flow and retention. But because the side panels 130 – 136, 140 and their associated transitions continue to closely conform to most of the remaining vehicle foot well surfaces, the tray 100 continues to be locked in one place.

[0052] FIGURES 10 – 14 superimpose a floor tray 100 on a surface 802 of a vehicle foot well for which the tray is designed according to the invention. In the part-isometric, part-longitudinal sectional view seen in FIGURE 10, It can be seen that on the section taken there is a quite tight conformance of the lower surface 300 of the tray 100 to the modeled surface 802 of the vehicle foot well. As best seen in FIGURE 11, the outer surface of the firewall sidewall 134 stays within one-eighth of an inch of the firewall surface 826 for at least three-quarters of the length of surface 826 as measured from the top margin 150 of the tray. In areas 1000, 1002 and 1004

(FIGURE 10), the modeled surface 802 of the vehicle foot well is actually above or to the interior to the tray 100. This negative interference is tolerable and in some instances is even desirable because the surface 802 is that of a vehicle carpet, which can or even should be depressed upon the installation of the tray 100 into the vehicle foot well. Such a tight fit is particularly desirable, for example, in the region of the tray around the accelerator pedal.

[0053] FIGURE 12 is a detail of FIGURE 10 in the area of the seat pedestal and a portion of the reservoir 110. Once again, there is a very tight conformance of the outer surface of the back panel 130 to the modeled seat pedestal surface 828 throughout most of its length on this section, well within 1/8 inch.

[0054] FIGURE 13 shows a side-to-side or transverse section taken in a relatively forward location, so as to cut through the kick plate tray and foot well surfaces 136, 830 on one side and the tray and foot well transmission tunnel surfaces 132, 810 on the other. As can be seen, tolerance to within 1/8 of an inch is maintained at least for the upper one-third of the surface area of these mating surfaces. Areas 1000, 1002 (partially represented in FIGURE 13) and 1006 are areas of negative standoff or interference in which the modeled surface 802 of the vehicle foot well is positioned interiorly of the vehicle tray 100. As above explained, this mismatch is permissible if held to 1/8 inch or less, and is even desirable in some points, because the surface 802 is an image of vehicle carpeting rather than a hard surface.

[0055] In FIGURE 14, there is seen at 1400 an intentional increase of radius of the transition between kick plate panel 136 and bottom wall 102. This is done because, for the model shown, the foot well kick plate surface 830 is both vertical and is relatively deep. Therefore, sidewall 136 needs to have a draft of at least two degrees (and more preferably five degrees) relative to

the surface 830 to insure that the wall of the tray 100 will remain acceptably thick enough at the junction of walls 136, 102. The increase of the radius 1400 accomplishes this. Nonetheless, even on this section the outer surface of the kick plate 136 stays within one-eighth of an inch of the kick plate surface 830 for at least one-third of the length, as measured from margin 150.

[0056] More generally, at least ninety percent of that top one-third of the surface area of each sidewall 130 – 136 that is adjacent the top margin 150 stays within 1/8 in. of the vehicle foot well surfaces with which they are designed to mate. Alternatively, ninety percent of the top one-half of the outer surface area of all upstanding sidewalls is within this 1/8 inch tolerance of respective foot well surfaces. In even a further alternative measurement of tolerance, it is preferred that at least fifty percent of the outer area of the upstanding sidewalls 130 – 136 be within 1/8 inch of the vehicle foot wells to which they correspond, regardless of position relative to the top margin 150.

[0057] As best seen in FIGURES 1, 5 and 10, a top margin 150 of the tray 100, which terminates all of the upstanding sidewalls 130, 132, 134, 136 and 138, substantially lies in a single plane which is tilted forwardly upwardly relative to the horizontal plane. The continuous nature of the top margin 150 means that the produced tray 100 has a higher hoop strength, and better protects the vehicle carpeting from dirt or mud on the sides of the occupant's feet. The occupant's feet tend to occupy positions on the forward region 106, but the position of the top margin 150 around this region is high, being at least five inches removed from the floor of the tray at its greatest separation.

COMPOSITION

[0058] According to one aspect of the invention, it is preferred that the tray or cover 100 not be of uniform composition throughout, but rather be a laminate having at least three layers which are bonded together. A preferred composition of the tray 100 is shown in the highly magnified sectional detail shown in FIGURE 6. In this illustrated embodiment, the tray 100 consists of a top layer 600, a central or core layer 602, and a bottom layer 604. All three layers 600 – 604 preferably consist of one or more water-impervious thermoplastic polymers, but layers 600 and 604 have properties which are at least different from core layer 602 and may even have properties which are different from each other. The trilayer cover is shown to be a three-dimensional floor tray in the drawings, but can also be a more two-dimensional floor mat of more limited coverage. Top layer 600 is made from a material selected for its tactile properties, its relatively high static and dynamic coefficients of friction with respect to typical footwear, and its resistance to chemical attack from road salt and other substances into which it may come into contact. Top layer 600 preferably includes a major portion of a thermoplastic elastomer such as VYRAM®, SANTOPRENE® or GEOLAST®, which are proprietary compositions available from Advanced Elastomer Systems. VYRAM® is preferred, particularly Grade 101-75 (indicating a Shore A hardness of 75). An upper surface 606 of the top layer 600 may be textured by a “haircell” pattern or the like so as to provide a pleasing tactile feel and visual appearance, as may a lower surface of the bottom layer 604.

[0059] It is preferred that top layer 600 be a polymer blend, in which instance a minor portion of the composition of the top layer 600 is selected for its coextrusion compatibility with core layer 602. A polyolefin polymer is preferred, such as polypropylene or more preferably polyethylene, even more particularly a high molecular weight polyethylene (HMPE). As used herein, HMPE is

a commodity product, available from many sources, and distinguished in the industry from low density polyethylene (LDPE) and high density polyethylene (HDPE) by its approximate properties:

| <b>Characteristic</b>                     | <b>LDPE</b> | <b>HDPE</b> | <b>HMPE</b>       |
|---|-------------|-------------|-------------------|
| Specific Gravity, ASTM D-792              | 0.918       | 0.96        | 0.95              |
| Tensile Modulus, ASTM D-638, psi          | 22,500      | 95,000      | 125,000           |
| Tensile Strength @ Yield, ASTM D-638, psi | 1,800       | 4,500       | 3,600 – 3,700     |
| Flexural Modulus, ASTM D-790, psi         |             | 225,000     | 165,000 – 175,000 |
| Hardness, ASTM D-2240, Shore D            | 45          | 66          | 68                |

[0060] In the above table, the testing methods by which the properties are determined are given for the purpose of reproducibility.

[0061] Particularly where the thermoplastic elastomer and the polyolefin are respectively selected as VYRAM® and HMPE, the proportion by weight of the thermoplastic elastomer to polyolefin material in layer 600 is preferably selected to be about 3:1. It has been discovered that some polyolefin material needs to be present in layer 600 for coextrusion compatibility with central layer 602, in the instance where a major portion of the layer 602 is also a polyolefin.

[0062] In an alternative embodiment, the thermoplastic elastomer component of the top layer 600 may be replaced with an elastomer such as natural rubber, acryl-nitrile butadiene rubber (NBR), styrene butadiene rubber (SBR), or ethylene propylene diene rubber (EPDM).

[0063] In a further alternative embodiment, layer 600 can be an acrylonitrile butadiene styrene (ABS) blend. ABS is a material in which submicroscopic particles of polybutadiene are dispersed in a phase of styrene acrylonitrile (SAN) copolymer. For layer 600, the percentage

by weight of polybutadiene, which lends elastomeric properties to the material, should be chosen as relatively high.

[0064] The core or central layer 602 preferably is composed of a thermoplastic polymer material that is selected for its toughness, stiffness and inexpensiveness rather than its tactile or frictional properties. Preferably a major portion of it is a polyolefin such as polypropylene or polyethylene. More preferably, a major portion of the layer 602 is composed of HMPE as that material has been defined above.

[0065] It is preferred that the central layer 602 be a blend, and in that instance a minor portion of layer 602 is composed of a material selected for its coextrusion compatibility with top layer 600 (and bottom layer 604 described below). In the illustrated embodiment, this minor portion is a thermoplastic elastomer such as SANTOPRENE®, GEOLAST® or VYRAM®. VYRAM® Grade 101-75 is particularly preferred. For layer 602, and particularly where the polyolefin and the thermoplastic elastomer are respectively selected as HMPE and VYRAM®, the proportion by weight of polyolefin to thermoplastic elastomer is preferred to be about 3:1. More generally, the percentages of the minor portions in layers 600 and 602 (and layer 604) are selected as being the minimum necessary for good coextrusion compatibility.

[0066] In an alternative embodiment, where layer 600 has been chosen as a polybutadiene-rich layer of ABS, layer 602 is chosen as a grade of ABS having less of a percentage by weight of polybutadiene in it, or none at all (effectively, styrene acrylonitrile copolymer or SAN).

[0067] Bottom layer 604 has a lower surface 300 which will be adjacent the vehicle foot well top surface. Typically, this surface is carpeted. The bottom layer 604 is a thermoplastic polymer

material selected for its wear characteristics, as well as its sound-deadening qualities and a yieldability that allows the layer 604 to better grip “hard points” in the vehicle foot well surface as well as conform to foot well surface irregularities. Preferably, a major portion of the layer 604 is composed of a thermoplastic elastomer, such as SANTOPRENE®, GEOLAST® or, preferably, VYRAM®. VYRAM® Grade 101-75 is particularly preferred.

[0068] It is preferred that the bottom layer 604 be a polymer blend. In this instance, a minor portion of the bottom layer 604 is selected for its coextrusion compatibility with the core layer 602. Where core layer 602 is mostly made of a polyolefin material, it is preferred that a polyolefin be used as the minor portion of the bottom layer 604. This polyolefin can be, for example, polypropylene or polyethylene, and preferably is HMPE. The amount of the minor portion is selected to be that minimum amount that assures good coextrusion compatibility. Where the polyolefin and the thermoplastic elastomer are respectively chosen to be HMPE and VYRAM®, it has been found that the thermoplastic elastomer: polyolefin ratio by weight in the layer 604 should be about 3:1.

[0069] In an alternative embodiment, the thermoplastic elastomer component of layer 604 may be replaced with a rubber, such as natural rubber, NBR, SBR or EPDM.

[0070] In another alternative embodiment, where the central layer 602 has been selected as ABS or SAN, layer 604 can be selected as a grade of ABS which has a higher percentage by weight of polybutadiene in it than in central layer 602.

[0071] Bottom jacketing layer 604 conveniently can have the same composition as top jacketing layer 600, but the two jacketing layers do not have to be similar. What is important that, where

the tray 100 is to be formed as a triextrusion (as is preferred), layers 600, 602 and 604 be sufficiently compatible that they can be triextruded as a single sheet.

[0072] It is preferred that most of the thickness of the tray 100 be made up by the core layer 602, which is used as the principal structural component of the tray 100. The core layer 602 has at least minimally acceptable tensile strength, shear strength and high flexural modulus, while at the same time being significantly less expensive than the thermoplastic elastomer-dominated jacketing layers. The jacketing layers 600 and 604 are selected to present good wear surfaces and to have a good resistance to chemical attack from substances such as road salt. Top layer 600 is selected to exhibit a relatively high coefficient of friction with respect to typical occupant footwear. The composition of bottom layer 604 is selected for its sound-deadening and yieldability qualities.

[0073] The total thickness of tray 100 is the sum of dimensions  $a$ ,  $b$  and  $c$ . In the illustrated embodiment, jacketing layer thicknesses  $a$  and  $c$  are each about 12.5% of the total thickness, while core layer thickness  $b$  is about 75%. In one embodiment, the total thickness of the tray 100 (or, more precisely, of the blank sheet used to mold the tray 100) is approximately 0.120 inch. Of this, core layer 602 is about 0.09 inch, while jacketing layers 600 and 604 are each about 0.0150 inch. In an alternative embodiment, the layer 600 can be made to be appreciably thicker than layer 604, as top surface 606 is a wear surface for the shoes of the occupant and will see more abrasive dirt and more wear than surface 300 in typical applications. In another alternative embodiment, the thickness of layer 604 may be increased, allowing it to even better conform to the vehicle foot well surface with which it is designed to mate and to increase sound-deadening.



[0074] A preferred embodiment of the present invention combines the high coefficient of friction, tactile qualities, sound-deadening and yieldability obtainable with a thermoplastic elastomer with the modest cost of a polyolefin. To demonstrate the technical advantages of a triextrusion tray over monoextruded prior art structures, tests measuring tensile strength, shear strength, flexural modulus and coefficient of friction were performed on (1) a triextrusion sheet material made and used according to the invention, (2) a monoextruded sheet of 75 wt. pct. VYRAM®/ 25 wt. pct. HMPE, and (3) a monoextruded sheet of wt. pct. VYRAM® / 75 wt. pct. HMPE. The particular tests and their results are described below.

[0075] The first two tests performed concern static and dynamic coefficients of friction.

Example 1

[0076] These tests determined static and kinetic coefficients of friction of a sheet of triextrusion material with respect to an object meant to emulate an typical occupant shoe outsole. This “shoe” was composed of Shore A Durometer 60 neoprene rubber, formed as a “sled” measuring 2.5 in. x 2.5 in. x 0.238 in. The “shoes” were drawn across an upper, textured surface of a .120 in. triextrusion sheet formed according to a preferred embodiment of the invention measuring 4 in. x 12 in. according to the procedure set forth in ASTM D 1894-01. The triextrusion sheet had, as its top layer, a blend of 75 wt. pct. VYRAM® Grade 101-75/25 wt. pct. HMPE. The core layer was 75 wt. pct. HMPE/25 wt. pct. VYRAM® Grade 101-75. The bottom layer was a blend of 25 wt. pct. HMPE/75 wt. pct. VYRAM® Grade 101-75. The bottom and top layers each comprised about 12.5% of the sheet thickness while the middle core layer comprised about 75% of the sheet thickness. Results are tabulated as follows.

| Test Number | Static Load (g) | Sled Weight (g) | Static Coefficient of Friction | Kinetic Load (g) | Sled Weight (g) | Kinetic Coefficient of Friction |
|-------------|-----------------|-----------------|--------------------------------|------------------|-----------------|---------------------------------|
| 1           | 166             | 199.9           | 0.830                          | 189              | 199.9           | 0.945                           |
| 2           | 155             | 199.9           | 0.775                          | 166              | 199.9           | 0.830                           |
| 3           | 171             | 200.0           | 0.855                          | 179              | 200.0           | 0.895                           |
| 4           | 145             | 199.9           | 0.725                          | 160              | 199.9           | 0.800                           |
| 5           | 150             | 199.9           | 0.750                          | 163              | 199.9           | 0.815                           |
| Average     |                 |                 | 0.787                          |                  |                 | 0.857                           |
| Std. Dev.   |                 |                 | 0.054                          |                  |                 | 0.061                           |

Example 2

[0077] Five neoprene rubber “sleds” fabricated as above were drawn across a 4 in. x 12 in. sheet of a single-extrusion 75 wt. pct. HMPE/25 wt. pct. VYRAM® Grade 101-75, according to ASTM D 1894-01. Results are tabulated below.

| Test Number | Static Load (g) | Sled Weight (g) | Static Coefficient of Friction | Kinetic Load (g) | Sled Weight (g) | Kinetic Coefficient of Friction |
|-------------|-----------------|-----------------|--------------------------------|------------------|-----------------|---------------------------------|
| 1           | 157             | 200.1           | 0.785                          | 162              | 200.1           | 0.810                           |
| 2           | 151             | 200.0           | 0.755                          | 148              | 200.0           | 0.740                           |
| 3           | 163             | 200.1           | 0.815                          | 170              | 200.0           | 0.850                           |
| 4           | 146             | 200.1           | 0.730                          | 148              | 200.1           | 0.740                           |
| 5           | 154             | 200.1           | 0.770                          | 155              | 200.1           | 0.775                           |
| Average     |                 |                 | 0.771                          |                  |                 | 0.783                           |
| Std. Dev.   |                 |                 | 0.032                          |                  |                 | 0.047                           |

[0078] The above tests show that with respect to a typical shoe sole composition, a material consisting mostly of a thermoplastic elastomer like VYRAM® exhibits a higher coefficient of friction than a material consisting mostly of a high molecular weight polyolefin.

Example 3

[0079] These tests compared the tensile strength of a sheet of triextruded material as above described with a sheet of single-extruded blend of material consisting of 75 wt. pct. VYRAM®, Grade 101-75, and 25 wt. pct. HMPE, and further with a sheet of a single-extruded blend of

material of 75 wt. pct. HMPE and 25 wt. pct. VYRAM® Grade 101-75. The tested single-extruded VYRAM®-dominated sheet was approximately .070 in. thick, while the HMPE-dominated sheet was approximately .137 in. thick. The triextrusion sheet was about .120 in. thick. The triextrusion sheet, the single-extruded VYRAM®-dominated sheet and the single-extruded HMPE-dominated sheet were die-cut into samples having an average width of 0.250". The test performed was according to the ASTM D 638-03 testing standard. A cross-head speed of 20 in. / min. was used. The extensiometer was set at 1000% based on 1.0" gauge length. Samples were conditioned at 40 hours at 23 Celsius and 50% relative humidity prior to testing at these conditions. Test results are tabulated below.

|                              | Test Number | Tensile Strength at Yield (psi) | Elongation at Yield (%) | Tensile Stress at Break (psi) | Elongation at Break (%) | Tensile Modulus (Youngs) (psi) |
|------------------------------|-------------|---------------------------------|-------------------------|-------------------------------|-------------------------|--------------------------------|
| <b>Tri-Extrusion</b>         | 1           | 1680                            | 24                      | 1530                          | 730                     | 30800                          |
|                              | 2           | 1710                            | 21                      | 1610                          | 710                     | 30100                          |
|                              | 3           | 1700                            | 21                      | 1620                          | 730                     | 32200                          |
|                              | 4           | 1740                            | 19                      | 1660                          | 770                     | 32700                          |
|                              | 5           | 1690                            | 17                      | 1630                          | 700                     | 24400                          |
|                              | Average     | 1700                            | 20                      | 1610                          | 730                     | 30000                          |
|                              | Std.Dev.    | 23                              | 3                       | 48                            | 27                      | 3320                           |
| <b>75%Vyram/<br/>25%HMPE</b> | 1           | 1040                            | 53                      | 1400                          | 620                     | 15900                          |
|                              | 2           | 1010                            | 45                      | 1430                          | 630                     | 17100                          |
|                              | 3           | 1050                            | 98                      | 1390                          | 640                     | 17100                          |
|                              | 4           | 1010                            | 62                      | 1430                          | 620                     | 16700                          |
|                              | 5           | 1030                            | 88                      | 1420                          | 610                     | 17100                          |
|                              | Average     | 1030                            | 69                      | 1410                          | 620                     | 16800                          |
|                              | Std.Dev.    | 18                              | 23                      | 18                            | 11                      | 522                            |
| <b>75%HMPE/<br/>25%Vyram</b> | 1           | 919                             | 63                      | 1130                          | 630                     | 30200                          |
|                              | 2           | 914                             | 61                      | 1110                          | 630                     | 34100                          |
|                              | 3           | 925                             | 69                      | 1120                          | 650                     | 29500                          |
|                              | 4           | 910                             | 67                      | 1110                          | 650                     | 21500                          |
|                              | 5           | 912                             | 68                      | 1140                          | 700                     | 24000                          |
|                              | Average     | 916                             | 66                      | 1120                          | 650                     | 27900                          |
|                              | Std.Dev.    | 6                               | 3                       | 13                            | 29                      | 5060                           |

[0080] The above data demonstrate that a triextrusion material according to the invention exhibits markedly greater tensile strength than a thermoplastic elastomer-dominated single-extrusion material. Also of interest is that the three-layer laminate exhibited a higher strength at yield and stress at break than the HMPE-dominated material, while showing a comparable tensile Young's modulus.

Example 4

[0081] Tests were performed on the above three materials for shear strength according to Test Standard ASTM D732-02. In these tests, a 1.00 in. dia. punch was applied to a 2.0 inch square of material until shear was achieved. The crosshead moved at 0.05 in/min. The test samples were preconditioned for at least 40 hours at 23 Celsius and 50% relative humidity, which were the conditions under which the tests were performed. Test results are tabulated below.

| Sample Name                    | Test Number | Thickness (in.) | Shear Force (lbf) | Shear Strength (psi) |
|--------------------------------|-------------|-----------------|-------------------|----------------------|
| <b>Tri-Extrusion</b>           | 1           | 0.119           | 747               | 2000                 |
|                                | 2           | 0.122           | 783               | 2040                 |
|                                | 3           | 0.119           | 747               | 2000                 |
|                                | 4           | 0.121           | 757               | 1990                 |
|                                | 5           | 0.117           | 734               | 2000                 |
|                                | Average     |                 | 754               | 2010                 |
|                                | Std. Dev.   |                 | 18                | 19                   |
| <b>75% VYRAM/<br/>25% HMPE</b> | 1           | 0.072           | 423               | 1870                 |
|                                | 2           | 0.070           | 416               | 1890                 |
|                                | 3           | 0.073           | 489               | 2130                 |
|                                | 4           | 0.072           | 481               | 2130                 |
|                                | 5           | 0.073           | 455               | 1980                 |
|                                | Average     |                 | 453               | 2000                 |
|                                | Std. Dev.   |                 | 33                | 126                  |
| <b>75% HMPE/<br/>25% VYRAM</b> | 1           | 0.135           | 680               | 1600                 |
|                                | 2           | 0.137           | 688               | 1600                 |
|                                | 3           | 0.134           | 687               | 1630                 |

|  |           |       |     |      |
|--|-----------|-------|-----|------|
|  | 4         | 0.136 | 724 | 1690 |
|  | 5         | 0.137 | 687 | 1600 |
|  | Average   |       | 693 | 1620 |
|  | Std. Dev. |       | 18  | 39   |

[0082] The above test data show that, as normalized for the different thicknesses tested, the triextrusion material is similar in shear strength to the 75%VYRAM/ 25% HMPE single-extrusion blend, and superior in shear strength to the 75%HMPE/25%VYRAM® single-extrusion blend.

Example 5

[0083] Tests were performed to determine the flexural properties of samples of a tri-extrusion material of the above-described formulation, a 75 wt. pct. Vyram/25 wt. pct. HMPE material, and a 75 wt. pct. HMPE/25wt. pct. VYRAM material (in all tests. the thermoplastic elastomer used was VYRAM® Grade 101-75). The tests were performed according to the ASTM D790-03 test method, Method I, Procedure A. For the tri-extrusion the dimensions of the samples averaged 0.490” x 0.0119” x 5.00”, the span length was 1.904 in., and the cross-head speed was 0.051 in./min. For the 75%Vyram/25%HMPE material, the dimensions of the samples averaged 0.484” x 0.072” x 5.00”, the span length was 1.152 in., and the cross-head speed was 0.031 in./min. For the 75%HMPE/25%Vyram material, the dimensions of the samples averaged 0.50” x 0.138” x 5.00”, the span length was 2.208 in., and the cross-head speed was 0.059 in/min. In all tests, the span-to-depth ratio was 16 +/- 1:1, the radius of the supports was 0.197 in., and the radius of the loading nose was 0.197 in. The tests were performed at 23 Celsius and 50% relative humidity and the samples conditioned for 40 hours at this temperature and humidity before the tests were performed. Results are tabulated below.

| Sample Name                  | Test Number | Flexural Stress At 5% Deflection (psi) | Flexural Modulus (tangent*)(psi) |
|------------------------------|-------------|--|----------------------------------|
| <b>Triextrusion</b>          | 1           | 294                                    | 33400                            |
|                              | 2           | 317                                    | 36000                            |
|                              | 3           | 304                                    | 33500                            |
|                              | 4           | 318                                    | 35700                            |
|                              | 5           | 305                                    | 33200                            |
|                              | Average     | 308                                    | 34400                            |
|                              | Std. Dev.   |  |                                  |
| <b>75%Vyram/<br/>25%HMPE</b> | 1           | 234                                    | 15400                            |
|                              | 2           | 238                                    | 16400                            |
|                              | 3           | 230                                    | 14500                            |
|                              | 4           | 225                                    | 14300                            |
|                              | 5           | 228                                    | 14300                            |
|                              | Average     | 231                                    | 15000                            |
|                              | Std. Dev.   | 5                                      | 915                              |
| <b>75%HMPE/<br/>25%Vyram</b> | 1           | 508                                    | 13000                            |
|                              | 2           | 505                                    | 13800                            |
|                              | 3           | 496                                    | 13100                            |
|                              | 4           | 497                                    | 12900                            |
|                              | 5           | 518                                    | 13800                            |
|                              | Average     | 505                                    | 13300                            |
|                              | Std. Dev.   | 9                                      | 444                              |

[0084] The asterisk in the table indicates that the reported values were arrived at by computer generated curve fit. These data show that the triextrusion is significantly stiffer than either monoextruded sheet. Overall, the triextrusion demonstrates superior properties in terms of tensile strength, shear strength and stiffness per unit cross-sectional area in comparison with that of any of the layers of materials from which the laminate is made, demonstrating that a triextruded tray or mat will be tougher and stiffer than one made of either monoextruded blend by itself.

PROCESS

[0085] FIGURES 7 and 8 provide an overview of a process for making the vehicle floor trays or covers according to the invention. The vehicle floor trays and covers are custom-fabricated for discrete vehicle models. At step 700, points on the vehicle foot well for which the floor tray is to be manufactured are digitally measured and captured. Preferably this step uses a coordinate measuring machine (CMM) which records each of a large plurality of points on the surface of the vehicle foot well to which the floor tray is to be fitted. The inventor has found that a FARO® Arm has been efficacious in obtaining these data using a contact method. It has been found that laying out points in linear groups, as by marking the locations to be measured on tape prior to measurement, is efficacious in capturing enough data points to later recreate the surface of which they are a part.

[0086] The data thus collected are stored in a file. The points of surface data are spaced from each other as a function of the complexity of the surface on which they reside. Few points of data are needed to establish large surface planes. More points of data are used in defining curved surfaces, with the density of data points varying according to the sharpness of the curve. In FIGURE 8, representative ones of these points are shown by small “x”s at 800, on a surface 802 that is reconstituted using the technique described immediately below. A typical data file will contain about a thousand points, spread over an imaged foot well surface area of about ten square feet.

[0087] The CMM data file is imported into a CAD program, which is used by a designer to reconstitute a vehicle foot well surface from the captured points. First, at step 701 different

“lines” of these points are connected together by B-splines 804. The splines 804, which the CAD program can automatically generate, are used to estimate all of the points on the line other than the captured data points of that line. The splines 804 are separated apart from each other as a function of the topographical complexity of the portion of the surface that they cover. For large flat areas, such as sill plate 806, the splines 804 may be separated far apart, as a plane between the splines is a good estimate of the surface in that area. For complex or tightly curved areas, such as sill curve 832 or kick plate transitional area 833, the splines 804 are tightly packed together because the surface segments have to be small in order to reproduce those curved surfaces of the foot well with acceptable accuracy.

[0088] Once the splines 804 have been assembled, the designer lofts an area between each pair of parallel splines 804 in order to create different areal segments 808. The “lofting” process proceeds along each of the major surfaces of the part, piecewise, until that surface is entirely recreated. For example, a transmission tunnel sidewall surface 810 is recreated by lofting an area 812 between a spline 814 to an adjacent spline 816 along the same surface. The designer then lofts the next area 818 from spline 816 to spline 820. Next, an area 822 from spline 820 to spline 824 is added, and so forth down the rest of the transmission tunnel surface 810 until that entire component of the vehicle foot well surface has been created. In similar fashion, the other major surfaces are added: a combination firewall/floor area segment 826, a pedestal sidewall 828, a kick plate segment 830, a sill plate curve 832 and the sill plate 806.

[0089] The resultant reconstructed vehicle foot well surface 802 is used, at steps 703 – 707, 709, 711, to construct a vehicle floor tray that fits the surface 802 to an enhanced degree of precision. At step 703, the designer chooses top and bottom sketch planes, which intersect the surface 802



at the top and bottom elevations of the tray to be designed. A top sketch plane intersects surface 802 at a locus high up on the sidewalls 810, 828, 830, 832 and 834. This locus is seen in FIGURE 1 as a top margin 150 of the upstanding sidewalls 130, 132, 134, 136 and the transitions between them. In the preferred embodiment, the top sketch plane is tilted and inclines upward in a forward direction. This produces a tray which is deeper near the firewall than it is near the seat, preferably producing a tray that is at least five inches deep at its deepest part. This protects the foot well carpet from the possibly muddy sides of an occupant's shoes or boots. A bottom sketch plane is defined to be coplanar with the bottom surface tray sill plate 140, spaced from the vehicle foot well sill plate 806 by a tight tolerance, such as 0.025". This bottom sketch plane does not intersect the remainder of the structure but is instead projected upward onto the vehicle foot well surface to create a locus that approximates the marginal outline of the floor/firewall segment 826.

[0090] At step 704, sidewalls are drawn in to span the top and bottom sketch planes. These prototypical sidewalls are created by first drawing a plurality of straight lines, each drawn from a point on the upper sketch plane locus to a point on the lower sketch plane locus. Since the upper sketch plane is more extensive and has a different shape from the lower sketch plane, the lateral margins of the upper and lower sketch planes are not congruent, and the straight lines drawn from the upper sketch plane may be canted at various angles to each other. In general, these lines will slope inwardly from the top sketch plane to the bottom sketch plane. The areas in between these lines can be lofted to create polygonal surfaces of a completed tray solid.

[0091] The resultant solid has a planar top surface, nearly planar bottom surface and sidewalls which make abrupt corners with them. The actual transitions between the vehicle foot well

sidewall surfaces and the floor are almost always curved, to a greater or lesser extent depending on the area in question and on the vehicle model. Therefore, at step 705, curves are fitted to the reconstructed vehicle foot well surface and these curves are substituted in for the previous abrupt angular shapes. The largest of these curves occurs across the firewall 834, to conform to that sloping and typically curved surface rather than to a horizontal extension of the bottom sketch plane. Curves are also used to modify the transitions between the floor 102 and the transmission tunnel surface 132, the kick plate 136, and the seat pedestal sidewall 130.

[0092] The above techniques aim to approximate, as closely as possible, the shape of the upstanding sidewalls 810, 828, 830 and 834, to a zero standoff from the foot well surface. In some instances, the outer surface of the tray 100 may actually extend slightly beyond the imaged side walls of the vehicle foot well (see portions 1000 – 1006 in FIGURES 10 – 14), creating a negative standoff. This is permissible to some degree because the surface to which the tray is being shaped is carpeted and the pile may be intentionally depressed at certain points.

[0093] The door sill 806 and the sill curve 832 typically are hard surfaces that must comply to close manufacturer tolerances. A vehicle door is designed to mate with these surfaces. Because of this it is important to match these surfaces carefully, and preferably this is done in this process to a preselected standoff of 0.025 inch.

[0094] At step 704, and for certain vehicle models, certain radii of the transitional surfaces are increased, in an intentional departure from the foot well surface. This is done, for example, where the curved transition is one from a deep vertical surface to the floor, as might occur between a vertical kick plate and firewall surface segments 836, 838. See transition 1400 in FIGURE 14. This is done to make sure that the preferred vacuum molding process, which uses a

female tool, does not create a thin place in the molded part at the deep corners. Where the sidewall surfaces are sloped inward by more than five degrees, such radiusing is unnecessary.

[0095] At step 707, which can be before, during or after steps 704 and 705, the tray solid is additionally modified to take into account irregularities in the reconstructed foot well surface. For example, the vehicle carpeting might have had rolls or wrinkles in it that should not be reproduced in a tray meant to fit the vehicle. This steps also smoothes out those surface irregularities which are artifacts of the surface acquisition and reconstruction steps 700 – 702.

[0096] Once a basic shape for the vehicle floor tray has been formed, it is modified at 709 in order to create the reservoir 110 and channels 104 (See Figures 1 – 4). This modification is necessary because, as has been explained, while there is a close conformance or mating between most of the exterior or lower surfaces of the floor tray on the one hand to the upper or interior surfaces of the vehicle foot well surfaces on the other, there must be a departure from this close conformance in order to create the profile needed by the reservoir and channels. In a preferred embodiment, a predetermined file containing the outer surface of the reservoir and channel surface is integrated into the floor of the tray solid. The importation of this design into the floor of the tray solid will cause a departure from the imaged vehicle surface floor of as much as ¼ inch in the areas around the reservoir periphery. This departure decreases as a function of distance from the imported pattern. The produced vehicle floor tray will nonetheless fit tightly to the vehicle foot well, because (1) the floor carpeting will be depressed to a greater extent under the reservoir than in peripheral areas (see, e.g., region 1004 in FIGURE 10), and (2) the upstanding sidewalls continue to closely conform to the corresponding surfaces of the vehicle foot well.

[0097] At step 711, the tray solid developed at steps 703 – 707, 709 is “shelled”. This means that the solid is carved out to leave a thin layer that is a uniform thickness (preferably about .120 - .125 in.) from the outer surface.

[0098] The result is a tray data file 708 that is a complete representation of both the upper and lower surfaces of the floor tray, to a precision sufficient to create only a 1/8 in. departure or less from a large portion of the respective surfaces of the vehicle foot well. This data file, typically as translated into a .stl format that approximates surfaces with a large plurality of small triangles, is used at 710 to command a stereolithographic apparatus (SLA). The SLA creates a solid plastic image or model of the design by selectively curing liquid photopolymer using a laser. The SLA is used to determine fit to an actual vehicle foot well and to make any necessary adjustments.

[0099] As modified with experience gained from fitting the SLA, at 712 the vehicle tray data file is used to make a commercial mold for producing the vehicle floor trays or covers. Triextruded sheets or blanks 714 are placed in the mold and heated to produce the vehicle floor trays at 716.

[0100] Three-dimensional vehicle floor trays for many different vehicle models can be quickly and accurately manufactured using this method. The method can also be modified to produce double trays, in which a single tray is provided which covers both driver and passenger vehicle foot wells as well as the intervening transmission tunnel. The technique can be used to create other vehicle floor covers as well, such as the liners used in the cargo areas of minivans and SUVs.

[0101] In summary, a novel vehicle floor tray has been shown and described which fits, within tight tolerances, to the vehicle foot well for which it is created. The floor tray according to the

invention includes a reservoir and channel system for retaining runoff in a way that will not slosh around in the foot well. By using a triextruded sheet blank, the tray combines the desirable coefficient of friction and yieldability characteristics of a thermoplastic elastomer, the lower cost of a polyolefin and a toughness that exceeds either material taken alone.

[0102] While an illustrated embodiment of the present invention has been described and illustrated in the appended drawings, the present invention is not limited thereto but only by the scope and spirit of the appended claims.

**I CLAIM:**

1. A process for manufacturing a vehicle floor tray, comprising the steps of:  
digitally measuring the three-dimensional position of a plurality of points on a surface of a vehicle foot well for which the vehicle floor tray is to be provided;  
storing said points in a memory;  
using the stored points to construct a model of the vehicle foot well surface;  
using the model of the vehicle foot well surface to construct a three-dimensional image of a vehicle floor tray;  
using the stored three-dimensional image to construct a mold for the vehicle floor tray; and  
manufacturing the vehicle floor tray by molding polymer material in the mold.
2. The process of Claim 1, wherein said step of digitally measuring the three-dimensional position of the points on the surface of the vehicle foot well comprises using a coordinate measurement machine (CMM).
3. The process of Claim 1, and further comprising the steps of:  
connecting together groups of the stored points with B-splines; and  
lofting between the B-splines to create areal segments of the surface of the vehicle foot well model.

4. The process of Claim 1, and wherein said step of constructing the three-dimensional image of the vehicle floor tray further comprises the steps of:

establishing a top sketch plane to intersect the vehicle foot well model and to establish a top margin of the vehicle floor tray;

establishing a bottom sketch plane to be at the lowest elevation of the vehicle floor tray image to be created; and

drawing sidewalls between the top sketch plane and the bottom sketch plane to approximate corresponding sidewalls of the vehicle foot well tray.

5. The process of Claim 1, and further comprising the step of:

tilting the top sketch plane so that it is at an angle to a floor of the vehicle foot well model, such that the produced vehicle floor tray is deeper in a direction toward the vehicle firewall than it is toward a seat of the occupant.

6. The process of Claim 1, and further comprising the step of modifying the drawn sidewalls of the three-dimensional image of the vehicle floor tray to conform at least the upper two-thirds of the area of the outer surface of the sidewalls nearest to the top margin to respective surfaces of the vehicle foot well model, such that through those areas the sidewalls of the vehicle floor tray do not depart from the corresponding surfaces of the vehicle foot well by more than one-eighth of an inch.

**DESIGNING AND MANUFACTURING VEHICLE FLOOR TRAYS**

**ABSTRACT OF THE DISCLOSURE**

A vehicle foot well is digitally measured. The digital measurements are used to create a model of a vehicle foot well surface, and from this a three dimensional image of a floor tray to fit this surface. The floor tray image in turn is used to construct a mold.



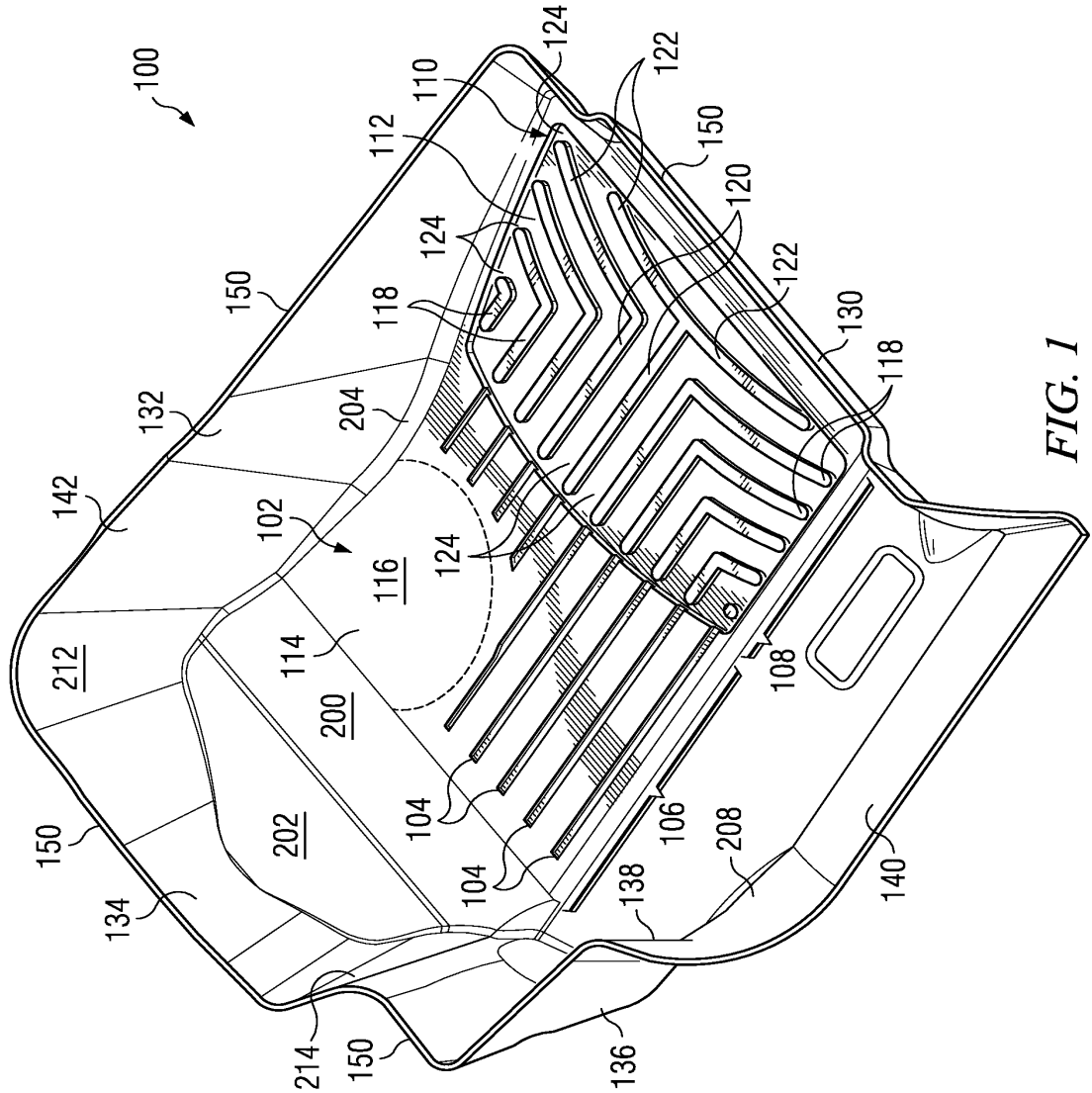


FIG. 1

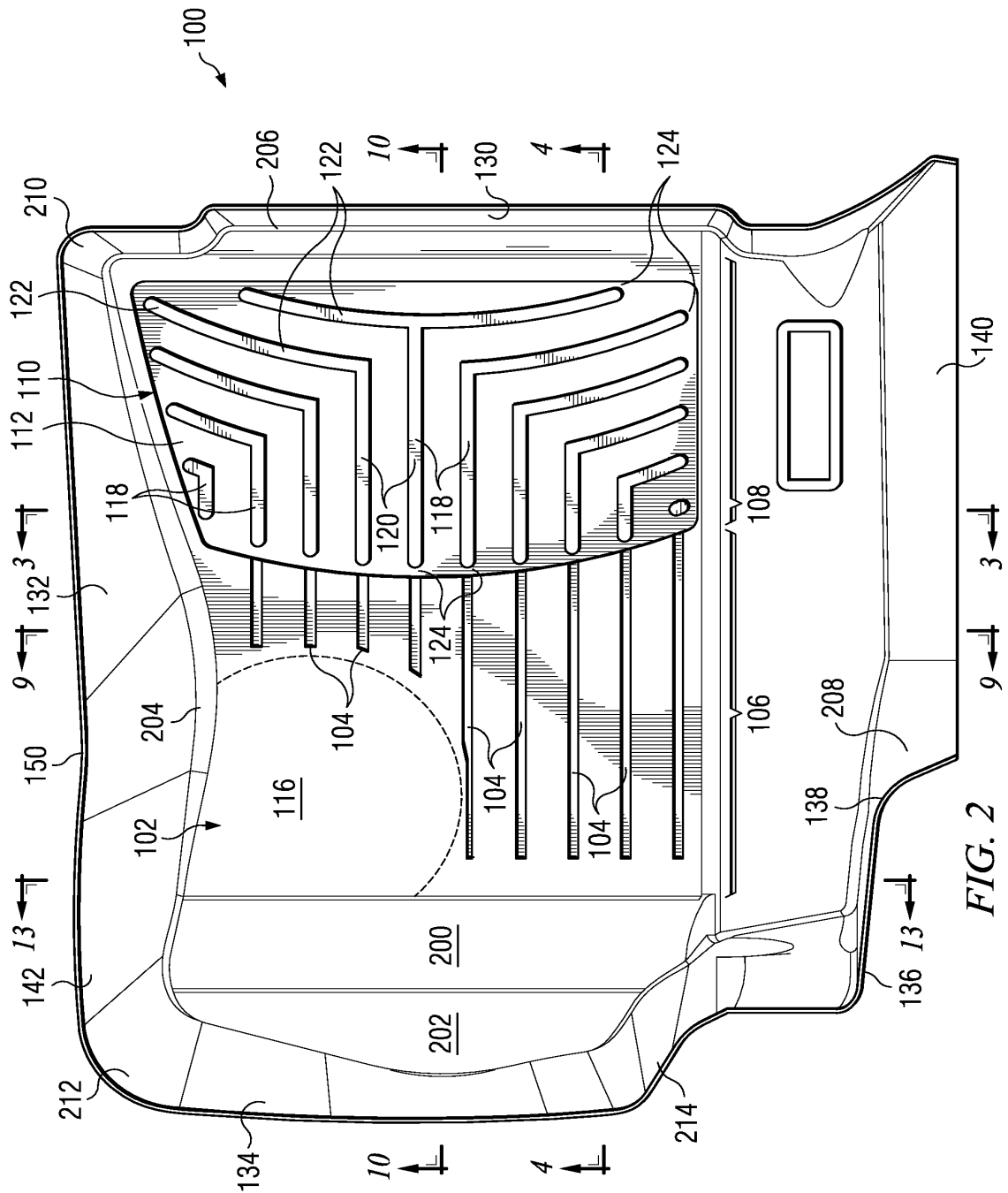


FIG. 2

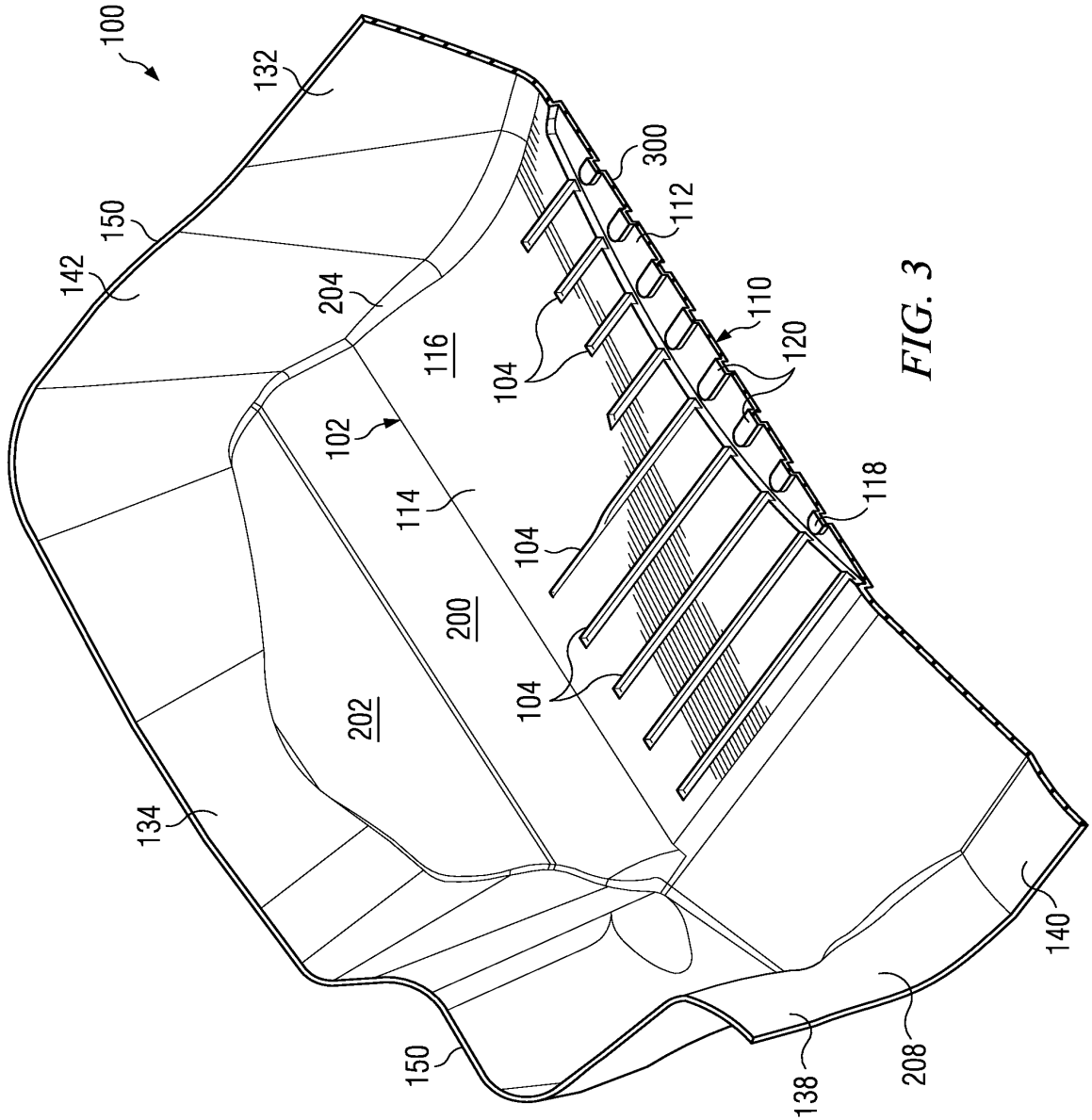


FIG. 3

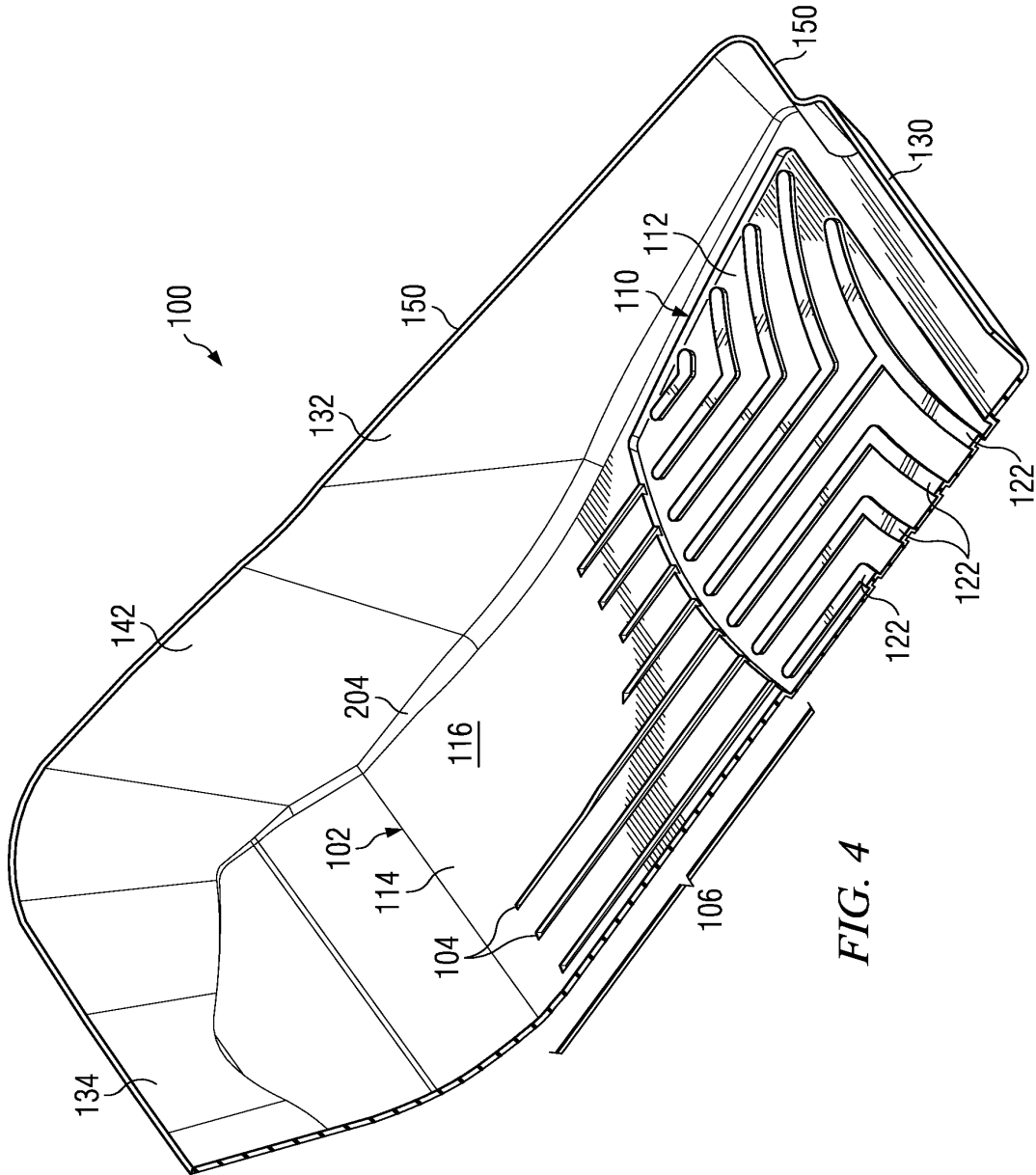


FIG. 4

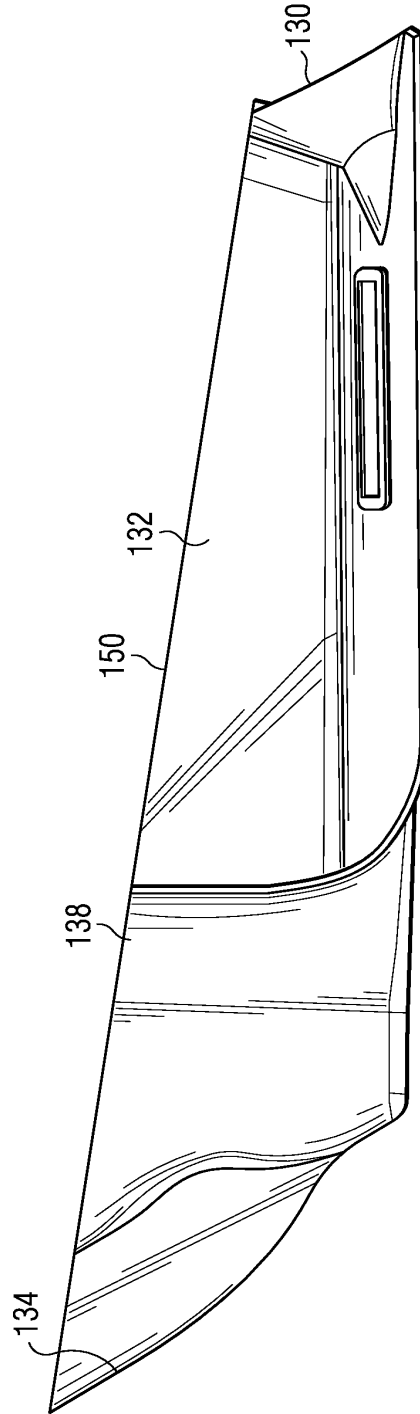


FIG. 5

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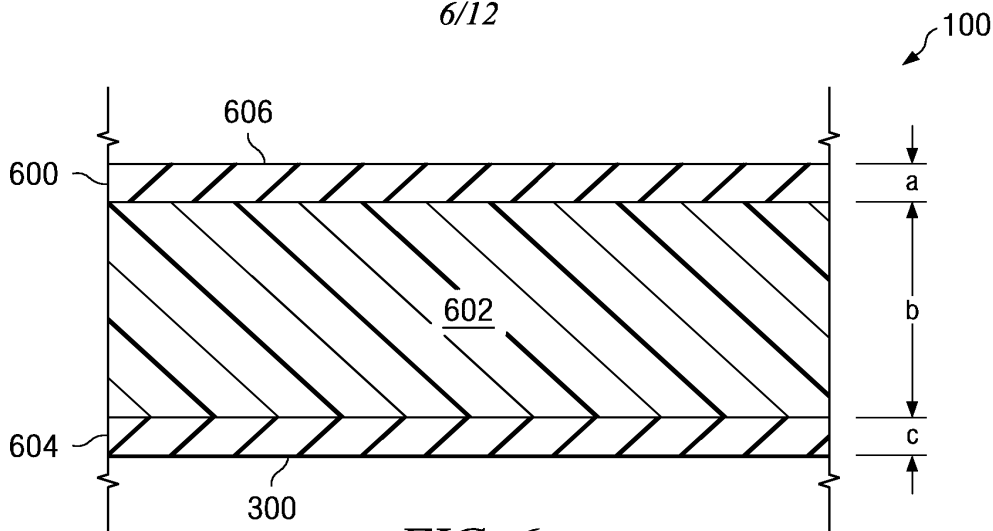


FIG. 6

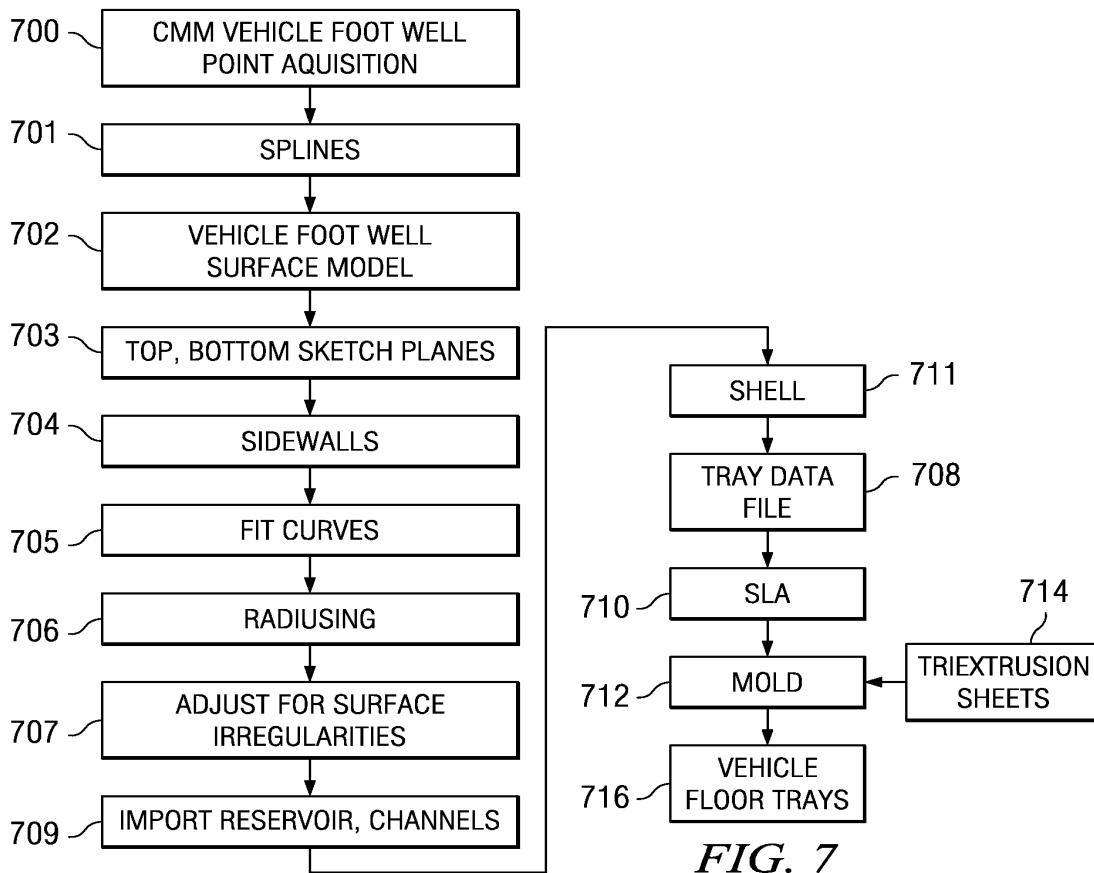


FIG. 7

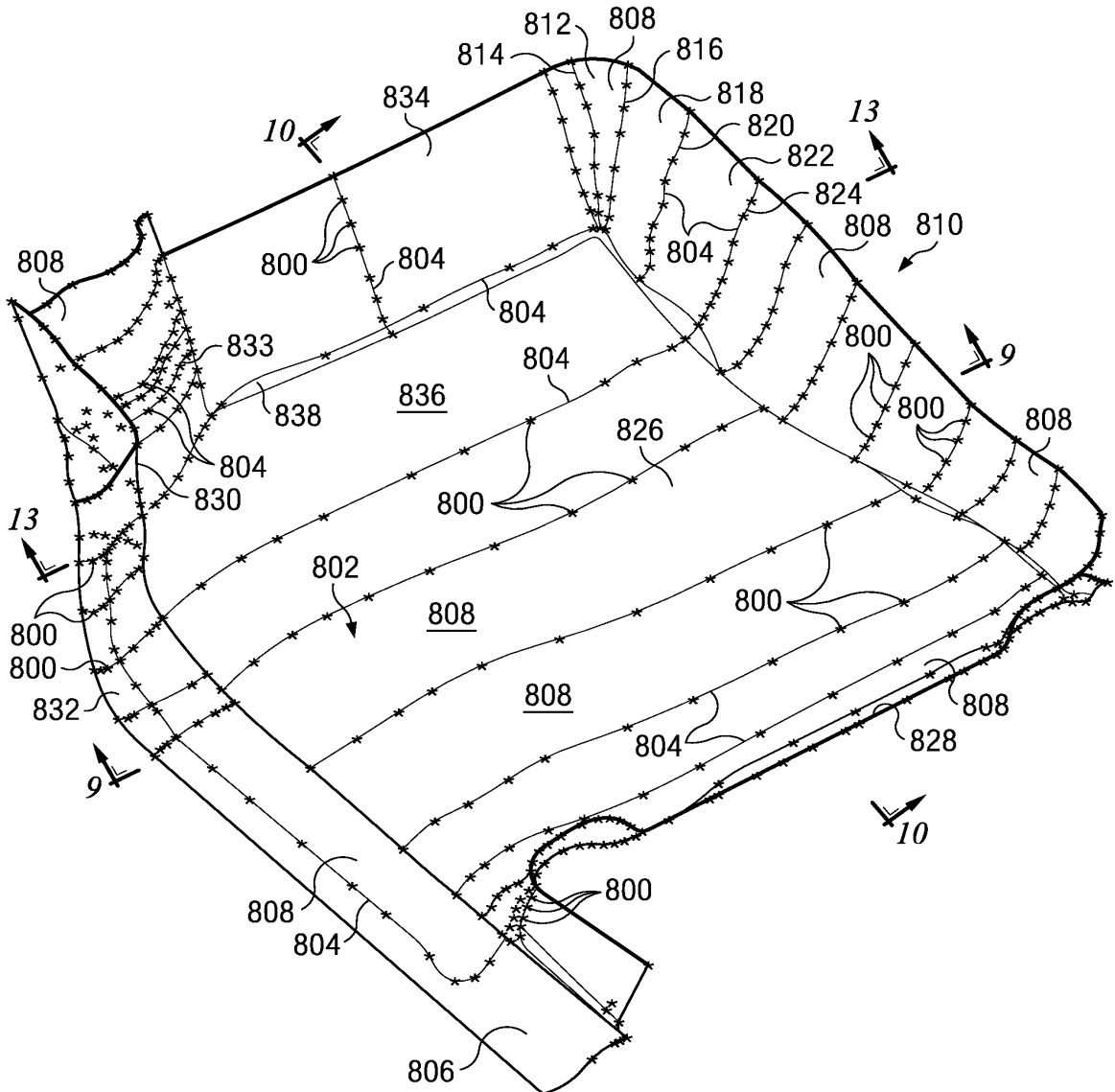


FIG. 8

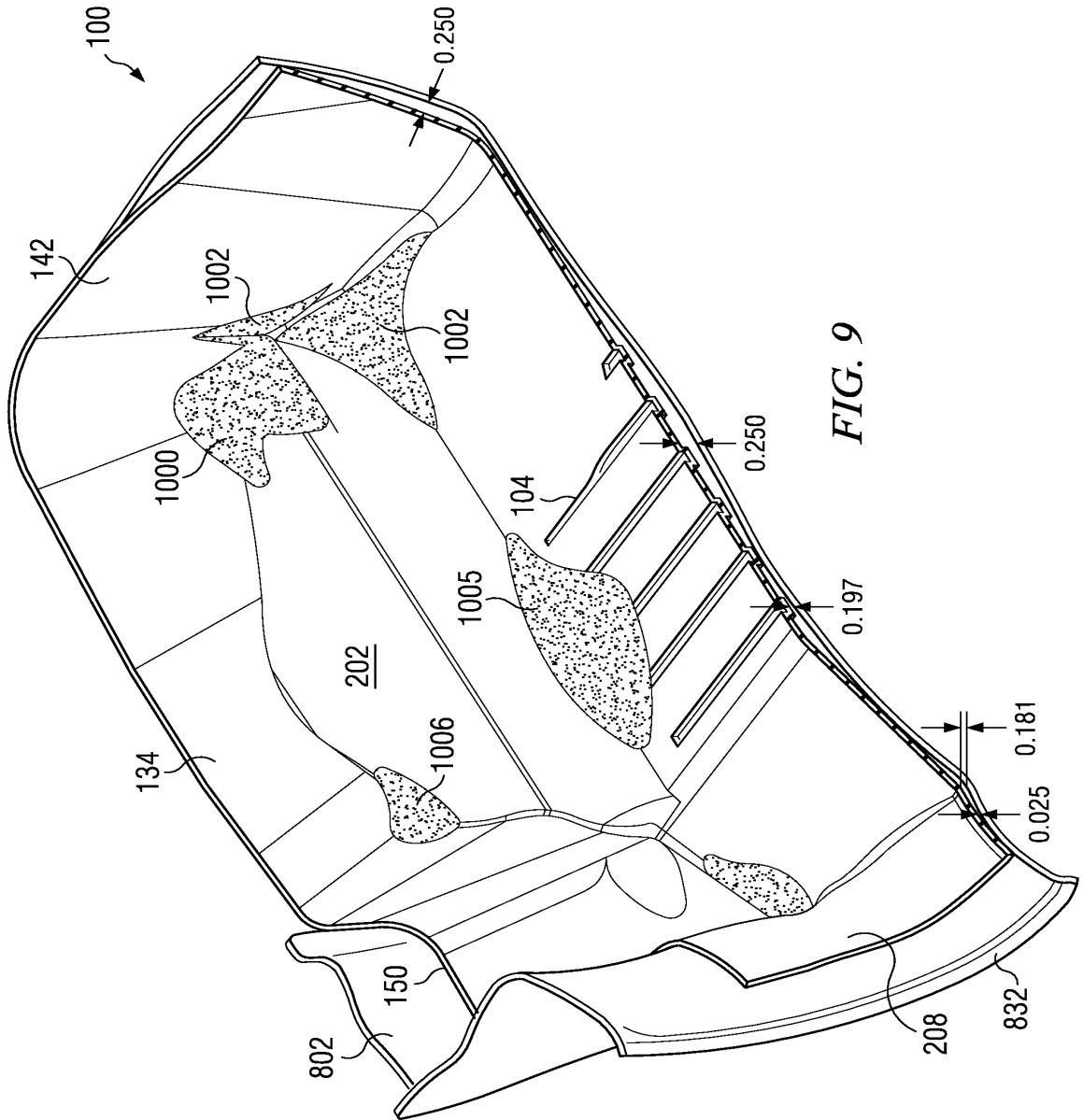


FIG. 9



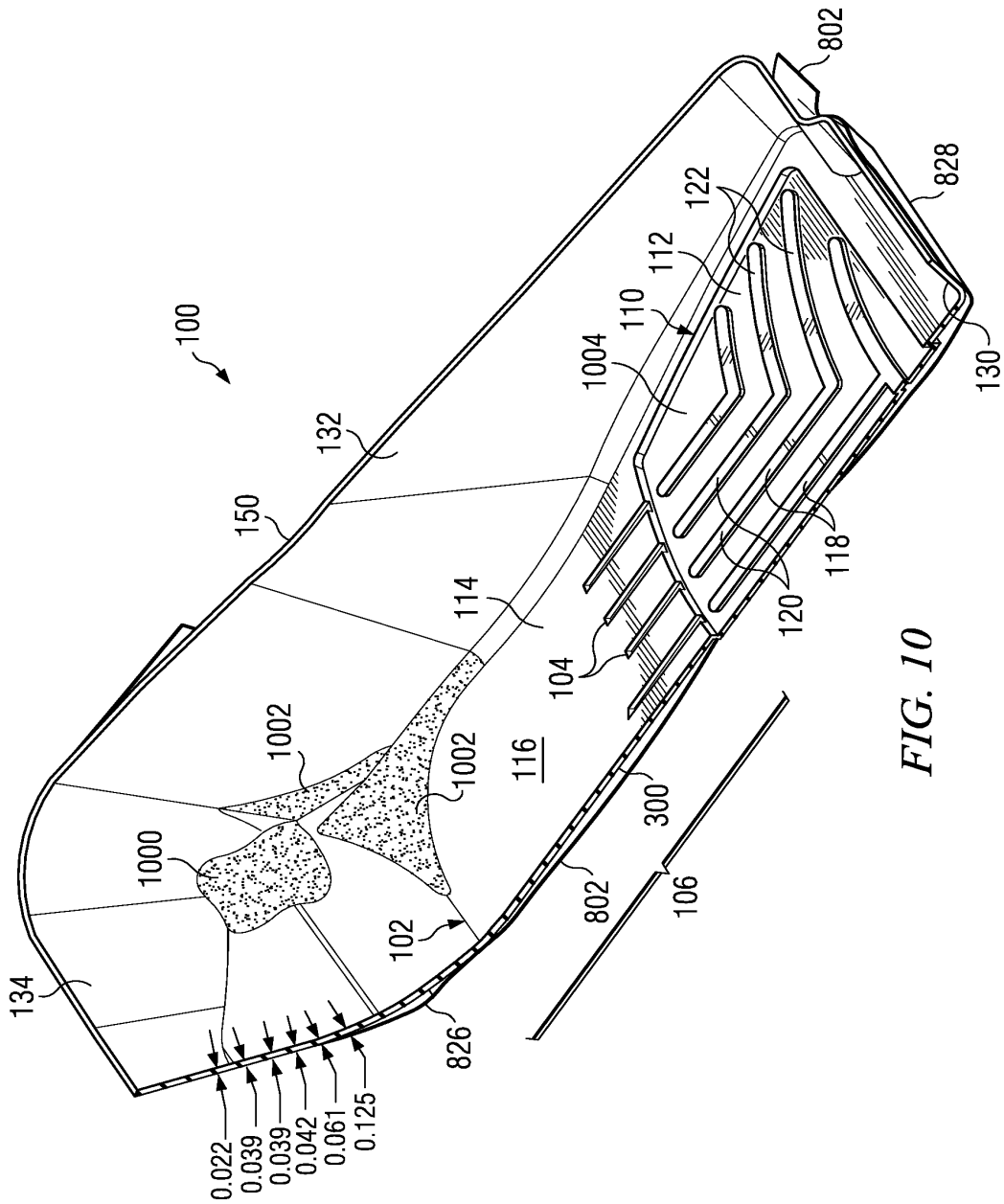


FIG. 10

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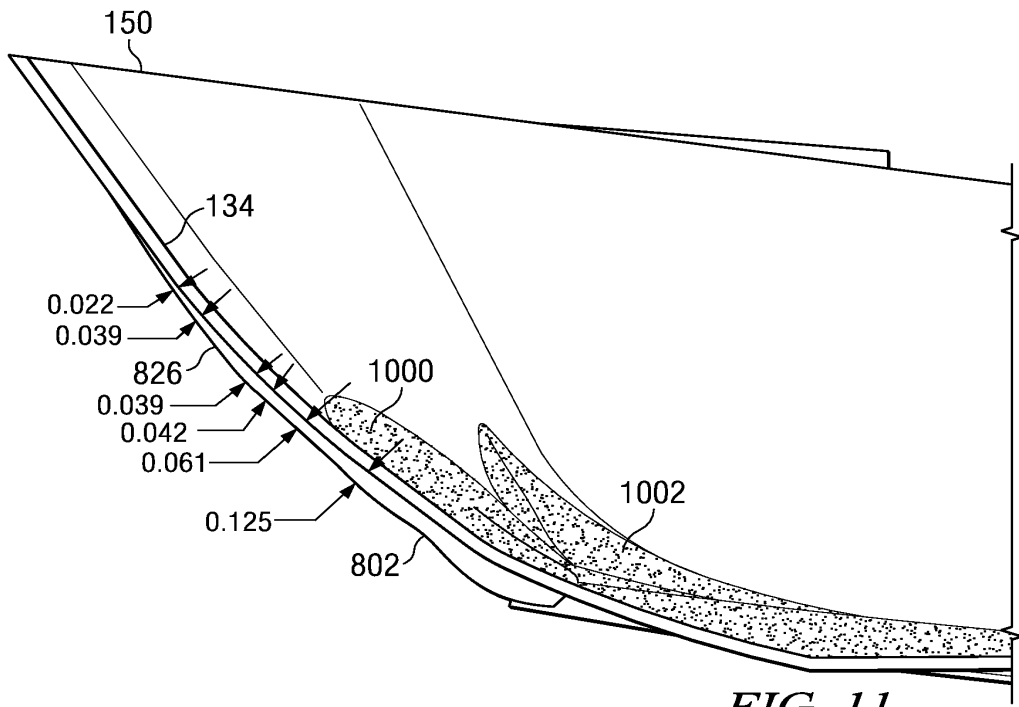


FIG. 11

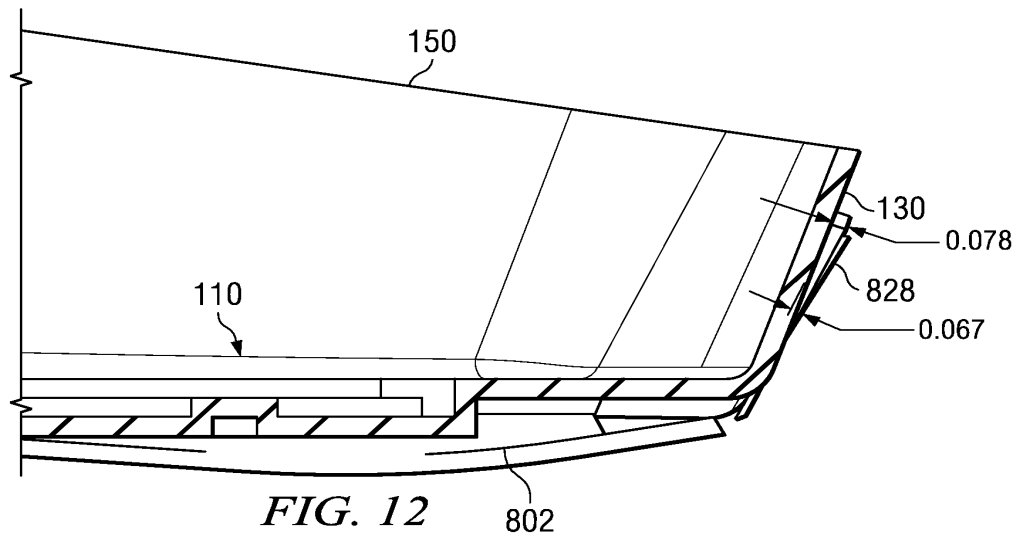


FIG. 12

11/12

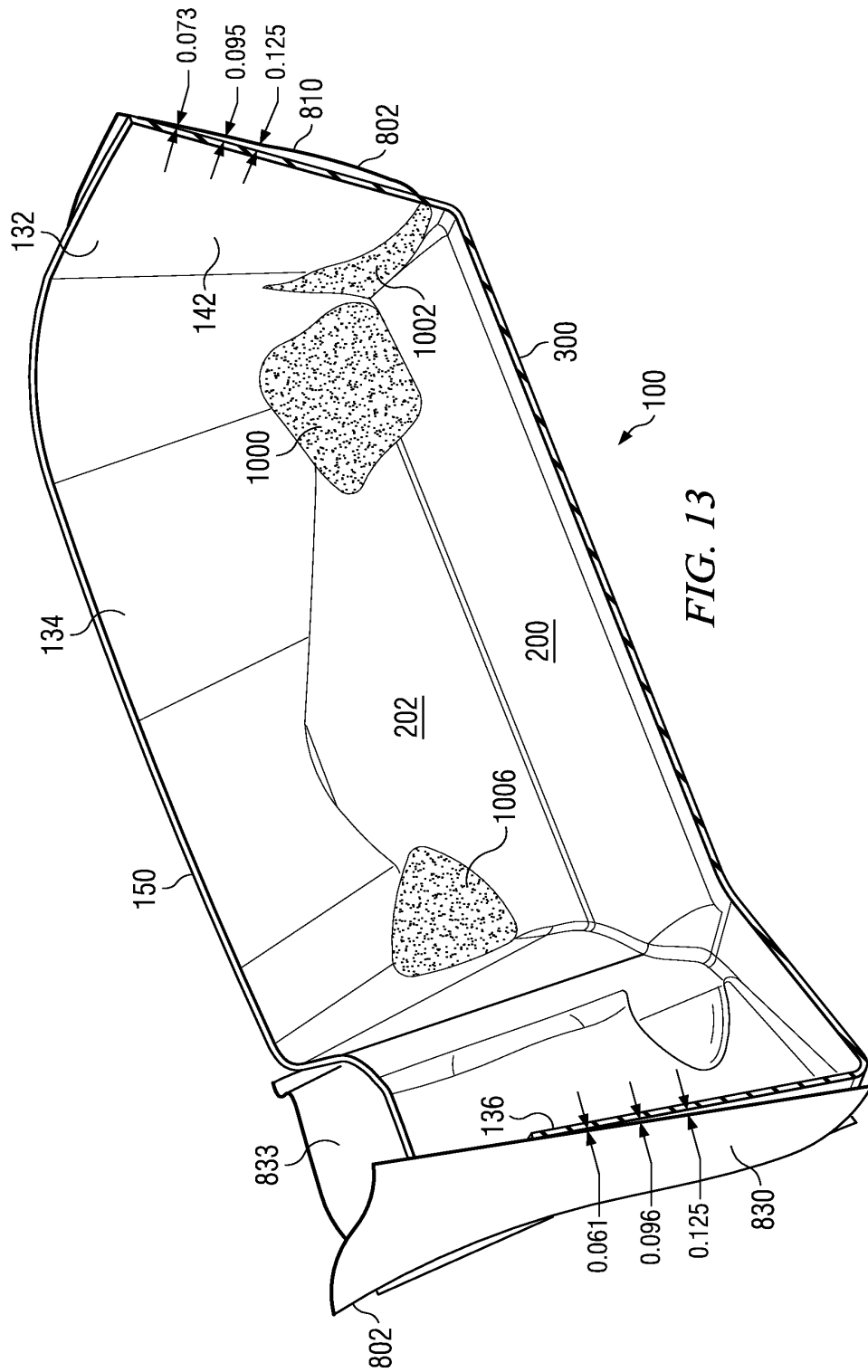
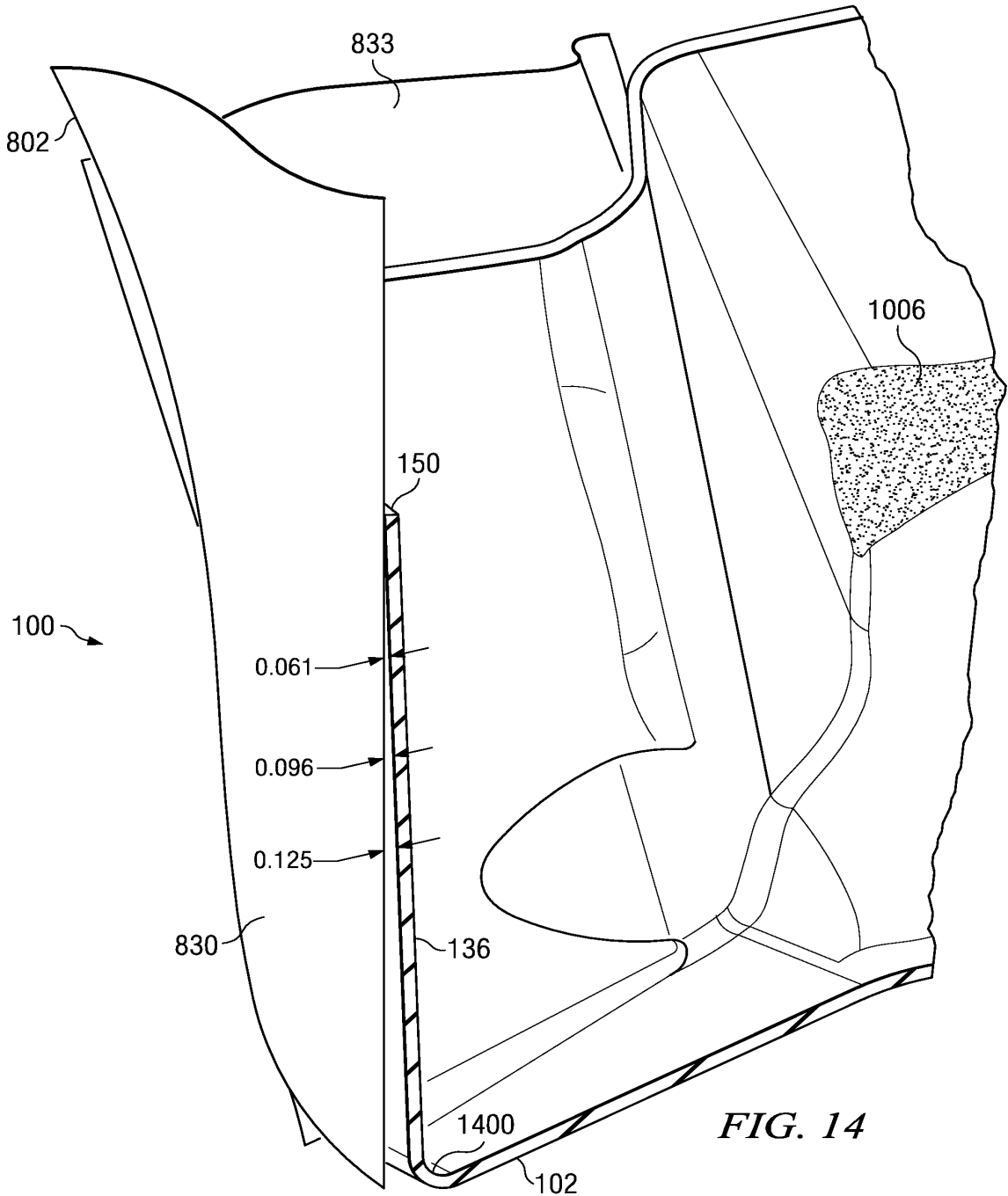


FIG. 13



**FIG. 14**

**INVENTOR'S DECLARATION**

As a below named inventor, I declare that:

My residence, post office address and citizenship are as stated below next to my name; that I believe I am the original, first and sole inventor of the subject matter which is claimed and for which a patent is sought on the invention or design entitled VEHICLE FLOOR TRAY, the specification of which:

X is attached hereto; or  
\_\_\_\_\_ was filed on \_\_\_ as United States Application No. or PCT International Application No. \_\_\_\_\_; or  
\_\_\_\_\_ was the subject of an amendment filed in the U.S. Patent and Trademark Office on \_\_\_\_\_

that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above; and that I acknowledge the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to patentability as defined in 37 C.F.R. §1.56.

I hereby claim foreign priority benefits under 35 U.S.C. §119 (a) – (d) or (f), or §365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States, listed below, and have also identified below any foreign or PCT international application(s) for patent or inventor's certificate having a filing date before that of the application to which priority is claimed:

| <u>Application<br/>Number</u> | <u>Country</u> | <u>Date Filed</u> | <u>Priority Claimed</u> |
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I hereby claim the benefit under 35 U.S.C. §120 or §365(c) of any United States application(s), or PCT international application(s) designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application(s) in the manner provided by the first paragraph of 35 U.S.C. §112:

| <u>Application Serial Number</u> | <u>Date Filed</u> | <u>Status</u> |
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Direct all telephone calls to Jefferson Perkins at Telephone No. (630) 990-4503.

Address all correspondence to:

Daspin & Aument, LLP  
210 W. 22<sup>nd</sup> Street, Suite 102  
Oak Brook, Illinois 60523  
Fax 630 990 4511

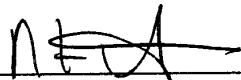
**CUSTOMER NUMBER: 43138**

I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Attorney Docket No.: 301700-00069

Full Name of Sole Inventor: David F. MACNEIL

Inventor's signature:

  
\_\_\_\_\_

Date of signature:

OCTOBER 29, 2004

Residence:

Hinsdale, IL

Citizenship:

United States

Post Office Address:

205 East Sixth Street  
Hinsdale, IL 60521

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|   |   |                        |              |
|---|---|------------------------|--------------|
| <b>Application Data Sheet 37 CFR 1.76</b>   |   | Attorney Docket Number | 301700-00106 |
|   |   | Application Number     |              |
| Title of Invention  | DESIGNING AND MANUFACTURING VEHICLE FLOOR TRAYS |                        |              |
| The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application. |   |                        |              |

**Secrecy Order 37 CFR 5.2**

Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2. (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

**Applicant Information:**

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|---|-------------------|---|--------------------|--|---------------------------------------|
| <b>Applicant 1</b>  |                   |   |                    |  | <input type="button" value="Remove"/> |
| <b>Applicant Authority</b>  |                   | <input checked="" type="radio"/> Inventor     |                    | <input type="radio"/> Legal Representative under 35 U.S.C. 117 |                                       |
|   |                   |   |                    | <input type="radio"/> Party of Interest under 35 U.S.C. 118    |                                       |
| <b>Prefix</b>   | <b>Given Name</b> | <b>Middle Name</b>                            | <b>Family Name</b> | <b>Suffix</b>  |                                       |
|   | David             | F.  | MACNEIL            |  |                                       |
| <b>Residence Information (Select One)</b>   |                   |   |                    |  |                                       |
|   |                   | <input checked="" type="radio"/> US Residency |                    | <input type="radio"/> Non US Residency                         |                                       |
|   |                   |   |                    | <input type="radio"/> Active US Military Service               |                                       |
| <b>City</b>   | Hinsdale          | <b>State/Province</b>                         | IL                 | <b>Country of Residence i</b>                                  | US                                    |
| <b>Citizenship under 37 CFR 1.41(b) i</b>   |                   | US  |                    |  |                                       |
| <b>Mailing Address of Applicant:</b>  |                   |   |                    |  |                                       |
| <b>Address 1</b>  |                   | 205 East Sixth Street                         |                    |  |                                       |
| <b>Address 2</b>  |                   |   |                    |  |                                       |
| <b>City</b>   | Hinsdale          | <b>State/Province</b>                         | IL                 |  |                                       |
| <b>Postal Code</b>  | 60521             | <b>Country j</b>                              | US                 |  |                                       |
| All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the <b>Add</b> button. |                   |   |                    |  |                                       |
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| <input type="checkbox"/> An Address is being provided for the correspondence information of this application.                      |                           |  |   |
| <b>Customer Number</b>   | 43138                     |  |   |
| <b>Email Address</b>   | jperkins@daspinaument.com | <input type="button" value="Add Email"/> | <input type="button" value="Remove Email"/> |

**Application Information:**

|  |   |  |                                     |
|--|---|--|-------------------------------------|
| <b>Title of the Invention</b>                  | DESIGNING AND MANUFACTURING VEHICLE FLOOR TRAYS |  |                                     |
| <b>Attorney Docket Number</b>                  | 301700-00106                                    | <b>Small Entity Status Claimed</b>               | <input checked="" type="checkbox"/> |
| <b>Application Type</b>                        | Nonprovisional                                  |  |                                     |
| <b>Subject Matter</b>                          | Utility   |  |                                     |
| <b>Suggested Class (if any)</b>                | 296   | <b>Sub Class (if any)</b>                        |                                     |
| <b>Suggested Technology Center (if any)</b>    | 3612  |  |                                     |
| <b>Total Number of Drawing Sheets (if any)</b> | 12  | <b>Suggested Figure for Publication (if any)</b> | 7                                   |

|   |   |                        |              |
|---|---|------------------------|--------------|
| <b>Application Data Sheet 37 CFR 1.76</b> |   | Attorney Docket Number | 301700-00106 |
|   |   | Application Number     |              |
| Title of Invention                        | DESIGNING AND MANUFACTURING VEHICLE FLOOR TRAYS |                        |              |

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| <b>Publication Information:</b> |  |
| <input type="checkbox"/>        | Request Early Publication (Fee required at time of Request 37 CFR 1.219)   |
| <input type="checkbox"/>        | Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not been and will not be the subject of an application filed in another country, or under a multilateral agreement, that requires publication at eighteen months after filing. |

### Representative Information:

|   |  |  |   |
|---|--|--|---|
| Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Enter either Customer Number or complete the Representative Name section below. If both sections are completed the Customer Number will be used for the Representative Information during processing. |  |  |   |
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| Customer Number   | 43138  |  |   |

### Domestic Priority Information:

|   |                 |                                       |                                    |
|---|-----------------|---------------------------------------|------------------------------------|
| This section allows for the applicant to claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c). Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78(a)(2) or CFR 1.78(a)(4), and need not otherwise be made part of the specification. |                 |                                       |                                    |
| Prior Application Status  | Pending         | <input type="button" value="Remove"/> |                                    |
| Application Number  | Continuity Type | Prior Application Number              | Filing Date (YYYY-MM-DD)           |
|   | Division of     | 10/976441                             | 2004-10-29                         |
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|---|----------------------|---------------------------------|---|
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|   |                      |                                 | <input type="button" value="Remove"/>                         |
| Application Number  | Country <sup>i</sup> | Parent Filing Date (YYYY-MM-DD) | Priority Claimed  |
|   |                      |                                 | <input type="radio"/> Yes <input checked="" type="radio"/> No |
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### Assignee Information:

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| If the Assignee is an Organization check here. <input type="checkbox"/>   |                                       |



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| <b>Application Data Sheet 37 CFR 1.76</b>   |   | Attorney Docket Number | 301700-00106 |                                    |
|   |   | Application Number     |              |                                    |
| Title of Invention  | DESIGNING AND MANUFACTURING VEHICLE FLOOR TRAYS |                        |              |                                    |
| Prefix  | Given Name                                      | Middle Name            | Family Name  | Suffix                             |
|   |   |                        |              |                                    |
| <b>Mailing Address Information:</b>   |   |                        |              |                                    |
| Address 1   |   |                        |              |                                    |
| Address 2   |   |                        |              |                                    |
| City  |   | State/Province         |              |                                    |
| Country <sup>i</sup>  |   | Postal Code            |              |                                    |
| Phone Number  |   | Fax Number             |              |                                    |
| Email Address   |   |                        |              |                                    |
| Additional Assignee Data may be generated within this form by selecting the Add button. |   |                        |              | <input type="button" value="Add"/> |

**Signature:**

|  |                     |                  |         |                            |            |
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| A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 10.18. Please see 37 CFR 1.4(d) for the form of the signature. |                     |                  |         |                            |            |
| <b>Signature</b>   | /Jefferson Perkins/ |                  |         | <b>Date (YYYY-MM-DD)</b>   | 2006-08-08 |
| <b>First Name</b>  | Jefferson           | <b>Last Name</b> | Perkins | <b>Registration Number</b> | 31407      |

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|   | Filing Date            |                  |  |
|   | First Named Inventor   | David F. MacNEIL |  |
|   | Art Unit               | 3612             |  |
|   | Examiner Name          | Joseph PAPE      |  |
|   | Attorney Docket Number | 301700-00106     |  |

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|                   | 1       | 4280729       | A                      | 1981-07-28 | Morawski  |  |
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|                   | 3       | 4591532       | A                      | 1986-05-27 | Tanaka  |  |
|                   | 4       | 6027782       | A                      | 2000-02-22 | Sherman   |  |
|                   | 5       | 6793872       | B1                     | 2004-09-21 | Buss  |  |
|                   | 6       | 6953545       | B1                     | 2005-10-11 | Tyler   |  |
|                   | 7       | D377780       |                        | 1997-02-04 | MacNeil   |  |
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|   | Filing Date            |                  |  |  |
|   | First Named Inventor   | David F. MacNEIL |  |  |
|   | Art Unit               | 3612             |  |  |
|   | Examiner Name          | Joseph PAPE      |  |  |
|   | Attorney Docket Number | 301700-00106     |  |  |

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|-------------------|---------|--------------------------------------|-----------------------------|------------------------|------------------|---|--|-------------------------------------|
|                   | 1       | 0 968 875                            | EP                          | A1                     | 2000-01-05       | T. P. Chomarar                                  | Abstract, Claims (partial translation only)                              | <input checked="" type="checkbox"/> |
|                   | 2       | 1 198 466                            | CA                          | A                      | 1985-12-24       | Du Pont et al.                                  | Abstract (partial translation only)                                      | <input checked="" type="checkbox"/> |
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| <b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br>( Not for submission under 37 CFR 1.99) | Application Number     |                  |  |
|   | Filing Date            |                  |  |
|   | First Named Inventor   | David F. MacNEIL |  |
|   | Art Unit               | 3612             |  |
|   | Examiner Name          | Joseph PAPE      |  |
|   | Attorney Docket Number | 301700-00106     |  |

|    |  |                          |
|----|--|--------------------------|
| 2  | Autoform Trunk Liner, English web page, downloaded from <a href="http://www.autoform.se/eng/products_trunk_liners.htm">http://www.autoform.se/eng/products_trunk_liners.htm</a> on October 20, 2004                              | <input type="checkbox"/> |
| 3  | "Installation Instructions For Your F-150/F-250 Ford Truck Front Floor Liners", Winfield Consumer Products, Feb. 1, 2001, downloaded from <a href="http://www.huskyliners.com">http://www.huskyliners.com</a> on January 3, 2005 | <input type="checkbox"/> |
| 4  | Husky Deep Tray Floor Liner, downloaded from <a href="http://www.truckstuffusa.com/cusfitdeeptr.html">http://www.truckstuffusa.com/cusfitdeeptr.html</a> on January 3, 2005  | <input type="checkbox"/> |
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| 6  | WeatherTech Floor Mat and Cargo Liner Product Sheets, MacNeil Automotive Products, Limited, Downers Grove, IL, Nov. 1994, 4 pp.  | <input type="checkbox"/> |
| 7  | Faro Laser ScanArm, downloaded from <a href="http://www.faro.com/Products/ScanARm.asp">http://www.faro.com/Products/ScanARm.asp</a> on September 23, 2004  | <input type="checkbox"/> |
| 8  | Faro ScanArm Product Techsheet, downloaded from <a href="http://www.faro.com/Products/Product_Techsheel.asp?techsheet_id=106">http://www.faro.com/Products/Product_Techsheel.asp?techsheet_id=106</a> on October 11, 2004        | <input type="checkbox"/> |
| 9  | "CMM Produces Bikes with Custom-Look", downloaded from <a href="http://manufacturingcenter.com/man/articles/0604/0604CMM.asp">http://manufacturingcenter.com/man/articles/0604/0604CMM.asp</a> on October 11, 2004               | <input type="checkbox"/> |
| 10 | "Stereolithography (SLA) for Rapid Precision Prototypes", p. 1, downloaded from <a href="http://www.boedeker.com/sla.htm">http://www.boedeker.com/sla.htm</a> on October 12, 2004  | <input type="checkbox"/> |
| 11 | "About Coordinate Measuring Machines (CMM)", downloaded from <a href="http://cmm.globalspec.com">http://cmm.globalspec.com</a> on Oct. 11, 2004  | <input type="checkbox"/> |
| 12 | BRITISH PATENT OFFICE, Search Report on GB Patent Appln. No. GB 0522091.8, 14 Feb 2006   | <input type="checkbox"/> |

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| <b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br>( Not for submission under 37 CFR 1.99) | Application Number     |                  |  |
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|   | First Named Inventor   | David F. MacNEIL |  |
|   | Art Unit               | 3612             |  |
|   | Examiner Name          | Joseph PAPE      |  |
|   | Attorney Docket Number | 301700-00106     |  |

|    |  |                          |
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| 13 | BRITISH PATENT OFFICE, Search Report on GB Patent Appln. No. GB 0522091.8, Claims 47 - 66, 77 and 78, 23 June 2006 | <input type="checkbox"/> |
| 14 | BRITISH PATENT OFFICE, Search Report on Patent Appln. No. GB 0522091.8, Claims 67 - 70, 26 June 2006               | <input type="checkbox"/> |
| 15 | BRITISH PATENT OFFICE, Search Report on Patent Appln. No. GB 0522091.8, Claims 71 - 73, 27 June 2006               | <input type="checkbox"/> |
| 16 | BRITISH PATENT OFFICE, Search Report on Patent Appln. No. GB 0522091.8, Claims 79 - 84 and 101-105, 23 June 2006   | <input type="checkbox"/> |
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|--------------------|--|-----------------|--|

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<sup>1</sup> See Kind Codes of USPTO Patent Documents at [www.USPTO.GOV](http://www.USPTO.GOV) or MPEP 901.04. <sup>2</sup> Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language translation is attached.

|   |                        |                  |  |
|---|------------------------|------------------|--|
| <b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br>( Not for submission under 37 CFR 1.99) | Application Number     |                  |  |
|   | Filing Date            |                  |  |
|   | First Named Inventor   | David F. MacNEIL |  |
|   | Art Unit               | 3612             |  |
|   | Examiner Name          | Joseph PAPE      |  |
|   | Attorney Docket Number | 301700-00106     |  |

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Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

**OR**

That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

None

**SIGNATURE**

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

|            |                     |                     |            |
|------------|---------------------|---------------------|------------|
| Signature  | /Jefferson Perkins/ | Date (YYYY-MM-DD)   | 2006-08-08 |
| Name/Print | Jefferson Perkins   | Registration Number | 31407      |

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(11) (B) No 1 198 466

(45) ÉMIS: 851224

(64) RE-DÉLIVRANCE DE BREVET No 1,120,516 EXPÉDIÉ: 820323 (52) CLASSE 296-98

(51) INT. CL. B60N 3/04<sup>4</sup>

(19) (CA) **BREVET CANADIEN** (12)

(54) Tapis pour automobiles

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Canada  
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Canada

(21) DEMANDE No 467,009

(22) DÉPOSÉE: 850122

REVENDICATIONS 37

**Canada**

DISTRIBUÉ PAR LE BUREAU DES BREVETS, OTTAWA  
CCA-275 (11-82)

PRECIS

TAPIS POUR AUTOMOBILES

L'invention a trait à un tapis d'automobile destiné à protéger le sol du véhicule et les vêtements de l'usager du véhicule contre les méfaits de l'humidité, la neige, le calcium, le sable, la boue et/ou autres contaminants semblables. Ce tapis comprend une cuve centrale à l'intérieur de laquelle est aménagé un système d'arêtes rapprochées, verticales et parallèles. Le tapis peut également comprendre deux (2) bavettes latérales comportant des arêtes perpendiculaires à l'axe longitudinal du tapis, une partie reposant derrière les pédales composée d'un système d'arêtes permettant l'écoulement des contaminants entraînés dans le véhicule par les chaussures de l'usager vers la cuve centrale ainsi qu'un plateau reposant devant les pédales et comportant une série de rainures longitudinales.

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MEMOIRE DESCRIPTIF

5 L'invention a trait à un tapis d'automobile et  
plus particulièrement à un tapis d'automobile conçu de  
manière à protéger le sol du véhicule et les vêtements,  
plus particulièrement les pantalons, de l'usager du  
véhicule contre les méfaits de l'eau, de la neige, du  
calcium, du sable, de la boue et/ou d'autres contami-  
10 nants semblables.

Les tapis d'automobile sont bien connus et  
fréquemment utilisés par les automobilistes qui les  
ajoutent sur le sol de leur voiture pour protéger le  
15 revêtement du sol contre les dommages résultant de  
l'usure, l'humidité, la neige, le calcium, le sable, la  
boue et autres contaminants semblables. Cependant, les  
tapis traditionnels n'apportent aucune protection pour  
les vêtements et plus particulièrement les pantalons de  
20 l'usager de l'automobile résultant de l'accumulation  
d'humidité, de neige, de calcium, de sable, de boue  
et/ou d'autres contaminants semblables. Par exemple,  
durant l'hiver, les chaussures ou couvre-chaussures de  
l'usager transporteront à l'intérieur du véhicule de  
25 l'eau sale, de la neige, du calcium, du sable et/ou  
d'autres contaminants semblables qui s'accumuleront sur  
la partie centrale du tapis et pourront être ainsi  
facilement absorbés par la pointe du pantalon de  
l'usager qui reposera infailliblement dans cette  
30 accumulation lors de la conduite de l'automobile.



La présente invention a pour objectif non seulement d'améliorer la protection du tapis du véhicule, mais principalement d'éliminer le problème de l'endommagement et de la détérioration des vêtements et plus particulièrement des pantalons.

Un autre objectif de la présente invention est de rendre disponible un tapis d'automobile qui accumule l'humidité, la neige, le calcium, le sable, la boue et/ou autres contaminants semblables dans une cuve tout en empêchant les vêtements et plus particulièrement les pantalons de l'utilisateur d'entrer en contact avec ces substances.

Un autre objectif de la présente invention est de rendre disponible un semblable tapis d'automobile qui peut être facilement enlevé de l'automobile afin de faciliter l'enlèvement des substances accumulées dans la cuve.

En conformité avec les objectifs décrits ci-dessus et d'autres objectifs, l'invention est un tapis d'automobile amovible comprenant une cuve centrale à l'intérieur de laquelle est aménagé un système d'arêtes rapprochées, verticales et parallèles. Le tapis d'automobile comprend également deux (2) bavettes latérales comportant des arêtes perpendiculaires à l'axe longitudinal du tapis, une partie reposant derrière les pédales composée d'un système d'arêtes permettant l'écoulement vers la cuve centrale des substances pouvant être entraînées à l'intérieur de l'automobile par les chaussures de l'utilisateur ainsi qu'un plateau reposant devant les pédales et comportant une série de rainures longitudinales.

Les objectifs mentionnés ci-dessus ainsi que d'autres objectifs de l'invention deviendront plus apparents avec la progression de la description de l'invention et l'examen des dessins ci-joints parmi  
5 lesquels:

la figure 1 représente une vue en perspective d'une réalisation de l'invention du tapis montré à la figure 1;

10

la figure la est une pastille d'agrandissement d'une partie du tapis montré à la figure 1 représentant une arête inclinée;

15

la figure 2 représente une coupe longitudinale du tapis montré à la figure 1 selon les flèches I et II;

20

la figure 3 représente une coupe transversale du tapis montré à la figure 1 selon les flèches III et IV.

25

Le tapis 10 comporte une portion horizontale 12 et une portion inclinée 14. La portion horizontale est conçue de manière à reposer à plat sur le sol de l'automobile à l'avant d'un des sièges avants. La portion inclinée 14 est destinée à reposer sur la paroi inclinée de l'automobile sise derrière les pédales.

30

La portion horizontale 12 comporte une cuve centrale 16 qui est conçue de manière à accumuler différents contaminants comme l'eau sale, la neige, le calcium, le sable et la boue qui autrement pourraient être

absorbés par le bas des vêtements et plus particulièrement des pantalons de l'usager. La cuve 16 est de forme généralement rectangulaire et est formée d'un fond plat 18 et de quatre (4) parois verticales 19, 20, 21 et 22.

5

Un système d'arêtes 32 verticales et parallèles est aménagé à l'intérieur de la cuve 16. La hauteur des arêtes est approximativement la même que la profondeur de la cuve. Ces arêtes forment un support qui empêche l'extrémité inférieure des vêtements et plus particulièrement la pointe des pantalons d'un usager d'entrer en contact avec les substances accumulées sur le fonds 18 de la cuve 16.

15

Les arêtes 32 sont disposées en diagonale dans la cuve afin de bloquer tout mouvement d'inertie de l'eau et/ou autres contaminants qui pourraient provoquer le débordement de ceux-ci lors, par exemple, d'un freinage violent.

20

Il est préférable que la superficie du sommet de chaque arête 32 soit réduite le plus possible de façon à limiter l'accumulation d'humidité, de neige, de calcium, de sable, de boue et/ou d'autres contaminants semblables sur celle-ci. Il est également préférable que les sommets des arêtes 32 soient relativement rapprochés les uns des autres (par exemple, un-quart de pouce) afin d'accentuer la protection des vêtements et plus particulièrement du pantalon et augmenter le blocage du mouvement de l'eau et autres contaminants par effet d'inertie.

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5 La portion horizontale 12 du tapis comprend également des bavettes latérales 24 et 26 comportant respectivement une série d'arêtes 60 et 50 qui sont disposées perpendiculairement à l'axe longitudinal du tapis ainsi qu'une bavette arrière 30 et un plateau avant 28. Les bavettes latérales, la bavette arrière et le plateau avant sont tous disposés sur un même plan horizontal qui intersecte le haut des parois verticales 19 à 22. Ces bavettes et plateau sont supportés par des 10 moyens appropriés, par exemple, des ailettes 72 et 73. Le plateau avant 28 comporte une série de rainures 70 légèrement inclinées vers la cuve de manière à faciliter l'écoulement de l'eau et autres contaminants provenant de la portion inclinée 14 et du plateau 28 vers la cuve 15 16.

20 Ces arêtes 60 et 50 sont destinées à canaliser les contaminants vers la cuve 16 et à soutenir le bas des vêtements et à l'empêcher d'entrer en contact avec les contaminants pouvant se trouver sur les bavettes 24 et 26.

25 La portion inclinée 14 est composée d'un système d'arêtes longitudinales 40 et de deux (2) arêtes inclinées 42 et 44 canalisant l'eau vers les rainures 70.

30 Le tapis peut être fabriqué de toute matière adéquate, tel que le caoutchouc, le vinyl, etc. Le tapis est préférablement fabriqué d'une seule pièce et est dimensionné de manière à assurer la rigidité voulue.

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5 Il est également préférable que les canaux 33 formés entre les arêtes 32 communiquent les uns avec les autres. Une façon de réaliser cette communication est de laisser un espace entre l'extrémité des arêtes 32 et les parois verticales 19, 20, 21 et 22 de la cuve 16.

10 Bien que l'invention ait été illustrée à l'aide d'une incarnation, elle ne doit pas être limitée à celle-ci. Il est clair que de nombreux ajouts, modifications et autres changements peuvent être effectués sans pour cela sortir du cadre ou de l'esprit de la présente invention, tel qu'elle apparaît dans la présente description et les revendications y jointes.



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Les réalisations ou incarnations de l'invention, au sujet desquelles un droit exclusif de propriété ou de privilège est revendiqué, sont définies comme il suit:

- 1) Un tapis d'automobile amovible destiné à protéger les vêtements des passagers de l'automobile comprenant une cuve centrale à l'intérieur de laquelle est aménagé un système d'arêtes rapprochées, verticales, parallèles et substantiellement pointues, un plateau reposant devant les pédales et des moyens pour canaliser vers la cuve les contaminants pouvant y être déposés.
- 2) Un tapis d'automobile, tel que défini à la revendication 1 dont les arêtes sont disposées non longitudinalement dans la cuve.
- 3) Un tapis d'automobile, tel que défini à la revendication 2, comportant des canaux formés entre les arêtes qui communiquent les uns avec les autres.
- 4) Un tapis d'automobile, tel que défini à la revendication 2, dont les arêtes sont disposées en diagonale dans la cuve.
- 5) Un tapis d'automobile, tel que défini à la revendication 4, comportant des canaux formés entre les arêtes qui communiquent les uns avec les autres.

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- 6) Un tapis d'automobile, tel que défini à la revendication 1, 4 ou 5, comprenant deux (2) bavettes latérales.
- 7) Un tapis d'automobile, tel que défini à la revendication 1, 4 ou 5, comprenant deux (2) bavettes latérales comportant des arêtes perpendiculaires à l'axe longitudinal du tapis.
- 8) Un tapis d'automobile, tel que défini à la revendication 1, 4 ou 5, comprenant une partie reposant derrière les pédales.
- 9) Un tapis d'automobile, tel que défini à la revendication 1, 4 ou 5, comprenant une partie reposant derrière les pédales comportant des moyens pour canaliser vers la cuve les contaminants pouvant y être déposés.
- 10) Un tapis d'automobile, tel que défini à la revendication 1, 4 ou 5, comprenant une partie reposant derrière les pédales comportant un système d'arêtes longitudinales.
- 11) Un tapis d'automobile, tel que défini à la revendication 1, 4 ou 5, comprenant une partie reposant derrière les pédales comportant un système d'arêtes longitudinales et des arêtes inclinées.

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- 12) Un tapis d'automobile, tel que défini à la revendication 1, 4 ou 5, comprenant une partie reposant derrière les pédales comportant un système d'arêtes longitudinales et des arêtes inclinées canalisant les contaminants pouvant être déposés sur cette partie vers la cuve.
- 13) Un tapis d'automobile, tel que défini à la revendication 1, 4 ou 5, dont la cuve est de forme rectangulaire et a des parois verticales.
- 14) Un tapis d'automobile, tel que défini à la revendication 1, 4 ou 5, dans lesquelles les moyens de canalisation vers la cuve comprennent une série de rainures longitudinales.
- 15) Un tapis d'automobile amovible destiné à protéger les vêtements des passagers de l'automobile comprenant une cuve centrale à l'intérieur de laquelle est aménagée un système d'arêtes rapprochées, verticales, parallèles et substantiellement pointues et deux bavettes latérales comportant des arêtes perpendiculaires à l'axe longitudinal du tapis.
- 16) Un tapis d'automobile, tel que défini à la revendication 15 dont les arêtes sont disposées non longitudinalement dans la cuve.

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- 17) Un tapis d'automobile, tel que défini à la revendication 16 comportant des canaux formés entre les arêtes qui communiquent les uns avec les autres.
- 18) Un tapis d'automobile, tel que défini à la revendication 16 dont les arêtes sont disposées en diagonales dans la cuve.
- 19) Un tapis d'automobile, tel que défini à la revendication 18, comportant des canaux formés entre les arêtes qui communiquent les uns avec les autres.
- 20) Un tapis d'automobile, tel que défini à la revendication 15, 18 ou 19, comprenant une partie reposant derrière les pédales.
- 21) Un tapis d'automobile, tel que défini à la revendication 15, 18 ou 19, comprenant une partie reposant derrière les pédales comportant des moyens pour canaliser vers la cuve les contaminants pouvant y être déposés.
- 22) Un tapis d'automobile, tel que défini à la revendication 15, 18 ou 19, comprenant une partie reposant derrière les pédales comportant un système d'arêtes longitudinales.
- 23) Un tapis d'automobile, tel que défini à la revendication 15, 18 ou 19, comprenant une

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partie reposant derrière les pédales comportant un système d'arêtes longitudinales et des arêtes inclinées.

- 24) Un tapis d'automobile, tel que défini à la revendication 15, 18 ou 19, comprenant une partie reposant derrière les pédales comportant un système d'arêtes longitudinales et des arêtes inclinées canalisant des contaminants pouvant être déposés sur cette partie vers la cuve.
- 25) Un tapis d'automobile, tel que défini à la revendication 15, 18 ou 19, dont la cuve est de forme rectangulaire et a des parois verticales.
- 26) Un tapis d'automobile, tel que défini à la revendication 15, 18 ou 19, comprenant un plateau reposant devant les pédales et comportant une série de rainures longitudinales.
- 27) Un tapis d'automobile amovible destiné à protéger les vêtements des passagers de l'automobile comprenant une cuve centrale à l'intérieur de laquelle est aménagé un système d'arêtes rapprochées, verticales, parallèles et substantiellement pointues et une partie reposant derrière les pédales comportant un système d'arêtes longitudinales et des arêtes inclinées.
- 28) Un tapis d'automobile tel que défini à la revendication 27, dont les arêtes sont disposées non longitudinalement dans la cuve.

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- 29) Un tapis d'automobile, tel que défini à la revendication 28, comportant des canaux formés entre les arêtes qui communiquent les uns avec les autres.
- 30) Un tapis d'automobile, tel que défini à la revendication 28, dont les arêtes sont disposées en diagonales dans la cuve.
- 31) Un tapis d'automobile, tel que défini à la revendication 30, comportant des canaux formés entre les arêtes qui communiquent les uns avec les autres.
- 32) Un tapis d'automobile, tel que défini à la revendication 27, 30 ou 31, comprenant deux bavettes latérales.
- 33) Un tapis d'automobile, tel que défini à la revendication 27, 30 ou 31, dont la cuve est de forme rectangulaire et a des parois verticales.
- 34) Un tapis d'automobile, tel que défini à la revendication 27, 30 ou 31, comprenant un plateau reposant devant les pédales et comportant une série de rainures longitudinales.
- 35) Un tapis d'automobile amovible fabriqué dans une matière souple comprenant:
- a) une cuve centrale, à l'intérieur de laquelle est aménagé un système d'arêtes verticales, parallèles, à section triangulaire,

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- b) une partie reposant derrière les pédales composée d'un système d'arêtes longitudinales et de deux (2) arêtes inclinées, et
  - c) deux (2) bavettes latérales comportant des arêtes perpendiculaires à l'axe longitudinal du tapis.
- 36) Un tapis d'automobile amovible, tel que défini à la revendication 35, dont la cuve centrale est de forme rectangulaire, a des parois verticales et est pourvu tout spécialement d'un ensemble d'arêtes triangulaires disposées en diagonale dans ladite cuve.
- 37) Un tapis d'automobile amovible, tel que défini à la revendication 35, dont la partie située à l'arrière des pédales de l'automobile comporte deux (2) arêtes inclinées dites "bavettes de relèvement", droite et gauche, canalisant l'eau s'écoulant entre les arêtes vers l'intérieur de la cuve.

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ANDRE DUPONT et PAUL LAURENT

*Abraham Rosenstein*  
LAPointe ROSENSTEIN  
leurs agents de brevets

2-1

par:

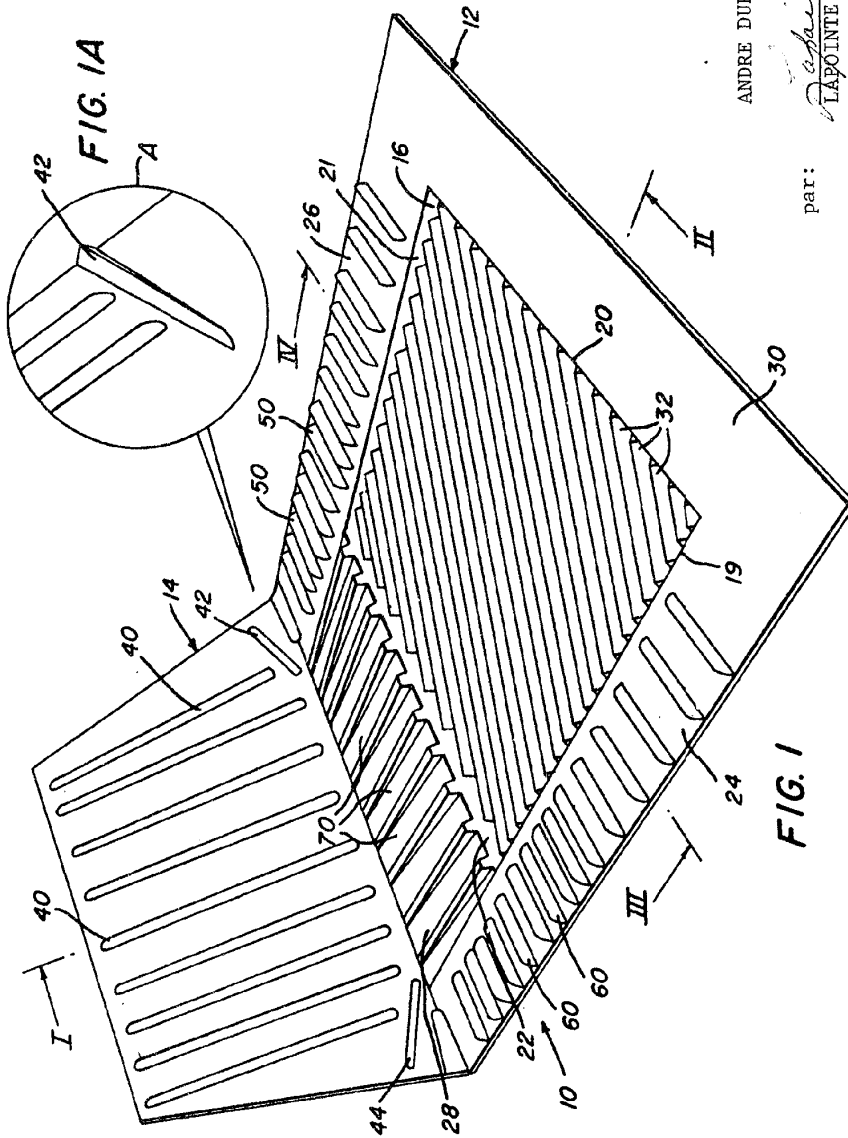


FIG. 1





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ANDRE DUPONT et PAUL LAURENT

par: *Depointe Rosenstein*  
LAPOINTE ROSENSTEIN  
leurs agents de brevets

2-2

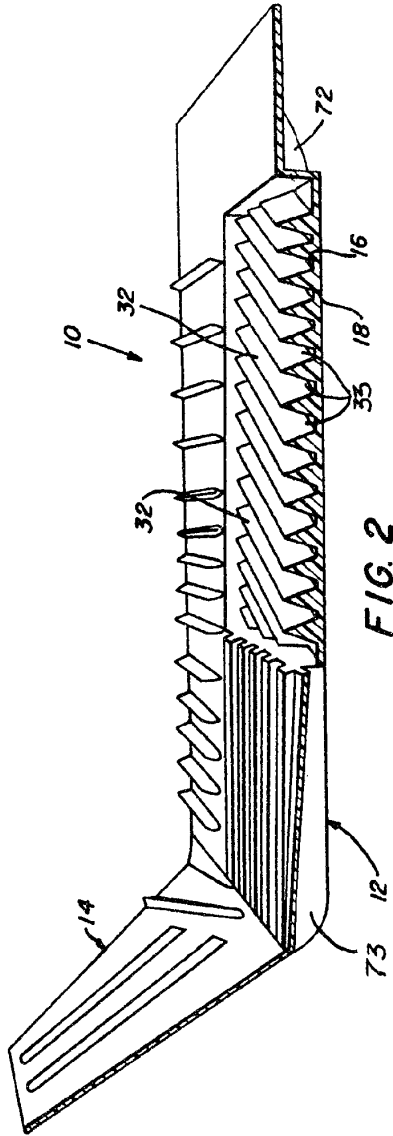


FIG. 2

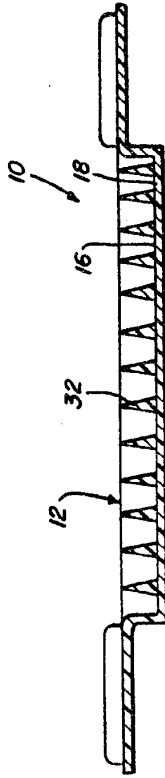


FIG. 3

## © EPODOC / EPO

PN - CA1198466 A 19851224  
 PNFP - CA1198466 B 00000000  
 AP - CA19850467009 19850122  
 PA - (B) DUPONT ANDRE; LAURENT PAUL  
 IN - (B) DUPONT ANDRE; BEAUJARDIN BERNARD; LAURENT PAUL  
 PR - CA19850467009 19850122  
 TI - (B) CAR MAT  
 IC - (B) B60N3/04  
 ICAI - (A B) B60N3/04  
 ICCI - (A B) B60N3/04  
 EC - B60N3/04C

## © WPI / DERWENT

AN - 1986-028628 [05]  
 TI - Moulded car floor mat with ribbed pump for drainage from foot-wear - sump ribs being closed together to keep users clothing out of drainage  
 AB - CA1198466 A moulded mat for a loose lining for a vehicle cabin footwell has one horizontal portion for covering the floor and an integral inclined portion for lining the front of the footwell, where the portion incorporates a shallow sump, to collect rain, snow, mud etc. from the users' shoes, traversed by ribs close enough together to prevent the users' clothes, esp. trouser legs or skirts, from dipping into the material collected in the sump.  
 - Pref. the sump is surrounded by flat borders with transverse ribs and has an apron with sloping gulleys to guide drainings from inclined portion into shallow sump. It also features longitudinal and oblique ribs to guide the drainings and support the user's shoes clear of its surface. Typically the mat is made of rubber or vinyl (flexible PVC) moulding material, with the peaks of the ribs in the sump about 1/4 in. apart. (16pp Dwg.No.0/3)  
 PN - CA1198466 A 19851224 DW198605 016pp  
 AP - CA19850467009 19850122  
 PA - (DUPO-I) DUPONT A  
 CPY - DUPO-I  
 IN - BEAUJARDIN B; LAURENT P  
 PR - CA19850467009 19850122  
 OPD - 1985-01-22  
 ORD - 1985-12-24  
 IW - MOULD CAR FLOOR MAT RIB PUMP DRAIN FOOT WEAR SUMP RIB CLOSE KEEP USER CLOTHING DRAIN  
 IC - B60N3/04  
 MC - A12-T04B  
 DC - A95 Q14

(11) (A) No. 1101016

(45) ISSUED 810512

(52) CLASS 296-80

(51) INT. CL. B60N 3/04<sup>2</sup>

(19) (CA) **CANADIAN PATENT** (12)

(54) FLOOR MAT

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No. OF CLAIMS 10

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ABSTRACT OF THE DISCLOSURE

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A floor mat having an upper and an underside, and a forward and rear end, and in which the upper side is provided with a tread portion, having a multiplicity of water flow guide-ways or channels or grooves, communicating with the rear end of the mat, and guiding water flow from the front towards the rear of the mat, and further having water collectors at the rear end of the mat, below the plane of the water guide-ways, in which water may collect.

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The invention relates to a floor mat especially for use in automobiles and other vehicles.

In bad weather, water, snow, mud and the like accumulate on the floor of an automobile. In many cases the water or melted snow will then simply rot the carpet, and corrode the floor of the vehicle. Various rubber and plastic floor mats are available. However, in the great majority of cases, the volumes of water and melted snow are such that the water simply flows off the mat into the carpet. This is particularly true  
10 when it is considered that the vehicle is subjected to acceleration, or deacceleration which will cause the water to flow backwardly or forwardly off the mat.

For all of these reasons it is therefore desirable to provide a floor mat for vehicles which both controls the flow of water on the mat, and guides it in a particular direction, and in addition, which also provides water collectors or recesses, in which the water may be collected, and from which it may readily be removed.

## BRIEF SUMMARY OF THE INVENTION

20 With these general objectives in mind, the invention provides a floor mat having an upper and an underside, and a forward and rear end, and in which the upper side is provided with a tread portion, having a multiplicity of water flow guide-ways or channels or grooves, communicating with the rear end of the mat, and guiding water flow from the front towards the rear of the mat, and further having water collectors at the rear end of the mat, below the plane of the water guide-ways, in which water may collect.

A further feature of the invention is the provision  
30 of partition walls in the water collectors to restrain the



water from surging to and fro during driving of the vehicle.

The invention further provides, on the underside of the tread portion of the floor mat, any suitable form of padding raising the level of the water guide-ways above that of the water collectors, so that water flowing down the water guide-ways and accumulating in the collectors will not flow in the reverse direction.

Preferably, the structure of the water collectors will be of flexible rubber material. In this way any water collecting therein, which may freeze, can still be readily removed as ice cubes.

The various features of novelty which characterize the invention are pointed out with particularity in the claims annexed to and forming a part of this disclosure. For a better understanding of the invention, its operating advantages and specific objects attained by its use, reference should be had to the accompanying drawings and descriptive matter in which there are illustrated and described preferred embodiments of the invention.

IN THE DRAWINGS:-

Figure 1 is a perspective illustration showing the interior of an automobile, with the floor mat according to the invention shown in position in the passengers compartment;

Figure 2 is a perspective illustration showing the upper side of the invention;

Figure 3 is a section along the line 3-3 of Figure 2;

Figure 4 is a lower perspective illustration of the underside of the invention;

Figure 5 is a section along the line 5-5 of Figure 2, and,

Figure 6 is a section along the line 6-6 of Figure 2.

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As shown in the drawings, the floor mat according to the invention is provided with a tread portion having an upper surface 10 having a series of alternate longitudinal ribs or ridges 12 and intervening grooves or channels 14 constituting water guide-ways, running from the front or forward edge 16 of the mat, towards the rearward end 18.

The ridges 12 are carried on a generally horizontal web portion 20. A perimeter wall 21 is raised above the ribs or ridges 12 and closes off the front end of the  
10 grooves 14.

On the underside 22 of the tread portion of the mat, there is provided a honey-comb pad formation consisting of spacer walls 24, the function of which is to hold the web 20 at a predetermined elevation.

At the rearward end 18, a pair of side walls 26, and intermediate partition walls 26a, cooperate with end walls 28, and intermediate wall 30, and a bottom wall 32, to provide a group of water collectors or recesses. Bottom wall 32 is  
20 located below the plane of web 20, and is generally co-planar with the lower edges of the spacer walls 24. The open rear ends of the grooves 14 will permit water to flow downwardly over the intermediate wall 30 into these collectors, where such water will collect, and be unable to flow back again into the upper surface of the mat 10.

The walls 26,28,30, and 32 are generally speaking of flexible material so that if the water freezes, the walls may expand, and at the same time cubes of ice may simply be snapped out.

The use of the floor mat is self-evident. Water  
30 will simply collect in the grooves 14, and as the vehicle

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accelerates it will flow back into the water recesses defined by the walls 26,28,30, and 32. At the end of the day, the water collected there may simply be dumped out. Alternatively, if it freezes, then the ice may simply be snapped out.

The ease of removal of water is a particular advantage. Removal of water from a conventional rubber mat has to be carried out with great care. The mat flexes when it is lifted. Water will then run off the mat. In the invention however, the collectors can easily be held steady while lifting so that the water will not escape.

In this way a substantial portion of the water, snow, etc., entering the car on the shoes of the driver or passenger will be retained and discarded so that it does not simply soak into the mat, or corrode the metal of the vehicle.

Additional partition walls 28a and 26b of reduced height in relation to walls 26a may usefully be provided to sub-divide the collectors into smaller compartments. In this way, surging of water during driving of the vehicle is restrained. Such walls 28a and 26b may, if desired be removable but for simplicity are preferably integral with the mat 10. The entire mat 10 is usefully molded as a one-piece integral structure of for example rubber, thermo-plastic or the like.

Supplementary Disclosure

Where a lighter weight mat, or a mat having a larger surface area is required, the mat becomes too flexible. As a result, when it is lifted up some of the water runs off.

In order to overcome this, a modified mat is shown in the following further illustrations:

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Figure 7 is a perspective of a further embodiment;  
Figure 8 is a side elevation of the mat of Figure 7;  
Figure 9 is a section along the line 9-9 of Figure 7;  
Figure 10 is a section along the line 10-10 of Fig. 7;  
Figure 11 is a section along the line 11-11 of Fig. 7;  
Figure 12 is a section along the line 12-12 of Fig. 7, and,  
Figure 13 is a section along the line 13-13 of Figure 7.

Such a mat has an upper surface 10a having ridges 12a  
and grooves 14a, similar to the mat of Figure 1. It is,  
10 however, traversed by one or more hinge formations 40,42, (two  
such formations being shown as a matter of convenience only,  
without limitation) the ridges 12a being discontinuous at  
hinges 40,42, to permit folding of the web 20a.

The mat also incorporates water collectors formed by  
walls 26a-b and 28a-b.

On the underside, spacer walls 24a are also inter-  
rupted at hinges 40,42, for the same purpose to permit folding  
along such hinge lines.

The front portion of the modified mat, i.e. from front  
20 edge 16 to hinge formation 42, and on its underside it may be  
free of spacer walls 24. It can be flexed and tilted up to  
lie against and conform to the fire wall of a vehicle without  
obstructing use of the pedals. If desired, it may be pro-  
vided with small, pointed formations 44 on its underside for  
gripping the carpet of a vehicle.

Handles 46 can be provided on either side of the mat,  
near the rear end 18 for lifting it.

In use, when the collectors or recesses are full of  
water, the mat is folded over along hinges 40 and 42. The  
30 handles 46 are then grasped and the mat can be lifted out of

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the vehicle and the water poured off. The mat, when folded up is much less likely to flex unexpectedly and dump the water before it is removed from the vehicle.

Such a mat can thus be made larger in surface area, and of thinner material while still functioning to effectively collect and remove water, etc., from the vehicle.

In addition to these advantages, it is found that by the use of this modified form of the invention, it is possible to provide a water collector type of mat in accordance with the invention, having a front end portion which may fold up or lie at an upward angle against the fire wall of the vehicle, without unduly distorting the shape of the mat.

This arises because of the fact that, whereas a relatively thin flexible type of mat such as has been used in the past, may fairly readily flex upwardly and lie against the fire wall of the vehicle, when thicker material is used, such as is in the case of the present invention, to provide a true water collecting type function, the upward flexing of a mat against the fire wall produces various undesirable results. In particular, the mat does not lie flat against the floor of the vehicle, and consequently the use of the control pedals and the like is subject to interference from the mat.

In addition, the mat when flexed upwardly, it tends to have a relatively substantial degree of inherent resilience, and is consequently sliding backwardly down the fire wall.

By the use of the present invention, incorporating hinge formations transversely across the mat, it is possible to overcome this problem so that notwithstanding the greater thickness of the mat, it will still lie flat both on the floor

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and the fire wall of the vehicle without either interfering with the use of the vehicle, and without exhibiting a tendency to slide rearwardly.

Having described what is believed to be the best mode by which the invention may be performed, it will be seen that the invention may be particularly defined as follows:

A two-level floor mat for horizontal floors such as floors in motor vehicles, and comprising a tread portion having a longitudinal axis and having a plurality of longitudinal grooves therein parallel to such axis such grooves defining a predetermined water level for flow of water there-  
10 along, pad means under said tread portion having a lower surface adapted to lie horizontal on said horizontal floor and locating said tread portion and said grooves at a predetermined level raised above the horizontal floor, water collector means located at one end of said tread portion with said grooves in water flow communication therewith, said collector means having a bottom wall portion lying at a  
20 second predetermined level below the level of said tread portion and said grooves whereby water flowing along said grooves will flow downwardly into said collector means and collect therein, and will not subsequently readily flow forwardly into said grooves, and, an undersurface forming part of said bottom wall portion and lying on said floor co-planar with said lower surface of said pad means whereby in use on said horizontal floor, said tread portion, and said collector means both are supported horizontal, but in different planes.

The invention further comprises a floor mat having  
30 the foregoing features wherein said tread portion comprises

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a web, a plurality of upstanding ridges defining grooves therebetween, and a perimeter wall around the front and two sides thereof higher than said ridges.

The invention further comprises a floor mat having the foregoing features wherein said pad means comprises a plurality of wall formations formed on the underside of said web.

10 The invention further comprises a floor mat having the foregoing features wherein said water collector means comprises a front wall, a back wall and two side walls, said front wall being in flow communication with said web, and including a plurality of partition walls dividing said collector means into a plurality of smaller spaces.

The foregoing is a description of a preferred embodiment of the invention which is given here by way of example only. The invention is not to be taken as limited to any of the specific features as described, but comprehends all such variations thereof as come within the scope of the appended claims.

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The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A two-level floor mat for horizontal floors such as floors in motor vehicles, and comprising;

a tread portion having a longitudinal axis and having a plurality of longitudinal grooves therein parallel to such axis such grooves defining a predetermined water level for flow of water therealong;

pad means under said tread portion having a lower surface adapted to lie horizontal on said horizontal floor and locating said tread portion and said grooves at a predetermined level raised above the horizontal floor;

water collector means located at one end of said tread portion with said grooves in water flow communication therewith, said collector means having a bottom wall portion lying at a second predetermined level below the level of said tread portion and said grooves whereby water flowing along said grooves will flow downwardly into said collector means and collect therein and will not subsequently readily flow forwardly into said grooves, and,

an undersurface forming part of said bottom wall portion and lying on said floor co-planar with said lower surface of said pad means whereby in use on said horizontal floor, said tread portion, and said collector means both are supported horizontal, but in different planes.

2. A floor mat as claimed in Claim 1 wherein said tread portion comprises a web, a plurality of upstanding ridges defining grooves therebetween, and a perimeter wall around the front and two sides thereof higher than said ridges.

3. A floor mat as claimed in Claim 2 wherein said pad means comprises a plurality of wall formations formed on the underside of said web.

4. A floor mat as claimed in Claim 3 wherein said water collector means comprises a front wall, a back wall and two side walls, said front wall being in flow communication with said web, and including a plurality of partition walls dividing said collector means into a plurality of smaller spaces.

10 5. A floor mat as claimed in Claim 4, including a perimeter wall around said water collector means, said perimeter wall comprising an upward extension of said back wall and the said two side walls, and reaching the same height as the perimeter wall around said tread portion, said two perimeter walls being formed integrally as a single structure, and substantially completely encircling said tread portion and said water collector means.

Claims Supported by the Supplementary Disclosure

20 6. A floor mat as claimed in Claim 1, including hinge means extending transversely of the mat intermediate its ends, whereby the same may be folded over upon itself.

7. A floor mat as claimed in Claim 6, including a plurality of upstanding ridges defining grooves therebetween, in said tread portion of said web, and including a plurality of wall formations on the underside of said web, and wherein said ridges and said wall formations are discontinued in the region of said hinge means, whereby to permit flexing of said web for folding of said mat.

30 8. A floor mat as claimed in Claim 7 wherein there are two hinge formations forming said hinge means, said hinge

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formations being arranged parallel to one another transversely across said mat, and being spaced apart whereby said mat may be folded twice.

9. A floor mat as claimed in Claim 6 including handle means extending outwardly from the sides of said mat for lifting of same.

10. A floor mat as claimed in Claim 9 wherein said two hinge formations define a front portion and an intermediate portion and a rearward portion of said mat, and wherein said front portion has an undersurface free of said wall formations whereby the same may flex upwardly and conform to the fire wall of the vehicle, and including handle means on the rearward portion of said mat, for lifting of same when folded.



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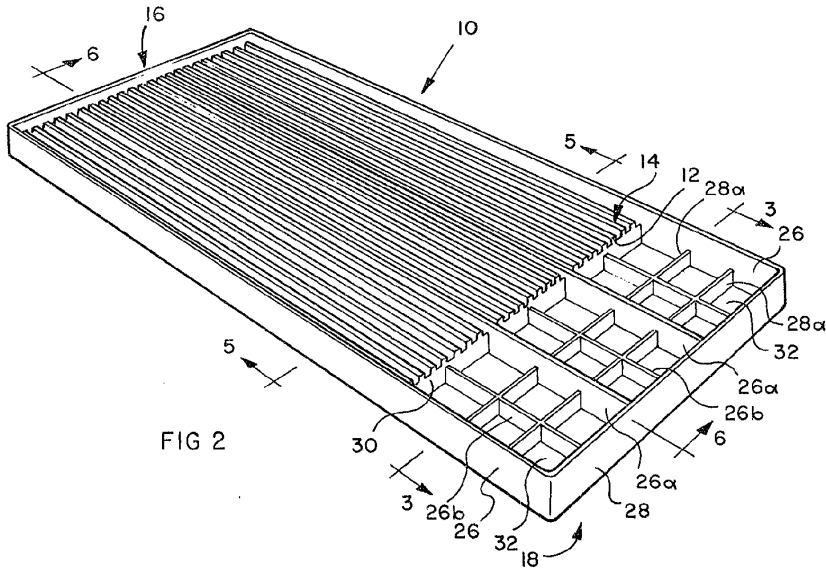


FIG 2

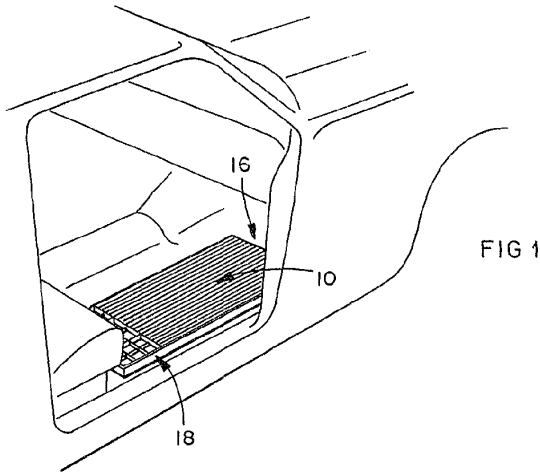


FIG 1

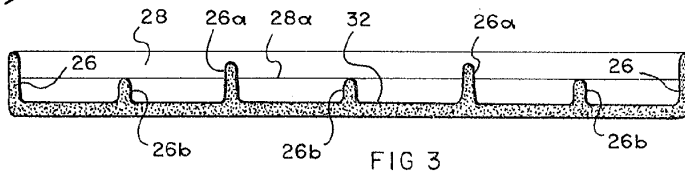


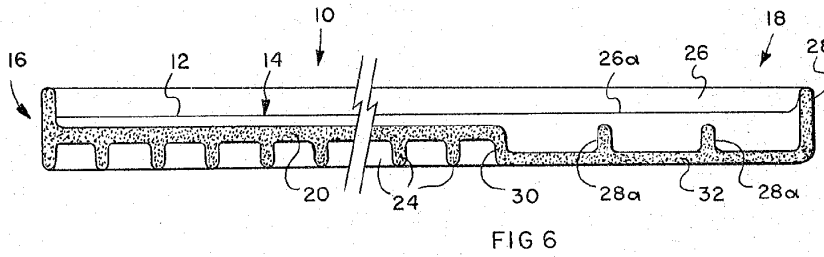
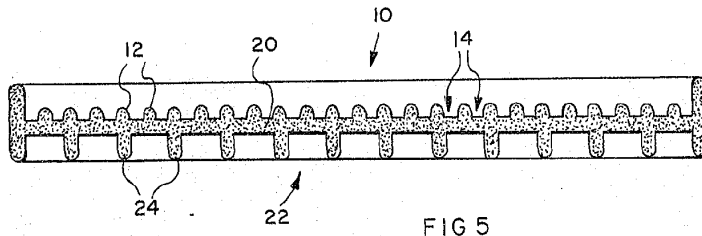
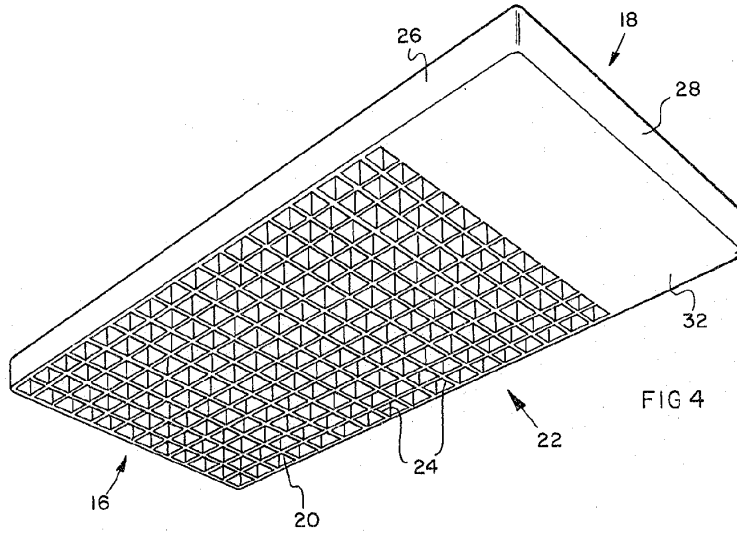
FIG 3

*Walter R. Keltner*  
Patent Agent



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*Carol K. Kelly*  
Patent Agent

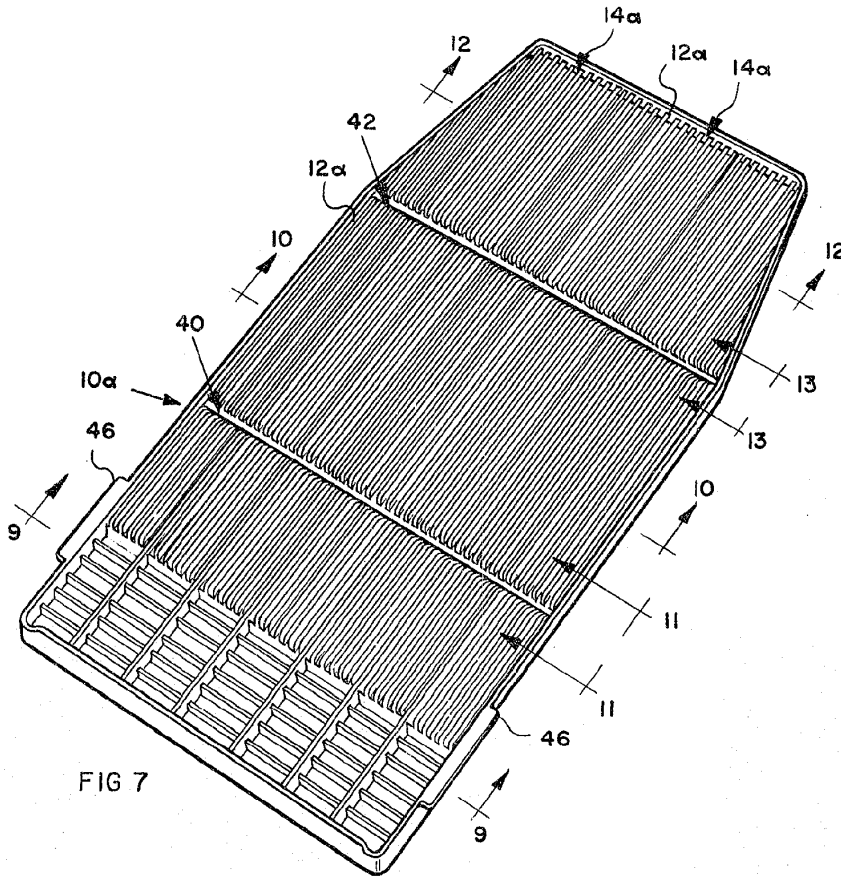


FIG 7

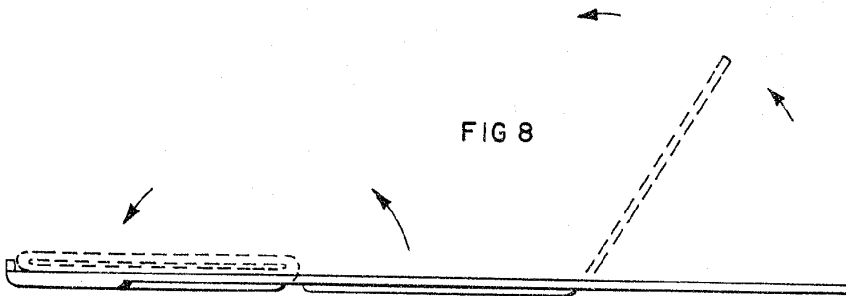


FIG 8

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*Carol M. White*  
Patent Agent

4-4

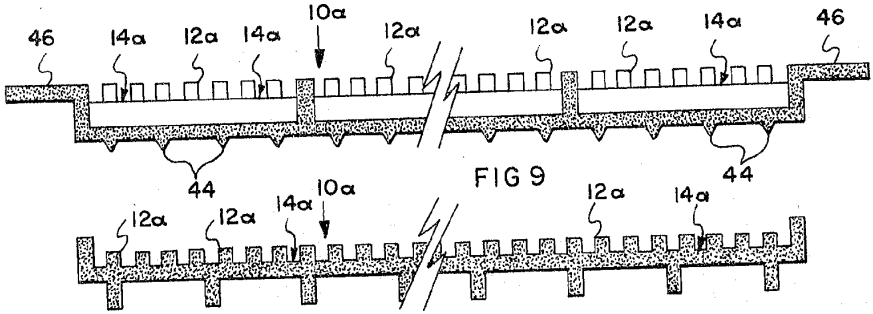


FIG 10

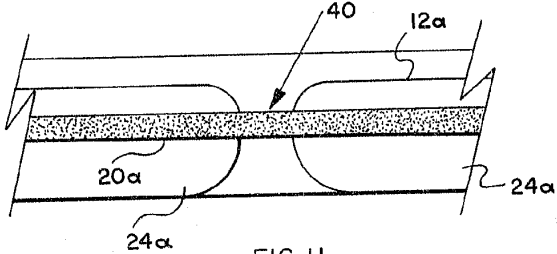


FIG II

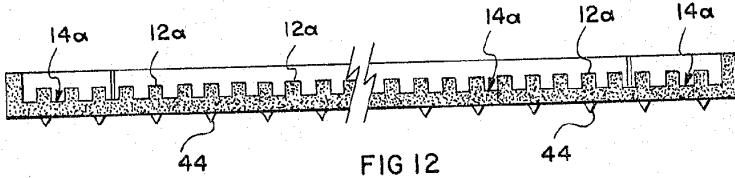


FIG 12

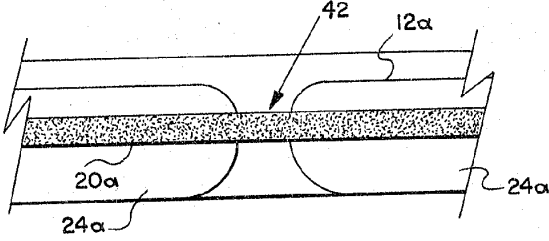


FIG 13

*Patent Agent*  
 Patent Agent

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: David F. MACNEIL

Application Number: not yet assigned

Filing date: herewith

Art Unit: 3612

Examiner:

Confirmation Number:

Title: DESIGNING AND MANUFACTURING VEHICLE FLOOR TRAYS

CUSTOMER NUMBER: **43138**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. §1.97(B)**

Dear Sir:

Pursuant to 37 C.F.R. §§ 1.56 and 1.97(b), Applicant brings to the attention of the Examiner the documents listed on the form PTO/SB/08A electronically filed herewith. This Information Disclosure Statement is being filed prior to receipt of the first Office Action on the merits. Applicant encloses copies of those listed documents other than those which are US patents, US published patent applications, or which have been made of record in an application upon which Applicant relies for a priority date under 35 USC § 120. 37 CFR § 1.97(d).

Applicant respectfully requests that the Examiner consider the listed documents, and evidence that consideration of relevant portions thereof by making appropriate notations on the attached forms.

*Discussion of Specific References*

Textiles Plastiques Chomarat, EP 0968875: This European Patent Application was published in French and Applicant does not possess a complete translation of it. Applicant submitted, in the prosecution history of the parent application (No. 10/976,441) the esp@cenet English Abstract, and a copy of the English-language claims in the later-issued European patent (which itself has a date too late to be considered as prior art to this Application). The claims as issued do not match those which appear in the laid-open publication but nonetheless give some idea of the contents of the A1 publication. It is believed that the Chomarat reference discloses a two-layer vehicle floor mat in which both layers are made from a polyolefin, more particularly a polyethylene. The base or support layer is constituted by a highly filled low density polyethylene (LDPE) while the surface layer is made of a combination of LDPE, high density polyethylene (HDPE), ethylene vinyl acetate (EVA) and fillers.

DuPont et al., CA 1198466: This Canadian patent was issued in French and Applicant does not possess a complete translation of it. Applicant submits herewith a Derwent abstract. The reference discloses a floor mat having one section for disposition adjacent the firewall and another section for disposition on the floor. The floor section includes a sump with ribs in it so that the rider's feet don't contact the collected fluid. The structure includes channels which flow into the sump.

It is believed that these references either taken alone or in combination do not disclose or suggest the invention claimed by the Applicant. However, it is the Applicant's desire to have

these references available in the record for both the Examiner and the public to see. The Applicant specifically reserves all rights of privilege and confidence with respect to this matter and submission of this document is not to be construed as a waiver of those rights. Moreover, submission of this document should not be considered an admission that the references cited herein are proper prior art to the aforementioned application.

This submission does not represent that a search has been made or that no better art exists and does not constitute an admission that each or all of the listed documents are material or constitute "prior art." If it should be determined that any of the listed documents do not constitute "prior art" under United States law, Applicant reserves the right to present to the Office the relevant facts and law regarding the appropriate status of such documents.

Applicant further reserves the right to take appropriate action to establish the patentability of the disclosed invention over the listed documents, should one or more of the documents be applied against the claims of the present application.

No fee is thought to be due with this Information Disclosure Statement. However, if there is any fee due in connection with this submission, please charge the fee to Deposit Account No. 503138 of Daspin & Aument, LLP.

Respectfully submitted,

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## Electronic Patent Application Fee Transmittal

|  |   |                 |               |                             |
|--|---|-----------------|---------------|-----------------------------|
| <b>Application Number:</b>             |   |                 |               |                             |
| <b>Filing Date:</b>                    |   |                 |               |                             |
| <b>Title of Invention:</b>             | DESIGNING AND MANUFACTURING VEHICLE FLOOR TRAYS |                 |               |                             |
| <b>First Named Inventor:</b>           | David F. MACNEIL                                |                 |               |                             |
| <b>Filer:</b>                          | Jefferson Perkins                               |                 |               |                             |
| <b>Attorney Docket Number:</b>         | 301700-00106                                    |                 |               |                             |
| Filed as Small Entity                  |   |                 |               |                             |
| <b>Utility Filing Fees</b>             |   |                 |               |                             |
| <b>Description</b>                     | <b>Fee Code</b>                                 | <b>Quantity</b> | <b>Amount</b> | <b>Sub-Total in USD(\$)</b> |
| <b>Basic Filing:</b>                   |   |                 |               |                             |
| Utility filing Fee (Electronic filing) | 4011  | 1               | 75            | 75                          |
| Utility Search Fee                     | 2111  | 1               | 250           | 250                         |
| Utility Examination Fee                | 2311  | 1               | 100           | 100                         |
| <b>Pages:</b>                          |   |                 |               |                             |
| <b>Claims:</b>                         |   |                 |               |                             |
| <b>Miscellaneous-Filing:</b>           |   |                 |               |                             |
| Publ. Fee- early, voluntary, or normal | 1504  | 1               | 300           | 300                         |
| <b>Petition:</b>                       |   |                 |               |                             |

| Description                             | Fee Code | Quantity | Amount | Sub-Total in USD(\$) |
|---|----------|----------|--------|----------------------|
| <b>Patent-Appeals-and-Interference:</b> |          |          |        |                      |
| Post-Allowance-and-Post-Issuance:       |          |          |        |                      |
| <b>Extension-of-Time:</b>               |          |          |        |                      |
| <b>Miscellaneous:</b>                   |          |          |        |                      |
| <b>Total in USD (\$)</b>                |          |          |        | <b>725</b>           |



## Electronic Acknowledgement Receipt

|  |   |
|--|---|
| <b>EFS ID:</b>                           | 1145986   |
| <b>Application Number:</b>               | 11463203  |
| <b>Confirmation Number:</b>              | 6550  |
| <b>Title of Invention:</b>               | DESIGNING AND MANUFACTURING VEHICLE FLOOR TRAYS |
| <b>First Named Inventor:</b>             | David F. MACNEIL                                |
| <b>Customer Number:</b>                  | 43138   |
| <b>Filer:</b>                            | Jefferson Perkins                               |
| <b>Filer Authorized By:</b>              |   |
| <b>Attorney Docket Number:</b>           | 301700-00106                                    |
| <b>Receipt Date:</b>                     | 08-AUG-2006                                     |
| <b>Filing Date:</b>                      |   |
| <b>Time Stamp:</b>                       | 16:59:17  |
| <b>Application Type:</b>                 | Utility   |
| <b>International Application Number:</b> |   |

### Payment information:

|   |        |
|---|--------|
| Submitted with Payment  | yes    |
| Payment was successfully received in RAM  | \$ 725 |
| RAM confirmation Number   | 343    |
| Deposit Account   | 503138 |
| The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:<br>Charge any Additional Fees required under 37 C.F.R. Section 1.16 and 1.17 |        |

### File Listing:

| Document Number     | Document Description                         | File Name                         | File Size(Bytes) | Multi Part | Pages |
|---------------------|--|-----------------------------------|------------------|------------|-------|
| 1                   | Transmittal letter                           | 30170000106AppInTransmittal.pdf   | 123209           | no         | 2     |
| <b>Warnings:</b>    |  |                                   |                  |            |       |
| <b>Information:</b> |  |                                   |                  |            |       |
| 2                   |  | 30170000106spec.pdf               | 928975           | yes        | 40    |
|                     | <b>Multipart Description</b>                 |                                   |                  |            |       |
|                     | <b>Doc Desc</b>                              |                                   | <b>Start</b>     | <b>End</b> |       |
|                     | Specification                                |                                   | 1                | 37         |       |
|                     | Claims                                       |                                   | 38               | 39         |       |
|                     | Abstract                                     |                                   | 40               | 40         |       |
| <b>Warnings:</b>    |  |                                   |                  |            |       |
| <b>Information:</b> |  |                                   |                  |            |       |
| 3                   | Drawings                                     | 30170000106dwgs.pdf               | 520224           | no         | 12    |
| <b>Warnings:</b>    |  |                                   |                  |            |       |
| <b>Information:</b> |  |                                   |                  |            |       |
| 4                   | Oath or Declaration filed                    | 30170000106copyparentinvdecl.pdf  | 70133            | no         | 2     |
| <b>Warnings:</b>    |  |                                   |                  |            |       |
| <b>Information:</b> |  |                                   |                  |            |       |
| 5                   | Application Data Sheet                       | 30170000106ADS.pdf                | 905334           | no         | 4     |
| <b>Warnings:</b>    |  |                                   |                  |            |       |
| <b>Information:</b> |  |                                   |                  |            |       |
| 6                   | Information Disclosure Statement (IDS) Filed | 30170000106IDS.pdf                | 864005           | no         | 6     |
| <b>Warnings:</b>    |  |                                   |                  |            |       |
| <b>Information:</b> |  |                                   |                  |            |       |
| 7                   | Foreign Reference                            | 30170000106CA1198466DuPontRef.pdf | 533827           | no         | 18    |
| <b>Warnings:</b>    |  |                                   |                  |            |       |
| <b>Information:</b> |  |                                   |                  |            |       |

|   |   |   |         |    |    |
|---|---|---|---------|----|----|
| 8   | Foreign Reference                               | 30170000106CA1101016Mora<br>rawskiRef.pdf         | 716317  | no | 17 |
| <b>Warnings:</b>                                |   |   |         |    |    |
| <b>Information:</b>                             |   |   |         |    |    |
| 9   | NPL Documents                                   | 30170000106UKPOSeRept<br>Cls47to66and77to78.pdf   | 225110  | no | 1  |
| <b>Warnings:</b>                                |   |   |         |    |    |
| <b>Information:</b>                             |   |   |         |    |    |
| 10  | NPL Documents                                   | 30170000106UKPOSeReptc<br>ls67to70.pdf            | 39501   | no | 1  |
| <b>Warnings:</b>                                |   |   |         |    |    |
| <b>Information:</b>                             |   |   |         |    |    |
| 11  | NPL Documents                                   | 30170000106UKPOSeRept<br>Cls71to73.pdf            | 36385   | no | 1  |
| <b>Warnings:</b>                                |   |   |         |    |    |
| <b>Information:</b>                             |   |   |         |    |    |
| 12  | NPL Documents                                   | 30170000106UKPOSeReptc<br>ls79to84and101to105.pdf | 34287   | no | 1  |
| <b>Warnings:</b>                                |   |   |         |    |    |
| <b>Information:</b>                             |   |   |         |    |    |
| 13  | NPL Documents                                   | 30170000106UKPOSeReptc<br>ls85to100.pdf           | 32818   | no | 1  |
| <b>Warnings:</b>                                |   |   |         |    |    |
| <b>Information:</b>                             |   |   |         |    |    |
| 14  | Information Disclosure Statement<br>(IDS) Filed | 30170000106IDSTransmittal<br>.pdf                 | 94517   | no | 3  |
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| 15  | Fee Worksheet (PTO-875)                         | fee-info.pdf                                      | 8476    | no | 2  |
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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.