

## (12) United States Patent

#### MacNeil

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#### (54) CLOSE-CONFORMING VEHICLE FLOOR TRAY WITH RESERVOIR

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#### Related U.S. Application Data

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	B21D 53/88	(2006.01)
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	B21B 1/46	(2006.01)
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	B62D 25/20	(2006.01)

(52) **U.S. Cl.** ...... **29/897.2**; 29/527.1; 29/407.05; 33/503; 296/97.23; 73/1.79

Field of Classification Search ...... 29/897.2, 29/527.1, 407.05; 33/503; 296/97.23; 73/1.79 See application file for complete search history.

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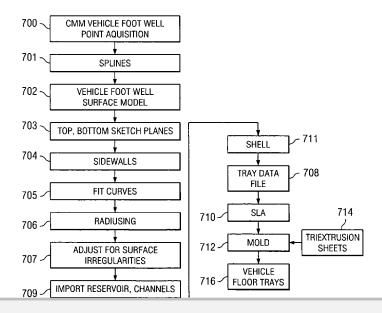
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#### **ABSTRACT** (57)

A vehicle floor tray is molded from a multiple extrusion thermoplastic polymer sheet such that it has high shear and tensile strength, an acceptable degree of stiffness and a high coefficient of friction on its upper surface. The floor tray design is digitally fitted to a foot well of a particular model of vehicle such that a lower surface of the tray is no more than one-half of an inch from a digitally acquired model of the foot well surface.

#### 5 Claims, 24 Drawing Sheets





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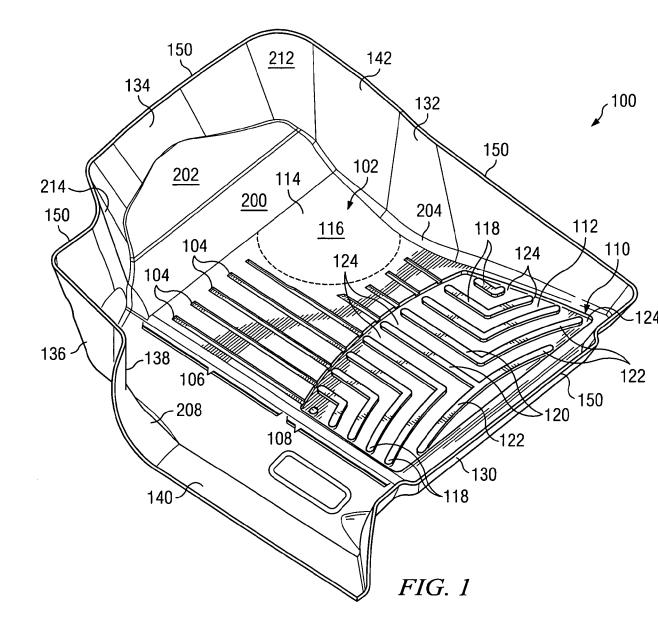
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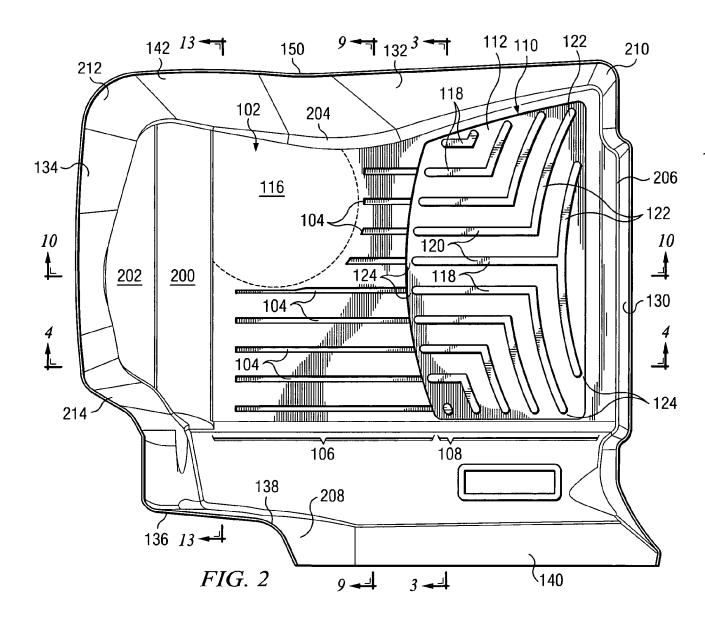
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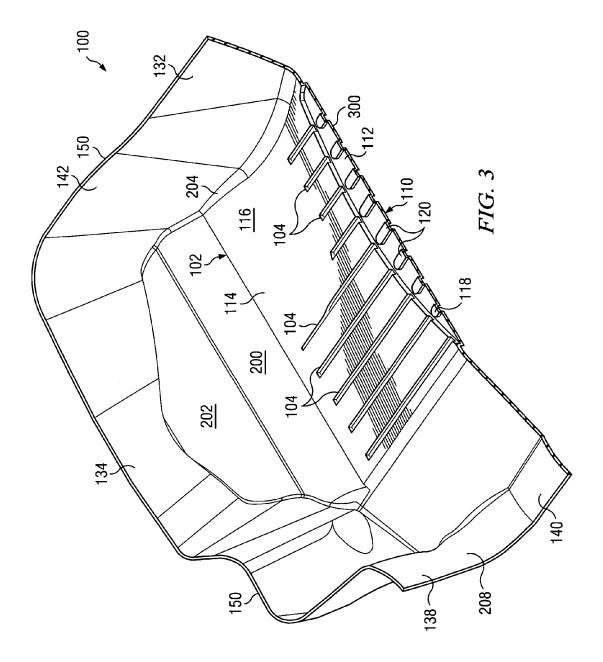














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