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McCConnell et al.

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(54) **VEHICLE UNIVERSAL DOCKING STATION AND ELECTRONIC FEATURE MODULES**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 195 days.

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(51) **Int. Cl.⁷** **H02G 3/00**

(52) **U.S. Cl.** **307/10.1; 710/303; 367/683**

(58) **Field of Search** **361/683-686; 710/300-304; 307/9.1, 10.1**

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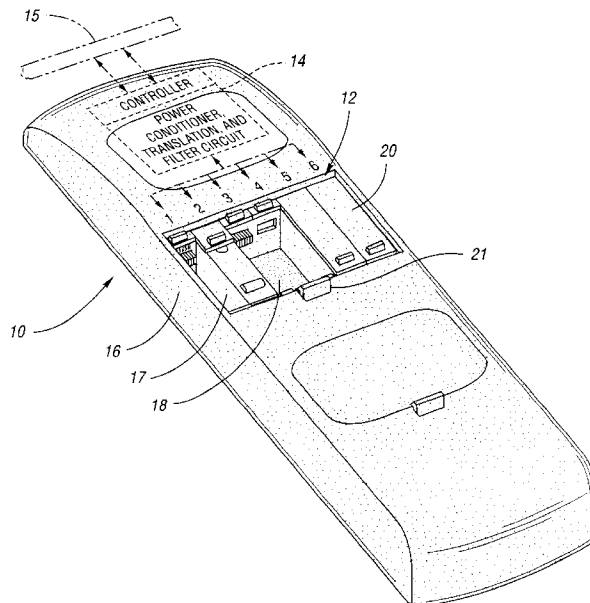
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(57) **ABSTRACT**

A smart, universal vehicle docking station is provided for receiving one or more plug-in feature modules. The docking station includes a personality module arranged to receive the feature modules. The feature modules are of uniform dimensions and include a standardized docking station coupler. Some of the feature modules can be operated separately from the docking station, and are completely interchangeable within the docking station. The personality module is removable so that an entire personality module can be removed from a vehicle for security reasons, as well as to be transplanted from one vehicle to another to provide immediate vehicle customization. A gateway located in the docking station allows integration and appropriate signal translation of signals between the modules and a vehicle irrespective of make or model of the vehicle. The present invention allows different features to be easily added or upgraded in a vehicle.

16 Claims, 12 Drawing Sheets



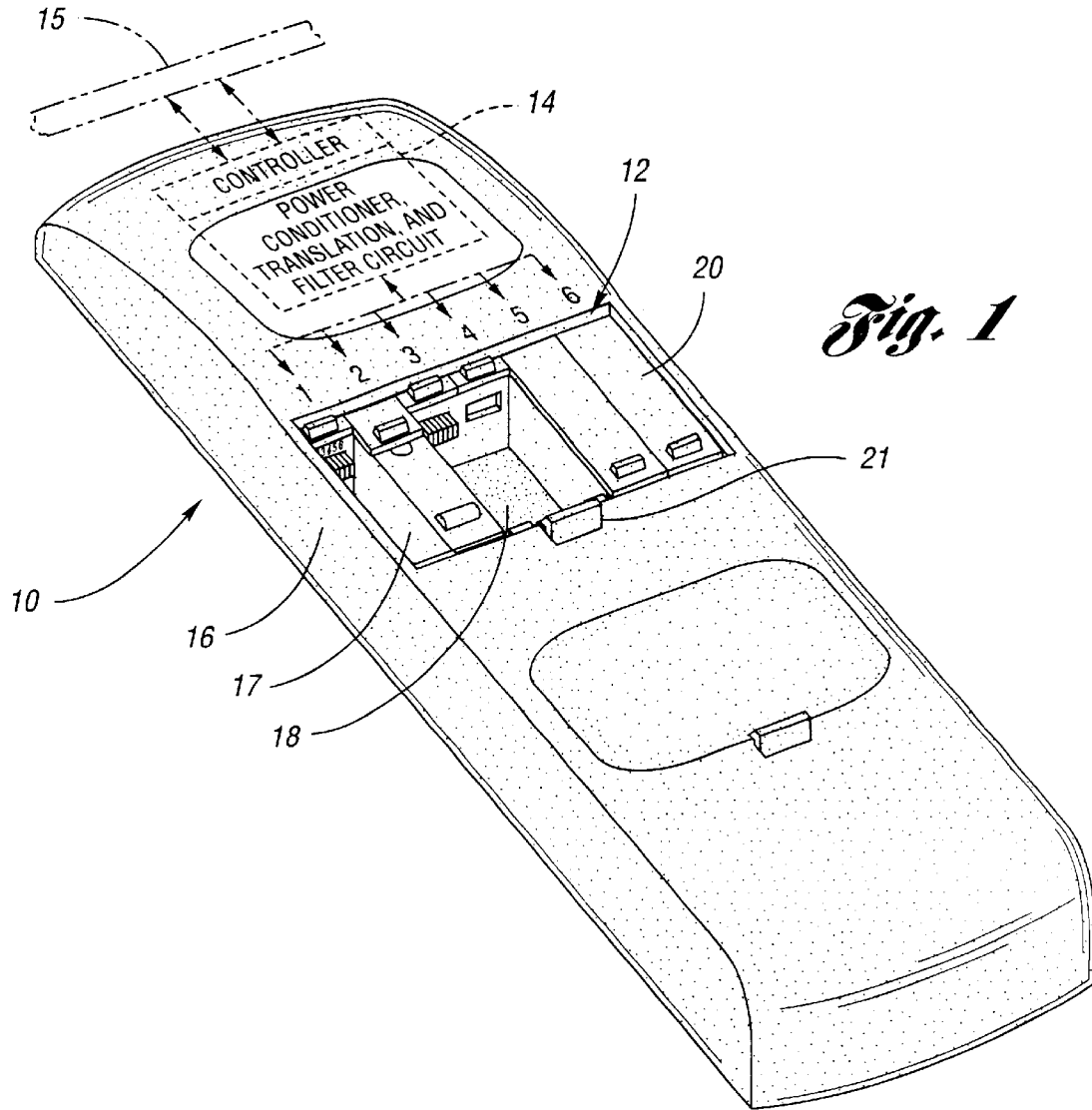


Fig. 1

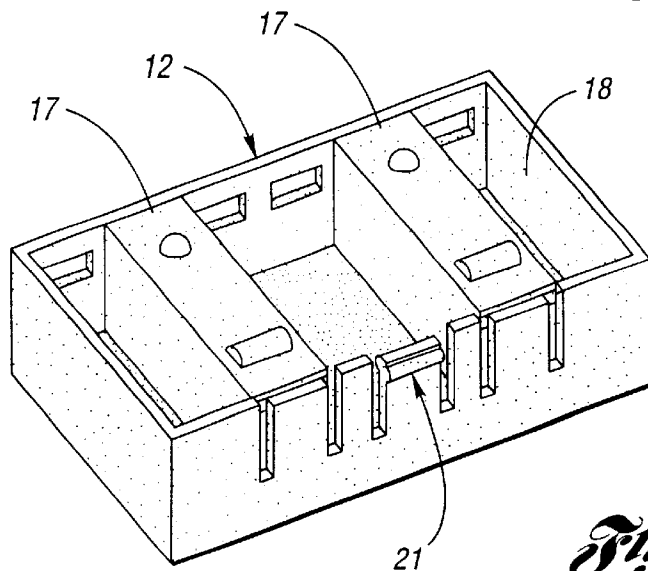


Fig. 2

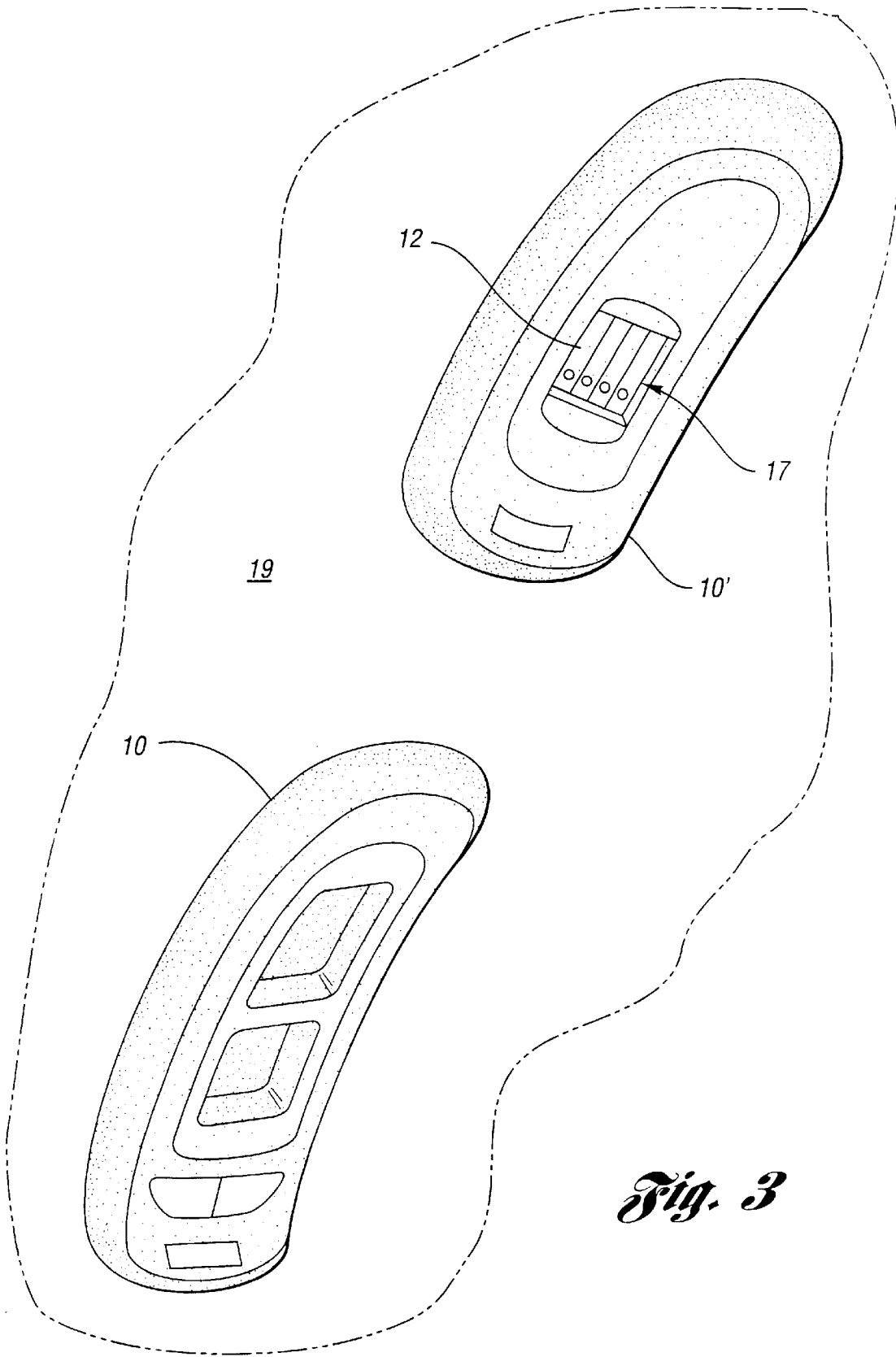


Fig. 3

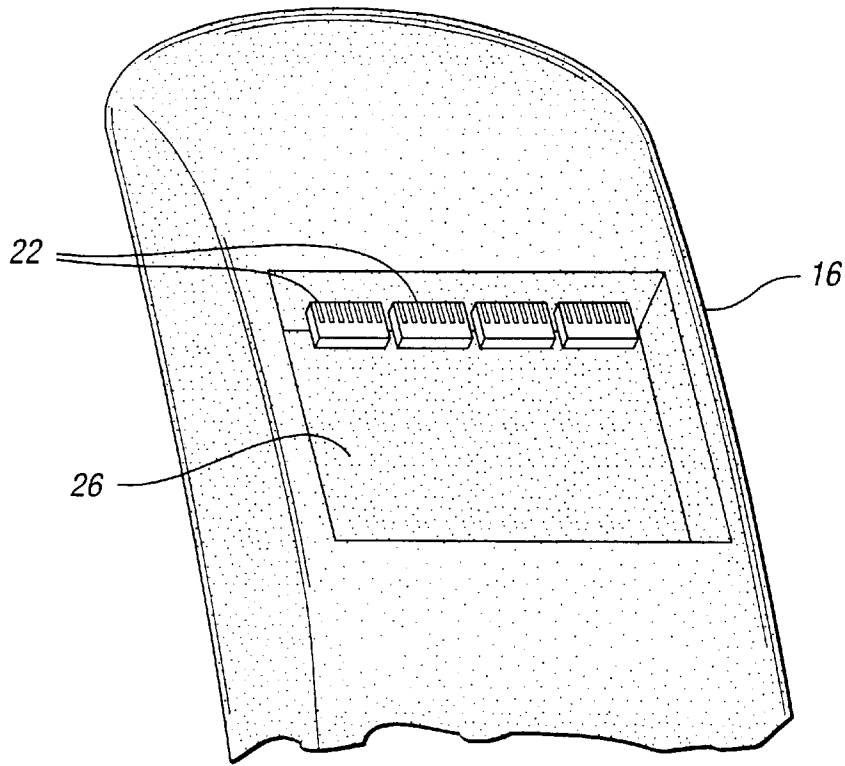


Fig. 4

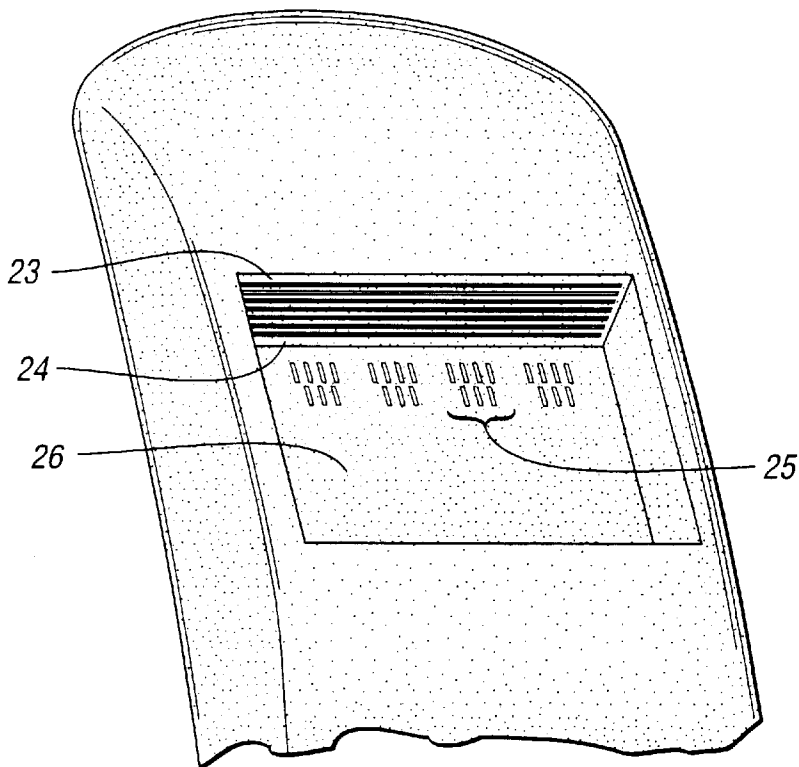


Fig. 5

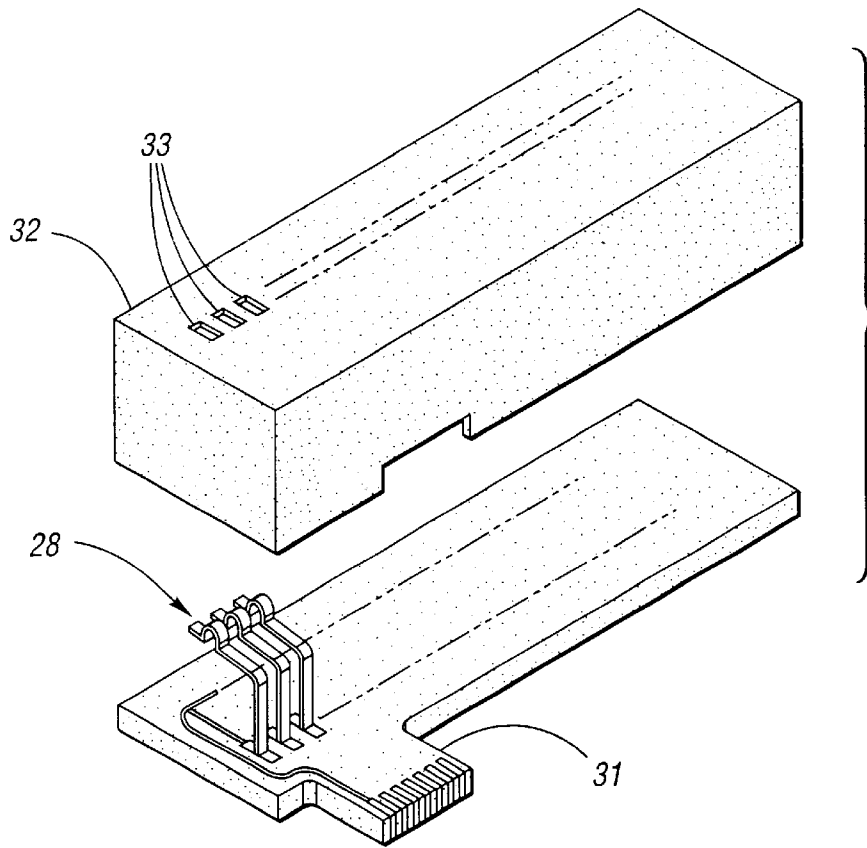


Fig. 6

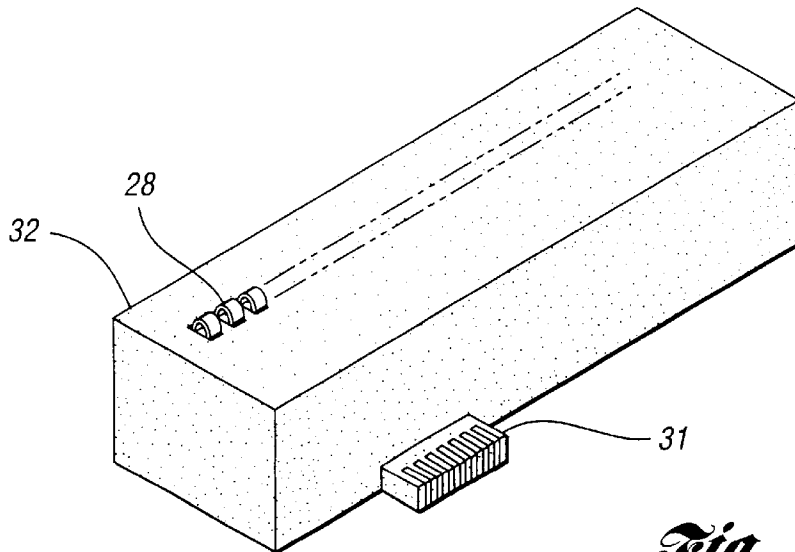


Fig. 7

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