

(12) **United States Patent**  
**Fisher**

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(54) **SYSTEM AND METHOD FOR PRODUCING MADE-TO-ORDER DESIGNS ON THE SURFACE OF AN EXTRATERRESTRIAL BODY**

(75) Inventor: **Gary Fisher**, Huntingdon Valley, PA (US)

(73) Assignee: **Lift-Off Technologies Corporation**, Huntingdon Valley, PA (US)

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**G05D 1/00** (2006.01)

(52) **U.S. Cl.**  
USPC ..... **701/2**

(58) **Field of Classification Search**  
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See application file for complete search history.

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*Primary Examiner* — Mary Cheung

*Assistant Examiner* — Anne Mazzara

(74) *Attorney, Agent, or Firm* — Saul Ewing LLP

(57) **ABSTRACT**

A method for producing designs involves receiving a request to create a design on the surface of an extraterrestrial body, transmitting a control signal to a device on a vehicle on the extraterrestrial body, the control signal causing the device to create the design, and receiving an image signal providing an image of the design created on the surface. A device for producing the designs includes a surface altering tool configured to rearrange material on the surface. The tool may be provided as a configurable-tread rover wheel that includes a wheel hub having radially-extending channels, and tread elements supported in the channels that are selectively articulatable under the control of a control module to form a tread pattern corresponding to a design intended to be produced. The tread elements may be selectively extended or retracted by operation of an array of solenoids controlled by the control module.

**14 Claims, 9 Drawing Sheets**

