



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

(10) **Patent No.:** **US 9,411,420 B2**
(45) **Date of Patent:** **Aug. 9, 2016**

(54) **INCREASING FORCE TRANSMISSIBILITY FOR TACTILE FEEDBACK INTERFACE DEVICES**

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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 902 days.

(21) Appl. No.: **11/789,418**

(22) Filed: **Apr. 23, 2007**

(65) **Prior Publication Data**

US 2007/0195059 A1 Aug. 23, 2007

Related U.S. Application Data

(63) Continuation of application No. 10/759,028, filed on Jan. 20, 2004, now Pat. No. 7,209,118, which is a continuation of application No. 09/675,995, filed on Sep. 29, 2000, now Pat. No. 6,680,729.

(60) Provisional application No. 60/157,206, filed on Sep. 30, 1999.

(51) **Int. Cl.**
G09G 5/00 (2006.01)
G06F 3/01 (2006.01)
A63F 13/20 (2014.01)

(52) **U.S. Cl.**
CPC **G06F 3/016** (2013.01); **A63F 13/06** (2013.01); **A63F 2300/1037** (2013.01); **A63F 2300/1043** (2013.01)

(58) **Field of Classification Search**
USPC 345/156, 161; 273/148 B; 340/407.1
See application file for complete search history.

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(57) **ABSTRACT**

Method and apparatus for increasing the transmissibility of forces produced by an actuator on a manipulandum. A haptic device, coupled to a host computer, outputs tactile sensations to a user based on interactions and events occurring in a displayed graphical environment. An actuator produces forces and a compliant suspension couples the actuator to the manipulandum. A compliance of the suspension is configured such that the suspension magnifies the forces for a particular frequency range of the forces. The magnified forces are transmitted to the manipulandum to be felt by the user.

18 Claims, 7 Drawing Sheets

