



(19) **United States**

(12) **Patent Application Publication**
Wegmuller et al.

(10) **Pub. No.: US 2002/0067336 A1**

(43) **Pub. Date: Jun. 6, 2002**

(54) **TACTILE FORCE FEEDBACK DEVICE**

(52) **U.S. Cl. 345/156**

(76) Inventors: **David Wegmuller**, Union City, CA
(US); **Paul Loughnane**, Newark, CA
(US); **David McVicar**, El Dorado, CA
(US)

(57) **ABSTRACT**

Correspondence Address:
Chun-Pok Leung
TOWNSEND and TOWNSEND and CREW
LLP
8th Floor
Two Embarcadero Center
San Francisco, CA 94111-3834 (US)

A tactile force feedback apparatus for an input device comprises an inertial member having a movable portion being movable relative to the input device. A magnetically actuatable member is connected to the movable portion of the inertial member. A magnetic driver is configured to generate a magnetic field to move the magnetically actuatable member and the movable portion of the inertial member with respect to the input device to generate tactile force feedback in response to a user's manipulation of the input device. The movable portion of the inertial member may include a contact member movable to strike the input device. The contact member may comprise an elastomeric material, and may be movable to make contact with the input device at a plurality of different contact locations during movement of the contact member.

(21) Appl. No.: **09/728,048**

(22) Filed: **Dec. 1, 2000**

Publication Classification

(51) **Int. Cl.⁷ G09G 5/00**

