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(54) Title: ELECTROACTIVE POLYMER ACTUATOR FEEDBACK APPARATUS SYSTEM, AND METHOD

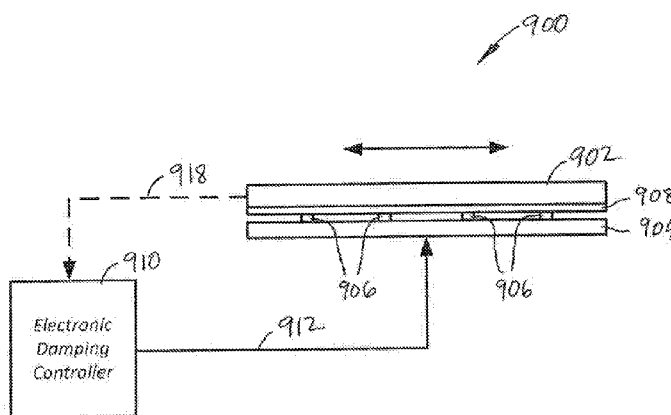


FIG. 9A

(57) Abstract: An electronic damping feedback control system for an electroactive polymer module, an electroactive polymer device, and a computer-implemented method for creating realistic effects are provided. The electronic damping controller is coupled in a feedback loop between a user interface device and an electroactive polymer actuator, where the actuator is coupled to the user interface device. The electronic damping controller is configured to receive an actuation signal from the user interface device in response to a user input. In response to the actuation signal, the electronic damping controller generates an electronic damping signal to couple to the actuator. The electroactive polymer device includes a user interface device, an electroactive polymer actuator coupled to the user interface device, and the electronic damping controller. The present invention may provide improved user interface devices.



A. CLASSIFICATION OF SUBJECT MATTER**G06F 3/01(2006.01)i**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

G06F 3/01; G06F 3/02; G06F 3/041; G09G 5/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: (haptic, tactile, feedback), (actuator), (polymer), (input, interface)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US 2010-0231550 A1 (CRUZ-HERNANDEZ JUAN MANUEL et al.) 16 September 2010 See Abstract, Claims 1,10-13, Paragraphs [0009]-[0013], Figs. 1,4,7	1-2,7-9,17 3-6,10-16
A	WO 2010-085575 A1 (ARTIFICIAL MUSCLE, INC. et al.) 29 July 2010 See Abstract, Claims 1-8, Paragraphs [0015]-[0030], Figs. 2A-6B	1-17
A	US 2007-0152974 A1 (KYU-YONG KIM. et al.) 05 July 2007 See Abstract, Claims 1-11, Paragraphs [0015]-[0024], Figs. 8A-8F	1-17
A	US 7339572 B2 (BRUCE M. SCHENA) 04 March 2008 See Abstract, Claims 1-7, Col.2 Line 10-Col.3 Line 10, Figs. 1-2f	1-17

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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