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(54) Title: HAPTIC OTUPUT DEVICE FOR USE WITH HAPTIC ENCODED MEDIA

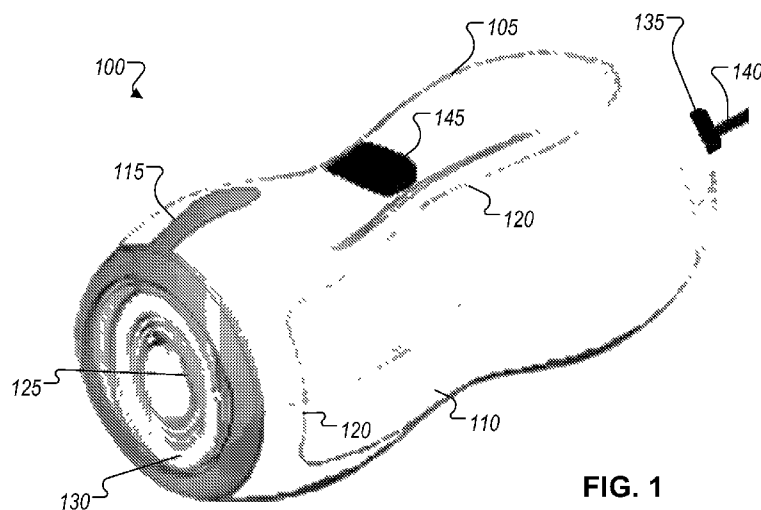


FIG. 1

(57) Abstract: Methods, systems, and apparatus for generating sensations in response to haptic data. A sensation output device can include a processor adapted to generate one or more control signals corresponding to a haptic command, an actuator adapted to output a force to a drive mechanism in response to one or more control signals received from the processor, an opening through which a portion of a user's body can be inserted, and an interface surface coupled to the drive mechanism, the interface surface configured to at least partially contact the inserted portion of the user's body. Further, the interface surface can be a compliant belt having surface features that is coupled with a carrier belt that is in contact with the drive mechanism. Additionally, the sensation output device can include a memory storing an algorithm including one or more haptic commands, which can be executed by the processor.



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A. CLASSIFICATION OF SUBJECT MATTER*G06F 3/00(2006.01)i, G06F 3/01(2006.01)i, G06F 15/00(2006.01)1*

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)

IPC G06F

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

(Chinese Patents and application for patent)

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

KOMPASS (KIPO internal) & Keywords "sensation output, actuator, communication interface, drive mechanism, lubrication system, reservoir, pump, outlet, haptic feedback, haptic command"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category' *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
X	US 2007-0279392 AI (ROSENBERG et al.) 06 December 2007	1,7-12,15
----- A	See abstract ; Fig. 3; page 4, paragraph [0047] ; page 5, paragraph [0053] ; page 7, paragraph [0074] ; page 11, paragraph [0094] ; and Claims	----- 2-6, 13, 14, 16-20
A	US 06793619 BI (BLUMENTAL) 21 September 2004 See abstract , column 7, line 60 - column 8, line 17	1-20
A	US 2005-014560 AI (BLUMENTHAL) 20 January 2005 See abstract , Fig. 1, and Claims	1-20
A	US 2008-0082028 AI 03.04.2008 See abstract , and Claims	1-20

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

* Special categories of cited documents

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2007-0279392 A 1	06.12.2007	EP 0979444 A 1 US 06859819 B 1	16.02.2000 22.02.2005
US 06793619 B 1	21.09.2004	None	
US 2005-014560 A 1	20.01.2005	None	
US 2008-0082028 A 1	03.04.2008	None	