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(54) **METHOD AND APPARATUS FOR PROVIDING HAPTIC EFFECTS TO A TOUCH PANEL**

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(57) **ABSTRACT**

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A method and apparatus for generating haptic effects for a touch panel or other interface device employs a touch-sensitive panel, a display and an actuator. The actuator includes a first structural element and a second structural element, a biasing element and two magnetic devices. The first magnetic device is configured to be carried by the first structural element and the second magnetic device is configured to be carried by the second structural element. The first structural element is coupled to a touch-sensitive panel and the second structural element may be coupled to the display or to a relatively fixed item. The biasing element couples the first and second structural elements together and deforms to facilitate a movement between the first and second structural elements. The actuator provides haptic effects by facilitating relative movement between the first and second structural elements.

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