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(54) **MOBILE IO INPUT AND OUTPUT FOR SMARTPHONES, TABLET, AND WIRELESS DEVICES INCLUDING TOUCH SCREEN, VOICE, PEN, AND GESTURES**

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(52) **U.S. Cl.**
CPC ***H04L 63/08*** (2013.01)

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CPC G06F 21/00; G06F 21/31; G06F 21/44; G06F 21/316; G06F 21/32; G06F 21/36
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See application file for complete search history.

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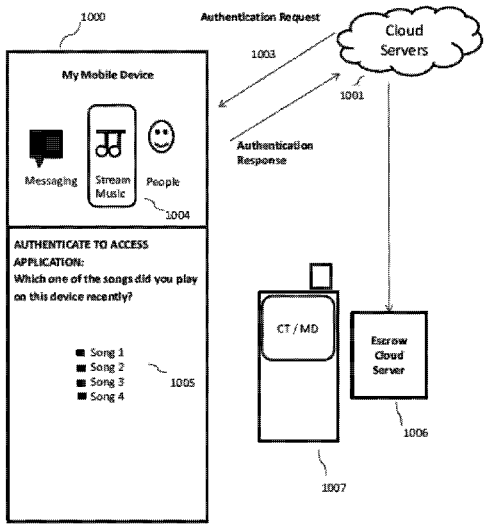
(57) **ABSTRACT**

A cellular telephone or mobile device with several methods of touch, voice, and gesture based input is described. A user is able to interact with a touch screen display on the device to select one or more keys, expand keys, and customize legends or toolbars. A user may deliver spoken audio to the device and actuate a series of commands on the device including search on the device, search on the Internet, accessing an Internet resource, or downloading a document. A user may be able to execute one or more macros on the device. The device may further have a plurality of authentication methods based on the activities on the device. Authentication requests may be made for specific applications or the device. An authentication request may include identifying pictures taken on the device and engaging in activities with the photos.

19 Claims, 7 Drawing Sheets