

[0293] Step 804 simply sets a flag which will indicate to decision diamond 798 during future scan cycles that typematic has already started for the element. Upon typematic initialization, step 810 sends out the key symbol for the first time to the host interface communication queue, along with any modifier symbols being held down by the opposite hand. Step 812 records the time the key symbol is sent for future reference by decision diamond 808. Processing then returns to step 770 to await the next proximity image scan.

[0294] Until the finger lifts off or another taps asynchronously, processing will pass through decision diamond 798 to check whether the key symbol should be sent again. Step 806 computes the symbol repeat interval dynamically to be inversely proportional to finger proximity. Thus the key will repeat faster as the finger is pressed on the surface harder or a larger part of the fingertip touches the surface. This also reduces the chance that the user will cause more repeats than intended since as finger proximity begins to drop during liftoff the repeat interval becomes much longer. Decision diamond 808 checks whether the dynamic repeat interval since the last typematic symbol send has elapsed, and if necessary sends the symbol again in 810 and updates the typematic send time stamp 812.

[0295] It is desirable to let the users rest the other fingers back onto the surface after typematic has initiated 804 and while typematic continues, but the user must do so without tapping. Decision diamond 805 causes typematic to be canceled and the typematic element deleted 778 if the user asynchronously taps another finger on the surface as if trying to hit another key. If this does not occur, decision diamond 182 will eventually cause deletion of the typematic element when its finger lifts off.

[0296] The typing recognition process described above thus allows the multi-touch surface to ergonomically emulate both the typing and hand resting capabilities of a standard mechanical keyboard. Crisp taps or impulsive presses on the surface generate key symbols as soon as the finger is released or decision diamond 792 verifies the impulse has peaked, ensuring prompt feedback to the user. Fingers intended to rest on the surface generate no keys as long as they are members of a synchronized finger press or release subset or are placed on the surface gently and remain there along with other fingers for a second or two. Once resting, fingers can be lifted and tapped or impulsively pressed on the surface to generate key symbols without having to lift other resting fingers. Typematic is initiated either by impulsively pressing and maintaining distinguishable force on a key, or by holding a finger on a key while other fingers on the hand are lifted. Glancing motions of single fingers as they tap key regions are easily tolerated since most cursor manipulation must be initiated by synchronized slides of two or more fingers.

[0297] Other embodiments of the invention will be apparent to those skilled in the art from consideration of the specification and practice of the invention disclosed herein. It is intended that the specification and examples be considered as exemplary only, with a true scope and spirit of the invention being indicated by the following claims.

What is claimed is:

1. A method comprising the steps of:
 - a. examining a human hand with respect to sensor surface and periodically producing first indications regarding the nature and position of sensed contacts, the contacts comprising identified hand parts;
 - b. evaluating the first indications to determine if two or more hand parts activate the sensor surface substantially simultaneously, and producing second indications identifying any such hand parts;
 - c. evaluating the first indications to determine if the character of sensed contacts is consistent with typing and producing third indication identifying such typing in response thereto;
 - d. evaluating second indications and third indications and making corrections regarding the third indication based upon the second indication, but only if the second indication identifies fingers.
2. The method of claim 1 wherein the sensed contacts comprise a plurality of fingers and a portion of a hand other than a finger.
3. The method of claim 1 wherein sensed contacts comprise portions of a human hand that are within sensing range of the sensor surface but not physically touching the sensor surface.
4. The method of claim 1 wherein periodically producing first indications comprises producing a first set of first indications at time t₀; producing a second set of first indications at time t₁; and producing a third set of first indications at time t₂.
5. The method of claim 4 wherein the time interval between times t₀ and t₁ is different than the time interval between times t₁ and t₂.
6. The method of claim 4 wherein two or more fingers activating the sensor surface comprises a plurality of fingers initiating contact with the sensor surface.
7. The method of claim 4 wherein two or more fingers activating the sensor surface comprises a plurality of fingers terminating contact with the sensor surface.
8. The method of claim 1 wherein the correction is to reverse a portion of the third indication.
9. The method of claim 1 wherein the third indication is a basis for a result; and the correction is the reversal of such result.
10. The method of claim 1 wherein the third indication is a basis for a plurality of results; and the correction is the reversal of a portion of such results.
11. A method comprising the steps of:
 - e. examining a human hand with respect to sensor surface and periodically producing first indications regarding the nature and position of sensed contacts, the contacts comprising identified hand parts;
 - f. evaluating the first indications to determine if two or more hand parts activate the sensor surface substantially simultaneously, and producing second indications identifying any such hand parts;
 - g. evaluating the first indications to determine if the character of sensed contacts is consistent with typing;
 - h. evaluating second indications and third indications and if the second indication does not identify fingers, producing a third indication identifying the typing.