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**.

[**0294**] 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.

[**0295**] 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 ether 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.

[**0296**] 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 touch-sensitive apparatus comprising:

a. a deformable touch layer having a top surface accessible to a user and a bottom surface;

b. a compliant sense object layer mounted below the deformable touch layer and adjacent to the bottom surface;

c. a compliant dielectric layer mounted below the deformable sense object layer; and

d. a plurality of sensors spaced apart from each other and mounted below the compliant dielectric layer, each sensor capable of providing an indication of proximity to the sense object layer.

2. The apparatus of claim 1 wherein the deformable touch layer is a dielectric material.

3. The apparatus of claim 1 wherein the sensors are also capable of providing an indication regarding the proximity of an object to the top surface of the deformable touch layer.

4. The apparatus of claim 1 wherein the sensors are capacitance sensors and the sense object layer is an electrical conductor.

5. The apparatus of claim 1 wherein the sense object layer is an electrical conductor.

6. The apparatus of claim 5 wherein the sense object layer is coupled to a local ground connection.

7. The apparatus of claim 6 wherein top surface has indication of characters thereon.

8. A method of sensing the position of an object comprising the steps of:

e. providing a deformable touch layer having a top surface accessible to a user and a bottom surface, the top surface having a length and width;

f. providing a compliant sense object layer mounted below the deformable touch layer;

g. providing a compliant dielectric layer mounted below the sense object layer;

h. sensing the presence of an object positioned above the deformable touch layer; and

i. providing a signal indicating the three dimensional position of the object.

9. The method of claim 8 wherein the sensing step is performed by a plurality of sensors spaced apart from each other and affixed beneath the compliant dielectric layer.

10. The method of claim 9 wherein the signal comprises information regarding the position of the object with respect to the length and width of the top surface and the position of the object with respect to one or more of the sensors.

11. The method of claim 10 wherein each sensor is capable of providing an indication of proximity to the sense object layer.

12. The method of claim 10 further comprising the step of applying force with an object to the top surface of the deformable touch layer, thereby deforming the compliant sense object layer to move a portion of the sense object layer closer to the one or more sensors.

13. The method of claim 8 wherein the deformable touch layer is a dielectric.

14. The method of claim 12 wherein the signal indicates position relative to the length and width by determining a subgroup of the plurality of sensors closest to the object.

15. The method of claim 14 wherein the subgroup is a single sensor.

16. The method of claim 14 wherein the signal indicates position relative to a portion of the sense object layer by determining the intensity of response from one or more sensors.

17. The method of claim 8 wherein the top surface is not planar.

18. A method of sensing the position of an object comprising the steps of:

j. providing a deformable touch layer having a top surface accessible to a user and a bottom surface, the top surface having a length and width;

k. providing a compliant sense object layer mounted below the deformable touch layer;

l. providing a compliant dielectric layer mounted below the sense object layer;