

user removes the finger from the touch pad relative positioning zone surface 27, at which point cursor movement stops, and touches the absolute positioning zone 29 to make a selection. For the duration of time the finger is continuously touching the touch pad surface after touching the absolute positioning zone 29, the cursor will preferably not move and a select function will be relayed to the microprocessor. When the finger is again placed in the relative positioning zone 27, the cursor again responds to the relative finger movement.

[0057] As will be clear to one of ordinary skill in the art, the invention as disclosed is not limited to one particular touch pad type or embodiment. Examples of standard touch pads which can be adapted to work well with the present invention are the Model TSM 920 touch pad manufactured by CIRQUE of Salt Lake City, Utah, as well as touch pads manufactured by ALPS of San Jose, Calif., the SYNAPTICS of San Jose, Calif., LOGITECH of Fremont, Calif., or others such as those disclosed herein. For simplified operation, standard touch pads can be adapted to provide the touch sensitive enter/select zone function by one of skill in the art either by modifying the touch pad microprocessor program or writing software in the main processor. One of skill in the art can write software or configure hardware to detect the touch of a finger with absolute coordinate location indicating that the finger has touched down within an enter/select zone. The software may optionally and preferably also include routines to confirm the finger does not merely "tap" the enter/select zone as required by standard touch pads to ensure only intentional touches are executed. The software may also optionally and preferably include routines to confirm there is no significant finger motion after the touch to ensure only intentional touches are executed. Furthermore, cursor motion is preferably inhibited after the touch is detected within the zone to assist a user in making an accurate selection.

[0058] The enter/select zone is particularly advantageous because many users have difficulty creating the proper "down and up" timing of a tap motion on standard touch pads. Because of this difficulty and the reassuring mechanical "click" sound accompanying mechanical buttons, touch pads are often accompanied with mechanical buttons which can be depressed by an operator to generate a "mouse button click" command. The enter/select zone of the present invention is simple, and easy to use so mechanical buttons are not needed. This configuration is a tremendous advantage in terms of reliability, cost savings, and easier design for manufacturers of kiosks.

[0059] It is contemplated that the touch pad of the current invention may be used with a monitor either with or without touch screen capabilities. Preferably, however, the different embodiments of the touch pad described in relation to the foregoing figures will be used as an inexpensive substitute for a touch screen monitor in a graphical interface system. It is also contemplated, due to the ability to completely seal the system described above from contamination and fluids, this invention will be useful in conjunction with many applications not specifically described herein.

[0060] FIG. 10 is a top elevational view of the presently preferred embodiment of the touchpad surface 80 of the present invention. This preferred embodiment shows that there are three zones which have been defined distinctly

different functions. Simply touching one of the three zones results in the function of the zone being actuated. The first zone 82 is a click feature as is commonly known in the graphical interfaces. Similarly, the second zone 84 provides a double click feature when touched. Finally, the third zone 86 provides what is commonly referred to as a drag function. Touching the third zone 86 causes the touchpad to toggle between drag lock and drag unlock modes. Dragging is a function associated with a graphical interface because it enables a cursor to drag an object from one location on a screen to another location.

[0061] In order to implement these functions, it is necessary to provide driver software. The driver software executes the desired function on the graphical display when the touchpad circuitry receives an actuation signal from the click 82, double-click 84 or drag-lock 86 zones.

[0062] Another feature of the touchpad is the ability to "time-out" certain processes. This is useful because of the environment in which the touchpad is often used. For example, in a kiosk, many different people will use the touchpad. Accordingly, the last user might have left the touchpad in the drag-lock mode because that is the last function performed. Therefore, after a predetermined time limit, the touchpad will return to an initial state or mode where the drag-lock function is not actuated. The time-out duration for drag-lock is therefore preferably quick, on the order of a few seconds.

[0063] It is to be understood that the above-described arrangements are only illustrative of the application of the principles of the present invention. Numerous modifications and alternative arrangements may be devised by those skilled in the art without departing from the spirit and scope of the present invention. The appended claims are intended to cover such modifications and arrangements.

What is claimed is:

1. A touchpad for use as an input and cursor manipulation device, said touchpad comprising:

a touch-sensitive surface having a plurality of programmable input zones, wherein each programmable input zone is programmed to independently transfer input data to a microprocessor operably associated with said touchpad, and wherein each of said plurality of programmable input zones is programmed to simulate a mechanical button when a conductive object comes into proximity with said at least one of said plurality of programmable input zones; and

a first one of the plurality of programmable input zones which provides a function associated with a mouse-type click when touched once.

2. The touchpad as defined in claim 1 wherein the touchpad further comprises a second one of the plurality of programmable input zones which provides a function associated with a mouse-type double-click when touched once.

3. The touchpad as defined in claim 2 wherein the touchpad further comprises a third one of the plurality of programmable input zones which provides a function associated with a drag lock feature which toggles between a state of being activated to being deactivated when touched.