

## KIOSK TOUCHPAD

### BACKGROUND

[0001] 1. The Field of the Invention

[0002] This invention relates to an improved interface control for graphical user interface systems such as those currently using a touch screen. More specifically, the invention relates to a touch pad having a defined programmable input zone which responds to any "touch" or "push" rather than requiring a "tap" to input an "enter/select" command or a drag enable function.

[0003] 2. The State of the Art

[0004] Computer systems today strive for "user friendliness." Through simpler, more clearly explained displays and easier-to-use interfaces, designers attempt to make a system understandable for both an expert and a first time user. Designers developed touch screen displays from this desire for user friendly systems. Touch screen displays comprise a display surface on which an operator can selectively display information or perform a function by touching an icon displayed on the screen in an interactive manner. The touch screen is operatively connected to a microprocessor which stores, computes, and supplies information required or functions to perform. Several touch screen displays -and their applications are described in the following patents: U.S. Pat. No. 5,737,729 to Denman (Apr. 7, 1998), U.S. Pat. No. 5,717,433 to Doba (Feb. 10, 1998), U.S. Pat. No. 5,572,573 to Sylvan (Nov. 5, 1996), U.S. Pat. No. 5,481,250 to Hano (Jan. 2, 1996), and U.S. Pat. No. 5,457,636 to Sansone (Oct. 10, 1995).

[0005] A kiosk, or small stand, is used for merchandising or vending services or goods, or for accessing information. Kiosks are well known in the art as indicated by the following U.S. Patents: U.S. Pat. No. 4,179,723 to Spencer (Dec. 18, 1979), U.S. Pat. No. 4,265,059 to Johnson (May 5, 1981), U.S. Pat. No. 4,817,043 to Brown (Mar. 28, 1989), and U.S. Pat. No. 5,271,669 to Pearlson (Dec. 21, 1993). One advantage of a kiosk is that it can be provided in public areas and be used by many operators because of the simple, secure system provided in conjunction with the kiosk. Kiosks often include a microprocessor and visual display or monitor for interaction with the operator. This interaction is generally simple and allows an operator to step through several pre-set options by typing basic commands on a keyboard or selecting the options on a touch screen interface which perform internal functions such as calculations or displaying information, distributing merchandise or money, or if associated with a printing device and paper source, printing an output.

[0006] Touch screens are currently used in many commercial and noncommercial fields including industrial control systems such as plant and process controls, commercial control systems such as typical kiosk systems used with postal, photo, copy center, video phone, hospitals, and ATM systems, information kiosks such as those used in many tourist areas, libraries and restaurants, and many other systems where simple operator-interactive means are needed. Many systems also combine touch screens with other interface systems such as numeric or alphanumeric key pads (e.g., ATMs), and other more simple function keys. Although touch screen systems, as they exist, function

adequately, there are a number of inadequacies. First, touch screen displays are relatively expensive. A typical touch screen costs more than a non-touch screen display.

[0007] Second, because the screen of a touch screen needs to be touched to activate it and because touch screens give offheat, touch screens are not easy to completely seal from the environment. This draw back may become significant when the display needs to be used in an area where it will be subjected to dust, chemical or bacterial contamination, or where the risk of contact with moisture is high. Because the system is not completely sealed and insulated from its surroundings, careful, thorough cleaning methods are applied, and the risk exists that contamination will damage the internal components of the device or come in contact with a subsequent user.

[0008] Third, once the screen is touched, the operator must wait for the computer to indicate the operator pressed hard enough and long enough for the touch screen to register the selection. Depending on how busy the system's processes are, this passage of time can be almost instantaneous, or can take some time. Often this delay frustrates users who make a selection which the processor does not register and indicate fast enough and inadvertently make a second undesired selection by pressing again.

[0009] It would be advantageous to have a device as user friendly as a touch screen which is inexpensive, sealed to contamination, easily washable, and provides immediate feedback when an operator makes a selection.

[0010] User friendly input devices for computers are well known in the art. One of the several types of input devices is the familiar "mouse." When combined with a graphical user interface, a mouse can be much easier to use than typed keyboard commands. By moving the mouse across a surface, an operator causes a cursor to move correspondingly on a display screen. The mouse has been accepted as a "user friendly" input device for both experienced and novice computer users providing a simple means to interact with a computer. However, mice are disadvantageous in many applications because they generally require a free-rolling surface, e.g., a table top, on which to operate. Thus, a mouse is not well suited for use in confined spaces, or where little or no surface space exists such as with a kiosk or other touch screen application. A mouse also includes mechanical parts which can become jammed, dirty or worn, and generally cannot be sealed from outside contamination.

[0011] In answer to the long existing need for a more convenient input device suitable for all space requirements, limited or not, various alternative input devices have been proposed. These alternative input devices include devices commonly referred to as track balls, track pens and track point devices, as well as various devices which sense the position of a pointing object on a position sensing surface. Devices which sense the position of a pointing object on a sensing surface generally have the advantages of being simple to use, reliable, rugged, compact and easy to integrate with current computers and other computing devices.

[0012] Numerous types of input devices utilize a position sensing surface. Examples are provided in various patent references. For example, U.S. Pat. No. 3,886,311 to Rodgers et al. (May 27, 1975) discloses a writing pen for detecting time varying electrostatic field produced by a writing tablet.