

handed user may choose to use one portion of the disc while a right handed user may choose to use another portion of the disc.

[0031] The position of the dial relative to the mouse housing may be widely varied. For example, the scroll dial may be placed at any external surface (e.g., top, side, front, or back) of the mouse housing 42 that is accessible to a user during manipulation of the mouse 40. In one embodiment, the plane of rotation created by the rotating dial is substantially parallel to at least a portion of the external surface of the mouse housing on (or in) which the rotary dial is positioned. For example, as shown, the rotary dial may be positioned at a top front surface of the mouse housing, and thus the plane of rotation may be substantially parallel to the top front surface of the mouse housing.

[0032] Furthermore, the rotary dial may be positioned inside or outside the external surface of the mouse housing. For example, the rotary dial may be recessed below, level with, or extend above the surface of the mouse housing. In the illustrated embodiment, the engageable face 48 of the rotary dial 44 is substantially flush with the external surface of the mouse housing. As such, the rotary dial does not protrude out of the mouse thus reducing the amount of accidental scrolling while making the mouse more aesthetically pleasing. The rotary dial 44 may also include tactile features 49, which provide tangible surfaces that help the user manipulate the rotary dial and that inform the user of its rotatable position during rotation thereof. By way of example, the tactile features may be bumps or voids located in the engageable face 48.

[0033] FIGS. 3 and 4 are side and top views, respectively, of a mouse 50, in accordance with one embodiment of the invention. By way of example, the mouse 50 may generally correspond to the mouse 40 shown in FIG. 2. The mouse 50 generally includes a movable base 52, a button body 54 and a rotatable disc 56. The movable base 52 is configured to moveably support the mouse 50 on a flat surface (i.e., desktop or mouse pad) so that a user can move an input pointer in a graphical user interface (GUI). In one embodiment, the movable base 52 operatively supports a position detecting mechanism therein so as to track the position of the mouse as it is moved along the flat surface. By way of example the position detecting mechanism may be a trackball mechanism or an optical sensor. The position detecting mechanism is generally configured to provide information to a computer so that the movement of the pointer on the screen corresponds to the movement of the mouse on the flat surface, i.e., when the mouse moves forward, the cursor moves vertically up on the screen.

[0034] In one embodiment, the button body 54 is configured to provide a clicking action for the mouse so that a user can perform an action on a display screen, as for example, making a selection in a GUI. The button body 54 may be pivotable relative to the base 52. For example, as shown in FIG. 5, the button body 54 may pivot around a pivot axis 55. As such, the body 54 may be pushed down towards the base 52 via a force F in order to generate the clicking action. The force F may be any downward force on the mouse 50, whether from a finger, palm or hand that results in a clicking action.

[0035] The clicking action may be used to implement a single click, a double click and/or a dragging and dropping

function. As is generally well known, a single click often selects an item on the screen, a double click often opens a document or starts a program, and dragging and dropping generally makes it easy to move an item on the screen. In order to perform a single click using the mouse 50, the user presses and releases the body 54. In order to perform a double click using the mouse 50, the user quickly presses and releases the body 54 twice. In order to perform a drag and drop function, the user first positions the pointer or cursor over an item on the screen (by moving the mouse along the flat surface) and presses and holds down the body 54 so as to select the item. Thereafter, the user, while still holding down the body 54, moves the pointer to a desired position on the screen (by moving the mouse along the flat surface) and subsequently releases the body 54.

[0036] In most cases, the movable base 52 and button body 54 provide a mouse housing for containing the electronics that generate control signals associated with moving the input pointer, making selections and scrolling. By way of example, the electronics may be printed circuit boards (PCB), processors, encoders, switches, wires, and the like. The base 52 and body 54 may also define the shape or form of the mouse 50. That is, the contour of the base 52 and body 54 may embody the outward physical appearance of the mouse 50. The contour may be rectilinear, curvilinear or both. In one embodiment, a bottom side of the base 52 has an external contour (e.g., rectilinear) that substantially conforms to the contour of a flat surface such as a desktop. In addition, a back portion 58 of the body 54 has an external contour (e.g., curved) that substantially conforms to the contour of the palm-side surface of a hand, and a front portion 60 of the body 54 has an external contour (e.g., curved) that substantially conforms to the contour of the fingers of the hand when the palm side surface of the hand is placed on the back portion 58 of the body 54.

[0037] The rotatable disc 56 is configured to provide a control function for the mouse 50 so that a user can perform one or more actions on a display screen. For example, the rotatable disc 56 may provide a control function corresponding to a scrolling feature that allows a user, for example, to move the GUI vertically (up and down), or horizontally (left and right) in order to bring more data into view on the display screen. The rotatable disc 56 is arranged to rotate relative to the body 54. As such, the rotatable disc 56 may be rotated around an axis 57 in order to implement the control function. In most cases, the axis 57 is normal to a plane defined by the external surface of the body 54. As such, the plane of rotation is generally orthogonal to the direction of clicking.

[0038] The orientation of the rotatable disc 56 relative to the base 54 may be widely varied. For example, the rotatable disc 56 may be recessed within, protrude above, or be substantially level with the body 54. In the illustrated embodiment, a top surface 64 of the rotatable disc 56 is substantially flush with an external surface 66 of the body 54. As such, the top surface 64, rather than the edge, of the rotatable disc 56 is accessible to the user. Furthermore, the rotatable disc 56 is configured to sit in the body 54. In most cases, the rotatable disc 56 is positioned in a plane that is substantially parallel to a plane defined substantially by the external surface 66 of the body 54 in which the rotatable disc 56 sits (e.g., front portion 60). By having the rotatable disc 56 sit in the surface 66 of the body 54, the user can click on