like. In the case of a music player, one of the button zones may be used to access a menu on the display screen, a second button zone may be used to seek forward through a list of songs or fast forward through a currently played song, a third button zone may be used to seek backwards through a list of songs or fast rearward through a currently played song, and a fourth button zone may be used to pause or stop a song that is being played.

[0059] To elaborate, the touch pad **72** is capable of moving relative to a frame **76** so as to create a clicking action for each of the button zones **74**A-D. The frame **76** may be formed from a single component or it may be a combination of assembled components. The clicking actions are generally arranged to actuate one or more movement indicators contained inside the frame **76**. That is, a particular button zone moving from a first position (e.g., upright) to a second position (e.g., depressed) is caused to actuate a movement indicator. The movement indicators are configured to sense movements of the button zones during the clicking action and to send signals corresponding to the movements to the electronic device. By way of example, the movement indicators may be switches, sensors and/or the like.

[0060] The arrangement of movement indicators may be widely varied. In one embodiment, the input device may include a movement indicator for each button zone **74**. That is, there may be a movement indicator corresponding to every button zone **74**. For example, if there are two button zones, then there will be two movement indicators. In another embodiment, the movement indicators may be arranged in a manner that simulates the existence of a movement indicator for each button zone **74**. For example, two movement indicators may be used to form three button zones. In another embodiment, the movement indicators may be configured to form larger or smaller button zones. By way of example, this may be accomplished by careful positioning of the movement indicators or by using more than one movement indicator for each button zone. It should be noted that the above embodiments are not a limitation and that the arrangement of movement indicators may vary according to the specific needs of each device.

[0061] The movements of each of the button zones **74** may be provided by various rotations, pivots, translations, flexes and the like. In one embodiment, the touch pad **72** is configured to gimbal relative to the frame **76** so as to generate clicking actions for each of the button zones. By gimbal, it is generally meant that the touch pad **72** is able to float in space relative to the frame **76** while still being constrained thereto. The gimbal may allow the touch pad **72** to move in single or multiple degrees of freedom (DOF) relative to the housing. For example, movements in the x, y and/or z directions and/or rotations about the x, y, and/or z axes (θ_x θ_y θ_z).

[0062] Referring to **FIG. 6**, a particular implementation of the multiple button zone touch pad **72** of **FIG. 5** will be described. In this embodiment, the input device **70** includes a movement indicator **78** for each of the button zones **74**A-D shown in **FIG. 5**. That is, there is a movement indicator **78** disposed beneath each of the button zones **74**A-D. Furthermore, the touch pad **72** is configured to gimbal relative to the frame **76** in order to provide clicking actions for each of the button zones **74**A-D. The gimbal is generally achieved by movably constraining the touch pad **72** within the frame **76**.

[0063] As shown in **FIG. 6**, the touch pad **72** includes various layers including a rigid platform **80** and a touch sensitive surface **82** for tracking finger movements. In one embodiment, the touch pad **72** is based on capacitive sensing and thus the rigid platform **80** includes a circuit board **84**, and the touch sensitive surface **82** includes an electrode layer **86** and a protective layer **88**. The electrode layer **86** is disposed on the top surface of the circuit board **84**, and the protective layer **88** is disposed over the electrode layer **86**. Although not shown in **FIG. 6**, the rigid platform **80** may also include a stiffening plate to stiffen the circuit board **84**.

[0064] The movement indicators **78** may be widely varied, however, in this embodiment they take the form of mechanical switches. The mechanical switches **78** are typically disposed between the platform **80** and the frame **76**. The mechanical switches **78** may be attached to the frame **76** or to the platform **80**. In the illustrated embodiment, the mechanical switches **78** are attached to the backside of the circuit board **84** of the platform **80** thus forming an integrated unit. They are generally attached in location that places them beneath the appropriate button zone **74**A-D. As shown, the mechanical switches **78** include actuators **90** that are spring biased so that they extend away from the circuit board **84**. As such, the mechanical switches **78** act as legs for supporting the touch pad **72** in its upright position within the frame **76** (i.e., the actuators **90** rest on the frame **76**). By way of example, the mechanical switches may correspond to tact switches and more particularly, enclosed SMT dome switches (dome switch packaged for SMT).

[0065] Moving along, the integrated unit of the touch pad **72** and switches **78** is restrained within a space **92** provided in the frame **76**. The integrated unit **72**/**78** is capable of moving within the space **92** while still being prevented from moving entirely out of the space **92** via the walls of the frame **76**. The shape of the space **92** generally coincides with the shape of the integrated unit **72**/**78**. As such, the unit is substantially restrained along the X and Y axes via a side wall **94** of the frame **76** and along the Z axis and rotationally about the X and Y axis via a top wall **96** and a bottom wall **100** of the frame **76**. A small gap may be provided between the side walls and the platform to allow the touch pad to move to its four positions without obstruction (e.g., a slight amount of play). In some cases, the platform **80** may include tabs that extend along the X and Y axis so as to prevent rotation about the Z axis. Furthermore, the top wall **96** includes an opening **102** for providing access to the touch sensitive surface **82** of the touch pad **72**. The spring force provided by the mechanical switches **78** places the touch pad **72** into mating engagement with the top wall **96** of the frame **76** (e.g., upright position) and the gimbal substantially eliminates gaps and cracks found therebetween.

[0066] Referring to **FIGS. 7A-7D**, according to one embodiment, a user simply presses on the top surface of the touch pad **72** in the location of the desired button zone **74**A-D in order to activate the switch **78** disposed underneath the desired button zone **74**A-D. When activated, the switches **78** generate button signals that may be used by an electronic device. In all of these Figures, the force provided by the finger works against the spring force of the switch **78** until the switch **78** is activated. Although the platform **80** essentially floats within the space of the frame **76**, when the user presses on one side of the touch pad **72**, the opposite side contacts the top wall **96** thus causing the touch pad **72**