can take the form of a keyboard that can include at least a low profile key cap assembly. The low profile key cap assembly can, in turn, be formed of a key cap connected to one end of a beam or lever, the beam or lever having another end pivotally connected to base portion. The key cap can be positioned proximate to a switch mechanism that can be engaged by the key cap impinging thereupon. In one embodiment, the beam can be rigid in nature and formed of, for example, stainless steel, aluminum, or any other suitable material. The rigid beam can be pivotally connected to the base portion at a pivot point using, for example, bushings. In this way, in order to engage the actuator, a force can be applied to the key cap causing the beam and the key cap to rotate about the pivot point resulting in the key cap moving in an arc-like manner. However, due to the relatively long distance between the pivot point and the key cap and the reduced Z stack of the key cap assembly, the angle of rotation of the key cap is small enough and any rotational wobble is substantially reduced.

[0021] In another embodiment, the beam can be formed of a more compliant material fixedly connected to the base. In this way, when the force is applied to the key cap, the beam can bend allowing a more compliant feel to the key cap. It should be noted that, in some cases, a compliant material layer formed of, for example, silicone rubber can be positioned between the key cap and the actuator providing a distinctive feel to the key cap. In some cases, this distinctive feel can be customized to a particular application by using various materials. For example, a harder material can provide a more firm feel whereas softer, more compliant materials, such as silicone rubber, a more compliant feel. In this way, it is contemplated that selected key cap assemblies can be fashioned to have their own associated "feel" that can depend upon a number of factors such as a position on the keyboard, function associated with key cap, and so on.

[0022] Furthermore, since there is no restriction on the material used to form an observable portion of the key cap, the key caps can be formed to include an upper layer formed of materials heretofore deemed unsuitable for use in keyboards. Such materials as wood, stone, polished meteorite (watch dials have been made from polished meteorite), glass, etc. can be used as opposed to standard key caps that rely on plastic material.

[0023] There are several types of keyboards, usually differentiated by the switch technology employed in their operation. The choice of switch technology affects the keys' responses (i.e., the positive feedback that a key has been depressed) and travel (i.e., the distance needed to push the key to enter a character reliably). One of the most common keyboard types is a "dome-switch" keyboard, which works as described below. When a key is depressed, the key pushes down on a rubber dome sitting beneath the key. The rubber dome collapses, which gives tactile feedback to the user depressing the key, and causes a pair of conductive lines on the printed circuit board (PCB) below the dome to contact, thereby closing the switch. A chip in the keyboard emits a scanning signal along the pairs of lines on the PCB to all the keys. When the signal in one pair of lines changes due to the contact, the chip generates a code corresponding to the key connected to that pair of lines. This code is sent to the computer either through a keyboard cable or over a wireless connection, where it is received and decoded into the appropriate key. The computer then decides what to do based on the particular key depressed, such as display a character on the screen, or perform some other type of action. Other types of keyboards operate in a similar manner, with the main difference being how the individual key switches work. Some examples of other keyboards include capacitive keyboards, mechanical-switch keyboards, Hall-effect keyboards, membrane keyboards, roll-up keyboards, and so on.

[0024] FIG. **1** is a side view of a typical key switch **100** of a scissor-switch keyboard. A scissor-switch keyboard is a type of relatively low-travel dome-switch keyboard that provides the user with good tactile response. Scissor-switch keyboards typically have a shorter total key travel distance, which is about 1.5-2 mm per key stroke instead of about 3.5-4 mm for standard dome-switch key switches. Thus, scissor-switch type keyboards are usually found on laptop computers and other "thin-profile" devices. The scissor-switch keyboards are generally quiet and require relatively little force to press.

[0025] As shown in FIG. **1**, the key cap **110** is attached to the base plate or PCB **120** of the keyboard via a scissor-mechanism **130**. The scissor-mechanism **130** includes two separate pieces that interlock in a "scissor"-like manner, as shown in FIG. **1**. The scissor-mechanism **130** is typically formed of a rigid material, such as plastic or metal or composite material, as it provides mechanical stability to the key switch **100**. As illustrated in FIG. **1**, a rubber dome **140** is provided. The rubber dome **140**, along with the scissor-mechanism **130**, supports the key cap **110**.

[0026] When the key cap **110** is pressed down by a user in the direction of arrow A, it depresses the rubber dome **140** underneath the key cap **110**. The rubber dome **140**, in turn, collapses, giving a tactile response to the user. The scissor-mechanism **130** also transfers the load to the center to collapse the rubber dome **140** when the key cap **110** is depressed by the user. The rubber dome also dampens the keystroke in addition to providing the tactile response. The rubber dome **140** can contact a membrane **150**, which serves as the electrical component of the switch. The collapsing rubber dome **140** closes the switch when it depresses the membrane **150** on the PCB, which also includes a base plate **120** for mechanical support. The total travel of a scissor-switch key is shorter than that of a typical rubber dome-switch key. As shown in FIG. **1**, the key switch **100** includes a three-layer membrane **150** (on a PCB) as the electrical component of the switch. The membrane **150** can be a three-layer membrane or other type of PCB membrane, which will be described in more detail below.

[0027] The following description relates to a single support lever keyboard mechanism for a low-travel keyboard suitable for a small, thin-profile computing device, such as a laptop computer, netbook computer, desktop computer, etc. The use of a single support lever to support the key cap and to activate the switch circuitry not only allows for the key cap to be formed of almost any material but also provides stability to each key, as will be described in more detail below. The aesthetic appearance of a keyboard therefore depends greatly on the key caps, which form most of the visible portion of a keyboard. It will be understood that the material of the key caps will be important, not only because the key caps are highly visible but also because the material should have a desired tactile feel to a user's fingers.

[0028] These and other embodiments of the invention are discussed below with reference to FIGS. **2**-**8**. However, those skilled in the art will readily appreciate that the detailed description given herein with respect to these figures is for explanatory purposes as the invention extends beyond these limited embodiments.