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Varying Keyboard Angle based on Mechanical Inserts

Abstract: A mechanical insert adjusts the shape and height of a keyboard so as to accommodate the ergonomic preferences of its user.

This disclosure relates to the field of keyboards.

A technique is disclosed that uses separate pieces inserted into strategic locations of a keyboard to alter the height and ergonomics of the keyboard.

Today, the shape and size of notebook and desktop computer keyboards are fixed. They are made with designed and placed molds, so users do not have a choice of keyboard angle adjustment. As a result, many users experience ergonomic problems due to their keyboards. Any custom design would be very costly and difficult to implement.

According to the present disclosure, and as understood with reference to the Figure, the angle of keys and the z-height of a notebook or desktop computer keyboard can be customized by users via mechanical inserts.

In one implementation, multiple inserts are manually inserted to increase the height or shape. In another implementation, an insert is adjustable using screws and springs, and the tension on the insert is increased or decreased to change the height of the insert while it is inserted into the keyboard. In this way, the keyboard height and angle can be adjusted via small screws on the keyboard itself. In yet another implementation, the insert is a Chinese fan style mechanism without layers. It is used to alter the keyboard shape and angle, by stretching and locking the keyboard into place. This eliminates the need for multiple inserts by integrating the fanning ability into the center strip of the keyboard instead.

These implementations allow for flexibility of the ergonomics of the keyboard in a notebook or desktop keyboard platform where ergonomics is typically not an easy option in small form factor designs.

In one example, a keyboard 10 has a left portion 20 and a right portion 30. A fan style mechanism 40 is connected, in some cases detachably, to the left 20 and right 30 portions. A hinge portion 45 of the fan mechanism 40 allows the left 20 and right 30 keyboard portions to pivot to a better ergonomic position for the particular user. Another hinge (not shown) may be attached adjacent the hinge portion 45 to elevate the rear of the left 20 and right 30 portions (and fan mechanism 40) in a tripod-like arrangement to further enhance ergonomics.

The disclosed technique advantageously provides adjustable and customizable parts which allow a user to easily increase the height and angle of the keyboard. The user also has the option to add weight to the keyboard, or takeaway weight from it. Using a single insert, the keyboard angle can be fine-tuned to the user's setup so that the ergonomics for the user are ideal. If the user then changes the posture of their setup, they can quickly adjust the angle and height of their keyboard on the go. As a result, a single keyboard product can be user-adjusted to match the needs of a large number of customers, rather than needing a variety of differently shaped keyboards for different customer.

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