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## SEALED KEYBOARD WITH NORMAL TYPING FEELING

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## **Sealed Keyboard with Normal Typing Feeling**

**Abstract:** A sealed keyboard achieves a normal typing tactile feel through the addition of a rubber skin over the keys that has a flex-zone around keycaps that reduces the extra force needed to press the key due to the rubber skin.

This disclosure relates to the field of computers.

A technique is disclosed that provides a sealed keyboard that has a normal typing feeling through the addition of a flex-zone around keycaps.

While computers initially were used in clean environments, and later in office environments, it is desired to be able to use them in harsher environments such as industrial environments, healthcare delivery environments, and education environments. In these environments, there is an increased risk of liquid, dust, and chemical damage to the computer. In many cases, computer keyboards are particularly susceptible to these contaminants because the keyboard is not sealed, allowing the substances to enter the keyboard around the individual keys.

Prior solutions have used full or partial soft material coverage over the keys. However, such keyboards exhibit a bad typing experience with reduced or absent tactile feedback. They also sacrificed displacement-force curve, have a higher key corner clicking force than key center force. In those which use a sealed rubber skin, the skin movement is not fully in sync with keycap when pressed.

According to the present disclosure, and as understood with reference to the Figure, a silicon rubber keyboard is illustrated in an unpressed state 2 and pressed state 4. The keyboard includes key caps 20 (only one is illustrated) with a flex zone 30 in the rubber skin 40 around each key cap 20. The flex zone 30 is formed via U-shaped grooves 50 on the rubber skin 40 around each key cap 20. The flex zone 30 provides room for stretching when the key is pressed.

Thus the flex zone 30 in the rubber skin 20 mitigates the extra force needed to press the key and, as a result, the user perceives a normal typing feeling.

The keycap and/or the lattice may be bonded, and the extra rubber skin in the flex zone 30 allows for full bonding in these areas.

The disclosed technique advantageously results in a silicon rubber keyboard which is sealed from liquid, dust, and chemical damage. When used in the keyboard of a notebook computer, the entire C-deck of notebook is sealed from liquid, dust, and chemical damage, making it ideal for use in harsh environments.

***Disclosed by Jack Hui He, Michael Wang, Hung-Ming Chen, Albee Lin, and James Chang, HP Inc.***

