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KEYBOARD WITH ULTRAVIOLET BACKLIGHT AND FLUORESCENT KEYS

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Keyboard with Ultraviolet Backlight and Fluorescent Keys

Abstract: By using UV backlighting to flouresce keyboard keys, light leak from backlit keyboards is eliminated.
This disclosure relates to the field of keyboards.

A technique is disclosed that eliminates light leak from backlit keyboards.

In current notebooks, backlit keyboards tend to allow light to escape in the space between the physical keys and the lattice supporting the key. This is commonly known as “light leak”, and can be irritating for some users. The problem typically presents itself when the keyboard is viewed at an angle, such as when a user looks down at a keyboard while sitting at a desk.

Mitigating this problem by moving the LED into the keyboard key would undesirably dramatically increases complexity and cost. Furthermore, lowering the key stroke to decrease the gap size would cause an unsatisfying keyboard experience for users.

According to the present disclosure, and as understood with reference to the Figure, by switching the source of light to radiation beyond the visible spectrum of light, the user will not be able to see the backlighting from between the keys, because the light is not visible.

The typical visible light spectrum LEDs that illuminate keys in dark environments are replaced with ultraviolet LEDs 10. In addition, the typical keyboard keys are replaced with keys 20 made of injection-molded UV-reactive plastic with a fluorescent additive. Fluorescent materials emit visible light when excited by ultraviolet light. Thus, when the keyboard is used in the dark, the UV light 15 causes the keys 20 to light up with visible light 25, but no light is visible from the space between the keys because the LEDs 10 emit UV light 15.

Different fluorescent additives in the keys 20 result in different fluoresced colors of visible light 25.

While the keyboard has identical functionality to a traditional backlit keyboard, the disclosed keyboard advantageously does not have any light leak from the space between the keys and the lattice.

_disclosed by Andrew Elsey and Michael Wang, HP Inc._
INC: KEYBOARD WITH ULTRAVIOLET BACKLIGHT AND FLUORESCENT KEYS

Visible light

20

25

Key

Scissor switch

15

UV light

UV LED