Technical Disclosure Commons

Defensive Publications Series

September 19, 2017

Volumetric Slider On User Interface

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VOLUMETRIC SLIDER ON USER INTERFACE

ABSTRACT

A device and a method are disclosed for providing an improved volumetric slider on a touch user interface (UI). The device includes a UI, such as a touch screen, displaying a volumetric slider or controller. The controller is designed as a blob for adjusting the volume by a natural pinch or un-pinch motion using fingertips. The un-pinch motion stretches the blob to create two smaller blobs and a visually-compelling thread, which indicates a distance between the two smaller blobs. The thread allows the user to judge the adjustment they have made to the volume. Further, the thread can be brought to zero value by the pinch motion of the fingertips to bring the two smaller blobs together. The disclosed concept may also be applied to controls across a higher number of dimensions in 3D or 4D environments, such as virtual reality or augmented reality.

BACKGROUND

Sliders are used for various aspects on a user interface (UI) like touch screen displays. A sliding motion enables a user to make adjustments as needed. For example, the user can use the sliding motion for adjusting volume, display properties, zooming in or zooming out, and the like. Generally, sliders are hard to use with precision even if software for the same is advanced. For instance, adjustments made using sliders may be imprecise because the finger or thumb covers some or most of slider path of UI. This is a problem as the user would need to refer to the path, which is covered by the fingers, to know how far they have gone. Similar problems may be encountered in multidimensional scenarios, such as virtual reality or augmented reality.

DESCRIPTION

A device and a method are disclosed for providing an improved volumetric slider on user interface (UI), as illustrated in FIG. 1. The device 100 may be a mobile phone or any smart device with a UI 102, such as a touch screen, displaying a volumetric slider or controller. The slider or controller may be designed as a blob 104 for adjusting any parameter, such as volume. The adjustment may be performed by a natural pinch or un-pinch motion using fingertips. For instance, the fingertips of thumb and a finger may be placed together on the blob 104 to initiate adjustment in volume, as shown at 106. The un-pinch motion, which involves parting of the fingers, stretches the blob 104 to create two smaller blobs and a visually-compelling thread between the two smaller blobs, as shown at 108. One of the two smaller blobs may be located under the thumb and the other smaller blob may be located under the other finger.

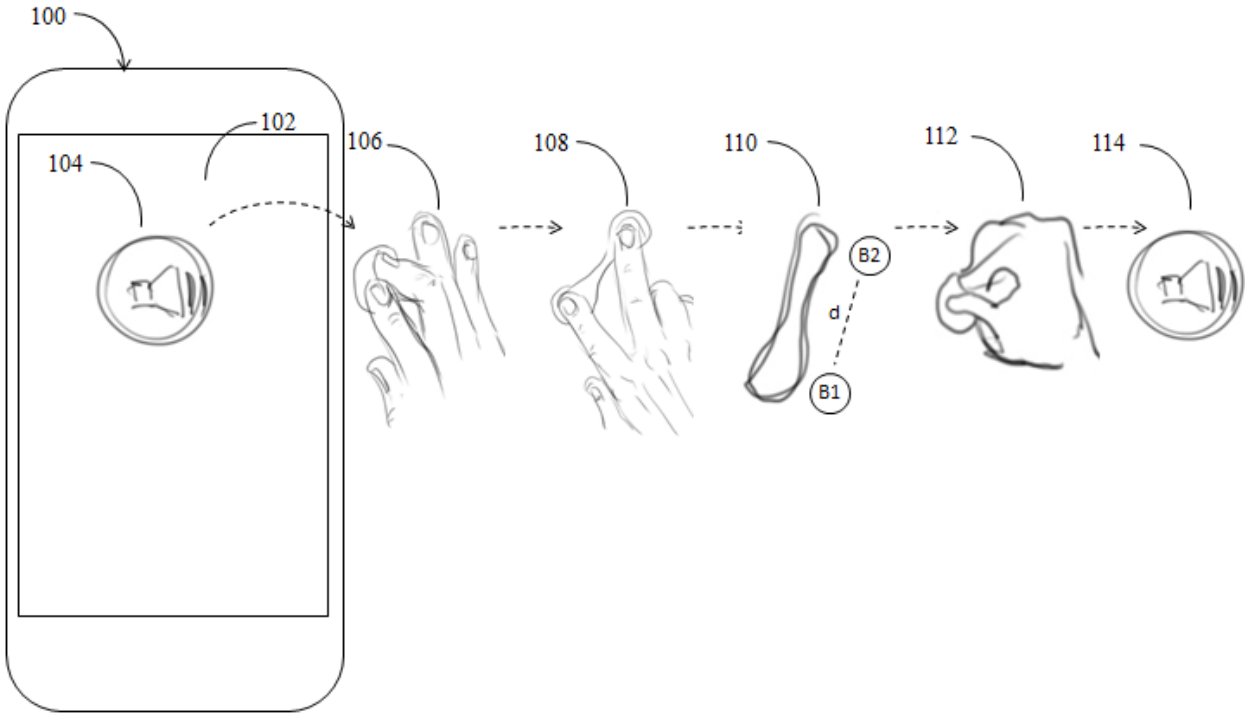

FIG. 1: Volumetric slider by a pinch or un-pinch motion of fingers

The visually-compelling thread “d” indicates a distance between the two smaller blobs B1, B2, as shown at 110. The thread allows the user to judge the adjustment they have made to

the volume. Further, the thread can be brought to zero value by the pinch motion of the fingers to bring the two smaller blobs together, as shown at 112. The smaller blobs may be touched again to slide them closer together or further apart. In one implementation, the fingertips can be placed anywhere along the line and then pinched together to reduce the value to zero again. When the two smaller blobs are brought together, the blob 104 is retained and may be moved anywhere on the touch screen 102 as required.

In one aspect, the concept may be intended as a 1D or 2D controller for 2D touch surfaces. In another aspect, the disclosed concept may be easily translated to controls across a higher number of dimensions in 3D or 4D environments, such as virtual reality or augmented reality. In one implementation, in higher dimensions, a set of values may be balanced across two dimensions, and then that unchanging setting translated through a third dimension. For example, stereo settings in one room could be translated to another or anti-skid braking settings could be translated from front-wheel drive to all-wheel drive.

Therefore, the “pinch” and “un-pinch” motion of a volumetric slider or controller designed as a blob provides an accurate measure of adjustment made by a user. The “pinch” and “un-pinch” motion is very well understood and already popular. For instance, the motion is currently in common use to zoom in or out of display views on touch screens, and it is a common way to illustrate relative size with a hand gesture.

In one implementation, the above concept may be used in place of any other controller that has a limited range, such as slider and most dials. In another implementation, the concept may be used in augmented reality, such as volume on a media player, to air/fuel mix on a helicopter.