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Floor controller for real-time control of music signal processing, mixing, video and lighting

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horizontally) shallow enough mechanisms, it becomes possible to play notes the thumb-to-pinky reach is nearly the same across both keyboards. Clearly, two keyboards, but there are also limitations in conventional keyboards that technique and respected in keyboard music composition; similar minor tech developed for such proximate keyboard arrays.

[0168] Without reducing the size of the keyboards a single hand can even n simple example is to add back-up notes of the same pitch or differing octaves. However, two hands may use the twokeyboard playing techniques to make avid use of a three, four, or more proximate keyboard array.

[0169] FIG. 3 shows an example of a proximate keyboard array. In this example, three keyboards **301**, **302**, **303** are arranged in an overhanging staircase arrangement. Three views are shown: a side view **300**, a top view with hidden key areas suggested by dashed lines **310 a**, and the side view of **300** reoriented as an orthogonal projection **310 b** of the top view **310 a**. The separation distances **305 a**, **305 b** between the tops of the keys of a given keyboard and the bottoms of the keys of a keyboard overhanging it should be minimized and in the limit are just slightly larger than the maximum travel distance of the overhanging key. The depth of the overhang **304 a**, **304 b** is set in the balance between the trade-off of maximizing desired accessibility to the back of an overhung key and minimizing the separation distance between the edges of the keys of two adjacent proximate keyboards. It is noted that any of the keyboards used here may be either of a standard variety or any of the more advanced keyboards described later (miniature, superimposed, multi-parameter keys, pressure-sensor array, etc.). It is also noted that this technique may be applied to other types of keyboards with applicable types of key geometry.

[0170] **2.1.1.2 Miniature Keyboards**

[0171] If the depth of the keyboard is reduced, the span of a given hand is increased further. This may be done by making the keys relatively shorter, forming a stubby keyboard, or by shrinking the size of the entire keyboard in all dimensions. Such miniature keyboards are commonly found on consumer electronic keyboards and keyboard instruments made for children.

[0172] Clearly a proximate keyboard array can be created from miniaturized keyboards. The range of the fingers within and across individual component keyboards may be greatly increased in this fashion, albeit with a perhaps somewhat compromised tradition and technique.

[0173] An additional, and particularly valuable role for the proximate capabilities of such miniature keyboards is to mount them, as a component, on an instrument with other components so as to form a more complex instrument where free fingers can operate two or more such components simultaneously. As a simple example, a guitarist using a thumb-pick or classical guitar technique can easily use free fingers to play chords, bass lines, melodies, etc. on a miniature keyboard attached to a guitar.

[0174] FIG. 4 shows an example of an instrument-mounted miniature keyboard configuration employing one miniature keyboard **421**, in particular an adapted Indian Sitar **400** with many additional example instrument elements which will be described later.

[0175] FIG. 5 shows an example of an instrument-mounted miniature keyboard configuration employing two miniature keyboards, in particular an adapted electric guitar **500** with many additional example instrument elements which will be described later. Here note the two

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