

(54) **MULTIMEDIA PC KEYBOARD EXTENDED WITH MUSIC CONTROL KEYS**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(52) U.S. Cl. **341/22; 84/744; 84/745**

(58) Field of Search **341/22; 84/744, 84/745, 600; 345/168**

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,565,641 A	*	10/1996	Gruenbaum	84/615
5,646,648 A	*	7/1997	Bertram	341/22
6,063,994 A	*	5/2000	Kew et al.	84/600

* cited by examiner

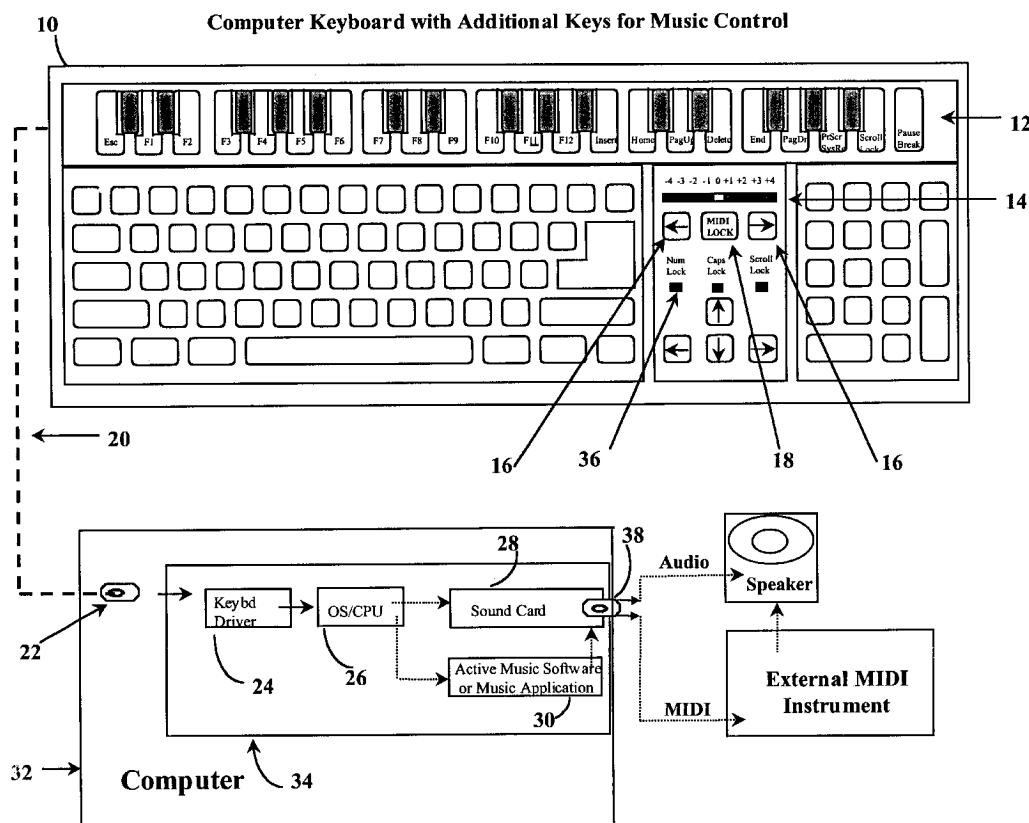
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(57) **ABSTRACT**

A dual mode keyboard system with a modified keyboard arrangement allows PC users to have real-time control of MIDI data. By toggling the keyboard system between a MIDI data input mode and an alphanumeric data input mode. The key board used in the current invention may either be a separate unit connected to a PC through a keyboard port or may be integrated as a single unit with PC hardware. The keyboard preferably has keys that are capable of operating in MIDI input mode and that are positioned at the top portion of the keyboard. The MIDI input keys are arranged to represent a keyboard instrument, such as a piano. The keyboard also has a MIDI control section for toggling between the MIDI input mode and the alphanumeric input mode, wherein the control section also has keys for choosing operating transposition octave levels of MIDI input keys. The keyboard is typically interfaced with the keyboard driver program and operating system or CPU of the PC. MIDI data inputted from the keyboard can directed through a sound card or music application software, before being played by and audio system or being sent to an external MIDI instrument. The dual mode keyboard system of the current invention provides for a simple and low cost alternative to current MIDI data manipulation systems.

13 Claims, 4 Drawing Sheets



Computer Keyboard with Additional Keys for Music Control

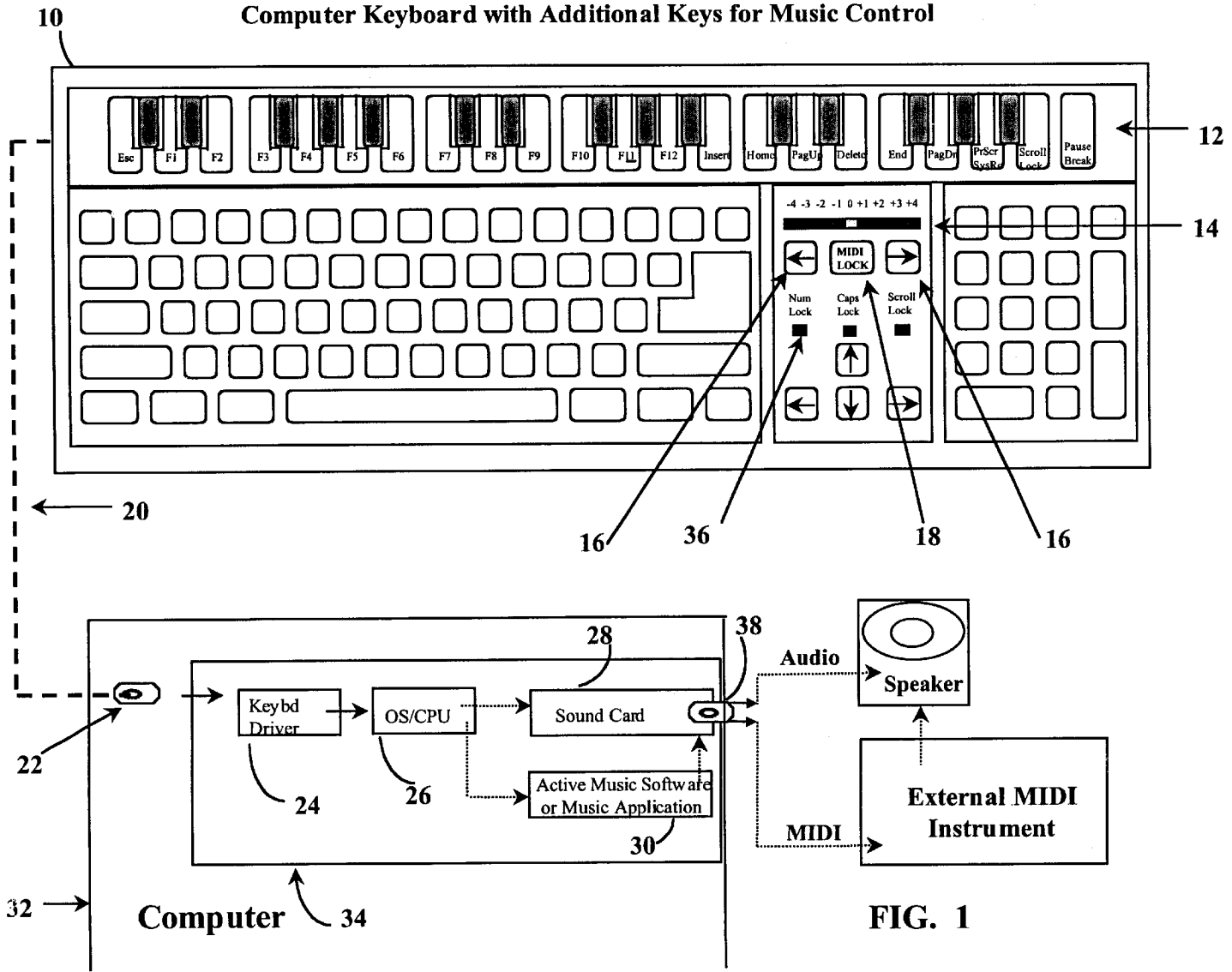


FIG. 1

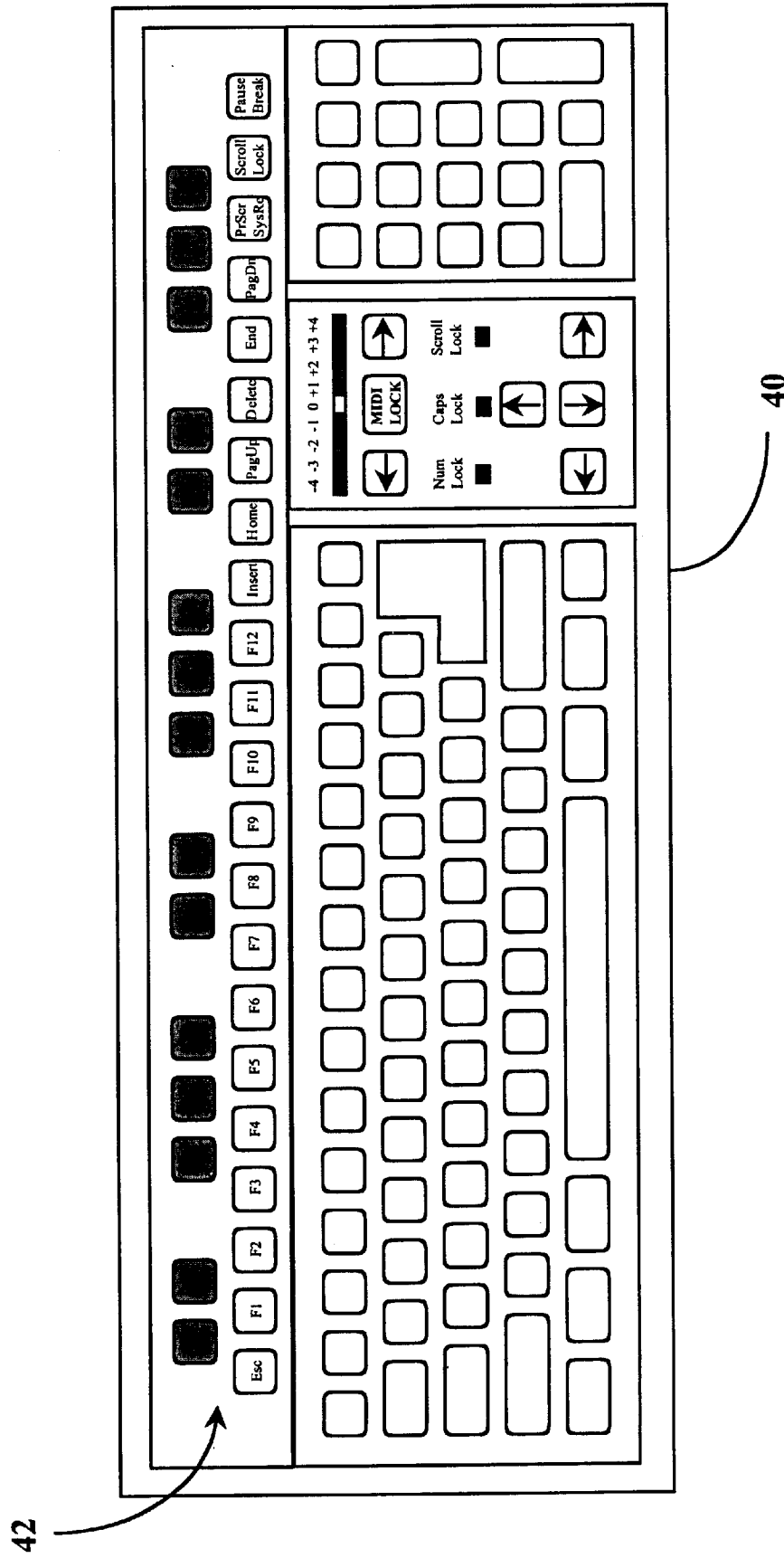


FIG. 2

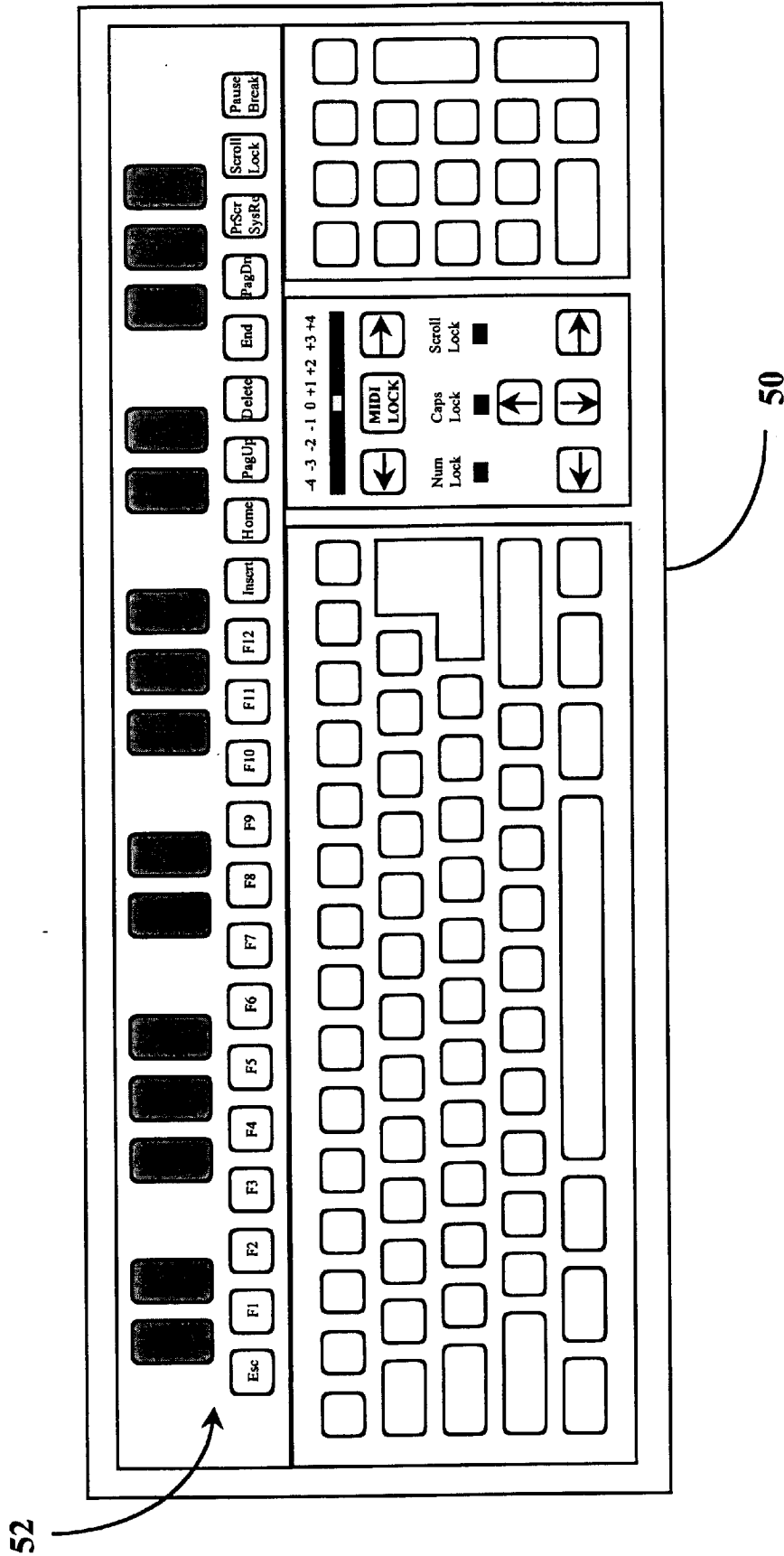


FIG. 3

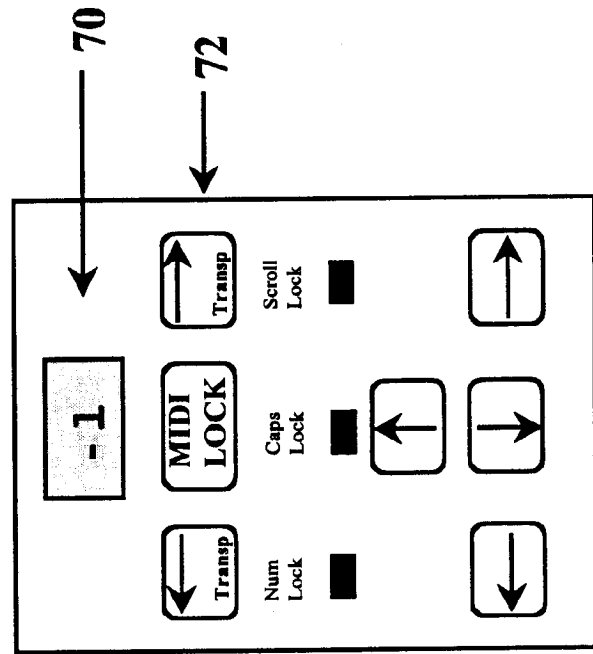


FIG. 4

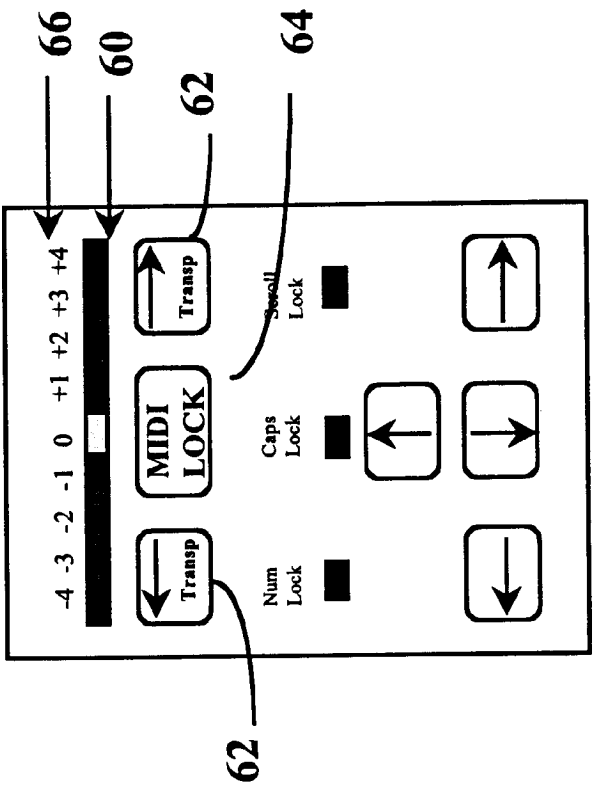


FIG. 5

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