



US005469152A

United States Patent [19]

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Yamamoto et al.

[45] **Date of Patent:** Nov. 21, 1995

[54] **REMOTE CONTROL DEVICE THAT TRANSMITS SIGNALS INDICATING TERMINATION OF KEY PRESSING OPERATIONS**

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[75] Inventors: **Hiroataka Yamamoto; Tamiya Tanaka,**
both of Kanagawa, Japan

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[73] Assignee: **Sony Corporation,** Tokyo, Japan

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[21] Appl. No.: **271,277**

Patent Abstracts of Japan, Pub.#JP60001916, Pub. Jan. 8, 1985, Sony KK, European Patent Office, vol. 9, No. 110.

[22] Filed: **Jul. 6, 1994**

Related U.S. Application Data

Primary Examiner—Donald J. Yusko

Assistant Examiner—Edward Merz

[63] Continuation of Ser. No. 885,085, May 18, 1992, abandoned.

Attorney, Agent, or Firm—Pasquale Musacchio; Jerry A. Miller

Foreign Application Priority Data

[57] **ABSTRACT**

May 20, 1991 [JP] Japan 3-143870

A remote control device controls an electronic system that has a number of functions. The remote control device has a limited number of function keys, and certain keys correspond to different functions of the electronic system. In order to permit discrimination of the function keys, the length of time during which the function key is actuated is employed in the electronic system. To prevent erroneous control caused by artificial interruption of the control signal, the remote control device appends one of two different time code signals to the key code corresponding to the actuated function key, whereby discrimination of the actuation time at the electronic system is made possible.

[51] **Int. Cl.⁶** **H04Q 9/14; H04Q 7/00**

[52] **U.S. Cl.** **340/825.63; 340/825.69; 340/825.24; 341/176; 359/148**

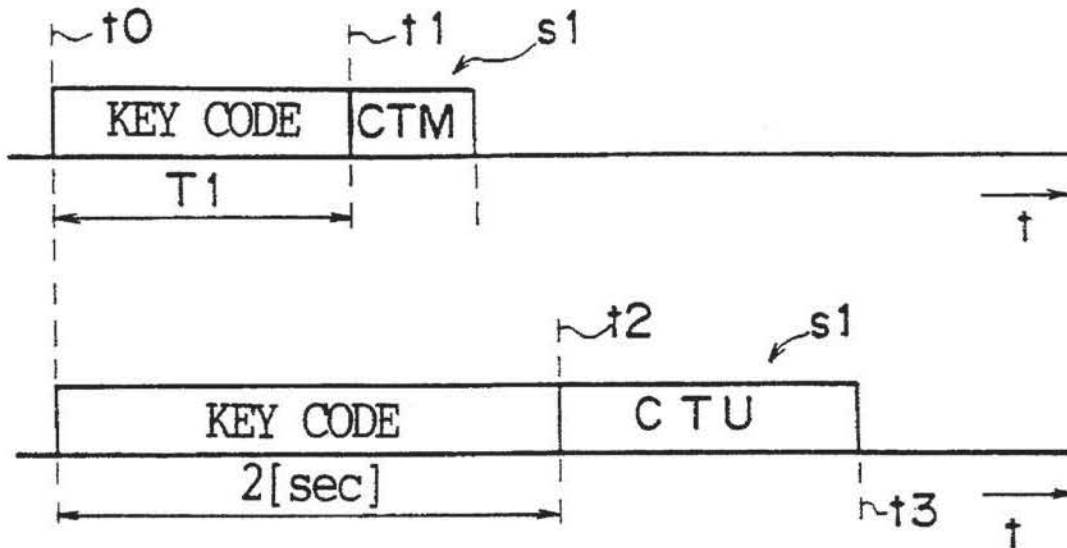
[58] **Field of Search** 340/825.24, 825.25, 340/825.57, 825.69, 825.72, 825.63; 358/194.1, 86, 335; 360/14.1, 33.1; 369/24, 50; 359/148; 341/176

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7 Claims, 7 Drawing Sheets



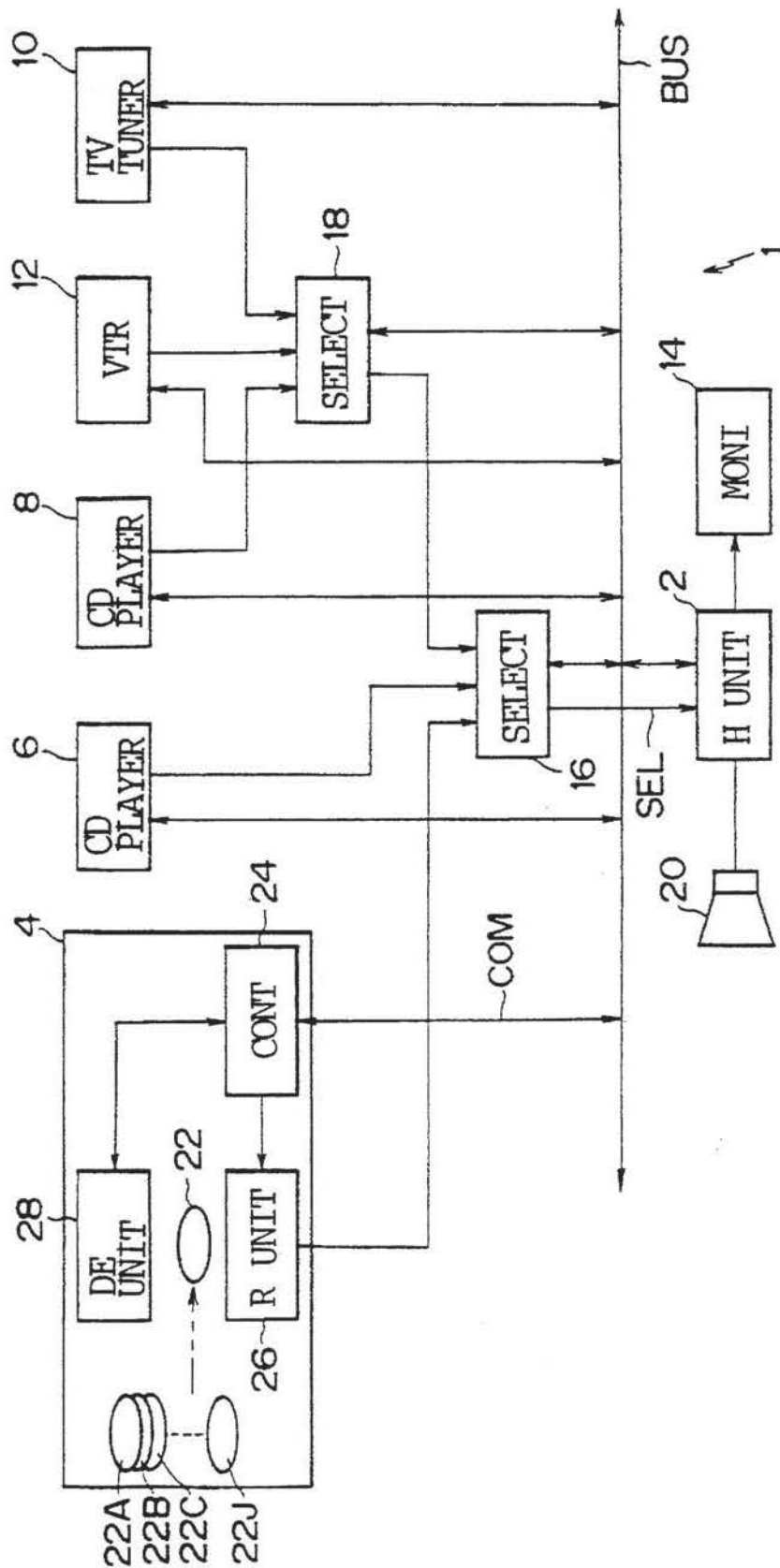


FIG. 1

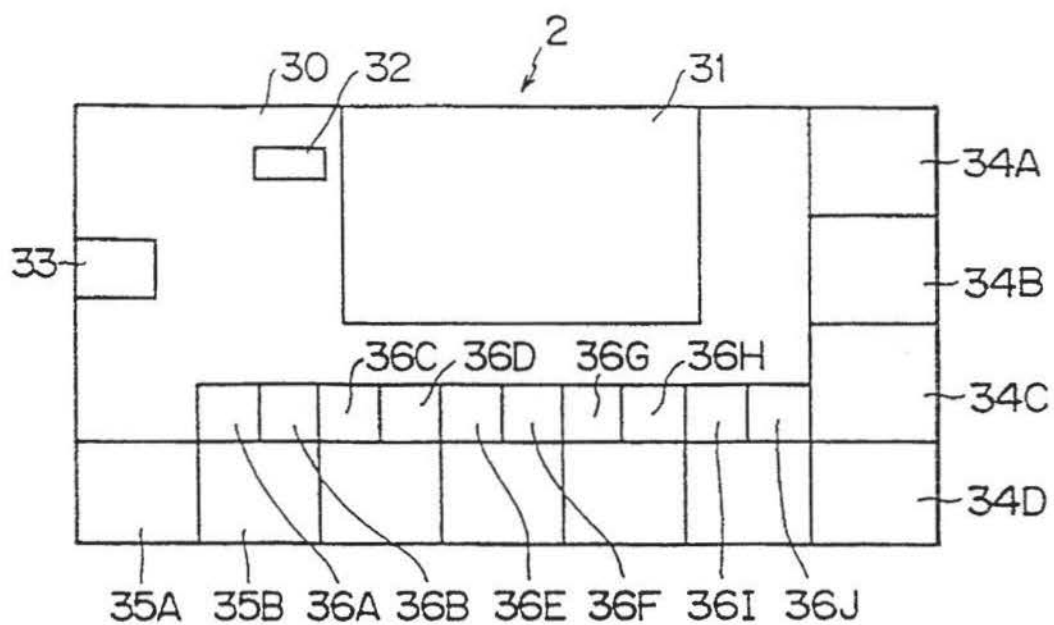


FIG. 2

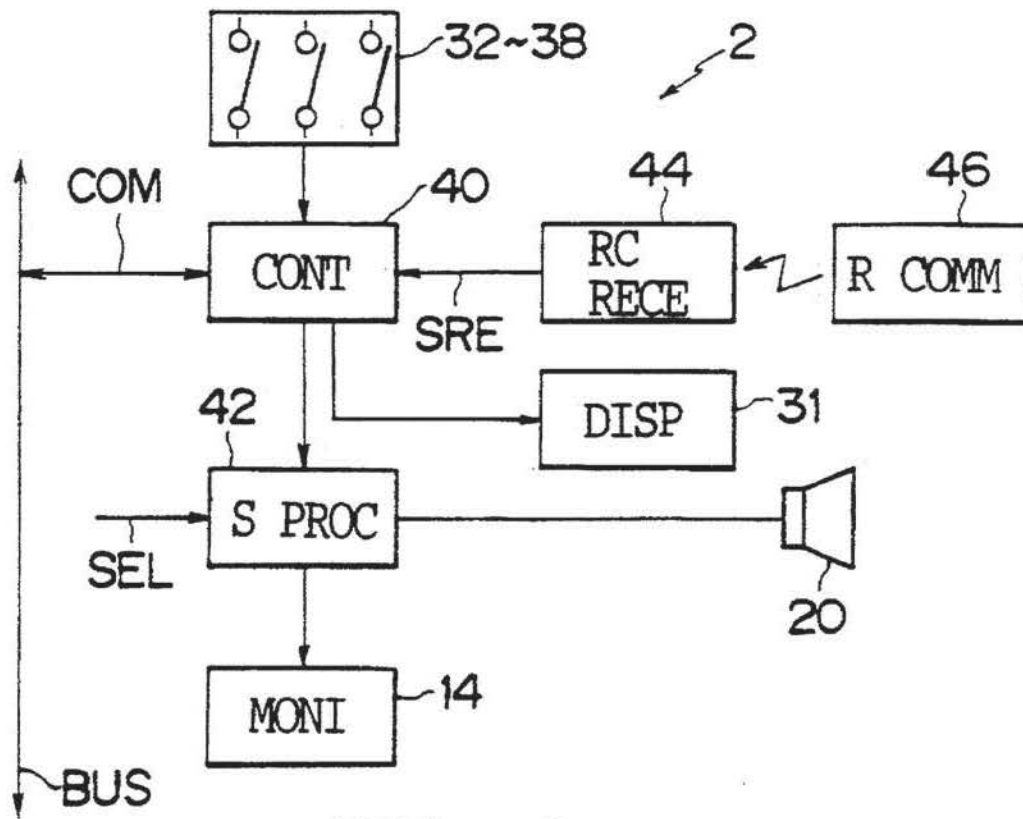


FIG. 3

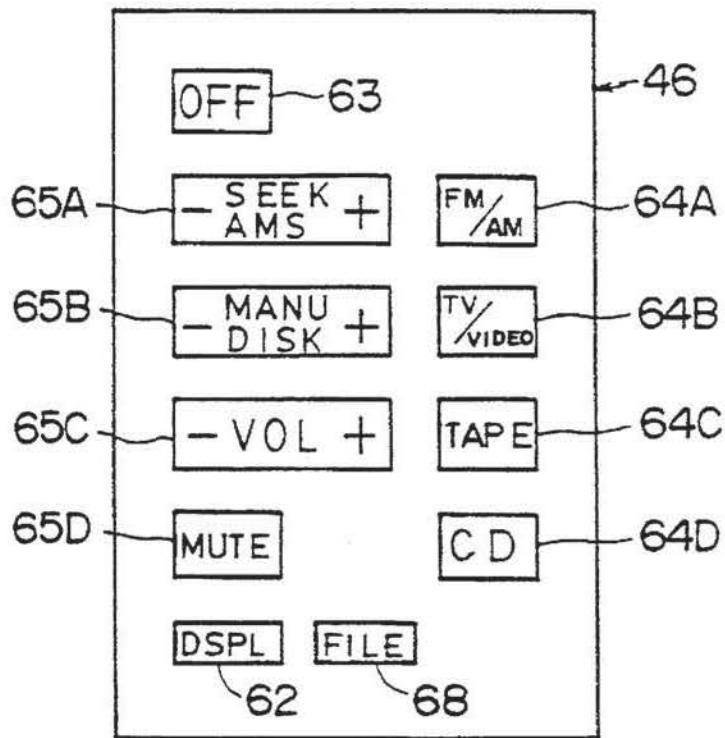


FIG. 4

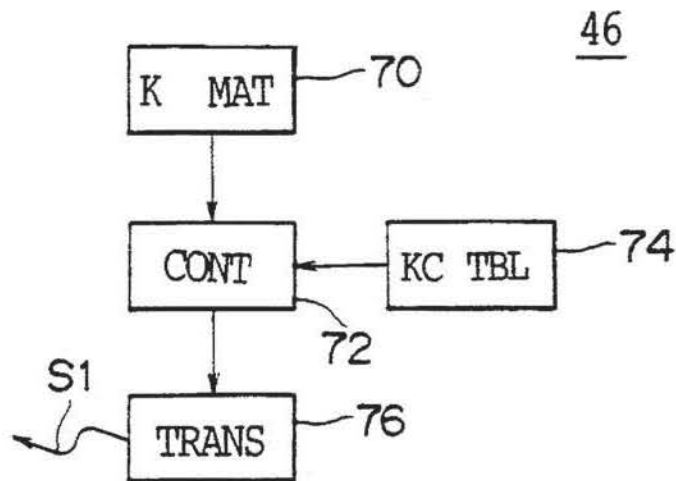


FIG. 5

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