United States Patent [19]

Shimada et al.

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[54] **REMOTE-CONTROLLING COMMANDER WITH MULTI-FUNCTION ROTARY DIAL**

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[30] **Foreign Application Priority Data**

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[52] U.S. Cl. 360/10.3; 360/33.1; 360/71; 360/73.08; 358/335
[58] Field of Search .... 369/7, 6; 358/335, 191.1, 358/194.1; 360/33.1, 10.1, 14.1, 61, 10.3, 71, 73, 73.01, 73.04, 73.05, 73.08; 455/181, 186, 185, 179, 603; 361/340; 200/33 R, 61, 58 R; 340/696, 688, 870.08

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[57] **ABSTRACT**

A remote-controlling commander includes a rotary dial rotatably mounted on a commander housing for manual operation of the user. The commander also includes a position detector for monitoring angular position of the rotary dial, in which the angular position and/or angular displacement of the rotary dial represents which operation of the apparatus is to be controlled and an encoder for producing an encoded signal variable depending upon the angular position and/or angular displacement of the rotary dial. The encoded signal is transmitted through a transmitter to a receiver provided in the apparatus to be controlled. The received signal is decoded in the apparatus to trigger the function represented by the received signal. The received signal from the remote-controlling commander may be used to perform functions associated with a VTR, such as timing of video recording, picture searching, channel timing, and the like.
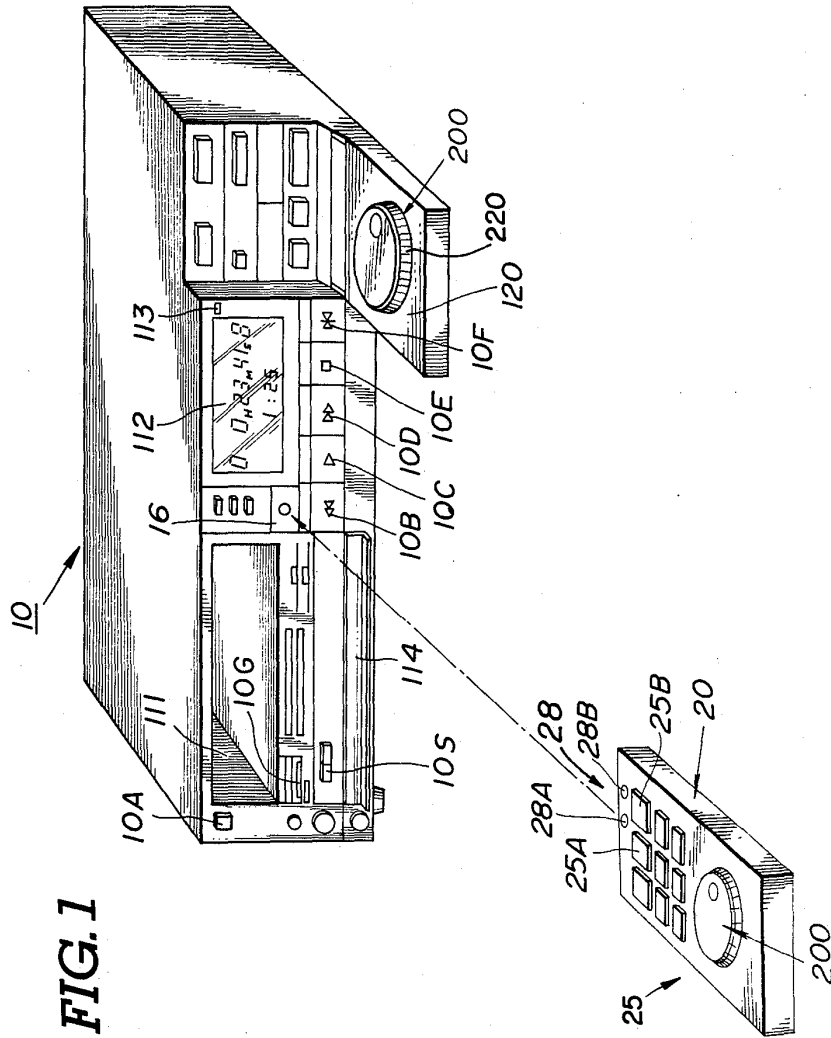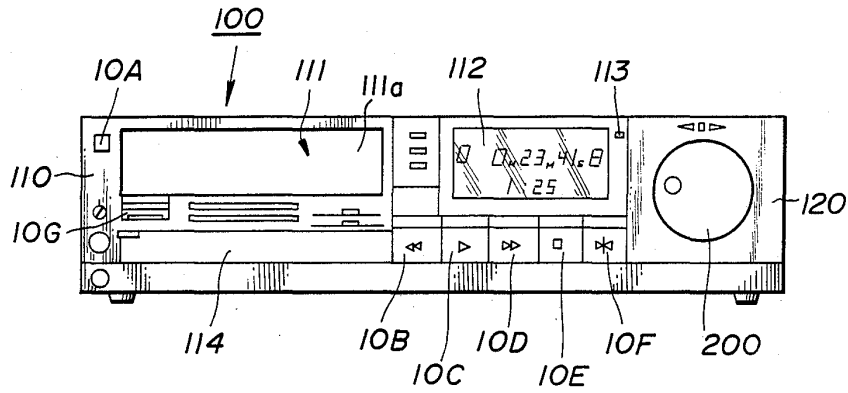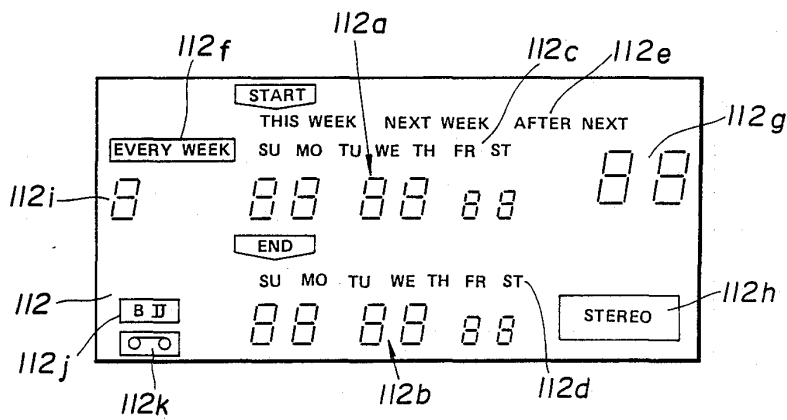
22 Claims, 13 Drawing Sheets

FIG.1

FIG.2

FIG.5

FIG.4

FIG.3

10a

113

OPEN

CLOCK
SET

TIMER
SET

10e

CLEAR | BAC

NE

110

105

INPUT SELECT

TUNER LINE/PCM

114
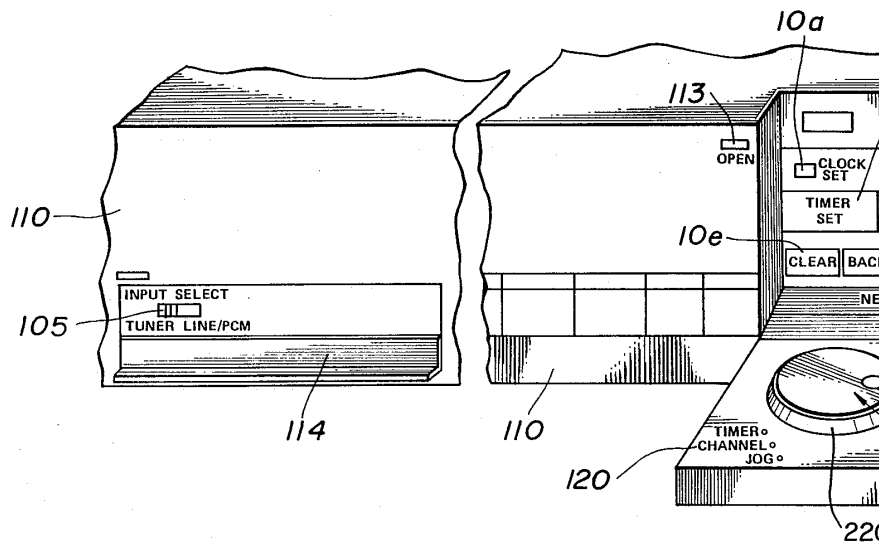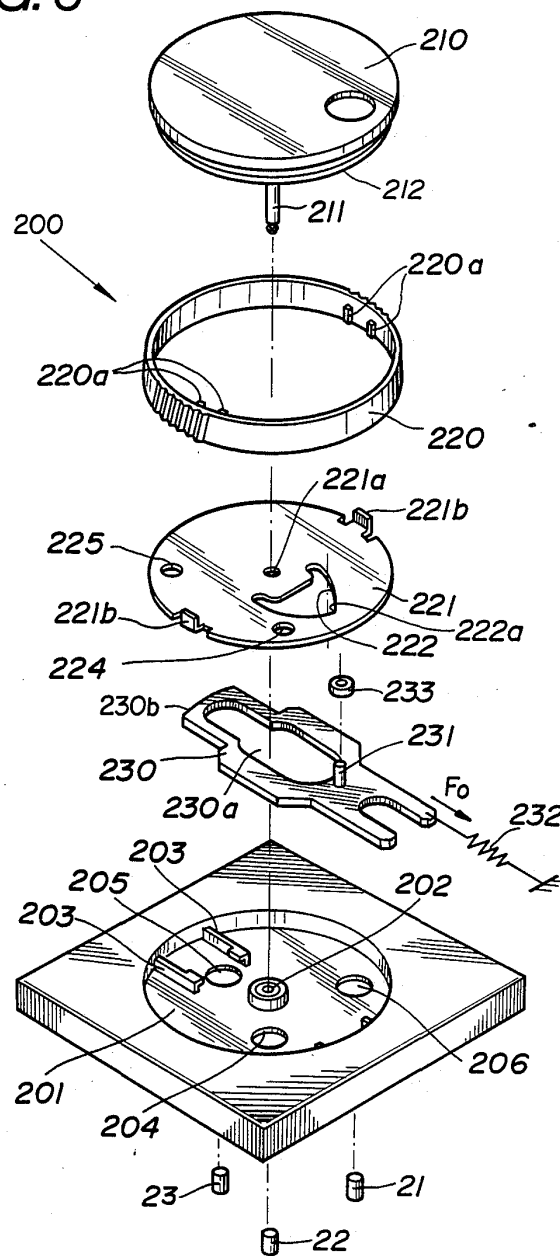
110

TIMER
CHANNEL
JOG

120

220
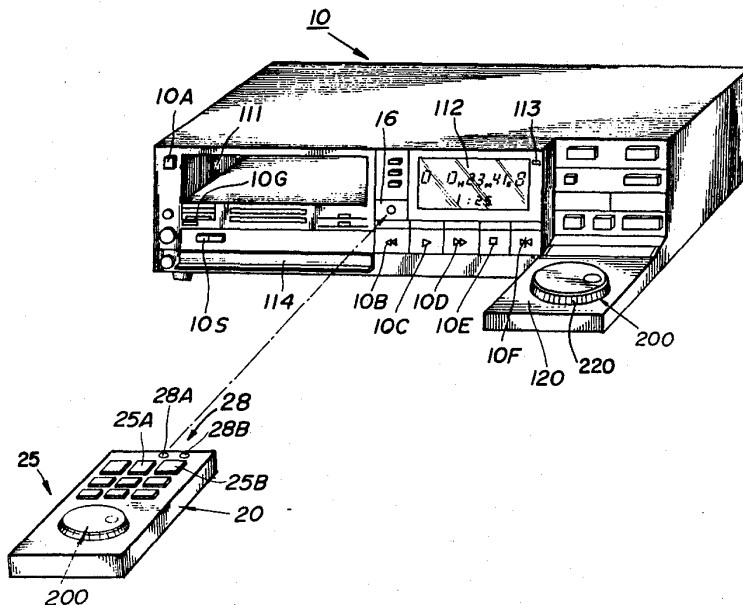
FIG. 6

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