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United States Patent [19]

Goldwasser et al.

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[54] **VARIABLE-DELAY VIDEO RECORDER**

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[21] Appl. No.: **669,061**

[22] Filed: **Mar. 12, 1991**

[51] **Int. Cl.**[5] **G11B 20/00**; G11B 20/10

[52] **U.S. Cl.** **360/7**; 360/32; 360/39

[58] **Field of Search** 360/7, 32, 54, 13, 14.1, 360/14.2, 14.3, 39; 369/258, 259; 358/310

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Primary Examiner—David Mis
Attorney, Agent, or Firm—Michael M. deAngeli

[57] **ABSTRACT**

A video recorder and playback device allowing simultaneous recording and playback of program material, including means for controllably varying a time delay between the recording and playback of recorded material. This allows, for example, playback of previously recorded material to be temporarily stopped and then resumed without interrupting the recording of new material. A user can arrange to start recording a broadcast program (while the user is not at home, for example) in the conventional way via stored instructions, and then begin watching the recording several minutes or hours later, before the program is over, without stopping the recording. The user can also interrupt the playback of a program that is being recorded as it is being watched (to take a telephone call, for example), and then resume playback of the program (after the phone call is over) without stopping the recording. The user can then watch the rest of the program delayed by a time period equal to the length of time of the interruption. If there are portions of the program that the user does not want to see (e.g. commercials), he can speed (i.e., fast forward) through those recorded portions and catch up to the live broadcast. The user can also rewind and replay portions of the program as the video recorder continues to record the program.

14 Claims, 4 Drawing Sheets

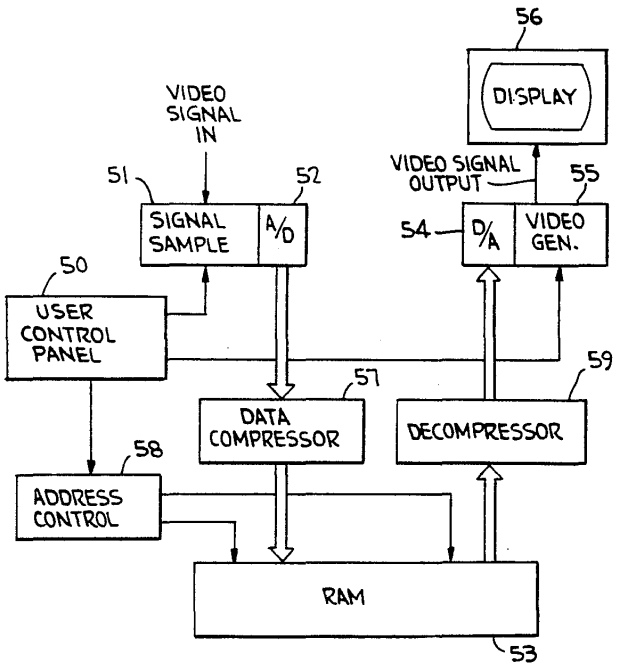

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FIG. 1

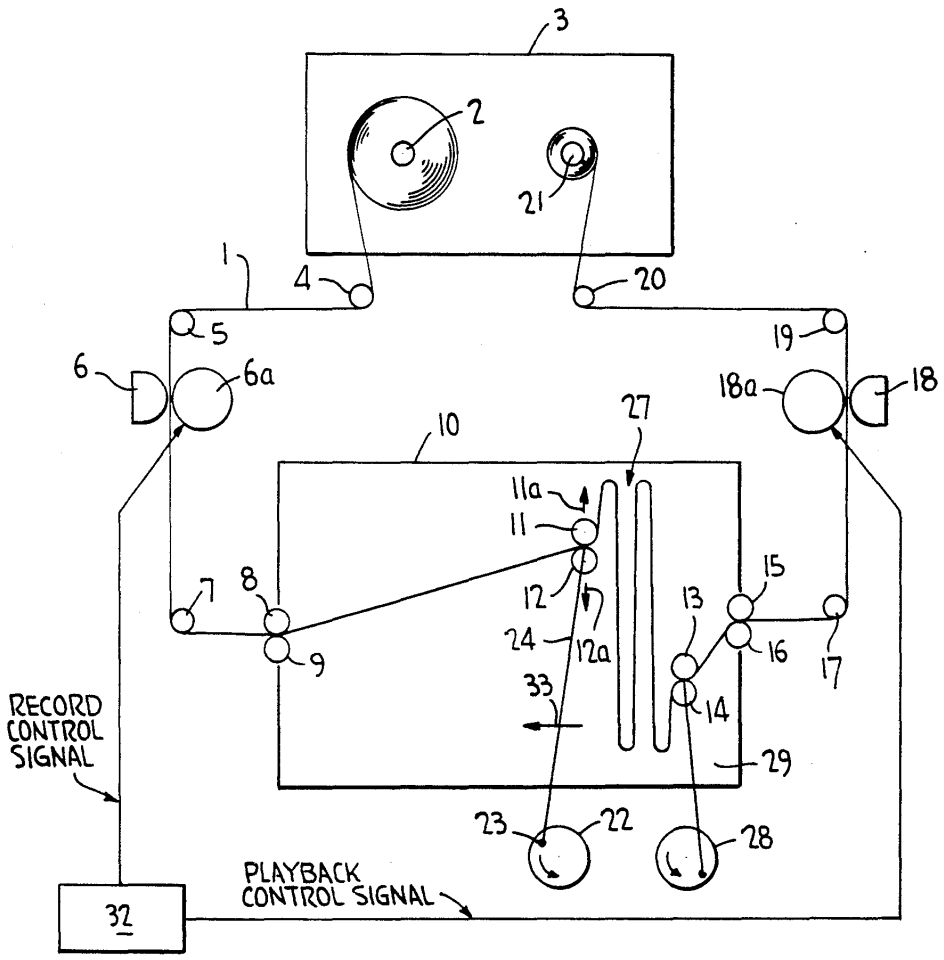

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FIG. 2(a)

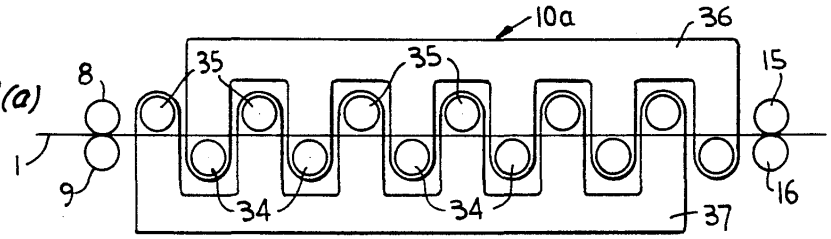

FIG. 2(b)

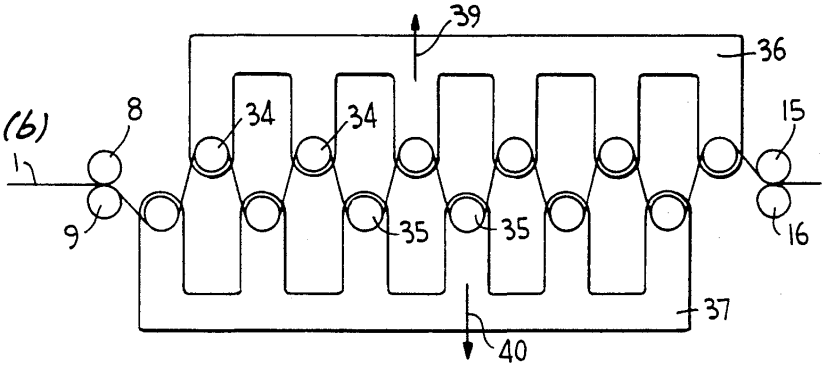

FIG. 2(c)

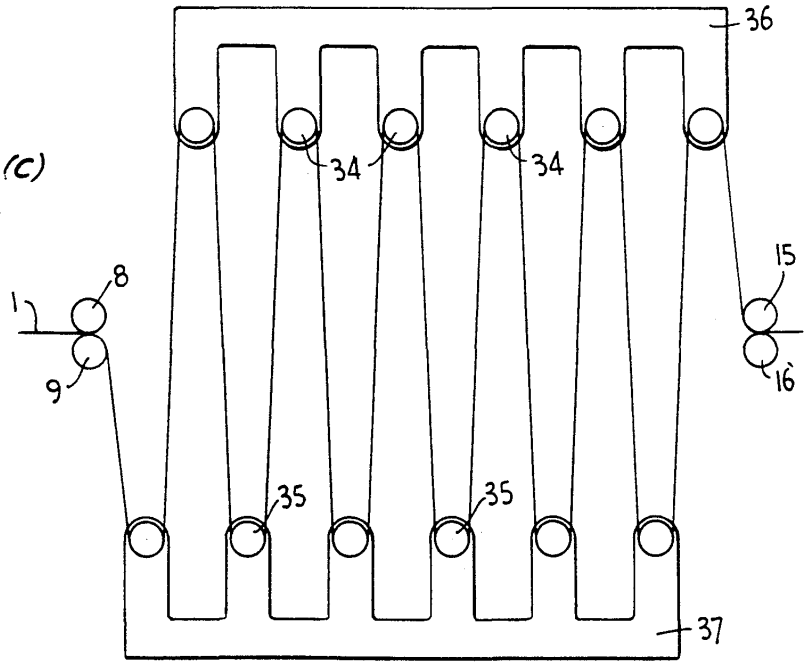

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FIG. 4

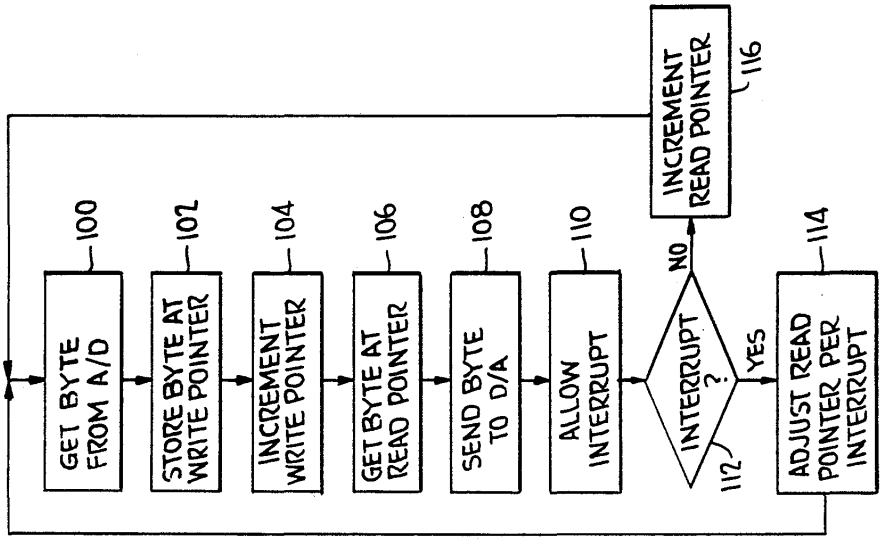

FIG. 3

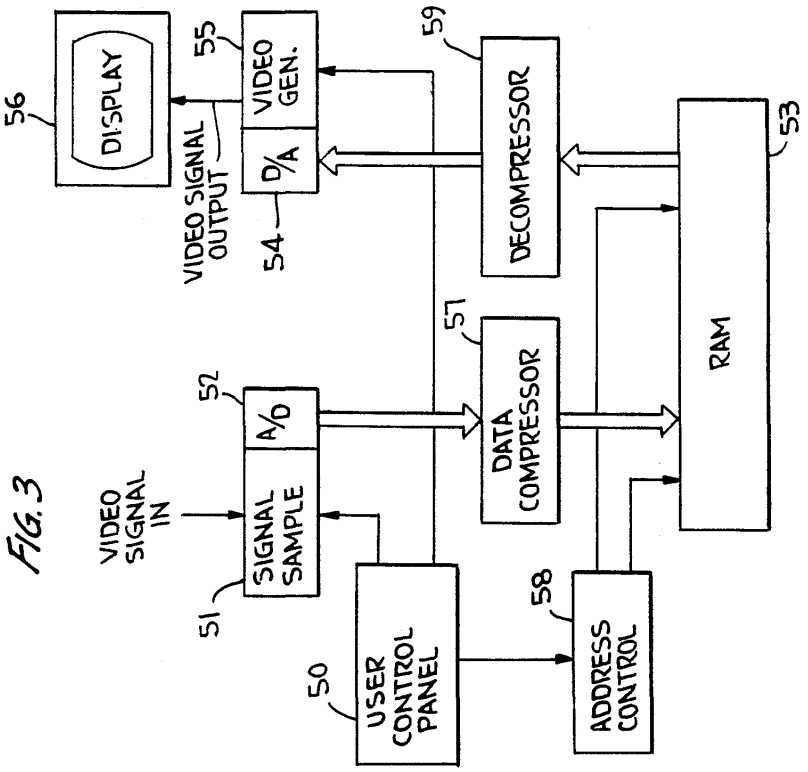

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FIG. 5

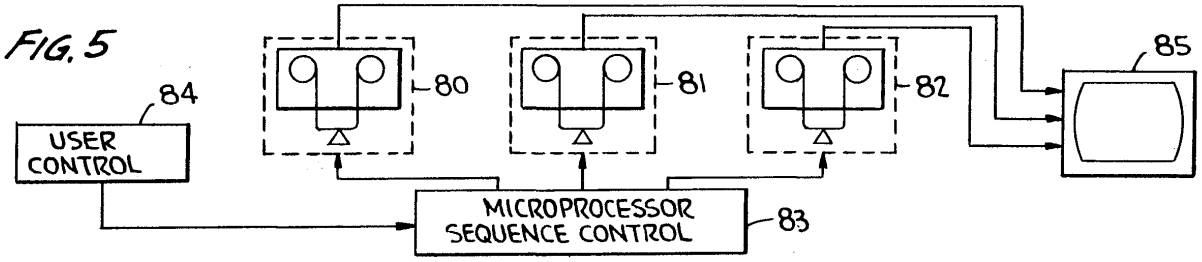
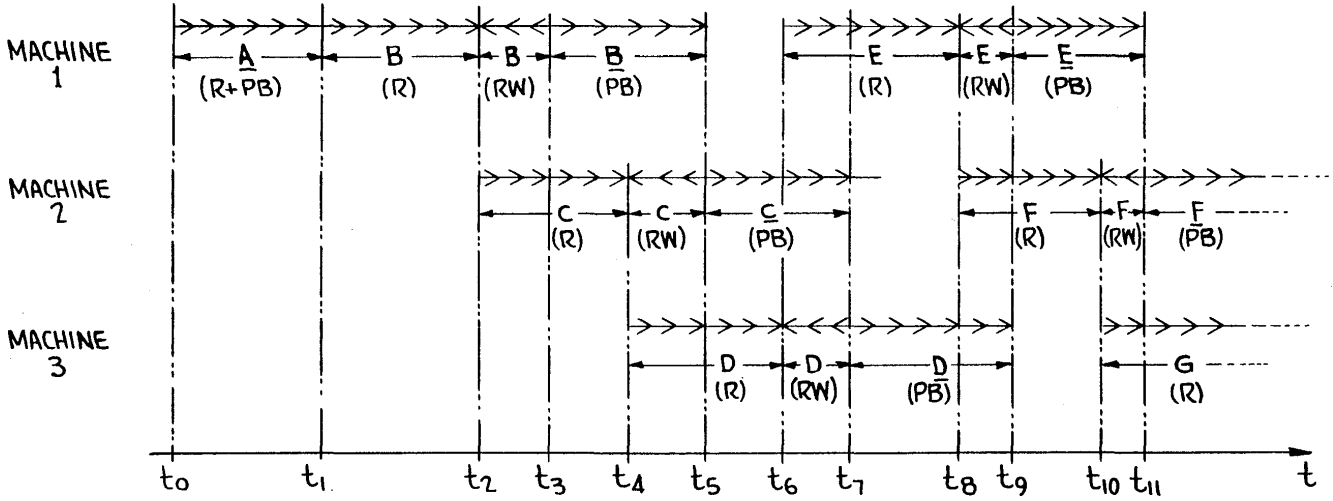


FIG. 6



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