United States Patent [19]

Mustafa et al.

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[45] **Date of Patent: Dec. 6, 1988**

[54] **SYSTEM FOR SYNCHRONIZING DIGITAL BIT STREAM FOR TELECOMMUNICATION SYSTEM**

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[73] Assignee: **GTE Government Systems Corporation**, Waltham, Mass.

[21] Appl. No.: **44,387**

[22] Filed: **Apr. 30, 1987**

[51] **Int. Cl.**[4] **H04N 7/04**

[52] **U.S. Cl.** **358/147**; 358/146; 358/148

[58] **Field of Search** 358/148, 141, 142, 146, 358/147, 143, 145, 86, 83; 375/95, 111, 119

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Assistant Examiner—David E. Harvey
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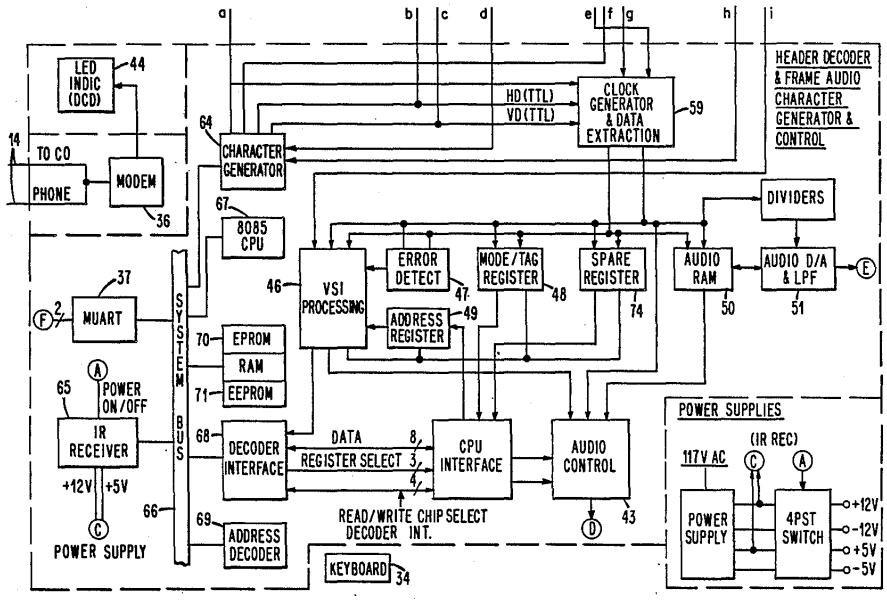
[57] **ABSTRACT**

A telecommunication system for synchronizing a digital bit stream sent from a central facility to a terminal on lines of television frames. Each active line starts with a horizontal sync pulse and a color burst. A first data clock at the central facility provides first data clock pulses synchronized with said color burst. A circuit at the central facility provides a flag bit one clock pulse wide delayed by a first constant number of clock pulses from the start of the line's horizontal sync pulse. A second data clock at the terminal provides second data clock pulses synchronized with said color burst. A circuit at said terminal provides a time window delayed by a second constant number of clock pulses from the start of the line's horizontal sync pulse so as to bracket said flag bit. A plurality of second data clock pulses occur during said time window. Circuits at the terminal determine which of said plurality of second data clock pulses coincide in time with said flag bit, thereby synchronizing said data stream with said second data clock.

2 Claims, 5 Drawing Sheets



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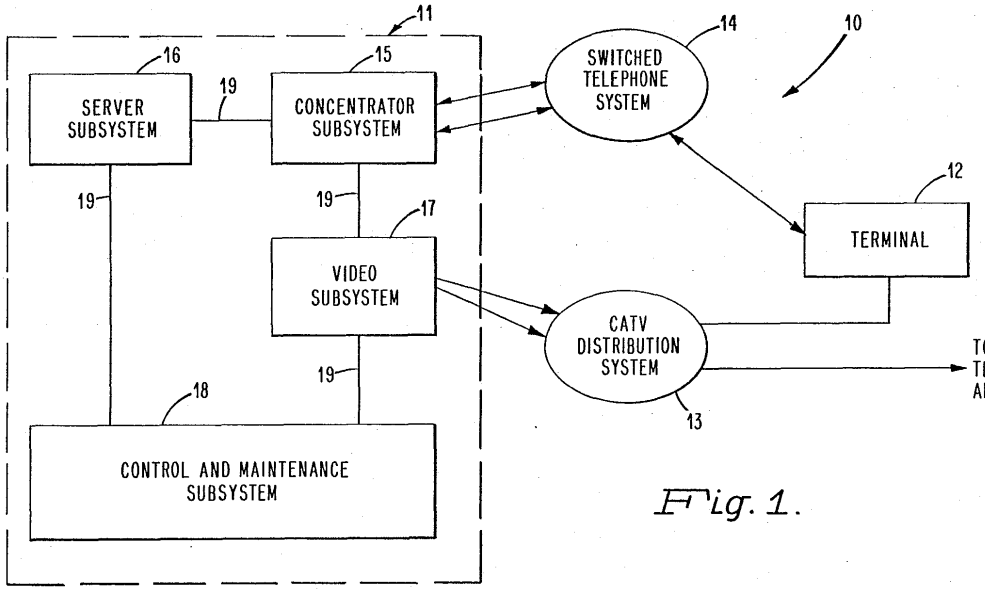

Fig. 1.

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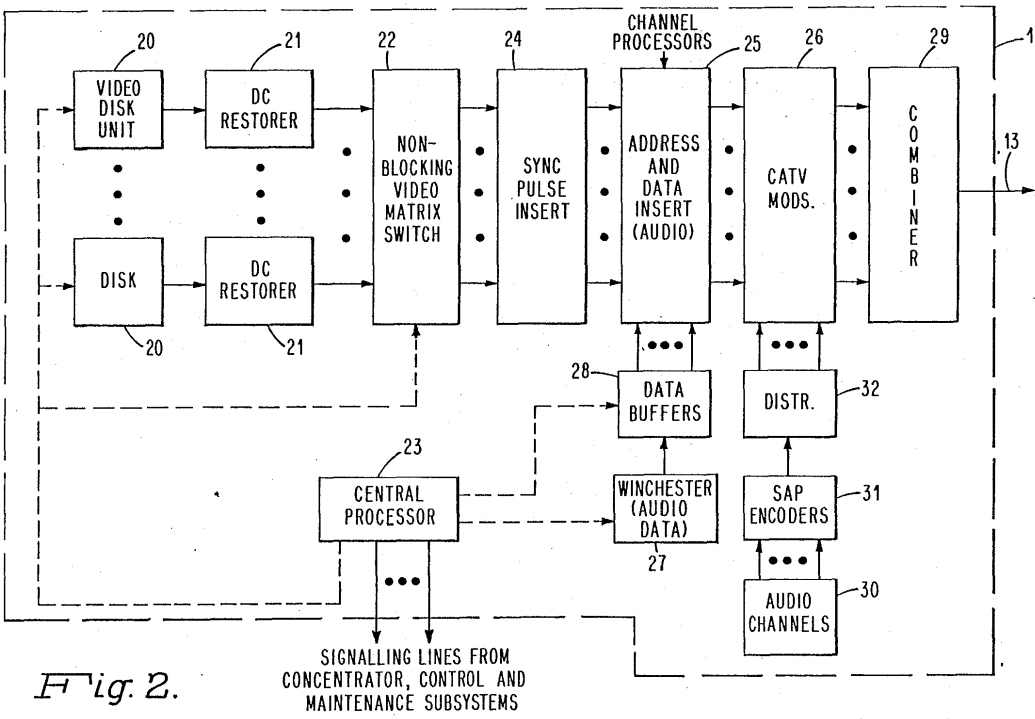

Fig. 2.

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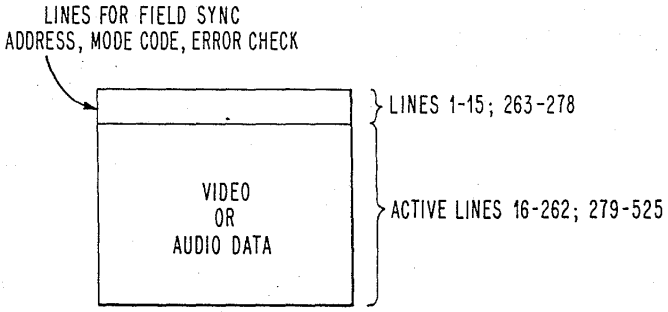

Fig. 3.

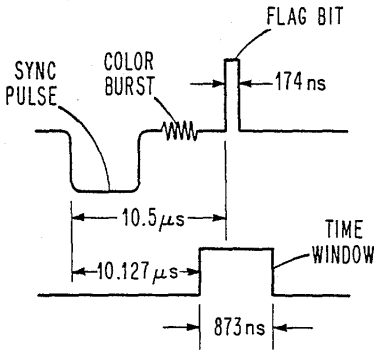

Fig. 4.

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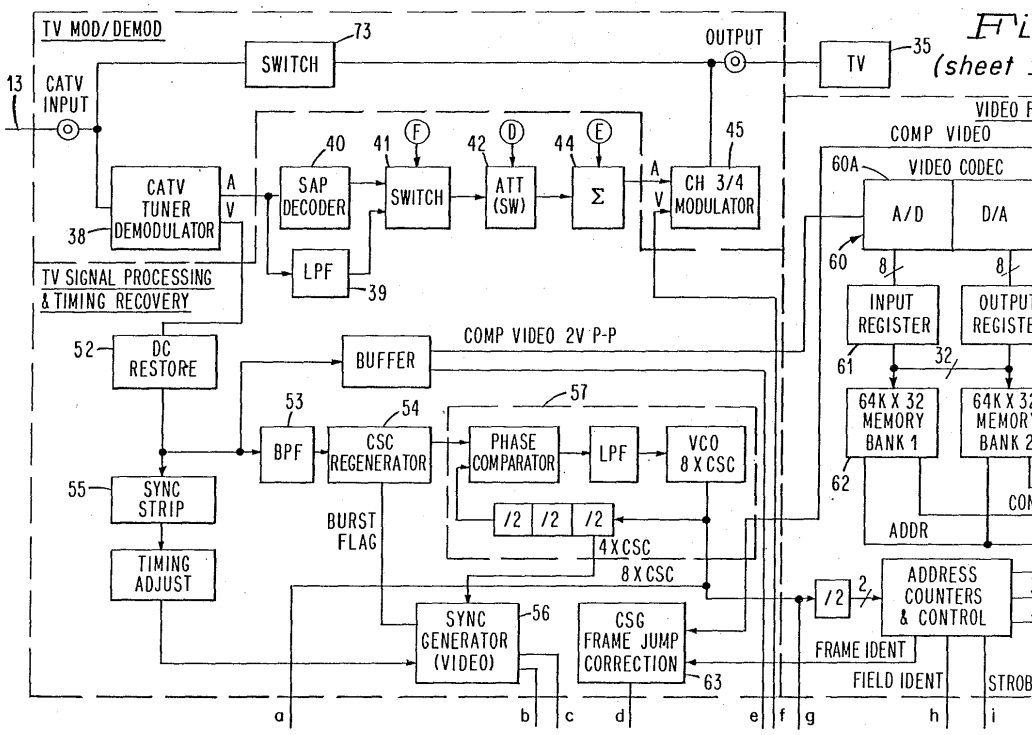

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