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Fallon

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(54) **CONTENT INDEPENDENT DATA COMPRESSION METHOD AND SYSTEM**

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(51) **Int. Cl.**[7] **H03M 7/34**; H03M 7/00
(52) **U.S. Cl.** **341/51**; 341/79
(58) **Field of Search** 341/51, 79, 67; 709/231, 219, 236, 250; 358/1.1; 712/32; 711/208

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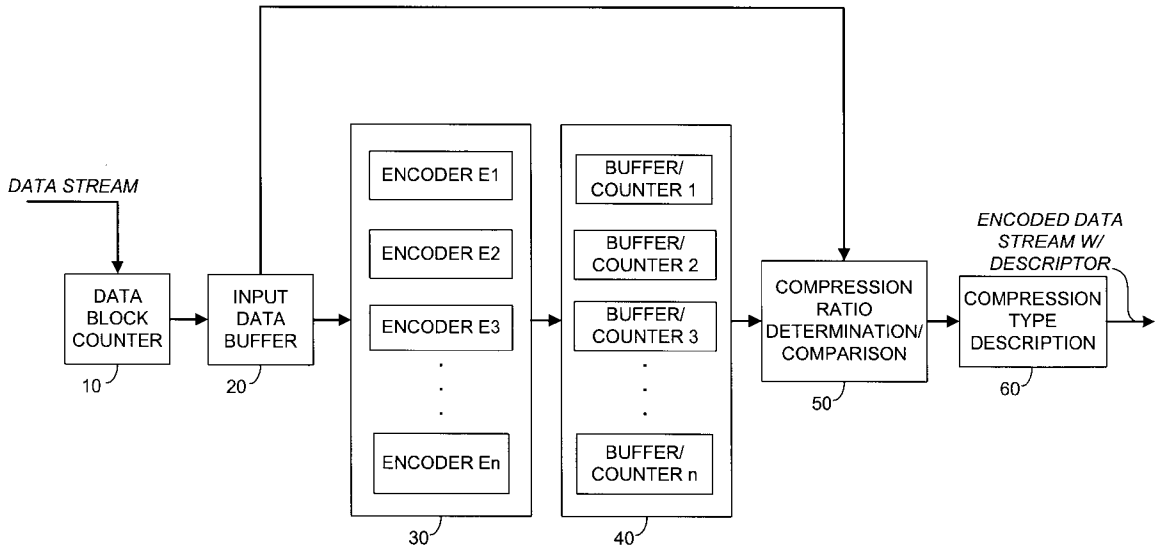
(57) **ABSTRACT**

Systems and methods for providing content independent lossless data compression and decompression. A data compression system includes a plurality of encoders that are configured to simultaneously or sequentially compress data independent of the data content. The results of the various encoders are compared to determine if compression is achieved and to determine which encoder yields the highest lossless compression ratio. The encoded data with the highest lossless compression ratio is then selected for subsequent data processing, storage, or transmittal. A compression identification descriptor may be appended to the encoded data with the highest compression ratio to enable subsequent decompression and data interpretation. Furthermore, a timer may be added to measure the time elapsed during the encoding process against an a priori-specified time limit. When the time limit expires, only the data output from those encoders that have completed the encoding process are compared. The encoded data with the highest compression ratio is selected for data processing, storage, or transmittal. The imposed time limit ensures that the real-time or pseudo real-time nature of the data encoding is preserved. Buffering the output from each encoder allows additional encoders to be sequentially applied to the output of the previous encoder, yielding a more optimal lossless data compression ratio.

34 Claims, 16 Drawing Sheets



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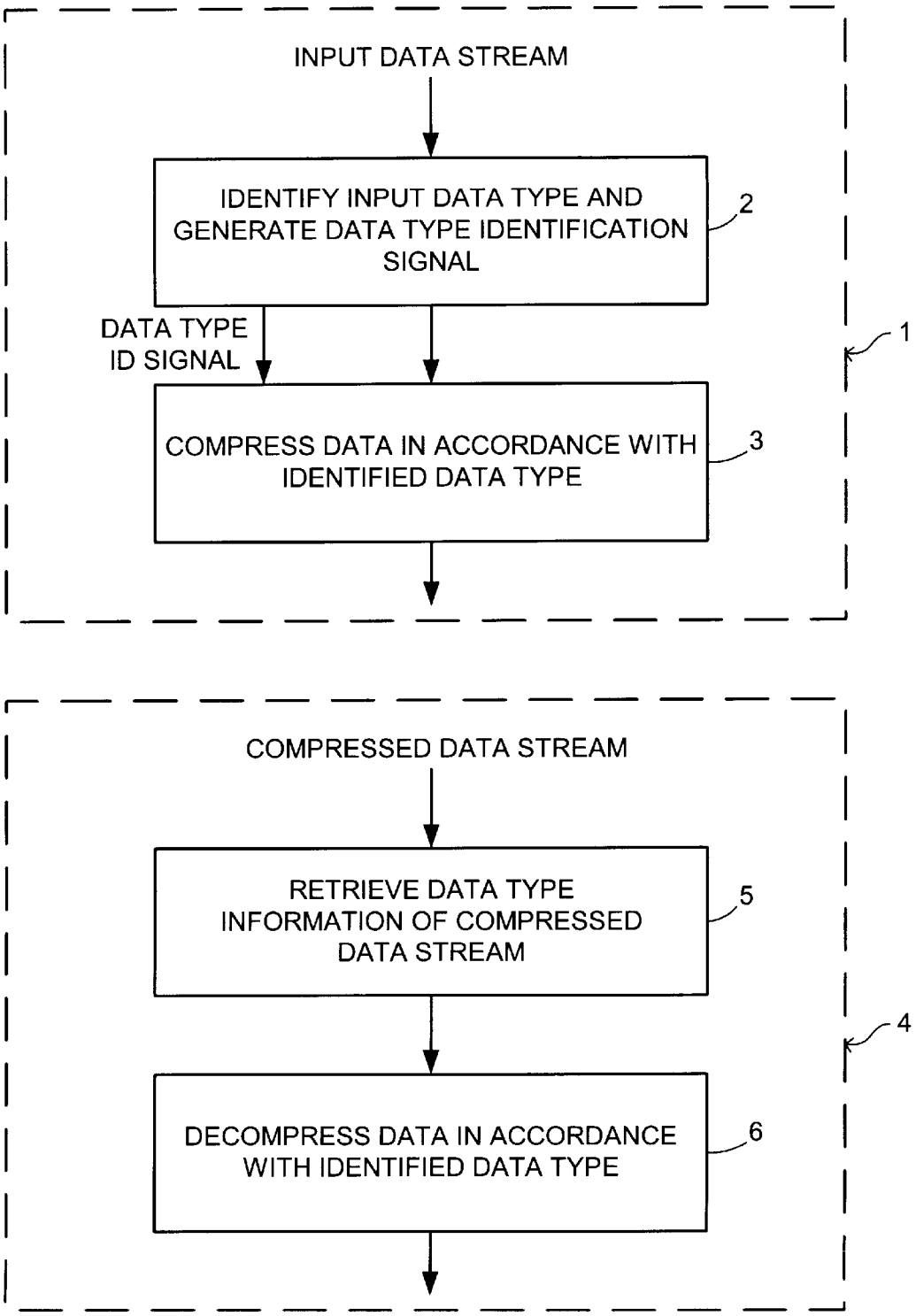

FIG. 1
PRIOR ART

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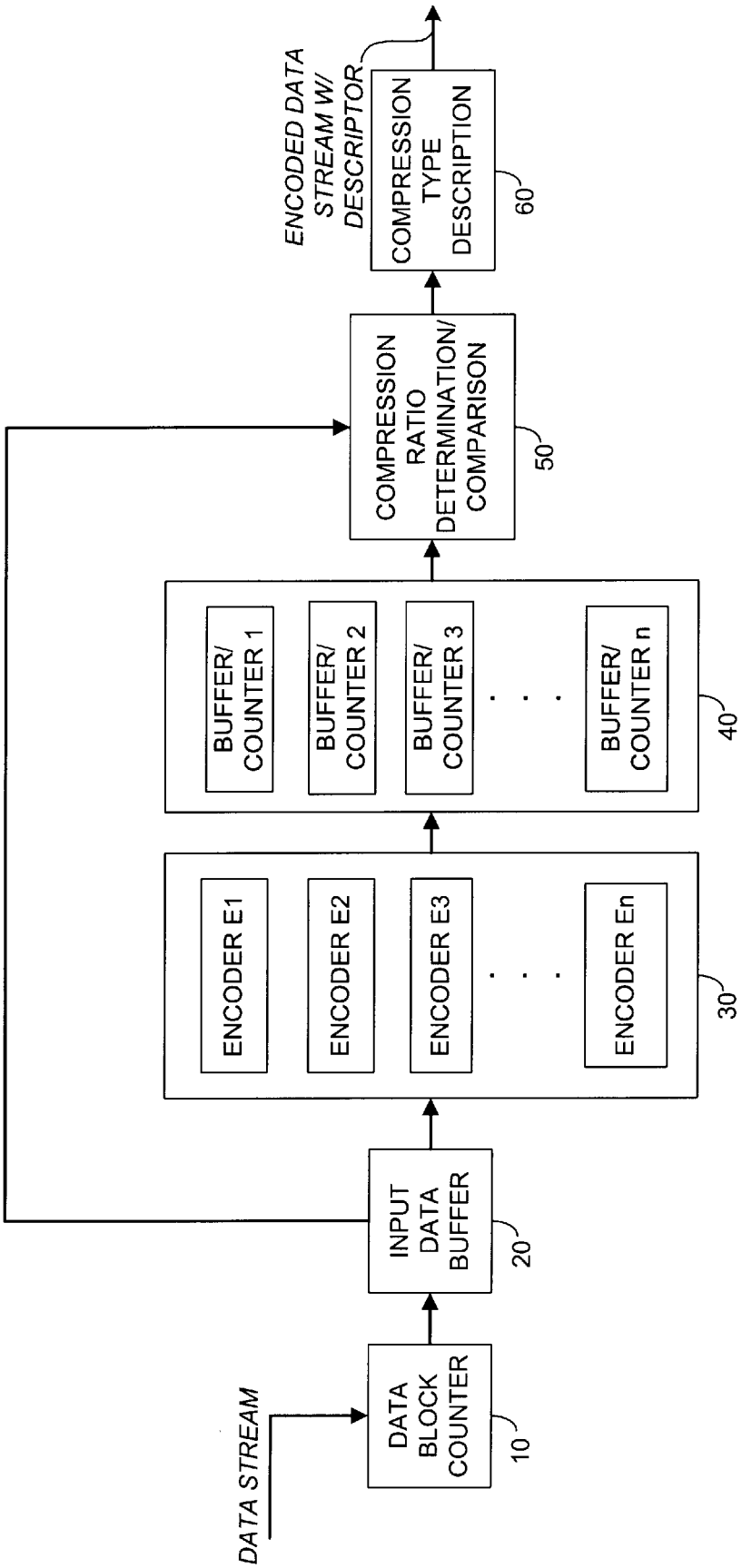

FIG. 2

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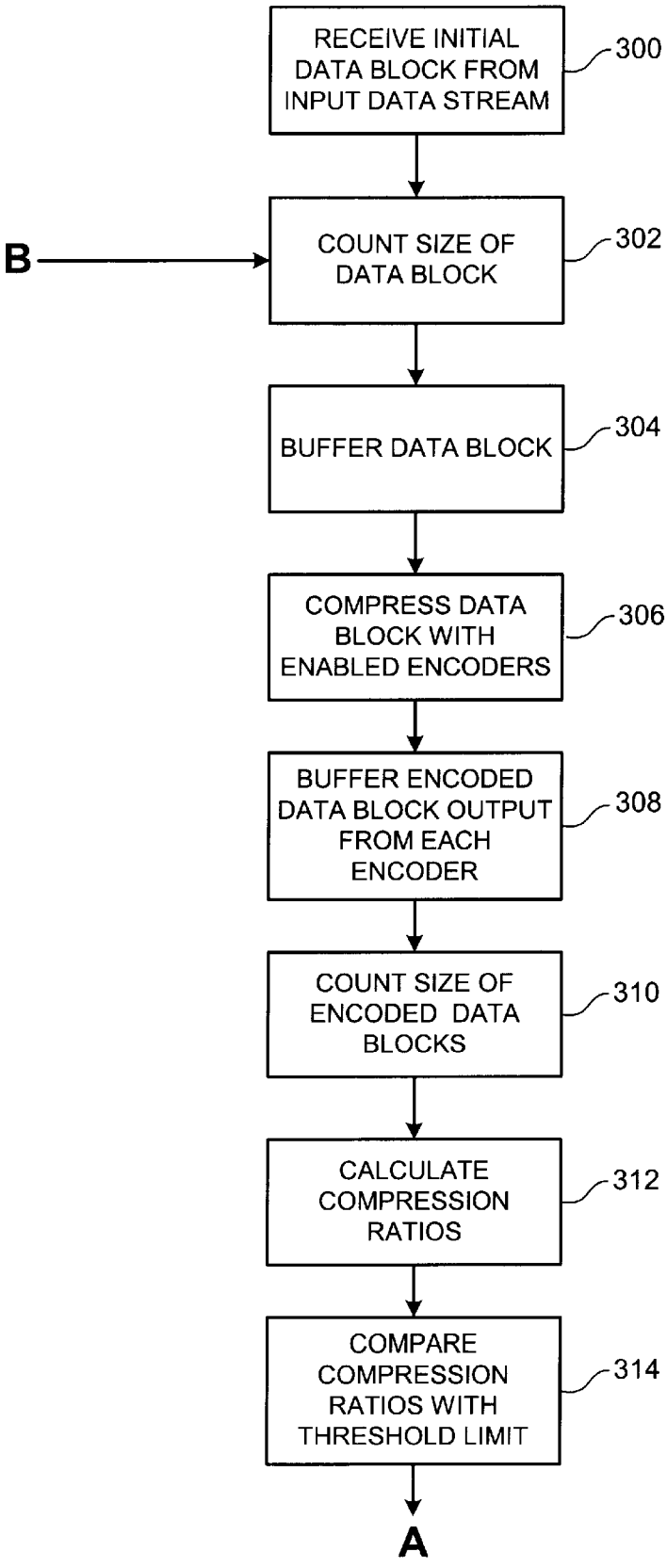

FIG. 3a

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