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(12) **United States Patent**  
**Lee**

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(54) **DIGITAL VIDEO INTERFACE WITH BI-DIRECTIONAL HALF-DUPLEX CLOCK CHANNEL USED AS AUXILIARY DATA CHANNEL**

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(\* ) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 405 days.

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(60) Provisional application No. 60/910,759, filed on Apr. 9, 2007.

(51) **Int. Cl.**  
**H04J 3/12** (2006.01)

(52) **U.S. Cl.** ..... **370/525**

(58) **Field of Classification Search** ..... None  
See application file for complete search history.

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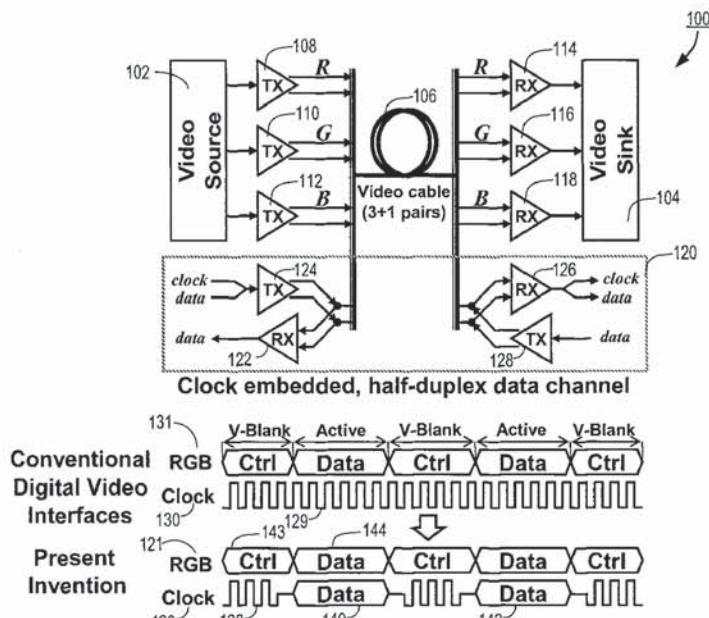
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(57) **ABSTRACT**

A digital video interface system and method for communicating digital video data from a source device to a sink device is provided, where the clock channel is used to transmit data as well as clock signals in a bi-directional, half-duplex manner using time division multiplexing. The digital video interface system comprises one or more data channels configured to transmit digital video data from the source device to the sink device in time divisional multiplexing including a plurality of first time slots and second time slots, and a clock channel configured to transmit a clock signal from the source device to the sink device in the first time slots and configured to transmit additional data from the source device to the sink device or from the sink device to the source device in the second time slots.

**32 Claims, 4 Drawing Sheets**



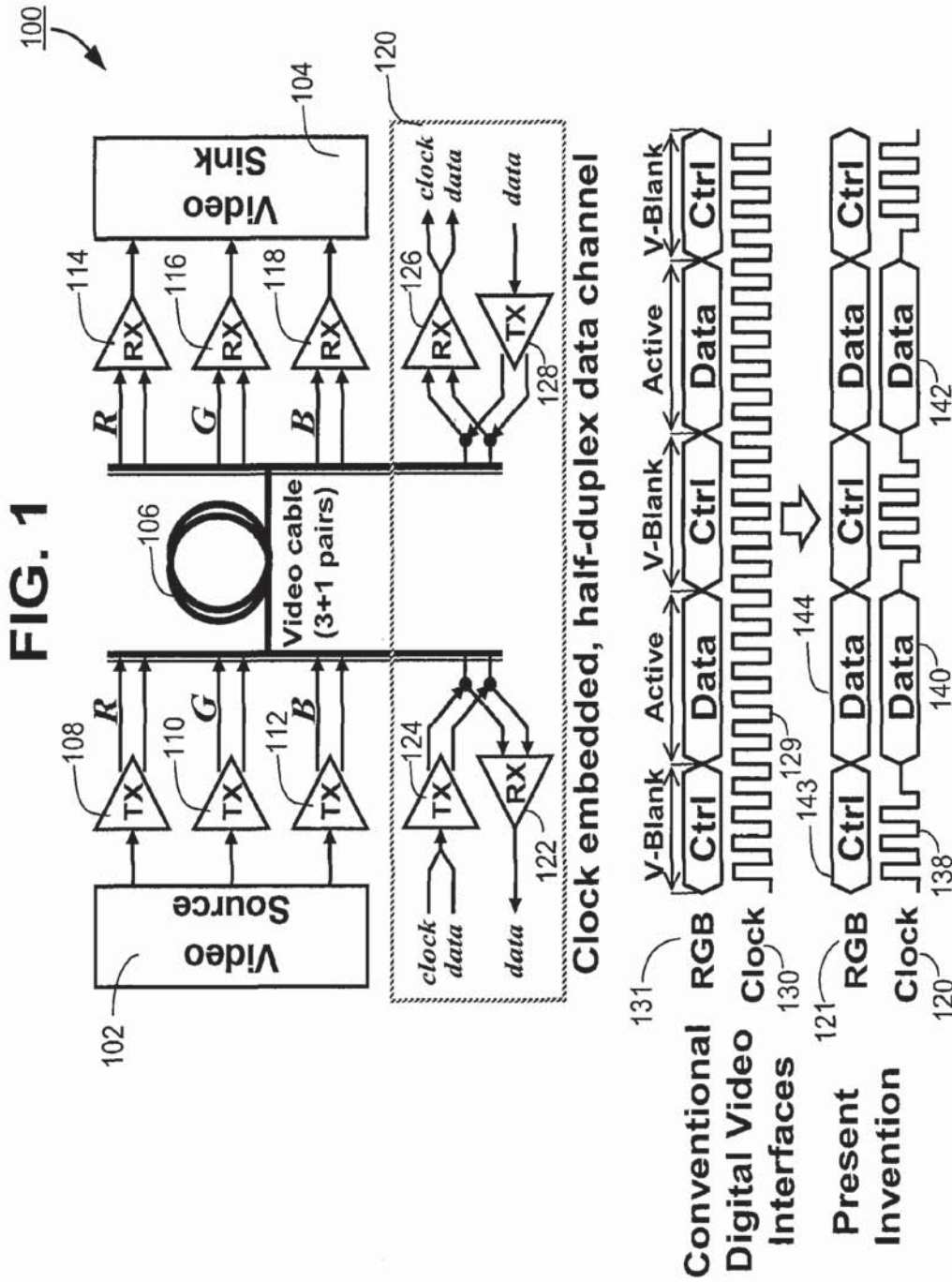


FIG. 2

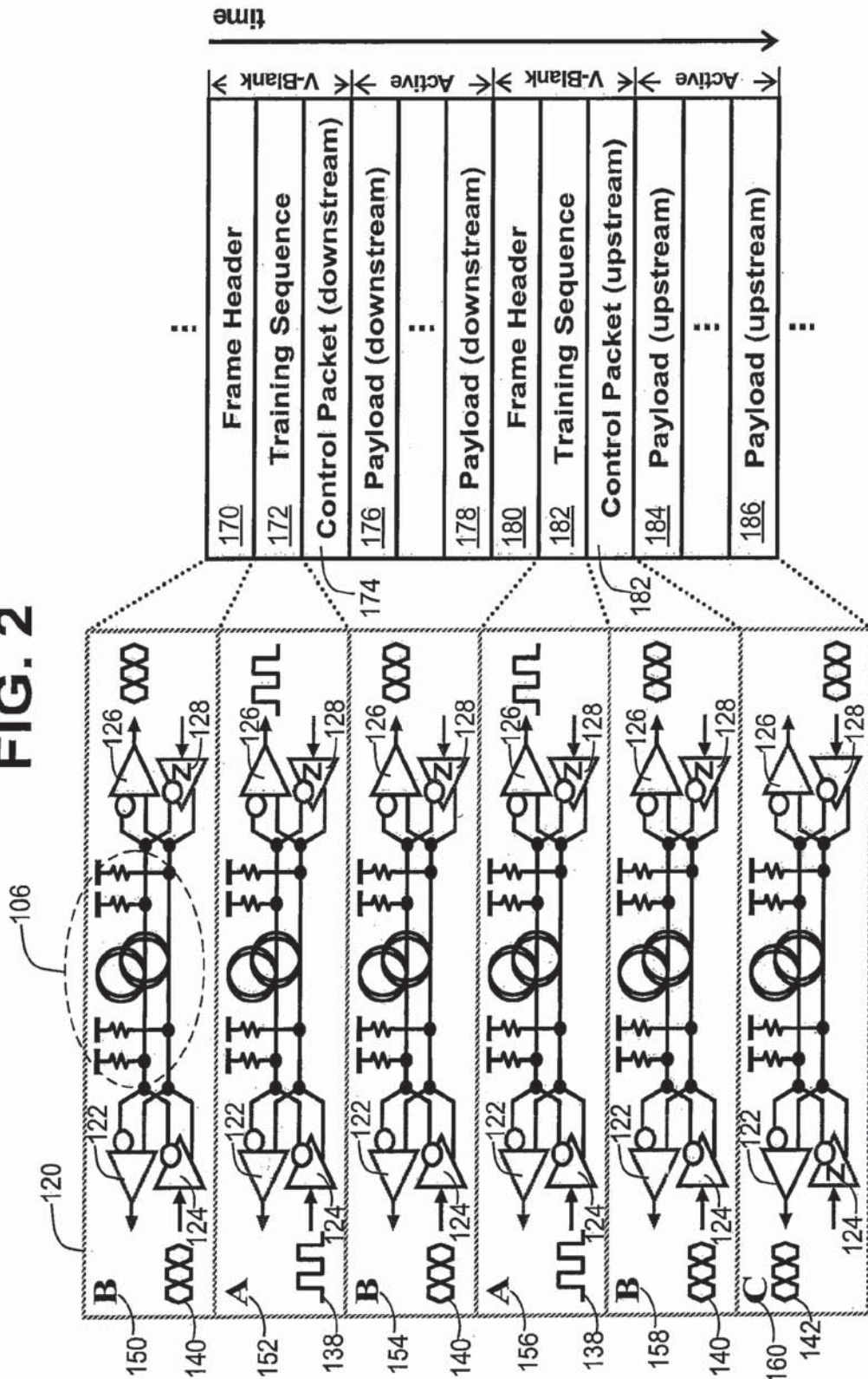
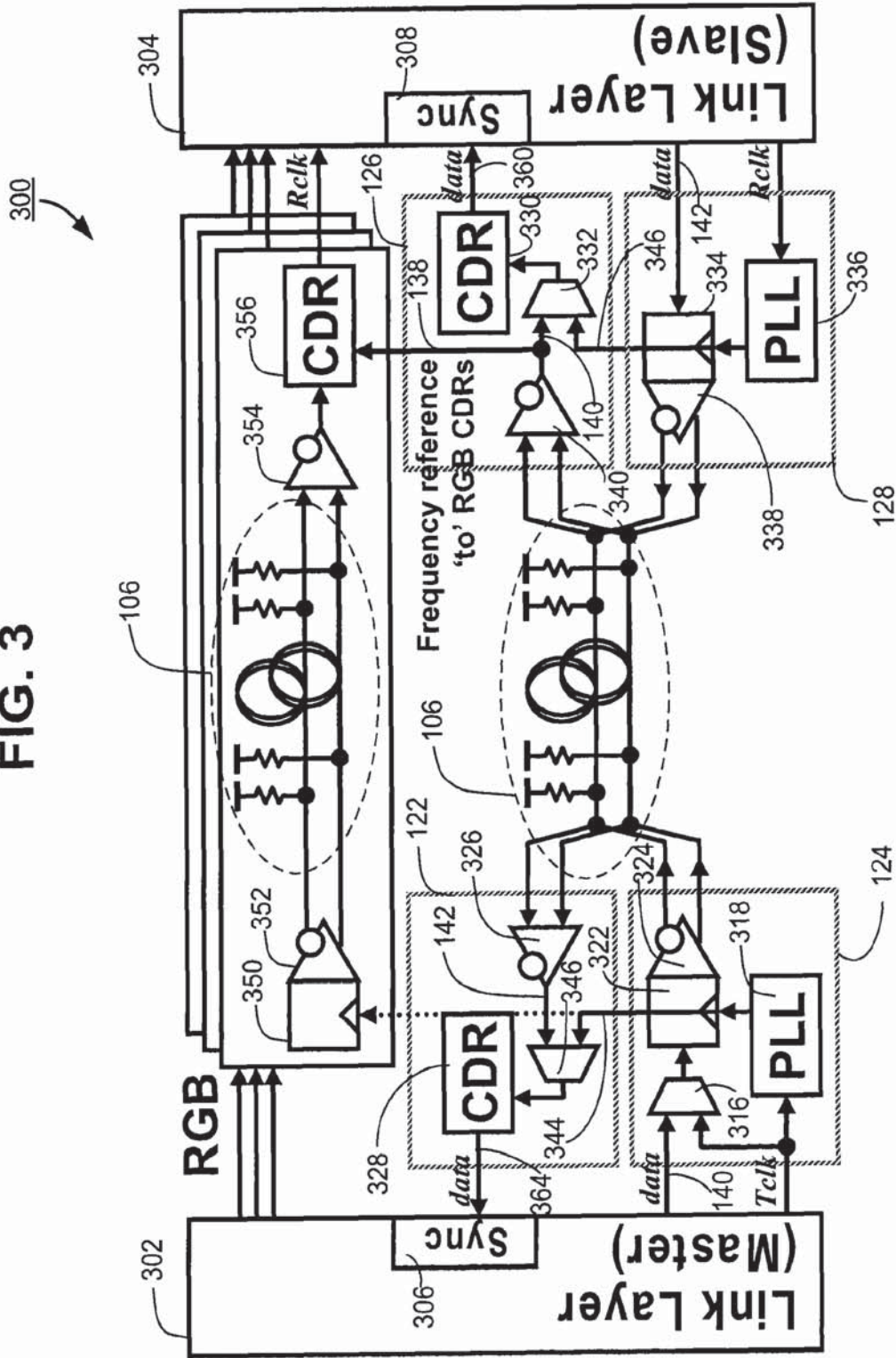
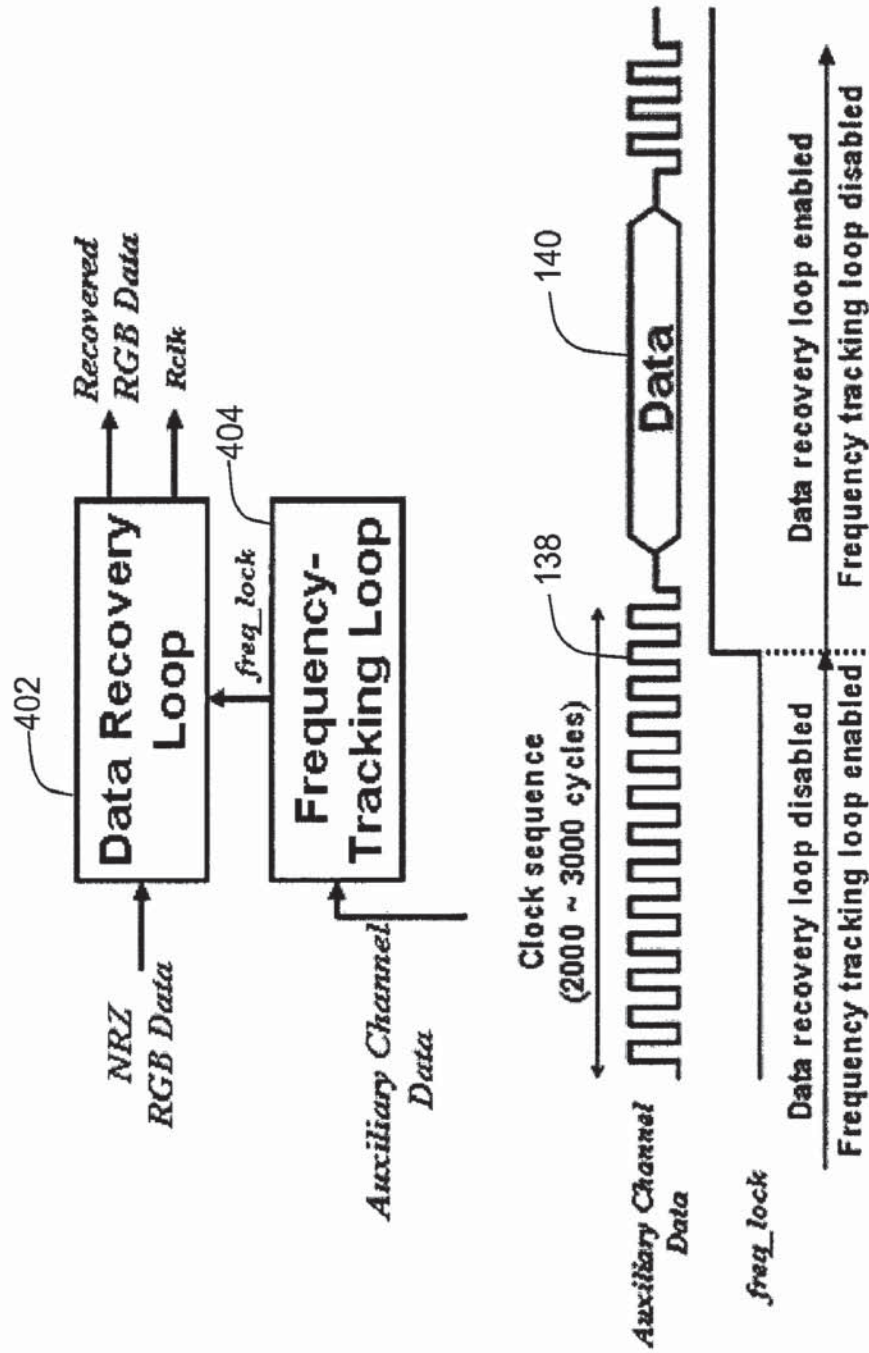


FIG. 3



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FIG. 4



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