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Johansson et al.

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(54) **BATCHED FAIR EXHAUSTIVE POLLING SCHEDULER**

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(51) **Int. Cl.**⁷ **H04L 12/28**

(52) **U.S. Cl.** **370/449; 370/329**

(58) **Field of Search** 370/431, 449, 370/329, 346; 455/450

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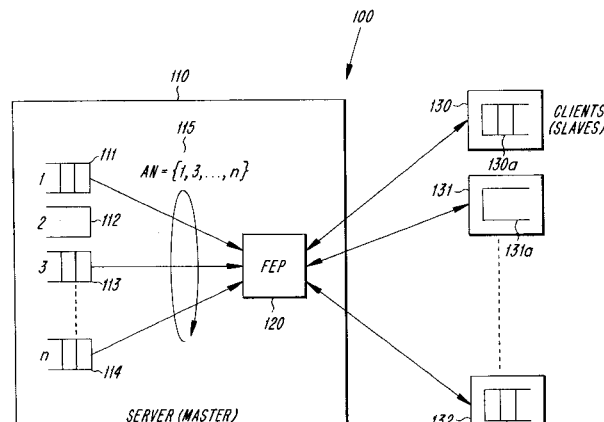
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(57) **ABSTRACT**

A method and apparatus for improving channel utilization and throughput in an ad-hoc wireless communication system is provided. A master unit and one or more slave units are coupled to a shared communication channel having at least an uplink (UL) channel and a downlink channel (DL) for each master unit-slave unit pair. A group of active nodes is established corresponding to slave units having UL and/or DL data associated therewith for transfer. The group of active nodes may be polled according to Fair Exhaustive Polling (FEP) and information alternately transferred on a TDD. Accumulated information may be transferred in a batch and feedback information collected and used to adjust polling. One or more links may be identified as lossy links due to increased Bit Error Rate (BER) and accompanying information loss resulting in lower throughput. Virtual active nodes added to the group of active nodes to compensate therefor. A transmission parameter such as number of retransmissions may be evaluated against a predetermined threshold to identify lossy links. If lossy links improve, virtual active nodes may be removed from the group of active nodes. Information associated with the one or more slaves units may be circuit switched synchronous information or non-circuit switched asynchronous information. Feedback information such as timeout information associated with the slave units may be evaluated. If a time out signal associated with a slave unit is received the slave unit may be scheduled for polling responsive to the time out signal.

18 Claims, 4 Drawing Sheets



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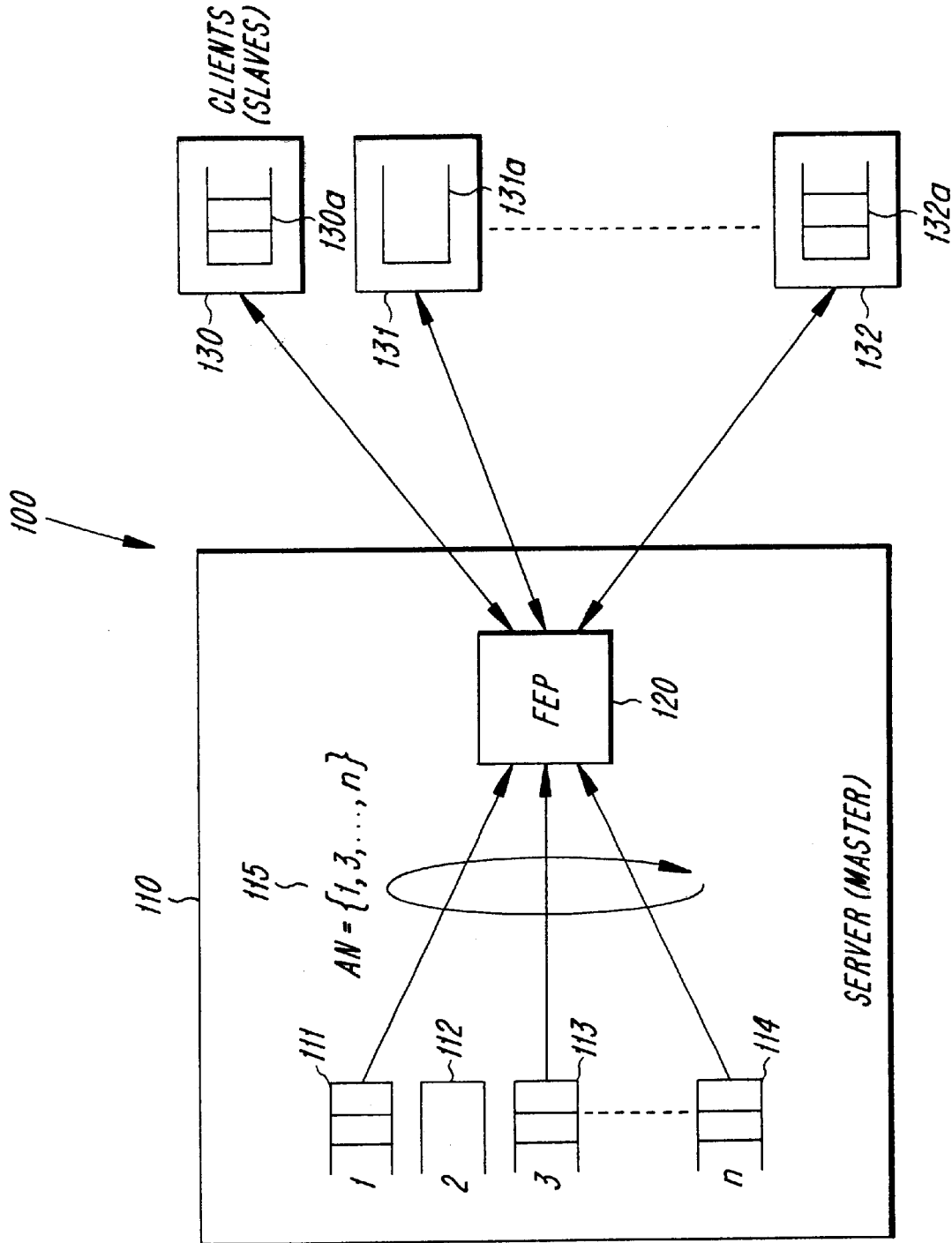


FIG. 1

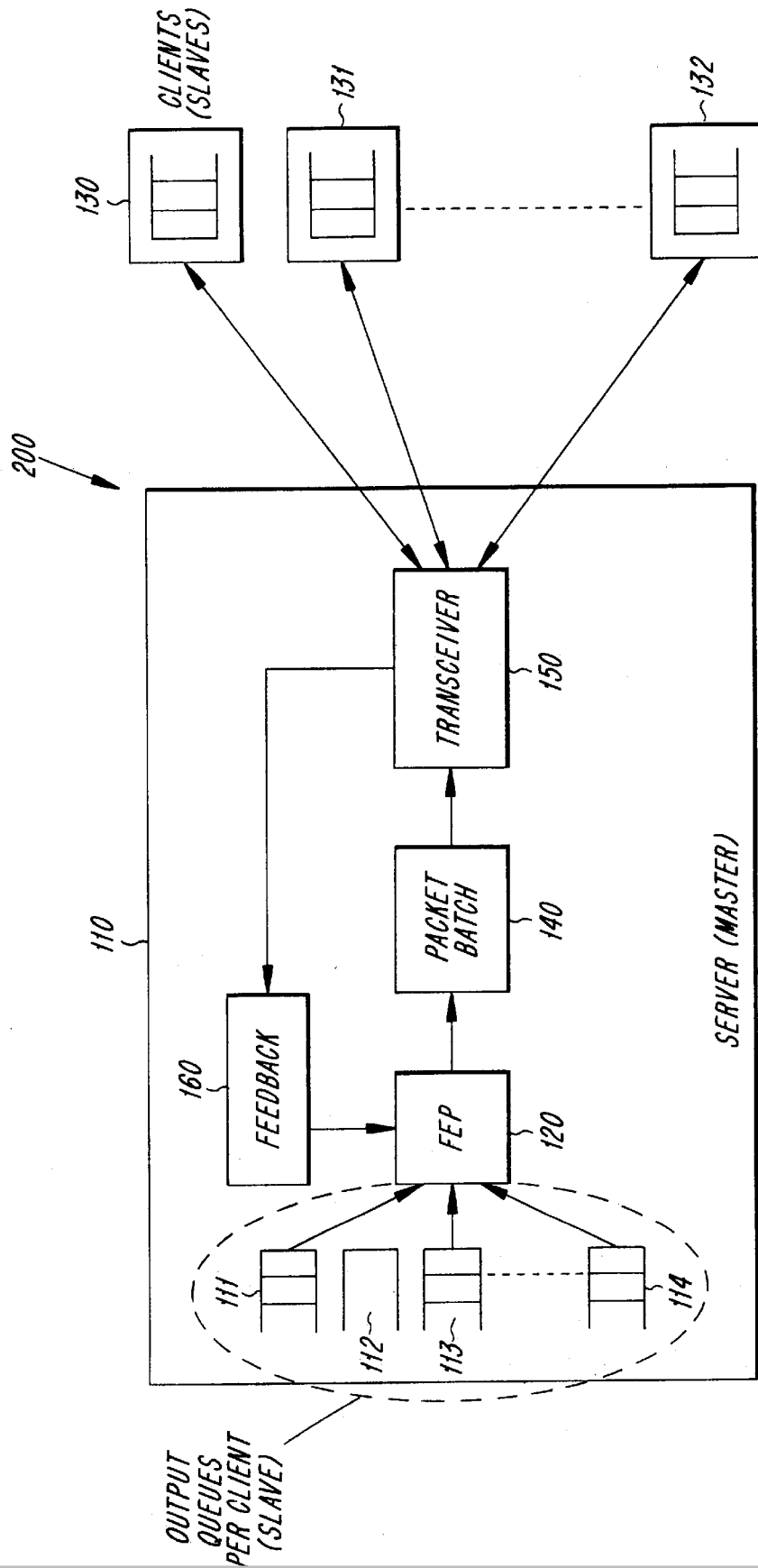


FIG. 2

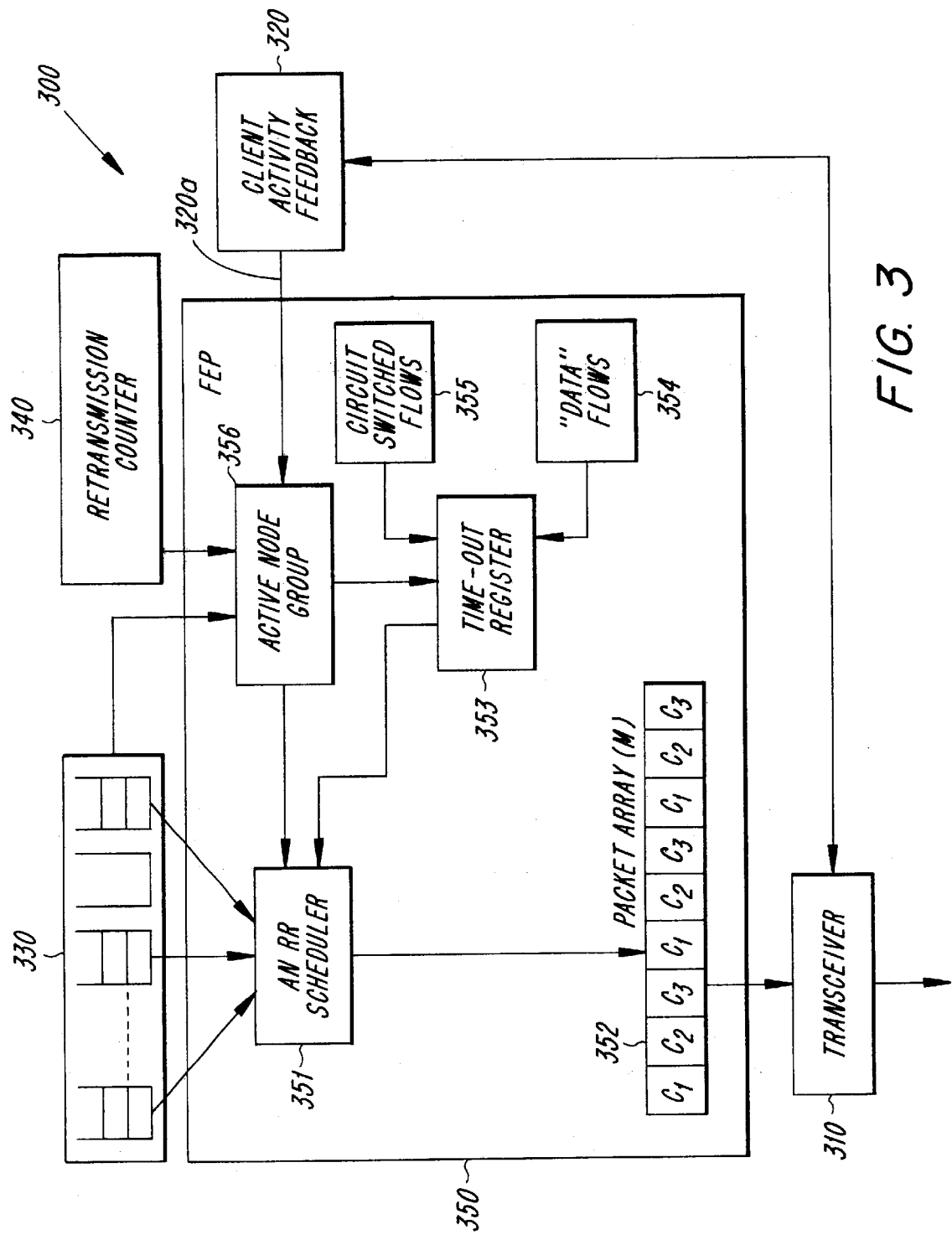


FIG. 3

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