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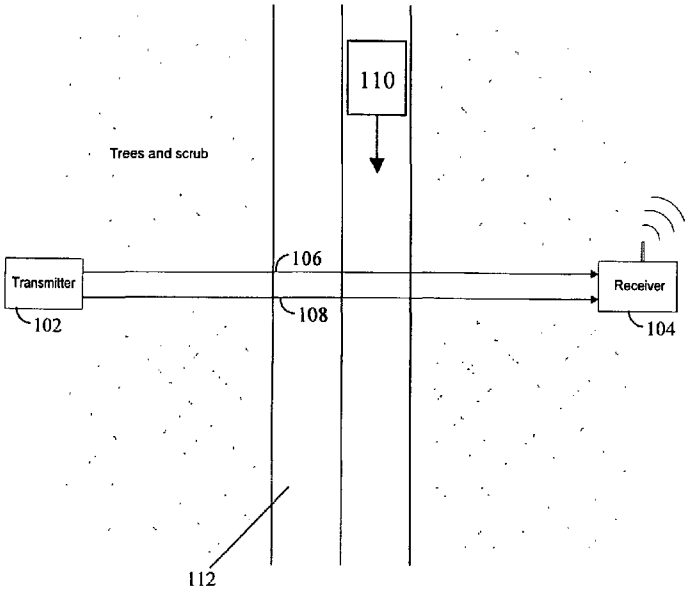
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(54) Title: A MONITORING PROCESS AND SYSTEM



(57) Abstract: A monitoring system includes a transmitter (102) with two transmit modules (208, 210) and a receiver (104) with two receive modules (212, 214). Each of the transmit modules (208, 210) generates an optical signal modulated at a unique frequency. The optical signals are transmitted across a roadway (112) and are detected by the receive modules (212, 214). When a vehicle (110) moves between the transmitter (102) and receiver (104), the optical signals are blocked. The receiver (104) generates timestamped make and break events corresponding to the blocking and unblocking of the signals, and these are used to determine parameters for the vehicle (110) such as velocity and vehicle classification. Because each signal is modulated at a different frequency, each receive module (212, 214) can distinguish the signals received from each of the transmit modules (208, 210), allowing the lane position of the vehicle (110) in a multi-lane roadway (112) to be determined.

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