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Rees

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(54) **COLLISION AVOIDANCE SYSTEM FOR USE IN AIRCRAFT**

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(58) **Field of Search** 342/24, 27–32, 342/41; 343/705, 708–713, 718

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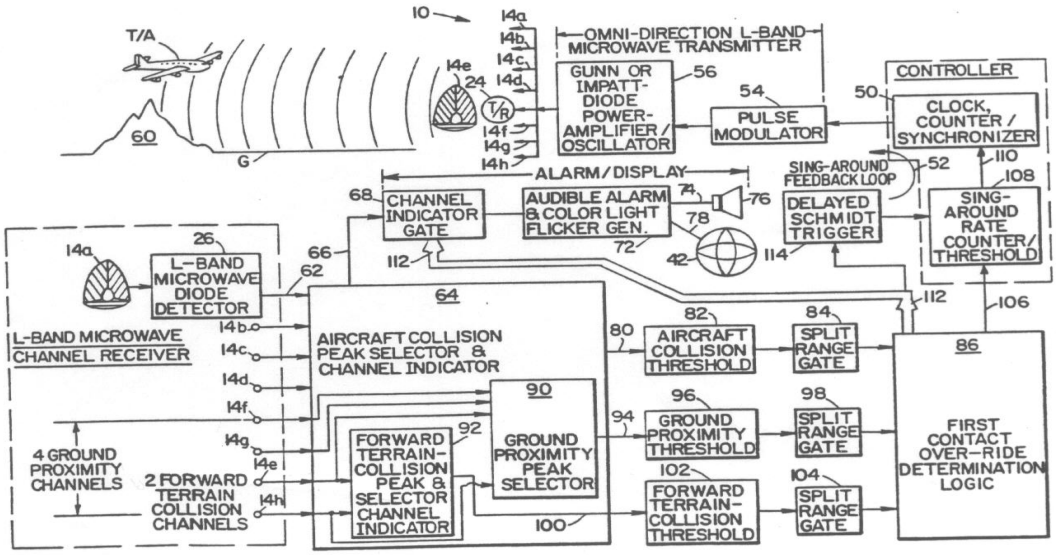
(57) **ABSTRACT**

A collision avoidance system mountable on an aircraft for providing to the pilot of that aircraft an early warning of the presence of another nearby threat aircraft within the surrounding air space. The system operates autonomously from that aircraft and does not require the presence of any matched system on board the threat aircraft. The system includes an omni-directional L-band microwave antenna formed by a dielectric sphere cut into eight equal "orange wedge" sectors covering eight distinct beam patterns. Eight L-band microwave signals are transmitted simultaneously from all eight dielectric sectors to provide a sphere of detection around the aircraft. The sectors also act as receivers for detecting a microwave signal reflected back from the threat aircraft, and indicating means provides information to the pilot regarding the direction, closeness and rate of closure of the threat aircraft.

14 Claims, 2 Drawing Sheets