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United States Patent [19]

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Pakett

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- [54] SMART BLIND SPOT SENSOR
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- [73] Assignee: Vorad Safety Systems, Inc., San Diego, Calif.
- [21] Appl. No.: 111,826
- [22] Filed: Aug. 25, 1993

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Primary Examiner—John B. Sotomayor
Attorney, Agent, or Firm—Spensley Horn Jubas & Lubitz

Related U.S. Application Data

- [63] Continuation of Ser. No. 930,079, Aug. 14, 1992, abandoned.
- [51] Int. Cl.⁵ G01S 13/93
- [52] U.S. Cl. 342/70; 342/71
- [58] Field of Search 342/70, 71, 72

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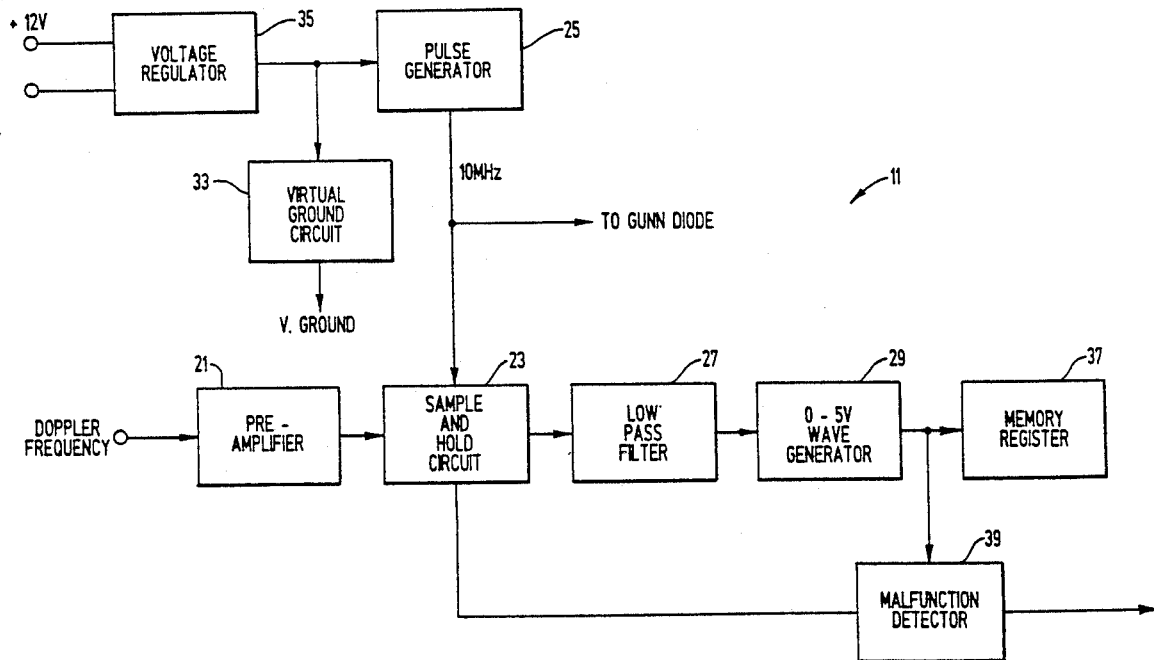
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[57] ABSTRACT

A radar system for sensing the presence of obstacles in a vehicle's "blind spots" and generating a signal to the vehicle operator indicative of the presence of such an obstacle. The system uses a common radar transceiver that transmits a radio frequency signal directed at a blind spot of the vehicle. The signal is reflected off any obstacles that are present in that blind spot region. A Doppler shift in the received reflected frequency generally indicates that an obstacle has moved into the blind spot. Doppler frequencies attributable to objects which are of no interest, such as stationary objects, are filtered out. Only obstacles that are traveling at approximately the same speed and direction as the vehicle are considered to be of interest, and will cause the blind spot sensor to generate an indication that an obstacle is present in the blind spot. The indication is preferably an unobtrusive illuminated indicator which is affixed to one of the vehicle's mirrors. In addition to the illuminated indicator affixed to a mirror, an obtrusive audible indicator is provided in the preferred embodiment of the present invention which creates an audible tone, whistle, or buzz when an obstacle is present and the vehicle's turn signal is active.

5 Claims, 5 Drawing Sheets



VWGoA - Ex. 1005

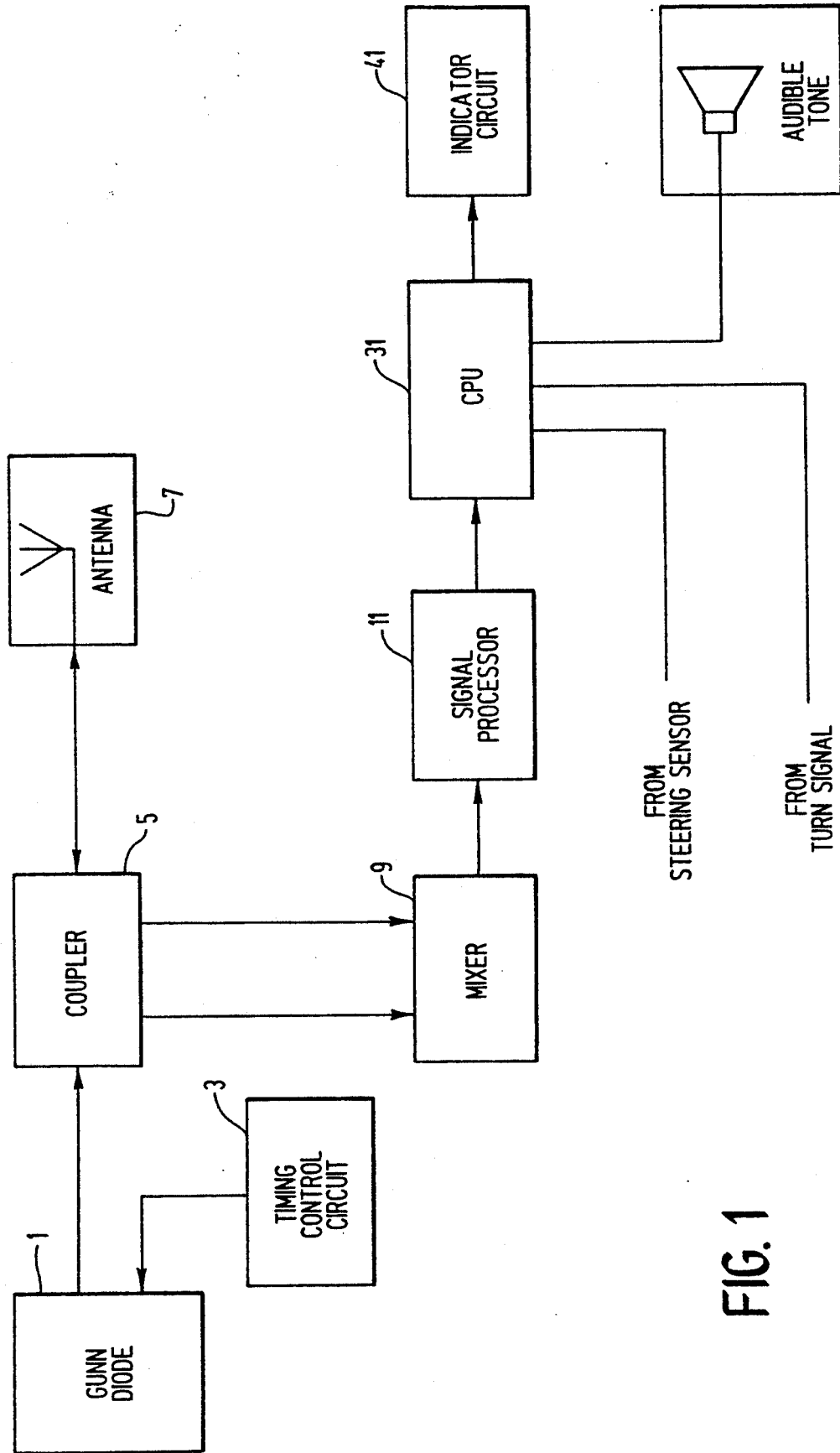
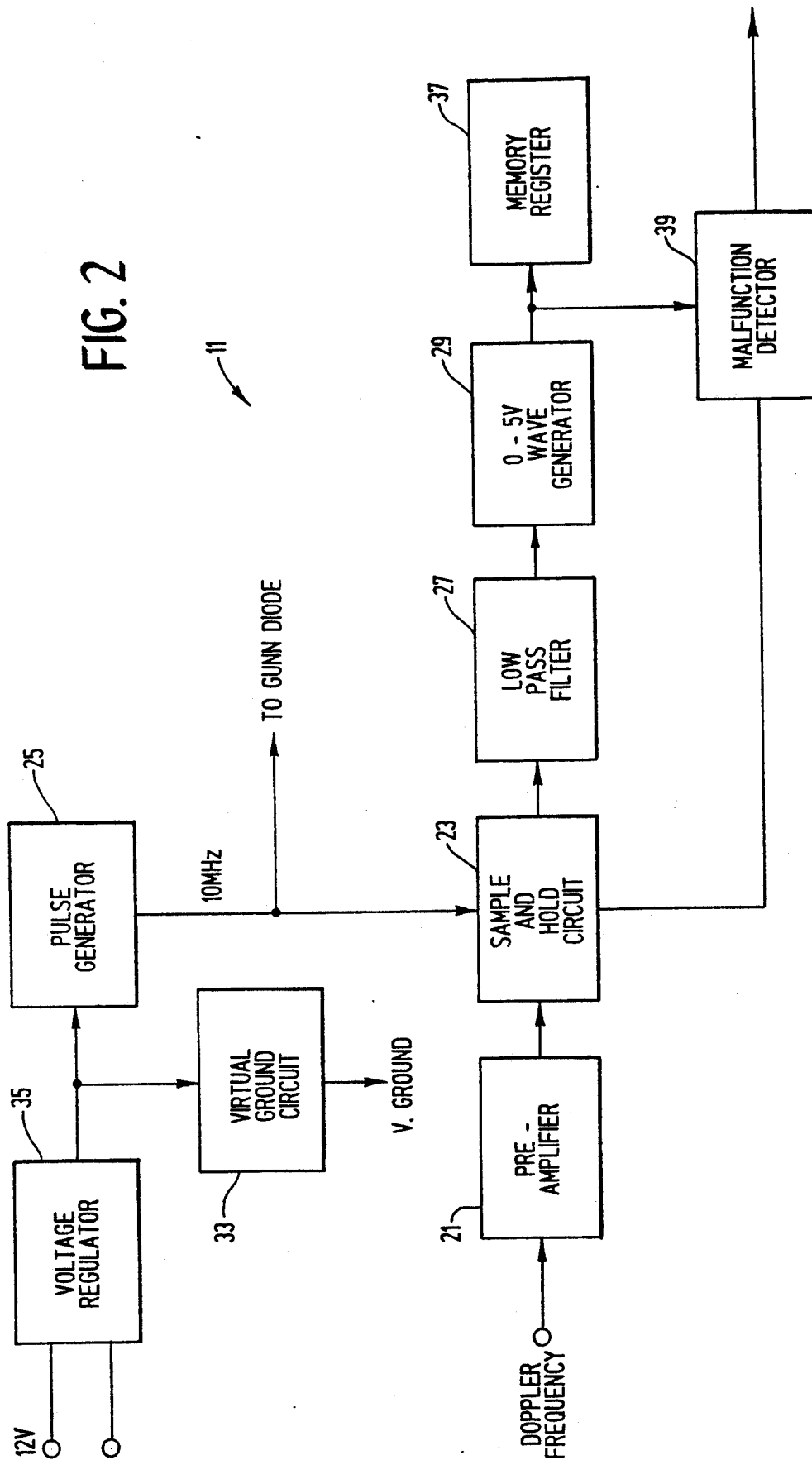


FIG. 1

FIG. 2



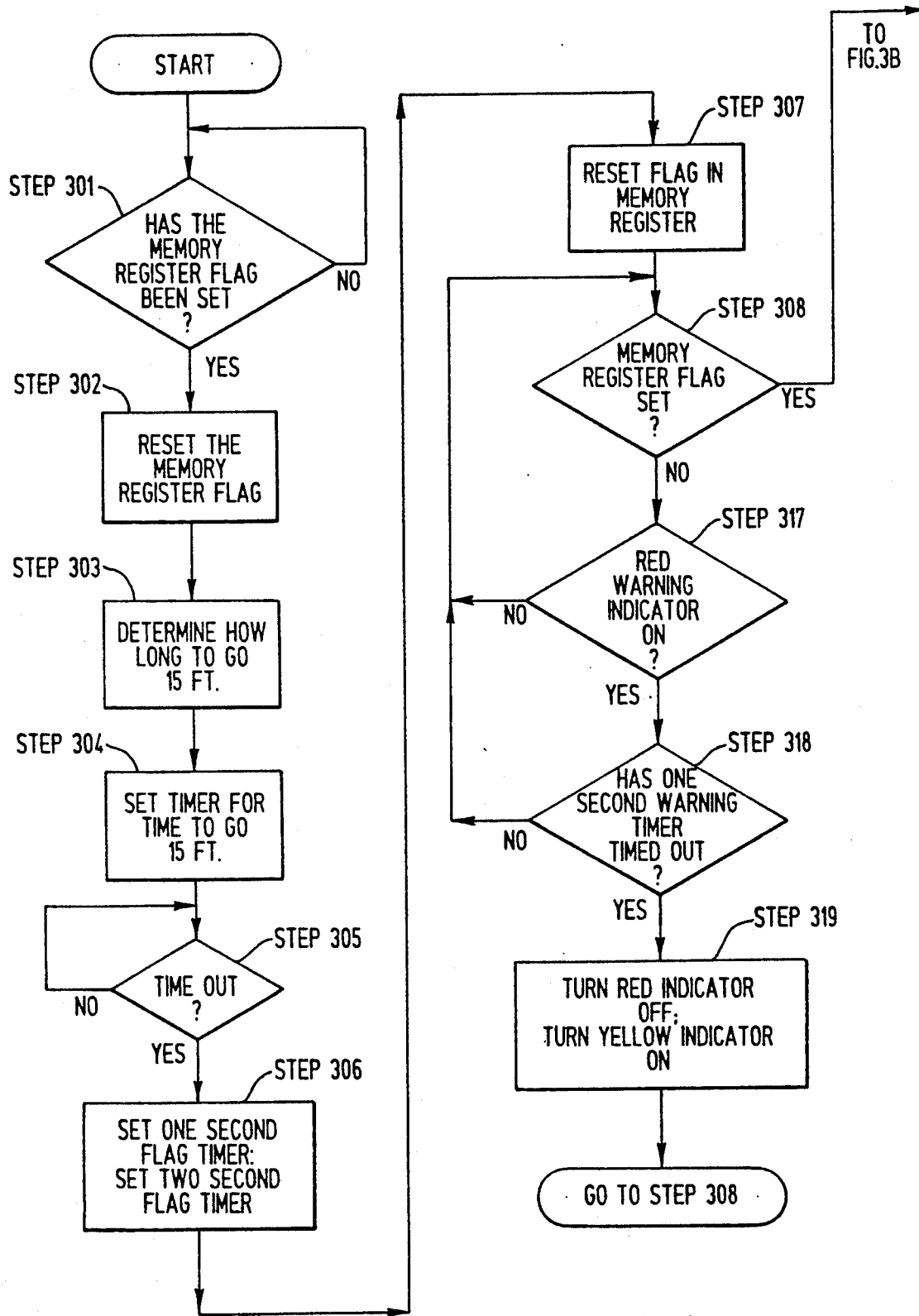


FIG. 3A

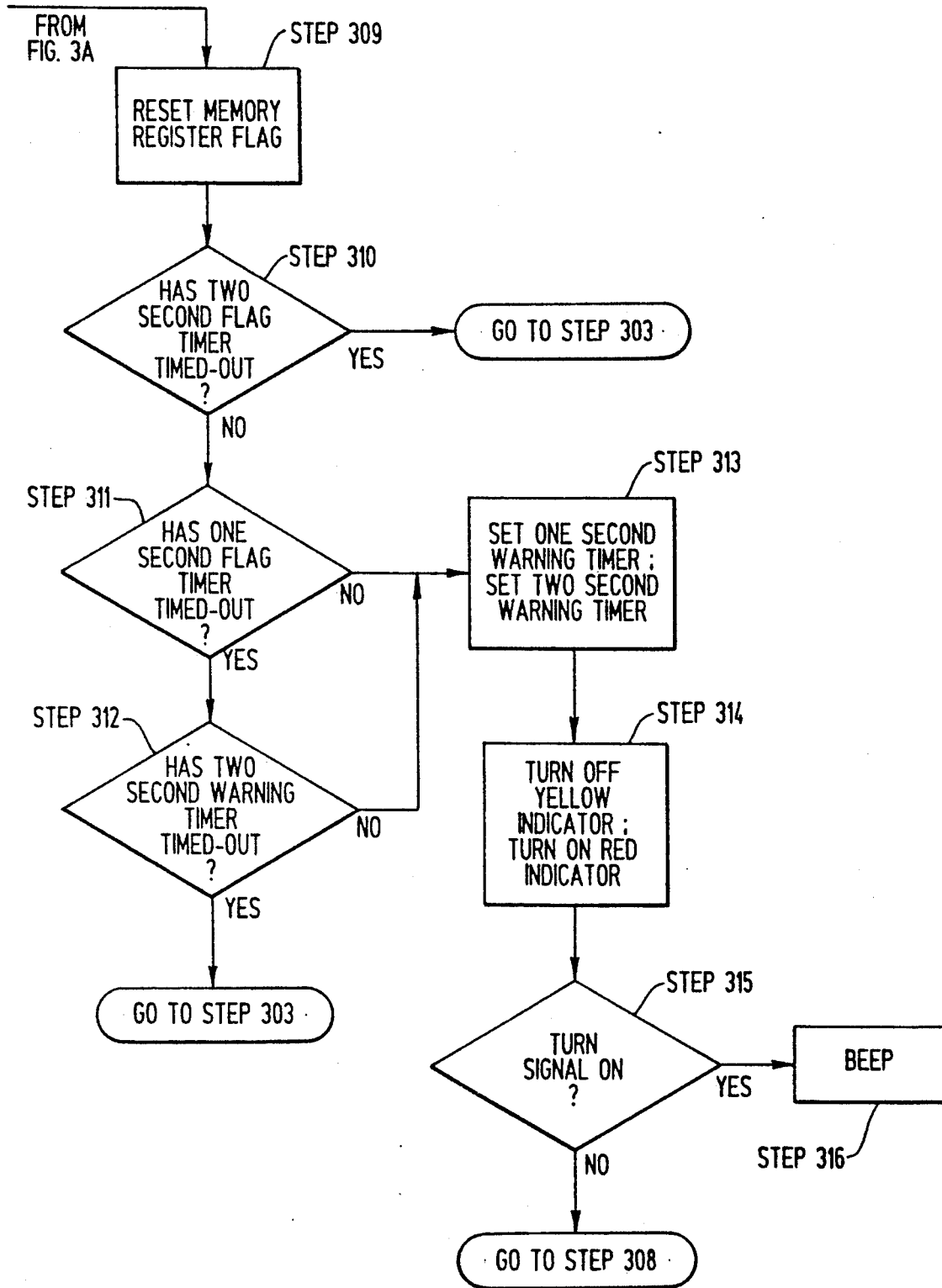


FIG. 3B

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