



(12) **United States Patent**
Colmenarez et al.

(10) **Patent No.:** **US 6,498,970 B2**
(45) **Date of Patent:** **Dec. 24, 2002**

(54) **AUTOMATIC ACCESS TO AN AUTOMOBILE VIA BIOMETRICS**

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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 0 days.

(21) Appl. No.: **09/836,680**

(22) Filed: **Apr. 17, 2001**

(65) **Prior Publication Data**

US 2002/0152010 A1 Oct. 17, 2002

(51) **Int. Cl.**⁷ **H04B 1/00**; H04Q 1/00; G01L 5/00

(52) **U.S. Cl.** **701/36**; 704/273; 382/116

(58) **Field of Search** 701/36; 704/273, 704/246, 270, 274, 275, 231; 382/116, 118; 340/426, 5.54, 5.8, 5.84, 5.52, 5.53, 5.72; 307/10.2; 180/287, 289

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Primary Examiner—Tan Q. Nguyen

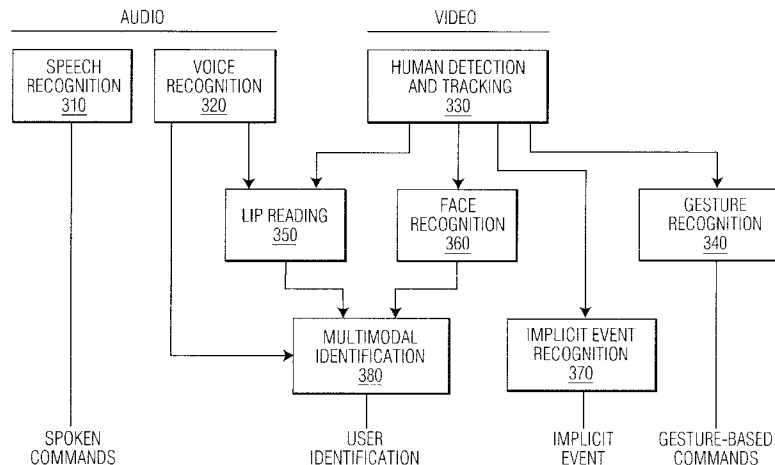
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(57) **ABSTRACT**

A system and method for identifying persons who are authorized to activate one or more vehicle mechanisms uses both an implicit identification of a face and an explicit identification of speech or a gesture. This system and method enables identification to be performed where a single identification is otherwise unable to perform the identification for some reason and improves the reliability and accuracy of an identification so that only authorized persons can activate the vehicle mechanisms. Vehicle mechanisms that can be activated using this multimodal identification system and method include, for example, automatic locks, automatic windows, a trunk lock, a vehicle engine, outdoor or interior lights, and a vehicle alarm.

23 Claims, 4 Drawing Sheets



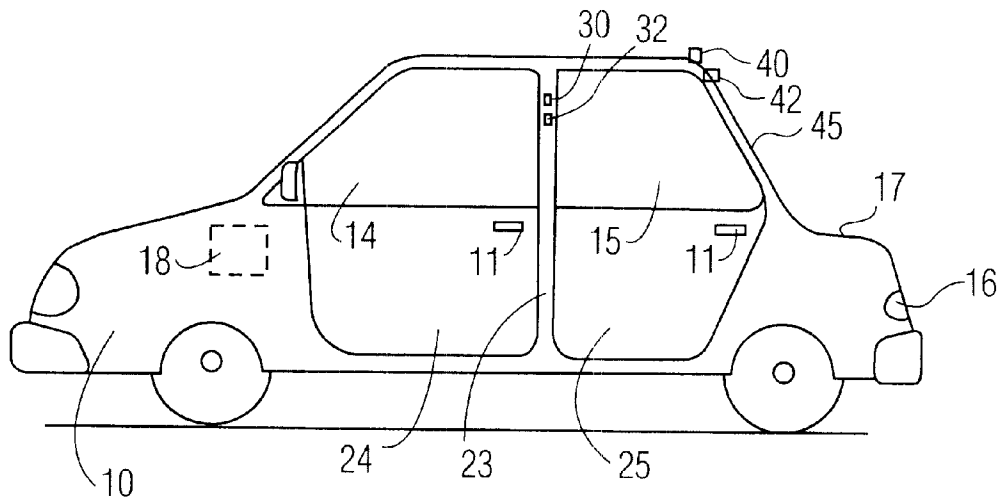


FIG. 1A

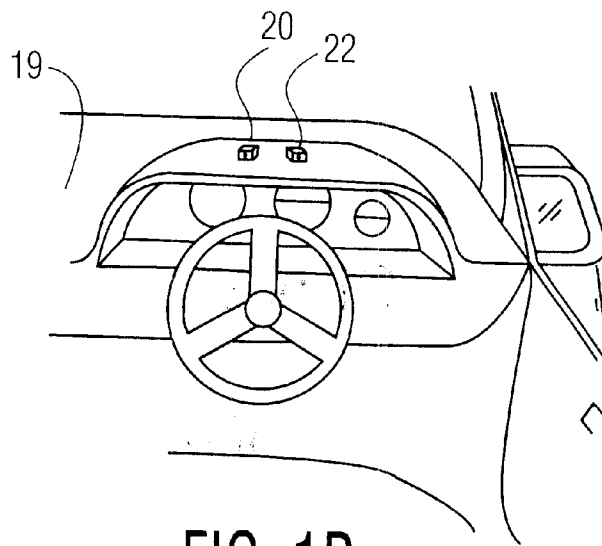


FIG. 1B

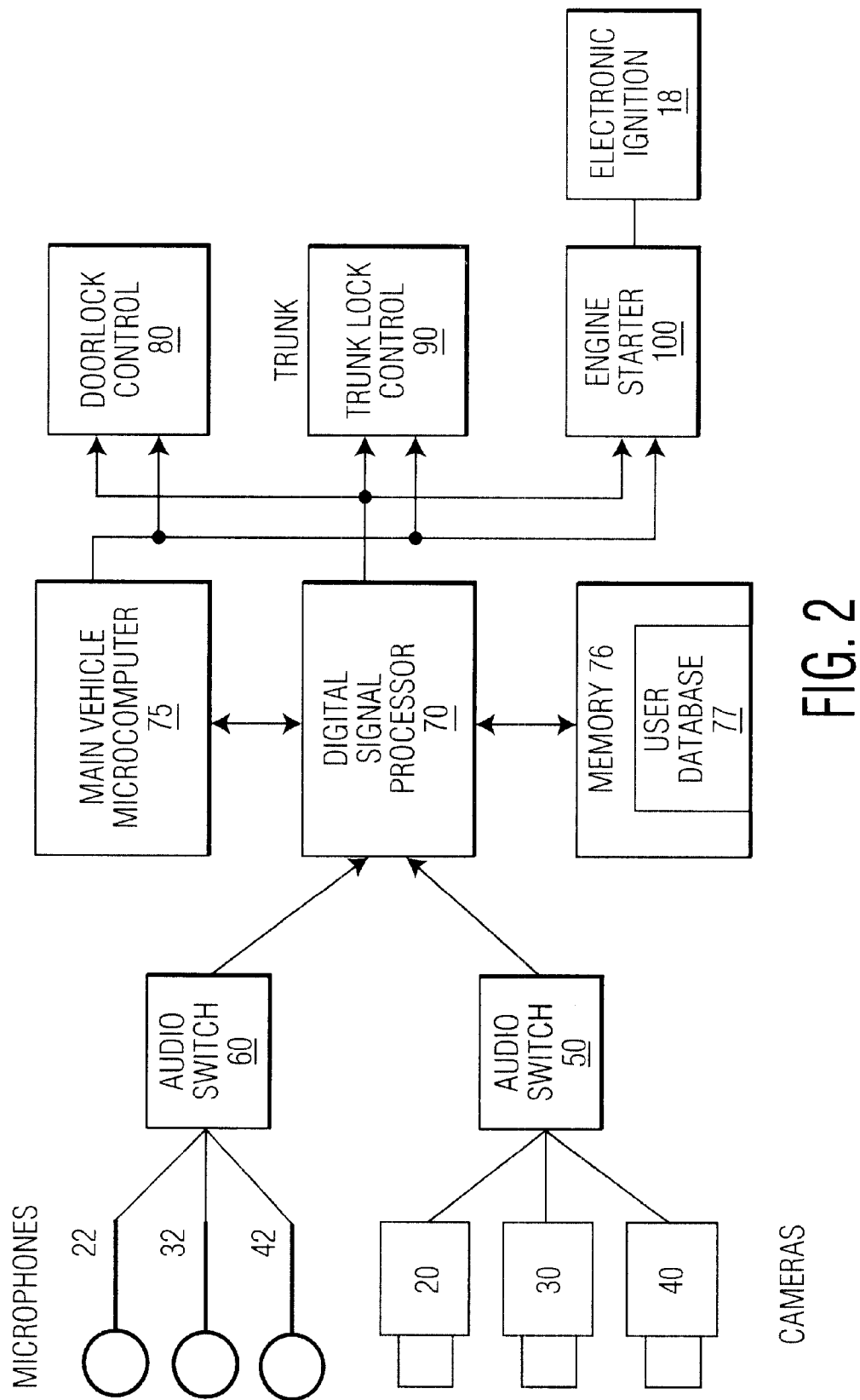


FIG. 2

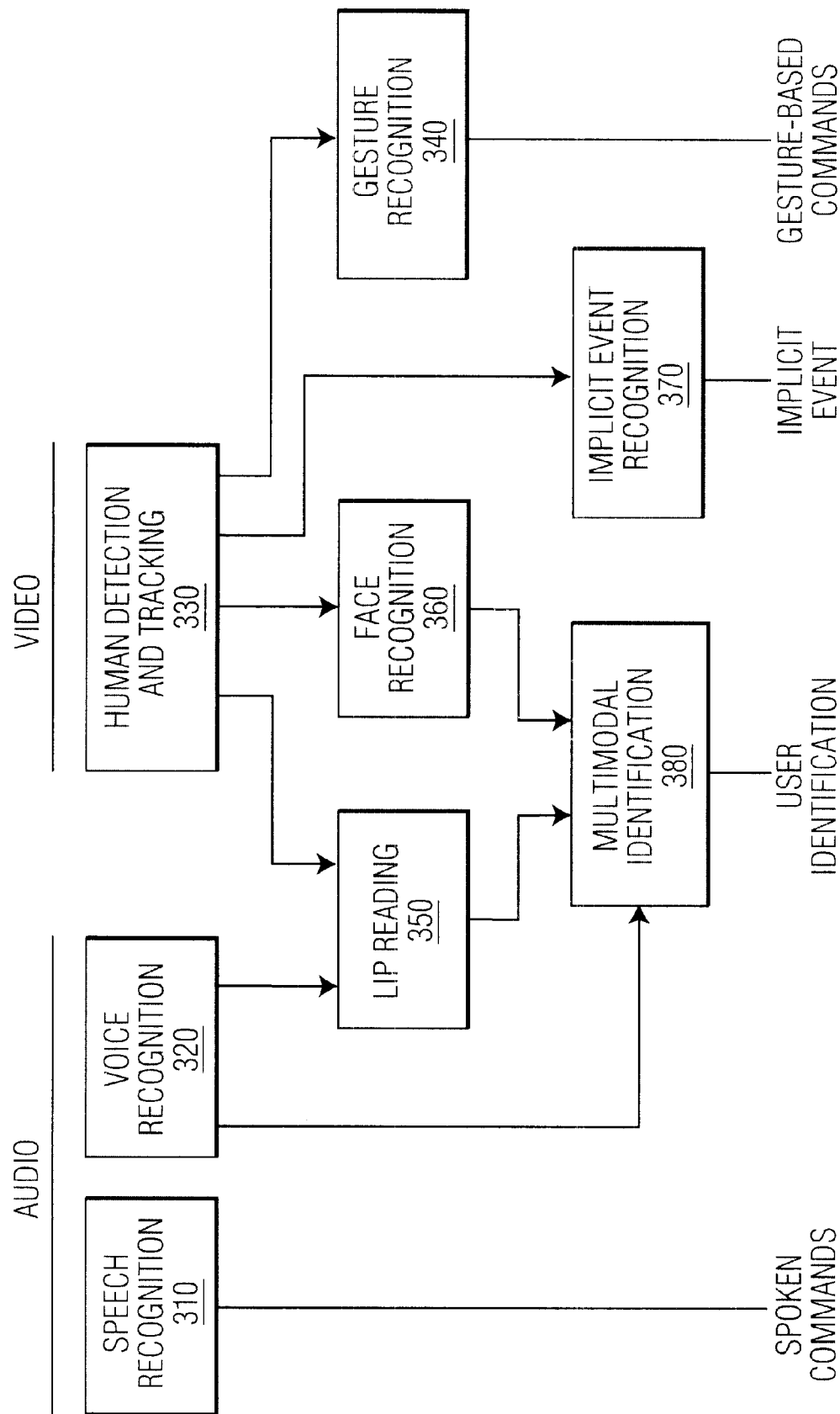


FIG. 3

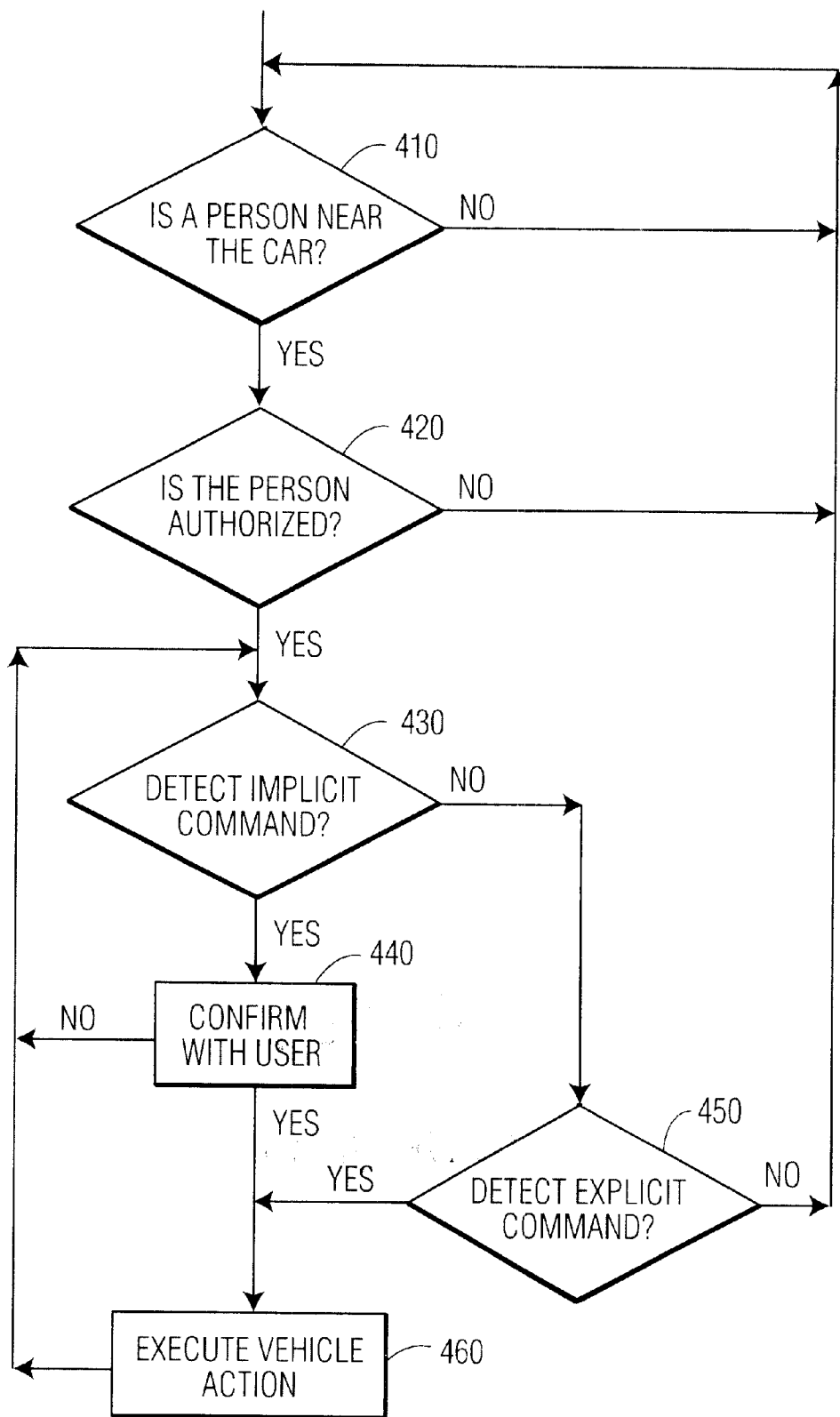


FIG. 4

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