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Colmenarez et al.

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

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(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

(56) **References Cited**

U.S. PATENT DOCUMENTS

| | | | | | |
|-----------|----|---|---------|------------------|------------|
| 4,449,189 | A | * | 5/1984 | Feix et al. | 364/513.5 |
| 4,856,072 | A | * | 8/1989 | Schneider et al. | 381/86 |
| 5,561,718 | A | | 10/1996 | Trew et al. | |
| 5,812,067 | A | * | 9/1998 | Bergholz et al. | 340/825.31 |
| 6,072,402 | A | * | 6/2000 | Kniffin et al. | 340/825.31 |
| 6,144,293 | A | * | 11/2000 | Plaschko et al. | 340/426 |
| 6,181,343 | B1 | | 1/2001 | Lyons | |
| 6,219,639 | B1 | * | 4/2001 | Bakis et al. | 704/246 |
| 6,219,640 | B1 | * | 4/2001 | Basu et al. | 704/246 |
| 6,243,683 | B1 | * | 6/2001 | Peters | 704/273 |

FOREIGN PATENT DOCUMENTS

| | | | | | |
|----|-------------|----|--------|-------|------------|
| DE | 4027491 | A1 | 3/1992 | | G07C/9/00 |
| DE | 19738321 | | 3/1999 | | B60R/25/00 |
| DE | 19838421 | | 3/2000 | | G07C/9/00 |
| EP | 0 924 123 | A2 | 6/1999 | | B60R/25/00 |
| EP | 0 871 330 | A1 | 1/2000 | | G08C/17/00 |
| JP | 11043016 | | 2/1999 | | B60R/25/00 |
| JP | 2000-047691 | | 2/2000 | | G10L/15/28 |
| WO | 9835118 | | 8/1998 | | E05B/49/00 |

OTHER PUBLICATIONS

Campell, "Biometric Consortium: testing with the TOHO CD-ROM Voice Verification Corpus" U. S. Department of Defense, R2, Fort Meade, Maryland.

Matthews et al., "Lipreading Using Shape, Shading and Scale", School of Information Systems, University of East Anglia, Norwich NR4 7TJ, Department of Medical Biophysics, University of Manchester, Manchester M13 9PT.

Freeman et al., "Television control by hand gestures", Mitsubishi Electric Research Labs, IEEE Intl. Wkshp. On Automatic Face and Gesture Recognition, Zurich, Jun. 1995.

* cited by examiner

Primary Examiner—Tan Q. Nguyen

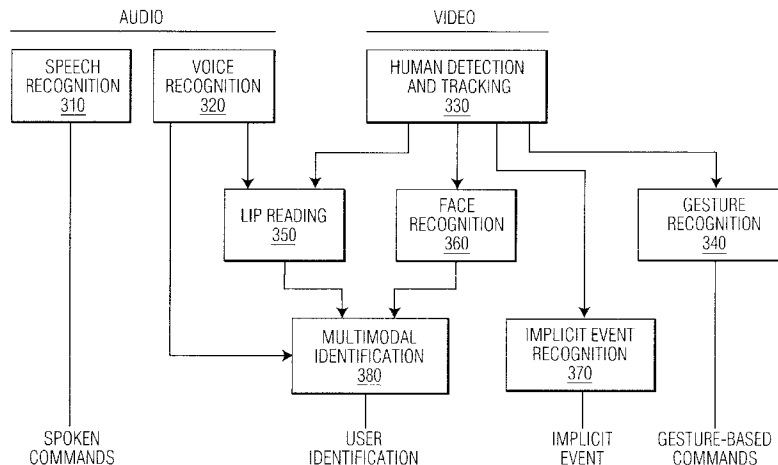
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(57) **ABSTRACT**

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



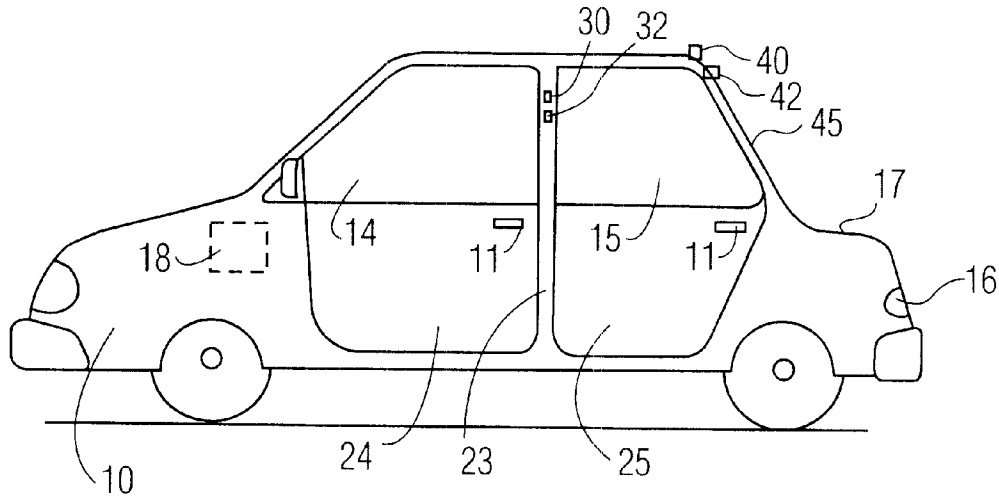


FIG. 1A

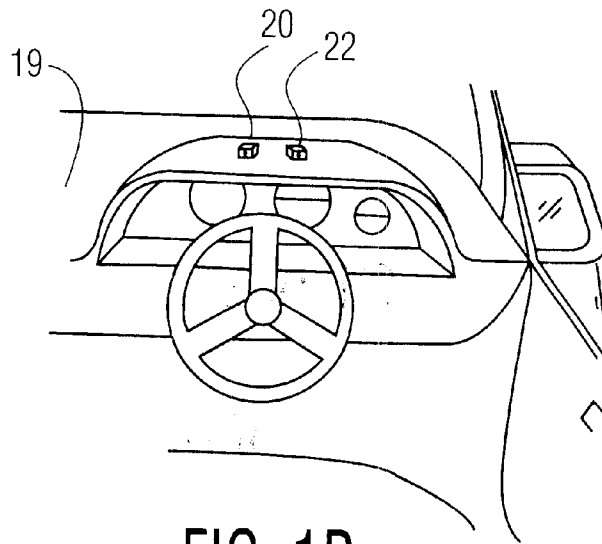


FIG. 1B

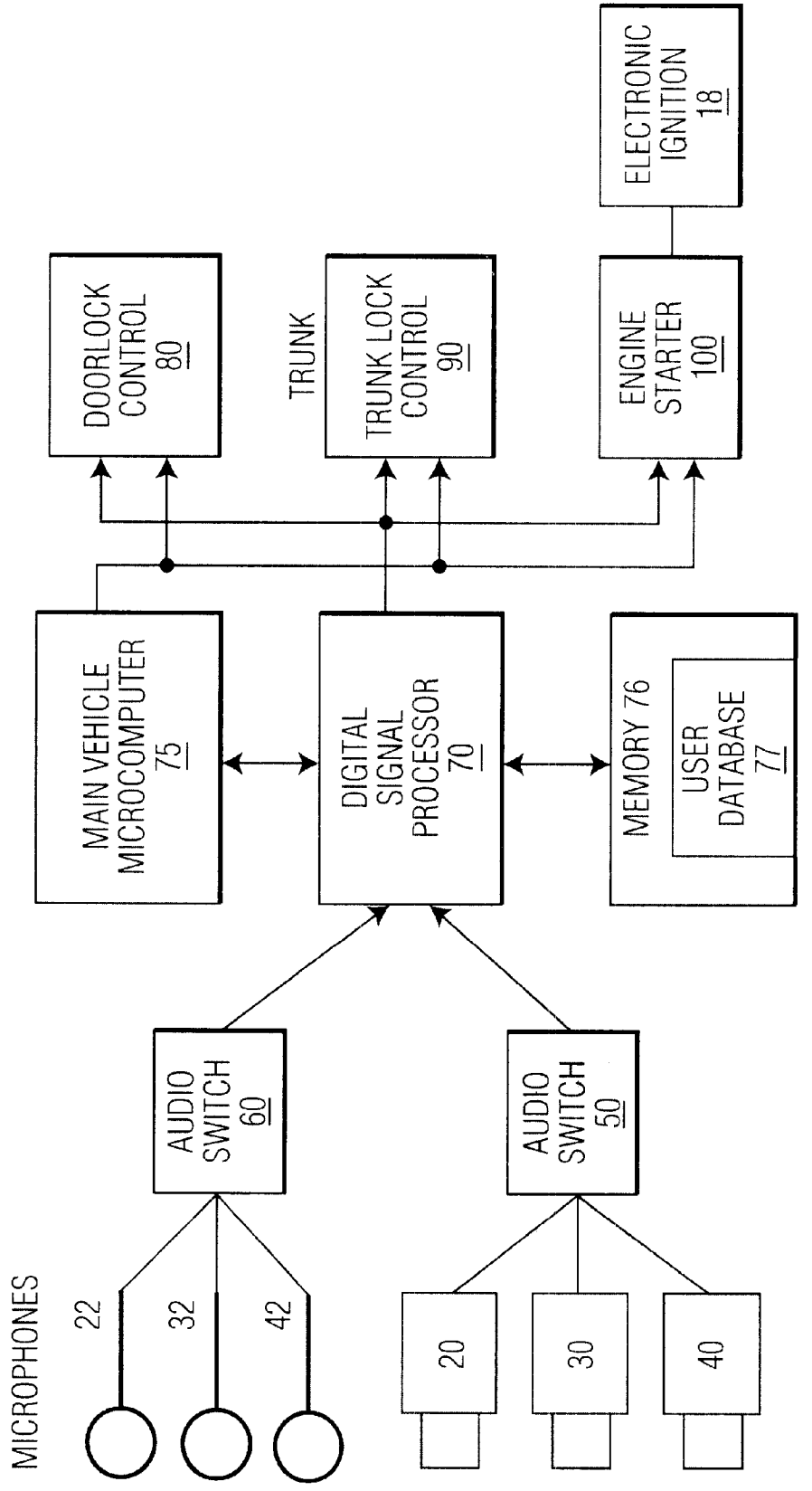


FIG. 2

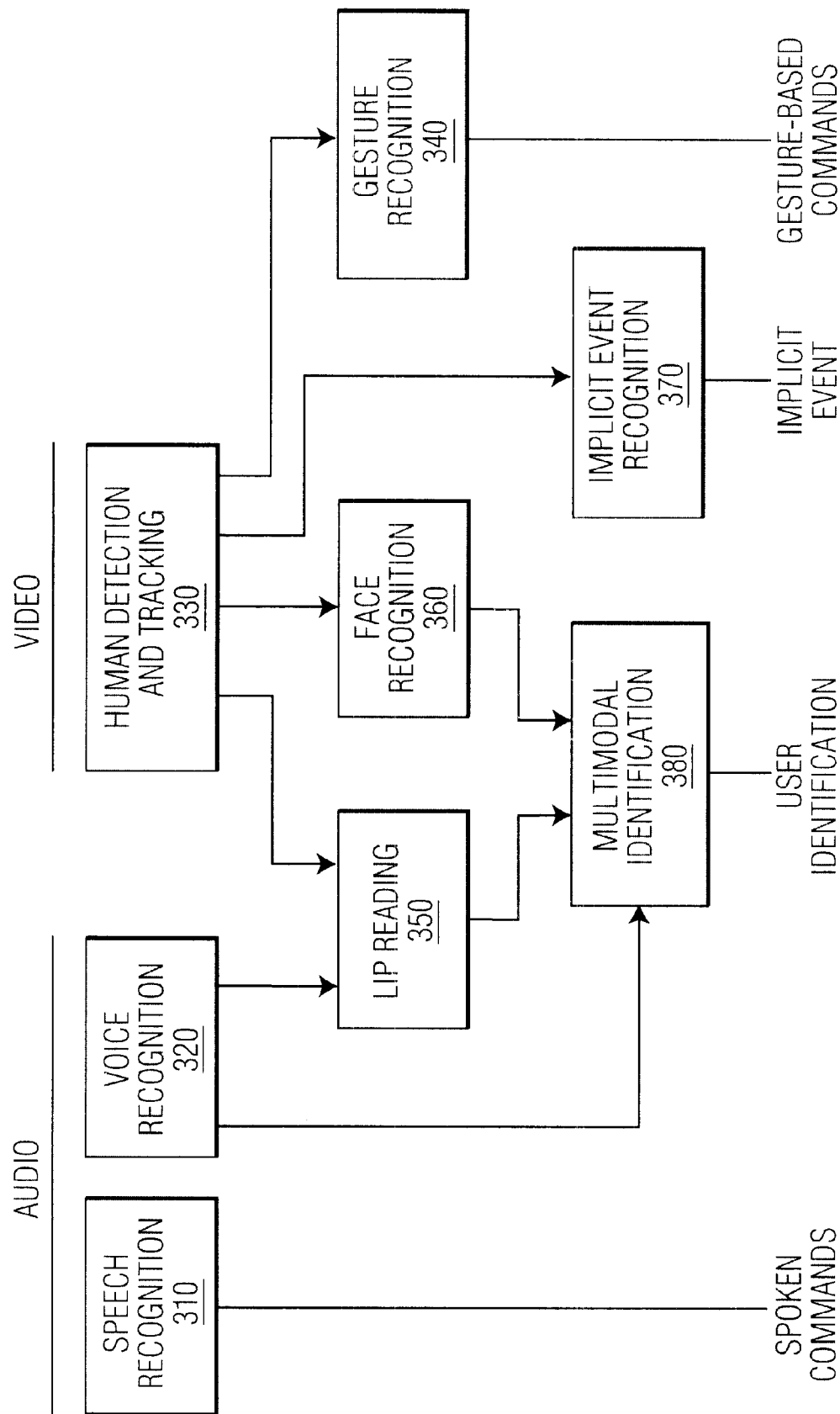


FIG. 3

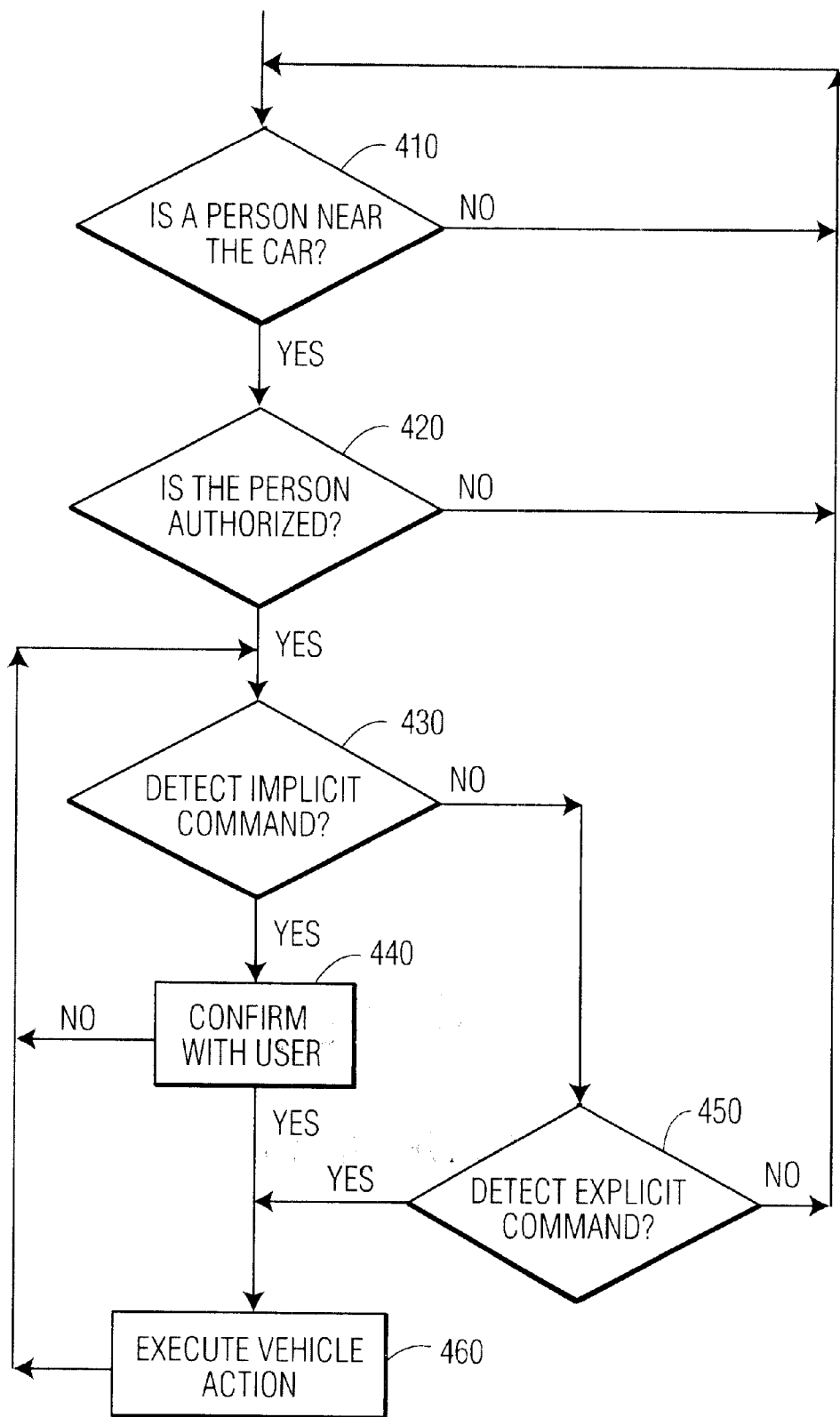


FIG. 4

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