United States Patent [19]

Davidian

[54] **ANTI-COLLISION SYSTEM FOR VEHICLES**

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[30] **Foreign Application Priority Data**

Jun. 4, 1992 [IL] Israel 102097

[51] **Int. Cl.⁵** G06F 15/50

[52] **U.S. Cl.** **364/461;** 364/426.04; 342/455; 340/436; 180/169

[58] **Field of Search** .... 364/460, 461, 424.01, 364/424.04, 426.04; 340/435, 436, 437, 438, 961; 342/29, 41, 455; 434/236, 238, 258; 273/440; 180/167–169; 73/517 A

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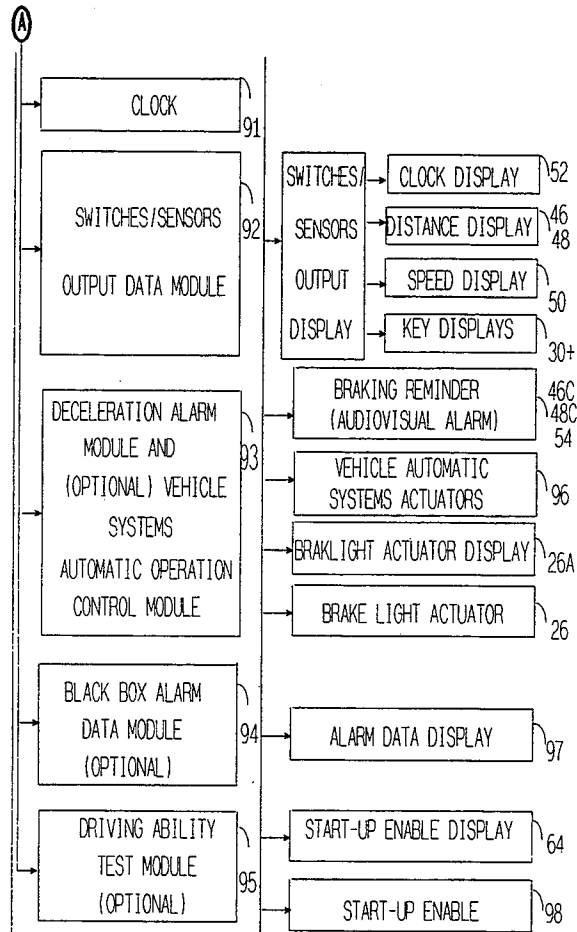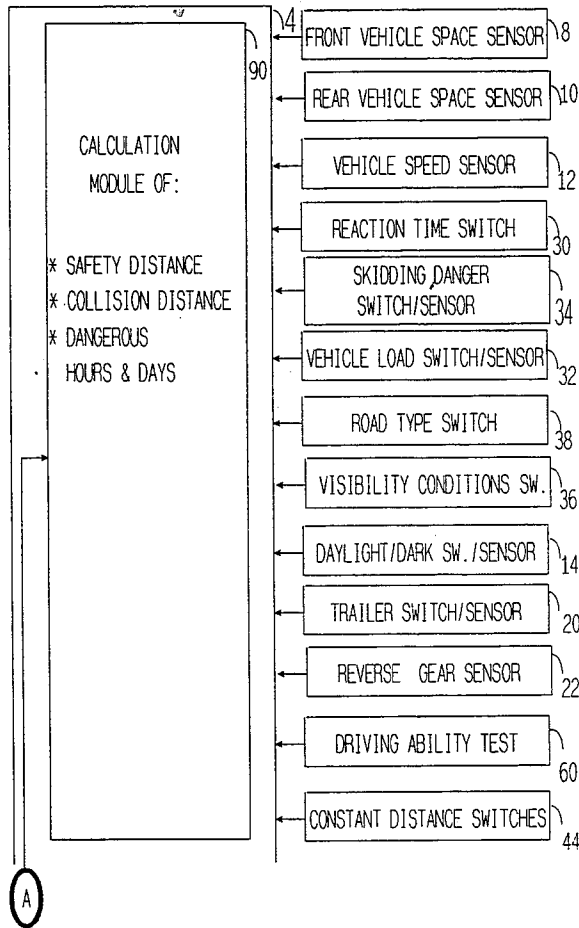|			
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Primary Examiner—Gary Chin
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[57] **ABSTRACT**

An anti-collision system for vehicles includes a speed sensor for sensing the speed of the vehicle, a space sensor for measuring the distance of the vehicle from an object, a computer for computing a danger-of-collision distance to the object, an alarm actuated by the computer when the sensed distance of the object is equal to or less than the danger-of-collision distance compared by the computer, and a brake light actuated upon the actuation of said alarm. The system also includes a control panel having parameter presetting means for presetting preselected parameters concerning the vehicle, the vehicle driver, and the environment, which are utilized by the computer for computing the danger-of-collision distance to the object.
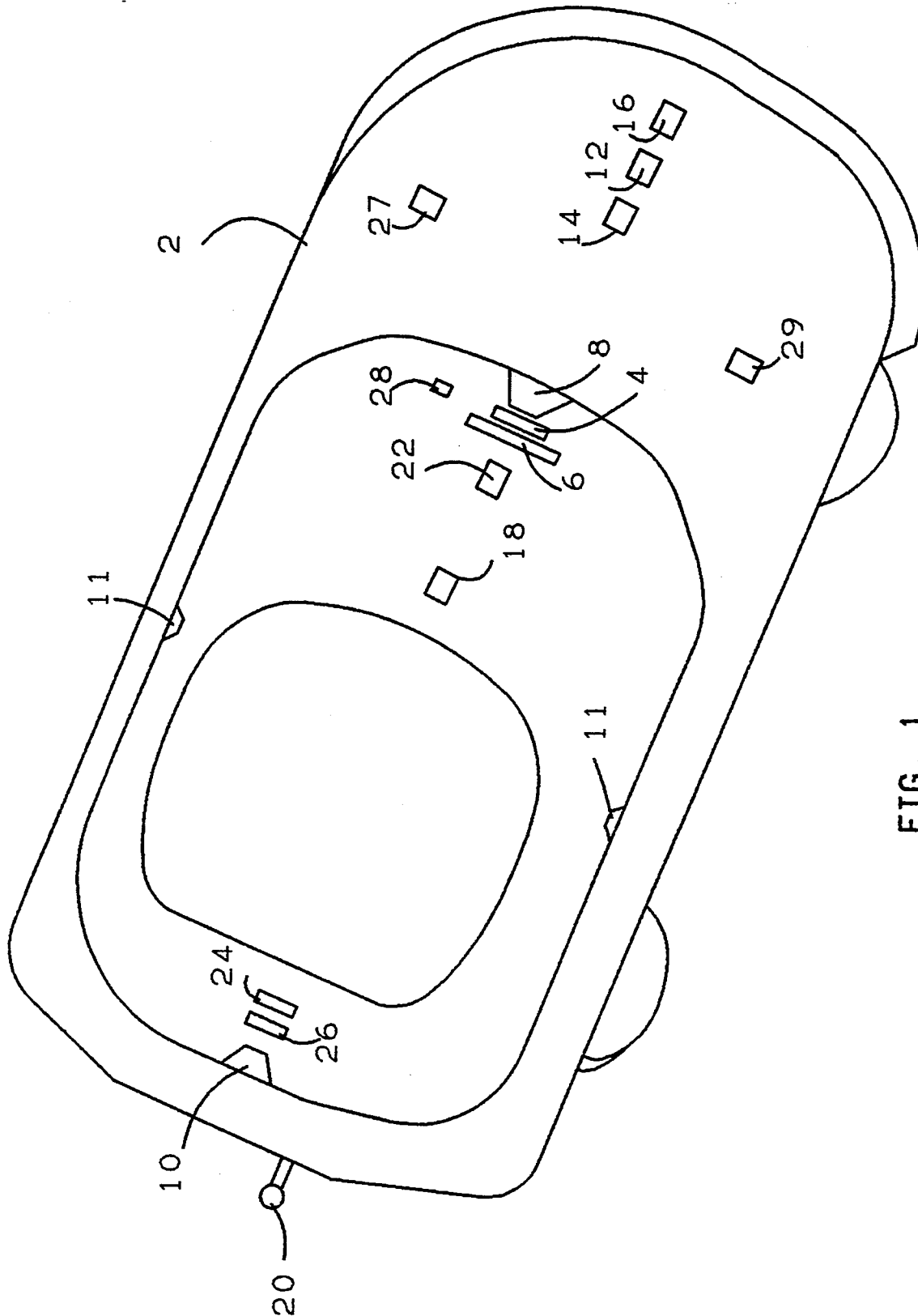
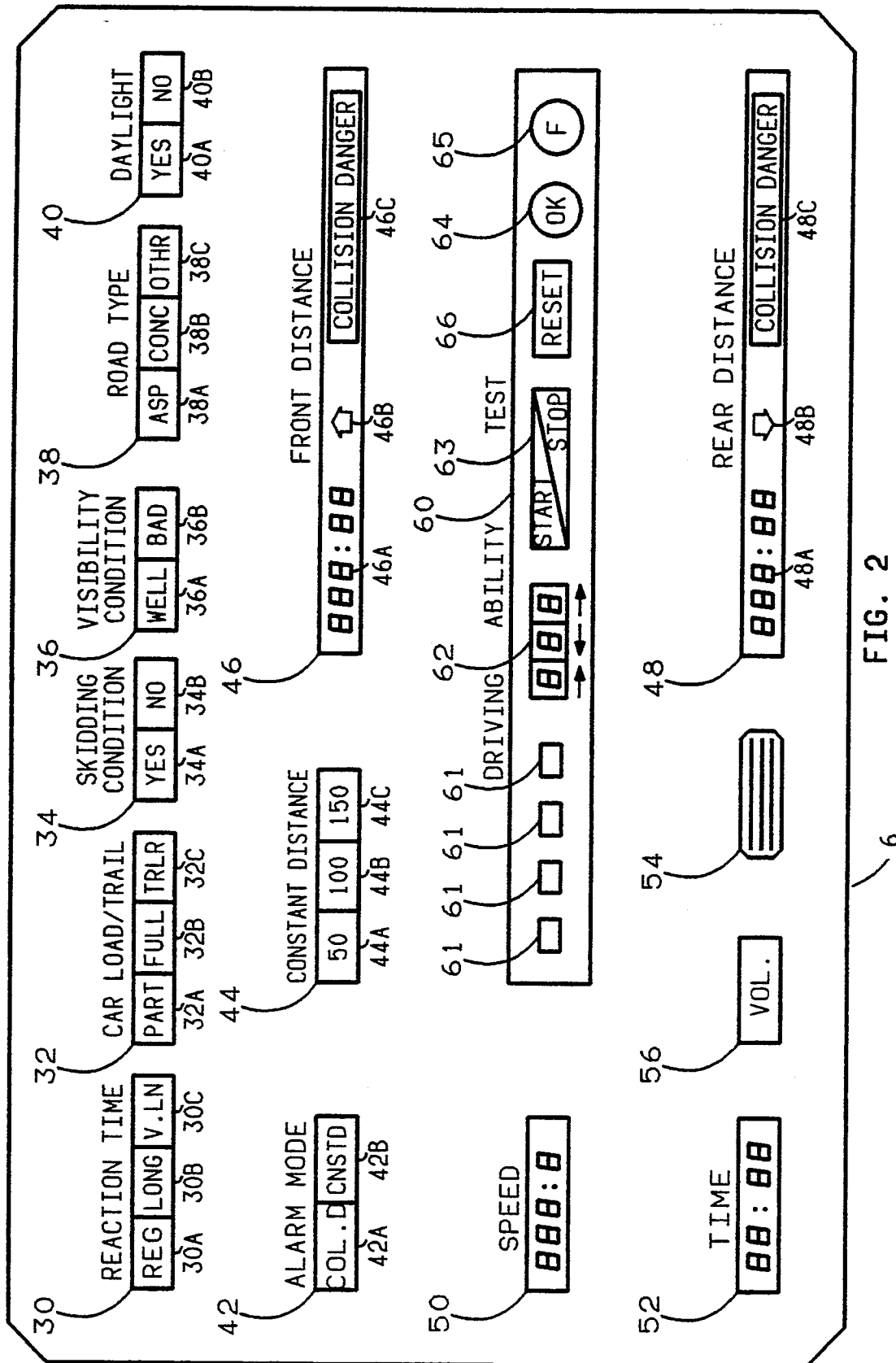**20 Claims, 30 Drawing Sheets**

FIG. 1

FIG. 2

30 REACTION TIME
REG 30A | LONG 30B | V.LN 30C

32 CAR LOAD/TRAIL
PART 32A | FULL 32B | TRLR 32C

34 SKIDDING CONDITION
YES 34A | NO 34B

36 VISIBILITY CONDITION
WELL 36A | BAD 36B

38 ROAD TYPE
ASP 38A | CONC 38B | OTHR 38C

40 DAYLIGHT
YES 40A | NO 40B

42 ALARM MODE
COL.D 42A | CNSTD 42B

44 CONSTANT DISTANCE
50 44A | 100 44B | 150 44C

46 FRONT DISTANCE
888:88 46A | ⇦ 46B | COLLISION DANGER 46C

48 REAR DISTANCE
888:88 48A | ⇦ 48B | COLLISION DANGER 48C

50 SPEED
888:8

52 TIME
88:88

54

56 VOL.

6

60 TEST

62 DRIVING ABILITY
888

63 START STOP

64 OK

65 F

66 RESET

61 61 61 61 61 61 61

FIG. 3

FIG. 4

MAIN MENU
STATUS DISPLAY
PARAMETERS INPUT
ALARM MODE SELECTION
BLACK BOX ALARM DATA

75

BLACK BOX ALARM DATA

DRIVE NO............................... 3

DRIVING DURATION (HR)...... 2.5

FRONT ALARMS TO DRIVING RATIO..5.3

78

ALARM TIME	SPEED	DISTANCE
19:23:56	117	37.5
19:23:57	115	33.2
19:23:58	100	37.4

REAR ALARMS TO DRIVING RATIO.......0.0
MECHANICAL SYSTEMS OPERATED ? NO
RETURN

CONSTANT
DISTANCE

76B

250
200
150
100
50
OTHER
RETURN

ALARM MODE SELECTION
COLLISION DANGER
CONSTANT DISTANCE...........................
RETURN

76A

PARAMETERS INPUT
REACTION TIME..............
VEHICLE LOAD
SKIDDING CONDITIONS
VISIBILITY CONDITIONS
ROAD TYPE
OTHER

77A

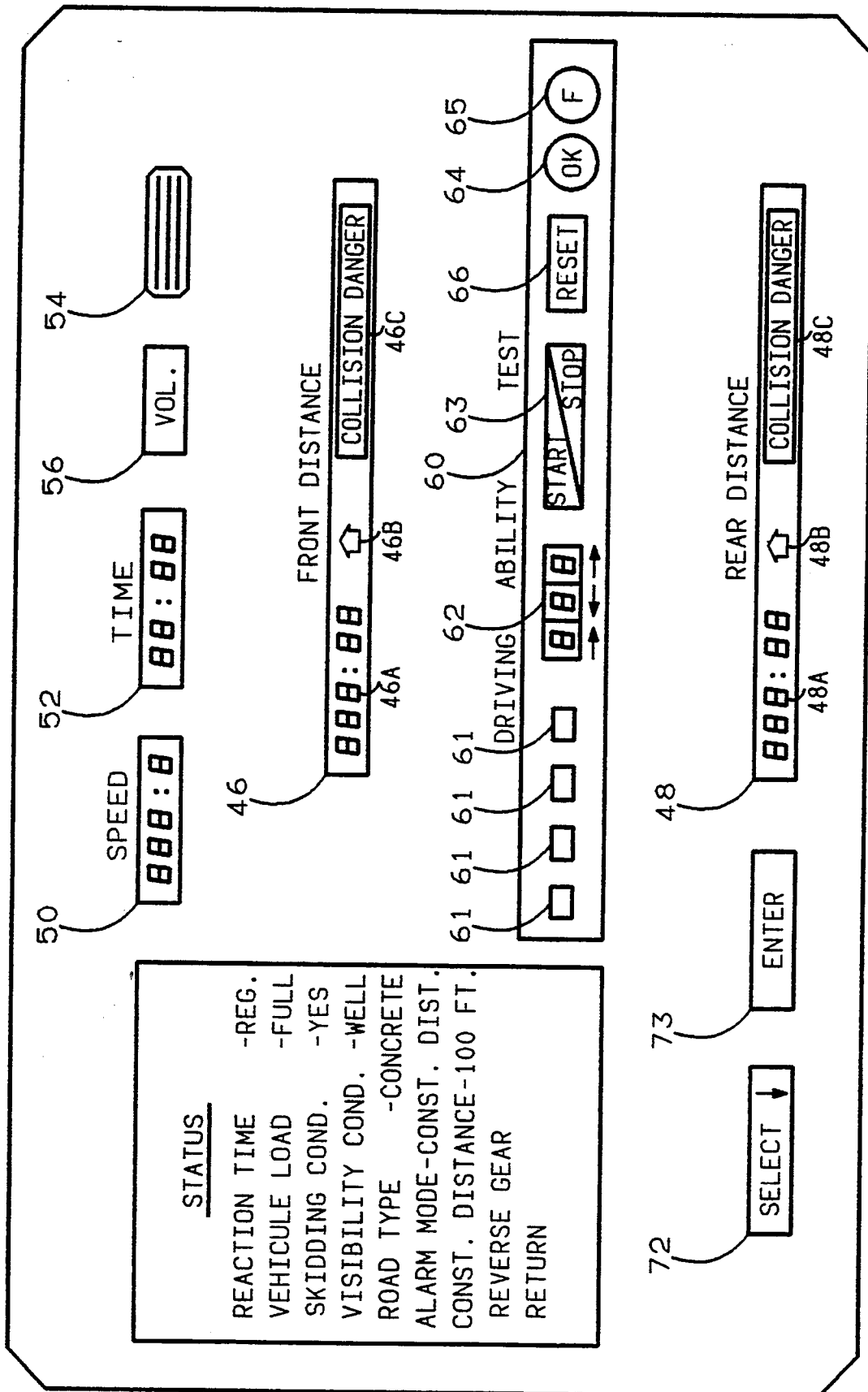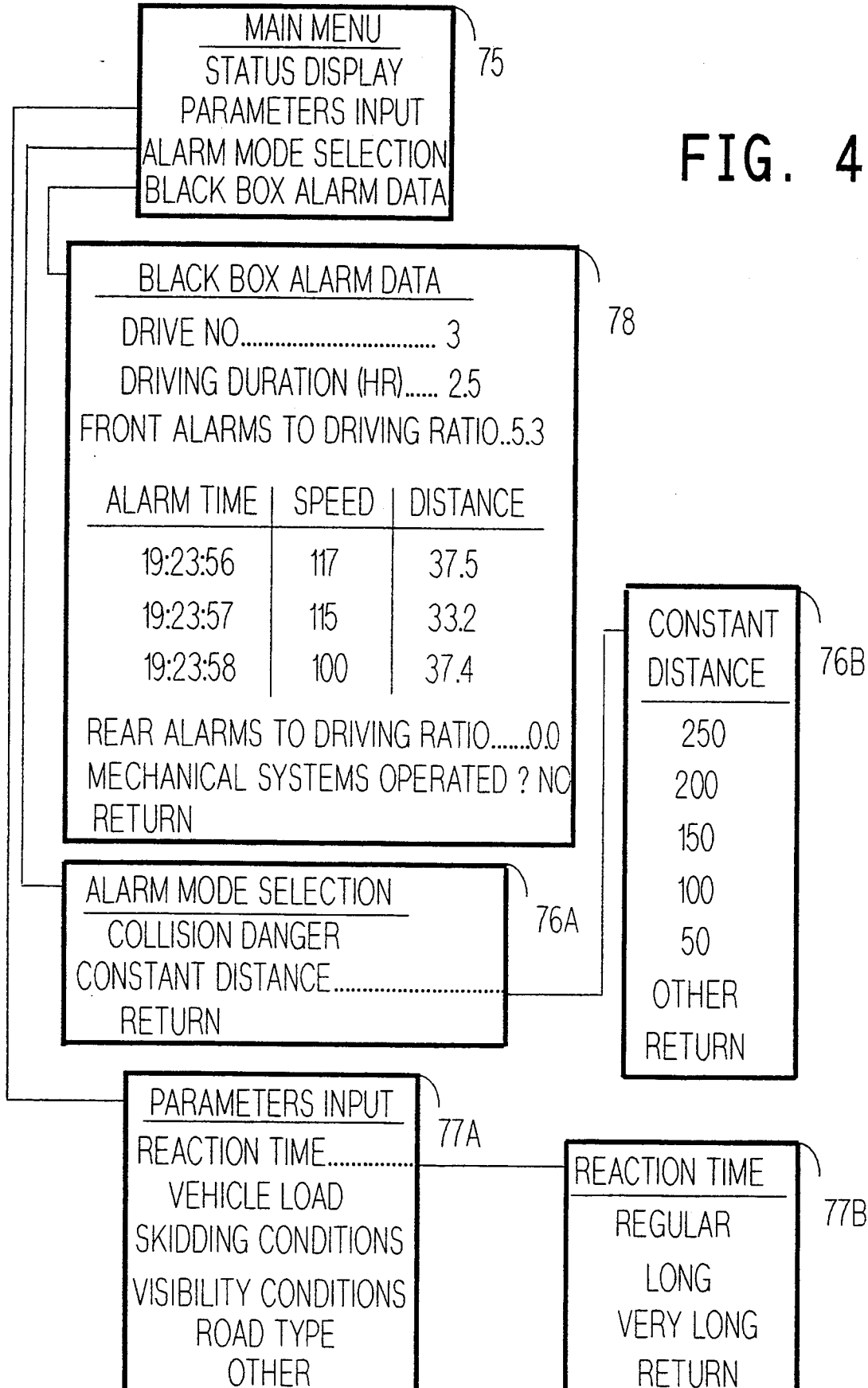REACTION TIME
REGULAR
LONG
VERY LONG
RETURN

77B

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