

(12) **United States Patent**
Snider

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(54) **USER CONFIGURABLE VEHICLE STEERING COLUMN STALKS**

FOREIGN PATENT DOCUMENTS

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DE	3913266	A1	10/1990
DE	10346112	A1	4/2005
DE	102010022620	A1	12/2011
EP	1331134	A2	7/2003
EP	1762421	A1	3/2007
FR	2772511	A1	6/1999
WO	87/06893	A1	11/1987
WO	97/13657	A1	4/1997
WO	01/60560	A1	8/2001

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(Continued)

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OTHER PUBLICATIONS

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(57) **ABSTRACT**

A user-configurable steering column is made from steering column-mounted switches, each of which is coupled to a computer, which is also coupled to various different driver circuits, each of which is configured to control the operation of a corresponding vehicle accessory device, such as head lamps, a wiper motor or the vehicle's cruise control. A tactile-sensitive display device located in either a head unit, smart-phone inside the vehicle, or in a dedicated, dash board-mounted device, provides a menu of assignable switches and user-controllable devices, or it displays icons representing the switches and accessories. A driver assigns a switch to a particular accessory by selecting icons. The computer thereafter reads the switches' states and sends corresponding control signals to the drivers for the various devices that were mapped to the switches. Multiple different programmed configurations can be stored in a memory device and selected by a user using the tactile-sensitive display device.

(52) **U.S. Cl.**

CPC **B60R 16/03** (2013.01); **B60K 35/00** (2013.01); **B60K 37/02** (2013.01); **B60Q 1/1469** (2013.01); **B60R 16/005** (2013.01); **G06F 3/03547** (2013.01)

(58) **Field of Classification Search**

None
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

2003/0023353 A1* 1/2003 Badarneh 701/1
2010/0268426 A1 10/2010 Pathak et al.

19 Claims, 4 Drawing Sheets

