

Toyota Motor North America, Inc., et al.

v.

Cruise Control Technologies LLC

IPR2014-00280

Patent 6,324,463

Trial Hearing

Petitioner Toyota Motor North America, Inc.'s Demonstrative Exhibits DX-1 through DX-54 for March 24, 2015 Oral Argument

Brief Overview of the '463 Patent

U.S. Patent No. 6,324,463

(12) **United States Patent**
Patel

(10) **Patent No.:** US 6,324,463 B1
 (45) **Date of Patent:** Nov. 27, 2001

(54) **CRUISE CONTROL INDICATOR**

(76) **Inventor:** C. Kumar N. Patel, 1171 Roberts La., Los Angeles, CA (US) 90077

(*) **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.:** 09/310,527

(22) **Filed:** May 12, 1999

Related U.S. Application Data

(60) Provisional application No. 60/085,183, filed on May 12, 1998.

(51) **Int. Cl.7** G06F 7/00; B60K 31/00

(52) **U.S. Cl.** 701/93; 701/70; 180/170; 362/459; 362/489

(58) **Field of Search** 701/93, 96, 70, 701/301; 340/438, 441, 815.4; 180/170; 345/30; 362/23, 482, 489, 459

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Associates, San Jose, CA, San Jose State University, CA, posted at least as early as Jul. 30, 1996.

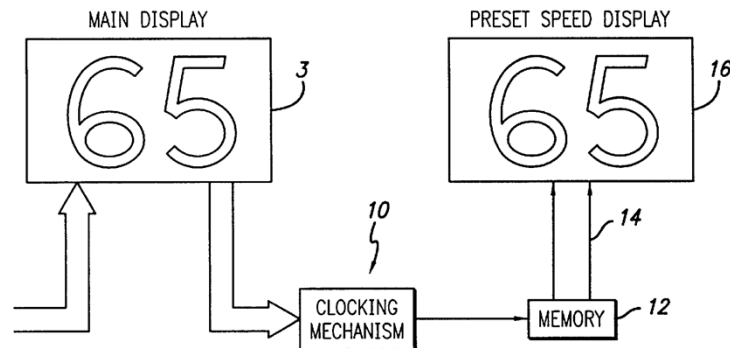
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(57) **ABSTRACT**

A system for indicating the operational status and parameters of a cruise control system for use in a human operated vehicle. The system includes apparatus for storing and recalling a preset speed for the cruise control system. The system further includes apparatus for indicating this preset speed to the operator, along with apparatus configured to indicate to the user whether or not the cruise control system is engaged. One embodiment is a system for use with vehicles with digital speedometers. In this embodiment, the system includes digital memory for storing the preset speed, and a digital display configured to show the preset speed and the operational status of the cruise control system. Another embodiment is for use with vehicles having analog speedometers. The analog system includes an array of LEDs and detectors arranged around a speed indicating dial and under the speedometer needle. The LEDs and detectors are arranged so that a preset speed may be stored into the system by detection of light reflected from one of the LEDs off a reflective surface on the back side of the needle, and onto one of the detectors. The LEDs of the analog system are further configured to indicate the preset speed and the operational status of the system.

36 Claims, 3 Drawing Sheets



Ex. 1001, '463 Patent

Filed:

- March 18, 2002

Issued:

- November 27, 2001

Claims at issue:

- Independent claims 1, 2, 12, 13, 18, 21, 25, 26, and 34
- Dependent claims 3 – 5, 14 – 16, 19, 27, 28, 35, and 36

U.S. Patent No. 6,324,463

- The '463 patent is directed to a method and apparatus for indicating the operational status and parameters of a cruise control system operated (e.g., activated, enabled, engaged) by user control.

system for indicating the operational status and parameters of a cruise control system for use in a human operated vehicle. The system includes apparatus for storing and calling a preset speed for the cruise control system. The system further includes apparatus for indicating this preset speed to the operator, along with apparatus configured to indicate to the user whether or not the cruise control system engaged. One embodiment is a system for use with vehicles with digital speedometers. In this embodiment, the system includes digital memory for storing the preset speed, and a digital display configured to show the preset speed and

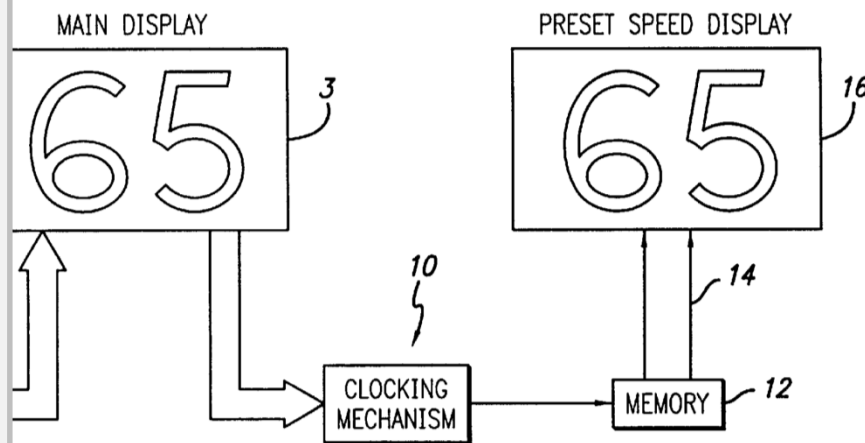
the operational status of the cruise control system. Another embodiment is for use with vehicles having analog speedometers. The analog system includes an array of LEDs and detectors arranged around a speed indicating dial and under the speedometer needle. The LEDs and detectors are arranged so that a preset speed may be stored into the system by detection of light reflected from one of the LEDs off a reflective surface on the back side of the needle, and onto one of the detectors. The LEDs of the analog system are further configured to indicate the preset speed and the operational status of the system.

Ex. 1001, '463 patent, at Abstract.
Paper 1, Petition Requesting IPR, at pp. 7-8.

U.S. Patent No. 6,324,463

- FIG. 1 illustrates a digital speed display embodiment of a cruise control system of the '463 Patent.
- Preset speed information is continuously displayed after the system is engaged, even when system is temporarily disengaged.

Paper 1, Petition Requesting IPR, at p. 8.



Ex. 1001 at FIG. 1.

When the cruise control system is first activated, the preset display 16 will blink the number zero indicating an “unset” state of cruise control. Further, if in the engaged state, the operator steps on the accelerator to momentarily (or longer) increase vehicular speed (for passing another vehicle or any other reason), the cruise control will remain engaged as is true of all systems today. However, the operator will always have a clear indication of the speed to which the vehicle will return upon removing the foot from the accelerator, obviating the need to rely on the memory of the operator to know the cruise control speed.

Ex. 1001 at 4:4-16.

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