

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TOYOTA MOTOR NORTH AMERICA, INC., FORD MOTOR
COMPANY, JAGUAR LAND ROVER NORTH AMERICA LLC,
SUBARU OF AMERICA, INC., and VOLVO CARS OF NORTH
AMERICA LLC,
Petitioner,

v.

CRUISE CONTROL TECHNOLOGIES LLC,
Patent Owner.

Case IPR2014-00289
Patent 6,324,463 B1

Before JOSIAH C. COCKS, HYUN J. JUNG, and GEORGE R. HOSKINS,
Administrative Patent Judges.

JUNG, *Administrative Patent Judge.*

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

Toyota Motor North America, Inc., et al. (collectively, “Petitioner”) filed a corrected Petition (Paper 8, “Pet.”) requesting institution of an *inter partes* review of claims 1–5, 12–15, 18–20, 25–28, and 34–36 of U.S. Patent No. 6,324,463 B1 (Ex. 1001, the “’463 patent”) pursuant to 35 U.S.C. § 311. Cruise Control Technologies LLC (“Patent Owner”) filed a preliminary response. Paper 9 (“Prelim. Resp.”). Based on these submissions, we instituted trial as to claims 1–5, 12–15, 18–20, 25–28, and 34–36 of the ’463 patent. Paper 13 (“Dec. on Inst.”).

After institution, Patent Owner filed a Patent Owner’s Response (Paper 21, “PO Resp.”), and Petitioner filed a Reply (Paper 29, “Reply”). In addition, Petitioner proffered the Declaration of David A. McNamara (Ex. 1012, “McNamara Declaration” or “McNamara Decl.”) with the Petition. Patent Owner does not rely on any expert declaration, and no deposition transcript was filed for Mr. McNamara.

An oral hearing in this proceeding was held on March 24, 2015, and a transcript of the hearing is included in the record (Paper 41, “Tr.”).

We have jurisdiction under 35 U.S.C. § 6(c). This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claims 1–5, 12–15, 18–20, 25–28, and 34–36 of the ’463 patent are unpatentable.

A. The '463 Patent (Ex. 1001)

The '463 patent discloses cruise control systems for use in a human operated vehicle. See Ex. 1001, Abst. Figures 1 and 2 of the '463 patent are shown below:

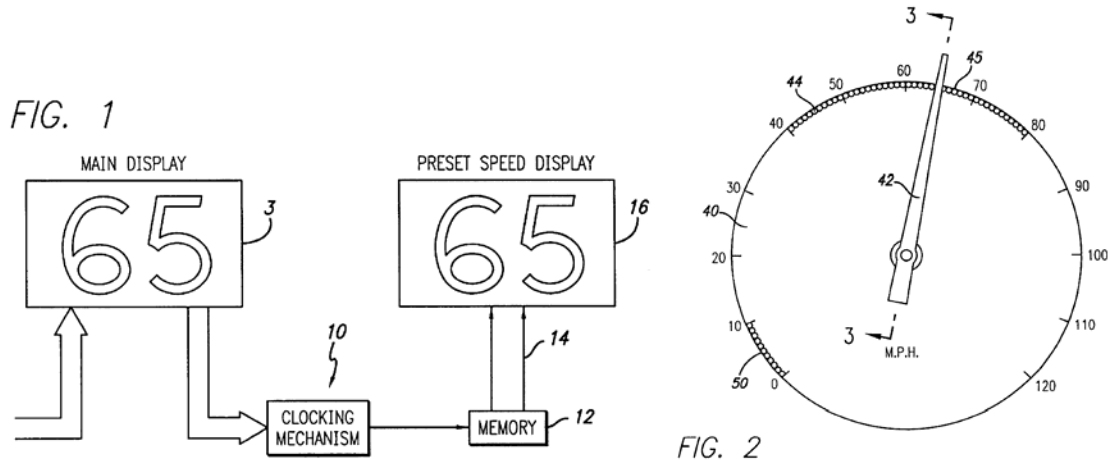


Figure 1 illustrates a digital speed display, while Figure 2 illustrates an analog speedometer. *Id.* at 3:8–13. In Figure 1, main speed display 3 shows the current speed at which the vehicle is operating. *Id.* at 3:49–53. When a cruise control set button (not shown in Figure 1) is pressed, the vehicle speed is stored in digital memory 12 as a preset speed. *Id.* at 3:53–60. Second speed display 16 shows that preset speed. *Id.*

Figure 2's analog speedometer 40 incorporates several LED assemblies 45. *Id.* at 4:19–26. Each LED assembly 45 has an LED and a detector. *Id.* at 4:29–30. When a cruise control set button (not shown in Figure 2) is pressed, all of the detectors are activated, and all of the LEDs momentarily light up. *Id.* at 4:48–51. The back of needle 42 reflects the light of the lit LEDs behind the needle, and that reflected light is detected by the detector of the LED assembly disposed at the location of needle 42. *Id.*

at 4:51–57. The LED of that assembly is then activated and remains lit to indicate the speed at which cruise control was engaged. *Id.* at 4:57–64.

B. Illustrative Claim

The '463 patent has 36 claims, of which claims 1–5, 12–15, 18–20, 25–28, and 34–36 are being challenged. Of the challenged claims, claims 1, 2, 12, 13, 18, 25, 26, and 34 are independent. Claims 1, 2, and 26 are system claims, and claims 12, 13, 18, 25, and 34 are method claims. Claim 1 is reproduced below.

1. A cruise control system for vehicle having a human operator, comprising:
 - a speed controller that automatically maintains the vehicle speed at a preset speed;
 - an enable switch associated with said controller for enabling the system;
 - a set speed input in communication with said controller for manually setting the speed of the vehicle at said preset speed, thereby engaging the system;
 - a memory which stores information indicative of said preset speed; and
 - a feedback system for communicating said information in said memory to the operator of the vehicle.

C. Prior Art Relied Upon

The Petition relies upon the following prior art references:

JP H9-50582 (“Yagihashi”) Feb. 18, 1997	Ex. 1004
(translation, Ex. 1005) ¹	

¹ The Petition cites to certified translations of Yoshimitsu (Ex. 1007), Nagashima (Ex. 1010), and Yagihashi (Ex. 1005). Pet. 10 n.1. Our decision also cites to those translations and exhibit page numbers.

JP S60-161226 ("Yoshimitsu") (translation, Ex. 1007)	Aug. 22, 1985	Ex. 1006
1984 Nissan 300zx Owner's Manual ("300zx Manual")	1983	Ex. 1008
JP H4-102059 ("Nagashima") (translation, Ex. 1010)	Sept. 3, 1992	Ex. 1009

D. The Asserted Grounds of Unpatentability

We instituted the instant *inter partes* review on the following grounds of unpatentability.

Reference[s]	Basis	Claims challenged
Yoshimitsu	§102(b)	13, 18, and 25–27
Yagihashi	§102(b)	12 and 13
Yoshimitsu and 300zx Manual	§103(a)	1, 2, 12, 14, 15, 27, and 34–36
Yoshimitsu and Nagashima	§103(a)	19 and 20
Yagihashi and Yoshimitsu	§103(a)	1–5, 14, 26–28, and 34–36

II. CLAIM CONSTRUCTION

In an *inter partes* review, “[a] claim in an unexpired patent shall be given its broadest reasonable construction in light of the specification of the patent in which it appears.” 37 C.F.R. § 42.100(b); *In re Cuozzo Speed Tech., LLC*, 778 F.3d 1271, 1279–83 (Fed. Cir. 2015). There is a “heavy presumption” that a claim term carries its ordinary and customary meaning. *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002); *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

A. Previously Interpreted Terms

In the Decision on Institution, we interpreted various claim terms of the '463 patent as follows:

Term	Interpretation
“engaging the system”	“operating the cruise control system to automatically control the vehicle at the preset speed”
“enabling”	“a ‘system on’ state for the cruise control system”
“enabled”	“a ‘system on’ state for the cruise control system”
“indicating to the operator the unset status of the preset speed”	“a state or status in which there is no preset speed for the cruise control system”
“activating the cruise control system”	“turning on the cruise control system”
“deactivated”	“the cruise control system is turned off”

See Dec. on Inst. 5–10.

The parties do not dispute these interpretations in their papers. We do not perceive any reason or evidence that now compels any deviation from these interpretations. Accordingly, we incorporate our previous analysis of the terms above. *See id.*

III. ASSERTED GROUNDS UNDER 35 U.S.C. § 102

To prevail in its challenges to claims 13, 18, and 25–27 as anticipated by Yoshimitsu and claims 12 and 13 as anticipated by Yagihashi, Petitioner must prove unpatentability by a preponderance of the evidence. *See* 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d).

In finding a claim anticipated, “[t]he identical invention must be shown in as complete detail as is contained in the . . . claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989). Moreover, “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631 (Fed. Cir. 1987). A finding of inherency “requires that the missing descriptive material is ‘necessarily present,’ not merely probably or possibly present” in the anticipating reference. *Trintec Indus., Inc. v. Top-USA Corp.*, 295 F.3d 1292, 1295 (Fed. Cir. 2002) (quoting *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999)).

A. *Anticipation by Yoshimitsu*

1. *Yoshimitsu (Ex. 1007)*

Yoshimitsu discloses a display device for a cruise control unit characterized by having a first display section which displays travel speed and a second display section which displays constant travel speed set by a setting manipulation. Ex. 1007, 569, 571.²

Figure 3 of Yoshimitsu is reproduced below:

² Our decision cites the exhibit page numbers provided in the lower, left-hand corner of the pages of Exhibit 1007.

Figure 3

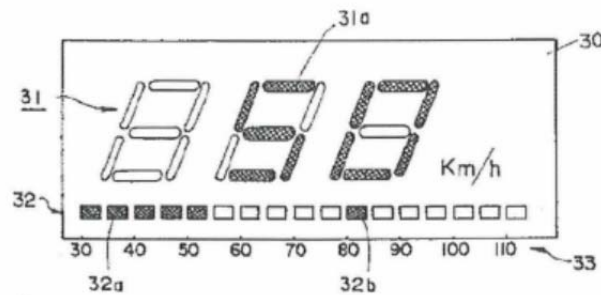


Figure 3 shows one example of a display surface. Ex. 1007, 575, 577. Display surface 30 has first display section 31 that displays travel speed and second display section 32 with display elements 32a that display the constant travel speed set. *Id.* at 575. In the figure, radiator 32b corresponds to the set vehicle speed. *Id.* For example, if the driver sets the cruise control to 80 km/h, radiator 32b corresponding to 80 km/h flashes to indicate the set speed to the driver. *Id.* After a fixed amount of time, radiator 32b stops flashing and emits light steadily until reset or canceled. *Id.* Thus, Yoshimitsu provides the set speed near an actual speed display, and the flashing heightens driver attention. *Id.* at 572–573.

2. Independent Claim 13

Claim 13 recites, with emphases added:

13. A method for indicating to a human operator of a vehicle having a cruise control system a preset speed for which the cruise control system is set, the method comprising:

- setting the preset speed;
- displaying to the operator a symbol indicative of the preset speed;*
- maintaining the display of the symbol indicative of the preset speed; and

discontinuing display of the symbol indicative of the preset when the cruise control system is deactivated or a new preset speed is selected.

Ex. 1001, 7:39–50. Petitioner argues that Yoshimitsu discloses all the limitations of claim 13. Pet. 15–18 (citing Ex. 1007, 571, 573–577, Fig. 3, claims 1, 2). In particular, Petitioner cites claim 1 of Yoshimitsu for “displaying to the operator a symbol indicative of the preset speed” (“the displaying step”). *Id.* at 17 (quoting Ex. 1007 claim 1, citing *id.* at 571, 575, 574, 575, 577, Fig. 3, claim 2). Petitioner also argues that Yoshimitsu discloses “discontinuing display of the symbol indicative of the preset [speed] when the cruise control system is deactivated or a new preset speed is selected” (“the discontinuing display step”), because Yoshimitsu describes “by the output signal (e) of circuit (3), radiator (32b) sustains lighting, thus sustaining the display of the set vehicle speed” and the “sustained state finishes by the reset signal provided to the sustained signal forming circuit (13) by the resetting manipulation of the cruise control display device or cancel operation of the memory.” *Id.* at 17–18 (citing Ex. 1007, 575–76) (emphasis omitted).

For the displaying step, Patent Owner responds that “each display element 32a appears to correspond to multiple speed values” and “the operator of the vehicle is not provided with any information about the actual preset speed (this even presumes that each display element 32a represents a 5 km/h range of values, but this is nowhere discussed or suggested in Yoshimitsu).” PO Resp. 5 (citing Ex. 1007, 569, 575, Fig. 3); Tr. 19:3–20:8, 21:8–22:4.

Petitioner replies that Patent Owner does not provide “a construction requiring any specific type of information or level of precision” and does not contest the application of the plain and ordinary meaning. Reply 6.

Petitioner also argues that Patent Owner’s interpretation requires “100% precision” and “eliminates every embodiment disclosed in the specification.” *Id.* Petitioner notes that “Patent Owner fails to offer any evidence rebutting Mr. McNamara’s Declaration, which unequivocally states that ‘32b shows a first symbol indicative of the first preset speed.’” *Id.* at 7 (McNamara Decl. ¶ 84).

Claim 13 only requires “displaying . . . a symbol indicative of the preset speed.” Patent Owner’s arguments do not persuade us that a display element representing a 5 km/h range would fail to disclose “a symbol indicative of the preset speed.” Moreover, the ’463 patent states that “analog dial 40 . . . is provided with a bank 44 of individual light emitting diode (LED) assemblies . . . at every 1 mile per hour (mph) interval” but “[i]t is understood that other intervals may be used if desired.” Ex. 1001, 4:21–26. Thus, Patent Owner’s arguments for the displaying step to require a particular precision are not persuasive.

For the discontinuing display step, Patent Owner responds that the Petition cites a single statement in Yoshimitsu regarding a resetting manipulation or cancel operation but Yoshimitsu does not provide an explanation of such resetting manipulation or cancel operation. PO Resp. 5–6 (citing Ex. 1007 at 571). Patent Owner, thus, argues that the “vague and unexplained” cited portion of Yoshimitsu does not disclose the discontinuing display step. *Id.* at 6.

As for the resetting manipulation, Petitioner replies that Yoshimitsu explains that a driver performs the setting manipulation and the McNamara Declaration testifies that “when a driver re-sets the cruise control at a different preset speed, the previous symbol is discontinued.” Reply 7–8 (citing Ex. 1007, 575; McNamara Decl. ¶ 51). For the cancel operation, Petitioner argues Figures 2 and 3 show set vehicle speed is displayed until a cancel operation. *Id.* at 8 (citing Pet. 18 (citing Ex. 1007, 575)).

Petitioner cites a portion of Yoshimitsu that discloses “at the time of setting the cruise control unit, the display of the set speed flashes . . . and afterwards, the set speed lights constantly.” *See* Pet 18; Ex. 1007, 576. Petitioner also cites Yoshimitsu for disclosing that “sustaining the display of the set vehicle speed . . . finishes . . . by the resetting manipulation of the cruise control display device or cancel operation,” which Petitioner’s expert also cites to aver that a “first symbol is removed when the speed is reset.” *See* Pet. 18; Ex. 1007, 575; McNamara Decl. ¶ 51. Considering the cited portions of Yoshimitsu together with the McNamara Declaration, Patent Owner’s arguments do not persuade us that Yoshimitsu fails to explain the resetting manipulation or cancel operation such that Yoshimitsu fails to disclose the discontinuing step.

Accordingly, based on the complete record before us, we determine that Petitioner has shown by a preponderance of the evidence that, under 35 U.S.C. § 102(b), claim 13 is anticipated by Yoshimitsu.

3. Independent Claim 18

Claim 18 recites, with emphases added:

18. A method for indicating to a human operator of a vehicle having a cruise control

system a preset speed for which the cruise control system is set, the method comprising:

setting the preset speed;

displaying to the operator a symbol indicative of the preset speed while maintaining the vehicle speed at substantially the preset speed;

maintaining the display of the symbol indicative of the preset speed;

braking the vehicle;

upon braking the vehicle, discontinuing maintaining the vehicle speed at substantially the preset speed while keeping data corresponding to the preset speed in a memory device; and

at a time after braking and during which time the vehicle is not being maintained at substantially the preset speed, displaying to the operator a symbol indicative of the preset speed.

Ex. 1001, 8:1–19. Petitioner argues that Yoshimitsu discloses all the limitations of claim 18. Pet. 18–21 (citing Ex. 1007, 571, 573–576, Fig. 3, claims 1, 2; McNamara Decl. ¶ 49). For “displaying to the operator a symbol indicative of the preset speed while maintaining the vehicle speed at substantially the preset speed” (“the displaying step”), Petitioner contends that Yoshimitsu discloses a “[s]etting vehicle speed display device for a cruise control unit characterized by being provided with a display surface having . . . [a] second display section . . . displaying constant travel speed set by the setting manipulation of the occupant.” Pet. 19–20 (quoting Ex. 1007 claim 1, citing *id.* at 571, 574, 575, Fig. 3 claim 2; McNamara Decl. ¶ 49) (emphasis omitted). Petitioner also contends that Yoshimitsu discloses “braking the vehicle” because Yoshimitsu describes “the cruise control state is temporarily released in the case of speed reduction by brake operation

while in cruise control.” *Id.* at 20 (citing Ex. 1007, 571) (emphasis omitted). As for “upon braking the vehicle, discontinuing maintaining the vehicle speed at substantially the preset speed while keeping data corresponding to the preset speed in a memory device” (“the discontinuing step”), Petitioner cites the same portion of Yoshimitsu and further argues that the limitation is disclosed by the description of a conventional cruise control system in which “when this set status was temporarily released after setting . . . though the memory was stored in the control circuit, no display was made at all on the driver seat side,” which was improved upon by Yoshimitsu to “provide the set vehicle speed display device for a cruise control unit which can display a set vehicle speed even after temporary release of cruise control and resolve a sense of insecurity felt by the driver.” *Id.* at 20–21 (citing Ex. 1007, 571) (emphasis omitted).

For the displaying step, Patent Owner states that “at least for the reasons explained . . . with regard to claim 13, Yoshimitsu does not anticipate claim 18.” PO Resp. 7. Compared to the displaying step of claim 13, the displaying step of claim 18 further requires that the displaying occur “while maintaining the vehicle speed at substantially the preset speed.” The additional recitation in the displaying step of claim 18 does not persuade us to modify our determination that the displaying step of claim 13 does not require a particular precision for indicating the preset speed. Thus, we are not persuaded by the same argument for the displaying step of claim 18.

For the braking step, Patent Owner responds that “Petitioner improperly relies on a combination of a discussed ‘prior art’ cruise control unit and other embodiments of Yoshimitsu in its allegations of anticipation.”

PO Resp. 7; Tr. 22:5–23:15. Petitioner replies that the Petition cited Yoshimitsu’s disclosure that “the cruise control state is temporarily released in the case of speed reduction by brake operation while in cruise control.” Reply 4 (citing Pet 20 (citing Ex. 1007, 571)). Petitioner also argues that Yoshimitsu explicitly pertains to the improvement of the display device of a cruise control unit. *Id.* (citing Ex. 1007, 571).

The portion of Yoshimitsu cited by the Petition describes the known cruise control unit. *See* Ex. 1007, 571. However, as Petitioner argues (Reply 4), Yoshimitsu “pertains to a cruise control unit, especially relating to the improvement of display device of the cruise control unit.” *Id.* Thus, Yoshimitsu expressly indicates that it improves the cruise control unit, and we cannot find any indication that the disclosed embodiments of Yoshimitsu do not include the known feature of a cruise control state being released temporarily by brake operation while in cruise control. Therefore, we are not persuaded by Patent Owner’s argument that Petitioner improperly relies on a combination of prior art and described embodiments of Yoshimitsu.

For the discontinuing step, Patent Owner similarly argues that Petitioner improperly relies on a combination of prior art and disclosed embodiments and that the cited portion of Yoshimitsu refers to “temporary release of cruise control,” not “braking the vehicle.” We are not persuaded that Petitioner relies on a combination for the reasons discussed above, and we are not persuaded that Yoshimitsu’s disclosure of a temporary release of cruise control *by brake operation* fails to disclose “braking the vehicle.” *See* Ex. 1007, 571.

Patent Owner also argues that cited portion of Yoshimitsu refers to “temporary release of cruise control” and does not disclose the further recitation “maintaining the vehicle speed at substantially the preset speed” and “keeping data corresponding to the preset speed in a memory device.” PO Resp. 8. However, Petitioner cites portions of Yoshimitsu that disclose “when this set status was temporarily released after setting . . . though the memory was stored in the control circuit, no display was made at all on the driver seat side” and Yoshimitsu’s improvement “provide[s] the set vehicle speed display device for a cruise control unit which can display a set vehicle speed even after temporary release of cruise control and resolve a sense of insecurity felt by the driver.” See Pet. 20–21 (citing Ex. 1007, 571). Patent Owner’s argument is not persuasive because it does not address all the portions of Yoshimitsu relied upon by Petitioner for the discontinuing step.

Accordingly, based on the complete record before us, we determine that Petitioner has shown by a preponderance of the evidence that, under 35 U.S.C. § 102(b), claim 18 is anticipated by Yoshimitsu.

4. Independent Claim 25

Claim 25 recites, with emphases added:

25. A method for indicating to a human operator of a vehicle having a cruise control system a preset speed for which the cruise control system is set, the method comprising:
 setting the preset speed;
 displaying to the operator a symbol indicative of the preset speed;
 accelerating the vehicle to a speed above the preset speed; and

maintaining the display of the symbol indicative of the preset speed while the vehicle is at the speed above the preset speed.

Ex. 1001, 8:56–67. Petitioner argues that Yoshimitsu discloses all the limitations of claim 25. Pet. 22 (citing Ex. 1007 at 574; McNamara Decl. ¶ 48). Petitioner relies on disclosures cited for “displaying to the operator a symbol indicative of the preset speed while maintaining the vehicle speed at substantially the preset speed” of claim 18 for “displaying to the operator a symbol indicative of the preset speed” (“the displaying step”), as recited by claim 25. Pet. 22. For “accelerating the vehicle to a speed above the preset speed” (“the accelerating step”), Petitioner contends that Yoshimitsu describes that “when the actual vehicle speed is higher tha[n] the set vehicle speed, the set vehicle speed is displayed blinking.” *Id.* (citing Ex. 1007, 574; McNamara Decl. ¶ 48) (emphasis omitted).

For the displaying step, Patent Owner states that “at least for the reasons explained . . . with regard to claim 18, Yoshimitsu does not anticipate claim 25.” PO Resp. 8. Patent Owner’s arguments for claim 18 rely on its arguments for a similar limitation in claim 13. For the reasons discussed above for claims 13 and 18, we are not persuaded that the displaying step of claim 25 is absent from Yoshimitsu.

For the accelerating step, Patent Owner responds that the cited portion of Yoshimitsu “does not expressly discuss ‘accelerating the vehicle’” and does not clarify “whether the reference to ‘higher’ is intended to mean ‘greater’ (in terms of value) or ‘above’ (in terms of a spatial relationship)” because, in the immediately preceding portion, Yoshimitsu describes

displays. PO Resp. 9. Petitioner replies that Yoshimitsu “expressly states that ‘the actual vehicle **speed** is higher tha[n] the set vehicle **speed**’” and contrasts that with the use of “display” or “displayed” when Yoshimitsu describes displays. Reply 5 (citing Pet. 22 (citing Ex. 1007, 574)).

Yoshimitsu states that “in the second display section, . . . when the actual vehicle speed is higher tha[n] the set vehicle speed, the set vehicle speed is displayed blinking.” Ex. 1007, 574. Yoshimitsu describes that “the second display section (32) ha[s] a plurality of display elements (32a)” and “displays the set vehicle speed.” *Id.* at 575. Figure 3 shows that second display section 32 includes several illuminated display elements 32a from 30 km/h to 50 km/h to indicate “50 km/h” and a single illuminated display element 32b to indicate “80 km/h.” Yoshimitsu states that “[i]n the Figure, radiator (32b) corresponding to the set vehicle speed of display element (32a) flashes, indicating that in the vicinity of 80 km/h is the set vehicle speed and the actual vehicle speed is in the vicinity of 50 km/h.” *Id.* Thus, when considering Yoshimitsu in its entirety instead of select quotes, we determine that Yoshimitsu, discloses that display elements 32a are illuminated sequentially past the set speed radiator 32b when actual vehicle speed is greater than set speed, and to distinguish set speed, set speed radiator 32b flashes. Therefore, we are not persuaded that Yoshimitsu fails to disclose “accelerating the vehicle to a speed above the preset speed.”

Accordingly, based on the complete record before us, we determine that Petitioner has shown by a preponderance of the evidence that, under 35 U.S.C. § 102(b), claim 25 is anticipated by Yoshimitsu.

5. Claim 26

Claim 26 recites, with emphases added:

26. A cruise control system for a variable speed vehicle controlled by a human operator, comprising:

a speed controller for automatically maintaining the vehicle at a substantially constant preset speed;

a set speed input in communication with the controller for selecting the preset speed;

a memory device operable to store information representative of the preset speed;

first visual display apparatus operable to display the indicative of the actual speed of the vehicle; and

second visual display apparatus operable to display the visual information indicative of an operation status of the speed controller, wherein the visual information displayable by the second visual display apparatus includes visual information indicative of the preset speed.

Ex. 1001, 9:1–17. Petitioner argues that Yoshimitsu discloses all the limitations of claim 26. Pet. 22–24 (citing Ex. 1007, 572–575, 577, Fig. 3, claims 1, 2; McNamara Decl. ¶ 47). Specifically, for the recited “speed controller,” Petitioner argues that Yoshimitsu describes

[a] cruise control unit . . . which combines an electronic control circuit . . . , stores a desired set vehicle speed signal (speed signal which is set) in this control circuit, inputs the actual vehicle speed signal during driving obtained by the speed sensor, and controls a constant travel speed by comparing both signals.

Id. at 23 (citing Ex. 1007, 571) (emphasis omitted). For the recited “memory device,” Petitioner contends that Yoshimitsu describes “previous

set vehicle speed signal (m) . . . was stored in set vehicle speed memory circuit (60).” *Id.* (citing Ex. 1007, 571, 575, 577) (emphasis omitted). For the recited “second visual display apparatus,” Petitioner argues that Yoshimitsu describes a “[s]etting vehicle speed display device for a cruise control unit . . . having . . . the second display section . . . displaying constant travel speed set by the setting manipulation of the occupant.” *Id.* at 23–24 (citing Ex. 1007, 571, 575, claims 1 and 2, Fig. 3; McNamara Decl. ¶ 47) (emphasis omitted).

For the “speed controller,” Patent Owner responds that the Petition cites a description of a prior art cruise control unit and alleges anticipation based on a combination of prior art and Yoshimitsu’s disclosed embodiments. PO Resp. 10 (citing Pet. 23). For the “memory device,” Patent Owner responds that the Petition cites two different embodiments of Yoshimitsu and prior art discussion. PO Resp. 10–11 (citing Pet. 23). Patent Owner also argues that the Petition cites: (1) a discussion of Figure 6, which is an alternative embodiment of Figures 1 and 4, (2) a discussion of a memory in the prior art, and (3) the statement “cancel operation of the memory” that is not referenced in Yoshimitsu’s embodiments. PO Resp. 11 (citing Ex. 1007, 571, 577; Pet. 23).

Petitioner replies that Patent Owner’s arguments fail because “the prior art cruise control systems **are** the embodiments disclosed” and Yoshimitsu explicitly pertains to the improvement of the display device of a cruise control unit. Reply 3–4 (citing Ex. 1007, 571).

We agree with Petitioner that Yoshimitsu expressly indicates that it improves a cruise control system with a display, and we cannot find any

indication that the disclosed embodiments of Yoshimitsu do not include the known features of a speed controller and memory. *See* Ex. 1007, 571. The Petition does not cite Figure 6 for the “speed controller.” Pet. 23.

Therefore, we are not persuaded by Patent Owner’s argument that Petitioner relies on a combination of prior art and embodiments of Yoshimitsu for the “speed controller” of claim 26.

For the “second visual display apparatus,” Patent Owner responds that “each display unit 32a in the second display section 32 appears to correspond to multiple speed values” and “there is no way to determine the actual preset speed.” PO Resp. 12. Petitioner replies that Patent Owner does not provide “a construction requiring any specific type of information or level of precision” and does not contest the application of the plain and ordinary meaning. Reply 6. Petitioner also argues that Patent Owner’s interpretation requires “100% precision.” *Id.*

Claim 26 requires “second visual display apparatus operable to display the visual information . . . wherein the visual information . . . includes visual information indicative of the preset speed.” It does not require a particular precision for the visual information to be “indicative of the preset speed.” Thus, Patent Owner’s arguments requiring a particular precision for indicating the preset speed are unpersuasive.

Accordingly, based on the complete record before us, we determine that Petitioner has shown by a preponderance of the evidence that, under 35 U.S.C. § 102(b), claim 26 is anticipated by Yoshimitsu.

6. *Claim 27*

Claim 27 depends from claim 26 and recites “wherein the visual information displayed by the second visual display apparatus includes information reflecting whether the speed controller is operating to maintain the vehicle at the cruising speed at the time the display is made.” Ex. 1001, 9:18–22.

Petitioner argues that Yoshimitsu discloses “when the actual vehicle speed is higher tha[n] the set vehicle speed, the set vehicle speed is displayed blinking.” Pet. 24–25 (citing Ex. 1007, 571, 574, 575, Fig. 3, claims 1 and 2; McNamara Decl. ¶ 47) (emphasis omitted).

Patent Owner responds that the cited portion of Yoshimitsu provides “no indication that the ‘speed controller is operating to maintain the vehicle at the cruising speed.’” PO Resp. 13; Tr. 23:20–25:15. Patent Owner also argues that “if the actual vehicle speed is higher (greater, in value) than the set vehicle speed, then the vehicle is not being maintained at the set vehicle speed.” PO Resp. 13.

Petitioner cites Figure 3, which Yoshimitsu describes as including “second display section (32) having a plurality of display elements (32a) . . . displaying the constant travel speed set by the setting manipulation of the occupant,” which is cited as “p. 7, ll. 10–13” in the Petition. Ex. 1007, 575. The Petition also cites paragraph 47 of the McNamara Declaration which avers that “in Figure 3 . . . , the lit LED 32b indicates that the speed controller is engaged (operation status).” Thus, Petitioner provides evidence that Yoshimitsu discloses a visual indication that a speed controller is operating to maintain set speed or “visual information displayed by the second visual display apparatus include[ing] information reflecting whether

the speed controller is operating to maintain the vehicle at the cruising speed at the time the display is made,” as recited by claim 27.

Thus, based on the complete record before us, we determine that Petitioner has shown by a preponderance of the evidence that, under 35 U.S.C. § 102(b), claim 27 is anticipated by Yoshimitsu.

B. Anticipation by Yagihashi

1. Yagihashi (Ex. 1005)

Yagihashi discloses an automotive display unit. Figure 6 of Yagihashi is reproduced below:

FIG. 6

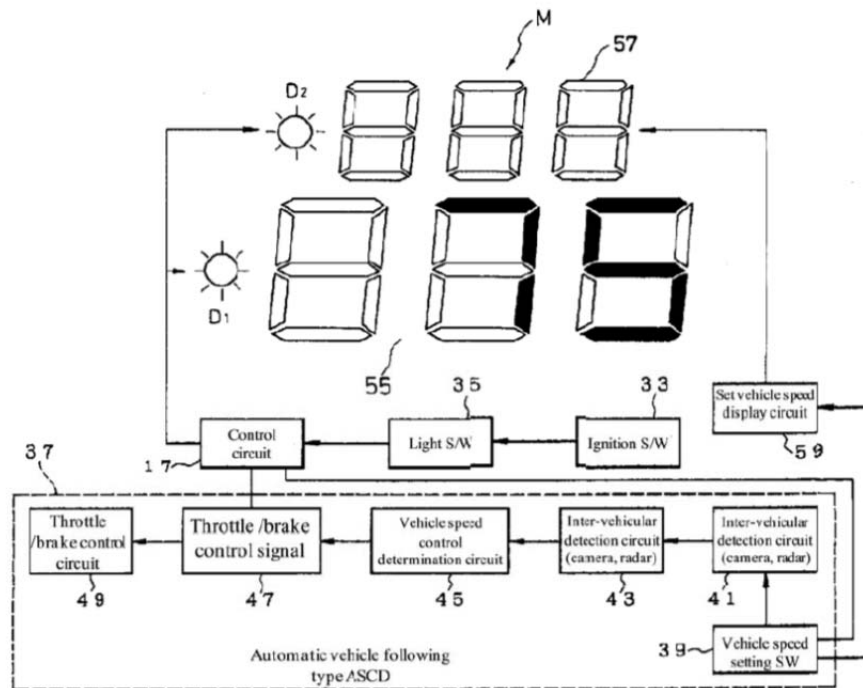


Figure 6 is a block diagram including a digital type display used as a meter device. Ex. 1005, 514, 530.³ Speed meter M has first digital display

³ Our decision cites either the exhibit page numbers provided in the lower, left-hand corner of the pages of Exhibit 1005, or the paragraph numbers.

part 55 that displays vehicle speed and second digital display part 57 that shows the set vehicle speed of auto-speed control device (“ASCD”) 37. Ex. 1005 ¶ 60. A signal from vehicle speed setting switch 39 is used for second digital display part 57. *Id.* Speed meter M also includes a variable display part where display information is modifiable. *Id.* ¶ 61. In Figure 6 above, the variable display part is composed of first and second light-emitting parts D₁ and D₂ that are adjacent display parts 55 and 57. *Id.* First and second light-emitting parts D₁ and D₂ can provide information through brightness, color, or blinking. *Id.* When ASCD 37 is not activated, second digital display part 57 does not provide a display. *Id.* ¶ 62. When ASCD 37 is activated, first and second light-emitting parts D₁ and D₂ are illuminated or blink. *Id.* ¶ 63. In one example, first light-emitting part D₁ has a red illumination, and second light-emitting part D₂ has a green illumination. *Id.* First light-emitting part D₁ can blink during a control mode with faster blinking during acceleration and slower blinking during deceleration. *Id.* Second light-emitting part D₂ illuminates according to cruising mode at a set speed. *Id.*

2. Independent Claim 12

Claim 12 recites, with emphasis added:

12. A method for visually communicating to the human operator of a vehicle having a cruise control system a cruising speed at which the vehicle is set, comprising:
 - determining the speed at which the vehicle is traveling;
 - activating the cruise control system at a desired cruising speed;
 - displaying a symbol indicative of the speed

at which the cruise control system is activated;
 *maintaining the activated cruise control
 speed symbol upon temporary acceleration or
 deceleration of the vehicle;*
 removing said symbol when the cruise
 control system is deactivated or a new cruising
 speed is selected.

Ex. 1001, 7:25–37. Petitioner argues that Yagihashi discloses all the limitations of claim 12. Pet. 44–47 (citing Ex. 1005 ¶¶ 41, 45–48, 60, 62–64, Figs. 6, 7; McNamara Decl. ¶¶ 66–75). For “maintaining the activated cruise control speed symbol upon temporary acceleration or deceleration of the vehicle” (“the maintaining step”), Petitioner argues that Yagihashi describes that “as visual recognition information, . . . a set speed [is] always required” and that “it is necessary for the set speed to display . . . decelerating (state 3).” *Id.* at 46 (citing Ex. 1005 ¶¶ 45, 63, Fig. 2; McNamara Decl. ¶¶ 73–75) (emphasis omitted).

Patent Owner responds that Petitioner improperly relies on a combination of embodiments disclosed in Yagihashi to allege anticipation. PO Resp. 13–14 (citing Pet. 44). Petitioner replies that the Petition cites to only paragraphs 60–63 of Yagihashi to show all the limitations of claim 12 and that Yagihashi states that certain embodiments can be combined. Reply 9 (citing Pet. 45–48; Ex. 1005 ¶ 107).

Although the Petition does cite other portions of Yagihashi, the Petition cites at least one of paragraphs 60–63 of Yagihashi for each of the limitations of claim 12. Paragraphs 60–63 describe the “Third Embodiment.” Thus, we are not persuaded that Petitioner improperly relies

on a combination of embodiments disclosed in Yagihashi to allege anticipation.

Patent Owner also argues that the Petition “cites to the light-emitting parts D1 and D2 of the Third Embodiment” but these light-emitting parts “do not display any symbol indicative of the speed at which the cruise control system is activated.” PO Resp. 15 (citing Pet. 46). Patent Owner also provides arguments against the citations to Figure 2 and paragraph 45 of Yagihashi. *Id.* Petitioner replies that the Petition also cites to paragraphs 73–75 of the McNamara Declaration that refer to the “preset speed in digital display part 57.” Reply 9–10 (citing Pet. 47).

Patent Owner’s arguments are not persuasive because the maintaining step by itself does not require indicating a speed. To reach Patent Owner’s requirement for a “symbol indicative of the speed at which the cruise control system is activated,” the maintaining step must be read with the previously recited step of “displaying a symbol indicative of the speed at which the cruise control system is activated,” which requires a symbol. For the previous step, the Petition cites paragraph 62 of Yagihashi which discloses that the “second digital display part 57 displays a set vehicle speed of the automatic vehicle following type ASCD 37” and paragraph 63 which discloses that “[w]hen the automatic vehicle following type ASCD 37 is activated . . . , the first light-emitting part D₁ and the second light-emitting part D₂ are illuminated or blinking.” Pet. 45–46. The portions of Yagihashi cited by Petitioner do not support Patent Owner’s arguments that the second digital display part 57, first light-emitting part D₁, and the second light-

emitting part D₂ are not maintained during acceleration or deceleration so as to fail to disclose the maintaining step.

Accordingly, based on the complete record before us, we determine that Petitioner has shown by a preponderance of the evidence that, under 35 U.S.C. § 102(b), claim 12 is anticipated by Yagihashi.

3. Independent Claim 13

Claim 13 recites, *inter alia*, “maintaining the display of the symbol indicative of the preset speed.” Ex. 1001, 7:38–50. Petitioner relies on the portions of Yagihashi cited for claim 12 to argue that Yagihashi discloses corresponding limitations of independent claim 13. Pet. 47.

Patent Owner responds that the Petition refers to “the **preamble** of claim 12[b, c, d, and e],” which is unclear and that “neither the light emitting parts D1 and D2 nor Yagihashi’s discussion of Figure 2” disclose the maintaining step of claim 13. PO Resp. 16.

Claim 12 recites “maintaining the activated cruise control speed symbol upon temporary acceleration or deceleration of the vehicle,” but claim 13 recites “maintaining the display of the symbol indicative of the preset speed.” For claim 13’s maintaining step, page 47 of the Petition states “See disclosures cited in response to the preamble of claim 12d” and page 46 indicates that “12d” is claim 12’s maintaining step. We are not persuaded that the additional phrase “the preamble of” makes the Petition’s arguments for claim 13’s maintaining step so unclear that Patent Owner could not respond properly. Patent Owner correctly surmised that “the Petition is referring to the ‘maintaining’ limitation of claim 12 as meeting the ‘maintaining’ limitation of claim 13” and provides the argument that

“neither the light emitting parts D1 and D2 nor Yagihashi’s discussion of Figure 2 meet this limitation.” PO Resp. 16. Also, for the reasons discussed above for claim 12, Patent Owner’s argument regarding the light-emitting parts of Yagihashi are not persuasive.

Thus, based on the complete record before us, we determine that Petitioner has shown by a preponderance of the evidence that, under 35 U.S.C. § 102(b), claim 13 is anticipated by Yagihashi.

IV. ASSERTED GROUNDS UNDER 35 U.S.C. § 103

To prevail in its challenges that claims 1, 2, 12, 14, 15, 27, and 34–36 would have been obvious over Yoshimitsu and the 300zx Manual; that claims 19 and 20 would have been obvious over Yoshimitsu and Nagashima; and that claims 1–5, 14, 26–28, and 34–36 would have been obvious over Yagihashi and Yoshimitsu, Petitioner must prove unpatentability by a preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d).

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). To establish obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *See CFMT, Inc. v. Yieldup Int’l Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003); *In re Royka*, 490 F.2d 981, 985 (CCPA 1974).

A patent claim composed of several elements, however, is not proved obvious merely by demonstrating that each of its elements was known, independently, in the prior art. *KSR*, 550 U.S. at 418. In that regard, for an obviousness analysis it is important to identify a reason that would have prompted one of skill in the art to combine prior art elements in the way the claimed invention does. *Id.* A precise teaching directed to the specific subject matter of a challenged claim, however, is not necessary to establish obviousness. *Id.* Rather, obviousness must be gauged in view of common sense and the creativity of an ordinarily skilled artisan. *Id.* Moreover, obviousness can be established when the prior art, itself, would have suggested the claimed subject matter to a person of ordinary skill in the art. *In re Rinehart*, 531 F.2d 1048, 1051 (CCPA 1976).

A. Obviousness Over Yoshimitsu and the 300zx Manual

1. 300zx Manual (Ex. 1008)

The 300zx Manual describes “cruise control.” Ex. 1008, 645.⁴ Figure SC308 is reproduced below:

⁴ Our decision cites the exhibit page numbers provided in the lower, left-hand corner of the pages of Exhibit 1008.

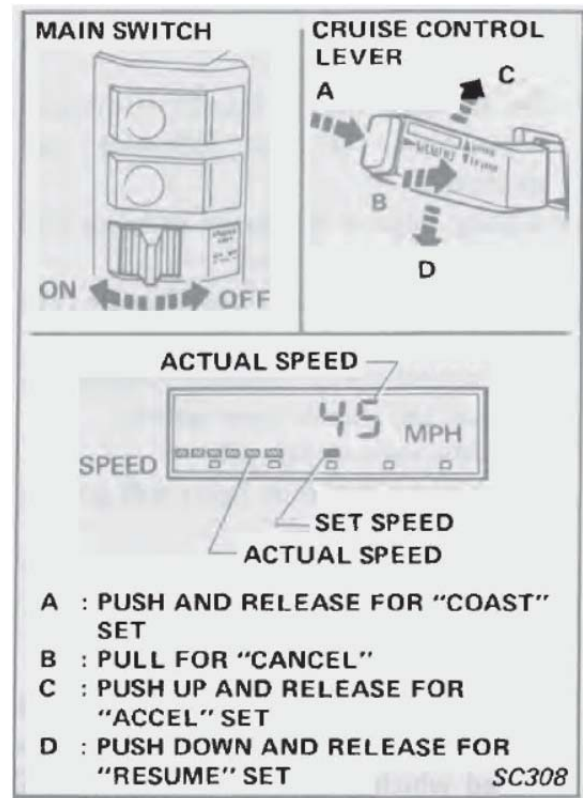


Figure SC308 shows a "Main Switch," "Cruise Control Lever," and a display including actual speed and set speed. *See id.* To operate cruise control, the main switch is pushed to the "ON" position. *Id.* A green pilot light then illuminates. *Id.*

When the vehicle is at a desired speed, pressing "COAST" on the cruise control lever sets the speed that the cruise control system maintains automatically. *Id.* Also, within 30 to 78 MPH, pushing the cruise control lever up accelerates the vehicle, and when released, sets the desired speed. *Id.* After setting the vehicle at a desired speed, the set speed illuminates in the graphic display of a digital and graphic type meter, as shown in Figure SC308 above. *Id.*

Vehicle speed can be increased briefly by pressing the accelerator pedal, and when released, the vehicle returns to the desired speed. *Id.* at

645–46. To reset at a higher speed, the accelerator pedal can be pressed to reach the new desired speed, and then the “COAST” on the cruise control lever is pressed or the cruise control lever is pushed up. *Id.* at 646. To reset at a lower speed, the brake pedal is pressed, and when the new desired speed is reached, the “COAST” on the cruise control lever is pressed or the cruise control lever is pushed up. *Id.*

To disengage cruise control, the brake pedal is pressed, or the control lever is pulled. *Id.* The preset meter remains on in a digital and graphic type meter. *Id.* If the main switch is turned off to disengage cruise control, the set speed indicator and green light turns off. *Id.*

2. Independent Claim 1

Claim 1 recites, *inter alia*, “a feedback system for communicating said information in said memory to the operator of the vehicle.” Ex. 1001, 6:19–20.

Petitioner contends that Yoshimitsu and the 300zx Manual teach elements of claim 1. Pet. 27–29 (citing Ex. 1007, 571–573, 575–577, title, claims 1, 2; Ex. 1008, 645; McNamara Decl. ¶¶ 49, 54–55). Specifically, Petitioner contends that Yoshimitsu teaches a “second display section . . . displaying constant travel speed set by the setting manipulation of the occupant.” Pet. 29 (citing Ex. 1007, 571, 574, 575, 577, Fig. 3, claims 1, 2) (emphasis omitted).

Patent Owner responds that “each display element 32a on the second display section 32 appears to correspond to multiple speed values” and “even when a single display element, radiator 32b, is illuminated, a range of possible set vehicle speeds can be inferred.” PO Resp. 19. Petitioner

replies, and we agree, that Patent Owner’s argument fails for the same reasons discussed in connection with the challenge of claims 13 and 18 as anticipated by Yoshimitsu. Reply 12.

Petitioner also asserts that a “person of ordinary skill in the art would be motivated to combine Yoshimitsu and the 300zx Manual because they both appear to describe the *same Nissan cruise control system* . . . as evidenced by the displays in the two references.” Pet. 25–26 (citing Ex. 1007, 1, Fig. 3; Ex. 1008, Title Page, Fig. SC308; McNamara Decl. ¶¶ 53, 55).

Patent Owner responds that: (1) there is no assertion or suggestion that the prior art cruise control system described in Yoshimitsu is the same as the Nissan cruise control system, (2) Yoshimitsu describes the prior art cruise control system as not displaying set speed, and (3) Yoshimitsu refers to an alternative embodiment in Figure 6 which was deleted by amendment. PO Resp. 17–18 (citing Pet. 26; Ex. 1007, 577, 582, 585).

Petitioner replies that it proposes combining Yoshimitsu with the enable switch of 300zx Manual. Reply 11. Petitioner also argues that Yoshimitsu describes adding a set speed display to the conventional cruise control system. *Id.* (citing Ex. 1007, 572).

Petitioner cites Figure 3 of Yoshimitsu and Figure SC308 of the 300zx Manual to assert that both Yoshimitsu and the 300zx Manual “are directed to the same or similar systems as evidenced by the displays.” Pet. 26. Figure 3 of Yoshimitsu does not depict a prior art embodiment. See Ex. 1007, 577 (stating “Figure 3 is an explanatory drawing . . . depicting the display screen of the present embodiment”). Petitioner, thus, does not rely

on the prior art cruise control system being the same as the cruise control system of the 300zx Manual. Also, Petitioner supports its position with the McNamara Declaration, and Patent Owner provides no evidence to refute Petitioner's declarant. *See* Pet. 26; McNamara Decl. ¶ 53. Furthermore, Petitioner does not rely on Yoshimitsu's disclosures regarding Figure 6.

Accordingly, based on the complete record before us, we determine that Petitioner has shown by a preponderance of the evidence that, under 35 U.S.C. § 103(a), claim 1 is unpatentable over Yoshimitsu and the 300zx Manual.

3. *Independent Claim 2*

Claim 2 recites, with emphasis added:

2. A cruise control system for a variable speed vehicle controlled by a human operator, comprising:

(a) a speed controller for automatically maintaining the vehicle at a substantially constant cruising speed selected by the operator;

(b) a cruise control enable switch associated with the controller for enabling and disabling the controller;

(c) a set speed input in communication with the controller for selecting the cruising speed of the vehicle when the controller is enabled;

(d) a memory that stores information representative of the selected cruising speed; and

(e) *a feedback system that substantially continuously communicates the selected cruising speed information to the operator of the vehicle until either the operator selects a subsequent cruising speed or the controller is disabled.*

Ex. 1001, 6:21–38. Petitioner contends that Yoshimitsu and the

300zx Manual teach elements of claim 2. Pet. 29–31 (citing Ex. 1007, 575–576; Ex. 1008, 645, 646, Fig. SC308; McNamara Decl. ¶¶ 53, 55). In particular, for the recited “feedback system,” Petitioner contends that Yoshimitsu teaches “by the output signal (e) of circuit (3), radiator (32b) sustains lighting, thus sustaining the display of the set vehicle speed” and “[t]his sustained state finishes . . . by the resetting manipulation of the cruise control display device or cancel operation of the memory.” Pet. 30–31 (citing Ex. 1007, 575–76) (emphasis omitted).

Patent Owner responds that Yoshimitsu fails to disclose the recited “feedback system” for the reasons asserted for claim 1. PO Resp. 20. Petitioner replies, and we agree, that Patent Owner’s argument fails for the same reasons discussed in connection with the challenge of claims 13 and 18 as anticipated by Yoshimitsu. Reply 12.

Also, citing its reasons for claim 13, Patent Owner argues that Yoshimitsu fails to provide “any explanation of ‘the resetting manipulation of the cruise control display device’ or a ‘cancel operation of the memory’” and, thus, fails to disclose the recited “feedback system.” PO Resp. 20–21 (citing Pet. 30–31).

For the reasons discussed for claim 13, we are not persuaded by Patent Owner’s argument that Yoshimitsu fails to explain the resetting manipulation or cancel operation such that Yoshimitsu fails to disclose the discontinuing step.

Accordingly, based on the complete record before us, we determine that Petitioner has shown by a preponderance of the evidence that, under 35 U.S.C. § 103(a), claim 2 is unpatentable over Yoshimitsu and the 300zx

Manual.

4. *Independent Claim 12*

Claim 12 recites, *inter alia*, “displaying a symbol indicative of the speed at which the cruise control is activated” (“the displaying step”), “maintaining the activated cruise control speed symbol upon temporary acceleration or deceleration of the vehicle” (“the maintaining step”), and “removing said symbol when the cruise control system is deactivated or a new cruising speed is selected” (“the removing step”). Ex. 1001, 7:25–38.

Petitioner argues that Yoshimitsu and the 300zx Manual teach elements of claim 12. Pet. 31–33 (citing Ex. 1007, 571, 573–577, claims 1, 2; Ex. 1008 at 645; McNamara Decl. ¶¶ 48, 53, 55). For the displaying step, Petitioner contends that Yoshimitsu teaches a “second display section . . . displaying constant travel speed set by the setting manipulation of the occupant” and the 300zx Manual teaches that “[t]he set speed will illuminate in the graphic display on the speedometer.” *Id.* at 32–33 (citing Ex. 1007, 571, 574, 575, claims 1, 2; Ex. 1008, 645; McNamara Decl. ¶¶ 53, 55) (emphasis omitted). For the maintaining step, Petitioner contends that Yoshimitsu teaches a “set vehicle speed display device for a cruise control unit which can display a set vehicle speed even after temporary release of cruise control” and “cruise control state is temporarily released . . . by brake operation.” *Id.* at 33 (citing Ex. 1007, 571, 574; McNamara Decl. ¶ 48) (emphasis omitted). For the removing step, Petitioner contends that Yoshimitsu teaches that the “sustained state [of the set vehicle speed display] finishes by the reset signal provided to the sustained signal forming circuit (13) by the resetting manipulation of the cruise control display device

or cancel operation of the memory.” *Id.* at 33–34 (citing Ex. 1007, 575–76) (emphasis omitted).

For the displaying step, Patent Owner responds that, for the reasons given for claim 13, “Yoshimitsu’s radiator 32b is not a symbol ‘indicative of the speed at which the cruise control is activated.’” PO Resp. 21. Patent Owner also argues that “[t]he graphic display of the 300zx Manual . . . does not show any numerical values associated with the set speed.” *Id.* (citing Ex. 1008, 645).

Petitioner replies, and we agree, that Patent Owner’s argument regarding Yoshimitsu fails for the same reasons discussed in connection with the challenge of claims 13 and 18 as anticipated by Yoshimitsu. Reply 12. As for the 300zx Manual, we agree with Patent Owner that the 300zx Manual does not show a numerical value associated with the set speed, but we are persuaded by Petitioner’s arguments that Yoshimitsu teaches the displaying step.

For the removing step, Patent Owner responds that, for the reasons given for claim 13, Yoshimitsu fails to provide “any explanation of ‘the resetting manipulation of the cruise control display device’ or a ‘cancel operation of the memory’” and thus, fails to disclose the displaying step. PO Resp. 23–24. Petitioner replies that Patent Owner’s argument fails for the reasons given for claim 13. Reply 12.

For the same reasons discussed above for the challenge of claim 13 as anticipated by Yoshimitsu, we are not persuaded by Patent Owner’s argument that Yoshimitsu fails to explain the resetting manipulation or cancel operation such that Yoshimitsu fails to disclose the removing step.

Accordingly, based on the complete record before us, we determine that Petitioner has shown by a preponderance of the evidence that, under 35 U.S.C. § 103(a), claim 12 is unpatentable over Yoshimitsu and 300zx Manual.

5. *Claim 15*

Claim 15 depends from claim 13 and recites “before setting the preset speed, activating the cruise control system; and after activating the cruise control system, but before setting the preset speed, indicating to the operator the unset status of the preset speed.” Ex. 1001, 7:55–60.

Petitioner contends that the 300zx Manual teaches “[t]o operate the cruise control, push the main switch to the ‘ON’ position” so that the “pilot light (green) on the combination meter panel will illuminate.” Pet. 34–35 (citing Ex. 1008, 645; McNamara Decl. ¶ 57).

Patent Owner responds that the “absence of an indication cannot meet the affirmative claim requirement of ‘indicating to the operator the unset status of the preset speed.’” PO Resp. 24. Petitioner replies that Patent Owner offers no proposed construction of the limitation, does not challenge Petitioner’s constructions, and provides no evidence to contradict the McNamara Declaration. Reply 13.

Claim 15 requires “indicating to the operator the unset status of the preset speed.” As discussed in our Decision on Institution, we are not persuaded that claim 15, which broadly recites “indicating,” requires the indication to be a visual indication. Dec. on Inst. 8. Patent Owner’s argument relies on a claim construction we determined to be too narrow. *See id.* Because Patent Owner’s argument provides no reasons or evidence

for the narrower construction, it is not persuasive. Moreover, claim 16, which depends from claim 15, recites that “wherein indicating the unset status of the preset speed includes displaying a visual symbol to the operator.” Thus, the scope of claim 15 must be broader than “displaying a visual symbol to the operator.”

Accordingly, based on the complete record before us, we determine that Petitioner has shown by a preponderance of the evidence that, under 35 U.S.C. § 103(a), claim 15 is unpatentable over Yoshimitsu and 300zx Manual.

6. Independent Claim 34

Claim 34 recites, with emphasis added:

34. A method for providing an operator of a vehicle equipped with a cruise control device with information reflecting the operating status of the cruise control device, comprising:

providing a cruise control device including:

(a) a speed controller for automatically maintaining the vehicle at a substantially constant preset speed;

(b) a set speed input in communication with the controller for selecting the preset speed;

(c) a memory device operable to store information representative of the preset speed;

(d) first visual display apparatus operable to display the indicative of the actual speed of the vehicle; and

(e) second visual display apparatus operable to display the visual information indicative of an operation status of the speed controller, *wherein the visual information displayable by the second visual display apparatus*

includes visual information indicative of the preset speed; activating the cruise control device; and operating the second visual display apparatus to indicate the active status of the cruise control device.

Ex. 1001, 10:10–31. Petitioner argues that Yoshimitsu and the 300zx Manual teach the limitations of claim 34. Pet. 35–37 (citing Ex. 1007, 571, 575, Fig. 3, claims 1, 2; Ex. 1008, 645; McNamara Decl. ¶¶ 53, 55). In particular, for “wherein the visual information displayable by the second visual display apparatus includes visual information indicative of the preset speed,” Petitioner contends that Yoshimitsu teaches “a display surface having . . . the second display section . . . displaying constant travel speed set by the setting manipulation of the occupant.” *Id.* at 36 (citing Ex. 1007, 571, 575, Fig. 3, claims 1, 2).

Patent Owner responds that “even when a single display element, radiator 32b, is illuminated, only a range of possible set vehicle speeds can be inferred” and thus, Yoshimitsu does not teach the limitation. PO Resp. 25. Petitioner replies that Patent Owner’s argument fails for the reason discussed for the challenge of claims 13 and 18 as anticipated by Yoshimitsu. Reply 12.

We agree with Petitioner. Claim 34 requires “visual information indicative of the preset speed” but does not require a particular precision for indicating the preset speed. Thus, as we determined with claims 13 and 18, Patent Owner’s argument does not persuade us that Yoshimitsu’s display element representing a 5 km/h range would fail to disclose “a symbol indicative of the preset speed.”

Therefore, based on the complete record before us, we determine that Petitioner has shown by a preponderance of the evidence that, under 35 U.S.C. § 103(a), claim 34 is unpatentable over Yoshimitsu and 300zx Manual.

7. Claims 14, 27, 35, and 36

Petitioner argues that claim 14, which depends from claim 13; claim 27, which depends from claim 26; and claims 35 and 36, which depend from claim 34, are unpatentable over Yoshimitsu and the 300zx Manual. Pet. 34 (citing Ex. 1007, 575–576, Fig. 3; Ex. 1008, 646; McNamara Decl. ¶¶ 50–51), 35 (citing Ex. 1008, 645; McNamara Decl. ¶¶ 47, 53, 54, 57), 37–38 (citing Ex. 1007, 575; Ex. 1008, 646; McNamara Decl. ¶¶ 50–51). For institution, we determined that Petitioner demonstrated a reasonable likelihood of prevailing on the challenge that claims 14, 27, 35, and 36 are unpatentable over Yoshimitsu and the 300zx Manual.

Patent Owner provides no arguments disputing that Yoshimitsu and the 300zx Manual rendered obvious claims 14, 27, 35, and 36, apart from the arguments presented for their respective parent claims. PO Resp. 17–30.

Accordingly, based on the complete record before us, we determine that Petitioner has shown by a preponderance of the evidence that, under 35 U.S.C. § 103(a), claims 14, 27, 35, and 36 are unpatentable over Yoshimitsu and the 300zx Manual.

B. Obviousness Over Yoshimitsu and Nagashima

1. Nagashima (Ex. 1010)

Nagashima discloses a cruise control unit with a setting speed display readout which displays the set speed. Ex. 1010 ¶ 1. Figure 1 of Nagashima is reproduced below:

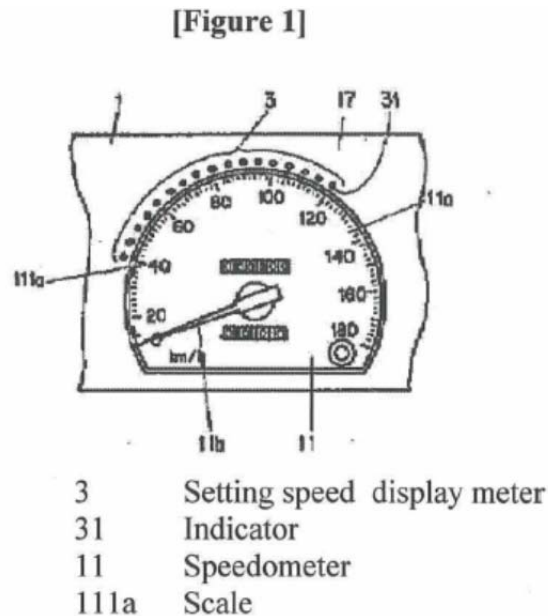
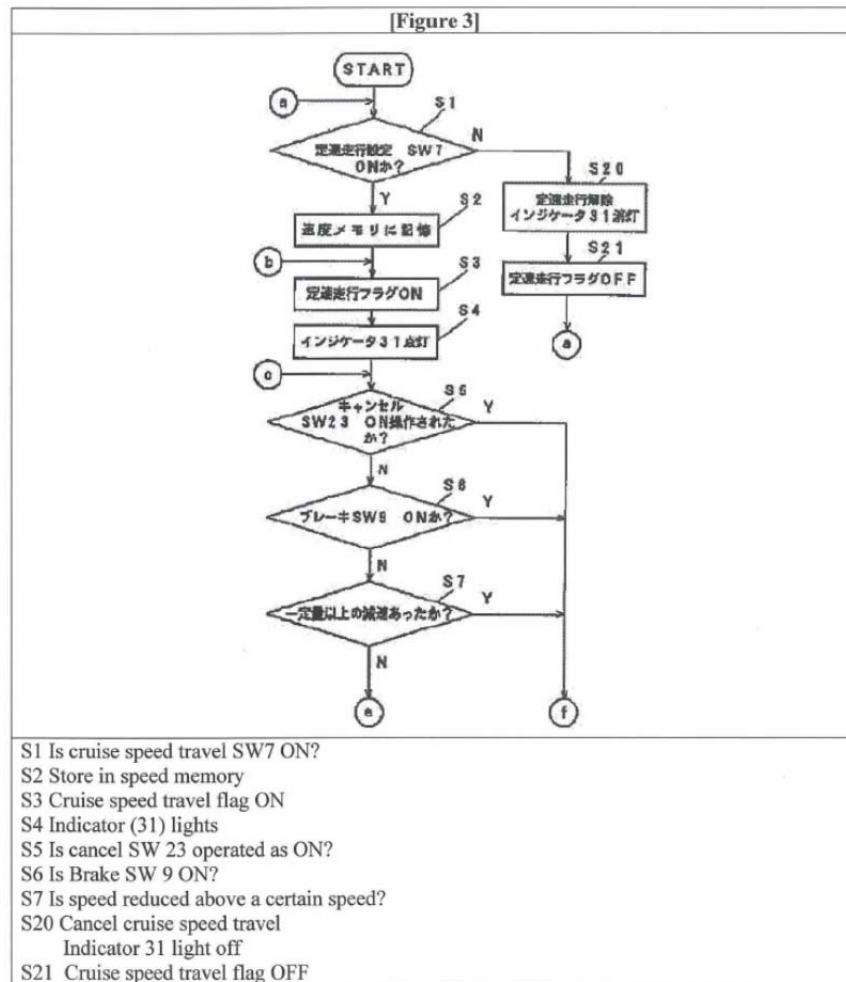
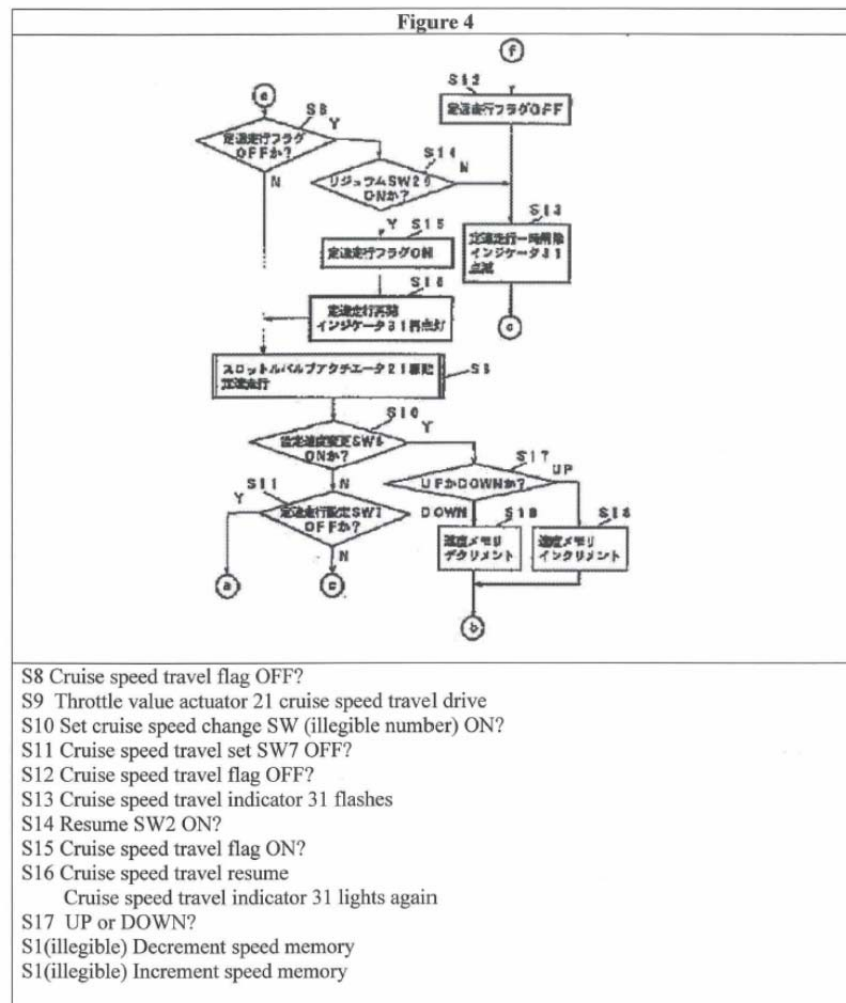


Figure 1 depicts a setting speed display readout. *Id.* at 751.⁵ Speedometer 11 has scale 111a and needle 11b to indicate speed on scale 111a. *Id.* ¶ 12. Indicators 31 comprised of LEDs are arranged at 5 km per hour speed increments along scale 111a from 40 km per hour to 120 km per hour. *Id.* ¶ 13. Indicators 31 function as setting speed display readout 3. *Id.*

Figures 3 and 4 of Nagashima are reproduced below:

⁵ Our decision cites the exhibit page number or paragraph number of Exhibit 1010.





Figures 3 and 4 are flow charts explaining the operation of the cruise speed device. Ex. 1010 ¶ 18. Step 1 determines if a cruise control setting switch is on, and if so, speed is calculated based on pulse signals from a speed sensor. *Id.* ¶¶ 19, 20. In steps 2–4, the calculated speed is stored in speed memory, cruise control flag turns to ON mode, and indicators 31 are lit according to the speed data stored in the speed memory. *Id.* ¶ 20. Step 5 determines if a cancel switch has been turned on or if there is a command for temporary release of cruise control. *Id.* ¶ 21. The next step determines if the brake has been operated. If the cruise control flag is not in an OFF mode, a throttle

valve actuator is controlled so as to perform cruise control. *Id.* ¶ 22. If the cancel switch has been turned on or there is a command for temporary release of cruise control, the cruise control flag is turned to OFF mode and indicators 31 blink. *Id.* ¶ 24. If a resume switch is in ON mode, the cruise control flag is turned to ON mode, cruise control resumes, and indicators 31 are lit. *Id.* ¶ 25. If the cruise control setting switch is in OFF mode or when there is a command to release cruise control, cruise control is released; indicators 31 are turned off; and cruise control is in OFF mode. *Id.* ¶ 27.

2. Claim 19

Claim 19 depends from independent claim 18 and recites:

wherein the symbol indicative of the preset speed displayed at the time after braking and during which time the vehicle is not being maintained at substantially the preset speed, is distinguishable by the operator from the symbol indicative of the preset speed while the vehicle is being maintained at substantially the preset speed.

Ex. 1001, 8:20–26.

Petitioner argues that Yoshimitsu teaches “the display changes as, for example, the flashing time differs during and after the setting manipulation” and that Nagashima teaches that “brake operation is performed . . . and indicators (31) blink.” Pet. 41–42 (citing Ex. 1007, 573; Ex. 1010 ¶¶ 24, 29, Figs. 3, 4) (emphasis omitted); *see also id.* at 38–39 (citing Ex. 1007, 573; Ex. 1010 ¶ 24; McNamara Decl. ¶¶ 59–61).

Petitioner argues that “[o]ne of ordinary skill in the art would have understood that a digital display that ‘displays’ a speed to be a numerical display” and “it would have been an obvious design choice to use a numerical indicator to show a preset speed, as taught by Yoshimitsu, and

have the numerical indicator blink after br[a]king, as taught by Nagashima.” Pet. 40 (citing McNamara Decl. ¶¶ 63–64; Ex. 1007, 571; Ex. 1010, 2). Petitioner also argues that both references “describe displays for cruise control systems” and “are directed to . . . (1) providing preset speed information to the driver while a cruise control system is engaged, and (2) displaying the preset speed information near the actual speed display so the driver can easily compare the two speeds.” *Id.* at 40–41 (citing Ex. 1007, 571; Ex. 1010, 750, ¶¶ 5, 8).

Patent Owner responds that Yoshimitsu fails to teach a “symbol indicative of the preset speed” because of the arguments asserted for claim 18. PO Resp. 26. We are not persuaded by the arguments that claim 18 requires more precision in indicating preset speed than what Yoshimitsu teaches, and thus, the same argument is not persuasive for claim 19.

Patent Owner also argues that Nagashima teaches “a plurality of indicators 31 ‘arranged in dots respectively at 5 km speed per hour increments along the scale (111a)” and “expressly states, ‘in the case brake SW 9 is in ON mode . . . the cruise control is temporally released, and **indicators** (31) blink.’” PO Resp. 26 (citing Ex. 1010 ¶¶ 13, 24). Patent Owner, thus, argues that “[i]f all of the indicators 31 (plural) blink when the brake operation is performed, there is no ‘symbol’ that could possibly be ‘indicative of the preset speed.’” *Id.*

Patent Owner’s argument does not characterize correctly Petitioner’s position. Petitioner acknowledges that “Yoshimitsu does not specifically address the display of the symbol indicative of the preset speed after braking” but contends that “Yoshimitsu does teach that the symbol

indicative of the preset speed can be different during different cruise control system states.” Pet. 39 (citing Ex. 1007, 573). Petitioner cites Nagashima for teaching that “the preset speed indicator blinks when the cruise control is temporarily released by braking.” *Id.* (citing Ex. 1010 ¶ 24; McNamara Decl. ¶¶ 59–61). For independent claim 18, from which claim 19 depends, Petitioner argues that Yoshimitsu’s second display section discloses the “symbol indicative of the preset speed.” *See* Pet. 19–20. Thus, Petitioner proposes modifying Yoshimitsu’s second display section to blink by braking as taught by Nagashima. Because we are not persuaded that Yoshimitsu fails to teach “a symbol indicative of the preset speed,” we are not persuaded by Patent Owner’s argument that having Yoshimitsu’s second display section blink after braking fails to teach a

symbol indicative of the preset speed displayed at the time after braking and during which time the vehicle is not being maintained at substantially the preset speed, is distinguishable by the operator from the symbol indicative of the preset speed while the vehicle is being maintained at substantially the preset speed[,]

as required by claim 19.

Accordingly, based on the complete record before us, we determine that Petitioner has shown by a preponderance of the evidence that, under 35 U.S.C. § 103(a), claim 19 is unpatentable over Yoshimitsu and Nagashima.

3. *Claim 20*

Petitioner argues that claim 20, which depends from claim 19, is unpatentable over Yoshimitsu and Nagashima. Pet. 42–43 (citing Ex. 1007, 573; Ex. 1010 ¶¶ 5, 24, 29). For institution, we determined that Petitioner demonstrated a reasonable likelihood of prevailing on the challenge that

claim 20 is unpatentable over Yoshimitsu and Nagashima.

Patent Owner does not provide any arguments disputing that Yoshimitsu and Nagashima rendered obvious claim 20, other than those presented above for claims 18 and 19, which are not persuasive. PO Resp. 17–30.

Based on the complete record before us, we determine that Petitioner has shown by a preponderance of the evidence that, under 35 U.S.C. § 103(a), claim 20 is unpatentable over Yoshimitsu and Nagashima.

C. Obviousness Over Yagihashi and Yoshimitsu

1. Independent Claims 1 and 2

Claim 1 recites, *inter alia*, “an enable switch associated with said controller for enabling the system.” Ex. 1001, 6:7–20. Claim 2 recites, *inter alia*, “a cruise control enable switch associated with the controller for enabling and disabling the controller.” Ex. 1001, 6:21–38.

Petitioner argues that Yagihashi and Yoshimitsu teach the elements of claim 1. Pet. 50–52 (citing Ex. 1005 ¶¶ 16, 17, 41, 44, 46–49, 60, 62, Fig. 6, claim 4; Ex. 1007, 571, 574, 575, 577, Fig. 3, claims 1, 2; McNamara Decl. ¶¶ 80, 81, 85). Specifically, for the “enable switch” of claim 1, Petitioner contends that Yagihashi teaches “logic to determine and detect the state of the automatic vehicle following type ASCD 37 by the control circuit 17,” “an auto cruise system setting switch 39 is operated” and that “signals from the vehicle speed setting switch 39 and the throttle/brake control signal output part 47 are entered into the control circuit 17.” *Id.* at 50 (citing Ex. 1005 ¶¶ 41, 46, 47) (emphasis omitted). For claim 2, Petitioner relies on the same portions of Yagihashi and Yoshimitsu cited for the corresponding

limitations of claim 1. Pet. 52–53.

Patent Owner responds that “when the vehicle speed setting switch 39 is turned on, the cruise control has a set vehicle speed” and “there is no separate ‘enable switch’ which puts the cruise control system into a ‘system-on state.’” PO Resp. 27 (citing Pet. 50–51; Ex. 1005 ¶ 48); Tr. 29:3–12. Patent Owner also states that “for at least the reasons explained above with regard to claim 1, claim 2 is not unpatentable over Yagihashi in view of . . . Yoshimitsu.” PO Resp. 28.

Petitioner cites at least paragraphs 46 and 47 of Yagihashi which describe Figure 3. Paragraph 47 states “[f]irst, in Step S1, an auto cruise system setting switch 39 is operated,” and Figure 3 shows a decision block S1 labeled “Is cruise control S/W ON?” Patent Owner cites paragraph 48 which states “[w]hen it is determined as ON in Step S1, [the process] is moved to Step S3, and whether a vehicle speed is at a constant vehicle speed or is accelerating according to a vehicle speed detection signal is determined” and “[i]n Step S4, whether [the vehicle speed] is slower or faster than a set vehicle speed of the cruise control system is determined from a vehicle speed signal and a relationship with the set vehicle speed of the cruise control.” Considering these paragraphs together, we determine that switch 39 at least enables cruise control. Thus, we are not persuaded by Patent Owner’s argument that Yagihashi fails to teach the enable switch of claims 1 and 2.

Accordingly, based on the complete record before us, we determine that Petitioner has shown by a preponderance of the evidence that, under 35 U.S.C. § 103(a), claims 1 and 2 are unpatentable over Yagihashi and

Yoshimitsu.

2. Claims 3 and 4

Claim 3 depends from claim 2 and recites “wherein the feedback system includes a digital display.” Ex. 1001, 6:39–40. Claim 4 depends from claim 3 and recites “wherein the digital display displays a predetermined signal when the controller is initially enabled to indicate the state of the controller.” Ex. 1001, 6:41–44.

For claim 3, Petitioner argues that Yagihashi teaches “second digital display part 57 displays a set vehicle speed.” Pet. 53–54 (citing Ex. 1005 ¶ 62, Fig. 6) (emphasis omitted). For claim 4, Petitioner contends that Yagihashi teaches that “the display information, such as brightness, color or blinking of the indicator 3, is changed according to the state of the automatic vehicle following type cruise control 37” and that “[w]hen the automatic vehicle following type ASCD 37 is activated, . . . the first light-emitting part D₁ and the second light-emitting part D₂ are illuminated or blinking.” *Id.* at 54 (citing Ex. 1005 Abstract, ¶¶ 61, 62, 63, Figs. 6, 7; McNamara Decl. ¶ 79) (emphasis omitted).

Patent Owner responds that Petitioner asserts second digital display part 57 discloses the “digital display” of claim 3 but argues light-emitting parts D₁ and D₂ disclose the digital display of claim 4. PO Resp. 28 (citing Pet. 53–54). Patent Owner also argues that “‘second digital display part 57’ does not display a predetermined signal when the controller is initially enabled to indicate the state of the controller, and the light-emitting parts D₁ and D₂ do not communicate cruising speed information to the operator of the vehicle.” *Id.*

Petitioner replies that “Patent Owner fails to explain how D1 and D2 are **not** part of the digital display” and has not offered or supported a construction that excludes light-emitting parts D₁ and D₂. Reply 15.

Patent Owner’s argument presumes that second digital display part 57 and light-emitting parts D₁ and D₂ are separate displays. However, paragraph 61 of Yagihashi states that “the variable display part . . . is adjacent to the first and second digital display parts 55 and 57 . . . and is composed of first and second light-emitting parts D₁ and D₂.” Figure 6 shows light-emitting part D₂ adjacent second digital display part 57. Moreover, the terms “variable display part” and “digital display part” indicate that a greater component includes part 57 and part D₂. Based on these disclosures, we determine that Yagihashi supports Petitioner’s contention that “Yagihashi discloses a feedback system that includes two digital display parts 55 and 57 as well as two light-emitting indicators D₁ and D₂.” Pet. 48. Therefore, we are not persuaded by Patent Owner’s argument that Yagihashi fails to teach the elements of claims 3 and 4.

Thus, based on the complete record before us, we determine that Petitioner has shown by a preponderance of the evidence that, under 35 U.S.C. § 103(a), claims 3 and 4 are unpatentable over Yagihashi and Yoshimitsu.

3. Independent Claims 26 and 34

Claim 26 recites, *inter alia*, “second visual display apparatus operable to display the visual information indicative of an operation status of the speed controller, wherein the visual information displayable by the second visual display apparatus includes visual information indicative of the preset

speed.” Ex. 1001, 9:1–17. Similarly, claim 34 recites, *inter alia*, “second visual display apparatus operable to display the visual information indicative of an operation status of the speed controller, wherein the visual information displayable by the second visual display apparatus includes visual information indicative of the preset speed.” Ex. 1001, 10:10–31.

Petitioner argues Yagihashi and Yoshimitsu teach the elements of claims 26 and 34. Pet. 55–56 (citing Ex. 1005 ¶¶ 62, 63), 57–59 (citing Ex. 1005 ¶¶ 41, 46, 47). For the recited “second visual display apparatus” of claim 26, Petitioner asserts that Yagihashi teaches that “the second digital display part 57 displays a set vehicle speed of the automatic vehicle following type ASCD 37” and that second light-emitting part D₂ is illuminated “according to the cruising mode at a set speed.” Pet. 56 (citing Ex. 1005 ¶¶ 62, 63) (emphasis omitted). For the recited “second visual display apparatus” of claim 34, Petitioner refers to the portions of Yagihashi cited for the second visual display apparatus of claim 26. *Id.* at 59.

Patent Owner responds that the second digital display part 57 and second light-emitting part D₂ do not display both “visual information indicative of an operation status of the speed controller” and “visual information indicative of the preset speed.” PO Resp. 29. For claim 34, Patent Owner relies on its argument for claim 26. *Id.* at 30.

Petitioner replies that “Patent Owner fails to explain how D₁ and D₂ are **not** part of the digital display” and has not offered or supported a construction that excludes light-emitting parts D₁ and D₂ as part of the display. Reply 15.

Yagihashi states that “second digital display part 57 is configured to display a set vehicle speed according to a signal from a set vehicle speed display circuit 39” and “second light-emitting part D₂ according to the cruising mode at a set speed is illuminated.” Ex. 1005 ¶¶ 60, 63. Yagihashi also states that “as shown in the table of Fig. 7, the first light-emitting part D1 and the second light-emitting part D2 are illuminated or blinking.” *Id.* ¶ 63. Figure 7 shows “D2 (green light-emitting diode) illuminating” for “cruising mode at set speed.” Thus, we are not persuaded by Patent Owner’s argument that second digital display part 57 and light-emitting part D₂ together fail to teach “visual information indicative of an operation status of the speed controller” and “visual information indicative of the preset speed.”

Therefore, based on the complete record before us, we determine that Petitioner has shown by a preponderance of the evidence that, under 35 U.S.C. § 103(a), claims 26 and 34 are unpatentable over Yagihashi and Yoshimitsu.

4. Claims 5, 14, 27, 28, 35, and 36

Petitioner argues that claim 5, which depends from claim 3; claim 14, which depends from claim 13; claims 27 and 28, which depend from claim 26; and claims 35 and 36, which depend from claim 34, are unpatentable over Yagihashi and Yoshimitsu. Pet. 54–55 (citing Ex. 1005 ¶¶ 62, 63), 55(Ex. 1005 ¶¶ 62, 62; Ex. 1007, 575, Fig. 3; McNamara Decl. ¶¶ 82–85), 56–57 (citing Ex. 1005 ¶ 62, Fig. 6), 59. For institution, we determined that Petitioner demonstrated a reasonable likelihood of prevailing on the challenge of claims 5, 14, 27, 28, 35, and 36 as unpatentable over Yagihashi and Yoshimitsu.

Patent Owner does not provide any arguments disputing that Yagihashi and Yoshimitsu rendered obvious claims 5, 14, 27, 28, 35, and 36, apart from the arguments presented for their respective parent independent claims. PO Resp. 17–30.

Accordingly, based on the complete record before us, we determine that Petitioner has shown by a preponderance of the evidence that, under 35 U.S.C. § 103(a), claims 5, 14, 27, 28, 35, and 36 are unpatentable over Yagihashi and Yoshimitsu.

V. CONCLUSION

Petitioner has demonstrated, by a preponderance of the evidence, that, under 35 U.S.C. § 102, claims 13, 18, and 25–27 are anticipated by Yoshimitsu and claims 12 and 13 are anticipated by Yagihashi, and that, under 35 U.S.C. § 103, claims 1, 2, 12, 14, 15, 27, and 34–36 are unpatentable over Yoshimitsu and the 300zx Manual, claims 19 and 20 are unpatentable over Yoshimitsu and Nagashima, and claims 1–5, 14, 26–28, and 34–36 are unpatentable over Yagihashi and Yoshimitsu.

VI. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, on the record of this proceeding, claims 1–5, 12–15, 18–20, 25–28, and 34–36 of the '463 patent have been shown to be unpatentable; and

FURTHER ORDERED that, because this is a final written decision, the parties to the proceeding seeking judicial review of the decision must

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comply with the notice and service requirement of 37 C.F.R. § 90.2.

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