

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ARCTIC CAT, INC.,
Petitioner,

v.

POLARIS INDUSTRIES INC.,
Patent Owner.

Cases
IPR2017-00455
Patent 9,217,501 B2

Before KARL D. EASTHOM, PHILLIP J. KAUFFMAN, and
MICHAEL W. KIM, *Administrative Patent Judges*.

KAUFFMAN, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

A. OVERVIEW

Artic Cat, Inc., “Petitioner,” filed a corrected Petition (Paper 16, “Pet.”) requesting inter partes review of claims 1–12, 14–20 of U.S. Patent No. 9,217,501 B2 (Ex. 1002, “the ’501 patent”). Pet. 1. Polaris Industries Inc., “Patent Owner,” filed a Preliminary Response (Paper 9, “Prelim. Resp.”) to the Petition.

As detailed below, Petitioner has not demonstrated a reasonable likelihood of prevailing with respect to at least one of the challenged claims.

B. RELATED PROCEEDINGS

The parties indicate that the ’501 patent is at issue in: *Digital Ally, Inc. v. TASER International, Inc.*, Case No. 0:15-cv-04475, pending in the United States District Court for the District of Minnesota (“the related litigation”) (Ex.1007, ¶ 26). Pet. 4; Paper 4, 2.

The ’501 patent is also the subject of IPR2017-00433, filed concurrently with the Petition at hand. There, Petitioner challenges the same claims of the ’501 patent as are challenged here.

C. MOTION TO SEAL

Patent Owner filed an unopposed Motion for a Protective Order (Paper 6) and an unopposed Motion to Seal (Paper 8), each seeking to maintain the Preliminary Response (Paper 7) and Exhibit 2015 as *Parties and Board only*.

This Decision refers only to the redacted public version of the Preliminary Response (Paper 9) and does not discuss the contents of Exhibit

2015. In subsequent actions in this proceeding, confidential information may be discussed and made public as necessary to resolve this case.

We reserve ruling on the Motion to Seal. Paper 7 and Exhibit 2015 will remain under seal in the interim.

After the absence of a timely request for rehearing, or if filed, after resolution of a request for rehearing, Patent Owner may seek authorization to file a Motion to Expunge Paper 7 and Exhibit 2015. *See* 37 C.F.R. §§ 42.71(d)(1), 42.56.

II. THE CLAIMED SUBJECT MATTER

A. INTRODUCTION

Side-by-side vehicles were known prior to the '501 patent. Ex. 1002, 1:21. The '501 patent is titled, "Side-by-Side Vehicle," relates to vehicles, including utility vehicles, and in particular to air handling systems and suspension systems for vehicles. *Id.* [54], 1:21–24.

The '501 patent describes embodiments that include a CVT (continuously variable transmission) having an air handling system.¹ *Id.* at 6:21–7:2, 7:37–9:43. In an exemplary embodiment, power source 130 (e.g., an engine) is operatively coupled to CVT unit 140 through a drive belt. *Id.* at 12:23–30, Figs. 9–11. CVT unit 140 receives ambient air through air intake system 160 and expels air through exhaust system 162. *Id.* at 12:30–35. Figure 11 of the '501 patent follows.

¹ For the abbreviation of CVT, *see* Pet. 9; Prelim. Resp. 2.

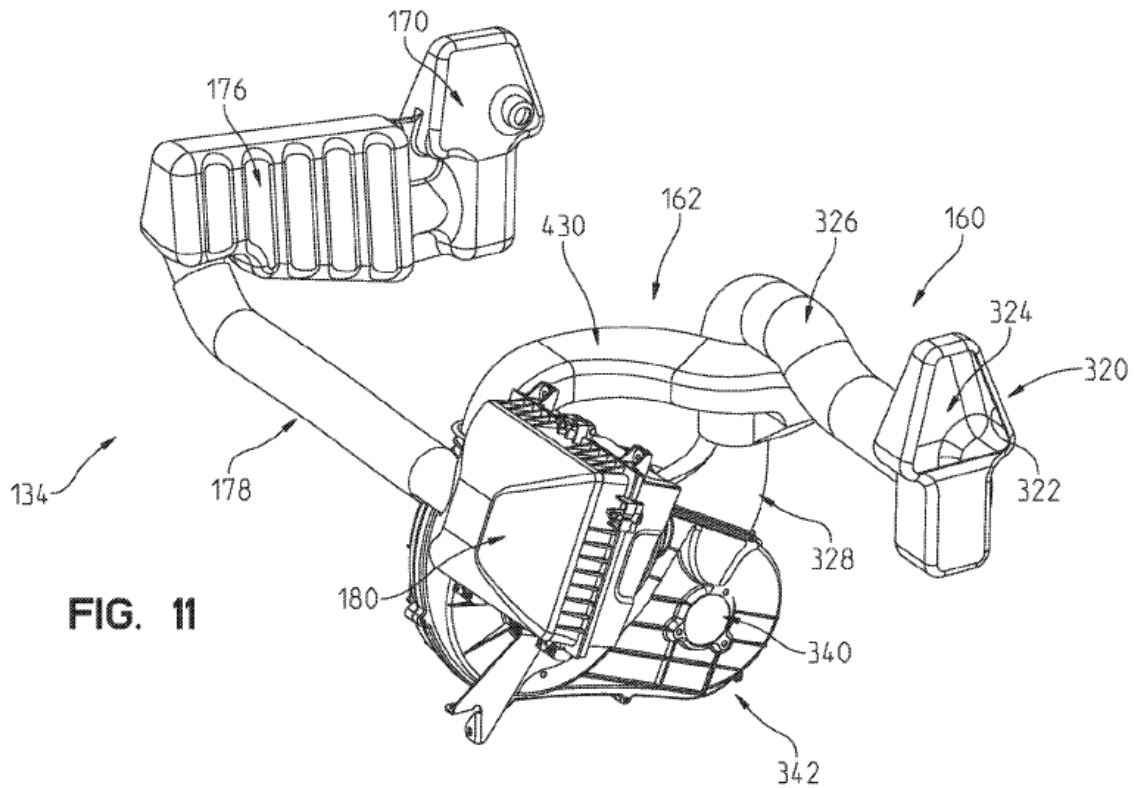


Figure 11 is a right perspective view of the CVT air handling system of the side-by-side vehicle shown in Figure 1. *Id.* at 10:14–16. Air inlet housing 320 includes air inlet 322, and is in fluid communication with interior 340 of CVT housing 342 via fluid conduit 326 and fluid duct 328. *Id.* at 16:32–35.

Figure 4 of the '501 patent follows.

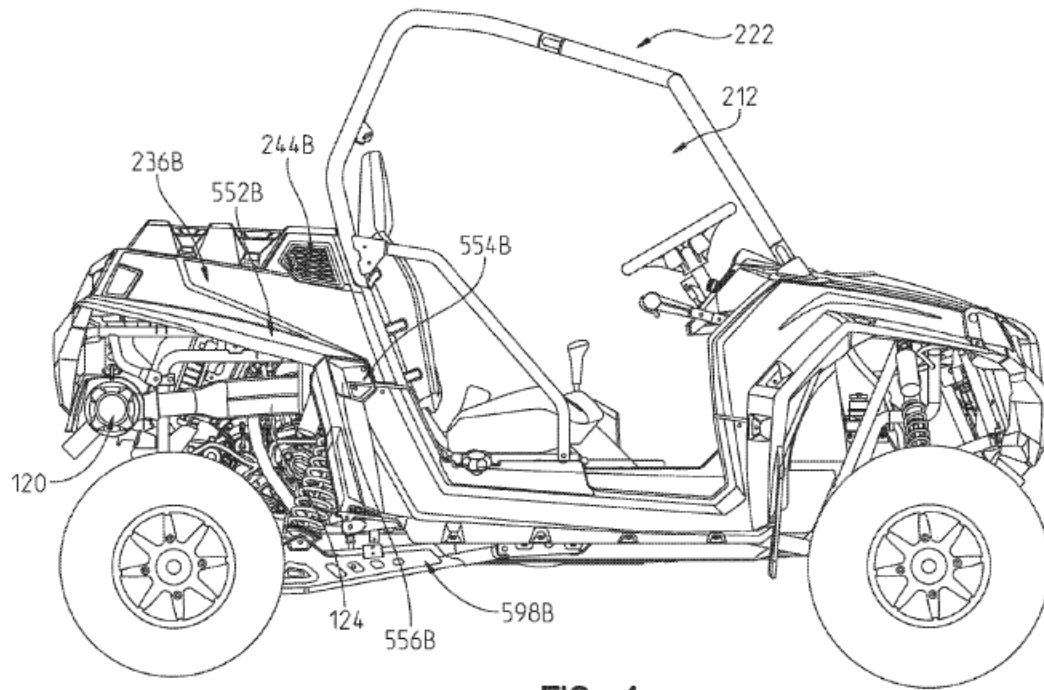


FIG. 4

Figure 4 is a right side view of the side-by-side vehicle shown in Figure 1. *Id.* at 9:60–61. Ambient air enters through cover 244B and filter 242 before entering air inlet 322. *Id.* at 16:20–31. Cover 244B is coupled to body panel 236B. *Id.* at 16:23–26; *see also* 14:52–56 (discussing body panel 236), Fig. 15.

B. ILLUSTRATIVE CLAIMS

Claim 1 is the sole independent challenged claim and follows:

1. A vehicle comprising:
 - a frame;
 - a plurality of ground engaging members supporting the frame;
 - a power source supported by the frame and operatively coupled to at least one of the plurality of ground engaging members to propel the vehicle;
 - a CVT unit supported by the frame and operatively coupled between the power source and the at least one of the plurality of ground engaging members;
 - an operator area supported by the frame, the operator area including seating and operator controls, a first portion of the plurality of ground engaging members being located forward of the seating and a second portion of the plurality of ground engaging members being located rearward of the seating, the seating including a plurality of seats in a side-by-side arrangement, the first portion of the plurality of ground engaging members including a first ground engaging member including a first wheel and a first tire, the second portion of the plurality of ground engaging members including a second ground engaging member including a second wheel and a second tire;
 - a cargo carrying portion supported by the frame and located rearward of the seating;
 - a plurality of exterior body panels supported by the plurality of ground engaging members; and
 - an air intake system operatively coupled to the CVT unit to communicate ambient air to an interior of the CVT unit, the air intake system receiving ambient air through an inlet in a portion of the plurality of exterior body panels, the inlet in the portion of the plurality of exterior body panels being located rearward of the first wheel of the first ground engaging member and forward of the second wheel of the second ground engaging member and located laterally outside of a lateral extent of the power source and the CVT unit.

C. APPLICABLE STANDARD

In an *inter partes* review, the Board interprets claim terms in an unexpired patent according to the broadest reasonable interpretation in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (upholding the use of the broadest reasonable interpretation approach).

For the purposes of this decision, and on this record, we determine that no claim terms need express interpretation. *See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (only those terms which are in controversy need to be construed, and only to the extent necessary to resolve the controversy).

III. PATENTABILITY

A. EVIDENCE AND ASSERTED GROUND OF UNPATENTABILITY

Petitioner asserts the following grounds of unpatentability under 35 U.S.C. § 103(a):

Claims	References
1, 2, 6, 7	Suzuki ² and Brown ³
3	Suzuki, Brown, and Nallinger ⁴
4, 5	Suzuki, Brown, Nallinger, and Sunsdahl ⁵ ,
1–12, 14–22	Ranger ⁶ and Bouffard ⁷

Pet. 5–6.

Petitioner relies upon the Declaration of Dr. Gregory Davis (Ex. 1001).

Patent Owner relies upon the Declaration of Donna Beadle (Ex. 2001) and that of Cassandra Doran (Ex. 2008) as well as other evidence.

B. PATENT OWNER’S OVERALL ARGUMENTS

Patent Owner asks that we use our discretion under 35 U.S.C. §§ 314(a) and 325(d) to deny the Petition based on three underlying contentions. Prelim. Resp. 1–21.

Patent Owner does not make an assertion that the same or substantially the same prior art or argument was previously asserted by

² U.S. Pub. 2006/0270503 A1, published Nov. 30, 2006 (Ex. 1005) (“Suzuki”).

³ U.S. 4,681,178, issued July 21, 1987 (Ex. 1006) (“Brown”).

⁴ U.S. 2,033,731, issued Mar. 10, 1936 (Ex. 1010) (“Nallinger”).

⁵ U.S. Pub. 2008/0023249 A1, published Jan. 31, 2008 (Ex. 1004) (“Sunsdahl”).

⁶ 2007 Ranger 500 2x4/4x4/4x4 EFI Service Manual (Ex. 1009) (“Ranger”).

⁷ U.S. 6,892,842 B2, issued May 17, 2005 (Ex. 1011) (“Bouffard”).

Petitioner, and for that reason, section 325(d) is not relevant to our analysis. Institution of an *inter partes* review is authorized by statute when “the information presented in the petition filed under section 311 and any response filed under section 313 shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a); 37 C.F.R. § 42.108. We consider Patent Owner’s three underlying contentions under this standard.

Patent Owner’s assertions regarding the word count limit have been addressed in other papers. See Papers 10–15. As a result, Petitioner filed a corrected Petition as Paper 16.

Patent Owner’s assertion that Petitioner’s contentions do not demonstrate the obviousness of the challenged claimed subject matter are addressed below on a ground by ground basis. Given our determination below that Petitioner has not demonstrated a reasonable likelihood of demonstrating that the challenged claims are unpatentable, we need not reach Patent Owner’s copying arguments.

Before addressing each ground of unpatentability, we note that the Federal Circuit has held that obviousness cannot be established “by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). Likewise, and more recently, the Federal Circuit stated that “In determining whether there would have been a motivation to combine prior art references to arrive at the claimed invention, it is insufficient to simply conclude the combination would have been obvious without identifying any reason why a person of

skill in the art would have made the combination.” *Metalcraft of Mayville, Inc. v. The Toro Company*, 848 F.3d 1358, 1366 (Fed. Cir. 2017) (without a sufficient explanation as to why the references would be combined to arrive at the claimed invention, we are left with only the hindsight bias that *KSR* warns against).

C. SUZUKI AND BROWN – CLAIMS 1, 2, 6, AND 7

Petitioner contends that claims 1, 2, 6, and 7 are unpatentable as obvious over Suzuki and Brown. Pet. 18–41.

1. *Claim 1*

a) *Suzuki*

Suzuki discloses a CVT cooling system for a vehicle such as an ATV, Side-by-Side Vehicle, or other off-road vehicle. Ex. 1005 ¶ 2. As background, Suzuki explains that CVT’s must be cooled during operation and that heat increases as load increases. *Id.* at ¶¶ 4–5. Suzuki’s system was intended to provide more effective cooling. *Id.* at ¶ 11. In particular, Suzuki’s system is configured to greatly increase the speed of airflow to provide improved cooling. *Id.* at ¶¶ 54, 56.

Suzuki discloses an embodiment of vehicle 10 that includes CVT 64 associated with engine 40 within engine compartment 38. *Id.* ¶¶ 30, 37, 39; Fig. 1. CVT 64 includes air intake duct 68. *Id.* ¶ 39. An annotated version of Figure 1 of Suzuki follows:

FIG. 1

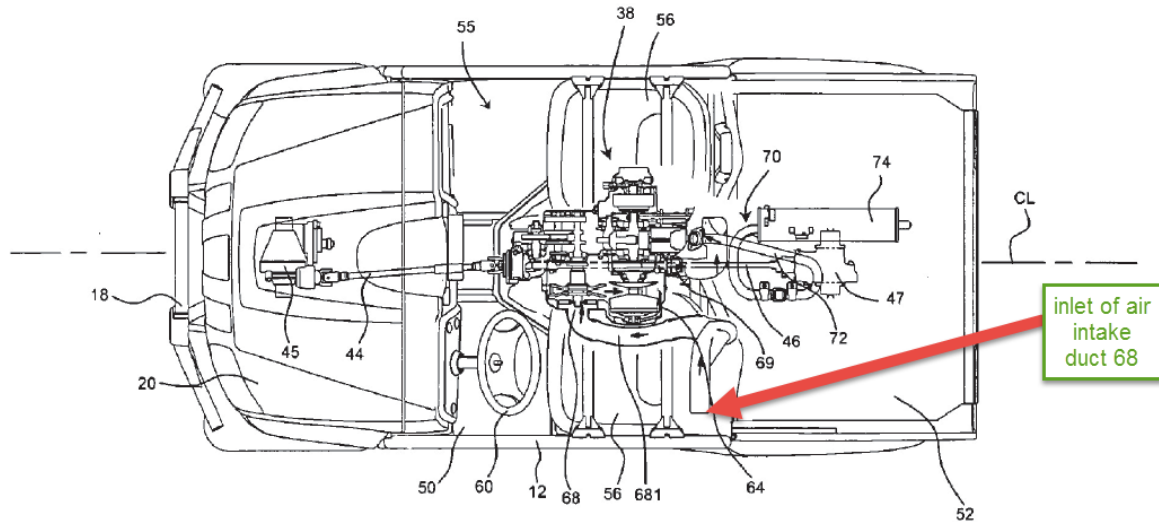


Figure 1 is a top plan view of vehicle 10 annotated with a label and arrow to identify the inlet of air intake duct 68 of CVT 64. Ex. 1005 ¶¶ 20, 30, 39. As indicated in the Figure, air intake duct 68 does not extend to the exterior of vehicle 10.

Suzuki discloses that “In some applications, side panels may be provided to at least partially enclose the engine compartment 38.” Ex. 1005 ¶ 39. This disclosure indicates that engine compartment 38 may or may not include side panels that at least partially enclose that compartment.

b) Brown

Brown discloses a vehicle air intake scoop for the vehicle’ engine where that scoop is located in a side panel. Ex. 1006, [54], Abstract, Figs 1, 2. Figure 2 of Brown is on the right side of this page.

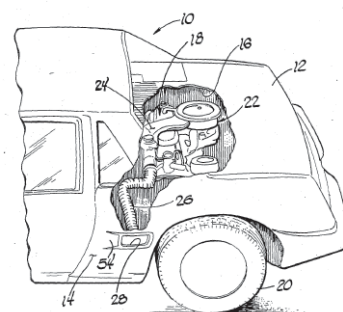


Fig 2

Figure 2 of Brown is an enlarged fragmentary view of vehicle 10 with air intake passage 28 to engine 22 visible. *Id.* at 2:5–8, 3:1–15.

c) Petitioner's Contentions

Petitioner contends that Suzuki discloses a vehicle as claimed except that Suzuki does not expressly disclose that the inlet for the CVT air intake system is positioned in a portion of an exterior body panel as claimed. Pet. 18–20, 23–33. According to Petitioner, it would have been obvious to reposition Suzuki's air intake, as taught by Brown, so that the air inlet is in a portion of an exterior body panel as claimed. Pet. 20–21, 33–36.

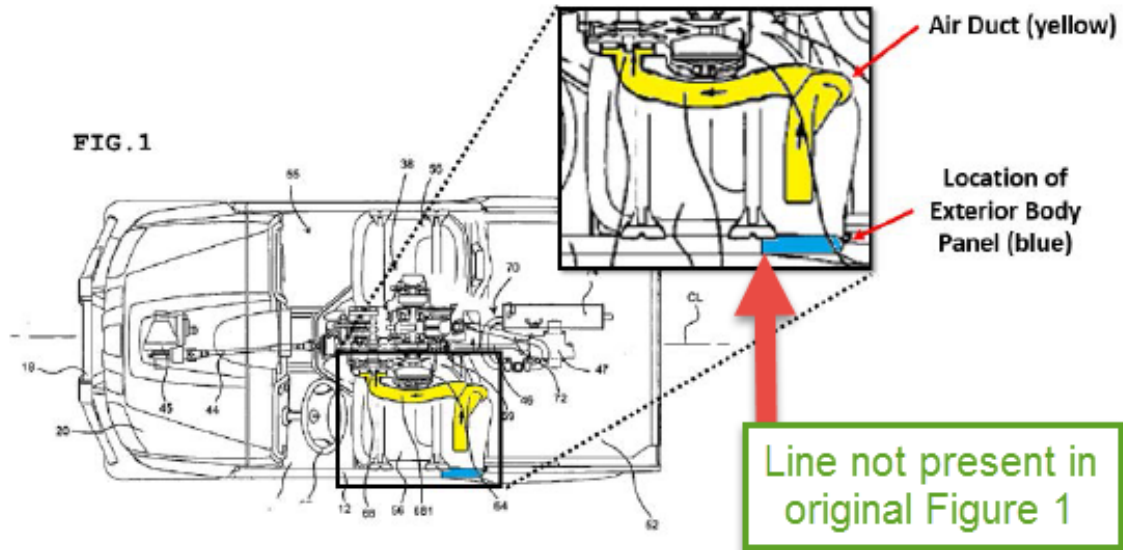
Petitioner reasons that a person of ordinary skill would have made this modification for three reasons. *Id.* at 21–23.

d) Analysis

(1) Improve Restricted Flow

Petitioner contends that the modification would permit the flow of cooling air unobstructed by exterior body panels and would avoid receiving hot air from inside the engine compartment, thereby cooling the CVT more effectively, reducing wear, and improving CVT efficiency. Pet. 19, 22; Ex. 1001 ¶¶ 48–50, 54, 55, 230, 233; Ex. 1005 ¶¶ 4–5. The premise of this reasoning is that airflow to Suzuki's CVT is obstructed by an exterior body panel or panels. That premise is not supported adequately the record.

Petitioner's modified version of Suzuki's Figure 1 follows.



Petitioner's modified Figure 1 magnifies a portion of the Figure and identifies the air duct (yellow) and a purported exterior body panel (blue) with color and labels. Pet. 19. As annotated above, the modified Figure presented by Petitioner also includes a line that is not present in the original Figure. *Compare* Ex. 1005, Fig. 1 with Pet. 19. The Petition is silent regarding the addition of this line. Although the line is suggestive of a body panel, no such line exists in the original Figure. Further, what Petitioner identifies as an exterior body panel is actually frame assembly 12 of vehicle 10. Ex. 1005 ¶ 32, Fig. 1 Further, as detailed above, Suzuki explicitly describes an intent to provide increased cooling, to include increased airflow speed, suggesting that even if engine compartment 38 is partially enclosed, air flow to intake duct 68 remains unimpeded.

In sum, Petitioner has not persuaded us that air flow to Suzuki's CVT air intake is impeded. In light of this, Petitioner's reasoning here lacks a rational underpinning.

(2) Short Ductwork

Petitioner contends that the modification would place the inlet near the CVT permitting short ductwork to the CVT. Pet. 22. According to Petitioner, shorter duct minimizes heat gain to the air from the engine, reduces pressure loss, and such a modification would be a routine engineering task. Pet. 22; Ex. 1001 ¶¶ 234–235.

As explained above, Petitioner proposes to modify Suzuki's air duct so that it may be positioned in an exterior body panel as taught by Brown. Such a modification extends rather than shortens the intake duct. Petitioner's reasoning supports shortening an intake duct, not extending an intake duct. In light of this, Petitioner's second reason lacks a rational underpinning.

(3) Known Technique

Petitioner contends that the modification would have been merely application of a known technique to a known device ready for improvement and would have yielded predictable results. Pet. 22–23; Ex. 1001 ¶¶ 235–237.

This purported reason for modifying the references is actually a conclusion that is based on the two reasons analyzed above. As explained above, each of those two reasons lacks a rationale underpinning. Consequently, we agree with Patent Owner that Petitioner has not provided a sufficient rationale for the proposed modification. See Prelim. Resp. 43–46.

2. *Claims 2, 6, and 7*

These claims depend from claim 1 and consequently Petitioner's ground of unpatentability against these claims suffers from the same shortcoming as that of claim 1. See Pet. 36–41.

D. SUZUKI, BROWN, AND NALLINGER – CLAIM 3
SUZUKI, BROWN, NALLINGER, AND SUNSDAHL – CLAIMS 4 AND 5

These claims depend from claim 1. Petitioner’s grounds of unpatentability against these claims encompasses and builds upon Petitioner’s combination of Suzuki and Brown asserted against claim 1. Consequently, Petitioner’s grounds of unpatentability against these claims suffers from the same shortcoming as that of claim 1 analyzed above.

E. RANGER AND BOUFFARD – CLAIMS 1–12 AND 14–22

Petitioner contends that claims 1–12 and 14–22 are unpatentable as obvious over Ranger and Bouffard. Pet. 48–129.

1. *Claim 1*

a) *Ranger*

Ranger describes the 2007 Polaris Ranger 500, a side-by-side four-wheel drive utility vehicle that comes in two-wheel drive, four-wheel drive carbureted, and four-wheel drive electronic fuel injection models. Ex. 1009, 1, 1.4–1.10.

b) *Bouffard*

Bouffard discloses an air intake for a straddle-type ATV. Ex. 1011 (54), Abstract, 1:14–16. Bouffard’s system positions the air intake relative to the engine so that the air traveling through the intake is not exposed to relatively high temperatures. *Id.* at 3:23–27. Bouffard discloses that the short intake pipe “avoids sound resonance and vibration that can adversely affect the fuel-to-air ratio in the carburetor.” *Id.* at 3:28–32. Bouffard discloses that the intake is positioned to avoid interaction with a water wave

created at the front of the vehicle when traveling through water. *Id.* at 3:33–36.

c) Petitioner’s Contentions

Petitioner contends that Ranger discloses the vehicle of claim 1 except that air enters through baffle boxes under the vehicle’s hood before traveling through ducts to the CVT and engine. Pet. 48–50. According to Petitioner, it would have been obvious to reposition Ranger’s air intake, as taught by Bouffard, so that the air inlet is in a portion of an exterior body panel as claimed. Pet. 50.

Petitioner provides several reasons for the proposed modification.

d) Analysis

(1) Sounds and Vibration

Petitioner contends that a short intake pipe “avoids sound resonance and vibration that can adversely affect the fuel-to-air ratio in the carburetor.” Pet. 50 (quoting Ex. 1011, 3:28–32 and citing Abstract; 2:55–63; 6:28–40); *see also* Pet. 51–54, 73 (referring to reasons for the modification at Pet. Section VI.D.). Similarly, Petitioner contends that “Bouffard discloses that moving the air inlets behind the driver ‘prevent[s] exposure of the rider to a substantial degree of noise and vibration emanating from the inlet end.’” Pet. 51 (quoting Ex. 1011, 3:41–45 and citing 3:15–19; 8:29–34), *see also* Pet. 54. Petitioner cites to Exhibit 1001 paragraphs 88 (Pet. 50) and 98 (Pet. 54) but these paragraphs do not deal with the ground of unpatentability based on Ranger and Bouffard.

As explained above, Bouffard explicitly discloses that the position of the air intake system relative to the engine avoids resonance and vibration that can adversely affect the fuel-to-air ratio in the carburetor. Ex. 1011,

3:28–32. Petitioner’s attempts to explain how this disclosure regarding an engine air intake is applicable to a CVT air intake are unpersuasive. First, Petitioner contends that Ranger’s and Bouffard’s vehicles have similar characteristics, such as: 4-wheeled vehicles driven off-road, smaller than automobiles, and simpler use/maintenance. Pet. 51–52 (citing Ex. 1001 ¶ 90). These characteristics are unrelated to cooling airflow, and do not explain cogently how a teaching regarding an engine air intake is applicable to a CVT air intake. Second, Petitioner contends that a person of ordinary skill would have recognized that Bouffard’s disclosure regarding an engine intake applies to a CVT intake. Pet. 52–54 (citing Ex. 1001 ¶¶ 92, 96). This assertion is conclusory and not supported by evidence. The cited paragraphs of Dr. Davis’s Declaration relate to the ground of unpatentability based on Suzuki and Brown, not the ground at hand.

(2) Reduced Maintenance Cost

According to Petitioner, Bouffard explains that shortening the intake pipe makes the system “easier to assemble and maintain and thereby reducing costs for maintenance, labor, and parts.” Pet. 50–51 (quoting Ex. 1011, 6:38–40).

Bouffard discloses that air intake system 300 has less parts and is easier to maintain than the system shown in Figure 3, a saddle-type ATV. Ex. 1011, 6:25–39, 5:1–9, Figs. 1A, 3. Petitioner does not explain persuasively how this disclosure specific to a saddle type ATV is applicable to Ranger’s side-by-side ATV.

(3) Water ingestion

Petitioner contends that “Bouffard teaches that air inlets positioned rearward of the driver, near the rear lateral sides of the seating area, and

higher than the wheel height are less likely to ingest water when traveling through water than inlets at the front of the vehicle, where waves are likely.” Pet. 51 (providing an annotated version of Ex. 1011, Fig. 14 and citing 3:33–36, 3:57–65, 4:20–27, 8:37–52); Ex. 1001 ¶ 89; *see also* Pet. 54 (making this same contention without supporting citations).

Here as above, Petitioner cites to a portion of Dr. Davis’s Declaration (i.e. paragraph 89) that does not relate to the ground at hand. Consequently, Petitioner’s assertion is attorney argument unsupported by evidence. Further, Petitioner does not explain cogently how the water wave created by a saddle type ATV such as Bouffard’s relates to a wave created by a side-by-side ATV such as Ranger’s.

(4) Increased space and fewer ductwork turns

Petitioner contends that the proposed modification would have resulted in increased space in the operator compartment and fewer turns in the air intake ductwork, thereby reducing the likelihood of leaks and blockages. Pet. 55 (citing Ex. 1011 ¶ 98).

Again, the cited portion of the Davis Declaration does not deal with the ground at hand. Further, this reasoning is conclusory. Petitioner does not explain cogently how the size of the operator compartment is altered. *See, e.g.*, Pet. 55 (relocating the CVT air intake with no change to the operator compartment). Further, Petitioner does not explain how the ductwork of the modified intake compares to the unmodified ductwork.

(5) Known Technique

Petitioner contends that the modification would have been merely application of a known technique to a known device ready for improvement,

and would have yielded predictable results. Pet. 55–56 (citing Ex. 1001 ¶ 99).

The cited portion of the Davis Declaration is not relevant to the ground at hand.

This purported reason for modifying the references is actually a conclusion that is based on the reasons analyzed above. As explained above, each of those reasons lacks a rationale underpinning, and consequently Petitioner has not persuaded us that a person of ordinary skill in the art would have made the proposed modification for the reasons proffered. Consequently, we agree with Patent Owner that Petitioner has not provided a sufficient rationale for the proposed modification. See Prelim. Resp. 53–60.

2. *Claims 2–12 and 14–22*

These claims depend from claim 1 and consequently Petitioner's ground of unpatentability against these claims suffer from the same shortcoming as that of claim 1 analyzed above. See Pet. 77–129.

IV. ORDER

For the reasons given, it is:

ORDERED that the petition is *denied*; and

FURTHER ORDERED that *no inter partes* review is instituted.

IPR2017-00455
Patent 9,217,501 B2

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