

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FCA US LLC,
Petitioner,

v.

JACOBS VEHICLE SYSTEMS, INC.,
Patent Owner.

Case IPR2015-01337
Patent 8,776,738 B2

Before RICHARD E. RICE, SCOTT A. DANIELS, and
JAMES A. TARTAL, *Administrative Patent Judges*.

TARTAL, *Administrative Patent Judge*.

DECISION

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

Petitioner, FCA US LLC, filed a Petition requesting an *inter partes* review of claims 1, 3, 5–7, 13–22, 31, 35–50, and 53–56 of U.S. Patent No. 8,776,738 B2 (“the ’738 patent”). Paper 2 (“Pet.”). Patent Owner, Jacobs Vehicle Systems, Inc., filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). We have jurisdiction under 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted “unless . . . the information presented in the petition . . . 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.”

Upon consideration of the Petition and the Preliminary Response, we conclude the information presented does not show there is a reasonable likelihood that Petitioner would prevail in showing the unpatentability of the challenged claims. Accordingly, we do not authorize an *inter partes* review to be instituted as to the ’738 patent.

I. BACKGROUND

A. *The ’738 Patent (Ex. 1001)*

The ’738 patent, titled “Variable Lost Motion Valve Actuator and Method,” issued July 15, 2014, from U.S. Application No. 14/139,308, filed December 23, 2013. Ex. 1001. The ’738 patent is directed to a variable valve actuation system for an internal combustion engine, and associated control strategies. Ex. 1001, Abstract.

Figure 53 of the '738 patent is reproduced below.

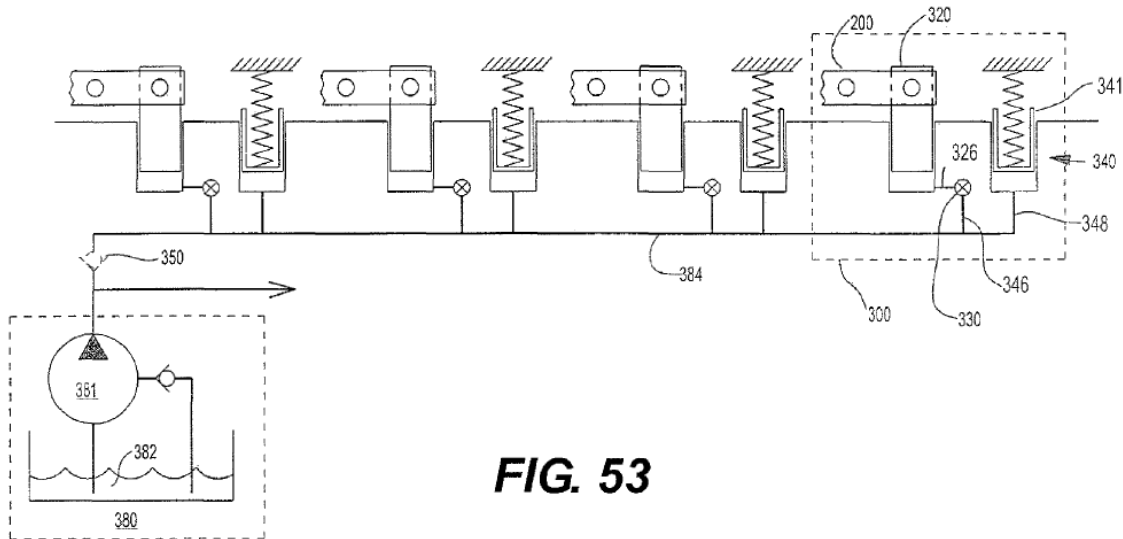


FIG. 53

Figure 53 shows an “embodiment of a multiple accumulator piston low pressure accumulator system which provides acceptable fluid receipt and refill.” *Id.* at 32:62–64. The accumulator system includes low pressure hydraulic fluid (oil) supply 380, including pump 381, fluid reservoir 382, and optional check valve 350. *Id.* at 32:65–67. Output from pump 381 is connected to a shared accumulator system supply gallery 384. *Id.* at 33:1–2. The supply gallery 384 is connected to passage 348 associated with each individual accumulator piston 341 in the system. *Id.* at 33:2–4. Trigger valve 330 controls the flow of fluid in accumulator 340 to and from control piston bore 324. (*Id.* at 33:4–6). According to Patent Owner, Figure 53 shows the manner in which “a plurality of solenoid trigger valves are coupled to the shared supply gallery.” Prelim. Resp. 7.

B. Illustrative Claim

Claim 1 of the '738 patent is independent and claims 3, 5–7, 13–22, 31, 35–50, and 53–56 ultimately depend from claim 1. Claim 1 of the '738 patent is illustrative of the claims at issue:

1. A valve actuation system for controlling at least one engine valve, comprising:
 - a) a hydraulic lost motion system having:
 - (i) a first piston disposed in a first piston chamber, being moveable by an engine cam shaft,
 - (ii) a second piston disposed in a second piston chamber;
 - (iii) at least one engine valve being moveable by the second piston; and
 - (iv) a hydraulic circuit configured to permit hydraulic communication between the first piston chamber and the second piston chamber;
 - b) a plurality of solenoid valves in hydraulic communication with the hydraulic circuit; and
 - c) a plurality of accumulators, each holding a supply of fluid under pressure, each of the plurality of solenoid valves having at least one dedicated accumulator disposed proximate thereto.

Id. at 49:7–17.

C. Related Proceedings

Petitioner states that the '738 patent is a subject of Civil Action Number 3:15cv350, filed March 9, 2015, in the United States District Court, District of Connecticut, and is also a subject of Investigation No. 337-TA-954, filed March 10, 2015, in the United States International Trade Commission. Pet. 55.

D. Asserted Grounds of Unpatentability

Petitioner contends that claims 1, 3, 5–7, 13–22, 31, 35–50, and 53–56 are unpatentable based on the following grounds:

Reference[s]	Basis	Challenged Claim(s)
Bowman ¹	§ 102(b)	1, 3, and 5–7
Bowman, Wunning, ² and Sono ³	§ 103(a)	13–22, 31, 35–50, and 53–56
Bowman, Wunning, Sono, and Stevenson ⁴	§ 103(a)	18–22

II. ANALYSIS

A. Claim Construction

The Board interprets claims of an unexpired patent using the broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *see also In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1277–79 (Fed. Cir. 2015) (“We conclude that Congress implicitly approved the broadest reasonable interpretation standard in enacting the AIA.”), *reh’g en banc denied*, 793 F.3d 1297 (Fed. Cir. 2015), *petition for cert. filed*, No. 15-446 (U.S. Oct. 6, 2015).

1. *“plurality of solenoid valves in hydraulic communication with the hydraulic circuit”*

Petitioner contends that “plurality of solenoid valves in hydraulic communication with the hydraulic circuit,” means a “plurality of solenoids valves connected to the hydraulic circuit by fluid paths and/or a supply

¹ US 5,127,375, issued July 7, 1992 (Ex. 1004, “Bowman”)

² US 5,201,296, issued April 13, 1993 (Ex. 1005, “Wunning”)

³ US 5,140,955, issued August 25, 1992 (Ex. 1006, “Sono”)

⁴ US 4,368,705, issued January 18, 1983 (Ex. 1007, “Stevenson”)

gallery.” Pet. 14. Patent Owner states that it disagrees, and instead proposes a meaning of “more than one solenoid valve connected to permit fluid flow into and out of the hydraulic circuit.” Prelim. Resp. 11. Patent Owner does not explain how its proposed construction differs substantively from Petitioner’s proposed construction. We determine no express construction is necessary for purposes of this Decision.

2. *“normal mode” and “transient mode”*

Patent Owner also proposes constructions for both “normal mode” and “transient mode.” Prelim. Resp. 12–13. We determine no express construction is necessary for purposes of this Decision.

B. *Asserted Anticipation by Bowman*

Petitioner asserts independent claim 1, and dependent claims 3 and 5–7 are anticipated by Bowman. Pet. 15–25. Petitioner provides a claim chart showing how it contends each limitation of claims 1, 3, and 5–7 is disclosed by Bowman.

1. *Summary of Bowman (Ex. 1004)*

Bowman, titled “Hydraulic Valve Control System for Internal Combustion Engine,” concerns “a modular hydraulic valve actuating assembly for use in association with a single combustion chamber in a multicylinder internal combustion engine cylinder head.” Ex. 1004, Abstract.

solenoid valve assembly 16, and accumulator 18. *Id.* at 3:61–68.

Cylindrical sleeve member 96 constitutes a master piston. *Id.* at 5:36–38.

Within the actuator housing there is an actuator piston assembly 28, which functions as a slave piston. *Id.* at 4:9–11. Hydraulic fluid may be pumped through hydraulic passage 102 from hydraulic cavity 100 to the actuator assembly. *Id.* at 5:49–51. “A one-way acting check valve 125 is located between an oil gallery generally designated by the numeral 126 and the cavity 120 of the solenoid check valve.” *Id.* at 6:9–11.

Figures 3 and 4 of Bowman are reproduced below.

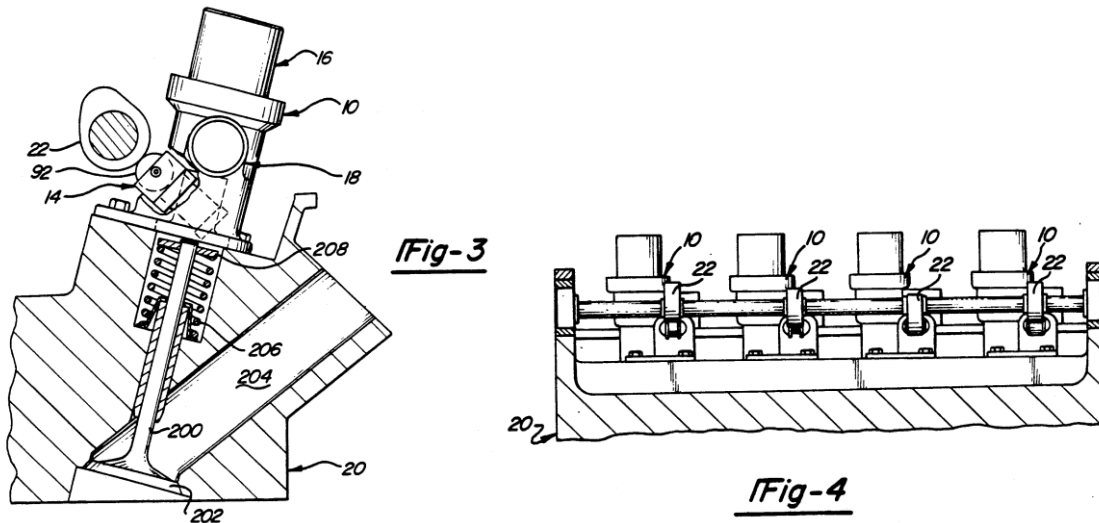


Figure 3 is “a side elevation view of the cartridge-type hydraulically actuated valve control system in combination with an actuating camshaft and cylinder head assembly,” and figure 4 is “a perspective view of a cylinder block showing a plurality of cartridge-type hydraulically actuated valve control systems mounted serially, in combination with each respective cylinder within the block,” as disclosed by Bowman. *Id.* at 3:35–43. As with figure 1, figures 3 and 4 depict solenoid valve assembly 16 and accumulator 18. In addition to valve lift cartridge module 10, figure 4

includes engine valve lift cams 22. With respect to figure 4, Bowman states “[e]ach cartridge module is separately bolted to the cylinder head and comprises, as described above, a complete unit in and of itself.” *Id.* at 6:54–56.

2. *Claim 1*

Petitioner contends that each element of claim 1 is disclosed by Bowman, as summarized in the table below.

Claim 1	Bowman
a first piston disposed in a first piston chamber, being moveable by an engine cam shaft	master piston 96 moveable by cam 22
a second piston disposed in a second piston chamber	slave piston 28
at least one engine valve being moveable by the second piston	engine valve 200 moveable by slave piston 28
a hydraulic circuit configured to permit hydraulic communication between the first piston chamber and the second piston chamber;	hydraulic passage 102 between master piston 96 and slave piston 28
a plurality of solenoid valves in hydraulic communication with the hydraulic circuit	a plurality of solenoid valve assemblies 16 as shown in figures 3 and 4
a plurality of accumulators, each holding a supply of fluid under pressure, each of the plurality of solenoid valves having at least one dedicated accumulator disposed proximate thereto	a plurality of accumulators 18, as shown in figures 3 and 4, proximate to solenoid valve assemblies 16

Although the Petition includes a claim chart purporting to map each element of claim 1 to Bowman, the claim chart is accompanied by virtually

no explanation beyond the information contained in the summary table and labels on Bowman figures 3 and 4 pointing to “Solenoid” and “Accumulator.”

Although Petitioner does not direct us to any supporting expert testimony, we have also reviewed the Declaration of John J. Moskwa submitted along with the Petition, and find that it provides virtually no support for Petitioner’s contention that claim 1 is anticipated by Bowman beyond the statement that the declarant agrees “that the claim chart shows where every element of claim 1 of the ’738 Patent is disclosed in Bowman.” Ex. 1002, ¶ 28. We afford such conclusory testimony little weight.

Of particular concern is the limitation requiring “a plurality of solenoid valves in hydraulic communication with the hydraulic circuit.” There is no dispute that the claim requires more than one solenoid valve connected to a single hydraulic circuit. Petitioner identifies hydraulic passage 102 of Bowman as corresponding to the claimed “hydraulic circuit.” Pet. 15. Petitioner, however, fails to explain how passage 102 of Bowman (or any other passage) is connected to a plurality of solenoid valves, as further required by claim 1.

A petition must identify how the construed claim is unpatenable, as well as the relevance of the evidence to the challenge raised. 37 C.F.R. § 42.104 (b). Although Petitioner provides a string citation in its claim chart to various statements in Bowman purportedly corresponding to the claimed “plurality of solenoid valves in hydraulic communication with the hydraulic circuit,” Petitioner offers no explanation relating the citations to the claimed language, and none is readily apparent. See Pet. 19–20. “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., Inc. v. Union Oil Co. of Cal., 814 F.2d 628, 631 (Fed. Cir. 1987) (citation omitted). Although figure 4 of Bowman shows a plurality of cartridge-type hydraulically actuated valve control systems mounted serially, Bowman expressly states that each cartridge module is “a complete unit in and of itself.” Petitioner has not shown that Bowman discloses “a plurality of solenoid valves in hydraulic communication with the hydraulic circuit,” as required by claim 1.

Additionally, challenged claims 3, 5–7, 13–22, 31, 35–50, and 53–56 all depend from claim 1. Each of the grounds of unpatentability asserted by Petitioner against these dependent claims relies upon Petitioner’s contention that Bowman discloses the features of claim 1. Accordingly, we determine that the information presented does not establish a reasonable likelihood that Petitioner would prevail in showing that at least one challenged claim of the ’738 patent is unpatentable based on the asserted grounds.

III. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that the Petition to institute *inter partes* review of the ’738 patent is DENIED, and no trial is instituted.

IPR2015-01337
Patent 8,776,738 B2

PETITIONER:

Frank Cimino
FCA-JVS@venable.com

Jonathan Falkler
JLFalkler@venable.com

PATENT OWNERS:

Andrew Riddles
DP-IPR-JVS@DAYPITNEY.COM

Brian Pollack
bpollack@daypitney.com

Cecilia Zhang Stiber
cstiber@daypitney.com