

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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TERUMO CARDIOVASCULAR SYSTEMS CORPORATION,  
Petitioner,

v.

SHEILAH D. KING and ALLEN PAIGE KING,  
Patent Owner.

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Case IPR2015-00263  
Patent 6,423,268 B1

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Before MICHAEL W. KIM, HYUN J. JUNG, and JAMES A. WORTH,  
*Administrative Patent Judges.*

KIM, *Administrative Patent Judge.*

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

I. INTRODUCTION

Terumo Cardiovascular Systems Corporation (“Petitioner”) filed a Corrected Petition (“Pet.”) for *inter partes* review of claims 1–18 of U.S. Patent No. 6,423,268 B1 (“the ’268 patent”) (Ex. 1001) pursuant to 35 U.S.C. §§ 311–319. Paper 4. Sheilah D. King and Allen Paige King (“Patent Owner”) filed a Corrected Patent Owner Preliminary Response.

Paper 11; “Prelim. Resp.” We have jurisdiction under 35 U.S.C. § 314, which provides that an *inter partes* review may be instituted only if “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.”

Petitioner challenges the patentability of claims 1–18 of the ’268 patent under 35 U.S.C. § 103. We determine that the information presented in the Petition demonstrates that there is a reasonable likelihood that Petitioner would prevail in showing that claims 1–18 are unpatentable. Pursuant to 35 U.S.C. § 314, we authorize an *inter partes* review to be instituted as to claims 1–18 of the ’268 patent.

A. *The ’268 patent*

The ’268 patent relates to “cooling, heating, and recirculating of fluids associated with arterial/venous and cardioplegia fluid lines in cardiovascular surgery.” Ex. 1001, 1:10–12. Specifically, during cardiovascular surgery, two separate fluid lines are operated. One is an arterial/venous fluid line that drains blood from a patient’s venous system, runs the blood through a heat exchanger and oxygenator, and returns to the blood to a patient’s heart. Ex. 1001, 1:14–22. Another is a cardioplegia fluid line that runs cooled cardioplegia solution to the heart, which stops the heart and reduces its temperature. In this manner, damage to the heart during surgery is minimized. Ex. 1001, 1:31–42. Previously, separate systems have been used for the heating and cooling of the arterial/venous fluid line and the heating and cooling of the cardioplegia fluid line. Ex. 1001, 1:60–62. According to the ’268 patent, some disadvantages of such a separate system arrangement include potentially redundant heating and cooling systems

occupying an excessive amount of space, the combined system drawing approximately 30 amps of power when only 20 amps are normally available, and undesirable spikes in current when both systems are operating.

Ex. 1001, 1:66–2:25. To ostensibly solve those disadvantages, the present invention is apparently directed to a controller electrically connected to a power supply and to first and second heaters such that the first and second heaters cannot be activated simultaneously. Ex. 1001, 2:57–59.

### *B. Related Matters*

Petitioner identifies the following related district court proceeding between Petitioner and Patent Owner that involves the '268 patent: *Allen Paige King and Sheilah Dianne King v. Terumo Cardiovascular Systems Corporation*, Case No. 4:13-cv-03281 (S.D. Tex.). Pet. 4.

### *C. Illustrative Claim*

Independent claim 1 is reproduced below:

1. A blood heating system for use in open heart surgery comprising:
  - a first fluid circuit;
  - a second fluid circuit defining a fluid flow pathway independent of said first fluid circuit;
  - a first heater in heat exchange relationship with said first fluid circuit;
  - a second heater in heat exchange relationship with said second fluid circuit;
  - a power supply connected to said first and second heaters so as to supply a desired electrical power to said first and second heaters;
  - a controller electrically interconnected to said power supply and to said first and second heaters such that said first and second heaters cannot be activated simultaneously; and
  - a relay means electrically interconnected between said first and second heaters and said power supply, said relay

means for deactivating one of said first and second heaters when the other of said first and second heaters is activated.

*D. Prior Art References Applied by Petitioner*

Petitioner challenges the patentability of claims 1–18 on the basis of the following items of prior art:

US 3,767,894 (“Berger”)	Oct. 23, 1973	Ex. 1006
US 5,702,358 (“Witherspoon”)	Dec. 30, 1997	Ex. 1007
US 4,010,412 (“Forman”)	Mar. 1, 1977	Ex. 1008
US 6,246,831 B1 (“Seitz”)	June 12, 2001	Ex. 1027

3M Health Care: Sarns TCM II Operators Manual (“the TCM II Manual”) 1994 (Ex. 1005).

“3M Health Care: A Basic Guide to 3M Health Care’s Cardiovascular Systems: Sarns and CDI Products” (“the 3M Guide”) 1998 (Ex. 1026).

*E. The Alleged Grounds of Unpatentability*

The information presented in the Petition sets forth Petitioner’s contentions of unpatentability of claims 1–18 of the ’268 patent based on the following specific grounds (Pet. 16–59):

Reference(s)	Basis	Challenged Claims
the 3M Guide and Forman	§ 103(a)	1–18
the TCM II Manual, Berger, and Seitz	§ 103(a)	1–3, 5–14, and 16–18
Witherspoon and Forman	§ 103(a)	1–18

Petitioner also cites the Declaration of Dr. Arthur W. Kelley (Ex. 1002; “the Kelley Declaration”), the Declaration of David Fallen (Ex. 1003;

“the Fallen Declaration”), and the Declaration of Edward Stephen Wells (Ex. 1004; “the Wells Declaration”).

## II. ANALYSIS

We turn now to Petitioner’s asserted grounds of unpatentability to determine whether Petitioner has met the threshold standard, under 35 U.S.C. § 314(a), for instituting review.

### A. *Claims 1–18 as Unpatentable over the 3M Guide and Forman*

Petitioner contends that claims 1–18 are unpatentable over a combination of the 3M Guide and Forman. Pet. 17–33 (citing Exs. 1001, 1002, 1008, 1026). Patent Owner disagrees. Prelim. Resp. 5–9, 11–22 (citing Exs. 1002, 1008, 1026, 2001). Claims 1 and 12 are independent.

#### 1. *The 3M Guide (Ex. 1026)*

The 3M Guide relates to cardiovascular products used in heart surgeries, for example, valve replacements, heart transplants, and cardiovascular bypass surgery. Ex. 1026, 2. Such products include blood pumps that take over the heart’s pumping functions, and myocardial protection products that deliver drugs to stop the heart’s beating and protect it from damage during the surgical procedure. Ex. 1026, 2. Another exemplary product is a cooling and heating device that provides hot, warm, or cold water used by the oxygenator and cardioplegia heat exchangers. Ex. 1026, 11.

#### 2. *Forman (Ex. 1008)*

Forman relates to an “apparatus for distributing power from a single alternating current source to a plurality of consuming units each having individual control means associated therewith.” Ex. 1008, 2:28–31. An

example of such consuming units may be electric storage heaters 1–4. Ex. 1008, 3:35–36. Forman discloses further a sequencing means operative to control a triggering means so as to trigger, on different devices, immediately-successive, non-overlapping bursts of integral numbers of half cycles of alternating current supply, in accordance with a continuously reprogrammable sequence. Ex. 1008, 2:28–42. For example, when two of four switches S1–S4 connected to respective heaters 1–4 are closed, inputs are applied to the associated two of gates M1–M4 so that the gates are strobed alternately, each for half the time. Ex. 1008, 6:56–59.

### 3. *Analysis*

Based on the information presented in the Petition and Preliminary Response, as well as all supporting evidence, we are persuaded that there is a reasonable likelihood that Petitioner would prevail in showing that claims 1–18 are unpatentable over a combination of the 3M Guide and Forman. Pet. 17–33; Prelim. Resp. 5–9, 11–22. For example, independent claim 1 recites a blood heating system for use in open heart surgery including two fluid circuits with respective heaters. Petitioner cites the 3M Guide for disclosing a cooling and heating device that provides hot, warm, or cold water used by oxygenator and cardioplegia heat exchangers during heart surgery. Ex. 1026, 1, 11. Independent claim 1 further recites “a power supply connected to said first and second heaters so as to supply a desired electrical power to said first and second heaters.” Petitioner cites Forman for disclosing an apparatus for distributing power from a single alternating current source to a plurality of consuming units. Ex. 1008, 2:28–31. Independent claim 1 recites additionally “a controller electrically interconnected to said power supply and to said first and second heaters such

that said first and second heaters cannot be activated simultaneously.”

Petitioner cites Forman for disclosing a sequencing means that alternates the providing of current to two electric storage heaters. Ex. 1008, 3:35–36, 6:56–59. Independent claim 1 recites also “a relay means electrically interconnected between said first and second heaters and said power supply, said relay means for deactivating one of said first and second heaters when the other of said first and second heaters is activated.” Petitioner asserts the following concerning the recited “relay means”:

Additionally, Forman teaches a plurality of solid state relays for deactivating one of the first and second heaters when the other is activated. The solid state relays described by Forman comprise a “triac,” a “gate,” and a “pulse processing circuit” associated with each load. Ex. 1008 at 5:27-35; Kelley Dec. ¶¶ 185-86. Forman discloses that the solid state relays deactivate one of the first and second heaters when the other is activated. Ex. 1008 at 6:51-60; Kelley Dec. ¶¶ 185-86. Forman thus discloses a relay means (which is simply “one or more signal actuated switching devices”) for deactivating one of a first and second heaters when the other of the first and second heaters is activated.

Forman further discloses that a relay means energizes one of the heaters as the other is de-energized, and that one heater may be switched to an activated state as another is deactivated. Specifically, Forman discloses a relay means comprising a plurality of triacs, wherein the triacs switches (or energizes) one of a first [L1] and second [L2] heaters to an activated state as the other of the heaters is deactivated (or de-energized). Kelley Dec. ¶ 188. A triac is one type of solid-state relay. Kelley Dec. ¶¶ 57-63. As described by Forman, “inputs from the lines t1 and t2 are applied to the associated two of the gates M1-M4 so that the gates are strobed alternately, each for half the time.” *Id.* at 6:51-60. In this manner, L1 or L2 is switched to an activated state (energized) as the other of L1 or L2 is deactivated (de-energized). Thus,

Forman discloses the claimed “relay means.” Kelley Dec. ¶¶ 187-88.

Pet. 24–25. Petitioner sets forth similar analyses for claims 2–18. Citing the Kelley Declaration, Petitioner provides several rationales for combining the aforementioned disclosures of the 3M Guide and Forman on pages 25–28 of the Petition.

Patent Owner asserts that Petitioner has deliberately and inappropriately excluded biomedical experience from its definition of a person of ordinary skill in the art. Specifically, Patent Owner asserts that Petitioner’s definition should be amended as follows:

a person of ordinary skill in the art at the time of the effective filing date of the application that lead to the ’268 patent is an individual with a bachelor's degree in electrical engineering or equivalent coursework or experience or an equivalent degree and at least two years of experience working with and/or designing electrical load management (“ELM”) systems, including ELM systems that use relays [and at least two years of experience in the design of electromechanical components for biomedical systems.]

Prelim. Resp. 5; Kelley Decl. ¶ 12. While the relevance of this assertion alone to the ground of unpatentability is not immediately apparent, it appears to be tangentially relevant to a later assertion made by Patent Owner. Thus, we consider this assertion substantively, and agree with Patent Owner to an extent. The claimed invention is directed to heating systems for use in open heart surgery. Accordingly, we agree that it is reasonable that the person of ordinary skill should have at least some familiarity with such systems. We disagree, however, that such a person must have two years of experience in the field, and must have experience in designing components in the field. The problems that the ’268 patent attempts to solve are those related to space



and power consumption. We are unpersuaded that the fact that such problems occur in the field of heating systems for use in open heart surgery presents technical difficulties that differ materially from space and power consumption problems in general. Accordingly, we determine that, on this record, a person of ordinary skill in the art is as follows:

a person of ordinary skill in the art at the time of the effective filing date of the application that lead to the '268 patent is an individual with a bachelor's degree in electrical engineering or equivalent coursework or experience or an equivalent degree and at least two years of experience working with and/or designing electrical load management ("ELM") systems, including ELM systems that use relays and at least some familiarity with heating systems for use in open heart surgery.

Patent Owner next asserts that Petitioner's assertions concerning the rationales to combine the 3M Guide and Forman are undermined by their own employees. Specifically, Patent Owner asserts that U.S. Patent No. 7,403,704 B2 ("the '704 patent") (1) is assigned to Petitioner, (2) the inventors of the '704 patent meet the aforementioned definition of one of ordinary skill, (3) the inventors of the '704 patent are employed by Petitioner, and (4) that the '704 patent sets forth many disadvantages of using relays in heating systems for use in open heart surgery that "negate the alleged motivation to combine relay-controlled electrical load management in blood heating systems as stated in the Kelley Declaration." Prelim. Resp. 13. Patent Owner's assertion is inapposite because Patent Owner conflates obviousness and desirability. Specifically, obviousness centers around what one of ordinary skill would have known at the time of the invention. To that end, Petitioner provides several pages of analysis and reasoning in the Petition, supported by the Declaration of Dr. Kelley, as to why one of

ordinary skill would have known to combine relay-controlled electrical load management in blood heating systems. We have reviewed the technical analysis and reasoning provided by both the Petition and Dr. Kelley, and determine that they are supported adequately and are reasonable.

Given this backdrop, the fact that the combination of relay-controlled electrical load management in blood heating systems would have had disadvantages is inapposite, as all technical choices have advantages and disadvantages. One of ordinary skill is not an automaton, and is presumed to be able to make certain choices over others based on various technical requirements with those advantages and disadvantages in mind. *See Winner Int'l Royalty Corp. v. Wang*, 202 F.3d 1340, 1349 n.8 (Fed. Cir. 2000). So long as the combination was known to one of ordinary skill, however, and Patent Owner's assertions do not negate that the aforementioned combination was known, disadvantages and all, no more is required in order to support a proper determination of obviousness.

Patent Owner takes issue with Petitioner's assertions concerning the alleged inadequacy of the quality of the examination that resulted in the issuance of the '268 patent. Patent Owner's assertions are inapposite, as we are unclear as to how they are relevant to the technical merits of the aforementioned ground of unpatentability of claims 1–18 based on the 3M Guide and Forman.

Patent Owner also takes issue with Petitioner's characterization that “[t]he [']268 *patent essentially copies the illustration from the 3M Guide . . . with no attribution for copied aspects of the copyrighted 3M Guide material.*” Prelim. Resp. 17 (citing Pet. 19). Patent Owner's assertions are again inapposite, as we are unclear what relevance copyright

issues have on the technical merits of the aforementioned ground of unpatentability of claims 1–18 based on the 3M Guide and Forman.

Patent Owner asserts further that the Kelley Declaration is fatally deficient in light of statements made in the '704 patent, and thus should not be given any weight. We disagree, as we are unclear how the statements in the '704 patent affect the Kelley Declaration substantively. The Kelley Declaration asserts that generally that it would have been known to combine relay-controlled electrical load management in blood heating systems. The identified portions of the '704 patent assert that such systems have disadvantages. In our view, these assertions are consistent and unremarkable for the reasons set forth above.

Patent Owner asserts additionally that the Kelley Declaration should be given little weight, because Dr. Kelley is only a “hypothetical” person of ordinary skill in the art who cannot be deposed. As an initial matter, we note that almost every use of experts involves inquiries into what a “hypothetical” person of ordinary skill in the art would have known, and that such use of experts is very common in patent proceedings in both in the U.S. Patent and Trademark, as well as district courts. Furthermore, our rules and trial practice guide provide numerous procedures for deposition of experts as a part of routine discovery, and Patent Owner will have the opportunity to depose Dr. Kelley in accordance with those rules and procedures. *See* 37 C.F.R. §§ 42.51–42.53; Office Patent Trial Practice Guide, 77 Fed. Reg. 48756, 48761–62 (Aug. 14, 2012).

Patent Owner asserts also that the Kelley Declaration should be given little weight, because Petitioner had available the inventors of the '704 patent as experts, who Patent Owner asserts are persons of “actual” ordinary

skill in the art, and that Petitioner's failure to use those inventors as experts indicates that the inventors had views that differed from Dr. Kelley. As an initial matter, we note that the use of third-party experts over a party's own employees is exceedingly common and unremarkable, and Patent Owner has not shown persuasively why this situation differs from that industry norm. Furthermore, we disagree with Patent Owner's assertions, as Patent Owner has not set forth persuasive evidence or reasoning as to why the inventor's views would differ from those of Dr. Kelley. If Patent Owner is referring to the above assertions that the disclosures made in the '704 patent are inconsistent with Dr. Kelley's Declaration, those assertions have been addressed above as not being inconsistent, and thus need not be repeated here.

4. *Reasonable Likelihood of Prevailing on Asserted Ground*

For the foregoing reasons, we conclude, on this record, that there is a reasonable likelihood that Petitioner would prevail on the ground that claims 1–18 are unpatentable over a combination of the 3M Guide and Forman.

B. *Claims 1–3, 5–14, and 16–18 as Obvious over the TCM II Manual, Berger, and Seitz*

Petitioner contends that claims 1, 2, 6, 7, 12, 13, and 16 are unpatentable over a combination of the TCM II Manual and Berger, and claims 3, 5, 8–11, 14, 17, and 18, are unpatentable over a combination of the TCM II Manual, Berger, and Seitz. Pet. 33–49 (citing Exs. 1001, 1002, 1003, 1004, 1005, 1006, 1027). Patent Owner disagrees. Prelim. Resp. 5–22 (citing Exs. 1002, 1005, 1006, 1027, 2001).

*1. The TCM II Manual (Ex. 1005)*

The TCM II Manual discloses a source of temperature-controlled water for blood heat exchangers used in an extracorporeal circuit. Ex. 1005, 5. The TCM II Manual discloses also a cardioplegia system which will supply cooling water for cardioplegia. Ex. 1005, 5.

*2. Berger (Ex. 1006)*

Berger relates to a combined electric water heater and electric space heater having a control system which provides a limited total current demand which is less than the total demand of all of the electric heater elements in the system. Ex. 1006, 1:5–9. More specifically, Berger discloses the following:

[T]he control system of FIG. 3 assigns a priority to the space heater elements and the water heater elements such that one stage of water heating and one stage of space heating are always available on demand. A second stage of space heating or a second stage of water heating is also available providing there is no demand for the other heater elements. With this arrangement, only two of the electric heater elements can simultaneously operate, so the current demand by the combined water heater and space heater is limited to the maximum demand of two of the four heater elements.

Ex. 1006, 4:45–56.

*3. Seitz (Ex. 1027)*

Seitz discloses relays that are used on a heater's circuit board to enable or disable power circuits to heating elements. Ex. 1027, 17:58–59.

*4. Analysis*

Based on the information presented in the Petition and Preliminary Response, as well as all supporting evidence, we are persuaded that there is a reasonable likelihood that Petitioner would prevail in showing that claims 1,

2, 6, 7, 12, 13, and 16 are unpatentable over a combination of the TCM II Manual and Berger, and claims 3, 5, 8–11, 14, 17, and 18, are unpatentable over a combination of the TCM II Manual, Berger, and Seitz. Pet. 33–49; Prelim. Resp. 5–22. For example, independent claim 1 recites a blood heating system for use in open heart surgery including two fluid circuits with respective heaters. Petitioner cites the TCM II Manual for disclosing a source of temperature-controlled water for blood heat exchangers used in an extracorporeal circuit, and a cardioplegia system for supplying cooling water for cardioplegia. Ex. 1005, 5. Petitioner then cites the Fallen Declaration for the finding that cardioplegia administration systems commonly used heat exchangers for controlling a temperature of the blood/cardioplegia solution that is administered to a patient’s heart. Ex. 1003 ¶ 21. Independent claim 1 further recites “a power supply connected to said first and second heaters so as to supply a desired electrical power to said first and second heaters.” Petitioner cites the TCM II Manual for disclosing that the multiple pump/heater system requires a dedicated 20 Amp power source. Ex. 1005, 5. Independent claim 1 recites additionally “a controller electrically interconnected to said power supply and to said first and second heaters such that said first and second heaters cannot be activated simultaneously.” Petitioner cites Berger for disclosing that only two of four electric heater elements can simultaneously operate. Ex. 1006, 4:52–53. Independent claim 1 recites also “a relay means electrically interconnected between said first and second heaters and said power supply, said relay means for deactivating one of said first and second heaters when the other of said first and second heaters is activated.” Petitioner cites time delay relays 435, 436, 437 of Berger as corresponding to the aforementioned relay means.

Ex. 1006, 4:66–5:5. Petitioner sets forth similar analyses for claims 2, 3, 5–14, and 16–18. Citing the Kelley Declaration and the Fallen Declaration, Petitioner provides several rationales for combining the aforementioned disclosures of the TCM II Manual, Berger, and Seitz on pages 39–43 of the Petition.

Patent Owner sets forth the same arguments for this ground of unpatentability, as was set forth above for the ground of unpatentability based on the 3M Guide and Forman, except that the TCM II Manual and Berger are substituted for the 3M Guide and Forman. Our analysis is the same as set forth previously, and thus need not be repeated here.

5. *Reasonable Likelihood of Prevailing on Asserted Ground*

For the foregoing reasons, we conclude, on this record, that there is a reasonable likelihood that Petitioner would prevail on the ground that claims 1, 2, 6, 7, 12, 13, and 16 are unpatentable over a combination of the TCM II Manual and Berger, and claims 3, 5, 8–11, 14, 17, and 18, are unpatentable over a combination of the TCM II Manual, Berger, and Seitz.

C. *Claims 1–18 as Obvious over Witherspoon and Forman*

Petitioner contends that claims 1–18, are unpatentable over a combination of Witherspoon and Forman. Pet. 51–59 (citing Exs. 1001, 1002, 1007, 1008). Patent Owner disagrees. Prelim. Resp. 5–22 (citing Exs. 1002, 1007, 1008, 2001).

1. *Witherspoon (Ex. 1007)*

Witherspoon relates generally “to a cardioplegia delivery device which may be used to deliver variable ratios of blood and cardioplegia solution at a controlled temperature.” Ex. 1007, 1:8–10. In one embodiment, Witherspoon discloses a device for controlling a temperature

of a heat exchange liquid such as water which is circulated through a heat exchange liquid flow path of a heat exchanger used for warming or cooling blood or cardioplegia fluid. Ex. 1007, 2:55–59. In another embodiment, Witherspoon discloses a device for supplying heat exchange liquid to a heat exchanger used in an extracorporeal circuit for warming or cooling blood. Ex. 1007, 4:40–44.

## 2. *Analysis*

Based on the information presented in the Petition and Preliminary Response, as well as all supporting evidence, we are persuaded that there is a reasonable likelihood that Petitioner would prevail in showing that claims 1–18, are unpatentable over a combination of Witherspoon and Forman. Pet. 51–59; Prelim. Resp. 5–22. For example, independent claim 1 recites a blood heating system for use in open heart surgery including two fluid circuits with respective heaters. Petitioner cites Witherspoon for disclosing, in one embodiment, a heat exchanger used for warming cardioplegia fluid, and, in another embodiment, a heat exchanger used in an extracorporeal circuit for warming or cooling blood. Ex. 1007, 2:55–59, 4:40–44. Independent claim 1 further recites “a power supply connected to said first and second heaters so as to supply a desired electrical power to said first and second heaters.” Petitioner cites Forman for disclosing an apparatus for distributing power from a single alternating current source to a plurality of consuming units. Ex. 1008, 2:28–31. Independent claim 1 recites additionally “a controller electrically interconnected to said power supply and to said first and second heaters such that said first and second heaters cannot be activated simultaneously.” Petitioner cites Forman for disclosing a sequencing means that alternates the providing of current to two electric



storage heaters. Ex. 1008, 3:35–36, 6:56–59. Independent claim 1 recites also “a relay means electrically interconnected between said first and second heaters and said power supply, said relay means for deactivating one of said first and second heaters when the other of said first and second heaters is activated.” Petitioner asserts the following concerning the recited “relay means”:

Additionally, Forman teaches a plurality of solid state relays for deactivating one of the first and second heaters when the other is activated. The solid state relays described by Forman comprise a “triac,” a “gate,” and a “pulse processing circuit” associated with each load. Ex. 1008 at 5:27-35; Kelley Dec. ¶¶ 185-86. Forman discloses that the solid state relays deactivate one of the first and second heaters when the other is activated. Ex. 1008 at 6:51-60; Kelley Dec. ¶¶ 185-86. Forman thus discloses a relay means (which is simply “one or more signal actuated switching devices”) for deactivating one of a first and second heaters when the other of the first and second heaters is activated.

Forman further discloses that a relay means energizes one of the heaters as the other is de-energized, and that one heater may be switched to an activated state as another is deactivated. Specifically, Forman discloses a relay means comprising a plurality of triacs, wherein the triacs switches (or energizes) one of a first [L1] and second [L2] heaters to an activated state as the other of the heaters is deactivated (or de-energized). Kelley Dec. ¶ 188. A triac is one type of solid-state relay. Kelley Dec. ¶¶ 57-63. As described by Forman, “inputs from the lines t1 and t2 are applied to the associated two of the gates M1-M4 so that the gates are strobed alternately, each for half the time.” *Id.* at 6:51-60. In this manner, L1 or L2 is switched to an activated state (energized) as the other of L1 or L2 is deactivated (de-energized). Thus, Forman discloses the claimed “relay means.” Kelley Dec. ¶¶ 187-88.

Pet. 24–25. Petitioner sets forth similar analyses for claims 2–18. Citing the Kelley Declaration, Petitioner provides several rationales for combining the aforementioned disclosures of Witherspoon and Forman on pages 54–55 of the Petition.

Patent Owner sets forth the same arguments for this ground of unpatentability, as was set forth above for the ground of unpatentability based on the 3M Guide and Forman, except that Witherspoon is substituted for the 3M Guide. Our analysis is the same as set forth previously, and thus need not be repeated here.

3. *Reasonable Likelihood of Prevailing on Asserted Ground*

For the foregoing reasons, we conclude, on this record, that there is a reasonable likelihood that Petitioner would prevail on the ground that claims 1–18 are unpatentable over a combination of Witherspoon and Forman.

D. *Conclusion*

On this record, we are persuaded that there is a reasonable likelihood that Petitioner would prevail in showing that claims 1–18 of the '268 patent are unpatentable. The Board has not made a final determination concerning patentability of any of the challenged claims.

III. ORDERS

After due consideration of the record before us, and for the foregoing reasons, it is:

ORDERED that pursuant to 35 U.S.C. § 314, an *inter partes* review is hereby instituted as to claims 1–18 of the '268 patent on the following grounds of unpatentability:

A. Claims 1–18 under 35 U.S.C. § 103(a) as unpatentable over the 3M Guide and Forman;

B. Claims 1, 2, 6, 7, 12, 13, and 16 under 35 U.S.C. § 103(a) as unpatentable over the TCM II Manual and Berger;

C. Claims 3, 5, 8–11, 14, 17, and 18 under 35 U.S.C. § 103(a) as unpatentable over the TCM II Manual, Berger, and Seitz; and

D. Claims 1–18 under 35 U.S.C. § 103(a) as unpatentable over Witherspoon and Forman; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(a), *inter partes* review of the '268 patent is hereby instituted commencing on the entry date of this Order, and pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial.

IPR2015-00263  
Patent 6,423,268 B1

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