

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

WANGS ALLIANCE CORPORATION d/b/a WAC LIGHTING CO.,  
Petitioner,

v.

KONINKLIJKE PHILIPS N.V.,  
Patent Owner.

---

Case IPR2015-01289  
Patent 6,147,458

---

Before GLENN J. PERRY, TREVOR M. JEFFERSON, and  
MIRIAM L. QUINN, *Administrative Patent Judges*.

QUINN, *Administrative Patent Judge*.

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

Wangs Alliance Corporation (“Petitioner”) filed a Petition to institute *inter partes* review of claims 1, 15, and 21 of U.S. Patent No. 6,147,458 (“the ’458 patent”) pursuant to 35 U.S.C. § 311–319. Paper 2 (“Pet.”). Koninklijke Philips N.V. (“Patent Owner”) timely filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). We have jurisdiction under 35 U.S.C. § 314.

For the reasons that follow, we *deny* the Petition.

## I. BACKGROUND

### A. RELATED MATTERS

Petitioner states that the patent-at-issue is the subject matter of a district court case filed in the U.S. District Court for the District of Massachusetts (Case No. 14-cv-12298-DJC). Pet. 1.

### B. ASSERTED GROUNDS

Petitioner contends that claims 1, 15, and 21 (“the challenged claims”) are unpatentable under 35 U.S.C. § 102 and § 103 based on the following specific grounds:

Reference[s]	Basis	Claims Challenged
Perry <sup>1</sup>	§ 102	1, 15, and 21
Hochstein <sup>2</sup> and Perry	§ 103	1, 15, and 21

---

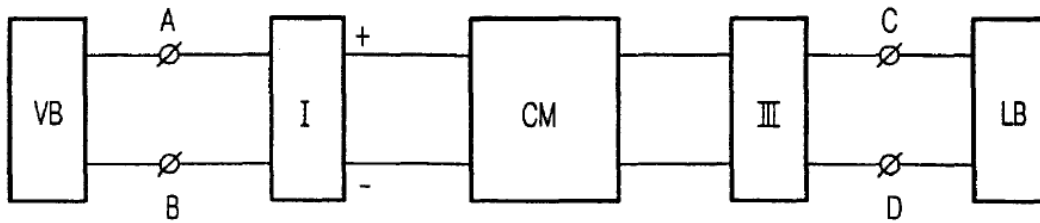
<sup>1</sup> U.S. Patent No. 6,150,771 (Exhibit 1003) (“Perry”).

<sup>2</sup> U.S. Patent No. 5,661,645 (Exhibit 1004) (“Hochstein”).

C. THE '458 PATENT (EX. 1001)

The '458 patent is directed to a circuit arrangement for operating a semiconductor light source. Ex. 1001, 1:5–7. The '458 patent describes that a solid-state relay, in existing signaling systems, conducts “leakage current” in a non-conducting state of the relay. *Id.* at 1:33–38. The '458 patent provides for the “means CM” to prevent such leakage current and for the voltage at the connection terminals to remain below a certain level. *Id.* at 1:40–46.

Figure 1 of the '458 patent, reproduced below, illustrates the control unit VB and semiconductor light source LB.



**FIG. 1**

Figure 1 depicts connection terminals A and B, input filter means I, “means CM,” converter III, and output terminals C and D. *Id.* at 3:49–57. Figure 2, reproduced below shows deactivating means IV, which deactivate the “means CM.” *Id.* at 4:9–11.

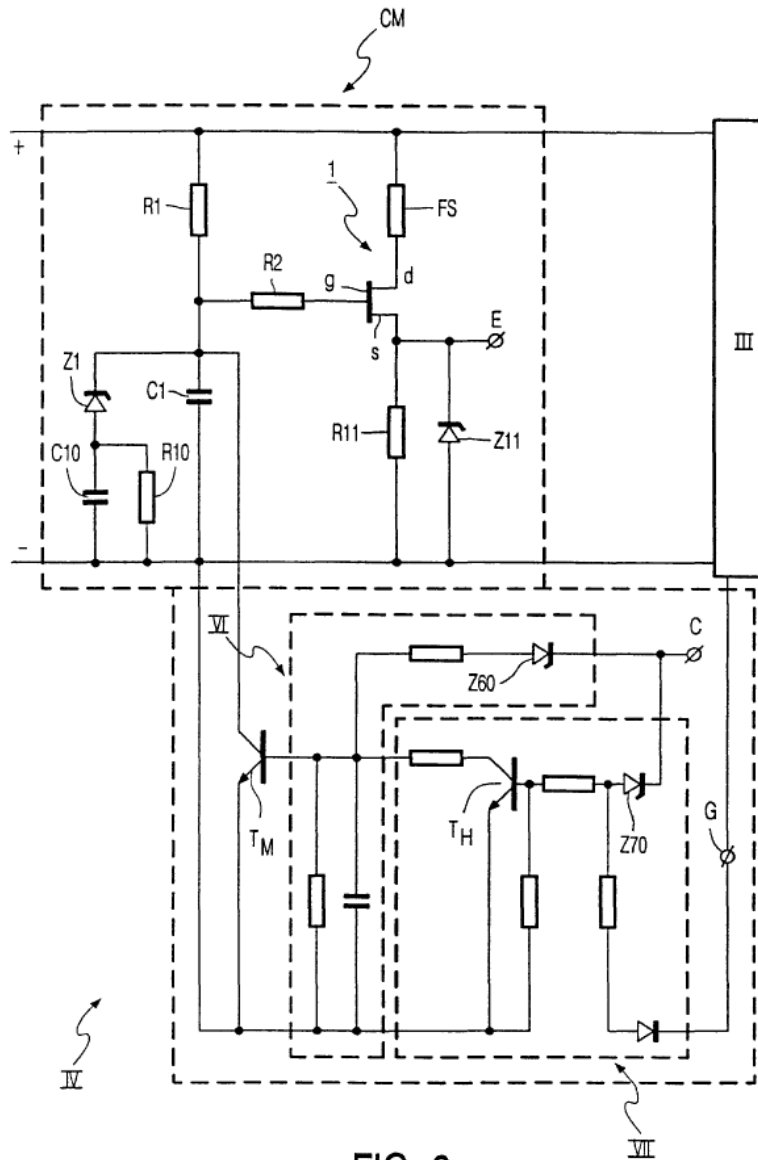


FIG. 2

According to the embodiment depicted in Figure 2, above, detection means VI (comprising zener diode Z60) detects a minimum voltage so that, if the voltage at the output terminal C is higher than the minimum voltage, switch  $T_M$  is ON and generates a control signal that deactivates the means CM by rendering the controlled semiconductor element 1 non-conductive. *Id.* at 4:18–25; 43–53. As long as the converter III and the semiconductor light source LB function correctly, the voltage at terminal C will be above

the minimum voltage and below the maximum voltage. *Id.* at 4:60–63. The zener voltage of zener diode Z70 is chosen to be equal to the maximum voltage, to detect when the voltage of output terminal C stays is equal to the maximum voltage. *Id.* at 5:1–16.

#### D. ILLUSTRATIVE CLAIMS

Challenged claims 1 and 15 are independent. Claim 1 is illustrative and is reproduced below:

1. A circuit arrangement for operating a semiconductor light source comprising:

connection terminals for connecting a control unit,  
input filter means,

a converter having a control circuit,

output terminals for connecting the semiconductor light  
source,

means CM for removing a leakage current occurring in the  
control unit in the non-conducting state, which means  
include a controlled semiconductor element, and

self-regulating deactivating means for deactivating the  
means CM, wherein the circuit arrangement is provided with  
detection means for detecting an incorrect functioning of the  
converter or of the semiconductor light source connected  
thereto.

## II. ANALYSIS

### A. CLAIM INTERPRETATION

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). We presume that claim terms have their ordinary and customary meaning. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007) (“The ordinary and customary meaning is the meaning that the term would have to a person of ordinary skill in the art in question.”).

Petitioner and Patent Owner have proposed constructions for various terms. *See* Pet. 3–11; Prelim. Resp. 11–21. We do not need to construe every term proposed by the parties if the construction is not helpful in our determination of whether to institute trial. Our discussion of “detection means” follows.

*“detection means”*

The term “detection means” is recited in the independent claims as follows:

Claim 1: detection means for detecting an incorrect functioning of the converter or of the semiconductor light source connected thereto[;]

Claim 15: detection means for detecting a defective converter or semiconductor light source connected thereto.

Both parties agree that the “detection means” terms are drafted in means-plus-function format. Both parties also agree that the recited function is “detecting an incorrect functioning of the converter or of the semiconductor light source connected thereto” (claim 1) and “detecting a defective converter or semiconductor light source connected thereto” (claim 15). The parties, however, disagree on whether the structure should refer to a Zener diode, or a Zener diode Z60 or Zener diode Z70, specifically. *See*

Prelim. Resp. 19 (“Philips disagrees with [Petitioner’s] construction insofar as it requires a generic zener diode.”).

We agree with the parties that the “detection means” is a Zener diode that performs the recited function. But we do not agree, at this time, that the diode must be the Z60 or Z70 diode, arranged as indicted in the drawings of the ’458 patent. Nor do we find that the Zener diode must be arranged to detect minimum and maximum voltages, because the recited function specifically defines the function of the Zener diode and its equivalents. *See* 35 U.S.C. § 112, ¶ 6 (the structure of a means-plus-function term is construed to “cover the corresponding structure . . . described in the specification *and equivalents thereof*”) (emphasis added). Therefore, we construe the “detection means” as a Zener diode that performs the recited function, according to the claim language of the appropriate claim.

*1. Other Claim Terms*

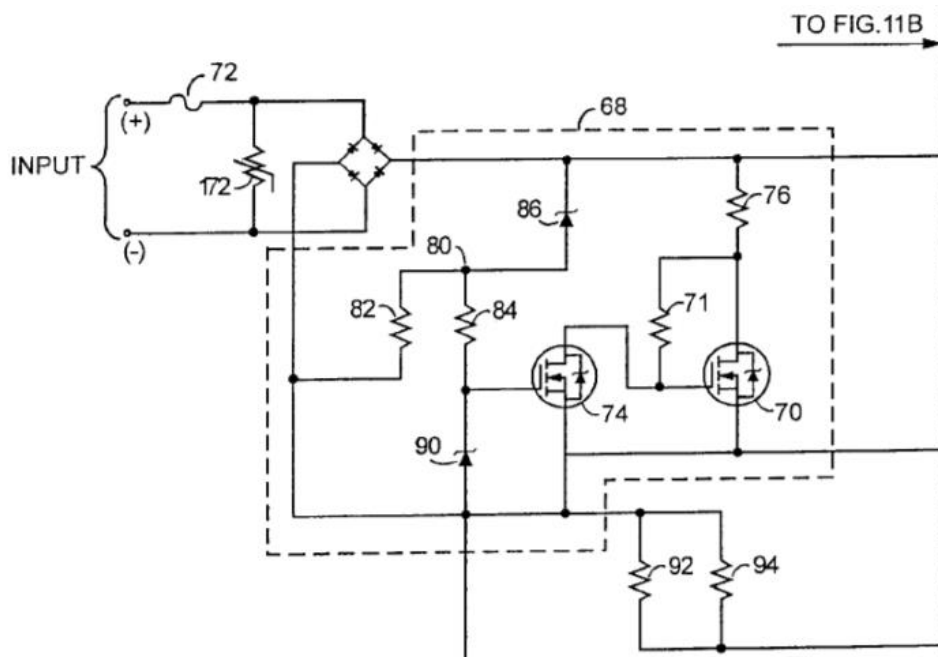
Petitioner has proposed a construction for other terms, including “input filter means,” “input filter,” and “leakage current.” Pet. 4–8. Patent Owner proposes a construction for the “input filter” terms, and contends that construction of additional terms is not needed to resolve the dispute. Prelim. Resp. 12–18, 20–21. Because we have construed the terms relevant to the controversy, no express constructions for other claim terms are necessary at this time.

**B. ANTICIPATION BY PERRY**

Petitioner asserts one ground of anticipation by Perry.

*1. Overview of Perry (Ex. 1003)*

Perry is directed to a circuit for interfacing between a conventional traffic signal's control monitor and a plurality of LEDs. Ex. 1003 at abstract. Perry's circuit includes a power factor corrected current source for driving the LEDs. *Id.* at 2:55–56. It also includes a circuit that short circuits incoming current that is below a certain value, indicating signal light turn off, and that opens up when the incoming current exceeds this value, indicating signal light turn on. *Id.* at 2:54–67, 7:58–59. Figure 11A, shown below, illustrates switching circuit 68.



As shown in Figure 11A above, Perry addresses voltage surges on the input line by providing line fuse 72 and metal oxide varistor (MOV) 172. *See id.* at 9:61–63, Fig. 11A.

## 2. Discussion

Petitioner describes in detail its contention of how Perry discloses all the limitation of the challenged claims. Pet. 17–30. The disclosure of the “detection means” is particularly relevant to our determination. Perry describes failure circuit 70, which senses “the drop in output current due to



the LED signal failure.” Ex. 1003, 7:48–50. “If the output current drops by at least 50% for several seconds, the failure circuit 70 shorts a fuse 72.” *Id.* at 7:50–51. Petitioner identifies the failure circuit 70 as the detection means. Pet. 28 (“Figure 11B discloses a detection means (failure circuit 70), which detects whether semiconductor light source (LED load 36) fails.”).

Petitioner provides, as further support for its contention, the Declaration of Dr. Tingler, particularly citing to paragraphs 87–89. *Id.* at 28. In paragraph 87, Dr. Tingler states that, with regard to the “detection means,” the corresponding structure is a transistor and a Zener diode.” Ex. 1005 ¶ 87. Paragraphs 87–89 of Dr. Tingler’s Declaration are reproduced *verbatim* in the Petition, and, therefore, repeat that Perry’s failure circuit 70 discloses the “detection means.”

Patent Owner challenges Petitioner’s assertion that failure circuit 70 discloses the recited “detection means,” because failure circuit 70 does not contain a Zener diode. We agree with Patent Owner that Petitioner has failed to meet its burden for two reasons.

First, the Petition did not show how the construed claim (as presented in the Petition) renders unpatentable the challenged claims in view of the prior art. *See* 37 C.F.R. § 42.104 (b)(4). Although the Petitioner proposed a Zener diode as the structure corresponding to the “detection means,” it presented an analysis of the prior art relying on a different position, i.e., that a transistor and a Zener diode are the corresponding structure of the “detection means.” Petitioner does not explain these different positions or how the applied construction of “a transistor and a Zener diode” is supported by the specification.

Second, Petitioner failed to show that a Zener diode (or its equivalent) performs the recited function. We agree with Patent Owner that failure circuit 70 does not contain a Zener diode. Prelim. Resp. 28. We also find that Petitioner did not explain how failure circuit 70 is an equivalent to a Zener diode. Neither the Petition nor the cited passages of the Dr. Tingler's Declaration allude to a Zener diode or its equivalent in describing the contention that Perry discloses the "detection means" limitation.

Accordingly, we determine that Petitioner has failed to show a reasonable likelihood of prevailing in its contention that the challenged claims are unpatentable as anticipated by Perry.

#### C. OBVIOUSNESS GROUNDS BASED ON HOCHSTEIN AND PERRY

Petitioner asserts one ground predicated on the combination of Hochstein and Perry.

##### *1. Overview of Hochstein (Ex. 1004)*

Hochstein relates to a power supply for operating light emitting diode ("LED") array traffic signals. Ex. 1004, 1:5–8. The Hochstein apparatus provides a boost, buck/boost or buck, switch-mode converter to a power line operated LED signal. *Id.* at 3:34–36. It also includes an adaptive clamp circuit connected to the rectifier input for preventing leakage current problems. *Id.* at 3:41–43. One embodiment of the Hochstein apparatus is depicted in Figure 5, reproduced below.

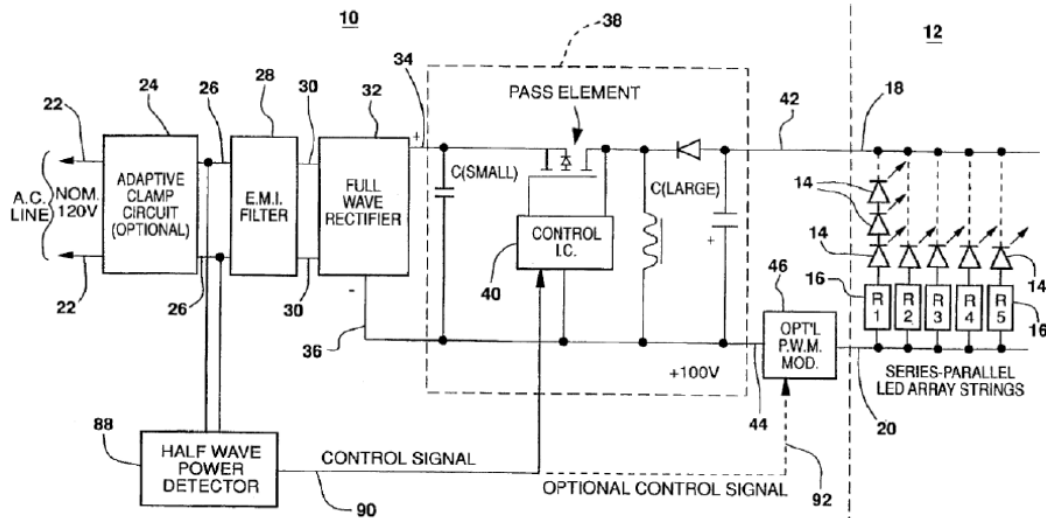


Figure 5 depicts regulated voltage, switch-mode power supply 10 with a pair of input lines 22 and an optional adaptive clamp circuit 24. *Id.* at 5:11–15. The output of adaptive clamp circuit 24 is connected to an input of an electromagnetic interference (“E.M.I.”) filter 28, which prevents conducted interference from feeding back into the power lines. *Id.* at 5:31–35. Lines 34 and 36 connect to an input of a power factor correction, buck/boost converter 38, which includes a power factor correction (“P.F.C.”) integrated circuit controller 40. *Id.* at 41–45. The output voltage of PFC switch-mode converter 38 is fed directly to LED array 12, or alternatively through pulse width modulated (“P.W.M.”) modulator 46. *Id.* at 5:66–6:1.

## 2. Discussion

Petitioner contends that Hochstein teaches most of the limitations of claims 1, 15, and 21. Pet. 17–35. Petitioner relies exclusively on Perry, however, as disclosing the “detection means.” Pet. 43–45. The Petition cites for support the Declaration of Dr. Tingler. *Id.* (citing Ex. 1005, ¶¶ 119–121). Petitioner’s position with regard to the obviousness ground is the same as its anticipation contention that Perry discloses the “detection

means.” Further, the Dr. Tingler Declaration passages relied upon for the “detection means” in the obviousness ground repeat the same analysis provided for the anticipation ground. Patent Owner has persuaded us that Petitioner’s obviousness contention relies on the same evidence of “detection means” proffered with respect to the anticipation ground. We determined above that Petitioner did not show that Perry discloses a “detection means.” Further, we find that Petitioner has not shown that Perry teaches or suggests the “detection means,” as we have construed the term. Consequently, we determine that Petitioner has failed to show a reasonable likelihood that it will prevail in its contention that the challenged claims are unpatentable as obvious over the combination of Hochstein and Perry.

### III. CONCLUSION

We *deny* this Petition because Petitioner has failed to show a reasonable likelihood of prevailing in its contention that the challenged claims are unpatentable over the asserted grounds. Therefore, we do not institute *inter partes* review of the ’458 patent.

### IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that the Petition is *denied* and no trial is instituted.

IPR2015-01289  
Patent 6,147,458

PETITIONER:

David Radulescu (Lead Counsel)  
Angela Chao (Back-up Counsel)  
[david@radulesculp.com](mailto:david@radulesculp.com)  
[angela@radulesculp.com](mailto:angela@radulesculp.com)

PATENT OWNER:

Denise DeFranco (Lead Counsel)  
Brandon Rash (Back-up Counsel)  
[denise.defranco@finnegan.com](mailto:denise.defranco@finnegan.com)  
[Brandon.rash@finnegan.com](mailto:Brandon.rash@finnegan.com)