UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner,

v.

VALTRUS INNOVATIONS LIMITED,
Patent Owner.

Case IPR2025-01157
Patent No. 7,939,967

PRELIMINARY PATENT OWNER RESPONSE

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I. Introduction[1]

The inventors of ’967 patent recognized shortcomings of prior art systems, for example, that “[i]n, a typical scenario, each operating power supply bears an approximately equal share of the load. However, such a balanced load sharing approach often results in each power supply operating with less than optimum efficiency.” EX1001, 1:7-10. The inventors further recognized a solution in the form of an apparatus and system which includes two power supplies in which “a first power supply [that is] coupled to an electrical load and a first source of electrical energy … is configured to issue an alert signal indicative of a failure condition of the first source of electrical energy,” and where a “second power supply is configured to transition from a lesser output level to a greater output level in response to an activation signal.” *Id*., 1:43-51.

In other words, rather than “each operating power supply bear[ing] an approximately equal share of the load” and thus “operating with less than optimum efficiency” as in prior art systems with redundant power supplies, *id*. at 1:5-12, the second power supply of the ’967 patent begins operation at “a lesser output level” than the first power supply, and then transitions to a “greater output level” than the first power supply only after the first power supply sends “an alert signal indicative

[1] All annotations and emphases are added unless otherwise noted.

of a failure condition of the first source of electrical energy." *Id.*, 1:43-51. Thus, unlike known prior art systems, the '967 Patent "allows for each of the power supplies to operate at or near optimum efficiency while providing for the electrical demands of the load being served." *Id.* at 4:9-12.

The Petition relies on some of the very same flawed prior art systems which the inventors of the '967 patent sought to improve upon, using Dr. Baker's opinions to fill in missing limitations. For example, Zak (Ground 1) discloses a "***conventional*** off-the-shelf switch power supply (SPS)" to which a backup power supply 12 powered by rechargeable batteries 25-26 is coupled. *See e.g.*, EX1005, 4:60-62 and FIG. 1 (annotated) below.

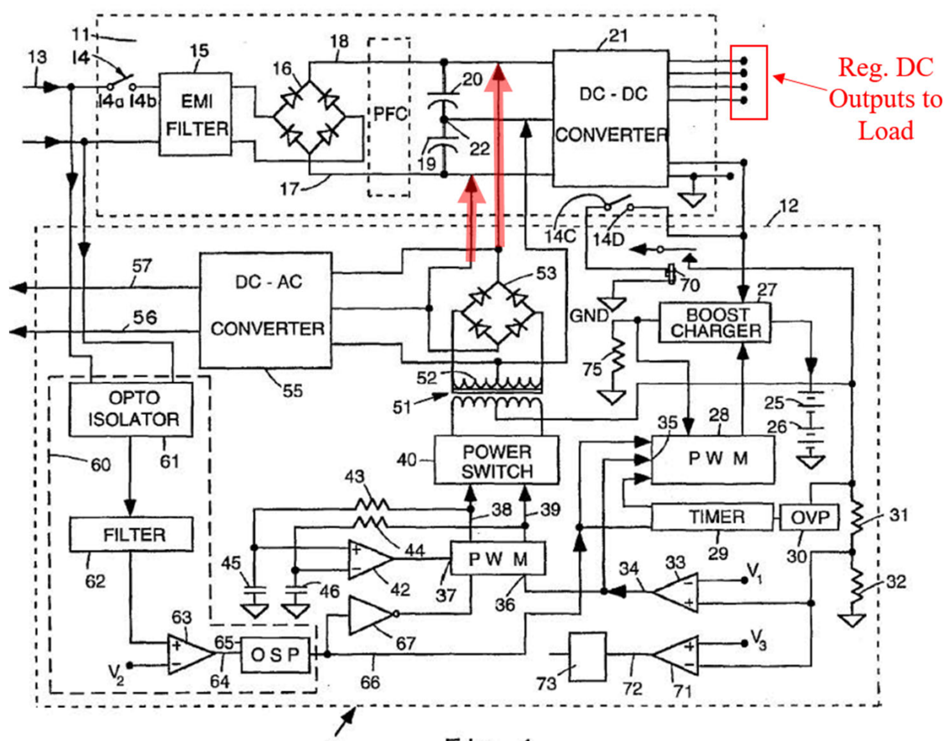
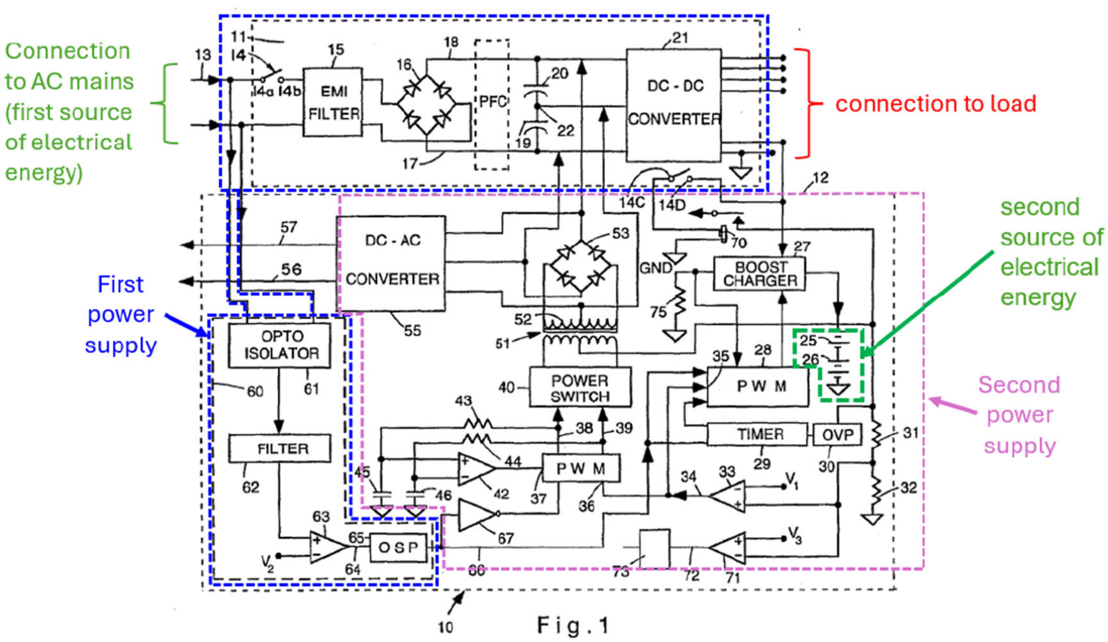


Fig. 1

As shown above, "backup power supply 12" provides voltages to high voltage lines 17 and 18 at a point ***upstream*** to the DC-DC converter 21 when AC power is lost. Meanwhile, electrical loads receive their power via the ***output*** of DC-DC converter 21 located in the SPS 11, regardless whether the AC main 13 or the rechargeable batteries 25-26 serve as the power source. This is the case even under Petitioner's mapping. Petitioner maps the claimed "first power supply" to the SPS 11 plus the detector circuit 60 that is located in the backup power supply 12 (Petitioner's blue-dashed boxes below), and maps the claimed "second power supply" to the backup power supply 12 less the rechargeable batteries 25-26 and the detector circuit 60 (pink-dashed box below). The output pins to the electrical load are annotated by Petitioner in red below (bracket plus text).



Pet., 11 (annotated by Petitioner).

But under that mapping, neither Petitioner nor Dr. Baker explain why the second power supply is “coupled to” the same electrical load (pins annotated in red) as the first power supply, as required by the claims. Nor do they explain why the second power supply ever supplies power at a “greater output level” than the first power supply since the electric load always receives power at the output of the DC-DC converter 21 located in the first power supply (SPS) 11. *See infra*, Section II.B.

Petitioner’s anticipation theory based on Zak fails for a second reason. Namely, Petitioner’s theory requires a modification to Zak’s design in an attempt to address the “alert signal” limitations. *See infra*, Section II.A. Specifically, Petitioner and Dr. Baker chose not to rely on Zak’s express disclosure of the switched power supply 11 and the backup power supply 12 as being the “first power supply” and the “second power supply” respectively. Instead, they deviate from that express disclosure by moving the detection circuit 60 out of the backup power supply 12 for inclusion in the alleged “first power supply” so that the alleged first power supply could issue an “alert signal” as required by the claims. But anticipation requires the reference to disclose all elements within four corners of the reference as arranged in the claims, and not through rearrangement.

Susong (Ground 2) is directed to a Power-over-Ethernet (PoE) architecture in which powering units periodically test their respective backup batteries. *First*, the Petition has not shown that Susong discloses a “second power supply” coupled to the same load as a "first power supply" because any inactive power supply unit is configured to be isolated from the electrical loads (*infra*, Section III.A). *Second*, the Petition has not shown that Susong's "failover operation," which is relied on for the limitations relating to issuing alert signals and transitioning output levels, would be performed at all under the Petitioner's mapping (*infra*, Section III.B). And with respect to claim 2, the Petition relies on Dr. Baker's opinions about the desirability of addressing alleged power interruptions (Pet., 33), which Susong neither discloses nor suggests exist (*infra*, Section III.C).

Chang (Ground 4) fares no better. Chang places multiple "independent power sources in parallel connection to get larger output power," which means those power sources are performing sub-optimally and represent the type of architecture which the '967 patent seeks to avoid. *See* EX1008, [0010], [0046], [0053], Claim 1; *compare* EX1001, 1:7-10. As a result, Petitioner resorts to re-characterizing various components in Chang as separate "power supplies," supported solely by Dr. Baker's unsupported testimony (*infra* Section V). In addition to not establishing that Chang discloses the recited "first power supply" and "second power supply," Petitioner has also not shown that Chang captures the inventive concept of transitioning a second power supply from a lesser output level to a greater output level in response to an activation signal (*infra* Section VII). This is because the output level of a power supply in Chang depends on whether the power source switching module 104, which is not part of any power supply under Petitioner's mapping, connects the power supply to a load. *See id.* The power source switching module 104, however, does ***not*** operate in response to the alleged activation signal that controls the operation of the control switch 107 (green signal line below); rather it operates in response to a different signal output by module 103 (red signal line below).

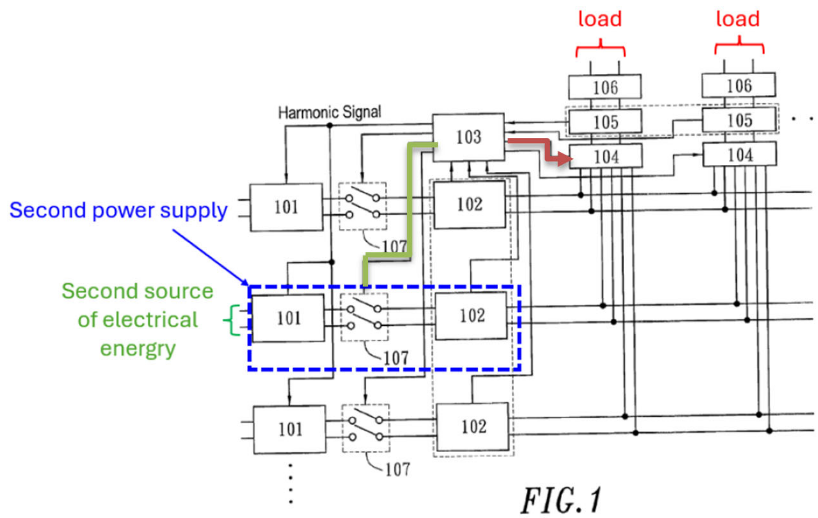


FIG.1

Pet., 56 (annotation by Petitioner, except for added green and red signal lines).

For these and additional reasons below, the Petitioner has failed to establish a likelihood of prevailing with respect to any claim of the '967 patent, and therefore institution should be denied on the merits.

II. Ground 1: Zak Does Not Anticipate Claims 1-3, 8, and 14-15

A. Petitioner's Anticipation Theory Requires Modifying Zak's Design and Therefore Fails as a Matter of Law.

Despite being presented as an anticipation challenge, Ground 1 deviates from Zak's express disclosure of the circuitry comprising a "***conventional*** off-the-shelf switch power supply (SPS) 11 operating in conjunction with a backup power supply 12." EX1005, 4:58-62. Specifically, the Petition rearranges Zak's components by slicing up the circuitry of UPS 10 in an entirely different manner than what is disclosed in order to arrive at a "first power supply" and "second power supply" which allegedly satisfy the additional limitations of claim 1. *See* below (alleged "first power supply" outlined in blue-dashed boxes and the alleged "second power supply" outlined in a pink-dashed box).

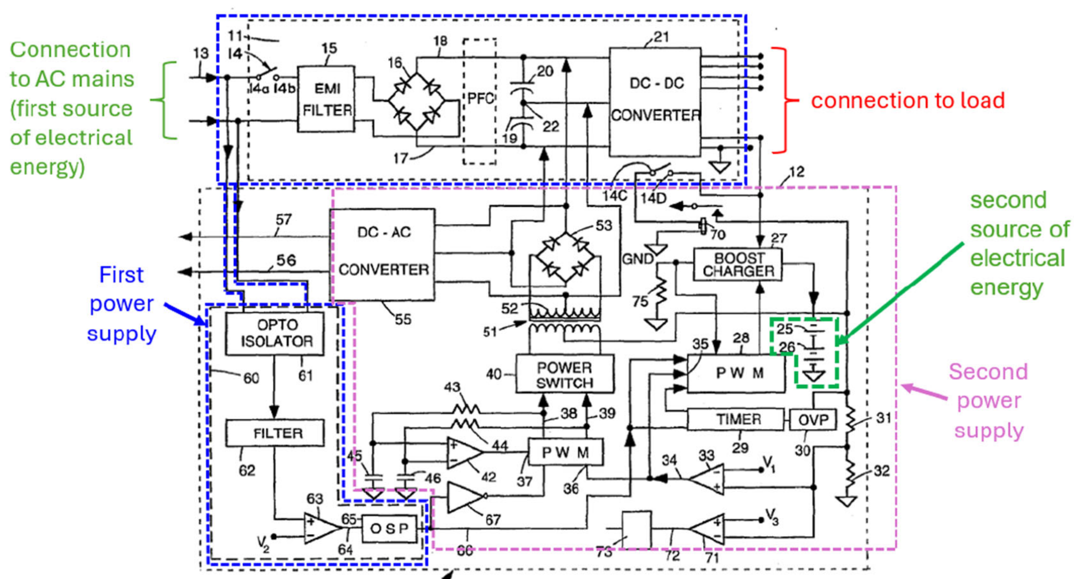
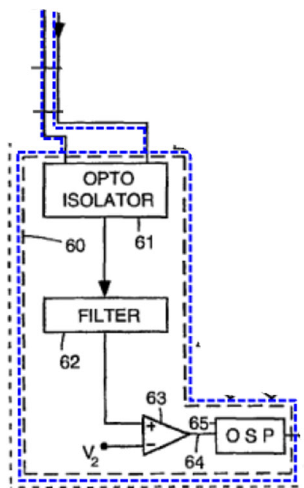


Fig. 1

Pet., 11 (annotated by Petitioner).

Thus, Petitioner's anticipation theory deviates from Zak's express disclosure, which nowhere teaches or suggests that the circuitry in the blue-dashed boxes above is a power supply or that the circuitry in the pink-dashed box is a power supply. In fact, Petitioner's theory requires modifying Zak by removing the subset of components that comprises Zak's detection circuit 60 from Zak's backup power supply 12 and adding them to Zak's conventional switch power supply 11:



(Zak's Detection Circuit 60)

Petitioner makes this modification because the claims require the recited "first power supply [be] configured to issue an alert signal indicative of a failure condition of the first source of electrical energy" with the "first source of electrical energy" being "coupled" to the first power source. EX1001, 6:19-22. That is, ***the claims require the alert signal to be issued by the same power supply to which the failing energy source is coupled***. But, if the detection circuit 60 remained inside the backup power supply 12, as Zak discloses, so that the alleged "second power supply" was the as-disclosed backup power supply 12, then any alleged alert signal would be emitted by the detection circuit in the "second power supply," not by the "first power supply" as required by the claims. That is why Petitioner had to rearrange the as-disclosed power supplies.

Similarly, Petitioner could not simply reverse the labels and rely on Zak's backup power supply 12 as the "first power supply" and the SPS 11 as the "second power supply." This is because Zak's detector circuit 60 (in the backup power supply 12) monitors and detects only a loss of main AC power (which is fed to the SPS 11), and not any loss of battery power. EX1005, 3:66-67, 5:66-6:7, 7:8-28. In other words, although in this reverse labeling, the alleged "first power supply" (now backup power supply 12) would be issuing an alleged alert signal via the detector circuit 60, that alleged alert signal would not be indicative of a failure condition of the energy source (battery) to which such "first power supply" is coupled. Thus, because the claims require the alert signal be issued by the *same* power supply to which the failing energy source is coupled, neither Zak's SPS 11 nor backup power supply 12 can satisfy the limitations of the claimed "first power supply."

A deviation from the as-defined power supply circuitry in Zak is therefore necessary. Petitioner acknowledges that it is modifying Zak, but attempts to sidestep the issue by contending that "[a]lthough Zak refers to different collections of components as 'power supplies' (*e.g.* all of Fig. 1 and boxes 11 and 12 in Fig. 1), the salient question is whether the components identified by Petitioner meet the claimed 'first power supply.'" Pet., 13. However, anticipation requires Zak disclose all of the elements of the claim "***arranged or combined in the same way as in the claim***." *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1370 (Fed. Cir. 2008).

Here, as explained above, neither the SPS 11 nor backup up power supply 12 from Zak meet the limitations of at least the "first power supply." Therefore, the Petition must resort to moving components around from one expressly identified power supply to another. But that is not anticipation because the mapping requires redefining Zak's power supplies from what is expressly disclosed. *In re Arkley*, 59 C.C.P.A. 804, 455 F.2d 586, 587 (1972) ("[T]he [prior art] reference must clearly and unequivocally disclose the claimed [invention] or direct those skilled in the art to the [invention] without any need for picking, choosing, and combining various disclosures not directly related to each other by the teachings of the cited reference."). In other words, anticipation is not established when Petitioner re-draws boxes around disclosed components, and then characterizes that new collection of components in a way that deviates from the express disclosure of the reference.

The case Petitioner cites says no different. *See* Pet., 13. In *ADASA*, the issue was whether the prior art's express disclosure of certain types of data—e.g., ''RFID Printer Data" that includes a "unique carton identifier"—could have been found to read on the claimed data structures ("MSBs" and "object class information") by a reasonable juror. *Adasa Inc. v. Avery Dennison Corp.*, 55 F.4th 900, 912 (Fed. Cir. 2022). But, unlike Petitioner's theory here, the theory of anticipation in *ADASA* was based on the prior art's ***express*** disclosure of specific data structures, albeit in different terms than those used by the claims. *See id*. at 912 ("In one embodiment, the carton serial number is the combination of a 'predetermined number,' for example the Julian calendar date, a 'production line number' consisting of the workstation ID and line number, and a trailing 'least significant portion' selected from a range of serial numbers determined by the system operator."). That is, there was no mixing and matching of different aspects of the prior art's disclosure in *ADASA*, as Petitioner does here. *ADASA* merely says that "the reference need not disclose the elements in the very same terms used by the patent," but it is still the case for anticipation that in the prior art "those elements must be arranged or combined in the same way as in the claim," as *ADASA* confirmed. *Id*. at 910. Zak's express disclosure fails to meet that standard.

Because the Petition rejects Zak's express disclosure of what components comprise a "power supply," and instead rearranges Zak's components, the Petition is forced to rely entirely on Dr. Baker's unsupported testimony that "the first power supply that meets the claims is what Zak calls the main power supply with an additional detector circuit …." EX1002, ¶40 (cited at Pet., 12-13). However, "a petitioner asserting anticipation cannot rely on its expert to supply disclosure of a claim element that is not expressly or inherently present in the reference." Patent Trial and Appeal Board Consolidated Trial Practice Guide, November 2019 ("CTPG"), at 36. Importantly, neither Dr. Baker's testimony nor the alleged POSITA's knowledge qualify as a patent or printed publication that can form the basis of a petition.

Moreover, Dr. Baker's statement above is telling as it expressly acknowledges that the circuitry Dr. Baker is relying on for the "first power supply" is not, in fact, what Zak calls a "power supply" at all, but is instead a collection of circuitry curated from different parts of Zak's UPS 10 designed for the sole purposes of reverse engineering the claimed invention. EX1002, ¶40 (cited at Pet., 12-13) (quoted on page 12 above). And, instead of identifying independent reasoning as to why the selected circuitry could be collectively understood to be a power supply, Dr. Baker cites only to the '967 patent itself, which says nothing about Zak's arrangement. EX1002, ¶40.

Notably, neither the Petition nor Dr. Baker propose an obviousness theory for rearranging Zak's components, or otherwise explain why the detector circuit 60 is characterized as part of the alleged "first power supply" instead of the alleged "second power supply." In fact, Petitioner's rearrangement of Zak's circuitry is particularly violative because Zak specifically and intentionally seeks to utilize a "conventional main power supply … ***without any modification whatsoever***." EX1005, 4:23-26. Zak disparages prior art solutions (Lavin) that require "the expense of necessitating that either the main power supply and the auxiliary power supply are designed as an integral unit or, alternatively, that the main power supply be modified in order to allow effective connection thereto of the auxiliary power supply." *Id*., 1:55-61, 2:11-19. Zak seeks to capitalize on the low cost of conventional power supplies (e.g., $8.00) and avoid any redesign which could "increase the manufacturing cost of the main power supply by a factor of approximately 10." *Id*., 3:1-8. Thus, Zak expressly *teaches away* from any modification of its conventional SPS 11, which is fundamentally what Petitioner seeks to achieve by re-characterizing Zak's backup detector circuit 11 as being part of the conventional SPS 11 (which is ***not*** to be modified, per Zak).

Because Zak does not disclose the claimed invention of the '967 patent "arranged or combined in the same way as in the claim," as required for anticipation, and because Petitioner does not propose a proper obviousness theory for rearranging Zak's components—nor could it because of Zak's express teaching away—Ground 1 fails as a matter of law.

B. Petitioner Fails to Establish That Zak, Even as Modified, Discloses the Arrangement Claimed by the '967 Patent

Claim 1 of the '967 patent recites, in pertinent part, "a ***first power supply coupled to an electrical load*** and a first source of electrical energy" and separately recites a "a ***second power supply coupled to <u>the</u> electrical load*** and a second source of electrical energy." Additionally, claim 1 recites "the second power supply [is] configured to transition from a lesser output level to a greater output level in response to an activation signal," where the "lesser" and "greater" output level is in comparison to the output level of the first power supply.

Zak discloses "an uninterruptible power supply (UPS) designed generally as 10." EX1005, 4:58-60. As Zak states, the UPS 10 comprises "a conventional off-the-shelf switch power supply (SPS) 11 operating in conjunction with a backup power supply 12." *Id*., 4:60-62. Under the Summary of Invention, Zak discloses that "an object of the invention [is] to provide an uninterruptible power supply which allows for connection of an auxiliary, backup DC power source to a conventional off-the-shelf main power supply … such as are used in computers, for example …." *Id*., 3:45-52; *see also id*., 5:14-17.

As shown below, the SPS 11 includes a "DC to DC converter 21 [that] converts the high voltage DC level at its input to a plurality of regulated ("Reg.")

DC output levels according to the specific requirements of the manufacturer of the SPS." EX1005, 5:9-14.

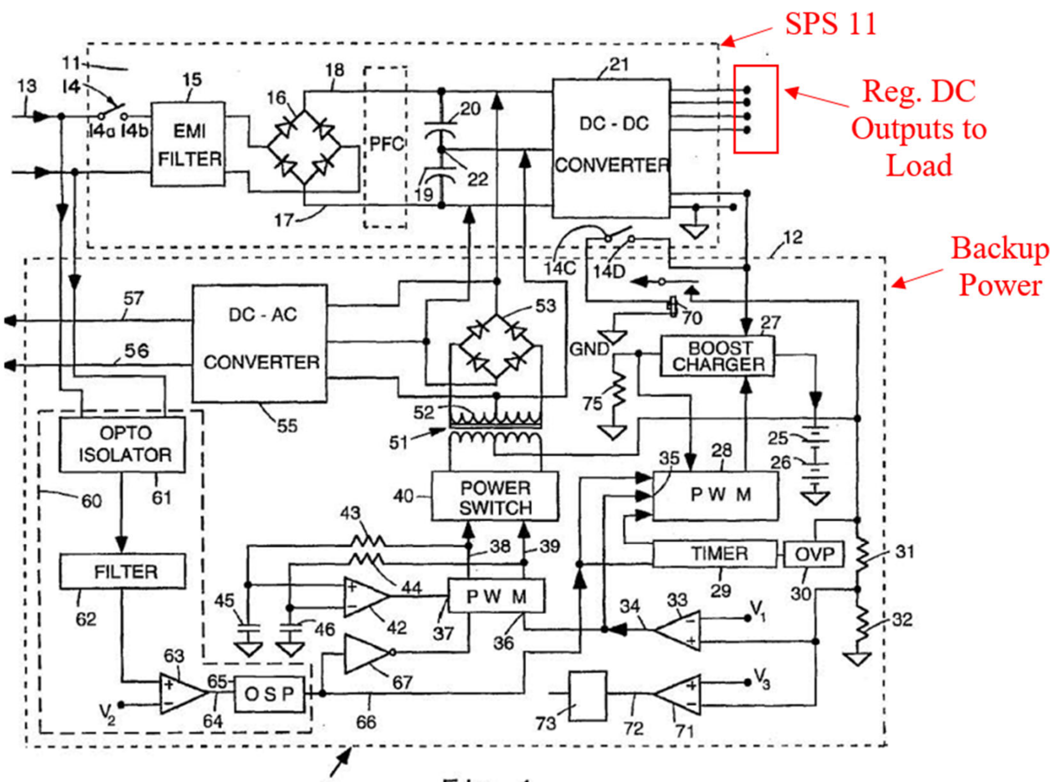


Fig. 1

Thus, as Zak explains, "when the SPS is employed as the main power supply in a personal computer, the DC output levels include at least a 12 volt DC level and a 5 volt DC level for powering the computer's electronics." *Id.* at 5:14-17. In addition, "[t]he backup power supply 12 comprises a pair of series-connected 12 volt batteries 25 and 26 which are maintained in a fully charged state, for so long as AC power is supplied to the main AC power line, by means of a boost charger 27 connected to the 12 volt output of the DC to DC converter 21 in the SPS 11." *Id.* at 5:25-30.

However, a failure in the main AC supply power results in "the 24 volt output of the backup batteries 25 and 26 [being] converted by the power switch 40, the isolating transformer 51 and the bridge rectifier 53 to a pair of high voltage DC levels … [that] are fed to the respective holdover capacitors 19 and 20 [in the SPS] so that the overall voltage across the low and high DC voltage rails 17 and 18 is 300 V …." *Id*. at 7:18-28. The voltage lines supplying battery power from the backup power supply 12 to the voltage rails 17 and 18 of the SPS 11 are annotated below.

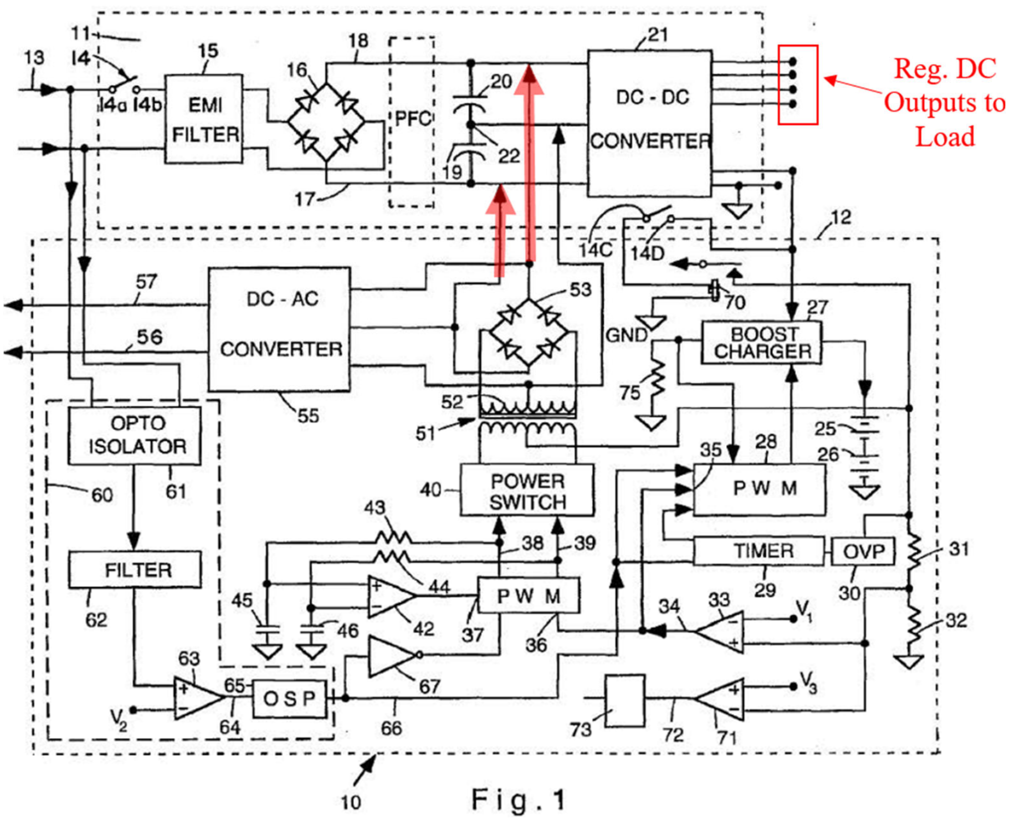


Fig. 1

Zak repeatedly mentions only that the backup power supply 12 provides power to the SPS 11 during AC power failure. *See e.g.*, EX1005, Abstract ("A ***backup system supplies DC power from a battery to the holdover capacitors***, and a back up control circuit ***supplies high voltage DC energy to the SPS*** at fixed intervals ….”); *see also id*. at 7:1-3 (“[U]nder normal operating conditions, the backup power supply 12 does not supply energy to the DC to DC converter 21 in the switch power supply 11.”).

Even under Petitioner’s modified version of Zak, reflected in its annotations of Fig. 1 below, Zak’s UPS 10 outputs power solely via DC-DC converter 21 of the SPS 11 (alleged first power supply) to the load (e.g., a computer), whether the source of energy comes from the A/C power connected to the SPS 11 or from the batteries 25/26 in the backup power supply 12.

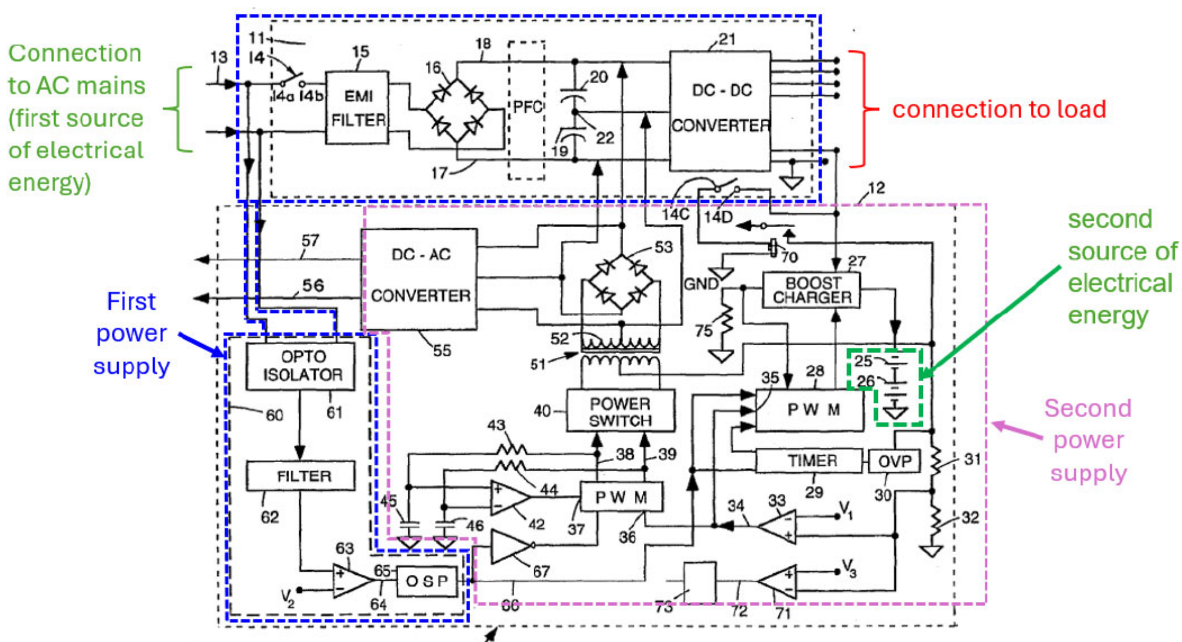
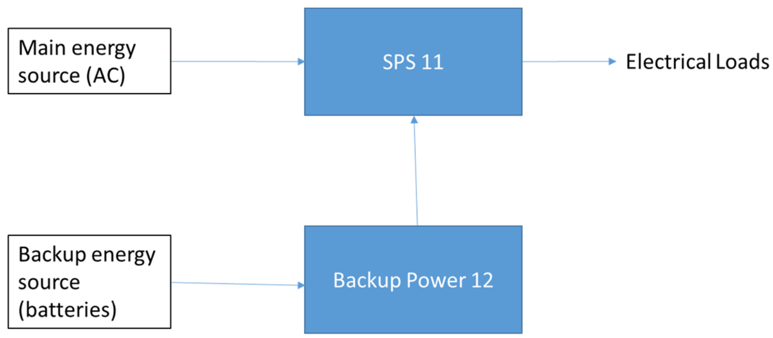


Fig. 1

Pet. 11 (annotated by Petitioner).

Thus, as Zak describes and even as modified by Petitioner, the backup power supply 12 is coupled to components of the switch power supply (SPS). This arrangement can be represented as follows:



However, Petitioner does not explain why Zak's backup power supply is coupled to the electrical load in this configuration. In particular, for the limitation that the "second power supply coupled to the electrical load," the Petition summarily states the following, and nothing else: "The second power supply is also coupled to the electrical load. (EX1005, 3:53-4:26, 5:47-57)(EX1002, ¶43)." Pet., 15 (citations included).

But the two citations to Zak fail to address the issue. The first citation (EX1005, 3:53-4:26) begins by stating that "[a]ccording to the invention there is provided an uninterruptible power supply including a main power supply and a backup power supply for supplying at least DC electrical power to a load." In other words, the "uninterruptible power supply" (UPS 10), which comprises both SPS 11 and backup power supply 12, is "supplying at least DC electrical power to a load."

But that says nothing about how the components comprising UPS 10 are otherwise coupled.

The cited passage goes on to describe how the backup circuit in the backup power supply is "coupled to the energy storage device [second energy source], to the at least one holdover capacitor [which is in the SPS] and to the DC output of the switch power supply [elements 51 and 53 in backup power supply 12, whose output connects to lines 17 and 18 of SPS 11 at points upstream of or to the left of the DC-DC converter 21]." Zak, 4:1-3; *see also id*., 4:11-16. Thus, this latter part of the passage is directed to describing how the backup power supply 12 connects to the SPS 11, not anything about the load. The second citation (EX1005, 5:47-57) similarly describes how the components in the backup power supply 12 couple to the "DC voltage rails 17 and 18" of the SPS 11. In neither case, however, is there any explanation as to how that disclosure supports the further showing that the "second power supply" is also "coupled to the electrical load," per claim 1.

Dr. Baker's testimony does not close the evidentiary gap. Rather, Dr. Baker cites to the same two passages from Zak as the Petition, and describes the same arrangement of the backup power supply coupling to the input rails 17 and 18 of the SPS 11, where the output terminals of SPS 11 continue to be connected to the load. EX1002, ¶43. Dr. Baker purports to provide a further explanation in paragraphs 36-37 as to how power is supplied to the load when AC power is lost. First, those paragraphs are cited in the Petition only in the overview discussion of Zak, and not as supporting evidence for any limitation. *See* Pet., 10-11. To the extent that they are cross-referenced in EX1002, ¶43, that would be improper double incorporation by reference, first through the Petition's reference to EX1002, ¶43 and then from EX1002, ¶43 to those paragraphs. Second, Dr. Baker merely concludes without support that "both power supplies are capable of providing power to the load, because both the holdover capacitors 19, 20 and the batteries 25, 26 are connected to the load." EX1002, ¶37. But Dr. Baker does not explain why providing power from the backup supply to the SPS 11, which may in turn provide power to the load, necessarily means that the backup power supply is "coupled to" the load, per claim 1. Thus, Dr. Baker's unsupported testimony, which in any event is not cited as support in the Petition, is not sufficient to show anticipation. "[A] petitioner asserting anticipation cannot rely on its expert to supply disclosure of a claim element that is not expressly or inherently present in the reference." CTPG at 36 (citing *Verdegaal Bros., Inc. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631 (Fed. Cir. 1987). Thus, Petitioner has not established that Zak discloses a "second power supply coupled to the electrical load," as required by claim 1 of the '967 patent.[2]

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[2] Ground 1 does not challenge independent claim 9, and independent claim 14 is not anticipated by Zak for the reasons set forth in Sections II.A and II.C.

Furthermore, in Zak's configuration (even as modified), any power output to the electrical load goes through the DC-DC converter in the alleged first power supply (SPS 11). Petitioner has not established that, in response to an activation signal (which results from the loss of AC main power), the second (backup) power supply transitions from a lesser output level to a greater output level than the first power supply.

Thus, Petitioner has failed to show that Ground 1 anticipates claims 1-3, 8, and 14-15.

C. Zak Does Not Expressly or Inherently Disclose Providing Operating Power From the First Power Supply While the Second Power Supply Transitions to a Greater/Normal Output Level (Claims 2, 14-15)

Claim 2 recites that "the first power supply further configured to provide operating power to the electrical load while the second power supply transitions from the lesser output level to the greater output level." Similarly, independent claim 14 recites "providing operating power from the first power supply to an electrical load during the transitioning" (Element 14[e]), where the "transitioning" refers to "transitioning a second power supply from a standby output level to a normal output level responsive to the signal" (Element 14[c]).

The Petition relies on Zak's "holdover capacitors 19 and 20" as allegedly providing "operating power temporarily in the event of a failure of the AC mains."

Pet. 17. However, this is supported solely by Dr. Baker's opinion (EX1002, ¶50), and not by any express or inherent disclosure in Zak. This is because, while Zak describes how the capacitors are charged, ***Zak never describes the circumstances under which the capacitors discharge***. *See e.g.*, Zak, 6:40-44 ("The high voltage bridge rectifier 16 provides at its output a 300 volt DC level which is applied across the low and high DC voltage rails 17 and 18 ***so as to charge the holdover capacitors*** 19 and 20 and feed the DC to DC converter 21."). As a result, neither the Petition nor Dr. Baker cite to any actual teaching in Zak that discloses the features of claims 2 and Element 14[e].

Moreover, even if the holdover capacitors were to discharge in the event of a loss of AC power, Zak does not disclose, nor does Petitioner establish, that any such discharge would provide "***operating power***," as expressly required by claims 2 and Element 14[e]. While Dr. Baker surmises that the capacitors will "begin to discharge at a rate dependent on the current draw of the load," he does not explain why the capacitors' capacitance is sufficient to provide operating level power. EX1002, ¶50. Specifically, Zak describes backup batteries 25 and 26 as providing operating power to the load during AC power loss, but it does not say anything about the load capacity of the holdover capacitors. *See* Zak, 7:30-33 ("For so long as there is power loss on the main AC power connected to the center tap of the secondary winding 52 of line 13, power is supplied to the DC to DC converter 21 in the switch power supply 11 by the power switch 40 until the batteries 25 and 26 become discharged."). Thus, there is no reason to believe that Zak would have necessarily sized its holdover capacitors large enough to provide operating power during AC loss when Zak does not expressly link that function to the holdover capacitors. "Ambiguous references do not anticipate a claim." *Wasica Finance GmbH v. Continental Automotive Systems, Inc.*, 853 F.3d 1272, 1284 (Fed. Cir. 2017).

For this additional reason, Ground 1 fails to establish that claims 2 and 14 (and dependent claim 15) are anticipated by Zak.

III. Ground 2: Claims 1-7 and 9-15 Are Not Obvious Over Susong

A. Susong Does Not Disclose an Apparatus where the First Power Supply and the Second Power Supply Are Both Coupled to the Same Electrical Load

Claim 1 recites "a first power supply coupled to an electrical load" and "a second power supply coupled to the [same] electrical load." As noted above, Petitioner points to units 210 and 220 of Susong's Figure 2 as respectively the first power supply and the second power supply. Pet., 28-29. But in Figure 2, when unit 210 is active, "Unit 2 220, having ports 220*a-d* would include a means for isolating the ports 220*a-d* from the cables extending from 210*a-d* to DEVICES A-D." Susong, [0038]. In other words, when unit 210 is coupled to the electrical loads A-D, unit 220 is isolated from the same electrical loads. Conversely, when unit 220 takes over as the active unit, "the ports 210*a-d* become isolated while the ports 220*a*-

d become active for driving the DEVICES A-D." Susong, [0038]. Thus, Petitioner has not shown that units 220 and 210 are ever configured to be coupled to the same electrical loads (*e.g.*, devices A-D). Hence, Petitioner has not shown that Susong renders obvious the claims challenged under Ground 2.

B. Susong Fails to Disclose a Second Power Supply That Transitions From a Lesser to a Greater Output Level

Independent claims 1 and 9 recite a "first power supply configured to issue an alert signal indicative of a failure condition of the first source of electrical energy"/ "first power supply configured to provide a first alert signal indicative of an anomalous condition of the first independent source of electricity" and a "second power supply further configured to transition from a lesser output level to a greater output level in response to an activation signal."[3] Claim 14 includes the limitation of "transitioning a second power supply from a standby output level to a normal output level responsive to the signal," and the Petition relies on the same analysis for this limitation as it provides for Element 1[d]. *See* Pet., 43. These limitations are generally referred to below as the "Transition Limitations."

For Ground 2, the Petition maps the "first power supply" to unit 210 and the "first source of electrical energy" to the batteries of unit 210. Pet., 28-29 ("The

[3] Claim 9 recites the signal as a "second activation signal."

batteries are a first source of electrical energy, to which the first power supply is coupled."). Similarly, the Petition maps the "second power supply" to unit 220 and the "second source of electrical energy" to the batteries of unit 220. Pet., 31 ("Susong teaches a second power supply (Fig. 2, 220) coupled to the electrical load (any of devices A-D) and a ***second source of electrical energy (respective batteries***)."). Thus, under Petitioner's own theory, when the first power supply sends an alert signal to indicate a failure/anomalous condition of the first energy source (battery) and when the second power supply is configured to perform the actions required by the Transitioning Limitations, both the first power supply and the second power supply should be coupled to their respective batteries. *See* EX1001, cl. 1 (requiring the first and second power supplies to be coupled to their respective sources of energy); EX1002, ¶91 (Dr. Baker assuming "the battery would provide operating-level power during the small amount of time it takes to transition from one unit to another, even if the battery assembly does not meet the standard.").

But to the extent units 210/220 adopt the same configuration as that shown in Figure 1 (as argued), the only time that they are coupled to their respective battery assembly 120 is when AC power is lost. *See* Susong, [0034] ("Thus, if AC power is removed for a threshold period of time, drops below a threshold level or otherwise becomes unstable, the ATS 114 can ***throw a switch*** to enable further powering of the devices supplied by this power supply 100 to be provided from the battery assembly 120 rather than the AC input 105."); *Id*. ("The ATS 114 includes intelligence to ***perform a swap in the power source of the power supply 100 in the event that the AC power source fails***."), [0020] ("The failover module detects a failure in the power supply unit and takes steps to ***switch over to a backup power supply***."). Petitioner does not argue that units 210/220 are coupled to AC power after the ATS 114 switches to backup power when AC power fails.

This is significant because Petitioner reads Susong's "failover operation" on the Transition Limitations. *See* Pet., 31-32 (relying on operations from FIGs. 4A-4B, including the surrender request and shutdown confirmation); EX1007, [0025] ("FIGS. 4A and 4B are flow diagrams illustrating one embodiment of the ***failover operation***."). But because Petitioner's mapping requires the batteries (the alleged sources of energy), not AC Power, to be coupled to the power supplies when the functions of emitting alert signals or transitioning output levels are performed, Petitioner's theory in fact requires that Susong continues to perform its "failover operation" even after the units lose their default AC power, as noted above.[4]

[4] The default powering state for Susong's units is from AC power (AC input 105). See EX1007, [0028] ("The received AC input is then provided to the power supply module 110."), [0034] (describing switch from AC input 105 to battery assembly 120 "in the event that the AC power source fails.").

But Petitioner has not shown that Susong's failover operation would or even could continue to be performed in that situation. For example, while Petitioner states that a failure of the batteries can be detected when AC power is lost on both power supplies (Pet., 24), there is nothing in the cited passages of Susong (EX1007, ¶¶0033-0034, 0019) or otherwise, to support that contention. Dr. Baker's declaration adds nothing to the discussion. *See* EX1002, ¶¶65-66. In any event, there is no evidence that Susong would perform a failover operation if AC power were lost to either power supply, let alone both power supplies. For example, when the active unit is coupled to the alleged first source of energy (batteries), that would mean that the active unit 210 has lost AC power[5] and its battery has taken over. But Petitioner has not shown that, in that case, the active unit 210 could even continue to perform periodic testing of its battery assembly and issue the recited alert signals as a result, given Susong's preference for small batteries for orderly shutdown instead of extended operation. *See* EX1007, [0033] ("In the typical setting for the present invention, the goal of the batteries is not to provide extended alternate power source,

[5] To be clear, Petitioner does not allege the AC power source as either a first energy source or a second energy source. Thus, the recited "failure" condition would be with respect to the first battery.

… [but] to provide, at a minimum, sufficient power source to allow for an orderly shutdown of the system in the event of a loss of primary power.”).

Even in the unlikely event that the active unit 210 were to continue to periodically perform battery tests after losing AC power, there is no evidence that the testing would lead to alert signals, activation signals or alleged transitions because either (1) the active unit's battery has not failed and is providing proper backup power to unit 210, or (2) the active unit has failed and therefore cannot provide the power needed for the failover operation. That is, Petitioner has not shown that Susong's “failed” battery assemblies could support battery testing or the switchover operation.

Similarly, <u>if the passive unit 220 loses AC power</u> and its battery has taken over, Petitioner has not shown that such a unit would send a “ready status” or “shut down command” to the active unit 210 when Susong indicates that typically the battery assembly would not “provide extended alternate power,” but instead would provide only “sufficient power source to allow for an orderly shutdown of the system in the event of a loss of primary power.” EX1007, [0033]. In short, Petitioner has not sufficiently supported its contention that Susong's failover operation would (or could) continue to be performed after AC power is lost. There are in fact specific reasons to believe it would not be, given that no power would be available to the units if both AC power is lost (as Ground 2 assumes) and the active unit's battery has experienced a "failure condition," per the claims.

C. Claim 2 is Not Obvious Over Susong

Claim 2 requires that the "first power supply further configured to provide operating power to the electrical load while the second power supply transitions from the lesser output level to the greater output level." EX1001, claim 2. Figures 4A-4B relied on by Petitioner provides, however, after "the active unit receives the shut down command 412 [from the partner unit], the active unit performs a shut down sequence and sends a confirmation command 414 to the partner unit that shut down is complete." EX1007, [0046]. It is only after receiving this "confirmation of the shut down from the active unit 462" that the partner unit "becomes the active unit" and proceeds to "perform[] all the actions necessary to ensure that power to the PoE ports, or to devices connected to the PoE ports is now provided by the new active unit." *Id.*, [0047].

Hence, as expressly disclosed, the partner unit remains isolated from the PoE device(s) until the active unit's shutdown is complete, and only then does it begin to supply power to any connected PoE devices. *Id.*; *see also id.*, [0038] (noting that Unit 210 "is assumed to be on-line and driving ports 210a-d for support DEVICES A-D respectively" while Unit 220 has "a means for isolating the ports 220a-d from the cables extending from 210a-d to DEVICES A-D"), [0047] ("the process of shutting down the previously active unit includes switching out and isolating the ports of the current active unit from the devices being driven by the PoE").

The Petition implicitly acknowledges this deficiency, conceding that Susong only provides "that the active unit is providing power until it shuts down (step 414), including while the take-over unit is receiving surrender request … and ***in response readying itself to become the active unit***." Pet., 33. But readying itself to become the active unit is not the same as transitioning from the lesser output to the greater output, much less that it has completed this transition. Thus, unsurprisingly, the Petition only argues that "it further would have been ***<u>obvious to implement</u>*** Susong so that the active unit provides power while the take-over unit transitions to a greater output in response to the activation signal …." Pet., 33. However, that argument finds no support in the reference itself, and therefore the Petitioner relies solely on Dr. Baker's declaration. *Id.* (citing EX1002, ¶¶90-92). That is improper because the IPR may only proceed on the basis of patents or printed publications; and an expert declaration is neither. *See* USPTO Memorandum, dated July 31, 2205 at 1 ("The United States Patent and Trademark Office (USPTO) will enforce and no longer waive the requirement of 37 C.F.R. § 42.104(b)(4) (Rule 104(b)(4)) that a petition for inter partes review (IPR) 'must specify where each element of the claim is found in the prior art patents or printed publications relied upon.").

Moreover, that argument is inconsistent with the express disclosure of Susong which, as explained above, teaches it is only ***after*** the active unit completes the shut-down process that "processing continues for the new active unit at step 402," which step "includes performing all the actions necessary to ensure that power to the PoE ports, or to devices connected to the PoE ports is now provided by the new active unit." EX1007, [0047]. Susong further explains that "[w]hen the switch occurs, the ports 210a-d become isolated while the ports 220a-d become active for driving the DEVICES A-D." *Id.*, [0038]. This means that before the previous active unit isolates itself from the PoE ports, the partner unit would not be supplying power to the PoE ports, and that there would not be a period when both units were supplying power to the PoE ports.

Dr. Baker suggests that Susong discloses claim 2 because the "battery would provide operating-level power during the small amount of time it takes to transition from one unit to another." EX1002, ¶91. But Susong's port isolation, as described above, would take place whether the active unit is being powered by the AC input or by the battery assembly 120.

Recognizing that Susong does not expressly disclose the limitations of claim 2, Dr. Baker further suggests that a POSITA "would have found obvious that the take-over unit would not transition from a lower output level to a greater one instantaneously." EX1002, ¶92. Dr. Baker further suggests "that interruptions in operating power were undesirable," and thus "a PHOSITA would have been motivated to implement Susong such that the active unit provides operating power to the external devices while the take-over unit transitions from a lesser to greater output level, so that the external devices continue to receive normal operating power during that transition." EX1002, ¶92. As a preliminary matter, as noted in Section III.B. above, Petitioner's theory requires the first power supply be connected to a defective battery assembly and without A/C input. There is no evidence that such a defective battery assembly could provide the required operational power.

Moreover, Dr. Baker provides no proposed modification to Susong that would make that possible. Specifically, Susong is clear that "[w]hen the switch occurs, the ports 210a-d become isolated while the ports 220a-d become active for driving the DEVICES A-D." *Id.*, [0038]; *see also id.* [0047] ("[T]he process of shutting down the previously active unit includes switching out and isolating the ports of the current active unit from the devices being driven by the PoE."). In other words, Susong does not disclose a mechanism for having ports 210 a-d and ports 220 a-d both driving DEVICES A-D at the ***same*** time so that unit 210 with a defective battery assembly could provide operational power while unit 220 is making the transition. Dr. Susong does not explain what modifications would be needed which are within the skill of a POSITA and which would have a reasonable expectation of succeeding.

D. The Petition Has Not Established the Obviousness of Additional Dependent Claims

1. Claim 3

The Petition includes additional deficiencies. For claim 3, Petitioner cites its expert's testimony to argue that the alleged activation signal, the shutdown confirmation, is "defined by" the alleged alert signal (surrender request) "because the surrender request is a necessary pre-condition for the shutdown confirmation, and sets the parameters for the shutdown confirmation (*e.g.*, which unit will confirm shutdown)." Pet., 34. The Petition cites nothing from the '967 patent to support this claim construction; nor does it explain why parameters that confirm which unit to shutdown would serve as an "activation signal" for the backup unit.

2. Claims 5-6

Each of claims 5 and 6 further recited that the "first power supply" transitions from a lesser output level to a greater output level. For these limitations, the Petition relies on the same two units (unit 210 and 220) as it does for claim 1, arguing that "operation of the two power supplies is identical and the communication is reciprocal, such that the description under claim 1 of the configuration and operation of the first power supply applies equally to the second power supply." Pet., 36. However, the Petitioner does not account for, or explain, how the additional operations of claims 5-7 can be performed when AC power has been lost and unit 210 has already determined a failure condition has occurred for its battery. Even if the units are identical, and even if Susong can perform a failover operation from unit 210 to unit 220, there is no reason to believe that Susong would then perform another failover operation back to unit 210 when unit 210 does not have AC power or a functioning battery.

IV. Ground 3: Claims 2, 8, 11, and 14-15 Are Not Obvious Over Susong and Zak

Ground 3 proposes to add Zak's holdover capacitors to Susong "to temporarily provide power during transitions between power supplies in the event of a battery failure, when the batteries would not be expected to provide backup power." Pet., 45. Even if it would have been obvious, however, Zak's holdover capacitors would not change the operation of Susong with respect to the switch over process because Susong's port-isolation occurs either at the units' ports or entirely external to the power supplies, as Susong shows with respect to Figs. 2-3. And because power isolation occurs at points different than where the battery and added holdover capacitors are attached, it is immaterial to the additional limitations of claims 2, 8, 11, and 14 whether power is provided from Susong's internal battery or from the added holdover capacitors. In other word, in either case (battery or capacitor), Susong's port isolation precludes the first power supply from providing operating power to the electrical load when the second power supply is making the transition because, as explained in Section III.C, the second power supply transitions from the lesser output level to the greater output level after the first power supply is shut down and isolated from the PoE ports.

As such, Ground 3 fails for the same reasons as Ground 2 fails for claim 2. *See supra*, Section III.C.

V. Ground 4: Chang Does Not Disclose the Recited First and Second Power Supplies

The challenged claims require "a ***first power supply*** coupled to an electrical load and a first source of electrical energy" and "a ***second power supply*** coupled to the electrical load and a second source of electrical energy." EX1001, claims 1, 9. As is clear from the plain claim language, the recited first and second power supplies are separate and different from the recited "source[s] of electrical energy" (or power sources). Yet, Petitioner ignores this difference, and conflates "source[s] of electrical energy" with "power suppl[ies]."

In particular, Chang recognized that, while prior art uninterruptible power supplies (UPS) could switch from a "common power source" to a discharge state when the "common power source" is unavailable, the "amount of power supplied from [the] UPS is limited …." EX1008, [0005]. Hence, Chang is directed to placing multiple "independent power sources in parallel connection to get larger output power via a harmonic signal." EX1008, [0010], [0046], [0053], Claim 1. Chang refers to this arrangement as a "***multiple power sources*** control system," and depicts the parallel power sources as "power input sides 101" in Fig. 1 below.

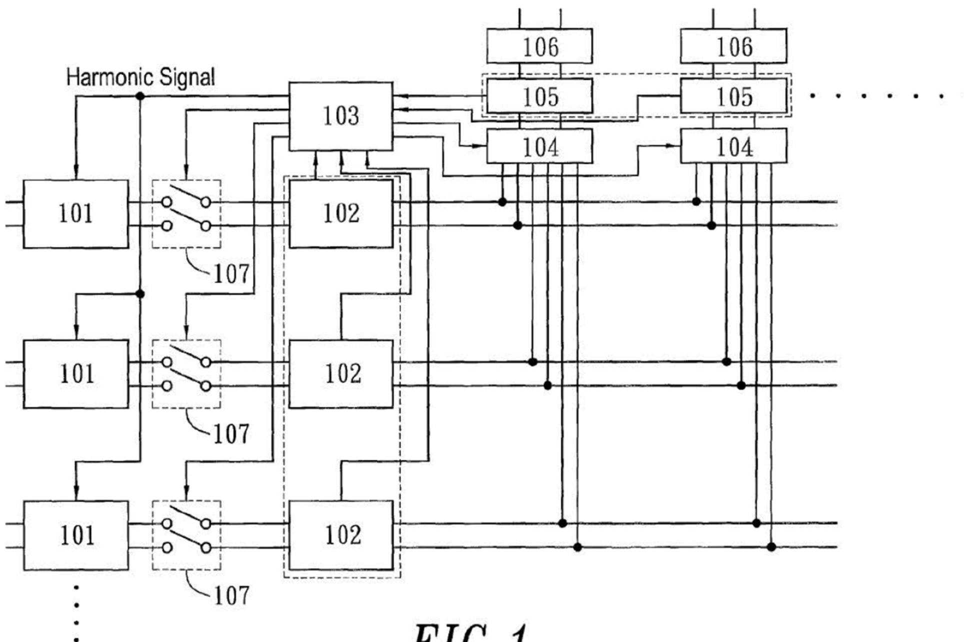
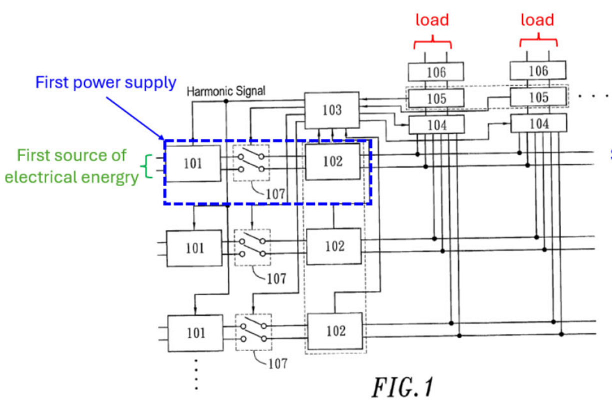
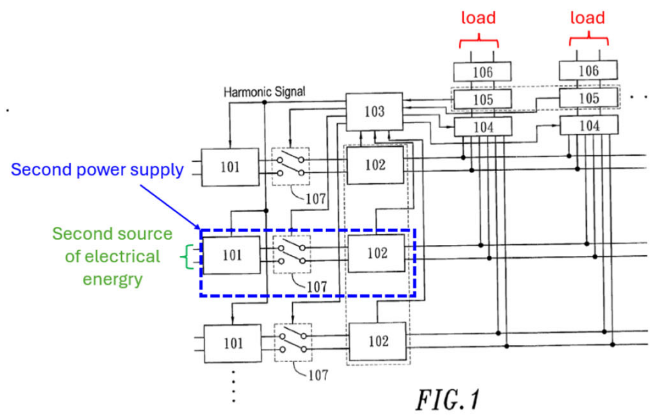


FIG. 1

EX1008, FIG. 1; see also id., [0012], [0041]. In the above figure, 101 is the "power input sides," 102 is "voltage and current detecting modules" on the power input sides, 103 is "a control module" that receives inputs from detection modules 102 and outputs commands to switch units 107, 104 is "power source switching modules," 105 is "voltage and current detecting modules" on the power output side, and 106 is "power output sides." EX1008, [0041]-[0042].

Despite Chang's express disclosure, Petitioner recasts Chang's single power supply with multiple power sources as multiple power supplies as indicated by its annotated Figure 1.





Pet., 54, 56. That characterization finds no support in Chang, whose element 104 is described as a "***power source switching*** module[]," not a "power supply switching module." EX1008, [0041]. That is, as far as Chang is concerned, each pair of 101 and 102 constitutes a power source (or "source of electrical energy"), not a power supply.

Petitioner's characterization to the contrary relies solely on Dr. Baker's testimony. *See* Pet., 4 ("The claimed 'power supply' is met by power input 101, control switch 107, and voltage and current detecting module 102 taken together. (EX1002, ¶142)."), 56 (same for "second power supply"). But Dr. Baker's declaration is similarly devoid of any support or reasoning, and simply announces his conclusion that the input 101, control switch 107, and voltage and current detecting module 102 supposedly comprise a "power supply," within the meaning of the '967 patent. Dr. Baker supports his conclusion by citing to the same paragraphs in Chang as the Petition does, none of which mention the term "power supply" or otherwise suggests that any subset of the components of FIG. 1 comprises a separate "power supply," least of all the collection of components identified by Petitioner. *See* EX1002, ¶¶ 141-142, 146-147.

There is also a clear violation of Rule 104(b)(4) that requires "specify[ing] where each element of the claim is found in the prior art patents or printed publications relied upon," as opposed to being backfilled by expert testimony or alleged common sense.

The Petitioner's selection of the three specific components from Chang's "multiple power sources control system" as allegedly being a "power supply" is the result of a cherry-picking exercise needed to make further arguments about why Chang allegedly renders the claims obvious. For example, the power input 101 is needed because the claims recite that each of the power supplies is coupled to a "source of electrical energy." The voltage and current detecting module 102 is included in the alleged "power supply" so that the Petition can argue that the "first power supply" issues "an alert signal indicative of a failure condition of the first source of electrical energy." And, the control switch 107 is also needed as part of the alleged "power supply" so that the Petition can allege that the is a "second power supply" that "transition[s] from a lesser output level to a greater output level in response to an activation signal," per claim 1. This is textbook cherry-picking and unsupported by any competent evidence in the record.

Thus, Ground 4 fails because the Petitioner has failed to show that Chang discloses the recited first and second power supplies.

VI. Ground 5: The Petition Has Not Established Obviousness of Combining Chang's Components 101, 107, and 102 Into a Single Uninterruptible Power Supply

Recognizing the complete lack of support in Ground 4 for characterizing Chang's power input side 101, control switch 107, and voltage and current detecting module 102 as collectively comprising a separate "power supply," Ground 5 proposes to modify Chang with Edelen. Specifically, Ground 5 "contends that it was obvious to modify Chang to combine each set of three units 101, 107, and 102 with a parallel battery backup into a single uninterruptible power supply, as conceptually depicted in the following modified Fig. 1 of Chang:

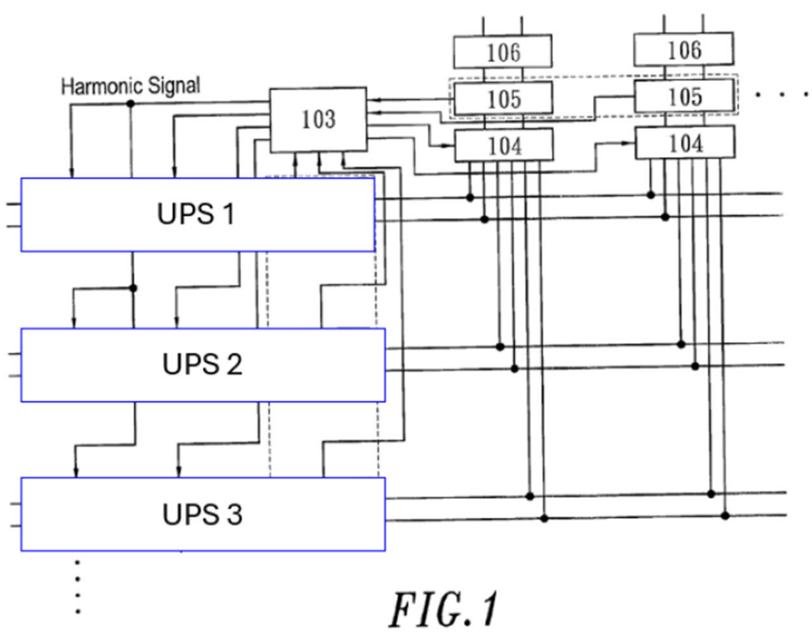
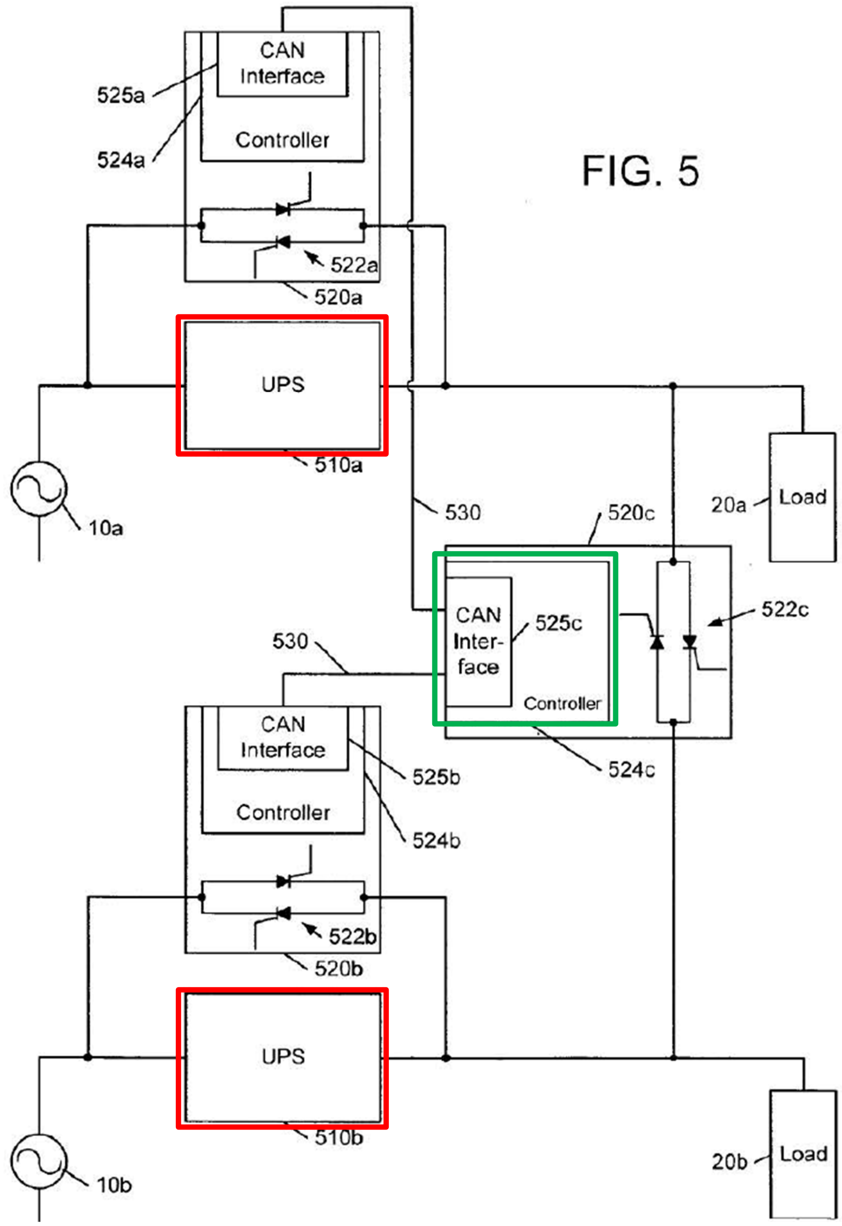


FIG. 1

Pet., 66.

As a preliminary matter, the modification would not overcome the deficiency noted in Section VII that any transition to greater output level by an alleged power supply is in response to signals sent to power source switching unit 104 and not to signals sent to the alleged power supply units.

Moreover, neither Chang nor Edelen teach or suggest incorporating a voltage/current detecting module, such as Chang's voltage and current detecting module 102, into a "power supply." Chang contains no mention of the voltage and current detecting module 102 being incorporated into a "power supply." Similarly, Edelen's power supplies (e.g., UPS systems 410a, 410b) do not have voltage and current detecting modules. The Petition contends that Edelen discloses "integrate circuitry to sense voltages" (Pet., 69), "integrated voltage monitoring" (Pet., 70) and "power monitoring capabilities" (Pet., 71), in each case citing to Edelen's paragraphs [0025]-[0027] and Dr. Baker's declaration. But those paragraphs describe FIG. 5 of Edelen, which is conspicuously omitted from the Petition and which depicts a system for "load transfer among UPSs using static switches interconnected by a communications bus" (EX1009, [0015]). Specifically, FIG. 5 depicts various components and signaling that is all ***external*** to the UPSs 510a, 510b. As shown below, the UPSs 510a, 510b (outlined in red) are depicted as only blocks in FIG. 5, with none of their circuitry shown or discussed in the relevant paragraphs.



In fact, to the extent that paragraphs [0025]-[0027] and FIG. 5 do discuss voltage and other condition sensing, those functions are expressly provided by circuitry ***external*** to the UPSs 510a, 510b, such as by the "third static controller 524c" highlighted in green above. See EX1009, [0027] ("the third static switch controller 524c may, for example, include voltage or other sensors and associated electronics that monitor voltage or other conditions”).

The Petition also attempts to draw similarity between Chang’s switches 107 and Edelen’s static switches in support of the alleged motivations to combine. *See* Pet., 70 (“[B]oth references use switches (switches 107 in Chang and static switches (e.g. 522a and 522b) in Edelen) to connect or disconnect power sources to a load.”), id., (“[T]he UPSs of Edelen receive power (like the power input 101 of Chang), provide a controllable switch (e.g. static switch 522a) that can connect or disconnect the power source from the output (like switch 107 of Chang) ….” But here again, Edelen’s static switches 522a and 522b are ***external*** to the UPSs 510a, 510b, as shown in FIG. 5 above. Thus, none of the prior art, alone or in combination, suggests to provide the “functionality of each set of modules 101, 107, and 102 in the system of Fig. 1 of Chang as a single Uninterruptible Power Supply (UPS),” as the Petitioner contends. Pet., 69. Moreover, Dr. Baker provides no additional reasoning or support, citing to the same prior art paragraphs and regurgitating the same conclusions as the Petition. *See e.g.*, EX1002, ¶¶ 184-186; 37 C.F.R. § 42.65(a) (“Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.”).

Finally, the Petition contends that “Chang … leaves open the extent to which the components of Fig. 1 are integrated into single devices or merely in functionally and physically interconnected devices." Pet., 71. But a lack of foreclosing a possibility is not disclosure or suggestion of the possibility. Moreover, "conclusory assertions … about general knowledge in the art cannot, without supporting evidence of record, supply a limitation that is not evidently and indisputably within the common knowledge of those skilled in the art." CTPG at 36. And while expert testimony may explain the prior art, it "is not a substitute for disclosure in a prior art reference itself." *Id*. Here, not only does the cited prior art fail to teach or suggest a "power supply" comprising a switch, like Chang's switch 107, or voltage/current sensing like Chang's module 102, but Edelen in fact teaches that such components should be ***external*** to the power supply.

VII. Grounds 4 and 5: The Prior Art Has Not Been Shown to Disclose a Power Supply Transitioning From a Lesser Output Level to a Greater Output Level in Response to an Activation Signal.

As previously noted, each of independent claims 1 and 9 recite that a "second power supply further configured to transition from a lesser output level to a greater output level ***in response to an activation signal***."[6] Claim 14 includes the similar limitation of "transitioning a second power supply from a standby output level to a normal output level ***responsive to the signal***," where "the signal" is recited as "a signal responsive to an anomalous condition of a first independent source of

[6] Claim 9 recites the signal as a "second activation signal."

electrical energy." Thus, in each case the claimed invention requires that the transition from one power supply output level to another power supply output level be in response to a signal, such as an activation signal.

For the "activation signal" of claims 1 and 9, the Petition states for Ground 4 and Ground 5 that the "'signal of the control module' that turns control switches 107 ON is the activation signal," where the control module is control module 103. Pet., 57, 64-65 (same for claim 9 under Ground 4), 73 (same for claims 1 and 9 under Ground 5), 77 (same for claim 14 under Ground 5); *see also id*., 57 ("Chang teaches that its control module 103 operates control switches 107"). The Petition goes on to theorize that "[w]hen the activation signal operates to turn switches 107 in the second power supply ON, it is causing the second power supply … to transition from a lesser output level to a greater output level by connecting the power input side 101 to the output, thereby transitioning the second power supply from zero output power to full output power." Pet., 57-58.

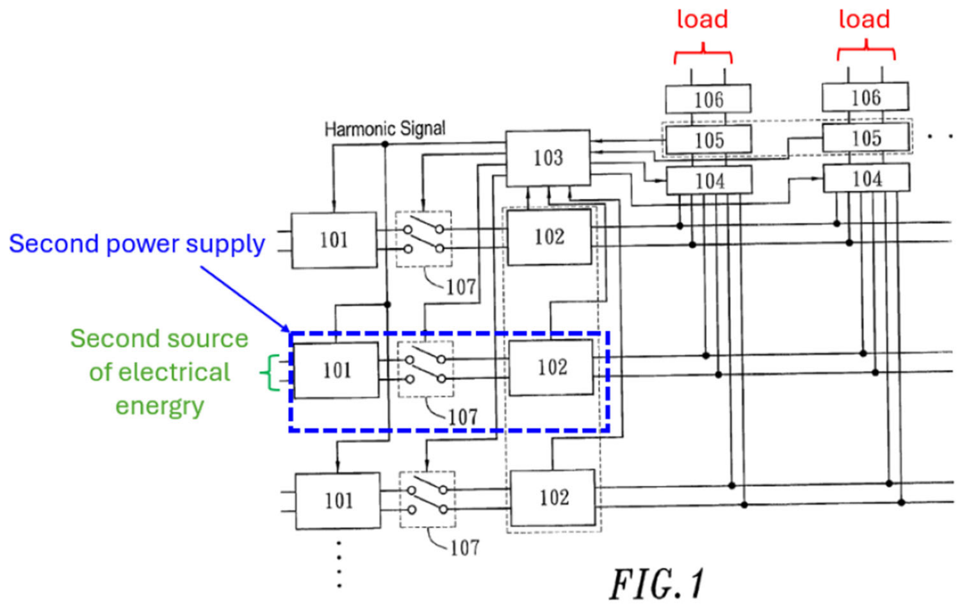


FIG.1

But even if a switch 107 is turned on, the output of the corresponding power input side 101 is not transitioned from a lesser output level to a greater output level until the power source switching unit 104 connects it to the load on the power output side 106. *See id.*, [0045] ("[T]he function of the power output sides 106 is to supply loads with required power."). This is because in Chang, the output level of the alleged "power supply" is based on whether it is actually connected to a load or not. For example, FIG. 4 describes a power source switching module 104 which, in response to "external control signal 45," sets an "ON or OFF state" of circuitry to "control the power transmitted to loads 46." *Id.*, [0049]; *see also id.*, [0048] (describing the power source switch module 104 of FIG. 3A receiving "external control signal 35" to set an "ON or OFF state to control whether the MOSFET transistor 32 output[s] the power passing through the bridge rectifier 31."). Thus, the output level in Chang is dependent on the "power source switching module 104 [which] is used to ***switch the power sources*** of power output sides 106 by the signal of the control module 103," where the "power sources" correspond to the individual power inputs at the power input sides 101. EX1008, [0043].

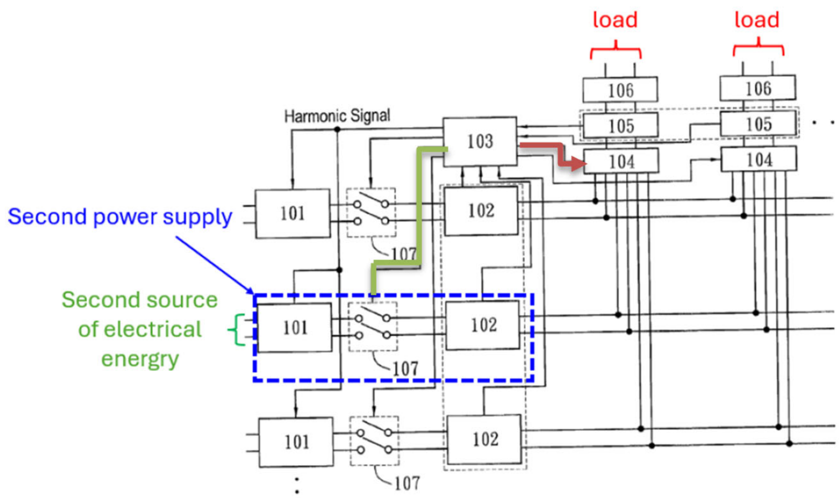


FIG.1

But as shown above, the switching within the power source switching unit 104 to connect 101+102 to a load downstream of 106 is in response to a signal from control module 103 to 104 (red arrows) (e.g., external control signal 35/45), and not in response to the signal from control module 103 to switch 107 (green line). Thus, Petitioner has not established that Chang's operation in response to the signal to switch 107 causes the alleged second power supply to transition from a lesser output level to a greater output level as required by Element 1[d] and other similar limitations. This is because without the further action by the power source switching unit 104 in response to the signal carried on the red signal line (e.g., external control signal 35/45), the alleged "second power supply" would not be connected to a load or cause an increase in the power output from the alleged "second power supply." *See*, *e.g.*, Change at [0046] ("when one of the independent power source [of the power input sides 101] is abnormal, the voltage and current detecting module [102] can inform[] the control module [103] of the state to make the control module [103] immediately ***control the power source switching module [104] to switch the power source*** supplying power output sides [106] to other normal independent power sources of the power input sides [101] such that the loads can keep obtaining required power."

Put another way, even if the alleged "power supplies" of Chang can be switched ON via switch 107 controlled by control module 103, the actual output level of that alleged "power supply" is dictated by power source switching module 104 in response to a signal sent to the power switching module 104 (on the red line), and not the signal sent to switch 107 (on the green line).

Thus, in addition to the reasons above in Sections V-VI, Grounds 4-5 also fail because the output level of the alleged "power supplies" do not transition in response to the alleged "activation signal" from the control module 103 to switch 107, as the Petition proposes. If anything, output levels transitions based on whether the power source switching module 104, which is not part of Petitioner's alleged "power supply," switches a particular independent power source for power input sides 101, as Chang describes doing. *See id.*, [0046].

VIII. Conclusion

For the foregoing reasons, institution should be denied.

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CERTIFICATE OF WORD COUNT

I hereby certify, pursuant to 37 C.F.R. section 42.24, that the foregoing **PRELIMINARY PATENT OWNER RESPONSE** contains 9,940 words, excluding the words in the table of contents, table of authorities, mandatory notices under section 42.8, this certificate of word count, certificate of service or exhibit list. The word count is based on the word count of the Microsoft Word program used to prepare the Patent Owner Preliminary Response.

/Jonathan M. Lindsay/
Jonathan M. Lindsay

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I hereby certify, pursuant to 37 C.F.R. section 42.6, that on October 2, 2025, a complete copy of the **PRELIMINARY PATENT OWNER RESPONSE** was served upon the following, by ELECTRONIC MAIL:

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