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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.



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(THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS)

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***EX PARTE* REEXAMINATION COMMUNICATION TRANSMITTAL FORM**

REEXAMINATION CONTROL NO. 90/019,565 .

PATENT UNDER REEXAMINATION 10690336 .

ART UNIT 3993 .

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

DETAILED ACTION

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Service of Papers

After the filing of a request for reexamination by a third part requester, any document filed by either the patent owner or the third party requester must be served on the other party (or parties where two or more third party requester proceedings are merged) in the reexamination proceeding in the manner provided in 37 C.F.R. 1.248. *See* 37 C.F.R. 1.550(c).

Submissions

Submissions after this Office action will be governed by the requirements of 37 C.F.R. 1.116 after final rejection and by 37 C.F.R. 41.33 after appeal, which will be strictly enforced.

Amendment in Reexamination Proceedings

Patent Owner is notified that any proposed amendment to the specification and/or claims in this reexamination proceeding must comply with 37 C.F.R. 1.52(a) and (b), and must be accompanied by any fees required by 37 C.F.R. 1.20(c). *See* MPEP § 2250, subsection IV, for examples to assist in the preparation of proper proposed amendments in reexamination proceedings.

Notice of Concurrent Proceedings

Patent Owner is reminded of the continuing responsibility under 37 C.F.R. 1.565(a) to apprise the Office of any litigation activity, or other prior or concurrent proceeding, involving the patent throughout the course of this reexamination proceeding. Likewise, the third party requester is also reminded of the ability to similarly apprise the Office of any such activity or proceeding throughout the course of this reexamination proceeding. *See* MPEP §§ 2207, 2282, and 2286.

Brief Description of the Proceedings

The Third Party Requester (TPR) requested reexamination of claims 1-5 of U.S. Patent No. 10,690,336 (hereinafter the '336 patent) based upon the following proposed rejections:

Ground 1: Claims 1-4 are unpatentable in light of Fujitsu (JP 2018041147 A, hereinafter Fujitsu) in combination with Tsai (CN 207064277 U, hereinafter Tsai).

Ground 2: Claim 5 is unpatentable in light of Fujitsu in combination with Tsai and Chou et al. (US 2008/0279694 A1, hereinafter Chou).

Ground 3: Claims 1, 2, and 4 are unpatentable in light of Lai (US 2017/0314777 A1, hereinafter Lai) in combination with Fujitsu.

Ground 4: Claim 5 is unpatentable in light of Lai in combination with Fujitsu and Chou.

An order was mailed on July 18, 2024, finding that Grounds 1-4 above raised a substantial new question of patentability (SNQ). In a letter filed July 29, 2024, Patent Owner (PO) waived the right under 37 C.F.R. 1.530 to file a Patent Owner Statement.

A non-final Office action was mailed on October 17, 2024. In the response filed December 17, 2024, Patent Owner presented arguments with respect to the rejections of claims

1-5, amended claim 4, and introduced new claims 6-48. New claim 41 is independent.

Claims 1-48 are now pending in this reexamination proceeding.

Response to Arguments and Declaration

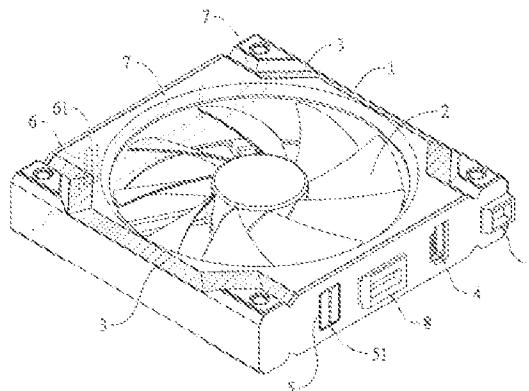
The examiner notes that the Declaration of David B. Tuckerman, Ph.D., filed December 17, 2024, (hereinafter, Declaration) is based on opinions and arguments similar to those reflected in Patent Owner's Remarks filed December 17, 2024 (hereinafter, Remarks). The Remarks and the Declaration will be addressed together under this heading.

1. The '336 Patent - Claim Interpretation

In the Remarks filed December 17, 2024 (hereinafter, the Remarks), under the heading "Overview of '336 Patent," Patent Owner construes the term "top of the body" to refer specifically to a top surface or a front face of the body. *See* Remarks, pg. 12-16 and 21 (arguing at pg. 21 that "top of the body" refers to "the front face of the fan body"); and Declaration, ¶ 24. Patent Owner construes the term "side of the body" to refer specifically to one of four lateral-facing side surfaces of the body that is perpendicular to the rotational axis of the fan. *See* Remarks, pg. 12-16; Declaration ¶ 24. However, the claims are not so limited, nor does the patent specification define the phrase "side of the body" with such precision or specificity. Rather, the claim states only that the fan includes "a first connector on one side of the body, and a second connector on another side of the body." In reexamination, claims are given the broadest reasonable interpretation consistent with the specification; limitations in the specification are not read into the claims. *See In re Yamamoto*, 740 F.2d 1569, 222 USPQ 934 (Fed. Cir. 1984). In this case, the patent specification restates the language of the claims (*see* col. 2:65-67) but does

not further define the term “side”. There is no reference number in the drawings indicating what part(s) or region(s) of the body would fall within the scope of the term “side.” It is consistent with the patent disclosure to interpret the term “side” as referring either to lateral sides or to lateral areas or regions of the body, either with respect to a central line through the body or with respect to the central fan axis, because the position of the first and second connectors (5, 6) shown in Figs. 1-2 is consistent with such usage and because the disclosure does not include any more precise definition of the term “side.” Any of these interpretations would be consistent with dictionary definitions of the term “side,” which include “one of the lateral surfaces of an object, as opposed to the front, back, top, and bottom” (*Random House Kernerman Webster’s College Dictionary*, definition 3), “either of two lateral parts or areas of a thing” (*Id.*, definition 4), or “region, direction, or position with reference to a central line, space, or point” (*Id.*, definition 8). The interpretation of “side” according to either of the latter two definitions is also consistent with the language of the specification and claims describing the body as having a fan in center (*e.g.*, as the reference point from which the sides are defined), the first connector on one side, and the second connector on another side. Moreover, the examiner notes that claim 1 also uses the term “sides” in line 4 to refer to “at least two sides of the fan at the top of the body.” The term “side” appears here to refer generally to lateral areas or regions rather than to precise surfaces, which argues in favor of a broad construction of the term “side” when interpreting the language of the patent claims. Patent Owner’s argument that one of ordinary skill in the art “would have known that a fan body typically has four sides distinct from and adjacent to the top and the bottom” (Remarks, pg. 15; Declaration, ¶ 32) is not persuasive, because the scope of the invention is defined by the language of the claims, not by what is “typical” in the art. In this case, neither the claims nor the patent specification use the term “side” with such precision, as discussed above.

Fig. 1 of the '336 Patent



Patent Owner further argues that interpreting the term “side” to refer generally to a lateral area or region could render the claim indefinite depending on how the lateral areas or regions were divided. *See* Remarks, pg. 14-16; Declaration, ¶¶ 27-31. This argument appears to conflate breadth with indefiniteness. The examiner’s interpretation of the term “side” is broader than the interpretation put forth by Patent Owner. However, breadth is not the same as indefiniteness. *See* MPEP § 2173.04, citing *In re Miller*, 441 F.2d 689, 169 USPQ 597 (CCPA 1971); *In re Gardner*, 427 F.2d 786, 788, 166 USPQ 138, 140 (CCPA 1970). Patent Owner’s argument that a

broad reading of the term “side” would mean that the sides could be defined differently from what is recited in the claim is not persuasive because the invention is limited by the claim. In other words, the claim requires that the first connector is on “one side” and the second connector is on “another side,” which is sufficient to exclude the “nonsensical” hypothetical examples (to use Patent Owner’s term) put forth by Patent Owner in which both connectors are on the same side of the body or each connector is on both sides of the body (*see* Remarks, pg. 14-15).

2. *Claim 1 as anticipated by Lai or obvious over Lai in view of Fujitsu*¹

The Declaration summarizes the disclosure of Lai, noting that Lai’s disclosure is brief and pointing out alleged inconsistencies in Lai such as the number of nodes illustrated in the schematic view of Fig. 2 at the input (111) and output (112) as compared to the number of inputs and outputs illustrated in the circuit diagrams of Figs. 4-6, and the motor supply lines in Figs. 4-6 not being drawn in such a way as to connect through from the input to the output (though noting that one of ordinary skill in the art would infer that the motor supply lines Vfan and GND do connect from the input to the output). *See* Declaration, ¶ 42. The Declaration argues that, due to these alleged deficiencies, Lai teaches nothing to one of ordinary skill in the art. *Id.*, ¶ 43. In response, the examiner notes that a reference “is prior art for all that it teaches,” even if that reference discloses an inoperative device. *Beckman Instruments v. LKB Produkter AB*, 892 F.2d 1547, 1551, 13 USPQ2d 1301, 1304 (Fed. Cir. 1989). Here, the examiner is not persuaded that Lai discloses an inoperative device. In any case, Lai is prior art for all that it teaches, and the examiner notes that what Lai *does* teach is commensurate in scope with what is both claimed and disclosed in the ‘336 patent. Like Lai, the ‘336 patent is also brief. Moreover, unlike Lai, the

¹ Claim 2, although included in the heading of Section 2 of the Remarks, is substantively addressed in Section 4 of the Remarks, to which the examiner responds below.

'336 patent does not provide any circuit diagrams or electrical schematics whatsoever, nor does the '336 patent offer any explanation of how illumination is provided to the illumination areas (either structurally or functionally) or how the power socket is electrically connected with the first connector, the second connector, the fan, and the illumination area to accomplish the claimed results of driving the fan and illumination area of one or more fans into rotation and illumination. Rather, the specification of the '336 patent simply repeats the claim language (col. 1:53-2:2; col. 3:1-16), and the drawings show only the exterior appearance of the fans. For these reasons, even if Lai were considered to be incomplete in some respects, Lai provides sufficient teaching commensurate in scope with the broad language of the patent claims and accompanying patent disclosure.

a. Illumination area at top of body

Patent Owner argues that Lai's LEDs (16) are not located at the top of the body. *See* Remarks, pg. 19-22; Declaration, ¶¶ 45-50. In response, the examiner notes that claim 1 does not require LEDs located at the top of the body. Rather, claim 1 recites "an illumination area on at least two sides of the fan at top of the body." The term "illumination area" is interpreted to mean an area that is illuminated. The patent disclosure is silent with respect to the source of illumination in the illumination area, much less the location of the source of the illumination. For these reasons, the limitation "an illumination area on at least two sides of the fan at top of the body" does not require that the source of the illumination is located on the top of the body and would appear to encompass illumination areas which are lit from below (*e.g.*, from an LED within the body of the fan). The limitation "on at least two sides of the fan" could be interpreted, on one hand, as referring to two lateral regions of the illumination fan as a whole (*i.e.*,

interpreting “the fan” as referring to the “illumination fan” recited in the preamble), two lateral regions of the center fan (*i.e.*, the “fan” recited in line 3 of claim 1), or two lateral regions of the body defined with respect to the center fan. The term “top of the body” is interpreted as a relative positional term, referring to a part of the body that can be oriented upwardly. The term “top” is interpreted in view of the patent disclosure as encompassing an area of the fan that can be upwardly oriented. The term “top” is not necessarily limited to a specific topmost surface of the body. This interpretation is consistent with the disclosure of the ‘336 patent, which illustrates the illumination areas (3, Fig. 1) being recessed below a topmost surface of the body.

Turning to Lai, Lai discloses an illumination area that is illuminated by LEDs which are shown at reference number 16 in Fig. 2 and at reference number 11 in Fig. 3. The examiner recognizes that Lai teaches positioning the LEDs themselves on what Patent Owner characterizes as inward-facing circular walls, as shown in Fig. 3. However, the illumination area provided by the LEDs of Lai is considered to be “on at least two sides of the fan at top of the body” in the sense that the LEDs illuminate the center fan (10) on at least two lateral regions of the center fan in an upwardly oriented area of the body (*e.g.*, such that the illuminated area is visible from above when the fan is oriented as shown in Fig. 3).

In response to Patent Owner’s argument that the LEDs of Lai would illuminate the fan rather than permitting “direct viewing of the LEDs” (Remarks, pg. 21; Declaration, ¶ 49), the examiner maintains that this argument is not commensurate in scope with the claims. Claim 1 explicitly recites the illumination area being “on at least two sides *of the fan* at top of the body,” which is reasonably understood to encompass illumination of the fan itself. Neither the claims nor the patent disclosure describe direct viewing of LEDs. Patent Owner recognizes that the LEDs of Lai would direct light onto the fan blades in such a way as to “create frontal visibility of

the illumination” (*see* Declaration, ¶ 50; *see also* Remarks, pg. 21, citing the Declaration at ¶ 50 as including the phrase “create visibility of the illumination” but deleting the term “frontal”).

Patent Owner states that the term “top” corresponds to a “front” of the fan. *See* Remarks, pg. 21:3-4; Declaration, ¶ 49:1-2. The statement in the Declaration that the LEDs of Lai would be reflected off of the fan blades and thus “create frontal visibility of the illumination” is understood to mean that the area subject to illumination by the LEDs includes at least two sides of the fan at the top/front of the fan body, which the examiner believes to be all that is required by the recitation of “an illumination area on at least two sides of the fan at top of the body.”

In response to Patent Owner’s argument that “an illuminated area being visible in a top view is not the same as an illumination area being physically located at the top of the body” (Remarks, pg. 21; Declaration, ¶ 50), the claim language does not clearly require that the “illumination area” is a structural component that is physically located at the top of the body. Rather, the term “illumination area” is reasonably interpreted as encompassing an area that is illuminated, rather than a particular source of illumination, as discussed above. This interpretation is consistent with the patent disclosure, which shows a recessed illumination area (3) without disclosing the source (or the location of the source) of the illumination.

b. Power socket and first connector on one side and second connector on another side

Patent Owner argues that Lai does not disclose any socket or connector. *See* Remarks, pg. 22-24; Declaration, ¶ 51-56. The examiner notes that the claim term “power socket” is interpreted as referring to an opening for making an electrical connection for transmission of power. The term “connector” is interpreted to mean a thing that connects. It is a broad term. Lai clearly teaches that the illumination fan (10) is configured for transmission of power between the

controller (20) and the illumination fan (10). This is plainly evident both from the functions of the fan described through Lai's specification (*see, e.g.*, ¶¶ 3 and 11-16) and from the circuit diagrams (Figs. 4-6), which each illustrate an input power supply at "VDD" for connecting a fan (10) to a controller (when the fan is configured as FAN 1, Figs. 4-6) or to an adjacent fan (when the fan is configured as FAN 2, Figs. 4-6).² Fig. 3 of Lai shows a window or opening (*i.e.*, a socket) in one side of each fan body, specifically in one lateral-facing side surface of the fan body, for connecting a transmission line from the controller (at 13 in Fig. 3) or from an adjacent fan (at 12 in Fig. 3) to the fan input in order to supply power to the fan(s), which corresponds to a power socket as claimed. As shown in Figs. 4-6, each fan (10) includes additional input connections on one side of the fan (10), indicated by the open circles in the lines connecting the input of the fan (at left of each fan 10 in Figs. 4-6) either to the output of the controller (when the fan is configured as FAN 1) or to the output of an adjacent fan (when the fan is configured as FAN 2), in addition to the VDD connection discussed above. Any one of these connections would read on the first connector as broadly claimed. On the opposite side of each fan are corresponding output connections (*e.g.*, at Dout or Vfan shown at right of each fan in Figs. 4-6). Any of these corresponding connections would read on the second connector as broadly claimed.

Patent Owner also argues that the conditional claim language "when the first connector of the body is connected with a second connector of a body of another illumination fan" necessarily requires both a connected state and a disconnected state and argues that Lai does not teach both connected and disconnected states. *See* Remarks, pg. 23; Declaration, ¶ 54. In response, the examiner notes that the claim does not recite a disconnected state, and the conditional claim language does not require a disconnected state. The claim is directed to a single illumination fan.

² The examiner notes that a clearer copy of Lai's figures is available in Taiwanese Patent No. M528403 to Lai, supplied with this Office action for Patent Owner's convenience.

The conditional limitation describes a function that occurs under the condition of the first connector of the fan being connected to a second connector of another fan. The examiner finds nothing in this limitation that requires the connection to be disconnectable. In other words, the term “when” could reasonably cover all states of the fan (*e.g.*, the “when” clause being always satisfied). Lai clearly teaches two fans in a connected state, as shown in Figs. 3-6. Moreover, the examiner finds nothing in Lai to suggest that two adjacent fans must be permanently and irreversibly connected, which appears to be what Patent Owner is suggesting. The schematic drawing of Fig. 2 shows the single output (112) of the fan which is not connected to a second fan. Even if *arguendo* a disconnected state were required, the illumination fan of Lai would be in a disconnected state prior to being assembled in series with other fans. The fan output is understood to be connected to a second fan when in use, as shown in Fig. 3 (the fans being connected by transmission line 12) and in the circuit diagram of Figs. 4-6 discussed above.

Patent Owner emphasizes Lai’s use of the word “single” to describe the input (111) and output (112) of each illumination fan (10) and the transmission lines (12, 13) between the controller (20) and the fan (10) and between adjacent fans. *See* Remarks, pg. 24; Declaration, ¶ 56. The single input (111) and single output (112) are shown in the schematic view of Fig. 2. The transmission lines (12, 13) are shown in Fig. 3. One of ordinary skill in the art would understand from Lai’s disclosure, considered as a whole, that the single input (111) and single output (112) each include multiple connectors -- *e.g.*, the VDD connectors, the Din/Dout connectors, the Vfan connectors, etc., as discussed above. The claim does not exclude a power socket and a first connector that are collocated in the manner described by Lai. With respect to the transmission lines, it would be readily apparent to one of ordinary skill in the art that the “single transmission line” of Lai would include multiple wires (*e.g.*, as a bundled cable) for making the multiple

connections shown in the circuit diagrams, without having to “split [the transmission line] in two” as argued by Patent Owner (Remarks, pg. 24; Declaration, ¶ 56).

Patent Owner further argues that Lai teaches the input (111) and output (112) being on the same side of the body (not on “one side” and “another side” as recited in the claim) due to the arrangement of the input and output shown in Fig. 2. *See* Remarks, pg. 24-26; Declaration, ¶¶ 57-58. In response, the examiner notes first that Fig. 2 is “a schematic view” (Lai, ¶ 6) showing wiring from six nodes at the “single input” and six nodes at the “single output” to a plurality of LED’s and to the central fan. Because Fig. 2 is a schematic, Fig. 2 is not definitive with respect to the physical location of the inputs and outputs on the fan body. In contrast, Fig. 3 shows “a planar view” that more clearly shows the external appearance of the fan body. Fig. 3 shows a window or opening on one side of the first fan body (specifically, on one lateral-facing side surface of the fan body) through which the controller (20) is connected to the first fan (10) via the transmission line (13). Fig. 3 shows a second transmission line (12) extending from another side of the first fan body (specifically, another lateral-facing side surface of the fan body) to connect the first fan (10) to a second fan (10). One of ordinary skill in the art would reasonably understand Fig. 3 to teach locating the power socket and the first connector (*e.g.*, the fan connections for connecting the first fan to the controller 20 via the transmission line 13) on a side of the fan body that is opposite the second connector (*i.e.*, the fan connections for connecting to the second fan 10 via the transmission line 12) on another side of the body, so that the fans can be readily connected in a series as shown in Fig. 3 without having to wrap transmission lines around the exterior of the fan bodies (this being Lai’s improvement over the prior art as illustrated in Fig. 1; *see* ¶ 2). The examiner recognizes that, like the schematic of Fig. 2, the circuit diagrams of Figs. 4-6 also do not definitively show the physical locations of the

connectors. However, considering Lai's disclosure as a whole, particularly in view of Fig. 3 as discussed above, one of ordinary skill in the art would understand that positioning the collocated power socket and first connector on one side of the body and the second connector on another side of the body would be a suitable solution for accomplishing the serial connection taught by Lai.

In this context, Patent Owner appears to argue that the word "on" in the phrases "on one side" and "on another side" requires that the recited features be positioned on an outer surface of the respective sides, as opposed to being recessed within the surfaces (arguing that the input 111 and output 112 of Lai are not "on" the side in question but are instead "behind" the side; *see* Remarks, pg. 25-26; Declaration, ¶¶ 57-58). This appears to the examiner to be an overly narrow interpretation of the word "on," particularly in view of the '336 patent disclosure which shows that, in the disclosed embodiment, the socket "on" the one side is recessed within (or "behind") the side. *See* power socket 4 in Fig. 1 of the '336 patent. The windows in Lai's fan body that open to the sides of the body, specifically, to the lateral-facing side surfaces of the body as shown in Fig. 3, are reasonably understood to be on the respective sides of the body as claimed.

Patent Owner further argues that the circuit diagrams of Figs. 4-6 do not include any elements corresponding to the single input (111) or single output (112) because the circuit diagrams show communication pathways, not spatial positioning. *See* Remarks, pg. 26-27; Declaration, ¶¶ 59-60. While the examiner recognizes that the circuit diagrams do not show spatial positioning, the examiner maintains that one of ordinary skill in the art would reasonably conclude that the circuit diagrams of Figs. 4-6 show the communication pathways that correspond to the single input (111) and single output (112) of the illumination fan that are schematically illustrated in Fig. 2, for connection by transmission lines (12, 13) as shown in Fig.

3, since Figs. 2-6 of Lai are all directed to illustrating the LED fan of Lai's invention (*see, e.g.*, ¶¶ 6-10, which describe Figs. 2-6 as respectively showing a schematic view, a planar view, and circuit diagrams "according to the present invention"). Figs. 4-6 are therefore informative as to the multiple connections between the controller, a first fan, and a second fan that define the communication pathways for power and data transmission to the LEDs and center fan via the input, output, and transmission lines when the controller and fans are connected in series. It is the examiner's position that the spatial arrangement of the inputs "on one side of the body" and the outputs "on another side of the body" is most clearly shown in the planar view of Fig. 3.

c. Power socket electrically connected with the first connector

Patent Owner argues that because the power socket and the first connector of Lai are distinct connections within the single input, they cannot be electrically connected without short circuiting. *See* Remarks, pg. 28-29; Declaration, ¶¶ 62-63. As a preliminary matter, the examiner notes that the '336 patent disclosure does not provide any special definition of the phrase "electrically connected" or explain how or in what sense the power socket and first connector are electrically connected. The phrase "electrically connected" is interpreted according to its plain and ordinary meaning to mean that the power socket and first connector are connected as part of a functioning electrical circuit. In Lai, the power socket (voltage supply as at VDD, Figs. 4-6) is understood to be electrically connected to the first connector (*e.g.*, Din or Vfan) because they are both part of the functioning circuit of the fan. The examiner finds no evidence or persuasive reasoning in support of Patent Owner's position that the phrase "electrically connected" requires cross-wiring of the power socket and the first connector.

- d. When first connector is connected with second connector of another fan, a fan and illumination area of the other fan are respectively driven into rotation and illumination

Patent Owner argues that the first connector of Lai is a signal line that is not supplied with power from the power socket. *See* Remarks, pg. 29-30; Declaration, ¶¶64-69. In response, the examiner notes that both the claim and the '336 patent disclosure as a whole are silent with respect to the manner in which the functional limitations are accomplished "when the first connector is connected with the second connector of another fan." For example, the '336 patent disclosure does not show or describe how the power socket, first and second connectors, fan, and illumination area are electrically connected to achieve the claimed function. The '336 patent disclosure includes no circuit diagrams or written explanation to further define this function or explain how it is accomplished. The '336 patent disclosure thus provides no special definitions for any of the terms or relationships described in the conditional functional limitation. Patent Owner's arguments appear to assume some specific electrical relationship between the power socket, first and second connectors, fan, and illumination areas that is neither claimed nor disclosed. Considering the breadth of the claim language and the silence of the patent disclosure, the conditional functional limitation is interpreted to mean only what it says -- that when the first connector is connected with a second connector of another fan, then a fan and illumination area of the other fan are respectively driven into rotation and illumination. That is clearly what occurs when one fan of Lai is connected to another fan of Lai. When the first connector of one fan (10) is connected to the second connector of another fan (10), for example, via a transmission line (12) as shown in Fig. 3, both fans rotate and light up under the control of the LED fan controller

(20; “an LED fan controller device can adjust each individual LED light on multiple LED fans while simultaneously control all fan speeds too,” ¶ 16).

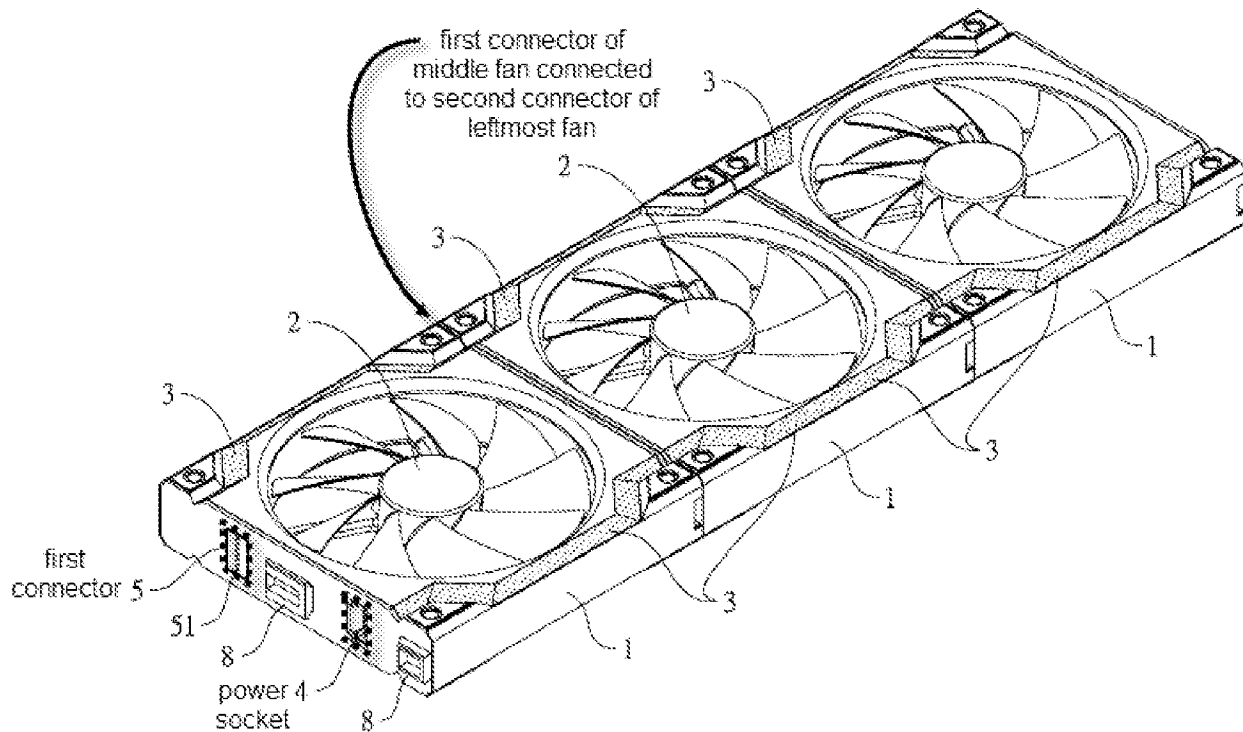
Patent Owner further argues that the second connector of a second fan would be too far away from a first connector of another fan to be connected to each other, identifying the positively claimed fan as the fan on the left in Fig. 3 and functionally claimed “another illumination fan” as the fan on the right in Fig. 3. *See* Remarks, pg. 30-31; Declaration, ¶¶ 65-68/ Patent Owner’s arguments appear to lose sight of the fact that the claim is directed to a single fan with a power socket and first and second connectors. In Lai, the power socket of the fan is understood to be supplied with power when the fan input is connected *either* to the controller (as at transmission line 13 in Fig. 3, when the fan is configured as FAN 1) *or* to the output of a second fan (as at transmission line 12 in Fig. 3, when the fan is configured as FAN 2), depending on whether the fan is connected directly to the controller (as is the case with the leftmost fan in Fig. 3) or indirectly to the controller via another fan (as is the case with the rightmost fan in Fig. 3). When connecting multiple fans in series as shown in Fig. 3 of Lai, a first connector (*i.e.*, an input) of one fan is connected to an adjacent second connector (*i.e.*, an output) of another fan. This type of connection is shown at transmission line 12 in Fig. 2, which connects the input of the rightmost fan to the output of the leftmost fan.

Patent Owner’s suggestion of connecting the *non-adjacent* inputs and outputs of two fans appears to arise from the somewhat vague conditional limitations in claim 1, which appear to describe two different conditional use scenarios. Claim 1 includes the following two conditional “when” clauses:

- “when the power socket on the one side of the body is supplied with power, the fan and the illumination area of the body are respectively driven into rotation and illumination” in lines 9-11; and
- “when the first connector of the body is connected with a second connector of a body of another illumination fan, a fan and an illumination area of the body of another illumination fan are respectively driven into rotation and illumination” in lines 12-14.

Fig. 3 of the ‘336 patent shows connected fans. Using Fig. 3 for reference, the first “when” clause is understood to refer, for example, to a fan configuration in which power is supplied to the power socket (4) of the positively claimed fan, corresponding to the configuration of the leftmost fan in Fig. 3. When power is supplied to the power socket (4) of the leftmost fan, then the fan and illumination area of that fan are respectively driven into rotation and illumination. The second “when” clause, by contrast, appears to refer to a different configuration in which, instead of supplying power to the power socket of the positively claimed fan, the first connector (5) of the positively claimed fan is instead connected to a second connector of another fan (and, presumably, a power socket of the “another fan” is supplied with power), corresponding to the configuration of the middle fan in Fig. 3. *See* annotated Fig. 3 below.

Fig. 3 of the '336 Patent
(Annotated by Examiner)



The claim description of two different conditional use scenarios appears to have led to some confusion reflected in Patent Owner's Remarks as to which connector of which fan is connected to which connector of which other fan. It is the examiner's position that Lai teaches an illumination fan having all of the structural features as claimed, and that the illumination fan of Lai is configured in such a way that the conditional functional limitations are satisfied when the power socket at the input of the illumination fan is supplied with power and when the input connectors of the illumination fan are connected to the output connectors of another illumination fan, as discussed in detail above.

On pg. 31 of the Remarks (and corresponding ¶¶ 67-68 of the Declaration), Patent Owner reiterates the position that the conditional limitation "when the first connector ... is connected with a second connector" necessarily requires a disconnected state. The examiner disagrees with

this position for the reasons discussed above. Patent Owner asserts that the illumination fans of Lai are “permanently connected via the ‘single transmission line 12’.” Remarks, pg. 31; Declaration, ¶ 68. The examiner finds no evidence to support this interpretation of Lai. To be clear, it is the examiner’s position that the claim language does not require a disconnected state; however, even if *arguendo* the claim were to be construed as requiring a disconnected state, then Lai appears to disclose such a state by virtue of the fact that the fans are each individual fans assembled together into a series of fans, and if not disconnectable then at the very least existing in a disconnected state prior to assembly.

e. Fujitsu - power socket and first connector on same side

Relevant to the proposed combination of Lai and Fujitsu, Patent Owner asserts that Fujitsu is not analogous art, arguing that Fujitsu is not in the same field of endeavor as the claimed invention and is not reasonably pertinent to the problem confronting the inventor. The Declaration asserts that the claimed invention is in the field of “illumination fans for personal computers” while Fujitsu is in the art of “cooling fans for high-reliability high-end servers.” Declaration, ¶ 76. (*See also* Remarks, pg. 43-44, where this issue is discussed in the context of the proposed combination of Fujitsu and Tsai.) In response, the examiner notes that Patent Owner’s arguments too narrowly define the respective fields of endeavor. With respect to the field of endeavor of the ‘336 patent, the Background of the Invention in the ‘336 patent states:

Moreover, more attention has been focused on **heat dissipation inside the housings of the computers with increased demands for higher specifications of the computers.** Therefore, fans are usually provided during assembly to dispel heat accumulated inside a housing to the outside. However, each fan has to be connected to the power supply through an independent power cable, so the number of fans that can be assembled is limited by the finite number of connections available on the power supply. **Thus in turn limits the efficiency of heat dissipation. Furthermore, the additional wire inside the housing makes cable routing and management more cumbersome.**

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Col. 1:29-40 (emphasis added).

With respect to the problem confronting the inventor in the '336 patent, the

Summary of the Invention in the '336 patent further states:

In view of the above shortcomings and problems, the inventor, through years of continued research and improvements in the field, has finally come up with the present invention that **improves efficiency of heat dissipation inside a computer housing** unlike the structures of the prior art.

Col. 1:44-49 (emphasis added).

Considering the disclosure of the '336 patent, it is reasonable to say that the field of endeavor of the '336 patent is heat dissipation fans for computers and that the problem confronting the inventor was efficiency of heat dissipation inside a computer housing and improved cable routing and management.

Turning to Fujitsu, Fujitsu states: "The present invention relates to an electronic device, a cooling fan controller, a cooling fan control program, and a cooling fan controlling method." Fujitsu, ¶ 1. Fujitsu states that "[t]he electronic device is not limited to a server, and can be a device that includes various electronic apparatus such as information processing device, communication device that ought to be cooled." *Id.*, ¶ 25.

With respect to the problem to be solved, Fujitsu is similarly concerned with cooling efficiency, stating:

On the other side, because cooling efficiency and lower power consumption is desirable in the servers in the recent years, rotation speed control or state monitoring of each fan unit is performed by a management and monitoring unit of the entire server. Accordingly, it is conceivable to physically connect a control signal line of each fan unit to the management and monitoring unit to identify and control each fan unit inside the server casing. **However, because the number of signal lines must be wired in accordance with the number of installed fan units in such a configuration, wiring of the signal lines becomes difficult as the number of installed fan units increases.**

To solve such a problem, in a structure in which the fan units are hot-swappable by sliding operation as explained above, **it is possible to adopt a serial interface capable of monitoring and controlling the fan units by using fewer signal lines. For example, the plurality of the fan**

units is connected in a daisy chain form by using a serial interface such as Inter-Integrated Circuit (I2C).

Fujitsu, ¶ 5-6.

Considering the disclosure of Fujitsu, it is reasonable to say that Fujitsu's field of endeavor is cooling fans for an electronic device, which is the same field of endeavor as the '336 patent. Moreover, Fujitsu's disclosure is reasonably pertinent to the problem of efficient heat dissipation and improved cable routing and management confronting the inventor. For these reasons, the examiner concludes that Fujitsu is analogous art. *See* MPEP § 2141.01(a).

In the non-final Office action, the examiner found that Fujitsu teaches a fan (10, Figs. 5-7) with a power socket (female power connector CNA and/or CNB, *see* ¶¶ 31 and 39) and a first connector (inter-fan connector CNC, ¶ 31) on one side of the body, and a second connector (inter-fan connector CND) on another side of the body. For clarity, the examiner notes that Patent Owner does not appear to dispute the examiner's finding that Fujitsu teaches a first connector (CNC) on one side of the body and a second connector (CND) on a second side of the body. Patent Owner's arguments are directed to the location of the power socket of Fujitsu. Patent Owner argues that Fujitsu's power socket (CNA or CNB) is located on a front side surface or a rear side surface of the fan, not on the same right side surface on which the first connector (CNC) is situated. *See* Remarks, pg. 32-41; Declaration, ¶¶ 85-100.

Patent Owner relies here on the construction of the term "side" to mean specifically one of four lateral-facing side surfaces of the body that is perpendicular to the rotational axis of the fan, as discussed above under Section 1 of this Response to Arguments. Patent Owner's argument is not persuasive for the following reasons. First, the proposed interpretation of the term "side" is narrower than is warranted by the claim language or the '336 patent specification,

as discussed above. Fujitsu's power socket (CNA or CNB) is generally located on the same side of the fan body as the first connector (CNC), *i.e.*, the lateral area to the right of the fan in Figs. 7A-B. Second, even if *arguendo* the term "side" were narrowly interpreted to mean a lateral side surface of the body, the structure of Fujitsu's power socket (CNA or CNB) directly abuts the same lateral side surface of the body on which the first connector (CNC) is located, as shown in Figs. 7A-B, and is thus reasonably considered to be on that same side. Third, even if *arguendo* the claim language were interpreted as requiring a power socket that opens to the same lateral-facing side surface of the fan on which the first connector is located, this arrangement would have been obvious in view of the combination of Lai and Fujitsu on which the rejection under 35 U.S.C. 103 is based.

In response to Patent Owner's argument that it would not have been obvious to modify Fujitsu by relocating the power socket (CNA/CNB) to open toward the same lateral-facing side surface of the body on which the first connector (CNC) is located because it would interfere with hot-swapping the fans of Fujitsu (Remarks, pg. 41; Declaration, ¶¶ 97-100), the examiner notes that the rejection under discussion in this section is based on a proposed modification of Lai, not of Fujitsu. Hot swapping is not an issue in the serial fan arrangement of Lai. Rather, Lai is concerned with serially connecting fans in such a way as to improve cable management (*i.e.*, as an improvement over the prior art of Fig. 1; *see* ¶ 2). As noted above, Fujitsu is also concerned with serially connecting fans in such a way that simplifies wiring of signal lines. *See* Fujitsu, ¶ 5-6. One of ordinary skill in the art would reasonably understand that the invention of Lai may benefit from the teaching of Fujitsu with respect to the arrangement of connectors on opposite sides of the fan body in order to simplify wiring of the fans. Considering the structure, function, and intended use of Lai's fan, it would have been obvious to one of ordinary skill in the art to

locate the power socket and the first connector on one side of the body, including on one lateral-facing side surface of the body, and the second connector on another side of the body, including the lateral-facing side surface of the body that is opposite the first connector, as taught by Fujitsu, in order to facilitate the serial arrangement of fans shown in Fig. 3 of Lai (and similarly in Figs. 5-6 of Fujitsu).

f. Fujitsu and Tsai - Illumination area on at least two sides of fan at top of body

Under Section 2.f. of the Remarks, pg. 42-45, Patent Owner argues that Fujitsu and Tsai do not teach the illumination area being on at least two sides of the fan at the top of the body, citing the non-final Office action at pg. 12. The examiner notes that, in the rejection under discussion, Lai is relied upon to teach the illumination area on two sides of the fan at top of the body, as discussed above in response to Section 2.a. of the Remarks. It appears that the arguments in Section 2.f. of the Remarks are presented in response to the rejection of claim 1 under 35 U.S.C. 103 as unpatentable over Fujitsu in view of Tsai, not the rejection over Lai in Fujitsu. For that reason, these arguments will be addressed in Section 3 below.

3. *Claim 1 as unpatentable over Fujitsu in view of Tsai*

a. Illumination area on two sides of fan at top of the body

Under the Section 2.f. heading, Patent Owner argues that Fujitsu does not teach the illumination area being on at least two sides of the fan at the top of the body, citing the non-final Office action at pg. 12. *See* Remarks, pg. 42-43. In the non-final Office action, the examiner acknowledged that Fujitsu does not teach the claimed arrangement of the illumination area but maintained that the claimed arrangement of the illumination area is taught by Tsai and would be

obvious to include in the invention of Fujitsu in order to enhance the aesthetic appearance of the fan. Patent Owner does not appear to dispute the examiner's finding that Tsai teaches an illumination area on two sides of the fan at top of the body. Rather, Patent Owner argues that Fujitsu is not pertinent to an illumination fan (Remarks, pg. 43; Declaration, ¶ 76) and that it would not have been obvious to modify Fujitsu in view of Tsai (Remarks, pg. 43-44, citing the Declaration, ¶¶ 75-76). Patent Owner's argument that Fujitsu is not analogous art has been addressed above under section heading 2.e.

With respect to the combination of Fujitsu and Tsai, Patent Owner argues that it would not have been obvious to add an illumination area as taught by Tsai to the fan of Fujitsu because Fujitsu's fan is used inside a server, where illumination areas on two sides of the fan at the top would not be widely viewable and would undesirably increase fan cost, power consumption, and heat load. *See* Remarks, pg. 43; Declaration, ¶ 75-89. This argument is not persuasive because Fujitsu discloses that a server is only one example of an electronic device that can be cooled by the fan. As noted above, Fujitsu states that "[t]he electronic device is not limited to a server, and can be a device that includes various electronic apparatus such as information processing device, communication device that ought to be cooled." Fujitsu, ¶ 25. A personal computer, argued by Patent Owner to be the preferred application of an illumination fan, would fall within the scope of an information processing device that ought to be cooled. Fujitsu's teaching regarding the desirability of low power consumption, cited by Patent Owner, is made in the context of a discussion of the advantages of rotation speed control or state monitoring for each fan unit, not with respect to illumination features. *See* Fujitsu ¶ 5. Additionally, the examiner notes that the illumination feature taught by Tsai is provided by a translucent light-guiding ring (20, Fig. 1) which can be used in combination with a single LED to distribute light in an annular pattern

around the fan (*see* ¶ 34), which would not appear to significantly increase cost, power consumption, or heat load as compared to the fan of Fujitsu, which also includes an LED. The examiner finds no evidence in the present record to support Patent Owner's position that the addition of an illumination feature such as that taught by Tsai would be prohibitively expensive or undesirably increase power consumption or heat load to such an extent as to outweigh the aesthetic benefits for use in situations where such benefits would be desirable, whether in a server, an information processing device, or a communication device as disclosed by Fujitsu.

Patent Owner further argues that the combination of Fujitsu and Tsai does not meet limitation "an illumination area on at least two sides of the fan at top of the body" because Fujitsu teaches an indicator lamp on one side of the body (not "top" of the body) and because the indicator lamp of Fujitsu does not make the fan an "illumination" fan as recited in the preamble. *See* Remarks, pg. 44-45; Declaration, ¶¶ 77-84. These arguments are not persuasive because the rejection is not based on Fujitsu alone but on the combination of Fujitsu and Tsai. The claimed arrangement of the illumination area is clearly taught by Tsai and would have been obvious to include in the fan of Fujitsu to yield the aesthetic benefits taught by Tsai, as discussed above. The fan resulting from the proposed combination would reasonably be considered an illumination fan as claimed.

b. Power socket and first connector on one side of the body

Under the Section 3 heading, Patent Owner argues that Fujitsu and Tsai do not disclose a power socket and a first connector on one side of a body as recited in claim 1. *See* Remarks, pg. 45-46, citing the arguments with respect to Fujitsu advanced under the Section 2.e. heading. To summarize the examiner's position as it applies to the rejection of claim 1 under 35 U.S.C. 103

as unpatentable over Fujitsu in view of Tsai, Fujitsu's power socket (CNA or CNB, Figs. 7A-B) is generally located on the same side of the fan body as the first connector (CNC), *i.e.*, the lateral area to the right of the fan in Figs. 7A-B. Moreover, even if *arguendo* the term "side" were narrowly interpreted to mean a lateral side surface of the body, the structure of Fujitsu's power socket (CNA or CNB) directly abuts the same lateral side surface of the body on which the first connector (CNC) is located, as shown in Figs. 7A-B, and is thus reasonably considered to be on that same side. Therefore, absent any more specific definition of the term "side" in either the specification or claims, Fujitsu is understood to teach a power socket and first connector on one side of the body.

4. *Claim 2 - Electrically conductive terminal and contact surface taught by Lai*

Patent Owner refers to the arguments set forth in Section 2 with respect to claim 1, which are addressed above. With respect to claim 2, Patent Owner further argues that neither Lai nor Fujitsu disclose an electrically conductive terminal in the first connector and an electrically conductive contact surface in the second connector. *See* Remarks, pg. 46. In response, the examiner maintains that one of ordinary skill in the art would clearly understand from the respective disclosures of Lai and Fujitsu that first and second connectors of the fan would respectively include an electrically conductive terminal and an electrically conductive contact surface, these being necessary components for transmitting the power and control signals (*i.e.*, conducting electricity) to the multiple fans when connected in series, as discussed in the prior Office action. Patent Owner has not provided any argument or evidence to the contrary.

5. *Claim 3 - Continuous illumination area obvious over Lai, or Fujitsu in view of Tsai*

In the heading of Section 5, Patent Owner states that “neither Lai nor Fujitsu discloses the continuous illumination areas of claim 3,” but Patent Owner has not provided any arguments or evidence pointing out any supposed errors in the rejections of claim 3, relying instead on the features of claim 1 as argued in Section 2, addressed above. *See* Remarks, pg. 46-47. The examiner maintains that a continuous illumination area would have been obvious in view of Lai, or obvious over Fujitsu in view of Tsai, for the reasons set forth in the non-final Office action and again below.

6. *Claim 4 - Groove and engaging block taught by Fujitsu*

In the heading of Section 6, Patent Owner states that “Fujitsu does not disclose a groove and an engaging block of claim 4,” but Patent Owner has not provided any arguments or evidence pointing out any supposed errors in the rejections of claim 4, relying instead on the features of claim 1 as argued in Section 2, addressed above. *See* Remarks, pg. 47. The examiner maintains that Fujitsu does teach this feature, for the reasons set forth in the non-final Office action and again below.

7. *Claim 5 - Groove on two sides and an engaging block taught by Chou*

In the heading of Section 7, Patent Owner states that “Chou does not disclose a groove on two sides and an engaging block of claim 5,” but Patent Owner has not provided any arguments or evidence pointing out any supposed errors in the rejections of claim 5, relying instead on the features of claim 1 as argued in Section 2, addressed above. *See* Remarks, pg. 47. The examiner maintains that Chou does teach this feature, for the reasons set forth in the non-final Office action and again below.

Claim Rejections - 35 USC § 112

The following is a quotation of 35 U.S.C. 112(b):

(b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

Amended claim 4 and new claims 18-20, 33-36, 37-40, 42, and 44-47 are rejected under 35 U.S.C. 112(b) as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor regards as the invention.

Regarding **amended claim 4 and new claim 44**, the limitation “an engaging block of the body of another illumination fan is provided on another side thereof” in lines 3-4 renders the claims indefinite, because this describes a structural feature (“an engaging block”) of a fan that is not being positively claimed (“another illumination fan”). Considering the preamble, the claims appear to be directed to a single illumination fan (“An illumination fan”) configured for a functional relationship with another illumination fan (“connectable with at least one illumination fan for a computer”). The “another illumination fan” is not positively claimed as part of the invention. It is unclear whether or in what sense the claimed illumination fan of claims 4 and 44 is further limited by the description of structural features of another fan that is not positively claimed.

Regarding **claims 18-20 and 33**, the limitations “is electrically connected” (in claims 18 and 20) and “is connected” (in claims 19 and 33), describing connection of the claimed fan to another fan, render the claims indefinite because, as noted above, the claims appear to be directed to a single illumination fan configured for a functional relationship with another illumination fan. It is unclear whether the recited connections between the claimed fan and another fan mean that the claimed fan is *configured to make* such a connection, or that the recited connection is *positively required*. For example, it is unclear whether infringement would occur

when an illumination fan is made that is configured to make the claimed connections to another fan, or only when that illumination fan is actually connected to another fan in the manner claimed. **Claims 34-36** are rejected in view of their dependency from claim 33.

Regarding **claim 37**, it is unclear what configuration of connections between fans is being described. In particular, it is unclear whether the two references to “another illumination fan” in lines 3 and 5 both refer to the same illumination fan. For the purpose of examination, both references to “another illumination fan” are interpreted as referring to the same illumination fan.

Claims 38-40 are rejected in view of their dependency from claim 37. Moreover, it is unclear whether subsequent references to “the another illumination fan” and “another illumination fan” in each of claims 38-40 refer to the same “another illumination fan” recited in claim 1 or claim 37 (or any preceding claim in the chain of dependency), or to a different illumination fan. Claims 38-40 are particularly confusing due to the apparent description of both the first connector and the second connector of the claimed illumination fan being connected to a respective connector of another illumination fan, with the connection of the *second connector* of the claimed fan to a first connector of another fan being apparently somehow conditional upon the connection of the *first connector* of the claimed fan to a second connector of another fan. It is unclear what configuration of fans is being described, and it is unclear in what sense or to what extent the one illumination fan to which the claims are directed would be limited by the configuration described.

Regarding **claim 42**, the limitation “an electrically conductive contact surface is provided in the second connector of the another illumination fan” in lines 3-4 renders the scope of the claim indefinite, because it appears to be further defining a structural feature of “another illumination fan” that is not positively claimed. As noted above, the claims are directed to a

single illumination fan configured for a functional relationship with another illumination fan (“connectable with at least one other illumination fan,” preamble). It is unclear whether or to what extent the claimed illumination fan is limited by features of the “another illumination fan.”

Regarding **claim 45**, the limitation “a groove is provided ... on each of two sides of the body of the another illumination fan” in lines 2-3 renders the scope of the claim indefinite, because it appears to again be defining a structural feature of “another illumination fan” that is not positively claimed. It is unclear whether or to what extent the claimed illumination fan is limited by features of the “another illumination fan.” Moreover, the limitation “the body of the illumination fan is connected with the body of the another illumination fan by respectively engaging an engaging block with one of the grooves on the sides of the body of the illumination fan and one of the grooves on the sides of the body of the another illumination fan” in lines 3-6 renders the claim indefinite, because it is unclear whether this describes a function of the claimed illumination fan, in which case the claim would be directed to a single illumination fan configured for connection as claimed; or a positive structural connection, in which case the claim would appear to require two illumination fans and an engaging block that are actually connected in the claimed configuration.

Regarding **claims 46 and 47**, it is unclear what configuration of fans Patent Owner is attempting to describe. Claims 46 and 47 each appear to describe both the first connector and the second connector of the claimed illumination fan being connected to a respective connector of the same “another illumination fan,” with the connection of the *second connector* of the claimed fan to a first connector of another fan being somehow conditional upon the connection of the *first connector* of the claimed fan to a second connector of the other fan. It is unclear what configuration of fans and connections is being described, and it is unclear in what sense or to

what extent the one illumination fan to which the claims are directed would be limited by the configuration described.

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a)(1) the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention.

(a)(2) the claimed invention was described in a patent issued under section 151, or in an application for patent published or deemed published under section 122(b), in which the patent or application, as the case may be, names another inventor and was effectively filed before the effective filing date of the claimed invention.

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 6-11, 21-42, and 46-48 are rejected under 35 U.S.C. 102(a)(1) and 102(a)(2) as anticipated by Lai or, in the alternative, under 35 U.S.C. 103 as obvious over Lai in view of Fujitsu.

Regarding **claims 1 and 41**, Lai discloses an illumination fan (LED fan 10, Fig. 3) connectible with at least one other³ illumination fan (¶ 12)⁴, comprising: a body provided with a fan in a center of the body (*see* Fig. 3), an illumination area (*i.e.*, an area that is illuminated) on at

³ The word “other” added in the preamble of new claim 41 does not meaningfully limit the claim.

⁴ The preamble phrase “for a computer” describes an intended use of the claimed fan and does not further limit its structure. Therefore, the phrase “for a computer” is not a claim limitation. *See* MPEP § 2111.02, subsection II.

least two sides of the fan at a top of the body (*i.e.*, being illuminated by LEDs 16, Figs. 2 and 4-6; ¶¶ 11 and 13-16), a power socket and a first connector (shown as input 111 in schematic view of Fig. 2, the power socket being the input power supply connection of the fan 10, and the first connector being any other of the input connections of the fan 10 for connecting the fan 10 to the controller 20 or to an adjacent fan 10, as shown in Figs. 4-6) on one side of the body (*i.e.*, on the side closest to the controller 20, Fig. 3), and a second connector (shown as output 112 in schematic view of Fig. 2, from the fan 10 to the next fan 10 in series, connected via transmission line 12 in Fig. 3; *see also* Figs. 4-6) on another side of the body (*i.e.*, on the side closest to the next fan 10 in the series, Fig. 3), wherein the power socket is electrically connected with the first connector, the second connector, the fan and the illumination area (*see* Figs. 2 and 4-5), such that when the power socket on the one side of the body is supplied with power, the fan and the illumination area of the body are respectively driven into rotation and illumination (¶ 16), and when the first connector of the body is connected with a second connector of a body of another illumination fan (*i.e.*, when the input connectors of one fan are connected with the output connectors of the adjacent fan in the series, *e.g.*, via a transmission line 12, Fig. 3), a fan and an illumination area of the body of the other illumination fan are respectively driven into rotation and illumination (¶ 16).

Although the schematic view of the fan shown in Fig. 2 of Lai illustrates the input (111) and the output connectors (112) on the same side of the fan body, the fan shown in Fig. 3 of Lai is understood to show the input and output connectors on opposite sides of the fan body, *e.g.*, for connection to a controller (20) on one side via a transmission line (13) and to another fan on another side via another transmission line (12), or for connection to one fan on one side via a

first transmission line (12) and to another fan on the other side via a second transmission line (12). For that reason, Lai is understood to anticipate claim 1.

If there is any doubt regarding the examiner's interpretation of Lai as disclosing the power socket and the first connector being on one side of the body and the second connector being on another side of the body, then Fujitsu clearly discloses a fan (fan unit 10, Figs. 5-7) comprising: a body (fan unit 10) provided with a power socket (female power connector CNA and/or CNB, *see* ¶¶ 31 and 39) and a first connector (inter-fan connector CNC, ¶ 31) on one side of the body, and a second connector (inter-fan connector CND) on another side of the body. The power socket (CNA, CNB) is electrically connected with the first connector (CNC), the second connector (CND), a fan (11), and an illumination area (12; *see* Fig. 14). When the power socket (CNA, CNB) on the one side of the body is supplied with power, the fan (11) and the illumination area (12) of the body are respectively driven into rotation and illumination (*see* ¶¶ 27, 31, and 39-40). When the first connector (CNC) of the body is connected with the second connector (CND) of a body of another illumination fan, a fan (11) and an illumination area (12) of the body of the other illumination fan are respectively driven into rotation and illumination ("two adjacent fan units 10 among the plurality of fan units 10 are connected via inter-fan connectors CNC and CND that transmit the pulse signal from one end side to the other end side, and supplies power from one end side to the other end side," ¶ 31). Therefore, it would have been obvious to one of ordinary skill in the art to provide the body of Lai with a power socket and a first connector on one side of the body (*e.g.*, on the side adjacent to the controller, to which the transmission line 13 is attached in Fig. 3 of Lai) and a second connector on another side of the body (*e.g.*, on the side adjacent to the next fan in series, to which the transmission line 12 is

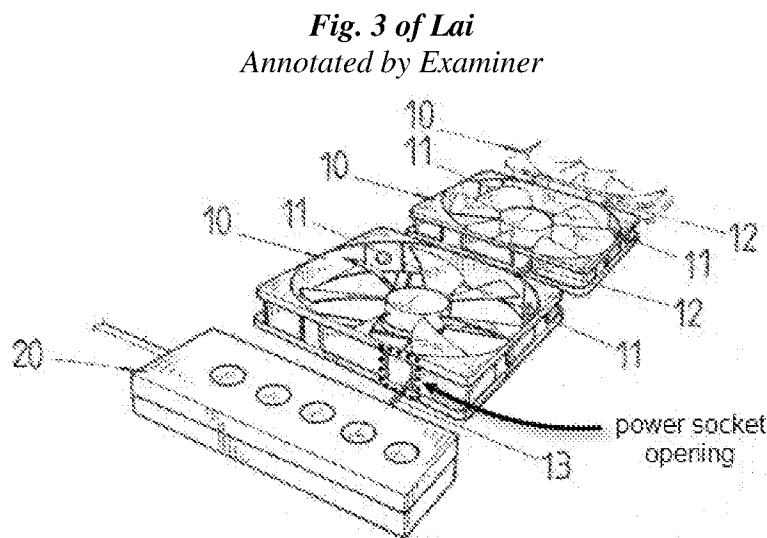
attached in Fig. 3 of Lai), as taught by Fujitsu, in order to facilitate a serial arrangement of fans (as shown in Fig. 3 of Lai and Figs. 5-6 of Fujitsu).

Regarding **claims 2 and 42**, Lai or the modified Lai teaches the claimed invention substantially as claimed, as set forth above for claims 1 and 41, respectively. Lai further teaches an electrically conductive terminal (any one or more of the input nodes of fan 10 shown in Figs. 4-6) provided in the first connector of the illumination fan, and an electrically conductive contact surface (any one or more of the output nodes of fan 10 shown in Figs. 4-6) is provided in the second connector of the illumination fan and of the “another” illumination fan (the two fans 10 being substantially identical, such that the electrically conductive contact surface is understood to be provided in the second connector of both fans 10) for being electrically connected with the electrically conductive terminal of an adjacent fan (via transmission line 12, Fig. 3), such that when the first connector of the body of the illumination fan is connected with the second connector of the body of another illumination fan (via transmission line 12), the fan and the illumination area of the body of the other illumination fan are respectively driven into rotation and illumination (§ 16, such that the controller 20 connected to the first fan “can adjust each individual LED light on multiple LED fans while simultaneously control[ing] all fan speeds too”). One of ordinary skill in the art would clearly understand from the disclosure of Lai that the input and output nodes of the fan respectively include an electrically conductive terminal and an electrically conductive contact surface, these being necessary components for transmitting the power and control signals (i.e., conducting electricity) to the multiple fans when connected in series.

Regarding **claims 6-8 and 9-11**, Lai or the modified Lai teaches the claimed invention substantially as claimed, as set forth above for claims 1 and 2, respectively. Lai further teaches

the top of the body (at top in Fig. 3) is adjacent to the one side of the body of the illumination fan (*i.e.*, the side from which the transmission line 13 extends in Fig. 3) (**claims 6 and 9**) and to the another side of the body of the illumination fan (*i.e.*, the side from which the transmission line 12 extends in Fig. 3) (**claims 7 and 10**), and the one side and the another side of the body of the illumination fan are adjacent to a bottom of the body of the illumination fan (at bottom in Fig. 3) (**claims 8 and 11**).

Regarding **claim 21**, Lai or the modified Lai teaches the claimed invention substantially as claimed, as set forth above for claim 1. Lai further teaches the power socket on one side of the illumination fan has an opening (*see* annotated Fig. 3 below) located on the one side of the illumination fan.



Regarding **claims 22-24**, Lai or the modified Lai teaches the claimed invention substantially as claimed, as set forth above for claim 21. Lai further teaches the top of the body (at top in Fig. 3) is adjacent to the one side of the body of the illumination fan (*i.e.*, the side from which the transmission line 13 extends in Fig. 3) (**claim 22**) and to the another side of the body of the illumination fan (*i.e.*, the side from which the transmission line 12 extends in Fig. 3)

(**claim 23**), and the one side and the another side of the body of the illumination fan are adjacent to a bottom of the body of the illumination fan (at bottom in Fig. 3) (**claim 24**).

Regarding **claim 25**, Lai or the modified Lai teaches the claimed invention substantially as claimed, as set forth above for claim 1. Lai further teaches an electrically conductive contact surface (any one or more of the output nodes of fan 10 shown in Figs. 4-6) is provided in the second connector and is located on the another side of the body of the illumination fan (*i.e.*, for electrical connection via transmission line 12, Fig. 3). One of ordinary skill in the art would clearly understand from the disclosure of Lai that the output nodes of the fan include an electrically conductive contact surface, this being a necessary component for transmitting the power and control signals (*i.e.*, conducting electricity) to the multiple fans when connected in series.

Regarding **claims 26-28**, Lai or the modified Lai teaches the claimed invention substantially as claimed, as set forth above for claim 25. Lai further teaches the top of the body (at top in Fig. 3) is adjacent to the one side of the body of the illumination fan (*i.e.*, the side from which the transmission line 13 extends in Fig. 3) (**claim 26**) and to the another side of the body of the illumination fan (*i.e.*, the side from which the transmission line 12 extends in Fig. 3) (**claim 27**), and the one side and the another side of the body of the illumination fan are adjacent to a bottom of the body of the illumination fan (at bottom in Fig. 3) (**claim 28**).

Regarding **claim 29**, Lai or the modified Lai teaches the claimed invention substantially as claimed, as set forth above for claim 1. Lai further teaches an electrically conductive terminal (any one or more of the input nodes of fan 10 shown in Figs. 4-6) is provided in the first connector and is located on the one side of the body of the illumination fan (*e.g.*, for electrical connection to the controller 20 via transmission line 13, Fig. 3). One of ordinary skill in the art

would clearly understand from the disclosure of Lai that the input nodes of the fan include an electrically conductive terminal, this being a necessary component for transmitting the power and control signals (i.e., conducting electricity) to the multiple fans when connected in series.

Regarding **claims 30-32**, Lai or the modified Lai teaches the claimed invention substantially as claimed, as set forth above for claim 29. Lai further teaches the top of the body (at top in Fig. 3) is adjacent to the one side of the body of the illumination fan (*i.e.*, the side from which the transmission line 13 extends in Fig. 3) (**claim 30**) and to the another side of the body of the illumination fan (*i.e.*, the side from which the transmission line 12 extends in Fig. 3) (**claim 31**), and the one side and the another side of the body of the illumination fan are adjacent to a bottom of the body of the illumination fan (at bottom in Fig. 3) (**claim 32**).

Regarding **claim 33**, Lai or the modified Lai teaches the claimed invention substantially as claimed, as set forth above for claim 1. Lai further teaches that, in use, the second connector of the illumination fan is connected with a first connector of the another illumination fan (*i.e.*, the output connector of one fan is electrically connected with the input connector of another fan via a transmission line 12, Fig. 3; *see also* Figs. 4-6, showing the electrical connections between FAN 1 and FAN 2).

Regarding **claims 34-36**, Lai or the modified Lai teaches the claimed invention substantially as claimed, as set forth above for claim 29. Lai further teaches the top of the body (at top in Fig. 3) is adjacent to the one side of the body of the illumination fan (*i.e.*, the side from which the transmission line 13 extends in Fig. 3) (**claim 34**) and to the another side of the body of the illumination fan (*i.e.*, the side from which the transmission line 12 extends in Fig. 3) (**claim 35**), and the one side and the another side of the body of the illumination fan are adjacent to a bottom of the body of the illumination fan (at bottom in Fig. 3) (**claim 36**).

Regarding **claim 37**, Lai or the modified Lai teaches the claimed invention substantially as claimed, as set forth above for claim 2. Claim 37 is interpreted to mean that when the first connector of the claimed fan is connected to a second connector of another fan, the connection is an electrical connection. In the case of Lai, when the first connector of the body of the illumination fan is connected with the second connector of the body of the another illumination fan (*i.e.*, when the input of one fan is connected to the output of another fan, via transmission line 12, Fig. 3), the connection is an electrical connection (for transmitting power and signals between the two fans; *see* Figs. 4-6 and ¶¶ 12-16).

Regarding **claims 38-40**, Lai or the modified Lai teaches the claimed invention substantially as claimed, as set forth above for claim 37. As discussed above in the rejections under 35 USC 112(b), it is unclear what is being described in claims 38-40. As the claims are best understood by the examiner, Lai appears to teach the limitations of claims 38-40 because when the first connector of one fan of Lai is electrically connected to the second connector of another fan of Lai (*i.e.*, when the input and output of adjacent fans are connected by a transmission line 12, Fig. 3), the second connector of the one fan is also electrically connected to the first connector of the other fan via the internal circuitry of the two fans, as part of a functional electrical circuit (*e.g.*, for transmitting power and control signals from the controller 20 to a third fan in series).

Regarding **claims 46 and 47**, Lai or the modified Lai teaches the claimed invention substantially as claimed, as set forth above for claim 41. As discussed above in the rejections under 35 USC 112(b), it is unclear what is being described in claims 46 and 47. As the claims are best understood by the examiner, Lai appears to teach the limitations of claims 46 and 47 because when the first connector of one fan of Lai is electrically connected to the second

connector of another fan of Lai (*i.e.*, when the input and output of adjacent fans are connected by a transmission line 12, Fig. 3), then the first connector of the one fan is electrically connected to the second connector of the other fan (via the transmission line 12) (**claim 46**) and the second connector of the one fan is also electrically connected to the first connector of the other fan via the internal circuitry of the two fans, as part of a functional electrical circuit (*e.g.*, for transmitting power and control signals from the controller 20 to a third fan in series) (**claims 46 and 47**).

Regarding **claim 48**, Lai or the modified Lai teaches the claimed invention substantially as claimed, as set forth above for claim 41. Claim 48 is interpreted to mean that when the first connector of the claimed fan is connected to a second connector of another fan, the connection is an electrical connection. In the case of Lai, when the first connector of the body of the illumination fan is connected with the second connector of the body of the another illumination fan (*i.e.*, when the input of one fan is connected to the output of another fan, via transmission line 12, Fig. 3), the connection is an electrical connection (for transmitting power and signals between the two fans; *see* Figs. 4-6 and ¶¶ 12-16).

Claim Rejections - 35 USC § 103

Claims 3, 12-14, and 43 are rejected under 35 U.S.C. 103 as obvious over Lai, or Lai in view of Fujitsu.

Regarding **claims 3 and 43**, Lai or the modified Lai teaches the claimed invention substantially as claimed, as set forth above for claims 1 and 41, respectively. Lai does not explicitly teach that the illumination areas of two connected fan bodies form a continuous illumination area. However, the arrangement of the illumination areas is understood to be a

matter of aesthetic design choice, there being no objective evidence of record to indicate that the continuous configuration of the illumination areas serves any mechanical function. It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify or further modify the invention of Lai by arranging the illumination areas in any desired aesthetic configuration, including a continuous illumination area (e.g., by extending the illuminated area to adjacent edges of the connected fans), in order to enhance the aesthetic appearance of the fans, since the courts have held that “matters relating to ornamentation only which have no mechanical function cannot be relied upon to patentably distinguish the claimed invention over the prior art.” *See* MPEP 2144.04, subsection I, citing *In re Seid*, 161 F.2d 229, 73 USPQ 431 (CCPA 1947).

Regarding **claims 12-14**, the modified Lai teaches the claimed invention substantially as claimed, as set forth above for claim 3. Lai further teaches the top of the body (at top in Fig. 3) is adjacent to the one side of the body of the illumination fan (*i.e.*, the side from which the transmission line 13 extends in Fig. 3) (**claim 12**) and to the another side of the body of the illumination fan (*i.e.*, the side from which the transmission line 12 extends in Fig. 3) (**claim 13**), and the one side and the another side of the body of the illumination fan are adjacent to a bottom of the body of the illumination fan (at bottom in Fig. 3) (**claim 14**).

Claims 4, 15-17, and 44 are rejected under 35 U.S.C. 103 as obvious over Lai in view of Fujitsu.

Regarding **claims 4 and 44**, Lai or the modified Lai teaches the claimed invention substantially as claimed, as set forth above for claims 1 and 41, respectively. Lai does not teach a groove and an engaging block for connecting the fan bodies. However, Fujitsu further teaches a

groove (*i.e.*, the female socket of connector CND) is provided on one side of the body of the illumination fan, while an engaging block (*i.e.*, the projection of the connector CNC) of the body of another illumination fan is provided on another side thereof to be engaged into the groove (§ 38), such that when the groove of the body of the illumination fan is engaged with the engaging block of the body of another illumination fan, the body of the illumination fan is connected with the body of the other illumination fan (§ 38; *see* Figs. 5-6). It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify or further modify the invention of Lai by providing a groove on one side of the body and an engaging block on another side of the body, as taught by Fujitsu, in order to facilitate a secure connection between adjacent fan bodies.

Regarding **claims 15-17**, the modified Lai teaches the claimed invention substantially as claimed, as set forth above for claim 4. Lai further teaches the top of the body (at top in Fig. 3) is adjacent to the one side of the body of the illumination fan (*i.e.*, the side from which the transmission line 13 extends in Fig. 3) (**claim 15**) and to the another side of the body of the illumination fan (*i.e.*, the side from which the transmission line 12 extends in Fig. 3) (**claim 16**), and the one side and the another side of the body of the illumination fan are adjacent to a bottom of the body of the illumination fan (at bottom in Fig. 3) (**claim 17**).

Claims 5, 18-20, and 45 are rejected under 35 U.S.C. 103 as obvious over Lai, or Lai in view of Fujitsu, in further view of Chou.

Regarding **claims 5 and 45**, Lai or the modified Lai teaches the claimed invention substantially as claimed, as set forth above for claims 1 and 41, respectively. Lai does not teach a groove provided on two sides of the body and an engaging block. However, in the fan art, Chou

discloses a fan body (Figs. 2 and 4) with a groove (sliding rail 246, Fig. 2; ¶ 22) on each of two sides of the body of the fan and on each of two sides of the body of another fan, configured such that the fan body can be connected with the body of the other fan by respectively engaging an engaging block (connecting member 46; ¶ 26) with one of the grooves on the sides of the fan body and one of the grooves on the sides of the other fan body (*see* Fig. 4, the engaging block 46 engaging the sliding rails 246 of the pair of fans 4). It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify or further modify the invention of Lai by providing a groove as taught by Chou on two sides of the body and connecting the body to the body of another illumination fan by respectively engaging an engaging block as taught by Chou with one of the grooves on the sides of the body of the illumination fan and one of the grooves on the sides of the body of the other illumination fan, in order to facilitate a secure connection of adjacent fans.

Regarding **claim 18**, the modified Lai teaches the claimed invention substantially as claimed, as set forth above for claim 5. Lai further teaches that, in use, the first connector of the illumination fan is electrically connected with the second connector of another illumination fan (*i.e.*, the input connector of one fan is electrically connected with the output connector of another fan via a transmission line 12, Fig. 3; *see also* Figs. 4-6, showing the electrical connections between FAN 1 and FAN 2).

Regarding **claims 19 and 20**, the modified Lai teaches the claimed invention substantially as claimed, as set forth above for claim 5. Lai further teaches that, in use, the second connector of the illumination fan is connected (**claim 19**), specifically, electrically connected (**claim 20**), with a first connector of the another illumination fan (*i.e.*, the output connector of one fan is electrically connected with the input connector of another fan via a

transmission line 12, Fig. 3; *see also* Figs. 4-6, showing the electrical connections between FAN 1 and FAN 2).

Claims 1-4, 6-17, 21-44, and 46-48 are rejected under 35 U.S.C. 103 as being unpatentable over Fujitsu in view of Tsai.

Regarding **claims 1 and 41**, Fujitsu discloses an illumination fan (fan unit 10, Figs. 5-7, illuminated at indicator lamp 12; *see* ¶¶ 25-26 and 40) connectable with at least one other⁵ illumination fan (*see* Figs. 5-6) for a computer (e.g., a server or other “electronic apparatus such as information processing device,” ¶ 25), comprising: a body (fan unit 10) provided with a fan (cooling fan 11) in a center of the body (*see* Fig. 7; ¶27), an illumination area (indicator lamp 12, Fig. 7, ¶ 40), a power socket (female power connector CNA and/or CNB, *see* ¶¶ 31 and 39) and a first connector (inter-fan connector CNC, ¶ 31) on one side of the body, and a second connector (inter-fan connector CND) on another side of the body. The power socket (CNA, CNB) is electrically connected with the first connector (CNC), the second connector (CND), the fan (11), and the illumination area (12; *see* Fig. 14). When the power socket (CNA, CNB) on the one side of the body is supplied with power, the fan (11) and the illumination area (12) of the body are respectively driven into rotation and illumination (*see* ¶¶ 27, 31, and 39-40). When the first connector (CNC) of the body is connected with the second connector (CND) of a body of another illumination fan, a fan (11) and an illumination area (12) of the body of the other illumination fan are respectively driven into rotation and illumination (“two adjacent fan units 10 among the plurality of fan units 10 are connected via inter-fan connectors CNC and CND that

⁵ The word “other” added in the preamble of new claim 41 does not meaningfully limit the claim.

transmit the pulse signal from one end side to the other end side, and supplies power from one end side to the other end side,” ¶ 31).

Fujitsu does not disclose that the illumination area is on at least two sides of the fan at the top of the body. However, in the art of illumination fans, Tsai teaches a fan body (Figs. 1-4) with a fan (motor 41 with blades 42) in a center of the body and an illumination area (translucent light-guiding ring 20, ¶ 34) on at least two sides of the fan (41, 42) at a top of the body (*see* Fig. 1, the illumination area defined by the annular light-guiding ring 20 surrounding the fan 41, 42 on all sides at the top of the body). Tsai teaches that this arrangement is advantageous for providing an attractive and colorful appearance to the fan (¶ 1-3). Therefore, it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the invention of Fujitsu by arranging the illumination area on at least two sides of the fan at the top of the body, as taught by Tsai, in order to enhance the aesthetic appearance of the fan.

Regarding **claims 2 and 42**, the modified Fujitsu teaches the claimed invention substantially as claimed, as set forth above for claims 1 and 41, respectively. Fujitsu further discloses an electrically conductive terminal is provided in the first connector (CNC) and an electrically conductive contact surface is provided in the second connector (CND) of the illumination fan as well as in the substantially identical second connector (CND) of the another illumination fan for being electrically connected with the electrically conductive terminal (“a connector CNC (male) that enables power supply and live connection of the control signal/monitoring signal is provided by protruding on the right side surface ... A connector CND (female) that enables power supply and live connection of the control signal/monitoring signal is provided by recessing on the left side surface ... Two adjacent fan units 10 are connected so as to

enable power supply and transmission of the control signal/monitoring signal by engaging the connector CNC of the fan unit 10 on one side and the connector CND of the fan unit 10 on the other end,” ¶ 38), such that when the first connector of the body of the illumination fan is connected with the second connector of the body of the another illumination fan, the fan and the illumination area of the body of the another illumination fan are respectively driven into rotation and illumination (¶ 31). One of ordinary skill in the art would clearly understand from the disclosure of Fujitsu that the connectors CNC, CND include an electrically conductive terminal and an electrically conductive contact surface, these being necessary components for enabling the power supply and transmitting the control signal (i.e., conducting electricity) to multiple fans connected in series.

Regarding **claims 3 and 43**, the modified Fujitsu teaches the claimed invention substantially as claimed, as set forth above for claims 1 and 41, respectively. The annular illumination area taught by Tsai extends to the outer periphery of the fan (*see* light-guiding ring 20 of Tsai, Fig. 1). Thus, when the fan bodies of Fujitsu are modified to include illumination areas in the configuration taught by Tsai, the illumination areas of two connected fan bodies will form a continuous illumination area due to the immediate proximity of the two illumination areas at the adjacent outer peripheries of the two fan bodies.

Regarding **claims 4 and 44**, the modified Fujitsu teaches the claimed invention substantially as claimed, as set forth above for claims 1 and 41, respectively. Fujitsu further teaches a groove (*i.e.*, the female socket of connector CND) is provided on one side of the body of the illumination fan, while an engaging block (*i.e.*, the projection of the connector CNC) is provided on another side of the body of the another illumination fan (the CNC connector being provided on each of the fans in series) to be engaged into the groove of the body of the

illumination fan (§ 38), such that when the groove of the body of the illumination fan is engaged with the engaging block of the body of another illumination fan, the body of the illumination fan is connected with the body of the other illumination fan (§ 38; *see* Figs. 5-6).

Regarding **claims 6-8, 9-11, 12-14, and 15-17**, the modified Fujitsu teaches the claimed invention substantially as claimed, as set forth above for claims 1, 2, 3, and 4, respectively. Fujitsu further teaches the top of the body (*i.e.*, the front area when oriented as shown in Figs. 7A-B) is adjacent to the one side of the body of the illumination fan (at right in Fig. 7A-B) (**claims 6, 9, 12, and 15**) and to the another side of the body of the illumination fan (at left in Fig. 7A-B) (**claims 7, 10, 13, and 16**), and the one side and another side of the body of the illumination fan are adjacent to a bottom (*i.e.*, the back area when oriented as shown in Figs. 7A-B) of the body of the illumination fan (**claims 8, 11, 14, and 17**).

Regarding **claim 21**, the modified Fujitsu teaches the claimed invention substantially as claimed, as set forth above for claim 1. Fujitsu further teaches the power socket (CNA or CNB) on the one side of the illumination fan has an opening (the connectors CNA and CNB being “female connectors,” § 39) located on the one side (*i.e.*, the right lateral side in Figs. 7A-B) of the illumination fan.

Regarding **claims 22-24**, the modified Fujitsu teaches the claimed invention substantially as claimed, as set forth above for claim 21. Fujitsu further teaches the top of the body (*i.e.*, the front area when oriented as shown in Figs. 7A-B) is adjacent to the one side of the body of the illumination fan (at right in Fig. 7A-B) (**claim 22**) and to the another side of the body of the illumination fan (at left in Fig. 7A-B) (**claim 23**), and the one side and another side of the body of the illumination fan are adjacent to a bottom (*i.e.*, the back area when oriented as shown in Figs. 7A-B) of the body of the illumination fan (**claim 24**).

Regarding **claim 25**, the modified Fujitsu teaches the claimed invention substantially as claimed, as set forth above for claim 1. Fujitsu further discloses an electrically conductive contact surface is provided in the second connector (CND) of the illumination fan and is located on the another side of the illumination fan (at left in Figs. 7A-B; “A connector CND (female) that enables power supply and live connection of the control signal/monitoring signal is provided by recessing on the left side surface ... Two adjacent fan units 10 are connected so as to enable power supply and transmission of the control signal/monitoring signal by engaging the connector CNC of the fan unit 10 on one side and the connector CND of the fan unit 10 on the other end,” ¶ 38). One of ordinary skill in the art would clearly understand from the disclosure of Fujitsu that the connector CND includes an electrically conductive contact surface, this being a necessary component for enabling the power supply and transmitting the control signal (i.e., conducting electricity) to multiple fans connected in series.

Regarding **claims 26-28**, the modified Fujitsu teaches the claimed invention substantially as claimed, as set forth above for claim 25. Fujitsu further teaches the top of the body (*i.e.*, the front area when oriented as shown in Figs. 7A-B) is adjacent to the one side of the body of the illumination fan (at right in Fig. 7A-B) (**claim 26**) and to the another side of the body of the illumination fan (at left in Fig. 7A-B) (**claim 27**), and the one side and another side of the body of the illumination fan are adjacent to a bottom (*i.e.*, the back area when oriented as shown in Figs. 7A-B) of the body of the illumination fan (**claim 28**).

Regarding **claim 29**, the modified Fujitsu teaches the claimed invention substantially as claimed, as set forth above for claim 1. Fujitsu further discloses an electrically conductive terminal is provided in the first connector (CNC) of the illumination fan and is located on the one side of the body of the illumination fan (at right in Figs. 7A-B; “a connector CNC (male) that

enables power supply and live connection of the control signal/monitoring signal is provided by protruding on the right side surface ... Two adjacent fan units 10 are connected so as to enable power supply and transmission of the control signal/monitoring signal by engaging the connector CNC of the fan unit 10 on one side and the connector CND of the fan unit 10 on the other end,” ¶ 38). One of ordinary skill in the art would clearly understand from the disclosure of Fujitsu that the connector CNC includes an electrically conductive terminal, this being a necessary component for enabling the power supply and transmitting the control signal (i.e., conducting electricity) to multiple fans connected in series.

Regarding **claims 30-32**, the modified Fujitsu teaches the claimed invention substantially as claimed, as set forth above for claim 29. Fujitsu further teaches the top of the body (*i.e.*, the front area when oriented as shown in Figs. 7A-B) is adjacent to the one side of the body of the illumination fan (at right in Fig. 7A-B) (**claim 30**) and to the another side of the body of the illumination fan (at left in Fig. 7A-B) (**claim 31**), and the one side and another side of the body of the illumination fan are adjacent to a bottom (*i.e.*, the back area when oriented as shown in Figs. 7A-B) of the body of the illumination fan (**claim 32**).

Regarding **claim 33**, the modified Fujitsu teaches the claimed invention substantially as claimed, as set forth above for claim 1. Fujitsu further teaches the second connector (CND) of the illumination fan is connected with a first connector (CNC) of another illumination fan (“Two adjacent fan units 10 are connected so as to enable power supply and transmission of the control signal/monitoring signal by engaging the connector CNC of the fan unit 10 on one side and the connector CND of the fan unit 10 on the other end,” ¶ 38).

Regarding **claims 34-36**, the modified Fujitsu teaches the claimed invention substantially as claimed, as set forth above for claim 33. Fujitsu further teaches the top of the body (*i.e.*, the

front area when oriented as shown in Figs. 7A-B) is adjacent to the one side of the body of the illumination fan (at right in Fig. 7A-B) (**claim 34**) and to the another side of the body of the illumination fan (at left in Fig. 7A-B) (**claim 35**), and the one side and another side of the body of the illumination fan are adjacent to a bottom (*i.e.*, the back area when oriented as shown in Figs. 7A-B) of the body of the illumination fan (**claim 36**).

Regarding **claim 37**, the modified Fujitsu teaches the claimed invention substantially as claimed, as set forth above for claim 2. Claim 37 is interpreted to mean that when the first connector of the claimed fan is connected to a second connector of another fan, the connection is an electrical connection. In the case of Fujitsu, when the first connector (CNC) of the body of the illumination fan is connected with the second connector (CND) of the body of the another illumination fan, the connection is an electrical connection (§ 38).

Regarding **claims 38-40**, the modified Fujitsu teaches the claimed invention substantially as claimed, as set forth above for claim 37. As discussed above in the rejections under 35 USC 112(b), it is unclear what is being described in claims 38-40. As the claims are best understood by the examiner, Fujitsu appears to teach the limitations of claims 38-40 because when the first connector (CNC) of one fan of Fujitsu is electrically connected to the second connector (CND) of another fan of Fujitsu, the second connector (CND) of the one fan is also electrically connected to the first connector (CNC) of the other fan via the internal circuitry of the two fans, as part of a functional electrical circuit (*e.g.*, for transmitting power and control signals to a third fan in series).

Regarding **claims 46-47**, the modified Fujitsu teaches the claimed invention substantially as claimed, as set forth above for claim 41. As discussed above in the rejections under 35 USC 112(b), it is unclear what is being described in claims 46 and 47. As the claims are best

understood by the examiner, Fujitsu appears to teach the limitations of claims 46 and 47 because when the first connector (CNC) of one fan of Fujitsu is electrically connected to the second connector (CND) of another fan of Fujitsu, then the first connector of the one fan is electrically connected to the second connector of the other fan (§ 38) (**claim 46**) and the second connector (CND) of the one fan is also electrically connected to the first connector (CNC) of the other fan via the internal circuitry of the two fans, as part of a functional electrical circuit (*e.g.*, for transmitting power and control signals to a third fan in series) (**claims 46 and 47**).

Regarding **claim 48**, the modified Fujitsu teaches the claimed invention substantially as claimed, as set forth above for claim 41. Claim 48 is interpreted to mean that when the first connector of the claimed fan is connected to a second connector of another fan, the connection is an electrical connection. In the case of Fujitsu, when the first connector (CNC) of the body of the fan is connected with the second connector (CND) of the body of the another illumination fan, the connection is an electrical connection (for transmitting power and signals between the two fans; § 38).

Claims 5, 18-20, and 45 are rejected under 35 U.S.C. 103 as being unpatentable over Fujitsu in view of Tsai, in further view of Chou.

Regarding **claims 5 and 45**, the modified Fujitsu teaches the claimed invention substantially as claimed, as set forth above for claims 1 and 41, respectively. Fujitsu and Tsai do not teach a groove provided on two sides of the body and the body being connected with the body of another illumination fan by respectively engaging an engaging block with one of the grooves on the sides of the body of the illumination fan and one of the grooves on the sides of the body of the other illumination fan. Fujitsu discloses that the two fans, connected as discussed

above for claim 1, are supported in the computer casing in a sliding arrangement (*see* Figs. 5-6 and ¶ 36), but Fujitsu is silent with respect to the structure for accomplishing this function. However, in the fan art, Chou discloses a fan body (Figs. 2 and 4) with a groove (sliding rail 246, Fig. 2; ¶ 22) on each of two sides of the body of the fan and on each of two sides of the body of another fan, configured such that the fan body can be connected with the other fan body by respectively engaging an engaging block (connecting member 46; ¶ 26) with one of the grooves on the sides of the fan body and one of the grooves on the sides of the other fan body (*see* Fig. 4, the engaging block 46 sliding along the sliding rails 246 of the pair of fans 4). It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to further modify the invention of Fujitsu by providing a groove as taught by Chou on two sides of the body and connecting the body to the body of another illumination fan by respectively engaging an engaging block as taught by Chou with one of the grooves on the sides of the body of the illumination fan and one of the grooves on the sides of the body of the other illumination fan, in order to support the connected fans as the fans are slid into and out of the computer casing.

Regarding **claim 18**, the modified Fujitsu teaches the claimed invention substantially as claimed, as set forth above for claim 5. Fujitsu further teaches that, in use, the first connector (CNC) of the illumination fan is electrically connected with the second connector (CND) of the another illumination fan (“Two adjacent fan units 10 are connected so as to enable power supply and transmission of the control signal/monitoring signal by engaging the connector CNC of the fan unit 10 on one side and the connector CND of the fan unit 10 on the other end,” ¶ 38).

Regarding **claims 19-20**, the modified Fujitsu teaches the claimed invention substantially as claimed, as set forth above for claim 5. Fujitsu further teaches the second connector (CND) of

the illumination fan is connected (**claim 19**), specifically, electrically connected (**claim 20**), with a first connector (CNC) of another illumination fan (“Two adjacent fan units 10 are connected so as to enable power supply and transmission of the control signal/monitoring signal by engaging the connector CNC of the fan unit 10 on one side and the connector CND of the fan unit 10 on the other end,” ¶ 38).

Citation of Pertinent Prior Art

The following prior art, cited in the Petition for *Inter Partes* Review of U.S. Patent No. 10,690,336 in IPR2024-01230, is considered pertinent to the disclosure of the ‘336 patent: Huang (US Patent No. 10,082,286), Echazaretta (US Patent Pub. 2008/0124234), Liu (US Patent Pub. 2015/0233391), and Hasegawa (JP 2005-051085 A).

Conclusion

Patent owner’s amendment filed December 17, 2024, necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

A shortened statutory period for response to this action is set to expire TWO (2) MONTHS from the mailing date of this action.

Extensions of time under 37 CFR 1.136(a) do not apply in reexamination proceedings. The provisions of 37 CFR 1.136 apply only to “an applicant” and not to parties in a reexamination proceeding. Further, in 35 U.S.C. 305 and in 37 CFR 1.550(a), it is required that reexamination proceedings “will be conducted with special dispatch within the Office.”

Extensions of time in reexamination proceedings are provided for in 37 CFR 1.550(c). A request for extension of time must specify the requested period of extension and it

must be accompanied by the petition fee set forth in 37 CFR 1.17(g)(1). Any request for an extension in a third party requested ex parte reexamination must be filed on or before the day on which action by the patent owner is due, and the mere filing of a request will not effect any extension of time. A request for an extension of time in a third party requested ex parte reexamination will be granted only for sufficient cause, and for a reasonable time specified. Any request for extension in a patent owner requested ex parte reexamination (including reexamination ordered under 35 U.S.C. 257) for up to two months from the time period set in the Office action must be filed no later than two months from the expiration of the time period set in the Office action. A request for an extension in a patent owner requested ex parte reexamination for more than two months from the time period set in the Office action must be filed on or before the day on which action by the patent owner is due, and the mere filing of a request for an extension for more than two months will not effect the extension. The time for taking action in a patent owner requested ex parte reexamination will not be extended for more than two months from the time period set in the Office action in the absence of sufficient cause or for more than a reasonable time.

The filing of a timely first response to this final rejection will be construed as including a request to extend the shortened statutory period for an additional two months. In no event, however, will the statutory period for response expire later than SIX MONTHS from the mailing date of the final action. See MPEP § 2265.

All correspondence relating to this *ex parte* reexamination proceeding should be directed as follows:

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Any inquiry concerning the status of this proceeding, should be directed to the Central Reexamination Unit (CRU) at telephone number: (571) 272-7705. The CRU's fax number is: (571) 273-9900. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAURA L DAVISON whose telephone number is (571) 270-0189. The examiner can normally be reached Monday - Friday, 8:00 a.m. - 4:00 p.m. ET.

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