

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re <i>Ex Parte</i> Reexamination of:	)	
	)	
U.S. Patent No. 10,690,336	)	
	)	
Issued: June 23, 2020	)	Group Art Unit: To Be Assigned
	)	
Named Inventor: Chien-Hao Chen	)	Examiner: To Be Assigned
	)	
Control Number: To Be Assigned	)	
	)	
Filed: July 2, 2024	)	
	)	
Title: ILLUMINATION FAN CONNECTABLE	)	
WITH AT LEAST ONE	)	
ILLUMINATION FAN FOR A	)	
COMPUTER	)	

Mail Stop *Ex Parte* Reexam
Honorable Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REQUEST FOR *EX PARTE* REEXAMINATION

Dear Commissioner:

Under 35 U.S.C. §§ 301-307 and 37 C.F.R. § 1.510 et seq., the undersigned, on behalf of Requester Axpertec Inc. (a.k.a. Phanteks USA) (“Requester”), respectfully requests *ex parte reexamination* of claims 1-5 of U.S. Patent No. 10,690,336 (“the ’336 patent,” Ex. 1001), which was issued on June 23, 2020 to Chien-Hao Chen (“Applicant”) from U.S. Patent Application No. 16/403,867, filed on May 6, 2019. An assignment search indicates that no assignment has been recorded with the U.S. Patent and Trademark Office.

As outlined in this Request, issued claims 1-5 of the ’336 patent are unpatentable in

view of prior art not previously considered by the Office. Thus, this Request raises substantial new questions of patentability with respect to claims 1-5 of the '336 patent.

Accordingly, Requester respectfully asks that the Office grant this Request for *ex parte* reexamination of the '336 patent, reexamine claims 1-5, and issue a Certificate cancelling claims 1-5 as unpatentable.

Attachments

- (1) Certificate of Service to Patent Owner.
- (2) Information Disclosure Statement and Form PTO/SB/08.

Exhibits

- | | |
|----------|--|
| Ex. 1001 | U.S. Patent No. 10,690,336 ("the '336 patent") |
| Ex. 1002 | File history of U.S. Patent No. 10,690,336 |
| Ex. 1003 | JP 2018041147 A (" <i>Fujitsu</i> ") |
| Ex. 1004 | Certified translation of <i>Fujitsu</i> |
| Ex. 1005 | CN 207064277 U (" <i>Tsai</i> ") |
| Ex. 1006 | Certified translation of <i>Tsai</i> |
| Ex. 1007 | Korean Patent No. 200494193 Y1 |
| Ex. 1008 | Certified translation of amended claims in Korean Patent No.
200494193 Y1 |

- Ex. 1009 U.S. Pat. Pub. No. 2008/0279694 (“*Chou*”)
- Ex. 1010 U.S. Pat. Pub. No. 2006/0012973A1 (“*Lin*”)
- Ex. 1011 U.S. Pat. Pub. No. 2017/0314777 (“*Lai*”)
- Ex. 1012 Patent Family for U.S. 10,690,336
- Ex. 1013 International Patent Application Publication No. WO2008/061519
- Ex. 1014 English translation of International Patent Application Publication No.
WO2008/061519

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 - b) [1a]: a body, provided with a fan in center of the body. 78
 - c) [1b]: an illumination area on at least two sides of the fan at top of the body 79
 - d) [1c]: a power socket and a first connector on one side of the body, and 80
 - e) [1d]: a second connector on another side of the body ... 83
 - f) [1e]: wherein the power socket is electrically connected with the first connector, the second connector, the fan and the illumination area, 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 89
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I. INTRODUCTION

Requester respectfully requests reexamination under 35 U.S.C. §§ 301-307 and 37 C.F.R. § 1.510 *et seq.* of claims 1-5 of U.S. Patent No. 10,690,336 (Ex. 1001), and issuance of a reexamination certificate canceling these claims. The prior art references applied in this Request raise substantial new questions of patentability and render the claims unpatentable.

II. *EX PARTE* REEXAMINATION FILING REQUIREMENTS

A. REQUIREMENTS UNDER 37 C.F.R. § 1.510 (B)

1. 37 C.F.R. § 1.510 (b) (1)

Section **Error! Reference source not found.** of this Request explains that several prior patents and printed publications—not previously considered or cited by this Office—raise at least one substantial new question of patentability for claims 1-5 of the '336 patent.

2. 37 C.F.R. § 1.510 (b) (2)

Reexamination of claims 1-5 of the '336 patent is requested, and Sections V and VI of this Request detail the pertinence and manner of applying the cited prior art to every claim for which reexamination is requested.

3. 37 C.F.R. § 1.510 (b) (3)

The enclosed exhibits and documents include a copy of every patent or printed publication relied upon or referred to and certified translations for references in foreign languages.

4. 37 C.F.R. § 1.510 (b) (4)

Exhibit 1001 is a complete copy of the '336 patent.

5. 37 C.F.R. § 1.510 (b) (5)

As shown with the Certificate of Service, a complete copy of this Request has been served via first-class mail on the Patent Owner's correspondence address as provided for in 37 C.F.R. § 1.33(c) and current litigation counsel for both Chien-Hao Chen (Applicant, sole named inventor, and the sole assignee) and Lian Li Industrial Co. (a purported exclusive licensee and a company owned by assignee Chien-Hao Chen), at the following addresses:

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6. 37 C.F.R. § 1.510 (b) (6)

Requester certifies that the statutory provisions of 35 U.S.C. § 315(e)(1) and 35 U.S.C. § 325(e)(1) do not bar or prohibit the Requester from requesting *ex parte* reexamination of the '336 patent.

B. OTHER PROCEEDINGS

The '336 patent has been asserted against Requester and three of its affiliates in a lawsuit captioned *Lian Li Industrial Co., Ltd. et al. v. Phanteks Europe et al.*, No. 2:23-cv-07471-HDV-MAR (C.D. Cal.). At the time of this Request, the Court has not yet construed any claim terms or made any determinations as to the validity of the '336 patent. Due to the ongoing nature of the above-identified lawsuit, Requester respectfully urges that, pursuant to 35 U.S.C. § 305, this Request be granted and reexamination be conducted not only with “special dispatch,” but also with “priority over all other cases” in accordance with M.P.E.P. § 2261.

C. FEES AND DEPOSIT ACCOUNT AUTHORIZATION

Pursuant to 37 C.F.R. § 1.20(c)(2), Requester is submitting \$12,600 for the reexamination filing fee. To the extent that any additional fees are required to complete this

Request, the Office is hereby authorized by the undersigned to charge Deposit Account No. 06-0916 for such fees.

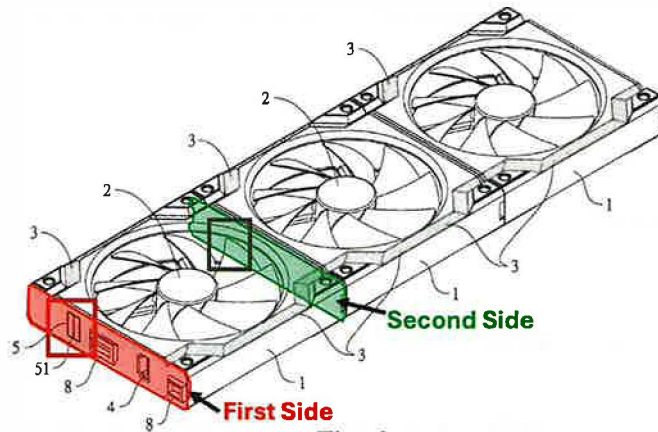
D. RESERVATION OF RIGHTS

Requester reserves all rights and defenses available, including, without limitation, defenses as to invalidity, indefiniteness, unenforceability, and noninfringement regarding the '336 patent. Accordingly, any interpretation or construction by the Requester of any claim terms, implicitly or otherwise, are solely for the purpose of this proceeding. Moreover, because the *ex parte* reexamination procedure does not permit challenges under 35 U.S.C. § 112, Requester has not included any indefiniteness arguments and retains the right to raise such arguments elsewhere.

III. OVERVIEW OF THE '336 PATENT AND ITS PROSECUTION HISTORY

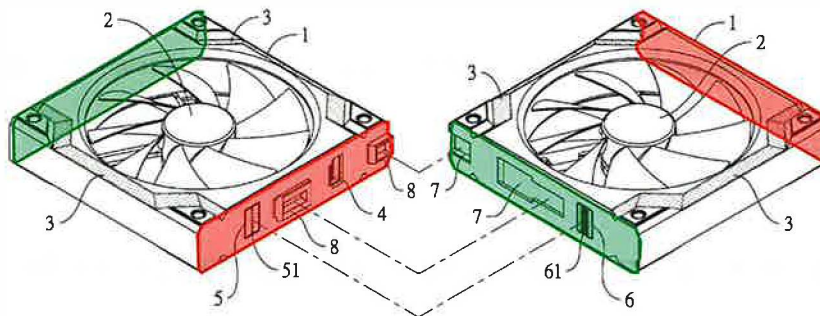
A. SPECIFICATION

The '336 patent describes an illumination fan for a computer, which includes a body with a fan in center of the body, an illumination area on at least two sides of the fan at top of the body, a power socket and a first connector on one side of the body, and a second connector on another side of the body. Ex. 1001, Abstract. Figure 3 shows three fans connected, with the connectors on the first and second sides of the first fan circled:



'336 Patent, Fig. 3 (annotated showing a **first side** highlighted in **red** and a **second side** highlighted in **green**, and first and second connectors circled)

Figure 2 shows two separate fans when they are disconnected from each other:



'336 Patent, Fig. 2 (annotated showing a **first side** highlighted in **red** and a **second side** highlighted in **green**)

The '336 patent discloses that the power socket is electrically connected with the first connector, the second connector, the fan and the illumination area. *Id.* The illumination fan is connectable, both electrically and mechanically, with another illumination fan. *Id.*, 2:61-3:3, 3:7-22. The '336 patent explains, as a result of the electrically connected fans, the

fan and the illumination area of the fans are driven into rotation and illumination. *Id.*

Abstract, 3:4-6.

B. CHALLENGED CLAIMS

Requester challenges claims 1-5 of the '336 patent, which are reproduced below.

Claim 1 [1pre]: An illumination fan connectable with at least one illumination fan for a computer, comprising:

[1a]: a body, provided with a fan in center of the body,

[1b]: an illumination area on at least two sides of the fan at top of the body,

[1c]: a power socket and a first connector on one side of the body, and

[1d]: a second connector on another side of the body,

[1e]: wherein the power socket is electrically connected with the first connector, the second connector, the fan and the illumination area, 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, and

[1f]: 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.

Claim 2 [2pre]: The illumination fan connectable with at least one illumination fan for a computer of claim 1,

[2a]: wherein an electrically conductive terminal is provided in the first connector, and an electrically conductive contact surface is provided in the second connector for being electrically connected with the electrically conductive terminal, 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, the fan and the illumination area of the body of another illumination fan are respectively driven into rotation and illumination.

Claim 3 [3pre]: The illumination fan connectable with at least one illumination fan

for a computer of claim 1,

[3a]: wherein when the body of the illumination fan is connected with the body of another illumination fan, the illumination areas of the two bodies form a continuous illumination area.

Claim 4 [4pre]: The illumination fan connectable with at least one illumination fan for a computer of claim 1,

[4a]: wherein a groove is provided on one side of the body of the illumination fan, while an engaging block is provided on another side thereof to be engaged into the groove, 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 another illumination fan.

Claim 5 [5pre]: The illumination fan connectable with at least one illumination fan for a computer of claim 1,

[5a]: wherein a groove is provided on two sides of the body of the illumination fan, and the body of the illumination fan is 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 another illumination fan.

C. PRIORITY AND EFFECTIVE FILING DATE

The '336 patent was filed on May 6, 2019, as U.S. Patent Application No. 16/403,867 ("the '867 application"). Ex. 1001, Cover Page. The '867 application claims priority to Taiwan Patent Application No. TW107217659 filed on December 26, 2018 . *Id.* Thus, the effective filing date for all claims of the '336 patent is no earlier than December 26, 2018. *See* 35 U.S.C. § 119(a).

D. PROSECUTION HISTORY

Despite having concurrent prosecution of several foreign counterparts in Taiwan and Korea, the applicant submitted no Information Disclosure Statement (“IDS”) to the Office during examination. *See* Ex. 1002 (lacking any IDS); Ex. 1014, list of patent family. The Examiner issued a Notice of Allowance, on April 13, 2020, and allowed the claims in response to the ’867 application filed on May 6, 2019, citing seven prior art references but rejecting none of the five claims. Ex. 1002, at 8-15. In the Reasons for Allowance, the Examiner recites the entirety of claim 1 as filed, stating that:

“[t]he following is an examiner’s statement of reasons for allowance: Claim 1 recites an illumination fan connectable with another illumination fan including a power socket and a first connector on one side of a body of an illumination fan, and a second connector on another side of the body of the illumination fan, and when the first connector of the body of the illumination fan is connected with a second connector of a body of the other illumination fan, a fan and an illumination area of the body of the other illumination fan are respectively driven into rotation and illumination.”

Ex. 1002 at 13.

E. CLAIM CONSTRUCTION

1. Broadest Reasonable Interpretation

During reexamination of an unexpired patent, claims are given the broadest reasonable interpretation consistent with the specification. *See In re Yamamoto*, 740 F.2d 1569, 1571 (Fed. Cir. 1984); *In re Swanson*, 540 F.3d 1368, 1378 (Fed. Cir. 2008); *In re*

Trans Texas Holdings Corp., 498 F.3d 1290, 1298 (Fed. Cir. 2007). This broadest reasonable meaning must be “in light of the specification.” *Yamamoto*, 740 F.2d at 1569. “The USPTO uses a different standard for construing claims than that used by district courts.” M.P.E.P. § 2111.01(I) (citing *In re American Academy of Science Tech Center*, 367 F.3d 1359, 1369; *see also* M.P.E.P. § 2111 (noting that the Federal Circuit’s *en banc* decision in *Phillips v. AWH Corp.* endorsed the USPTO’s standard)).

As explained by the Federal Circuit, “giving claims their broadest reasonable construction ‘serves the public interest by reducing the possibility that claims, finally allowed, will be given broader scope than is justified.’” *In re American Academy of Science Tech Center*, 367 F.3d at 1364 (quoting *In re Yamamoto*, 740 F.2d at 1571). The Court further stated that “[c]onstruing claims broadly during prosecution is not unfair to the applicant (or, in this case, the patentee), because the applicant has the opportunity to amend the claims to obtain more precise claim coverage.” *Id.* (citing *In re Yamamoto*, 740 F.2d at 1571-72). The Board has echoed this sentiment. *See Ex parte Yashukochi*, Appeal No. 2011-000986 (BPAI Feb. 22, 2011).

In *In re Yashukochi*, Appellant argued that Examiner’s interpretation of claimed subject matter was overly broad. After analyzing the record and finding that it did not support Appellant’s narrower construction, the Board noted that:

Appellant, as the author of its claims, has the responsibility to

present claims that clearly and unambiguously distinguish its subject matter from the prior art. During the reexamination before the examiner, Appellant had ample opportunity to amend the claims. It would have been a relatively simple matter for Appellant to have modified their claims to exclude the presence of [the contested subject matter]. Indeed, we think that under circumstances such as those here, where the claims could have been simply amended to clearly exclude [alternative interpretations of the claimed subject matter], it would be inappropriate for the Office to accept a disavowal of scope, no matter how clearly stated, in lieu of an amendment to the claims. It should not require litigation to determine to the scope of the subject matter the inventors claim as their property.

In re Yashukochi, Slip. Op. at 19-20, n. 10, emphasis added.

“The broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach.” M.P.E.P. § 2111 (citing *In re Cortright*, 165 F.3d 1353, 1359 (Fed. Cir. 1999)). “[I]t is important not to import into a claim limitations that are not part of the claim.” M.P.E.P. § 2111.01(II) (quoting *Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875 (Fed. Cir. 2004)). For example, M.P.E.P. § 2111.01(II) states “a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.”

IV. IDENTIFICATION OF PRIOR ART AND EXISTENCE OF SUBSTANTIAL NEW QUESTIONS OF PATENTABILITY OF THE CLAIMS OF THE '336 PATENT

A. IDENTIFICATION OF THE PRIOR ART REFERENCES

Reexamination of the '336 patent is requested in view of the following prior art, none of which was considered during examination (*see* Ex. 1001, cover):

1. JP 2018041147 A ("*Fujitsu*"), published on March 15, 2018.
2. CN 207064277 U ("*Tsai*"), published on March 2, 2018.
3. US 2008/0279694A1 ("*Chou*"), published on November 13, 2008.
4. US 2017/0314777 ("*Lai*"), published on November 2, 2017.

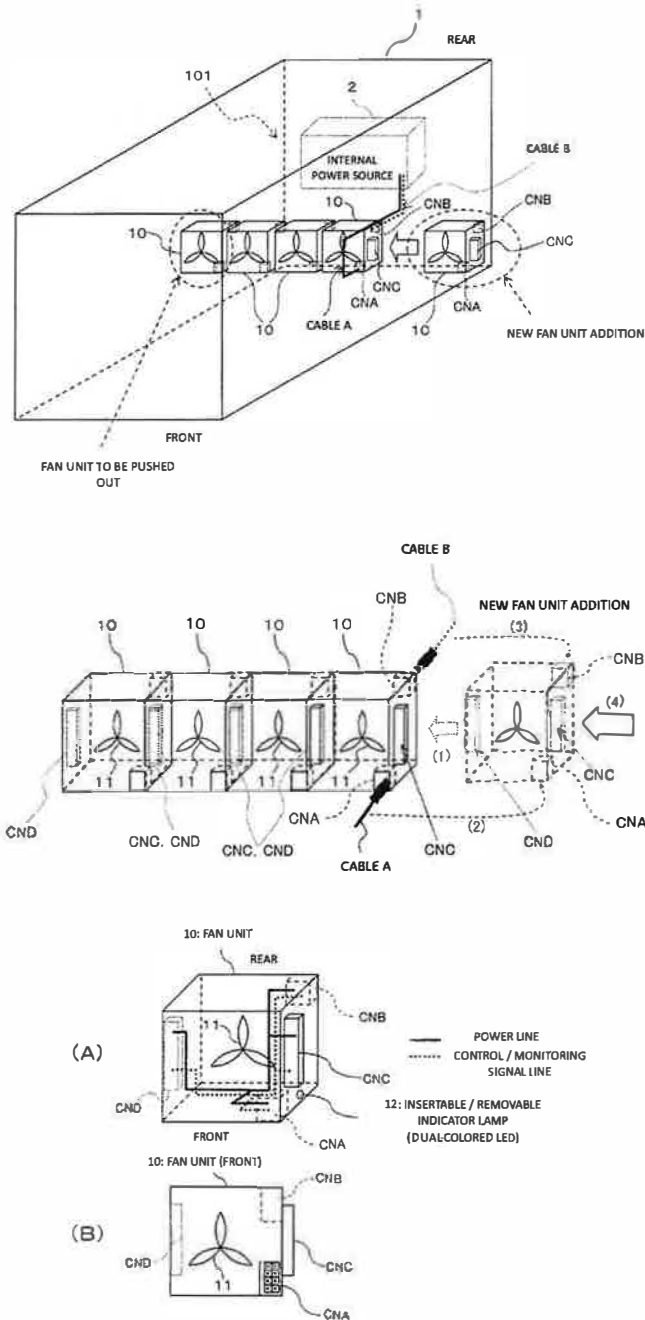
These prior art documents are listed on a form PTO/SB/08 filed concurrently herewith. Copies of the listed references and certified translations for foreign references are attached.

The '336 patent was filed on May 6, 2019, claiming priority to TW107217659, filed on December 26, 2018. Each prior art reference qualifies as prior art to the '336 patent under AIA 35 U.S.C § 102(a)(1) as a printed publication available to the public before December 26, 2018, the earliest effective filing date of the '336 patent, and there are no applicable exceptions under 35 U.S.C. 102(b)(1).

1. JP 2018041147 A ("*Fujitsu*"), Ex. 1003 (Japanese Language), Ex. 1004 (Certified Translation)

Fujitsu discloses plural fan units connected in series for cooling an electronic

apparatus. Each fan unit has a control unit that gives an address for identifying the fan unit.



FIGS. 5, 6, 7A and 7B of Fujitsu (Ex. 1003)

Each fan unit 10 includes a cooling fan 11 that is rotationally driven by a motor. Two

adjacent fan units propagate the pulse signal from one end side to the other end side, and supply power from one side (CNC) to the other end side (CND). *See* FIGS. 5 to 11). Each fan unit 10 is connected to two or more power cables (cables A and B) that can supply power to the own fan unit when the own fan unit is disposed on one end side of the plurality of fan units 10. Power supply connectors CNA and CNB are provided (see FIGS. 5 to 7).

A connector CNC (male) capable of active connection of the power supply and the control signal / monitoring signal is provided on the right side as viewed from the front of each fan unit 10. A connector CND (female) capable of active connection of a power supply and a control signal / monitoring signal is position on and recessed from the left side as viewed from the front of each fan unit 10. The two adjacent fan units 10 and 10 are connected so that power can be supplied and control signals / monitoring signals can be propagated by fitting the connector CNC of one fan unit 10 to the connector CND of the other fan unit 10.

2. CN 207064277 U (“*Tsai*”), Ex. 1005 (Chinese Language), Ex. 1006 (Certified Translation)

Tsai discloses a light-emitting structure of a cooling fan. Its middle frame is used for bearing motor and flabellum, the framework includes the frame on the outside of the central frame and centrally located framework of annular, central frame includes epimer portion and hypomere portion, light guide ring is the light-transmitting component of ring-type,

light guide ring is enclosed on the epimer of central frame and between central frame and frame, luminescence unit includes a circuit board and is electrically connected at the light emitting diode on the surface of circuit board, light guide ring has a groove towards the side of frame, luminescence unit can be just embedded among groove, and the light emission direction of light emitting diode is directed towards light guide ring, the visual effect of uniform ring-shaped lighting can be produced by light guide ring.

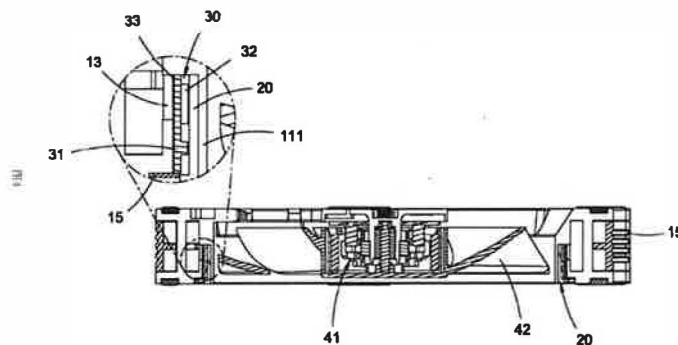


FIG. 4 of Ex. 1006

Its middle frame 10 includes one central frame 11 of annular and a frame 12 in the outside of centrally located framework 11, its middle frame 11 is used for bearing motor 41 and blades 42, and frame 12 is arranged at four corners position at the center for being symmetrical with central frame 11. The motor 41 and blades 42 are installed in the middle position of central frame 11, and central frame 11 includes epimer portion 111 and hypomere portion 112.

A frame 12 is provided with a socket 13 and is electrically connected with power

supply. The circuit board 31 of member 30 is inserted in socket 13 and is electrically connected with socket 13. There is circuit board 31 electrode 33 (such as golden finger) and light emitting diode 32 to be electrically connected with (see Fig. 4), the circuit of luminescence unit 30 can be electrically connected with after being inserted in socket 13 by electrode 33 and socket 13, and the socket 13 can pass through wire (not shown), the power input end that motor 41 is connected by the wire casing at the back side of framework 10 obtains power supply. The luminescence unit 30 can be easily assembled, can also easily more transducing send different colors light hair Light unit 30, to produce the radiator fan for the light that can send different colors.

As explained below, the *Fujitsu* reference in combination with the *Tsai* Reference renders Claim 1 of the '336 patent obvious.

3. US 2008/0279694 A1 (“*Chou*”), Ex. 1009

Chou discloses a fan and fan assembly for electronic products, Ex. 1009, [0002]-[0006], which a person of ordinary skill in the art would have understood includes computer products. Thus, a person of ordinary skill in the art would have understood that *Chou* discloses a cooling fan assembly for computers. The fan assembly includes multiple fans that are connected together by a connecting member 46. Ex. 1009, [0025], FIG. 4:

Thermaltake - EX1020, Page 25
IPR2024-01230 (Thermaltake v. Lian Li Industrial, et al)

As shown above, two sides of the fan frame 24 are highlighted in **blue**, with the locations of the sliding rails 246 (i.e., grooves) in **purple**. Side walls 261 of the connecting member 26 (an engaging block) are highlighted in **green**. When the connecting member engages the grooves of the sliding rails, the fans are connected together:

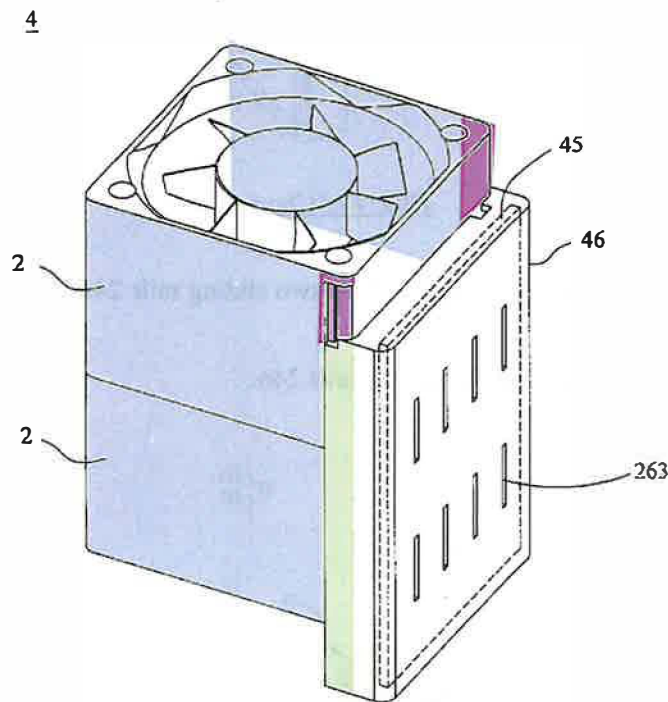


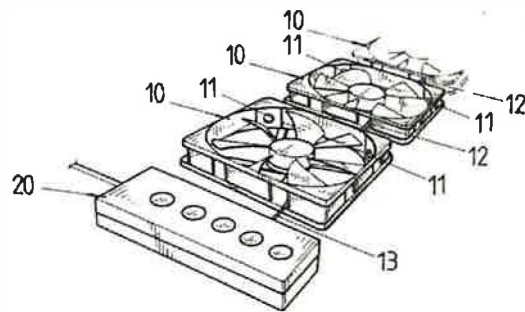
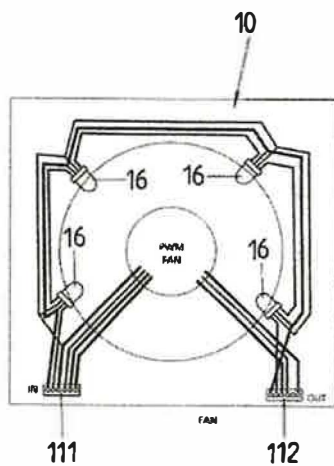
FIG. 4 of Chou, annotated

Therefore, *Chou* discloses a mechanism for connecting multiple cooling fans together using an engaging block and grooves in the fan bodies. It will be demonstrated later that various references in combination with the *Chou* reference render Claim 5 of the '336 patent obvious.

4. US 2017/0314777 A1 (“*Lai*”), Ex. 1011

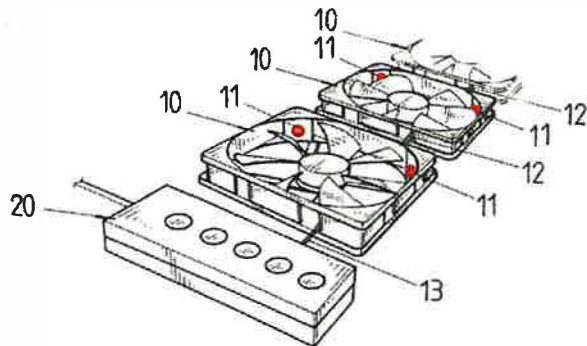
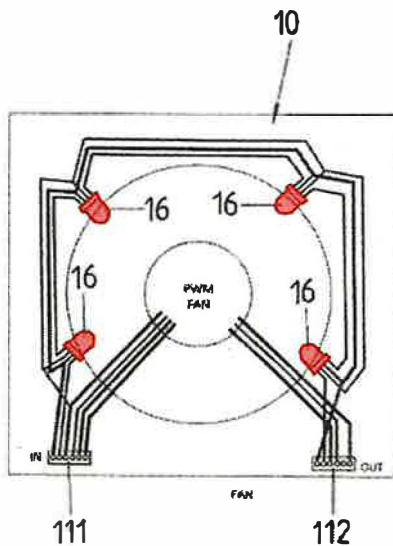
Lai discloses *Lai* discloses an LED fan controller device that connects multiple LED fans. Ex. 1011, [0003]. *Lai*’s LED fans 10 are linked to one another using a single transmission line, using a single input 111 and a single output 112 in each LED fan 10.

Ex. 1011, [0011], [0012], FIGS. 2 and 3:



FIGS. 2 and 3 of *Lai*

The LED fans 10 also include multiple LED lights 16, located on the sides of the fan:



FIGS. 2 and 3 of Lai, showing **RBG LEDs 16** highlighted in red

Therefore, *Lai* discloses illuminated cooling fans that are daisy-chained (connected in series) and transmit both power and control signals for the lighting and fan motors via single connections between each fan.

B.SUMMARY OF THE SUBSTANTIAL NEW QUESTIONS OF PATENTABILITY

A substantial new question exists for all grounds of rejection outlined in this Request.

Each reference is prior art to the '336 patent, and these grounds raise substantial new questions of patentability ("SNQs"). Specifically, these references contain teachings not previously considered by the Office. None of the enclosed grounds, references, or combinations has been considered or raised during the '336 patent prosecution. Further, Requester's grounds rely on art that is not the same or substantially the same as art previously considered by the Office. *Advanced Bionics v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 7-9 (P.T.A.B. Feb. 13, 2020).

First, *Fujitsu* alone presents a substantial new question of patentability and neither *Fujitsu* nor any of its teachings was cited during prosecution, so no teaching of *Fujitsu* was previously considered by the Office. All grounds herein rely upon *Fujitsu*. Notably, *Fujitsu* was cited in an Office Action issued by the Korean Patent Office in a counterpart Korean application to the '336 patent, causing the applicant to amend claim 1 of the Korean

counterpart application. *See* Exs. 1007, 1008, 1012. Specifically, the applicant amended claim 1 to include the “groove” and “engaging blocks” limitations that correspond to dependent claim 4 of the ’336 patent. Even though *Fujitsu* discloses male and female connectors, i.e., protruding blocks and recessed grooves that operate as the claimed “groove” and “engaging block” as explained in detail herein, the Korean Patent Office did not rely on such teaching of *Fujitsu* to reject the amended claim 1 with the claimed “groove” and “engaging block” limitations.

Second, a substantial new question exists for grounds based on *Fujitsu*, *Tsai*, *Chou*, and/or *Lai*, because they disclose features listed in the reasons for allowance:

“[t]he following is an examiner’s statement of reasons for allowance:

Claim 1 recites an illumination fan connectable with another illumination fan including a power socket and a first connector on one side of a body of an illumination fan, and a second connector on another side of the body of the illumination fan, and when the first connector of the body of the illumination fan is connected with a second connector of a body of the other illumination fan, a fan and an illumination area of the body of the other illumination fan are respectively driven into rotation and illumination.”

Ex. 1002 at 13.

As explained below, *Fujitsu* in view of other prior art references teaches the limitations of claim 1 and renders claim 1 obvious. Because each combination of prior art in the proposed grounds teaches all the features identified in the reasons for allowance, a substantial new question of patentability exists.

V. PROPOSED REJECTIONS OF THE '336 PATENT

The Requester proposes the following obviousness rejections against claims 1-5 of the '336 patent:

- **Ground 1:** The combination of *Fujitsu* and *Tsai* renders claims 1-4 obvious.
- **Ground 2:** The combination of *Fujitsu*, *Tsai*, and *Chou* renders claim 5 obvious.
- **Ground 3:** The combination of *Lai* and *Fujitsu* renders claims 1, 2, and 4 obvious.
- **Ground 4:** The combination of *Lai*, *Fujitsu*, and *Chou* renders claim 5 obvious.

VI. DETAILED EXPLANATION OF THE PROPOSED REJECTIONS OF THE CLAIMS OF THE '336 PATENT

A. GROUND 1: CLAIMS 1-4 ARE OBVIOUS UNDER 35 U.S.C. § 103 OVER *FUJITSU* IN VIEW OF *TSAI*

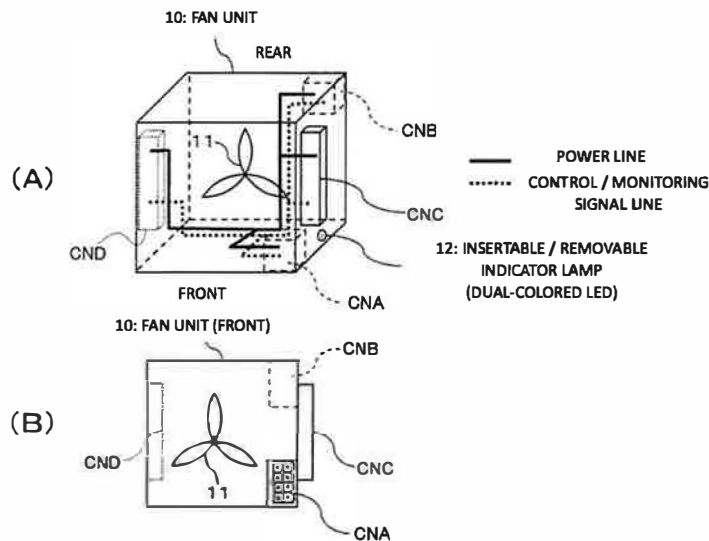
1. Independent Claim 1

- a) [1 pre]: An illumination fan connectable with at least one illumination fan for a computer, comprising:

To the extent the preamble is limiting, *Fujitsu* in view of *Tsai* renders [1 pre] obvious.

Fujitsu discloses a fan unit 10 that is “a fan connectable with at least one fan for a computer.”

See Ex. 1004, FIGS. 5-7B.



FIGS. 7A-7B of *Fujitsu*

As shown above, fan unit 10 is a “fan” because it includes a cooling fan 11. Additionally, fan unit 10 is an “illumination fan” because it includes indicator lamp 12. Indicator lamp 12 lights up in green or yellow and indicates a state of the fan unit 10. *Id.*, [0040], [0046],

FIG. 6 of Fujitsu

Fujitsu discloses the fan units 10 being connectable with one another, stating “the plurality of fan units 10 is connected in a daisy chain form by using a serial interface such as I2C.” *Id.*, [0020] (emphasis added). Additionally, “two adjacent fan units 10 among the plurality of the 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 (refer to FIGS. 5 to 11). *Id.*, [0031], *see also* [0037]-[0039].

Fujitsu’s fans are “for a computer” as claimed, because *Fujitsu* discloses using fan units 10 to cool an electronic device that is a server, i.e., a computer, such as server 1 and server 100 in the figures. *See id.*, [0017], [0025], [0026]. Specifically, *Fujitsu* discloses server 1 as an electronic device that includes a CPU and runs computer programs. *Id.*, [0068]-[0071]. Therefore, *Fujitsu*’s server is a computer, and *Fujitsu*’s fan units are fans “for a computer” as claimed.

Therefore, *Fujitsu* discloses a fan unit 10 that is connectable to another fan unit for a computer. *Fujitsu*’s fan unit 10 also includes an indicator lamp 12 that is a Light Emitting Diode (LED) and is thus an “illumination fan.” *See id.*, [0012], [0070], FIG. 7A, FIG. 15.

To the extent one asserts that the *Fujitsu* LED lamp does not disclose an *illumination*

fan, it would have been obvious to a person of ordinary skill in the art to modify *Fujitsu's* fan unit to be an “illumination fan.” Computer fans having lighting for illumination are not novel and were well-known long before the '336 patent. For example, more than ten years before *Tsai*, another patent publication in 2006 disclosed a “cooling fan with light-emitting device” to “enhance the appearance of the computer.” Ex. 1010, [0002], [0004].

Indeed, *Tsai* is a prior Chinese patent publication that discloses a “light emitting structure of heat dissipation fan.” Ex. 1006, Title. *Tsai* discloses a heat dissipation fan for “providing an annular illuminating visual effect.” See Ex. 1006, [0007].

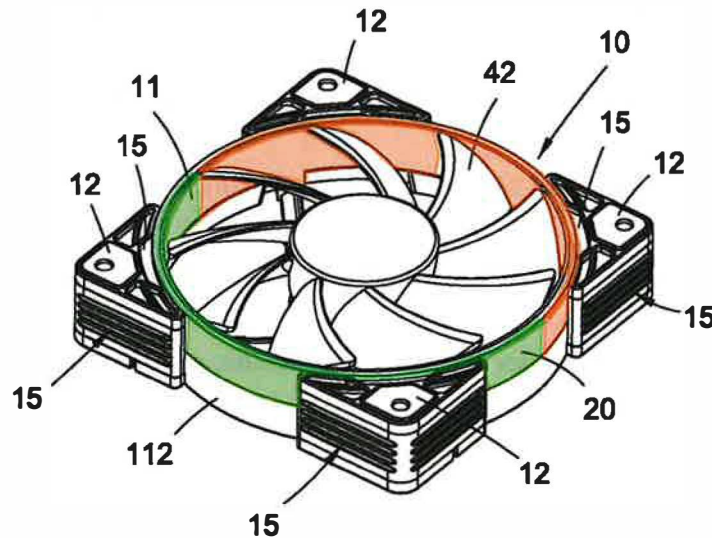


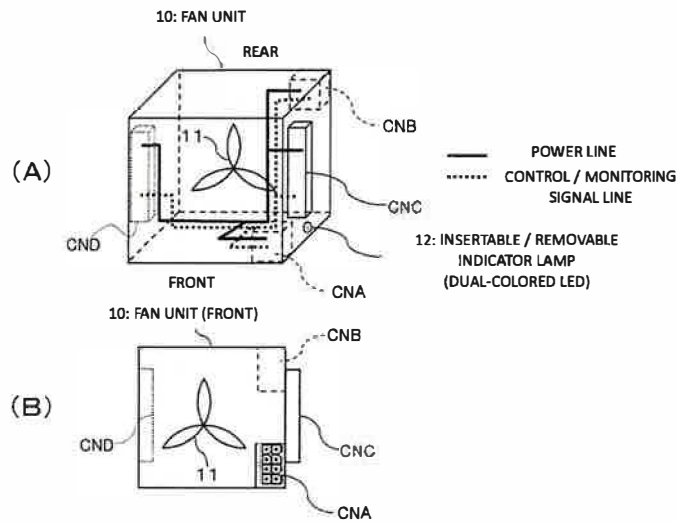
FIG. 1 of *Tsai*, annotated highlighting illumination on at least two sides of the fan

Tsai's heat dissipation fan is an “illumination fan,” because *Tsai* teaches a light emitting unit 30 having one or more light emitting diodes 32 and a light guiding ring 20 that provides an

illuminating visual effect. *Id.*, [0007], [0034], FIGS. 1-3. *Tsai*'s illumination fan is intended for personal computers, *id.*, [0002]-[0004], and is therefore a "fan for a computer" as claimed. Thus, it would have been obvious to modify the fan of *Fujitsu* to be an illumination fan (if needed), based on the disclosure of *Tsai*. The resulting combination would have included the fan unit of *Fujitsu*, modified to include a light emitting unit, and optionally a light guiding ring, as disclosed in *Tsai*.

A person of ordinary skill in the art at the time of the '336 patent would have been motivated to combine *Fujitsu* with *Tsai*. *Fujitsu* and *Tsai* are analogous to one another and, disclosing computer cooling fans with LEDs, both are analogous to the '336 patent. Like the '336 patent, both references are in the same field of endeavor of computer cooling fans, and both references also discuss the power supply and control of cooling fans. Like the '336 patent, both references disclose light emitting elements.

Combining *Fujitsu* with *Tsai* would have involved combining *Fujitsu*'s known computer fan unit 10 with the known light emitting unit and/or light guiding ring of *Tsai*, according to known methods of computer fan construction. For example, *Fujitsu* illustrates a fan unit 10 having ample space for including or incorporating the light emitting unit and light guiding ring of *Tsai*:



FIGS. 7A and 7B of Fujitsu (Ex. 1004)

Tsai illustrates the components of its illuminated fan, and shows how a light guiding ring 20 and light emitting unit 30 with LED(s) 32 could be easily incorporated into the space of a computer cooling fan:

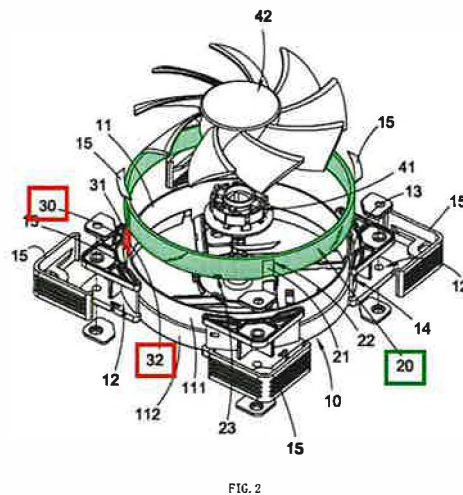
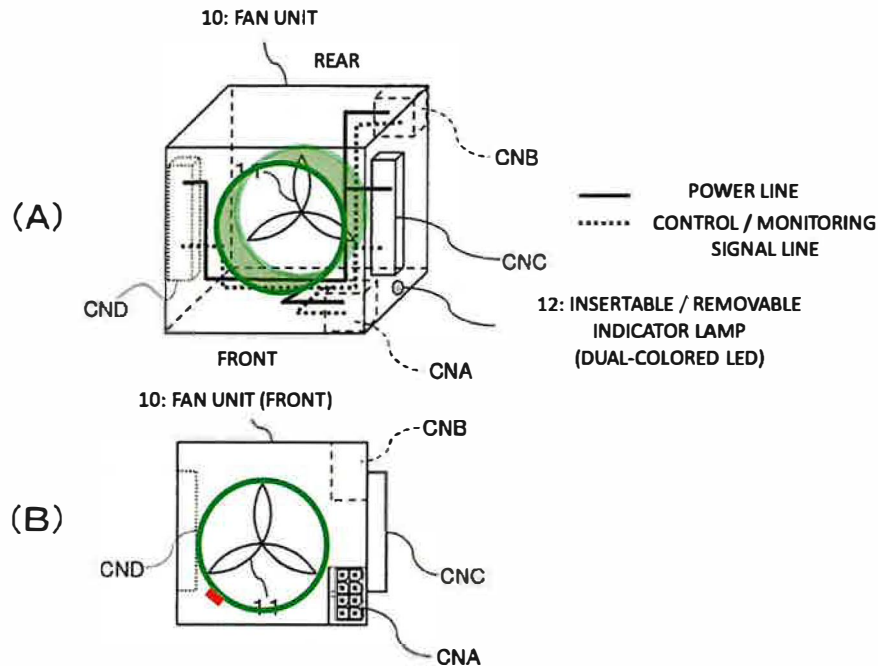


FIG. 2

FIG. 2 of Tsai (Ex. 1006) (showing a thin circular light **guiding ring 20** in **green**, and a

miniature **light emitting unit 30** having one or more **LEDs 32** in **red**)

Persons of ordinary skill in the art would have been guided by the diagrams and disclosure of *Tsai* to incorporate the light emitting unit and/or light guiding ring of *Tsai*, resulting in the following combination:



FIGS. 7A and 7B of Fujitsu, modified to include the **green light guiding ring** of *Tsai*, attached to the **light emitting unit** of *Tsai* (**red** in FIG. 7B) or attached to the **indicator lamp 12** of *Fujitsu* (**red** in FIG. 7A)

The combination of *Fujitsu* and *Tsai* would have yielded the predictable results of improving the function or aesthetics of the cooling fan, such as to illuminate the space near the fan or to provide a pleasing or entertaining appearance for the computer including the fan. Additionally, the combination of *Fujitsu* and *Tsai* would have involved use of *Tsai*'s known

LED lighting technique to improve *Fujitsu*'s similar computer cooling fan in the same way of improving the appearance of the computer. Further, because *Fujitsu* already teaches connecting the electrical power for controlling or driving the fans, its electrical power supply can also be used for powering the illumination.

Tsai provides a teaching, suggestion, or motivation for combining *Fujitsu* with *Tsai*, because *Tsai* discloses using LED lighting to provide a "prettified and colorful appearance" in a computer. Ex. 1006, [0003]. Furthermore, *Lin* – another patent reference in the same field of computer cooling fans – provides a teaching, suggestion, or motivation for combining *Fujitsu* with *Tsai*, because *Lin* teaches "mak[ing] the cooling fan to omit light" to "enhance the appearance of the computer." Ex. 1010, [0004].

A person of ordinary skill in the art would have reasonably expected success in modifying *Fujitsu*'s fan unit 10 to incorporate the light emitting unit 30 and/or light guiding ring 20 of *Tsai*. As explained above, a person of ordinary skill in the art would have been guided by *Tsai*'s disclosure and diagrams to place light guiding ring 20 around the cooling fan 11 of *Fujitsu*'s fan unit 10, and would have been guided to place one or more LED lights adjacent the light guiding ring to provide an annular lighting effect as disclosed in *Tsai*. Additionally or alternatively, *Tsai*'s disclosure of a light guiding ring 20 would have informed a person of ordinary skill in the art as to how to place *Fujitsu*'s indicator lamp 12

adjacent to the light guiding ring, to provide an annular lighting effect while also indicating a status of the fan unit. Any necessary modifications to the structure of *Fujitsu*'s fan unit 10, such as rearranging internal wiring or modifying the case of the fan unit to accommodate *Tsai*'s illumination elements, would have been minor and within the capabilities of a person of ordinary skill in the art, especially with *Tsai*'s guidance and diagrams.

For the reasons above, [1pre] would have been obvious based on *Fujitsu* in combination with *Tsai*.

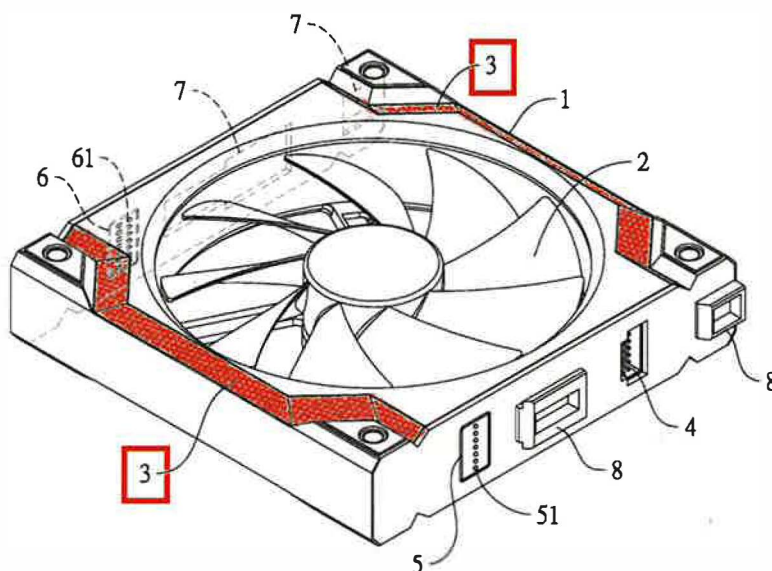
b) [1a]: a body, provided with a fan in center of the body

Fujitsu discloses [1a]. *Fujitsu* discloses a fan unit 10 that has a body (shown as a box in the figure below) and a “a cooling fan 11 that is driven rotationally by a not-shown motor.” See Ex. 1004, [0027], FIGS. 7A-7B. FIGS. 7A-7B shows each fan unit 10 including a fan 11 in the center of the body.



c) [1b]: an illumination area on at least two sides of the fan at top of the body

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'336 Patent, FIG. 1, highlighting illumination areas 3 in red

As explained with respect to [1a] above, *Fujitsu* discloses a fan unit 10 (also referred to as 110) having a body. As explained with respect to [1pre], *Fujitsu* also discloses an indicator lamp 12 that is a dual-colored LED. See FIG. 7A:

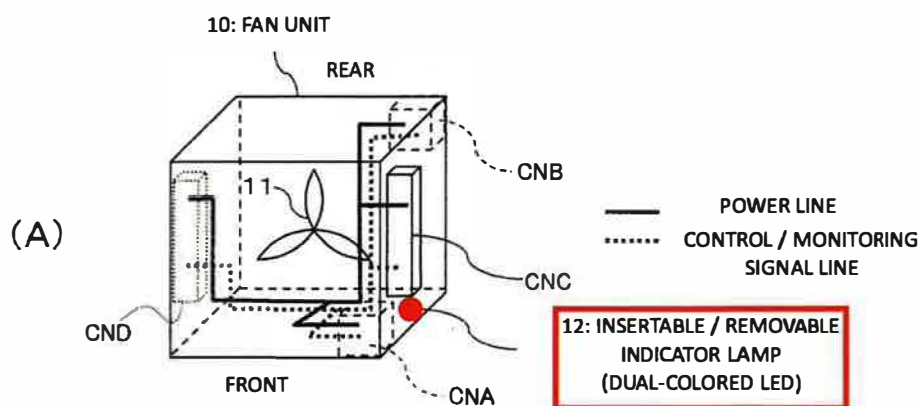


FIG. 7A of *Fujitsu* (circling indicator lamp 12 in red)

Accordingly, *Fujitsu* discloses a light on at least one side of the fan at top of the

body. *Fujitsu* does not disclose “an illumination area on at least two sides of the fan at top of the body” as claimed. However, as explained with respect to [1pre], it would have been obvious to a person of ordinary skill in the art at the time of invention to modify *Fujitsu*’s fan unit 10 to be an “illumination fan” with the claimed illumination area.

The combination of *Fujitsu* and *Tsai* is an illumination fan having an illumination area on at least two sides of the fan at top of the body. *Tsai* discloses a “light emitting structure of the heat dissipation fan includ[ing] a frame 10, a light guiding ring 20 [with a light inputting surface 21] and a light emitting structure 30.” Ex. 1006, [0032]-[0034].

Tsai’s FIG. 3 is reproduced below.

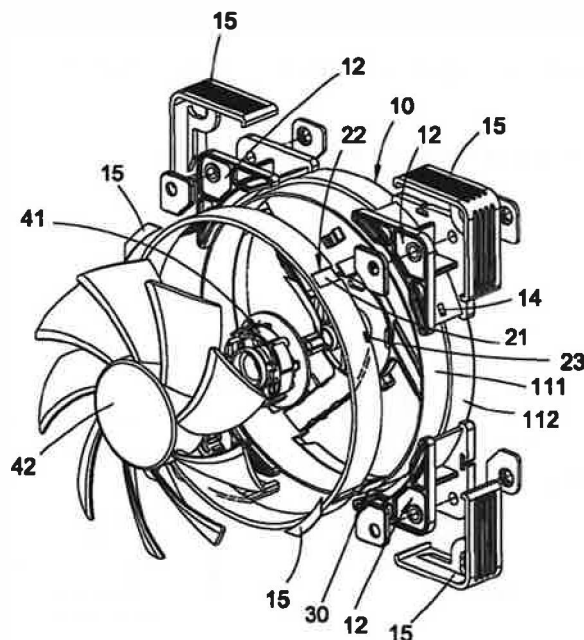


FIG. 3

FIG. 3 of Tsai

FIG. 3 of *Tsai* teaches the “lights emitted by the light emitting diode 32 enter the light guiding ring 20 via the light inputting surface 21, thus the light guiding ring 20 provides a visual effect with an annular illuminating manner,” and “[t]he light guiding ring 20 sheathes the outer side of the upper segment part 111 of the central frame 11, thus the lights of the light guiding ring 20 collectively illuminate toward outside with the opaque upper segment part 111 served as a background to increase the light emitting uniformity.” *Id.*, [0034]. The light guiding ring wraps around the fan and extends to a top surface of the fan body, because light guiding ring 20 is exposed on the same face as the fan:

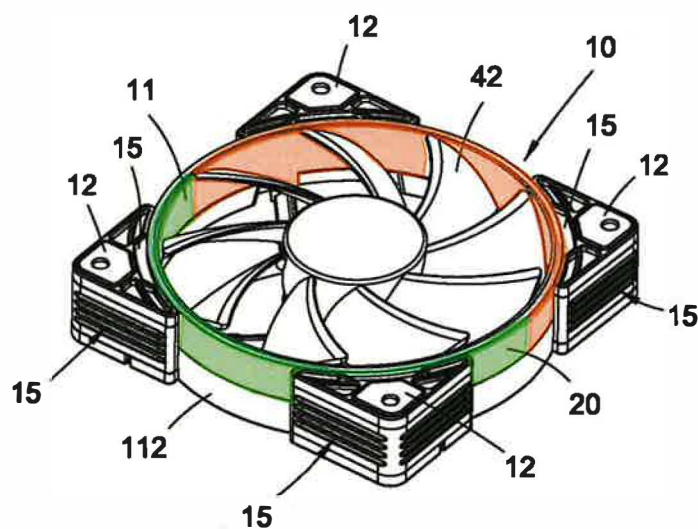


FIG. 1 of *Tsai*, annotated showing two an illuminated area on at least two sides of the fan
body top

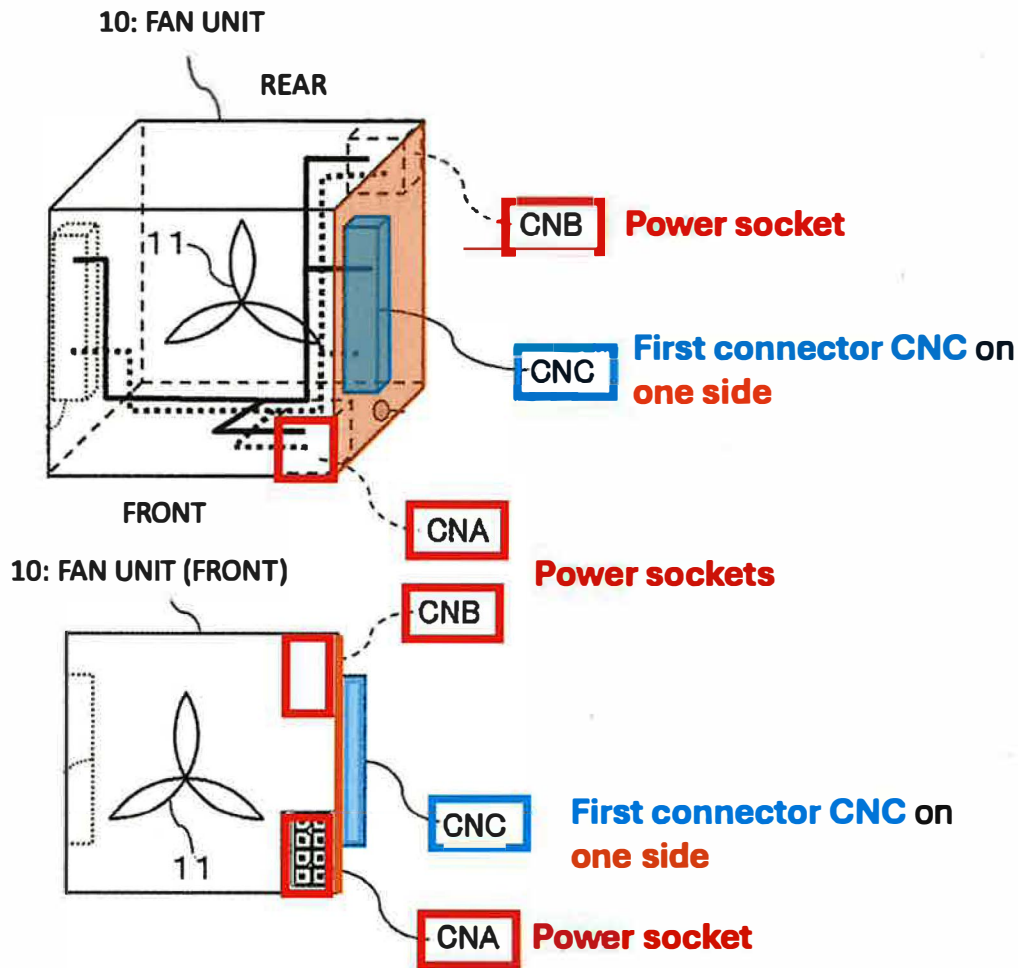
As shown in the **green** and **orange** shaded areas of the annotated figure above, light guiding ring 20 creates an illumination surface on top of the fan body. Because the light guiding ring

20 encircles the fan, the illumination area is also “on at least two sides of the fan at top of the body,” as claimed. The **green** and **orange** shaded areas of the annotated figure above represent “at least two sides of the fan.”

For these reasons, the combination of *Fujitsu* and *Tsai* renders obvious [1b].

d) [1c]: a power socket and a first connector on one side of the body, and

The combination of *Fujitsu* and *Tsai* discloses [1c]. As a preliminary matter, the broadest reasonable interpretation of [1c] requires a first connector on one side of the body, and a power socket without specifying any location. Under this interpretation, each of *Fujitsu*’s power connectors CNA and CNB constitute a “power socket,” because they are connectors “to which two or more power cables capable of supplying power.” Ex. 1004, [0031], FIGS. 7A-7B. *Fujitsu*’s inter-fan connector CNC constitutes the claimed “first connector on one side of the body” *Id.* FIG. 7A of *Fujitsu* is annotated below to illustrate this interpretation of [1c] and *Fujitsu*:

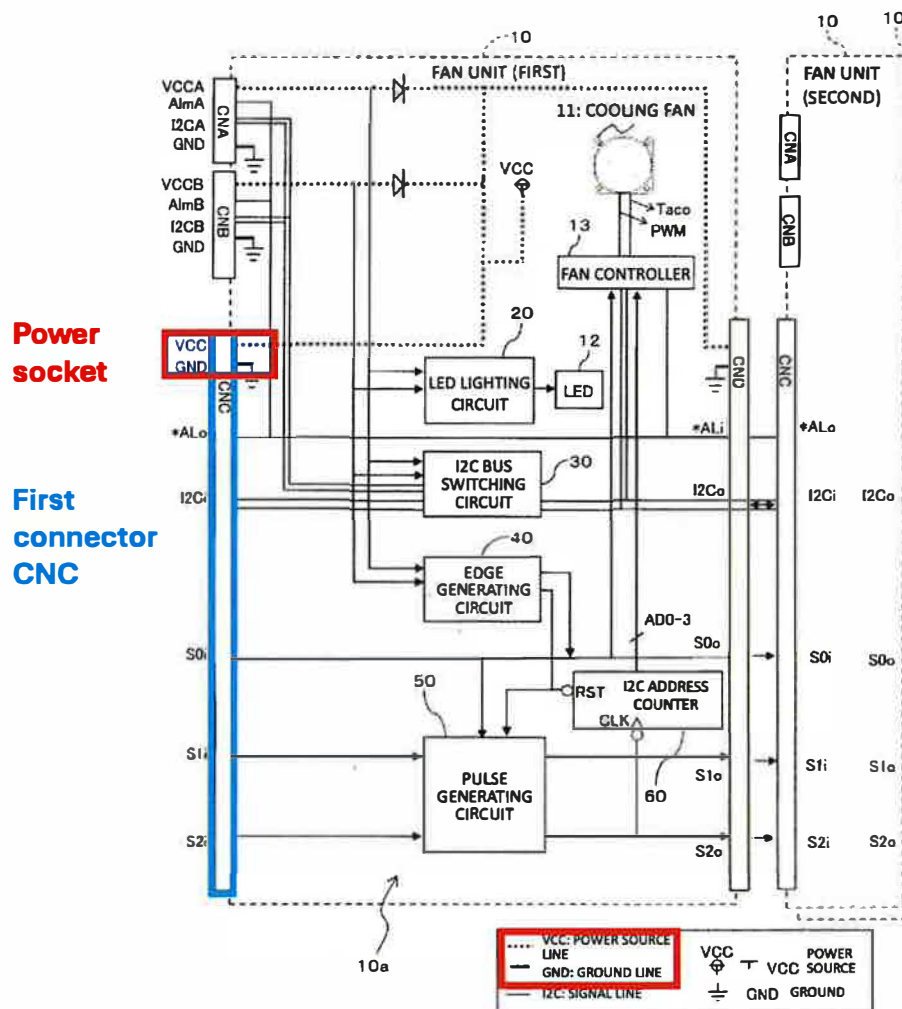


FIGS. 7A and 7B of Fujitsu, annotated

To the extent the Office determines that the broadest reasonable interpretation of [1c] requires both a power socket and a first connector on one side (i.e., the power socket and first connector on the same side) and that the power socket may be considered part of the first connector,¹ then *Fujitsu* still meets [1c]. As shown above, *Fujitsu*'s connector CNC

¹ The fact that [1c] recites "a power socket" and "a first connector" as two separate elements suggests that the claim may require two separate structures. To the extent the Office and/or Patent Owner interprets the claim element "a power socket and a first

includes a **first connector** (blue above) and a power socket on **one side** (orange, above) of the fan body. In describing the electrical connections of connector CNC, *Fujitsu* illustrates and explains that connector CNC also includes the VCC power and ground connections, and thus includes a “power socket”:



connector on one side of the body” broadly or functionally to suggest that a single structure can serve both of these electrical connections or functions, then CNC and CND as disclosed and illustrated in *Fujitsu* each meets the limitations of [1c], because each is a connector that also powers the connected fans.

FIG. 14 of Fujitsu, annotated

Ex. 1004, [0092], [0093], FIG. 14.

Alternatively, female connector CND of *Fujitsu* constitutes the “power socket and a connector on one side of the body” of [1c], as illustrated in FIG. 14 of *Fujitsu*, below:

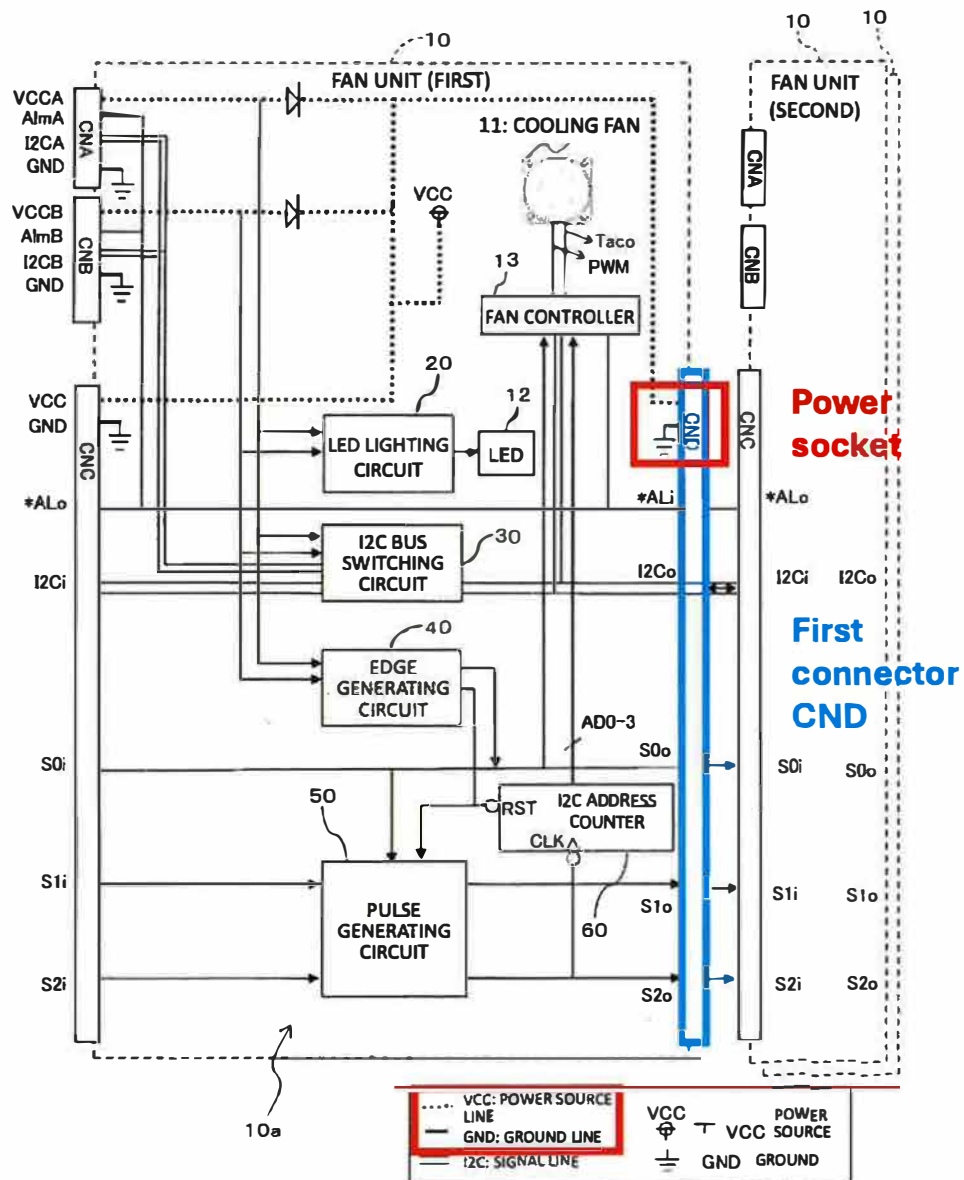
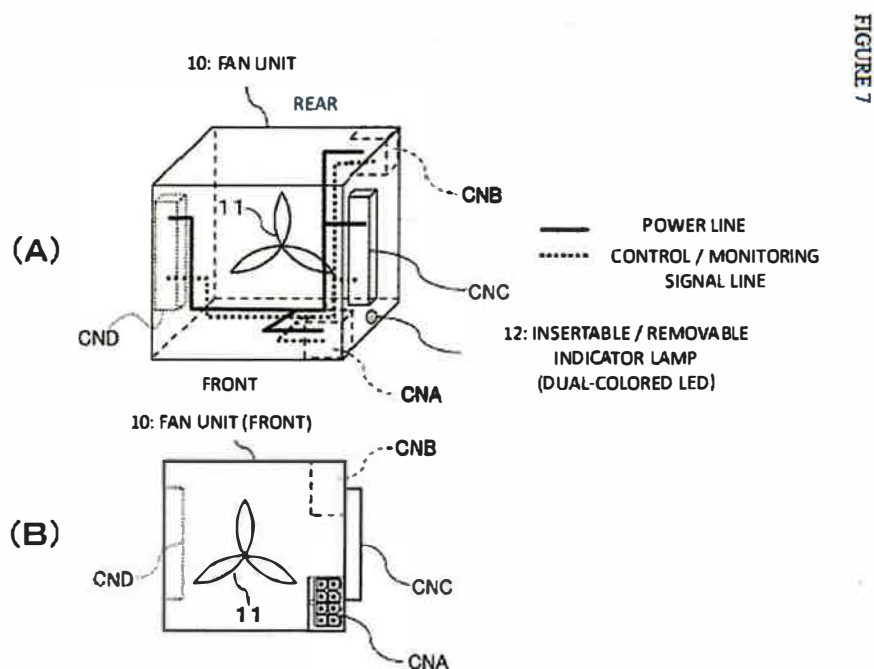


FIG. 14 of Fujitsu, annotated

For these reasons, the combination of *Fujitsu* and *Tsai*, and particularly the connectors of *Fujitsu*, meet [1c] in two alternative ways. As a first alternative, *Fujitsu* discloses a power socket (either CNA/CNB), and a first connector (CNC or CND). As a second alternative, *Fujitsu* discloses a power socket (the VCC power and ground connections of connector CNC or CND) and a first connector (remaining electrical connections of connector CNC or CND).

e) [1d]: a second connector on another side of the body

The combination of *Fujitsu* and *Tsai* discloses [1d]. As explained above with respect to [1c], *Fujitsu* discloses a first connector that is either male connector CNC or female connector CND. *See* Ex. 1004, [0031], [0037], [0038], [0041], [0076], [0084], [0091], FIGS. 7A, 14. *Fujitsu* also discloses “a second connector on another side of the body” as claimed because, as shown in FIGS. 7A and 7B of *Fujitsu*, CNC and CND are on opposite sides of fan unit 10:



FIGS. 7A and 7B of Fujitsu

Accordingly, under an interpretation in which male connector CNC is the claimed “first connector,” then female connector CND is “a second connector on another side of the body” as claimed. Under an alternative interpretation in which female connector CND is the claimed “first connector,” then male connector CNC is the claimed “second connector on another side of the body.” Under either interpretation, the combination of *Fujitsu* and *Tsai* meets [1d].

f) [1e]: wherein the power socket is electrically connected with the first connector, the second connector, the fan and the illumination area, 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

The combination of *Fujitsu* and *Tsai* renders [1e] obvious. As explained with respect to [1c], *Fujitsu* discloses a power socket in at least two ways: 1) CNA and CNB are each a “power socket”; or 2) connectors CNC and CND each include a power connection that is a “power socket.”

As explained with respect to [1d], *Fujitsu* discloses a second connector, which is CND or CNC (the opposite of the first connector). *Fujitsu* also discloses a fan 11, as explained with respect to [1a], and the combination of *Fujitsu* and *Tsai* includes an illumination area, as explained with respect to [1pre] and [1b]. FIGS. 7A and 7B and 14 of *Fujitsu* show that each of the first connector, the second connector, the fan, and the illumination area is electrically connected with the power socket, regardless of whether the power socket is CNA, CNB, CNC, or CND:

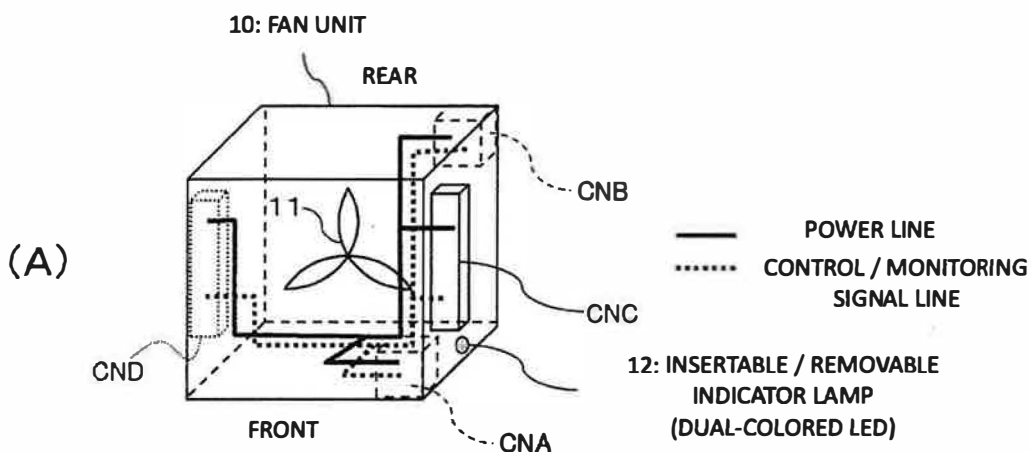


FIG. 7A of Fujitsu, showing CNA, CNB, CNC, CND all electrically connected via a power line (solid line) or a control/monitoring signal line (dotted line)

Fujitsu discloses that CNA, CNB, CNC, and CND “for supplying power and transmitting a control signal/monitoring signal to the adjacent fan unit 10” are connected by a power line, and “enable power supply and live connection of the control signal/monitoring signal,” in which “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.” Ex. 1004, [0037]-[0039], [0041].

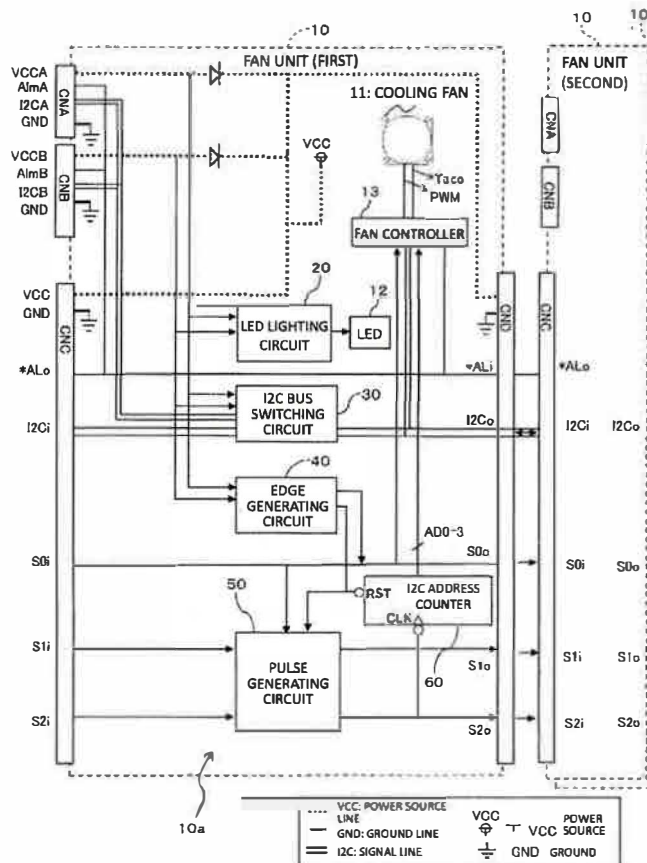


FIG. 14 of Fujitsu, showing CNA, CNB, CNC, and CND (the power socket, first connector, and/or second connector), in electrical being electrically connected to each other, cooling fan 11, and LED lighting circuit 20

In FIG. 14 above, components are connected via power lines, ground lines, and/or signal lines.

Additionally, a POSITA would have understood that Tsai's light emitting unit 30 in the combination of *Fujitsu* and *Tsai* would have been electrically connected with the components of *Fujitsu* shown in the figures above. For example, light emitting unit 30 of *Tsai* would have been electrically connected like LED lighting circuit 20 shown in FIG. 14 of *Fujitsu*, above.

The combination of *Fujitsu* and *Tsai* also discloses 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,” as claimed. *Fujitsu* discloses computer fans that are serially connected in a daisy chain, such that each fan receives power and control signals from a connection to the adjacent fan using a “serial interface capable of monitoring and controlling the fan units by using fewer signal lines.” Ex. 1004, [0006]. *Fujitsu* discloses “the power line and the control / monitoring signal line of the four fan units 10 inside the server 1 are joined in a daisy chain form via the cables A and B, and the connectors CNA, CNB, CNC, and CND.” Ex. 1006, [0076]. *Fujitsu*’s fans provide power for both rotating cooling fan 11 and illuminating indicator lamp 12 using a single power connection, either CNA/CNB or CNC or CND. *Id.*, [0006], [0020], [0027], [0041], [0049], [0076], [0080], [0085], [0092], [0093], [0096], [0124], FIGS. 7A and 7B, 14. Therefore, *Fujitsu* discloses [1e].

Tsai also discloses the additional limitations of [1e], because *Tsai* discloses supplying power to a rotating fan and to an illumination area using a common connector. In particular, *Tsai* discloses a fan body “with a socket 13 electrically connected to a power source” and “[t]he circuit board 31 of the light emitting unit 30 is inserted in the socket 13 and electrically connected to the socket 13” and “the socket 13 is connected to a power input

end of the [fan] motor 41 to be provided with the power supply via a conductive wire” to provide the heat dissipation fan “capable of emitting lights with various colors.” Ex. 1006, [0037], FIG. 4.

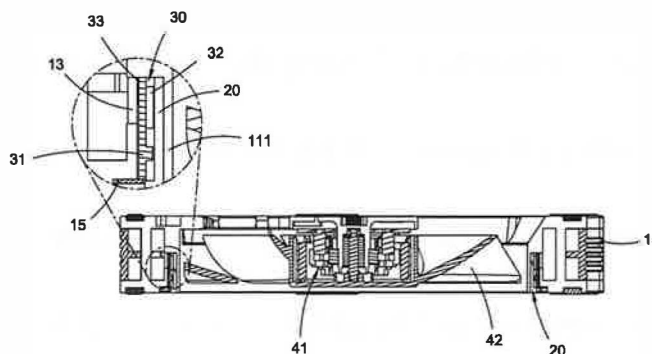


FIG. 4 of Tsai

As explained with respect to [1pre], a person of ordinary skill in the art would have been motivated to combine *Fujitsu* with the illumination elements of *Tsai*. Furthermore, the combination of *Fujitsu* and *Tsai* would have yielded the predictable results of powering the daisy-chained fans with illumination “using fewer signal lines” as disclosed by *Fujitsu*. Ex. 1004, [0006]. Persons of ordinary skill in the art would have expected success in driving both the fan rotation and illumination by supplying a single power socket in the combination of *Fujitsu* and *Tsai*, because *Fujitsu* already discloses powering a fan motor and LED lighting circuit using a single power connection. See Ex. 1004, FIG. 14 and associated description.

For these reasons, [1e] would have been obvious based on *Fujitsu* in view of *Tsai*.

g) [1f]: 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.

The combination of *Fujitsu* and *Tsai* discloses [1f]. As explained with respect to [1c] and [1d], connector CNC or CND of *Fujitsu* constitutes the claimed “first connector,” and the other of connector CNC or CND constitutes the claimed “second connector.” FIGS. 6 and 14 of *Fujitsu* illustrates a first connector of the body of one fan (such as connector CND) being connected with a second connector of a body of another illumination fan:

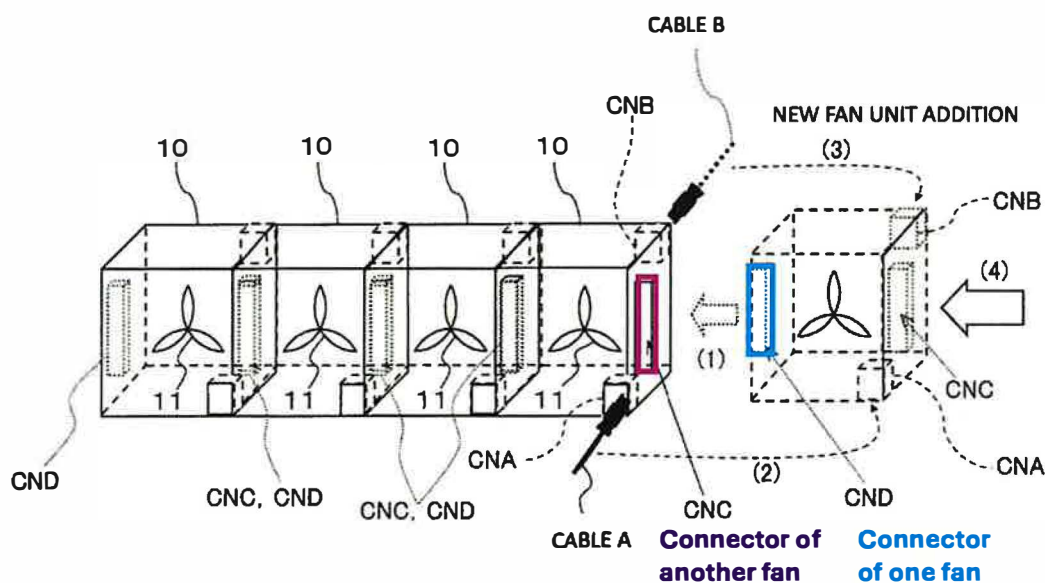


FIG. 6 of Fujitsu

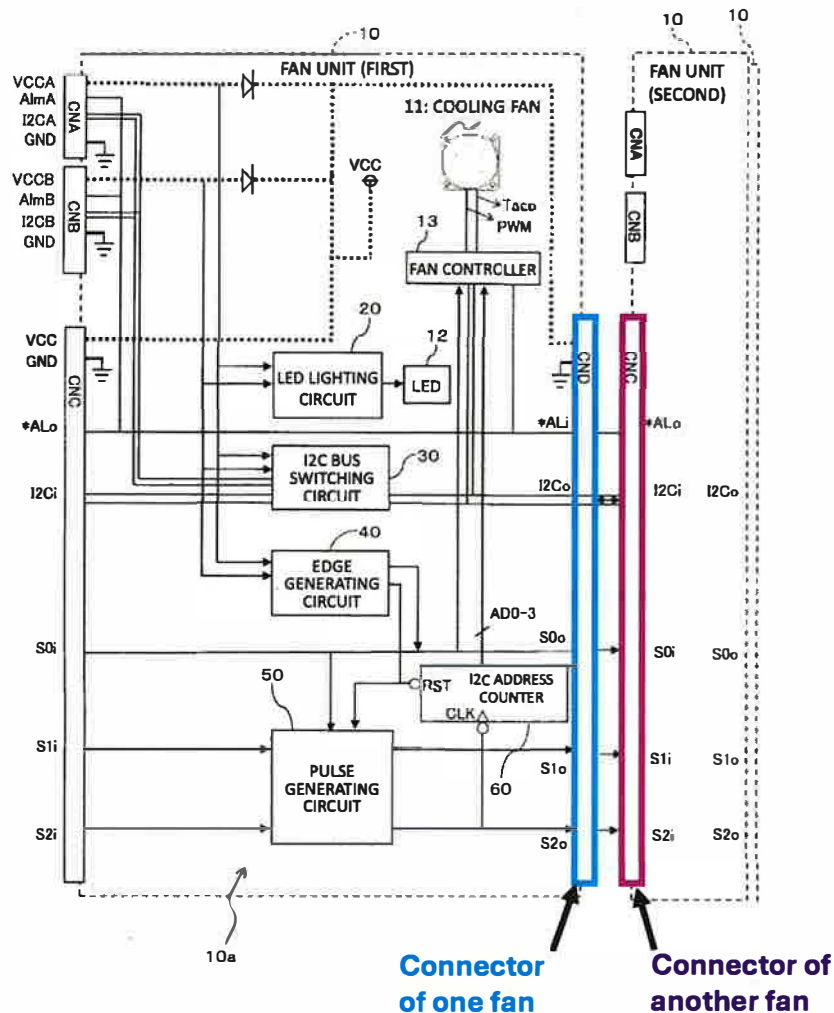
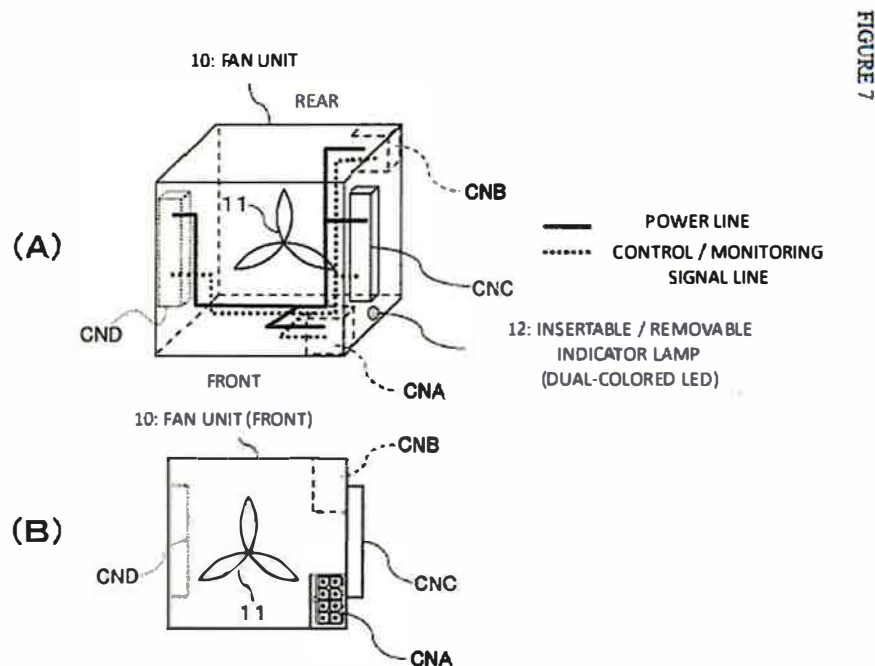


FIG. 14 of Fujitsu

As explained with respect to [1e], connectors CNC and CND provide power from one fan unit 10 to another fan unit 10 connected in series, and a person of ordinary skill in the art would have understood that the connectors provide power to both drive rotation of a fan and to illuminate light emitting elements such as light emitter 30 of *Tsai* and/or indicator lamp 12 of *Fujitsu*. See Ex. 1004, FIGS. 7A and 7B, 14. *Fujitsu* further discloses that its

connectors CNC and CND are used “for supplying power and transmitting a control signal/monitoring signal to the adjacent fan unit 10,” thereby “enable[ing] power supply and live connection of the control signal/monitoring signal,” in which “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.**” Ex. 1004, [0037]-[0039], FIGS. 7A and 7B.



FIGS. 7A and 7B of Fujitsu

Fujitsu thus discloses connector CNC of one fan unit 10 on one side being connected

with connector CND of an adjacent fan unit 10, and the fan 11 of the adjacent fan unit 10 is driven into rotation, and a control signal/monitoring signal can be transmitted to the adjacent fan unit 10. The combination of *Fujitsu* and *Tsai* further includes illuminating one or more illumination areas of the adjacent fan.

As discussed in the sections above, *Tsai* teaches using illumination fans, in which “[t]he circuit board 31 of the light emitting unit 30 is inserted in the socket 13 and electrically connected to the socket 13” and “the socket 13 is connected to a power input end of the motor 41 to be provided with the power supply via a conductive wire” to provide the illumination fans. Ex. 1006, [0037], FIG. 4.

For the reasons above, [1f] is rendered obvious by *Fujitsu* in view of *Tsai*.

2. Claim 2

a) [2 pre]: The illumination fan connectable with at least one illumination fan for a computer of claim 1

The combination of *Fujitsu* and *Tsai* discloses an illumination fan connectable with at least one illumination fan for a computer of claim 1, as explained above in Section VI.A.1.

b) [2a]: “wherein an electrically conductive terminal is provided in the first connector, and an electrically conductive contact surface is provided in the second connector for being electrically connected with the electrically conductive terminal, 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, the fan and the illumination

**area of the body of another illumination fan are respectively
driven into rotation and illumination”**

The combination of *Fujitsu* and *Tsai* discloses [2a]. *Fujitsu* discloses a fan unit 10 including a first connector (e.g., connector CNC or CND) on one side of the body and a second connector (e.g., the other of connector CND or CNC) on another side of the body, as explained above with respect to [1c] and 1e[d]. *Fujitsu* discloses that “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.” Ex. 1004, [0031] and [0037]-[0039]. For the same reasons as explained above with respect to [1f], *Fujitsu* in combination with *Tsai* discloses 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, the fan and the illumination area of the body of another illumination fan are respectively driven into rotation and illumination” as claimed. *See* Section VI.A.1.g.

Fujitsu also discloses that connectors CNC and CND have terminals that transmit electrical signals from one fan to another. Ex. 1004, [0094], [0103], [0107], [0115]-[0118], FIGS. 14, 16-18. Referring to Fig. 14 as an example, connectors CNC and CND join the fan units, electrically connect them, and provide the electrical connectors to drive fan units and LEDs into rotation and illumination.

FIGURE 14

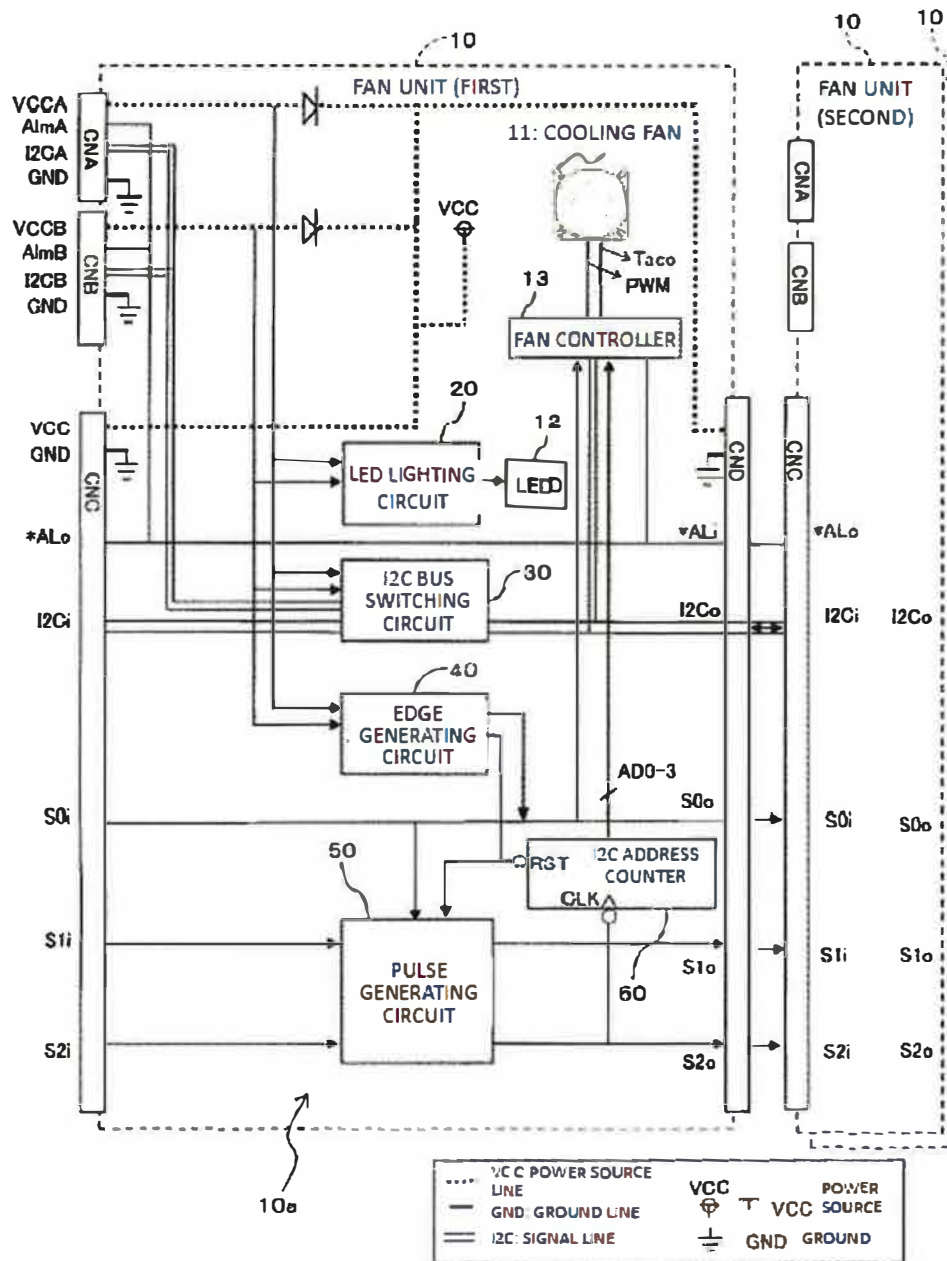


FIG. 14 of Fujitsu

A person of ordinary skill in the art would have understood that in order to transmit electricity and signals between connectors CNC and CND of different fans, the connectors

and terminals require contact surfaces that are electrically conductive. For example, persons of ordinary skill in the art would have understood that electrical wires, pins, receptacles, pads, and other types of commonly-known electrical connections are all types of terminals that have electrically conductive surfaces enabling the transmission of power and signals. As an example, WO2008/061519 (exhibits 1013 and 1014) discloses fans having connectors on opposite sides of the fan body, with one connector having electrical contact pins and the other connector having flat contacts – both types of electrically conductive terminals and electrically conductive contact surfaces. *See* Exs. 1013, 1014, FIGS. 2A, 2B, 3, and associated descriptions.

Tsai also discloses a socket 13 of an illuminated fan having conductive wires and wire slots, and the socket being electrically connected to a power source. [0008], [0013], [0037], claims 1, 7. Therefore, the combination of *Fujitsu* and *Tsai* discloses the claimed “electrically conductive terminal” and “electrically conductive contact surface” of claim 2.

For the reasons above, the combination of *Fujitsu* and *Tsai* renders claim 2 obvious.

3. Claim 3

a) [3pre]: The illumination fan connectable with at least one illumination fan for a computer of claim 1

The combination of *Fujitsu* and *Tsai* discloses an illumination fan connectable with at least one illumination fan for a computer of claim 1, as explained above in Section VI.A.1.

Fujitsu discloses a plurality of serially-connected fan units 10. Ex. 1004, [0010], [0026], [0041], Fig. 6:

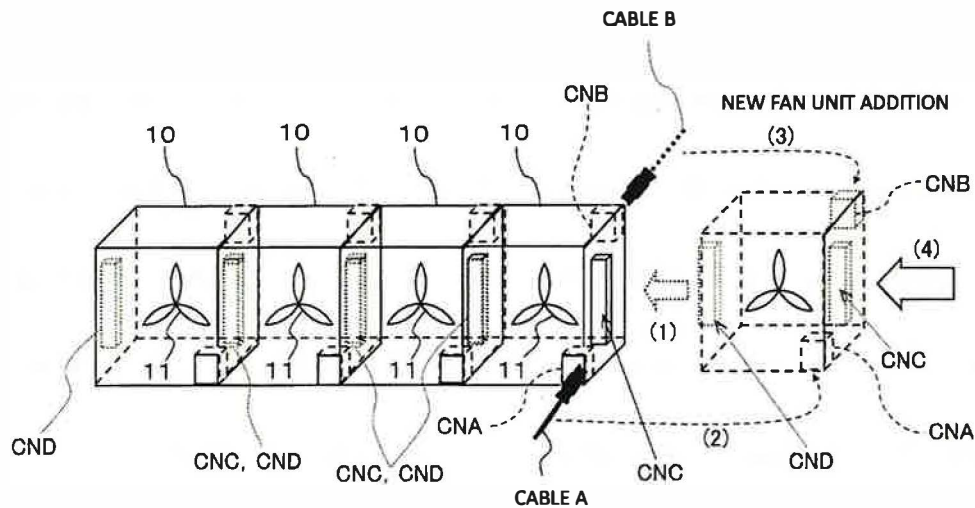


FIG. 6 of EX. 1004

The combination of *Fujitsu* and *Tsai* includes multiple fan units 10 having the light emitting unit 30 and/or light guiding ring 20 of *Tsai*. In the combination of *Fujitsu* and *Tsai*, the fan units 10 of *Fujitsu* would have the illumination area of *Tsai*, which is represented by at least the green ring below:

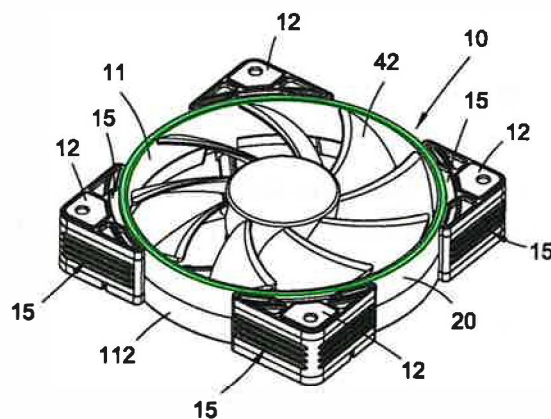


FIG. 1 of Tsai, showing highlighting an illumination area of light guiding ring 20 in green

The combined fan units 10 and light emitting units 30 / light guiding rings 20 of Tsai would have had illuminated areas that appear to continue from one fan to the next, as follows:

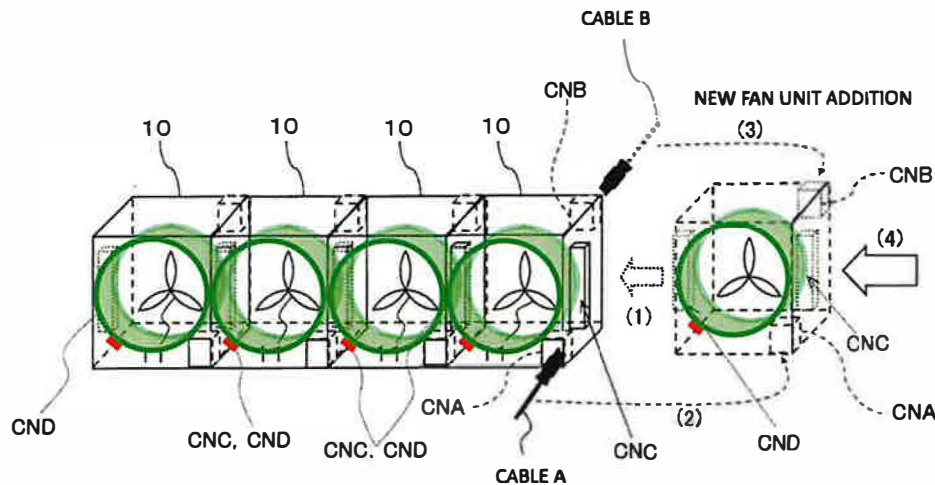


FIG. 6 of Fujitsu combined with the light guiding rings 20 (green)
and light emitting units 30 (red) of Tsai

For these additional reasons, the combination of *Fujitsu* and *Tsai* is an “illumination fan connectable with at least one illumination fan for a computer,” as claimed.

b) [3a]: “wherein when the body of the illumination fan is connected with the body of another illumination fan, the illumination areas of the two bodies form a continuous illumination area”

The combination of *Fujitsu* and *Tsai* discloses [3a]. The *Fujitsu-Tsai* combination includes an illumination fan unit 10 body connected with the body of another illumination fan unit 10:

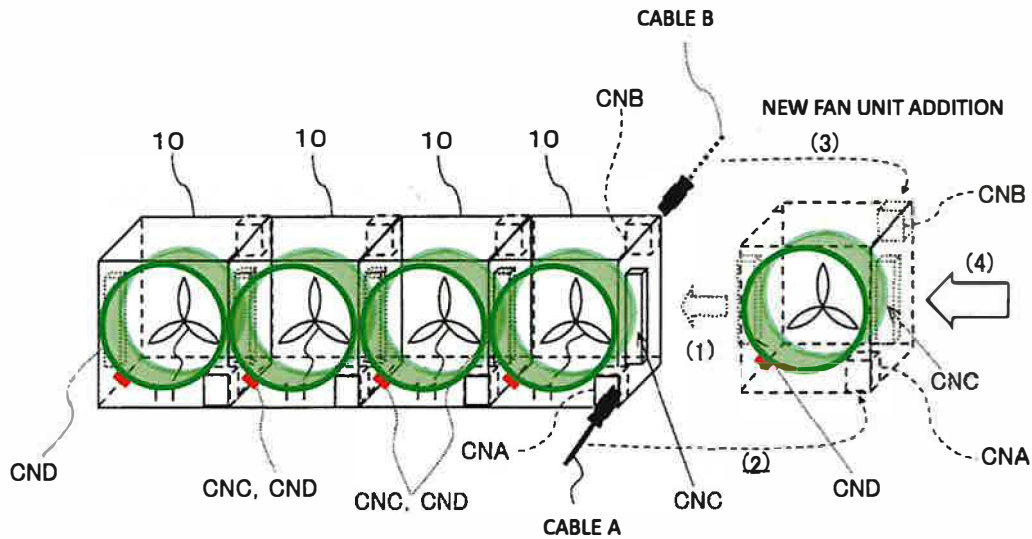


FIG. 6 of Fujitsu combined with the light guiding rings 20 (green)
and light emitting units 30 (red) of Tsai

Ex. 1004, [0029], FIG. 6. When the bodies of fan units 10 are connected, the surfaces of adjacent fan bodies form a continuous area. The continuous surface is highlighted in **yellow**, below:

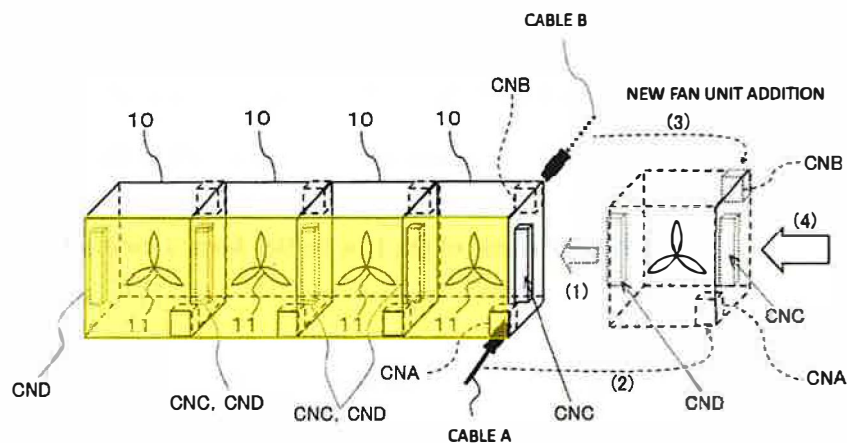


FIG. 6 of Fujitsu, showing a continuous surface highlighted in **yellow**

FIG. 6 of Fujitsu combined with the *light guiding rings 20 (green)*

and *light emitting units 30 (red)* of Tsai

The light guiding rings (**green** above) are illuminated by LED lights such as the light emitting units (**red** above) or indicator lamps of *Fujitsu* (not shown above).

For the reasons above, the combination of *Fujitsu* and *Tsai* renders claim 3 obvious.

4. Claim 4

a) **Claim 4 [preamble]: The illumination fan connectable with at least one illumination fan for a computer of claim 1**

The combination of *Fujitsu* and *Tsai* is an illumination fan connectable with at least one illumination fan for a computer of claim 1, as explained above in Section VI.A.1.

b) **[4a]: “wherein a groove is provided on one side of the body of the illumination fan, while an engaging block is provided on another side thereof to be engaged into the groove, 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 another illumination fan”**

The combination of *Fujitsu* and *Tsai* discloses [4a]. The *Fujitsu-Tsai* combination is an illumination fan unit 10 having a male connector CNC on one side of the body and a female connector CND on another side of the body:

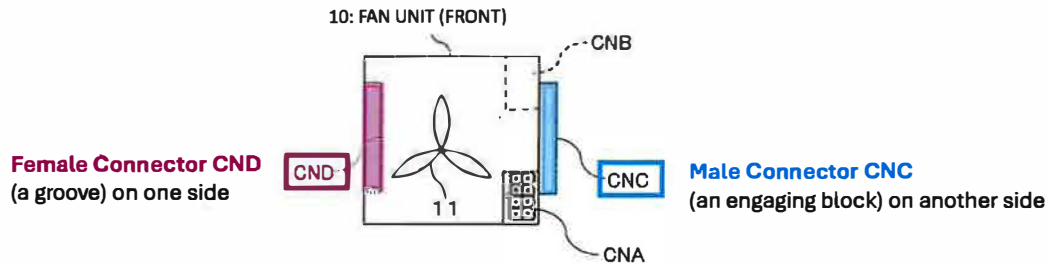


FIG. 7B of Fujitsu, annotated

The '336 patent does define or describe in detail the claimed “groove” and “engaging block,” other than stating “the groove 7 of one body 1 can be mated with the engaging block 8 of another body 1, allowing the two bodies 1 to be combined together.” Ex. 1001, 3:20-22, FIG. 2. *Fujitsu* discloses fan body structure that exhibits the same functionality described in the '336 patent. Additionally, **using grooves and engaging blocks to mate two fan bodies together was widely known long before the '336 patent.** *See, e.g.,* CN2419399Y (FIGS. 2, 4, 8), CN2861563Y (FIGS. 2-9), CN2861564Y (FIGS. 2-9), CN101725571A (FIGS. 1-4), US2009/0246015 (FIGS. 1-11), WO2008/061519 (FIGS. 1, 3, 4), TW282827 (FIGS. 3-4). Indeed, to the extent that the Office finds that *Fujitsu* does not disclose a “groove” and an “engagement block,” these limitations of claim 4 would have been obvious based on *Fujitsu* in view of any one of several other prior art references cited herein disclosing electronic devices that can connect to one another using a groove and an engaging block on the device body.

Fujitsu's female connector CND constitutes the claimed “groove,” and male

connector CNC constitutes the claimed “engaging block,” because the two can be mated to allow two fan units 10 to be combined together:

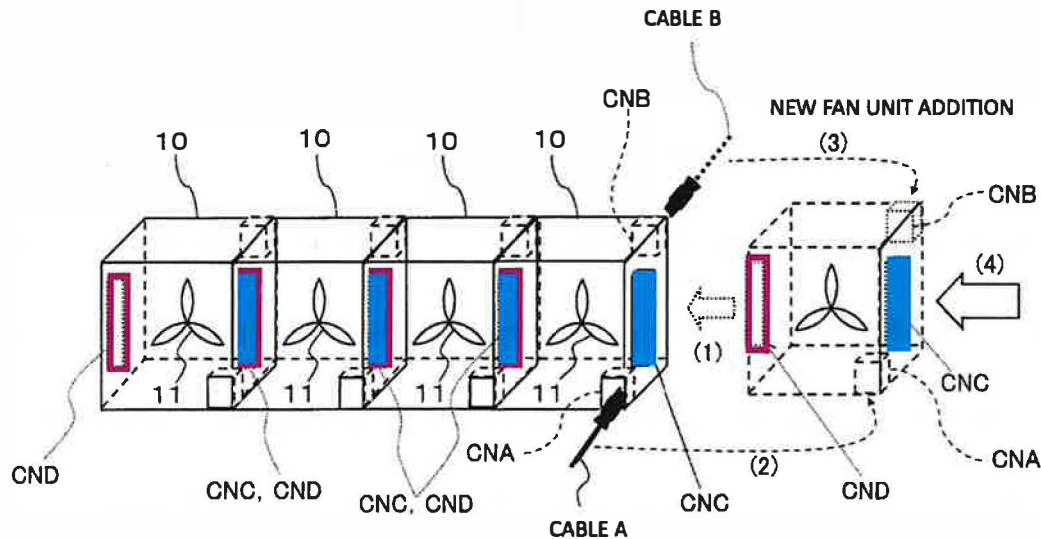


FIG. 6 of Fujitsu, annotated showing female connectors CND (grooves, in purple)
engaged with male connectors CNC (engaging blocks, in blue)

As shown above, connectors CNC and CND engage to connect the bodies of two fan units 10. Connector CND is a “female” connector including a groove provided on one side of the body of the fan unit 10, and connector CNC is a “male” connector including an engaging block provided on another side thereof to be engaged into the groove. When the groove of the female connector CND is engaged with the engaging block of the male connector CNC, the body of the fan unit 10 is connected with the body of another fan unit 10. *Fujitsu* discloses that “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.” Ex. 1004, [0038]. *Fujitsu* further discloses that “[a] maintenance person engages the connector CNC (male) of the fan unit 10 on the right-most side with the connector CND of the new fan unit 10 (refer to Arrow (1) shown in FIG. 6). Accordingly, the new unit 10 is connected to the fan unit 10 on the right-most side as a fifth fan unit 10.” *Id.*, [0044]. Therefore the *Fujitsu-Tsai* combination discloses 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 another illumination fan” as claimed.

For the reasons above, claim 4 is rendered obvious by *Fujitsu* in view of *Tsai*.

**B. GROUND 2: CLAIM 5 IS OBVIOUS UNDER 35 U.S.C. § 103 OVER
FUJITSU IN VIEW OF *TSAI* AND *CHOU*.**

**1. [5pre] The illumination fan connectable with at least one
illumination fan for a computer of claim 1,**

The combination of *Fujitsu* and *Tsai* is an illumination fan connectable with at least one illumination fan for a computer of claim 1, as explained above in Section VI.A.1.

**2. [5a] wherein a groove is provided on two sides of the body of the
illumination fan, and the body of the illumination fan is 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 another illumination fan.

The combination of *Fujitsu*, *Tsai*, and *Chou* renders [5a] obvious. The *Fujitsu-Tsai* combination is an illumination fan that connect using *Fujitsu*'s connectors CND and CNC, of which CND is a "groove" on one side of a fan body as explained with respect to claim 4. See Section VI.A.4. *Fujitsu* discloses hot swapping fans (i.e., connecting and disconnecting fans while in operation) by sliding fans through a casing of a computer such as a server. Ex. 1004, [0002], [0014]-[0018], [0032], [0062], [0065], [0142]. FIGS. 3-6, 8-12. As the fans are inserted into the computer casing, the fans are electrically connected using female connector CND and male connector CNC of two fan units 10, as shown in FIG. 5:

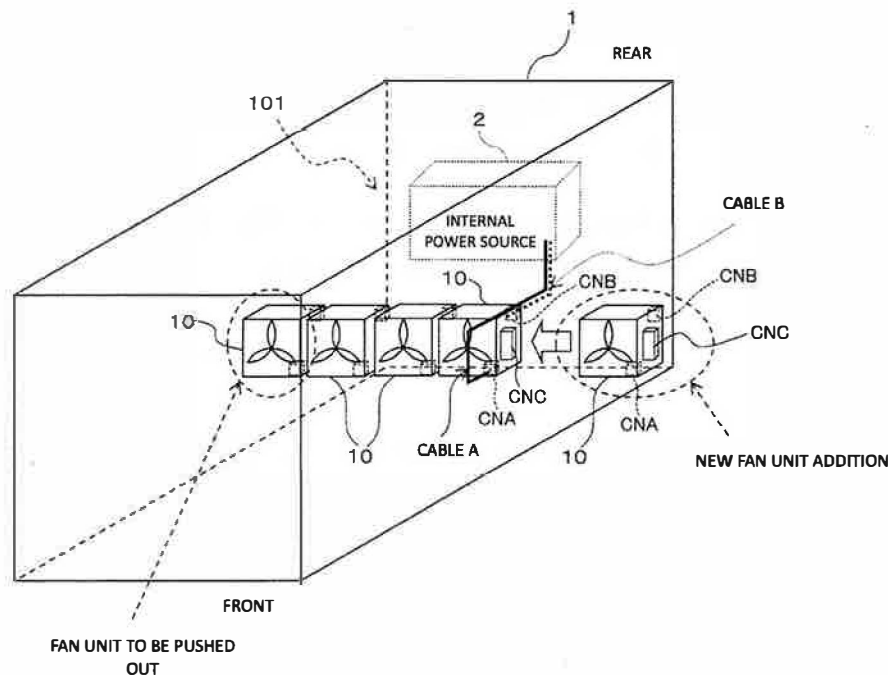


FIG. 5 of Fujitsu

Fujitsu does not provide mechanical details of how the fan units 10 slide in the server 1, or how the fan units 10 are aligned with one another when sliding a new fan unit into the computer. Thus, *Fujitsu* does not disclose a groove on two sides of the body, or an engaging block that engages with a groove of one illumination fan and a groove of a second illumination fan.

Chou is analogous prior art to *Fujitsu* and *Tsai*, and all three references are analogous art to the '336 patent. All three prior art references, as well as the '336 patent, are in the same field of endeavor of cooling fans for electronic devices, such as computers. *Chou* discloses a fan assembly for cooling electronic products. Ex. 1009, title, [0003]. The fan assembly includes multiple fans that are connected together:

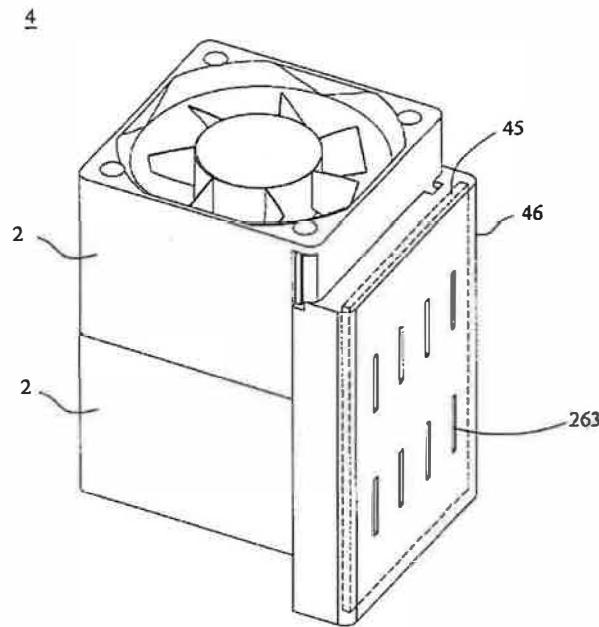


FIG. 4 of Chou

Two or more fans are connected by a connecting member 46. Ex. 1009, [0025], FIG. 4. The structure of *Chou*'s fans and connecting member are further illustrated and described with respect to FIG. 2:

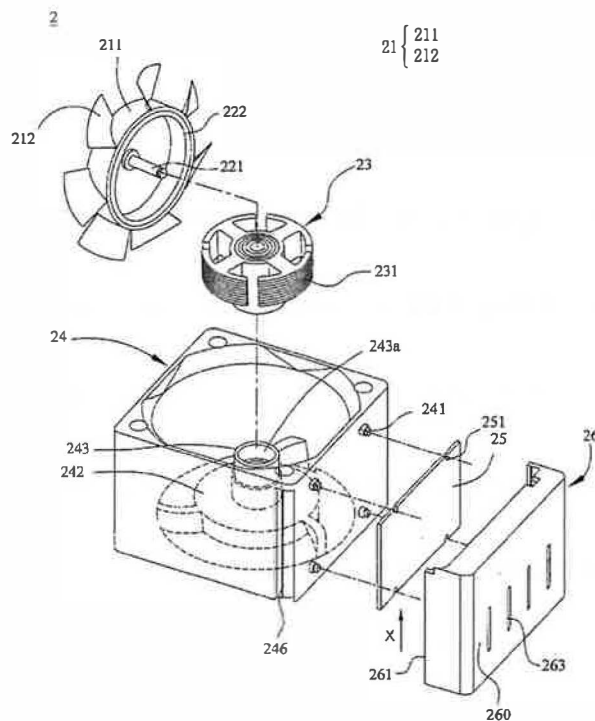


FIG. 2 of Chou

Chou discloses each fan 2 having a frame 24, and the frame 24 has at least two sliding rails 246 disposed a peripheral corner of the fan frame. The side walls 261 of a connecting member 26 engage the sliding rails 246. As shown in the diagram below, *Chou*'s fan has sliding rails 246, which are grooves, on two sides of the fan frame 24:

As shown above, two sides of the fan frame 24 are highlighted in **blue**, with the locations of the sliding rails 246 (grooves) in **purple**. The sliding rails 246 (grooves) are similar in many ways to the grooves 7 illustrated in Fig. 4 of the '336 patent. Side walls 261 of the connecting member 26 (an engaging block) are highlighted in **green**. When the connecting member engages the grooves of the sliding rails, the fans are connected together:

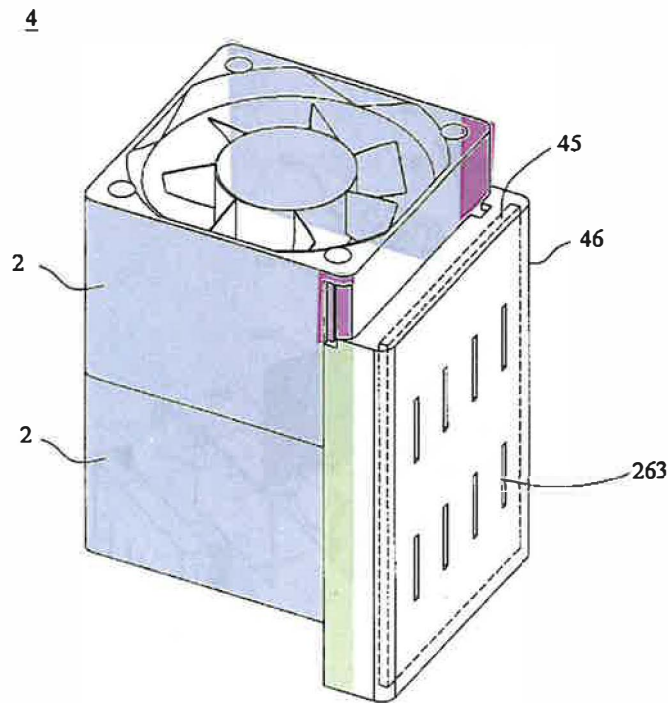


FIG. 4 of Chou, annotated

Notably, although *Chou* illustrates two fans stacked and connected in series (e.g., one fan blows into the other), *Chou* states that its examples are non-limiting and modifications could have been made. *See id.*, [0025], [0029]. A person of ordinary skill in the art would have understood that the sliding rail 246 grooves could have been placed on different peripheral edges of the fan frame 24 sides, such that the fans could be connected in parallel, or side by side.

It would have been obvious to a person of ordinary skill in the art at the time of the '336 patent to modify the *Fujitsu-Tsai* illumination fan to include grooves on two sides and an engaging block that engages the grooves to connect the fans, as disclosed in *Chou*.

The combination would have involved applying *Chou*'s known technique of connecting computer cooling fans using a connecting member (an engaging block) that engages sliding rails (grooves) on two sides of the cooling fan bodies, to the known *Fujitsu-Tsai* illumination cooling fans. The combination would have yielded predictable results of allowing cooling fans to slide in and out of a computer casing having the connecting member installed, such as the sliding computer fans disclosed in *Fujitsu*, discussed above. Additionally, the combination would have yielded predictable results of aligning the *Fujitsu-Tsai* fans as they are slid into a computer casing, so that *Fujitsu*'s connectors CNC and CND are aligned with one another to connect properly. An example of the combination of *Fujitsu*, *Tsai*, and *Chao* would have appeared is shown below:

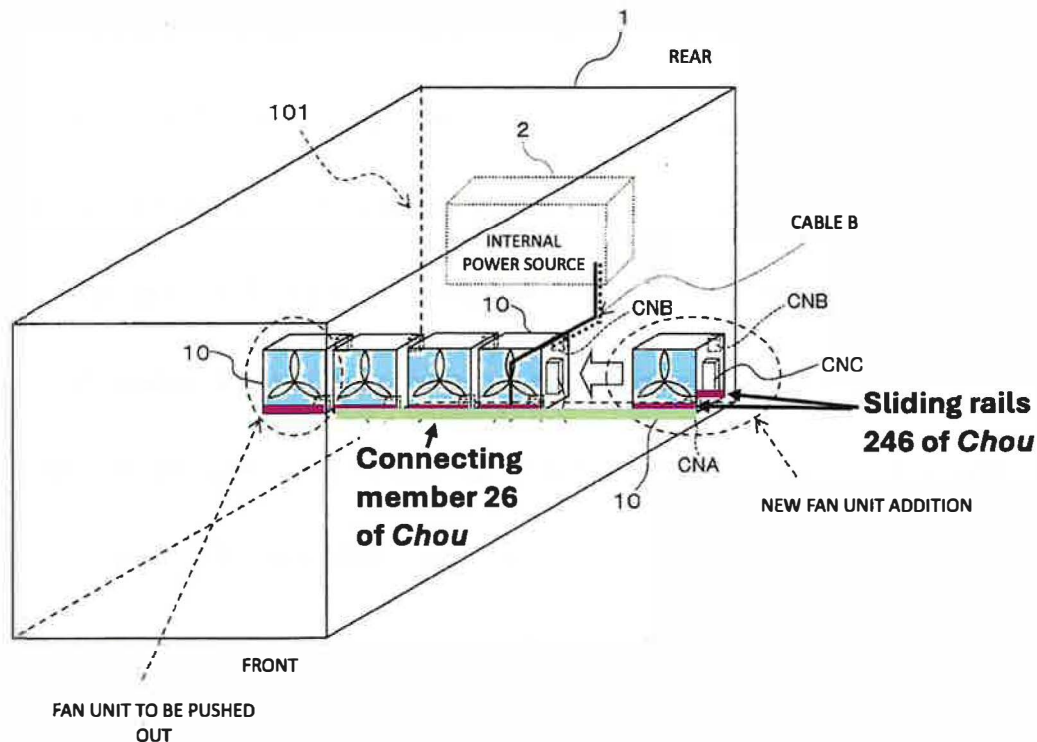


FIG. 5 of Fujitsu, modified

A person of ordinary skill in the art would have expected success in modifying the *Fujitsu-Tsai* illumination fans to include *Chou*'s sliding rails (grooves) and connecting member (engagement block). *Fujitsu* already discloses connecting fan units by sliding them together in a computer casing, as explained above, but lacks details as to how the fan units are aligned moved through the computer casing. Only minor modifications would have been needed to add grooves to the bodies of the *Fujitsu-Tsai* fan bodies, such as etching, cutting, or molding grooves on the sides of the fan bodies. To the extent necessary, a person of ordinary skill in the art would have been able to easily relocate components such

as connectors CNA and/or CNB in *Fujitsu*'s fan units, to be away from the grooves. There is also no disclosure in *Fujitsu* or *Tsai* that teaches away from adding *Chou*'s connecting member 26 to engage with the grooves and to connect fans together.

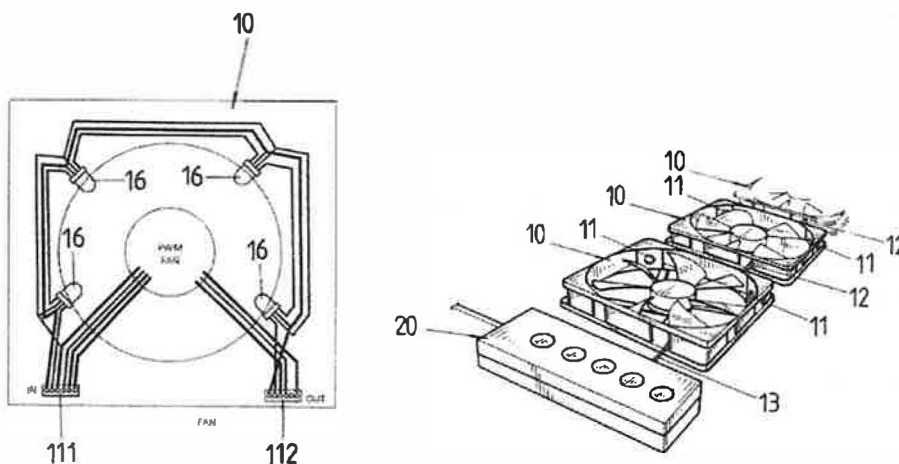
For the reasons above, the combination of *Fujitsu*, *Tsai*, and *Chou* renders claim 5 obvious.

C.GROUND 3: CLAIMS 1, 2, AND 4 ARE OBVIOUS UNDER 35 U.S.C. § 103 OVER *LAI* IN VIEW OF *FUJITSU*

1. Independent Claim 1

- a) [1 pre]: An illumination fan connectable with at least one illumination fan for a computer, comprising:

Lai discloses [1pre]. *Lai* discloses LED fans 10 that are linked to one another using a single transmission line. Ex. 1011, [0011], [0012], FIGS. 2 and 3:



FIGS. 2 and 3 of *Lai*

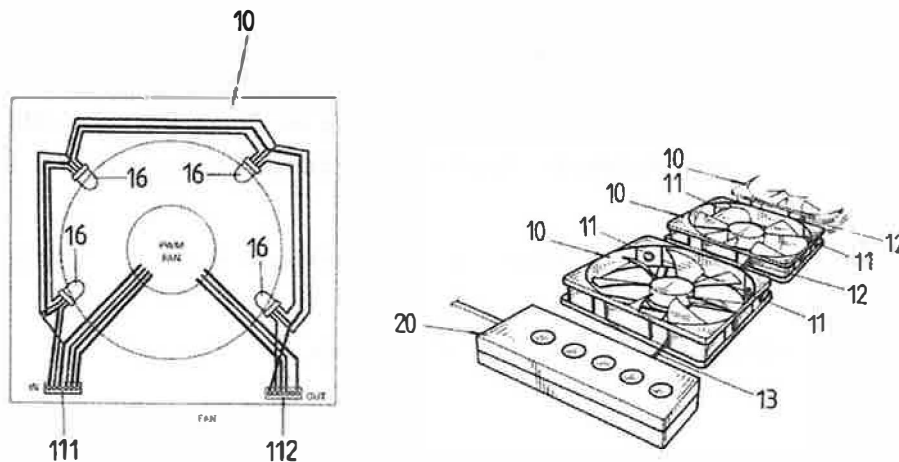
LED fan 10 in *Lai* is an "illumination fan" as claimed because it includes multiple

addressable RGB (Red-Green-Blue) LED lights 16, and includes a PWM fan. As shown above in FIG. 3, the LED fan 10 is connectable to another LED fan 10.

For these reasons, *Lai* discloses [1pre].

b) [1a]: a body, provided with a fan in center of the body

Lai discloses [1a]. *Lai* discloses an LED fan 10 that includes a PWM fan located at the center of the fan body:



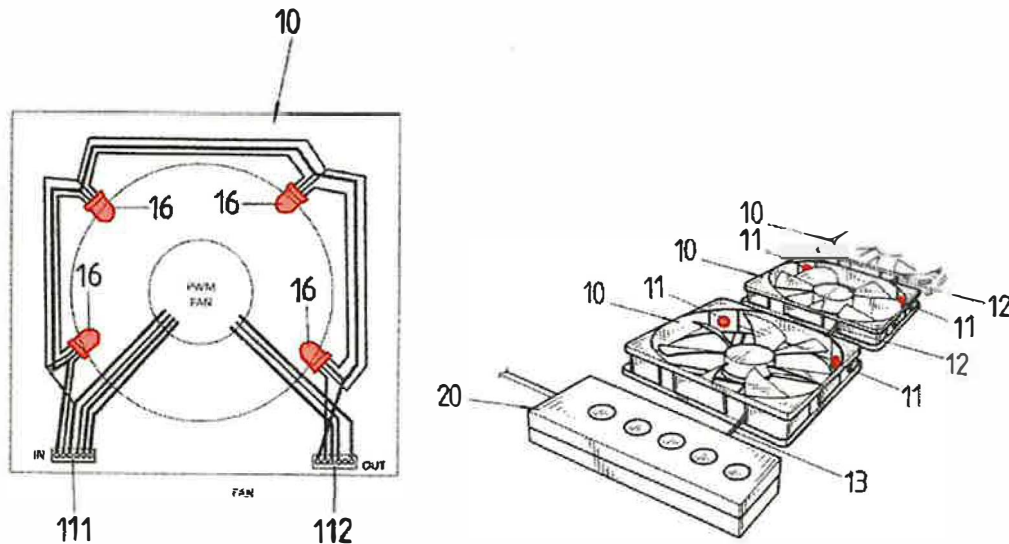
FIGS. 2 and 3 of Lai

EX. 1011, [0007], [0011], [0012]. As shown in the diagram to the left (FIG. 2) and the perspective view on the right (FIG. 3), *Lai*'s LED fan 10 has a fan body, with a fan at the center of the body.

For these reasons, *Lai* discloses [1a].

c) [1b]: an illumination area on at least two sides of the fan at top of the body

Lai discloses [1b]. *Lai*'s LED fan 10 includes multiple RGB LEDs 16 that are located on the sides of the fan:



*FIGS. 2 and 3 of Lai, showing **RGB LEDs 16** highlighted in red*

Each of the RGB LEDs 16 creates an “illumination area” as claimed. *See* EX. 1011, [0007], [0011], [0012], [0015], [0016]. As shown above, there are LED lights 16 on at least two sides of the PWM fan that is in the center of the fan body. In the perspective view of FIG. 3, *Lai* also shows that the LED lights are visible at the top of the fan body, because the LED lights would illuminate the entire height of the surface surrounding the fan.

For these reasons, *Lai* discloses [1b].

- d) **[1c]: a power socket and a first connector on one side of the body, and**

Lai discloses [1c]. *Lai* discloses an LED fan 10 that connects to other LED fans in series using a single input 111 and a single output 112 on each LED fan 10. EX. 1011, Abstract, [0003], [0011]-[0013], FIGS. 1-6. Single input 111 is a “connector on one side of the body” as claimed. A schematic view shown in FIG. 2 illustrates a connector-like structure labelled 111, on a side of the fan body:

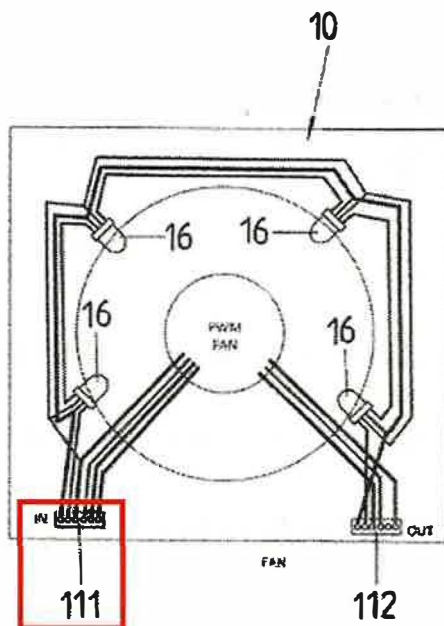


FIG. 2 of Lai, annotated

Lai also discloses LED fan 10 being connected, or linked, together using a single transmission line (12 or 13) that connects to single input 111 and single output 112. See EX. 1011, [0012], FIG. 3:

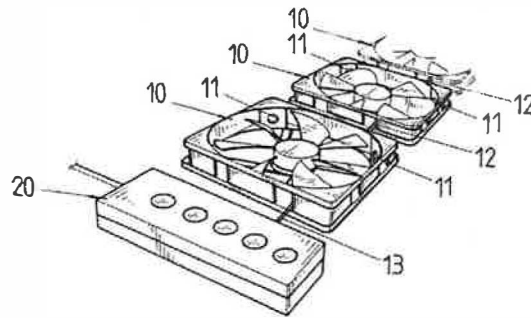


FIG. 3 of Lai

Persons of ordinary skill in the art would have understood that *Lai* discloses a first connector. Persons of ordinary skill in the art would have understood that single input 111 is a “first connector” because it is used in conjunction with a transmission line (12 or 13) to link one LED fan 10 to another LED fan 10 or to controller 20. Additionally, circuit diagrams in FIGS. 4-6 of *Lai* show electrical connections between a controller 20, a mother board 30, and LED fans 10, with circles indicating connections in the circuit, highlighted in blue below:

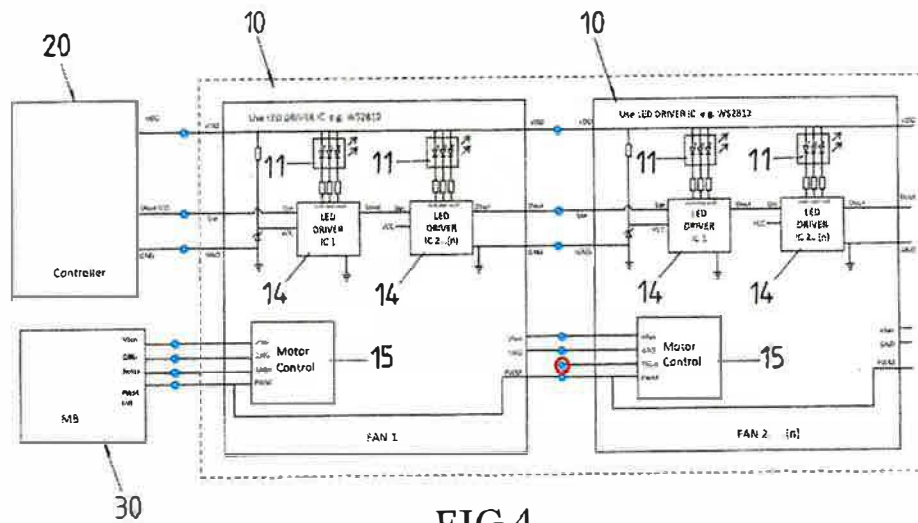


FIG. 4

FIG. 4 of Lai, annotated

Furthermore, the red circle in FIG. 4 above is not connected to a line from the left-hand LED fan 10, further suggesting that the blue circles indicate connections of a connector on each LED fan 10. For these additional reasons, a person of ordinary skill in the art would have understood that *Lai*'s single input 111 and single output 112 constitute the claimed "connectors."

To the extent it is asserted that single input 111 is not a "connector," then alternatively, single input 111 in conjunction with transmission line 12 or 13 constitutes a "connector" as claimed.

Additionally, single input 111 includes a "power socket" as claimed, under the broadest reasonable interpretation of the claim. Single input 111 receives power via a

transmission line 12 or 13, and includes power connections for the RGB LEDs 16 and the PWM fan. *See* Ex. 1011, [0011]-[0013], FIGS. 2, 3, 4-6 (showing power connections between components of LED fans 10 and controller 20). Single input 111 performs the same function disclosed in the '336 patent, of receiving power from a power supply of a computer. Ex. 1001, 3:29-34.

For these reasons, *Lai* discloses “a power socket and a first connector on one side of the body” as claimed, and therefore discloses [1c].

e) [1d]: a second connector on another side of the body

Lai arguably discloses [1d], and in any event, *Lai* in view of *Fujitsu* renders [1d] obvious. *Lai*'s LED fan 10 includes a single output 112, which is a second connector. The schematic in FIG. 2 of *Lai* shows an electrical diagram with single output 112:

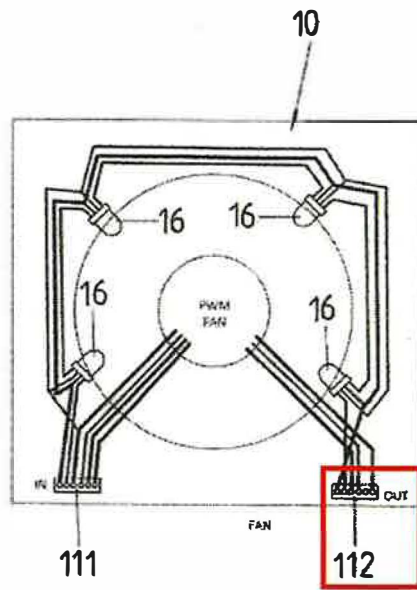


FIG. 2 of Lai

A person of ordinary skill in the art would have understood that single output 112 is a “connector” for the reasons discussed above with respect to single input 111 and the “first connector” in [1c]. Although the schematic in FIG. 2 of *Lai* shows both single input 111 and single output 112 on the same side, FIG. 3 of *Lai* shows LED fans 10 linked together using transmission lines 12 and 13, with a first transmission line extending from a first side of the LED fan 10, and a second transmission line extending from a second side of the LED fan 10, as shown below:

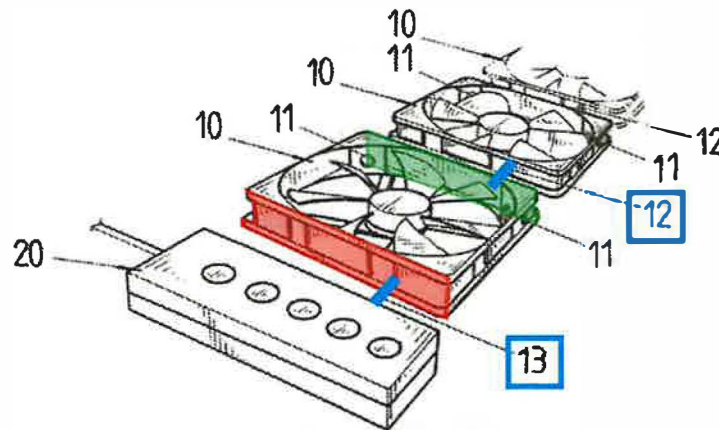


FIG. 3 of Lai, annotated

As shown above, *Lai* illustrates LED fans 10 as being connected side-by-side, with a first transmission line 13 (in blue) extends from a first side (highlighted in red) of the fan body, and a second transmission line 12 (in blue) extends from a second side (highlighted in green) of the fan body. Additionally, the circuit diagrams in FIGS. 4-6 of *Lai* illustrate

input electrical connections on a **first** side (**red**, below) of the fan, consistent with the single input 111 on one side, and illustrate output electrical connections on a second side (**green**, below) of the fan:

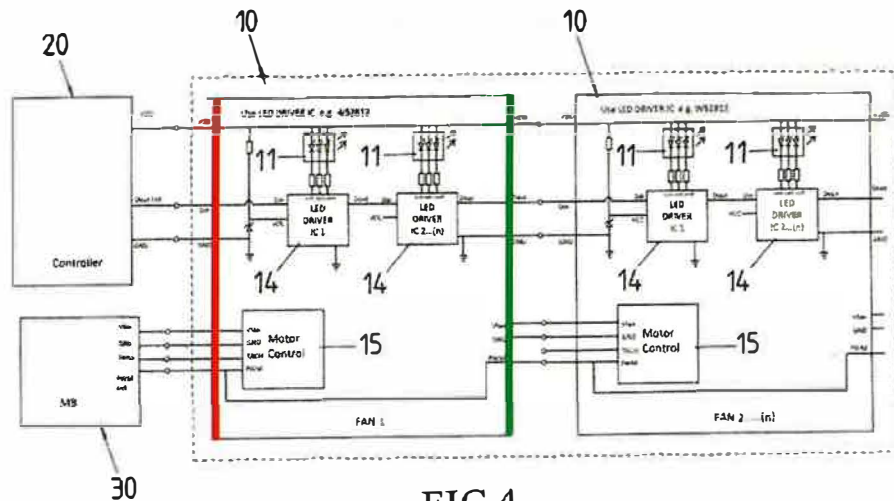


FIG. 4

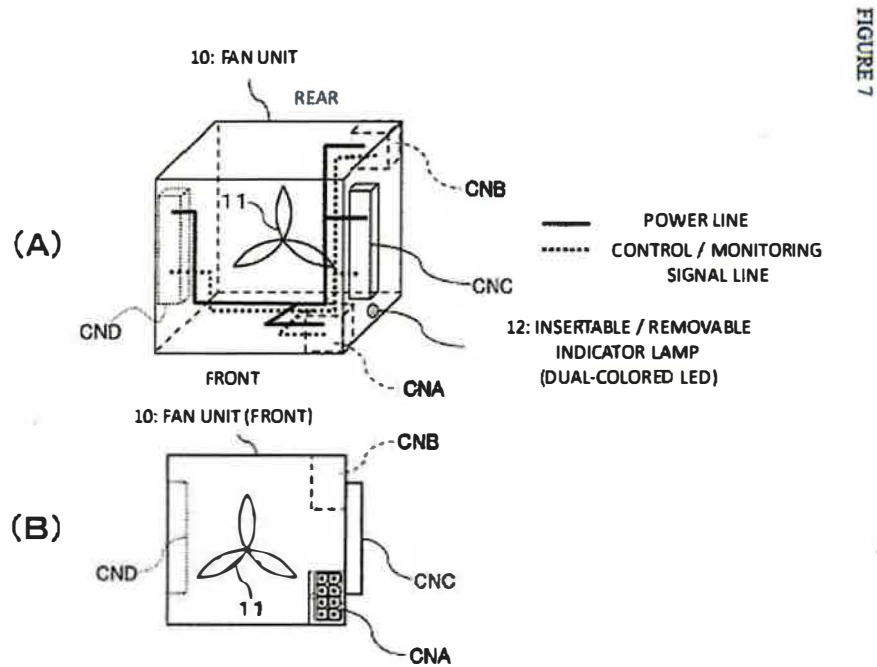
FIG. 4 of Lai, annotated

A person of ordinary skill in the art would have understood that single input 111 and single output 112 are on the **first** (**red**) and **second** (**green**) sides of the fan body, respectively, to connect with the transmission lines 12/13. Therefore, a person of ordinary skill in the art would have understood that *Lai* discloses “a second connector on another side of the fan body” as claimed.

Lai discloses [1d] for the reasons above. However, to the extent it is found that single output 112 is not disclosed as being on *another* side of the fan body (i.e., a different side from single input 111), then it would have been obvious to a person of ordinary skill

in the art at the time of the '336 patent to modify *Lai* based on *Fujitsu*.

Fujitsu is analogous art to *Lai*, and both references are analogous to the '336 patent, because all three are in the same field of endeavor of computer cooling fans. *Fujitsu* discloses “a plurality of the serially-connected fan units 10 units that cools the electronic apparatus 101” such as a computer server. Ex. 1004, [0026]. *Fujitsu* further discloses each fan unit 10 having a male connector CNC and a female connector CND. See Ex. 1004, [0031], [0037], [0038], [0041], [0076], [0084], [0091], FIGS. 7A and 7B, 14. One of the male connector CNC or female connector CND is on a first side of the fan unit 10 body, and the other connector CNC/CND is on another side. Indeed, *Fujitsu* discloses “a second connector on another side of the body” as claimed because, as shown in FIGS. 7A and 7B of *Fujitsu*, CNC and CND are on opposite sides of fan unit 10:



FIGS. 7A and 7B of Fujitsu

It would have been obvious to a person of ordinary skill in the art at the time of the '336 patent to modify *Lai* to have a first connector (such as single input 111) on one side of a fan body, and to locate a second connector (such as single output 112) on another side of the fan body, such as an opposite side, based on the configuration of connectors CNC and CND in *Fujitsu*. The combination of *Lai* and *Fujitsu* would have appeared similar to FIG. 3 of *Lai*, but with visible connectors on the fan body sides and not just visible transmission lines:

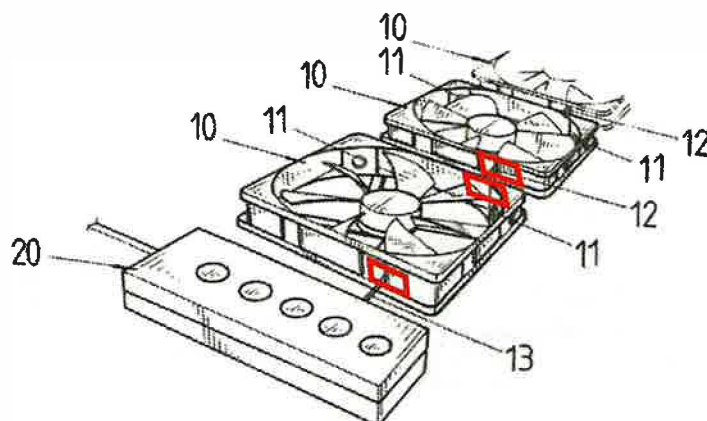


FIG. 3 of Lai, modified to show connectors on sides of the LED fan 10 body

The combination would have involved applying *Fujitsu*'s known technique of placing cooling fan connectors on opposite sides of a fan body, to the known LED fans of *Lai*, to yield predictable results of connecting the LED fans in series (as shown above in FIG. 3) using shorter transmission lines 12 and 13, or using *no* separate transmission lines using *Fujitsu*'s connectors CNC and CND having embedded electrical contacts.

Additionally, the modification would have involved simple substitution of the location of *Lai*'s single output 112. For example, it would have been obvious to substitute the location of *Lai*'s single output 112 being on the same side as single input 111 (as suggested in the schematic in FIG. 2 of *Lai*) with a location on another side such as an opposite side (as suggested in FIGS. 3-6 of *Lai* and in *Fujitsu*). *Fujitsu* also provides motivation for modifying *Lai*, because *Fujitsu* teaches connecting fans in series and end-to-end using a serial interface, to be able to monitor and control the cooling fans "using

fewer signal lines.” See Ex. 1004, [0005], [0006], [0019], [0020].

A person of ordinary skill in the art would have expected success in modifying the location of *Lai*’s single output 112 (*Lai*’s second connector). *Lai* does not disclose any particular reason or requirement for having input 111 and output 112 on the same side, and instead suggests that they can be located on opposite sides as shown in FIGS. 3-6 of *Lai*. Any necessary modification to *Lai*’s hardware would have been minor and within the capabilities of a person of ordinary skill in the art, such as moving single output 112 to another side and routing the necessary wiring to that side.

For the reasons above, [1d] would have been obvious based on *Lai* in view of *Fujitsu*, to the extent it is found that *Lai* alone does not disclose [1d].

f) [1e]: wherein the power socket is electrically connected with the first connector, the second connector, the fan and the illumination area, 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

Lai discloses [1e]. As explained above with respect to [1d], *Lai* alone or in combination with *Fujitsu* discloses a power socket and a first connector on one side of the fan body, a second connector on another side of the fan body, a fan, and an illumination area. The schematic in FIG. 2 of *Lai* shows that the power socket is electrically connected with the first connector, the second connector, the fan, and the illumination area:

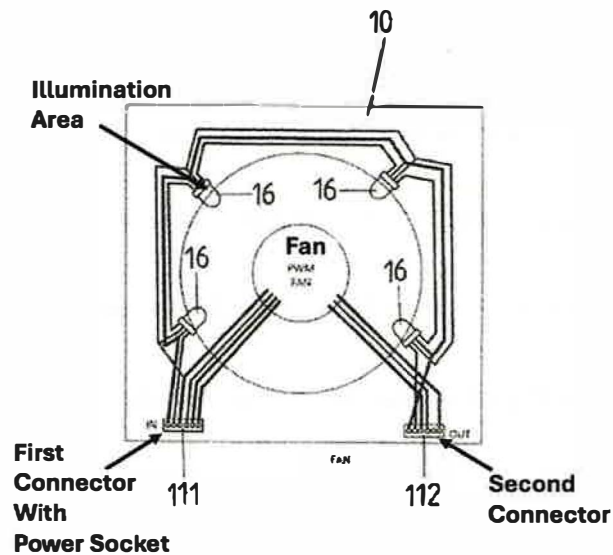


FIG. 2 of Lai, annotated

Lai further discloses that “LED fans 10 are linked together with controller 20 by another transmission line 13.” Single input 111 is a first connector with a power socket that receives power for LEDs 16 and for the fan. When the single input 111 is connected, the LEDs 16 receive power from a controller 20, and the fan receives power from a motherboard 30. *See* Ex. 1011, [0013], [0014], FIGS. 4-5. *Lai* also discloses an embodiment in which controller 20 provides power for both the LEDs 16 and the fan, via single connector 111. Ex. 1011, [0015], FIG. 6. The illumination area (*Lai*’s RGB LEDs 16) and *Lai*’s fan are both driven when the single input 111 is provided with power, because *Lai* discloses using a single transmission line 13 to provide power and control to single input 111. *See* Ex. 1011, [0012], FIG. 3. Therefore, *Lai* discloses 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,” as claimed.

For these reasons, *Lai* discloses [1e].

g) [1f]: 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.

Lai discloses [1f]. *Lai* discloses a first connector of one LED fan 10 that is connected to a second connector of a body of a second LED fan 10 via a transmission line

12. Ex. 1011, [0011], [0012], FIG. 3:

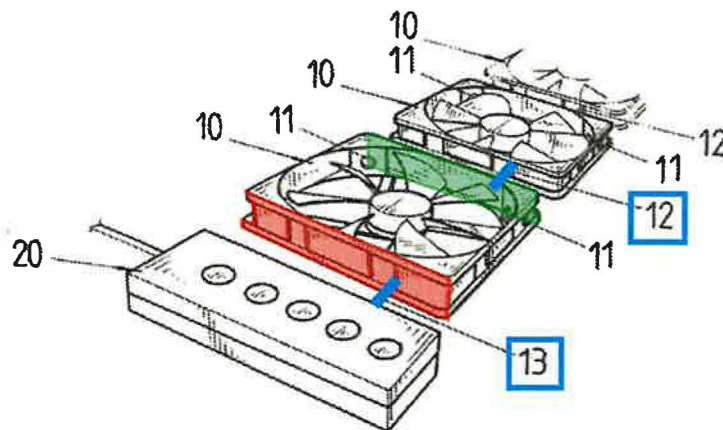


FIG. 3 of *Lai*, annotated

As explained above, each LED fan 10 in *Lai* includes a body with a first connector (single input 111) and a second connector (single output 112). *See* Ex. 1011, [0011], FIG. 2. When the two LED fans 10 are connected via the single transmission line 12, the RGB LEDs 16 (an illumination area) and the fan of the second LED fan 10 are electrically connected to

the first LED fan 10, and receive power from the single output 112, via single output 111

of the second fan, as shown in the figures of *Lai* and the diagram below:

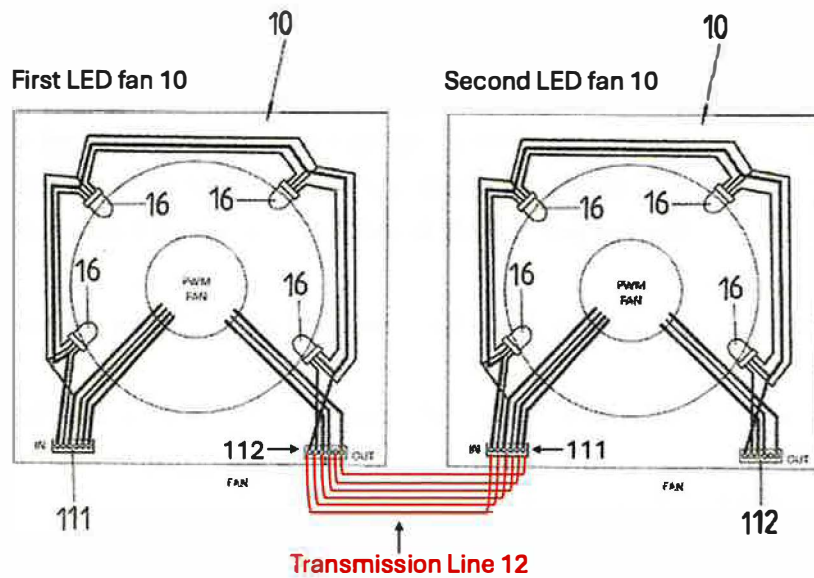


Diagram based on FIG. 2 of *Lai*

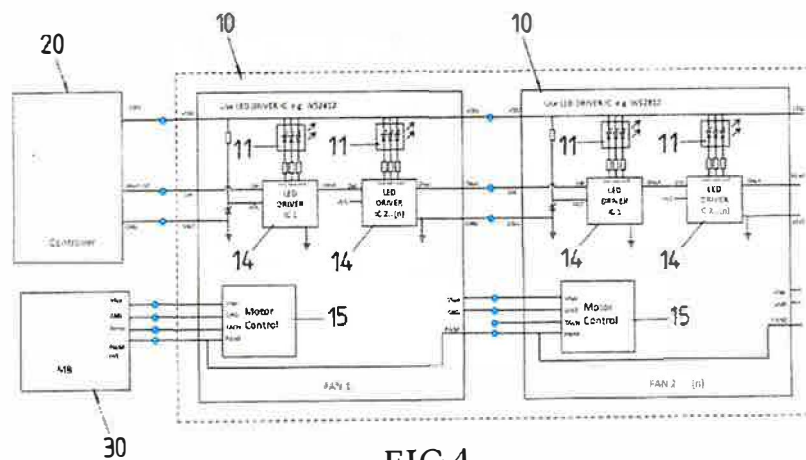


FIG. 4

FIG. 4 of *Lai*, annotated

Lai further discloses a controller 20 and/or motherboard 30 that controls the linked LED

fan lights and motors. *See* Ex. 1011, [0011]-[0016], FIGS. 4-6. *Lai* particularly discloses “an LED fan controller device can adjust each individual LED light on multiple LED fans while simultaneously control all fan speeds too.” *Id.*, [0016]. Persons of ordinary skill in the art would have understood that because *Lai*’s LED fans 10 are linked together and are controlled by a common controller, *Lai* discloses “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” as claimed. For these reasons, *Lai* discloses [1f].

In summary, *Lai* in view of *Fujitsu* renders claim 1 obvious.

2. Claim 2

a) [2 pre]: **The illumination fan connectable with at least one illumination fan for a computer of claim 1**

The combination of *Lai* and *Fujitsu* discloses an illumination fan connectable with at least one illumination fan for a computer of claim 1, as explained above in Section VI.C.1.

b) [2a]: **“wherein an electrically conductive terminal is provided in the first connector, and an electrically conductive contact surface is provided in the second connector for being electrically connected with the electrically conductive terminal, 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, the fan and the illumination**

**area of the body of another illumination fan are respectively
driven into rotation and illumination”**

For the same reasons as explained above with respect to [1f], *Lai* discloses 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, the fan and the illumination area of the body of another illumination fan are respectively driven into rotation and illumination” as claimed. *See* Section VI.C.1.g.

The *Lai-Fujitsu* combination also discloses “an electrically conductive terminal is provided in the first connector, and an electrically conductive contact surface is provided in the second connector for being electrically connected with the electrically conductive terminal” as claimed.

Lai and *Fujitsu* also disclose electrically-conductive connectors that transmit electrical signals from one fan to another. Ex. 1011, [0011], [0012], FIGS. 2-6; Ex. 1004, [0094], [0103], [0107], [0115]-[0118], FIGS. 14, 16-18. A person of ordinary skill in the art would have understood that in order to transmit electricity and signals between connectors of different fans, the connectors and terminals require contact surfaces that are electrically conductive. For example, persons of ordinary skill in the art would have understood that electrical wires, pins, receptacles, pads, and other types of commonly-known electrical connections are all types of terminals that have electrically conductive

surfaces enabling the transmission of power and signals. As an example, WO2008/061519 (Exs. 1013 and 1014) discloses fans having connectors on opposite sides of the fan body, with one connector having electrical contact pins and the other connector having flat contacts – both types of electrically conductive terminals and electrically conductive contact surfaces. *See* Exs. 1013, 1014, FIGS. 2A, 2B, 3, and associated descriptions.

For the reasons above, the combination of *Lai* and *Fujitsu* renders claim 2 obvious.

3. Claim 4

a) Claim 4 [preamble]: The illumination fan connectable with at least one illumination fan for a computer of claim 1

The combination of *Lai* and *Fujitsu* discloses an illumination fan connectable with at least one illumination fan for a computer of claim 1, as explained above in Section VI.C.1.

b) [4a]: “wherein a groove is provided on one side of the body of the illumination fan, while an engaging block is provided on another side thereof to be engaged into the groove, 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 another illumination fan”

The combination of *Lai* and *Fujitsu* discloses [4a]. The *Lai-Fujitsu* combination is an LED fan 10 having a first connector (such as single input 111) on one side of the body and a second connector (such as single output 112) on another side of the body:

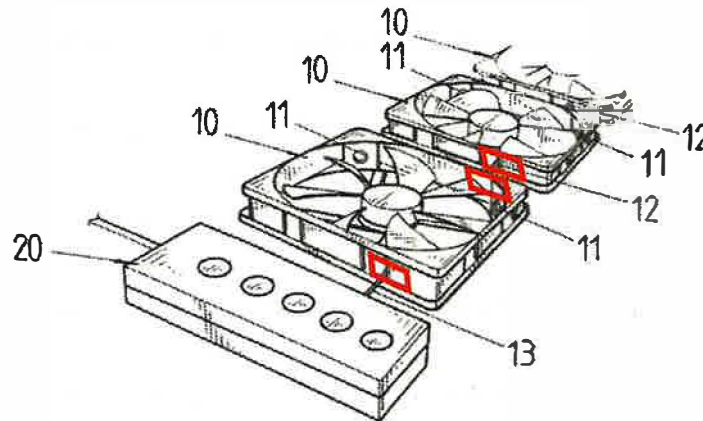


FIG. 3 of Lai, modified based on Fujitsu to show connectors on sides of the LED fan 10 body

In addition to modifying the placement of *Lai*'s single output 112 (*Lai*'s second connector), it would have been obvious to a person of ordinary skill in the art to modify *Lai*'s connectors so that one connector is provided with a groove, and the other connector includes an engaging block, as disclosed in *Fujitsu*:

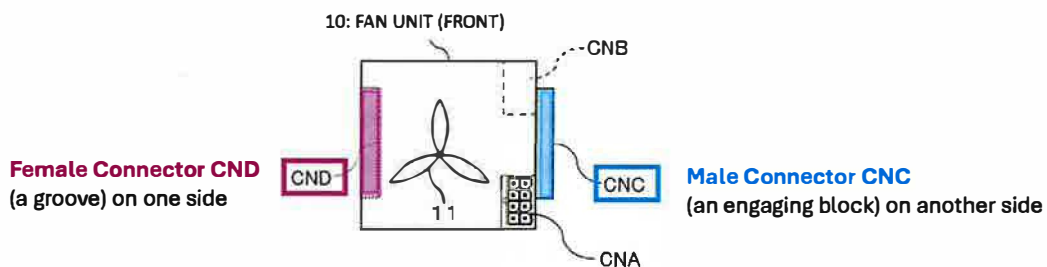


FIG. 7B of Fujitsu, annotated

See also Section VI.A.4, discussing *Fujitsu*'s disclosure of [4a]. Additionally, **using grooves and engaging blocks to mate two fan bodies together was widely known long before the '336 patent.** See CN2419399Y (FIGS. 2, 4, 8), CN2861563Y (FIGS. 2-9),

CN2861564Y (FIGS. 2-9), CN101725571A (FIGS. 1-4), US2009/0246015 (FIGS. 1-11), WO2008/061519 (FIGS. 1, 3, 4), TW282827 (FIGS. 3-4). Indeed, to the extent that the Office finds that *Fujitsu* does not disclose a “groove” and an “engagement block,” these limitations of claim 4 would have been obvious based on *Lai* in view of any one of several other prior art references cited herein disclosing electronic devices that can connect to one another using a groove and an engaging block on the device body.

In addition to the reasons for modifying *Lai* based on *Fujitsu* discussed above, a person of ordinary skill in the art would have been motivated to modify *Lai*’s single input 111 (first connector) to be a groove or an engaging block, and would have been motivated to modify *Lai*’s single output 112 (second connector) to be an engaging block or groove, as disclosed in *Fujitsu*. The resulting combination would have looked similar to *Lai*’s LED fans 10, except with the groove and engaging block connectors of *Fujitsu*, and without *Lai*’s transmission line 12:

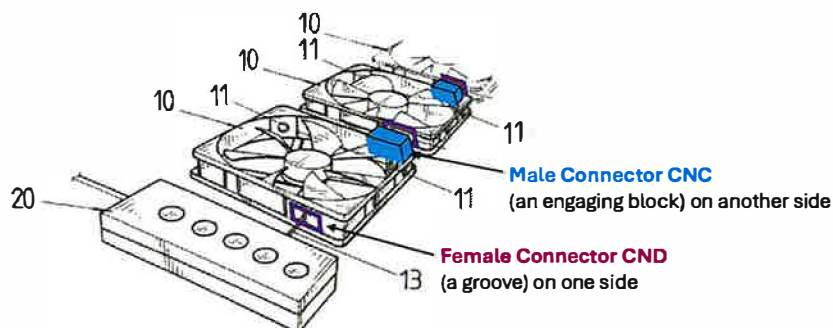


FIG. 3 of *Lai*, modified based on *Fujitsu* to include a groove (in purple)
and an engaging block (in blue)

The combination would have involved applying the known male and female connectors of *Fujitsu* to the known LED fans of *Lai*, to yield predictable and advantageous results of providing a connection mechanism for connecting multiple fans in series and with reduced wire connectors between the fans. In other words, implementing the male and female connectors of *Fujitsu* (grooves and engaging blocks) with *Lai*'s first and second connectors would have simplified the number of components required to connect multiple LED fans in series, while also holding the LED fans in the side-by-side configuration illustrated in FIG. 3 of *Lai*. Persons of ordinary skill in the art would have expected success in modifying the first and second connectors of *Lai*, because only minor changes would have been needed to add an engaging block with the electronic connections of single output 112, and to create a grooved portion with the electronic connections of single input 111. There is nothing in *Lai* or *Fujitsu* that would have discouraged or lead a person of ordinary skill in the art away from the making such modifications to *Lai*.

For the reasons above, claim 4 would have been obvious based on *Lai* in view of *Fujitsu*.

**D.GROUND 4: CLAIM 5 IS OBVIOUS UNDER 35 U.S.C. § 103 OVER LAI
IN VIEW OF FUJITSU AND CHOU**

1. Claim 5

- a) [5pre] The illumination fan connectable with at least one illumination fan for a computer of claim 1,**

The *Lai-Fujitsu* combination discloses an illumination fan connectable with at least one illumination fan for a computer of claim 1, as explained above in Section VI.C.1.

- b) [5a] wherein a groove is provided on two sides of the body of the illumination fan, and the body of the illumination fan is 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 another illumination fan.**

The combination of *Lai*, *Fujitsu*, and *Chou* renders [5a] obvious. The *Lai-Fujitsu* combination is an LED fan that connects with another LED fan using connectors on different sides of the fan body, as evident from connectors CND and CNC in *Fujitsu* FIG. 6, and linked fans in *Lai* FIG. 3. See Section VI.C.1.e. *Lai* discloses linking multiple LED fans side-by-side. Ex. 1011, [0011], [0012], FIG. 3:

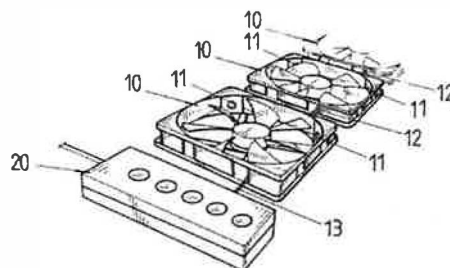


FIG. 3 of Lai

Lai discloses that “LED fans 10 are linked together using a single transmission line 12” (para. [0012]) without elaborating on mechanical details of how the LED fans 10 are “linked” as shown in FIG. 3 above. Thus, *Lai* does not disclose a groove or an engaging block.

Chou teaches connecting two fans together (para. [0025]) and is analogous to *Lai* and *Fujitsu*, and all three references are analogous art to the '336 patent. All three and the '336 patent are in the same field of endeavor of cooling fans for electronic products, such as computers. *Chou* discloses a fan assembly for cooling electronic products. Ex. 1009, title, [0003]. The fan assembly includes multiple fans that are connected together:

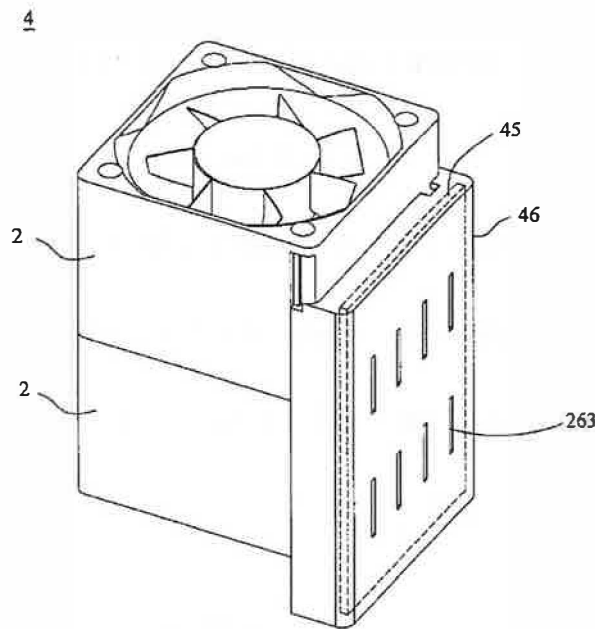


FIG. 4 of Chou

Two or more fans are connected by a connecting member 46. Ex. 1009, [0025], FIG. 4. The structure of *Chou*'s fans and connecting member are further illustrated and described with

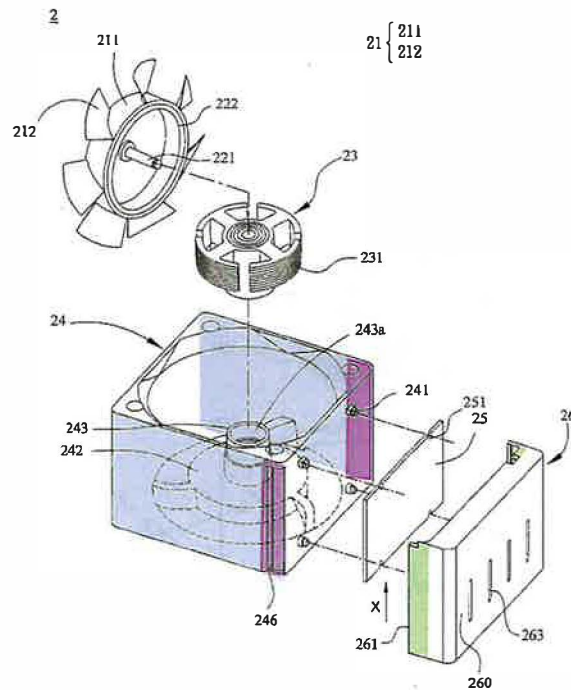


FIG. 2 of Chou, annotated

As shown above, two sides of the fan frame 24 are highlighted in **blue**, with the locations of the sliding rails 246 (grooves) in **purple**. Side walls 261 of the connecting member 26 (an engaging block) are highlighted in **green**. When the connecting member engages the grooves of the sliding rails, the fans are connected together:

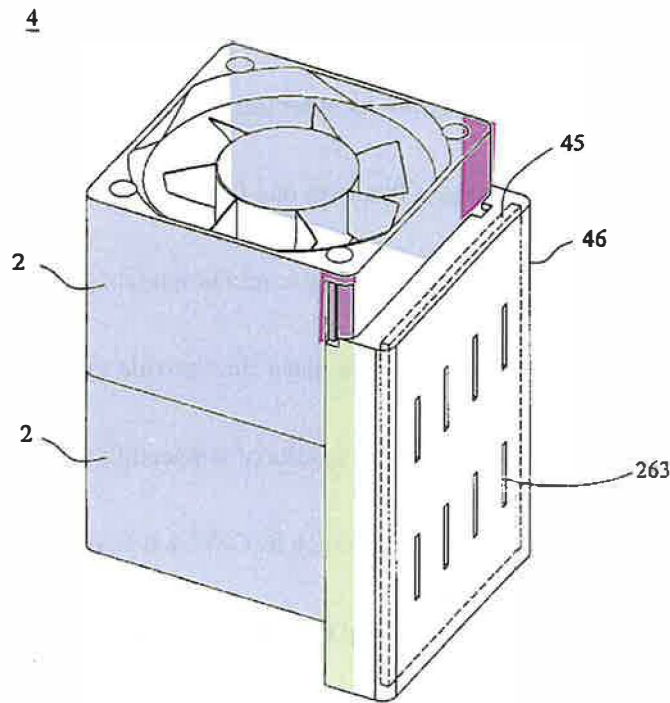


FIG. 4 of Chou, annotated

Notably, although *Chou* illustrates two fans stacked and connected in series (e.g., one fan blows into the other), *Chou* states that its examples are non-limiting and modifications could have been made. *See id.*, [0025], [0029]. A person of ordinary skill in the art would have understood that the sliding rail 246 grooves could have been placed on different peripheral edges of the fan frame 24 sides, such that the fans could be connected in parallel, or side by side.

It would have been obvious to a person of ordinary skill in the art at the time of the '336 patent to modify the *Lai-Fujitsu* LED fan to include grooves on two sides and an engaging block that engages the grooves to connect the fans, as disclosed in *Chou*. The

combination would have involved applying *Chou*'s known technique of connecting computer cooling fans using a connecting member (an engaging block) that engages a sliding rail (groove), with the engaging block on one fan and with the groove on another, to the known *Lai-Fujitsu* LED cooling fans. The combination would have yielded predictable results of holding the LED fans in place side-by-side. Additionally, the combination would have yielded predictable results of connecting the *Lai-Fujitsu* fans to align *Fujitsu*'s connectors on opposite sides (such as CNC and CND). An example of the combination of *Lai*, *Fujitsu*, and *Chao* would have appeared is shown below:

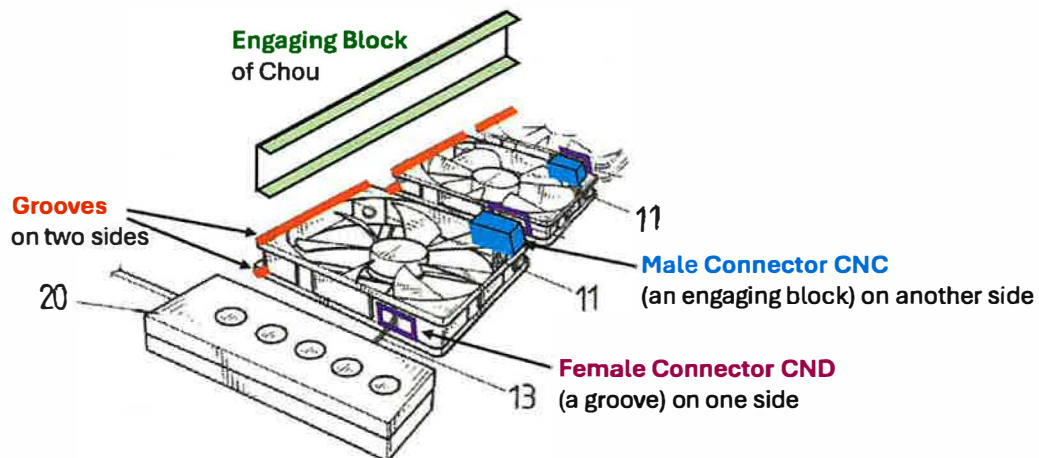


Diagram based on FIG. 3 of Lai as modified based on Fujitsu and Chou

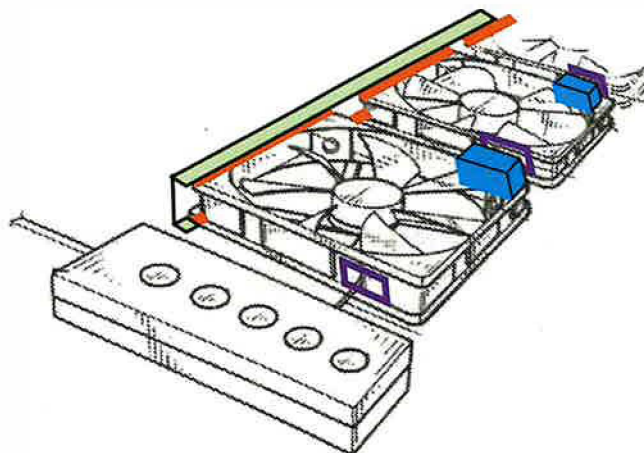


FIG. 3 of Lai, modified to include the grooves (in orange) and engaging block (in white and green) of Chou, shown with the engaging block engaging grooves on two sides (a top and bottom) of each LED fan

A person of ordinary skill in the art would have expected success in modifying the *Lai-Fujitsu* LED fans to include *Chou*'s sliding rails, i.e., grooves, and connecting member (engagement block). Only a minor modification, a minor structural reshaping, would have been needed to incorporate grooves to the sides of the *Lai-Fujitsu* fan bodies, such as molded or carved grooves on the top side and bottom side of the fan bodies. As shown above, adding grooves would not have interfered with the electrical connections and electronics of the LED fans. To the extent necessary, a person of ordinary skill in the art would have been able to easily place grooves around connectors, and the disclosed *Lai-Fujitsu* structures and drawings illustrate abundance space or surface area for that to occur. No disclosure in *Lai* or *Fujitsu* teaches away from adding *Chou*'s connecting member 26 to engage with the grooves and connect fans together. Therefore, the combination of *Lai*,

Fujitsu, and *Chou* renders claim 5 obvious.

VII. CONCLUSION

As discussed above, several prior art references unavailable to the Examiner during the prosecution of the '336 patent disclosed all the claimed limitations, share the same or substantially application of computer cooling and LED illumination, have identical or similar connector configurations, and are not cumulative of any of the references available to the Examiner. The prior art teachings anticipate or render obvious the as-issued claims. For these reasons and as detailed above, the Office should grant reexamination of claims 1-5 of the '336 patent and reject these claims for at least the requested grounds.

If there are any additional fees due in connection with the filing of this paper not already paid, please charge the fees to our Deposit Account No. 06-0916.

Respectfully submitted,
FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

Dated: July 2, 2024

By: /Kai Rajan/
Kai Rajan, Reg. No. 70,110

Attachments: (1) Certificate of Service to Patent Owner
(2) Information Disclosure Statement and Form PTO/SB/08
(3) Exhibits and references listed in this Request