

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

DARFON ELECTRONICS CORP.,
Petitioner,

v.

MICHAEL SHIPMAN,
Patent Owner.

IPR2022-01008
Patent 10,942,581 B2

Before JAMESON LEE, KEVIN F. TURNER, and DEBRA K. STEPHENS,
Administrative Patent Judges.

STEPHENS, *Administrative Patent Judge.*

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 314, 37 C.F.R. § 42.4

I. INTRODUCTION

A. Background and Summary

Darfon Electronics Corp. (“Petitioner”) filed a petition for *inter partes* review (Paper 1 (“Pet.” or “Petition”)) challenging claims 1–20 of U.S. Patent 10,942,581 B2 (Ex. 1001 (“’581 patent”)). Michael Shipman (“Patent Owner”) timely filed a Preliminary Response (Paper 5 (“Prelim. Resp.”)). Additionally, pursuant to our September 28, 2022 email authorization, Petitioner filed a Reply to the Patent Owner’s Preliminary Response (Paper 8) limited to addressing the issue of the level of ordinary skill in the art and Patent Owner filed a Sur-Reply to Petitioner’s Reply (Paper 9).

The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), which provides as follows:

(a) THRESHOLD.—The Director may not authorize an *inter partes* review to be instituted unless the Director determines that the information presented in the petition filed under section 311 and any response filed under section 313 shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition (35 U.S.C. § 314(a)).

Petitioner challenges claims 1–20 as unpatentable under 35 U.S.C. § 103 in twelve grounds of unpatentability (Pet. 7). Generally, Patent Owner contends that the Petition should be denied as to all challenged claims (*see* Prelim. Resp.). We do not reach whether Petitioner has shown a reasonable likelihood of prevailing on at least one claim. For reasons discussed below, we discretionarily deny the Petition under 35 U.S.C. § 325(d).

B. Real Parties in Interest

Patent Owner states that Michael Shipman is the real party-in-interest (Paper 4, 1).

Petitioner states that Darfon Innovation Corp. and Darfon America Corp. are the real parties-in-interest (Pet. v).

C. Related Matters

Petitioner states “[t]here is no co-pending litigation in which U.S. Patent No. 10,942,581 . . . is asserted” (Pet. v).

Patent Owner states “Shipman v. Darfon America Corp., et al, California Superior Court for the County of Santa Clara case number 21-CV-386802” is a related matter (Paper 4, 1).¹

D. The ’581 Patent (Ex. 1001)

The ’581 Patent, titled “Illuminated Keyboard,” issued March 9, 2021 (Ex. 1001, codes (45), (54)). The ’581 Patent describes “keyboard constructions having illuminated indicia,” i.e., “the symbol appearing on the top of [a] key member” and “illuminated key members” (*id.* at 2:35–37; *see id.* at 1:38–39). Figure 3, reproduced below, is a “perspective view of a

¹ The related matter, was not filed in a Federal District Court, but instead, was filed in the California Superior Court for the County of Santa Clara; as such, it appears the related matter does not directly concern patent infringement or validity contentions.

preferred embodiment of a key member for use with the keyboard having illuminated keys” (*id.* at 10:17–19).

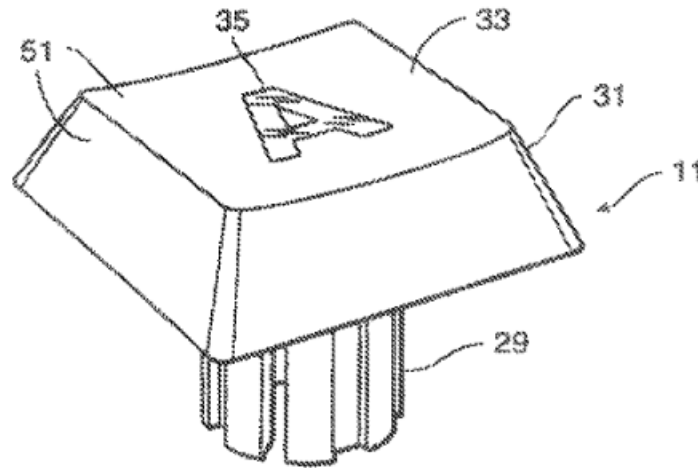


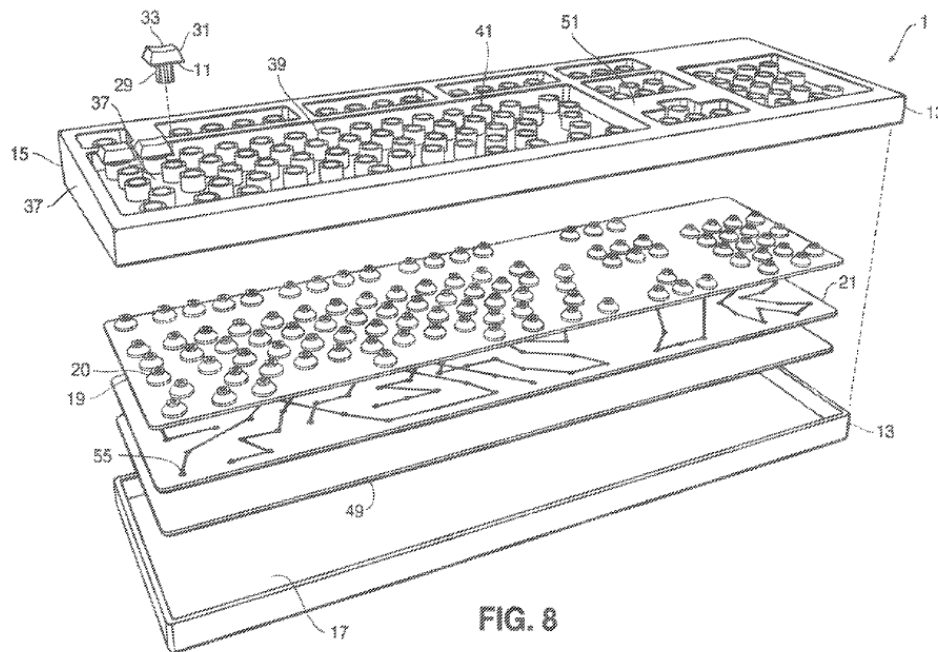
FIG. 3

As shown in Figure 3, “key member 11 includes a key shaft 29 and a key cap 31,” and, “on the top surface 33 of the key cap 31 is a symbol 35 such as an alphanumeric character” (Ex. 1001, 12:25–28). “[K]ey member 11 is constructed at least partially of a substantially translucent light channeling material so that light can be received by the outer surfaces of the key shaft 29 and channeled upwardly to be emitted from the key cap’s upper surface 33” (*id.* at 12:29–33). In particular, “light rays are emitted from the symbol 35 itself in which the translucent material portion of the key cap 31 extends through the key shaft 29 and key cap 31 to the key symbol 35. The remaining portion of the key cap’s upper surface 33 is constructed of a non-light emitting material or covered by an opaque coating 51 (FIG. 3)” (*id.* at 12:33–39). In particular, the coating on upper surface 33 of key member 11 “is preferred” to be

a reflective paint for reflecting visible light, which would ordinarily be emitted from the key members and upper clamshell member or substantially absorbed by a substantially non-reflective material. Thus, traditional non-reflective paints and

coatings such as dark grey, black or blue are preferably avoided. Meanwhile, diffuse reflective coatings such as light grey, white, and silver are preferred, as are coherent reflective coatings such as metallic silver, metallic gold and other shiny metallic colors which “substantially reflect[] visible light” (*id.* at 9:12–26; 21:27–30). As such, “much of the visible light, which would ordinarily be lost, is reflected in either a diffuse or coherent manner back into the . . . key members until projected from the tops of the key caps to provide enhanced luminosity of the characters formed on the key caps” (*id.* at 9:28–33).

Turning to the keyboard, Figure 8, reproduced below, is an exploded view of a “keyboard having illuminated keys of the present wherein the light source” for illuminating the keys “is a planar illuminating sheet” (Ex. 1001, 10:37–40).



As shown in Figure 8, from the top down, keyboard 1 includes key members 11 having a shaft 29; light channeling membrane 37 underlying the key members to channel light to the keys and incorporated into keyboard housing 13; translucent diaphragm 19 having a plurality of elastomeric

projections 20 for biasing the key members 11 upwardly; translucent circuit board 21 which sends signals indicating key presses; and planar luminescent sheet 49 which functions as a light source (*id.* at 14:15–21; *see id.* 12:45–59, 13:3–5).

Planar luminescent sheet 49 functions as a light source for illuminating key members (Ex. 1001, 13:63–66, 15:49–50). In an example, planar luminescent sheet 49 includes “a light pipe connected to an independent light source such as LEDs 85” (*id.* at 15:38–39, 20:31–33; *see* Fig. 31). The “light emitted upwardly by the luminescent planar sheet 49 is transmitted through the translucent diaphragm and circuit board to the bottom of the key members 11” (*id.* at 14:19–21; *see id.* at 15:32–42). The “light is then channeled through the key members’ shafts 29 to be emitted from the key’s upper surface 33 in the form of a symbol 35” (*id.* at 14:22–25).

E. Illustrative Claims

Challenged claims 1 and 12, the two independent claims, are reproduced below:

1. A lighted computer keyboard comprising:

a plurality of key members including a top, a bottom and one or more sides, said key members made of a substantially translucent material for channeling light, each of said key members including a first substantially reflective and opaque coating covering at least a portion of a top of said key member, said first substantially reflective opaque coating applied directly on the top surface of the key members, at least a portion of said top of said key members being not covered by said first coating with the uncovered portion being in the shape of a symbol so as to provide an illuminated symbol on the upper surface of the key members, and at least of portion of said bottom or sides of said key members being not covered by said first coating;

a plurality of scissor actuators with a scissor actuator underlying each key, each said scissor actuator including a pair of arms rotationally connected near their midpoints so as to rotate in scissor like manner for guiding and supporting said keys as said keys move in an upward and downward movement, said arms including upper extremities engaging said keys and lower extremities;

a plurality of elastomeric domes with an elastomeric dome underlying each key for biasing said key members in an upward direction;

a seat underlying said elastomeric domes, said seat including clips for engaging and connecting to said scissor actuators' lower extremities;

a circuit board underlying said plurality of key members and said elastomeric domes said circuit board being operational to produce signals in response to depression of said key members; and

a luminescent planar sheet for producing light, said luminescent planar sheet underlying said key members, said elastomeric domes, and said seat, said luminescent planar sheet being optically connected to said key members so as to permit the transmission of light to allow visible light to be received into the translucent material of said key members and reflected off said key members' substantially reflective coating to be emitted from said top of said key members

(Ex. 1001, 22:48–23:22).

12. A lighted computer keyboard comprising:

a plurality of key members including a top, a bottom and one or more sides, said key members made of a substantially translucent material for channeling light, each of said key members including a first coating covering at least a portion of a top of said key member with at least a portion of said top of said key members not covered by said first coating with the uncovered portion being in the shape of a symbol so as to provide an illuminated symbol on the upper surface of the key members,

and at least of portion of said bottom of said key members being not covered by said first coating;

a plurality of scissor actuators with a scissor actuator underlying each key, each said scissor actuator including a pair of arms rotationally connected near their midpoints so as to rotate in scissor like manner for guiding and supporting said keys as said keys move in an upward and downward movement, said arms including upper extremities engaging said keys and lower extremities;

a plurality of elastomeric domes with an elastomeric dome underlying each key for biasing said key members in an upward direction;

a seat underlying said key members and said elastomeric domes, said seat including clips for engaging and connecting to said scissor actuators' lower extremities;

a circuit board underlying said plurality of key members and said

elastomeric domes, said circuit board being operational to produce signals in response to depression of said key members; and

a luminescent planar sheet for producing light, said luminescent planar sheet underlying said key members, said elastomeric domes, said seat, and said circuit board, said luminescent planar sheet being optically connected to said key members so as to permit the transmission of light to allow visible light to be received into the translucent material of said key members to be emitted from said top of said key members, and

said luminescent planar sheet includes a planar light pipe made of translucent plastic, one or more reflective members positioned under a plurality of said key members, a reflective sheet positioned under said reflective members and said planar light pipe, and at least one light emitting diode (LED) connected to said planar light pipe

(Ex. 1001, 23:63–24:42).

F. References Relied Upon

Petitioner relies upon the following prior art references:

Reference	Exhibit
Shipman, WO 2007/024213 A1, published March 1, 2007 (“Shipman”)	1005
Chiba et al., JP 2007-280810, published October 25, 2007 (“Chiba”) ²	1006
Kerr et al., US 7,236,154 B1, issued June 26, 2007 (“Kerr”)	1008
Chiang et al., US 2003/0103359 A1, published June 5, 2003 (“Chiang”)	1009
Kamei et al., US 2002/0122683 A1, published September 5, 2002 (“Kamei”)	1010
Fye, US 5,736,233, issued April 7, 1998 (“Fye”)	1011
Schoemer, US 4,124,879, issued November 7, 1978 (“Schoemer”)	1012

(Pet. 7).

Petitioner also relies on the Declaration of Sean O’Neal for support of its contentions in the Petition (Ex. 1002).

G. Asserted Grounds

Petitioner asserts that claims 1–20 would have been unpatentable on the following grounds:³

² Hereinafter, citations to Chiba are made to Patent Owner’s English-language translation of Chiba (Ex. 1007). Chiba is a Japanese unexamined patent application publication (Ex. 1006).

³ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), included revisions to 35 U.S.C. §§ 102 and 103 that became effective after the filing of the applications to which the ’581 patent claims priority. Therefore, we apply the pre-AIA versions of these statutes.

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–20	103	Chiba, Shipman
1–2, 4–8, 11–18	103	Kerr or Kerr and Chiba
1–20	103	Chiang, Shipman
5, 6, 9, 10, 13	103	Chiba, Shipman, and Kamei
5, 6, 9, 10, 13	103	Kerr and Kamei or Kerr, Chiba, and Kamei
5, 6, 9, 10, 13	103	Chiang, Shipman, and Kamei
2, 3, 9, 10, 18–20	103	Kerr and Shipman or Kerr, Chiba, and Shipman
7, 8, 14, 15	103	Chiba, Shipman, and Schoemer
7, 8, 14, 15	103	Kerr and Schoemer or Kerr, Chiba, and Schoemer
7, 8, 14, 15	103	Chiang, Shipman, and Schoemer
11, 16	103	Chiba, Shipman, and Kerr
11, 16	103	Chiang, Shipman, and Kerr

(Pet. 7).

II. ANALYSIS

Discretionary Denial – 35 U.S.C. ¶ 325(d)

Patent Owner contends we should exercise discretion under 35 U.S.C. § 325(d) because “[a]ll references in the proposed grounds are cumulative to references already cited against the patent in the original prosecution”

(Prelim. Resp. 3). Petitioner does not contest Patent Owner’s assertion that the discretionary denial provisions of Section 325(d) apply in cases where the prior art presented were “substantially the same prior art” previously presented to the Office (35 U.S.C. § 325(d); Pet. 7–8; Prelim. Resp. 3–4).

“In evaluating arguments under § 325(d), we use [a] two-part framework: (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and (2) if either condition of first part of the framework is satisfied, whether the petitioner

has demonstrated that the Office erred in a manner material to the patentability of challenged claims (*Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential); *see also Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 at 17–18 (PTAB Dec. 15, 2017) (precedential as to Section III.C.5, first paragraph) (listing factors (a)–(f) to consider in evaluating the applicability of § 325(d)) (“*Becton, Dickinson*”).

Within this two-part framework, the Board considers a number of non-exclusive factors in evaluating whether to exercise its discretion under § 325(d) (*see Becton, Dickinson & Co. v. B. Braun Melsungen AG*, Paper 8; *see also Advanced Bionics*, Paper 6 at 9–11). The factors set forth in *Becton, Dickinson* are as follows:

- (a) the similarities and material differences between the asserted art and the prior art involved during examination;
- (b) the cumulative nature of the asserted art and the prior art evaluated during examination;
- (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection;
- (d) the extent of the overlap between the arguments made during examination and the manner in which petitioner relies on the prior art;
- (e) whether petitioner has pointed out sufficiently how the examiner erred in its evaluation of the asserted prior art; and
- (f) the extent to which additional evidence and facts presented in the petition warrant reconsideration of the prior art or arguments (*Becton, Dickinson*, Paper 8 at 17–18).

Factors (a), (b), and (d) of the *Becton, Dickinson* factors relate to whether the art or arguments presented in the Petition are the same or

substantially the same as those previously presented to the Office (*Advanced Bionics*, Paper 6 at 10). Factors (c), (e), and (f) “relate to whether the petitioner has demonstrated a material error by the Office” in its prior consideration of that art or arguments (*Advanced Bionics*, Paper 6 at 10). Only if the same or substantially the same art or arguments were previously presented to the Office do we then consider whether petitioner has demonstrated a material error by the Office (*Advanced Bionics*, Paper 6 at 10). “At bottom, this framework reflects a commitment to defer to previous Office evaluations of the evidence of record unless material error is shown” (*Advanced Bionics*, Paper 6 at 9).

We agree with Patent Owner that substantially the same art was previously presented to the Office.

In particular, with respect to Petitioner’s ground based on Chiba and Shipman (“Ground I”), Patent Owner asserts that Shipman, cited by Petitioner, is “substantially the same art” as the references “Huang, Illuminat[ing] Keyboard, US Pub 2013/0148327 (Jun. 13, 2013)” (“Huang Pub”) and “Shipman, Illuminated Keyboard, US Patent 7,172,303 (Feb. 6, 2007)” (“Shipman ’303”) cited during prosecution (Prelim. Resp. 3–4). Patent Owner asserts Huang Pub “already disclosed a scissor keyboard” and Shipman ’303 “disclosed a single sheet with domes,” as does Shipman, and thus, the references “are substantially the same art” (Prelim. Resp. 3–4). That is, Patent Owner appears to argue that the cited prior art, even if not the exact same references, is relied upon for duplicative disclosures.

Patent Owner further contends, with respect to Petitioner’s ground based on Kerr and Chiba (“Ground II”), that these two references “are substantially the same art” as the references Huang Pub and Shipman ’303 cited during prosecution (Prelim. Resp. 4). More specifically, Patent Owner

contends Huang Pub “already disclosed a backlit keyboard with scissor mechanisms” and Shipman ’303 “disclosed a single sheet with domes” (Prelim Resp. 4). As above, it appears Patent Owner argues the cited prior art is merely used for duplicative disclosures.

Patent Owner additionally contends, with respect to Petitioner’s ground based on Chiang and Shipman (“Ground III”), that Chiang is the “same prior art” because Chiang “is the published version of Chiang, Illuminated Keyboard, US Patent 6,860,612 (Mar. 1, 2005),” which was cited during prosecution (Prelim. Resp. 4). Patent Owner further asserts Shipman, relied upon in Ground III, for teaching a “single sheet with domes, is duplicative of cited patent Shipman [’303] which also shows single sheet with domes” (Prelim. Resp. 4). Patent Owner’s argument is that the art relied upon in the Petition are duplicative of those relied upon during Examination. Therefore, Patent Owner contends the asserted references in Ground III, are “substantially the same art” (Prelim. Resp. 4).

Huang Pub was relied upon and described by the Examiner who indicated, “Huang does not disclose the transparent elastomer with reflective coating” (Ex. 1004, 166). The Examiner identified and summarized other references having that feature (Ex. 1004, 164–166). Similarly, the other references relied upon by the Examiner, are each described as disclosing a majority of the limitations (Ex. 1004, 163–166). The Examiner determined the prior art did not “disclose the uniquely combined elements” recited in the claims (Ex. 1004, 162).

In review of the record, we determine the art presented in the Petition is cumulative and is substantially the same as those previously presented to the Office. Having determined that the first part of the framework is

satisfied, we now consider whether Petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.

Petitioner did not address whether the Office materially erred in its decision to allow the application (*see* Pet. 7). In the Petition, Petitioner does not address the applicability of Section 325(d) except to state

The claims of the '581 patent have not been considered in view of Shipman, Chiba, Kerr, Chiang, or Kamei. While Schoemer was considered, the Examiner did not consider it in combination with the other references as presented in this Petition or with the benefit of the declaration of Mr. O'Neal.

(Pet. 7). Indeed, Petitioner does not address whether the proffered art is cumulative to or substantially the same as the art considered during prosecution. Nor does Petitioner address whether the Office materially erred.

On this record, Petitioner has not demonstrated the “Office erred in a manner material to the patentability of challenged claims” (*Advanced Bionics*, Paper 6 at 8).

III. CONCLUSION

Petitioner proffers substantially the same prior art previously presented to the Office. Petitioner does not demonstrate that the Examiner erred in a manner material to the patentability of the challenged claims. Taking a holistic view of the totality of the circumstances presented, on this record, we exercise discretion under Section 325(d) and do not institute an *inter partes* review.

IV. ORDER

In consideration of the foregoing, it is hereby:

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ORDERED that the Petition is *denied* and no *inter partes* review is instituted.

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