

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COOLER MASTER CO., LTD.,
Petitioner,

v.

ASETEK DANMARK A/S,
Patent Owner.

IPR2023-00668
Patent 8,245,764 B2

Before WILLIAM V. SAINDON, KEVIN W. CHERRY, and
JASON W. MELVIN, *Administrative Patent Judges*.

MELVIN, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314
Granting Motion for Joinder
35 U.S.C. § 315(c)

I. INTRODUCTION

Cooler Master Co., Ltd. (“Petitioner”) filed a Petition (Paper 3, “Pet.”) to institute *inter partes* review of claims 1–30 of U.S. Patent No. 8,245,764 B2 (Ex. 1001, “the ’764 patent”). Petitioner filed also a Motion for Joinder seeking to join Petitioner as a party to *Shenzhen Apaltek Co., Ltd. v. Asetek Danmark A/S*, IPR2022-01317 (“the Apaltek IPR”). Paper 1 (“Mot.”). Asetek Danmark A/S (“Patent Owner”) did not file a Preliminary Response or an opposition to the Motion. Pursuant to 35 U.S.C. § 314 and 37 C.F.R. § 42.4(a), we have authority to determine whether to institute review.

An *inter partes* review may not be instituted unless “the information presented in the petition . . . and any response . . . 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). For the reasons set forth below, we institute *inter partes* review and grant Petitioner’s Motion.

A. REAL PARTIES IN INTEREST

Petitioner identifies itself as the real party-in-interest. Pet. 146. Patent Owner identifies Asetek Danmark A/S, Asetek USA, Inc., Asetek A/S, and Asetek Holdings, Inc. as the real parties-in-interest. Paper 5, 1 (Patent Owner’s Mandatory Notices).

B. RELATED MATTERS

Petitioner identifies the following related litigations: *Cooler Master Co., Ltd. et al v. Asetek Danmark A/S*, No. 5:21-cv-04627-EJD (N.D. Cal.); and *Asetek Danmark A/S v. Shenzhen Apaltek Co.*, No. 3:22-cv-06179-WHO

(N.D. Cal.). Pet. 148. Patent Owner identifies *Cooler Master Co., Ltd. v. Asetek Danmark A/S*, No. 4:21-cv-04627 (N.D. Cal.). Paper 5, 1.

Petitioner identifies IPR2020-00522, IPR2020-00523, and IPR2020-00524, which were filed in February 2020, concluded in August 2021, and are currently on appeal to the U.S. Court of Appeals for the Federal Circuit. Pet. 148. Patent Owner identifies IPR2022-01317, in which we instituted review. Paper 5, 1.

C. THE '764 PATENT

The '764 patent is titled “Cooling System for a Computer System.” Ex. 1001, Code (54). It issued from an application filed October 7, 2011, as a continuation of and claims priority to a PCT application filed May 6, 2005. *Id.* at Code (63).

The '764 patent relates to a liquid-cooling system for a computer system. *Id.* at Code (57). The specification explains, at the time of the invention, air cooling arrangements were the most-used cooling system for cooling central processing units (CPUs) in computer systems. *Id.* at 1:17–31. An alternative design known at the time of the invention was to use a cooling liquid circulating inside a closed system by means of a pumping unit with a heat exchanger past which the cooling liquid circulates. *Id.* at 1:32–36. The specification contends that liquid cooling is generally more efficient and quieter than air cooling, but that a liquid cooling design consists of “many components,” which increases the total installation time, size, and risk of leakage of the cooling liquid from the system. *Id.* at 1:37–47. Thus, one object of the invention is to provide a small and compact liquid-cooling solution that is more efficient than existing air-cooling arrangements and can be produced at low cost enabling high production volumes, be easy-to-use

and implement, can be used with existing CPU types and computer systems, and requires a low level of maintenance or no maintenance at all. *Id.* at 1:51–60.

An illustrative embodiment of such a device is depicted in Figures 7 and 8, reproduced below.

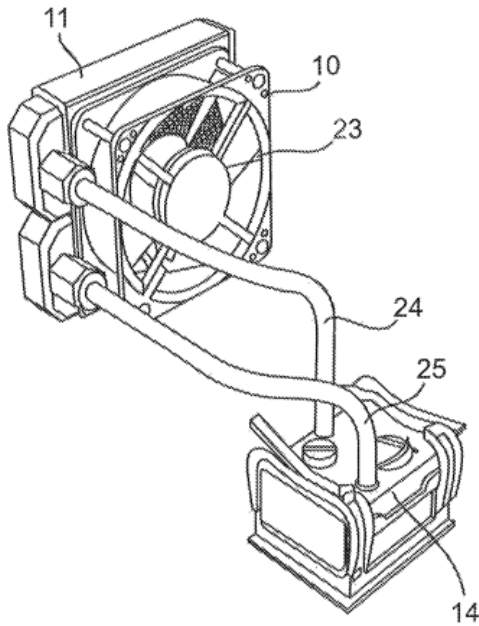


FIG. 7

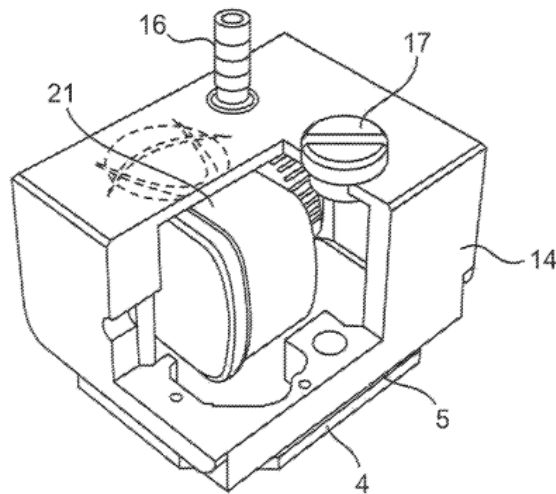


FIG. 8

Figure 7¹ is a perspective view of the cooling system showing reservoir housing 14 with the heat exchanging surface 5 (shown in Figure 8) and the pump 21 (shown in Figure 8) inside the reservoir. *Id.* at 15:61–16:7. Figure 8 is a cut-out view into reservoir housing 14, when the reservoir, pump 21, and heat exchanging surface 4 are situated inside the reservoir. *Id.* at 15:28–30.

¹ It appears the specification transposes the description of Figure 7 with that of Figure 8. We refer to the description of “Figure 8” in the specification in our discussion of Figure 7, and we refer to the specification’s discussion of “Figure 7” in our discussion of Figure 8.

The reservoir has a tube inlet connection (not shown in Figure 8) through which the cooling liquid enters the reservoir. *Id.* at 15:30–32. From the tube inlet connection, the cooling liquid flows through the reservoir passing heat exchanging surface 4 and enters the inlet of the pump. *Id.* at 15:32–35. After the cooling liquid flows through the pump, the cooling liquid passes out of the outlet of the pump and further out through tube outlet connection 16. *Id.* at 15:35–37. As shown in Figure 7, tube inlet connection and tube outlet connection 16 are connected to heat radiator 11 by means of connecting tubes 24 and 25. *Id.* at 15:64–67. Cooling liquid flows into and out of the reservoir and the heat radiator through connecting tubes 24 and 25, respectively. *Id.* Heat radiator 11 (shown in Figure 7) cools the cooling liquid before it passes back into the reservoir. *Id.* at 15:67–16:4.

The reservoir may be provided with channels or segments for establishing a certain flow-path for the cooling liquid through the reservoir to prevent the cooling liquid passing the reservoir too quickly to take up a sufficient amount of heat from the heat exchanging surface. *Id.* at 16:25–42.

Figures 17 and 20 show the internal structures of a preferred embodiment of the reservoir according to the invention and are reproduced below. *Id.* at 21:12–22:59.

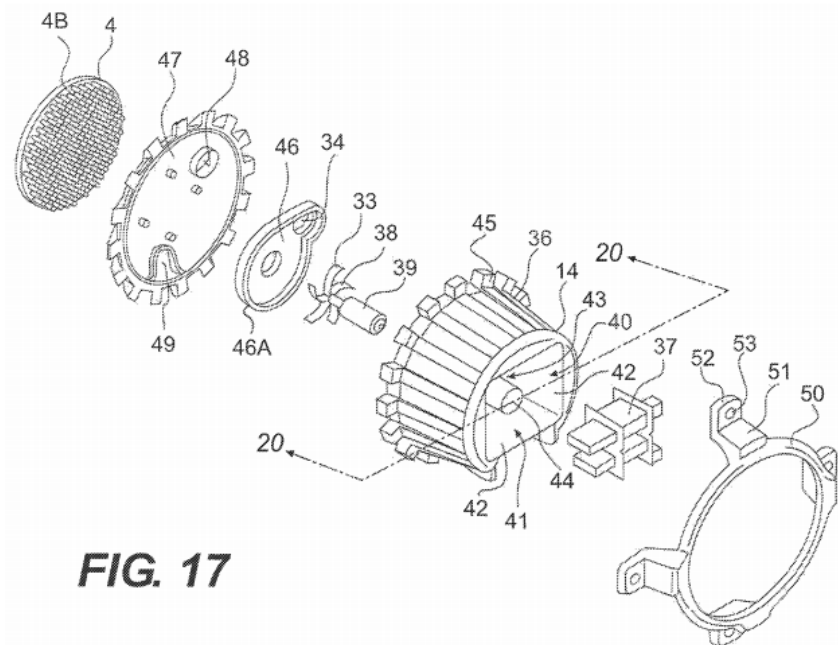


FIG. 17

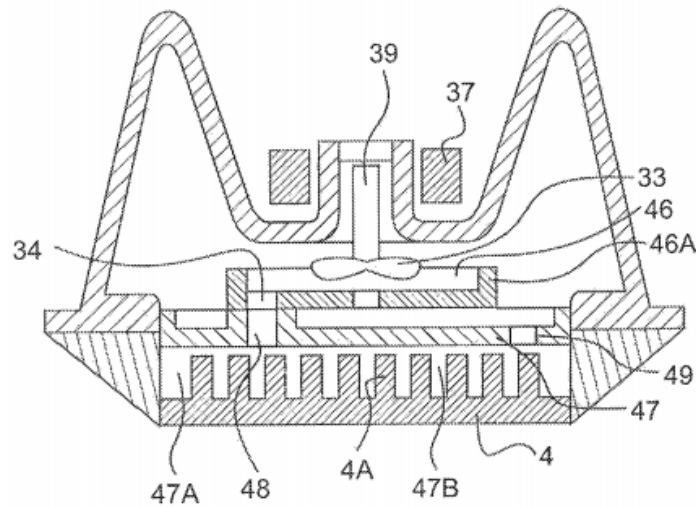


FIG. 20

Figure 17 is an exploded perspective view of a preferred embodiment of a reservoir and a pump and the heat exchanging surface. *Id.* at 9:62–64.

Figure 20 is a simplified schematic showing a cross-sectional view of the reservoir along plane 20-20 of Figure 17. *Id.* at 10:4–5. Reservoir housing 14 as shown in Figures 17 and 20 is in the form of a double-sided chassis

having a substantially conical, circular configuration with stiffening ribs 36 extending axially along the exterior of the reservoir housing and configured to mount an electrical motor. *Id.* at 21:14–21. Reservoir housing 14 has recess 40 intended for accommodating stator 37 of an electrical motor driving impellor 33 of the pump, which is attached to shaft 38 of rotor 39 of the electric motor. *Id.* at 21:28–40. The specification explains that “a liquid-proof division” is made between rotor 39 of the motor, which is submerged in the cooling liquid, and the stator 37 of the pump. *Id.* at 21:41–51.

The enclosed space between impeller 33 and heating exchanging interface 4 is divided into two separate chambers by impeller cover 46A and intermediate member 47, as shown in Figure 20. The chamber formed by impeller 33 and impeller cover 46A is described as “pump chamber 46” and has outlet 34. *Id.* at 22:26–53.

D. CHALLENGED CLAIMS

Challenged claim 1 is independent and is reproduced below:

1. A cooling system for a heat-generating component, comprising:
 - a double-sided chassis adapted to mount a pump configured to circulate a cooling liquid, the pump comprising a stator and an impeller, the impeller being positioned on the underside of the chassis and the stator being positioned on the upper side of the chassis and isolated from the cooling liquid;
 - a reservoir adapted to pass the cooling liquid therethrough, the reservoir including:
 - a pump chamber including the impeller and formed below the chassis, the pump chamber being defined by at least an impeller cover having one or more passages for the cooling liquid to pass through;

a thermal exchange chamber formed below the pump chamber and vertically spaced apart from the pump chamber, the pump chamber and the thermal exchange chamber being separate chambers that are fluidly coupled together by the one or more passages; and

a heat-exchanging interface, the heat-exchanging interface forming a boundary wall of the thermal exchange chamber, and configured to be placed in thermal contact with a surface of the heat-generating component; and

a heat radiator fluidly coupled to the reservoir and configured to dissipate heat from the cooling liquid.

Id. at 27:39–64. Claims 10 and 15 are also independent and recite generally similar limitations. *See id.* at 28:27–43, 28:57–29:13. The other challenged claims depend, directly or indirectly, from claim 1, 10, or 15. *Id.* at 27:66–30:12; Ex. 1002, 1:18–2:35.

E. PRIOR ART AND ASSERTED GROUNDS

Petitioner asserts the following ground of unpatentability:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–19, 21–27, 29, 30	103	Duan ²
1–19, 21–27, 29, 30	103	Duan, Duan-I ³
8	103	Duan, Laing ⁴
8	103	Duan, Duan-I, Laing
1–30	103	Batchelder ⁵ , Duan

² US Pub. No. 2006/0185830 A1, pub. Aug. 24, 2006 (Ex. 1006).

³ US Pub. No. 2006/0185829 A1, pub. Aug. 24, 2006 (Ex. 1007).

⁴ US Pub. No. 2004/0052663 A1, pub. Mar. 18, 2004 (Ex. 1015).

⁵ US Pat. No. 6,019,165, iss. Feb. 1, 2000 (Ex. 1008).

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
8	103	Batchelder, Duan, Laing

Pet. 3. Petitioner also relies on the Declaration of Georgios Karamanis, Ph.D. Ex. 1003.

II. ANALYSIS

To join a petitioner to an instituted proceeding, the Board first determines whether the Petition “warrants” institution under 35 U.S.C. § 314. 35 U.S.C. § 315(c); *see Facebook, Inc. Windy City Innovations, LLC*, 973 F.3d 1321, 1332 (Fed. Cir. 2020).

The Board next determines whether to exercise “discretion to decide whether to ‘join as a party’ the joinder applicant,” who is the Petitioner in this proceeding. *Windy City*, 973 F.3d at 1332. As moving party, Petitioner bears the burden of proving that it is entitled to the requested relief. 37 C.F.R. § 42.20(c). A motion for joinder should (1) set forth the reasons joinder is appropriate; (2) identify any new grounds of unpatentability asserted in the petition; and (3) explain what impact (if any) joinder would have on the trial schedule for the existing review. *See Kyocera Corp. v. SoftView, LLC*, IPR2013-00004, Paper 15 at 4 (PTAB Apr. 24, 2013). In addition, a motion for joinder must be filed “no later than one month after the institution date of any inter partes review for which joinder is requested.” 37 C.F.R. § 42.122(b).

A. INSTITUTION OF INTER PARTES REVIEW

Petitioner represents that the “Petition is essentially a copy of the petition filed in” the Apaltek IPR and that the Petition “includes identical grounds.” Mot. 1. Our independent review of the Petition and the

Apaltek IPR petition confirms Petitioner's representations, and that the Petitions in the two proceedings are substantially the same.

Having already considered the merits of those challenges and the evidence in the Apaltek IPR and having determined that the threshold for institution of inter partes review has been met, we determine that the Petition here also presents a reasonable likelihood of prevailing on the challenges to at least one claim. Therefore, for the same reasons stated in our Decision to Institute in the Apaltek IPR, we institute inter partes review in this proceeding on the grounds presented in the Petition. *See* IPR2022-01317, Paper 7.

B. MOTION FOR JOINDER

Petitioner timely filed its Motion for Joinder on March 6, 2023, which was no later than one month after the institution of the Apaltek IPR on February 6, 2023. *See* 37 C.F.R. § 42.122(b).

We determine that Petitioner has met its burden of showing that joinder is appropriate because, as set forth above, the Petition is substantially identical to the petition in the Apaltek IPR, contains the same grounds based on the same evidence, and relies on the same declaration of Georgios Karamanis, Ph.D. (Ex. 1003). Petitioner also represents that joinder will not impact the Apaltek IPR schedule. Mot. 3 ("Petitioner agrees to the deadlines set forth in the Apaltek IPR Scheduling Order").

Additionally, Petitioner represents that it is willing to accept a limited, "understudy role" to ShenZhen Apaltek Co., Ltd. (the original petitioner in the Apaltek IPR) "as long as Apaltek remains a party to the Apaltek IPR." *Id.* at 4. Specifically, Petitioner represents that in its understudy role, it agrees that the following conditions will apply:

(a) Petitioner will not make any substantive filings and shall be bound by the filings of Apaltek, unless a filing concerns termination and settlement, or issues solely involving Petitioner.

(b) Petitioner will not present any argument or make any presentation at oral hearing unless an issue solely involves Petitioner, or when addressing Board-approved motions that do not affect Apaltek.

(c) Petitioner will not seek to cross-examine or defend the cross-examination of any witness, unless the topic of cross-examination concerns issues solely involving Petitioner, within the time permitted by Apaltek alone and with Apaltek's agreement.

(d) Petitioner will not seek discovery from Patent Owner, unless issues arise that are unique to, and only applicable to, Petitioner.

(e) Petitioner will not rely on expert testimony beyond that submitted by Apaltek unless and until Apaltek is terminated as party to the proceedings, prior to any necessary depositions. Petitioner's expert, Dr. Karamanis, is the same expert used in the Apaltek IPR, and his expert declaration submitted herein is substantively identical to the declaration he submitted in the Apaltek IPR.

Id. at 4–5. Patent Owner has not filed an opposition to Petitioner's Motion. Thus, Petitioner's Motion stands unopposed .

Under these circumstances, we agree with Petitioner that joinder is appropriate and will not unduly impact the ongoing trial in the Apaltek IPR. We limit Petitioner's participation in the Apaltek IPR proceeding, as follows: (1) Apaltek alone is responsible for all petitioner filings in the proceeding until such time that it is no longer an entity in the proceeding, and (2) Petitioner is bound by all filings by Apaltek in the Apaltek IPR

proceeding, except for (a) filings regarding termination or settlement, and (b) filings where Petitioner receives permission to file an independent paper. Petitioner must obtain prior Board authorization to file any paper or take any action on its own in the proceeding, so long as Apaltek remains as a non-terminated petitioner in the proceeding. This arrangement promotes the just and efficient administration of the ongoing trial in the Apaltek IPR and protects the interests of Apaltek as original petitioner in IPR2022-01317 and of Patent Owner.

III. CONCLUSION

For the reasons discussed above, we institute *inter partes* review of the challenged claims of the '764 patent based on the asserted unpatentability grounds. We *grant* Petitioner's Motion for Joinder and join Petitioner to IPR2022-01317, with the limitations set forth above.

IV. ORDER

Accordingly, it is

ORDERED that, pursuant to 35 U.S.C. § 314(a), *inter partes* review of claims 1–30 of the '764 patent is instituted on the grounds set forth in the Petition;

FURTHER ORDERED that, pursuant to 35 U.S.C. § 315(c) and 37 C.F.R. § 42.122, Petitioner's Motion for Joinder is *granted*, and Petitioner is joined as a petitioner to IPR2022-01317, subject to the above-described limitations on Petitioner's participation;

FURTHER ORDERED that the asserted grounds of unpatentability on which the Board instituted *inter partes* review in IPR2022-01317 are unchanged and remain the only instituted grounds;

FURTHER ORDERED that the Scheduling Order entered in IPR2022-01317, including any schedule changes agreed by the parties in that proceeding pursuant to the Scheduling Order, shall govern the trial schedule in IPR2022-01317;

FURTHER ORDERED that the case caption in IPR2022-01317 for all further submissions shall be modified to add Cooler Master Co., Ltd. as a named Petitioner, and to indicate by footnote the joinder of Petitioner to that proceeding, as indicated in the attached sample case caption;

FURTHER ORDERED that a copy of this Decision be entered into the record of IPR2022-01317.

IPR2023-00668
Patent 8,245,764 B2

FOR PETITIONER:

James Ryerson
Heath Briggs
Kyle D. Chen
GREENBERG TRAURIG, LLP
ryersonj@gtlaw.com
briggsh@gtlaw.com
kchen@gtlaw.com

FOR PATENT OWNER:

Eric P. Raciti
Arpita Bhattacharyya
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP
eric.raciti@finnegan.com
arpita.bhattacharyya@finnegan.com
regional-desk@finnegan.com

[Sample Case Caption]

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SHENZHEN APALTEK CO., LTD. and
COOLER MASTER CO., LTD.,
Petitioner,

v.

ASETEK DANMARK A/S,
Patent Owner.

IPR2022-01317*
Patent 8,245,764 B2

* Cooler Master Co., Ltd., which filed a petition in IPR2023-00668, has been joined as a party to this proceeding.