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KENNAMETAL INC. Intellectual Property Department P.O. BOX 231 1600 TECHNOLOGY WAY LATROBE, PA 15650			LEE, AIDEN Y	
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ROBINSON E. LATTIMER

Appeal 2019-000198
Application 14/600,437
Technology Center 1700

Before JEFFREY T. SMITH, MICHAEL G. McMANUS,
and JANE E. INGLESE, *Administrative Patent Judges*.

McMANUS, *Administrative Patent Judge*.

DECISION ON APPEAL

The Examiner finally rejected claims 1 and 6–16 of Application 14/600,437 under 35 U.S.C. §§ 103 and 112. Final Act. (Aug. 24, 2017) 3–13. Appellant¹ seeks reversal of the rejections pursuant to 35 U.S.C. § 134(a). We have jurisdiction under 35 U.S.C. § 6(b).

For the reasons set forth below, we AFFIRM.

¹ The Appellant, Kennametal Inc., is identified as the real party in interest. Appeal Br. 3.

BACKGROUND

The present application generally relates to an intermetallic composite (IMC) evaporator boat assembly described as useful for the evaporation of metals. Spec. ¶ 1. The assembly includes an evaporator boat and a thermal insulation package having a cavity where the “evaporator boat is removably received.” *Id.* ¶ 3. The cavity is taught to be “open at its opposite ends.” *Id.* ¶ 10. Figure 2 of the Application is reproduced below.

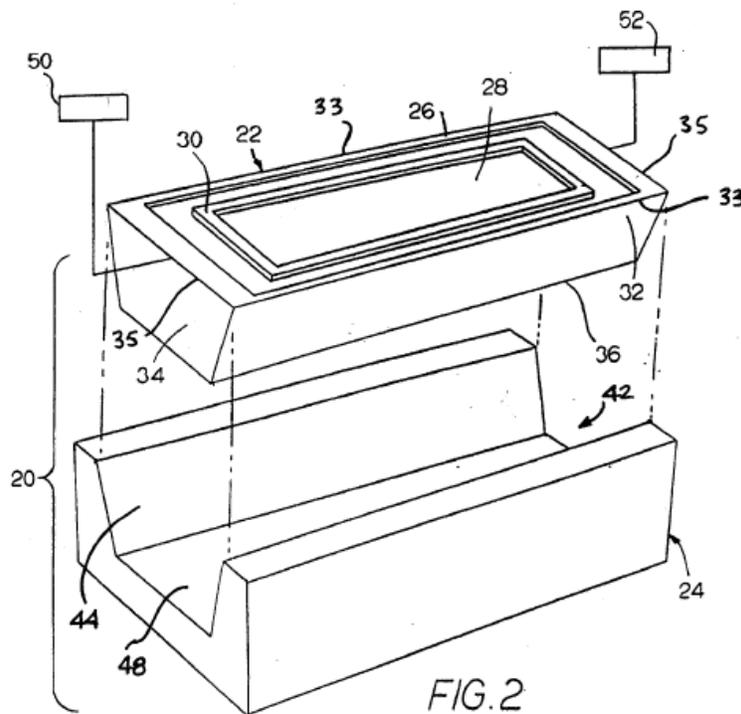


Figure 2 shows an IMC evaporator boat assembly where the evaporator boat 22 is “exploded away” from the thermal insulation package 24. *Id.* ¶ 6. The figure additionally shows heaters 50, 52 “electrically connected to each end wall 34.” *Id.* ¶ 12.

Claim 1 is illustrative of the subject matter on appeal and is reproduced below with certain limitations bolded for emphasis:

1. An IMC evaporator boat assembly comprising:
an evaporator boat, the evaporator boat comprising a top surface defining a pool, a side wall, an end wall, and a bottom surface;
a thermal insulation package comprising a thermal insulation body wherein the thermal insulation body contains a cavity, the cavity comprising a side wall and a bottom surface;
wherein the evaporator boat is removably received within the cavity such that the side wall of the evaporator boat contacts the side wall of the thermal insulation package and the bottom surface of the evaporator boat contacts the bottom surface of the thermal insulation package, and such that **the end wall of the evaporator boat is exposed**; and
wherein the evaporator boat is operatively connected to a heater.

Appeal Br. 8 (Claims App'x) (emphasis added).

REJECTIONS

The Examiner maintains the following rejections:

1. Claims 10–12 and 14–16 are rejected under 35 U.S.C. § 112(b) for failure to particularly point out and distinctly claim the subject matter which the inventor regards as the invention. Final Act. 3–4.
2. Claims 1, 6, and 7 are rejected under 35 U.S.C. § 103 as obvious over Epstein² in view of Plumat et al.,³ Barnard et al.,⁴ and Wilder.⁵ *Id.* at 4–5.

² US 2009/0217876 A1, published Sept. 3, 2009.

³ US 3,673,006, issued June 27, 1972 (“Plumat”).

⁴ US 5,951,769, issued Sept. 14, 1999 (“Barnard”).

⁵ US 5,182,567, issued Jan. 26, 1993.

3. Claims 8, 9, and 13 are rejected under 35 U.S.C. § 103 as obvious over Epstein, Plumat, Barnard, Wilder, and Kobayashi.⁶ *Id.* at 9–10.
4. Claims 10–12 are rejected under 35 U.S.C. § 103 as obvious over Epstein, Plumat, Barnard, Wilder, and Rusinko et al.⁷ *Id.* at 10–12.
5. Claims 14–16 are rejected under 35 U.S.C. § 103 as obvious over Epstein, Plumat, Barnard, Wilder, Kobayashi, and Rusinko. *Id.* at 13.

DISCUSSION

Rejection 1. The Examiner rejected claims 10–12 and 14–16 as indefinite. *Id.* at 3–4. Appellant does not offer substantive argument on appeal. Rather, Appellant states that “[t]he present antecedent basis rejection is easily remedied by minor amendment and does not affect the substantive issue[s] raised in this appeal.” Appeal Br. 4. Because Appellant does not substantively oppose the rejection on the basis of indefiniteness, we summarily affirm. *Hyatt v. Dudas*, 551 F.3d 1307, 1313–14 (Fed. Cir. 2008); *see also* Manual of Patent Examining Procedure (MPEP) § 1205.02 (9th ed. Mar. 2014) (“If a ground of rejection stated by the examiner is not addressed in the appellant’s brief, appellant has waived any challenge to that ground of rejection and the Board may summarily sustain it, unless the examiner subsequently withdrew the rejection in the examiner’s answer.”).

⁶ US 2011/0223552 A1, published Sept. 15, 2011 (“Kobayashi”).

⁷ US 7,494,616 B2, issued Feb. 24, 2009 (“Rusinko”).

Rejection 2. The Examiner rejected claims 1, 6, and 7 as obvious over Epstein, Plumat, Barnard, and Wilder. Final Act. 4–9. In support of the rejection, the Examiner finds that Wilder teaches a vapor evaporator where each end of the container “is exposed for the purpose of connecting heating element to each end of the container.” *Id.* at 7 (citing Figure 2). Figure 2 of Wilder is reproduced below.

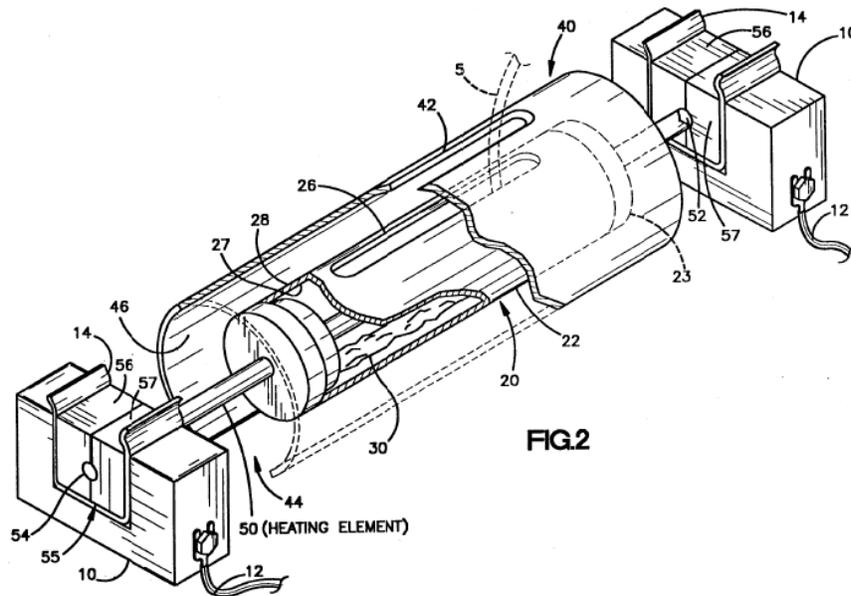


Figure 2 of Wilder shows a cutaway view of a metal evaporator. Wilder 3:48–49. The metal evaporator of Figure 2 includes heat shield 40 surrounding and spaced away from container 20. *Id.* at 5:30–34. We further observe that Figure 3 of Wilder appears to teach a container 20 having exposed end walls. *Id.*, Fig. 3.

Wilder further teaches as follows:

[A]lthough the container thus far described would function as a vapor source if an adequate heat source were provided, excessive heat loss by radiation will be present from the container thus described were it to be operated at the elevated temperatures

required to vaporize metals, making performance far from optimal.

In the best mode, then, a shield is to be provided that will significantly improve the thermal efficiency of the vapor source. Although a multi-layered radiant heat shield may appear to be desired in an application such as this, a practical approach is obtained by the use of a single-layer radiant heat shield 40 surrounding the container 20 and spaced away from it.

Wilder, 5:21–34.

Appellant argues that the cited references and the nature of the problem do not provide a reason to combine the teachings of the references so as to arrive at an evaporator boat assembly where the side and bottom walls of the evaporator boat are covered by a thermal insulation package and the end walls are left exposed. Appeal Br. 5. Appellant argues that the references, including Wilder, teach uniform heat retention. *Id.* Appellant asserts that the heat shield of Wilder reflects heat over the entire body of the evaporation container so as to maintain an isothermal condition. *Id.*

In its Reply Brief, Appellant concedes that Wilder teaches exposed end walls, but argues that Wilder, taken as a whole, does not teach an arrangement that would lead to unequal heating of the evaporator boat. Reply Br. 2.

Appellant's arguments do not squarely address the Examiner's reasoning. The Examiner determines that one of ordinary skill in the art would have combined the teachings of the references in such a way that the end walls of the evaporator boat are exposed "in order to connect heating element 50 [of Wilder]." Answer 9; *see also* Final Act. 7 ("each end . . . is exposed for the purpose of connecting heating element[s] to each end of the

container”). Appellant does not address the desirability of connecting a heating element to the container end wall. Further, Appellant predicates its argument on a need for uniform heat distribution but does not cite to any portion of Wilder that teaches such point. Wilder primarily teaches that a heat shield is desirable to prevent heat loss.

In view of the foregoing, we determine that Appellant has not shown reversible error in the Examiner’s rejection of claims 1, 6, and 7 as obvious over Epstein, Plumat, Barnard, and Wilder.

Rejection 3. The Examiner rejected claims 8, 9, and 13 as obvious over Epstein, Plumat, Barnard, Wilder, and Kobayashi. Final Act. 9–10. The Examiner relies on Kobayashi for its teaching to use inorganic fibers, such as silica, alumina, or alumina silicate. *Id.* at 9.

Appellant argues that the rejection of claims 8, 9, and 13 should be reversed for the same reasons articulated with regard to Rejection 2. As we have not found such arguments to be persuasive, we determine that Appellant has not shown reversible error in this regard.

Appellant additionally argues that Kobayashi addresses chemical vapor deposition (CVD) apparatuses where internal furnace temperatures can reach 500–1000°C while evaporator boat assemblies “often reach 1400–1650°C.” Appeal Br. 6 (citing Kobayashi ¶ 6 regarding CVD furnace temperature). As a result, Appellant argues, Kobayashi does not teach the suitability of silica or alumina fibers for evaporator boat assemblies.

In the Answer, the Examiner asserts that Kobayashi teaches that the fibers are taught to be used for heat insulation in heat treatment apparatuses. Answer 10. Accordingly, the Examiner finds, one of ordinary skill in the art

would have been led to use such fibers in a similar application. *Id.* at 10–11. The Examiner further finds that Appellant has not provided support for the proposition that the fibers taught by Kobayashi “cannot bear the temperature condition 1400–1650°C.” *Id.* at 11. We further observe that Appellant has not provided citation to record evidence to support its assertion that evaporator boat assemblies may reach 1400–1650 °C.

“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007). Here, the Examiner posits the combination of inorganic fibers known to be used in high heat applications with a known function (thermal insulation body). Appellant fails to show that one of ordinary skill in the art would not have regarded such fibers as appropriate for the proposed combination.

Accordingly, Appellant has not shown reversible error in the rejection of claims 8, 9, and 13 as obvious over Epstein, Plumat, Barnard, Wilder, and Kobayashi.

Rejections 4 and 5. The Examiner rejected claims 10–12 as obvious over Epstein, Plumat, Barnard, Wilder, and Rusinko. Final Act. 10–12. The Examiner further rejected claims 14–16 as obvious over Epstein, Plumat, Barnard, Wilder, Rusinko, and Kobayashi. *Id.* at 13. Appellant does not present separate argument with regard to these rejections. Rather Appellant relies upon its arguments presented with regard to Rejection 2. Appeal Br. 6–7. As we have not found such arguments to be persuasive, we determine that Appellant has not shown reversible error in this regard.

CONCLUSION

For the reasons stated by the Examiner in the Final Office Action and the Examiner's Answer as well as those reasons set forth above, we determine as follows:

Claim(s) Rejected	Basis	Affirmed	Reversed
10-12, 14-16	§ 112(b)	10-12, 14-16	
1, 6, 7	§ 103 Epstein, Plumat, Barnard, and Wilder	1, 6, 7	
8, 9, 13	§ 103 Epstein, Plumat, Barnard, Wilder, and Kobayashi	8, 9, 13	
10-12	§ 103 Epstein, Plumat, Barnard, Wilder, and Rusinko	10-12	
14-16	§ 103 Epstein, Plumat, Barnard, Wilder, Rusinko, and Kobayashi	14-16	
Overall Outcome		1, 6-16	

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED