UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/611,164	09/12/2012	Nabil Rizkalla	20507A	5910

23389 7590 11/14/2016

SCULLY SCOTT MURPHY & PRESSER, PC
400 GARDEN CITY PLAZA
SUITE 300
GARDEN CITY, NY 11530

EXAMINER
MCDONOUGH, JAMES E

ART UNIT	PAPER NUMBER
1734	

NOTIFICATION DATE	DELIVERY MODE
11/14/2016	ELECTRONIC

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

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

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Docket@SSMP.COM

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte NABIL RIZKALLA

Appeal 2014-007349
Application 13/611,164
Technology Center 1700

Before ADRIENE LEPIANE HANLON, MARK NAGUMO, and BRIAN D. RANGE, *Administrative Patent Judges*.

HANLON, *Administrative Patent Judge*.

DECISION ON APPEAL

A. STATEMENT OF THE CASE

The Appellant filed an appeal under 35 U.S.C. § 134 from an Examiner's decision finally rejecting claims 1 and 5–7 under 35 U.S.C. § 103(a) as unpatentable over Carman et al.[1] in view of Mehan et al.[2, 3] We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

---

[1] US 6,123,743 A, issued September 26, 2000 ("Carman").
[2] US 2005/0031811 A1, published February 10, 2005 ("Mehan").
[3] Claims 8–15 and 17–19 are also pending but have been withdrawn from consideration.

Independent claim 1 is reproduced below from the Claims Appendix of the Appeal Brief dated February 4, 2014 ("App. Br."). The limitations at issue are italicized.

> 1. A process for producing a porous catalyst support, the process comprising:
>
> a) preparing a precursor for a catalyst support, the precursor comprising an admixture of an alpha alumina and/or a transition alumina; a binder; *a blowing agent comprising thermoplastic shells encapsulating a hydrocarbon*; and water;
>
> b) molding said precursor into a structure;
>
> c) *heating said structure for a sufficient time and at a sufficient temperature to expand and propel the hydrocarbon in said blowing agent to form a porous structure*, and
>
> d) heating said porous structure for a sufficient time and at a sufficient temperature to fuse said porous structure to form said porous catalyst support.

App. Br. 17.

B. DISCUSSION

Carman discloses a bonded sol-gel alumina abrasive product comprising alumina abrasive particles held together by a glass-ceramic bond material. Carman, col. 2, ll. 34–36. According to the process disclosed in Carman, glass powder is mixed with the abrasive in the requisite proportions along with any temporary binders, plasticizers, and the like. The mixture is then formed into a bonded abrasive product using conventional equipment. Carman, col. 4, ll. 18–22. Carman discloses that in some cases, the desired porosity of the abrasive composite is supplied by sacrificial components, blowing agents, or the like. Carman, col. 4, ll. 48–50.

The Examiner finds, and the Appellant does not dispute, that Carman teaches a process temperature of about 1000–1100°C. According to the Examiner,

"the temperature of the material would be brought to the process temperature, and before the temperature of the composition reached 1000–1100 C (i.e., process temperature) the blowing agent would have gassed the composition to form a porous structure." Ans. 2.[4]

Although Carman teaches the use of a blowing agent, the Examiner finds "Carman does not teach the use of the claimed blowing agent." Ans. 3. Turning to Mehan, the Examiner finds "Mehan teaches that as blowing agents[,] microballoons (polymeric shells made of thermoplastic) that encapsulate a heat activated chemical compound (paragraphs 0017 and 0020) are known, where the heat activated compound may be a hydrocarbon based liquid such as isopentane or isobutene (paragraph 0022)." Ans. 3; *see also* Mehan ¶ 24 ("One preferred encapsulated blowing agent is Expancel™ polymeric microballoons, available from Expancel, Inc.").[5] The Examiner concludes that it would have been obvious to one of ordinary skill in the art to use the microballoons disclosed in Mehan as the blowing agent in the process of Carman. Ans. 3.

The Appellant argues that "no motivation is provided by the cited references to one skilled in the art to combine the references as proposed by the Examiner." App. Br. 6 (emphasis omitted). More specifically, the Appellant argues:

> As claimed, to function as blowing agents, the thermoplastic shells need to expand and propel the hydrocarbon that is encapsulated to form a porous structure. By necessity, the only manner by which a gas from inside the encapsulated blowing agent can be propelled to form a porous structure is by the thermoplastic shells rupturing, i.e.,

---

[4] Examiner's Answer dated April 22, 2014.

[5] The Appellant discloses that examples of expandable microspheres include "Expancel.RTM. micro spheres, commercially available from Expancel, Stockviksverken, Sweden." Spec. 9, ll. 11–14. On this record, "microspheres" and "microballoons" have been used interchangeably.

> bursting open in order for the hydrocarbon to be released. Claim 1 explicitly requires in step (c) that the precursor containing the encapsulated blowing agent is heated for a sufficient time and sufficient temperature to expand and propel the hydrocarbon in the encapsulated blowing agent to form a porous structure.

App. Br. 7 (emphasis omitted).

The Appellant argues that Mehan "does not teach or suggest that the polymeric shells are used as blowing agents in the manner claimed, i.e., by propelling a gas to form a porous structure." App. Br. 7. Rather, the Appellant argues that Mehan "consistently teaches only expanding the polymeric shells with explicit indications to prevent their rupture." App. Br. 7 (emphasis omitted). The Appellant argues that the expanded polymeric shells or microspheres in Mehan create a gas pocket that forms a non-porous foam. App. Br. 12.

In response, the Examiner explains that "Mehan was not used to show what is porous or not porous, but was only used to show what was a known blowing agent at the time of invention." Ans. 6. The Examiner finds, and the Appellant does not dispute, that "those skilled in the art would understand the conditions under which the microballoons may rupture, and would understand that under certain conditions this would be desired." Ans. 5. Clearly, one of ordinary skill in the art would have understood that rupturing the microballoons of Mehan to form a porous structure would have been desirable in Carman. *See* Carman, col. 4, ll. 48–50 (disclosing that the desired porosity may be supplied by blowing agents).

On this record, the Appellant has not directed us to any credible evidence showing that, at the time of the Appellant's invention, one of ordinary skill in the art would not have known that the microballoons disclosed in Mehan were capable

of rupturing under the conditions disclosed in Carman,[6] thereby forming a porous structure. Moreover, the Appellant has not directed us to any credible evidence showing that the porous structure formed under the conditions disclosed in Carman would not have been suitable for its intended use. Thus, the mere fact that Mehan uses the disclosed microballoons to form a non-porous foam is not sufficient to show reversible error in the Examiner's conclusion of obviousness.

For the reasons set forth above and reasons provided in the Examiner's Answer, the § 103(a) rejection of claims 1 and 5–7 is sustained.

C. DECISION

The decision of the Examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1).

AFFIRMED

[6] The process temperature disclosed in Carman (i.e., "1000° C. to 1100° C.") overlaps the process temperature disclosed in the Appellant's Specification (i.e., "higher than 1000 DC"). Carman, col. 3, ll. 2–3; Spec. 12, ll. 7–8; *see also* Reply Brief dated June 19, 2014, at 10 ("the instant invention employs calcination temperatures of above 1000°C, which would, without a doubt, result in rupture of the blowing agent and propelling of gas therefrom (page 11, bottom, to page 12, line 11 of the application as filed)").