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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/074,575	08/01/2018	David James WHITEMAN	07812.0196-00000	1247

22852 7590 08/03/2022

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EXAMINER
BERNS, DANIEL J

ART UNIT	PAPER NUMBER
1736	

NOTIFICATION DATE	DELIVERY MODE
08/03/2022	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte DAVID JAMES WHITEMAN,
CRAIG PORTER, and SABINE GOMILA

Appeal 2021-003736
Application 16/074,575
Technology Center 1700

Before MICHAEL P. COLAIANNI, DEBRA L. DENNETT, and SHELDON M. McGEE, *Administrative Patent Judges*.

COLAIANNI, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant[1] appeals under 35 U.S.C. § 134 the final rejection of claims 1–8, 19, and 20. Claims 10–18 are pending but have been withdrawn from consideration by the Examiner (Appeal Br. 6). We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6(b).

We REVERSE.

Appellant's invention is directed to inorganic particulate materials for use in polymeric films (Spec. 1:25). The Specification describes that the

[1] "Appellant" refers to "applicant" as defined in 37 C.F.R. § 1.42 (2022). Appellant identifies the real party in interest as ImerTech SAS (Appeal Br. 3).

nature and amount of inorganic particulate material influences film properties, such as pore size, strength, thickness, and flexibility (Spec. 2:4–6). Decreasing the particle size of inorganic particulate material allows for production of thinner films, but is said to be associated with increased tension in melts and the likelihood of hole development (Spec. 2:7–13). The Specification describes that use of decreased particle sizes has also been tied to processing issues, such as increased viscosity and swelling (Spec. 2:15–19). Appellant sought to resolve these problems associated with polymeric film production by purportedly identifying specific inorganic material particle sizes and percentages that optimize production (Appeal Br. 7).

Claim 1 is illustrative (emphasis added):

> 1. An inorganic particulate material comprising:
> equal to or more than about 3 ppm of particles having a particle size equal to or greater than about 25 μm,
> *equal to or less than about 40 wt% of particles smaller than about 0.75 μm*,
> having a d98 less than about 11 μm, and
> *wherein the % of particles smaller than 0.5 μm is equal to or less than about 25 wt%.*

Appellant appeals the following rejections:

1. Claims 1–5, 7, 8, 19, and 20 are rejected under 35 U.S.C. § 103 as unpatentable over Calhoun et al. (WO 01/85832 A2, published Nov. 15, 2001, "Calhoun").

2. Claim 6 is rejected under 35 U.S.C. § 103 as unpatentable over Calhoun and further in view of Rainer et al. (US 8,647,597 B1, issued Feb. 11, 2014).

FINDINGS OF FACT & ANALYSIS

We review the appealed rejections for reversible error based on the arguments and evidence presented by Appellant. 37 C.F.R. § 41.37(c)(1)(iv) (2022); *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential) *cited with approval in In re Jung*, 637 F.3d 1356, 1365 (Fed. Cir. 2011) (explaining that even if the Examiner had failed to make a prima facie case, "it has long been the Board's practice to require an applicant to identify the alleged error in the examiner's rejections").

Rejection (1)

Appellant argues the subject matter of claims 1 and 8 only (Appeal Br. 7). To resolve the present appeal, we need only focus on sole independent claim 1.

The Examiner's findings and conclusions regarding Calhoun are located on pages 4–5 of the Final Office Action. The Examiner finds, *inter alia*, Calhoun teaches an inorganic particulate material having "a preferred mean particle size (i.e. d_{50}, defined as "the particle size value less than about which there are 50% by weight of the particles") of ~0.8–3μm . . . , implying or at least suggesting that the claimed wt% of <~0.75μm particles is met." (Final Act. 4). The Examiner determines that it would have been obvious to one of ordinary skill in the art at the time of the invention "to adjust the particles' size (either by removing undesirably-sized particles and/or agglomerates, grinding too large particles/agglomerates, and/or agglomerating too small particles), . . . to meet the claimed wt% of <~0.75μm particles (Final Act. 5).

Appellant argues that the Examiner has not established that the cited reference discloses or suggests "[a]n inorganic particulate material

comprising . . . equal to or less than about 40 wt% of particles smaller than about 0.75 μm" (Appeal Br. 9). Appellant argues that Calhoun is also deficient for failing to teach or suggest "[a]n inorganic particulate material comprising . . . [a] % of particles smaller than 0.5 μm []equal to or less than about 25 wt%" (Appeal Br. 8).

In response, the Examiner reiterates that Calhoun's disclosure of an inorganic particulate material having a d_{50} of ~0.8–3μm implies or least suggests that "the claimed wt% of <~0.75μm particles [in claim l] is met . . . (herein [the] '40/0.75 limitation')" (Ans. 6). Based on this finding, the Examiner extrapolates that Calhoun's disclosure further meets "the claimed limitation of ≤ ~25 wt% of particles being < 0.5 μm (herein [the] '25/0.5 limitation') with equal or even greater force since the 25/0.5 limitation is a subset of (i.e. smaller portion within) the 40/0.75 limitation" (Ans. 6).

Appellant argues, with respect to the so-called 40/0.75 limitation, that Calhoun "says *nothing* about a *particular percentage* of particles smaller than about 0.75 μm, as claimed" (Appeal Br. 9). Appellant argues that the Examiner has created "a convoluted hypothetical in which '≤40wt% of [Calhoun's] particles could be of <0.75 μm while the 'rest' of the 50wt% of [Calhoun's] particles smaller than ~0.8–3 μm could be between 0.75–0.80 μm" (Appeal Br. 9 (citing Final Act. 2–3)). Appellant contends that "Calhoun provides *no* teaching or suggestion of this hypothetical particle distribution" (Appeal Br. 9).

Appellant argues, regarding the so-called 25/0.5 limitation, that Calhoun's d_{50} "value of 0.8 μm to 3 μm does not teach or suggest keeping 25 wt% or less of particles below 0.5 μm" (Reply Br. 2).

Appellant's arguments are persuasive.

The Examiner carries the initial burden of establishing a prima facie case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). We agree with Appellant that Calhoun's d_{50} value of 0.8–3 μm neither discloses nor suggests anything about the particular percentage of particles smaller than about 0.75 μm or smaller than 0.5 μm (Reply Br. 2–4). As Appellant argues (Reply Br. 4), the Examiner's finding that Calhoun "show[s] that the claimed limitation was encompassed or at least overlapped" (Final Act. 9) by the prior art does not establish what weight percentage of Calhoun's particles would have been smaller than the claimed particle sizes. *See In re Warner*, 379 F.2d 1011, 1017 (CCPA 1967) ("A rejection based on section 103 clearly must rest on a factual basis . . . .").

At best, Calhoun describes a preferred particulate product size distribution where 50% by weight of the particles are less than about 0.8–3 μm (Calhoun 10). The Examiner's reasoning is conclusory because it is challenged by Appellant and the Examiner assumes without providing sufficient evidence that Calhoun's preferred particulate product having a d_{50} of 0.8–3 μm contains "smaller portion[s] within" the product, which meet the claimed particulate product size distributions (Ans. 6). In this case, the Examiner has not carried the initial burden of establishing a prima facie case of obviousness. Rather, the Examiner's findings appear to be based on impermissible hindsight.

We reverse the Examiner's § 103 rejection (1) based on Calhoun.

Rejection (2)

This rejection relies on Calhoun to teach or suggest the claimed inorganic particulate material comprising equal to or less than about: (i) 40 wt% of particles smaller than about 0.75 μm and (ii) 25 wt% of particles

smaller than 0.5 μm (Final Act. 4–5; Ans. 6–9). These are the same flawed findings discussed above in the context of rejection (1). The Examiner has not shown that Calhoun teaches or suggests that a particulate product having a d_{50} of 0.8–3 μm contains "subset[s]," which meet the claimed particulate product size distributions (Ans. 6). Therefore, the Examiner reversibly erred in determining that it would have been obvious to one of ordinary skill in the art at the time of the invention to adjust the size of Calhoun's particles to meet the claimed particulate product size distributions (Final Act. 5). The Examiner has not satisfied the initial burden of establishing a prima facie case of obviousness. *Oetiker*, 977 F.2d at 1445.

We reverse the Examiner's § 103 rejection (2).

DECISION SUMMARY

In summary:

Claim(s) Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1–5, 7, 8, 19, 20	103	Calhoun		1–5, 7, 8, 19, 20
6	103	Calhoun, Rainer		6
Overall Outcome				1–8, 19, 20

REVERSED