

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte BENJAMIN M. SHAW

Appeal 2009-001635
Application 10/986,503¹
Technology Center 1700

Decided:² June 30, 2009

Before JEFFREY T. SMITH, LINDA M. GAUDETTE, and
MARK NAGUMO, *Administrative Patent Judges*.

NAGUMO, *Administrative Patent Judge*.

DECISION ON APPEAL

¹ Application 10/986,503, *Method for Polymerizing Olefins in a Gas Phase Reactor Using a Seedbed During Start-Up*, filed 10 November 2004. The specification is referred to as the “503 Specification,” and is cited as “Spec.” The real party in interest is listed as Chevron Phillips Chemical Company, LP. (Appeal Brief, filed 6 February 2008 (“Br.”), 3.)

² The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the Decided Date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

A. Introduction

Benjamin M. Shaw (“Shaw”) timely appeals under 35 U.S.C. § 134(a) from the final rejection³ of claims 1-20.⁴ We have jurisdiction under 35 U.S.C. § 6. We REVERSE.

The subject matter on appeal relates to a process of olefin polymerization during the “start up” phase in a seedbed reactor. The appealed process is said to avoid agglomeration or sheeting of polymer on the reactor walls.

According to the 503 Specification, the polymerization of olefins in a fluidized bed reactor occurs in a seedbed in the presence of a catalyst. A seedbed is said to be a bed of polymer particles that is fluidized by passage of gaseous monomers and optionally an inert non-condensable gas such as nitrogen, which can be added to increase the dew point of the feed gas composition. (Spec. 5, ¶ [0014].) The 503 Specification teaches further that under certain conditions, e.g., when the polymerization temperature is close to the sintering temperature—the temperature at which agglomerates of polymer start to form—polymer in the form of agglomerates and sheets may accumulate on the walls of the reactor. (*Id.* at 2-3, ¶ [0003].) The result of such accumulations is said to include loss of production, unreliable operation, and unsafe operating conditions. (*Id.* at 3, ¶ [0004].) The claimed method is said to avoid these problems by controlling the amount of

³ Office action mailed 26 September 2007 (“Final Rejection”; cited as “FR”).

⁴ Claim 21, the only other pending claim, has been withdrawn from consideration.

(polymerizable) hydrocarbon absorbed in the polymer seedbed. (*Id.*
at ¶ [0005].)

Representative Claim 1 is reproduced from the Claims Appendix to
the Principal Brief on Appeal:

1. A method for startup of a gas phase polymerization reactor,
wherein startup comprises the time prior to reaching target
reaction conditions, the method comprising:

beginning the startup at initial operating parameters, and
controlling an amount of *polymerizable* hydrocarbon
absorbed in a polymer seedbed during startup such that
the amount is less than a critical amount of hydrocarbon,
whereby

an undesirable degree of agglomeration or sheeting
on an interior wall of the reactor is avoided during
startup.

(Claims App., Br. 14; indentation, paragraphing, and emphasis added.)

The Examiner has maintained the rejection⁵ of claims 1-20 under
35 U.S.C. § 103(a) in view of the teachings of Abe.⁶

The issue dispositive of this appeal is whether, as Shaw contends, the
Examiner erred in interpreting the term “polymerizable hydrocarbon” as
reading on saturated compounds, such as the “saturated aliphatic
hydrocarbon” that is introduced and controlled in the polymerization
processes taught by Abe.

⁵ Examiner’s Answer mailed 25 April 2008. (“Ans.”).

⁶ Shinji Abe et al., *Processes for Producing Polyolefin Composition*, U.S.
Patent 6,472,484 B1 (2002).

B. Discussion

It is well established that “the PTO applies to the verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant’s specification.” *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997).

Findings of fact throughout this Opinion are supported by a preponderance of the evidence of record.

Abe describes a process of copolymerizing ethylene and α -olefins in two gas phase fluidized bed reactors arranged in series, in which a saturated aliphatic hydrocarbon is preset at a concentration C_1 in the first reactor and at a concentration C_2 in the second reactor. (Abe, col. 2, ll. 13-28.) The method is said to prevent sheeting in the reactor, as well as producing polyolefin stably with high productivity. (Abe, col. 22, ll. 48-50.)

According to the Examiner, the only differences between the claimed invention and processes described by Abe lie in the absence of characterization of the process as involving “starting up” and the avoidance of forming agglomerates or sheeting on an interior wall of the reactor. (Ans. 5, 2d paragraph.) The Examiner argues in the Response to Argument section of the Examiner’s Answer, that saturated aliphatic hydrocarbons are “polymerizable hydrocarbon” compounds because they can participate in grafting copolymerization. (*Id.* at 10, first paragraph.) However, the Examiner has not directed our attention to any credible evidence in

the 503 Specification or in the record on appeal that supports the proposition that persons having ordinary skill in the art would have understood the term “polymerizable hydrocarbon,” as used in the claims on appeal, to include “saturated compounds such as polyolefin waxes or polyolefins” (Ans. 10, first full paragraph). While it is true that, under some conditions, such saturated compounds “can still participate in grafting copolymerization, where the C-H bond can be broken to initiate or participate in a polymerization process” (*id.*), the Examiner has failed to show that processes described by Abe are conducted under such conditions. Nor, as Shaw argues (Reply Br.⁷ 7-8), has the Examiner come forward with any credible evidence that persons having ordinary skill in the art would have expected that saturated hydrocarbons would behave as polymerizable hydrocarbons under the fluid bed polymerizations described and claimed by Shaw.

Although the construction of a claim in a patent is subject to different standards from the interpretation of a claim in an application, recent remarks of our reviewing court are pertinent to the interpretation of the claims in this appeal:

What *Phillips* now counsels is that in the absence of something in the written description and/or prosecution history to provide explicit or implicit notice to the public—i.e., those of ordinary skill in the art—that the inventor intended a disputed term to cover more than the ordinary and customary meaning revealed by the context of the intrinsic record, *it is improper to read the term to encompass a broader definition simply because it may be found in a dictionary, treatise, or other extrinsic source.*

⁷ Reply Brief filed 25 June 2008, cited as “Reply Br.”

Nystrom v. Trex Co., Inc., 424 F.3d 1136, 1145 (Fed. Cir. 2007) (r'hg and r'hg en banc denied) (*citing Phillips v. AWH Corp.*, 415 F.3d 1303, 1321 (Fed. Cir. 2005))(emphasis added). The Examiner's position may have had some force with respect claim 1 as originally presented, which referred to "the amount of hydrocarbon absorbed in a polymer seedbed during startup" (Spec. 21). That force was vitiated, however, upon amendment of the limitation "hydrocarbon adsorbed" to "polymerizable hydrocarbon adsorbed" (Amendment filed 15 November 2006). The Examiner failed to establish a satisfactory basis for rejection of the amended claims.

The Examiner argues further, in the Response to Arguments section of the Answer, that

appellants fail to recognize that the controlling system of Abe et al. control both the saturated hydrocarbon and the monomers to be absorbed by the polymer seeds, since both the saturated hydrocarbon (C_1) and the monomers (unsaturated or polymerizable hydrocarbons) (C_2) are competing with each other to be absorbed into the polymer seeds.

(Ans. 10, second paragraph.) As Shaw points, Abe uses the term " C_2 " to refer to the concentration of a saturated aliphatic hydrocarbon in a reactor of a second stage, whereas the term " C_1 " refers to the concentration of a saturated aliphatic hydrocarbon in a reactor of the first stage. (Reply Br. 8-9, quoting Abe, col. 7, ll. 20-26.) Thus, the Examiner's analysis is not only belated, but is also based on misapprehensions and misapplications of the teachings of Abe.

The rejections of the remaining claims build on, but do nothing to cure, the fundamental flaw in the rejection of claim 1. We therefore decline to analyze their strengths and weaknesses as they cannot alter the disposition of the appeal of claim 1.

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C. Order

We REVERSE the rejection of claims 1-20 under 35 U.S.C. § 103(a) in view of the teachings of Abe.

REVERSED

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