

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

In re David Buszard, Matthew D. Phillips, Richard S. Rose and
Stephen B. Falloon

In re David Buszard, Matthew D. Phillips, Richard S. Rose & Stephen B. Falloon, 504 F.3d 1364 (Fed. Cir.
2007) · No. 2006-1489 · Decided September 27, 2007

SUMMARY

The United States Court of Appeals for the Federal Circuit reviewed a Board of Patent Appeals and Interferences decision holding patent application claims anticipated under 35 U.S.C. § 102. The court held that a reaction mixture producing flexible polyurethane foam could not reasonably be construed to include a rigid-foam mixture whose product was later mechanically crushed. The court reversed and remanded for further examination, with Judge Prost dissenting.

CASE DETAILS

COURT	United States Court of Appeals for the Federal Circuit
WRITING FOR THE COURT	Pauline Newman; Daniel M. Friedman; Sharon Prost
JURISDICTION	Federal
DECIDED	September 27, 2007
DOCKET	2006-1489
DISPOSITION	reversed_and_remanded
PROCEDURAL POSTURE	Patent applicants appealed the Board of Patent Appeals and Interferences' decision holding all claims in their application unpatentable for anticipation under 35 U.S.C. § 102.
STANDARD OF REVIEW	Under the Administrative Procedure Act, the Board's factual findings are reviewed for substantial evidence and its legal conclusions for correctness in law. The Board's claim interpretation during patent prosecution is reviewed for reasonableness under the broadest reasonable interpretation standard.
PRECEDENTIAL VALUE	published precedential Federal Circuit opinion
PARTIES	David Buszard, Matthew D. Phillips, Richard S. Rose, Stephen B. Falloon v. Director of the United States Patent and Trademark Office

TOPICS

patent prosecution

patent law

administrative procedure act

judicial review of agency action

appellate procedure

PRACTICE AREAS

patent law

patent prosecution

administrative law

appellate procedure

QUESTIONS PRESENTED

1. Whether the Eling reference disclosed every limitation of the applicants' claims, including a flexible polyurethane foam reaction mixture, so as to anticipate the claims under 35 U.S.C. § 102.
2. Whether the Board's broad construction of flexible polyurethane foam reaction mixture as any reaction mixture that ultimately produces a flexible polyurethane foam was reasonable during patent examination.

HOLDINGS

1. Eling did not anticipate the claims because it disclosed a rigid polyurethane foam reaction mixture that produced a rigid foam, which was later mechanically crushed, rather than a flexible polyurethane foam reaction mixture.
2. The Board's construction equating a flexible polyurethane foam reaction mixture with any mixture that ultimately produces a flexible foam was not reasonable because it improperly equated a rigid-foam reaction mixture with a flexible-foam reaction mixture.
3. PTO tribunal decisions are reviewed under the Administrative Procedure Act, with factual findings reviewed for substantial evidence and legal conclusions reviewed for correctness in law.

KEY QUOTATIONS

"A rejection for anticipation under section 102 requires that each and every limitation of the claimed invention be disclosed in a single prior art reference." (504 F.3d at 1366)

"No matter how broadly "flexible foam reaction mixture" is construed, it is not a rigid foam reaction mixture." (504 F.3d at 1367)

"We agree with Buszard that it is not a reasonable claim interpretation to equate "flexible" with "rigid," or to equate a crushed rigid polyurethane foam with a flexible polyurethane foam." (504 F.3d at 1367)

FACTUAL BACKGROUND

The applicants' patent application claimed a flame-retardant composition containing a dialkyl tetrahalophthalate ester, a phosphorus-containing flame retardant, and a flexible polyurethane foam reaction mixture, as well as a flexible foamed article made from that composition. The Board found the claims anticipated by the Eling patent, which disclosed making a rigid polyurethane foam and then producing a flexible foam by mechanically crushing the rigid foam. The Federal Circuit concluded that Eling disclosed a rigid-foam reaction mixture and did not disclose the claimed flexible polyurethane foam reaction mixture.

PROCEDURAL HISTORY

The PTO examiner rejected the claims for anticipation, and the Board affirmed, construing the claimed flexible polyurethane foam reaction mixture broadly enough to encompass the Eling reference. The Federal Circuit reviewed the Board's decision and reversed the anticipation determination, remanding for completion of examination.

DISPOSITION

reversed_and_remanded

REMAND INSTRUCTIONS

The case was remanded to the PTO for completion of examination and appropriate further proceedings.

CASES CITED

- Dickinson v. Zurko, 527 U.S. 150, 165 (1999)
- In re Gartside, 203 F.3d 1305, 1312 (Fed. Cir. 2000)
- In re Paulsen, 30 F.3d 1475, 1478-79 (Fed. Cir. 1994)
- Karsten Manufacturing Corp. v. Cleveland Golf Co., 242 F.3d 1376, 1383 (Fed. Cir. 2001)
- In re Yamamoto, 740 F.2d 1569, 1571-72 (Fed. Cir. 1984)
- In re Zletz, 893 F.2d 319, 321-22 (Fed. Cir. 1989)
- In re Am. Acad. of Sci. Tech Ctr., 367 F.3d 1359, 1364 (Fed. Cir. 2004)
- In re Morris, 127 F.3d 1048, 1053-56 (Fed. Cir. 1997)
- In re Crish, 393 F.3d 1253, 1256 (Fed. Cir. 2004)
- In re Bigio, 381 F.3d 1320, 1324 (Fed. Cir. 2004)
- In re Hyatt, 211 F.3d 1367, 1372-73 (Fed. Cir. 2000)
- Phillips v. AWH Corp., 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (en banc)

OPINION

PER CURIAM.

504 F.3d 1364 (2007) In re David BUSZARD, Matthew D. Phillips, Richard S. Rose and Stephen B. Falloon. No. 2006-1489. Serial No. 10/429,429. United States Court of Appeals, Federal Circuit. September 27, 2007. *1365 Thomas A. Ladd, Baker & Daniels LLP, of Indianapolis, IN, argued for appellants. Shannon M. Hansen, Associate Solicitor, Office of the Solicitor, United States Patent and Trademark Office, of Arlington, VA, argued for the director of the United States Patent and Trademark Office.

With her on the brief were John M. Whealan, Solicitor, and Heather F. Auyang, Associate Solicitor. Before NEWMAN, Circuit Judge, FRIEDMAN, Senior Circuit Judge, and PROST,

Circuit Judge. Opinion for the court filed by Circuit Judge NEWMAN. Dissenting opinion filed by Circuit Judge PROST. NEWMAN, Circuit Judge. Patent applicants David Buszard, Matthew D. Phillips, Richard S. Rose and Stephen B. Falloon (together "Buszard") seek review of the decision of the Board of Patent Appeals and Interferences[1] holding all of the claims in the patent application unpatentable on the ground of anticipation, 35 U.S.C. § 102.

We reverse the Board's decision as to anticipation and remand for completion of examination. BACKGROUND Buszard's patent application, Serial No. 10/429,429, is directed to a flame retardant composition that produces a flexible polyurethane foam, and the flexible foamed article made from that composition. Claims 1 and 13 were treated as representative: 1. A flame retardant composition comprising: a dialkyl tetrahalophthalate ester; a phosphorus-containing flame retardant having at least about 5 wt.% phosphorus, and a flexible polyurethane foam reaction mixture.

13. A flexible foamed article made from the flame retardant composition of claim 1. The Board held that the claims are anticipated by a patent to Eling et al. entitled "Process for making rigid and flexible polyurethane foams."

The relevant content of the Eling reference is fairly summarized in Eling's claims 1 and 2: 1. Process for preparing a rigid foam by reacting a polyisocyanate (1), an isocyanate-reactive compound (2), said compound (2) having an average equivalent weight of at most 374 and an average number of isocyanate-reactive hydrogen atoms of from 2 to 8, an isocyanate-reactive compound (3), said compound (3) having an average equivalent weight of more than 374 and an average number of isocyanate-reactive hydrogen atoms of from 2 to 6 and water in the presence of a catalyst and in the presence of a fire retardant.... *1366 2.

Process for preparing a flexible foam by crushing the rigid foam prepared according to the process according to claim 1. Thus Eling prepares both a rigid foam and a flexible foam; the rigid foam is produced by the chemical reaction of compounds that form a rigid foam, and Eling's flexible foam is produced by crushing the rigid foam.

In contrast, Buszard's flexible foam is produced by the chemical reaction of compounds that directly form a flexible foam, and do not produce a rigid foam. The Board held Buszard's claims to be anticipated "because the appellants' claimed reaction mixture includes any reaction mixture which produces, at least ultimately, a flexible polyurethane foam." Buszard appeals, arguing that his claims explicitly state the requirement of a "flexible polyurethane foam reaction mixture," and that this claim element is not shown in the Eling reference, thereby negating "anticipation."

DISCUSSION Decisions of the PTO tribunals are reviewed in accordance with the standards of the Administrative Procedure Act. See Dickinson v. Zurko, 527 U.S. 150, 165, 119 S.Ct. 1816, 144

L.Ed.2d 143 (1999) (applying the Administrative Procedure Act, 5 U.S.C. § 706, to appeals of PTO rulings).

Thus the Board's factual findings are reviewed to determine whether they are unsupported by substantial evidence, and the Board's legal conclusions are reviewed for correctness in law. See *In re Gartside*, 203 F.3d 1305, 1312 (Fed. Cir.2000). "A rejection for anticipation under section 102 requires that each and every limitation of the claimed invention be disclosed in a single prior art reference."

In re Paulsen, 30 F.3d 1475, 1478-79 (Fed. Cir.1994); see *Karsten Manufacturing Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383 (Fed.Cir.2001) ("Invalidity on the ground of 'anticipation' requires lack of novelty of the invention as claimed.... that is, all of the elements and limitations of the claim must be shown in a single prior reference, arranged as in the claim.").

Buszard argues that the Eling reference shows only a rigid polyurethane foam which when mechanically crushed loses its rigidity because it is in small particles. Buszard states that the Eling rigid foam product is chemically different from a flexible polyurethane foam that is directly produced by polymerization, without crushing, and that this difference is readily understood by a person of ordinary skill in the field of polyurethane foams.

Thus Buszard states that the flexible foam mixture required by his claims is different in kind from the rigid foam mixture described by Eling, whether or not Eling's product is subsequently crushed into small particles.

The PTO states that Buszard's claims, when given their broadest interpretation, read on the Eling product and thus are anticipated by Eling. Buszard states that this interpretation is devoid of support, even when viewed in accordance with the protocols of patent examination. During examination, the patent application claims may be given their broadest interpretation consistent with the specification, in order to facilitate sharpening and clarifying the claims at the application stage.

In re Yamamoto, 740 F.2d 1569, 1571 (Fed.Cir.1984) ("The PTO broadly interprets claims during examination of a patent application since the applicant may 'amend his claims to obtain protection commensurate with his actual contribution to the art.'") (citation omitted).

Thus the patent examiner and the applicant, in the *1367 give and take of rejection and response, work toward defining the metes and bounds of the invention to be patented. See *In re Zletz*, 893 F.2d 319, 321-22 (Fed. Cir.1989) (the broadest reasonable construction of claims during examination serves to target ambiguities in claims at the time when the claims are readily amended).

As explained in *Zletz*: "An essential purpose of patent examination is to fashion claims that are precise, clear, correct, and unambiguous. Only in this way can uncertainties of claim scope be removed, as much as possible, during the administrative process." *Id.* at 322. Buszard argues that the Board's construction of the claims to read on and thus be anticipated by Eling's crushed solid foam is not reasonable.

The Board interpreted the claim term "flexible polyurethane foam reaction mixture" to mean "any reaction mixture which produces, at least ultimately, a flexible polyurethane foam." Buszard states that persons experienced in the field of polyurethane foams know that a flexible polyurethane foam reaction mixture is different from a rigid polyurethane foam reaction mixture, and that this process limitation cannot be found in Eling, no matter how broadly that reference is read.

The PTO Solicitor agreed, at the argument of this appeal, that the flexibility or rigidity of foamed polyurethane depends on the composition of the reaction mixture, which controls the degree of chemical cross-linking and thus the flexibility of the polymer.

The Solicitor agreed that a person of ordinary skill in the field of polyurethane foams knows that a flexible foam and a rigid foam have different chemical structures and are produced from different chemical reactants. Nonetheless, the Solicitor argued that the rejection should be sustained simply because the examiner is entitled to give claims their broadest reasonable interpretation during examination.

Buszard responded that the examiner's interpretation is not reasonable, as a matter of well-known chemistry, for flexible foam reaction mixtures are different from rigid foam reaction mixtures, and one does not encompass the other.

The Solicitor proposed at oral argument that when a rigid foam is mechanically crushed, the chemical bonds are broken and the product is the same as the flexible product of a flexible foam reaction mixture. There was no rejection on this ground, there is no evidence or argument to this effect in the record, this theory was not mentioned by any examiner or in the Board's opinion, and it appears to be contrary to science.

This theory was proposed without support or citation, and without opportunity for Buszard to refute it. It is not sufficiently creditable to warrant further consideration. Buszard's specification and claims specifically state the requirement of a flexible polyurethane foam reaction mixture. No matter how broadly "flexible foam reaction mixture" is construed, it is not a rigid foam reaction mixture.

The Eling reference describes only a rigid foam reaction mixture that produces a rigid product. Only by mechanically crushing the rigid product into small particles is it rendered flexible, as a rock can be mechanically crushed to produce particles of sand. This description cannot reasonably

be construed to describe, and thus to "anticipate," the flexible foam product of a flexible foam reaction mixture.

We agree with Buszard that it is not a reasonable claim interpretation to equate "flexible" with "rigid," or to equate a crushed rigid polyurethane foam with a flexible polyurethane foam. The decision of the Board is reversed, and the case is remanded for appropriate further proceedings. REVERSED and REMANDED *1368 PROST, Circuit Judge, dissenting. Consistent with our case law, the United States Patent and Trademark Office ("PTO"), Board of Patent Appeals and Interferences ("Board") gave the claim term "flexible polyurethane foam reaction mixture" its broadest reasonable interpretation, construing it to include "any reaction mixture which produces, at least ultimately, a flexible polyurethane foam."

Under this construction, substantial evidence supports the Board's finding of anticipation. Because the majority fails to apply the rule that the Board is entitled to give claim language its broadest reasonable interpretation, I respectfully dissent. I As the majority opinion acknowledges, the Board does not engage in the same claim construction process during patent prosecution as a district court would in an infringement suit.

Instead, the Board gives claim language its broadest reasonable interpretation consistent with the specification. In *re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1364 (Fed.Cir. 2004); In *re Morris*, 127 F.3d 1048, 1053-54 (Fed.Cir.1997); In *re Zletz*, 893 F.2d 319, 321 (Fed.Cir.1989); In *re Yamamoto*, 740 F.2d 1569, 1571-72 (Fed.Cir.1984). This is because, unlike in an infringement suit, the applicant has a chance to amend the claims to more precisely convey his intended meaning.

Yamamoto, 740 F.2d at 1571; see also *Zletz*, 893 F.2d at 322 ("An essential purpose of patent examination is to fashion claims that are precise, clear, correct, and unambiguous. Only in this way can uncertainties of claim scope be removed, as much as possible, during the administrative process.").

In other words, unlike a district court in an infringement suit, there is no need for the Board (or this court) to engage in a complicated, in-depth claim construction analysis during patent prosecution. In infringement suits, courts take on the difficult task of analyzing the claim terms to ascertain the meaning the terms would have to a person of ordinary skill in the art as of the filing date of the patent application.

See *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed.Cir.2005) (en banc). Courts examine the claims, the specification, the prosecution history, and possibly extrinsic evidence all in an effort "to determine what the applicant regards as his invention." *Id.* at 1312, 1314-19 (quoting 35 U.S.C. § 112 ¶ 2).

In contrast, one need not engage in a guessing game during patent prosecution. If a claim term is ambiguous or confusing, the applicant can (and should) clarify it. Or, if an applicant wants a claim term to have a specific meaning, the applicant can either amend the claim to expressly convey the applicant's intended meaning or provide an express definition for the claim term in the specification.

See *Yamamoto*, 740 F.2d at 1571-72 (noting that an applicant can overcome a rejection by amending the claim language); *Morris*, 127 F.3d at 1054 (noting that the PTO must take into account definitions contained in the specification when interpreting claim language).

Accordingly, if the PTO rejects a claim because a broad construction renders the claim invalid as anticipated, the applicant can, for example, amend the claim to narrow its scope and, thus, overcome the rejection. In this way, interpreting claim language broadly during prosecution "serves the public interest by reducing the possibility that claims, finally allowed, will be given broader scope than is justified."

Yamamoto, 740 F.2d at 1571; see also *id.* ("The PTO broadly interprets claims during examination of a patent application since the applicant may `amend his claims to obtain protection commensurate with his actual contribution to the art.>"). *1369 Because the Board is entitled to give claim language its broadest reasonable interpretation, our precedent requires that our review of the Board's interpretation be limited to determining whether it was reasonable.

In re Crish, 393 F.3d 1253, 1256 (Fed.Cir.2004); *In re Bigio*, 381 F.3d 1320, 1324 (Fed.Cir.2004); *In re Hyatt*, 211 F.3d 1367, 1372-73 (Fed.Cir.2000); *Morris*, 127 F.3d at 1055. Although the majority opinion pays lip service to this precedent, it does not apply it in this case. II In this case, the only disputed issue is whether the Eling reference discloses a "flexible polyurethane foam reaction mixture" as required by Buszard's pending claims.

The Board construed this term to include "any reaction mixture which produces, at least ultimately, a flexible polyurethane foam." *In re Buszard*, No.XXXX-XXXX, 2006 WL 1665669, at *2 (Bd. Pat. App. & Int. Apr. 20, 2006). This construction encompasses mixtures that produce polyurethane foams that are made flexible upon crushing, such as the mixture disclosed in the Eling reference.

Accordingly, the Board concluded that Buszard's representative claims were anticipated by the Eling reference. *Id.* Because the Board must give claim language its broadest reasonable interpretation, I would affirm the Board's construction of "flexible polyurethane foam reaction mixture." Of course, had Buszard's specification provided a definition of the term "flexible polyurethane foam reaction mixture," the Board would have been required to give that term the definition recited in the specification.

See *Morris*, 127 F.3d at 1054. But Buszard's specification does not define this term. And the Board's interpretation, while broad, is not unreasonable. As explained by the Board, a broad construction is consistent with Buszard's specification: For example, the specification discloses in the last full sentence on page 7 that "[t]he flexible polyurethane foam compositions... according to the present invention include all well known, industrial compositions" (emphasis added).

Use of the term "all" supports the proposition that the aforementioned industrial compositions include the compositions of Eling. Additionally, in the sentence bridging pages 7 and 8 of the specification, [Buszard] disclose[s] that "flexible polyurethane foam compositions can be made according to the present invention by reacting an isocyanate with a polyol in the presence of a foam-forming agent and a blend of tetrahalophthalate esters and phosphorus-containing flame retardant additives."

Because these enumerated ingredients correspond fully to those taught by Eling, the claim interpretation [of "flexible polyurethane foam reaction mixture"] discussed earlier is consistent with this disclosure of [Buszard's] specification. *Buszard*, 2006 WL 1665669, at *2.

On appeal, Buszard alleges and the majority appears to agree that the term "flexible polyurethane foam reaction mixture" has a specific meaning to one of ordinary skill in the art. But neither Buszard's specification nor his briefs provide a definition. Indeed, he boldly asserts in his reply brief that he "suffer[s] no duty to define an art recognized term."

I disagree. For one thing, "[i]t is the applicant[s] burden to precisely define the invention, not the PTO's." *Morris*, 127 F.3d at 1056; see also 35 U.S.C. § 112 ¶ 2 ("The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.").

Moreover, although Buszard asserts *1370 that the term "flexible polyurethane foam reaction mixture" has a well-defined meaning to someone skilled in the art, not only has Buszard failed to provide any evidence to back up this assertion, his briefs also fail to tell us what that meaning is.

The only enlightenment Buszard provides regarding the meaning of "flexible polyurethane foam reaction mixture" is a single page from the Kirk-Othmer Encyclopedia of Chemical Technology, which generally describes the differences between "flexible foam" and "rigid foam." Nowhere in the record, however, is there any evidence regarding how a person of ordinary skill in the art would interpret the phrase "flexible polyurethane foam reaction mixture."

In oral argument, Buszard, for the first time, argued that the term "flexible polyurethane foam reaction mixture" should be interpreted to mean a mixture of ingredients that produces flexible foam upon polymerization, without a crushing step. Yet Buszard's claims do not specifically exclude a crushing step.^[1] Nor are his claims limited to chemical reactants that would produce flexible foam without a crushing step.

Buszard nevertheless urges us to engage in the same claim construction process that courts employ in an infringement suit. According to Buszard, we should interpret the disputed claim term narrowly in light of his specification, which describes mixtures of ingredients that produce flexible foam without a crushing step. Buszard also points out that the flexible foams described in his specification are consistent with the general description of "flexible foam" in the Kirk-Othmer Encyclopedia of Chemical Technology.

But whether Buszard can provide descriptions of flexible foam that he believes are consistent with his desired interpretation is beside the point. "Absent an express definition in [his] specification, the fact that [Buszard] can point to definitions or usages that conform to [his] interpretation does not make the PTO's definition unreasonable when the PTO can point to other sources that support its interpretation."

Morris, 127 F.3d at 1056. And in this case, the Board identified passages in Buszard's specification that support a broad interpretation. I would, therefore, affirm. III The majority concludes that Buszard's claims are not anticipated because flexible foam made from a mixture of ingredients that produces flexible foam upon polymerization (i.e., without a crushing step) is different from flexible foam made by first producing rigid foam and then crushing it.

That may be true,[2] but it is irrelevant. The relevant question is whether Buszard's claim language can reasonably be interpreted to include the mixture disclosed in the Eling reference, which is capable of producing a flexible polyurethane foam. It can.

Because a patent has not yet issued, Buszard has the ability to correct any ambiguities in his claim language. If Buszard seeks a specific claim interpretation, he *1371 should amend his claim so it conveys his intended meaning. NOTES [1] In re Buszard, No.XXXX-XXXX, 2006 WL 1665669 (Bd. Pat.App. & Int. Apr. 20, 2006).

[1] Indeed, as the Board noted, "an artisan would consider the flexible polyurethane foam disclosed by [Buszard] as resulting from certain steps (e.g., adding, mixing, heating, etc.), and [Buszard] point[s] to nothing in [his] claims which would have excluded from these steps the crushing step of Eling." Buszard, 2006 WL 1665669, at *2.

[2] It is noteworthy that, before the Board, Buszard "[did] not even present argument, much less evidence," that his flexible foam product differed from the flexible foam product disclosed in the Eling reference. Buszard, 2006 WL 1665669, at *1.

NEWMAN, J.

Opinion for the court filed by Circuit Judge NEWMAN. Dissenting opinion filed by Circuit Judge PROST. NEWMAN, Circuit Judge. Patent applicants David Buszard, Matthew D. Phillips, Richard S. Rose and Stephen B. Falloon (together "Buszard") seek review of the decision of the

Board of Patent Appeals and Interferences¹ holding all of the claims in the patent application unpatentable on the ground of anticipation, 35 U.S.C. § 102.

We reverse the Board's decision as to anticipation and remand for completion of examination. BACKGROUND Buszard's patent application, Serial No. 10/429,429, is directed to a flame retardant composition that produces a flexible polyurethane foam, and the flexible foamed article made from that composition. Claims 1 and 13 were treated as representative: 1. A flame retardant composition comprising: a dialkyl tetrahalophthalate ester; a phosphorus-containing flame retardant having at least about 5 wt.% phosphorus, and a flexible polyurethane foam reaction mixture.

13. A flexible foamed article made from the flame retardant composition of claim 1. The Board held that the claims are anticipated by a patent to Eling et al. entitled "Process for making rigid and flexible polyurethane foams." The relevant content of the Eling reference is fairly summarized in Eling's claims 1 and 2: 1. Process for preparing a rigid foam by reacting a polyisocyanate (1), an isocyanate-reactive compound (2), said compound (2) having an average equivalent weight of at most 374 and an average number of isocyanate-reactive hydrogen atoms of from 2 to 8, an isocyanate-reactive compound (3), said compound (3) having an average equivalent weight of more than 374 and an average number of isocyanate-reactive hydrogen atoms of from 2 to 6 and water in the presence of a catalyst and in the presence of a fire retardant.... *13662.

Process for preparing a flexible foam by crushing the rigid foam prepared according to the process according to claim 1. Thus Eling prepares both a rigid foam and a flexible foam; the rigid foam is produced by the chemical reaction of compounds that form a rigid foam, and Eling's flexible foam is produced by crushing the rigid foam.

In contrast, Buszard's flexible foam is produced by the chemical reaction of compounds that directly form a flexible foam, and do not produce a rigid foam. The Board held Buszard's claims to be anticipated "because the appellants' claimed reaction mixture includes any reaction mixture which produces, at least ultimately, a flexible polyurethane foam." Buszard appeals, arguing that his claims explicitly state the requirement of a "flexible polyurethane foam reaction mixture," and that this claim element is not shown in the Eling reference, thereby negating "anticipation." DISCUSSION Decisions of the PTO tribunals are reviewed in accordance with the standards of the Administrative Procedure Act.

See *Dickinson v. Zurko*, 527 U.S. 150, 165, 119 S.Ct. 1816, 144 L.Ed.2d 143 (1999) (applying the Administrative Procedure Act, 5 U.S.C. § 706, to appeals of PTO rulings). Thus the Board's factual findings are reviewed to determine whether they are unsupported by substantial evidence, and the Board's legal conclusions are reviewed for correctness in law. See *In re Gartside*, 203 F.3d 1305, 1312 (Fed.

Cir.2000). “A rejection for anticipation under section 102 requires that each and every limitation of the claimed invention be disclosed in a single prior art reference.” *In re Paulsen*, 30 F.3d 1475, 1478-79 (Fed. Cir.1994); see *Karsten Manufacturing Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383 (Fed.Cir.2001) (“Invalidity on the ground of ‘anticipation’ requires lack of novelty of the invention as claimed.... that is, all of the elements and limitations of the claim must be shown in a single prior reference, arranged as in the claim.”).

Buszard argues that the Eling reference shows only a rigid polyurethane foam which when mechanically crushed loses its rigidity because it is in small particles. Buszard states that the Eling rigid foam product is chemically different from a flexible polyurethane foam that is directly produced by polymerization, without crushing, and that this difference is readily understood by a person of ordinary skill in the field of polyurethane foams.

Thus Buszard states that the flexible foam mixture required by his claims is different in kind from the rigid foam mixture described by Eling, whether or not Eling’s product is subsequently crushed into small particles.

The PTO states that Buszard’s claims, when given their broadest interpretation, read on the Eling product and thus are anticipated by Eling. Buszard states that this interpretation is devoid of support, even when viewed in accordance with the protocols of patent examination. During examination, the patent application claims may be given their broadest interpretation consistent with the specification, in order to facilitate sharpening and clarifying the claims at the application stage.

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Thus the patent examiner and the applicant, in the *1367give and take of rejection and response, work toward defining the metes and bounds of the invention to be patented. See *In re Zletz*, 893 F.2d 319, 321-22 (Fed. Cir.1989) (the broadest reasonable construction of claims during examination serves to target ambiguities in claims at the time when the claims are readily amended).

As explained in *Zletz*: “An essential purpose of patent examination is to fashion claims that are precise, clear, correct, and unambiguous. Only in this way can uncertainties of claim scope be removed, as much as possible, during the administrative process.” *Id.* at 322. Buszard argues that the Board’s construction of the claims to read on and thus be anticipated by Eling’s crushed solid foam is not reasonable.

The Board interpreted the claim term “flexible polyurethane foam reaction mixture” to mean “any reaction mixture which produces, at least ultimately, a flexible polyurethane foam.” Buszard states

that persons experienced in the field of polyurethane foams know that a flexible polyurethane foam reaction mixture is different from a rigid polyurethane foam reaction mixture, and that this process limitation cannot be found in Eling, no matter how broadly that reference is read.

The PTO Solicitor agreed, at the argument of this appeal, that the flexibility or rigidity of foamed polyurethane depends on the composition of the reaction mixture, which controls the degree of chemical cross-linking and thus the flexibility of the polymer.

The Solicitor agreed that a person of ordinary skill in the field of polyurethane foams knows that a flexible foam and a rigid foam have different chemical structures and are produced from different chemical reactants. Nonetheless, the Solicitor argued that the rejection should be sustained simply because the examiner is entitled to give claims their broadest reasonable interpretation during examination.

Buszard responded that the examiner's interpretation is not reasonable, as a matter of well-known chemistry, for flexible foam reaction mixtures are different from rigid foam reaction mixtures, and one does not encompass the other.

The Solicitor proposed at oral argument that when a rigid foam is mechanically crushed, the chemical bonds are broken and the product is the same as the flexible product of a flexible foam reaction mixture. There was no rejection on this ground, there is no evidence or argument to this effect in the record, this theory was not mentioned by any examiner or in the Board's opinion, and it appears to be contrary to science.

This theory was proposed without support or citation, and without opportunity for Buszard to refute it. It is not sufficiently creditable to warrant further consideration. Buszard's specification and claims specifically state the requirement of a flexible polyurethane foam reaction mixture. No matter how broadly "flexible foam reaction mixture" is construed, it is not a rigid foam reaction mixture.

The Eling reference describes only a rigid foam reaction mixture that produces a rigid product. Only by mechanically crushing the rigid product into small particles is it rendered flexible, as a rock can be mechanically crushed to produce particles of sand. This description cannot reasonably be construed to describe, and thus to "anticipate," the flexible foam product of a flexible foam reaction mixture.

We agree with Buszard that it is not a reasonable claim interpretation to equate "flexible" with "rigid," or to equate a crushed rigid polyurethane foam with a flexible polyurethane foam. The decision of the Board is reversed, and the case is remanded for appropriate further proceedings. REVERSED and REMANDED.

In re Buszard, No.2006-1120, 2006 WL 1665669 (Bd. Pat.App. & Int. Apr. 20, 2006).

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