United States Court of Appeals for the Federal Circuit

GREENLIANT SYSTEMS, INC.,
Plaintiff-Appellee,

and

SILICON STORAGE TECHNOLOGY, INC.,
Plaintiff-Appellee,

v.

XICOR LLC,
Defendant-Appellant.

2011-1514

Appeal from the United States District Court for the Northern District of California in case no. 11-CV-0631, Judge Edward M. Chen.

Decided: August 22, 2012

JO DALE CAROTHERS, Covington & Burling LLP, of San Diego, California, argued for all plaintiffs-appellees. With him on the brief were ALAN H. BLANKENHEIMER, CHRISTOPHER J. LONGMAN and LESLI RAWLES GALLAGHER. Of counsel was IAN J. MILLER. Of counsel on the brief were RONALD L. YIN, MICHAEL G. SCHWARTZ and ERIK R.

FUEHRER, DLA Piper LLP, of East Palo Alto, California, for plaintiff-appellee Greenliant Systems, Inc.

JEFFREY R. BRAGALONE, Shore Chan Braglone DePumpo LLP, of Dallas, Texas, argued for defendant-appellant. With him on the brief were MICHAEL W. SHORE and CHRISTOPHER L. EVANS.

Before LINN, PLAGER, and DYK, *Circuit Judges*.

DYK, *Circuit Judge*.

Xicor LLC appeals a final judgment of the United States District Court for the Northern District of California granting a declaratory judgment in favor of Greenliant Systems, Inc. The district court entered the final judgment pursuant to the parties' agreement that the summary judgment order in *Silicon Storage Technology, Inc. v. Xicor LLC* ("*SST*"), 776 F. Supp. 2d 1072 (N.D. Cal. 2011), which held that claims 12 and 13 of reissued U.S. Patent No. RE38,370 ("the RE'370 patent") were invalid under the rule against recapture, "applies equally in this case and should be entered herein." *See Greenliant Systems, Inc. v. Xicor LLC*, No. 11-CV-0631, slip op. at 3 (N.D. Cal. Jun. 22, 2011). The remaining claims were dismissed by agreement of the parties. We affirm.

BACKGROUND

Under 35 U.S.C. § 251, a patentee may, within two years of the issuance of a patent, seek a broadening reissue of that patent if, among other things, the patentee originally claimed "less than he had a right to claim." *See MBO Labs., Inc. v. Becton, Dickinson & Co.*, 602 F.3d 1306, 1313 (Fed. Cir. 2010). However, under the rule against recapture, "a patentee is precluded from regaining the subject matter that he surrendered in an effort to

obtain allowance of the original claims." *N. Am. Container, Inc. v. Plastipak Packaging, Inc.*, 415 F.3d 1335, 1349 (Fed. Cir. 2005) (internal quotation marks omitted). This case presents the question of whether broadening claims 12 and 13 of the reissued RE'370 patent (the claims at issue in this case) improperly recaptured claim scope that Xicor[1] had previously surrendered during the prosecution of its predecessor, U.S. Patent No. 5,977,585 ("the '585 patent").

I

The specifications of the '585 patent and the RE'370 patent are substantially identical and disclose improvements to electronic memory devices, specifically EEPROM circuits, in which "the presence or absence of charge on a floating gate electrode indicates a binary one or zero." RE'370 patent col. 1 ll. 20-22; '585 patent col. 1 ll. 16-18. In an EEPROM, charge is transferred to and from the floating gate electrode through a tunneling oxide layer that acts as an insulator when not actively tunneling. However, traditional tunneling oxide layers formed by thermal oxide growth are susceptible to pin-hole defects as well as compressive stress. The improved tunneling oxide layer disclosed in the patents reduces defects and stress, and thereby improves, among other things, processing yields, reliability, and the useful life of EEPROM memory.

Claim 1 of the '585 patent recited:

> 1. An improved tunneling region for use with an integrated circuit comprising:

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[1] The RE'370 was originally assigned to Xicor Corp., the predecessor of the current owner, Xicor LLC. For simplicity, we will refer to these entities collectively as "Xicor."

> a first layer of polysilicon;
>
> a first electron tunneling layer of thermal oxide formed over said first layer of polysilicon;
>
> a second electron tunneling layer of annealed deposited silicon dioxide formed over said first tunneling layer having a thickness less than 2000 Angstroms thick, said silicon dioxide layer being *formed by low pressure chemical vapor deposition comprising the use of tetraethylorthosilicate*; and
>
> a second layer of polysilicon formed over said layer of deposited silicon dioxide, such that when a bias voltage is applied between said first layer of polysilicon and said second layer of polysilicon, electron tunneling will occur from said first layer of polysilicon to said second layer of polysilicon through said first and second electron tunneling layers.

'585 patent col. 4 l. 66-col. 5 l. 17 (emphasis added). Claim 4, the only other independent claim of the '585 patent, recited:

> 4. A semiconductor device including means for electron tunneling, comprising:
>
> a first conductive layer;
>
> an annealed silicon dioxide tunneling layer having a thickness less than 2000 Angstroms formed on top of said conductive layer, said silicon dioxide layer being *formed by low pressure chemical vapor deposition comprising the use of tetraethylorthosilicate*;
>
> a second conductive layer formed on top of said silicon dioxide layer, said first conductive

> layer acting as a source of tunneling electrons under an appropriate voltage bias condition, said second conductive layer serving as the receptor of said tunneling electrons.

'585 patent col. 5 l. 25-col. 6 l. 8 (emphasis added). For the purposes of this case, the two key limits of the disputed "tunneling layer" in both claim 1 and claim 4 of the '585 patent are that (1) the layer is "formed by low pressure chemical vapor deposition," and (2) the deposition "compris[es] the use of tetraethylorthosilicate," which is also referred to as "TEOS." Both of these claims are product-by-process claims, i.e., the product is defined in part by the process by which it is made.

II

The '585 patent and the RE'370 patent relate back to U.S. Patent Application No. 07/195,766 ("the '766 application"), filed on May 17, 1988. Claims 1-12 of the originally filed '766 application covered methods for depositing an electron tunneling layer, while claim 13 covered a device containing such a deposited tunneling layer. On January 19, 1989, the examiner issued a restriction requirement under 35 U.S.C. § 121 that required Xicor to separately prosecute the method claims and the device claim. Xicor elected to first prosecute the method claims after the restriction requirement became final on August 3, 1989.

During prosecution of the method claims, the examiner rejected, among others, claim 7 as being obvious in view of prior art "disclos[ing] that the tunneling oxide layer can be . . . deposited by [low pressure chemical vapor deposition]." J.A. 453. However, the examiner stated that "[i]f claim 7 was amended to recite that the tunneling oxide layer was deposited by [low pressure chemical vapor deposition] *using TEOS*, the claim would be allowable." J.A. 454 (emphasis added). Xicor added

the TEOS limit, and claim 7 was subsequently allowed as part of U.S. Patent No. 5,219,774 ("the '774 patent"), which issued on June 15, 1993.

On May 18, 1993, while the application for the '774 patent was still pending, Xicor filed a divisional application, which copied independent claim 13, the lone device claim from the original '766 application, and added, among others, independent device claim 14. Claims 13 and 14 of the divisional application eventually issued as claims 1 and 4 of the '585 patent, and are thus critical to the recapture rule issue presented in this case.

On July 28, 1993, the examiner rejected claims 13 and 14, among others, as obvious. In response, Xicor amended claim 13 to include the "said silicon dioxide layer being formed by low pressure chemical vapor deposition comprising the use of [TEOS]" limit that was already included in claim 14 as initially drafted in the divisional application. J.A. 610.

On March 25, 1994, the examiner again rejected claims 13 and 14 on anticipation and obviousness grounds. As described below, the process limitations in product-by-process claims such as claims 13 and 14 cannot be used to distinguish prior art unless the process imparts structural differences to the product. The examiner explained that the process limitations of the device claims (i.e., how the tunneling layer is "formed by a low pressure chemical vapor deposition comprising the use of [TEOS]") would not be given "patentable weight over . . . the prior art of record" unless Xicor established that those process limits imparted "structural limitations" that distinguished the claimed device from prior art devices. J.A. 621-23. As described in greater detail below, Xicor argued in response that "*deposited TEOS oxide*" did in fact have "significant *structural* benefits over prior art

thermal oxide layers when used as tunneling layers." J.A. 632 (first emphasis added). Unpersuaded, the examiner maintained the rejections. However, the Board of Patent Appeals and Interferences ("Board") reversed the examiner's rejections, finding that the "advantages of *TEOS deposited oxides* versus thermally grown oxides" were "sufficient to establish unobvious differences between" the claims and the prior art. J.A. 731-32 (emphasis added). The '585 patent issued on November 2, 1999, with claims 13 and 14 of the divisional application issuing as claims 1 and 4 of the '585 patent.

On November 2, 2001, Xicor filed a reissue application for the '585 patent. Xicor added new claims 12 and 13, which omitted the "comprising the use of [TEOS]" limit, but otherwise duplicated claims 1 and 4 of the '585 patent. The reissue examiner found that claims 12 and 13 did not include and were "not broader than the surrendered subject matter," and thus were "not barred by the recapture rule." J.A. 2287. The RE'370 patent issued with new claims 12 and 13 on December 30, 2003.

III

On February 11, 2011, Greenliant filed an action against Xicor, seeking a declaration that it did not infringe any claims of the RE'370 patent and that all claims of the RE'370 patent are invalid. The parties agreed that a summary judgment order in *SST*, 776 F. Supp. 2d at 1086, determining that claims 12 and 13 of the RE'370 were invalid under the recapture rule, "applies equally in this case and should be entered herein." *See Greenliant*, No. 11-CV-0631, slip op. at 2-3. Based on the prosecution history of the '585 patent, the district court in the *SST* case had reasoned that

> [a] reasonable, objective observer would conclude that the TEOS limitation was included in order to

> distinguish the claimed . . . process limitations [in the product-by-process claims] from the prior art. By including the TEOS limitation, Xicor surrendered alternative chemicals to TEOS, and these alternatives were recaptured by claims 12 and 13 of the '370 reissue patent.

SST, 776 F. Supp. 2d at 1086.[2]

Along with the stipulation regarding claims 12 and 13, the parties agreed that Greenliant's "claims for declaratory judgment relief of noninfringement and invalidity that relate to claims 1-11 of the [RE]'370 patent" should be dismissed based on a covenant not to sue. With no issues remaining, the district court entered a final judgment in favor of Greenliant on June 22, 2011, holding claims 12 and 13 invalid and dismissing the request for declaratory relief as to claims 1-11. At that time, the district court also granted SST's motion to intervene in the *Greenliant* case, allowing SST to participate in an anticipated appeal to this court. On August 1, 2011, the district court granted Xicor's motion to clarify the record. The district court clarified that its judgment was "based on the legal and factual findings contained in the . . . March 21, 2011 [*SST* order]," and ordered that "the materials on which the [*SST* order] [wa]s based," including the prosecution history of the '585 patent, "be made part of this record."

Xicor timely appealed. We have jurisdiction under 28 U.S.C. § 1295(a)(1).[3]

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[2] The district court in *SST* also found that the prosecution history of the process claims of the '774 patent established an independent basis for holding that Xicor had surrendered non-TEOS reactants prior to recapturing those alternatives by claims 12 and 13 of the RE'370 patent. *See* 776 F. Supp. 2d at 1085-86. In light of our disposition, we need not reach this issue.

DISCUSSION

"We review a district court's legal determination that a reissue patent violates the rule against recapture without deference." *MBO Labs.*, 602 F.3d at 1312. Because the district court decided this case on summary judgment, we apply a de novo standard of review. *Edwards Lifesciences LLC v. Cook Inc.*, 582 F.3d 1322, 1335 (Fed. Cir. 2009). Regardless of the standard applied by the district court, we apply the correct clear and convincing evidence standard on appeal and agree with the district court's result. *See Yoon Ja Kim v. ConAgra Foods, Inc.*, 465 F.3d 1312, 1322 (Fed. Cir. 2006).

I

As noted above, the reissue statute provides that "a patentee may surrender a patent and seek reissue 'enlarging the scope of the [original patent's] claims' if 'through error without any deceptive intent' he claimed 'less than he had a right to claim in the [original] patent' and he applies for reissue 'within two years from the grant of the original patent.'" *MBO Labs.*, 602 F.3d at 1313 (quoting 35 U.S.C. § 251). Under the rule against recapture, a patentee's reissue claims are invalid when those claims were broadened to include subject matter that the patentee previously surrendered during prosecution of the original patent. *Id.* Thus, "a patentee is precluded 'from regaining the subject matter that he surrendered in an

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[3] Appellees argue that we should dismiss this case because, in their view, Xicor's only basis for appeal is the summary judgment order in the *SST* case, and there has been no final judgment in that case. However, this is not a situation in which the parties stipulated that the final result of another action be the final result here. Rather, the parties merely agreed that a specific order in the *SST* case be applied and entered in this case. Appellees' arguments are without merit.

effort to obtain allowance of the original claims.'" *N. Am. Container*, 415 F.3d at 1349 (quoting *Pannu v. Storz Instruments, Inc.*, 258 F.3d 1366, 1370-71 (Fed. Cir. 2001)).

An assessment of a challenge under the recapture rule is guided by three steps:

> (1) first, we determine whether, and in what respect, the reissue claims are broader in scope than the original patent claims; (2) next, we determine whether the broader aspects of the reissue claims relate to subject matter surrendered in the original prosecution; and (3) finally, we determine whether the reissue claims were materially narrowed in other respects, so that the claims may not have been enlarged, and hence avoid the recapture rule.

N. Am. Container, 415 F.3d at 1349. Here, aside from the removal of the TEOS limit, claims 12 and 13 of the RE'370 patent are identical to claims 1 and 4 of the '585 patent. The parties agree that claims 12 and 13 of the RE'370 patent are broader than claims 1 and 4 of the '585 patent as a result of the removal of the TEOS limit. The parties also agree that the second step is the only step at issue, namely, whether there was a surrender of subject matter.

To decide whether a patentee surrendered certain subject matter, we must determine "whether an objective observer viewing the prosecution history would conclude that the purpose of the patentee's amendment or argument" concerning a particular claim was for reasons of patentability, that is, "to overcome prior art and secure the patent." *Kim v. ConAgra Foods, Inc.*, 465 F.3d 1312, 1323 (Fed. Cir. 2006). In order to surrender subject matter through argument as opposed to claim amend-

ment, a patentee "must clearly and unmistakably argue that his invention does not cover [that] subject matter to overcome an examiner's rejection based on prior art." *MBO Labs.*, 602 F.3d at 1314.

The parties dispute whether the prosecution history of the method claims in the '774 patent is relevant to whether Xicor, in the course of the prosecution of the device claims, surrendered devices produced through the use of non-TEOS reactants. We do not need to reach this question because we find that Xicor surrendered the relevant subject matter based on the prosecution history of the '585 patent alone.

As noted earlier, claims 1 and 4 of the '585 patent were written in product-by-process form whereby the disputed tunneling layer element in each claim was "defined at least in part in terms of the method or process by which it [was] made." *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 158 n.* (1989) (quoting Donald S. Chisum, *Chisum on Patents* § 8.05 (1988)). "Product-by-process claims . . . enable an applicant to claim an otherwise patentable product that resists definition by other than the process by which it is made." *In re Thorpe*, 777 F.2d 695, 697 (Fed. Cir. 1985). "In determining validity of a product-by-process claim, the focus is on the product and not the process of making it." *Amgen Inc. v. F. Hoffman-La Roche Ltd.*, 580 F.3d 1340, 1369 (Fed. Cir. 2009). "That is because of the . . . long-standing rule that an old product is not patentable even if it is made by a new process." *Id.* at 1370; *see also SmithKline Beecham Corp. v. Apotex Corp.*, 439 F.3d 1312, 1317 (Fed. Cir. 2006) ("It has long been established that one cannot avoid anticipation by an earlier product disclosure by claiming . . . the product as produced by a particular process."); *Thorpe*, 777 F.2d at 697 ("If the product in a product-by-process claim is the same as or obvious from a product of

the prior art, the claim is unpatentable even though the prior product was made by a different process."). However, there is an exception to this general rule that the process by which the product is made is irrelevant. As we recognized in *Amgen*, if the process by which a product is made imparts "structural and functional differences" distinguishing the claimed product from the prior art, then those differences "are relevant as evidence of no anticipation" although they "are not explicitly part of the claim." 580 F.3d at 1370; *see also SmithKline*, 439 F.3d at 1319 ("If those product-by-process claims produced a different product than that disclosed by the [prior art], there would be an argument that the [prior art] did not anticipate."); *In re Garnero*, 412 F.2d 276, 279 (CCPA 1969) (finding that certain process limits are "capable of construction as structural . . . limitations").

Consistent with our precedent, the Patent Office in determining patentability considers the process in which a product is formed if that process imparts distinctive structural characteristics:

> The structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be expected to impart *distinctive structural characteristics* to the final product.

Manual of Patent Examining Procedure § 2113 (8th ed. Rev. 8 July 2010) (emphasis added).

Xicor points out that it "could only have surrendered non-TEOS reactants by making arguments or amendments whose purpose 'was to overcome prior art and secure the patent.'" Appellant's Br. 28 (quoting *MBO*

Labs., 602 F.3d at 1314). Xicor also points out that "the TEOS process limitation must have imparted novel physical characteristics to the device in order for it to distinguish prior art." Appellant's Br. 29. However, Xicor argues, "[the TEOS] process limitation did not [actually] impart any distinctive structural characteristics to the claimed device." Appellant's Br. 30. Instead, Xicor asserts, it was the deposition conditions such as temperature and pressure, rather than the choice of chemical reactants, that determined the physical characteristics of the claimed device's tunneling layer. Thus, according to Xicor, it did not surrender devices produced through the use of non-TEOS reactants. We disagree.

During the prosecution of the '585 patent, Xicor both amended claim 13 to add the TEOS limit and relied on the TEOS limit appearing in claims 13 and 14 to overcome prior art. Xicor submitted a fact declaration and repeatedly used that declaration to argue before the examiner, and more importantly before the Board, that forming the claimed tunneling layer by a low pressure chemical vapor deposition *with TEOS* imparted structural differences that distinguished the claimed tunneling layer from the prior art.

In a March 25, 1994, office action, the examiner rejected claims 13 and 14 of the divisional application on multiple grounds. The examiner first rejected claims 13 and 14 as anticipated by Hazani. The examiner noted that "Hazani shows a[] [memory] device having first and second polycrystalline silicon layers" and a "650 Angstrom oxide layer" through which "[o]ne can define a plane . . . to define a 'tunnelling layer' and 'thermal layer.'" J.A. 621. The examiner also rejected claims 13 and 14 as obvious over Sato in view of Korma. The examiner found that Sato described a "tunnelling silicon dioxide layer [] disposed between two polycrystalline silicon layers," and

Korma disclosed an oxide thickness of 1000 Angstroms, making it obvious to use an oxide thickness under 2000 Angstroms as recited in claims 13 and 14. J.A. 622.

In conjunction with both of these rejections, the examiner explained that the process limitations in the product-by-process claims, i.e., the tunneling layer being "formed by a low pressure chemical vapor deposition comprising the use of [TEOS]," were "not given patentable weight over . . . the prior art." J.A. 621.

> [T]he applicant is reminded that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that, as here, an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. [*See Thorpe*, 777 F.2d 695]. The claims do not contain any structural limitations between the two oxide layers to make them distinguishable from one another, i.e., different molecular density concentrations or molecular ordering. Therefore, although grown by different processes, the silicon dioxide layers claimed are not distinguishable from Sato's.

J.A. 622. The examiner also explained:

> The applicant must show the *structural* limitations caused from the process of making the device. The matter given weight in claims drawn to structure having "process of making" segments are those present in the final product, and here, after forming one oxide layer on another, one cannot distinguish separate tunnelling and thermal oxide layers in the final product.

J.A. 623-24.

On August 29, 1994, Xicor's response to the examiner's rejection was received by the Patent Office. Xicor made no further amendments to claim 13 or 14, which, by this time, both included the TEOS limit. However, Xicor argued that its claimed invention, including a "deposited TEOS oxide layer," was "structurally distinct from the prior art thermal oxide layers taught by Hazani and Sato." J.A. 628.

Xicor pointed to "characteristics of the claimed device [that] are clearly different and superior to the prior art thermal oxide layers," and thus, in Xicor's view, evidenced structural differences between the prior art and the claimed TEOS deposited tunneling oxide layer. J.A. 631. With respect to improved dielectric properties, Xicor argued:

> [The inventor] found that low temperature deposited dielectrics, properly annealed, are better than thermal oxides for tunneling. For example, . . . the inventor discovered that TEOS tunneling oxides formed in the manner claimed in this case increase the total charge which can be conducted through a dielectric layer by at least an order of magnitude while at the same time providing a dramatic improvement in processing yields.

J.A. 629. Further, with respect to stress, Xicor argued:

> It is well known that thermally grown oxide layers create heavy compressive stress. It is well known that TEOS deposited layer can be defined to induce either compressive or tensile stress, and be of a much lower magnitude than for thermally grown oxide. Consequently, stress can be minimized when using a TEOS deposited tunneling ox-

> ide layer. This provides the advantage of a device having a much greater useful life.

J.A. 630 (internal quotation marks omitted). Finally, with respect to pinhole defects, Xicor argued:

> [P]inholes are often created in a thermal oxide layer as a result of small metallic impurities in the underlying silicon or polysilicon layer. The TEOS deposited layer coats all surfaces and thus will fill in such pinholes . . . .

J.A. 630 (internal quotation marks omitted). Due to these improved characteristics, Xicor asserted, "the industry has acknowledged that the use of deposited TEOS oxide has significant *structural* benefits over prior art thermal oxide layers when used as tunneling layers." J.A. 632.

On November 15, 1994, the examiner again rejected claims 13 and 14, among others, as being anticipated by Hazani, and in the alternative, as obvious over Sato in view of Korma. Xicor subsequently appealed to the Board. Before the Board, Xicor urged that the "prior art devices . . . d[id] not possess the characteristics and structure of Appellant's claimed device," J.A. 656, and repeated the arguments that it had made to the examiner regarding the improved dielectric properties, reduced stress, and reduced defect densities of the claimed TEOS deposited tunneling oxide layer. J.A. 657-61. With respect to the anticipation and obvious rejections, Xicor argued:

> The structure of the tunneling oxide layer according to the present invention is significantly different from prior art tunneling oxide layers since the inventive layer substantially reduces stress and defect density. Forming *TEOS tunneling oxides* in the manner claimed by [Xicor] increases the total

> charge which can be conducted through a dielectric layer by at least an order of magnitude while at the same time providing a dramatic improvement in processing yields. The Examiner has not shown that the cited references, alone or in combination, suggest or teach this process or its advantages.

J.A. 661 (emphasis added). Moreover, in order to distinguish a prior art reference that found another type of deposition preferable to TEOS deposition for forming an insulation layer, Xicor specifically argued that "one skilled in the art would not have been motivated to use TEOS for oxide deposition." J.A. 663.

On June 3, 1999, the Board reversed the examiner's rejections of claims 13 and 14, among others. The Board understood Xicor's arguments to be directed to the TEOS limit, noting that "[t]he only issue on appeal is the weight to be given to the process step of 'said silicon dioxide layer being formed by low pressure chemical vapor deposition comprising the use of [TEOS].'" J.A. 726-27. The Board held:

> The foregoing advantages of *TEOS deposited oxides* versus thermally grown oxides . . . are sufficient to establish unobvious differences between the claimed product and the prior art.

J.A. 731-32 (emphasis added).

Xicor's arguments clearly and unmistakably represented to the examiner and the Board that TEOS was a necessary component of the deposition process that imparted the distinct structural characteristics upon Xicor's claimed tunneling oxide layer. There is no merit to Xicor's argument that these multiple references to the use of TEOS can be dismissed as mere "nomenclature . . . used

by Xicor as a label to distinguish" between different tunneling layers. Appellant's Br. 60. It is clear that "an objective observer viewing the prosecution history would conclude" that Xicor had surrendered devices produced through the use of non-TEOS reactants during the prosecution of the '585 patent to overcome prior art and secure the patent. *Kim*, 465 F.3d at 1323. Under the rule against recapture, Xicor cannot now reclaim that surrendered subject matter. *Pannu*, 258 F.3d at 1370-71.

Xicor argues that, as a technical matter, "it is the deposition conditions—such as temperature and pressure—that determine the physical characteristics" of the claimed tunneling oxide layer, not the reactant, such as TEOS, that is used. Appellant's Br. 54. Thus, according to Xicor, the TEOS limit could not have influenced the Board's decision to allow the claims. But Xicor is bound by the arguments that it made before the examiner and before the Board. It does not matter whether the examiner or the Board adopted a certain argument for allowance; the sole question is whether the argument was made. *See, e.g.*, *Springs Window Fashions LP v. Novo Indus., L.P.*, 323 F.3d 989, 995 (Fed. Cir. 2003) (holding that though "it is not clear from the record why the examiner allowed the claims," the examiner's reasons for allowance "do not negate the effect of the applicant's disclaimer"). Nor does it matter here whether TEOS actually imparted the cited structural differences because Xicor argued that it did.

This principle is well established by our cases on prosecution history disclaimer, a doctrine that "serves the same policy" as the recapture rule, i.e., "prevent[ing] a patentee from encroaching back into territory that had previously been committed to the public." *MBO Labs.*, 602 F.3d at 1318 (internal quotation marks omitted); *see also Hester Indus., Inc. v. Stein, Inc.*, 142 F.3d 1472, 1482

(Fed. Cir. 1998). In *North American Container*, for example, the patentee distinguished the "generally convex" inner walls of his invention from prior art that, as the patentee characterized it, contained "wall portions 3 [that] are *slightly concave*." 415 F.3d at 1343 (emphasis added). Thus, we held that "generally convex" not only required that the majority of points along the claimed walls were convex, but also that no portions along the claimed walls were concave. *Id.* at 1345-46. The patentee argued that, during prosecution, he "intended only to distinguish his invention from the prior art on the basis that the inner walls in the prior art bottles [we]re entirely concave." *Id.* But regardless of any technical merit behind the newly explained distinction, we held that the patentee was bound by arguments actually made during prosecution. *Id.* at 1346. "Although the inner walls disclosed in the [prior art] patents may be viewed as entirely concave, that is not what the applicant argued during prosecution to gain allowance for his claims." *Id.*

Here, Xicor is bound by the arguments it made during the prosecution of the '585 patent, which clearly establish that it surrendered devices produced through the use of non-TEOS reactants for the recited low pressure chemical vapor deposition in order to gain allowance. Thus, we affirm the district court's holding that claims 12 and 13 of the RE'370 patent are invalid under the rule against recapture.

AFFIRMED

COSTS

No costs.