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I. INTRODUCTION

In In re Beineke, Walter Beineke, a patent applicant, appealed the rejection of his two patent applications regarding two species of white oak trees, by the Board of Patent Appeals and Interferences (the "Board"). Beineke alleged that the patent applications should be granted pursuant to 35 U.S.C. § 161 because the oak trees were found on a cultivated lawn. Section 161 provides patent protection for inter alia plants discovered on cultivated land. After examining the history of the statute, the United States Court of Appeals for the Federal Circuit affirmed the Board’s decision to reject both patent applications, concluding that patent protection is extended to mature plants only when human activity is involved in the plant’s invention or discovery.

II. BACKGROUND

A. Factual History

In late 1981, Walter Beineke came across two white oak trees in the front yard of someone’s home. Beineke noticed that both oak trees, referred to as AFTO-2 and AFTO-3 in the patent applications, had shown "superior genetic traits as compared to

1. In re Beineke, 690 F.3d 1344, 1345 (Fed. Cir. 2012).
2. Id. at 1346.
4. In re Beineke, 690 F.3d at 1354.
5. Id. at 1346. The fact that Beineke found the two species of oak trees on someone else's property does not affect the outcome of the decision. The patent statute only requires that a person invents or discovers a new variety of plant, but does not mandate that the new variety must be located on the property of the inventor. See 35 U.S.C. § 161.
other white oak trees." The superior traits that the two trees exhibited included distinct timber quality and central stem tendency. Beineke observed that AFTO-2 was about 118 years old, that AFTO-3 was about 105 years old, and that both were about 65 feet in height. Beineke then decided to take acorns from each of the superior oak trees and plant them, in order to ascertain whether the progeny trees would carry the same superior genetic traits. After a few years of observation, Beineke concluded that the superior genetic traits were carried by the progeny trees. Beineke then asexually reproduced the progeny trees and found that the superior genetic traits "ran true to the originally discovered trees and to each other in all respects." After examination, Beineke believed that he had discovered "two new and distinct varieties" of oak trees.

B. Procedural History

Having believed that he discovered two new varieties of oak trees, Beineke filed plant patent applications for AFTO-2 and AFTO-3, pursuant to 35 U.S.C. § 161. Though Beineke argued that he found the oak trees on a groomed lawn, the examiner denied both patent applications because the trees were not found in a cultivated state, as the statute requires.

6. Id. at 1348.
7. Id. at 1346.
8. Id.
9. Id.
10. In re Beineke, 690 F.3d at 1346.
11. Id.
12. Id.
13. Id. In order to obtain a plant patent, there needs to be an invention or a discovery; "it is not enough that a thing shall be new, in the sense that in the shape or form in which it is produced shall not have been before known, and that it shall be useful, but it must, under the constitution and the statute, amount to an invention or discovery." Thompson v. Boisselier, 114 U.S. 1, 11 (1885). The invention or discovery must involve "an exercise of the inventive faculty." Dann v. Johnston, 425 U.S. 219, 225 (1976).
Beineke lacked sufficient evidence of cultivation, the examiner issued the final rejections of both the patent applications.\textsuperscript{15}

Beineke then appealed both final rejections to the Board of Patent Appeals and Interferences (the “Board”).\textsuperscript{16} The Board examined the legislative history of § 161 and concluded “compliance with the ‘cultivated’ requirement of § 161 is determined by whether the existence or condition of the found plant itself has been affected by human activity (i.e., cultivation).”\textsuperscript{17} The Board found that the land on which the trees existed was wooded, uncultivated pasture owned by the Government up until 1930.\textsuperscript{18} In 1930, a house was constructed on the property and the land became privately owned.\textsuperscript{19} However, the Board found that the oak trees began growing well before the construction of the house.\textsuperscript{20} The Board majority also found that Beineke offered no evidence of human activity contributing to the cultivation of the trees.\textsuperscript{21} Because the trees began growing in an uncultivated state and no human activity contributed to the growth
of the trees, the Board concluded the trees did not meet the requirements of § 161.22
After the Board’s rejection, Beineke filed a request for continued examination and argued that the oak trees were discovered in a cultivated state because the lawn surrounding the trees was cultivated.23 After the examiner again rejected the patent applications, Beineke appealed to an enlarged Board.24
The enlarged Board also rejected the two patent applications.25
The Board supported their conclusion by determining that it was unlikely that the trees were planted by a human and that there was insufficient evidence of cultivation.26
One Board member concurred in the decision, arguing a narrower reading of § 161, and another Board member dissented, arguing that the trees were patentable because they were found on a “place of residence.”27 Beineke then appealed both Board decisions, rejecting the two applications, to the United States Court of Appeals for the Federal Circuit.28 The Federal Circuit consolidated the appeals.29

III. LEGAL ANALYSIS

The United States Court of Appeals for the Federal Circuit addressed the Board’s rejection of Beineke’s patent applications by analyzing the legislative history of 35 US.C. § 161.30 The Federal Circuit addressed two main issues while interpreting the

22. Id. (citing Beineke, 2008 WL 2942147 at *3 Appeal 2007-3882; Beineke, 2008 WL 2951696 at *3). Two members of the Board dissented from the rejection, concluding that the two oak trees were patentable because the board members believed “cultivated” to mean that the plant only needed to receive human labor after its discovery. Id. Therefore, even though no human activity was involved in the growth of the oak trees, Beineke contributed to the trees after he discovered them. Id. (citing Beineke, 2008 WL 2942147 at *13).
23. Id. at 1346-47.
24. Id.
25. Id. at 1347.
26. Id.
27. In re Beineke, 690 F.3d at 1347.
28. Id.
29. Id.
30. Id.
statute: (1) whether the trees were patentable under the original 1930 Plant Patent Act and (2) whether the trees were patentable under the 1954 Amendments to the Plant Patent Act.31 The Federal Circuit reviewed these issues of statutory construction de novo.32

A. The 1930 Plant Patent Act

The Federal Circuit held that the two mature oak trees did not fall under the protection of the 1930 Plant Patent Act (1930 Act).33 The 1930 Act provisions, which were incorporated into the present statute, required that the plant was a result of human activity and that the true inventor was the one to apply for the patent.34 In analyzing these two elements, the Federal Circuit looked at both the contemporary legal context and the legislative history of the 1930 Act.35

1. Contemporary Legal Context

Prior to 1930, the general attitude towards plant patents was that plants were products of nature and, thus, could not be patented.36 The 1930 Act was promulgated in order to change this attitude and to allow plants to be patented under a limited context.37 The 1930 Act extended patent protection to:

31. Id. at 1348.
32. Id. at 1347. The United States Court of Appeals for the Federal Circuit has the authority to review the Board’s decisions on appeal. 28 U.S.C. § 1295(a)(4)(A) (2006). The Federal Circuit reviews the Board’s legal conclusions about statutory construction without any deference to the Board’s decision. In re Giacomini, 612 F.3d 1380, 1382 (Fed. Cir. 2010).
33. In re Beineke, 690 F.3d at 1352.
34. Id.
35. Id. at 1348,1350.
36. Id. at 1349. The Supreme Court in Chakrabarty recognized that prior to 1930 there was a long held “belief that plants, even those artificially bred, were products of nature for purposes of the patent law.” Diamond v. Chakrabarty, 447 U.S. 303, 311 (1980).
37. In re Beineke, 690 F.3d at 1350.
Any person who has invented or discovered any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvements thereof, or who has invented or discovered and asexually reproduced any distinct and new variety of plant, other than a tuber-propagated plant, . . . may . . . obtain a patent therefor.  

Importantly, the 1930 Act excluded the extension of patent protection to the mere finding of new plants.

2. Legislative History

The Federal Circuit then analyzed the legislative history of the 1930 Act and found that the legislative history also emphasized the requirement that human creative effort was a necessary component to acquire a plant patent. The Senate Report for the 1930 Act illustrated that Congress specifically rejected proposed provisions that would extend patent protection to the finding of new plants. The intention of Congress was clear that the 1930 Act only provided patent protection for the discovery or invention of new varieties of plants that included the inventive faculty of the inventor.

38. *Id.* at 1348, n.2 (citing Act of May 23, 1930, Pub. L. No. 71-245, ch. 312, 46 Stat. 376). According to the Manual of Patent Examining Procedure, a tuber-propagated plant is a “short, thickened portion of an underground branch . . . . This exception is made because this group alone, among asexually reproduced plants, is propagated by the same party of the plant that is sold as food.” MPEP § 1601 (8th Ed., Rev. 1, Aug. 2001).

39. *In re Beineke*, 690 F.3d at 1349.

40. *Id.* at 1351.

41. *Id.*

42. *Id.* at 1351-52. The Senate report compared the invention of a new plant to a mineral substance:

[There is] a clear and logical distinction between the discovery of a new variety of plant and of certain inanimate things, such, for example, as a new and useful natural mineral. The mineral is created wholly by nature unassisted by man and is likely to be discovered in various parts of the country; and, being the
The contemporary legal context and the legislative history of the 1930 Act both demonstrated that the 1930 Act required human activity involved in the invention or discovery of the plant as well as the patent being submitted by the true inventor. These histories illustrated that merely finding a new plant without the involvement of human activity in the planting or growth would not be extended patent protection under the 1930 Act. Based on the foregoing, the Federal Circuit held that the two oak trees did not fall under the protection of the 1930 Act. The court reasoned that Beineke did not allege that the trees were a product of his creative efforts. Beineke instead interpreted the statute to allow patent protection for a mere finding of a new variety of plant, without any human intervention.

B. The 1954 Amendments

The Federal Circuit held that the two mature oak trees also did not fall under the protection of the 1954 Amendments to the plant patent statutes. The amendments provide that there is an exception to the rule that plants merely found in nature were not patentable. Section 161 was amended to state:

Whoever invents or discovers and asexually reproduces any distinct and new variety of plant,
including cultivated sports, mutants, hybrids, and newly found seedlings, other than a tuber propagated plant or a plant found in an uncultivated state, may obtain a patent therefor, subject to the conditions and requirements of this title. 50

Within the amendment is an exception for seedlings newly found in a cultivated state. 51 The Federal Circuit found that the cultivated land aspect of this exception was important because it illustrated that the requirement of human activity still existed. 52 Cultivation would tend to indicate that human participation contributed to the seedling's inception. 53 Therefore, this exception promulgated by the 1954 Amendments accords with the requirement that the plant's discovery or invention be a result of human activity and the creative faculty. 54 Hence, Congress affirmed the notion that plants that were merely discovered without human activity were not patentable under the statute. 55

Beineke interpreted the present statute, which incorporated the 1954 Amendment provisions, to extend patent protection to the mature oak trees because they were discovered on cultivated land. 56 However, the amendments only created the exception for newly found seedlings, not any other type of plant. 57 Thus, because Beineke conceded that the two mature oak trees were not newly found seedlings, the Federal Circuit found that the trees did not fall under the protection of the 1954 Amendments. 58

Ultimately, the Federal Circuit held that, because the oak trees did not fall under the protection of either the 1930 Act or the 1954 Amendments, the Board's rejection of Beineke's patent applications should be affirmed. 59

51. In re Beineke, 690 F.3d at 1353.
52. Id.
53. Id.
54. Id.
55. Id.
56. Id. at 1352.
57. In re Beineke, 690 F.3d at 1352.
58. Id.
59. Id. at 1354.
IV. Future Implications

The Federal Circuit's decision in In re Beineke to retain the narrow scope of 35 U.S.C. § 161 has a significant impact on subject matter that is patentable. One modern debate surrounding patentability of plants includes whether plants can be patented under both § 161 as well as § 101 of the patent statute. Recently, courts have upheld that plants can be patented under a utility patent pursuant to 35 U.S.C. § 101. With the ability of an inventor to resort to the broad interpretation of § 101, the Federal Circuit's decision properly retained a narrow interpretation of § 161.

The patentable subject matter under § 101 includes inventions or discoveries of "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof..." While courts usually look to § 101 for guidance on patentable subject matter, such guidance exists in other sections of the patent statute as well. To obtain a plant patent, the patentable subject matter, examined in In re Beineke, is defined by the more stringent requirements of § 161. Lately, courts have been struggling with the issue of providing a meaningful standard for patentable subject matter that does not exclude uncontemplated future innovations that do not fall neatly within that standard. Difficulty arises when attempting to apply the different subject matter sections in a way that does not encompass ineligible subject

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61. Imazio Nursery, 69 F.3d at 1563-64 (focusing on the fact that § 161 "engrafts the Plant Patent Act onto the basic patent law, which requires us to apply thereto all the rules, regulations, and provisions of the basic patent law, except as otherwise provided"); J.E.M. Agric. Supply, 534 U.S. at 143 (finding that there is nothing explicit in either § 161 or § 101 that prevents plants from being patented under § 101); David, 516 F.3d at 1014 (upholding the broad reach of § 101, thus declining to narrow the scope of patentable subject matter).


63. Id. § 161.

matter, while also not foreclosing the possibility of adding new subject matter in the future. 65 This struggle has emerged at the forefront of § 101, and given the overlapping nature of plant patent protection, this struggle will continue to have implications on patentability under § 161. 66

Courts have held that plants are not only patentable under § 161, but also under utility patents pursuant to § 101. 67 In 1985, the Board held that plants were within the subject matter of § 101 because plants are within the meaning of “manufacture” or “composition matter.” 68 Since that decision, courts have continuously upheld the notion that plants are patentable under § 101, as well as § 161. 69 Other decisions have elaborated on this notion and held that neither the 1930 Act nor the 1954 Amendments are the exclusive means for plant patents and thus do not preclude plants from being patented under § 101. 70

Similar to the issue of plant patentability in In re Beineke, the issue of gene patentability under § 101 also concerns the question of human intervention. 71 In Association for Molecular Pathology, the Federal Circuit had to determine whether two isolated human

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65. Id. at 1301.
66. See J.E.M. Agric. Supply, 534 U.S. at 135. In J.E.M. Agric. Supply, petitioners argued that plants were not proper subject matter under § 101 because if they were, then Congress would have never enacted the Plant Patent Act. Id. at 134. In response, the Supreme Court held that denying such protection under § 101 “would be inconsistent with the forward-looking perspective of the utility patent statute.” Id. at 135.
67. See Imazio Nursery, 69 F.3d at 1563-64; J.E.M. Agric. Supply, 534 U.S. at 143; David, 516 F.3d at 1014.
68. J.E.M. Agric. Supply, 534 U.S. at 131. In Ex Parte Hibberd, the Board held that plants were included in the patentable subject matter of § 101 because plants were within the understood meaning of “manufacture” or “composition matter.” Ex Parte Hibberd, 227 U.S.P.Q. 443, at 444 (B.P.A.I. Sept. 24, 1985).
69. See Imazio Nursery, 69 F.3d at 1563-64; J.E.M. Agric. Supply, 534 U.S. at 143; David, 516 F.3d at 1014.
70. J.E.M. Agric. Supply, 534 U.S. at 137-38 (ruling that the defendant’s use of negative inferences do not support the notion that there are not any “express indication that Congress intended § 161 to be the exclusive means of patenting plants”).
genes, \textit{BRCA1} and \textit{BRCA2}, were considered either products of nature or human-made inventions.\textsuperscript{72} The Federal Circuit held that the isolated DNA molecules were not found in nature, but were "obtained in the laboratory and are man-made, the product of human ingenuity. While they are prepared from products of nature, so is every other composition of matter."\textsuperscript{73} The Federal Circuit elaborated on the patentability of the molecules and stated that the claims "cover molecules that are markedly different—have a distinctive chemical structure and identity—from those found in nature."\textsuperscript{74} Similar to the analysis and holding in \textit{In re Beineke}, it is clear that a patent will not be issued for something that was merely found in nature, without any intervention by the human faculty.\textsuperscript{75} As seen in both \textit{In re Beineke} and \textit{Association for Molecular Pathology}, the distinction between ineligible products of nature and inventions with the requisite level of human intervention will continue to be a hotly debated issue.

Courts have a desire for efficient application of § 101, but are reluctant to create too specific of a guideline in applying the law.\textsuperscript{76} This specificity could potentially preclude desirable future applications of the statute and create a concern that "patent law not inhibit further discovery by improperly tying up the future use of laws of nature."\textsuperscript{77} On the other hand, courts are also concerned with making too broad of a guideline for patentable subject matter.\textsuperscript{78} The Supreme Court has cautioned that too broad of an application of § 101 "could eviscerate patent law" and open the floodgates of litigation, eventually dulling the overall effectiveness of the statute.\textsuperscript{79}

\textsuperscript{72} \textit{Id.} at 1325.  
\textsuperscript{73} \textit{Id.}  
\textsuperscript{74} \textit{Id.} at 1328.  
\textsuperscript{75} \textit{See id.} at 1325.  
\textsuperscript{76} \textit{See Prometheus Labs.}, 132 S. Ct. at 1301; \textit{J.E.M. Agric. Supply}, 534 U.S. at 130.  
\textsuperscript{77} \textit{Prometheus Labs.}, 132 S. Ct. at 1301.  
\textsuperscript{78} \textit{Id.} at 1293.  
\textsuperscript{79} \textit{Id.} (recognizing that "too broad an interpretation of this exclusionary principle could eviscerate patent law"). While courts are encouraged to broadly interpret § 101, too broad of interpretation, especially as applied to living things, would start to cross the line into the unpatentable areas of nature, physical
As related to *In re Beineke*, plants were once believed to be unpatentable subject matter because they were considered products of nature. Now, the legislature and courts recognize that plants can be patented under both § 161 and § 101, but courts still need to be cautious of foreclosing the possibilities of patentable subject matter by narrowly applying these sections. A narrow interpretation might create a hindrance to the addition of patentable subject matter in the future. However, retaining a narrow application of § 161, like the Federal Circuit did in *In re Beineke*, might not be such a hindrance because of the exceptionally broad language of § 101. Courts will continue to recognize, based on decisions such as *In re Beineke*, that a narrow application of § 161 is proper, so long as courts retain the expansive language of § 101.

V. CONCLUSION

The Federal Circuit ultimately rejected both of Beineke’s plant patent applications. The court decided to retain the narrow scope of § 161 by not allowing patent-eligibility based on a mere finding of a new variety of mature white oak trees. Moreover, the phenomena, and abstract ideas. See MPEP § 2105 (8th Ed., Rev. 1, Aug. 2001). Too broad of an interpretation of § 101 would invite a dramatic influx of new patent applications, as well as Board and court decisions analyzing those applications, which would inevitably clog up both the court system and the PTO Board process.

82. *In re Beineke*, 690 F.3d at 1354. *See J.E.M. Agric. Supply*, 534 U.S. at 130 (noting that the “language of § 101 is extremely broad”).
83. *J.E.M. Agric. Supply*, 534 U.S. at 138 (holding that defendant’s negative inferences “simply does not support carving out subject matter that otherwise fits comfortably within the expansive language of § 101 . . . ”). Though courts may look to *In re Beineke* as guidance for the narrow application of § 161, the decision would most likely not have come out differently if Beineke applied for a utility patent under § 101. The subject matter that Beineke was trying to patent was something merely found in nature and thus ineligible for any patent. *See In re Beineke*, 690 F.3d at 1346.
84. *In re Beineke*, 690 F.3d at 1354.
85. *Id.*
Federal Circuit maintained that an element of cultivation is required by the patent statute and that this element is not so easily overcome. In clearly defining the scope of § 161, the court refined the notion of plant patentability and, at the same time, reinforced the effective guidance found in the statute.

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86. See id. at 1352.
87. See id. at 1354.

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