

April 2016

Designing Food, Owning the Cornucopia: What the Patented Peanut Butter & Jelly Sandwich Might Teach About GMOs, Modified Foods, the Replicator, and Non-Scarcity Economics

Thomas C. Folsom

Please take a moment to share how this work helps you [through this survey](#). Your feedback will be important as we plan further development of our repository.

Follow this and additional works at: <http://ideaexchange.uakron.edu/akronintellectualproperty>

 Part of the [Intellectual Property Law Commons](#)

Recommended Citation

Folsom, Thomas C. (2015) "Designing Food, Owning the Cornucopia: What the Patented Peanut Butter & Jelly Sandwich Might Teach About GMOs, Modified Foods, the Replicator, and Non-Scarcity Economics," *Akron Intellectual Property Journal*: Vol. 8 : Iss. 1 , Article 3.

Available at: <http://ideaexchange.uakron.edu/akronintellectualproperty/vol8/iss1/3>

This Article is brought to you for free and open access by Akron Law Journals at IdeaExchange@UAkron, the institutional repository of The University of Akron in Akron, Ohio, USA. It has been accepted for inclusion in Akron Intellectual Property Journal by an authorized administrator of IdeaExchange@UAkron. For more information, please contact mjon@uakron.edu, uapress@uakron.edu.

**DESIGNING FOOD, OWNING THE CORNUCOPIA:
WHAT THE PATENTED PEANUT BUTTER & JELLY
SANDWICH MIGHT TEACH ABOUT GMOs, MODIFIED
FOODS, THE REPLICATOR, AND NON-SCARCITY
ECONOMICS***

*Thomas C. Folsom***

Abstract.....	55
I. Introduction	55
II. The Once-Patented Peanut Butter and Jelly Sandwich.....	61
A. The Patent and its History.....	63
1. Overview of the ‘596 Patent.....	66
2. Cover Page.....	67
3. Prior Art.....	67
4. Background of the Invention	68
5. Summary of the Invention	69
6. Drawings.....	69
7. Description.....	69
8. Claims.....	71
9. Detour: The Additional Claims in the Related Cases.....	72
10. A Clarification and a Quasi-Rabbit Trail: A	

* © Thomas C. Folsom 2013, 2014. I thank Professor Jay Dratler, Jr., master of ceremonies, and Professor Jeffrey Samuels for my invitation to the Seventh Annual Intellectual Property Scholars Forum at The University of Akron School of Law (Oct. 25, 2013). That year’s topic was “Intellectual Property & Food,” which was the occasion for my writing this piece, and I thank all of the participants for helping to sharpen the issues. I appreciate the help of my Research Assistants, David Whitfield, Paul Shakeshaft, and Joel Dash. I also thank any number of science fiction writers for the trope of a food replicator, and the scientific community for work to realize such a device or process. *See, e.g., Replicator (Star Trek)*, WIKIPEDIA, <http://en.wikipedia.org/wiki/Replicator> (Star_Trek) (last visited Sept. 29, 2014) (attributing the word “replicator” to *Star Trek*); *3D Printing: Food in Space*, NASA, http://www.nasa.gov/directorates/spacetechnology/home/feature_3d_food_prt.htm (last visited Oct. 31, 2014) (reporting NASA has awarded a preliminary contract to study 3D printing for making food).

** Professor, Regent University School of Law; J.D., Georgetown University Law Center; B.S., United States Air Force Academy.

Hypothetical Process Claim.....	78
11. The Routine Backstory and Conclusion	79
12. Final Thoughts about the Proceedings in the PTO.....	89
B. The Patent and its Notoriety (the Banality of Bad Patents).....	91
1. Bad Press	92
2. The Sound and the Fury—Adjudication by Pitchfork, Tar and Feathers	94
3. Comparative Law and Economic Impact	95
C. The Prospect—Designing Food, Owning the Cornucopia.....	96
III. Lessons from the Sandwich Extended to the Cornucopia	97
A. Ordinary Problems and Old Proposals.....	98
B. Extraordinary Problems: Semi-Non-Scarcity Economics.....	100
C. International Ripple Effects	103
1. TRIPS Might Become Yet Harder to Bear	103
2. TRIPS Might Be Ready for Second Thoughts	104
IV. Starving for Attention? (Two Proposals)	104
A. The Problem of Patent Justice.....	105
B. First Proposal: A Public Domain Protection Agency .	107
C. Second Proposal: Field of Use, Reinvigorated Utility	113
1. Field of Use	113
2. Reinvigorated Utility	113
3. Rate-making and Virtual Rate-making.....	114
V. Conclusion	114

(Cornucopia: *a horn of plenty overflowing with food; an abundance*)

People think it is amusing to talk about patents on a peanut butter and jelly sandwich, but it is a patent that never should have issued This is a technology—if you can call it that—that has been around in many forms for many years.¹

1. Sara Schaefer Muñoz, *Patent No. 6,004,596: Peanut Butter and Jelly Sandwich*, WALL ST. J., (Apr. 5, 2005, 12:01 AM), <http://online.wsj.com/news/articles/SB11266108673297874> (quoting Professor Adam Jaffe).

ABSTRACT

Imagine for purposes of discussion that the technology for designing and building an actual cornucopia—something that embodies code, genetically modified organisms, or other techniques for producing, modifying, creating, or duplicating food (call it neo-tech food design)—exists, works, and is safe. To frame the problems of neo-tech food design, I start with what ought to be an easy case of low-tech food design, the peanut butter and jelly sandwich. Since it is a prime example of an incremental improvement invention, and hence like very many other inventions that are routinely patented, it must be asked: *was* there a problem? And if so, what exactly was the problem with the issuance, or cancelation of a patent on a sandwich comprising a doubly sealed, doubly encapsulated jelly filling with spaced apart seals, one of which capsules is peanut butter?

Based on lessons learned from the once-patented sandwich, I present two proposals, in the alternative. *First*, and as what might seem an unlikely solution, I endorse the creation of a Public Domain Protection Agency (PDPA) with resources to help resolve the problems that will predictably arise out of a cornucopia. The PDPA might also serve as a counterweight to the tendency, exemplified by the agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), to lock-in some of the current developed nations' standards for patentability, world-wide. *Second*, I present an alternate proposal that is more attainable: (1) virtual field of use limitations, and (2) virtual rate-making proceedings. This last proposal can be practically implemented by a revitalization of the beneficial utility (or *ordre public*) doctrine or by a purposive reconsideration, and discretionary implementation of existing remedies under current patent law. Preparing in advance for the problems of neo-tech food design has the advantage of preserving the system of patent law, rebalancing it in the interest of justice to ensure an economic return to inventors in global markets while avoiding the charge of profiteering on hunger in certain less fortunate markets. This is a particular instance of a larger problem. The problem is that some of the new technologies extend the unexplored limits of non-scarcity economics to a degree not previously seen in patent law. This, in turn, challenges the “justice” of the conventional patent system.

I. INTRODUCTION

This paper began as an informal discussion draft prepared for the Seventh Annual Intellectual Property Scholars Forum at Akron

University School of Law. This article is offered now to provide some focused ideas on an aspect of the genetically modified organism (GMO) and neo-tech food design challenge that has not yet been fully explored. It is the perception that routinely-issued bad patents cast a shadow over (1) the prospect of virtually unlimited low cost food and (2) the legitimacy and fundamental justice of the patent system itself.

While I cannot claim that a majority of the some 8.6 million issued U.S. patents² are bad, I strongly suspect that a non-trivial plurality of issued patents are essentially no better, and some are certainly worse, than the patent issued in 1999 on a peanut butter and jelly sandwich. Regardless of the precise numbers, I believe there is a popular perception that the Patent Office has issued a great many bad-but-routine patents. This perception and the facts that give rise to it pose a significant problem of legitimacy in patent law. I claim that any existing or potential problem of legitimacy will become an actual and significant crisis when and if it comes to patenting products or processes that can provide a cornucopia, an abundance of food, in a hungry world. That is a unifying theme of this article. Choosing to make patent law more correct in this context is a matter of simple justice—that composite mixture of the right,³ the lawful,⁴ the fair,⁵ and the good⁶ among other ideas⁷—if

2. A random sample of the Electronic Official Gazette for Patents, for patents issued on April 8, 2014, suggests a number in excess of 8,689,000. *See, e.g.*, Sun Protective Neckware Garment, U.S. Patent No. 8,689,362 (filed Dec. 5, 2011) (issued Apr. 8, 2014); Patents, 1401 Off. Gaz. Pat. & Trademark Office 2 (Apr. 8, 2014), *available at* <http://www.uspto.gov/web/patents/patog/week14/>. For a table of issue years and patent numbers for patents issued since the current patent numbering system began with patent number “1” issued on July 13, 1836, see *Table of Issue Years and Patent Numbers, for Selected Document Types Issued Since 1836*, U.S. PATENT & TRADEMARK OFFICE, (Mar. 26, 2014, 12:17 AM), <http://www.uspto.gov/web/offices/ac/ido/oeip/taf/issuyear.htm>. As of the date of that table, there were 8,621,662 utility patents listed in the series. The table notes that “[s]ome numbers within a series may be unused.” *Id.*

3. Justice has been said to comprise the right, in accordance with duties to respect the legitimate interests of others; giving to each what is due to each. *See, e.g.*, PLATO, *THE REPUBLIC* bk. 1, at 294 (Scott Buchanan ed., Viking Press 1948) (telling the truth and repaying debts; rendering to each his due); *id.* bk. 4, at 450 (minding your own business); IMMANUEL KANT, *The Science of Right, reprinted in 42 GREAT BOOKS OF THE WESTERN WORLD* 401 (Robert Maynard Hutchins et al. eds., 1952) (following Ulpian and quoting: “[a]ssign to every one what is his own”).

4. Justice has been said to involve action in accordance with law. *E.g.*, Thomas C. Folsom, *Evaluating Supernatural Law: An Inquiry into the Health of Nations*, 21 REGENT U. L. REV. 105, 140-41 (2008). In such a usage, it is often implied that the law in question is itself reasonable, directed to the common good, intelligibly articulated (promulgated) ahead of time, and authorized. *See generally*, ST. THOMAS AQUINAS, *SUMMA THEOLOGIA* Ia, Iae, q. 90, ans. 4 (Timothy McDermott ed., 1989) (stating those criteria in the form of a definition).

5. Justice has been said to include fairness, insofar as it seeks to treat equals equally—and unequals unequally—in respect of a legitimate criterion. *See* MORTIMER J. ADLER, *SIX GREAT IDEAS* 155-85 (1981) (advancing a theory of equality, as one of several components of justice); *id.* at 188 (criticizing John Rawls’ *A Theory of Justice*, if Rawls is understood as maintaining that justice consists *solely* in fairness).

not of social justice.⁸ Under neither simple justice nor social justice can constraints upon the cornucopia be woodenly imposed in accordance with an unreformed patent law, widely perceived as granting bad patents on sandwiches, if there are people who need to eat. It is one reason why I propose definite legal responses, sooner rather than later, to anticipate and avoid the crisis. But even if I am wrong about current public perception of patent law, my proposals remain salient both in the context of a hypothetical patented food replicator and the policy issues that would surround it.

6. Justice might also include the good insofar as it seeks to apply a specified standard of morality for purposes of assessing the other three propositions or components of justice. The moral good may determine: (i) the content of the “right,” by assessing what others are “due,” (ii) the boundaries of the “lawful” by measuring whether any given law is itself reasonably directed to the common good, articulated and authorized, and (iii) the scope of the “fair” by judging whether any particular criterion for ascertaining “equals” is legitimate. *See generally, e.g.,* PLATO, GORGIAS (Donald Zeyl ed., 1987) (admonishing that the practice of advocacy and persuasion be used for “justice” in the interest of the common “good”); ARISTOTLE, ETHICS bk. 1, at 52 (J.L. Ackrill ed., 1973) (observing “political science spends most of its pains on making the citizens to be of a certain character, viz. good and capable of noble actions”); MARTIN L. KING, LETTER FROM BIRMINGHAM JAIL (Apr. 16, 1963), *available at* <http://abacus.bates.edu/admin/offices/dos/mlk/letter.html> (noting, “there are two types of laws: just and unjust” and asserting both “a moral responsibility to obey a just law” and a “moral responsibility to disobey” a law that is unjust, not only for the reasons given but, by implication, because the unjust law in question is directly contrary to the common good and unauthorized, denies the rights to which human beings are due, and relies upon an illegitimate criterion for equality).

7. I believe these four, together, define justice. Folsom, *supra* note 4, at 138-42 (and attributing the idea of composite justice to others). *But see generally* THE GREAT IDEAS: A SYNTOPICON OF GREAT BOOKS OF THE WESTERN WORLD 850, 857-58 (Mortimer J. Adler et al. eds., 1952) (including many other notions); OTTO A. BIRD, INST. FOR PHILOSOPHICAL RESEARCH, THE IDEA OF JUSTICE (Mortimer J. Adler ed., 1967) (collecting authorities and cataloging them according to each of several versions of “justice”). In addition, any number of law professors, judges, lawyers, and other amateurs have tried to improve upon what the professional philosophers have done. *See, e.g.,* ANALYTIC JURISPRUDENCE ANTHOLOGY (Anthony D’Amato ed., 2001) (collecting various attempts, and including excerpts from many law-trained amateur moral philosophers).

8. “Social justice” is perhaps more difficult to define than “justice,” because more equivocal and more overtly attached to somewhat controversial shadings of meaning, than simple justice. But it should mean no less than simple justice, and both are commonly taken as signifying not merely some conventional construct, but a more fundamental moral virtue. *See generally* CATECHISM OF THE CATHOLIC CHURCH WITH MODIFICATIONS FROM THE EDITIO TYPICA 496 (2d ed. 1997) (describing “justice,” section 1807, as one of the four cardinal moral virtues, and defining it as “giving their due” to God and neighbor; to establish harmony, thereby promoting equity and the common good); *id.* at 521 (describing “social justice,” section 1928, as the means, linked to the common good, by which a society might provide the conditions that allow associations or individuals “to obtain what is their due” according to their nature and their vocation). If simple justice were that one of the four cardinal virtues possessed by individuals that chiefly regards others, it might be fair to say that one acceptable version of social justice is the political implementation of simple justice, serving both as a check on existing law and as a public policy goal for fashioning new laws.

To substantiate and illuminate my proposal, this article is divided into several parts. Part I is merely this introduction. Part II tells a long story of the short life and unlamented death of the peanut butter-and-jelly (PB&J) patent and its family of rejected applications. I tell the story of this patent and its related applications not only in terms of their own text and claims, but also in their legendary, if not mythic, place in public perception. The story includes their final adjudications, as if by pitchfork, tar and feathers. The PB&J patent is widely cited to illustrate much of what is, ambiguously but vociferously, supposed to be wrong with the patent system. Accordingly, it would not hurt to address what, exactly, was so bad about this “bad” patent and how this scorned patent differs in kind, in degree, or at all, from many thousands, tens of thousands, or several millions of routinely issued patents.

There are more than a half dozen systemic reasons that a routine patent may be routinely bad. These include the well-known failures of patent law in respect of nonobviousness and novelty, enablement and written description, eligible subject matter, claim construction, judicial equivalents, remedies, and secondary liability.⁹ The PB&J patent presents only one of those problems, but in detail: the obviousness (or not) of incremental improvements.

As a matter of fact, and perhaps contrary to myth, many inventions are the result of incremental improvements.¹⁰ Yet the “nonobviousness” requirement of our patent law is designed to prevent the issuance of any

9. See Donald Chisum, *What the Reform Act Does NOT Reform*, Chisum Patent Law Reference Guides (CPLRG), No. 7 (Sept. 16, 2011), <http://www.chisum.com/category/current-developments/america-invents-act> (listing these problems, essentially unaltered by the America Invents Act, Pub. L. No. 112-29, 125 Stat. 284-341 (2011) [hereinafter AIA], glossed in H.R. REP. NO. 112-98 (2011). No less august a body than the United States Congress has “meticulously documented” the “unbearable” flaws in the patent system. See H.R. REP. NO. 112-98, at 38-57 (referencing AIA and the authorities cited therein). Accepting the weight of such evidence, the question is not whether the system is flawed, but rather how to fix it in the wake of the failure of the AIA even to address, let alone resolve, so many of the well-known problems.

10. “[Ordinary] invention is often an incremental process, not a series of discrete ideas conceived in isolation. This fact is well recognized in the literature In fact, the evidence does not simply show that most inventions result from simultaneous independent invention. It also shows that the vast majority of the most important inventions of the past two centuries—the pioneering inventions that seem with the passage of history such radical departures from the prior art—were themselves the result of gradual social processes in which multiple inventors developed the key parts of the invention at about the same time.” Mark A. Lemley, *The Myth of the Sole Inventor*, 110 MICH. L. REV. 709, 714, 715-16 (2010); see also *id.* at 716-33 (cataloging pioneering inventions, showing both their simultaneous invention and also their incremental nature); ROBERT MERGES & JOHN DUFFY, *PATENT LAW AND POLICY* 610 (6th ed. 2013) (observing that “[t]he rationales for denying patents to obvious inventions must be balanced against the evidence suggesting that technical advance often proceeds in relatively small increments” and referencing ERIC VON HIPPEL, *THE SOURCES OF INNOVATION* 131-207 (1988) for the proposition that “small improvement inventions are often essential to progress”).

patent upon those incremental improvements that a person having ordinary skill in the art (PHOSITA) could have made.¹¹ Because the sandwich as an “art” invites nearly everyone to be a PHOSITA, the PB&J patent opens the private world of routine patent practice to (horrified) public view. But it is, in fact, no different in kind than hundreds, thousands, or millions of other patents routinely granted on novel but slight improvements, asserted to be nonobvious against a legal standard that is inherently impossible to apply on a consistently predictable basis. Like it or loathe it, it is not the sandwich that is at issue but the patent law itself. More than once in this article I will ask the question: What, exactly, is so bad about the PB&J patent? Often, I will provide several possible answers—(1) it was bad because it was wrongly granted, (2) bad because it was wrongly cancelled, (3) bad because it was both, (4) bad because it was neither, or (5) no one can say. Not to hide the ball nor leave it to implication, I am asserting that any and all of those answers could be correct. And *that* is the problem. To paraphrase a familiar statement: this law does make liars of us all.¹²

Part III draws some lessons from the PB&J saga and extends those lessons to a hypothetical cornucopia. I use the term “cornucopia” to signify an abundance of food produced or enabled by code, GMOs, or other techniques for modifying, creating, or duplicating food (neo-tech food design technologies). I discuss the public interest in a hypothetical cornucopia measured against present tendencies in patent law. I describe the problem in terms of non-scarcity economics, and I use the example of a pair of pharmaceutical patents in India to demonstrate global consequences in a related field of use. Analogizing the public policy concerns in medicine to those in food, I claim that at least the same degree of public interest applies to food.

Part IV pivots from problems to solutions. It opens with an explicit statement of the problem of fundamental justice in patent law as applied to neo-tech food design. I then present two proposals to anticipate and resolve the problems of designing and patenting food. First, I endorse a Public Domain Protection Agency (PDPA) to create a predictable, principled, and practical rebalancing of the interests, tilting explicitly

11. “A patent may not be obtained though the invention is not identically disclosed or described [in the relevant prior art], if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains” *Graham v. John Deere Co.*, 383 U.S. 1, 13 (1966) (quoting 35 U.S.C. § 103 (2012)).

12. See WILLIAM SHAKESPEARE, *THE TRAGEDY OF HAMLET PRINCE OF DENMARK* act 3, sc. 1, l. 83 (observing that “[t]hus conscience does make cowards of us all”).

towards a specified tailored and graduated scale of patent-protection. Second, I also advance a less disruptive, and completely authorized, alternate proposal: (1) virtual field of use adjudications, and (2) virtual rate-making, capable of implementation by purposive application or reinterpretation of existing remedies, or by a revitalization of the beneficial use (*ordre public*) doctrine, both of which are already permitted by existing law.

Interest Alert and Disclosure: When I accepted the conference invitation, I did not appreciate the coincidence that the conference was supported by The J.M. Smucker Company (Smucker, Smuckers, or Smucker's herein),¹³ the owner of the PB&J patent about which I had independently decided to write. Smuckers is, as I later learned, a corporate citizen with headquarters not far from the University of Akron.

In a double irony, as I arrived late to the conference dinner, the master of ceremonies, an old friend, introduced me to the Smuckers representatives and others in attendance by announcing that I would receive the "bites the hand that feeds you award" for my treatment of the PB&J patent of our host. So I suppose I might stand suspect of bias on both sides, both pro-patent because of the conference sponsorship, and anti-patent because of our master of ceremonies' characterization. In fact both, and neither, are completely correct. The careful reader will note that I am as close to a defender of the PB&J patent as one is likely to find, but only in a left-handed sense because I previously concluded that "bad" patents are not an abuse of the system, they are the system.¹⁴ I believe the PB&J patent is no worse than plenty of others, and better than many. If the PB&J patent is "bad," it has a lot of company, and it invites another look at the system that foments, encourages, and has normalized the practice of patent law according to the standards set, not by clients or their patent lawyers, but by the statute, regulations, and rules as interpreted by the Patent Trademark Office (PTO) and the courts.

Odd as it may seem, I developed the idea of using the PB&J patent

13. The conference brochure title page reads: "The University of Akron School of Law presents the Seventh Annual IP Scholars Forum . . . Intellectual Property and Food . . . supported by: The J.M. Smucker Company." Perhaps similar wording was on the invitation, but I do not recall having seen it.

14. I have not only practiced patent law for over ten years in my prior life, but I have been teaching patent law off-and-on since about 1987. On this basis, I have previously written, and I continue to believe, that "bad patents are not an abuse of the system, they *are* the system." *E.g.*, Thomas C. Folsom, *Minority Report: Real Patent Reform, Maybe Later—The America Invents Act and the Quasi-Recodification Solution*, 6 AKRON INTELL. PROP. J. 179, 181, 182, 219 *passim* (2012). *See also infra* text accompanying note 165 (incorporating the sources cited by Congress to document what it found to be the unbearable flaws in the patent system).

as a hinge-point to this paper quite independently and completely on my own. It is a framing device adopted in response to the challenge of explaining to a general audience¹⁵ why there are preexisting grounds for suspicion of current patent doctrine, especially when it comes to food. This patent presents the groundwork for doubting that existing patent law would well apply to a hypothetical cornucopia. Because of the unexpected conference connection to the PB&J patent proprietor and to avoid any appearance of a conflict, I have refrained from my original plan, hatched as I worked on my draft, of eventually writing to Smucker and asking for information about any interesting behind-the-scenes strategic decisions relating to the PB&J patent and the family of applications. Instead, everything in this article is taken from publicly available sources, supplemented by occasional hunches.¹⁶ Other than the conference dinner, lunch, and friendly conversations with its corporate attendees at the conference, I have received nothing from Smucker.¹⁷

II. THE ONCE-PATENTED PEANUT BUTTER AND JELLY SANDWICH

An alternate title to this paper might have been: “What’s so Funny about Patenting a Peanut Butter-and-Jelly Sandwich?” (with a nod to Nick Lowe and to Elvis Costello for the song of similar name).¹⁸ This patent is no funnier than any of the several thousands or more of equally suspect patents, making none of this particularly funny any longer. One could paraphrase the song’s lyric:

As I walk through this wicked world, searching for [a voice of reason in patent law]/ . . . I ask myself/ . . . what’s so funny ‘bout [patenting a peanut butter-and-jelly sandwich]?/ . . . ‘cause each time I feel [patent law] slipping away/ [it] just makes me want to cry/ what’s so [much funnier ‘bout patenting a PB&J sandwich than so much else that rou-

15. I make no apology, therefore, for spending more time on the specific claims, cited prior art, and disclosures of the PB&J patent and related applications than is generally found in articles directed to the general public. It is precisely the claims, in the context of the prior art and the advances asserted by the inventor, that a generalist ought to appreciate if he or she is going to make an informed judgment about the issues.

16. Because the PB&J technology was not even intended to be the main course, but only an appetizer to the topic of the article, and to avoid gorging on the hors d’oeuvres, I have not read the file wrappers. I believe there is more than enough information readily available without invoking the prosecution history.

17. At the event, I purchased a couple boxes of the Smuckers Uncrustables®-brand of encapsulated PB&J sandwiches as snacks for the forum attendees with my own funds, not reimbursed by anyone.

18. See NICK LOWE, (*What’s So Funny ‘Bout) Peace, Love, and Understanding* (1970), <http://www.youtube.com/watch?v=8WWp67DsTk4> (sound recording available at, e.g., iTunes; recorded by, among others, Elvis Costello & the Attractions).

tinely gets patented]?/ ohhh, what's so funny . . . [‘bout patenting a peanut butter and jelly sandwich]?¹⁹

This section opens with a once-over-not-so-lightly discussion of the brief but scandalous career of U.S. Patent No. 6,004,596 (the ‘596 Patent herein) issued December 21, 1999, for a “Sealed Crustless Sandwich.” The broadest claims are not limited to PB&J. It is not until claim 7 that the ‘596 Patent brings in those ingredients by limiting the “first filling” (and the third filling) to peanut butter, and the “second filling” to jelly. It is an interesting patent, involving by the time it gets to the PB&J claim, three fillings, a first and a third that “retain” a second filling between them, and (in all claims) a “crimped edge” that binds two pieces of bread together, containing the filling(s), the top and bottom fillings being relatively leak-resistant and joined together at their edges to seal the center filling within a reservoir, and none of the layers touching the crimped edge.

For ease of discussion, and with the benefit of hindsight, I characterize this claimed invention as comprising a “doubly encapsulated filling, secured by two spaced apart seals.”²⁰ In the PB&J version, the filling is jelly, completely encapsulated and sealed on the top, bottom, and sides by peanut butter (the first sealed encapsulation of the jelly), which is encapsulated and sealed a second time by the bread, with the bread-seal spaced apart from the peanut-butter-seal so that none of the peanut-butter-seal touches the bread seal; the jelly is thereby twice confined with the hope that it will not leak through the bread.²¹ After great outcry, and almost eight years later, all claims were cancelled by an *ex parte* reexamination certificate issued on September 25, 2007.

This section concludes by moving from the PB&J sandwich to a foreshadowing of the hypothetical food replicator, a device or process that could create an actual cornucopia. I assert that the inability of current patent law doctrines gracefully to accommodate PB&J technology, as perceived by the public, bodes ill for its ability to handle GMO/modified food or neo-tech food design technologies that raise the possibility of an essentially limitless supply of food. Assuming that one

19. *See id.* (including the original lyric).

20. This general concept may be embodied in a sandwich. It may also be expressed as a method for making such a sandwich. As a result, the concept may be claimed either as a product or as a process (and it was, in fact, claimed as both). In characterizing the invention as a “doubly encapsulated filling, secured by two spaced apart seals,” I am not here distinguishing between the claim forms, and I embrace both product and process within this more general characterization.

21. It should go without saying that the invention is not the “peanut butter and jelly sandwich” nor is it merely such a sandwich with the peanut butter spread on both pieces of bread, nor is it even such a sandwich in the form of a pasty or pie.

could “create” food, as by a replicator, that was safe and efficient, what then?

Note to the reader who is in a hurry: My conclusion to this section is: the “mistake” surrounding this claimed invention was (a) that a patent issued in the first place (erroneously issued), or (b) that the patent was wrongly cancelled, mainly because of public embarrassment and misreporting of the actual claims (erroneously cancelled), or (c) both, or (d) neither/cannot be said simply because the standard for assessing nonobviousness is so systemically flawed that any answer is possible. I assert that any and all of those answers could be correct. And *that* is the problem. The PB&J invention was an incremental improvement, and it exposes the contradiction between the law’s requirement of nonobviousness and the reality of inventions by incremental improvements. The legal standard as applied to such claimed inventions is inherently unworkable. If you already know a great deal about patent practice, you may read the following sections very rapidly, perhaps pausing only briefly to catch some of the generally unreported details of the claims and the prior art. I included so much of this detail for the benefit of those who do not know a great deal about the patent practice precisely because I believe patent law is too important to be left to the patentees, and yet the non-experts tend to misunderstand what is “normal” patent practice. That group of non-expert readers might enjoy studying these sections.

A. *The Patent and its History*

The case of the PB&J patent has been reported in the popular press as well as by professionals in the patent field, and this article will later refer to such reports.²² Meanwhile, because of litigation, reexamination, and cancellation of the ‘596 Patent, accompanied by parallel appeals from the final rejection of related applications, the story might be momentarily confusing. Without knowing the several threads, it might seem strange that there could have been a decision by the Court of Appeals for the Federal Circuit (CAFC) in 2005, affirming the Patent Office’s final rejection of claims to a peanut butter & jelly sandwich, while a commonly owned patent on a peanut butter & jelly sandwich had actually issued years earlier, been involved in litigation, and was not cancelled until 2007. A brief chronology, preceding the discussion of the PB&J technology itself, may help.

22. See *infra* Part II.B, “The Patent and its Notoriety” (summarizing some representative accounts).

The Patent. Despite many years of known sandwich-making techniques and products, U.S. Patent No. 6,004,596 covering a peanut butter and jelly sandwich issued in 1999 on an application filed on December 8, 1997.²³ Reexamination was requested in March 2001,²⁴ and all claims were eventually cancelled in September 2007.²⁵

The Products and the Patent Litigation. As early as December 1996, the inventors, Smucker, or an affiliate began selling the UNCRUSTABLES-brand of crustless sealed sandwiches,²⁶ which incorporated the PB&J technology covered by the '596 Patent.²⁷ In the summer of 2000, Albie's Foods, Inc. "began selling a prepared peanut butter and jelly sandwich product" that caught Smucker's attention.²⁸ It is quite likely that the controversy involved early examples of what would later become known as Albie's EZ-Jammers-brand of stuffed and sealed sandwiches.²⁹ In December 2000, Smucker sent a letter to Albie's admonishing that Albie's sandwich "establishes a clear infringement of [the '596 Patent] directed to the famous Smucker product sold nationally under the trademark 'UNCRUSTABLES'" and demanding that Albie's "cease and desist from violating" the patent.³⁰

In January 2001, Albie's responded to the demand letter by filing a declaratory judgment action in Michigan, its home state, seeking to invalidate the patent.³¹ In May of that year, Smucker responded by bringing an infringement action against Albie's in Smucker's home state

23. U.S. Patent No. 6,004,596 (filed Dec. 8, 1997) (issued Dec. 21, 1999) [hereinafter '596 Patent].

24. See *Ex parte* Reexamination Certificate No. 6,004,596 C1 (issued Sept. 25, 2007) (reciting reexamination request No. 90/005,949, filed Mar. 9, 2001).

25. *Id.*

26. See UNCRUSTABLES, Registration No. 2,473,056 (claiming trademark rights in "uncrustables" for "food, namely sandwiches," first used on December 18, 1996); see also *Albie's Foods, Inc. v. Menusaver, Inc.*, 170 F. Supp. 2d 736, 738 (E.D. Mich. 2001) (indicating the patent was assigned by its inventors to "Menusaver, Inc., a wholly-owned subsidiary of Smucker").

27. The Smuckers Uncrustables® line currently includes peanut butter and grape, strawberry, raspberry, honey, and other combinations. See SMUCKER'S UNCRUSTABLES, <http://www.smuckersuncrustables.com> (last visited Apr. 12, 2014).

28. See *Menusaver*, 170 F. Supp. 2d at 738 (summarizing the patent controversy between Smuckers and Albie's).

29. See E.Z. JAMMERS AWESOME SANDWICHES, Registration No. 2,737,919 (claiming trademark rights in "E.Z. Jammers Awesome Sandwiches" for "sandwiches for retail distribution" first used on August 1, 2001) (cancelled for failure to file a renewal). Albie's EZ Jammer line now includes the "EZ Jammer WOW!Butter & Grape Jelly Sandwich." ALBIE'S, <http://albies.com/ez-jammers.cfm> (last visited Feb. 6, 2015). Albie's also currently offers a line of stuffed breadsticks, meat pasties, chicken pot pies, and pizza calzones; and it appears that the "butter" in the butter and grape jammer is soy, rather than peanut-based. *Id.* The Albie's EZ Jammers at issue in the litigation were probably similar to one or more of its current products.

30. *Menusaver*, 170 F. Supp. 2d at 738.

31. *Id.*

of Ohio.³² By November 2001, the litigation was confined to Ohio.³³ And in December 2001, the litigation terminated pending reexamination of the PB&J patent in the U.S. Patent & Trademark Office.³⁴

Cancellation of the Patent. The patent ended up cancelled on reexamination. For good measure, and as if to ensure that it were twice dead, the patent was already facing expiration for failure to pay the maintenance fee, due not long before the patent was cancelled for good measure on reexamination.³⁵ So ended the short life and un-mourned death of this patent.³⁶

The Rejected Applications Appealed to the CAFC. During the litigation, and continuing in parallel to the reexamination of the '596 Patent, Smucker prosecuted a number of related applications.³⁷ In particular, two of those related applications were prosecuted through final rejection in the Patent Office, and appealed to the CAFC. One claimed a method of making a sandwich, perhaps the original method claims carried over from the divisional of the original application.³⁸ It

32. *Id.*; Complaint, J.M. Smucker Co. v. Albie's Foods, Inc., No. 5:01-cv-01182 (N.D. Ohio May 16, 2001).

33. In the exercise of its discretion, the Michigan court dismissed without prejudice, having concluded that the parties should seek their remedy in Ohio. *Menusaver*, 170 F. Supp. 2d at 740.

34. Upon an unopposed motion to stay proceedings pending reexamination, and with an indication that a copy of the relevant pleadings had been mailed to the Commissioner of Patents and Trademarks, the Ohio court dismissed without prejudice. *Agreed Dismissal*, J.M. Smucker Co. v. Albie's Foods, Inc., No. 5:01-cv-01182 (N.D. Ohio Dec. 12, 2001).

35. The online records of the PTO reflect that the '596 Patent expired Jan. 21, 2008, for failure to pay the maintenance fee. *See* U.S. PATENT & TRADEMARK OFFICE, Public Patent Information and Retrieval (PAIR), <http://portal.uspto.gov/pair/PublicPair> (search "Application Number" for "08/986,581"; then follow "Transaction History" hyperlink) (showing that the patent expired on Jan. 21, 2008); *id.* (search "Application Number" for "08/986,581") (giving the same expiration date and showing nonpayment of the maintenance fee as the reason). Although the date of the expiration for failure to pay is a date that is some months after the reexamination certificate (issued on Sept. 25, 2007), the two events together certainly ensured the patent is twice dead. An observer might speculate that the failure to pay the maintenance fee was due to the patentee's increasing awareness that this patent had pretty nearly no chance of getting through reexamination, and perhaps even to moot the reexamination. *See supra* note 24.

36. *Cf.*: "She dwelt among the untrodden ways/ Beside the springs of Dove/ A [patent] whom there were none to praise/ And very few to love . . . [b]ut she is in her grave . . ." William Wordsworth, *She Dwelt Among the Untrodden Ways* (1799/1800), reprinted in *ENGLISH ROMANTIC WRITERS* 263, 263 (David Perkins ed., 1967).

37. The application family appears to have included as many as six other continuing applications, in addition to the application that matured into the '596 Patent. *See* U.S. PATENT & TRADEMARK OFFICE, *supra* note 35 (search "Application Number" for "08/986,581"; then follow "Continuity Data" hyperlink) (showing a family of related applications claiming the benefit of the filing date of the issued patent, including its own reexamination petition and also some six other unique application serial numbers filed between Sep. 24, 1999, and Mar. 23, 2004, all shown as subsequently abandoned).

38. U.S. Patent Application Serial No. 09/821,137 (filed Mar. 30, 2001) ("the Process

was rejected by the Examiner and appealed to the Board of Patent Appeals and Interferences (BPAI).³⁹ The other co-pending application that was appealed included claims directed to the sandwich itself, more narrowly or differently drawn than those of the issued patent, and perhaps with an eye towards the EZ Jammer litigation.⁴⁰ It too was rejected by the Examiner and appealed to the BPAI.⁴¹ The BPAI affirmed the rejections in both of these pending cases, almost certainly on the basis of the new prior art references that had been discovered during litigation.⁴² Both of the rejected applications were appealed to the CAFC, which affirmed the rejection of each in April 2005.⁴³

1. Overview of the '596 Patent

U.S. Patent No. 6,004,596 issued on December 21, 1999, for a Sealed Crustless Sandwich.⁴⁴ The inventors are Len C. Kretchman of Fergus Falls, Minnesota, and David Geske of Fargo, North Dakota.⁴⁵ The patent was assigned to Menusaver, Inc., an affiliate of J.M. Smucker Co.⁴⁶ The '596 Patent was not unnoticed, nor uncriticized, at least by the

Application”) for a method of making a sealed crustless sandwich. It was a continuation of a divisional of the parent and so entitled to the same effective filing date as the parent. An examiner might have made an election requirement, resulting in a divisional, when both product and process claims are included in a single application, as may have been the case here. In any event, the issued patent—the '596 Patent—was for a product.

39. *Ex parte* Len C. Kretchman & David Geske, No. 2003-1754, 2003 WL 23507730 (B.P.A.I. Dec. 10, 2003) (“BPAI Method Decision”).

40. U.S. Patent Application Serial No. 09/845,925 (filed Apr. 30, 2001) (“the Product Application”). This patent application was a continuation of a divisional of the parent and so entitled to the same effective filing date. An applicant in litigation or contemplating litigation might file a continuing application with claims more nearly tailored to read on the allegedly infringing product, as might have been the case here.

41. *Ex parte* Len C. Kretchman & David Geske, No. 2003-1775, 2003 WL 23507731 (B.P.A.I. Dec. 10, 2003) (“BPAI Sandwich Decision”).

42. The prior art of record cited in the '596 Patent case comprised seven patents from 1963 through 1998 and a book: CAROLE HANDSLIP, 50 GREAT SANDWICHES (1994). In affirming the Examiner’s rejections of the pending applications, the Examiner and the BPAI relied on two new prior art references, a self-published undated book and a newspaper article. The book was URSULA KAISER, PASTA, PIES, AND PASTRIES: TART RECIPES FROM AROUND THE WORLD (undated, circa 1996 or earlier). *See* BPAI Method Decision, *supra* note 39, at 3-6, 7-8; BPAI Sandwich Decision, *supra* note 41, at 2-4, 5-6. In addition to Kaiser’s book, the BPAI relied upon a newspaper article: Karen Shideler, *Ways to Make it Through the First Day of School*, WICHITA EAGLE, Aug. 14, 1994 [hereinafter the back-to-school article]. Neither was prior art of record in the prosecution of the issued patent though both references were prior to the effective filing date of the parent. These are the sort of references that are turned up in litigation and might have done so here.

43. *See In re* Kretchman, 125 F.App’x 1012 (Fed. Cir. 2005) (appeal of the BPAI Sandwich Decision, *supra* note 41).

44. '596 Patent, *supra* note 23.

45. *Id.*

46. *Id.* (showing the assignee as “Menusaver, Inc.”); *Albie’s Foods, Inc. v. Menusaver, Inc.*,

time of the 2001 litigation involving Smucker and Albie's.⁴⁷ The following subsections will summarize and highlight the ordinary aspects of the '596 Patent, laying a foundation for the conclusion that there is nothing on the face of the patent that clearly points to it being "bad."

2. Cover Page

The patent as issued contained 10 claims and 4 drawing sheets (containing Figs. 1-5). The application was filed on December 8, 1997, and the prior art of record included seven U.S. patents issued between 1963 and 1998, five in U.S. class 426/275, and one each in U.S. classes 426/244 and 426/89.⁴⁸ Class 426 is for processes, products, and compositions of "Food or Edible Material."⁴⁹ The subclasses (275, 244, and 89) are provided for more distinctly classifying processes for binding two or more layers of solid foods together;⁵⁰ processes for heating a food material;⁵¹ and for products composed of edible materials encased by another edible material.⁵² The prior art of record also included one non-patent publication, *50 Great Sandwiches*, from 1994.

3. Prior Art

Among the seven cited patents are these three that are representative:

U.S. Patent No. 3,083,651 for a sandwich-making device to form an assembled untoasted sandwich into a configuration such that it may be readily cooked in a conventional toasting device by compressing the sandwich, trimming the crust from the edge, and sealing the remaining

170 F. Supp. 2d 736, 738 (E.D. Mich. 2001) (identifying Menusaver, Inc., as "a wholly-owned subsidiary of Smucker").

47. See, e.g., Seth Shulman, *PB&J Patent Punch-up: Someone's Managed to Patent a Crustless PB&J, And It Ain't Mom*, MIT TECH. REV. (May 1, 2001), <http://www.technologyreview.com/article/401013/pbj-patent-punch-up/>.

48. '596 Patent, *supra* note 23.

49. U.S. PATENT & TRADEMARK OFFICE, CLASSIFICATION DEFINITIONS 426 (Dec. 2000 ed.), available at <http://www.uspto.gov/web/patents/classification/uspc426/defs426.pdf>. It should be noted that class 426 deals with edible materials "only in those situations where the edible [material] is intended to be consumed and is not merely in a nontoxic form which is ancillary to its ultimate and intended purpose, e.g., adhesive for stamps, etc." *Id.* at 1.

50. *Id.* at 39 (sub-classifying food processes wherein two or more layers of solid foods are bound to one another and "wherein at least one of the preforms is made of dough").

51. *Id.* at 35 (sub-classifying food processes "wherein . . . a food material is heated in a dielectric manner . . .").

52. *Id.* at 25 (sub-classifying food products "composed of a fluent material encased by another material or . . . composed of two or more solid self-sustaining materials integrally connected and wherein all of the above products are made up of distinct unlike edible materials").

edge portions under compression to prevent subsequent leakage of the filling.⁵³

U.S. Patent No. 3,690,898 for a method of making a filled sandwich suitable for placing in a vertical position for heating in a conventional household toaster by treating slices of bread with a thin layer of a hydrocolloid (including pre-gelatinized starches such as corn starch, or a hydrated slurry such as unmodified starch, guar gum, carob gum, or gelatin) to seal a filling inside the sandwich, between two pieces of bread.⁵⁴

U.S. Patent No. 4,382,768 for an apparatus for making dough envelopes containing filling, comprising a mold with cutting edges around a central chamber producing uniformly shaped envelopes of dough, and with pasting faces within the mold to provide a strong and uniform seal around the edges of the dough envelope.⁵⁵

There are four other prior art patents of record, but these three suffice to illustrate both the state of the art and the nature of the search conducted within the Patent Office prior to granting the PB&J patent.

4. Background of the Invention

The background of the invention reveals that it “relates generally to sandwiches and more specifically it relates to a sealed crustless sandwich for providing a convenient sandwich without an outer crust which can be sealed for long periods of time without a central filling . . . leaking outwardly.”⁵⁶

The inventors point out that “many individuals enjoy sandwiches” with meat or jelly-like fillings between two slices of bread. But many of those individuals do not care so much for the outer crust “associated with conventional slices of bread” and must take the time to tear away

53. Sandwich Making Device, U.S. Patent No. 3,083,651 col.1 ll.43-55 (filed Jan. 27, 1960) (issued Apr. 2, 1963) (describing compressing the sandwich, trimming the crust, and sealing the edges to prevent leakage); *id.* at col.3-4 (claiming a sandwich pressing device).

54. Method of Making a Filled Sandwich, U.S. Patent No. 3,690,898 col.1 ll.12-21; col.2 ll.1-22 (filed Feb. 9, 1970) (issued Sept. 12, 1972) (describing steps to seal a filled sandwich to prevent loss of filling); *id.* at col.4 ll.10-34 (claiming a method of treating slices of bread, applying a layer of sandwich filling on a treated surface, and placing at least two slices of treated bread in face-to-face relation to provide a filled sandwich).

55. Apparatus for Making Dough Envelopes Containing Filling, U.S. Patent No. 4,382,768 col.1-2 (filed Oct. 27, 1980) (issued May 10, 1983) (describing the background of the invention, and known methods of making filled pastries such as ravioli, creplich, won ton, and empanada); *id.* at figs. 1-4 (depicting a typical prior art method for forming dough envelopes); *id.* at col.7-10 (claiming an apparatus). “Creplich” is a variant spelling of “kreplach” which is a Yiddish term for a square or triangular dumpling filled with ground meat or cheese. *Creplich*, MERRIAM WEBSTER, <http://www.merriam-webster.com/dictionary/creplich> (last visited Sept. 30, 2014).

56. ‘596 Patent, *supra* note 23, at col.1 ll.6-10.

the crust, which is then thrown away and wasted. The invention is said to address that problem and also to provide “a method of making a sealed crustless sandwich” that “can be stored for extended periods of time without an inner filling . . . seeping into the bread portion.”⁵⁷

While the inventors acknowledge that the prior art discloses “numerous sandwich devices” that may be “suitable for the particular purpose . . . which they address,” the inventors assert that none of the prior art sandwiches is suitable for providing the object of their sandwich: “providing a convenient sandwich [1] without an outer crust, which [2] can be stored for long periods without a central filling . . . leaking outwardly.”⁵⁸

5. Summary of the Invention

The summary of the invention discloses two primary objects, additional objects, further objects, and yet other objects, having to do with: overcoming the failings of the prior art; providing a sandwich that does not have a crust; retaining an inner filling that does not seep into the bread; providing a sandwich that can be stored for an extended period of time, for use in lunch boxes; reducing waste because of thrown-away crust portions; and providing a method of producing such sandwiches.

6. Drawings

The drawings include five figures. They show: (1) a side view of a cutting cylinder above the bread and fillings; (2) a side view of the cutting cylinder penetrating and crimping the bread and fillings; (3) an upper perspective view of the finished sandwich within an airtight package; (4) a cross-sectional view of the finished sandwich; and (5) a lower perspective view of the cutting cylinder.

7. Description

The description of the preferred embodiment discloses three fillings between two pieces of bread (“bread portions”) that are crimped together. These are (1) an upper filling and (2) a lower filling between the two pieces of bread, and (3) a middle filling between, and encapsulated by, the other two fillings. The upper and lower fillings are preferably peanut butter, but could be “any other edible substance” such

57. *Id.* at col.1 ll.22-25.

58. *Id.* at col.1 ll.44-46.

as, “but not limited to meat, vegetable oil, jelly, cheese, honey, or fruit.” The center filling is preferably jelly but may consist of the same assortment of edible substances as the upper and lower fillings. The point of so surrounding the center filling with the two other fillings that line an interior reservoir of the sandwich is to prevent the center filling “from leaking outwardly into and through the bread portions.”⁵⁹ The sandwich is preferably packaged within a resilient package both to extend its useful life and to provide convenience to the user of the sandwich.

The sandwich is produced by forming it beneath a cutting cylinder, described as having a “sleeve” that is slidably positioned within a lumen of the cylinder. The sleeve has a notched end at its bottom, with spaced apart notches to form a plurality of depressions in the crimped edge which represent pressure points projected into the two pieces of bread. A cutting edge surrounds the cutting cylinder and may be formed into various shapes to form different designs for various sandwiches (though a round shape is illustrated). On contact, the notched edge of the sleeve compresses the upper piece of bread into the lower piece of bread to form a “seal which retains itself for extended periods of time.” There are support members attached to the cutting cylinder and sleeve for raising and lowering the mechanism.

In operation, an upper filling is juxtaposed to the bottom of the upper piece of bread, and a lower filling is juxtaposed to the top of the lower piece of bread. The middle filling is positioned and sealed between upper and lower fillings. Preferably, none of the fillings extend into the crimped edge “since any foreign substance within the crimped

59. This calls to mind the well-known “cladding” patent—perhaps one could have described the outer and middle fillings by reference to their viscosity and perhaps by defining a positive (or negative) gradient between the middle and the outer fillings so that the least-viscous (relatively positive) fillings would be outermost with the most viscous (or negative) filling between, forming a relative barrier against leakage resulting from the gradient differential between the edible substances. *See generally* Corning Glass Works v. Sumitomo Elec. U.S.A., Inc., 868 F.2d 1251 (Fed. Cir. 1989) (affirming a determination that the addition of a negative dopant to the cladding layer around a core was equivalent to the addition of a positive dopant to the core since both were ways of establishing a refraction index differential that resulted in the channeling of light signals through the core of a fiber optic cable). Or, like the infamous pH-range patent claim, the PB&J patent claims might have described viscosity, more directly, by a numerical coefficient of viscosity, in terms of the ratio of the tangential, frictional force per unit area to the velocity gradient perpendicular to the direction of flow of a liquid. *See Viscosity*, MERRIAM-WEBSTER, <http://www.merriam-webster.com/dictionary/viscosity?show=0&t=1412100054> (last visited Sept. 30, 2014) (defining the term). Perhaps the outer fillings could be similar to “a range of 6 to 9” (or whatever) on a constructed viscosity scale; *cf.* Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17 (1997) (remanding to determine whether a pH level of 5.0, though outside the claimed range of pH levels between 6.0 and 9.0, could infringe under the doctrine of equivalents). Perhaps, if so dressed-up, the claims at issue might have seemed less *déclassé*.

edge weakens the seal” between the upper and lower pieces of bread. The spaced apart depressions formed by the pressure points caused by the notched end of the cylinder “prevent the crimped edge from separating” and so retain the filling. As this is happening, and because of the positioning of the upper and lower fillings relative to the bread and each other, the peripheral edge of the upper filling is forced into the peripheral edge of the lower filling, surrounding the center filling and sealing it between the other two fillings. As the cutting cylinder and sleeve are elevated away from the sandwich, pressurized air is released into the cylinder to help force the sandwich out from within the cylinder.⁶⁰

Afterwards, an air-tight resilient package is wrapped around the sandwich. And it is done. The preferred embodiment shows a circular shape of the finished product. And, as I noticed after buying a couple of sample boxes for the Akron conference, the sandwich is sold frozen; and it happens that, when unrefrigerated and put out in the morning for conference snacks at lunch (or perhaps, put in a child’s lunch box), the sandwich unfreezes, just in time for eating.

8. Claims

There are two independent claims (1 and 9) within a total of ten. Seven of the dependent claims (2-8) depend from claim 1, and one claim (10) depends from claim 9.

Claim 1 is to a “sealed crustless sandwich.”⁶¹ In essence, it provides:

a first bread layer, at least one edible filling juxtaposed; a second bread layer juxtaposed and opposite the first bread layer; a crimped edge for sealing the filling between the bread layers; wherein the crust portion of the first and second bread layers has been removed.

The next seven claims further define and limit the invention by adding, serially, seven other things, qualities, or relations:

Claim 2 . . . a plurality of spaced apart depressions on the crimped edge for increasing a bond on the edge [claim 2, depending from claim 1]

Claim 3 . . . wherein the crimped edge is a distance away from [doesn’t touch] the filling for increasing the bond [claim 3, depending from

60. This pressurized air step is useful for separating the sandwich from the product that manufactures it.

61. See ‘596 Patent, *supra* note 23, at col.4 ll.15-32.

claim 2]

Claim 4 . . . wherein the filling comprises: a first [upper], a second [center], and a third [lower] filling, and wherein the second filling is completely surrounded by the first and third fillings, for preventing the second filling from coming into contact with the bread [claim 4, depending from claim 3]

Claim 5 . . . wherein the first [upper] and third [lower] fillings have “sealing characteristics” [claim 5, depending from claim 4]

Claim 6 . . . wherein the first [upper] filling is juxtaposed to the upper piece of bread, the third [lower] filling is juxtaposed to the bottom piece of bread, and the edges of the first and third fillings are engaged to one another to form a reservoir for retaining the second [center] filling between them [claim 6, depending from claim 5]

Claim 7 . . . wherein the first and third fillings are peanut butter, and the second filling is a jelly [claim 7, depending from claim 6]⁶²

Claim 8 . . . wherein the sandwich’s crimped edge is substantially circular in shape [claim 8, depending from claim 7].⁶³

The other independent claim is claim 9. It claims a sealed sandwich with three fillings, crimped edges for sealing the three fillings between a top and bottom piece of bread, with the third [center] filling encapsulated by the other two. It also describes the pieces of bread as each having “a crust portion” and then claims the relationship “wherein said . . . crust portions have been removed.”⁶⁴ Claim 10 depends from claim 9, and includes the further limitation that each of the first and second [sic, third?] fillings have “sealing” characteristics.⁶⁵

9. Detour: The Additional Claims in the Related Cases

The prior sections describe the ‘596 Patent. But a detour is in order. In 2007, the ‘596 Patent was cancelled on reexamination but without a

62. It is, finally, at the point of claim 7 that the invention is limited, with the help of hindsight, to a peanut butter and jelly sandwich characterized by a “doubly encapsulated filling, secured by two spaced apart seals.” This is because claims 1 and 3 posit a crimped edge-seal between two pieces of bread, enclosing a filling, with the bread seal spaced apart from the filling; claims 4 and 5 posit a filling completely encapsulated, and sealed, by another filling; claim 6 posits these fillings joined to ensure that an edge seal of the upper and lower fillings engages around the middle filling. Claim 7 introduces peanut and butter and jelly. *See supra* text accompanying notes 20 & 21 for the “doubly encapsulated filling, secured by two spaced apart seals” formula.

63. ‘596 Patent, *supra* note 23, at col.4 ll.62-63.

64. *Id.* at col.6 ll.1-2.

65. *See id.* at col.6 ll.4-6.

readily available written explanation.⁶⁶ Meanwhile, two related patent applications were adjudicated, and there is a written record of their disposition. To prepare the way for a subsequent discussion of the reasons for rejection of these applications (and by inference, for the cancellation of the previously issued '596 Patent), and hence for an explanation of what was so “bad” about the attempts to patent a PB&J sandwich, here is a description of the claims presented in two related applications. One application was for a product (the Product Application)⁶⁷ and the other for a process of making sealed crustless sandwiches (the Process Application).⁶⁸

The Claims in the Product Application. The Product Application was for a sandwich and is a continuation of the parent—it had the same disclosure as the '596 Patent, but differed in the claims.⁶⁹ The Product Application presented three claims, numbered 39-41.⁷⁰ Here are the claims at issue in the Product Application:

39. A crustless sandwich comprising:

[a] a first portion of bread with its crust cut off to define a first predetermined outer shape bordered by a first outer margin with a first perimeter,

[b] a second portion of bread with its crust cut off to define a second predetermined outer shape identical to said first outer shape of said first bread portion with said outer shape of said second portion having a second outer margin with a second perimeter,

[c] said second margin being coextensive with said first outer margin,

[d] a central filling between said bread portions in an area within, but smaller than said first and second outer margins,

[e] said cut bread portions being sealed by compression between said outer margins and in a sealed marginal area whereby said compressed

66. Not readily available, that is, outside the file wrapper which must be presumed to contain the reasons for cancellation. I have voluntarily constrained myself from dipping into the prosecution history or from requesting a copy of it from Smucker. *See supra* notes 16-17. Accordingly, I have reconstructed a likely scenario from other sources. In addition, the applications are relevant in themselves better to paint the picture of how current patent law routinely works, and because the history of the applications intertwines with that of the '596 Patent.

67. U.S. Patent Application Serial No. 09/845,925 (filed Apr. 30, 2001). *See supra* note 40.

68. U.S. Patent Application Serial No. 09/821,137 (filed Mar. 30, 2001). *See supra* note 38.

69. It is a continuation of a divisional of the [grand] parent application. *See* BPAI Sandwich Decision, *supra* note 41, at 3 n.4 (reciting the chain of continuations from the [grand] parent application, which issued as the '596 Patent).

70. Claims 39 and 40 of the Product Application are quoted by the BPAI. *Id.*

sealed outer margins are free of said filling and spaced outwardly from said filling,⁷¹

[f] closely spaced depressions of compacted bread along said sealed marginal area to crimp said compressed marginal area at spaced points to prevent said bread portions from separating at said outer perimeters,

[g] and with said compressed marginal area extending outwardly to said outer shapes of said bread portions defined by said perimeters.⁷²

For ease of discussion, I refer, with the benefit of hindsight, to a general description of the most narrow claims of the asserted invention as comprising a “doubly encapsulated filling, secured by two spaced apart seals.”⁷³ That is essentially what claim 7 of the ‘596 Patent points out and claims.⁷⁴ The preceding proposed claim 39 is broader than claim 7 of the issued patent—broader because it does not require one filling to be encapsulated by another filling. It is drawn merely to a single encapsulation of a filling, sealed by the bread, and with the bread-seal spaced apart from the filling it encloses.

The next claim of the Product Application, claim 40, was also in independent form. Like claim 39 of the Product Application, it too is roughly parallel to claim 7 of the ‘596 Patent, but more specific. Claim 40 takes a slightly different approach to the sandwich than claim 39. Proposed claim 40 is, for example, limited to peanut butter and jelly, while claim 39 is not so limited. More significantly, proposed claim 40 seeks to claim only what I have previously referred to as a “doubly encapsulated filling, secured by two spaced apart seals.” This proposed claim provides as follows:

40. A crustless peanut butter and jelly sandwich comprising:

[a] a first portion of bread with its crust cut off to define a first predetermined outer shape bordered by a first outer margin with a first perimeter,

[b] a second portion of bread with its crust cut off to define a second

71. These limitations, in clauses [a] through [e] of claim 39, yield a part—the *first encapsulated* filling—of what I have described for ease of discussion as a “doubly encapsulated filling, secured by two spaced apart seals.” Clause [e] posits a compression *seal* in the bread surrounding the filling, *spaced apart* from the filling. This claim 39 is broader than my characterization because it claims only one encapsulation of a filling, and by only one seal. It is claim 40 that adds the other encapsulation of the filling, and the second seal. *See supra* text accompanying notes 20 & 21 for the “doubly encapsulated filling, secured by two spaced apart seals” formula.

72. *See* BPAI Sandwich Decision, *supra* note 41 (quoting claim 39).

73. *See supra* text accompanying notes 20 & 21.

74. *See supra* note 62.

predetermined outer shape identical to said first outer shape of said first bread portion with said outer shape of said second portion having a second outer margin with a second perimeter, said second margin being coextensive with said first outer margin,

[c] a first layer of peanut butter between said bread portions in an area within, but smaller than said first and second outer margins,

[d] a layer of jelly generally centered on said first layer of peanut butter leaving an exposed surface of said first peanut butter layer surrounding said jelly layer,

[e] a second layer of peanut butter over said first layer of peanut butter and sealed to said first peanut butter layer at said exposed surface whereby said jelly is encapsulated by peanut butter of said layers,⁷⁵

[f] said cut bread portions being sealed by compression between said outer margins and in a sealed marginal area whereby said compressed sealed outer margins are free of peanut butter and/or jelly and spaced outwardly from said layers of peanut butter, closely spaced depressions of compacted bread along said sealed marginal area to crimp said compressed marginal area at spaced points to prevent said bread portions from separating at said outer perimeters and with said compressed marginal area extending outwardly to said outer shapes of said bread portions defined by said perimeters.⁷⁶

Claim 41 of the Product Application added the limitation: “wherein said sandwich is wrapped in an airtight package.”⁷⁷

The Claims in the Process Application. The Process Application was for a method of making a sandwich and is another continuation of the parent—it had the same disclosure as the ‘596 patent, but differed in the claims.⁷⁸ The Process Application presented a number of method

75. These limitations, in clauses [c] through [e] of claim 40, yield the *first* seal and first encapsulation of the “doubly encapsulated filling, secured by two spaced apart seals,” whereby the filling itself is completely encapsulated and sealed by another filling (the jelly completely sealed by the peanut butter).

76. *Id.* The limitations of clause [f] of claim 40 complete the description of the “doubly encapsulated filling, secured by two spaced apart seals” by adding the *second* seal and second encapsulation (the peanut butter-encapsulated-and-sealed jelly filling is now encapsulated by bread, and the bread seal is spaced apart from the filling seal).

77. Brief for Appellee at 28-31, *In re Kretchman*, 125 F.App’x 1012 (Fed. Cir. 2005) (No. 2004-1449), 2004 WL 3763782, at *28-31 (quoting the additional limitation in claim 41) [hereinafter PTO Brief].

78. It is a continuation of a divisional of the [grand] parent application. See BPAI Method Decision, *supra* note 39, at 5 n.5 (reciting the chain of continuations from the [grand] parent application, which issued as the ‘596 Patent).

claims, including claims numbered 45, 46, and 50.⁷⁹ I have referred, with the benefit of hindsight, to a general description of the asserted invention as comprising a “doubly encapsulated filling, secured by two spaced apart seals.”⁸⁰ That is essentially what claim 7 of the ‘596 Patent points out and claims.⁸¹ Claims 45 and 50 are for a method of creating a sandwich. Claim 46 is a broader method because it is not limited to the double encapsulation. Here are those claims:

45. A method of creating a hermetically sealed crustless sandwich, said method comprising:

- (a) providing a first slice of bread with an edge crust;
- (b) applying a layer of peanut butter onto said first slice in an area inside said crust and defining a substance free outer periphery of said first slice;
- (c) applying a layer of a fruit spread over said peanut butter layer leaving a perimeter of uncovered peanut butter;
- (d) covering said layer of fruit spread by a second layer of peanut butter contacting said first layer of peanut butter to encapsulate said fruit spread;⁸²
- (e) applying a second slice of bread over said first slice of bread with an edge crust matching said edge crust of said first slice;
- (f) providing a cutter with a continuous cutting edge having a desired cut shape larger than said periphery;
- (g) positively forcing said cutting edge through said slices in unison with said cut shape outside said area to cut two matching cut portions of bread with an outer periphery outside said area and a contour matching said cut shape and surrounding said area;
- (h) compressing said bread completely around said outer periphery to seal said bread around said contour with said peanut butter and encapsulated first spread captured between said bread portions, wherein said compressing operation also crimps said substance free periphery at spaced pressure points to give space locations of greater sealing force at said outer periphery of said bread portions;⁸³ and,

79. The claims are quoted by the Board of Patent Appeals and Interferences. *Id.*

80. *See supra* text accompanying notes 20 & 21.

81. *See supra* note 59.

82. Here is the method of producing a first encapsulation, of the fruit by the peanut butter, with the peanut butter sealing the edges of the fruit spread as the effects of step (d) cooperate with those of step (c).

83. Here is the method of producing a second encapsulation, of the fruit-and-peanut butter by

(i) placing said cut crustless sandwich into an airtight package for long term storage.⁸⁴

Claim 46 describes a method for producing an encapsulated filling, secured by a spaced apart seal in the bread. The method of doing so is described differently from claim 45. At method steps 46(d), (e), and (f), the formation of the spaced apart seal (the crimped bread seal) is described in terms of an edge “spaced outwardly” from a perimeter of the central filling of an “edible food.”⁸⁵ Independent method claim 46 is broader than claim 45 because it is not limited to peanut butter and jelly, but to any single edible filling; and it is not limited to a doubly enclosed filling. It adds a method step that further limits the crimped bread seal to a seal that does not mash the two bread pieces together, but in which the “perimeter surfaces [of the two pieces of bread] are sealed together while leaving said two portions [the two pieces of bread] separately exposed around said periphery.”⁸⁶ Here is the claim:

46. A method of creating a sealed crustless sandwich, said method comprising:

(a) placing a first slice of bread with a first perimeter surface surrounded by an edge crust on a support surface;

(b) applying a central filling of an edible food in an area inside said perimeter surface;

(c) applying a second slice of bread with an edge crust and second perimeter surface similar to said first perimeter surface over said first slice of bread with said perimeter surfaces facing each other;

(d) providing a cutter with a continuous cutting edge having a desired cut shape fitting inside said edge crusts of said bread slices and spaced outwardly from said area with said shape overlying said perimeter surfaces;

(e) positively forcing said cutter edge through said slices in unison and against said support surface, with said cut shape outside said area to thereby cut two matching portions of bread with an outer periphery outside said area of said central filling and a contour matching said cut shape and encircling said area; and,

the bread, with the crimped bread seal spaced apart from the peanut butter seal as the effects of steps (e), (f), and (g) cooperate with those of step (h) to produce a crimped edge at the substance-free outer periphery produced by step (b).

84. See BPAI Method Decision, *supra* note 39 (quoting claim 45).

85. *Id.* at 2 (quoting claim 46).

86. This is the last clause of claim 46(f). *Id.*

(f) compressing said perimeter surfaces together, independently of said cutting of said bread portions, by an edge sealing member with a bottom pressure surface having a transverse width defining an outer edge matching said cut shape and an inner edge spaced outwardly of said area of said central filling whereby said perimeter surfaces are sealed together while leaving said two portions separately exposed around said periphery.⁸⁷

Claim 50 depends from claim 46 and adds a further process limitation (this is the process step that produces the doubly-encapsulated peanut butter and jelly sandwich with spaced apart seals, forming the complete invention as I have previously characterized it):⁸⁸

wherein said central filling includes a layer of jelly with a given shape, a first layer of peanut butter below said jelly layer and larger than said given shape to include a surrounding first exposed surface of peanut butter and a second layer of peanut butter above said jelly layer and larger than said given shape to include a surrounding second exposed surface of peanut butter with said peanut butter exposed surfaces sealed together to encapsulate said jelly layer by said peanut butter layers.⁸⁹

10. A Clarification and a Quasi-Rabbit Trail: A Hypothetical Process Claim.

Let us grant that claim 7 of the '596 patent and proposed claim 40 of the Product Application are drawn to a sandwich with a doubly encapsulated filling having spaced-apart seals.⁹⁰ Likewise, let us grant that proposed claim 50 of the Process Application is drawn to a method of producing such a sandwich. Here is a clarification: when it comes time to discuss whether the '596 Patent is a "bad" patent, and whether it comes from a "bad" family, I will assess these narrow claims.⁹¹

In addition to the clarification, it is always useful to consider whether there might be a hypothetical claim that could have been presented. Let us return to the Process Application and add a limitation. We might call it a hypothetical proposed method claim [51], depending

87. *Id.*

88. *See supra* text accompanying notes 20 & 21 (giving that characterization); *see also supra* note 62 (tying claim 7 of the '596 Patent to that characterization); *supra* notes 75 & 76 (tying claim 40 of the Product Application to that characterization).

89. *See* BPAI Method Decision, *supra* note 39 (quoting claim 50).

90. That is the conclusion just reached. *See supra* note 88.

91. The theme I am exploring includes the proposition that the '596 Patent and the related applications are not significantly different in kind from countless other patents routinely granted. It is, therefore, the narrow claims with which I am most concerned.

from method claim 50: “and (g) releasing pressurized air into a cutting cylinder from which said cutting edge depends, to help force the sealed crustless sandwich away from the cutting edge.”⁹²

The reason for including the hypothetical claim, i.e., adding the air puffer, will later become clear. It is not offered to second guess anyone involved. Instead, it supports the point that the line between a “bad” patent and a “good” one can be very thin indeed. This rests on the twin assumptions that the ‘596 Patent is conventionally bad, in no small part because it was ruled invalid for *bona fide* obviousness or anticipation, but that the hypothetical claim 51 might convert the PB&J technology into something conventionally “good” because it might have overcome the prima facie case of obviousness.⁹³ Those assumptions may need to be tested, but it is well to state them.

Both the clarification and the hypothetical claim actually avoid the potential rabbit trails that would otherwise muddy the discussion. I will not deal with all the filed claims, but only those narrowly describing a sandwich with a doubly encapsulated filling with spaced apart seals and a method of making it. Nor will I deal with every imaginable alternate set of claims that might have avoided the prior art, but only one hypothetical claim, and that one very specifically drawn. These simplifying conventions will keep the discussion focused on what, exactly, was so bad about patenting the PB&J technology and what, if anything, makes it different from other patents.

11. The Routine Backstory and Conclusion

Imagine, for the moment, that the issuance of the ‘596 Patent and its continued existence had not created a public outrage. Ignoring the sound and fury, and without the bias created by the buzz that surrounded the patent, let us imagine a routine prosecution of the related applications and a routine reexamination of the ‘596 Patent against the backstory of a successful product. That is, let us look at the claims as if in an adjudicative vacuum, based on existing law and practice, including ordinary application of secondary factors such as commercial success.

The crustless sealed peanut butter and jelly sandwich was a success.

92. This limitation is supported by the common disclosure in the specification of the parent application. *See supra* text accompanying note 69; *see also* ‘596 Patent, *supra* note 23, col.3 ll.50-53 (describing a pressurized air puffer).

93. On the other hand, the ‘596 Patent might have been already doomed because of the public outcry and outrage, resulting in the sort of trial by pitchfork, tar and feathers that no amount of standard patent practice could have saved. *See* discussion *infra* Part II.B. This is the problem caused by the public perception of illegitimate patents.

Starting from a conception sometime in 1995, and at zero sales, the inventors, Len Kretchman and David Geske, were able to start selling late in 1996 and to get a patent application on file in 1997.⁹⁴ They marketed their product, not at retail stores but to school lunch programs, expanded into a production facility in Fargo, North Dakota, and then sold the invention to an affiliate of Smucker sometime before the end of 1999.

By 2004, five years after the patent issued, and on the eve of oral argument at the CAFC on the related applications, the *Wall Street Journal* reported that Smucker was realizing \$27.5 million in annual revenue from the Uncrustables.⁹⁵ By 2006, around the time the reexamination decision was being reached, the *Bowling Green Daily News* reported that Smucker had realized \$60 million in annual Uncrustables product sales and that Smucker had announced plans to move production of the sandwich from the plant in Fargo, North Dakota, to its \$51 million facility in Scottsville, Kentucky.⁹⁶

For good measure, the Uncrustables brand continued to expand after the patent was cancelled in 2007. The company is reported to have announced that sales of its Uncrustables sandwich line grew at a steady compound annual rate since fiscal 2007, reaching nearly \$125 million in sales in fiscal 2012, and that Smucker was preparing to invest another \$80 million in its Scottsville plant to expand the capacity for baking bread and making Uncrustables sandwiches.⁹⁷ Though these numbers are variously reported from various sources, probably combining different measures and, so, perhaps not entirely accurate as I have cobbled them together here,⁹⁸ they paint a picture of a successful product.

94. Muñoz, *supra* note 1; '596 Patent, *supra* note 23, at [22].

95. Muñoz, *supra* note 1 (and also for the earlier marketing of the sandwiches to school lunch programs and sale of the invention to an affiliate of Smucker).

96. *Smucker to Produce all Uncrustables in Allen County After Closing Other Plant*, BOWLING GREEN DAILY NEWS (Sept. 7, 2006), <http://www.tmcnet.com/usubmit/2006/09/07/1871838.htm>. The paper reported that, according to SEC filings, the \$60 million in Uncrustables sales represented 4% of Smucker's \$1.5 billion of overall net sales in the U.S. retail market during the year. *Id.*

97. See Eric Schroeder, *Smucker in Midst of "Most Robust Period of Innovation" in Company History*, FOOD BUS. NEWS (Feb. 2, 2013), http://www.foodbusinessnews.net/articles/news_home/Business_News/2013/02/Smucker_in_midst_of_most_robust.aspx?ID=%7B56C93C03-2FE1-42E9-B5CD-F705AAED312C%7D (reciting Smucker's announcement of 6% year-over-year compound growth in Uncrustables sales over the period).

98. *Id.* It is not entirely clear how, at a 6% annual compound growth rate, the sales revenue grows from \$60 million to \$125 million (but there may be a missing year, or the quantities measured might be differently expressed in the different sources, and so not comparable). More precise numbers can probably be gleaned from publicly available sources, but the exact count is orthogonal to my point, which is merely that by any measure, and in the ordinary meaning of the

Against this backstory of the product's success, I have outlined the '596 Patent at some length, if only to suggest its utter banality. It is like so many other routine patents, except that it just happens to deal with a sandwich having a sealed edge, and as delimited in claim 7, containing jelly encapsulated within a protective sheath of peanut butter lathered between the jelly and the bread, the peanut butter completely covering the top, bottom, and periphery of the encapsulated jelly. This describes a doubly encapsulated, spaced apart, sealed sandwich. The jelly is first encapsulated by a peanut butter seal and is encapsulated a second time within the crimped seal of the sandwich. The inner peripheral seal of peanut butter around the jelly is designed not to touch the outer peripheral seal crimping the bread; hence the two seals of the doubly encapsulated filling are spaced apart. So also with the more narrow claims presented in the Product Application and in the Process Application. I will outline the ultimate rejections, again at some length, in the next paragraphs, once more to point out the routine nature of the entire proceeding and also to suggest that according to usual practice, there were at least two, and maybe three, chances by which one or more claims might have survived.

First, the Examiner, and the Board, arguably misread at least one element of the prior art, thereby failing to establish the prima facie case. It is likely that they misunderstood the "margin" disclosed in Ursula Kaiser's self published book, upon which they relied for either an anticipation-type or obviousness-type rejection of claims.⁹⁹ *Second*, the specification discloses at least one limitation that might have distinguished the prior art of record, had it been added to one of the process claims. The step of using an air puff to disengage the sandwich from the cutting cylinder might have changed the result.¹⁰⁰ *Third*, secondary factors might have included, among other things, the showing of a nexus between the commercial success of the product and the claimed invention.¹⁰¹ The immediate success of the Uncrustables,

expression, the product is, and was, successful. *Id.*

99. See KAISER *supra* note 42; *infra* text at notes 114-16 (discussing the "margin" disclosed in the book). Of course, even in the absence of any explicit teaching by Kaiser or anyone else to space the bread seal away from an enclosed sealed filling, an examiner might simply have said it would have been obvious to anyone having skill in the art to space the seals apart, or else might have said the spacing was "inherent" in some of the prior art. *Id.*

100. See *supra* note 93. Of course, this would have opened a new avenue for prior art searching. If we assume that puffers are well known, then an examiner would have faced the challenge of determining whether the addition of a known pressurized air blower to disengage the finished sandwich from the cutter-crimper cylinder would have been an obvious addition to a process for making a peanut butter and jelly sandwich. *Id.*

101. See *infra* note 122.

including \$27.5 million in reported sales during the year of the final rejections of the pending applications¹⁰² (notwithstanding the prior existence, sales, and common use of as many as 200,000 low-priced devices manufactured by Ursula Kaiser and pictured in her book¹⁰³ that, according to the Examiner and the Board, were designed to create precisely the same product that Smucker sought to patent), might have been tied to the claimed invention.¹⁰⁴ By no means am I second guessing anyone. All I am intending to point out is that, though all were ultimately rejected or cancelled, one or more of the multiple PB&J cases just might have gone the other way. If this is a “bad” patent from a bad family of applications, it is uncomfortably close to being routine. Nor can it be dismissed as a patent covering a non-significant product.

Rejections of the Continuing Applications. The patent portfolio began to unravel with the rejections of the two continuing applications. As outlined above, the fate of those two applications is set forth in two decisions by the BPAI in December 2004, each of which was summarily affirmed by the CAFC in April 2005.¹⁰⁵ The rejections are similar. Each relies on the same two new prior art references, not part of the prior art cited in the prosecution of the ‘596 Patent. One was a “back-to school” article from a Kansas newspaper,¹⁰⁶ and the other was a self-published book by Ursula Kaiser.¹⁰⁷ Kaiser’s book was said to have taught essentially all the elements of the claimed inventions, and the newspaper article is said to have taught the idea of making a peanut butter and jelly sandwich less leaky by spreading peanut butter on both slices of bread.

Kaiser’s book compiles over 100 tart recipes from around the world. It also features two products, the *Tartmaster* and the *Krimpcut Sealer*, designed to make sealed pastries, pies, tarts, and sandwiches

102. See *infra* note 139.

103. See *infra* note 109.

104. See *infra* note 111. Of course, even in the face of substantial sales, an examiner could still dissect the claimed invention, perhaps focusing on the “unmashed” crimped bread edges, and then assign to the applicant the burden of proving that purchasers were flocking to the product for that reason; or the examiner could require the applicant to show that there was a preexisting market-leader in the pre-packaged peanut butter and jelly sandwich line of business from which the patented invention took market share. *Id.*

105. See *supra* notes 37-43 (outlining the applications, and their disposition, at the PTO and the CAFC).

106. See Shideler *supra* note 42. The relevant teaching in that article is this: “If you put peanut butter on both slices of bread, the jelly in the middle won’t make the bread soggy.” PTO Brief, *supra* note 77, at 7 (quoting this sentence from the article).

107. KAISER, *supra* note 42. Though the Kaiser book is undated, it was conceded to be prior art to the ‘596 Patent and the related applications. PTO Brief, *supra* note 77, at 7 n.3 (stating that the applicant “acknowledges that [Kaiser’s book, and the *Tartmaster* and *Krimpcut Sealer*] are prior art to the claimed invention”).

easier to produce, “like magic.”¹⁰⁸ The *Tartmaster* is a cylindrical cutter, having a plunger and a crimping-sealing edger, once offered for sale through *The Pampered Chef*.¹⁰⁹ The *Krimpkut Sealer* is a pastry wheel that “not only cuts and crimps” but also “seals at the same time.”¹¹⁰

The Examiner, and the Board, applied Kaiser’s book alone or in combination with the back-to-school article to show, for example, all the elements of claim 39 of the Product Application.¹¹¹ Indeed, the Board supposed the rejection of claim 39 might have been made on the basis of complete anticipation by the Kaiser book, rather than obviousness, but observed that the error, if any, was harmless.

The Examiner, and the Board, applied the same references to all of the other claims in each of the two cases, filling some of the gaps with knowledge that the Examiner asserted would have been obvious to a person having ordinary skill in the art and, in similar fashion, rejected all claims of the Product Application and the Process Application.¹¹²

What is interesting is the triviality of the book compared to the prior art already of record and examined in the ‘596 Patent. Kaiser’s book was relied upon by the Examiner to show: dough (and bread) crimped and enclosing one or more fillings; a cutter suitable for removing crust and crimping the edges; and various sandwiches, tarts, and other products and recipes involving a filled, sealed sandwich. All of this was in the prior art already examined.¹¹³ The Examiner and the Board also observed that Kaiser’s book provided some basic guidelines for bread recipes. The guidelines included advice to leave a ¼ inch margin between the filling and the edge of the bread: “Spoon the filling in the center of the bread leaving a ¼ inch margin of bread around the edge for a secure seal.”¹¹⁴ The Examiner concluded, quite possibly in

108. KAISER, *supra* note 42, *passim*.

109. See, e.g., Lucinda Hahn, *The Case of The Tartmaster: Keeping Heat on Competition*, CHI. TRIB., Jan. 18, 2005, available at 2005 WL 23417875 (reporting on a falling out between Ursula Kaiser and The Pampered Chef over the product). Kaiser reportedly said the *Tartmaster* was “The Pampered Chef’s second-best selling product in 1991 and that it was estimated *The Pampered Chef* was ordering “100,000 to 200,000 a year” prior to stopping its orders and introducing its own Cut-N-Seal product in 1993. *Id.*

110. KAISER, *supra* note 42, at 2.

111. BPAI Sandwich Decision, *supra* note 41, at 7 (affirming the rejection of claim 39). See also PTO Brief, *supra* note 77, at 14 (including a claim chart, mapping each limitation of claim 39 to a corresponding teaching in the Kaiser book).

112. BPAI Sandwich Decision, *supra* note 41, at 7; BPAI Method Decision, *supra* note 39, at 8.

113. See *supra* notes 53-55 (reciting three representative prior art patents of record in the ‘596 Patent case).

114. KAISER, *supra* note 42, at 11. See, e.g., BPAI Sandwich Decision, *supra* note 41, at 14 (quoting the passage); *id.* at 19 (agreeing with the Examiner that it would have been obvious to

error, that this margin was for the purpose of separating the filling from the crimped edge of the bread and answered to the spaced apart limitation of the claimed invention (as claimed in both the Product Application and the Process Application).

From this quoted language, the PTO asserted that Kaiser taught or made obvious the “spaced apart” seal of claim 39, a crimped bread edge creating a seal spaced apart from the filling.¹¹⁵ But that reading would have required Kaiser to teach or suggest that the cut-and-sealed crimp be made in the bread at the *outer* periphery of the ¼ inch margin—and that there be a sealed filling inside—to create a [second] seal on the outer periphery of the bread, thereby preserving space between the [sealed] fillings and the crimped-bread seal. Instead, Kaiser shows a cut on the *inner* periphery of the margin, creating a bread seal tightly adjacent to the fillings.¹¹⁶ That is to say, the Kaiser book does *not* appear to describe, show, or teach a seal spaced apart from the filling. It could have been just as fairly concluded that Kaiser’s margin simply made sure there was enough bread to work with; then showing a cut that is made close to the filling. There is no clear indication that Kaiser either appreciated the need for or attempted to create a seal that is spaced apart from the filling. But, as claim 39 of the Product Application was broadly drawn to a single filling, the Kaiser reference would have sufficed had it shown a spaced apart seal.

Claim 40 of the Product Application added the further limitation of a second encapsulation, one filling encapsulated by another filling including top, bottom, and the peripheral edge; and peanut butter and jelly. The Kaiser book, just like the already cited prior art in the ‘596 Patent, taught a top-and-bottom edible layer enclosing a middle edible layer.¹¹⁷ The back-to-school article taught a layer of jelly between layers

completely encapsulate).

115. PTO Brief, *supra* note 77, at 14 (including the quoted passage from the Kaiser book in a claim chart to supply the spaced apart limitation of claim 39[d]: “a central filling between said bread portions in an area within, but smaller than said first and second outer [bread] margin[]”).

116. KAISER, *supra* note 42, at 48 (illustrating a *Krimpcut Sealer* cutting a Mozzarella sandwich on the *inside* margin, close to the filling); *id.* at 30 (illustrating a *Tartmaster* plunger cutting an open-faced piece of bread on the inside margin, close to the filling, to create a Spinach roll); *see also, e.g., id.* at 3, 4, 5, 7, 8, 9, & 10 (presenting overview pictures of the general method, all showing tight cuts, crimping or cutting on the inner periphery of the bread margin, leaving no observable space between the filling and the bread seal).

117. *Compare* KAISER, *supra* note 42, at 11 (guideline for bread recipes: “When using a moist filling, spread the bread with butter, margarine, or mayonnaise to prevent the bread from getting soggy”), with U.S. Patent No. 3,690,898, *supra* note 54, at col.3 ll.28-45 (a peanut butter and jelly sandwich: “Slices of rye bread . . . are treated so as to apply a thin layer of pre-gelatinized cornstarch thereto . . . onto one surface of each bread slice . . .”; a mixture of peanut butter and apple jelly is applied to the treated side of one slice of bread; the sandwich is then assembled by placing a second slice of bread with a treated surface onto the sandwich filling that had been applied

of peanut butter on the top and bottom slices of bread.¹¹⁸ But neither Kaiser nor the back-to-school article nor any other prior art taught or suggested using a top and bottom layer to enclose the edges of the middle layer. However, the Examiner and the Board agreed it would have been obvious to do so: since the back-to-school article pointed out that the reason the peanut butter was on both top and bottom of the jelly was to prevent leakage, anyone having skill in the art would have known that it would have been nice to also enclose the edges.

It cannot be said for certain that the misreading of the Kaiser book's ¼ inch margin made the difference between patentability and non-patentability, but it certainly counted against Smuckers. Even were it to have been read correctly, and so not containing the “spaced apart” limitation, the missing element might have been said to be inherently obvious, or the Examiner might have noticed an explicit teaching of a spaced apart seal in the prior art already of record. Neither can it be said that the addition of another limitation in a hypothetical claim, such as the pressurized blower to disengage the completed sandwich from the cutting and crimping cylinder, would certainly have made a difference. And yet there is anecdotal evidence that, at least recently, some users of the Kaiser-inspired cutter wish there were some way to get the sandwich out of the plunger.¹¹⁹ One can easily imagine a person having skill in the art, or otherwise qualified as an expert, who might have opined as much, as of the 1999 filing date, with respect to the unmet need to improve the old *Tartmaster* and its method of use by such an addition. Of course, that addition might also have been declared to be obvious under the *ipse dixit* test that is so frequently used.¹²⁰

to the first slice of bread). The 3,690,898 patent also taught (what the Kaiser reference did not teach): a bread seal spaced apart from the filling. *Id.* at col.2 ll.68-71.

118. Shideler, *supra* note 42.

119. *The Pampered Chef's* plunger, substantially the same as Kaiser's *Tartmaster*, is still offered for sale online. Comments from happy purchasers indicate that this device allows them to make a satisfactory substitute for the Uncrustables-brand sandwich, but one unhappy purchaser warns that it cannot disengage from the sandwich but tears away and, so, is no good.

120. Much has been made of the so-called objective three-part test for obviousness embedded in § 103 of the 1952 Patent Act. *See, e.g.,* *Graham v. John Deere Co.*, 383 U.S. 1, 3-4, 10-19 (1966) (making much of it). So also, it is well known to add another test for obviousness according to the secondary factors in addition to, or as part of, the statutory test. *See id.* at 36 (accepting such factors as an aid); *but see id.* at 36-37 (applying the factors but finding that they failed to “tip the scale of patentability”). Likewise, a practical combining test, as part of or in addition to the statutory test is well known. *See KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007). Not so much has been made of the *ipse dixit* test, other than perhaps to look the other way or to pretend that with the discrediting of the “subjective” tests, it has somehow disappeared. *Cf. Graham*, 383 U.S. at 25-26 (concluding the first of the companion cases, the plough with the shock absorber); *id.* at 36-37 (concluding the second of the companion cases, the sprayer with the hold-down lid) (adding in each a “because we

In both the Product and the Process Applications, the Examiner refused to credit proffered affidavits of commercial success and discounted the affidavits of experts disputing the ability of the *Tartmaster* (or *Krimpcut Sealer*) to produce the claimed peanut butter and jelly sandwich.¹²¹

The secondary factors could include these time-delimited comparisons:¹²²

(a) 1991-1996 (the five year period from the complete disclosure, in the Kaiser devices or the book, of all elements that would have made the claimed invention obvious, according to the Examiner, until the first sale of the Uncrustables). Prior to 1996, there were no sales of the Uncrustables and no evidence of record that anyone else had put the references together to create the so-called obvious invention. This is despite the fact that it was reported that the *Tartmaster* plunger, described in Kaiser's book, is said to have had some 100,000 to 200,000 units shipping to a distributor by 1991.

(b) 1999-2004 (the five year period from the issuance of the '596 Patent to the final rejection of the Product Application and the Process Application by the Examiner and the Board). The Uncrustables line reached \$27.5 million in annual sales in 2004. Meanwhile, Albie's began selling an allegedly infringing article in 2000, one year after the patent issued, and nine years after, according to the Examiner, it would have been obvious to create such a sandwich.

(c) 2006 (the year after the CAFC's decision affirming the rejections of both the Product Application and the Process Application; and the year in which the reexamination cancellation was announced). By 2006, the Uncrustables line climbed to \$60 million in annual sales.

The applicant would have to show that these sales figures actually do demonstrate some legally-sufficient level of success measured against some benchmark and would have had to demonstrate a nexus between the success and a feature of the claimed invention. The Examiner did not

say so" conclusory paragraph to a multi-page discourse on the beauty of the so-called objective test).

121. BPAI Method Decision, *supra* note 39, at 5-7 (agreeing with the Examiner's criticisms of the affidavits offered to distinguish the claimed features from the prior art); *id.* at 7-10 (agreeing that the secondary evidence did not establish a nexus between commercial success and the subject matter claimed); BPAI Sandwich Decision, *supra* note 41, at 4-5 (agreeing with the Examiner's criticisms of the affidavits offered to distinguish the claimed features from the prior art); *id.* at 6, 8 (agreeing that the secondary evidence did not establish a nexus between commercial success and the subject matter claimed).

122. *See supra* notes 95 (providing sales figures), 96, & 103 (estimating the number of *Tartmaster* plungers).

believe the applicant had met its burden, and the Board affirmed.¹²³ But from the data, it is easy to see that the outcome might have been different. In particular, it could be seen that if the undated Kaiser book, and the *Tartmaster* product described in Kaiser's book and on sale in large quantities since 1991, either alone or in combination with a newspaper article published in 1994 really made the invention obvious, then it is hard to account for the six to nine year gap before any evidence that anyone other than the patentee brought a product to market that answered to the patented sandwich. The substantial sales of the product by Smucker is at least some evidence that, had the product been obvious, someone else would have sold it. Perhaps if patents were examined on a best two-out-of-three, or if the applicant had an opportunity to supplement the record after seeing how the evidence had been evaluated, some other Examiner might have found the evidence of commercial success at least relevant.

In summary, all was undone on the basis of a self-published book and a newspaper article. The book showed the same sort of folded over and sealed products as the prior art¹²⁴ already of record including U.S. Patent Nos. 3,083,651 and 4,382,768. The newspaper article adds the teaching of putting peanut butter on both sides of bread in a sandwich, enclosing jelly in between, a variation of the prior art of record, including U.S. Patent No. 3,690,898, which showed a filling enclosed on top, bottom, and periphery by an edible hydrocolloid to seal the filling (and in one embodiment of which the first filling was a mixture of peanut butter and apple jelly, sealed by a layer of gelatinized cornstarch applied to each of the enclosing slices of bread forming a peripheral seal around the peanut butter and jelly filling). The book and the back-to-school article, arguably cumulative of the prior art already of record in the parent case, now applied in respect of claims more narrowly drawn than those already granted in the parent case, gave the Patent Office a chance for what was essentially a "do-over." As the BPAI affirmed the rejections of the method claims¹²⁵ and product claims,¹²⁶ and as the

123. BPAI Method Decision, *supra* note 39, at 8.

124. *See supra* notes 53-55.

125. *See* BPAI Method Decision, *supra* note 39, at 7. Here is a representative analysis by the BPAI, affirming the Examiner's rejection of method claim 50 of the co-pending application: Based on the combined teachings of [Kaiser's *Tartmaster* book] and [the back-to-school article], the examiner (answer, page 5) has reasonably determined that it would have been obvious for one of ordinary skill in the art at the time of the invention to apply peanut butter on the bottom slice of bread in [the *Tartmaster* book] as a filling ingredient, add jelly (fruit spread) on top of that peanut butter and apply another layer of peanut butter on the top of the jelly (next to the top slice of bread) so as to prevent the bread from getting soggy. *Since one purpose of the two peanut butter layers in*

CAFC summarily affirmed the Patent Office's disposition,¹²⁷ it would seem that the co-pending reexamination of the '596 Patent was likely to proceed in similar fashion and would result in cancellation. It did, and it did.

Cancellation of the '596 Patent on Reexamination. On reexamination, the array of prior art substantially increased from the seven patents previously cited. There were now 24 U.S. patents and one foreign patent cited. In addition, Ursula Kaiser's book was made of record, as were two publications from *The Pampered Chef*.¹²⁸ As noted, I have not contacted Smucker, nor have I had access to the prosecution history; and here, the Reexamination Certificate is silent. One reasonable hypothesis is that upon reexamination, in light of the new references but most prominently including the Kaiser book that was so nearly dispositive in the rejection of the continuing applications, the Examiner simply applied the same reference, in substantially the same way, to reach the same result.

Another partially consistent explanation of the reexamination is provided on *Wikipedia*. It is there reported that the claims were amended on reexamination in response to the new prior art.¹²⁹ It is said that Smucker "narrowed the wording of their claims to only cover a very specific version of the sandwich."¹³⁰ The same report continues, stating that the more narrow claims were rejected by the Examiner in

making the sandwich is to protect the bread from contact with the jelly, the examiner has fairly determined that one of ordinary skill in the art at the time of the invention would have drawn the reasonable inference from the teachings of the applied references that the peanut butter should be applied in a manner so as to encapsulate the jelly, that is, the jelly layer would be made smaller in area so that it does not contact the bread. We again observe that [the *Tartmaster* book] (page 11) suggests that a 1/4 inch margin free of filling should be maintained "for a secure seal."

Id. at 6 (emphasis added). The Examiner's rejection of the other method claims was similar, and the BPAI's affirmation was similar. As I have previously noted, the Examiner and the BPAI almost certainly misread and misapplied the 1/4 inch margin suggested by Kaiser's *Tartmaster* book.

126. The BPAI's analysis, and the Examiner's basis for rejection, of the product claims essentially track the rejection of the process claims, applying the teachings of the *Tartmaster* book and the back-to-school article to the product. See BPAI Sandwich Decision, *supra* note 41, at 7 (applying the references to the product claims).

127. See *In re Kretchman*, 125 Fed. App'x. 1012, 1012 (Fed. Cir. 2005).

128. See *Ex parte* Reexamination Certificate No. 6,004,596, *supra* note 24, at [56].

129. *Sealed Crustless Sandwich*, WIKIPEDIA, https://en.wikipedia.org/wiki/Sealed_crustless_sandwich (last visited Sept. 30, 2014).

130. *Id.* This is a reasonable approach by a patentee. As described in the Wikipedia article, the "narrowing" seems to amount essentially to the abandonment of the broadest claims in favor of the invention of claim 7. This is because the Wikipedia article, perhaps using shorthand, describes the newly narrowed claims as covering "only" sealed crustless peanut butter and jelly sandwiches "where the jelly is held between two layers of peanut butter." *Id.* Compare this to the discussion at Part II.A.8, describing claims 1-7 of the '596 Patent. If so, the patentee was, in effect, offering to sacrifice claims 1-6 in return for something like claim 7.

reexamination, in December 2003, “in light of the new prior art.”¹³¹ Finally, according to this report, in September 2006, the BPAI reversed the Examiner’s reasoning and yet affirmed the rejection of the narrowed claims as being “too vague to clearly identify exactly what Smucker’s is trying to patent.”¹³² Smucker did not respond to the BPAI’s new basis of rejection, and in December 2006, the PTO mailed a notice of intent to issue a reexamination certificate cancelling all claims.¹³³ It did so on September 25, 2007.¹³⁴ The *Wikipedia* report is fraught with the implication that Smucker might actually have overcome the anticipation (§ 102) and obviousness (§ 103) rejections, and finally lost only on the basis of failure “particularly [to] point[] out and distinctly claim[]” the subject matter of the invention (§ 112). This implies that Smucker might have saved the patent by a clarifying amendment, had the company not already grown weary of the fight or embarrassed by the negative publicity.

12. Final Thoughts about the Proceedings in the PTO

Though the PTO granted the ‘596 Patent after examination of a somewhat crowded field, the result might not sit well to an ordinary observer unacquainted with the prior art, or with the limitations in the claims. As a sealed food item contained within an edible dough, it suggests a turn-over, or a pie. As a peanut butter sandwich, it suggests merely buttering both sides and depositing the jelly between. As a classic combination patent, it tempts a simple invocation of, no denying it, “I could have done that myself, and if obvious to me, then it must be obvious to any person having ordinary skill in the art.” As an example of prior art searches, it suggests the limits inherent in turning to prior patents as the source most practically available to an examiner—in a context in which almost every living American can readily imagine that there “must have been” something pretty much just like this, and can almost “see” the patent-invalidating prior art without the need for any

131. *Id.* This would be consistent with the hypothesis that the same *Tartmaster* prior art (previously applied in the reported rejections of the co-pending applications) was now applied in substantially the same way in the case of the ‘596 Patent.

132. *Id.* This would seem to have converted the grounds for rejection from prior art (§ 103 obviousness-type) to vagueness (§ 112, second paragraph, failure to distinctly point out and claim what the applicant believes to be the invention). It seems rather odd to have done so, but not beyond the range of Patent Office actions. The reason it seems odd is that the claims at issue in the previously rejected applications are very similar to the ones at issue in the reexamination of the ‘596 Patent. Both the Examiner and BPAI would be presumed to know of the prior actions.

133. *Id.*

134. *See Ex parte* Reexamination Certificate No. 6,004,596, *supra* note 24, at [45].

search, and without the need to read any of the claims with much care.

We might call this something like prior art by folklore to the extent anyone without the benefit of having read the more narrow claims, but with the benefit of reconstructed memories, can remember having eaten just this sort of sandwich, or a Cornish pastie,¹³⁵ a calzone,¹³⁶ a turnover,¹³⁷ or a pie with a sealed crust many times before. And don't you know someone, or haven't you yourself, tried to put the peanut butter on both sides? And haven't you seen someone tear off the crust, or press the edges together? Or, if not, wouldn't it be pretty obvious to do so?

Meanwhile, the product was a commercial success. It went on sale as a branded product,¹³⁸ with some \$27.5 million in sales in 2004,¹³⁹ attracting allegedly similar unlicensed competing products resulting in at least one patent infringement lawsuit,¹⁴⁰ a failed attempt to secure additional patent rights in a family of continuing applications, a trip to the Federal Circuit in 2005 (on two of the rejected applications),¹⁴¹ and ending with the cancellation of the claims of the '596 Patent itself after *ex parte* reexamination in 2007.¹⁴²

Because it ended up cancelled, one might suppose that the correct

135. The great and authoritative Wikipedia says that early references to pasties (round battered pies, not to be confused with another usage of the term) include a term of delivery in a 13th century charter granted by Henry III to the town of Great Yarmouth. *Pasty*, WIKIPEDIA, <http://en.wikipedia.org/wiki/Pasty> (last visited Sept. 30, 2014).

136. "As a rule, calzones are usually stuffed with cheeses . . . [t]he dough is folded into a half-moon shape then sealed . . . or formed into a spherical shape and baked or fried." *Calzone*, WIKIPEDIA, <http://en.wikipedia.org/wiki/Calzone> (last visited Sept. 30, 2014).

137. "A turnover is a type of pastry made by placing a filling on a piece of dough, folding the dough over and sealing it. Turnovers can be sweet or savory and are often made as a sort of portable meal, or desert, similar to a sandwich . . . savory turnovers generally contain meat or vegetables . . . Savory turnovers are often sold as convenience foods in supermarkets." *Turnover (food)*, WIKIPEDIA, [http://en.wikipedia.org/wiki/Turnover_\(food\)](http://en.wikipedia.org/wiki/Turnover_(food)) (last visited Sept. 30, 2014).

138. Smucker's Uncrustables are still on-sale. Smuckers has given the sandwiches their own webpage and offers the sandwiches in several flavors of jelly. See SMUCKER'S UNCRUSTABLES, <http://www.smuckersuncrustables.com/> (last visited Jan. 10, 2015); see also *id.* at <http://www.smuckersuncrustables.com/products/> (product information).

139. Muñoz, *supra* note 1.

140. *Id.*; Complaint, J.M. Smucker Co. v. Albie's Foods, Inc., No. 5:01-cv-01182 (N.D. Ohio May 16, 2001).

141. *In re Kretchman*, 125 F.App'x 1012 (Fed. Cir. 2005).

142. It has been reported variously that there was a patent infringement lawsuit that was "dismissed"; that the question of patent validity got to the CAFC anyhow (probably on a related application); that the '596 Patent expired for failure to pay a maintenance fee; and that the claims of the '596 Patent were cancelled in an *ex parte* reexamination. See *Agreed Dismissal*, *supra* note 34; *In re Kretchman*, 125 F.App'x 1012; *Ex parte* Reexamination Certificate No. 6,004,596 C1 (filed Dec. 8, 1997) (issued Sept. 25, 2007), respectively. It certainly is the case that the claims were cancelled in reexamination, because the certificate says as much, and on a date certain, September 25, 2007.

result was ultimately reached without too much harm done. Not unlike so many other such cases, it only took about eight years. We can well suppose there were some transaction costs, but of the sort we routinely absorb, while generally praising the patent system as seeming to encourage, in aggregate, the progress of useful arts. One might wonder, then, about the outrage over the problems ascribed to the patented PB&J sandwich, these being only the ordinary problems of any ordinary patent.

In the next section, I summarize just some of the disgust that this patent reportedly generated. Later, I will draw lessons from the sandwich—both old lessons and new. Meanwhile, a fair question remains: what was so “bad” about this patent? Was it that (a) it issued (despite being novel and quite arguably nonobvious over the prior art), or (b) it was cancelled (despite there being new prior art that was arguably merely cumulative over the prior art already of record), or (c) both (a) and (b) because of the lack of confidence in the entire patent system? I assert there is a systemic problem—any of the answers could be correct, and that is the problem. The problem arises routinely, and is apparent in the case of the PB&J patent, because of the inherent implausibility of the legal standard of “nonobviousness” as applied to any of the typical inventions that comprise incremental improvements.

B. The Patent and its Notoriety (the Banality of Bad Patents)

The patent has been, I think it fair to say, mocked or worse by such representative sources as the *Wall Street Journal*, an MIT-labeled website, and the *New York Times*. More to the point, it is included as a representative “bad” patent in a significant critique of the patent laws.¹⁴³ And, as a result of that inclusion, it is at least an indirect part of the legislative history of the America Invents Act of 2011 (AIA).¹⁴⁴ It is, therefore, one of the abuses that was “meticulously documented”¹⁴⁵ and “unbearable” and which the AIA was intended to remove, but which the AIA completely failed to address, because it did not address the legal standard of “nonobviousness.” The following summary of third-party criticism is by no means complete. But it should suffice to establish the point that the PB&J patent is well-known, notorious, and widely considered both in the popular imagination and in the halls of Congress

143. See ADAM B. JAFFE & JOSH LERNER, INNOVATION AND ITS DISCONTENTS: HOW OUR BROKEN PATENT SYSTEM IS ENDANGERING INNOVATION AND PROGRESS, AND WHAT TO DO ABOUT IT 25-26, 32-34 (2004).

144. AIA, *supra* note 9; H.R. REP. NO. 112-98, *supra* note 9.

145. See AIA, *supra* note 9; H.R. REP. NO. 112-98, *supra* note 9, at 38-57.

to be a blemish on the patent system.

1. Bad Press

The case has been tried in the popular press, according to a script that could have been predicted, and based either implicitly or explicitly on commonly held notions (even by those not trained in the arcane mysteries of patent law) that the claimed invention was either old or obvious. The *Wall Street Journal* reports that “[t]he frozen, disc-shaped sandwiches, marketed as lunch-box fare, have been one of Smucker’s most successful products”¹⁴⁶ and well conveys some events along the timeline:

The Uncrustable sandwich was developed in 1995 [by two fathers] who began mass-producing them for Midwestern schools . . . Smucker . . . spotted their success and bought the company. Patent rights . . . were granted shortly after that, in December 1999 . . . It wasn’t long before Smucker was defending its turf. In 2001, the jam maker ordered the small grocer and caterer, Albie’s Foods of Gaylord, Mich., to stop making its own crustless peanut butter and jelly sandwiches . . . Albie’s fired back in federal court, trying to get the patent invalidated . . .

Both parties eventually dismissed the case . . . [but] [m]eanwhile, [Smucker’s] set out to expand [sic] the patent with new applications before the U.S. Patent and Trademark Office. But the patent examiner . . . denied the company’s requests for broader protection on the sandwich’s structure and the process by which it is made. The company appealed, but the Patent Office’s Board of Trademark Appeals and Interferences upheld the [examiner’s] decision [based on a] pastry cookbook and a how-to newspaper article] . . .¹⁴⁷

The article noted that Smuckers had taken an appeal from the BPAI’s final rejection of the pending applications and was set to argue the case before the Federal Circuit the day after the article went to press. The Journal noted that it is “common for companies to try to build a ‘family of patents’ around a product,”¹⁴⁸ and the paper also does a good job of anticipating the point-counterpoint to the expected argument before the CAFC. It reports that “[a]t the center of the patent debate is the sandwich’s sealed edge.”¹⁴⁹

146. Muñoz, *supra* note 1.

147. *Id.*

148. *Id.* (quoting Professor Josh Lerner).

149. *Id.*

The board . . . says it's no different than making ravioli or pie crust. The board said that it based its opinion in part on international tart recipes from an undated pastry cookbook and the "Tartmaster," a device mentioned in [Kaiser's cook]book that is used to cut and seal bread [Smucker's brief argues, however, that] this "smashed edge" [shown in the pastry cookbook] is the "antithesis of the surface-to-surface seal" formed in its process . . . [and] uses sandwich diagrams to demonstrate that, unlike pie crusts or ravioli, the sandwiches are made without "commingling the two bread slices into an amorphous homogenous mass." Instead, the slices remain "separately visible about the periphery of the sandwich."

Smucker [also] argues that it should be given exclusive rights for its method of sandwiching the jelly between the peanut butter and bread. [But the] examiner [disagreed], citing a 1994 [newspaper] article on back-to-school tips that offered a layering approach as a way for parents to keep [PB&J] sandwiches from getting soggy. [The examiner concluded it] is "*obvious* for one . . . to apply peanut butter on the bottom slice of bread . . . add jelly . . . and apply another layer of peanut butter on top of the jelly."¹⁵⁰

The *Wall Street Journal's* account is relatively balanced and kinder to the sandwich than some others. As another report warned, it is time to "[f]orget the hubbub over Naptster, or even that inane 'one-click' lawsuit between Amazon and Barnes and Noble."¹⁵¹ Instead, "[h]old on to your lunchboxes For reasons that elude me, Smucker's lawyers decided to try to enforce the firm's exclusive rights to—I'm not making this up—its patented version of the peanut butter and jelly sandwich."¹⁵² Pointing out that "I cannot help but notice from the picture on the box that [the sandwiches] look suspiciously similar to plump, untoasted Kellogg's Pop-Tarts,"¹⁵³ the author goes on to use expressions like "monumentally misguided" and concludes that the "debacle" epitomizes the "biggest problem with intellectual property as it is practiced today: it's so often dramatically overreaching."¹⁵⁴

150. *Id.* (emphasis added).

151. Shulman, *supra* note 47.

152. *Id.*

153. Perhaps, had the reporter noticed the prior art, it might have been the teaching of U.S. Patent No. 3,690,898, *supra* note 54, that would have called to mind the "pop-tart" technology. The "plumpness" is one visual indication that the Uncrustables might be distinct from the invention claimed in the '898 Patent, insofar as they might be considered not to be compressed and therefore not suitable for vertical disposition in a conventional household toaster.

154. Shulman, *supra* note 47.

2. The Sound and the Fury—Adjudication by Pitchfork, Tar and Feathers

In the actual event, the appeal before the CAFC on the two rejected applications may have been anti-climactic. On April 8, 2005, in what may be “the swiftest justice in the history” of the Federal Circuit, and only two days after oral argument, Smucker’s appeal was rejected without opinion on a Rule 36 *per curium* ruling.¹⁵⁵ As drolly noted by one highly reliable commentator, such decisions are “reserved for cases that are so clearly on one side of standing precedent that a written opinion is deemed unnecessary.”¹⁵⁶ This is after it was reported that “Judge Gajarsa noted in oral argument that his wife often squeezes together the sides of their child’s peanut butter and jelly sandwiches to keep their filling from oozing out. ‘I’m afraid she might be infringing on your *patent*’ he said.”¹⁵⁷

After the Federal Circuit affirmed the rejections of the pending applications in 2005, the anti-climactic *ex parte* reexamination that finally cancelled the claims of the ‘596 Patent in September 2007 is interesting only insofar as the universe of references expanded dramatically. In addition to the seven U.S. patents already made of record, the reexamination adds 17 more U.S. patent references (the oldest two now going back to 1956 and 1957) and one foreign patent document. The reexamination also makes of record some three other printed publications (including two from *The Pampered Chef*) and a declaration. It is also interesting that the cover page shows the reexamination request was made on March 9, 2001,¹⁵⁸ about one year after the patent had issued and six years before the Reexamination Certificate finally issued.

155. Dennis Crouch, *Children Rejoice—the Peanut Butter and Jelly Patent [Application] Rejected on Appeal*, PATENTLY-O (Apr. 8, 2005), http://patentlaw.typepad.com/patent/2005/04/children_rejoic.html.

156. *Id.*

157. Dennis Crouch, *Federal Circuit Judge Admits that Family Member is Infringing PBJ Claims*, PATENTLY-O (Apr. 5, 2005), http://www.patentlyo.com/patent/2005/04/federal_circuit.html (emphasis added). Perhaps the judge was referring neither to the application under review nor to any of its narrower claims (and yet it would have seemed that the previously granted patent was not at issue). Or maybe he was thinking of some sort of anticipation by inherency, if his wife’s practice actually read on any of the claims, and if her practice constituted relevant prior art. Perhaps he might have recused himself if he believed members of his family were interested in the outcome. The judge was not alone in thinking the PB&J claims were funny. *But see* Lowe, *supra* note 18 (asking, “what’s so funny” about the proposition at issue).

158. The Wall Street Journal article indicates that Albie’s sought a declaratory judgment of invalidity in 2001 and that the suit was later dismissed. Muñoz, *supra* note 1. That was no accident. *See supra* text accompanying notes 24-34.

3. Comparative Law and Economic Impact

The *New York Times* throws in a reference to the sandwich patent, *en passant*, in a yet broader and more recent critique. The paper reported, on April 2, 2013, that India's Supreme Court rejected the Indian patent application for the Novartis drug patent on Gleevec (also spelled Glivec), despite the "drug provid[ing] such effective treatment for some forms of leukemia that the [FDA] approved the medicine in the United States in 2001 in record time."¹⁵⁹ The *Times* noted that the ruling "confirmed that India had a very high bar for approving patents on medicines."¹⁶⁰ One of the reporters, in an earlier or preliminary version of the same or similar article, notes that in the United States "patents are so easy to win that one was given in 1999 for a peanut butter and jelly sandwich."¹⁶¹ This, of course, confuses the "criteria"—novelty and nonobviousness in the United States and their close parallels internationally—with its application (and may be the reason why the article was pulled and revised). Rephrased, the critique is just as biting. It could be said that the luck, accident, and opportunism surrounding the application of the criteria is nearly the same in any country with the result that sometimes arguably "good" inventions fail to be protected in India (and elsewhere), and that sometimes arguably "bad" patents get granted in the United States (and elsewhere). Not discussed is what criteria exists for judging the application of the criteria—what is it, exactly, that makes a good patent good, and a bad patent bad if there is systemic and irreducible uncertainty in applying the standards?

The economic impact of patent standards is emphasized in the *Times* article. "Novartis had hoped that India's adoption under international pressure of a new patent law would lead the country to grant [the patent on Gleevec], which [under a patent license] can cost up to \$70,000 per year."¹⁶² In contrast, the "Indian generic versions cost about \$2,500 [per] year."¹⁶³ One of the reporters observes that the question of "[w]hich country's patent system does more to protect the

159. Gardiner Harris & Katie Thomas, *Low-Cost Drugs in Poor Nations Get Lift in Court*, N.Y. TIMES, Apr. 2, 2013, at A1.

160. *Id.* at B4 (citing Anand Grover).

161. Gardiner Harris, *Top Court in India Rejects Novartis Drug Patent*, KEI ONLINE (attributed to the *New York Times*, Apr. 1, 2013), available at http://lists.keionline.org/pipermail/ip-health_lists.keionline.org/2013-April/002968.html (last visited Dec. 17, 2014).

162. *Id.* (emphasis added).

163. Harris & Thomas, *supra* note 159, at A1. The article notes, apparently without intended irony, that India is the world leader in generics, exporting "about \$10 billion worth of generic medicines every year," and that India (together with China) produces more than 80% of the active ingredients of all drugs used in the United States. *Id.*

sick and encourage invention” has become “an increasing source of international debate.”¹⁶⁴

Finally, the sandwich patent has come to be a byword for “bad” patents. It is prominently featured in the secondary sources, which, in turn, were inserted into the legislative history of the AIA to support the conclusion that the AIA was needed to correct “unbearable” flaws in the existing Patent Act after Congress had “meticulously” documented the need to do so.¹⁶⁵ Congress claimed that its goal in the AIA was to improve patent quality, addressing the concern that questionable patents are too easily obtained.¹⁶⁶ One would suppose that the lessons of the PB&J patent have been digested and passed out of the system. But maybe not. What does the sandwich teach about the cornucopia?

C. *The Prospect—Designing Food, Owning the Cornucopia*

If existing patent law so easily fumbles the easy things—those things, like sandwiches, it seems “everyone” is competent to judge and on which the public seems to gag—then it cannot bode well for patent law’s projected ability to deal with matters of food law that are just a bit more difficult. A law that loses the confidence of its practitioners, not to mention its society and transnational audiences (and here I am referring not only to the United States, but to those nations throughout the world who, by virtue of the Agreement on Trade-Related Aspects of Intellectual Property¹⁶⁷ and like accommodations are affected by U.S.-influenced law and practice), is one that poses a danger. When the stakes rise from the relatively harmless patent monopoly on a leak-less PB&J sandwich to the dramatic consequences of reproducible food, then the problem of legitimacy will become a matter of urgency, greater than the

164. Harris, *supra* note 161. For confirmation of the various iterations of the Harris article at the *Times*, see Harold Wegner, *NYT “Peanut Butter” Patent Journalism*, IP FRONTLINE (Apr. 5, 2013), available at <http://www.ipfrontline.com/depts/article.aspx?id=50321&deptid=4> (noting that Harris’ April 1, 2013 *New York Times* article, *Top Court in India Rejects Novartis Drug Patent*, contained a reference to the peanut-butter-and-jelly sandwich; but that the *Times*, “instead of issuing a correction or updating the article,” dropped that article altogether and substituted a newly titled piece by Gardiner Harris, *Patent’s Defeat in India is Key Victory for Generic Drugs*, on April 1, 2013, which omitted the comparison to the peanut butter sandwich patent). Wegner speculates that the reporter might have found a reference to the PB&J patent from earlier editorials and articles in the *New York Times* and laments the apparent decline in quality of patent journalism at the *Times*. *Id.* It appears that the Harris & Thomas article, *supra* note 159, dated April 2, 2013, is yet a third incarnation. It, too, omits the earlier comparison to the PB&J patent.

165. See AIA, *supra* note 9; H.R. REP. NO. 112-98, *supra* note 9, at 38-57.

166. *Id.* at 39 & n.5.

167. Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299; 33 I.L.M. 1197 (1994) [hereinafter TRIPS].

urgency already recognized by Congress and others. The fact that the AIA failed so completely even to address the obvious (no pun intended) problems it so obviously imagined it undertook to address is sobering. If we can spin a prophetic hypothetical of a food replicator, based on some neo-tech food design technology that might alleviate world hunger, and if a widely discredited patent system is all that stands between the cornucopia and the hungry, a betting person would not like the odds. What, indeed, might be done in advance of any crisis (other than hope that the technology simply will never exist, that this hypothetical is merely an exercise in alarmist thinking, and that we should all stay calm and muddle on)?

III. LESSONS FROM THE SANDWICH EXTENDED TO THE CORNUCOPIA

In this section, I draw lessons from the sandwich and apply them to GMOs and to the hypothetical replicator and the cornucopia. It is an object of this exercise to frame a proposal to preserve patent law, generally, while managing the cornucopia according to a specified public interest.

In advance of there being an actual cornucopia-producing technology, but based on some of the similar problems posed by patented pharmaceuticals and methods of treatment in countries unable easily to pay for the use of life-sustaining technologies, I reluctantly propose a Public Domain Protection Agency (PDPA) as a concrete mechanism to adapt patent law to the cornucopia without unduly distorting the existing doctrines.¹⁶⁸ Most significantly, I propose to authorize the PDPA to make adjustments, within any given nation and worldwide, to provide different levels of patent protection (or no protection) based upon measurable and predictable economic criteria.

This is a frankly economic view of patents, but modified by specific policy and moral choices, and addressed explicitly and directly rather than under the table by pretense and subterfuge.

168. The reluctance is two-fold. First, it would be a difficult reform to implement. Second, perhaps the last thing we need is another administrative agency, and so the solution might not be worth the candle. *See generally* PHILIP HAMBURGER, *IS ADMINISTRATIVE LAW UNLAWFUL?* (2014) (claiming that at least some of it is). The answer to both concerns is the same—necessity. The successive failures of anyone to get such concepts as “obviousness” right after so many attempts, and the clear rewards of doing so, suggest there may be no other practical solution. For, after all, one clear advantage of my proposal is that it is very practical, the near opposite of mere theoretical musing or rambling.

A. Ordinary Problems and Old Proposals

The ordinary problems are well-rehearsed, and I will do little more than mention them here. It is not my intention to flog that nearly-dead horse any longer. In connection with the AIA, Congress has provided a handy compendium of material that “meticulously” documents the standard list of “unbearable” flaws, citing among other sources the relatively recent National Academy of Sciences report and the Federal Trade Commission report, each of which, in turn, incorporates a substantial bibliography of its own.¹⁶⁹ Rather than reinvent and rephrase that evidence, I will simply incorporate those sources by this reference for the proposition that the patent system is inadequate to its task. We might recall Professor Chisum’s pithy evaluation of the AIA: “Never has so much attention been focused on a patent enactment that accomplished so little.”¹⁷⁰ His list of the old problems, ignored by the AIA and thus essentially unaltered by it, is instructive. Against this background, the phenomenon of the intermediary known variously as the “troll” or the “patent assertion entity (PAE)” makes complete sense. The PAE is simply a way to discount, or factor, the substantial juridical risk inherent in the incoherent patent system, leaving the inventor or inventive entity free either to cash out or to go about its business while the PAE absorbs the risk of costly enforcement or other attempts to monetize the patent. Here is Professor Chisum’s list of problems that the AIA failed to address:

- (1) the standards of novelty and unobviousness in relation to the prior art (though the Act will, prospectively, alter the definition of prior art),
- (2) the enablement and written description requirements,
- (3) patent eligible subject matter,
- (4) claim interpretation,
- (5) the doctrine of equivalents and prosecution history estoppel,
- (6) remedies for infringement, and
- (7) direct and indirect infringement (active inducement and contributo-

169. AIA, *supra* note 9; H.R. REP. NO. 112-98, *supra* note 9, at 39 (citing studies by the National Academy of Sciences and the Federal Trade Commission, and citing six articles by Professors Lemley and Shapiro, Chisum, Mossinghoff, Farrell and Merges, Jaffe and Lerner, and Rivette and Kline); *id.* at 39 (citing a half dozen recent Supreme Court cases); *id.* at 57 (providing additional detail on prior hearings). The cited studies by the National Academy of Sciences and by the Federal Trade Commission each contain substantial bibliographies and documentation on the widely recognized failures of the patent system.

170. Chisum, *supra* note 9.

ry infringement).¹⁷¹

To be sure, the AIA might make it easier to introduce prior art into the record, and therefore, to the extent the problem of the PB&J patent had to do with a bad prior art search, the new law may be a partial cure, or at least something to settle the stomach. But to the extent the underlying problem was just another variation of the same old problems—among them, trying to define what, exactly, is analogous art and then what novel claim is “obvious” in light of the prior art under the existing standards—the old problems still remain. The problems remain after the PB&J patent “scandal” and after the AIA “fix,” pretty much as they were before. I have written on these “ordinary problems” already, as have scores of others, many of them focusing on the problem of the nonobviousness doctrine that the PB&J patent exposes.¹⁷² Let me not retread those, by now, well-travelled paths, but let me start somewhat fresh from where I (and others) have previously ended up. Perhaps the only interesting question remaining is this: how to create the fundamental reform in patent law that the AIA failed to accomplish.

Let it be assumed, *arguendo*, that there are formidable systemic institutional impediments to implementing the sort of fundamental patent reform that would address the seven problems just cataloged above in Professor Chisum’s list—*viz.*, assume there are no realistically existing judicial, legislative, or administrative solutions on the horizon. And let it be assumed that my idea (last year’s proposal) of a “quasi-recodification/quasi-restatement” solution¹⁷³ has no traction. But that is old news. Is there not anything new to say in the specific context of neo-tech food design?

It might be fair to say that the PB&J problem adds something at least a little bit new, beyond the old problem of searching the prior art, beyond opening wider the door for third party introduction of prior art,

171. *Id.*

172. Folsom, *supra* note 14, at 185-219 (commenting on the ordinary problems); *see supra* note 169 (collecting references documenting recognized problems). In respect of the nonobviousness doctrine in particular, *see also, e.g.*, MERGES & DUFFY, *supra* note 10, at 606 (observing that “[t]he importance of the nonobviousness doctrine is matched by the difficulty of the inquiry”); *cf., id.* at 13-26 (illustrating the architecture of a modern patent by an extended discussion of U.S. Patent No. 5,205,473 issued in 1993 for an insulated hot-drink container or holder that could be made out of paper), and *id.* at 37-49 (challenging students to think about drafting a patent application on an improved insulated cup holder, focusing on the subsequently issued patent of Sorenson as an example). The authors note that “even the most mundane technologies can spur related innovations” and report that some 97 utility patents have referenced the Sorenson patent. *Id.* at 49. They conclude their discussion by observing that among those issued patents citing to Sorenson, some “may be utterly obvious variations” and identify one as such. *Id.*

173. Folsom, *supra* note 14, at 185-219.

and beyond the irreducible problem with applying the standard of nonobviousness once the applicable art is retrieved. It is not exactly an eligible subject matter problem: after all, a sandwich and a method of making it must be a manufacture or a composition of matter, and a patentable process. But a sandwich is, after all, food. And people need to eat in a way that they do not “need” many of the other patented methods or articles of ordinary commerce (perhaps pharmaceuticals, medical devices, and methods of treatment are most nearly analogous).

What if there is or should be a new way to think about something akin to “utility” (in the older sense of American patent law’s concern about patents “injurious to the well-being, good policy, or sound morals of society” or “not mischievous or immoral”).¹⁷⁴ Likewise, something akin to “field restrictions”¹⁷⁵ as applied explicitly to creation of food by neo-tech food design technologies.

B. Extraordinary Problems: Semi-Non-Scarcity Economics

The problem (for patent law) of the cornucopia is the problem of creating food, and then pricing it out of reach of those who are hungry, by operation of patent laws that would prevent copying of the technology. If there were ever to be such a neo-food design technology (safe, effective, and apart from the patent premium, cheap), and if it were to be covered by a patent, I think it is fair to characterize the result as an extraordinary problem. Even were all the old problems in patent law to be solved, as if by magic, and even if it should be universally conceded that the “replicator” that could create an actual cornucopia were clearly patentable subject matter—novel, nonobvious, perfectly enabled by a written disclosure, particularly described by clear claims clearly interpreted, and so on—I believe there is a new set of problems, calling for a new set of proposals.

The new set of problems arises from “code” not yet well defined. “Code,” as I define it, can and will result in producing something very similar to non-scarcity with respect to coded constructs. This upsets the

174. This could be an updated version of the sort of standard expressed in *Lowell v. Lewis*, 15 F. Cas. 1018 (C.C.D. Mass. 1817) (Story, J.).

175. This could be something like art. 27 of the TRIPS Agreement (“patentable subject matter”) (permitting exclusions to protect *ordre public*, and to exclude therapeutic methods, plants and animals and macroscopic organisms”) but adjusted. TRIPS, *supra* note 167. See generally, Convention on the Grant of European Patents, art. 54(2), Oct. 5, 1973, 1065 U.N.T.S. 199, as revised Nov. 29, 2000 [hereinafter European Patent Convention] or 35 U.S.C. § 287(c) (2012) (and also the older reading of art. 52 of the European Patent Convention seeming to prohibit patents for mental acts, playing games, doing business, and programs for computers). What I have in mind would be a proposal that kicks in at the remedy stage, and elsewhere, pursuant to rules promulgated in advance after notice and a hearing by a genuine administrative agency authorized to do so.

conventional bargain theory of American patent law because there is a difficulty in determining how much of an incentive is “right” (or “just” or “socially just”) compensation to invent, to disclose, to commercialize non-scarce goods. I will begin with a definition of code.

Code. Let it be postulated that “code” is a step or a series of steps for performing a function that can be represented by logical operators, wherein the function primarily comprises:

- (a) storing, viewing (perceiving), communicating, reproducing, moving, or modifying information,
- (b) changing the state of a machine, a virtual machine, another coded construct, or changing the state of a living organism, or a biological carrier (and in the case of a living organism or biological carrier, by a code world operation originating, at least initially, outside of the organism or carrier),
- (c) encrypting or decrypting, identifying, hiding or finding, retrieving, attracting or repelling, spoiling, or rerouting information, or
- (d) creating a visual representation or analogy illustrating the state, or the working of a machine, virtual machine, coded construct or a living organism.

Virtual Machines and a Code World. Let it be said that a “virtual machine” is an objectively reproducible coded construct for transforming an input to an output according to a rule. Finally, let it be said that the “code world” is an embodied, switched network for moving information traffic or code.

Many coded constructs are scarcity-free. With object-oriented code we may, once we have defined a class of “horses,” make as many as we please and turn them into unicorns if we will. But the term “scarcity-free” can be misleading. Such products, and many others, may be better described as marginally cost-free (or nearly so), but often with very substantial sunk costs, opportunity costs, and other costs. The economic problems, and the analytics, may be left to the economists to calculate. The legal problem, and the justice of the patent system, is my concern. The specific case for this paper is the “starving for attention” problem in patent law.

The Coded Hypothetical. Postulate something like the 3D printer, but instead of drawing a spool of some sort of formable plastic-like material, it draws a spool of a threadlike protein-based or life-sustaining material, which may be fabricated and that might be formed into predetermined shapes, textures, and flavors. We might suppose two

machines: (1) the 3D scanner that might render, say, the Big Mac brand of hamburger, and (2) a 3D printer that might replicate it from the scanned image, flavored and seasoned to taste. Or we might simply postulate (since we are assuming the existence of the technology) the replicator as enacted in the *Star Trek* version of a future technology and which seemingly produces food out of “nothing” much. Assume the replicator produces food that is safe, cheap, and nutritious, but is patented both domestically and internationally.

By “starving for attention” if it came to that (and this is, of course, a hypothetical boundary case) let us put this question: what nation facing a famine emergency would be prepared to starve in order to satisfy the terms of the agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)?¹⁷⁶ Or dealing with purely internal patent law, what nation would not repeal, or drastically modify, its own patent laws to free the technology for copying? We may imagine a cornucopia. We may also liken the potential transnational problem of food, withheld by the patent premium, to the current transnational problem of pharmaceuticals, likewise potentially withheld by the patent premium. Two cases out of India illustrate that it is certainly possible in such instances (1) to invalidate a patent (or refuse to grant a patent) under the notoriously plastic criteria,¹⁷⁷ or (2) to require a compulsory, and rather low cost, license under equally plastic criteria.¹⁷⁸

This article is running long enough for now, and I will not belabor the hypothetical. I believe that it at least suggests some need for preemptive, proactive planning for a much softer landing. We might thereby preserve much of what is good about patent law, rather than throwing, as it were, the bathwater out with the sandwich. It also suggests the need for some serious rethinking about the justice, and the social justice, of the patent system, at least when it comes to “code” and to the subcategory of code that might produce the replicator and the cornucopia.

176. See generally TRIPS, *supra* note 167.

177. Kaustubh Kulkarni & Suchitra Mohanty, *Novartis Loses Landmark India Patent Case on Glivec*, REUTERS (Apr. 2, 2013), <http://in.reuters.com/article/2013/04/01/india-drugs-patent-novartis-glivec-idINDEE93000920130401>. Harris & Thomas, *supra* note 159 (reporting on the Novartis failure to obtain an Indian patent on Gleevec/Glivec).

178. See Mansi Sood, *Natco Pharma Ltd. v. Bayer Corporation and the Compulsory Licensing Regime In India*, 6 NUJS L. REV. 99, 99-100 (2013) (commenting on the compulsory license for the production of Bayer’s patented kidney-cancer drug, Nexar, granted in *Bayer Corporation v. Natco Pharma Ltd.*, Order No. 45/2013—“a momentous occasion in Indian pharmaceutical patent history”).

C. *International Ripple Effects*

1. TRIPS Might Become Yet Harder to Bear

There are already well-known rumblings about the burdens imposed upon some nations by the pressure brought to bear upon them to enact or adopt intellectual property standards devised by other nations. One example is the burden of drug patents. Recently, India's Supreme Court denied Novartis' patent application for a major cancer drug. It was reported that:

India's criteria for the granting of [medical/drug] patents remain far higher than those in the United States, where patents are so easy to win that one was given in 1999 for a peanut butter-and-jelly sandwich.

. . . In recent decades, the United States has become increasingly insistent that other countries wishing to do business there adopt far more stringent patent protection rules, with the result that poorer patients often lose access to cheap generic copies of medicines when their governments undertake trade agreements with the United States.¹⁷⁹

Likewise, India recently granted a compulsory license on Bayer's patented kidney-cancer drug, Nexar. The contest, and the debate, is summarized well:

On one side are the pharmaceutical giants, supported by much of the developed world, who demand increased patent protection under stricter intellectual property rights regimes, citing it to be the "bedrock of their business" They contend that increased usage of compulsory licenses will disincentivize research and development ('R&D') and use TRIPS provisions to supplement their demand for longer patent protection

On the opposite side, these drug giants are countered by developing nations who want to shorten patent life and want flexibility to grant compulsory licenses in order to ensure greater access to essential medicines. According to them, high levels of income inequality coupled with poor infrastructure make it extremely difficult for the State to provide essential medicines at affordable prices in large quantities

Developing countries are, as a result, advocates for allowing government autonomy in the endowment of compulsory licenses, although they are often coerced into submission by developed countries through

179. Harris, *supra* note 161. Substitute "food" for "medicine," and this quote illustrates one of the ripple effects worldwide of allowing anyone effectively to own food by patenting the cornucopia in the United States.

threats such as trade sanctions and blacklisting.¹⁸⁰

What is hard to bear when medicines are involved might become yet harder to bear if and when food is involved. Refusals to grant patents, or requirements for compulsory licenses, ought to be expected in the case of a cornucopia, and the resulting confusion of patent law multiplied across nations in a global economy, on top of the “ordinary” confusion of patent law in any single nation, ought to lead to a rethinking of TRIPS before the problem arises.

2. TRIPS Might Be Ready for Second Thoughts

Stepping back and evaluating from the perspective of something like the common good, it may be time to rethink TRIPS. If one marked trend in modern intellectual property is expansion in nearly all directions (subject matter, questionable nonobviousness, expanding equivalents, among others), it might be possible to imagine a countermovement, a contraction, sometime in the foreseeable future. It might be that, upon reconsideration, and if left to market, normative, and related forces, the current high tide of intellectual property rights might be seen as not inevitable, and the tide might recede. To switch metaphors, if intellectual property law might be likened to a pendulum, the law might at this moment be near the high-sidehigh side of its trajectory away from equilibrium. And if one marked trend of TRIPS is to lock-in this momentarily expanded intellectual property cycle, and to lock it in worldwide, it may be long past time to start thinking about a damper (or, once more to switch metaphors, an escape valve).

Quite apart from neo-tech food design, and in light of neo-tech and global pressure independent of food law, it may make sense to rethink TRIPS. The added pressure of neo-tech food design might simply make the contradictions a bit more clear. It might be time to rethink TRIPS. Instead of simply having second thoughts without action, a concrete step would be to initiate a PDPA to legitimize the anticipated necessary adjustments while preserving the rest. Another proposal is to revitalize a pair of existing doctrines, including the older view of beneficial utility.

IV. STARVING FOR ATTENTION? (TWO PROPOSALS)

Here are two alternative proposals to resolve the problem of patent justice, after first taking some time to address the nature of the problem.

180. Sood, *supra* note 178, at 100-04 (footnotes omitted).

A. The Problem of Patent Justice

A first step would be seriously to consider, and to define, “justice.” If we posit that justice comprises the ordered relation of the lawful, the fair, the right, and the good,¹⁸¹ it would be possible to have a reasoned discussion and perhaps to make progress towards a resolution, or at least a working definition of the terms. A second step would be seriously to contemplate what, if anything, the adjective “social” adds to the concept of justice.¹⁸² Patent law is not just. It fails on all four elements of simple justice. It is not fair because it treats incremental inventions differently; some are awarded patents that withstand challenges and others not. It is not right because it promises that patents “shall” issue unless they fail to meet one of the conditions, and yet inventions that do meet those conditions as routinely applied are sometimes rejected. Other patents though granted, are often labeled “bad” after issuance. Moreover, patent law is not lawful because of the lack of principled, practical, and predictable rules. A “law” ought to be announced in advance with sufficient certainty that persons subject to it can conform their conduct to it. Instead, patent advice can, in a substantial plurality of cases, only be given with reasonable certainty *ex post*, and not *ex ante*.

Nor is patent law directed towards the common good. If the good is defined instrumentally as a sort of economic incentive then it ought to be validated according to such principles as tend to be repeatedly asserted by its proponents. Some adjudicatory body ought to spend at least some fraction of the time wasted on futile “obviousness” inquiries on the “real” issue of the economic bargain, and perhaps even take something like evidence on the question that really matters, if that bargain were really the question that matters. On the other hand, if the common good is served by giving force to the natural claim of ownership by the inventor of a nonobvious improvement that never before existed and which routine workers would not have developed, then let the economics be the factor that tilts the balance towards legal recognition of the natural right. The explicit recognition of two motives, the natural right and the economic bargain—not one or the other, but both at the same time—is the key towards finally establishing justice in the patent laws.

Let the reality of a natural property right be coupled to the reality of an economic bargain by actually awarding a class of patents on novelty items, by rulemaking and explicit fact-finding, including explicitly

181. See *supra* text accompanying notes 3-7 (reciting trivially old commonplace verities).

182. See *supra* text accompanying note 8 (reciting one view of social justice held by a large population).

economic considerations in combination with a consistent application of the obviousness standard. This would be “good” by any measure and would drive the right, the fair, and the lawful back into the system. Justice can be restored to patent law by abandoning the talk of monopolies and of concessionary rights and finally coming to grips with the problem of obviousness, while creating a second class of rights for novelty items, validated by actual economics and real bargaining for the public good, rather than the playful rhetoric of nonexistent or nonsensical “bargains” that passes, and has for the last many years passed, as if it were serious.

If the problem of patent “justice” were to be fixed, the problem of “social” justice (if somehow different enough to be worth discussing) in the patent system would almost certainly take care of itself. Since “justice” is one of the four cardinal virtues especially concerned with the good of others,¹⁸³ it already incorporates positive “social” externalities. Perhaps a good place to start that second step (contemplation of social justice) would be rediscovery of “distributive” justice as a first approximation of “social” justice.

The once-canonical sources would have agreed that distributive justice has to do with how a polity justly distributes the goods of the polity to its members.¹⁸⁴ Wealth, honor, and office are three of those goods, and a corresponding rule of just distribution would be a function of productivity, merit, and the ability to rule.¹⁸⁵ But what of those who are disabled or unequal? How is a measure of reciprocity, and justice, to be balanced between those who differ and yet are in need? The ancient answers—honor to whom honor is due, respect to whom respect is due¹⁸⁶—deserve modern reconsideration. If there is to be something like a compulsory license and a forced dedication of the fruits of intellectual or otherwise intangible property that produces necessities that seem to be non-scarce goods, then the act should be recognized as a sort of favor and the partially dispossessed giver entitled to a measure of respect and

183. See, e.g., PLATO, *supra* note 3, bk. II, at 326 (having already shown that three of the four cardinal virtues—courage, self-control, and wisdom—are certainly and obviously self-regarding, but now asking why anyone should “want” to add the fourth, justice, which seems to be not only other-regarding but also contrary to self-interest. As Glaucon puts the problem: “I have never yet heard the superiority of justice to injustice maintained by anyone in a satisfactory way. I want to hear justice praised in respect of itself; then I shall be satisfied . . .”). *Id.*

184. Among these, perhaps Aristotle said it best. See ARISTOTLE, *supra* note 6, bk. V, at 99-110 (discussing justice in the distribution of a polity’s goods).

185. *Id.*

186. *Id.*; see also St. Paul: “Pay to all what is owed to them: taxes to whom taxes are owed, revenue to whom revenue is owed, respect to whom respect is owed, honor to whom honor is owed.” *Romans 13:7* (English Standard).

gratitude in addition to some sort of royalty.

As a matter of justice, the legal regime might require conspicuous attribution, and a conspicuous “thanks” prominently displayed and as a condition to any low-cost or otherwise forced contribution. That condition is a minimal prerequisite to any just implementation of either of my two proposals.

B. First Proposal: A Public Domain Protection Agency

One solution would be a fully funded, full-bore administrative agency with rule-making power and a full staff. Call it the Public Domain Protection Agency (PDPA), and charge it with invalidating or in the alternative, and for proprietors who would be prepared voluntarily to accept regulation or limitation, regulating or limiting the remedies available to the proprietors of otherwise valid patents, copyrights, and other rights to the intangible products of the mind. We might envision it as a body capable of creating classes and categories of patents (and copyrights), categories of industries, and levels of protection, by rule and by practice.

Staffing and Mission. The PDPA might have commissioners and staff. The staff might include economists, accountants, lawyers, and engineers. Proceedings before the commission might actually test an existing patent (or pending patent application) for economic return, for its ability to “promote progress” in the useful arts, and for the appropriate level of protection required to create a reasonable return on investment, fully amortized and risk-weighted. It might resemble a public utility or regulated industry rate-making proceeding. It might so regulate the cornucopia as to provide a fair return on investment while preventing people from starving to death: to incentivize the creation, but then to regulate the benefit according to rule.

Making Good on the Promise. The PDPA might, in short, actualize the patent system’s promise of providing the appropriate level of incentive (neither too much nor too little) to encourage invention, disclosure, and commercialization/exploitation, while simultaneously promoting rather than retarding progress in the useful arts. At the same time, it might actually do some good. No doubt it will not be, nor can it be imagined that it might ever be able to handle all of the problems. But it almost certainly will handle many, and there appear to be no other alternatives apart from sitting still and hoping that the fundamental failures of patent law, probably irreducibly interwoven into the system and incapable of solution, will somehow solve themselves just as the

pressure (and the need for a solution) gets nearly intolerable.

The Model. A statutory model for a PDPA is that which created the Securities and Exchange Commission (SEC). That specific legislation both provided the SEC with statutory guidance and then authorized the SEC to promulgate rules. Under that model, a PDPA might be given authority to make rules for the disclosure so often imagined to be the *quid pro quo* of the patent “monopoly.” It might also be authorized to employ the entire Constitutional scale by a statute that explicitly permits a class of patents to issue on novel discoveries, and another class of patents to issue on nonobvious inventions. The result might be a regulation “N” for novelty-only patents, and a regulation “O” for [non]obviousness-type patents.¹⁸⁷ The combined rules for disclosure (a Regulation N-O)¹⁸⁸ could be relaxed for the applicant who asserts mere novelty, but heightened for the applicant who asserts that the invention is also nonobvious. The applicant could always rest in the novelty category. But if seeking the higher level of a nonobviousness-type of patent, an applicant might need to disclose, among other items, a lexicon for purposes of claim interpretation and a range of judicial equivalents rather like the current statutory equivalents in § 112(f).¹⁸⁹ The applicant might be required to conduct a prior art search of a specified nature and to disclose and explain the results, categorizing the prior art and distinguishing the claimed invention over the art.

Classes of Patents. The enabling legislation might also direct the PDPA to provide thresholds within the scale of patents. At one level, and using one form to be created by the PDPA, an applicant having elected one or the other category might simply claim to be *either* novel or nonobvious. For a novelty patent, perhaps a Form N-1 might be the least demanding to an applicant. At a higher threshold, the applicant might be required to provide specified disclosure of secondary factors, and of economic returns rather like public utility rate-making. For such a [non] obviousness-type patent, perhaps the base form would be an O-1. And for divisionals and other continuations, Forms O-2 and O-3, respectively. These would provide something more nearly approaching a record suitable for review, upon a standard for judicial review set by

187. See the various forms under the Securities Act of 1933, Forms S-1 and S-3, implementing the guidance set forth in Sections 7, 10, and Appendix A of the statute. 15 U.S.C. §§ 77g, 77j, 77aa (2000).

188. See Regulation S-K (instructions for filing forms under the Securities Act of 1933, and the Securities Exchange Act of 1934) and Regulation S-X (qualifications and reports of accountants). 17 C.F.R. §§ 229.10 (2012) through 17 C.F.R. § 229.802 (2010) (Reg. S-K) & 17 C.F.R. § 210 (2010) (Reg. S-X).

189. 35 U.S.C. § 112(f) (2012).

Congress, and which might be a *sui generis* standard. Rather than pretending that fact questions magically become questions of law, under the current “mongrel practice” that provides “perverse incentives” and “perverse effects,”¹⁹⁰ it might be well explicitly to say that, in the patent law, there are certain legal-factual questions that may be reviewed, not entirely *de novo* by an appellate court, but with some deference to prior determinations by other bodies. By doing so, the connections may be made more coherent. The “presumptions” of validity might be limited to only those patents granted by the PDPA on the more rigorous and more demanding disclosures, and examinations, of a Form O-1. Likewise, the ability to second-guess the fact-finder upon review might be tailored to the type of patent—the patent of discovery (novelty) or the patent of invention (nonobvious).

Novelty Patents. Finally, the PDPA enabling legislation might frankly acknowledge that patents may be granted for eligible subject matter that is (1) useful, and that is (2) new, *or* nonobvious, in order (3) to encourage investment in invention/discovery, disclosure, and commercialization of products or processes. The third acknowledgment would permit the sort of rate-making determinations that a stranger might have (wrongly) imagined would have been routine in a system that is supposedly based not only on an economic incentive model, but also on one that is at least sometimes avowedly skewed towards providing the least incentive necessary to get some public benefit. A result of the PDPA rate-making might be a more rational and predictable rate of return on investment which would be the predicate for relief. There might be a clear set of patents for which the case for injunctive relief is established upon the record prior to issuance. Meanwhile, the case for damages, and for the alternative reasonable royalty, might be established on the record. The competent body in the PDPA could also discount time-values and could, perhaps, set durational windows—a period of years during which a particular patent might be a prime candidate for injunctive remedies, followed by a period of years during which damages might suffice, followed by a period of reasonable royalties, and (perhaps) followed by a period in which mere attribution

190. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 378 (1996) (the construction of a term of art as a question of law, but permitting the taking of evidence on the question, is a “mongrel practice”); *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1473-81 (Fed. Cir. 1998) (*en banc*) (Rader, J., dissenting in part, concurring in the judgment) (“perverse incentives” and “perverse effects”); *see also Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 469 F.3d 1039, 1039-40 (Fed. Cir. 2006) (declining petition for rehearing *en banc*, but with a majority of the 12 judges prepared to reconsider *Cybor*’s no-deference standard).

might suffice. In support of these determinations, the authorizing legislation could direct the PDPA to create standards for secondary liability based on something like fault (contributory-style or inducement-style), or status (agency-style or other authorization-style), or other articulated basis.

Advantages to Applicants. This regime would also have advantages to applicants, some of them compelling. As in the case of some of the more remarkable original securities laws, this new PDPA might be, in some sense of the word, voluntary. Rather than invoking the PDPA, an applicant might instead opt for the current system by prosecuting a patent of invention (nonobviousness) through the PTO. But such a route might be stripped of any presumptions of validity. The novelty patent might be exclusively offered through the PDPA, affording a relatively fast and certain, though limited, set of rights. Likewise, the patent of invention (nonobviousness) with a presumption of validity might be exclusively offered through the PDPA affording a very powerful set of rights, but only after a correspondingly serious examination upon a tangible, uniform, and extensive record. The adjustments can be explained at greater detail, but it might be worth noting that the new system would produce serious answers to the long-recognized but unsolved problems of patent law: (1) the standards of novelty and nonobviousness in relation to the prior art, (2) the enablement and written description requirements, (3) patent eligible subject matter, (4) claim interpretation, (5) the doctrine of equivalents and prosecution history estoppel, (6) remedies for infringement, and (7) direct and indirect infringement (active inducement and contributory infringement).

Election into the PDPA. The new regime might accomplish all this with surprisingly little net transaction costs. Those who like the present system might continue to use it. But those who elect to opt into the PDPA system might find it markedly preferable. As to the “little” guys and small or independent inventors, it might be that they are the ones who will benefit the most. They can always invoke the present system. But those who realize that they have limited resources, and wanting to devote a greater portion of those resources to get into production or to find an industry or venture capital partner, might far better concentrate their resources on obtaining a weak but quick and reliable PDPA-issued novelty patent, in the N-1 class. Others might seek the stronger, PDPA-issued patent of [non]obvious invention in class O-1, which will come with a real set of presumptions, predictable results, and an economic return largely established at the time of prosecution. Such a patent might actually be worth something to the inventor, and the entirety of this PDPA package might actually provide some benefit to the public that is

worth the “embarrassment” of the patent monopoly.¹⁹¹

Safe Harbor and Economic Base Calculations (Allocations Among Markets). The PDPA’s presumption of validity, and other provisions that remedy existing defects in the patent laws, may be assimilated by “safe harbor” rules of the sort that are commonplace in SEC practice. That is, a patent application that meets certain objective conditions may be “deemed” to satisfy otherwise uncertain statutory standards. The PDPA could also perform economic base-case calculations, including some that might provide the basis for rational transnational price-discrimination for allocating cost-plus-profit recovery. If many of the neo-tech coded inventions seem to be scarcity free, or marginal cost free, and if many economic models might show cost recovery and return on investment in a first market (say, the United States) then how should the price be set in second or third markets (say, India, or another country)? The PDPA could actually come to grips with the economic impact of one market’s subsidization of another and the degree, if any, of allocation of imputed and prior costs to the marginal prices. Likewise, the PDPA could address whether it is “just” for one market to carry another, and whether the conditions of attribution and gratitude could possibly suffice to equalize the transaction (in addition to some sort of reasonable economic recovery).

Where Does the Staff Come From? Perhaps the first choice would be to attract staff and workers from the existing corps of patent examiners presently employed by the PTO. Or, as the need for the PTO decreases, there could be a process by which PTO employees could transition to the PDPA and so avoid unemployment. It would be good to have a wash in terms of aggregate employee costs. It may be the case, as with the SEC, that the quality and prestige of the work might attract additional talented and highly qualified persons.

Solving the Capability Problem. There is, and has been, much talk about converging patent law and policy with economic reality and economic interests. But how, exactly, so long as there is no existing institution having the capability, much less any authority under the law as it is, might anyone actually do so? How exactly, as long as we adhere to a unitary patent system, are we to treat different industries, fields of use, and dramatically different legitimate interests as differently as they so clearly seem to be? If there is a real problem, and if the PDPA is the

191. *Graham v. John Deere Co.*, 383 U.S. 1, 9 (1966) (“Jefferson saw clearly the difficulty in ‘drawing a line between the things which are worth to the public the embarrassment of an exclusive patent, and those which are not.’”).

(only) real solution, and is also a possible solution, then it would seem to be the only realistic alternative. Of course, if this is an overblown statement of the problem, and we can count on things somehow just working out, then never mind.

An Easy Solution to the PB&J Invention. It is clearly a novelty invention, at the least. Were there a PDPA in place, a novelty patent might have issued. It might have been classed as a non-injunctive relief patent. It might have entitled its owner to the rights of attribution and perhaps a modest compulsory license. Of course, the PDPA proceedings would have been optional and Smucker could have refused to elect PDPA treatment, but the PDPA would have provided speed, certainty, and reliability.

Summary. The orientation of the PDPA will be, as its name signifies, pro-public domain. It will be at the same time both pro- and anti-patent. It will be anti-patent of invention (those that claim nonobviousness), but pro-patent of novelty items. The one (the patent of invention) will be harder to get but more secure once issued, the other (the patented novelty item) will be much easier to obtain and less of a burden on everyone else once issued because of its shorter duration and more modest remedies proportionate to the incremental innovation.¹⁹²

A substantial plurality of inventions results from incremental improvements, made nearly simultaneously by persons working independently of each other.¹⁹³ Because the patent law as currently written was not meant to reward incremental steps of the sort that a routine worker might have taken, but so many inventions are the result of such steps, a large plurality of the some 8 million issued patents must be “bad.” They are bad, to be blunt, because no one knows how to apply the statutory standard of nonobviousness to the steady stream of obvious, incremental inventions that form the subject matter of countless patent applications. I have already noted that the Constitution does not require nonobviousness and that the statute could therefore accommodate mere novelty. The PDPA is a mechanism for

192. To the critic who believes that Article 1, section 8, clause 8 of the Constitution requires something like nonobviousness or anything else beyond novelty because of the word “invention,” I have two responses. The first is that the Constitution also uses the word “discovery” which could authorize some reward for mere novelty. See Folsom, *supra* note 14, at 214, 215-16. The second is that under the *de facto* standard currently in existence we are already, in fact, awarding patents on obvious novelty items, and we might as well make the most of it by regularizing the practice and providing shorter terms and more modest remedies for such things in order to make economic sense and logical sense out of the situation. See MERGES & DUFFY, *supra* note 10, at 610 (citing Edmund Kitch, *The Nature and Function of the Patent System*, 20 J. L. & ECON. 265, 284 (1974) as “endorsing a patentability standard based on ‘substantial novelty’”).

193. Lemley, *supra* note 10.

implementing that solution and for creating precisely the proportionate remedy appropriate for a novel-but-obvious incremental improvement that some advocates for the current system believe to be an appropriate response to patent's critics.¹⁹⁴

C. Second Proposal: Field of Use, Reinvigorated Utility

1. Field of Use

A straightforward and explicit field of use analysis would simply draw some boundary lines. A designed and tailored statutory amendment could carve out something like the cornucopia for special treatment under the patent laws. Likewise, a carefully crafted judicial doctrine could be developed.

2. Reinvigorated Utility

The law of the United States is no stranger to a strong form of utility as a judicial gloss on the long-standing statutory expression that any invention must be “useful” in order to be patented. It was once the case that this required “beneficial utility,” including the statement that the invention “should not be . . . injurious to the well-being, good policy, or sound morals of society.”¹⁹⁵ A reinvigorated utility requirement could

194. In an as-yet unpublished speech, Judge Rader contended that critics of the patent system have misunderstood certain limits already placed upon patents. He claimed that, among other things, the critics misapprehend the “little by little” nature of human progress which comprises small, incremental steps; and a great many patents, therefore, are granted for mere incremental improvements (and are to be applauded). He explained that proportionate remedies, scaled to the increment of the improvement, thereby getting the value right, solve any problem of over-protection for small steps and allow proper payment for them. Randall Rader, 2014 Mervis Lecture at the College of William & Mary: The Case for Incremental Invention: Two Cheers for Quality Patents (Oct. 7, 2014). A two-fold problem with Judge Rader's explanation is that while such patents might be common, and might very well track the reality of human progress, nonetheless a great many of them are (or ought to be) invalid under existing law because they are obvious; and designing proportionate remedies would require a sort of economic fact-finding (and legal basis) that is not evident under existing law and might be beyond the capacity of existing institutions. My proposal seeks to implement the idea by creating a regular system for categorizing such patents as mere novelty items, according them a lesser set of rights, and taking evidence on the question of economic return necessary to fashion a proportionate remedy—explicitly admitting that what is currently happening is the routine patenting of mere novelty items contrary to the existing requirement of nonobviousness, but authorizing such patents and then specifying their limits, including not merely more modest remedies, but shorter duration. My proposal is to institute precisely the mechanism that Judge Rader and other friends of the current patent system might be pleased to see.

195. *Lowell v. Lewis*, 15 F. Cas. 1018 (C.C.D. Mass. 1817) (Story, J.). To be sure, the context is doubtful, and I am proposing an extension of a doctrine which the Federal Circuit no longer

cabin the replicator as an invention whose exclusive practice might indeed be injurious to the well-being of society in a way not contemplated by Justice Story but applicable when code might otherwise create a cornucopia. Laws of other nations, and international treaties, create a comparable space for an exception to patent rights under the rubric of public order, and this could extend to the cornucopia by legislative or other appropriate action.

3. Rate-making and Virtual Rate-making

It seems hard to imagine rate-making without a rate-making body such as a PDPA. But it might not be impossible, were Congress seriously to address the problem of patent remedies, to take some small steps in that direction by amendments to the Patent Act. Likewise, it might be barely possible for courts to refashion their factor lists presently used for calculating damages, or for calculating reasonable royalties, so as to engage in a sort of virtual rate-making. I do not encourage it, absent the fully balanced set of countervailing features under a fully formed, and fully authorized, Public Domain Protection Agency.

V. CONCLUSION

It is long past time for a deliberate overhaul of patent law (and other intellectual property). Perhaps the looming promise (or threat) of neo-food design technology and the possibility of patenting the cornucopia might be sufficient impetus to reinvigorate the discussion.

In light of the systemic failure of existing patent law, which I illustrated by an extended discussion of the once-patented PB&J sandwich, I have proposed the idea of a Public Domain Protection Agency (PDPA). The PDPA can (1) de-unify patent law while maintaining a common kernel; (2) create classes and categories of patent protection; and (3) adjust terms, remedies, and other consequences accordingly and according to clear rules and regulations promulgated in advance with the aid of economic and other relevant data. If patent law

embraces (at least when the issue has to do with a substitutionary product said to “deceive” the public). See *Juicy Whip, Inc. v. Orange Bang, Inc.*, 185 F.3d 1364, 1367 (Fed. Cir. 1999) (pointing out there is either no deception or nothing wrong with designing a product to appear to be something it is not—cubic zirconium simulating a diamond, imitation gold leaf imitating real gold, synthetic fabrics to simulate expensive natural fabrics, or imitation leather; and citing cases involving imitation grill marks on food produced without using heat, laminated flooring to imitate wood, and imitation hamburger). Perhaps *Juicy Whip* contains far more dicta than was needed to dispose of the case of the bright orange reservoir that was before the court. In any event, what a court has contracted, it is free to expand. And Congress certainly may act.

is really, as we have so often been told, merely a concession granted by the state, existing only as the statute happens to read, and designed primarily for the public good by providing only the least incentive “necessary” to spur invention, then maybe after a couple hundred years of sniping, complaining, and trying to make improvements along the edges, it might be time to take real, concrete steps to test those propositions. A PDPA might do so. The replicator might be the technology that so heightens the contradictions in existing law as to spawn a PDPA not only as the least-harmful solution, but perhaps as one of the very few good solutions.

A second proposal is to reinvigorate field of use and beneficial utility doctrines. A condition to both of these proposals is that, in addition to rethinking the economics of non-scarcity as applied to neotech inventions constructed by code (which I have defined), it is time to rethink the fundamental justice—either justice *simpliciter*, or social justice (both of which have been variously defined, but ought to be more carefully discussed)—of the patent system. I have made my own first pass at doing so, and I hope that others will offer better or more refined versions if mine does not satisfy.

ILLUSTRATION: THE GOBLIN AND THE CORNUCOPIA



Hablot K. Browne, *The Goblin and the Sexton*
Picture Credit: the Victorian Web, scanned image by Philip V. Allingham
(engraving from Charles Dickens, *Pickwick Papers*,
<http://www.victorianweb.org/art/illustration/phiz/pickwick/24.html>)

You might well imagine current patent law, like a goblin, sitting over the buried cornucopia to the consternation of a starving bystander (perhaps a member of the public whom patent law was designed to serve, rather than to abuse, misuse, threaten, or disturb). It would be well to ensure that patent law remains designed to provide incentives to inventors without overprotecting.