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Making Patents: Patent Administration, 1790–1860

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MAKING PATENTS: PATENT ADMINISTRATION, 1790–1860

Kara W. Swanson[†]

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INTRODUCTION

Histories of the tumultuous early years of the US patent system have focused on “courts and parties.”¹ Congress, using its constitutional authority to “promote the [p]rogress of . . . useful [a]rts,” passed three patent acts in rapid succession.² To understand the transition from the practices of colonial North America to the world’s first modern patent system, intellectual histories focusing on legislation and judicial opinions, as well as their interpretation by contemporary politicians and legal thinkers, have been invaluable.³ There was a third site of

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1. STEPHEN SKOWRONEK, BUILDING A NEW AMERICAN STATE: THE EXPANSION OF NATIONAL ADMINISTRATIVE CAPACITIES, 1877–1920, at 24 (1982) (describing early republic as a “state of courts and parties”).
2. U.S. CONST. art. I, § 8, cl. 8. The three statutory schemes were those created by the Patent Act of 1790, Pub. L. No. 1-7, 1 Stat. 109 (1790); the Patent Act of 1793, Pub. L. No. 2-11, 1 Stat. 318 (1793); and the Patent Act of 1836, Pub. L. No. 24-357, 5 Stat. 117 (1836).
3. See, e.g., OREN BRACHA, OWNING IDEAS: THE INTELLECTUAL ORIGINS OF AMERICAN INTELLECTUAL PROPERTY, 1790–1909, at 12–31, 47–53, 188–306 (2016) [hereinafter BRACHA, OWNING IDEAS]; EDWARD C. WALTERSCHEID, TO PROMOTE THE PROGRESS OF USEFUL ARTS:

contestation, however. The patent clerk in his daily actions, implementing changing legislative mandates, was also influencing how Americans understood patents.⁴ As Woodrow Wilson noted over one hundred years ago, scholars and political theorists have long put aside “as ‘practical detail’ which clerks could arrange” the question of “how law should be administered with enlightenment, with equity, with speed, and without friction.”⁵ This Essay focuses on patent bureaucrats

AMERICAN PATENT LAW AND ADMINISTRATION, 1787–1836 (1998); Oren Bracha, *The Commodification of Patents 1600–1836: How Patents Became Rights and Why We Should Care*, 38 LOY. L.A. L. REV. 177 (2004) [hereinafter Bracha, *Commodification*]; Herbert Hovenkamp, *The Emergence of Classical American Patent Law*, 58 ARIZ. L. REV. 263 (2016); Camilla A. Hrdy, *State Patent Laws in the Age of Laissez Faire*, 28 BERKELEY TECH. L.J. 45 (2013); B. Zorina Khan, *Property Rights and Patent Litigation in Early Nineteenth-Century America*, 55 J. ECON. HIST. 58 (1995); Steven Lubar, *The Transformation of Antebellum Patent Law*, 32 TECH. & CULTURE 932 (1991); Adam Mossoff, *Who Cares What Thomas Jefferson Thought About Patents? Reevaluating the Patent “Privilege” in Historical Context*, 92 CORNELL L. REV. 953 (2007); Adam Mossoff, *Patents as Constitutional Private Property: The Historical Protection of Patents Under the Takings Clause*, 87 B.U. L. REV. 689, (2007); Frank D. Prager, *The Influence of Mr. Justice Story on American Patent Law*, 5 AM. J. LEGAL HIST. 254 (1961); Frank D. Prager, *Historic Background and Foundation of American Patent Law*, 5 AM. J. LEGAL HIST. 309 (1961); Frank D. Prager, *Trends and Developments in American Patent Law from Jefferson to Clifford (1790–1870), Part II*, 6 AM. J. LEGAL HIST. 45 (1962).

4. I use “his” deliberately, as the actors I discuss during this time period were all male, although William Thornton, patent clerk in the early nineteenth century, drafted his wife, Anna Maria, to help him with patent copying duties and women also worked as copyists in the Patent Office in the 1850s. Daniel Preston, *The Administration and Reform of the U.S. Patent Office, 1790–1836*, 5 J. EARLY REPUBLIC 331, 336 (1985) (noting Mrs. Thornton’s participation); Kara W. Swanson, *Rubbing Elbows and Blowing Smoke: Gender, Class, and Science in the Nineteenth-Century Patent Office*, 108 ISIS 40, 45–46, 48, 51 (2017). The participants were also all white. KENNETH W. DOBYNS, *THE PATENT OFFICE PONY: A HISTORY OF THE EARLY PATENT OFFICE* 234 (2d ed. 2016) (identifying the first possible Black clerical employee of patent office in 1870). Note that while concentrating on the intellectual history of the patent system, Bracha also agrees the patent system involves more than law and policy decisions. Bracha, *Commodification*, *supra* note 3, at 182; *see also* Robert Burrell & Catherine Kelly, *Parliamentary Rewards and the Evolution of the Patent System*, 74 CAMBRIDGE L.J. 423, 449 (2015) (noting the significance of bureaucrats (“law officers”) in the development of UK patent law before 1830). For a similar emphasis on administration, *see* JERRY L. MASHAW, *CREATING THE ADMINISTRATIVE CONSTITUTION: THE LOST ONE HUNDRED YEARS OF AMERICAN ADMINISTRATIVE LAW* 6 and *passim* (2012).
5. Woodrow Wilson, *The Study of Administration*, 2 POL. SCI. Q. 197, 198–99 (1887); *see also* Charles Evans Hughes, *Speech Before the Elmira*

and the practical details they arranged.⁶ In processing patent applications, they were required to interpret the law. Their decisions frequently raised questions of “equity,” leading to considerable “friction.”⁷ In their paper-shuffling, patent bureaucrats materialized political theory.⁸ Daily procedure translated high-order questions about the nature and purpose of patents into mundane controversies about application processing and civil service hiring.

The relationship between patent applicants and the government, and thus the nature of patents themselves as the product of that relationship, was enacted in the making of patents, practical detail by practical detail. In the first decades of the US patent system, there was a widely acknowledged shift from patents as privileges to patents as rights, as the relationship between the inventor and the state changed in law and political theory.⁹ What began in early modern Europe and

Chamber of Commerce, May 3, 1907, in ADDRESSES OF CHARLES EVANS HUGHES, 1906–1916, at 186 (2d ed. 1916) (distinguishing administrative “matters of detail” from “real” judicial questions) (as quoted by DANIEL R. ERNST, TOCQUEVILLE’S NIGHTMARE: THE ADMINISTRATIVE STATE EMERGES IN AMERICA, 1900–1940, at 29 (2014)).

6. For the historiography of the patent clerk and the Patent Office, see generally ROBERT C. POST, PHYSICS, PATENTS AND POLITICS: A BIOGRAPHY OF CHARLES GRAFTON PAGE 42–61, 108–64 (1976) [hereinafter POST, PHYSICS, PATENTS AND POLITICS] (discussing the experiences of Charles Page, as patent examiner and patent agent in the broader context of the mid-nineteenth-century patent office); Robert C. Post, “*Liberalizers*” Versus “*Scientific Men*” in the Antebellum Patent Office, 17 TECH. & CULTURE (1976) [hereinafter Post, “*Liberalizers*”] (discussing the competing philosophies of “liberalizers” and “scientific men” in the mid-century Patent Office); DOBYNS, *supra* note 4 (providing a history of the first century of the Patent Office); P.J. FEDERICO, ed., OUTLINE OF THE HISTORY OF THE UNITED STATES PATENT OFFICE (1936)(reprint of July 1936 number of the J. PAT. OFF. SOC’Y); Preston, *supra* note 4 (discussing patent administration from 1790–1836).
7. See Wilson, *supra* note 5, at 198–99.
8. Cf. David P. Currie, *The Constitution in Congress: Substantive Issues in the First Congress, 1789-1791*, 61 U. CHI. L. REV. 775, 775–76 (1994) (arguing that executive officers interpret the Constitution through daily actions); MASHAW, *supra* note 4, at 16 (focusing on administrative action rather than legislative or judicial actions).
9. See, e.g., Bracha, *Commodification*, *supra* note 3, at 180–81, passim (explaining transition from privilege to right). See also BRACHA, OWNING IDEAS, *supra* note 3, at 5, 11; Mossoff, *Who Cares What Thomas Jefferson Thought About Patents? Reevaluating the Patent “Privilege” in Historical Context*, *supra* note 3, at 967–68 (focusing on the US patent system and interpreting it in context of British precedents). Cf. SEAN BOTTOMLEY, THE BRITISH PATENT SYSTEM DURING THE INDUSTRIAL REVOLUTION 1700–1852: FROM PRIVILEGE TO PROPERTY, at 20–23, passim (2014) (interpreting British patent history in this period as transition from patents as privileges to property); Jerry L. Mashaw, *Recovering American*

colonial America as a discretionary privilege granted by a sovereign became an application as of right in the United States.¹⁰ How patent administrators performed their role crucially contributed to what patents were. The changing patent laws mandated different levels of administrative discretion. In arranging the practical details of patent processing, bureaucrats both narrowed and enlarged the scope of their statutory discretion, thereby making patents more or less like privileges or rights. Further, as they exercised discretion, administrators enacted their understanding of the purpose of patents, choosing to emphasize the public benefit which might flow from this means of encouraging new technologies, or the private concerns of inventors, seeking maximum economic return. With recognition of their power to shape the nature and purpose of patents came controversy about the best men for the job. Was making patents a job for copyists or cabinet officials?

Considering these questions brings us to a clerk's eye view of the patent system, a level at which personal inclinations and practical considerations mattered more than declarations of Congress and courts, which often became certain only in retrospect.¹¹ In the muddy reality of daily work, patent processing refused to fit neatly into an orderly narrative of transformation from privilege to right, guided by the constitutionally mandated purpose to "promote the [p]rogress of . . . useful [a]rts."¹² Grand claims of social benefit and individual rights dissipated in countless bureaucratic decisions.¹³ Reliance on ex ante bureaucratic review and ex post critique in courts and the marketplace seesawed back and forth depending on the legislative regime and the actions of the administrators. Bureaucrats, wanting to get the job done,

Administrative Law: Federalism Foundations, 1787–1801, 115 YALE L.J. 1256, 1263 (describing how "administration projects state power").

10. Mario Biagioli, *Patent Republic: Representing Inventions, Constructing Rights and Authors*, 73 SOC. RSCH. 1129, 1129 (2006); BRACHA, OWNING IDEAS, *supra* note 3, at 6, 188–89; BOTTOMLEY, *supra* note 9, at 103; *see also* B. ZORINA KHAN, THE DEMOCRATIZATION OF INVENTION: PATENTS AND COPYRIGHTS IN AMERICAN ECONOMIC DEVELOPMENT, 1790–1920, at 2 (2005) (arguing the US patent law was suffused from the outset with anti-privilege ideas).
11. *See, e.g.*, BRACHA, OWNING IDEAS, *supra* note 3, at 227–30 (demonstrating that *Hotchkiss v. Greenwood*, 52 U.S. 248 (1850) now seen as a turning point in the development of nonobviousness doctrine, did not become so until later); Kara W. Swanson, *Race, Gender, and the True Inventor* (work in progress presented virtually at Working with Intellectual Property: Legal Histories of Innovation, Labor, and Creativity, Stanford Center for Law and History, Stanford Law School, spring 2021) (arguing that meaning of "true inventor" as enacted into patent laws in 1790, 1793 and 1836 did not become certain until the end of the nineteenth century).
12. U.S. CONST. art. I, § 8, cl. 8.
13. BRACHA, OWNING IDEAS, *supra* note 3, at 304–06.

responded to the immediate pressures of applicants, colleagues, and superiors.¹⁴

In the twenty-first century, the nature and purpose of patents remains consequentially contested, in high stakes debates tied to the interpretation of their early history.¹⁵ This Essay argues that in order for twenty-first-century scholars to evaluate these debates and fully understand the antebellum patent system, we need to understand how antebellum patent bureaucrats made patents. Our histories of the patent system need to include the clerk.

While not offering a full history of seventy years of patent administration, this Essay analyzes US patent making under the three legislative regimes of the antebellum period. I first question dominant assumptions about the early patent board (1790–93) as highly discretionary and public-oriented, and then review the considerable power William Thornton wielded between 1802 and 1828 to shape the patent system in service of inventors, despite the formal absence of any discretion to do so, before turning to the first decades of the modern examination system (1836–60), when debates raged about who should fill the new patent examiner positions. In each era, I consider who was processing patent applications and how, arguing that such details shaped public perceptions about the nature and purpose of patents. In

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14. Contemporary studies have demonstrated such pressures and analyzed them as a form of regulatory capture. *See, e.g.*, 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* 136 (2004) (discussing examiners under pressure to “‘go easy’ on applicants and allow their patents to be granted”); DAN L. BURK & MARK A. LEMLEY, *THE PATENT CRISIS AND HOW THE COURTS CAN SOLVE IT* 22–24 (2009) (arguing that PTO suffers from capture by patent applicants); Mark A. Lemley & Bhaven Sampat, *Examiner Characteristics and Patent Office Outcomes*, 94 *REV. ECON. & STAT.* 817, 817, 826 (2012) (identifying different groups of examiners with different responses to agency and applicant pressures); Sean Tu, *Luck/Unluck of the Draw: An Empirical Study of Examiner Allowance Rates*, 2012 *STAN. TECH. L. REV.* 10, at 2 (2012) (same). For a recent review of contemporary empirical literature of patent examiner behavior, see Michael D. Frakes & Melissa F. Wasserman, *Empirical Scholarship on the Prosecution Process at the USPTO*, in *RESEARCH HANDBOOK ON THE ECONOMICS OF INTELLECTUAL PROPERTY LAW* 77 (Peter S. Menell & David L. Schwartz eds., 2019).
15. *Compare Oil States Energy Servs., LLC v. Greene’s Energy Grp., LLC*, 138 S. Ct. 1365, 1373 (2018) (finding that patents are public rights and therefore that administrative post-grant review of patents does not violate Article III), *with* Adam Mossoff, *Statutes, Common Law Rights, and the Mistaken Classification of Patents as Public Rights*, 104 *IOWA L. REV.* 2591, 2593–94 (2019) (arguing that *Oil States* was incorrectly decided based on a misunderstanding of history), *and* N. Scott Pierce, *Double Jeopardy: Patents of Invention as Contracts, Invention Disclosure as Consideration, and Where Oil States Went Wrong*, 30 *FORDHAM INTELL. PROP. MEDIA & ENT. L.J.* 645, 649–51 (2020) (same).

conclusion, I draw some suggestions from this initial survey of US patent administration both for our historical understanding of patents and contemporary critiques of the Patent Office, reminding us of the power of clerks.

I. THOMAS JEFFERSON AND THE PATENT BOARD, 1790–93

The Patent Office has long proudly claimed Thomas Jefferson as the first patent bureaucrat.¹⁶ As Secretary of State in President George Washington's first administration, Jefferson acted, along with Secretary of War Henry Knox and Attorney General Edmund Randolph, as part of a three-person "patent board," pursuant to the Patent Act of 1790.¹⁷ To obtain exclusive rights for up to fourteen years to make, use, and sell an inventive idea "not before known or used," "any person" could submit a petition to these three men.¹⁸ If at least two of them found the invention "sufficiently useful and important," the board was to "cause letters patent to be made out."¹⁹ If a patent was obtained "surreptitiously by, or upon false suggestion," a district court judge had the power to repeal it, but the Act made no provision for appeal from a refusal to grant a petition.²⁰

This mandate to judge not only novelty but also whether an invention was "sufficiently useful and important," combined with the lack of recourse if a petition were denied, created a process similar to that by which petitioners had sought patents from the British crown and from colonial governments.²¹ As in these systems, no petitioner,

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16. As part of the Centennial Celebration of the patent system, the Patent Office Society, the organization of patent clerks, dedicated a bust of Thomas Jefferson, claiming him as the first "Commissioner of Patents." E. F. Klinge, Address at the Dedication Ceremony of the Bust of Thomas Jefferson (Nov. 23, 1936), in NAT'L COMM. ON CENTENNIAL CELEBRATION OF THE AM. PAT. SYS., CENTENNIAL CELEBRATION OF THE AMERICAN PATENT SYSTEM 28–29 (1937).
 17. P. J. Federico, *Operation of the Patent Act of 1790*, 18 J. PAT. OFF. SOC'Y 237, 237–38 (1936).
 18. Patent Act of 1790, Pub. L. No. 1-7, § 1, 1 Stat. 109, 109–110 (1790).
 19. *Id.*
 20. *Id.* § 5; see Christopher Beauchamp, *Repealing Patents*, 72 VAND. L. REV. 647, 663–67 (2019) (discussing repeal power).
 21. For a discussion of the origins and slow formalization of the British system, see CHRISTINE MACLEOD, *INVENTING THE INDUSTRIAL REVOLUTION: THE ENGLISH PATENT SYSTEM, 1660–1800*, at 2–3 and passim (Cambridge Univ. Press ed., 1988); BOTTOMLEY, *supra* note 9, at 36–39 (noting changes between 1535 and 1852); BRACHA, *OWNING IDEAS*, *supra* note 3, at 15–25. For previous colonial practice and state patents, see BRUCE W. BUGBEE, *THE GENESIS OF AMERICAN PATENT AND COPYRIGHT LAW* 60–103 (1967); BRACHA, *OWNING IDEAS*, *supra* note 3, at 25–31; P. J. Federico, *State Patents*, 13 J. PAT. OFF. SOC'Y 166, 166–76 (1931); P. J. Federico, *Colonial*

however inventive, had an enforceable right to a patent grant, making it akin to a royal privilege, granted at the “grace and favour” of the monarch.²² The small committee of unelected executive branch officers replaced the legislature, which, in earlier colonial and state patent processes, had considered petitions and granted patents by private bills. While American inventors had filed patent petitions with Congress seeking to continue this earlier approach, Congress refused to exercise its delegated power by granting patents directly.²³

Instead, by designating the Secretaries of State and War as patent administrators, Congress had assigned the heads of two of only three executive departments to the task of processing patent petitions.²⁴ Due to their government positions, between them, Jefferson and Knox had a comprehensive understanding of domestic and foreign affairs. The third board member, Attorney General Randolph, was the government’s legal advisor and also had the duty of examining each patent, once “made out,” for conformity to the statute.²⁵ Like the monarch, these men sat at the center of power as they made their judgment about what was “sufficiently useful and important,” with the ability to consider all national priorities.²⁶ They also were not directly responsible to the people or their representatives, as they were appointed by the president. These elite men, what President Washington called “first characters of the Union,” read each application and made unreviewable decisions.²⁷

Monopolies and Patents, 11 J. PAT. OFF. SOC’Y 358, 358–64 (1929); Hrdy, *supra* note 3, at 58–60.

22. BRACHA, OWNING IDEAS, *supra* note 3, at 22 (citing W. M. HINDMARCH, A TREATISE ON THE LAW RELATIVE TO PATENT PRIVILEGES FOR THE SOLE USE OF INVENTIONS 3–4 (1846)). While explaining these similarities in greater detail, Bracha also notes that US patents of this period differed from prior colonial and British patents in that they were “universalized privilege[s],” as the statutory guidance offered a new standardization of the entitlements to be granted. Bracha, *Commodification*, *supra* note 3, at 219, 222.
23. WALTERSCHEID, *supra* note 3, at 37, 81–87, 107–08, 115–20.
24. The third department was Treasury. LEONARD D. WHITE, THE FEDERALISTS: A STUDY IN ADMINISTRATIVE HISTORY 26 (1948). *Cf.* Mashaw, *supra* note 9, at 1286–87 (arguing that Treasury was not an executive department).
25. Patent Act of 1790 § 1; Mashaw, *supra* note 9, at 1289–90 (describing role of Attorney General).
26. Patent Act of 1790 § 1.
27. “From George Washington to James Madison, 23 September 1789,” *Founders Online*, NATIONAL ARCHIVES, <https://founders.archives.gov/documents/Washington/05-04-02-0046> [Original source: *The Papers of George Washington*, Presidential Series, vol. 4, 8 September 1789–15 January 1790, ed. Dorothy Twohig. Charlottesville: University Press of

From their privileged position, these men made patent grants based on their understanding of the public good.²⁸ Surviving records indicate that Jefferson, himself an inventor, took the lead in patent administration duties.²⁹ As Jefferson described his work decades later, he examined patent applications “[c]onsidering the exclusive right to invention as given not of natural right, but for the benefit of society.”³⁰ Petition by petition, board members, led by Jefferson, learned about new technologies that might be useful to the new nation and then were directed to select only those sufficiently important and useful for a patent grant.³¹

It is this combination of factors, that is, lack of review from denial and examination by elite men charged with promoting social benefit on a national scale, that has led both scholars and participants to

Virginia, 1993, pp. 67–68] (describing type of men sought for judicial appointments); *see also* LEONARD D. WHITE, *THE JEFFERSONIANS: A STUDY IN ADMINISTRATIVE HISTORY, 1801–1829*, at 258–63, 267–69, 508 (1951) (describing general approach to appointments by Presidents Washington and Adams).

28. *See* Bracha, *Commodification*, *supra* note 3, at 181 (arguing that patents of this era fulfilled “individually defined public purposes”).
29. Memorandum Book of the Office of the Secretary of Congress, 1785–88, and of the Department of State, 1789–1795, microformed on Papers of the Continental Congress, 1774–1779, Microscopy No. 247, Roll 198, Item 187 (National Archives Microfilm Publications), at 49–76 (recording that only Jefferson and Knox attended periodic meetings between April 17, 1790 and July 9, 1790); KEITH THOMSON, *JEFFERSON’S SHADOW: THE STORY OF HIS SCIENCE 165-75* (2012) (Jefferson’s inventions); *see also* WALTERSCHEID, *supra* note 3, at 179–83; Federico, *supra* note 17, at 238.
30. “From Thomas Jefferson to Isaac McPherson, 13 August 1813,” *Founders Online*, NATIONAL ARCHIVES, <https://founders.archives.gov/documents/Jefferson/03-06-02-0322> [Original source: *The Papers of Thomas Jefferson, Retirement Series*, vol. 6, *11 March to 27 November 1813*, ed. J. Jefferson Looney. Princeton: Princeton University Press, 2009, pp. 379–386] (recollecting twenty years later); *see also* Mossoff, *Who Cares What Thomas Jefferson Thought About Patents? Reevaluating the Patent “Privilege” in Historical Context*, *supra* note 3, at 955 (arguing that Jefferson’s reminiscences are frequently misread and overemphasized); Christopher Beauchamp, *Oliver Evans and the Framing of American Patent Law*, 71 CASE W. RES. L. REV. 1, 468–71 (2020) (setting Jefferson’s letter in context of Oliver Evan’s patent litigation).
31. For Jefferson’s lifelong engagement with technology and its links to his political philosophy, *see*, for example, Hugo A. Meier, *Thomas Jefferson and a Democratic Technology*, in *TECHNOLOGY IN AMERICA: A HISTORY OF INDIVIDUALS AND IDEAS 17–33* (Carroll W. Pursell, Jr. ed., 2d ed. 1990). How elite Americans thought about the role of manufactures, and thus labor-saving technology, varied. Jefferson’s views sharply diverged from those of Alexander Hamilton, then Secretary of Treasury. WALTERSCHEID, *supra* note 3, at 147–48, 155.

characterize early US patents as privileges.³² The ability to monetize an inventive idea through a federal grant that could be licensed and assigned was not a right granted to inventors by Congress, but rather a privilege that might be bestowed or withheld in the unreviewable discretion of bureaucrats. This privilege model was replaced during the nineteenth century by the current system in which inventors seek patents with an expectation of a grant if they meet the legal criteria of a patentable invention and with a robust appeal process available if their application is denied, changing patents into rights.³³

While others have debated the endpoint of that shift—arguing, for example, that the creation of a statutory right to appeal a denial, while important, did not destroy all vestiges of a privilege-based understanding of the nature and purpose of patents³⁴—I focus on the actions of Jefferson and his fellow patent bureaucrats to understand its beginnings, arguing that their practices of making patents during this early period made patents less privilege-like and more rights-like than the statutory language suggests.

The limited information available indicates that the board granted less than half of patent petitions, a much lower rate than under later statutory regimes.³⁵ In their approach to making patents, these administrators apparently set a high bar when measuring patent petitions against the purposes of the patent system, seeking to serve the interests of a new nation as interpreted by its most influential members. Yet there are hints that Jefferson and his colleagues, faced with the practical problem of processing petitions, quickly began to develop practices

32. For scholarship, see, e.g., sources cited *supra* notes 9–10. For participants, see BRACHA, OWNING IDEAS, *supra* note 3, at 196–201 (noting how patent petitioners in this period acted as though they were seeking privileges). Note that these two aspects of privilege—unreviewable discretion and decision-making by elites—need not go hand-in-hand. There is also a third aspect of patents-as-privileges: they might be most easily obtained by those who themselves had privilege, in the sense of social capital and economic resources. In eighteenth-century England, for example, patents involved “an astute game of patronage.” BOTTOMLEY, *supra* note 9, at 43. As I suggest *infra* in text accompanying notes 44–46, meeting the Board’s requests would have required resources that might have been beyond inventors who were not themselves wealthy or who lacked wealthy backers.

33. See generally U.S. PAT. & TRADEMARK OFF., MANUAL OF PATENT EXAMINING PROCEDURE (2020) (providing detailed rules for patent examination and intra-agency review of denials). See also BRACHA, OWNING IDEAS, *supra* note 3, at 3–4.

34. BRACHA, OWNING IDEAS, *supra* note 3, at 215.

35. About fifty-seven patents were issued under the Patent Act of 1790. Federico, *supra* note 17, at 244, 246 (noting that at least 114 applications were filed in 1790 and 1791 alone); see also DUMAS MALONE, JEFFERSON AND THE RIGHTS OF MAN 283 (1951).

nudging the discretionary privilege model of patents toward something more like rights.³⁶

Because the patent board was operational for fewer than three years and because few records survive, hints are all that remain.³⁷ But we need to consider the possibility that in an uncountable number of cases, the board denied patent petitions for reasons unrelated to its discretionary power to evaluate the perceived importance of claimed inventions. Some petitioners may have failed to describe inventions at all, that is, technology that was new and that worked; in modern parlance, their inventions lacked novelty and/or operability. Others may have given up before a final board decision, unable or unwilling to respond to board requests. In either scenario, the lack of an issued patent had nothing to do with the discretion of the board to test inventions for sufficiency. Early patents, thus, might have been, through bureaucratic processing, less privilege-like than Congress intended.

Here are some hints that suggest significant numbers of petitions might have failed for non-discretionary reasons. The board appears rapidly to have developed a practice of asking for “a more ample description,” a model, and/or “more complete drawings” before it made a decision.³⁸ In its first week of operation, the board asked petitioner Nathan Read to share “plans and descriptions” and after reviewing them, requested him to prepare models as well.³⁹ By February 1791,

36. Cf. Bracha, *Commodification*, *supra* note 3, at 222 (arguing that the framework of the 1790 Patent Act was a “hybrid” of older privileges and modern rights). Historians of the British patent system have traced a similar administrator-driven change in the nature of patents during the century and a half after British patents for invention survived the Statute Against Monopolies (1634), as British patent practice evolved to make patents less like privileges and more like rights as clerks attended to the practical details. BOTTOMLEY, *supra* note 9, at 48–49, 63 (noting the decreased emphasis in considering how an invention contributed to the public good over the eighteenth century and that high fees and the convoluted process served to “weed out” about 20% of patents); Bracha, *Commodification*, *supra* note 3, at 201–02 (describing British shift via law in action); Adam Mossoff, *Rethinking the Development of Patents: An Intellectual History, 1550–1800*, 52 HASTINGS L.J. 1255, 1294 (2001) (arguing that English patents had become rights by the late eighteenth century).

37. Federico, *supra* note 17, at 244–45 (noting surviving records).

38. “From Thomas Jefferson to Robert R. Livingston, 4 February 1791,” *Founders Online*, NATIONAL ARCHIVES, <https://founders.archives.gov/documents/Jefferson/01-19-02-0019> [Original source: *The Papers of Thomas Jefferson*, vol. 19, 24 January–31 March 1791, ed. Julian P. Boyd. Princeton: Princeton University Press, 1974, pp. 240–241] (as cited in Federico, *supra* note 17, at 243).

39. Notation made April 17, 1790, Memorandum Book of Department of State, 1789–95, *supra* note 29, at 49.

Jefferson referred to this practice as a “general rule.”⁴⁰ Further, records indicate that the board held hearings, asking petitioners to appear in person and explain their inventions.⁴¹ All of these actions were extra-statutory. The statute stated that patentees did not have to provide an enabling specification (that is, a detailed description) or model until the patent had already been granted and made no mention of hearings.⁴² Following the statutory guidance, early petitioners appear to have provided very little detail about their inventions in their initial petitions.⁴³

Responding to the board demands would have increased the upfront expense to petitioners, possibly significantly. Filing a petition cost fifty cents. Once a patent was approved, the applicant had to pay for filing a specification and having a patent “made out,” sealed, and endorsed, fees totaling \$3.20 plus a per word charge, resulting in a final cost of \$4–5.⁴⁴ A stagecoach ride from New York to Philadelphia to appear before the board could cost \$5 and take two days and then there might be the need to pay for food and lodging.⁴⁵ Jacob Isaacks, of Newport, Rhode Island, who travelled to Philadelphia in early 1791 to demonstrate his invention, complained to Jefferson that “his delay here is very distressing” on account of his poverty.⁴⁶ If petitioners had not already prepared drawings or a model, they would have faced prepar-

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40. “From Thomas Jefferson to Robert R. Livingston,” *supra* note 38.
41. Memorandum Book of Department of State, 1789-1795, *supra* note 29, at 49, 61, 63, 65, 68, 70–72, 75–76 (notes of meetings held April, June and July, 1790); *see also* Federico, *supra* note 17, at 242; WALTERSCHEID, *supra* note 3, at 178–81.
42. Patent Act of 1790, Pub. L. No. 1-7, § 2, 1 Stat. 109, 110–111 (1790).
43. WALTERSCHEID, *supra* note 3, at 162, 164 (noting that Oliver Evans’ petition was unusual in its specificity); BRACHA, OWNING IDEAS, *supra* note 3, at 192 (discussing the emphasis on social contribution in petitions rather than enabling details).
44. Patent Act of 1790 §§ 1, 7; DOBYNS, *supra* note 4, at 31, 35.
45. *The Swift-Sure, A New Line of Stages*, GAZETTE U.S. & PHILA. DAILY ADVERTISER, July 15, 1799.
46. “III. Secretary of State to Caspar Wistar, Jr., 20 March 1791,” *Founders Online*, NATIONAL ARCHIVES, <https://founders.archives.gov/documents/Jefferson/01-19-02-0171-0004> [Original source: *The Papers of Thomas Jefferson*, vol. 19, *24 January–31 March 1791*, ed. Julian P. Boyd. Princeton: Princeton University Press, 1974, pp. 615–616]; “Editorial Note: Experiments in Desalination of Sea Water,” *Founders Online*, NATIONAL ARCHIVES, <https://founders.archives.gov/documents/Jefferson/01-19-02-0171-0001> [Original source: *The Papers of Thomas Jefferson*, vol. 19, *24 January–31 March 1791*, ed. Julian P. Boyd. Princeton: Princeton University Press, 1974, pp. 608–614] (describing Isaacks as “aged, infirm and poor resident of Newport” and detailing his travels to Philadelphia via New York).

ation costs, which might include hiring someone to do the work. Some petitioners might simply have been unable to pay these extra expenses. Others might have reconsidered the worth of a patent when such expenditures were required without any guarantee that a patent would issue. Such recalculation seems to have been in effect among those who had petitioned Congress directly for federal patents before passage of the 1790 Act. Faced with the newly formalized procedure, most evidently did not bother to resubmit petitions to the board.⁴⁷ If we allow for the possibility that a fraction of ungranted petitions were simply dropped by inventors, the grant rate of those inventors who took the trouble to prepare additional materials and to appear before the board rises, coming closer to rates routinely achieved by the Patent Office once its denials were subject to review and Congress removed the criterion of importance from its bureaucratic mandate.⁴⁸

In addition to abandoned petitions, it is both possible and undeterminable, given the dearth of records, that another fraction of petitions foundered when applicants failed to convince board members that their inventions worked or were new. Another hint exists in the form of surviving petitions, the text of which concentrated on explaining the benefits of the invention rather than its details.⁴⁹ The board's "general rule" of seeking additional information might have been in aid not only of assessment of importance but also, or even primarily, a threshold assessment of novelty and operability. There is no reason to believe that inventors in this period were any less likely than those in later decades to reinvent known devices unwittingly or to claim perpetual motion machines.⁵⁰ Isaacks was given the opportunity to demonstrate his desalination process for Jefferson and an assembled group of scientific Philadelphians, for example, but experimentation proved that his claimed invention "does not facilitate the separation of

47. WALTERSCHEID, *supra* note 3, at 173.

48. Post, "*Liberalizers*," *supra* note 6, at 25 (showing grant rates in early examination years at around 66%); Michael Carley, Deepak Hegde & Alan Marco, *What Is the Probability of Receiving a U.S. Patent?*, 17 YALE J.L. & TECH. 203, 211 (2015) (showing grant rates at the turn of the twenty-first century from 40–70%).

49. BRACHA, OWNING IDEAS, *supra* note 3, at 192.

50. Two years into his tenure as Superintendent of Patents, William Thornton told John Quincy Adams that "almost all the applications for Patents" were not new. Entry in John Quincy Adams's Diary (Dec. 27, 1804), THE DIARIES OF JOHN QUINCY ADAMS: A DIGITAL COLLECTION (Mass. Hist. Soc'y ed., 2020), http://www.masshist.org/jqadiaries/php/popup?id=jqad27_119 [<https://perma.cc/69ND-EKUY>]; also included in Papers relating to the administration of the U.S. Patent Office Superintendency of William Thornton, 1802–1828, Harris, C.M. National Archives Microfilm [hereinafter Thornton Papers].

sea-water from it's [sic] salt."⁵¹ Jefferson, who was keenly interested in establishing a navy, understood the importance of turning sea water into drinking water.⁵² Isaacks, however, had not improved known distillation techniques.⁵³

These hints suggest that it is at least possible that the board was functioning less like a monarch exercising "grace and favour," that is, granting privileges to serve its members' elite view of the national interest, and more like modern patent examiners, allowing patents if basic requirements were met.⁵⁴ Faced with the near-impossible task of predicting the future of a technology to contribute to the nation, the board might have retreated to some form of believable operability and apparent novelty, tacitly agreeing that any petitioner who met those hurdles had shown sufficient usefulness and importance and thus sharply limiting its own discretion.⁵⁵

Undoubtedly, Jefferson promoted the use of "general rules" to minimize the time and effort of the board's statutory duties, which he complained "cut[] up his time into the most useless fragments."⁵⁶ Later, he remembered the board's efforts to reduce "their decisions to a system

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51. "VI. Affidavit of the Secretary of State on the Result of the Experiments, 26 March 1791," *Founders Online*, NATIONAL ARCHIVES, <https://founders.archives.gov/documents/Jefferson/01-19-02-0171-0007> [Original source: *The Papers of Thomas Jefferson*, vol. 19, 24 January–31 March 1791, ed. Julian P. Boyd. Princeton: Princeton University Press, 1974, pp. 617–618].
52. "III. Secretary of State to Caspar Wistar, Jr.," *supra* note 46 (stating that it was an "advantage" of Issacks' claim that it will increase knowledge among "masters of vessels" about distillation of sea water). For Jefferson's involvement in the debates over the formation of a navy, eventually established in 1794, see HAROLD SPROUT & MARGARET SPROUT, *THE RISE OF AMERICAN NAVAL POWER, 1776–1918*, at 17–18 (Princeton Univ. Press 5th prtg. 1967). See generally Julia H. Macleod, *Jefferson and the Navy: A Defense*, 8 HUNTINGTON LIBR. Q. 153 (1945) (discussing Jefferson's views on the establishment of a navy).
53. Isaacks had chosen to petition Congress for "a reward suitable to the importance of the discovery, and adequate to his expences [sic]" rather than to seek a patent and Jefferson's investigations thus resulted in a report to Congress and no reward to Isaacks. "Editorial Note," *supra* note 46, at n12.
54. BRACHA, *OWNING IDEAS*, *supra* note 3, at 22.
55. See Beauchamp, *supra* note 20, at 665–66 (arguing that Congress envisioned that courts would aid in winnowing out invalid patents through post-grant repeal process included in Patent Acts of 1790 and 1793).
56. "From Thomas Jefferson to Hugh Williamson, 1 April 1792," *Founders Online*, NATIONAL ARCHIVES, <https://founders.archives.gov/documents/Jefferson/01-23-02-0312> [Original source: *The Papers of Thomas Jefferson*, vol. 23, 1 January–31 May 1792, ed. Charles T. Cullen. Princeton: Princeton University Press, 1990, p. 363].

of rules as fast as the cases presented should furnish materials.”⁵⁷ In addition to the general rule of requiring full information about the invention to inform the decision on patentability, Jefferson described rules against patenting a machine based on a new use, against a “change of material” as a patentable invention, and against patenting a “mere change of form.”⁵⁸ None of these rules had any explicit statutory basis; they were interpretations of the statute by the bureaucrats, struggling to implement a broad mandate.⁵⁹ And each of them, over time, was incorporated into patent law.⁶⁰

Without any surviving details of board deliberations, it is not possible to determine whether when deciding to grant a petition, the board did so based on minimal criteria of novelty and operability, as defined by “general rules,”—a liberal approach that would leave it to the market to determine the usefulness and importance of such inventions—or whether it used a two-step process, separately considering novelty and operability and additionally making a discretionary judgment that some new and operable inventions were more important, and thus patent-worthy, than others.⁶¹ Again, we have hints. We can consider the patents that were granted. The first, to Samuel Hopkins, for a method of making potash, gained support from some of the early republic’s scientific leaders, but utterly failed in the marketplace, despite Hopkins’ strenuous efforts to commercialize it.⁶² Did Jefferson and his colleagues hope that this more expensive method to create a

57. *Id.*; “Thomas Jefferson to Thomas Cooper, 25 August 1814,” *Founders Online*, NATIONAL ARCHIVES, <https://founders.archives.gov/documents/Jefferson/03-07-02-0440> [Original source: *The Papers of Thomas Jefferson, Retirement Series*, vol. 7, 28 November 1813 to 30 September 1814, ed. J. Jefferson Looney. Princeton: Princeton University Press, 2010, pp. 606–607]. Jefferson also referred to the formulation of such rules based on experience as a slow process, which may be why Oliver Evans’ patent, the third issued, combined several different inventions, while a later applicant was required to divide multiple inventions into separate petitions, a requirement that is now also part of patent examination practice. Federico, *supra* note 17, at 246–47.

58. “From Thomas Jefferson to Isaac McPherson,” *supra* note 30.

59. The struggles of bureaucrats to interpret statutes in order to do their jobs were widespread across the new government. See WHITE, *supra* note 24, at 10 (detailing operational details worked out in 1790s).

60. *Hotchkiss v. Greenwood*, 52 U.S. 248, 262 (1850) (change of material); *Bean v. Smallwood*, 2 F. Cas. 1142, 1143 (C.C.D. Mass. 1843) (No. 1,173) (new use); *Smith v. Nichols*, 88 U.S. 112, 119 (1874) (change of form).

61. *Cf. Hovenkamp*, *supra* note 3, at 274–75 (noting Adam Smith’s unenthusiastic views of patents in markets and Smith’s influence on Jefferson).

62. David W. Maxey, *Samuel Hopkins, the Holder of the First U.S. Patent: A Study of Failure*, 122 PA. MAG. HIST. & BIOGRAPHY 3, 27, 32–33 (1998).

useful industrial chemical would prove a social benefit, or did they simply see no harm in letting the market decide? As Jefferson noted in 1792, the petitioners themselves “always deemed” their inventions “valuable.”⁶³

More telling, perhaps, is the board’s infamous decision to grant a patent to each of four steamboat inventors, all on August 26, 1791, without resolving who had priority or whose technology was superior.⁶⁴ With no statutory provision specifying a means of identifying the true inventor from among competing candidates (later known as interference proceedings), the board chose not to pick a favorite.⁶⁵ This solution did not seem to advance the public good, insofar as it failed to signal to investors which technology offered the best chance of improved navigation.⁶⁶ The market would have to sort among the contenders without the aid of the patent system.⁶⁷ Perhaps predictably, the conflicting patents seem to have discouraged investment, with patentee John Fitch’s investors, for example, quitting soon after he failed to gain a clear monopoly.⁶⁸ Further, the fourteen-year exclusivity granted to the four patentees created a period of “suspended activity” and “confusion” during which neither they nor others improved steamboat technology.⁶⁹

There is one last hint of Jefferson’s perspective on the board’s discretion under the Patent Act of 1790. When communicating with Hugh Williamson, a congressman involved in drafting a new patent act, Jefferson noted that “fixed rules” for patent processing were “more likely” “to deal out justice without partiality or favouritism,” indicating

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63. “From Thomas Jefferson to Hugh Williamson,” *supra* note 56.
64. Federico, *supra* note 17, at 248. See generally Frank D. Prager, *The Steam Boat Interference, 1787–1793*, 40 J. PAT. OFF. SOC’Y 611 (1958) (discussing the controversy among the four inventors).
65. Federico, *supra* note 17, at 248; Prager, *supra* note 64, at 636–37. Such a provision was included in the Patent Act of 1793, Pub. L. No. 2-11, § 9, 1 Stat. 318, 322–23 (1793).
66. See WALTERSCHEID, *supra* note 3, at 186–90.
67. The patent board’s tolerance of unclear boundaries echoes the conflicting rights granted by the Stationer’s Company in England in the sixteenth and seventeenth century, a hallmark of the privilege era of copyright. ADRIAN JOHNS, *PIRACY: THE INTELLECTUAL PROPERTY WARS FROM GUTENBERG TO GATES* 25–26 (2009) (describing operation of Stationer’s Company); BRACHA, *OWNING IDEAS*, *supra* note 3, at 34–36 (analyzing privilege aspects of early copyright). My thanks to Oren Bracha for noting this comparison.
68. ANDREA SUTCLIFFE, *STEAM: THE UNTOLD STORY OF AMERICA’S FIRST GREAT INVENTION* 119 (2004).
69. Prager, *supra* note 64, at 640–41.

some discomfort with broad discretion and the privilege-like nature of patents it supported.⁷⁰

None of these extra-statutory board practices alleviated the inability of an unsuccessful petitioner to appeal a patent denial. However much the bureaucrats may have constrained their statutory discretion in the interest of efficiency, inventors lacked a forum to demand a patent as of right.⁷¹ Nor did Jefferson in his later writings acknowledge any contradiction between trusting market forces to weed out impractical inventions and his espoused commitment to granting patents only when they offered social benefit. Further, rules such as refusing patents for new uses and changes of material or form, while constraining discretion, also were arguably proxies for insufficiently useful and important inventions. For these reasons, I am not arguing that the board members and those who interacted with the board to obtain patents developed a rights-based understanding of patents in these three years. Rather, I am arguing that from the outset, practical necessity translated what could have been a very high bar to obtaining patents into a system that was less discretionary and more protective of inventor's rights than the statutory language and grant rate suggests.

Once we reconsider how the board processed patent petitions, we also gain new perspective on the relevant expertise of board members, as not only elite in power and privilege, but also in technical training. The legislators who drafted the Patent Act of 1790 and designated the Secretary of State, Secretary of War, and Attorney General as the patent administrators would have assumed that any holder of those positions would be an educated gentleman in an era when education was not confined by disciplines.⁷² Such a man would be a participant in

70. "From Thomas Jefferson to Hugh Williamson," *supra* note 56; Walterscheid, *supra* note 3, at 195–200, 205–06 (describing Jefferson's participation in enacting a new law, including drafting a proposed bill).

71. *See supra* text accompanying notes 55–58.

72. The assumption of a government of educated gentleman was demonstrated by the actions of the Constitutional Convention, the type of men serving at that time under the Articles of Confederation, and Washington's selections. WHITE, *supra* note 24, at 26, 30 (noting the lack of debate about executive organization at the Constitutional Convention, the carry-over of men already serving under the Articles of Confederation into the Washington administration (including Knox), and Washington's search for "men of stature," including Washington's description of the desirable Secretary of War as "not only of competent skill in the science of War, but possessing a general knowledge of political subjects, of known attachment to the Government we have chosen, and of proved integrity")(quoting "From George Washington to Charles Cotesworth Pinckney, 22 January 1794," *Founders Online*, NATIONAL ARCHIVES, <https://founders.archives.gov/documents/Washington/05-15-02-0084> [Original source: *The Papers of George Washington*, Presidential Series, vol. 15, 1 January–30 April 1794,

the republic of letters, in which the knowledge of law and political philosophy shared by many politicians did not preclude equal familiarity with natural philosophy and developments in machines and manufactures.⁷³ They might have been swayed by the fact that Jefferson, already appointed Secretary of State when the Act was passed, was “perhaps the public person in the United States most suited to administer the patent law”⁷⁴ because of his broad knowledge of science and technology and familiarity with relevant literature in other languages.⁷⁵ And they might have picked the Secretary of War because in the eighteenth century (and well into the nineteenth century), engineering and other technical knowledge formed part of what former General Washington referred to as “the science of War,” taught in military schools, where students learned navigation, surveying, and weaponry, along with the use of technical instruments that allowed necessary calculations.⁷⁶ These men might have been designated because of their knowledge of national affairs that allowed them to assess the social benefit of inventions, but they also might have been designated because of their likely ability to comprehend “manufacture[s], engine[s], machine[s], [and] device[s],” at a time when the government had no technical library.⁷⁷

As the US patent system developed, the board members, embodying both state power at the highest level and technical expertise,

ed. Christine Sternberg Patrick. Charlottesville: University of Virginia Press, 2009, pp. 103–105]).

73. THOMSON, *supra* note 29, at 25–30, 36 (describing eighteenth-century American gentleman’s education, including that of Secretary of State Jefferson and future president John Adams, and noting the intellectual abilities of the members of the Continental Congress, with emphasis on scientific and technical learning).
74. Federico, *supra* note 17, at 238.
75. THOMSON, *supra* note 29, at 2–3. Jefferson had been appointed Secretary of State on September 26, 1789 and took office on March 22, 1790. MALONE, *supra* note 35, at 243 n.3; *id.* at 254–55.
76. “From George Washington to Charles Cotesworth Pinckney,” *supra* note 72; NEIL LONGLEY YORK, MECHANICAL METAMORPHOSIS: TECHNOLOGICAL CHANGE IN REVOLUTIONARY AMERICA 112 (1985) (noting that “technical knowledge . . . is the stock in trade of a professional military engineer” in the late eighteenth century). In this period, the United States lacked military schools, instead importing trained engineers from Europe to assist the military during the Revolution. *Id.* at 112–13. For eighteenth-century European engineering education, see Peter Lundgreen, *Engineering Education in Europe and the U.S.A., 1750–1930: The Rise to Dominance of School Culture and the Engineering Professions*, 47 ANNALS SCIENCE 33, 36, 41, 46, 52 (1990). For the founding of West Point as first US military school in 1802, see *id.* at 52.
77. Patent Act of 1790, Pub. L. No. 1-7, § 1, 1 Stat. 109, 109–10 (1790).

enacted the nature and purpose of patents through the practical details of petition processing.

II. REGISTRATION AND WILLIAM THORNTON, 1793–1836

Despite the apparently large numbers of ungranted patent petitions under the first patent regime, there is little evidence that many inventors pushed for a change, another hint that perhaps some of the ungranted petitions might have been abandoned rather than denied.⁷⁸ It was rather the bureaucrats who complained. Given his other responsibilities, Jefferson soon found himself “oppressed beyond measure” by the duties of patent examination.⁷⁹ By December 1791, Jefferson had drafted a proposal for a simple registration system combined with a robust publication requirement, that is, a plan to push all evaluation of patents to the market and the courts.⁸⁰

While Jefferson’s draft bill did not become law, in the Patent Act of 1793, Congress abolished the patent board, replacing substantive evaluation by high-ranking officials with a registration system for patents under the supervision of the State Department.⁸¹ In place of cabinet members, the State Department clerk was given the task of

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78. The four steamboat inventors were disgruntled by the result of their petitions and the attorney for one of them published a pamphlet attacking the patent system. Lubar, *supra* note 3, at 936 & n.11 (citing JOSEPH BARNES, TREATISE ON THE JUSTICE, POLICY, AND UTILITY OF ESTABLISHING AN EFFECTUAL SYSTEM FOR PROMOTING THE PROGRESS OF USEFUL ARTS 27–34 (1792)); WALTERSCHEID, *supra* note 3, at 193; cf. Edward C. Walterscheid, *Thomas Jefferson and the Patent Act of 1793*, 39 ESSAYS IN HIST. (1998), <http://www.essaysinhistory.com/thomas-jefferson-and-the-patent-act-of-1793/> [<https://perma.cc/2HVVH-GZGP>] (claiming that inventors must have objected to the time-consuming nature of this process and to the low issuance rates); Federico, *supra* note 17, at 250 (claiming without citation that “some persons” were unhappy that the board did not grant patents “freely”).
79. “From Thomas Jefferson to Hugh Williamson,” *supra* note 56; see also MALONE, *supra* note 35, at 281 (noting that patents were “the most time-consuming of [Jefferson’s] domestic duties”).
80. “A Bill to Promote the Progress of the Useful Arts, [1 December 1791],” *Founders Online*, NATIONAL ARCHIVES, <https://founders.archives.gov/documents/Jefferson/01-22-02-0322> [Original source: *The Papers of Thomas Jefferson*, vol. 22, 6 August 1791–31 December 1791, ed. Charles T. Cullen. Princeton: Princeton University Press, 1986, pp. 359–362]; MALONE, *supra* note 35, at 285 (noting that Jefferson, in his draft bill, would have “reliev[ed] himself of all except nominal functions”); Walterscheid, *supra* note 78 (calling Jefferson’s proposed publication requirements “onerous” and costly).
81. Patent Act of 1793, Pub. L. No. 2-11, §§ 1, 3, 11, 1 Stat. 318, 318–323 (1793) (requiring the Secretary of State to “cause letters patent to be made out” to any inventor who pays a fee, swears that they have invented, and delivers description to Secretary of State).

processing patent applications.⁸² The new Patent Act switched the locus of evaluation of the application from government officials to the inventor, by requiring a signed, witnessed oath of the applicant that they were the “true inventor.”⁸³ Incorporating the Board’s extra-statutory practice, Congress now required “a written description of his [sic] invention . . . in . . . full, clear and exact terms,” drawings, and a model (if applicable) before the patent would be granted.⁸⁴ Further, in imitation of English practice, Congress also encouraged inventors to evaluate the worth of their inventions by raising the application fee to \$30.⁸⁵ If the paperwork was correctly submitted and the inventor paid that sum, the patent was to be drafted and forwarded to the Secretary of State for signature.⁸⁶ While there was still no right to appeal a denial, there was, as the Attorney General would repeatedly opine and the courts confirm, also no statutorily recognized discretion to deny a patent based on substance.⁸⁷ Patents had, by Congressional mandate, seemingly switched from privilege to a right “which the citizen may demand, and which the officers of government have no power to withhold.”⁸⁸

This interpretation was based on the new statutory language. From a statute offering unfettered discretion to consider the substance of an invention, the United States had switched to a statute without examination or discretion. Substantive review was only *ex post*, in the federal courts.⁸⁹ A close examination of patent making under the earlier system

82. *Id.* § 11.

83. *Id.* § 3.

84. *Id.*; see Biagioli, *supra* note 10, at 1149 (analyzing the significance of oath and specification). Note that while the 1790 Act had used gender inclusive language to refer to inventors, Patent Act of 1790, Pub. L. No. 1-7, § 1, Stat. 109, 109–10 (1790) (“he, she, or they”), the 1793 Act used only “he or they,” Patent Act of 1793 § 1.

85. Patent Act of 1793 § 11; BOTTOMLEY, *supra* note 9, at 63 (showing reliance on fees in lieu of examination). While a great increase, this fee was still “among the lowest in the world in relation to per capita income.” KHAN, *supra* note 10, at 54.

86. Patent Act of 1793 § 1 (indicating that once the inventor met the requirements of submission, the Secretary “shall cause the seal of the United States” to be “affixed” to the “letters patent”).

87. See *infra* note 114 and accompanying text.

88. Peter A. Browne, *Mechanical Jurisprudence*, No. 14, 3 FRANKLIN J. & AM. MECHANICS’ MAGAZINE 176 (March 1827) (lawyer describing US patent as “constitutional right”).

89. Court evaluation included the poorly understood judicial repeal procedure. Beauchamp, *supra* note 20, at 668–69. Evaluating the role of the courts in the patent system during this period, and into the first decades of the nineteenth century, is difficult, as there were very few published patent cases. There were only six reported United States patent decisions between

revealed hints of procedures constraining discretion, as administrators sought to manage their workload. A clerk's eye view of the four decades of the registration system shows bureaucrats seizing discretion. Again, administrators in their enactment of the law shaped the nature and purpose of patents.

Not surprisingly, while the increase in fees seems to have reduced the number of petitions initially, with lowered barriers to a patent grant, as well as the growing population of the United States, applications, and hence issued patents, soon began to increase.⁹⁰ While the State Department issued twenty-two patents under the new system in 1794, in 1801 there were forty-four.⁹¹ The paperwork for each had to be collected, requiring correspondence with the applicant if they had failed to submit all the required elements, and then the patent had to be written out by hand.⁹² The patent workload became increasingly onerous for the small State Department staff and, in 1802, then Secretary of State James Madison, serving under now President Thomas Jefferson, appointed William Thornton as the first federal employee dedicated full-time to processing patent applications.⁹³ Thornton kept his position until his death in 1828, allowing him ample opportunity to shape the US patent system.⁹⁴

Formally, Thornton was a clerk and his appointment did not change the registration system.⁹⁵ But he and others immediately termed his role that of "Superintendent of Patents" and Thornton began organizing a patent office, with dedicated space and staff.⁹⁶ As in the

1800 and 1809, and a further thirty-seven cases between 1810 and 1819. Khan, *supra* note 3, at 63. The situation did not change significantly in the next decades. Khan finds thirty-six patent cases between 1820 and 1829 and thirty-seven cases between 1830 and 1839. *Id.* Cf. Christopher Beauchamp, *The First Patent Litigation Explosion*, 125 YALE L.J. 848, 854-56 (2016) (noting a rapid increase after 1840 in patent case filings, as distinct from reported decisions).

90. *U.S. Patent Activity: Calendar Years 1790 to the Present*, U.S. PAT. & TRADEMARK OFF., https://www.uspto.gov/web/offices/ac/ido/oeip/taf/h_counts.htm [<https://perma.cc/U4HF-XG5U>] (last modified Oct. 9, 2020) (utility patents granted per year).
91. *Id.*
92. Preston, *supra* note 4, at 344 (noting that Thornton sometimes had to ask inventors for more details); *see also* Thornton Papers, *supra* note 50, (scattered examples of correspondence with applicants).
93. Preston, *supra* note 4, at 334.
94. *Id.*
95. *Id.* at 335.
96. *Id.* at 335-37; "To James Madison from William Thornton, 27 November 1807," *Founders Online*, NATIONAL ARCHIVES, <https://founders.archives.gov/documents/Madison/99-01-02-2366> [Early Access document] (describing his role as "Superintendent of the Patent Office"). Cf. Entry in John

prior patent regime, the nature of the man acting as a patent bureaucrat mattered, although under the registration system it was the Secretary of State rather than Congress who decided what sort of man should fill the role. In choosing Thornton, Madison selected a man similar to Jefferson in education, wealth, and accomplishments. Thornton had the ability and interest to consider the content of patent applications and to understand how patents were used by inventors and investors.

Like Jefferson, Thornton had scientific and technical training, an international perspective, and an ample inheritance.⁹⁷ Born in the British West Indies to a family whose wealth came from sugar plantations worked by enslaved labor, Thornton had been raised in England, trained as a physician in Edinburgh, and spent time in London and Paris before emigrating to the United States, settling in Philadelphia.⁹⁸ He became close friends with Madison when they roomed at the same boarding house while Madison was attending the Constitutional Convention in 1787, and in Washington City they were neighbors and jointly owned racehorses.⁹⁹ He was also friends with Washington and Jefferson.¹⁰⁰ While living in Philadelphia, Thornton had invested in Fitch's steamboat company, beginning decades of involvement with steamboat technology and the patent system.¹⁰¹ Thornton closely followed Fitch's patent travails—which included the disappointing decision of the patent board to award simultaneous patents to all steamboat inventors—and advised him about patent strategy. Thornton also considered himself an inventor of steamboat

Quincy Adams's Diary (Dec. 27, 1804), *supra* note 50 (calling Thornton "Commissioner of Patents").

97. These details of Thornton's life are drawn from BEATRICE STARR JENKINS, WILLIAM THORNTON: SMALL STAR OF THE AMERICAN ENLIGHTENMENT (1982); ELINOR STEARNS & DAVID N. YERKES, WILLIAM THORNTON: A RENAISSANCE MAN IN THE FEDERAL CITY (1976); Allen C. Clark, *Doctor and Mrs. William Thornton*, 18 RECS. COLUM. HIST. SOC'Y 144 (1915); C.M. Harris, *Biographical Sketch of William Thornton, from 1759 to 1802*, in PAPERS OF WILLIAM THORNTON, VOLUME ONE, 1781–1802 xxxi–liii (C.M. Harris, ed., 1995); DOBYNS, *supra* note 4, at 53–56.
98. STEARNS & YERKES, *supra* note 97, at 3; JENKINS, *supra* note 97, at v; Harris, *supra* note 97, at xxxiii–xliv.
99. STEARNS & YERKES, *supra* note 97, at 9; DOBYNS, *supra* note 4, at 55.
100. Clark, *supra* note 97, at 169 ("Dr. Thornton was proud of the intimacy with General Washington . . ."); STEARNS & YERKES, *supra* note 97, at 38 (noting that Thomas Jefferson was "among the distinguished acquaintances and friends who visited" Thornton).
101. Harris, *supra* note 97, at xlv–xlvi; Clark, *supra* note 97, at 184.

technology.¹⁰² After he won a competition to design the Capitol Building, Thornton moved to Washington City and then served as a Commissioner of the District of Columbia.¹⁰³ It was when his term as Commissioner ended that Madison appointed him to the patent clerkship, allowing him to retain a federal salary.¹⁰⁴ Despite Thornton's familial wealth, he struggled throughout his life to maintain funds sufficient to support his expensive lifestyle, which included multiple homes and enslaved servants.¹⁰⁵

In reading and processing patent applications, Thornton was never shy about exercising his elite expertise and drawing upon his extensive social capital. The first patent bureaucrat to engage directly with the patent system as an inventor and investor, he enacted a patent system designed to serve “true inventor[s]” while regarding the broader public with near hostility.¹⁰⁶ While he occasionally acknowledged that the public would benefit from the patent system, in Thornton's articulations, any social benefit in the form of technological progress was not so much the goal as an incidental result. To protect true inventors and maintain the value of their patents, Thornton repeatedly exercised his judgment about the substance of patent applications.

Although the patent system created by the 1793 Act is usually described as a registration system requiring only low-level paper-processing by bureaucrats, it in fact required substantive review. In

102. SUTCLIFFE, *supra* note 68, at 70, 76, 120; DOBYNS, *supra* note 4, at 26, 67–76.

103. Harris, *supra* note 97, at xlvii–li; DOBYNS, *supra* note 4, at 54–55.

104. Harris, *supra* note 97, at liii; DOBYNS, *supra* note 4, at 55. For discussions of patent practice during Thornton's tenure, see DOBYNS, *supra* note 4, at 57, 60–66, 82–83, 92–106; William I. Wyman, *Dr. William Thornton and the Patent Office to 1836*, in 18 J. PAT. OFF. SOC'Y 83, 83–87 (1936); WALTERSCHEID, *supra* note 3, at 253; Preston, *supra* note 4, at 338–40.

105. For Thornton's financial situation, see, for example, DOBYNS, *supra* note 4, at 106, noting that Thornton “complain[ed] about his salary” until “[h]e was very near the end of his life”; *id.* at 65, discussing Thornton's financial commitments and noting that Thornton “had received no money from his property in the West Indies for two years.” In the 1790s, Thornton owned “some 70 slaves” in Tortula. Charles M. Harris, *William Thornton (1759–1828)*, LIBR. OF CONG. (2001), <https://www.loc.gov/rr/print/adecenter/essays/B-Thornton.html> [<https://perma.cc/YV77-Z48E>]. Notes regarding the purchase of slaves in the United States are included in the papers of Thornton's wife. *See, e.g.*, entry of Feb. 27, 1796 (“bought a negro named Tome”), Anna Maria Brodeau Thornton papers, 1793–1861, Manuscript Division, Library of Congress, Washington, D.C. At one point, Thornton owned a house, two farms, and a city garden. DOBYNS, *supra* note 4, at 55.

106. Patent Act of 1793, Pub. L. No. 2-11, § 3, 1 Stat. 318, 321 (1793) (requiring applicant to swear they are the “true inventor” before receiving patent).

addition to ensuring each applicant had submitted every piece of required paperwork, Thornton had to decide if a model was “necessary,” which required reading to determine whether the claimed invention was a machine that could be modeled.¹⁰⁷ The new act also provided for arbitration in the case of “interfering applications,” but provided no guidance as to what it meant for applications to interfere.¹⁰⁸ Again, that was left to Thornton to decide based on the substance of each application, drawing upon, presumably, some combination of his records of pending applications (Thornton’s record keeping was often behind) and his memory of applications he had read.¹⁰⁹

Like Jefferson and the other board members, Thornton innovated in extra-statutory ways during his two-decade tenure, both to make his workload more tolerable and to promote his understanding of patents and the patent system. He took the board’s repeated requests for additional information and Jefferson’s “general rules” one step further, issuing a booklet for patent applicants that described the requested form and content of patent applications.¹¹⁰ He developed the practice of accepting and filing caveats (a means of establishing priority of invention in use in England) and of allowing patentees to seek reissuance to correct errors, both of which practices were subsequently formalized as part of patent law.¹¹¹

These practices shaped the nature of granted patents. Reissuance allowed the substance of a patent to change in ways Thornton believed were protecting true inventors from errors, whether theirs or his, and caveats rendered later applications non-novel, even though Thornton lacked authority to deny applications on that ground. By incorporating these ways of making patents, Thornton enacted his prioritization of individual inventor rights over any broader concept of the public good. Reissue practice, in particular, proved frustrating to businesses as it

107. Patent Act of 1793 §3.

108. *Id.* § 9.

109. Preston, *supra* note 4, at 336–37.

110. *Patents*, 6 J. PAT. OFF. SOC’Y 97, 98 (1923) (reprint of 1811 version of pamphlet). This practice would be ratified by Congress in 1870. Patent Act of 1870, Pub. L. No. 41-230, § 19, 16 Stat. 198, 200 (1870).

111. Patent Act of 1836, Pub. L. No. 24-357, §§ 12 (caveats), 13 (reissuance), 5 Stat. 117, 121–22 (1836). According to patent attorney and historian Levin H. Campbell, the practice of reissuance was first developed in 1817 and confirmed in *Grant v. Raymond*, 31 U.S. 218, 244 (1832) (acknowledging “settled practice”). Levin H. Campbell, *Correspondence*, 65 SCI. AM. 69 (1891); see also Kendall J. Dood, *Pursuing the Essence of Inventions: Reissuing Patents in the 19th Century*, 32 TECH. & CULTURE 999, 999–1000 (1991). For British caveat practice, see BOTTOMLEY, *supra* note 9, at 53–54. Post-grant corrections of patents continue to the present and provisional applications have replaced the earlier caveats. 35 U.S.C. §§ 111(b), 134(b), 318(a), 328(a) (2018).

allowed the coverage of patents, and thus the possibility of infringement, to change throughout their term.¹¹²

Lacking explicit authority, Thornton repeatedly assumed authority, enacting his own interpretation of the law. Most controversially, he was unwilling to grant patents to inventions he believed were not new. He made no secret of his activities, outlining them for then-Secretary of State Robert Smith in 1810 as “labours perhaps . . . more . . . the duties of conscience than of office.”¹¹³ His actions led some inventors to complain to the Secretary of State and resulted in multiple Attorney General opinions that Thornton (and the entire executive branch) lacked the discretion to deny a patent to any petitioner who fulfilled the paperwork requirements.¹¹⁴ Even after those rebukes, Thornton continued to warn applicants in correspondence that their inventions were not new or useful¹¹⁵ and if forced to issue such patents, he sometimes changed the language of the patents he drafted to indicate his distrust of their claimed novelty, adding terms such as “alleged” to the statement that the named recipient was the true inventor and/or noting anticipating prior art on the back of the document.¹¹⁶ In one case, Thornton provoked a patentee into bringing a libel suit regarding Thornton’s continued public insistence that a patent claiming the

112. Dood, *supra* note 111, at 1006 (noting that the practice was eventually greatly curtailed).

113. “Letter from William Thornton to Robert Smith, Dec. 19, 1810,” in Thornton Papers, *supra* note 50. For examples, “Letter from William Thornton to Samuel Pitkin, April 7, 1806” (pricking machine not novel); “[P]rotest” to Robert Fulton’s patent as not new, Feb. 8, 1811, each in Thornton Papers, *supra* note 50; and those referenced in WALTERSCHEID, *supra* note 3, at 259, 260 n.54.

114. Nourse’s Case, 1 Op. Att’y Gen. 575 (1822); *digested in* STEPHEN D. LAW, DIGEST OF AMERICAN CASES RELATING TO PATENTS FOR INVENTION AND COPYRIGHTS FROM 1789 TO 1862, at 149 (5th ed. 1877). This opinion limiting the State Department to ministerial rather than judicial action in consideration of a patent application was reiterated after Thornton’s death. See Patents, Patent Office, and Clerks, 2 Op. Att’y Gen. 454, 454–55 (1831), *digested in* LAW, *supra*, at 114. See also *Grant*, 31 U.S. at 241 (“The [S]ecretary of [S]tate may be considered, in issuing patents, as a ministerial officer. If the prerequisites of the law be complied with, he can exercise no judgment on the question whether the patent shall be issued.”).

115. See WALTERSCHEID, *supra* note 3, at 263 n.63.

116. For a summary of Thornton’s practice in this regard and for specific examples, see *id.* at 259–65; DOBYNS, *supra* note 4, at 94, 98; Edward D. Walterscheid, *The Winged Gudgeon—An Early Patent Controversy*, 79 J. PAT. & TRADEMARK OFF. SOC’Y 533, 536–38 (1997).

beveling of one edge of a common piece of mill machinery, the “winged gudgeon,” was invalid for lack of novelty.¹¹⁷

In his stubborn crusade to issue only patents that he believed would be found valid in court, Thornton articulated a particular vision of the purposes of the patent system and the harms poor administration posed. He might have returned, like Jefferson, to the “benefit of society,” arguing that invalid patents would allow patentees to extract license fees for known technologies or to prosecute infringement suits, costing Americans needless sums.¹¹⁸ Thomas Fessenden, for example, author of the first US patent treatise, agreed with Thornton that patents for old inventions were an “abuse” and also agreed that the remedy was “due care in the regulation of the patent office,” advocating “caution . . . not to grant patents for pseudo inventions.”¹¹⁹ The harm from such an abuse, Fessenden thought, was the “deceit” to the “public.”¹²⁰ While Thornton agreed that such patents were “egregious impositions” on the public, he focused much more on avoiding the “ruin” of true inventors, among whom he saw himself.¹²¹ Thornton thought the most serious harm was that false patents claiming all or some of the true inventor’s invention would render the true inventor’s grant almost worthless unless the true inventor engaged in expensive litigation.¹²²

Instead of worrying about whether the public was benefitted or harmed by the grant of exclusive rights to inventors, Thornton considered the public a source of threat to true inventors. To avoid this threat, he had a policy of refusing to provide copies of unexpired patents to anyone unless the patentee gave their permission.¹²³ While the Patent

117. See generally Walterscheid, *The Winged Gudgeon*, *supra* note 116 (discussing the controversy and history).

118. See “From Thomas Jefferson to Isaac McPherson,” *supra* note 30.

119. THOMAS G. FESSENDEN, AN ESSAY ON THE LAW OF PATENTS FOR NEW INVENTIONS xxxvi (1810).

120. *Id.*

121. “Letter from William Thornton to Robert Smith,” *supra* note 113; see also “Letter from William Thornton to Caleb Kirk, June 10, 1817” (Thornton describing himself as “bound in conscience to defend the public against the direct and willful impositions of patentees”) in Thornton Papers, *supra* note 50.

122. “Letter from William Thornton to Robert Smith,” *supra* note 113 (noting risk to patentees of “ruin”); see also Preston, *supra* note 4, at 343–44 (discussing difficulties of patent litigation).

123. See, e.g., “Letter from William Thornton to John Stevens, Jan. 23, 1809” and “Letter from William Thornton to John Stevens, Feb. 15, 1809” (reiterating his policy of only providing copies of issued patents with patentee permission) in Thornton Papers, *supra* note 50; see also WALTERSCHEID, *supra* note 3, at 282–85; Preston, *supra* note 4, at 341. *Id.* at 341.

Act of 1790 had provided for the availability of patents to the public,¹²⁴ the Patent Act of 1793 had omitted this provision and Thornton took the position that it required him only to provide copies of disputed patents to litigating parties.¹²⁵ To Thornton, the information contained in the patents was not a building block for further American innovation, but rather a set of instructions to infringers that would allow them to set up competing businesses, or worse yet, to file copycat patent applications which he then would be unable to deny.¹²⁶ Given the primitive state of internal transportation, there was some basis for Thornton's fear that a true inventor might lose potential licensing revenues to infringing competitors in distant states without any knowledge of such loss—and of course, the remedy even if such loss were discovered was expensive and time-consuming litigation. Thornton preferred to allow each inventor to control information about the details of their invention, rather than to consider the files of the Patent Office as a public resource.

As with his attempts to refuse patents for lack of novelty, Thornton repeatedly lost on this point. In 1809, the Attorney General ordered Thornton to give copies of patents upon request, subject only to payment of copying fees.¹²⁷ He nevertheless continued the policy until he was challenged again in 1824 by a group of well-connected men committed to the idea that the public should have access to issued patents as a means of promoting the progress of American technology. Thornton's fight with the Franklin Institute in Philadelphia, which sought to publish copies of patents in its journal, precipitated a months-long battle that reached all the way to President John Quincy Adams before Thornton again had to capitulate.¹²⁸

124. Patent Act of 1790, Pub. L. No. 1-7, § 3, 1 Stat. 109, 111 (1790).

125. Preston, *supra* note 4, at 340–41; WALTERSCHEID, *supra* note 3, at 283. See also “Letter from William Thornton to John Stevens, Jan. 23, 1809” and “Letter from William Thornton to John Stevens, Feb. 15, 1809,” *supra* note 123 (reiterating his policy of only providing copies of issued patents with patentee permission).

126. Cf. Eric Robinson, *James Watt and the Law of Patents*, 13 *TECH. & CULTURE* 115, 130–31 (1972) (explaining that in the late eighteenth century, James Watt, English inventor and patentee, expressed similar concerns about the uses of patent specifications).

127. “Letter from William Thornton to John Stevens, July 8, 1809” (noting Attorney General’s “answer in favour of those who have applied for copies of Patents”), in Thornton Papers, *supra* note 50; see also WALTERSCHEID, *supra* note 3, at 284–85; *Delivering Copies of Specifications of Patents*, 1 *Op. Att’y Gen.* 171 (1812), *digested in LAW*, *supra* note 114, at 206 (reiterating an unpublished 1809 opinion requiring Thornton to produce copies upon request).

128. Thornton won an opening skirmish, see *Right of Citizens to Copies of Papers Respecting Patents*, 1 *Op. Att’y Gen.* 718, 719 (1825) (recognizing

Thornton's career making patents is striking in two regards. First, because of who he was, he persistently defied the law and his superiors to shape the patent system and hence patents in accordance with his own views, secure in his position. Second, despite having lost every battle, Thornton ultimately won the war with respect to the ability of and necessity for patent bureaucrats to judge the content of applications. In his defiance, Thornton had enacted an approach to making patents that Fessenden and others admired, that is, *ex ante* substantive review.

After Thornton's death, the registration system became increasingly destabilized. There were three Patent Superintendents in the next seven years.¹²⁹ The first, Thomas Jones, formerly a professor of natural philosophy and chemistry at the College of William and Mary, and later, first editor of the Franklin Institute's journal, continued to review the substance of applications.¹³⁰ Like Thornton, he suggested that applicants withdraw their applications when he believed their claimed inventions were already known, advising them not to spend further money for what would be worthless patents.¹³¹ This version of advisory *ex ante* review skirted the Superintendent's lack of authority to deny a patent. His successor, John Craig, previously a teacher and headmaster in Baltimore, however, refused even to read applications, using his statutory lack of discretion as a reason to reduce his workload.¹³² This refusal to exercise any *ex ante* review resulted in a failure to declare interferences, leading to even more invalid patents.¹³³ The third, Colonel James Pickett, a former diplomat lacking any relevant technical expertise, reportedly relied on long-time employee Charles Keller to

discretion to deny copies of patents granted to others) but ultimately lost after Secretary of State Henry Clay intervened. WALTERSCHEID, *supra* note 3, at 289-304; BRUCE SINCLAIR, PHILADELPHIA'S PHILOSOPHER MECHANICS: A HISTORY OF THE FRANKLIN INSTITUTE, 1824-1865, at 29-30, 32, 42-45 (1974)(describing backgrounds of founders and officers and fight with Thornton); Preston, *supra* note 4, at 340-42.

129. For an overview of the Superintendents in this period, see DOBYNS, *supra* note 4, at 107-24; Preston, *supra* note 4, at 351.

130. SINCLAIR, *supra* note 128, at 54-56.

131. Testimony of Thomas P. Jones, in LOUIS MCLANE, REPORT OF THE SECRETARY OF STATE: IN COMPLIANCE WITH A RESOLUTION OF THE 9TH OF MAY, WITH DOCUMENTS RELATING TO THE CONDUCT OF THE SUPERINTENDENT OF THE PATENT OFFICE, S. DOC. NO. 23-398, at 13, 15 (1st Sess. 1834).

132. DOBYNS, *supra* note 4, at 113, 116.

133. WALTERSCHEID, *supra* note 3, at 263.

exercise advisory ex ante review about the novelty of claimed inventions.¹³⁴

Overall, these successors lacked the political connections and social clout to persist in Thornton's emphatic civil disobedience. Jones and Craig (Pickett only held the position for three months) each faced rebellion and criticism from their staff, particularly from Thornton hold-overs, leading eventually led to their dismissal.¹³⁵ By 1835, when Craig was dismissed, Keller was the most experienced Patent Office employee.¹³⁶ He drew upon that experience, including six years of working under Thornton, to draft a set of proposed Patent Office reforms.¹³⁷ Keller, however, as a self-educated machinist, had even less ability than Thornton's successors to turn his ideas into legally sanctioned practice.¹³⁸ With the appointment of Henry Ellsworth, a dedicated administrator, as the fourth successor to Thornton in 1835 and the Washington arrival of John Ruggles, newly elected Senator from Maine and aspiring patentee, Keller found men with the necessary social capital and access to power to once again change the role of the patent bureaucrat.¹³⁹ Drawing upon two decades of Thornton demonstrating that a technically savvy bureaucrat could sort claimed inventions into novel and non-novel categories without undue "oppression" to himself, Keller offered the lessons of practical experience that Ruggles used to inform a new US patent law and the creation of the modern Patent Office.

III. BUREAUCRATIC EXPERTISE, 1836–1860

To begin the process of statutory reform, Ruggles chaired a Senate committee on the patent system and quickly issued a report, describing the problems and proposing a full-time patent examiner as the solution.¹⁴⁰ He agreed with Thornton that the chief problems were the

134. Thaddeus Hyatt, *Charles M. Keller and the American Patent Office*, 14 SCI. AM. 310 (1859) (letter to editor about Keller's duties).

135. See DOBYNS, *supra* note 4, at 109–11, 115–21.

136. *Id.* at 124.

137. Hyatt, *supra* note 134, at 310.

138. DOBYNS, *supra* note 4, at 119.

139. *Id.* at 124–25, 127, 131; Post, "Liberalizers," *supra* note 6, at 27 (crediting Keller); Preston, *supra* note 4, at 351 (crediting Ellsworth); *The Patent Act of 1836*, J. PAT. OFF. SOC'Y 91, 95–96 (1936); *Ruggles, John (1789-1874)*, BIOGRAPHICAL DIRECTORY OF THE U.S. CONG., <http://bioguideretro.congress.gov/Home/MemberDetails?memIndex=R000502> [<https://perma.cc/6389-29B4>] (last visited Oct. 18, 2020).

140. JOHN RUGGLES, SELECT COMMITTEE REPORT ON THE STATE AND CONDITION OF THE PATENT OFFICE, S. DOC. NO. 24-338, at 4 (1st Sess. 1835); WALTERSCHEID, *supra* note 3, at 422–23. The entire Senate Report

“evils” resulting from “the unrestrained and promiscuous grant of patent[s].”¹⁴¹ He concluded: “The most obvious . . . means [to prevent these evils] appears to be to establish a check upon granting of patents, allowing them to issue only for such inventions as are in fact new and entitled, by the merit of originality and utility, to be protected by law.”¹⁴² Ruggles identified three questions that this “obvious” solution raised: (1) what the nature of the “check” on patents should be, (2) “in whom the power to judge of inventions before granting a patent can safely be reposed,” and (3) how these judge-like actors could be “regulated and guarded to prevent injustice . . . [to] honest and meritorious inventors.”¹⁴³

The first two questions were familiar. Since 1790, the “check” perennially under debate had been patent bureaucrats and Ruggles’ innovation of the examiner continued that approach.¹⁴⁴ The identity of those bureaucrats had swung from department heads to lowly clerks and then, with Thornton’s appointment, had been modified to a mid-level Superintendent of Patents. Madison’s selection of a man with technical qualifications had been another bureaucratic innovation that largely persisted after Thornton’s death, even if his successors had not been intimate friends of presidents.¹⁴⁵ In proposing full-time patent examiners, Ruggles imagined that this tradition would continue, describing the new position with “the power to judge of inventions” as “altogether above a mere clerkship,” needing “the exercise and application of much scientific acquirement and knowledge of the existing state of the arts in all their branches.”¹⁴⁶ In Jacksonian America, however, unlike in the Federalist years of the Washington administration, this tradition would come under new scrutiny. The assumption of government by a natural aristocracy had weakened and access to the growing number of federal jobs was hotly contested. Jacksonian Democrats explicitly espoused rotation in office and the accessibility of civil service

is reprinted in *1836 Senate Committee Report*, 18 J. PAT. OFF. SOC’Y 853 (1936).

141. S. DOC. NO. 24-338, at 4.

142. *Id.*

143. *Id.*

144. *Cf.* Beauchamp, *supra* note 20, at 664 (arguing that courts had participated as a check through repeal process).

145. Preston, *supra* note 4, at 351 (noting Jones and Craig had technical qualifications, although Pittsfield, who remained in the office less than a year, did not, nor did Ellsworth, who was given a staff of technically trained examiners).

146. S. DOC. NO. 24-338, at 4.

jobs to all.¹⁴⁷ By requiring qualifications for examiners that were rare in the young republic, the Patent Office risked a return to government by elites.

A staunch Jacksonian, Ruggles articulated this attitude about officeholders in his third, new, question about patent administration.¹⁴⁸ Although aware that a “flood” of false “patent monopolies” was “embarrassing to the community generally,” Ruggles, like Thornton, focused on harm to “honest and meritorious inventors” who, even though able to get a patent readily under the registration system, still struggled to profit from their invention when others could patent the same invention, leaving them only the remedy of expensive litigation.¹⁴⁹ In suggesting *ex ante* review, Ruggles remained focused on the inventor rather than the community, identifying a new potential harm: unwarranted denials. Rather than assuming that those who became examiners, as natural aristocrats bound by a code of honor, had the proper skills and attitude to perform without need for review, Ruggles suggested that examiners needed to be “regulated and guarded” to avoid “injustice.”¹⁵⁰ Almost a half century after Jefferson had become the first patent bureaucrat, Ruggles sought to temper administrative discretion with oversight. His solution, enacted into law, was an appellate tribunal within the office to consider allegedly improper denials, soon amended to include judicial review.¹⁵¹ This legal change was a significant step in supporting patents as rights, but it was not sufficient. As under previous regimes, there were still practical details left to the bureaucrats.

In the Jacksonian anti-monopoly and anti-privilege philosophy of universal access to government largesse, from jobs to corporate charters, it was not only the new position of patent examiner with its requirement of expertise that was potentially troublesome.¹⁵² Patents themselves fit only awkwardly in this philosophy. In his report, Ruggles suggested that the patent system should “secure [patents] to all descriptions of persons, without discrimination.”¹⁵³ Patents, albeit exclusive rights,

147. LEONARD D. WHITE, *THE JACKSONIANS: A STUDY IN ADMINISTRATIVE HISTORY, 1829–1861*, at vii, 300–01 (1954).

148. *Ruggles, John (1789-1874)*, *supra* note 139.

149. S. DOC. NO. 24-338, at 3–4.

150. *Id.* at 4. For the “culture of honor” of early American politicians, see JOANNE B. FREEMAN, *AFFAIRS OF HONOR: NATIONAL POLITICS IN THE NEW REPUBLIC* xv (2001).

151. S. DOC. NO. 24-338, at 4, 6; Patent Act of 1836, Pub. L. No. 24-357, § 11, 5 Stat. 117, 121 (1836).

152. BRACHA, *OWNING IDEAS*, *supra* note 3, at 210–11; Hovenkamp, *supra* note 3, at 270–71.

153. S. DOC. NO. 24-338, at 1.

were to be universally available entitlements, granted without “partiality or favouritism,” rather than discretionary privileges.¹⁵⁴ Expertise-based bureaucratic discretion was not the same, he implicitly argued, as undemocratic discrimination. At the same time, Ruggles acknowledged that ex ante review would result in fewer patents. Some of those “all descriptions of persons” would be denied patents, even after appeal.¹⁵⁵ The universal right to a patent came with fine print: no patent if the applicant did not convince an examiner the invention was useful and, particularly, novel.

As Herbert Hovenkamp has suggested, the examination system initiated in 1836 persisted as the form of the patent system because Ruggles’ interpretation prevailed.¹⁵⁶ Despite ex ante review that resulted in some rejections, patents achieved a status as rights rather than privileges. Under the modern examination process, the government grant of exclusivity to inventors has been largely accepted as “nondiscretionary” and “free from capture,” successfully creating a “patent exceptionalism” from the hostility toward monopolies both in the Age of Jackson and well into the twentieth century.¹⁵⁷ This state of affairs, however, was not simply a matter of legislative enactment, even supported by judicial decisions.¹⁵⁸ The first examiners and the newly designated Commissioner of Patents had to experiment with exercising their “power to judge” and negotiate the hiring of examiners.¹⁵⁹

The new system had immediate, highly visible results. The number of patents issued per year dropped precipitously, from 737 in 1835 to 435 in 1837, with the Commissioner estimating that allowance rates had dropped from nearly 100% to about 66%.¹⁶⁰ As Ruggles had hoped, the perception of patents also shifted, with an apparent increased confidence in their commercial value.¹⁶¹ The “honest and meritorious

154. “From Thomas Jefferson to Hugh Williamson,” *supra* note 56; *accord* BRACHA, OWNING IDEAS, *supra* note 3, at 212.

155. S. DOC. NO. 24-338, at 1.

156. Hovenkamp, *supra* note 3, at 270.

157. *Id.* at 271, 275, 306; *accord* BRACHA, OWNING IDEAS, *supra* note 3, at 209.

158. BRACHA, OWNING IDEAS, *supra* note 3, at 215–16 (arguing that the privilege framework was not swept away by the 1836 Act but required judicial development of the utility doctrine).

159. S. DOC. NO. 24-338, at 4. Ellsworth became the first Commissioner, and Keller the first examiner, although within four months, Ellsworth was suggesting a second examiner was needed. DOBYNS, *supra* note 4, at 136, 141–42.

160. HENRY ELLSWORTH, REPORT FROM THE COMMISSIONER OF PATENTS, H.R. DOC. NO. 80, at 1 (3d sess. 1838).

161. S. DOC. NO. 24-338, at 6; B. Zorina Khan & Kenneth Sokoloff, *History Lessons: The Early Development of Intellectual Property Institutions in*

inventor” was in a stronger position to commercialize an invention through a patent because of ex ante review.¹⁶² Yet the inventive community agreed with Ruggles that unwarranted denials were a harm and, unsurprisingly, felt that any rejections experienced by themselves or their clients were unwarranted, a harm against which agency and court review was not a sufficient guard.¹⁶³ Every applicant thought of themselves an “honest and meritorious inventor,” unaware that their “ignorance of . . . the state of the arts and manufactures, and of the inventions made in other countries” might make them not a “true inventor.”¹⁶⁴

This tension led, for the first time, to criticism about the type of man given this “power to judge.”¹⁶⁵ As has been documented by Robert Post, the nation’s largest patent agency, Munn & Co., led a public campaign against examiners.¹⁶⁶ The criticism, largely contained within the pages of *Scientific American*, a weekly newspaper published by the agency, was not that ex ante review was a mistake.¹⁶⁷ Rather, the critique was that the men selected as examiners were too elite and that they were judging inventions too stringently.¹⁶⁸ In the battle against “illiberal” “scientific men,” the patent commissioner and examiners again helped shape what patents were and the purposes of the patent system.¹⁶⁹

Among congressmen and the first patent commissioners, there was initial broad support for examiners to be highly qualified, scientifically trained men, men whose credentials were as elite as those of Jefferson and Thornton. Ruggles reiterated the “rare” qualifications needed after the new system had been in effect for six months (and after Ruggles had received his own patent):

the United States, 15 J. ECON. PERSPS. 233, 239 (2001) (arguing that an increase in patent assignments demonstrated increased market value).

162. S. DOC. NO. 24-338, at 4.

163. Post, “*Liberalizers*,” *supra* note 6, at 29.

164. S. DOC. NO. 24-338, at 3.

165. Post, “*Liberalizers*,” *supra* note 6, at 27.

166. *Id.* at 34.

167. For more on Munn & Co. and the *Scientific American*, see Michael Borut, *The Scientific American in Nineteenth Century America* 135–36 (Apr. 15, 1977) (Ph.D. dissertation, New York University) (ProQuest).

168. Although the debate was not phrased in this way at the time, it can be viewed as an argument over the “person skilled in the art,” Patent Act of 1836, Pub. L. No. 24-357, § 6, 5 Stat. 117, 119 (1836), insofar as the “scientific men” were charged with using the wrong standard to review applications, by using their elite knowledge rather than that of an artisan, that is, one skilled in the art.

169. Post, “*Liberalizers*,” *supra* note 6, at 40, 42.

An efficient and just discharge of the duties, it is obvious, requires extensive scientific attainments, and a general knowledge of the arts, manufactures, and the mechanism used in every branch of business in which improvements are sought to be patented, and of the principles embraced in the ten thousand inventions patented in the United States, and of the thirty thousand patented in Europe.¹⁷⁰

As Congress expanded the number of examiner positions, applicants sought to win the coveted jobs by soliciting recommendations from scientific elites testifying to their qualifications.¹⁷¹ Edmund Burke, who became commissioner in 1846, claimed that “[t]he great body of the enlightened inventors of this country . . . desire earnestly that the men who are to pass upon their valuable rights shall be not only men of integrity, but of the highest order of talents and scientific qualifications.”¹⁷² Into the 1850s, the examiners were men of high attainment, separated in their knowledge and formal education from inventors, who usually lacked formal technical training.¹⁷³ Inventors might be “all descriptions of persons,” but examiners were not.¹⁷⁴ When applying for a patent, the Jacksonian common man met rare men in the Patent Office, men who sat in judgment on each application and might reject it based on information written in a language the applicant could not read.

As patent allowance rates continued to drop, Burke might have been engaging in wishful thinking when he asserted that the majority of inventors were happy with this hiring policy. The *Scientific American* reported on personnel changes of Commissioners and examiners and frequently commented on the qualifications and performance of

170. S. COMM. REP. NO. 24-58, at 6 (2d Sess. 1837). Ruggles received the first patent under the 1836 act. U.S. Patent No. 1 (July 13, 1836). For the qualifications of examiners appointed by Ellsworth and his successors, Post, “*Liberalizers*,” *supra* note 6, at 31–33.

171. For example, Titian Peale obtained recommendations from Joseph Henry and Alexander Dulles Bache, two of the preeminent men of science of the day. Post, “*Liberalizers*,” *supra* note 6, at 41. For expansion of examiner positions, see Swanson, *supra* note 4, at 52.

172. EDMUND BURKE, REPORT OF THE COMMISSIONER OF PATENTS, H.R. DOC. NO. 29-140, at 5 (1st Sess. 1846); *see also* speech by Congressman Dickinson, *Debate on a Bill to Increase Force and Salaries in the Patent Office*, 1 J. PAT. OFF. SOC’Y 588, 594 (1919) (reprinting the debates as excerpted from the Congressional Globe).

173. Post, “*Liberalizers*,” *supra* note 6, at 31–33, 37–39, 47–48 (qualifications of examiners); KHAN, *supra* note 10, at 126 (demographics of patentees).

174. “All descriptions of persons” did not, for the most part, include white women or persons of color. *See* Swanson, *supra* note 11.

each.¹⁷⁵ The “scientific men” in the Patent Office were collectively blamed for perpetrating injustice on honest inventors through too frequent denials, with some individual examiners derided as especially “illiberal,” that is, too apt to misuse their expertise to refuse patents for inventions that any mechanically minded man would find novel.¹⁷⁶ Critics accused the “scientific men” of exercising unfettered discretion, not sufficiently “regulated and guarded.”¹⁷⁷ With only a handful of examiners, the *Scientific American* through its large patent agency would have been able to collect experiences with each. In its pages, it noted the difference in allowance rates among examiners to prove unlawful discretion.¹⁷⁸ A rejection, one disappointed patent solicitor charged, was the result of the “will and whim of individuals,” tipping patents back toward royal privileges rather than rights accessible to all.¹⁷⁹

Henry Renwick, an examiner with engineering training from Columbia College, sought to counter this perception by explaining in 1850 how he and his colleagues sought to “aid[] and assist[] [the inventor], as far as possible, to cover every inch of ground to which he has clear title.”¹⁸⁰ Yet Renwick also stressed that “the duties that this office . . . owes to the public” required that only those “who have contributed to the arts” receive patents and that no “monopol[ies]” could be granted except for things “new and useful [and] heretofore undescribed.”¹⁸¹ Repeating Thornton and Ruggles’ argument, Renwick reminded readers that avoiding invalid patents would also benefit patentees, for “when the deed for that title is granted,” cautious examination of subsequent applications would ensure that a patentee

175. The multiple *Scientific American* articles on the Patent Office during this period are summarized and cited in Post, “*Liberalizers*,” *supra* note 6, at 39–46 (also citing attention to patent office personnel decisions in *American Polytechnic Journal* (1853–54) and the general interest *New York Tribune*).

176. *Id.* at 24 (citing *Scientific American*, Jan. 3, 1857).

177. JOHN RUGGLES, SELECT COMMITTEE REPORT ON THE STATE AND CONDITION OF THE PATENT OFFICE, S. DOC. NO. 24-338, at 4 (1st Sess. 1835).

178. Post, “*Liberalizers*,” *supra* note 6, at 50.

179. Charles G. Page, *The Patent Office—No. V*, 1 AM. POLYTECHNIC J. 327, 328 (1853). Page, a former patent examiner, left the office and went into business as a patent agent. POST, PHYSICS, PATENTS, AND POLITICS, *supra* note 6, at 137.

180. H. B. Renwick, Report, in THOMAS EWBANK, REPORT OF THE COMMISSIONER OF PATENTS FOR THE YEAR 1850, H.R. EXEC. DOC. NO. 31-32, at 325 (2d. Sess. 1851); *see also* POST, PHYSICS, PATENTS, AND POLITICS, *supra* note 6, at 116–17, 127 (detailing Renwick’s credentials and the attacks on him).

181. H.R. EXEC. DOC. NO. 31-32, at 324–25.

“is not harassed and ruined by the grant of other titles.”¹⁸² In some exasperation, Renwick stated: “it is a common misapprehension . . . to suppose this office is established . . . to afford facilities to . . . every person who may find it convenient to make application for patent.”¹⁸³ Mixing real property analogies with the specter of harmful monopolies, Renwick struggled to justify his actions as examiner and explain the nature of the rights he and his colleagues created by suggesting that the examiners owed “duties” to the public as well as to each applicant. Albeit in a context very different from Jefferson, a wealthy property owner serving as Secretary of State, Renwick, a bureaucrat dependent on a government job to support himself, articulated a duty to guard the public against unwarranted monopolies. This re-articulation of the public purpose of the patent system was now presented as in balance with a Thornton-like concern with each inventor, who needed to be aided and freed from harassment.

Renwick and his fellow bureaucrats found their assertion of the joint purposes of the patent system a tough sell. Their critics focused only on inventor rights and the need to protect them not from the rapacious public Thornton had feared, but rather from the patent administrators themselves. The proposed solution was to replace the rare men of science with common men as examiners who would, it was argued, exercise their discretion more properly, that is, less often.¹⁸⁴ During the tenure of Charles Mason as Commissioner of Patents from 1853 to 1857, this approach to personnel gained a powerful ally in Secretary of Interior Robert McClelland, Mason’s supervisor.¹⁸⁵ McClelland sought control of Patent Office hiring to expand his patronage network.

In Washington of the 1850s, the “spoils system” of awarding government jobs to political allies was firmly entrenched, supported by a powerful blend of raw political self-interest and high-minded Jacksonian philosophy advocating government by the common man and rotation in office.¹⁸⁶ With McClelland’s goal of awarding Patent Office

182. *Id.* at 325.

183. *Id.* at 324.

184. POST, PHYSICS, PATENTS, AND POLITICS, *supra* note 6, at 120–21.

185. Mason’s tenure is chronicled in DOBYNS, *supra* note 4, at 189–97; Leila Sellers, *Commissioner Mason and Clara Barton*, 22 J. PAT. OFF. SOC’Y 803 (1940); and N.J. Brumbaugh, *Charles Mason, Commissioner of Patents, 1853–57*, 2 J. PAT. OFF. SOC’Y 122 (1919). Note that the Patent Office had been transferred from the State Department to the newly created Department of Interior by the Act of March 3, ch. 108, 9 Stat. 395 (1849) (codified as amended at 43 U.S.C. § 1451).

186. MARTHA BARRIS TAYLOR, HISTORY OF THE FEDERAL CIVIL SERVICE, 1789 TO THE PRESENT 16–31 (1941); PAUL P. VAN RIPER, HISTORY OF THE UNITED STATES CIVIL SERVICE 41–42 (1958); ROBERT MARANTO &

jobs to build his party connections aligned with the goal of the inventive community to hire less scientifically-minded examiners in order to increase the rate of application acceptance, Mason fought a losing battle to hire and retain scientific men, resigning twice in disgust over McClelland's interference with personnel decisions.¹⁸⁷ When Mason left the office for good with a change in presidential administration in 1857, his successor fired most of the examiners, replacing them with some of the non-scientific men clamoring for federal jobs, and patent allowance rates rose.¹⁸⁸ The examiner became one of the multitude, rather than one of the elite.

Mason's replacement as Commissioner, Joseph Holt, who himself received the position as a political reward,¹⁸⁹ described the new state of affairs in 1858:

This . . . admirable system . . . wisely avoids the laxity of European laws, which grant patents, as of course, on all applications, upon payment of the fees, and leave their value to be subsequently tested by the impoverishing process of protracted litigation. As decidedly, on the other hand, does it eschew that stern, unsympathizing, distrusting temper, which would receive the inventor as a stranger beneath the roof of this magnificent edifice [T]he happy medium between these two equally pernicious extremes . . . [that] welcom[es] the inventor as a friend and patron, in that frank and free conference with him enjoined by law, [and] kindly and anxiously sifts from his invention its minutest patentable features, is a policy essentially American in its origin and aims, and must be inflexibly maintained¹⁹⁰

Holt lauded the “inherent and irrepressible energy of the national mind” that was bringing ever more applications to the Patent Office as the nation industrialized.¹⁹¹ When these irrepressibly inventive Americans came to their Patent Office, the examiners avoided both the Scylla of “impoverishing” litigation that resulted from the absence of ex ante review and the Charybdis of “stern, unsympathizing, distrust- ing” examination by an illiberal elite that might deny a patent to a true

DAVID SCHULTZ, A SHORT HISTORY OF THE UNITED STATES CIVIL SERVICE 18, 29–31 (1991).

187. DOBYNS, *supra* note 4, at 193, 197; Sellers, *supra* note 185, at 823, 825.

188. See Post, “*Liberalizers*,” *supra* note 6, at 48–50, 52.

189. *Biographical Sketches of the Commissioners of Patents*, 18 J. PAT. OFF. SOC'Y 145, 156 (1936).

190. JOSEPH HOLT, REPORT OF THE COMMISSIONER OF PATENTS FOR THE YEAR 1857, H.R. EXEC. DOC. NO. 35-32, at 2 (1st Sess. 1858).

191. *Id.*

inventor.¹⁹² As a “friend,” the examiner now processed applications in a “kindly” way with the goal of finding the “minutest patentable features.”¹⁹³ The examiner no longer was superior to the inventor by rare attainments. Instead, it was the inventor who was the “patron” of the examiner, whose job it was to work for inventors.¹⁹⁴

By 1860, then, via hiring practices, the day-to-day work of examiners had been adjusted by reconfiguring the who rather than the how. The result was a combination of perception (non-elite kindly examiners) and reality (a rise in patent allowance rates) that promoted patents as accessible rights rather special privileges. The equalization of inventors and examiners as members of the inherently inventive public allowed patents to remain an “admirable” and “essentially American” good in an era of the triumph of universality and accessibility as key democratic virtues.¹⁹⁵ By careful attention to “patentable features” and rising allowance rates, Holt considered his office to be supporting “a movement in the direction of the highest type of civilization,” the progress of the useful arts that would relieve “the masses of mankind . . . from the pressures of ceaseless toil.”¹⁹⁶ Careful protection of individual inventor rights would result in cumulative social benefit.

Holt also highlighted the way his staff worked to implement their mandate. Since the passage of the 1836 Act, the examiners had been developing the process of what today is known as prosecution, now formalized through “office actions” and the back-and-forth of claim rejection, cancellation, and amendment.¹⁹⁷ They had the statutory authority, in addition to rejecting applications outright for lack of novelty, to suggest that an applicant “alter[] his specification to embrace only that part of the invention . . . which is new.”¹⁹⁸ Holt emphasized that examiners “anxiously” worked to identify even the “minutest

192. *Id.*

193. *Id.*

194. *Id.*

195. *Id.*

196. *Id.* at 2–3.

197. *Responding to Office Actions*, U.S. PAT. & TRADEMARK OFF., <https://www.uspto.gov/patents-maintaining-patent/responding-office-actions> [<https://perma.cc/E8V7-L5GE>] (last visited Oct. 16, 2020) (“An Office action is written correspondence from the patent examiner that requires a properly signed written response from the applicant in order for prosecution of the application to continue”). See generally MANUAL OF PATENT EXAMINATION PROCEDURE, *supra* note 33 (detailing the current process of patent prosecution).

198. Patent Act of 1836, Pub. L. No. 24-357, § 7, 5 Stat. 117, 119–20 (1836).

patentable features” in otherwise non-novel inventions.¹⁹⁹ This approach greatly increased the chance that anyone who found it “convenient” to apply for a patent could receive one.²⁰⁰ Like the actions of earlier bureaucrats, this generous interpretation of the legislative mandate would shape the patent law, this time by modification rather than ratification. After the Civil War, courts developed the “invention” doctrine, now known as non-obviousness, to limit patents on technically trivial inventions, requiring examiners to be a little less kind as they combed an application looking for patentable features.²⁰¹

CONCLUSION

As the subsequent development of the invention doctrine demonstrates, the patent system, including its bureaucracy, continued to evolve after 1860. The triumph of the spoils system in Patent Office hiring was not the final chapter in patent administration, any more than the Patent Act of 1836 was the final legislative guidance.²⁰² The solutions that McClelland and Holt chose—hiring based on political patronage and an examination process geared toward to finding something patentable in as many applications as possible—both changed after the Civil War. While it was the judiciary that imposed the requirement that inventions be non-obvious, it was patent commissioners who returned to hiring based on technical expertise.²⁰³

These new approaches, however, did not reignite tensions about *ex ante* review in the Patent Office. The perception that examiners

199. H.R. EXEC. DOC. NO. 35-32, at 2.

200. H. B. Renwick, Report, *in* THOMAS EWBANK, REPORT OF THE COMMISSIONER OF PATENTS FOR THE YEAR 1850, H.R. EXEC. DOC. NO. 31-32, at 324 (2d. Sess. 1851).

201. BRACHA, OWNING IDEAS, *supra* note 3, at 227–29 (noting that although the concept was recognized by the Supreme Court in 1850 in *Hotchkiss v. Greenwood*, it did not become significant until later).

202. The contours of the examination system created in 1836 have remained through wholesale reenactments of the patent law in 1870 and 1952, as well as a major revision in 2011. Patent Act of 1870, ch. 230, §§2, 31, 16 Stat. 198, 198, 202 (1870); Patent Act of 1952, ch. 950, §§ 131–35, 66 Stat. 792, 801–02 (1952); America Invents Act of 2011, Pub. L. No. 112-29, § 7, 125 Stat. 284, 313–15 (2011).

203. Note that in 1952, the non-obviousness doctrine was ratified by Congress (Patent Act of 1952 §103), and the Supreme Court subsequently affirmed that section 103 encompassed the previous decades of case law on the topic. *Graham v. John Deere*, 383 U.S. 1, 3–4 (1966). Note also that in 1870, Congress mandated that examiners-in-chief (although not the three lesser grades) should be “persons of competent legal knowledge and scientific ability.” Patent Act of 1870 §10. *See also* Patent Act of 1952 §7.

remained appropriately guarded and regulated was aided by the ever-increasing size of the examining corps, a legislative response to a steady increase in applications.²⁰⁴ The Patent Act of 1870 authorized almost 70 people in a proliferating range of examining positions.²⁰⁵ It thus became more difficult for those outside the office to follow hiring decisions and compare individual allowance rates. With less public scrutiny, commissioners experimented with the first merit-based hiring practices within the federal civil service, implementing exams beginning in 1868 to test technical knowledge.²⁰⁶ These tests, a commissioner claimed, allowed self-taught “persons having that natural interest in mechanism” as well as those formally educated to compete for examiner jobs.²⁰⁷ Further, by 1878, the commissioner described a fifty-seven step process which detailed the movement of a patent application through the office, from the draftsmen, who examined the drawings for statutory conformance, to the clerks for recording filing dates and fees, to the examiners for substantive review, and round again, accumulating paperwork and notations at each step until the patent was ready for issuance.²⁰⁸ This process, published in the annual report to Congress, suggested procedural guards and regulations on the discretion of patent

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204. *U.S. Patent Activity: Calendar Years 1790 to the Present*, *supra* note 90 (after decrease in both annual applications and granted patents during the first years of the Civil War, both increased beginning in 1864). *See also* DOBYNS, *supra* note 4, at 172 (noting that 1867 was the first year the Patent Office issued over 10,000 patents).
205. Patent Act of 1870 § 2 (creating first and second assistant examiners, as well as principal examiners).
206. *Special Correspondence of the Scientific American – Affairs at the Patent Office*, 19 SCI. AM. 180 (Sept. 16, 1868)(noting examinations conducted under Commissioner Foote); SAMUEL S. FISHER, REPORT OF THE COMMISSIONER OF PATENTS FOR THE YEAR 1869, H.R. EXEC. DOC. NO. 41-102, at 6–7 (2d Sess. 1870) (explaining competitive examinations in use and results); SAMUEL A. DUNCAN, REPORT OF THE COMMISSIONER OF PATENTS FOR THE YEAR 1870, H.R. EXEC. DOC. NO. 41-89, at 11–12 (3d Sess. 1871)(praising results of Fisher’s examinations); DOBYNS, *supra* note 4, at 232; William I. Wyman, *Samuel Sparks Fisher: Commissioner of Patents, 1869-1870*, 2 J. PAT. OFF. SOC’Y 490, 492–94 (1920); *see also* Pendleton Act of 1883, ch. 27, 22 Stat. 403 (enacting general civil service reform, including selective examinations). Note that the *Scientific American* reported earlier examination of clerk applicants. Our Editorial Correspondence, 4 SCI. AM. 266 (April 27, 1861)(n.s.).
207. ELLIS SPEAR, REPORT OF THE COMMISSIONER OF PATENTS FOR THE YEAR 1877, H.R. EXEC. DOC. NO. 45-61, at ix (2d Sess. 1878). *See also* H.R. EXEC. DOC. NO. 41-102, at 7 (reporting education and experience of top 4 candidates in two examination cycles as showing that both “the practical and theoretical” perform well on the exam).
208. H.E. PAINE, REPORT OF THE COMMISSIONER OF PATENTS FOR THE YEAR 1878, H.R. EXEC. DOC. NO. 45-48, at ix–xii (3d Sess. 1879).

bureaucrats, making their decisions a result of the uniform application of general principles rather than “will and whim.”²⁰⁹ While quietly wielding expertise to judge the substance of applications, the Patent Office bureaucrats did their best to standardize themselves and their practices and to convince the public of their standardization.

The mid-nineteenth-century “injustice” of individual men, with publicly reported histories and personal proclivities, gave way to a faceless mass of examiners, operating by a rote process, invisible within a virtuous dullness.²¹⁰ Because of these negotiated approaches to hiring and procedure, throughout the twentieth century and into the twenty-first, patent administration has seemed a “grey, technical realm.”²¹¹ The delicate balance enacted via kindly attention to inventors resulting in the liberal dispersal of individual exclusive rights as a means of serving the public has been aided by twentieth-century judicial decisions repeatedly suggesting that the office lacks the discretion to consider sweeping issues of the public good.²¹²

In restoring the patent bureaucracy to the antebellum history of patents, this Essay provides a historical context for present-day controversies about the nature and purpose of patents.²¹³ I have described the

209. Page, *supra* note 179, at 328.

210. JOHN RUGGLES, SELECT COMMITTEE REPORT ON THE STATE AND CONDITION OF THE PATENT OFFICE, S. DOC. NO. 24-338, at 4 (1st Sess. 1835).

211. Biagioli, *supra* note 10, at 1130. *See also* BRACHA, OWNING IDEAS, *supra* note 3, at 303–04 (describing increase of patent bureaucracy as facilitating the “legalization” of patent prosecution, leading to patents becoming “formal, textual artifacts”).

212. *See, e.g.*, *Diamond v. Chakrabarty*, 447 U.S. 303, 316–18 (1980) (approving the grant of a patent to genetically modified organism and suggesting that a question of potential harm from such organisms is a question for Congress, but irrelevant to interpreting the doctrine of patentable subject matter); *see also* Robert P. Merges, *Intellectual Property in Higher Life Forms: The Patent System and Controversial Technologies*, 47 MD. L. REV. 1051 (1988); Cynthia M. Ho, *Splicing Morality and Patent Law: Issues Arising from Mixing Mice and Men*, 2 WASH. U. J.L. & POL’Y 282–85 (2000) (both arguing against Patent Office consideration of the social benefit or harm that might result from biotech inventions); Lionel Bentley & Brad Sherman, *The Ethics of Patenting: Towards a Transgenic Patent System*, 3 MED. L. REV. 275, 275–76 (1995) (noting that neutrality of patent law in US and elsewhere was being challenged by calls to consider ethics of biotechnology); SHOBITA PARTHASARATHY, PATENT POLITICS: LIFE FORMS, MARKETS & THE PUBLIC INTEREST IN UNITED STATES & EUROPE 2, 13-14, 22 (2017) (noting that in US, “the inventor’s interest . . . was the public interest”).

213. In addition to the sources cited *supra* note 15, *see also* PARTHASARATHY, *supra* note 212, at 29–38, 48–49 (noting controversies throughout twentieth century and tying this history to twenty-first century debates about patenting life forms).

seventy-year effort to embody and enact ex ante review of patent applications in a way that was tolerable to bureaucrats, inventors, and commercializers alike. Drama requiring presidential intervention, attorney general opinions, and newspaper campaigns was sparked by—and ultimately quelled by—patent administrators. In deciding how to implement legislative mandates and in their embodiment both of state power and technical expertise, bureaucrats influenced how patents were perceived and the relative role of inventors and the public as beneficiaries of the patent system. Although this Essay does not develop all we can learn from the clerk’s eye view, the history it surveys offers a few suggestions.

One is that muddiness might offer some clarity. In the muddiness of daily practical detail, patent administrators did not experience their work as offering binary choices between privilege vs. right and/or public good vs. individual benefit. Rather, administrators experienced these views of patents and their purposes in the form of countervailing tendencies about the exercise of discretion and beneficiaries of their actions. Much of the time, in their actions, administrators emphasized true inventors’ rights and benefits, trends shaped by the nature of administration itself.²¹⁴ To the patent clerk, the customers—inventors—were more present and more important than an amorphous public or constitutional expressions of purpose. Considering the muddiness of motivations guiding those who made patents suggests that using such binaries as analytic frames can obscure as well as clarify, over-emphasizing oppositional aspects and underappreciating the continued mixed motivations that drove making and using patents.

The second suggestion is that discretion is always present; it is the means of talking about it that change. While the early wild pendulum swings in both the degree and celebration of administrator discretion have been replaced by a statutorily defined happy medium of neither too much nor too little, no amount of procedure, hiring tests, or expertise can remove will and whim.²¹⁵ Rather, recent studies have shown that examiners perform their duties differently, for example, based on the perceived gender of applicants and their hopes for future employment with the law firm representing an applicant.²¹⁶

214. Jonathan S. Masur, Response, *The PTO’s Future: Reform or Abolition?* 158 U. PA. L. REV. PENNUMBRA 1, 2 (2009) (describing scholarship analyzing the Patent Office as subject to “a type of [regulatory] capture by the patent bar”). See also sources cited *supra* note 14 (discussion of regulatory capture of the Patent and Trademark Office).

215. JOSEPH HOLT, REPORT OF THE COMMISSIONER OF PATENTS FOR THE YEAR 1857, H.R. EXEC. DOC. NO. 35-32, at 2 (1st Sess. 1858).

216. Kyle Jensen, Balázs Kovács & Olav Sorenson, *Gender Differences in Obtaining and Maintaining Patent Rights*, 36 NATURE BIOTECH. 307, 308 (2018) (perceived female inventors have less favorable outcomes on patent applications); Haris Tabakovic & Thomas G. Wollmann, *From Revolving*

As the gray, technical realm becomes newly visible with the release of patent application processing metrics on a (anonymized) per examiner basis, there is now renewed scrutiny of the who and how of the patent bureaucrat. This scrutiny is crucially needed to inform possible corrections of the patent system as we weigh our theories of the nature and purpose of patents against the realities of application processing.²¹⁷ Bureaucrats matter.

Doors to Regulatory Capture? Evidence from Patent Examiners 3, 19 (Nat'l Bureau of Econ. Rsch., Working Paper No. 24638, 2018) (finding that examiners grant more patents to firms that later hire them).

217. Frakes & Wasserman, *supra* note 14, at 77.