

The Myth of Continuity in American Gun Culture

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ABSTRACT

The Supreme Court's 2022 decision in New York State Rifle & Pistol Association v. Bruen elevated history, text, and tradition as the sole criteria for assessing the constitutionality of firearms restrictions. Gun-rights advocates have responded to Bruen with a wave of Second Amendment challenges, most employing a three-part argument: 1) X firearms-related issue has existed since the founding; 2) the Founders did little or nothing about it; and, therefore, 3) we cannot do anything about it, either. Legal scholars are engaged in critical work on parts 2 and 3 of that argument. As a professional historian involved in several ongoing Second Amendment cases, I have the disciplinary expertise to offer a critique of part 1. This Article explains why the argument for continuity in American gun culture is largely a myth, and offers a case study of the role that historical research can play in Second Amendment cases in the Bruen era.

It begins by arguing that whereas today's gun culture is consumerist, government-phobic, and individualist, early America's gun culture was utilitarian, government-led, and collective. The Article then presents detailed critiques of the iterations of the myth of continuity being deployed to overturn laws regulating assault weapons, large-capacity magazines, and ghost guns. These were nonexistent or impractical technologies in the Founding era, no more likely to attract regulatory attention than jetpacks in our own times. Once these weapons finally became reliable enough consumer items to cause problems in the twentieth and twenty-first centuries, regulation quickly followed. Put into proper historical context, then, assault weapons, high-capacity magazines, and ghost guns represented "dramatic technological changes" that provoked "unprecedented societal concerns." Regulations addressing those concerns should be found constitutional under Bruen's history-centric framework.

Some other types of regulation will not fare as well. But by incentivizing states to research Founding-era history when defending their firearms laws, Bruen will inevitably bring renewed scrutiny to Heller's ahistorical claim that the Second Amendment was crafted to protect an individual right to armed self-defense. The Article therefore concludes by predicting that Bruen will ultimately destabilize the very foundation of modern Second Amendment jurisprudence.

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INTRODUCTION

In 2008, for the first time, the Supreme Court declared that the Second Amendment to the United States Constitution protects an individual right to possess firearms.¹ Two years later, the Court held that states and municipalities must abide by this novel interpretation of gun rights, thanks to incorporation of the right by the Fourteenth Amendment.² These rulings set the stage for *New York State Rifle & Pistol Association v. Bruen*, in the summer of 2022, wherein the Court declared the right to carry firearms outside the home an individually held fundamental right. What makes *Bruen* so radical and consequential is the novel framework it has introduced for assessing the constitutionality of any governmental regulation of individual conduct covered by “the Second Amendment’s plain text.”³

Bruen invalidated the two-part framework for deciding Second Amendment cases which federal circuit courts had adopted in the years after *Heller*. Under the *Heller* framework, courts first looked to the Second Amendment’s history, text, and tradition to determine whether a regulation impinged on the protected right. If it did, courts then applied one of the traditional tiers of constitutional scrutiny to determine the legitimacy of the government’s interest and whether the challenged regulation furthers that interest. Rejecting this established approach, *Bruen* instead insisted that lower courts begin deciding

1. *District of Columbia v. Heller*, 554 U.S. 570 (2008).

2. *McDonald v. City of Chicago*, 561 U.S. 742 (2010).

3. *N.Y. State Rifle & Pistol Ass’n v. Bruen*, 597 U.S. ___, 8 (2022).

Second Amendment cases entirely based on history, text, and tradition. State and local limitations on an individual’s right to keep and bear arms will now be considered constitutional only if they are consistent with “the Nation’s historical tradition of firearm regulation.”⁴ According to Erwin Chemerinsky, the ruling “provides more protection for gun rights than virtually any other in the Constitution.”⁵ In no other branch of constitutional law has history become so central or so contested as in Second Amendment litigation.⁶

Bruen has encouraged opponents of firearm regulation to pay even closer attention to early America than they had before. They like what they do not see. The ruling makes historical evidence of firearm regulation—or more to the point, the absence of such historical evidence—dispositive. Laws restricting concealed-carry permits to those who can demonstrate “good cause?”⁷ Laws

4. *Id.*

5. Erwin Chemerinsky, *Supreme Court Gun Ruling Puts Countless Firearms Regulations in Jeopardy*, ABA JOURNAL (June 29, 2022, 10:10 AM), <https://www.abajournal.com/columns/article/chemerinsky-supreme-court-gun-ruling-puts-countless-firearms-regulations-in-jeopardy#:~:text=For%20the%20first%20time%20in,to%20those%20who%20show%20cause.> [https://perma.cc/JH5H-DKZ4]

6. See Jacob D. Charles, *The Dead Hand of a Silent Past: Bruen, Gun Rights, and the Shackles of History*, 73 DUKE L.J. 67, 69-75 (2023).

7. See, e.g., California Dep’t of Justice, *Legal Alert: U.S. Supreme Court’s Decision in New York State Rifle & Pistol Association v. Bruen*, No 20-843 (June 24, 2022), available at <https://oag.ca.gov/system/files/media/legal-alert-oag-2022-02.pdf>. [https://perma.cc/PD68-8LGZ]

requiring buyers be at least twenty-one before purchasing handguns?⁸ Laws disarming convicted felons⁹ or persons under restraining orders for domestic violence?¹⁰ These are hard to find in early America. And according to the most pro-gun-rights interpretation of *Bruen*'s standard, if Americans had no such regulations in 1791, when the Second Amendment was ratified, or, maybe, in 1868, when the Fourteenth Amendment was ratified, then Americans cannot have them today, either. "We are going to defeat virtually every gun control on the books," exulted the executive director of a prominent gun-rights organization in March 2023, when the *New York Times* asked about the implication of *Bruen* to his organization's judicial agenda.¹¹ While such predictions might seem

8. See, e.g., *John Corey Fraser v. Bureau of Alcohol, Tobacco, Firearms and Explosives*, No. 3:22-cv-410 (E.D. Va. May 10, 2023), available at https://storage.courtlistener.com/recap/gov.uscourts.vaed.524643/gov.uscourts.vaed.524643.47.0_1.pdf.

9. See, e.g., *United States v. Quiroz*, No. 22-CR-00104, 2022 U.S. Dist. LEXIS 168329 (W.D. Tex., Sept. 29, 2022).

10. *U.S. v. Rahimi*, No. 21-11001 (5th Cir., March 2, 2023), available at <https://www.ca5.uscourts.gov/opinions/pub/21/21-11001-CR2.pdf>; but see *United States v. Rahimi*, 61 F.4th 443, 454 (5th Cir.), cert. granted, 143 S. Ct. 2688, 216 L. Ed. 2d 1255 (2023), and rev'd and remanded, No. 22-915, 2024 WL 3074728 (U.S. June 21, 2024).

11. Shawn Hubler, *In the Gun Law Fights of 2023, a Need for Experts on the Weapons of 1791*, N.Y. TIMES (Mar. 14, 2023) (quoting Sam Paredes of Gun Owners of California), available at <https://www.nytimes.com/2023/03/14/us/gun-law-1791-supreme-court.html>. For more coverage of *Bruen*, history, and historians, see Jacob Gershman, *Why America's Gun Laws Are in Chaos*, WALL ST.

premature, *Bruen* undeniably heralds a new era of gun law. An analysis completed seven and a half years after *Heller* found that during that interval, Second Amendment civil challenges prevailed fifteen percent of the time.¹² In the *Bruen* era, civil challenges are already succeeding at more than twice that rate. A recent study identifies eighty-one Second-Amendment civil claims adjudicated in the twelve months after the decision was announced.¹³ Forty percent of them prevailed.¹⁴

As I discuss at more length in the conclusion to this Article, the Court's 2024 decision in *United States v. Rahimi* may relax *Bruen*'s test somewhat, by directing judges to ask whether modern regulations are consistent with the principles of our regulatory tradition rather than assess how textually similar they are to historic laws.¹⁵ But *Rahimi* left *Bruen*'s history-centric framework intact. Consequently, for the foreseeable future the nation will continue its momentous reconsideration of gun regulations, with the distant past as the primary field of contention.

J. (Aug. 1, 2023), available at https://www.wsj.com/articles/why-the-nations-gun-laws-are-in-chaos-587ded3f?mod=hp_lead_pos1 [<https://perma.cc/YRE9-V88F>].

12. Eric Ruben & Joseph Blocher, *From Theory to Doctrine: An Empirical Analysis of the Right to Keep and Bear Arms After Heller*, 67 DUKE L.J. 1433, 1478 (2018).

13. Charles, *supra* note 6, table 2, at 126.

14. *Id.* Charles' survey of cases stopped at June 22, 2023. By way of comparison, he identified 294 Second Amendment criminal claims in the first year after *Bruen*, and those only succeeded 3.74% of the time.

15. *United States v. Rahimi*, No. 22-915, 2024 WL 3074728 (U.S. June 21, 2024).

Under *Bruen*'s framework, judges are not expected to engage in historical research themselves; rather, they are "entitled to decide a case based on the historical record compiled by the parties."¹⁶ Offices of Attorneys General across the country, scrambling to defend established or new laws, have consequently turned to professional historians with expertise in eighteenth- and nineteenth-century firearms. This is not a crowded field. In a 2023 *New York Times* article on the situation, the influential legal historian Saul Cornell quipped that its members could convene "in an English phone booth."¹⁷

I am one of the historians in that metaphorical booth, and the phone has been ringing. While I have been studying the history of firearms in the eighteenth and nineteenth century for more than a decade, before *Bruen* I had never been approached by any party to a Second Amendment case. Since *Bruen*, I have been recruited as an expert witness by authorities defending firearms regulations in Washington D.C., Oregon, Illinois, Washington State, California, New Jersey, Colorado, Delaware, Nevada, New York, and Massachusetts.¹⁸

16. N.Y. State Rifle & Pistol Ass'n v. Bruen, 597 U.S. ___, 17 n.6 (2022).

17. Hubler, *supra* note 11.

18. In the District of Columbia: Hanson et al., v. District of Columbia, Case No. 22-cv-02256 (D.D.C.). In Oregon: Arnold et al., v. Kotek, et al., No. 22CV41008 (Harney Cnty. Cir. Ct.); Oregon Firearms Federation et al. v. Kotek et. al., 2:22-cv-01815-IM (D. Ore.) (lead case); Fitz, et al., v. Rosenblum, et al., 3:22-cv-01859-IM (D. Ore.) (trailing case); Eyre, et al., v. Rosenblum et al., 3:22-cv-01862-IM (D. Ore.) (trailing case); and Azzopardi, et al., v. Rosenblum, et al., 3:22-cv-01869-IM (D. Ore.) (trailing case). In Illinois: Barnett v. Raoul, 23-cv-209-RJD (S.D. Ill.) (lead case); Harrel v. Raoul, Case No. 23-cv-141-SPM (S.D. Ill.) (trailing case); Langley v. Kelly, Case No. 23-cv-192-NJR

In examining the arguments made by plaintiffs and their expert witnesses in these cases, nearly all involving limits on magazine capacities, assault weapons, or ghost guns, what has most stood out to me is their strained insistence on historic continuity. No one who seriously studies firearms in eighteenth century American life can fail to appreciate the profound differences between then and now. Yet opponents of firearm regulation intone a myth of continuity in American gun culture.

The myth of continuity maintains that American gun culture has been fundamentally stable since the colonial era. Gun-rights activists invoke this supposed continuity to delegitimize modern firearm laws. They argue that guns

(S.D. Ill.) (trailing case); *Federal Firearms Licensees of Illinois v. Pritzker*, 23-cv-215-NJR (S.D. Ill.) (trailing case); *Herrera v. Raoul*, 23-cv-532 (N.D. Ill.); and *Kenneally v. Raoul, et al.*, 23-cv-50039 (N.D. Ill.). In California: *Wiese, et al., v. Bonta, et al.*, 2:17-cv-00903-WBA-KJN (E.D. Cal.). In Washington State: *Sullivan, et al., v. Ferguson, et al.*, 3:22-cv-05403 (W.D. Wash.); *Brumback, et al., v. Ferguson, et al.*, 1:22-cv-03093-MKD (E.D. Wash.); *Hartford et al. v. Ferguson, et al.*, No. 3:23-cv-05364-RJB (W.D. Wash.); *Banta, et al. v. Ferguson and Batiste*, No. 2:23-cv-00112-MKD (E.D. Wash.); and *Guardian Arms, et al., v. State of Washington, et al.*, No. 23-2-01761-34 (Wash., and County of Thurston). In New Jersey: *Association Of New Jersey Rifle & Pistol Clubs, Inc. et al. v. Platkin et al.*, 3:18-cv-10507 (D.N.J.); *Cheeseman et al. v. Platkin et al.* 1:22-cv-04360 (D.N.J.); *Ellman et al. v. Platkin et al.*, 3:22-cv-04397 (D.N.J.). In Colorado: *Rocky Mountain Gun Owners et al., v. the Town of Superior et al.*, 22-cv-2680 (D. Colo.); *National Association for Gun Rights et al., v. Jared Polis*, 24-cv-00001-GPG-STV (D. Colo.). In Delaware: *John Rigby et al. v. Kathy Jennings et al.* 1:21-cv-01523-MN (D. Del.). In Nevada: *Palmer et al., v. Stephen Sisokak et al.*, 3:21-cv-00268 (D. Nev.). In New York: *Lane, et al., v. James, et al.*, 22-cv-10989 (S.D.N.Y.). In Massachusetts: *Granata, et al., v. Campbell, et al.*, 1:21-cv-10960-RWZ (D. Mass).

and gun-related issues today are not so different from the founding era, and that the Second Amendment makes it unconstitutional for us to regulate what the founders left unregulated.

Because of their focus on technological change, “class-of-arms” cases (addressing regulations on high-capacity magazines, assault weapons, ghost-guns, and other types of accessories and firearms) encourage particularly detailed iterations of the myth of continuity.¹⁹ Moreover, such cases figure prominently in contemporary firearms litigation. While challenges to felon-in-possession laws constitute the large plurality of Second Amendment cases before federal courts in the *Bruen* era, a recent analysis found that class-of-arms cases are the next most common category.²⁰ The historical arguments deployed in these cases are therefore not only highly detailed but legally consequential. They merit scrutiny.

Consider, for example, arguments against limitations on high-capacity magazines. Plaintiffs and their allies in recent cases have rummaged through a shared compendium of exotic guns, many literally drawn from a 1955 book entitled *Firearms Curiosa*, in search of evidence for the antiquity of repeating

19. See for example Joseph G.S. Greenlee, *The American Tradition of Self-Made Arms*, 54 ST. MARY'S L.J. 35 (2023).

20. See the analysis of legal challenges to types of gun laws after *Bruen* in Rachel Weiner, *The Supreme Court upended gun laws nationwide. Mass confusion has followed.* WASH. POST (July 7, 2024), available at <https://www.washingtonpost.com/dc-md-va/2024/07/07/gun-laws-supreme-court-bruen-rahimi/>

firearms (guns capable of firing more than one shot without reloading).²¹ Thus equipped, they use the myth of continuity to advance a three-part argument. First, that “magazines capable of holding more than 10 rounds predate the Second Amendment and were known to and embraced by the Founders.”²² Second, that “no regulations from around the time of the adoption of the Second or Fourteenth Amendments limited the ammunition capacity of a firearm.”²³ And third, given *Bruen*’s insistence that “*only* historical tradition can remove a firearm from the Second Amendment’s protective scope,”²⁴ such regulations are unconstitutional today.

The myth of continuity provides a flexible argumentative template, one that can take various forms depending on the regulation that needs overturning. At its most general, it maintains that Americans in the colonial and founding eras wanted and used guns for the same basic reasons that Americans want and use guns today. Of course, proponents of the myth acknowledge that firearms have evolved, and that society has changed. But they insist that guns in the late eighteenth century were sufficiently analogous to guns in our own time to have

21. LEWIS WINANT, FIREARMS CURIOSA (1955).

22. Memorandum of Points and Authorities in Support of Plaintiffs’ Motion for Summary Judgement at 15, *Wiese et al., v. Bonta et al.*, No. 2:17-cv-00903-WBS-KJN (E.D. Ca. Mar. 31, 2023).

23. Complaint for Declaratory and Injunctive Relief and damages at 20, *Hanson et al., v. District of Columbia*, Civil Action No. 22-cv-2256 (D.D.C. Apr. 20, 2023).

24. Complaint for Declaratory and Injunctive Relief at 4, *Harrel v. Raoul*, Case No. 23-cv-141-SPM (S.D. Ill. Jan. 17, 2023). *Harrel et. al., v. Raoul et. al.*, No. 3:23-cv-00141-SPM (S.D. Ill.) (Emphasis in original).

provoked similar societal concerns. As two pioneers of this narrative put it in a 2007 law review article, “it is certainly true that firearms technology has advanced since 1791—but not as much as some would like to think.”²⁵

What has *really* changed, the myth’s purveyors argue, is not the guns, the reasons Americans have them, what their owners do with them, or the resulting social consequences. What has really changed is the law. Modern policymakers have broken with tradition by seeking to regulate weapons that the founders, in their wisdom, could have regulated and opted not to. In other words, regulation is the great discontinuity, and it must be overturned.

The myth of continuity’s perniciousness – or its promise, depending on your viewpoint – comes from the way it confidently projects our modern experience with guns and gun violence back onto the late eighteenth century. That projection has helped remake Second Amendment jurisprudence over the past fifteen years, most consequentially with *Heller* and its ahistorical premise that pistols played a similar role in crime and self-defense in 1791 as they did in 2008. *Bruen*’s framework ensures that the myth of continuity will figure even more prominently into regulatory battles going forward. That is true not only because of the primacy that the decision affords history, but also because of how it directs courts to approach regulatory silence.

25. Clayton E. Cramer & Joseph Edward Olson, *Pistols, Crime, and Public: Safety in Early America*, 44 WILLAMETTE L. REV. 699, 716 (2008) (Emphasis in original).

Authored by Justice Thomas, the *Bruen* ruling distinguishes between policy challenges it presumes will be “fairly straightforward” and those that will not.²⁶ In the first category are those involving firearm regulations that address “a general societal problem that has persisted since the 18th century.”²⁷ In such cases, the absence of “distinctly similar historical regulation addressing that problem is relevant evidence that the challenged regulation is inconsistent with the Second Amendment.”²⁸ Historic regulation through “materially different means,” or regulation later rejected on constitutional grounds, could also be evidence that contemporary restrictions are unconstitutional.²⁹ In other words, a “straightforward” case under *Bruen*’s framework is one featuring an enduring societal problem involving firearms. If the activity in question went unregulated by the Founders, it is presumed to be constitutionally immune from regulation today.

Cases expected to be something other than straightforward are those involving “unprecedented societal concerns or dramatic technological changes.”³⁰ Such cases “may require a more nuanced approach,” necessitating analogical reasoning to determine “how and why the regulations burden a law-

26. N.Y. State Rifle & Pistol Ass’n v. Bruen, 597 U.S. ___, 17 (2022).

27. *Id.*

28. *Id.*

29. *Id.* at 17–18.

30. *Id.* at 18.

abiding citizen's right to armed self-defense."³¹ Referencing Cass Sunstein's influential essay "On Analogical Reasoning,"³² Justice Thomas explained that this "commonplace task for any lawyer or judge" simply requires determining whether a modern regulation is "relevantly similar" to a historic regulation."³³

Given that the second, more nuanced approach opens more avenues for defending regulation, much depends on whether courts can be convinced that a firearms-related problem has "persisted since the late 18th century."³⁴ Opponents of gun regulations therefore have more incentive than ever to argue for continuity in American gun culture. What is usually at stake in such arguments is the vital question of *why* there might be regulatory silences in the historic record. After all, legislation responds to felt needs. Historical context is essential to fully understanding those needs. States defending firearms laws in the *Bruen* era will often need to provide that context to rebut the myth of continuity put forward by plaintiffs and their allies.

By way of illustration, consider a technology that remains unregulated today: personal jetpacks. Jetpacks have intrigued militaries and the public for more than a hundred years. That interest has generated competition in research

31. *Id.* at 18–20. *See also* Joseph Blocher & Eric Ruben, *Originalism-by-Analogy and Second Amendment Adjudication*, 133 *YALE L.J.* 99 (2023).

32. Cass R. Sunstein, *On Analogical Reasoning*, 106 *HARV. L. REV.* 741 (1993).

33. *Bruen*, 597 U.S. at 28-29.

34. *Id.* at 17.

and development.³⁵ Most of us know, however, that jetpacks remain an expensive and experimental curiosity in our own times because of stubborn technological, safety, and practical challenges, including cost.³⁶ But imagine a scenario where a jurist 232 years in the future is presented with a shrewdly curated version of this context. Confronted only with documentary evidence that a patent was taken out on a jetpack design as early as 1919 (it was³⁷); that militaries remained intrigued by the technology throughout the century³⁸ (indeed, they still are³⁹); and that the jetpack commanded enduring popular interest (any number of movies⁴⁰ and television shows⁴¹ could serve as exhibits), that future jurist might be persuaded that the absence of regulation reflected an ideological disposition against regulating jetpacks. Of course, a simpler and

35. Anthony Quinn, *The Fall and Rise of Jetpacks*, ROYAL AERONAUTICAL SOCIETY (Aug 16, 2022), <https://www.aerosociety.com/news/the-fall-and-rise-of-jetpacks/#>.

36. Jessica Romeo, *The Rise and Fall of the Jetpack*, JSTOR DAILY (March 25, 2021), <https://daily.jstor.org/the-rise-and-fall-of-the-jet-pack/>

37. Quinn, *supra* note 33.

38. Robert D. Roach, *The First Rocket-Belt*, 4:4 TECH. & CULTURE, 490-98 (1963).

39. Kyle Mizokami, *The Pentagon is Ready to Give Soldiers Jetpacks*, POP. MECHANICS (Mar. 9, 2021), <https://www.popularmechanics.com/military/weapons/a35770774/pentagon-jetpack-research/>

40. See, e.g., the main character in the Marvel Studios film franchise *Guardians of the Galaxy*.

41. See, e.g., the main character in the Disney Channel television series *The Mandalorian*.

more accurate explanation would be that jetpacks remained too rare to attract regulatory attention in 2025.⁴²

Repeating firearms were the jetpacks of the founding era. They were intriguing, expensive, and dangerous curiosities that attracted interest and even paying crowds. But they produced no social consequences and therefore attracted no regulatory attention. Explaining *why* repeating firearms were the jetpacks of the founding era, however, requires a type of historical analysis more typical of history journals than law reviews. It requires answers to practical questions about historic technologies and their social, military, and regulatory consequences. For instance: how well did repeating firearms work in the eighteenth and nineteenth centuries? Were they reliable, effective, or safe to shoot? How many were made? How widely did they circulate? What were they used for? More concretely, if high-capacity weapons were actually “known to and embraced by the Founders,”⁴³ why, then, did the founders fight their revolution without them? Indeed, why did the United States military rely overwhelmingly on single-shot firearms in every war it fought between the ratification of the Second and Fourteenth Amendments?

Bruen’s framework implicates history in most topics in Second Amendment litigation. Historical analysis has become increasingly important, as numerous kinds of gun regulations now face the same basic, three-pronged

42. The technology’s failure to materialize is explored in DANIEL H. WILSON, *WHERE’S MY JETPACK? A GUIDE TO THE AMAZING SCIENCE FICTION FUTURE THAT NEVER ARRIVED* (2009).

43. Memorandum of Points, *supra*, note 22.

attack: (1) X firearms-related issue has existed since the founding; (2) the Founders did little or nothing about it; and therefore (3) we cannot do anything about it, either.

In the years since *Bruen*, legal scholars have been doing vital work on points (2) and (3). For example, Joseph Blocher and Eric Ruben have argued persuasively that *Bruen*'s "originalism-by-analogy" framework lacks the standards of relevant similarity, consistent levels of analogical generality, and institutional humility necessary to guide principled or even coherent Second Amendment decisions.⁴⁴ Jacob Charles⁴⁵ and Albert W. Alschuler⁴⁶ have offered powerful critiques of the decision's equation of legislative silence with constitutional protection. Darrell A. H. Miller and Blocher have demonstrated that the *Bruen* majority failed to be sufficiently transparent or rigorous when it dismissed relevant historical laws as outliers.⁴⁷ And Blocher and Reva Siegal have excavated a centuries-long record of sensitive-place regulations to argue

44. Blocher & Ruben, *supra* note 31.

45. Charles, *supra* note 6.

46. Albert W. Alschuler, *Twilight-Zone Originalism: The Peculiar Reasoning and Unfortunate Consequences of New York State Pistol & Rifle Association v. Bruen*, 32 WM. & MARY BILL RTS. J., 24-25 (2023).

47. Darrell A. H. Miller & Joseph Blocher, *Manufacturing Outliers*, 2022 SUPREME COURT REVIEW 2 (2022).

that history offers ample support for certain firearms safety laws, even under *Bruen*'s framework.⁴⁸

Professional historians are better positioned than legal scholars to respond to the first prong of the attack: the claim that guns and gun problems in the late eighteenth century were fundamentally similar to those in our own times. This Article offers a critique of that claim. My contribution as a professional historian involved in several recent cases is to explain and debunk the myth of continuity in American gun culture, the central historical conceit underlying gun-rights legal activism in the *Bruen* era. Rather than continuity, I argue that courts evaluating the constitutionality of firearms laws would be on much firmer historical ground if they began by presuming *discontinuity* between the founding era and now.

The Article makes the case in three parts. Part I offers a wide-angle consideration of some of the most significant discontinuities between American gun culture in the late eighteenth century and in our own times. It explains that while early America was an unusually well-armed society by the standards of the day, the main reasons why it was so-well armed – slavery, settler colonialism, and inter-imperial warfare – differ profoundly from the explanations for today's superabundance of firearms. Whereas contemporary gun culture is consumerist, government-phobic, and individualist, I argue that early America's gun culture

48. Joseph Blocher & Reva B. Siegel, *Guided by History: Protecting the Public Sphere from Weapons Threats Under Bruen*, 98 NYU L. REV 6 (2023).

was utilitarian, government-led, and collective. Part I explains these hallmarks of early America's gun culture through an analysis of the uneven geography and shifting chronology of firearms ownership in the seventeenth and eighteenth centuries.

The Article then narrows its focus in Part II to consider a highly elaborate iteration of the myth of continuity concerning the history of repeating firearms. The technology behind repeating arms is at the heart of current legal battles over high-capacity magazines and assault weapons. Contrary to the claims of prominent gun-rights activists and plaintiffs in recent cases, Part II demonstrates that most repeating firearms were unreliable curios before the nineteenth century. They were much too unusual and irrelevant to have attracted regulatory attention from the founding generation, notwithstanding a robust tradition of firearms regulation. Part II goes on to explain that while technological advances made repeating firearms commercially viable by the mid-nineteenth century, "large-capacity firearms" (with magazines holding more than ten rounds) were still vanishingly rare when the Fourteenth Amendment was ratified. Indeed, it was not until the turn of the twentieth century that weapons like those at the heart of our current regulatory debates – semiautomatic firearms with detachable magazines – began to enter the US consumer market. Once the social consequences of automatic- and semiautomatic guns began to be felt, states across the country moved swiftly to regulate them.

Although the continuity argument for repeating firearms draws upon decades of gun-activist scholarship, the myth has found other applications in recent years. Part III evaluates a newer application of the myth of continuity

crafted for the fight over “ghost guns”: firearms assembled by amateurs either from commercially available kits or by using 3D-printers. Gun-rights activists oppose regulations requiring federal serial numbers on these arms. To challenge the constitutionality of such regulations, they have developed a narrative about “The American Tradition of Self-Made Arms,” to quote a recent law review article on the topic.⁴⁹ Part III explains the history behind firearms production in early America, explaining why firearms were so hard to produce, why the overwhelming majority came from Europe, and why there was no significant tradition of self-made arms in our nation’s history.

Finally, the conclusion reflects on the role that historical research is likely to play in the unfolding battle over firearms regulation. In the short- and medium-term, rigorous, contextualized history should help preserve some firearms laws. The long-term consequences could be more significant. By encouraging states and localities to research history when defending firearm regulations, the decision will inevitably bring renewed scrutiny to *Heller*’s claim that the Second Amendment was crafted to protect an individual right to armed self-defense—rather than to protect the viability of state militias. That claim seemed weak to most professional historians in 2008.⁵⁰ It has since been revealed to be weaker

49. Greenlee, *supra* note 19.

50. See e.g., Brief of Jack N. Rakove, Saul Cornell, David T. König, Lois G. Schworer et al. as Amici Curiae, *District of Columbia v. Heller*, 554 U.S. 570 (2008). [<https://perma.cc/E4KC-JSMC>]

still.⁵¹ I believe it will come to look even less defensible under the brightening glare of the renewed historical inquiry prompted by *Bruen*. The Article therefore concludes by arguing that the decision will ultimately undermine the very basis of modern Second Amendment jurisprudence.

I.

GUN CULTURE IN BRITISH NORTH AMERICA BEFORE THE REVOLUTION

In one important regard, the continuity argument rings true: like residents of the United States today, (white) British North Americans owned a lot of guns. Compared to most colonists elsewhere around the hemisphere, and compared to their counterparts in Great Britain, white residents of the thirteen colonies were remarkably well-armed.⁵² However, contrary to some overheated rhetoric, they

51. See e.g., PATRICK J. CHARLES, *ARMED IN AMERICA: A HISTORY OF GUN RIGHTS FROM COLONIAL MILITIAS TO CONCEALED CARRY* (2018); Nathan Kozuskanich, *Originalism in a Digital Age: An Inquiry into the Right to Bear Arms*, 29:4 J. OF THE EARLY REP., L. REV. 585-606 (Winter 2002).

52. For gun ownership in Britain, see Priya Satia, *Who Had Guns in Eighteenth-Century Britain?*, in *A RIGHT TO BEAR ARMS? THE CONTESTED ROLE OF HISTORY IN CONTEMPORARY DEBATES ON THE SECOND AMENDMENT* (Jennifer Tucker, Barton C. Hacker, & Margaret Vining eds., 2019); see also Kevin M. Sweeney, *Firearms Ownership and Militias in Seventeenth- and Eighteenth-Century England and America*, in *A RIGHT TO BEAR ARMS? THE CONTESTED ROLE OF HISTORY IN CONTEMPORARY DEBATES ON THE SECOND AMENDMENT* 61 (Jennifer Tucker, Barton C. Hacker, & Margaret Vining eds., 2019).

were not “the greatest weapon-using people of that epoch in the world.”⁵³ They were not even the greatest weapon-using people east of the Mississippi in the eighteenth century. That distinction almost certainly belonged to eastern North America’s Indigenous polities, which, while obviously still vulnerable to the much larger settler population, had remarkably high per-capita rates of gun ownership. In most Native societies east of the Mississippi, nearly every able-bodied man was a trained warrior and a commercial hunter who owned several trade muskets over the course of a lifetime.⁵⁴

Still, by the standards of the day, British North Americans were unusually well-armed. Careful samples of probate inventories from 1774 suggest that on average about half of all white households possessed a firearm.⁵⁵ That certainly did not mean that “the gun was more abundant than the tool,”⁵⁶ but it did mean that the gun was (considerably) more abundant than the bible.⁵⁷ All told, the thirteen colonies might have had as many as 150,000-200,000 firearms on hand

53. For “the greatest,” see Greenlee, *supra* note 19 at 46 (quoting CHARLES WINTHROP SAWYER, *FIREARMS IN AMERICAN HISTORY* 9 (1910)).

54. For Indigenous ownership, see DAVID J. SILVERMAN, *THUNDERSTICKS: FIREARMS AND THE VIOLENT TRANSFORMATION OF NATIVE AMERICA* (2016).

55. James Lindgren & Justin L. Heather, *Counting Guns in Early America*, 43 WM. & MARY L. REV. 1777, 1780–81 (2002).

56. Greenlee, *supra* note 19, at 46 (quoting CHARLES WINTHROP SAWYER, *FIREARMS IN AMERICAN HISTORY* 9 (1910)).

57. Lindgren & Heather, *supra* note 55, at 1800.

by the eve of the Revolution, enough (at the upper end) to arm around a third of adult white men.

The relative abundance of firearms is an important continuity with our own times. But once we inquire into why early Americans had so many guns, and how those motivations shaped patterns of gun ownership over time, the gulf between then and now comes into view.

A. *Why Was Early America so Well-Armed?*

Why were British North Americans so well-armed compared to their contemporaries? For reasons distinct to the times. Whereas our present-day gun culture is consumerist, government-phobic, and individualist, gun culture in eighteenth century British North America was utilitarian, government-led, and collective.

Consider some of the features of contemporary gun culture. One of the most prominent is the gun's association with rural America and with hunting. Here the continuity with the eighteenth century seems strong. In an era where rural farming families comprised around 95% of the colonial population, firearms were useful and sometimes indispensable tools for everyday life.⁵⁸ They were required for fowling or hunting big game, and handy for keeping pests from crops and homes. Guns are obviously put to similar uses in the United States

58. For a comparison of rural population and urban population data from the 1790 census, see United States Bureau of the Census & Social Science Research Council, *Historical Statistics of the United States: Colonial Times to 1957*, 14 (1975).

today, but only by a small proportion of the population (14% now live in rural areas, and a mere 4% hunt).⁵⁹

Another conspicuous feature of our contemporary gun culture is the degree to which firearms are prized and heavily-marketed consumer goods.⁶⁰ For a small minority of wealthy colonial buyers, finely-made arms could be valued and pleasing material possessions, objects to take care of and even pass down to inheritors.⁶¹ But the extreme rarity in the eighteenth century of the large firearm collections so important to the flourishing of today's industry is another metric of discontinuity. A landmark 2016 study from researchers at Harvard and Northeastern University found that today's so-called "super-owners," the three

59. For the 2021 rural population, see Elizabeth A. Dobis et al., *Rural America at a Glance: 2021 Edition*, USDA ECONOMIC RESEARCH SERVICE 2 (Nov. 2021). For hunting today, see Andrew Moore, *Decline in Hunting Threatens Conservation Funding*, NC STATE COLLEGE OF NATURAL RESOURCES NEWS (Jan. 27, 2021), available at <https://cnr.ncsu.edu/news/2021/01/decline-in-hunting-threatens-conservation-funding/>.

60. For recent accounts of the business of marketing and selling firearms in the United States, see RYAN BUSSE, *GUNFIGHT: MY BATTLE AGAINST THE INDUSTRY THAT RADICALIZED AMERICA* (2021); and JENNIFER CARLSON, *MERCHANTS OF THE RIGHT: GUN SELLERS AND THE CRISIS OF AMERICAN DEMOCRACY* (2023).

61. MICHAEL LENZ, "ARMS ARE NECESSARY": GUN CULTURE IN EIGHTEENTH-CENTURY AMERICAN POLITICS AND SOCIETY 138-40 (2010).

percent of Americans who for reasons of collecting or prepping or both own the most guns, possess roughly half of all privately held firearms in the country.⁶²

Contrast that with the colonial era. Historian Kevin Sweeney's painstaking work in probate records from British North America has revealed that only 4.4% of male probate inventories contained more than three firearms, and that only 1.4% contained more than five.⁶³ Rather than aficionados or preppers, most of the tiny number of early American "super-owners" had entirely practical, utilitarian reasons to maintain private arsenals. More than two-thirds of those in Sweeney's sample who owned six or more guns were southern slaveholders.⁶⁴ All ten of the probate inventories containing ten guns or more belonged to South Carolinian planters who ran vast slave labor enterprises, averaging ninety-five enslaved laborers each.⁶⁵ Americans of the late eighteenth century would have found today's hyper-commercialized and ideologically charged culture of consuming guns deeply alien.

62. Lois Beckett, *The Gun Numbers: Just 3% of American Adults Own a Collective 133m Firearms*, THE GUARDIAN (Nov. 15, 2017), available at <https://www.theguardian.com/us-news/2017/nov/15/the-gun-numbers-just-3-of-american-adults-own-a-collective-133m-firearms>.

63. Kevin M. Sweeney, *An Eighteenth-Century Gun Culture Shaped by Restraints*, Sept. 6, 2023, Duke Center for Firearms Law Second Thoughts Blog, <https://firearmslaw.duke.edu/2023/09/an-eighteenth-century-gun-culture-shaped-by-constraints>

64. See Kevin M. Sweeney's declaration at 12 in *Nguyen et al., v. Bonta*, 3:20-cv-02470-WQH-BGS (S.D. Cal.).

65. *Id.*

Over the past generation a concern with self-defense has become central to contemporary gun culture, a shift the firearms industry has skillfully encouraged through its advertising campaigns.⁶⁶ This increasing focus on self-defense is also at the heart of recent Second Amendment jurisprudence as defined in *Heller*, *McDonald*, and *Bruen*. But crime and self-defense, in the sense of attacks on or protection against other members of one's own society, are weak explanations for colonial gun ownership. Prior to the widespread availability of breechloading weapons and metallic cartridges in the mid-nineteenth century, firearms were awkward tools either for perpetrating or resisting crimes of passion. They were notoriously inaccurate at range, liable to misfire, and had to be muzzle-loaded with gunpowder and ball before every shot, either by pouring ammunition direct into the barrel or packing in a pre-made paper cartridge loaded with powder and ball.⁶⁷ That took time and focus. Moreover, such guns were seldom kept loaded and at the ready for any extended period because black powder corroded iron barrels so quickly.⁶⁸

66. The sociologist David Yamane has done important work documenting this shift in U.S. gun culture. See e.g., David Yamane, Paul Yamane, and Sebastian L. Ivory, *Targeted Advertising: Documenting the Emergence of Gun Culture 2.0 in Guns Magazine: 1955–2019*, 6 PALGRAVE COMMUNICATIONS 1 (2020).

67. Randolph Roth, *Why Guns Are and Are Not the Problem: The Relationship Between Guns and Homicide in American History*, in *A RIGHT TO BEAR ARMS? THE CONTESTED ROLE OF HISTORY IN CONTEMPORARY DEBATES ON THE SECOND AMENDMENT* 116–17 (Jennifer Tucker, Barton C. Hacker, & Margaret Vining eds., 2019)

68. *Id.* at 117.

Partly for these reasons, firearms usually played a relatively small role in murders between white people in North America before the era of the Civil War. Randolph Roth, the nation's foremost scholar of the history of homicide in North America, has argued that rates of gun violence rose and fell in step with political instability and shifts in faith in government, justice, and social hierarchy.⁶⁹ When the overall homicide rate was low, guns were used in only 10-15% of homicides.⁷⁰ During periods of political instability before the Civil War, firearms were used in as many as 30-40% of all homicides.⁷¹ But even those unusual circumstances look different from our own times. In 2020 nearly 80% of all homicides in the United States involved a firearm.⁷² In sum, neither consumerism nor fear of crime are adequate explanations for British North America's unusually high rates of firearm ownership.

That given, what *are* compelling explanations? Freedom from restrictive laws provides a partial answer. Gun ownership among wealthy colonists seems to have been twice as common as it was among their peers in mid-eighteenth-century England, while the poorest white colonists were more than eighteen

69. *Id.* at 116.

70. *Id.*

71. *Id.*

72. For homicide and arms technology, see generally *id.* Roth's chapter draws upon his magisterial book *American Homicide*. RANDOLPH ROTH, *AMERICAN HOMICIDE* (2009). For 2020 homicides, see John Gramlich, *What the Data Says about Gun Deaths in the U.S.*, PEW RESEARCH CENTER (Feb. 3, 2022), available at <https://www.pewresearch.org/fact-tank/2022/02/03/what-the-data-says-about-gun-deaths-in-the-u-s/>.

times more likely to own a gun than their English counterparts.⁷³ Whereas England criminalized hunting and gun ownership for all but the relatively wealthy,⁷⁴ colonists in British North America faced no such barriers.⁷⁵ Even so, that fact cannot explain the great variability in gun ownership across time and space in early America. To explain that, we need to center slavery, settler colonialism, and inter-imperial warfare.

In the first instance, firearms were necessary for the two systematic forms of violent predation that preoccupied generations of European colonists: dispossessing Native People of their land and enslaving people of African descent (amounting to nearly a fifth of the population in the thirteen colonies in 1775).⁷⁶ As those ten rich South Carolinian enslavers understood very well, neither project could have been sustained without a weapons gap. Some modern activists, writers, and jurists seeking a continuous American gun culture have ennobled these imperatives by gathering them under the banner of self-defense.⁷⁷

73. Sweeney, *supra* note 52, at 60.

74. LOIS G. SCHWOERER, *GUN CULTURE IN EARLY MODERN ENGLAND* 46–73, 156–70 (2016).

75. Sweeney, *supra* note 52, at 59–60.

76. ALAN TAYLOR, *AMERICAN REVOLUTIONS: A CONTINENTAL HISTORY: 1750-1804* 3 (2016).

77. As Clayton E. Cramer puts it, “traditionally, historians assumed that guns were always part of our culture, a consequence of a nation formed from a ‘howling wilderness,’ a necessity in a place where hunting for food and defense against dangerous animals, and sometimes hostile Indians, was needed.” See CLAYTON E. CRAMER, *LOCK, STOCK, AND BARREL: THE ORIGINS OF AMERICAN GUN CULTURE* viii (2018). Justice Alito writes in his concurring opinion in *Bruen* that “in 1791, when the

During oral arguments in *Heller*, for example, Justice Anthony Kennedy asked whether the second clause in the Second Amendment “had nothing to do with the concern of the remote settler to defend himself and his family against hostile Indian tribes and outlaws, wolves and bears and grizzlies and things like that?”⁷⁸ It is true that colonists terrorizing and exploiting enslaved people and settlers violently encroaching on Native land (often in defiance of British law) had reason to fear their victims, and, therefore, reason to be armed.⁷⁹ But such colonists needed guns not so much for self-defense as for collective-*offense*: so that they and their white neighbors could safely take what they wanted from Black and Indigenous people. Limitations on white American gun ownership, of the type common in England at the time, would have been incompatible with these projects.⁸⁰

Moreover, many colonists needed to be well-armed on account of imperial rivals on the continent. Warfare between western Europe’s great powers

Second Amendment was adopted, there were no police departments, and many families lived along on isolated farms or on the frontiers. If these people were attacked, they were on their own. It is hard to imagine the furor that would have erupted if the Federal Government and the States had tried to take away the guns that these people needed for protection. Today, unfortunately, many Americans have good reason to fear that they will be victimized if they are unable to protect themselves.” N.Y. State Rifle & Pistol Ass’n v. Bruen, 597 U.S. ___, 9 (2022) (Alito, J., concurring).

78. Transcript of oral arguments in *D.C. v. Heller*, March 18, 2008, p. 8.

79. For an overview of settler encroachment on Native land in the decade before the Revolution, see Taylor, *supra*, n. 76, at 55-90.

80. For limitations, see essays by Satia and Sweeney, *supra* n. 52

provoked warfare in the Americas repeatedly during the colonial era. Given the vastness of imperial claims, the vulnerability of scattered frontier settlements, and the relatively small size of imperial armies, colonists inevitably found themselves recruited into formal or informal military service in ways that very few Americans today can relate to.⁸¹ Conflict between Spain, France, and Britain also magnified the risks of slavery and settler colonialism, as European powers sought advantage by arming and otherwise empowering their enemies' enemies.⁸² That happened during King Williams' War (1689-1697), Queen Anne's War (1702-1713), King George's War (1744-1748), and, especially, during the Seven Years' War (1754-1763). More than 100,000 men from the British colonies served alongside British regular forces in North America in these conflicts, which required periodic weapons shipments from the metropole.⁸³

81. Among the white, able-bodied males between the ages of sixteen and sixty in colonial Massachusetts, for example, only ministers, civil magistrates, and students and faculty of Harvard were exempt from militia service. See FRED ANDERSON, *A PEOPLE'S ARMY: MASSACHUSETTS SOLDIERS & SOCIETY IN THE SEVEN YEARS WAR* 26 (1984). In contrast, as of 2018 7% of the adult population in the United States were veterans. See Jonathan Vespa, *Those Who Served: America's Veterans from World War II to the War on Terror*, REPORT OF THE U.S. CENSUS BUREAU (June 2, 2020), available at <https://www.census.gov/library/publications/2020/demo/acs-43.html>.

82. For a case-study of this phenomenon, see ALAN TAYLOR, *THE INTERNAL ENEMY: SLAVERY AND WAR IN VIRGINIA, 1772-1832* (2013).

83. See GEORGE D. MOLLER, *AMERICAN MILITARY SHOULDER ARMS, VOLUME I: COLONIAL AND REVOLUTIONARY WAR ARMS* 9–12 (2011) (appendix I provides the tally of 107,000 colonists serving in these years – see p. 471).

Other colonists in the Americas obviously consumed guns, too. They consumed guns for hunting and dealing with pests, for the predations of slavery and settler colonialism, and for coping with inter-imperial war. But it seems nowhere else in the hemisphere did these imperatives reinforce each other as strongly or as often as in eastern North America.⁸⁴ Partly for that reason, nowhere else was the state so energetic in its attempts to arm such a large percentage of its colonial population. Today, we associate government regulation of firearms with various kinds of limitations on private ownership. In the colonial era, government regulations were more likely to encourage and even mandate private gun ownership rather than to restrict it.

B. Colonial Militias & the Uneven Geography of Gun Ownership

The most consequential firearm regulations concerned militias: the formal, compulsory, selective, state-sanctioned organizations through which colonists undertook most martial activities.⁸⁵ Colonial authorities passed hundreds of

84. French Canada, where settlers likewise engaged in warfare with Native People, contented with imperial rivals, and (to a lesser extent) practiced slavery, seems to be the exception that proves the rule. Census records indicate arms ownership by about two-thirds of the male population of New France in the eighteenth century. See Jay Cassel, *The Militia Legend: Canadians at war, 1665-1760*, IN CANADIAN MILITARY HISTORY SINCE THE SEVENTEENTH CENTURY 61 (YVES TREMBLY, ED., 2001).

85. For a critique of how the majority in *Heller* mischaracterized these bodies as unorganized “citizens’ militias” whose primary purpose was to be a “safeguard against tyranny,” see Kevin M. Sweeney, *Firearms, Militias, and the Second Amendment*, in THE SECOND AMENDMENT ON TRIAL: CRITICAL ESSAYS ON DISTRICT OF COLUMBIA V. HELLER 311 (Saul Cornell & Nathan Kozuskanich eds., 2013).

militia laws before the Revolution, laws mandating how these armed bodies were to be constituted, mobilized, equipped, led, and disciplined.⁸⁶ This body of legislation fostered an uneven geography of gun ownership in British North America. That unevenness can help us understand *why* colonists had guns, in addition to *who* had them and *where*.

Research in probate records makes it clear that colonial governments exerted a powerful influence on the geography of gun ownership in the British colonies, and that they did so primarily through the mechanism of militia laws. Gun ownership was highest in those colonies where governments energetically encouraged and supported militia service. These were places where slavery, settler colonialism, and/or nearby imperial rivals provoked security concerns. In such places, colonial authorities mandated gun ownership and, in times of heightened anxiety, took steps to equip militiamen who lacked their own arms.⁸⁷

In mid-seventeenth-century New England, for example, with its violently expanding settler frontier and robust militia tradition, nearly 70% of male probate inventories included a firearm.⁸⁸ Ownership was nearly as high in the

86. Several hundred of these laws were anthologized by the Selective Service System in the mid-twentieth century. See MILITARY OBLIGATION: THE AMERICAN TRADITION; A COMPILATION OF THE ENACTMENTS OF COMPULSION FROM THE EARLIEST SETTLEMENTS OF THE ORIGINAL THIRTEEN COLONIES IN 1607 THROUGH THE ARTICLES OF CONFEDERATION 1789 (ARTHUR VOLLMER ED., 1947).

87. The association between militia organization and changes in firearm possession over time and place is a dominant theme in Sweeney's work. See Sweeney, *supra* note 52; Sweeney, *supra* note 85.

88. See table 3.6 in Sweeney, *supra* note 52 at 75.

Chesapeake. In late-seventeenth-century Virginia, where anxious authorities restricted militia service to property owners but took an active role in arming them, firearms likewise appear in 70% of male probate inventories.⁸⁹ Vulnerable South Carolina, which not only had an enslaved majority but also shared frontiers with the mighty Creek and Cherokee nations to the West and (prior to the establishment of Georgia) with rival Spanish Florida to the South, was even better armed by the mid-eighteenth century.⁹⁰ There, colonial and imperial officials cooperated to ensure white colonists possessed firearms, and even armed enslaved men for militia service in wartime.⁹¹

In contrast, mid-Atlantic colonies with weak or nonexistent militia traditions usually had far lower rates of gun ownership. Dutch and English New Yorkers, accustomed to relying on professional military and Native allies, owned fewer firearms than their counterparts north or south. There, firearms appear in just over half of late seventeenth-century inventories, and in barely more than a third by the mid-eighteenth century.⁹² In Pennsylvania, New Jersey, and

89. *Id.*

90. *Id.*

91. For South Carolina's arming, see DE WITT BAILEY, *SMALL ARMS OF THE BRITISH FORCES IN AMERICA: 1664-1815* 110–12 (2009). For arming South Carolina's enslaved, see John W. Shy, *A New Look at Colonial Militia*, 20 *WM. & MARY Q.* 181 (1963); PETER MICHAEL VOELZ, *SLAVE AND SOLDIER: THE MILITARY IMPACT OF BLACKS IN THE COLONIAL AMERICAS* 358 (1993); Maria Alessandra Bollettino, *Slavery, War, and Britain's Atlantic Empire: Black Soldiers, Sailors, and Rebels in the Seven Years' War* 41–50 (2009) (unpublished Ph.D. Dissertation, University of Texas, Austin).

92. See table 3.6 in Sweeney, *supra* note 52, at 75.

Delaware, with few enslaved laborers, no nearby imperial rivals, and, until the mid-eighteenth century, relatively peaceful relations with Indigenous neighbors, pacifist Quaker proprietors repressed militias during most of the colonial era. As a result, here again only around a third of Pennsylvania's probate inventories contained firearms before independence.⁹³

When the imperatives and dangers associated with opportunities and threats relaxed in the colonies, gun ownership declined. Massachusetts militiamen were well-armed in the decades before Metacom's (King Philip's) War (1675-78) devastated southern New England's Indigenous polities. By the 1740s, however, the colony's militias struggled to arm themselves for the crisis of King George's War.⁹⁴ Relying on Indigenous allies and armed enslaved men from South Carolina, North Carolina defeated the formidable Tuscarora between 1711 and 1715, relieving the colony of the most proximate threat to its settler colonial program.⁹⁵ Militia service declined in North Carolina over the following decades, to the point that by the mid-eighteenth century it was described as "not near half-armed and those [arms] they have very bad."⁹⁶

The state played an enormous role in these shifting patterns of gun ownership, not only through militia regimes specific to individual colonies but

93. Sweeney, *supra* note 85, at 321-23.

94. *Id.* at 328-29.

95. Wayne Lee, *Fortify, Fight, or Flee: Tuscarora and Cherokee Defensive Warfare and Military Culture Adaptation*, 68:3, *J. of Milit. Hist.*, 731-44 (July 2004).

96. Sweeney, *supra* note 85, at 334-35.

through the primary fount of firepower, the imperial metropole. To a greater degree than in previous inter-imperial conflicts, the Seven Years' War came to turn on events in North America. British war planners needed to recruit tens of thousands of colonists but found that most of them were either unwilling or unable to muster into service with an appropriate firearm. Consequently, Britain shipped more than 66,000 guns to the colonies between 1756-1763.⁹⁷ That sudden infusion of firepower might have represented a fifty percent increase in the number of guns available in British North America. While thousands of these arms remained in colonial storehouses or crown arsenals after 1763, the majority apparently stayed with the colonists who mustered out of service.⁹⁸

Colonial British North America had a robust gun culture, in summary, but it was very different from the one that prevails today. Encouraged and assisted by the metropole and by colonial assemblies, British North Americans armed themselves for the purpose of responding to shared threats and opportunities. The result, evident in the shifting geography of firearms ownership, was a gun culture that was utilitarian rather than consumerist; government-led, rather than

97. De Witt Bailey, the main expert on the topic, found that the British Ordnance Department sent colonial authorities in British North America 10,000 muskets in 1756 and another 12,000 in 1758. During the war, merchants operating under government license shipped another 7610 firearms to colonial governments, and 36,592 “for the planters” – that is, for private buyers. Presumably most of these buyers were likewise motivated by the war. Bailey’s figures exclude weapons shipped for the Indian trade. *See* Bailey, *supra* note 91, at 119–24, 236–38.

98. *Id.*

government-phobic; and collective, rather than individualist. These profound differences have been obscured by the myth of continuity.

II.

THE RARITY OF REPEATING FIREARMS IN EARLY AMERICA

The myth of continuity has been richly elaborated in regulatory battles over repeating firearms. Over the past generation, localities, states, and the federal government have passed laws restricting legal access to detachable magazines beyond a certain size (usually ten or fifteen rounds), as well as “assault weapon” laws prohibiting specific types of firearms. The two kinds of laws often go together and are closely related, insofar as most state restrictions define assault weapons partly through reference to ammunition capacity.⁹⁹

In response to these regulatory efforts, gun-rights advocates David B. Kopel and Clayton Cramer developed a detailed narrative about the antiquity of repeating weapons. They previewed elements of that narrative in 1995, as part of a coauthored *Temple Law Review* article.¹⁰⁰ In the years since, Kopel in particular has reiterated and elaborated on it in more public-facing venues,¹⁰¹ as

99. See e.g., Cal. Penal Code § 30515(a)(2).

100. David B. Kopel, Clayton E. Cramer, and Scott G. Hattrup, *A Tale of Three Cities: The Right to Bear Arms in State Supreme Courts: Emerging Issues in State Constitutional Law*, 68 TEMP. L. REV. 1177, 1197-1204 (1995).

101. See e.g., David Kopel, *The History of Magazines Holding 11 or More Rounds: Amicus Brief in 9th Circuit*, WASHINGTON POST: VOLOKH CONSPIRACY BLOG (May 29, 2014), available at

well as other law review articles¹⁰² and in amici curiae briefs in state courts,¹⁰³ circuit courts,¹⁰⁴ and the U.S. Supreme Court.¹⁰⁵ Kopel has been instrumental in the development of the continuity narrative that is now the basic historical framework used by most plaintiffs and expert witnesses trying to overturn restrictions on high-capacity magazines and assault weapons.

Part of the reason that this narrative has enjoyed so much success is that most of its specific fact claims are correct. It is indeed the case that repeat fire is an old idea in gun-making. Inventive gunsmiths began trying to design reliable, effective firearms capable of shooting multiple rounds without reloading as early

<https://www.washingtonpost.com/news/volokh-conspiracy/wp/2014/05/29/the-history-of-magazines-holding-11-or-more-rounds-amicus-brief-in-9th-circuit/> [https://perma.cc/8MG3-Z3WX].

102. The most complete and sophisticated version of the argument—frequently cited in current litigation—is David B. Kopel, *The History of Firearms Magazines and Magazine Prohibitions*, 88 ALB. L. REV. 849 (2015). *See also* Cramer & Olson, *supra* note 25, at 716–22.

103. *See, e.g.*, Brief of Cato Institute, Firearms Policy Coalition, Firearms Policy Foundation, and Independence Institute as Amici Curiae, *Vermont v. Misch*, 2021 VT 10, No. 172-2-19, *available at* <https://www.davekopel.org/Briefs/States/2019-266-Cato-Amicus.pdf>. (last visited July 31, 2023).

104. *See, e.g.*, Brief of S.P. Fjestad and The Center for Constitutional Jurisprudence as Amici Curiae, *Shew, et al. v. Malloy, et al.*, 994 F. Supp. 2d 234 (D. Conn. 2014), *available at* <https://www.davekopel.org/Briefs/Shew-History-Brief.pdf>. (last visited July 31, 2023). [https://perma.cc/J7BR-PFZY]

105. *See, e.g.*, Brief of Cato Institute, National Sheriffs' Association, Second Amendment Foundation, and Independence Institute as Amici Curiae, *Kolbe v. Hogan*, No. 17-127 (petition for writ of certiorari in respect of *Koble v. Hogan*, 849 F.3d 114 (2017)), *available at* https://www.cato.org/sites/cato.org/files/wp-content/uploads/kolbe_cert-stage.pdf. (last visited July 31, 2023). [https://perma.cc/ZLQ6-KLT3]

as the sixteenth century.¹⁰⁶ Evidence for their efforts can be found in personal and public archives, in patent records, and occasionally in actual weapons preserved in museums and private collections today.

What pushes this continuity narrative into myth is not so much its constituent fact claims as the misleading conclusions that it derives from them. In fact, early repeating weapons were flawed, experimental curiosities prior to the founding of the United States. They were both dangerous (to the shooter) and highly unusual. Most of these weapons never advanced beyond proof of concept. Only a small minority of repeating firearm inventions ever moved past the design or prototype stage, and none achieved commercial significance or military relevance prior to 1791. This centuries-long history of inventive failure has a context, one essential to evaluating arguments about the historic regulation of firearms—or lack thereof.

*A. The Elusive Quest for Reliable Repeating Firearms Prior to the
Nineteenth Century*

Europeans began engaging with gunpowder and its potential military applications in the thirteenth century.¹⁰⁷ By then, European states had long been in competition with one another for military and economic advantage. As the design and efficacy of artillery, bombs, and handheld firearms improved, and as

106. W. W. GREENER, *THE GUN AND ITS DEVELOPMENT* 76-86 (9th ed. 1910).

107. For an insightful account of the emergence of gunpowder technologies in China and their transmission to Europe, see KENNETH WARREN CHASE, *FIREARMS: A GLOBAL HISTORY TO 1700* (2003).

these improvements forced leaders to reconsider venerable military traditions, states began spending more and more on their militaries. Intensifying competition between sovereigns created powerful incentives for craftspeople and inventors to improve on existing military technology.¹⁰⁸

Sovereign competition fueled innovation. Three of the most important innovations in the seventeenth and eighteenth centuries were: (a) gradual improvements in gunpowder corning, a process that made powder burn more evenly and enabled producers to better modulate its power; (b) the substitution of the cumbersome matchlock ignition system for the more reliable flintlock system in the late seventeenth century; and (c) the development of the socket bayonet (also in the late seventeenth century), which, for the first time, enabled infantry to act both as musketeers and pikemen.¹⁰⁹ All three advances had significant consequences for the development and use of firearms around the world. Still, most improvements to firearms technology were incremental during the Renaissance and early modern era. Meaningful breakthroughs were very rare.

Repeat fire was probably the most coveted but elusive of the gun-making world's aspirations. Safe and reliable increased rate of fire would have been an invaluable force multiplier for militaries. States would have paid handsomely to acquire such a comparative advantage, and that prospect helped incentivize

108. GEOFFREY PARKER, *THE MILITARY REVOLUTION: MILITARY INNOVATION AND THE RISE OF THE WEST, 1500-1800* (2d ed. 1996).

109. These and other developments are lucidly described in BERT S. HALL, *WEAPONS AND WARFARE IN RENAISSANCE EUROPE: GUNPOWDER, TECHNOLOGY, AND TACTICS* (1997).

centuries of experimentation. Four basic designs for repeating firearms had come into view as early as the sixteenth century. Each attracted generations of talented gunsmiths, and each had distinct virtues and limitations.

The first solution, the so-called “superposed load” or “stacked charge method,” fired multiple rounds loaded into a single barrel. This was probably the earliest method for achieving repeat fire, and it appeared in two basic versions. One functioned like a roman candle.¹¹⁰ The other also employed a barrel loaded with multiple rounds but allowed the shooter more control over the pace of firing. This was achieved either with multiple locks or a sliding lock that would enable the user to fire the load in two or more different bursts.¹¹¹

A second solution achieved repeat fire with a revolving breech – usually some type of bored cylinder on an axis at the rear of the barrel. One innovative design along these lines emerged in Germany in the early sixteenth century.¹¹² A third solution employed multiple barrels. A seventeenth-century Scot built a gun with a single, fixed breech and fifty barrels arrayed around an axis, for instance.¹¹³ Finally, a fourth design incorporated an internal magazine housing enough powder and (sometimes) balls for multiple shots. Most such arms

110. The earliest examples probably date to the late 1300s. See D.R. BAXTER, *SUPERIMPOSED LOAD FIREARMS, 1360-1860* 1-8 (1966). For discussion of some particularly ingenious superposed load designs, see M. L. BROWN, *FIREARMS IN COLONIAL AMERICA: THE IMPACT ON HISTORY AND TECHNOLOGY: 1492-1792* 104-6 (1980).

111. WINANT, *supra* note 21, at 166-93.

112. BROWN, *supra* note 110, at 50.

113. *Id.* at 100.

employed a rotating breechblock to cycle a single powder charge and (sometimes) a single ball into the chamber before closing the chamber for firing.¹¹⁴

Master gunsmiths made exquisite varieties of repeating arms from the sixteenth through the eighteenth centuries, at high cost. Designs with rotating breeches or multiple barrels seldom exceeded a ten-round capacity, but early magazine or superposed firearms could. Regardless of type, gunmakers often decorated multi-fire weapons lavishly, and sold or gifted them to a tiny stratum of elite consumers across Europe.¹¹⁵ But most of these weapons remained gorgeous curiosities, usually more suited to admire than to shoot. Writing about early magazine arms, W. W. Greener, one of the nineteenth century's preeminent authorities on firearms, remarked that "the peculiar complication of the various mechanisms, and the general inutility of the weapons themselves, render a detailed description of little value to the inventor or the general reader; but the

114. Of early magazine repeaters, a respected authority says, "As all were basically impractical and many quite hazardous to use they were produced in extremely limited quantities and hence all are considered great collector's prizes." NORM FLAYDERMAN, *FLAYDERMAN'S GUIDE TO ANTIQUE AMERICAN FIREARMS AND THEIR VALUES* 691 (9th ed. 2007).

115. For example, the seventeenth-century English diarist Samuel Pepys saw and was impressed by a magazine arm in 1663. This weapon belonged to Sir Edward Montagu, the Earl of Sandwich, one of the most prominent men in England at the time. He used the gun to impress friends and clients, like Pepys. See Pepys' diary entry for Friday, March 4, 1663/64, *available at* <https://www.pepysdiary.com/diary/1664/03/#fn1-1664-03-04> (last visited July 31, 2023).

connoisseur will find several varieties in the Paris Museum.”¹¹⁶ Prized more than used, early repeating firearms survive at far, far higher rates than do the era’s ordinary, single-shot firearms that did actual work in the world. Although produced in very small quantities annually, they accumulated over the centuries of production so that today the world’s museums and collectors possess many intriguing specimens.¹¹⁷

Each design suffered different drawbacks. While muskets with superposed loads were mechanically simpler than the alternatives, roman-candle style bursts of fire had limited utility on the battlefield and virtually no utility off it. Worse, superposed load systems were notoriously perilous to the shooter on account of having so much explosive gunpowder packed into a single firearm. If the sequencing between rounds was off, the barrel could explode like a tubular grenade in the shooter’s hands. That is why one expert on these curious weapons declared that “the dread of misfires was reason enough for the lack of sustained enthusiasm for any of the superposed load guns.”¹¹⁸

As for rotating breech mechanisms, they were complex and exceedingly difficult to make well prior to the mid-nineteenth century when moving parts could be built with machine precision. Long-guns festooned with several barrels

116. GREENER *supra* note 106, at 81.

117. For example, see the engraved, walnut, steel, and silver repeating flintlock pistol signed by gunmaker Michele Lorenzoni now in the Metropolitan Museum in New York City. *Repeating Flintlock Pistol*, METMUSEUM.ORG, <https://www.metmuseum.org/art/collection/search/788263> (last visited July 31, 2023).

118. WINANT, *supra* note 21 at 178.

were too heavy and cumbersome to be practical handheld weapons. Early magazine guns demanded an even higher level of craftsmanship to create a perfect seal between the rotating breechblock and the stored powder, lest the combustion in the chamber ignite the magazine. The best, like those made by the Florentine Michele Lorenzoni in the late seventeenth and early eighteenth centuries, minimized these dangers through slow, precise craftsmanship.¹¹⁹ But early magazine guns could still be perilous, even in the hands of expert gunmakers. Lorenzoni's countryman, the famed gunmaker Bartolomeo Girardoni, reportedly lost his left hand in a magazine explosion.¹²⁰

Notwithstanding often brilliant work, then, no repeating firearm design functioned well enough to become militarily and commercially significant before the nineteenth century. These ideas were simply too far ahead of their times. As Greener explained, "the advantages of the repeating principle thus appear to have been observed at an early date, and the inventive genius of the gun-maker would have been equal to producing weapons of the desired type if only the skill and tools of the workman had allowed of a perfect mechanically fitting joint being obtained."¹²¹

To illustrate the point, consider the gun patented by English lawyer James Puckle in 1718. The Puckle Gun has become a fixture in the myth of continuity, invoked frequently in contemporary challenges to assault weapons bans and

119. BROWN, *supra* note 110, at 144-45.

120. For Girardoni's accident, see ELDON G. WOLFF, AIR GUNS 27 (1968).

121. GREENER, *supra* note 116, at 80.

magazine restrictions.¹²² But on closer inspection it exemplifies both just how strange and flawed most examples of early modern repeat-fire weapons really were. Elaborating on what by the early eighteenth century were established rotating breech designs, Puckle devised a clever multi-fire, flintlock ignition gun. It consisted of a long barrel mounted to a tripod, and a set of removable, rotating breeches.¹²³ These breeches had different purposes. One was designed for shooting “grenadoes,” by which Puckle apparently meant shrapnel; one fired standard round balls; and one fired shots cast in the shape of ice-cubes.¹²⁴ Puckle intended the balls to be used on Christians, and the cubes to be used against Muslim Turks.¹²⁵ Needless to say, this was a design that privileged mystical sectarian posturing over battlefield effectiveness (and aerodynamism).

Puckle’s creation had other limitations. The bulky gun required at least two men to carry and position it, making it more like light artillery than a handheld firearm.¹²⁶ Although sometimes misleadingly billed as an early machine-gun, Puckle’s exotic firearm was not self-loading – the user had to reposition the

122. See, e.g., *Duncan v. Becerra*, 970 F.3d 1133, 1147 (9th Cir. 2020), *reh’g en banc granted, opinion vacated*, 988 F.3d 1209 (9th Cir. 2021), and *on reh’g en banc sub nom. Duncan v. Bonta*, 19 F.4th 1087 (9th Cir. 2021), cert. granted, judgment vacated, 213 L. Ed. 2d 1109, 142 S. Ct. 2895 (2022), and vacated and remanded, 49 F.4th 1228 (9th Cir. 2022).

123. CHARLES FFOULKES, *ARMS AND ARMAMENT: AN HISTORICAL SURVEY OF THE WEAPONS OF THE BRITISH ARMY* 83 (1945).

124. *Id.* at 84.

125. *Id.*

126. *Id.* at 85.

breech with a hand crank and then tighten it in-between each round.¹²⁷ Compared to actual machine guns, it had a glacial rate of fire. Once it had discharged its seven cube-loads, for example, the breech had to be removed; each chamber had to be re-loaded with powder, wadding, and shot; the breech had to be carefully re-attached to the gun; and the touchhole of each chamber had to be re-primed as it came into position prior to each shot.¹²⁸ Under serene conditions, a practiced operator would theoretically have been able to fire all seven cube-shots in a chamber in under a minute. But given that an average soldier fired two or three shots a minute from a smoothbore musket, the Puckle Gun hardly represented a sea-change in firearms technology.¹²⁹

Of course, the weapon could only fire seven shots a minute if it worked properly. Charles Ffoulkes, the researcher who re-discovered the Puckle Gun in 1936, had his doubts. Like all rotating breech designs made before the Industrial Revolution, the breech of the Puckle Gun could not be fully gas-proof. In fact, Ffoulkes found the Puckle design even more faulty than others with rotating breeches, because the closeness of the chambers heightened the risk of a chain-

127. *Id.* at 83–84.

128. *Id.* at 84

129. For average rate of musket fire, see HEW STRACHEN, *EUROPEAN ARMIES AND THE CONDUCT OF WAR 17* (1983). Players of the popular video game *Assassins Creed: Rogue* have been introduced to a Puckle Gun more wondrous than even its inventor imagined. *See, e.g., MrDiggity, AC® Rogue Remastered: These Puckle Guns are SLIGHTLY Overpowered for Boarding*, YOUTUBE (June 29, 2020), <https://www.youtube.com/watch?v=PyMFowUics8>.

fire (one charge prematurely igniting the others).¹³⁰ The British military seems to have shared Ffoulkes' skepticism. The inventor formed a company to raise investment around his gun, but it never got off the ground. "Fear not, my friends, this terrible machine," quipped one wry contemporary, "they're only wounded who have shares therein."¹³¹

To be fair to James Puckle, the fundamental material and technological hurdles to manufacturing functional repeating firearms were beyond anyone's solving in the eighteenth century. To be durable, reliable, affordable, and safe enough to achieve popularity, the experimental designs required metallurgical techniques and a level of machine precision unknown until well into the nineteenth century. Not until the advent of these and other breakthroughs (including the adoption of percussion-cap ignition in the 1830s and metallic cartridges in the 1850s) could repeating firearms become practical weapons of mass production, widespread military adoption, and commercial viability.¹³²

Neither hustling arms inventors looking to make a fortune nor military and political leaders hunting for battlefield advantage knew that, of course. Hope sprung eternal, for both groups. That is why numerous historic designs for repeating firearms exist, despite the technical and material limitations that

130. FFOULKES, *supra* note 123, at 83-84.

131. W. Y. CARMAN, A HISTORY OF FIREARMS: FROM EARLIEST TIMES TO 1914 80 (1955); WINANT, *supra* note 21, AT 221.

132. For a summary of the basic technological hurdles and how they were finally overcome in the nineteenth century, see JOSEPH BRADLEY, GUNS FOR THE TSAR: AMERICAN TECHNOLOGY AND THE SMALL ARMS INDUSTRY IN NINETEENTH-CENTURY RUSSIA 12-19 (1990).

prevented any of them from achieving commercial and military relevance or attracting government regulation.

B. Repeating Arms in the Colonies and Early United States

Advances in repeating firearm technology arose in Europe prior to the nineteenth century, and few of these rare weapons left Europe. Very occasionally, however, repeating firearms appear in the documentary record of early America. Two English gunsmiths, trained in the rarified tradition of making repeating firearms, emigrated to Boston in the early eighteenth century. One seems to have brought a magazine firearm with him to Massachusetts and, decades later, advertised it for sale in old age.¹³³ The other made a repeating firearm, probably a superposed load design, that Boston's authorities demonstrated to impress Indigenous dignitaries in the early 1720s.¹³⁴ A 1736 estate sale in South Carolina included "a six times repeating Gun."¹³⁵

133. David S. Weaver & Brian Godwin, "John Cookson, Gunmaker," 19:1 *ARMS & ARMOUR* 43, 55 (January 2, 2022). Cookson's advertisement appeared in the *Boston Gazette*, April 12, 1756.

134. For John Pim's London roots, see BROWN, *supra* note 110, at 255, 257. Brown also describes an ingenious .52 caliber snaphaunce revolver inscribed with Pim's name. At least one other expert doubts the authenticity of that inscription. See Baxter, *supra* note 110, at 153. Baxter also thinks Pim is the same person that, as a boy named "Pym," was apprenticed to a London gunmaker in 1679. See Baxter, *supra* note 110, at 153.

135. Kevin Sweeney, "In Search of Repeating Firearms in Eighteenth Century America," *Second Thoughts Blog*, July 26, 2023, <https://firearmslaw.duke.edu/2023/07/in-search-of-repeating-firearms-in-eighteenth-century-america>.

Gun rights activists have been particularly keen to find examples from the founding era, in hopes of substantiating their oft-repeated claim that “firearms capable of firing multiple rounds without reloading were well known to the founding generation.”¹³⁶ The two examples that they most frequently invoke are a repeater associated with Joseph Belton and a Girardoni air rifle.¹³⁷ Put into proper context, these two guns make it clear that the founding generation could only have thought of repeating firearms as flawed curios.

Philadelphian Joseph Belton saw an opportunity for military contracts with the outbreak of the American Revolution. In 1775 he pitched an idea for a

136. Amended Complaint of July 1, 2022 (Dkt.# 42), Sullivan et al., v. Ferguson, No. 3:22-cv-05403-DGE (W.D. Wash. Oct. 18, 2022), available at <https://storage.courtlistener.com/recap/gov.uscourts.wawd.310742/gov.uscourts.wawd.310742.42.0.pdf>.

137. A brief search on Westlaw brings back two judicial opinions and twelve briefs, mostly from amici curiae, that reference the Belton rifle as an example of a functional repeating firearm. *See, e.g.*, *Ass’n of New Jersey Rifle & Pistol Clubs Inc. v. Att’y Gen. New Jersey*, 974 F.3d 237, 255 (3d Cir. 2020), *cert. granted, judgment vacated sub nom. Ass’n of New Jersey Rifle & Pistol Clubs, Inc. v. Bruck*, 213 L. Ed. 2d 1108, 142 S. Ct. 2894 (2022); Brief of Second Amendment Foundation and Millennial Policy Center as Amici Curiae, *Rocky Mountain Gun Owners v. Hickenlooper*, 2018 WL 11269710 (Colo.), at 20. [<https://perma.cc/PC2J-B2VH>] A similar search on Westlaw brings back three judicial opinions and thirty-five briefs, mostly from amici curiae, that reference the Girardoni (sometimes spelled “Girandoni”) air rifle as an example of a functional repeating firearm. *See, e.g.*, *Duncan v. Bonta*, 19 F.4th 1087 (9th Cir. 2021), *cert. granted, judgment vacated*, 213 L. Ed. 2d 1109, 142 S. Ct. 2895 (2022), and *vacated and remanded*, 49 F.4th 1228 (9th Cir. 2022); Brief of National African American Gun Association, Inc. as Amicus Curiae, *Worman v. Healey*, 2018 WL 7049897 (U.S.), at 11 n. 8. [<https://perma.cc/SZA8-K2TF>]

submersible with cannons that he claimed would sink British ships. Benjamin Franklin recommended Belton and his submersible idea to George Washington, but still the proposal went nowhere.¹³⁸ In 1777, Belton tried another approach. He informed the Continental Congress that he had “discover’d an improvement, in the use of Small Armes . . . which I have kept as yet a secret.”¹³⁹ Surviving correspondence makes it clear that Belton was pitching a superposed load design. Intrigued, Congress placed an order for 100 of these “new improved” guns. Congress cancelled the order a few days after extending it, however, and refused to ever reconsider notwithstanding Belton’s increasingly desperate appeals.¹⁴⁰

138. See Letter from Benjamin Franklin to Silas Deane (Aug. 27, 1775), and editors’ footnote No. 2, *available at* <https://founders.archives.gov/?q=joseph%20belton&s=1111311111%20&sa=&r=1&sr=> (last visited Jan. 25, 2023); Letter from Benjamin Franklin to George Washington (July 22, 1776), and editors’ footnote No. 1, *available at* <https://founders.archives.gov/?q=joseph%20belton&s=1111311111&sa=&r=3&sr=> (last visited Jan. 27, 2023); Letter from George Washington to Benjamin Franklin (July 30, 1776), *available at* <https://founders.archives.gov/?q=joseph%20belton&s=1111311111&sa=&r=4&sr=> (last visited Jan. 27, 2023).

139. See Joseph Belton to the Continental Congress, Philadelphia, April 11, 1777. This letter and the rest of the relevant correspondence has been digitized and transcribed on Wikisource. *Correspondence between John Belton and the Continental Congress (1777)*, WIKISOURCE.ORG, *available at* https://en.wikisource.org/wiki/Correspondence_between_John_Belton_and_the_Continental_Congress (last visited Jan. 27, 2023). [<https://perma.cc/JNU8-NERW>].

140. *Id.*

Congress's failure to adopt Belton's weapon is an obvious problem for those arguing that the weapon represented a meaningful breakthrough in firearms technology. Why would insurgents risking their lives and fortunes scorn a major advance in weaponry? Proponents of the myth of continuity attempt to get around this problem by explaining that Belton was charging prices "which the Continental Congress could not afford."¹⁴¹ It is true that Belton requested £1000 from each state, a significant sum at the time (though hastily reduced to £500 the moment Congress balked).¹⁴² But the Continental Congress issued about £44.5 million in currency during the Revolutionary War.¹⁴³ It clearly had the wherewithal to hire Belton if it had wanted to. Congress could and would have paid his price *if* it believed he and his guns would deliver a meaningful military

141. See David B. Kopel & Joseph Greenlee, *The History of Bans on Types of Arms Before 1900*, 50 J. LEGIS __, 39 (forthcoming 2024).

142. See Letter from Joseph Belton to Congress (May 7, 1777), available at https://en.wikisource.org/wiki/Correspondence_between_John_Belton_and_the_Continental_Congress (last visited Feb. 4, 2023). When Congress refused, Belton cut his price in half, to no avail. See Letter from Joseph Belton to John Hancock (May 8, 1777), available at https://en.wikisource.org/wiki/Correspondence_between_John_Belton_and_the_Continental_Congress (last visited Feb. 4, 2023).

143. For wartime currency, see Stephen Mihm, *Funding the Revolution: Monetary and Fiscal Policy in Eighteenth-Century America*, in THE OXFORD HANDBOOK OF THE AMERICAN REVOLUTION 334 (Jane Kamensky & Edward G. Gray eds., 2013). MEASURINGWORTH.COM provides conversion estimates to historical currencies, but not before 1791. The £44.5 million figure is its average estimate of \$200 million converted to British sterling as of 1791. See <https://www.measuringworth.com/calculators/exchange/> (last visited July 10, 2023).

advantage. That delegates evidently did not believe this tells us much about the quality of the arms on offer.

Given the technical challenges afflicting repeat-fire gunpowder weapons, it is little wonder that one of the only repeating weapons from the period that enjoyed even limited, experimental military use in a European army was not a true firearm, but rather an airgun. As with other categories of repeaters, airguns had been produced since at least the sixteenth century and probably earlier.¹⁴⁴ While most airguns were single-shot weapons, using highly compressed air as the propellant, rather than gunpowder, eliminated many of the problems that had long bedeviled the quest for repeating arms.¹⁴⁵ It was a relatively simple enhancement to attach a fixed tubular magazine to the side or underside of the airgun's barrel, and to feed balls into the chamber (using gravity, by tipping the barrel up), one-by-one with a lever. The shooter could then fire as many rounds as the magazine would hold before needing to reload the fixed magazine. Depending on the size and pressure of the compressed air reservoir, the shooter might be able to empty the magazine more than once before needing to refill the propellant. Air-rifles had numerous advantages over gunpowder weapons. In addition to the ease with which they were configured for multi-fire, they required no gunpowder (not always easy to obtain), and the absence of gunpowder meant

144. WOLFF, *supra* note 120, at 4–13.

145. *Id.* at 27–28.

that their bores required little cleaning and that shots produced no smoke and little noise.¹⁴⁶

The most impressive airgun of the period was developed in Vienna by one-handed Bartolomeo Girardoni, shortly after the American Revolution. Following his gruesome accident working with magazine firearms, he decided he had enough of gunpowder weapons and transitioned to airguns. Girardoni made improvements to existing designs, most especially an elegant breechblock mechanism for chambering balls from the attached magazine.¹⁴⁷ Multi-shot air-rifles of his design saw limited service in the Austrian military between the 1790s and 1810s, a special corps of hundreds of snipers being equipped with the weapon.¹⁴⁸

Nonetheless, airguns had major drawbacks that consigned them to the status of military oddities and niche consumer items, notwithstanding their significant advantages. Period technology made it difficult to achieve air pressures commensurate with black powder, so power was one concern. As an article in the *Sportsman's Cyclopedia* from 1831 put it, “for buck or deer shooting the best air gun is not sufficiently powerful; for rook shooting it is very well calculated.”¹⁴⁹ The weapons were time-consuming and onerous to prime.

146. *Id.* at 25–30.

147. For background on his air rifle, see the essay by Robert D. Beeman, *New Evidence on the Lewis and Clark Air Rifle – an “Assault Rifle” of 1803*, BEEMANS.NET, <https://www.beemans.net/lewis-assault-rifle.htm> (last visited July 31, 2023).

148. WOLFF, *supra* note 120, at 22, 29–30.

149. Cited in *id.* at 22.

Girardoni's air-rifles had to be pumped fifteen-hundred times to fully pressurize one reservoir.¹⁵⁰ Cannisters of pressurized air can explode, much like early gunpowder magazines, producing grenade-like effects.¹⁵¹ The craft and expense involved in building reliable airguns greatly exceeded even the considerable skill required to build fine firearms. Air-tight reservoirs, pumps, valve housings and valve seats had to be made with a degree of precision unknown in most manufactured goods from the era. These material and technical demands greatly increased costs.¹⁵² According to one of the few book-length studies of historic airguns, the high cost of these arms and their various limitations made them “a novelty used by people of wealth who had sufficient funds to go in for the unusual.”¹⁵³

For all these reasons, airguns were exceedingly rare in eighteenth-century America. Indeed, they were so rare that owners could charge people to see them. Two months after the Second Amendment was ratified, a museum proprietor in New York named Gardiner Baker took out ads in the city's newspapers to promote his latest acquisition: “an air gun, made by a young man, a native of

150. Austrian military snipers reportedly traveled with numerous pressurized air reservoirs, to speed recharging. *Id.* at 29–30.

151. *Id.* at 31–32.

152. *Id.* at 30–32.

153. *Id.* at 31. See also John Paul Jarvis, *The Girardoni Air Rifle: Deadly Under Pressure*, GUNS.COM (Mar. 15, 2011), <https://www.guns.com/news/2011/03/15/the-girardoni-air-rifle-deadly-under-pressure> (last saved by *Internet Archive* on Sept. 6, 2023).

Rhode-Island.”¹⁵⁴ According to its new owner, the gun would “do execution twenty times, without renewing the charge,” suggesting that it was a single-shot weapon capable of firing twenty individually loaded rounds before needing to renew the compressed air supply. Baker explained that he had purchased the gun “at a very considerable price, with a view eventually to make it the property of the American museum.” To recoup his investment, he announced that he would “exhibit it to the examination of all persons desirous of viewing it, and of discharging a shot, for which they shall pay six-pence.”¹⁵⁵

Meriwether Lewis brought what seems to have been a Girardoni Air Rifle on his famous expedition across the continent with William Clark for a similar purpose.¹⁵⁶ The Corps of Discovery seems never to have fired the gun offensively or defensively. None of the more than twenty references to the air-rifle in the expedition’s journals involve combat.¹⁵⁷ Instead, like virtually every other repeating firearm from that period, this unusual weapon was a showpiece. Lewis brought the air-rifle on the expedition precisely because it was so uncommon. He hoped a gun that fired multiple times without powder, flash, smoke, or much noise would impress Native People. It did. He happily reported

154. *To the Curious*, THE WEEKLY MUSEUM (Feb. 11, 1792) (article on file with the author).

155. *Id.*

156. For a discussion of the air gun and the expedition, see JIM GARRY, WEAPONS OF THE LEWIS AND CLARK EXPEDITION 91–103 (2012).

157. The journals are searchable online at [HTTPS://LEWISANDCLARKJOURNALS.UNL.EDU/](https://lewisandclarkjournals.unl.edu/)

that it “excited great astonishment,” which is itself a testament to the weapon’s novelty.¹⁵⁸

Indigenous people were not the only ones fascinated with this exotic airgun. At the very outset of the expedition near Pittsburgh, “some gentlemen” asked for a demonstration. Lewis obliged, firing the airgun seven times. But when one of the men took hold of the weapon, he accidentally squeezed off an eighth shot that hit a woman forty yards away, in the head. To his great relief, Lewis found the woman’s “wound by no means mortal or even dangerous.”¹⁵⁹ That the gun’s eighth round inflicted only a minor flesh wound at forty yards suggests it lost pressure rapidly.¹⁶⁰

Airguns remained rare curiosities elsewhere in the U.S. in the early nineteenth century. Just a few months before Lewis and Clark set out, the museum in Connecticut’s State House advertised an airgun as one of its three prime attractions (the others being a wampum cloak and a sixteen-foot-long snakeskin from South America).¹⁶¹ Despite the frequency with which these

158. Journal Entry by Meriwether Lewis on April 18, 1806, JOURNALS OF THE LEWIS & CLARK EXPEDITION, <https://lewisandclarkjournals.unl.edu/item/lc.jrn.1806-04-18#lc.jrn.1806-04-18.01> (last visited Feb. 4, 2023).

159. Journal Entry by Meriwether Lewis on August 30, 1803, JOURNALS OF THE LEWIS & CLARK EXPEDITION, <https://lewisandclarkjournals.unl.edu/item/lc.mult.1803-08-30kloefkorn> (last visited Feb. 4, 2023).

160. *Id.*

161. See, for example, James Steward’s advertisement for the attraction. *Museum*, THE CONNECTICUT COURANT (Apr. 27, 1803) (advertisement on file with the author).

weapons are invoked by gun rights activists, in no sense were they commonly used at the time in crime, warfare, self-defense, or anything else.

In fifteen years studying the international arms trade in the Age of Revolutions (1763-1825), I have never come across any evidence in primary sources that repeating firearms were anything other than exotic curios in this era. Few alive at the time had ever laid eyes on one. Single-shot muzzle-loaders remained the only handheld firearms that the vast majority of people ever owned, used, or encountered in the late-eighteenth and early-nineteenth centuries.

In sum, notwithstanding the great desire of states for military advantage, the great incentives that they held out for inventors who could deliver it, and the centuries of skillful effort that went into chasing those incentives, repeating firearms remained militarily and commercially irrelevant throughout the eighteenth and early nineteenth centuries. On those very rare occasions when such weapons were deployed by European militaries, they were issued to dozens or (in the case of the Girardoni rifle) hundreds of men in wars involving hundreds of thousands or even millions of combatants. Commercially, the best (and most expensive) examples of repeating firearms circulated among a paper-thin slice of Europe's political and economic elite. For almost everyone else at the time, these guns were unknown and irrelevant. That fact ought to be borne in mind when assessing the absence of laws regulating repeating firearms and ammunition capacity at the time of the Second Amendment's adoption.

C. *Firearm Regulation in Early America (Or, Why Did the Founders Not Regulate Repeating Firearms or Ammunition Capacity?)*

We have an incomplete understanding of the history of firearm regulation in the United States. Electronically searchable compendia of historic laws have only captured part of our legal tradition. They are particularly lacking when it comes to local ordinances, where (as today) much regulation and enforcement originated.¹⁶² Still, even the incomplete record reveals a rich regulatory tradition in pursuit of public safety – safety as authorities at the time defined it, that is.

Lawmakers in British North America and in the early United States passed hundreds of laws that directly or indirectly regulated firearms prior to 1791. Sometimes these concerns look familiar to our own times. For instance, states passed laws regulating the carrying¹⁶³ or brandishing¹⁶⁴ of particular weapons;

162. Blocher & Ruben, *supra* note 31, at 158.

163. *See, e.g.*, An Act Forbidding and Punishing Affrays, ch. 49, 1786 Va. Acts 35 (1786), available at <https://firearmslaw.duke.edu/laws/1786-va-laws-33-ch-21-an-act-forbidding-and-punishing-affrays/> (last visited June 1, 2023).

164. *See, e.g.*, An Act to Prevent Routs, Riots, and Tumultuous assemblies, and the Evil Consequences Thereof, 1786 Mass. Sess. Laws (1786), available at <https://firearmslaw.duke.edu/laws/1786-mass-sess-laws-an-act-to-prevent-routs-riots-and-tumultuous-assemblies-and-the-evil-consequences-thereof/> (last visited June 1, 2023).

forbidding discharge in sensitive times¹⁶⁵ and places;¹⁶⁶ and sentence enhancements for crimes committed with arms.¹⁶⁷ Regulations of all these types were enacted in the decade before the ratification of the Second Amendment, and they reflect public safety concerns familiar to twenty-first century Americans.

But, as explained above, the technological limitations of muzzle-loading flintlock firearms meant that regulating gun violence between subjects (or, after independence, citizens) was not remotely as significant a policy concern in the late-eighteenth century as it is today. Instead, most of the era's firearms-relevant legislation addressed public safety concerns that are thankfully alien to our own times. The hundreds of militia laws on the books directly or indirectly follow

165. See, e.g., An Act to Prevent Firing of Guns and Other Firearms within this State, on Certain Days Therein Mentioned, ch. 81, 1784–1785 N.Y. Laws 152 (1785), available at <https://firearmslaw.duke.edu/laws/1784-1785-n-y-laws-152-an-act-to-prevent-firing-of-guns-and-other-firearms-within-this-state-on-certain-days-therein-mentioned-ch-81/> (last visited June 1, 2023).

166. See the 1788 Ohio Law 42, “An Act for Suppressing and Prohibiting Every Species of Gaming for Money or Other Property, and for Making Void All Contracts and Payments Made in Furtherance Thereof, ch. 13, § 4, 1788–1801 Ohio Laws 42 (1788), available at <https://firearmslaw.duke.edu/laws/1788-1801-ohio-laws-42-an-act-for-suppressing-and-prohibiting-every-species-of-gaming-for-money-or-other-property-and-for-making-void-all-contracts-and-payments-made-in-furtherance-thereof-ch-13/> (last visited June 1, 2023).

167. See, e.g., the 1788 Ohio Laws 20, A Law Respecting Crimes and Punishments . . . , ch. 6, 1788_1801 Ohio Laws 20 (1788), available at <https://firearmslaw.duke.edu/laws/1788-1801-ohio-laws-20-a-law-respecting-crimes-and-punishments-ch-6/> (last visited June 1, 2023).

from the imperatives of slavery, settler colonialism, and inter-imperial competition.

White authorities also passed numerous laws aimed at controlling the access that Indigenous and enslaved people had to arms and ammunition.¹⁶⁸ Courts have painful decisions to make about these discriminatory laws.¹⁶⁹ They are manifestly bigoted and hateful, and there is something not just objectionable but degrading about giving them any form of deference today. One option, then, is to simply exclude them from consideration of our nation's tradition of firearms regulation.¹⁷⁰ But these ugly laws are an inescapable part of that tradition.¹⁷¹ Racism and white supremacy are too marbled through our history, and too fundamental to explaining it, for courts to indulge the notion that we can ignore law touched by bigotry and hope to have anything coherent left afterward.¹⁷²

168. The Repository of Historic Gun Laws at the Duke Center for Firearms Law has an incomplete sampling of such “race and slavery based laws”: *Search Results: Race and Slavery Based*, DUKE CTR. FOR FIREARMS LAWS, https://firearmslaw.duke.edu/repository/search-results/?_sft_subjects=race-and-slavery-based (last visited June 1, 2023).

169. The dilemma is sensitively described, with examples of differing solutions, in Jacob D. Charles, *On Sordid Sources in Second Amendment Litigation*, 76 STAN. L. REV. ONLINE (Aug., 2023).

170. *Id.* at 36-42.

171. Adam Winkler, *Racist Gun Laws and the Second Amendment*, 135:8 HARVARD L. REV. FORUM (2021-2022).

172. In a 2019 gun-case before the 7th Circuit, then-Judge Amy Coney Barrett considered historic race-based gun laws in an opinion that previewed the sort of analysis she would endorse in *Rahimi* five years later: one that prioritizes the principles underpinning regulatory tradition more than the

Contrary to the claims of gun-rights activists, historic legislation did not target Black and Native people because gun regulation was somehow inherently racist.¹⁷³ Legislation targeted Black and Native people because early American society was racist.

Crucially, founding-era legislatures clearly believed they had the authority to disarm white people, too. English precedents for the disarming of Catholics, insurgents, “disaffected persons,” and others judged “dangerous to the peace of

particularities of individual laws. While acknowledging that race-based gun laws would of course be unconstitutional today, Barrett abstracted from them the more general and historically undeniable principle that “founding-era legislatures categorically disarmed groups whom they judged to be a threat to public safety.” See her dissent in *Kanter v. Barr*, 919 F.3d 437, 458 (7th Cir. 2019). For thoughtful analysis of this point, see Joseph Blocher & Catie Carberry, *Historical Gun Laws Targeting ‘Dangerous’ Groups and Outsiders*, in *NEW HISTORIES OF GUN RIGHTS AND REGULATION: ESSAYS ON THE PLACE OF GUNS IN AMERICAN LAW AND SOCIETY* 131–48 (Joseph Blocher, Jacob D. Charles, & Darrell A. H. Miller eds., 2023); Charles, *supra* note 169, at 5. On June 2, 2023, an all-Republican appointed panel for the Eighth Circuit adopted this approach to reject a Second Amendment challenge to the felon-in-possession law. See *United States v. Edell Jackson*, No. 22-2870 (8th Cir. 2023).

173. Gun-rights advocates have long argued that the racist character of much early American gun law disqualifies it from relevance in contemporary legal battles. See e.g., Clayton E. Cramer, *The Racist Roots of Gun Control*, 4 KAN. J.L. & PUB. POL’Y 17 (1995); David Kopel & Joseph Greenlee, *The Racist Origin of Gun Control Laws*, THE HILL (Aug. 22, 2017), <https://thehill.com/blogs/pundits-blog/civil-rights/347324-the-racist-origin-of-gun-control-laws/> [https://perma.cc/CYD6-B4P8]. For an illuminating consideration of the history of race-specific gun law and how it has been instrumentalized by gun-rights activists, see Patrick J. Charles, *Racist History and the Second Amendment: A Critical Commentary*, 43 CARDOZO L. REV. 1343 (2022).

the kingdom” shaped practice in the colonies.¹⁷⁴ Seventeenth-century Massachusetts disarmed religious dissidents, for example. Maryland, Virginia, and Pennsylvania all passed laws to disarm Catholics during the Seven Years’ War.¹⁷⁵

The scope of the state’s perceived authority to disarm came into sharp focus in the early years of the American Revolution. Patriot committees began taking guns away from white political opponents in New York as early as the fall of 1775.¹⁷⁶ On March 14, 1776, the Continental Congress urged counterparts across the country to do likewise; to “cause all persons to be disarmed within their respective colonies, who are notoriously disaffected to the cause of America, or who have not associated, and shall refuse to associate, to defend, by arms, these United Colonies.”¹⁷⁷ In addition to New York, loyalists faced disarmament in

174. Joseph G. S. Greenlee, *The Historical Justification for Prohibiting Dangerous Persons from Possessing Arms* 20, WYOMING L. REV., 257-61 (2020).

175. *Id.* at 263–64.

176. Thomas Verenna, *Disarming the Disaffected*, JOURNAL OF THE AMERICAN REVOLUTION (Aug. 26, 2014), <https://allthingsliberty.com/2014/08/disarming-the-disaffected/>.

177. See Congressional Resolutions of Tuesday, Jan. 2, 1776, in UNITED STATES CONTINENTAL CONGRESS, JOURNALS OF THE CONTINENTAL CONGRESS, 1774-1789, EDITED FROM THE ORIGINAL RECORDS IN THE LIBRARY OF CONGRESS, VOL. 4 205 (Worthington Chauncey Ford ed., 1904).

Connecticut¹⁷⁸, North Carolina¹⁷⁹, Delaware¹⁸⁰, Georgia,¹⁸¹ New Hampshire¹⁸², New Jersey¹⁸³, South Carolina¹⁸⁴, Pennsylvania¹⁸⁵, Massachusetts¹⁸⁶, Maryland¹⁸⁷, and Virginia.¹⁸⁸

178. *An Act for restraining and punishing Persons who are inimical to the Liberties of this and the rest of the United Colonies, Connecticut Assembly, Dec. 14, 1775*, in AMERICAN ARCHIVES: CONSISTING OF A COLLECTION OF AUTHENTICK RECORDS, STATE PAPERS, DEBATES, AND LETTERS AND OTHER NOTICES OF PUBLICK AFFAIRS, FOURTH SERIES, VOL. 4 270–72 (M. St. Claire Clarke & Peter Force eds., 1837) [hereinafter AMERICAN ARCHIVES].

179. *Extract of a Letter from the Provincial Council of North Carolina, March 5, 1776*, in AMERICAN ARCHIVES, VOL. 5, *supra* note 178, at 59, 67.

180. “General Orders for the Delaware State,” in DELAWARE ARCHIVES: REVOLUTIONARY WAR IN THREE VOLUMES, VOL 3 1049 (1919). See also resolutions for Thursday, July 3, 1777, in UNITED STATES CONTINENTAL CONGRESS, *supra* note 177, VOL. 8, 529-30.

181. “Special meeting of the Council of Safety,” Jan 18, 1776, in ALLEN DANIEL CANDLER, ED., THE REVOLUTIONARY RECORDS OF THE STATE OF GEORGIA 101 (1908).

182. OTIS GRANT HAMMOND, THE TORIES OF NEW HAMPSHIRE IN THE WAR OF THE REVOLUTION 19 (1917).

183. *July 1, All persons who refuse to bear arms to be disarmed*, in AMERICAN ARCHIVES, VOL 6, *supra* note 160, at 1634.

184. *South Carolina Congress, March 13, 1776*, in AMERICAN ARCHIVES, VOL 5, *supra* note 178, at 592. South Carolina went further, ordering that if anyone previously disarmed shall arm himself again, that person would be incarcerated.

185. *See Resolves of the Pennsylvania Assembly for April 6, 1776*, in AMERICAN ARCHIVES, VOL 5, *supra* note 178, at 714.

186. *See Notes from the Massachusetts Council, May 1, 1776*, in AMERICAN ARCHIVES, VOL 5, *supra* note 178, at 1301.

Short of weapons for the Continental Army, George Washington argued for an even broader confiscation program in at least one county, targeting not only men actively fighting for the crown but even those who “claimed the Right of remaining Neuter.”¹⁸⁹ Indeed, patriot forces were so desperate for guns early in the war that they sometimes took them from whites regardless of political affiliation. In early 1776, Georgia dispatched men to search the homes of all “overseers and negroes” throughout the colony, and even those across the border in southern South Carolina, to seize all guns and ammunition they found, leaving behind only “one gun and thirteen cartridges for each overseer.”¹⁹⁰

From New Hampshire in the north to Georgia in the south, in other words, guns were taken away from white Americans in the name of public safety—public safety as the founding generation defined it. The emergency of the Revolution obviously made it easier for lawmakers to justify taking guns from white people, but the conviction that the state had regulatory authority to do so neither began with the Revolution nor ended with it. In 1787, in the aftermath of the uprising known

187. See *Notes from the Baltimore County Committee, March 8, 1776*, in AMERICAN ARCHIVES, VOL 5, *supra* note 178, at 1509.

188. *Extracts from the Votes of the Assembly [VA], April 6, 1776*, in AMERICAN ARCHIVES, VOL 6, *supra* note 178, at 881.

189. George Washington to the Pennsylvania Council of Safety (Dec. 15, 1776), at <https://founders.archives.gov/documents/Washington/03-07-02-0276> [<https://perma.cc/3USK-3REQ>].

190. Candler, *supra* note 181, at 92.

as Shay's Rebellion, the Massachusetts Assembly passed a law disarming not only persons who took up arms against the state, but also those "who have given or may hereafter give them counsel, aid, comfort or support, voluntarily, with intent to encourage the opposition to the government."¹⁹¹

In sum, early America had a diverse, extensive, and sometimes deeply intrusive tradition of regulating firearms in the name of public safety. This tradition was often but certainly not always directed at racial outsiders. Why, then, do we find no period laws regulating repeating firearms or restricting the size of firearm magazines?

Proponents of the myth of continuity would have us believe that this regulatory restraint emerged from ideology; that (a) the founding generation were intimately familiar with repeating firearms, including those capable of firing more than ten rounds without reloading, but (b) believed they lacked the regulatory authority to restrict them. Neither proposition is convincing. As I explain in the previous section, the founding generation could only have conceived of repeating arms as flawed curiosities. Like their counterparts today, lawmakers from early America focused their efforts on actual social phenomena, not the possible implications of experimental technologies. They did not spend their time scouring European publications for news about the cutting edge of firearms technology or hold lengthy debates about the social implications of

191. See Massachusetts Act of Feb. 16, 1787, ch. VI, 1787 MASS ACTS 555 (1787), available at <https://firearmslaw.duke.edu/laws/act-of-feb-16-1787-ch-vi-1787-mass-acts-555/> (last visited June 1, 2023).

weapons that few of them had ever seen, and that were not known to have ever been militarily or commercially consequential anywhere in the world. The simplest and most accurate explanation for the absence of regulation, therefore, is that repeating firearms and high-capacity weapons were much too rare and too irrelevant to public safety to attract regulatory attention in 1791.

D. Nineteenth-Century Breakthroughs in Repeating Firearms

Firearms technology would undergo huge changes after 1791. Advances in metallurgy, machine tooling, and mass-production associated with the Industrial Revolution enabled gifted firearms innovators and engineers to finally overcome many of the challenges that had frustrated the quest for reliable repeat fire in earlier centuries. New innovations built on one another, such that the nineteenth century became the most dynamic era in the history of firearms technology. Nonetheless, this age of breakneck innovation had its limits – limits obscured in recent court cases by purveyors of the myth of continuity. As I explain below, reliable hand-held arms with capacities greater than ten rounds remained exceedingly rare in the United States even when the Fourteenth Amendment was ratified in 1868.

1. Repeat-Fire Pistols

Some American gunsmiths kept experimenting with superposed load designs in the decades after the Second Amendment's ratification, to little

effect.¹⁹² But more lasting changes in firearms technology were underway. One of the most important was the development of the percussion-cap ignition system. Around the turn of the century, European chemists developed a new class of highly explosive compounds, dubbed fulminates. Though the potential military applications of these compounds were tantalizing, early experiments demonstrated that they were much too powerful to be used in firearms or artillery as an alternative propellant to gunpowder.¹⁹³ In 1805, Scotsman Alexander Forsyth had the insight that while fulminates could not yet be used for propulsion, in very small quantities they could be used for ignition. Others soon improved on his idea. By the 1810s, multiple inventors were developing “percussion caps”—small, sealed caps (usually made of copper) filled with fulminate.¹⁹⁴

It was a simple matter to change gun locks to accommodate the new ignition. The “hammer” of the venerable flintlock (the rotating arm topped with a vice and flint) was redesigned as a rotating arm topped with a small flat surface (now actually looking like a tiny hammer). Rather than a pan filled with priming powder, the newly designed hammer would fall upon an iron nipple topped with a percussion cap. The blow would ignite the fulminate, which would in turn

192. See Andrew Fagal, *The Promise of American Repeating Weapons, 1791-1821*, AGE OF REVOLUTIONS (Oct. 20, 2016), <https://ageofrevolutions.com/2016/10/20/the-promise-of-american-repeating-weapons-1791-1821/>.

193. CARMAN, *supra* note 131, at 162, 176.

194. *Id.* at 176–77.

ignite the main gunpowder charge inside the barrel. Percussion caps were inexpensive to mass produce, and far more reliable than flints as a source of ignition. Over the next few decades, militaries around the world would convert their stockpiles of firearms from flintlocks to percussion locks.¹⁹⁵

The advent of percussion cap ignition opened the way for reliable repeating pistols. Relieved of cumbersome hammer-vices, flints, and priming pans filled with loose powder, arms designers saw a path to using the old ideas of multiple, rotating barrels or rotating breeches to make practical weapons for the first time.¹⁹⁶ In decades prior, such designs would have still faced severe manufacturing obstacles to large-scale production because it was so difficult to make precision component parts by hand. But by the 1830s, Springfield Armory and some of its biggest contractors had become world-leaders in the use of automatic milling machines to produce parts so uniform as to be interchangeable. This “American system of manufacture,” as the rest of the world would soon call it, combined with other advances in metallurgy and machine tooling made it possible both to build complex arms from nearly identical component parts, and to manufacture them at greater speed and less cost than ever before. These

195. DANIEL R. HEADRICK, *THE TOOLS OF EMPIRE: TECHNOLOGY AND EUROPEAN IMPERIALISM IN THE NINETEENTH CENTURY* 85-87 (1981).

196. HERBERT G. HOuze, *SAMUEL COLT: ARMS, ART, AND INVENTION* 24 (2006)

changes first became visible in the firearms market with the advent of affordable, reliable, mass-produced single-shot percussion-cap pistols.¹⁹⁷

By the 1830s, two types of repeating pistols were entering the market alongside these simpler firearms. The first type, skillfully refined and aggressively patented by the inventor Samuel Colt, featured a single barrel with a multi-chambered, rotating breech. Percussion caps were affixed to the rear of each chamber in the breech. The chamber rotated mechanically so that the cap affixed to successive chambers would assume position to receive the hammer's blow and ignite the powder inside each chamber.¹⁹⁸ The second type, most associated with gunmaker Ethan Allen, featured three or more barrels that rotated around an axis (either manually or mechanically), the charge for each barrel ignited by a separate percussion cap. Also referred to as "revolvers" early on, these arms eventually came to be known as "pepperboxes."¹⁹⁹

In an era of emergent industrialization, dramatic population increases, and speedy urbanization, the rapid proliferation of mass-produced single-shot and repeating pistols unsurprisingly led to increases in armed crime. Unlike repeat-fire curiosities in the eighteenth century, in other words, pepperboxes and revolvers contributed to actual societal concerns. And these societal concerns

197. WILLIAM HARDY MCNEILL, *THE PURSUIT OF POWER: TECHNOLOGY, ARMED FORCE, AND SOCIETY SINCE A.D. 1000* 233-34 (1982). *See also* MERRITT ROE SMITH, *HARPERS FERRY ARMORY AND THE NEW TECHNOLOGY: THE CHALLENGE OF CHANGE* 219-51 (1977).

198. HOUZE, *supra* note 196, at 37-53.

199. For pepperboxes and revolvers, see LOUIS A. GARAVAGLIA & CHARLES G. WORMAN, *FIREARMS OF THE AMERICAN WEST: 1803-1865* 95-104, 139-52, 203-20 (1998).

generated legislation. Responding to rising public safety concerns over the increase in gun violence and the proliferation of concealable weapons (repeating pistols as well as single-shot, percussion-cap pistols, bowie knives, and other weapons), lawmakers across the country sought to regulate concealed-carry. Cornell calls this “the first wave of modern-style American gun-control laws.” At least twenty states and territories enacted such laws between the ratifications of the Second and Fourteenth Amendments.²⁰⁰

While they delivered new firepower, pepperboxes and revolvers had two important limitations in this era. The first was capacity. Whether the firearm had rotating chambers or rotating barrels, there were practical design limits to how many shots it could fire from a single loading. Gunmakers occasionally designed versions capable of firing more than ten rounds,²⁰¹ but these were extraordinarily unusual and made in tiny quantities. Guns with too many barrels or chambers became too heavy, clunky, and hard to manage. The vast majority of revolvers and pepperboxes produced in the nineteenth century held seven or fewer rounds.

200. Saul Cornell, *Limits on Armed Travel under Anglo-American Law: Change and Continuity over the Constitutional Longue Durée, 1688-1868*, in *A RIGHT TO BEAR ARMS? THE CONTESTED ROLE OF HISTORY IN CONTEMPORARY DEBATE ON THE SECOND AMENDMENT* 79 (Jennifer Tucker, Barton C. Hacker, & Margaret Vining eds., 2019). For the relevant laws, see <https://firearmslaw.duke.edu/repository-of-historical-gun-laws/advanced-search>, searching for the category “carrying weapons” between 1791-1868. Search performed Apr. 22, 2024. See also Mark Frassetto, *Firearms and Weapons Legislation up to the Early 20th Century* (Jan. 15, 2013), at 20–24, available at <https://ssrn.com/abstract=2200991> (last accessed July 21, 2023).

201. For three examples, see LEWIS WINANT, PEPPERBOX FIREARMS 104, 124, 137 (1952).

Flayderman's Guide to Antique American Firearms and Their Values, now in its 9th edition, is considered the gold standard reference for historic American firearms. That authoritative guide lists only three nineteenth-century revolvers with greater than ten-round capacity: all of them were made in quantities best characterized as “experimental”—probably fewer than three hundred, combined.²⁰²

The second important limitation from mid-nineteenth-century repeating pistols is that they took a very long time to load. To load a chamber of a cap-and-ball revolver, the shooter had to execute five distinct steps. First, fill each chamber with the appropriate measure of gunpowder; second, insert a ball; third, compact the ball into the powder charge with a ramming rod; fourth, cap the chamber with grease to avoid chain-fire (optional but highly recommended); and fifth, attach a percussion cap to each nipple at the back of the chamber. If the revolver had six chambers, it would therefore take thirty steps to fully load it. Pepperboxes had comparably laborious loading procedures. Paper cartridges

202. (1) The Aaron C. Vaughn Double Barrel Revolver, made in the early 1860s and characterized as “one of the most rare and unusual of American percussion revolvers,” held fourteen rounds, total production: twenty or fewer; (2) the John Walch Navy Model 12 Shot Revolver, made in 1859-1860, chambered twelve rounds (six chambers, each with a double load), total production: around 200; (3) the Charles E. Sneider two-cylinder revolver, made in the 1860s, held fourteen rounds (in two, seven-shot cylinders), “Quantity unknown; very limited. Extremely rare.” FLAYDERMAN, *supra* note 114, at 374–75, 514.

containing powder and ball could be used to slightly expedite the process, but reloading could still easily take a minute and half to two minutes or more.²⁰³

These and other limitations of the day have been obscured by gun-rights advocates. Plaintiffs in recent cases have invoked a number of high-capacity pistols from the era, without explaining that these were nearly always experimental arms produced in tiny quantities.²⁰⁴ Few of these weapons did meaningful work in the world. And yet, faulty history and fantasy guns have been leveraged to do real work in our legal system.

At mid-century, American consumers wanting reliable repeating weapons purchased cap-and-ball pepperboxes or revolvers that usually held between three

203. For a demonstration, see Blackie Thomas, *Loading the Percussion Revolver*, YOUTUBE (Feb. 26, 2016), <https://www.youtube.com/watch?v=B84wI2MKZ2s>

204. Consider some of the weapons that plaintiffs in one federal case (*Oregon Firearms Federation v. Kotek*) invoke as examples of the wide variety of functioning, viable, large-capacity pistols supposedly available to U.S. consumers before 1868. These include 24-shot pepperboxes (made only as freakish showpieces); a 21-round Colt revolver, which as far as I can discover Colt never manufactured; the Walch 12-shot Navy revolver, of which only about 200 were ever made; the 42-shot Enoy “Ferris Wheel” pistol, a bizarre experiment, apparently never made beyond prototypes, that would have been far too heavy to hold and aim with one hand; and a 20-round belt-fed chain pistol, a patented design from 1855 that was as intriguing as it was impractical (imagine a bicycle chain hanging eight inches down from the barrel of a revolver). All examples are drawn from Eyre Plaintiffs’ First Amended Complaint at 14-15, *Oregon Firearms Federation et al. v. Tina Kotek et. al.*, 2:22-cv-01815-IM (D. Ore.), which relies on David Kopel, *Magazines over 10 Rounds Were Well-Known to the Founders*, REASON.COM (Feb. 11, 2020), <https://reason.com/volokh/2020/02/11/magazines-over-10-rounds-were-well-known-to-the-founders/>. [<https://perma.cc/3T2C-G55L>]

and seven rounds. In terms of the damage that a single person could inflict with such a firearm (or two), limited shot capacity and lengthy reload times made these weapons very different from today's semiautomatic pistols with detachable, large-capacity magazines. For comparison's sake, consider the handguns used by the mass-murderer in the Virginia Tech massacre on April 6, 2007. Using a Glock 19 and a Walther P22 and equipped with multiple magazines (of 15- and 10-round capacities, respectively) Seung-Hui Cho fired 174 shots in 9 minutes, killing 33 people and wounding 17 others before taking his own life.²⁰⁵ Would-be murderers in the mid-nineteenth century could hardly have conceived of that kind of killing power.

2. *The Slow Spread of the First Viable "Large Capacity" Firearm*

The technological and manufacturing advances that made repeat-fire pistols practical weapons for the first time also enabled new breakthroughs in long arms. Innovations in breech-loading and metallic cartridges proved particularly important and were incorporated into commercially successful rifles starting in the 1860s. Given that the Supreme Court has thus far declined to decide whether judges should focus on 1791 or 1868 when considering Second Amendment arguments, those rifles will continue to figure prominently in firearms cases.²⁰⁶

205. *Background on Pistols Used in Virginia Tech Shooting*, VIOLENCE POL'Y CTR. (Apr. 2007), <https://vpc.org/studies/vatechgunsbackgrounder.pdf>.

206. See *United States v. Ramini*, *supra*, note 10, at footnote 1, p. 8.

The muzzle-loading long arms of the colonial era and early nineteenth century had significant practical disadvantages. There were three main drawbacks to loading a firearm muzzle-first. It was hard to do while lying prone, whereas rising up to reload made one an easier target during combat. Muzzle-loading also made rifles impractical battlefield weapons because they took so long to load. Their lead balls had to be nearly as large as the diameter of the barrel bore if they were to engage the internal grooves (rifling) that gave the round its spin. That meant a shooter had to pound the tight-fitting lead ball down the barrel to the breach – a task that grew increasingly difficult with the accumulation of gunpowder residue. Finally, muzzle-loading made repeat-fire difficult to achieve because the point of loading and exit were the same. Guns loaded at the breech solved all these problems.²⁰⁷

As with so many other innovative designs, breech-loading was a very old concept. But such weapons were exceedingly difficult to build prior to the Industrial Revolution, mainly because it was so hard to make the breech accessible but also sufficiently sealable to contain explosive gases. Solutions of varying quality arose to address this problem in the first half of the nineteenth century. In the U.S. alone, inventors patented 135 breech-loading longarm designs between 1811-1860.²⁰⁸

Metallic cartridges represented another breakthrough. Soldiers, especially, had used paper cartridges of powder and ball for generations. But such cartridges

207. For the “breechloader revolution,” see HEADRICK, *supra* note 195, at 96-104.

208. ALEXANDER ROSE, *AMERICAN RIFLE: A BIOGRAPHY* 105 (2008).

were notoriously delicate: liable to get wet and ruined, and far too fragile to use in any kind of ammunition-feeding device. Once percussion caps came into common use, however, it took little imagination to envision a single, metal object that contained primer, powder, and ball all in one. By the 1850s, inventors began moving from concept to practical application. Within a decade, they realized that in addition to serving as a durable container for primer, powder, and ball, properly designed metallic cartridges could help overcome stubborn limitations with breech-loading, by completely sealing the breech when fired.²⁰⁹

Flawed but clever designs began to appear that combined attached or internal magazines, metallic cartridges, and mechanisms for the chambering of cartridges and ejection of spent cases. This line of innovation culminated in 1860 with the world's first reliable firearm with a greater than ten-shot capacity – the most typical threshold in contemporary lawmaking for the designation “large capacity.” It was developed by Oliver Winchester's New Haven Arms Company.²¹⁰ The “Henry,” named after Winchester's brilliant gunmaker, Benjamin Tyler Henry, was an ingenious breech-loading, lever-action rifle that could fire sixteen rounds without reloading (one in the chamber and fifteen from an attached, tubular magazine). Refinements to the Henry resulted in an even better gun: the Winchester Model 1866.²¹¹

209. HEADRICK, *supra* note 195, at 98.

210. The Spencer Repeating Rifle, also introduced in 1860, was a seven-shot, lever-action rifle.

211. HERBERT G. HOUZE, WINCHESTER REPEATING ARMS COMPANY: ITS HISTORY & DEVELOPMENT FROM 1865 TO 1981 42-46 (1994).

Throughout the 1860s, none of the viable alternatives fired more than ten rounds. Practically speaking, then, Henrys and Winchesters were the only “large-capacity” firearms in circulation in the years surrounding the ratification of the Fourteenth Amendment. That given, these weapons feature prominently in recent court cases. Numbers matter. Plaintiffs and their expert witnesses have been quick to argue that “magazines holding over 10 rounds were commonly possessed already in the 1860s, 130 years before attempts to strictly regulate them would come along.”²¹² It is true that Winchester lever-action rifles would enjoy tremendous commercial success in the late nineteenth century. Given the special importance of the 1868 to contemporary firearms litigation, however, the more relevant question is how many of these weapons were in civilian hands around the time the Fourteenth Amendment was ratified.

Company records reveal there were 74,000 Henrys and Winchester 1866s produced between 1861 and 1871.²¹³ Notwithstanding the Winchester’s ubiquity in Hollywood westerns and, consequently, our national imagination, the huge

212. Complaint for Declaratory and Injunctive Relief at 21–22, *Harrel v. Raoul*, Case No. 23-cv-141-SPM (S.D. Ill. Jan. 17, 2023) (citing Kopel, *supra* note 102, at 871).

213. Specifically, there were approximately 11,000 Henrys from 1861 – March 1863; 3,000 rifles with King’s improvements, but without company name, from April 1866 – March 1867, and 60,000 M1866s between 1866 – 1871. *See* Letter from Tom Hall (longtime curator of the Winchester Collection) to D. C. Cronin, (May 18, 1951), Box 8, folder 16, Winchester Repeating Arms Company, Office files (MS:20), McCracken Research Library, Cody, WY.

majority of these weapons were exported abroad to foreign militaries.²¹⁴ Subtracting these exports from Winchester's production figures, only 9,094 large-capacity firearms would have been left for domestic consumption in the United States before 1872. More than 90% of those were Henrys purchased by or issued to Union soldiers during the Civil War.²¹⁵ These figures suggest (a) that large-capacity firearms went almost exclusively to military buyers through the early 1870s, and (b) that very few were in the hands of private persons that might have used them in ways that attracted regulatory attention.

The figures also tell us that even a few years after the ratification of the Fourteenth Amendment, large-capacity firearms constituted a tiny percentage of firearms in the United States. How tiny? Some numbers offer perspective. In 1859, on the eve of the Civil War, the U.S. Ordnance Department counted 610,598 shoulder arms in federal arsenals. Combined, the arsenals of individual states likely contained hundreds of thousands more. Domestic producers made 2.5 to 3 million firearms for the Union during the war, while Union purchasing agents imported 1,165,000 European muskets and rifles.²¹⁶ The Confederacy

214. Export numbers from HOUZE, *supra* note 210, at 21 (500 to Bavaria), 36 (1000 for the French forces in Mexico), 51 (1000 to Chile and 5000 to Japan), 59 (400 to the Swiss and 1000 to Juarez's forces in Mexico), 65 (1000 to Brazil), 71 (4406 to France and 20,000 to the Ottomans), 73 (600 to Peru), 75 (30,000 to the Ottomans).

215. For the 8500 Henrys used in the Civil War, see PAMELA HAAG, *THE GUNNING OF AMERICA: BUSINESS AND THE MAKING OF AMERICAN GUN CULTURE* 81 (2016).

216. CARL L. DAVIS, *ARMING THE UNION; SMALL ARMS IN THE CIVIL WAR* 39, 64, 106 (1973).

imported more than a quarter million firearms as well.²¹⁷ The scale of private gun ownership is less documented and therefore less clear, though the U.S. may have had the most heavily armed civilian population in the world after the Civil War. If government arsenals possessed around five million firearms, we can conservatively estimate that the civilian population (more than 31 million at the time) owned at least as many again.²¹⁸ With a very rough estimate of ten million firearms total in the U.S. during the early 1870s, then, fewer than one in a thousand would have been large capacity.

Rare, unreliable, and irrelevant in 1791, repeating firearms capable of firing ten or more rounds only became practical weapons starting in 1860. By the time that the Fourteenth Amendment was ratified eight years later, these firearms remained too few and far between to attract regulatory attention in the United States.

E. The Arrival and Regulation of Automatic and Semiautomatic Firearms

Lever-action rifles with large capacity magazines came into common use in the United States in the generation after the Fourteenth Amendment was ratified. But even then, the firearms Americans owned were very different from the ones at the heart of our regulatory battles today. Because they were relatively slow to load, these weapons were evolutionary rather than revolutionary. State

217. C.L. WEBSTER III, *ENTREPÔT: GOVERNMENT IMPORTS INTO THE CONFEDERATE STATES* 318–20 (2010). Webster notes total CSA imports could have reached half a million.

218. For assumptions behind this estimate, see Amended Report and Declaration of Brian DeLay, at 41, note 84, *Barnett et al., v. Raoul et al.*, No. 3:23-cv-209-SPM (S.D. Ill).

and local governments folded them into a regulatory regime that had been gradually expanding for decades. The spread of automatic and semiautomatic firearms in the early twentieth century, in contrast, was a dramatic technological change that would generate unprecedented societal concerns and strikingly new forms of regulation.

1. *The Era of the Slow-load Large-capacity Firearm, 1860-1900*

The late nineteenth century was an era of slow-load large-capacity firearms. Winchester lever-action rifles and their large-capacity competitors in the last third of the nineteenth century had fixed magazines. Once a fixed magazine was empty, the shooter had to reload each round, one by one. As with Colt revolvers, this round-by-round loading process put a ceiling on the damage a single shooter could inflict on a group of people.²¹⁹ Notwithstanding the success of lever-action large-capacity firearms, that ceiling had not gotten dramatically higher since the 1830s. The magazines of most large-capacity rifles held somewhere between ten to fifteen rounds. A person armed with a pair of seven-shot revolvers could fire fourteen rounds without reloading. Except for the remarkable but expensive and short-lived Evans rifle, then, a shooter from the time with a repeating rifle had roughly the same capabilities as a shooter with two revolvers in his hands. There were trade-offs, of course. The repeating rifle often had somewhat more power

219. Colt transitioned away from the laborious cap and ball system to faster-loading metallic cartridges in the early 1870s, more than a decade after its competitor Smith & Wesson had done so. See JOHN WALTER, *HAND GUN STORY* 52-55 (2008).

and always had more range and accuracy. Pistols were concealable and easier to use in some circumstances. (Neither arm had the power, range, or accuracy of bolt-action, single-shot rifles that the U.S. and the strongest European militaries continued to favor.)²²⁰

In other words, the advent of Winchester repeaters and their imitators did not provoke fundamentally different social problems than those that had been accelerating in the U.S. since the proliferation of revolvers and pepperboxes earlier in the century. The changes were of degree, rather than kind. State and municipal lawmakers continued to regulate firearms in the name of public safety, as they had since the colonial era. The Duke Repository of Historical Gun Laws, an indispensable though incomplete compendium, contains 285 such regulations on carrying weapons enacted between 1865 and 1900.²²¹ By the turn of the century, the majority living in the nation's most populous urban areas – millions of Americans – were subject to one restrictive carry regime or another.²²² Rather than target lever-action rifles, though, lawmakers in this regulatory era usually lumped them together with other kinds of firearms when crafting law. Rifles are invoked alongside other kinds of weapons in Montana's 1879 prohibition against

220. For the U.S. Military, see for example DAVID F. BUTLER, *UNITED STATES FIREARMS: THE FIRST CENTURY, 1776-1875* 152–93 (1971).

221. <https://firearmslaw.duke.edu/repository-of-historical-gun-laws/advanced-search>, [<https://perma.cc/K4F4-3DFN>] searching for the category “carrying weapons” between 1865-1900. Search performed Jan. 27, 2024.

222. Saul Cornell, *The Long Arc of Arms Regulation in Public: From Surety to Permitting*, 1328-1928, 55 U.C. DAVIS L. REV. 2554, 2591–96(2022).

dueling, for instance; in North Carolina's 1869 law against hunting on the Sabbath; in Florida's 1881 law criminalizing the sale of weapons to minors and to those with "unsound minds;" and in unlawful discharge laws in Texas (1871), Wyoming (1879), New Mexico (1886), and Rhode Island (1892).²²³ Exciting new historical scholarship on nineteenth-century firearms regulation has made it increasingly clear that America has a robust tradition of regulating arms in the name of public safety.²²⁴ But we have a great deal left to unearth about the regulatory response to increasing firearms lethality in the second half of the nineteenth century.

223. Frassetto, *supra* note 199, at 39 (Montana), 92 (North Carolina), 76 (Florida); 98 (Texas), 99 (Wyoming), 12 (New Mexico), 97 (Rhode Island). For a nuanced examination of state and local firearm regulations in the second half of the nineteenth century, one attentive to regional difference and minority viewpoints, see PATRICK J. CHARLES, *ARMED IN AMERICA: A HISTORY OF GUN RIGHTS FROM COLONIAL MILITIAS TO CONCEALED CARRY* 122–65 (2018).

224. The historian Brennan Gardner Rivas is producing some of the nation's most exciting and important new scholarship on nineteenth-century firearms regulation. See e.g., Brennan Gardner Rivas, *An Unequal Right to Bear Arms: State Weapons Laws and White Supremacy in Texas, 1836–1900*, 121 *SOUTHWESTERN HIST. Q.* 284 (2017); Brennan Gardner Rivas, *Enforcement of Public Carry Restrictions: Texas as a Case Study Symposium: The 2nd Amendment at the Supreme Court: '700 Years of History' and the Modern Effects of Guns in Public*, 55 *U.C. DAVIS L. REV.* 2603 (2022); Brennan Gardner Rivas, *Perspective: In the Past, Americans Confronted Gun Violence by Taking Action*, *WASHINGTON POST* (June 3, 2022), available at <https://www.washingtonpost.com/outlook/2022/06/03/past-americans-confronted-gun-violence-by-taking-action/>.

The era of slow-load large-capacity firearms was different from our own times. To appreciate how different, it is instructive to consider which handheld firearms among those commercially available before the twentieth century *would* have been subject to regulations currently before federal courts. It is not a long list. Most laws regulating “assault weapons” focus overwhelmingly on semiautomatic firearms, which, as I explain below, only began entering the market at the turn of the century.²²⁵ As for today’s limits on “large-capacity magazines,” nearly all such laws contain an exception for “a tubular magazine that is contained in a lever-action firearm.”²²⁶ Using *Flayderman’s Guide* and excluding guns made in small quantities (fewer than 1000), I cannot identify any firearm commercially available before the twentieth century that would definitely be subject to regulation under such ordinances.²²⁷

Slow-load large-capacity rifles seldom attracted particular regulation because, in an era when revolvers had already become so common, they did not represent a fundamental change in how a single armed individual could threaten

225. Semiautomatic rifles and shotguns were not introduced into the market until the early twentieth century. Two successful semiautomatic pistols predate the turn of the century (the Borchart C-93, introduced in 1893, and the Mauser C-96, introduced in 1896). But neither of these German-made guns seems to have been popular consumer items in the United States before the turn of the century).

226. The term refers to the metallic tube affixed underneath the barrel of most lever-action rifles.

227. The lever-action Evans Rifle could *arguably* have been subject to the magazine limitations, depending on whether authorities considered its large and unusual internal magazine a “tubular” device.

public safety. But automatic and semiautomatic weapons with detachable magazines, the world's first viable fast-load large-capacity firearms, did.

2. *The Advent of the Fast-load Large-capacity Firearm, c.1900*

Lever-action or pump-action rifles require energy transferred from human muscle through an internal mechanism to eject a spent casing and chamber a new round. The same is true of single-action revolvers, which require the shooter to pull back the hammer to rotate the chamber and position a new round for firing. (Double-action revolvers transfer all this work to the trigger, which, when squeezed, both rotates the chamber and releases the hammer).

Automatic and semiautomatic firearms do not rely on human muscle. Instead, their great innovation is to enlist some of the energy released by the first round to eject the spent casing and chamber the next round. Automatic firearms (which continue to fire so long as the trigger is depressed and ammunition lasts) and semiautomatic firearms (which fire a round with each squeeze of the trigger) first started coming on the market in the 1890s. In addition to advances in machine production, materials science, and precision parts, these revolutionary weapons incorporated three specific innovations.

The first was the invention of a reliable mechanism using springs and levers to capture the recoil energy of a fired round to chamber the next round. That discovery belongs to Hiram Maxim, creator of the famous Maxim machine gun in 1884.²²⁸ Maxim aimed to improve upon the French mitrailleuse (1851), the

228. CARMAN, *supra* note 131, at 82–88.

U.S. Gatling gun (1862), and the Swiss Nordenfeldt (1873). Like the Puckle gun, their distant and ineffective precursor, these heavy, multi-barreled military weapons sat atop tripods or carriages and achieved rapid fire through hand-cranked ammunition feeding devices. The bulky Maxim gun also required at least two people to carry and position. But unlike its competitors' mechanical feeding systems, the Maxim's method of using recoil to chamber each new round was scalable and, therefore, would have huge consequences for smaller, handheld firearms.²²⁹

Smokeless powder was the second innovation. When fired, black powder leaves residue behind that fouls barrels. This was a manageable annoyance in the era before guns could fire several times a second. With the astonishing rates of fire made possible through Maxim's invention – up to six hundred rounds a minute²³⁰ – fouling could be so rapid as to render an automatic fire weapon inoperable. Serendipity intervened to solve this problem. In the mid-1880s, right when Maxim was making his breakthrough in harnessing recoil energy, researchers in France perfected a chemical propellant (based on nitrocellulose) that was three times as powerful as black powder, gave off very little smoke, and

229. *Id.*

230. JULIA KELLER, MR. GATLING'S TERRIBLE MARVEL: THE GUN THAT CHANGED EVERYTHING AND THE MISUNDERSTOOD GENIUS WHO INVENTED IT 222 (2008).

left behind almost no residue in the barrel.²³¹ Smokeless powder meant that automatic fire would be a practical technology.

Third and finally, automatic and semiautomatic firearms required a method of feeding cartridges into the weapon. Maxim's machine gun used belts of bullets, stored in crates or boxes. For semiautomatic firearms designed to fire one shot at a time, it would be far more practical to have a magazine. One option was to have a fixed magazine incorporated into the weapon itself, as with the tubular magazines of most lever-action rifles. Some of the earliest semiautomatic handguns would be designed around fixed box magazines – the Mauser C96, for example (an innovative if flawed German arm introduced in 1896).²³²

Once gunmakers began turning their attention to semiautomatic arms in earnest, however, they had another, more appealing option: detachable magazines. Like self-loading mechanisms and smokeless powder, detachable magazines achieved their initial practical use in military arms during the 1880s. The first successful firearm with a detachable magazine had been developed by James Paris Lee, to be used with military bolt-action rifles.²³³ What made detachable magazines so advantageous is that they dramatically accelerated loading. Rather than reloading a weapon bullet-by-bullet (as with lever-action

231. For the development of smokeless powder, see René Amiabile, *Scientific Reasoning and the Empirical Approach at the Time of the European Invention of Smokeless Powder*, in *GUNPOWDER, EXPLOSIVES, AND THE STATE: A TECHNOLOGICAL HISTORY* 343–54 (Brenda J. Buchanan ed., 2006).

232. WALTER, *supra* note 219, at 196–98.

233. ROSE, *supra* note 207, at 224–25.

rifles or revolvers), the shooter simply ejected the spent magazine, inserted a full magazine, and resumed firing.²³⁴

By the early 1890s, then, gunmakers had at their disposal a trio of potent new design features that would become characteristic of most modern automatic and semiautomatic firearms – self-loading mechanisms, smokeless powder ammunition, and detachable magazines. The first pistol to successfully combine all three elements was the Borchardt C-93. Made in Germany in 1893, the Borchardt C-93 had a detachable, 8-round magazine.²³⁵ Competitors were quick to enter the market. In 1900, Belgium’s Fabrique Nationale (“FN”) produced a semiautomatic pistol with a 7-round detachable magazine designed by John Moses Browning, arguably the most inventive and important of all U.S. gunmakers. FN would go on to sell more than 700,000 of them over the next decade, mostly to foreign militaries.²³⁶ Colt soon realized its mistake and revived its partnership with Browning, marketing better and better versions of his semiautomatic pistols starting in 1900. These culminated with the M1911, a handgun with a 7-round detachable magazine. The most copied and influential of all modern handguns, several million M1911s have been sold in the past century. Variations of the gun are still in production today.²³⁷

234. Greener compared the standard service arms of nineteen countries in 1910. Only four (Turkey, Switzerland, Great Britain, and Belgium) employed arms with detachable magazines. GREENER, *supra* note 116, at 736–37.

235. WALTER, *supra* note 231, at 127–44.

236. *Id.* at 220–28.

237. FLAYDERMAN, *supra* note 114, at 118.

American firms also helped lead the way in the production of semiautomatic rifles. Winchester and Remington both had models out early in the century. As with the early semiautomatic handguns, some designs had fixed magazines and others had detachable magazines. Light, fully automatic guns (so-called “sub-machine guns”), migrated from the battlefield to the U.S. civilian market. The most notorious was the Thompson submachine gun, aka the “Tommy Gun,” which entered the U.S. market in the 1920s. It was a select fire weapon, meaning it could be set either to automatic or semiautomatic fire. Tommy Guns had box magazines ranging from twenty to thirty rounds, and drum magazines as large as one hundred rounds. Its high price discouraged civilian sales. But this fast-load large-capacity firearm became much sought-after by gangsters and by law enforcement units tasked with stopping them.²³⁸

3. *The Regulatory Response to Automatic and Semiautomatic Firearms*

Because their detachable magazines enabled users to load and reload all at once, rather than round by round, the new fast-load firearms empowered individual shooters to inflict far more damage on more people than had been possible with earlier technologies. So, as they had with the proliferation of single-shot and multi-fire pistols in the nineteenth century, lawmakers responded to the novel threat to public safety with legislation. Between 1925 and 1933, more than half of the states in the nation passed laws regulating fully automatic

238. JOHN ELLIS, *THE SOCIAL HISTORY OF THE MACHINE GUN* 149–64 (1975).

firearms.²³⁹ In 1934, Congress passed the first significant federal firearm law in the nation's history, regulating fully automatic firearms along with several other kinds of weapons.²⁴⁰

Despite the great variety of models produced, prior to the 1930s surprisingly few of the new firearms came with magazines that held more than ten rounds. Gun-rights proponents have characteristically suggested otherwise in recent cases, by invoking facts shorn of context to conjure a false picture of continuity.

Consider the misleading claims made by Ashley Hlebinsky, senior fellow and cofounder of the new Firearms Research Center at the University of Wyoming, in a recent expert witness declaration for plaintiffs in an Oregon high-capacity magazine case.²⁴¹ Hlebinsky notes that the Mauser C-96 “came in configurations as high as twenty rounds,”²⁴² apparently referring to the variant Model 712, which could fire in semi- or fully-automatic modes, and could indeed accept a 20-round cartridge. What is left unsaid is that this arm was introduced in the early 1930s, and that Mauser shipped the vast majority of them to China. Moreover, because the Model 712 had an automatic fire mode, if any found their way to the United States they would have been regulated under the National

239. For details, see DELAY, *supra* note 217 at 52, note 104.

240. ROBERT J. SPITZER, *THE POLITICS OF GUN CONTROL* 139 (6th ed. 2015).

241. Declaration of Ashley Hlebinsky, *Oregon Firearms Federation et al. v. Tina Kotek et. al.*, 2:22-cv-01815-IM (D. Ore.).

242. *Id.* at 28.

Firearms Act.²⁴³ Hlebinsky observes that some Luger semiautomatic pistols “had the option of thirty-two round snail drum magazines.”²⁴⁴ It is true that some Artillery Model Lugers were issued with snail-drum magazines to German shock troops and non-commissioned-officers, but there is no evidence these were ever marketed to U.S. consumers.²⁴⁵ She writes that the Model 1903, Winchester’s first semiautomatic rifle made for the public, “was also fixed with a lesser-known Sabo ninety-six round detachable magazine.”²⁴⁶ What she neglects to mention is that this exotic, complex magazine cost twice as much as the firearm to which it was affixed and was made in tiny quantities (an expert in these arms is aware of only four in existence, and writes that “it is easy to see why it is so rare and was essentially a commercial failure”).²⁴⁷ Hlebinsky writes that the Winchester 1907

243. See the profile of the Mauser Model 712 “Schnellfeuer” Machine Pistol on the NRA Museum’s website, NRAMUSEUM.COM, <https://www.nramuseum.org/guns/the-galleries/wwii,-korea,-vietnam-and-beyond-1940-to-present/case-37-wwii-the-axis,-germany-italy/mauser-model-712-schnellfeuer-machine-pistol.aspx> (last visited July 31, 2023).

244. Hlebinsky, *supra* note 241, at 28.

245. See the profile of the DWM Model 1914 Artillery Luger snail drum magazine on the NRA Museum’s website, NRAMUSEUM.COM, <https://www.nramuseum.org/guns/the-galleries/world-war-i-and-firearms-innovation/case-34-world-war-i-the-central-powers/dwm-model-1914-artillery-luger-snail-drum-magazine.aspx> (last visited July 31, 2023).

246. Hlebinsky, *supra* note 241, at 28.

247. See essay accompanying a recent auction of one of these rare weapons, *Lot #709: © Winchester Model 1903 .22 Semi Automatic Rifle with Rare Sabo Model B Magazine*, MORPHY AUCTIONS, <https://auctions.morphyauctions.com/LotDetail.aspx?inventoryid=446518> (last visited July 31, 2023).

had box magazines that went up to twenty rounds.²⁴⁸ But according to a profile of this gun in the NRA magazine *The American Rifleman*, the 1907's "standard magazines held five rounds, but 10- and even 15-rounders were made for law enforcement and military work."²⁴⁹ She notes Winchester developed a select-fire rifle in 1917 mounted with two, twenty-round magazines.²⁵⁰ That made for a very impressive forty-shot capacity. But the most important fact about this gun is only obliquely addressed in a footnote. Winchester only produced one (1) of these firearms, a prototype made in the (doomed) hope of securing a military contract.²⁵¹

Perhaps partly because large-capacity magazines were so unusual at this time, lawmakers worried about the implications of semiautomatic weapons for public safety do not seem to have conceived of magazines as something they could productively regulate separately from the guns themselves. And yet many clearly thought that the magazine capacity of these firearms was one of the things

248. Hlebinsky, *supra* note 241, at 28.

249. Dave Campbell, *A Look Back at the Winchester Model 1907 Rifle*, AMERICAN RIFLEMAN (Dec. 19, 2017), <https://www.americanrifleman.org/content/a-look-back-at-the-winchester-model-1907-rifle/>; <https://www.americanrifleman.org/content/a-look-back-at-the-winchester-model-1907-rifle/> [https://perma.cc/JY6E-SFQG]

250. Hlebinsky, *supra* note 241, at 25.

251. See Ian McCollum, *Burton 1917 Light Machine Rifle*, FORGOTTENWEAPONS.COM (July 4, 2016), <https://www.forgottenweapons.com/burton-1917-light-machine-rifle/>. [https://perma.cc/ZWN6-LYFS]

that made them so dangerous. So those states that did act regulated the arms themselves, often addressing magazine capacity in the process.²⁵²

At least nine states passed laws restricting semiautomatic weapons during the 1920s and 1930s. Eight of them incorporated capacity ceilings into the law. Different states set different limits, presumably reflecting the different circumstances and views prevailing among their constituents. For Ohio the limit was eighteen. Michigan put it at sixteen. Rhode Island set the limit at twelve. Virginia's limit was seven, whereas Montana's was six. South Dakota forbade guns "from which more than five shots or bullets may be rapidly, or automatically, or semi-automatically discharged from a magazine." Arkansas and Connecticut likewise put the limit at five shots. Five other states – Massachusetts, California, South Carolina, Louisiana, and Illinois – crafted laws that leave ambiguity as to whether they only applied to automatic firearms. But California included a ceiling of ten rounds, and South Carolina, Louisiana, and Illinois all put the limit at eight. Fully automatic weapons could spit out eight or ten rounds in a single second. That strongly suggests that like at least nine other states, these four also decided to respond to the novel public safety implications of semiautomatic firearms by regulating them.²⁵³

252. Spitzer, *supra* note 199, at 68–71.

253. 1933 Minn. Laws 231-33, § 1 (no specific limit). For other laws, see 1933 Ohio Laws 189, § 12819-3 (eighteen-shot limit); 1927 Mich. Pub. Acts 887, § 3 (sixteen-shot limit); 1927 R.I. Pub. Laws 256 § 1 (twelve-shot limit); 1934 Va. Acts 137-39 § 1 (seven-shot limit); 1935 Mont. Laws 57, 57-60, Ch. 43, § 1 (six-shot limit); 1933 S.D. Sess. Laws 245-47 § 1 (five-shot limit); 1935 Ark. Laws 171,

In sum, contrary to the myth of continuity, firearms technology has undergone dramatic and consequential transformations since the founding era. These transformations led to waves of regulation. Safe, reliable, affordable repeat fire weapons, the elusive goal of centuries of innovative gunsmiths, only became available to consumers starting in the 1830s with the advent of revolvers and pepperboxes. The profusion of affordable pistols (repeaters as well as single shots) fueled anxieties about crime which, in turn, led to dangerous weapons legislation across the country. Viable firearms capable of firing more than ten rounds without reloading only started making serious inroads into the U.S. consumer market after the ratification of the Fourteenth Amendment. Like revolvers and pepperboxes, these were slow-load repeating firearms. Shooters endured lengthy, vulnerable pauses while reloading round by round. It was not until the early twentieth century that fast-load repeat fire weapons became common in the U.S. market. Equipped with automatic or semiautomatic firearms with detached magazines, shooters could fire and reload much faster than ever before. This momentous rupture in firearms technology generated new anxieties over public safety and provoked new kinds of regulatory responses across the nation.

171-75 § 1 (five-shot limit); 1935 Conn. Laws 389, 389-94, Ch. 152, § 1 (five-shot limit); 1927 Mass. Acts 413, §§ 1-2; 1934 S.C. Acts 1288, § 1 (eight-shot limit); 1932 La. Acts 337-38, §§ 1-2 (eight-shot limit); 1931 Ill. Laws 452-53, §§ 1-2 (eight-shot limit). Washington D.C. also regulated semiautomatic firearms in this period: 47 Stat. 650 (1932) ch. 465, §§ 1, 14 [D.C.], (twelve-shot limit). All except the Connecticut statute are available at <https://firearmslaw.duke.edu/repository-of-historical-gun-laws>.

To use the language of *Bruen*'s framework, the United States has witnessed multiple "dramatic technological changes" in firearms, changes that have generated "unprecedented societal concerns" and led to waves of regulatory responses.²⁵⁴ Technological changes provoking social concerns that lead to public safety legislation. That is the nation's tradition of firearms regulation.

III.

THE NOVELTY OF GHOST GUNS IN AMERICAN LIFE

Major arms manufacturers began stamping serial numbers on firearms as early as the mid-nineteenth century. Finding industry serialization useful in investigating crime, states began incorporating these numbers into firearms law in the early twentieth century. The federal government first required serial numbers in 1958,²⁵⁵ and these rules were elaborated in the landmark 1968 Gun Control Act (GCA). Still in force today, the GCA requires producers and importers of firearms to obtain Federal Firearms Licenses, and to stamp serial numbers and other markings on their guns' frames or receivers (the "primary structural component of a firearm to which fire control is attached").²⁵⁶ Finished frames or receivers are treated as firearms by the GCA, and subject to this same

254. *Id.*

255. Interstate Traffic in Firearms and Ammunition, 26 CFR 79.

256. Codified as 18 U.S.C. §§ 921–934. For the A.T.F. definition, see <https://www.federalregister.gov/documents/2021/05/21/2021-10058/definition-of-frame-or-receiver-and-identification-of-firearms> (last visited July 30, 2023). On pistols this component is called a frame, and on semiautomatic rifles it is called a receiver.

requirement. In the years since, these regulations have become essential tools for federal, state, and local authorities investigating gun crime.²⁵⁷

The GCA contained an exemption for hobbyists who made their own firearms for personal use. Some began purchasing partially finished steel frames and receivers, which, unlike the fully finished versions, are not legally regarded as firearms or required to bear serial numbers. Most such consumers had to employ a machinist or gunsmith to finish these parts before they could be used to assemble a working firearm.²⁵⁸ Over the past fifteen years or so, however, advances in polymers, small-batch parts manufacturing, compact control milling devices, and, most recently, 3D-printing and computer-aided design (CAD) files have helped firearms entrepreneurs turn the GCA's hobbyist exception into a dynamic sub-industry. Their products enable unskilled buyers to easily assemble their own guns without professional assistance and often without specialized tools.²⁵⁹

Fully functional semiautomatic pistols and rifles can now be rapidly assembled at home with kits purchased online or in stores. For instance, 80% Arms, a prominent online vendor, offers an array of unfinished frames and receivers. They sell kits that include the other parts necessary to assemble a working firearm (none of which are regulated by the GCA, so they can be sold

257. William J. Krouse, *Privately Made Firearms: A Growing Source of Unmarked, Untraceable 'Ghost Guns'?* CONGRESSIONAL RESEARCH SERVICE REPORT IF11810, April 8, 2021.

258. *Id.*

259. *Id.*

finished). The kit for a GST-9 pistol (modeled after a Glock-19) also comes with an Allen wrench, two drill bits, a cutting tool, and a one-page, color-coded instruction sheet.²⁶⁰ Customers simply place the unfinished frame in a jig that guides them as they drill three holes on each side of the polymer frame, remove four small tabs with cutting pliers, and grind out one final piece of the frame with the cutting tool.²⁶¹ They now have a finished frame, and can quickly assemble the rest of the components with the help of an array of online instructional videos.²⁶²

In most of the country, consumers can buy gun kits like these without passing a background check, meeting minimum age requirements, or enduring waiting periods, and then, with no specialized experience or unusual tools, quickly assemble a reliable, un-serialized firearm. Such “ghost-guns” have

260. *GST-9: 80% Pistol Build Kit*, <https://www.80percentarms.com/products/gst-9-80-pistol-build-kit/> [<https://perma.cc/TR86-ZMVT>](last visited July 31, 2023).

261. *GST-9: 80% Lower Pistol Kit: Jig Instructions*, <https://www.80percentarms.com/content/GST9%20MANUAL%20FINAL%20V2.pdf> (last visited July 31, 2023).

262. See, e.g., *Home of the GST-9 MOD1 and Everything 80%*, Odysee.com, <https://odysee.com/@80PercentArms:0> [<https://perma.cc/U7JA-UCMZ>](last accessed July 31, 2023).

provoked concerns over trafficking²⁶³ and extremist violence,²⁶⁴ and alarm over the ease with which teenagers are purchasing them.²⁶⁵ They are also increasingly prominent in gun crime, which presents significant challenges to law enforcement precisely because they are so difficult to trace. The number of “privately made firearms” submitted for tracing to the bureau of Alcohol, Tobacco, and Firearms increased by more than 1000% between 2017 and 2021.²⁶⁶ In late 2021, the *New York Times* reported that they accounted for a quarter to half of all guns recovered at crime scenes in Los Angeles, San Diego, Oakland, and San Francisco.²⁶⁷

263. See for example, the Drug Enforcement Administration’s press release *Ghost Gun and Narcotics Trafficking Ring Shut Down in NYC*, DEA.GOV (Mar. 15, 2023), <https://www.dea.gov/press-releases/2023/03/15/ghost-gun-and-narcotics-trafficking-ring-shut-down-nyc>. [https://perma.cc/X5L4-WW5M]

264. Alain Stephens, *The Feds Are Increasingly Worried about Extremists Acquiring Ghost Guns, Leaked Report Shows*, THE TRACE (Aug. 6, 2021), <https://www.thetrace.org/2021/08/ghost-gun-government-report-3d-print-extremism-terrorism/>.

265. Tom Jackman & Emily Davies, *Teens Buying ‘Ghost Guns’ Online, with Deadly Consequences*, THE WASH. POST (July 12, 2023).

266. U.S. DEPT. OF JUSTICE, NATIONAL FIREARMS IN COMMERCE AND TRAFFICKING ASSESSMENT, VOL. TWO: CRIME GUNS; PART III: CRIME GUNS RECOVERED AND TRACED WITHIN THE UNITED STATES AND ITS TERRITORIES 5 (2022), available at <https://www.atf.gov/firearms/docs/report/nfcta-volume-ii-part-iii-crime-guns-recovered-and-traced-us/download>.

267. Glenn Thrush, *‘Ghost Guns’: Firearm Kits Bought Online Fuel Epidemic of Violence*, NY TIMES (Nov. 14, 2021), <https://www.nytimes.com/2021/11/14/us/ghost-guns-homemade-firearms.html>. [https://perma.cc/9VKL-DQ45]

In response to these unprecedented societal concerns, as of March 2024, thirteen states and the District of Columbia have enacted legislation to regulate the sale and manufacture of ghost guns.²⁶⁸ These regulations differ in detail, but all seek to prohibit untraceable firearms.²⁶⁹

Opponents of these efforts to hold ghost guns to some of the same regulatory standards as professionally made guns are employing the myth of continuity to challenge the laws in court. Joseph Greenlee, a lawyer and gun-rights activist who now directs the office of litigation counsel for the National Rifle Association, elaborated the thesis in a 2023 article in the *Saint Mary's Law Journal*.²⁷⁰ As its title suggests, “The American Tradition of Self-Made Arms” argues that today’s printers and assemblers of ghost guns are part of a venerable national tradition of “at-home arms production,” one that stretches back into the colonial era.²⁷¹ Hlebinksy made similar claims before a Congressional

268. The states are California, Illinois, Colorado, Hawaii, Nevada, Delaware, Maryland, Connecticut, New Jersey, New York, Washington, Oregon, and Rhode Island. Virginia and Massachusetts have regulations against plastic guns undetectable by metal detectors. *Which States Regulate Ghost Guns?*, EVERYTOWN FOR GUN SAFETY, <https://everytownresearch.org/rankings/law/ghost-guns-regulated/> (last visited March, 2024).

269. *Id.* Delaware, Hawaii, New Jersey, Oregon, and Rhode Island also prohibit 3D-printed firearms.

270. Greenlee, *supra* note 19.

271. *Id.* at 14.

committee on ghost guns in 2021.²⁷² The argument, in brief, is that (1) private citizens have been making their own arms since the founding era; (2) the founders did nothing about it; (3) therefore we can do nothing about it, either. Sound familiar?

This iteration of the myth of continuity is already finding its way into legal challenges.²⁷³ For example, Defense Distributed, a Texas-based nonprofit that helped pioneer 3D-printed guns and describes itself as the “first private defense contractor in service of the general public,”²⁷⁴ recently challenged California’s regulation of privately made arms. The organization’s complaint cites Greenlee to argue that “the unregulated self-manufacture of firearms was common in the American colonies;”²⁷⁵ that during the Revolution, “Americans manufactured their own arms and gunpowder to survive,”²⁷⁶ and that the widespread tradition

272. Testimony of Ashley Hlebinsky, United States Senate, Subcommittee on the Constitution, Committee on the Judiciary, Stop Gun Violence: Ghost Guns, May 11, 2021, <https://www.judiciary.senate.gov/imo/media/doc/Ashley%20Hlebinsky%20Written%20Testimony%20Final.pdf>.

273. See for example Greenlee’s expert declaration in Roger Palmer et al., v. Stephen Sisolak et al., No. 3:21-cv-00268 (D. Nev.).

274. See Defense Distributed’s website: *About*, DEFENSE DISTRIBUTED, <https://defdist.org/> (last visited June 16, 2023).

275. See Complaint for Declaratory and Injunctive Relief at 6, Defense Distributed et al., v. Rob Bonta et al., No. 2:22-cv-06200-CAS-AGR (C.D. Cal.).

276. *Id.* at 7.

of gun-making “extended to pioneers, mountain men, and explorers whose need to make and repair firearms was a necessity to survive.”²⁷⁷

How accurate are these claims? Are ghost guns really consistent with American tradition?

A. *Glock, Ikea-Style*

Much like the continuity argument devised for battles over assault weapons and high-capacity magazines (from which it clearly takes inspiration), the American-tradition-of-self-made-arms-narrative tactically collapses categories and obscures historical context. Before turning to history, some categorical clarity is necessary.

The self-made-arms-narrative deploys three kinds of categorical confusion to conjure a tradition out of the historical record. First, to expand the terrain within which useful historical analogues might be located, it defines “arms-making” to include an implausibly huge range of activities. Pursuits as dissimilar as manufacturing high-quality firearms from scratch, performing minor repairs, and even filling paper cartridges with a measure of gunpowder and a lead ball all constitute “arms-making” according to this analysis.²⁷⁸

Second, the narrative conflates amateurs with professionals. No one doubts that there has long been an arms industry in the United States, or that the industry

277. *Id.* at 8.

278. For the equation of cartridge-making with “the convenience of at-home arms production,” see Greenlee, *supra* note 19, at 50.

has long employed professionals with specialized skills in firearms production. Ghost gun kits are not aimed at professionals. They are explicitly designed for and marketed to amateurs. On its website, for instance, 80% Arms assures customers that its AR-15 and .308 jigs make it “ridiculously easy for a non-machinist to finish their 80% lower in under 1 hour with no drill press required.”²⁷⁹ The relevant historical issue, then, concerns *amateur* arms production. Gun-rights advocates could not substantiate a longstanding tradition of “amateur-made arms,” however. Hence the sleight-of-hand made possible by the phrase “self-made,” which is roomy and abstract enough for them to link today’s consumers of ghost-gun kits with Samuel Colt, Benjamin Tyler Henry, John Browning, and others of the nation’s most accomplished professional gunsmiths.²⁸⁰

Finally, the *self-made*-arms narrative mischaracterizes what it is that consumers are actually doing with ghost-gun kits and 3D-printers. They are not making guns, but rather *assembling* them. Here gun-rights activists owe a debt to the federal government and its unfortunate adoption of the label “privately made firearm” (PMF) for the category to which guns from kits and printers belong.²⁸¹ The distinction between making and assembling may seem like a

279. See the tab “Ridiculously Easy” on <https://www.80percentarms.com/> (last visited March 24, 2024).

280. Greenlee, *supra* note 19, at 72-74. The overwhelming majority of examples Greenlee offers in his article concern professional gun-makers.

281. See *What is a Privately Made Firearm (PMF)?*, ATF.gov, <https://www.atf.gov/rules-and-regulations/qa/what-privately-made-firearm-pmf> (last visited July 31, 2023).

quibble, but it bears upon the constitutional question at stake in these cases. The conceit that consumers are using kits to “make” arms is critical to the argument that these amateurs belong to a “long and storied tradition in America,” as the president for the National Association of Gun Rights recently put it.²⁸² But what if consumers are merely availing themselves of a novel product that, for the first time in our nation’s history, enables amateurs to quickly “assemble” functioning arms?

Consider a familiar comparison. Several years ago, I purchased a dining table and a set of chairs from Ikea. Everything came disassembled and packed in boxes, along with an Allen wrench, a few other tools, and a one-page instruction sheet. It took me a few hours to assemble the pieces. My table and chairs have held up well. There is a proud tradition of furniture making in this country stretching back into the colonial era. But no one I have had over for dinner seriously thinks I am part of that tradition.

The operative question, then, is whether there is a venerable American tradition of amateurs assembling firearms? The answer is no. Explaining why, and assessing claims to the contrary, requires an examination of how firearms were built before the nineteenth century; where they were built, by whom, and why; and the nature of firearms production in early America.

282. Quoted in Jackman & Davies, *supra* note 265.

B. Europe's Early-Modern Dominance of Global Arms Production

Europeans manufactured and distributed the vast majority of the firearms used around the world in the eighteenth century, including in the colonial Americas. To understand why so few of early America's guns were made by American gunsmiths, let alone by nonexperts, we have to understand how firearms worked and how they were manufactured.

1. How Muskets Worked

Firearms were the most technologically complex objects the average person ever encountered in the eighteenth century. With a primed, loaded, and cocked musket pressed against the shoulder, a simple squeeze of the index finger unleashed a kind of magic. That squeeze initiated a series of movements inside the lock mechanism. The pulled trigger rotated small iron wedge called a sear, which held a gear called a tumbler in place. With the sear released, the tumbler rotated forward--propelled by a spring that had been tensed when the shooter first cocked the gun. The cock (or hammer), connected to the tumbler, also rotated forward, with force. Atop the cock a simple vice gripped a sharpened piece of flint, and as it rotated downward the flint skidded into a concave, serrated steel plate called a frizzen.²⁸³

Flint is one of nature's hardest materials; hard enough that when it hits iron or steel with enough force and at the right angle some of the metal gives way,

283. Many books offer lucid explanations of the workings of flintlock firearms. See for example BROWN, *supra* note 110, at 68-79; and CARMAN, *supra* note 131, at 100-04.

showering off in a glowing spray of super-heated flakes. Thanks to the elegant design of the flintlock mechanism, when the cock and flint fell forward the frizzen was shoved backward on its pin, exposing a little pan full of fine, black gunpowder. That is when human energy traveling through levers and springs unleashed chemical energy. The cascading metal sparks ignited this powder, and a tongue of flame darted down from the pan through a small touchhole into the barrel of the musket, where the shooter had earlier packed in a larger charge of gunpowder. That charge ignited. Trapped by the barrel's walls and the breech-plug at the rear, the explosion traveled the only direction it could, forward. In so doing it drove before it an obstacle, the musket ball, a lead sphere that clanged and screamed down the length of the barrel, took to the air, and flew.²⁸⁴

The remarkable tool that made all this happen had four basic components: a wooden stock, a lock (ignition) mechanism made of iron and steel, an iron barrel, and a group of metal parts (usually brass) called "furniture" including a butt-plate, trigger guard, and ramrod pipe. Many carpenters could make serviceable stocks, and many blacksmiths could cast, file, and polish brass furniture. Reliable barrels and locks, however, were very difficult to produce and extraordinarily difficult to produce in quantity.

2. *Making Gun Barrels*

The barrels of eighteenth-century firearms were made from wrought iron – nearly pure iron that is repeatedly heated and worked into shape with tools. Low

284. *Id.*

carbon content made wrought iron softer and much more ductile than the most common alternative, cast iron (an iron alloy with a lower melting temperature that was used in molds). Wrought iron's relative pliability meant it could withstand the extreme pressures of repeated gunpowder explosions.²⁸⁵ That is, wrought-iron gun barrels could withstand these pressures *if* they were well made. Barrel-makers from the era heated iron slabs and then laboriously hammered them into shape and welded them together around a tapered iron rod called a mandrel. The mandrel's diameter would be slightly narrower than the intended bore of the firearm. The iron wrapped around the mandrel was repeatedly heated and hammered on an anvil cut with grooves corresponding to the desired shape of the barrel. Eventually, the iron took the form of a tube with an open seam, thicker at one end so that the breech of the gun would be able to endure the shock of the charge.²⁸⁶

Great care had to be taken in closing the seam, lest the barrel burst upon firing. Once the seam had been sealed, the interior had to be bored. A steel bit affixed to a hand-turned drill was twisted into the barrel, scraping out a thin layer of iron with each pass. This difficult process would be repeated over and over, each time with a slightly larger bit, until the diameter of the bore reached the desired caliber. At this point the breech had to be closed, either by screwing in a threaded iron plug, or by heating and hammering in a plug without threads. Then the touchhole would be drilled or punched at the breech, and the rough exterior

285. ROBERT B. GORDON, *AMERICAN IRON, 1607-1900* 7-11 (2020).

286. For barrels, see BROWN, *supra* note 110, at 17-20; BAILEY, *supra* note 91, at 95-97.

of the barrel would be ground down to a pre-determined thickness and filed smooth.²⁸⁷ Untreated iron oxidizes (rusts) when exposed to air or, especially, moisture. Once begun, this process will not stop on its own; it will continue until the integrity of the iron object has been totally compromised. Barrel makers learned to treat barrels with chemicals that artificially accelerate and then arrest the oxidization process.²⁸⁸ Finally, barrel loops would be braised onto the underside and a stud braised on the top, near the muzzle, to act as a sight and (for military arms) as a stop for a socket bayonet.²⁸⁹

Badly made or poorly maintained barrels could fail, disabling or even killing the shooter. Henry Knox, one of George Washington's top lieutenants during the Revolution and the nation's first Secretary of War, had two fingers blown off his left hand when the breech of his fowling piece burst.²⁹⁰ He got off easy. Given how one must cradle a longarm to shoot it, the explosive shrapnel of iron from the burst barrel could just as easily have gone into his eyes, chest, or throat. With the stakes of inferior craftsmanship literally a matter of life-and-death, the major arms-producing states of Europe required finished gun barrels to undergo rigorous inspection. Barrels would be "viewed" (their bore measured with a rod gauge; the muzzle diameter checked with a socket gauge; and the soundness of the braising confirmed), and then be "proved" (charged with twice

287. *Id.*

288. For barrel "browning," see GREENER, *supra* note 116, at 279-81.

289. BAILEY, *supra* note 91, at 95.

290. BROWN, *supra* note 110, at 299.

the standard load of powder, fired, left to sit for forty-eight hours, and then closely examined for the tell-tale signs of rust that would betray any stress fractures).²⁹¹ In the mid-eighteenth century, fully a quarter of the musket barrels made for the French military typically failed proof. It was not easy to work slabs of iron into a quality barrel, in other words, even for craftsmen paid to do nothing else.²⁹²

3. *Making Gun Locks*

It was more challenging still to make quality gunlocks, the most complex parts of period firearms. Flintlock mechanisms consisted of more than a dozen separate parts, some fixed and others moveable, all required to operate in symmetry to produce the intended effect. Engravings published in 1770 as a supplement to the *Encyclopédie*, Enlightenment France's great monument to knowledge, provide precise views of the finished lock mechanism (Fig. 1) and its constituent parts (Fig. 2), which are reproduced in the appendix to this Article. Lock makers in eighteenth-century Europe generally used hardened dies to make the larger pieces. Small, red-hot bars of iron would be pounded into dies cut in the shape of the lock-plate, cock, hammer, tumbler, bridle, sear, frizzen, and trigger. It usually took multiple firings before a component part was properly forged to shape, which made the metal brittle. Lock-makers, therefore, had to

291. BAILEY, *supra* note 91, at 95–97.

292. SEE KEN ALDER, *ENGINEERING THE REVOLUTION: ARMS AND ENLIGHTENMENT IN FRANCE: 1763-1815* 174 (1997).

soften (anneal) it with controlled reheating and by cooling it inside cast-iron chests full of powdered charcoal.²⁹³ Some parts required additional steps. The tumbler (see fig. 17, in Fig. 2), for example, which transmitted the main spring's energy to the hammer, featured graded notches that had to be filed with near precision for the lock mechanism to function correctly.²⁹⁴

Once properly formed and cooled, the pieces would be knocked out of the dies, annealed, and excess metal cut and filed off. Screws of various lengths and diameters had to be cut to size, to affix the smaller parts to the lock plate and the lock plate to the stock. Threads for metal screws would be cut on a steel screw plate, and those for wood on a lathe.²⁹⁵ The hammer and frizzen had to be hardened before they could endure their constant collisions without quickly wearing down. These two parts were "case-hardened" by being heated with charcoal inside a sealed box to import carbon to their surface, creating a hard skin, or "case."²⁹⁶

The most finicky parts of a gunlock were its three delicate springs. The battery spring (Fig. 2, #21) held the frizzen in place, so that the pan cover (attached to the frizzen) kept the priming charge covered until firing. The sear spring (Fig 2, #18), smallest of the three springs, imparted tension to the trigger.

293. See SMITH, *supra* note 197, at 86–89.

294. *Id.* at 90.

295. *Id.* For gunlock making (and a deeper engagement with the *ENCYCLOPÉDIE*), see also BROWN, *supra* note 110, at 68–79, 200–207; BAILEY, *supra* note 91, at 95–96.

296. For case hardening, see GORDON, *supra* note 285, at 255.

The mainspring (Fig. 2, #19) the largest and most important, absorbed energy when the shooter cocked the gun and then released that energy to power the cock's descent after the trigger was pulled.²⁹⁷

While case hardening sufficed for hammers and frizzens, that was insufficient for springs. Springs had to be made from steel, otherwise they would not return to their original shape after repeatedly coming under stress. This requirement introduced still more technical difficulties into the gun-making process because quality steel was extremely challenging to produce. An alloy of iron and 1-1.5% carbon, steel required iron of exceptional purity and crucibles made from clay free from contaminants that could corrupt the carbon-diffusion process. The process was so technically and materially demanding that steelmakers from Sheffield, England, dominated the international industry through the mid-nineteenth century.²⁹⁸

4. *Europe's Competitive Advantage*

Given the challenges involved in making quality firearms, top producers were those with regular access to high-quality materials, and who could sustain economies of scale while reliably policing quality. It is unsurprising, then, that the vast majority of firearms built in the eighteenth century came from London and Birmingham, England; Liège, Belgium; Placencia, Spain; Saint-Etienne,

297. For the evolution of lock designs and the critical role of springs, see BROWN, *supra* note 92, at 68–79.

298. GORDON, *supra* note 285, at 171–84.

France, and a few other European cities where the regional economies had for decades been oriented around arms production. These were the manufacturing centers that manufactured the large majority of the world's guns and nearly every firearm that anyone ever laid eyes on in the colonial Americas.²⁹⁹

Europe's major arms producers employed a complex division of labor. Rather than tens of thousands of gun-makers producing firearms from scratch, there were tens of thousands of specialists responsible for a particular component or process. More than two-dozen sub-trades went into making a musket at Saint-Etienne. Merely producing a quality barrel involved four supervisors overseeing thirteen armorers.³⁰⁰ Elsewhere one would find rough-stockers and woodcarvers; barrel-forgers, barrel-borers, barrel-straighteners, and barrel-browners; lock-makers who either employed or sub-contracted out to others who specialized in forging lock-parts, or casehardening and polishing, or making steel springs, or producing pins and screws. Then there were the filers, furniture casters, sight-fitters, engravers, and, finally, the finishers whose job it was to put everything together.³⁰¹

This complex division of labor improved quality and uniformity, as well as profitability and productive capacity. Artisans in the dozens of specializations that went into the gun trade spent as much as a decade developing their skills

299. For Britain's manufacturing dominance, see PRIYA SATIA, *EMPIRE OF GUNS: THE VIOLENT MAKING OF THE INDUSTRIAL REVOLUTION* (2019).

300. *Id.* at 176, 201.

301. BAILEY, *supra* note 91, at 95–99.

with a master. Guilds gave coherence, structure, and collective influence to individual professions. The state enforced demanding regulations and quality tests, and steady contracts from great monarchs and powerful merchants nursed the entire enterprise.³⁰²

Nothing remotely comparable existed anywhere in colonial America, which helps explain why colonists were so profoundly dependent on imports. What, then, are we to make of all the *gunsmiths* in the colonies?

C. “*Gunsmiths*,” vs. “*Gunsmiths*,” vs. “*Gunsmiths*” before the
Revolution

As of 2020, there were nearly eight million registered automobiles in the state of Florida.³⁰³ There are no vehicle production or assembly plants in the state, so Floridians drive automobiles made in other states or countries.³⁰⁴ Most Floridians have easy access to service stations and oil change shops for routine

302. Exemplary studies of gun-making centers include DE WITT BAILEY AND DOUGLAS A. NIE, *ENGLISH GUNMAKERS: THE BIRMINGHAM AND PROVINCIAL GUN TRADE IN THE 18TH AND 19TH CENTURY* (1978); CLAUDE GAIER, *FOUR CENTURIES OF LIÈGE GUNMAKING* (1985); ALDER, *supra* note 292.

303. 7,853,979 registrations in 2021, according to Statista. *Automobile Registrations in the United States in 2021, by State*, STATISTA (Sept. 28, 2023), <https://www.statista.com/statistics/196010/total-number-of-registered-automobiles-in-the-us-by-state/>.

304. See Anh Bui, P. Slowik, and N. Lutsey, *Power Play: Evaluating the US Position in the Global Electric Vehicle Transition*, INTERNATIONAL COUNCIL ON CLEAN TRANSPORTATION 17 (2021), available at <https://theicct.org/wp-content/uploads/2021/12/us-position-global-ev-jun2021-1.pdf>.

maintenance. In the event of damage or malfunction beyond the routine, Floridians turn to one of the state's more than twenty-five thousand auto mechanics or body shops for repairs.³⁰⁵ Some of Florida's professional mechanics and hobbyists have the requisite skill and experience to build cars from imported parts. But thanks to the transparency of modern industrial statistics, the distinction the English language makes between auto *manufacturing*, auto *maintenance*, and auto *repair*, and the fact that there are no legal, ideological, or corporate incentives to claim that Floridians make the cars they drive, we can all agree that while the state has a lot of cars, a lot of maintenance and repair shops, and individuals with mechanical skill, the state's population nonetheless imports its millions of vehicles.

Things are quite different when it comes to guns and gunsmiths in early America. Gunsmiths are easy enough to find in the archives of individual colonies, and they routinely advertised their services in colonial newspapers. For example, Henry Deabarear informed his customers in Pennsylvania that "he follows his usual business, such as gun work and spring lancet making, likewise cupping spring and teeth instruments."³⁰⁶ And Thomas Tew, in his shop on Broad Street in Newport, boasted that he "cleans and repairs GUNS, and GUN-

305. According to IBIS World, in 2024 there were 18,881 auto mechanic businesses in Florida (see *Auto Mechanics in Florida - Market Research Report, July 2, 2024*, IBISWORLD, [HTTPS://WWW.IBISWORLD.COM/US/INDUSTRY/FLORIDA/AUTO-MECHANICS/12652/](https://www.ibisworld.com/us/industry/florida/auto-mechanics/12652/)) and 7453 auto body businesses in Florida (see *Car Body Shops in Florida - Market Research Report, July 2, 2024*, IBISWORLD, [HTTPS://WWW.IBISWORLD.COM/US/INDUSTRY/FLORIDA/CAR-BODY-SHOPS/12653/](https://www.ibisworld.com/us/industry/florida/car-body-shops/12653/)).

306. PENNSYLVANIA GAZETTE (Sept. 15, 1773).

LOCK in the best and most expeditious manner.”³⁰⁷ In New York, Gilbert Forbes made and sold “all Sorts of GUNS, in the neatest and best Manner, on the lowest Terms.”³⁰⁸

While anecdotal evidence of gunsmithing is common, assessing the role colonial gunsmiths played in arming British North America is a challenge. For one thing, historians disagree about the number of gunsmiths active in the colonies. Experts have advanced wildly diverging estimates, ranging from 175³⁰⁹ to nearly 2000³¹⁰ working in the thirteen colonies on the eve of the Revolution.

Impoverished terminology presents an even bigger challenge. As the advertisements above suggest, a single term covered a wide range of expertise. Though this varying expertise existed across a spectrum, it clustered into three basic groups. Those able to repair firearms were called “gunsmiths.” Those capable of not just repairing but also building firearms from a mix of self-made and imported parts were known as “gunsmiths.” And those with the skills, tools, and materials necessary to manufacture guns entirely from components of their own making were called “gunsmiths.”

307. NEWPORT MERCURY (June 26, 1775).

308. NEW YORK JOURNAL (May 25, 1775).

309. ROBERT F. SMITH, MANUFACTURING INDEPENDENCE: INDUSTRIAL INNOVATION IN THE AMERICAN REVOLUTION 12 (2016).

310. BROWN, *supra* note 110, at 404–09. Brown’s appendix lists the names of approximately 500 people involved in manufacturing war material for the Revolutionary War effort, though this number includes many who made musket balls, bayonets, wire brushes, etc. Brown estimates the total number of gunsmiths active during the Revolution to be less than two thousand. *Id.* at 347.

You see the problem . . . and the opportunity. The looseness of the term is both an obstacle to genuine understanding and a helpful screen for the motivated argument that early America had a widespread tradition of self-made arms. A closer consideration of each of the three, overlapping sub-groups of gunsmiths makes it plain, though, that only a small percentage of them were in the business of making their own arms.

The first group, repairers of firearms, vastly outnumbered the rest. Given that guns were so common, so important, and so easily damaged or worn out, and given the impracticality of sending defective arms back to Europe to be fixed, artisans capable of repairing arms had a steady clientele throughout the colonies. It is easy to see why. Many things could go wrong with muskets; even more so with the relatively light and inexpensive firearms that predominated in early America.³¹¹ Nearly any component of a firearm could need repairing or replacing after a few years of hard use or inattention. Inventories of guns stored by colonial governments frequently listed as many as a quarter, a third, or even higher fractions out of repair.³¹²

Surviving evidence gives us glimpses of what specifically required repair. For one unusually-well documented gunsmith in eighteenth century North

311. The Creek leader Alexander McGillivray offered a glimpse into the expected durability of lighter firearms in 1789 when he requested “English Trading Guns which are Good and will last more than two Years in Constant Use.” See Letter from Alexander McGillivray to William Panton, Little Tallassie (Feb. 1, 1789), in JOHN WALTON CAUGHEY, MCGILLIVRAY OF THE CREEKS 215–20 (1938).

312. *Id.* at 314–19; BAILEY, *supra* note 91, at 105–06.

America, the most common work was replacing or repairing (casehardening) frizzens and hammers that had grown too soft through overuse. Missing screws also needed attending to, barrels straightened, cracked butts restoked, broken breech plugs refashioned, and springs replaced.³¹³ Any of these mishaps or a dozen others could render a firearm into little more than an expensive club. As one observer put regarding Indian trade guns, “the breaking a Spring or a gunlock etc. may be the means of destroying a whole Seasons Hunt and of distressing and Starving a numerous Family.”³¹⁴

Most gunsmithing in eighteenth century America amounted to repair work. John Anderson from Williamsburg, Virginia, seems to have been typical. His account books reflect a craft business oriented almost entirely to repairs, and they contain no evidence that he made even a single firearm prior to the American Revolution.³¹⁵ Greenlee lists numerous examples of early Americans in other craft professions working part-time as “gunsmiths” for extra income.³¹⁶ The intended implication here is that the craft was not only very widespread but also relatively easy to learn. But insofar as the farmers, carpenters, cutlers, stone

313. Kevin Paul Jones, *An Examination of Flintlock Components at Fort St. Joseph (20BE23), Niles, Michigan* 17, 29–30 (2019) (unpublished M.A. thesis, Western Michigan University).

314. *Plan of Robert Rogers, 1767*, in *THE PAPERS OF SIR WILLIAM JOHNSON*, VOL. 13, 453 (Alexander C. Flick ed., 1921).

315. HAROLD B GILL, *THE GUNSMITH IN COLONIAL VIRGINIA* 22–27, 64–68 (1974). Cited in the Expert Report and Declaration of Kevin M. Sweeney at 6 n.10, *Nguyen et al., v. Bonta et al.*, No. 3:20-cv-02470-WQH-BGS (S.D. Cal.).

316. Greenlee, *supra* note 19, at 66-68.

masons, and attorneys (yes, attorneys) he mentions moonlighted with gunsmithing, they almost certainly were dabbling in this first, largest, and least-skilled category of “gunsmith” focused on repairs.

A second, smaller cohort of gunsmiths had experience making firearms with a mix of self-made components and imported locks and/or barrels. Colonial newspapers routinely note the importation of locks³¹⁷ and barrels.³¹⁸ It is hardly surprising that colonial gunsmiths would welcome the outsourcing of the most technically complex and consequential parts of a firearm. Most would have worked with imported locks and/or barrels because they lacked the expertise to make them, or at least make them well. Others with the requisite skill often relied on imported parts because it was more economical to do so, or because essential tools or materials were lacking. Steel for the springs in gunlocks was particularly difficult to produce in early America and only imported at great expense.³¹⁹

Even the era’s most distinctive and developed American arms-making tradition – production of the American long rifle (also known as the Kentucky-,

317. During the 1750s and 1760s in the *Pennsylvania Gazette* alone, merchants advertised gunlocks on July 16, 1752; May 10, 1753; Feb. 11, 1755; Feb. 5, 1756; March 11, 1756; Jan 5, 1758; March 8, 1759; Jan. 3, 1760; Jan. 9, 1766; and July 20, 1769.

318. Consider the following examples from a ten-year period in a single colony: NEW YORK GAZETTE (Nov. 8, 1762), NEW YORK GAZETTE (Mar. 4, 1765), NEW YORK JOURNAL (Nov. 27, 1766), NEW YORK GAZETTE OR WEEKLY POST-BOY (Oct. 24, 1768), NEW YORK GAZETTE AND WEEKLY MERCURY (Mar. 16, 1772), NEW YORK JOURNAL OR THE GENERAL ADVERTISER (June 11, 1772).

319. On the scarcity of steel for lock-springs as a particular impediment to the colonial arms industry, see BROWN, *supra* note 110, at 243-44.

Lancaster-, or Pennsylvania-rifle), usually relied on imported English or German locks.³²⁰ American-rifles were prized for their well-made barrels, and specialists in that tradition were using increasingly sophisticated production methods by the second half of the eighteenth century.³²¹ But as for typical fowling pieces or muskets, consumers would have more confidence in the integrity of imports because, unlike those made in America, imported barrels had been manufactured under a demanding system of regulations and had almost always undergone proof.³²²

How analogous were these imported locks and barrels to the components and kits used to assemble ghost guns in our own times? Hardly at all. Consider the distance the new eighteenth-century owner of an imported lock and barrel would have to travel before having a reliable firearm to shoot. A functional wooden stock would have to be made, a task requiring woodworking tools and expertise. Numerous additional parts would have to be made or purchased, including a butt-plate, side-plate, trigger, trigger guard, trigger plate, trigger pivot, escutcheon, ramrod, ramrod pipes, furniture-fastening cross-pins, and a variety of metal and wood screws.³²³ There were no parts kits in early America, so all of this would have to have been made or acquired *à la carte*. One of the

320. *Id.* at 268.

321. Carlton O. Wittlinger, *The Small Arms Industry of Lancaster County: 1710-1840*, 124 PENNSYLVANIA HISTORY: A JOURNAL OF MID-ATLANTIC STUDIES 121, 135–36 (1957).

322. BROWN, *supra* note 110 at 150.

323. BAILEY, *supra* note 91, at 95-96.

reasons there were no parts kits is that firearms were not yet built with interchangeable parts. Quite unlike the “incredibly precise” machine-made interchangeable parts advertised by today’s ghost-gun entrepreneurs, eighteenth-century components were almost all made by hand.³²⁴ The resulting variability in the size, shape, thickness, and quality of individual parts required significant time and skill on the part of the person charged with turning them into a reliable firearm. Parts often had to be filed, fitted, re-filed, and re-fitted before they could be put into harmony with one another, and particular time and care had to be taken mounting the barrel and the lock to the stock.³²⁵ Needless to say, all of this had to be done without PDF instructions or how-to videos.

There was far more to this work than assembling, in other words, and it was not the domain of amateurs. Gunsmiths capable of building firearms with imported locks and/or barrels were not like today’s consumers of ghost-gun kits. They were skilled professionals who earned their livelihood making arms for the market.

Colonial Americans who made their own firearms from scratch belonged to the third and smallest cohort of gunsmiths. Unlike the European system characterized by complex division of labor, gun-makers in the colonies usually worked alone or in pairs in small shops. That meant that in addition to an unusually wide range of skills, such producers needed an unusually large

324. See the tab “incredibly precise” at <https://www.80percentarms.com/> (last visited Sept. 28, 2023).

325. BAILEY, *supra* note 91, at 96–98. *See also* Jones, *supra* note 313, at 15.

collection of materials and tools. They needed iron, copper, and steel; bellows, forges, anvils, and sledges; hammers and mallets of different shapes, materials, and sizes; a remarkable array of files (one eighteenth-century gunsmith's inventory includes twenty-nine types); rasps, saws, planes, hand- and table-vices, wrenches, swedges, screwdrivers, piers, pincers, tongs, drills, chisels, gouges, screw-plates, augers, drawing knives, and sandpaper; and mortars, pestles, and the necessary components for browning chemicals, among other necessities.³²⁶

Mobilizing the requisite skills and equipped with these and other necessary materials and tools, it would have taken an early American gunsmith around a week of work to produce a basic, utilitarian longarm from scratch.³²⁷ Anything elaborate or ornate would have taken considerably longer. Evidence from the time suggests that even those capable of building guns from scratch seldom did so. John Partridge Bull of Deerfield, Massachusetts, was one of those unusual gunsmiths who knew how to make firearms from scratch and had the materials, facilities, and tools to do so. Bull is even more unusual because he left behind a detailed account book recording the work he did over two decades as a gunsmith,

326. For tools, see BROWN, *supra* note 110, at 244–57; JAMES B. WHISKER, *THE GUNSMITH'S TRADE* 180–81 (1992).

327. SMITH, *supra* note 292, at 11.

1768-1788. It reveals that he made just three new guns during those twenty years.³²⁸

In sum, early America had a minor, low-productivity tradition of firearms manufacturing, one executed not by amateurs but by a small number of experts. Sometimes these experts made firearms for their own private use, as any professional might put their expertise to personal use. Everyone else used guns made by experts, overwhelmingly by Europeans. The vast majority of guns in the colonies came from Europe; repairs consumed the lions' share of work done by American gunsmiths; and of those firearms produced in America, most were built by skilled artisans using European locks and/or barrels.

D. The Failure of Colonial Gun-Making in Times of Crisis

Still, some might concede these basic facts and still insist upon a “tradition of self-made arms” in the colonies. Maybe this was a tradition of significant latent potential, potential kept slumbering by the competitive advantage of European manufacturing. So long as Europe turned out huge quantities of quality, affordable barrels and locks, one could argue, American gunsmiths rarely had cause to make them at home – *but they could have, if need be*. That is certainly what one would expect if, as Greenlee insists, there had been a robust American tradition of self-made arms. The trouble with this interpretation is that

328. Susan McGowan, *Agreeable to His Genius: John Partridge Bull (1731-1813)*, *Deerfield, Massachusetts* 5, 39–40, 74–75 (1988) (unpublished M.A. thesis, Trinity College). I thank Kevin Sweeney for alerting me to this source.

the colonies did sometimes find themselves under-armed at moments of crisis, and yet domestic manufacturing consistently failed them.

Consider “the great arms crisis” of 1758, during the Seven Years’ War.³²⁹ General James Abercromby, tasked with organizing 20,000 colonists for a campaign into the Ohio Country, could only obtain 10,000 guns from the metropole. He spent all spring and early summer imploring, cajoling, and bullying colonial governors to secure arms for the new recruits. With varying degrees of enthusiasm and sincerity, the governors grudgingly loaned out arms from public magazines, appealed to loyal subjects to contribute to the cause, and recruited the help of Thomas Hancock and other prominent merchants. These merchants eventually managed to purchase guns from market-savvy colleagues who had placed bulk orders with English gun dealers at the start of the war in anticipation of reaping handsome profits (foresight well-rewarded).³³⁰ What no one seems to have seriously attempted, or even to have imagined would be worth attempting, was mobilizing British North America’s “tradition of self-made arms” to manufacture the guns the recruits required. Insofar as American gunsmiths helped solve the crisis, it was through repairs - making defective arms fit for service.³³¹ Delayed six weeks by the maddening search for firearms,

329. BAILEY, *supra* note 91, at 121.

330. John A. Schutz, *The Disaster of Fort Ticonderoga: The Shortage of Muskets during the Mobilization of 1758*, 14 HUNTINGTON LIB. Q. 307, 307–09 (1951). *See also* BAILEY, *supra* note 75, at 121–23.

331. Schutz, *supra* note 330, at 314.

Abercromby arrived too late at Ticonderoga and suffered one of Britain's most humiliating defeats of the war.³³²

Or consider "Lord Dunmore's War" in 1774. In the fall of that year, Virginia's royal governor led militiamen from the colony's western counties in a war of conquest against the Shawnee in the Ohio Country. Settlers eagerly volunteered for militia duty, out of a mix of anxious dislike of the Shawnee, expectation of plunder, and hope of receiving land bounties.³³³ Where would their guns come from? Reading Greenlee, one would conclude that these resourceful backcountry folk simply made their own guns. As for the "pioneers, mountain men, and other explorers essential to the expansion of the American empire from sea to shining sea," he tells us, "they had to know how to build and repair arms themselves to survive."³³⁴ The frontier leaders tasked with organizing militias understood the situation better. As one local recruiter put it, "most of these men is bad off for arms and ammunition and I believe Cannot get them."³³⁵ Facility with basic repairs was obviously a welcome skill. But a little

332. Schutz argues that lack of muskets was "the most important cause of the defeat." *Id.* at 307. For the defeat in context, see FRED ANDERSON, *CRUCIBLE OF WAR: THE SEVEN YEARS' WAR AND THE FATE OF EMPIRE IN BRITISH NORTH AMERICA: 1754–1766* (2000).

333. ROB HARPER, *UNSETTLING THE WEST: VIOLENCE AND STATE BUILDING IN THE OHIO VALLEY* 46–66 (2018).

334. Greenlee, *supra* note 19, at 68.

335. Letter from Michael Woods to William Preston (May 29, 1774), in *DOCUMENTARY HISTORY OF DUNMORE'S WAR: 1774 397–98* (Reuben Gold Thwaites & Louise Phelps Kellogg eds., 1905), 397–98.

reflection on the great difficulties involved in building firearms even in well-supplied eastern seaports ought to be enough to disabuse anyone of the notion that the average western settler had the necessary materials, facilities, tools, and skills to make a musket. Dunmore's forces won a narrow victory over Shawnees not because of a tradition of self-made arms, but because the state had provided English-made guns (and ammunition) for unarmed militiamen from the governor's palace and colonial magazine in Williamsburg.³³⁶

The scale and logistical challenge of Abercromby's or Dunmore's campaigns obviously paled in comparison to what the colonies would soon be facing in the Revolutionary War. Indeed, the Revolution represented the perfect natural experiment to test the proposition that early Americans nurtured a robust tradition of self-made arms. War with Britain would make it existentially necessary for insurgents to acquire many tens of thousands of additional firearms. Would "the American tradition of self-made arms" be up to the challenge?

E. American Gun-Making During and After the Revolution

Greenlee's surprising answer is yes. "To sustain themselves against a large and well-supplied British military throughout the eight-year war," he writes, "the Americans relied on gunsmiths, individuals with knowhow from working on

336. For guns and ammunition sent from the mansion and magazine, see JOURNALS OF THE HOUSE OF BURGESSSES OF VIRGINIA 1773-1776, INCLUDING THE RECORDS OF THE COMMITTEE OF CORRESPONDENCE 223 (John Pendleton Kennedy ed., 1905).

their own arms, and Americans who were willing to learn the art of arms manufacturing.”³³⁷ Indeed, he insists that during the Revolutionary War, “Americans needed to build their own arms to survive.”³³⁸ These claims are at odds with what most professional historians know about the war. The evidence makes it clear that American arms makers were not remotely up to the challenge of equipping a war against Great Britain. Were it not for massive imports of firearms (and gun parts, and gunpowder, and saltpeter, among many other things) from continental Europe, the insurgency against Great Britain would have been a spectacular failure.

Patriot leaders hoped things would be otherwise at the dawn of the rebellion, and confidently boasted that they could build their way out of their arms shortage. Benjamin Franklin wrote that with the right incentives “arms may be made as good and as cheap in America as in any Part of the World.”³³⁹ John Adams claimed that his country had “many manufacturers of firearms now, whose arms are as good as any in the world.”³⁴⁰ John Hancock believed that the

337. Greenlee, *supra* note 19, at 51.

338. *Id.* at 48.

339. Letter from Benjamin Franklin to Silas Deane (Aug. 27, 1775), available at <https://founders.archives.gov/?q=joseph%20belton&s=1111311111%20&sa=&r=1&sr=> (last visited Jan. 25, 2023)

340. John Adams, *Novanglus III* (Feb. 6, 1775), in PAPERS OF JOHN ADAMS, VOL 2 243–55, 252 (Robert J Taylor et al. eds., 1977).

colonies' gunsmiths would "soon be able to provide" the necessary firepower.³⁴¹ And Thomas Paine informed readers of *Common Sense* of cannon cast "at pleasure" and American small arms "equal to any in the world."³⁴² Richard Penn, a former lieutenant governor of Pennsylvania and the man whom the Continental Congress entrusted to deliver the "olive-branch petition" to the King in the summer of 1775, warned parliament that the colonies made small arms "in great numbers, and very complete."³⁴³ Another correspondent from Philadelphia went even further, assuring parliament that there were gunsmiths in his province could "make one hundred thousand stand of Arms in one year."³⁴⁴

Even accounting for optimistic bravado and a degree of menacing boastfulness, American officials had ambitious, sincere hopes for domestic arms production. Provincial congresses from around the colonies passed legislation and issued appeals in hopes of recruiting gunsmiths and would-be gunsmiths to public service. Greenlee devotes several pages of his article to quoting these

341. Letter from John Hancock to George Washington (Mar. 6, 1776), available at <https://founders.archives.gov/?q=%20Author%3A%22Hancock%2C%20John%22%20Recipient%3A%22Washington%2C%20George%22&s=1111311111&r=25> (last visited July 26, 2024).

342. THOMAS PAINE, RIGHTS OF MAN, COMMON SENSE, AND OTHER POLITICAL WRITINGS 41 (Mark Philp ed., 1998).

343. Penn's testimony is in WILLIAM COBBETT, THE PARLIAMENTARY HISTORY OF ENGLAND FROM THE EARLIEST PERIOD TO THE YEAR 1803: FROM WHICH LAST-MENTIONED EPOCH IT IS CONTINUED DOWNWARDS IN THE WORK ENTITLED "THE PARLIAMENTARY DEBATES," VOL 18 911–13 (1814).

344. Quoted in Greenlee, *supra* note 19, at 55.

sources,³⁴⁵ much like counterparts writing about the history of large-capacity firearms detail example after example of exotic historic weapons. But just as those authors seldom tell us about the safety, price, production numbers, or distribution of the unusual guns they highlight (that is, about context), Greenlee has almost nothing to say about the *results* of revolutionary era appeals for domestic production of firearms.³⁴⁶ The silence is understandable, because those results were deeply underwhelming.

Take Massachusetts, which budgeted nearly \$100,000 to pay for domestically produced war material early in the conflict. Colonial craftsmen lacked the capacity to meet this surging demand, and much of that appropriation went unspent.³⁴⁷ Authorities in Maryland likewise worked to encourage domestic arms production. They set a relatively modest goal of producing 240 a month yet failed to achieve it.³⁴⁸ New York offered a bounty of \$444 to anyone willing to start a gunlock factory in the colony; that substantial bounty went

345. *See generally, id.* at 54-61 ([parenthetical recommended here]).

346. Greenlee claims that it is difficult to assess the scale of domestic firearms production during the war because, fearful of British retaliation, American gunsmiths did not sign their creations. *Id.* at 60. This is incorrect. In the first instance, archival evidence can tell us more about the scale of manufacturing than can examination of weapons that have survived the centuries. Second, some of the surviving guns do bear makers' signatures or insignia. Indeed, authorities sometimes required gunmakers to sign the firearms they produced under contract. *See* BROWN, *supra* note 110, at 325; NEIL LONGLEY YORK, *MECHANICAL METAMORPHOSIS: TECHNOLOGICAL CHANGE IN REVOLUTIONARY AMERICA* 65 (1985).

347. SMITH, *supra* note 309, at 9-10.

348. *Id.* at 10.

unclaimed, and the colony was reduced to sending George Washington unarmed recruits.³⁴⁹ Virginians had high hopes for domestic firearms production. But even after sending agents in search of gunsmiths far beyond their colony's borders, Virginians not only failed to help arm the Continental Army, but they also failed to secure the arms they themselves required.³⁵⁰ Wealthy Pennsylvania organized the most ambitious arms-making program of the individual colonies. It spent more than other colonies, and tried to centralize production in a new, \$100,000 state-run armory inspired by European methods of mass production. Yet even with their lucrative incentives and state-supported infrastructure, Pennsylvania's wartime gunsmiths only managed to produce around eighty-four muskets a month on average. Each one cost the state about twice as much as a new musket fetched on the open market.³⁵¹

In frustration, individual colonies looked to the Continental Congress to equip their fighting men. Though it took time to cohere, Congress eventually organized a very impressive system of wartime production. State intervention was crucial, because only the government could overcome systemic obstacles inhibiting production. Even in peacetime, private manufacturers struggled to obtain working capital, master unfamiliar technical skills, source and arrange for the timely transportation of raw materials, and recruit experienced labor.

349. *Id.*

350. *Id.*

351. *Id.* at 15, 222 n.41. For the efforts of individual colonies, see also YORK, *supra* note 346, at 65–70.

Wartime mobilization, disruption, scarcity, and inflation made all these routine problems dramatically worse.³⁵² The Department of the Commissary General of Military Stores (DCGMS) had solutions. It provided cash advances, raw materials, transportation, and technical consulting to private manufacturers working under contract. More consequentially, the DCGMS centralized production at three main national arsenals, at Springfield Massachusetts, Carlisle Pennsylvania, and Philadelphia.³⁵³

State contractors and master craftsmen at these arsenals coordinated specialists in multiple trades to mass-produce necessary military supplies. For some vital supplies, the results were remarkable. Among other items, they made large quantities of cartridge boxes, ramrods, bayonets, and cartridge paper. They produced hundreds of wagons, ammunition carts, and iron cannon.³⁵⁴ The cast tens of thousands of pieces of shot and artillery shells in a wide range of sizes.³⁵⁵ And, relying overwhelmingly on imported gunpowder or domestic powder made with imported saltpeter, the mostly female labor force at the ammunition laboratory in Philadelphia produced an astonishing 4.2 million musket cartridges.³⁵⁶

352. See BROWN, *supra* note 110, at 310.

353. SMITH, *supra* note 309, at 142–71.

354. *Id.* at 122, 193.

355. *Id.* at 123–26, 209.

356. *Id.* at 82–88. Government facilities made eleven million musket cartridges overall. *Id.* at 209.

What the DCGMS could not do, it became clear, was manufacture new firearms at anywhere near the scale that the war demanded. The most recent expert estimate suggests that on the eve of the Revolution there were only around 175 gunsmiths in the colonies capable of doing this work.³⁵⁷ Perhaps partly for this reason, of the three arsenals only the one in Philadelphia was tasked with producing arms. Departmental procurement records from the time make it difficult to say with confidence how many new firearms the facility turned out. One expert suggests that fifteen thousand “was not out of the question” during its years of operation, which, if accurate, would be an impressive figure given the challenges of the day.³⁵⁸

But the large majority of these American-made firearms produced during the Revolution relied on European locks and barrels. War planners understood from the beginning that it would have to be so. In September 1775, for example, Congress authorized the foreign purchase and importation of ten thousand muskets and *twenty* thousand musket locks.³⁵⁹ George Moller, a respected authority early American firearms history, found evidence for at least 40,000 locks imported during the Revolution, along with comparable quantities of musket barrels (including nearly 30,000 purchased by a U.S. agent in France in

357. *Id.* at 12.

358. *Id.* at 96.

359. *See* resolutions of Monday, Sept. 18, 1775, in UNITED STATES CONTINENTAL CONGRESS, *supra* note 177, at 2:253-54.

May of 1777).³⁶⁰ The scale of these parts imports suggest that the expert gunsmiths employed by government seldom made firearms from scratch. Indeed, after extensive research, Moller himself was “unable to establish a single instance where a continental armorer was employed in the fabrication of entirely new arms.”³⁶¹

Even while relying extensively on imports for the most critical components, it is doubtful whether domestic producers made even a tenth of the firearms used by American forces during the war. Around three hundred thousand Americans bore arms in the Revolution, either as Continentals or militiamen.³⁶² Some of them entered the service with their own firearm (the great majority of which had been made entirely in Europe or built with European locks and barrels), and some served with arms taken from the enemy.³⁶³ But, as Greenlee briefly acknowledges,³⁶⁴ most fought with arms imported from continental Europe, particularly arms from France. Moller’s careful inventory records more than

360. See MOLLER, *supra* note 83, at 141–42.

361. *Id.* at 147.

362. According to historian John Ferling, around 100,000 served in the Continental Army over the course of the war, and around 200,000 soldiered in colonial militias. See John Ferling, *Myths of the American Revolution*, 40 SMITHSONIAN MAGAZINE 48 (2010).

363. For more on both points, see Brian DeLay, *The Arms Trade and American Revolutions*, 128:3 AM. HIST. REV. 1152-54 (SEPT. 2023).

364. Greenlee, *supra* note 19, at 54.

130,000 muskets imported between 1776-1783, and he suspects the actual total exceeded 200,000.³⁶⁵

In other words, it was not “domestic arms production [that] maintained the colonies through the arms shortage during the war.”³⁶⁶ What maintained the colonies through the arms shortage during the war was a remarkable state-run engagement with the international arms trade and, especially, the patronage of European governments. Colonial gunsmiths contributed meaningfully to the war effort, primarily by repairing many thousands of arms.³⁶⁷ When they did manufacture guns, they almost always relied on imported locks and barrels. As had been true throughout the colonial era, and as would be true for Haitians and Spanish Americans fighting for their own independence in the coming decades, American revolutionaries obtained their guns (and ammunition) not through a “tradition of self-made arms,” but rather from government and markets.³⁶⁸

In the aftermath of the Revolution, Washington, Franklin, Knox, and other nationalists spent more than a decade urging their compatriots to invest in a domestic arms industry. As Treasury Secretary Alexander Hamilton put it while making the case in his landmark *Report on the Subject of Manufactures*, “the

365. Moller’s inventory includes 117,661 “total known imports” from 1776-1783. Benjamin Franklin secured an additional 15,000 for Massachusetts in 1775, for a total of 132,661. MOLLER, *supra* note 83, at 195, 484–85.

366. Greenlee, *supra* note 19, at 61.

367. MOLLER, *supra* note 83, at 146-53.

368. I argue that the international arms trade connected the American Revolution, the Haitian Revolution, and the Spanish-American Wars for Independence in DeLay, *supra* note 362.

extreme embarrassments of the United States during the late War, from an incapacity of supplying themselves are still matter of keen recollection.”³⁶⁹ The new federal government finally began making the necessary investments in the mid-1790s, relying both on state arsenals at Springfield, Massachusetts and Harper’s Ferry Virginia and on private contractors to make firearms. These investments and state-private partnerships made the U.S. largely self-sufficient for arms in the War of 1812 and positioned it to take advantage of and contribute to the era’s technological breakthroughs described above in Part II.³⁷⁰ The Civil War supercharged the country’s arms production, making it one of the most efficient and inventive in the world. Ever since, the U.S. arms industry has been thoroughly entangled with war-making and government contracts – even as the gun lobby has spun the ingenious illusion that the federal government is the industry’s enemy rather than its indispensable historic patron.³⁷¹

In sum, after centuries of depending upon European imports, Americans in the early republic finally managed to become largely self-sufficient in arms

369. Alexander Hamilton’s Final Version of the Report on the Subject of Manufactures (Dec. 5, 1791), available at <http://founders.archives.gov/documents/Hamilton/01-10-02-0001-0007> (last visited June 20, 2023).

370. This history is powerfully illuminated in Andrew Beardsley Fagal, *The Political Economy of War in the Early American Republic: 1774–1821* 89 (2013) (unpublished Ph.D. dissertation, State University of New York at Binghamton).

371. Brian DeLay, *The American Public Has Power Over the Gun Business. Why Doesn’t it Use It?*, THE CONVERSATION (Feb. 16, 2018), available at <https://theconversation.com/the-american-public-has-power-over-the-gun-business-why-doesnt-it-use-it-92005>.

production. They did so through federal patronage of production at national arsenals and through federal contracts to private manufacturers. The individuals who worked at arsenals or under contract were not exponents of an “American tradition of self-made arms” or the forebears of today’s amateurs with gun kits trying to evade state regulation. They were professionals or professionals-in-training, working in an industry intimately connected to the state. They were the forebears of those employed today by firms like Glock, Sig Sauer, and Smith & Wesson to make arms for the state and for the market, and who are obliged by law to stamp federal serial numbers on their products.

3D-printed guns and kits enable consumers with no skill, experience, or special tools to quickly assemble high-quality firearms. Nothing like that has ever existed before in American life. The dramatic technological changes that have given birth to this sub-industry have provoked unprecedented societal consequences. As those consequences accelerate, we are witnessing the nation’s tradition of regulatory response iterate in real time. When Greenlee drafted his article about self-made arms, in addition to the District of Columbia six states regulated ghost guns.³⁷² Today, more than twice as many states do.³⁷³ These laws are consistent with our nation’s history of firearms regulation. In no sense are the entrepreneurs who sell parts and kits or their customers part of a historic tradition of “self-made arms” that should shield their guns from the serialization requirements that for more than half a century have applied to other firearms. As

372. Greenlee, *supra* note 19, at 80.

373. Everytown for Gun Safety, *supra* note 269.

with regulating high-capacity magazines, then, treating ghost guns like any other firearm (that is, requiring serial numbers and background checks) should be found constitutional under *Bruen*'s framework.

CONCLUSION

Gun-rights activists have enjoyed breathtaking victories over the past fifteen years. *Heller* and *Bruen* have inscribed the myth of continuity deep into the heart of Second Amendment jurisprudence. Experience has convinced gun rights activists that history is favorable terrain upon which fight for its legal program, hence the post-*Bruen* euphoria about overturning “virtually every gun control on the books.”³⁷⁴ There is no doubt that *Bruen*'s framework makes that wild aspiration more realistic than before. By refusing to consider the public interest at stake in regulation; indulging in a very high level of abstraction when defining “arms” (e.g., a flintlock musket is analogous to an AR-15) but being intolerant of abstraction when assessing law (dismissing most historic regulations as “outliers” insufficiently similar to contemporary laws); and equating regulatory silence with constitutional protection, the Court has erected formidable, even radical new obstacles to democratically-enacted firearms regulation in the United States.³⁷⁵

374. Hubler, *supra* note 11.

375. For these and other critiques of the decision, see Blocher and Ruben, *supra* note 31; Charles, *supra* note 6; Alschuler, *supra* note 46.

Still, the implications of that radicalism have already occasioned one tactical retreat. In December of 2019, Zackey Rahimi of Texas assaulted his girlfriend (the mother of Rahimi’s child) and then fired a gun at a witness. Placed under a civil protective order, Rahimi soon violated it. He also threatened another woman with a firearm and involved himself in five shootings.³⁷⁶ Police with a warrant investigating the shootings found firearms in his possession, in violation of the protective order and, therefore, of 18 U.S.C. § 922(g)(8), the federal law disarming persons subject to domestic violence restraining orders.³⁷⁷ Rahimi sued, alleging that the law violated his Second Amendment rights. Before *Bruen*, both a district court and the Fifth Circuit disagreed.³⁷⁸ But in early 2023, the Fifth Circuit struck down Rahimi’s conviction under the law and declared 18 U.S.C. § 922(g)(8) unconstitutional, insisting that the government had failed to produce a sufficiently “well-established and representative analogue” to satisfy *Bruen*’s historical-tradition test.³⁷⁹

The alacrity with which the Supreme Court agreed to review the decision suggested that even some of the *Bruen* majority had reservations about the more embarrassing consequences of that test. *Rahimi* offered an opportunity for meaningful reform, something urged upon the Court by historians, legal scholars,

376. Amy Howe, *Court to Hear Major Gun-Rights Dispute over Domestic-Violence Restrictions*, SCOTUSBLOG (Nov. 6, 2023) <https://www.scotusblog.com/2023/11/court-to-hear-major-gun-rights-dispute-over-domestic-violence-restrictions/>

377. *Id.*

378. *Id.*

379. *United States v. Rahimi*, No. 21-11001, 2023 WL 2317796, at *1 (5th Cir. Mar. 2, 2023).

and the authors of numerous other amicus briefs.³⁸⁰ As most observers expected, however, the Court reversed the Fifth Circuit decision in such a way as to leave *Bruen*'s framework mostly intact.³⁸¹

Writing for the eight-person majority, Chief Justice Roberts grounded support for Rahimi's disarmament in analogous measures from common law – specifically in surety laws and going armed laws. “Section 922(g)(8) is by no means identical to these founding era regimes,” he explained, “but it does not need to be.”³⁸² The Fifth Circuit erred in interpreting *Bruen* to require a “historical twin,” he continued, when in fact it only demands a “historical analogue.”³⁸³ More specifically, the decision directed courts to assess the constitutionality of firearms laws based on “the principles that underpin our regulatory tradition,” rather than on a text-by-text comparison to specific historic regulations.³⁸⁴

380. I joined seventeen other professors of English and American history and law to argue that “dangerousness has always been a basis for restricting gun ownership;” that firearms were “very rarely involved in domestic disputes” in early America; and that local jurisdictions used common law to provide “some degree of social oversight and regulation of domestic violence to protect the public peace” during the colonial early national eras. See Brief for Amici Curiae Professors of History and Law, *United States v. Rahimi*, US No. 22-19, at 2, 4.

381. *United States v. Rahimi*, No. 22-915, 2024 WL 3074728 (U.S. June 21, 2024).

382. *Id.*, at 13.

383. *Id.*, at 16.

384. *Id.*, at 7. Note that Justice Roberts framed this as a reiteration of rather than an adjustment to *Bruen*'s framework.

It is too soon to know whether this modified test will alter the trajectory of Second Amendment decisions in district and appellate courts. On the one hand, it is meaningful that five of *Bruen*'s six signatories also signed onto this concession/clarification. As explained above, the U.S. has a long, rich tradition of regulating firearms in the name of public safety. A constitutional test prioritizing the principles underpinning that tradition should theoretically create more argumentative space for states and localities to successfully defend gun safety laws. Still, legal scholars have expressed skepticism that *Rahimi* will effectively guide lower courts grappling with similar issues (felon disarmament and red flag laws, for instance), let alone other, more distant areas of Second Amendment jurisprudence.³⁸⁵ The handful of firearms decisions issued in the immediate aftermath of *Rahimi* seem to justify that skepticism.³⁸⁶ More importantly, it is too soon to know what *Rahimi* will mean for the Supreme Court's conservatives in future firearms cases. Indeed, the fact that half of them felt moved to write detailed concurrences seems to reflect ongoing disagreement

385. See, e.g., Jacob D. Charles, *On Guns, The Supreme Court Can't Shoot Straight*, WASHINGTON MONTHLY (June 29, 2024): <https://washingtonmonthly.com/2024/06/29/on-guns-the-supreme-court-cant-shoot-straight/>

386. Andrew Willinger, *Rahimi in the Lower Courts So Far*, July 17, 2024, Duke Center for Firearms Law Second Thoughts Blog, <https://firearmslaw.duke.edu/2024/07/rahimi-in-the-lower-courts-so-far>

within the supermajority about what *Bruen* means for the nation's gun laws.³⁸⁷ That the lone dissent in *Rahimi* came from Justice Thomas, *Bruen*'s author, starkly illustrates the depth of those disagreements.

While still contested, then, *Bruen* remains the overarching framework for Second Amendment cases. *Rahimi* might give states and localities a bit more maneuvering room to defend firearm laws, but their success will still depend significantly on the type of regulation in question. A careful study of case outcomes in *Bruen*'s first year revealed a striking number of successful challenges while illuminating the unevenness of those victories. A few categories of challenges were unanimously rejected in *Bruen*'s first year, including those connected with the National Firearms Act, unlawful use in a crime, and sentence enhancements.³⁸⁸ Other challenges did much better. Age restrictions, licensing and permit requirements, and sensitive place regulations prevailed just over half of the time.³⁸⁹ This inconsistent judicial record says much about the inadequacy of the ruling's framework as a guide to lower courts. *Bruen*-era decisions have been described as "wildly manipulable and unpredictable,"³⁹⁰ evincing "an

387. In addition to Justice Sotomayor, Justices Gorsuch, Kavanaugh, and Barrett contributed concurrences.

388. Charles, *supra* note 6, table 3 at 127. For the unevenness of *Bruen*-era decisions at courts of appeals, see Jacob Charles, The Second Amendment on Appeal Post-*Bruen*, March 22, 2024, Duke Center for Firearms Law Second Thoughts Blog, <https://firearmslaw.duke.edu/2024/03/the-second-amendment-on-appeal-post-bruen> [<https://perma.cc/PB6Y-Y7HN>].

389. Charles, *supra* note 6, at table 3, 53.

390. Blocher and Ruben, *supra* note 31, at 105.

erratic, unprincipled jurisprudence”³⁹¹ where judges “wield their power in firearms cases far more actively than their interest-balancing predecessors ever did.”³⁹²

At the same time, the uneven record is partly explained by the fact that reliable historical evidence is more readily available for some questions than for others. The myth of continuity is challenging to debunk for many, perhaps most issues in firearms law, because it is so difficult to make definitive arguments about things that never happened. Why did the Founders not take guns away from domestic abusers or convicted felons? Why did they not prohibit minors from purchasing guns? Why did they not institute robust licensing and permit requirements? There are sophisticated historical arguments to be made for these and related topics.³⁹³ But those arguments will seldom turn on questions as straightforward as “did high-capacity firearms cause societal problems in the Founding era?” or “how many Henrys and Winchesters were there in the U.S. in 1868?”

Indeed, in most cases the more elaborate the historical narrative proffered by gun-rights activists, the less likely it will be to survive contact with serious historical research. That is surely one reason why assault weapon/large capacity magazine regulations have fared better than some other laws, having been upheld

391. *Id.*

392. Alschuler, *supra* note 46, at 75.

393. See, e.g., Blocher & Siegal, *supra* note 48.

in more than two-thirds of cases so far in the *Bruen* era.³⁹⁴ Fairing better is not the same thing as faring well, of course, but the contrast with some other types of regulations is notable. There have been fewer rulings on ghost gun challenges,³⁹⁵ and states have only just begun to engage professional historians to help them respond to the misleading American-tradition-of-self-made-arms narrative. But ghost guns represent another area of firearm law where historical research should be an effective tool in defense of regulation.

This is not to say that claims about continuity are largely correct for some categories of cases and largely incorrect for others. The differences between the founding-era and our own times are profound and extend to almost everything to do with firearms. As a matter of historical accuracy, *discontinuity* would be a much more defensible starting assumption for courts considering firearms challenges in the *Bruen* era than continuity would be. It is just that the myth of continuity is more readily debunked in some categories of firearms cases than in others, on account of the nature of the evidentiary claims. History is not inherently favorable terrain for gun-rights legal activism, in other words – unless the myth of continuity goes unchallenged in court.

394. Charles, *supra* note 6, at table 3, 53. These laws have also mostly been upheld by *Bruen*-era appellate courts. See Charles, *supra* note 388.

395. Of five adjudicated claims filed against ghost gun regulation in the past year, two have been upheld. See Charles, *supra* note 6, at table 3, 53.

Historians have an important and unavoidable role to play in Second Amendment litigation in the *Bruen* era. But I sympathize with Americans who feel ambivalent about that. When I have talked with friends, colleagues, and acquaintances about working as an expert witness in recent Second Amendment cases, most are understandably puzzled, even mildly aghast to learn that historians have anything to do with the fate of firearms policy in their communities. With nearly sixty million guns sold legally in the U.S. from 2020-2022,³⁹⁶ with gun suicides,³⁹⁷ homicides,³⁹⁸ and mass shootings³⁹⁹ on the rise, and with firearms fatalities now the number one cause of death for American children,⁴⁰⁰ they believe we urgently need an array of professionals working on

396. For sales data based on the FBI's National Criminal Instant Background Check System, see Daniel Nass & Champe Barton, *How Many Guns Did Americans Buy Last Month?*, THE TRACE (June 5, 2023), <https://www.thetrace.org/2020/08/gun-sales-estimates/#:~:text=Americans%20bought%20an%20estimated%201.38,an%20analysis%20of%20FBI%20data.&text=That's%20about%20the%20same%20as,like%20mass%20shootings%20and%20elections>.

397. Gun suicide, accounting for more than half of all firearms-related deaths in the United States, increased by 10% from 2019-2021. See John Gramlich, *What the Data Say about Gun Deaths in the U.S.*, PEW RESEARCH CENTER (Apr. 26, 2023), <https://www.pewresearch.org/short-reads/2023/04/26/what-the-data-says-about-gun-deaths-in-the-u-s/>.

398. Gun homicides climbed 45% between 2019 and 2021. *Id.*

399. According to the F.B.I., there were three mass-shootings in 2000 and sixty-one in 2021. *Id.*

400. In 2020, guns surpassed automobile accidents to become the leading cause of childhood death in America. Robert Gebeloff et al., *Childhood's Greatest Danger: The Data on Kids and Gun*

solutions. Public health specialists, doctors, faith and community leaders, law enforcement, legal scholars, criminologists, and, especially, democratically elected representatives should all be involved in discussions over effective responses to our gun crisis. But historians?

So, as a reluctant interloper into matters of constitutional law, I offer what I consider to be an optimistic prediction. It is true that in the short- to medium-term, historical research can only help blunt *Bruen*'s most disruptive implications for public safety. Even with robust partnerships between state legal teams and professional historians, the results will likely be quite uneven across different categories of law. But over the long term, an honest reckoning with the differences between our own times and the founding era can do more than expose bogus arguments against specific firearms regulations. By incentivizing states to research Founding-era history when defending firearms regulation, *Bruen* will inevitably bring renewed scrutiny to *Heller*'s ahistorical claim that the Second Amendment was crafted to protect an individual right to armed self-defense.

Recall that gun culture in the founding era was one that for generations had evolved around collective threats and opportunities, most of them stemming from the enduring preoccupations of slavery, settler colonialism, and inter-imperial war. Above all, recall that this was a gun culture molded by the state. Throughout the colonial and early national eras, government exerted an enormous influence on who did and did not have guns, and on shifting patterns

Violence, NY TIMES (Dec. 14, 2022), <https://www.nytimes.com/interactive/2022/12/14/magazine/gun-violence-children-data-statistics.html>.

of firearms ownership over time and space. When acute collective threats and opportunities arose, whether huge (the Seven Years' War) or modest (Lord Dunmore's War), much of the public relied on government for arms and ammunition.

Most immediately, the founding generation thought about firearms in relation to the formative experience of the American Revolution. No one who had any role in that war harbored illusions that victory came from "self-made" guns. Victory had been armed by the state. It had been armed, in the first instance, by local insurgent committees purchasing whatever they could and confiscating the arms of political opponents. It had been armed by colonial assemblies who partnered with prominent merchants to scour Caribbean markets for muskets and gunpowder. It had been armed by the Continental Congress, which oversaw a sophisticated and sprawling international program to import guns and ammunition. And, ultimately, it had been armed by the generous patronage of foreign governments.⁴⁰¹

Despite itself, *Bruen* will invite the nation to use its deepening understanding of the founding generation's experience with guns to revisit their reasons for crafting the Second Amendment. After prolonged controversy and argument, Article I, Section 8 of the Constitution had just secured to the new federal government sweeping powers over state militias. Congress was empowered to "provide for calling forth the Militia to execute the Laws of the Union, suppress Insurrections and repel Invasions; To provide for organizing,

401. See DeLay, *supra* note 363.

arming, and disciplining, the Militia, and for governing such Part of them as may be employed in the Service of the United States.”⁴⁰² All political observers at the time understood government power to be a precondition to arming effective collective action. Everything about the colonial and revolutionary experience confirmed that. Indeed, government was so essential that it could effectively disarm just by failing to arm.

That given, it is little wonder that many feared the new Federal government would abuse its authority over state militias by doing just that. The Virginian George Mason, delegate to the Constitutional Convention whose reservations prevented him from signing the finished document, gave voice to these anxieties. At his state’s ratifying convention, Mason objected that the new Constitution gave national authorities “almost unlimited Authority over the militia of the several states; whereby, under Colour of regulating, they may disarm, or render useless the Militia, the more easily to govern by a standing Army . . .”⁴⁰³ Mason’s suggested remedy was “an express declaration, that the state governments might arm and discipline” their militias.⁴⁰⁴

As several of the nation’s most distinguished early American historians argued in an amicus brief to the Court in 2008, the Second Amendment was

402. U.S. CONS. Art. I, § 8.

403. Letter from George Mason to Thomas Jefferson (May 26, 1788), *available at* <https://founders.archives.gov/?q=%20Author%3A%22Mason%2C%20George%22%20Recipient%3A%22Jefferson%2C%20Thomas%22&s=1111311111&r=6>.

404. Sweeney, *supra* note 85, at 360.

crafted to address these and other concerns about reconciling republican liberty with the need for effective military power.⁴⁰⁵ The language of Madison’s initial draft is even clearer on this point than the ratified edit: “the right of the people to keep and bear arms shall not be infringed; a well armed and well regulated militia being the best security of a free country: but no person religiously scrupulous of bearing arms, shall be compelled to render military service in person.”⁴⁰⁶

Justice John Paul Stevens’s dissent in *Heller* correctly identified the discontinuity between the Founders’ anxieties about firearms and our own. “The Second Amendment was adopted to protect the right of the people of each of the several States to maintain a well-regulated militia,” he explained. “It was a response to concerns raised during the ratification of the Constitution that the power of Congress to disarm the state militias and create a national standing army posed an intolerable threat to the sovereignty of the several States.”⁴⁰⁷

Of course, the *Heller* majority insisted instead on continuity, arguing that the Founders were actually a lot like gun owners in our own times. Rather than the balance of federal and state power, militias, or standing armies, what really concerned them was protecting an individual right to keep and bear arms for self-defense. Americans will have to keep living and dying with the consequences of

405. Rakove et al., *supra* note 50.

406. Quoted in Sweeney, *supra* note 85 at 361. For the larger debate over arming the militia, see *id.* at 359–61.

407. *Heller*, 554 U.S. at 637 (Stevens, J., dissenting).

that deadly misinterpretation for the foreseeable future. But so long as *Bruen* provokes renewed historical inquiry whenever a firearms regulation is challenged, the folly of modern Second Amendment jurisprudence will only come into sharper and sharper focus. History will not be kind to the myth of continuity in American gun culture.

APPENDIX



Fig. 1: Views of a mid-18th-century French flintlock mechanism, lock screws, cock/hammer, frizzen/battery, muskets, false breech, pistol, and breech plug, from Diderot's *L'encyclopédie, ou Dictionnaire Raisonné des Sciences, des Arts et des Métiers: Recueil de Planches sur les Sciences et les Arts* (Paris, 1770), vol. 1, Plate V. Note the outline of the trigger, below f. 2.



Fig. 2: Trigger guard and constituent parts of a French flintlock mechanism, from multiple vantage points. From Diderot's *L'encyclopédie, ou Dictionnaire Raisonné des Sciences, des Arts et des Métiers: Recueil de Planches sur les Sciences et les Arts*.