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10 IN THE UNITED STATES DISTRICT COURT
 11 FOR THE EASTERN DISTRICT OF CALIFORNIA
 12 SACRAMENTO DIVISION

15 **WILLIAM WIESE, et al.,**
 16 Plaintiffs,
 17 v.
 18 **ROB BONTA, et al.,**
 19 Defendants.

Case No. 2:17-cv-00903-WBS-KJN

**DECLARATION OF KEVIN SWEENEY
 IN SUPPORT OF DEFENDANTS'
 OPPOSITION TO MOTION FOR
 SUMMARY JUDGMENT AND COUNTER-
 MOTION FOR SUMMARY JUDGMENT**

Date: July 10, 2023
 Time: 1:30 p.m.
 Courtroom: 5, 14th Floor
 Judge: Hon. William B. Shubb

DECLARATION OF KEVIN SWEENEY

I, Kevin Sweeney, declare under penalty of perjury that the following is true and correct:

1. I am a Professor of History emeritus at Amherst College. From 1989 to 2016, I taught history and American Studies at Amherst. I regularly offered courses on colonial American history, the era of the American Revolution, and early American material culture, which focused on studying the production and use of home furnishings and other artifacts in common use dating from the 1600s, 1700s, and early 1800s. During these years, in my own research on material culture, I made use of colonial-era probate inventories to study such topics as home furnishings in an effort to discover what types of possession were commonly found in households, to measure changes in standards of living, and to gain insights into domestic architecture.¹ I also examined critically and wrote about the strengths and weaknesses of these sources, their usefulness and pitfalls.² For decades, historians who are aware of these records' usefulness and their limitations have used estate inventories to study agricultural changes in England, wealth and social structures in England and its colonies, the institution of

¹ Kevin M. Sweeney, "Furniture and the Domestic Environment in Wethersfield, Connecticut, 1640-1800 in *Material Life in America, 1600-1860*, Robert B. St. George, editor (Boston: Northeastern University Press, 1988), 261-290.

² Kevin M. Sweeney, "Using Tax Lists to Detect Biases in Probate Inventories," *Early American Probate Inventories: Dublin Seminar for New England Folklife Annual Proceedings 1987*, Peter Benes, editor (Boston: Boston University Press, 1989), 32-40.

1 slavery in colonial American and the lives of slaves, and
2 household possessions in America, England, and France.³

3 2. My current research on seventeenth and eighteenth-
4 century firearms and militias utilizes similar types of
5 methodologies, documentary sources, and period artifacts. This
6 project, which has been going on for over a decade, was initially
7 inspired by my skepticism of the controversial claims and
8 pretended use of evidence from probate inventories in Michael A.
9 Bellesiles, *Arming America: The Origins of a National Gun Culture*
10 (New York: Alfred A. Knopf, 2000). As part of my on-going
11 project, I have given papers at the annual meetings of the
12 American Historical Association and the Organization of American
13 Historians, at conferences on firearms and society at Stanford
14 and Wesleyan Universities, and elsewhere, and published two
15 essays "Firearms Militias, and the Second Amendment" (2013) and
16 "Firearms Ownership and Militias in Seventeenth- and Eighteenth-
17 Century England and America" (2019). A third essay is
18 forthcoming on "Revolutionary State Militias in the Backcountry
19 and Along the Frontiers," and I am currently working on a fourth

20
21 ³ For some notable examples which also contain informed
22 observations on the use of probate inventories, their biases, and
23 how to deal with the biases see: James Horn, *Adapting to a New*
24 *World: English Society in the Seventeenth-Century Chesapeake*
25 (Chapel Hill: University of North Carolina Press, 1994); Gloria
26 L. Main, *Tobacco Colony: Life in Early Maryland, 1650-1720*
27 (Princeton: Princeton University Press, 1982), esp. 49, 282-
28 286171-174; Philip D. Morgan, *Slave Counterpoint: Black Culture*
in the Eighteenth-Century Chesapeake & Lowcountry (Chapel Hill:
University of North Carolina Press, 1998); Carole Shammas, *The*
Pre-Industrial Consumer in England and America (Oxford: Oxford
University Press, 1990), esp. 19-20; Lorna Weatherill, *Consumer*
Behaviour & Material Culture in Britain 1660-1760, 2nd. ed.
(London: Routledge, 1996), esp. 201-207.

1 essay as well as working on a book-length manuscript. My
2 curriculum vitae, detailing my education, experience, and
3 publications, is attached to this declaration as **Exhibit A**.

4 3. I have been asked by the Office of the Attorney General
5 of the California Department of Justice to prepare a declaration
6 on repeating firearms in eighteenth-century and early nineteenth-
7 century America. I make this declaration on the basis of my
8 training, professional expertise, and research. For my work in
9 this case, I am being compensated at a rate of \$100 per hour.

10 4. During the 1700s, most gun owners in the British
11 American colonies and in the newly independent republic of the
12 United States possessed and used single shot, muzzle-loading,
13 flintlock firearms. As Harold Peterson stated in his classic
14 1956 book, *Arms and Armor in Colonial America, 1526-1783*: "The
15 period began in 1689 with the muzzle-loading smooth-bore musket
16 and pistol as the most popular weapons. In 1783, almost a
17 hundred years later, the period ended with the same weapons [i.e.
18 muzzle-loading smooth-bore muskets and pistols] still supreme,
19 and without even any notable improvements in their design or
20 construction."⁴ Peterson continued: "Breech-loaders and
21 repeaters had appeared frequently on the scene but had made
22 little impression upon it."⁵

23 5. Evidence compiled during a decade of research using
24 eighteenth-century probate inventories, militia muster lists,
25 newspapers, and other documentary sources confirms the validity

26 _____
27 ⁴ Harold L. Peterson, *Arms and Armor in Colonial America*
28 *1526-1783* (Harrisburg, Penn.: Stackpole Publishing 1956), 221.

⁵ *Ibid.*, 221.

1 of Peterson's basic conclusions while offering three minor
2 modifications. First, these weapons described by Peterson [i.e.,
3 the muzzle-loading smooth-bore musket and pistol] were still
4 "supreme" in 1800 and probably as late as 1810. Second, most
5 muzzle-loading, flintlock long arms that were privately owned and
6 used during this period were not muskets, but lighter firearms
7 that were usually cheaper and had narrower bores than did
8 muskets. Finally, it is more accurate to say that repeaters had
9 **occasionally** appeared on the scene and not "frequently" as
10 Peterson believed. Here, he was probably misled by the
11 preference that private collectors and institutional collections
12 had (and still have) for obtaining rare examples of unusual or
13 innovative firearms.

14 6. Many years ago, the American archaeologist James Deetz
15 cautioned that "for a variety of reasons, surviving artifacts
16 cannot be taken as necessarily representative objects of their
17 period."⁶ Because of this fact, firearms that have survived and
18 found their way into museum collections can exaggerate just how
19 common or how important repeating firearms were at the time when
20 they were created. As military historian Joseph Bilby has
21 observed, "most early revolving and magazine guns were limited to
22 a few prototype models."⁷ It is possible that some of these
23 repeating firearms may have been purchased originally for their

24 _____
25 ⁶ James Deetz, *In Small Things Forgotten: An Archaeology of*
26 *Early American Life* rev. ed. (New York: Anchor, 1996) 8. For
27 similar observation see Ivor Noel Hume, *A Guide to Artifacts of*
28 *Colonial America* (New York: Knopf, 1974), 26-27.

27 ⁷ Joseph G. Bilby, *A Revolution in Arms: History of the*
28 *First Repeating Rifles* (Yardly, Penn.: Westholme Publishing,
2015), 41.

1 novelty and never used.⁸ Ornamented European examples of
2 repeating firearms were “solely designed as presentation pieces
3 to grace a noble or royal collection.”⁹ To deal with the
4 distorted picture that can result from looking only at surviving
5 artifacts, archaeologists and historians often use probate
6 inventories to get a more realistic picture of what artifacts
7 were in fact commonplace in a given period.¹⁰ This is one of the
8 methods employed in this declaration to assess how common were
9 repeating firearms in eighteenth-century America.

10 7. In this declaration, a repeating firearm will be
11 defined as “a firearm having a magazine or a revolving cylinder
12 holding several rounds and an action that makes possible rapid
13 firing of successive shots.”¹¹ This specific definition is
14 broadened to include superimposed firearms that lacked magazines
15 and instead used self-acting loads as well as mechanical actions
16 such as sliding locks to successively discharge bullets after the
17 gun was loaded. This declaration will also consider as repeating
18 firearms air guns with magazines, though one could question if
19 they were strictly firearms because they used compressed air
20 instead of black powder to discharge their bullets. This

21 ⁸ D. R. Baxter, *Superimposed Load Firearms 1360-1860* (Hong
22 Kong: South China Morning Post, 1966), xi.

23 ⁹ *Ibid.*

24 ¹⁰ Noel Hume, *Guide to Artifacts of Colonial America*, 21-22,
25 26-33; Deetz, *In Small Things Forgotten*, 11-15; and the works
26 cited in footnote 4 above.

27 ¹¹ Definition from Merriam Webster Dictionary
28 https://www.merriam-webster.com/dictionary/repeating_firearm
<Accessed online 2/7/2023 at 4:50PM>. Here, “magazine” is being
used in the contemporary sense of an ammunition-feeding device,
and not in the historical sense of a storehouse where ammunitions
and gunpowder are kept.

1 declaration's definition of a repeating firearm **excludes**
2 eighteenth-century volley guns, duck-foot pistols, and other
3 multi-barrel weapons that discharged the bullets in their
4 multiple barrels simultaneously instead of successively or
5 repeatedly. Such firearms had to be reloaded after each
6 discharge of the weapon, and this process took time. The
7 definition in use in this declaration also **does not** include the
8 Ferguson rifle which was not a repeating firearm, despite
9 erroneous claims to the contrary.¹² This rifle was a single-shot,
10 breech-loading firearm and not a repeater that could be fired
11 successively without reloading.¹³

12 **I. FIREARMS OWNED BY EIGHTEENTH-CENTURY AMERICANS**

13 8. Today, we tend to refer to any muzzle-loading
14 eighteenth-century gun as a musket, and this is what Peterson did
15 in the statement quoted above. However, Peterson knew better, as
16 did Ben Franklin. In the mid-1740s, Franklin informed the
17 readers of his Philadelphia newspaper that a "Musket" was "the
18 Name of a particular Kind of Gun."¹⁴ An eighteenth-century musket
19 was a sturdy, muzzle-loading military firearm that fired a single
20 lead ball weighing about an ounce, had a sling for ease of
21 carrying on long marches, and had a lug near the muzzle for

22 ¹² It is categorized as a repeater in Nicholas J. Johnson,
23 David B. Kopel, George A. Mocasry, E. Gregory Wallace and Donald
24 Kilmer, *Firearms Law and the Second Amendment: Regulation,*
25 *Rights, and Policy* (3d. ed. 2021), Chapter 23, page 2206.
Downloaded from firearmsregulation.org/www.FRRP3d_CH23.pdf
<Downloaded 2/11/2023 at 4:48PM>.

26 ¹³ The loading procedure for a Ferguson rifle is described in
Peterson, *Arms and Armor in Colonial America*, 218-219.

27 ¹⁴ "Form of Association" in *The Papers of Benjamin Franklin*,
28 ed., Leonard W. Labaree, et al., 40 volumes to date (New Haven:
Yale University Press, 1959), Vol. 3, 208.

1 attaching a bayonet. It weighed about 10 to 11 pounds and was
2 .69 caliber in its bore if French or .75 caliber if English, with
3 an average barrel length of 44 inches.¹⁵ On a battlefield, a
4 musket was more than just a firearm: because of its weight and
5 sturdy construction and because of its bayonet, a musket also
6 functioned as a club and a spear. These capabilities were
7 integral to its role as an eighteenth-century military arm. The
8 combination of these features and capabilities made a musket “a
9 Universal Weapon.”¹⁶

10 9. Eighteenth-century muskets did have two serious
11 drawbacks which they shared with all flintlock, muzzle-loading
12 smoothbores. First, their accuracy and range were limited. The
13 round ball fired by these weapons was not very aerodynamic, and
14 this produced a great deal of drag that reduced its velocity. A
15 musket’s smooth-bore barrel also lacked rifling, which were
16 spiral grooves cut inside the barrel. When a ball traveled down
17 a barrel with rifling, the grooves imparted a spin to the ball
18 that stabilized and flattened its trajectory, increasing its
19 distance and accuracy. (The effect of rifling on a rifle ball’s
20 flight can be compared to throwing a spiral pass in football
21 which also flattens trajectory and improves accuracy.) While a
22 smooth-bore musket may have been just as accurate as an
23 eighteenth-century muzzle-loading rifle at distances of up to 50
24 yards, most authorities agree that a musket was not very accurate

25 ¹⁵ Author’s estimate of barrel averages calculated from data
26 found in George C. Neumann, *Battle Weapons of the American*
27 *Revolution*, (Texarkana, Texas: Scurlock, 1998), 121-141.

28 ¹⁶ Stuart Reid, *The Flintlock Musket: Brown Bess and*
Charleville 1715-1865(Oxford: Osprey, 2016), 61, 55-60.

1 at ranges beyond 100 yards.¹⁷ Today, pistols and most long arms
2 other than shotguns have rifled barrels.

3 10. Loading and reloading eighteenth-century muskets was a
4 complicated and relatively slow process by today's standards. To
5 load a musket, a shooter held it in front of him parallel to the
6 ground, pulled back the gun's cock to its half cock position to
7 prevent a premature discharge, and then took from a cartridge box
8 an individual paper cartridge that contained a pre-measured load
9 of gunpowder and a ball. Next one opened the priming pan, bit
10 the cartridge and poured a small amount of powder into the
11 priming pan which was then closed shut. Following this, the
12 shooter placed the musket upright on the ground and poured the
13 remainder of the cartridge's gun powder down the barrel, and then
14 crammed the paper cartridge with its ball into the barrel. (The
15 cartridge's paper wrapper served as wadding, holding the ball in
16 place.) A ramrod was used to push the cartridge paper and ball
17 down the barrel, after which the ramrod was recovered and secured
18 in its resting place under the barrel. The musket was then
19 raised, placed on full cock, aimed, and the trigger pulled.
20 Pulling the trigger released the cock, which held a flint that
21 moved forward, striking a steel frissen, creating sparks that
22 ignited the powder in the priming pan which in turn ignited the
23 charge of powder placed in the barrel, creating an explosion that

24 ¹⁷ Reid, *Flintlock Musket*, 34. For a claim that a rifle had
25 an advantage over a musket at distances greater than 50 yards see
26 John F. Winkler, *Point Pleasant, 1774: Prelude to the American*
27 *Revolution* (Oxford: Osprey, 2014), 29. For a claim that a rifle
28 and a musket were equally accurate at 100 yards see Alexander
Rose, *American Rifle, A Biography* (New York: Delta Trade
Paperbacks, 2009), 20.

1 -- finally -- discharged the musket ball. As a rule, a musket
2 could realistically be loaded and fired two or three times a
3 minute in combat by well-equipped and trained soldiers.¹⁸

4 11. The process of loading and reloading a musket took
5 even longer if instead of using a prepared paper cartridge, one
6 used gunpowder from a powder horn to prime the pan and then
7 poured into the horn's measuring cap the amount of powder needed
8 to charge the barrel. With this procedure one also had to remove
9 an individual musket ball from a shot pouch and place it in the
10 barrel after pouring down the measured charge of powder. The
11 ball was then rammed home. Using this method of loading not only
12 took longer, but also lacked the wadding provided by a paper
13 cartridge which helped hold the ball in place. According to the
14 results of one modern test, wadding also increased a smoothbore's
15 muzzle velocity by about 30%.¹⁹ Most hunters, backwoods men with
16 muzzle-loading rifles, and many colonial militiamen lacked
17 cartridge boxes and paper cartridges and instead used powder
18 horns and shot bags.

19 12. Even with these drawbacks, colonial governments and
20 later state governments armed troops with these muskets during
21 the French and Indian War (1754-1763) and the Revolutionary War
22 (1775-1783). There really weren't serious alternatives. As a
23 result, the British Ordnance Office loaned colonial governments
24 22,000 muskets to arm provincial troops raised for active service

25 ¹⁸ Jeremy Black, *European Warfare, 1660-1815* (New Haven:
26 Yale University Press, 1994), 40; Hew Strachen, *European Armies
and the Conduct of War* (London: George Allen & Unwin, 1983), 17.

27 ¹⁹ Glenn Foard, *Battlefield Archaeology of the English Civil
28 War* British Series 570 (Oxford: British Archaeological Reports,
2012), 105.

1 in the field during the French and Indian War, and at least
2 100,000 European muskets—most of them French—were imported during
3 the American War for Independence.²⁰ During the French and Indian
4 War, the British also sent muskets to arm Georgia and North
5 Carolina militiamen who lacked arms, and state governments
6 sometimes provided arms for mobilized militiamen during the
7 Revolutionary War.²¹

8 13. As a rule, American colonists preferred lighter
9 firearms that were better suited than muskets for pest control,
10 birding, or hunting. Especially popular in New England were
11 locally made or imported smoothbore and fusils that weighed only
12 6 to 7 pounds and had narrower bores of .60 to .65 caliber, with
13 average barrel lengths of 50 inches.²² The narrower bores used
14 smaller and lighter projectiles, required less powder for each
15 shot, and thus reduced the weight of the lead ammunition one
16 carried.²³ Some New England fowlers could outrange muskets and
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18

19 ²⁰ De Witt Bailey, *Small Arms of the British Forces in*
20 *America 1664-1815* (Woonsocket, R.I.: Mowbray, 2009), 120-123;
21 George D. Moller, *American Military Shoulder Arms*, 2 volumes
(Albuquerque, N.M., 2011), Vol. 1, Appendix 5, 484-485.

22 ²¹ Kevin M. Sweeney, "Firearms, Militias, and the Second
23 Amendment" in Saul Cornell and Nathan Kozuskanich, eds. *The*
24 *Second Amendment on Trial: Critical Essays on District of*
Columbia v. Heller (Amherst: University of Massachusetts Press,
2013), 335, 348, 351-352.

25 ²² Author's estimate of barrel averages calculated from data
26 found in Neumann, *Battle Weapons of the American Revolution*, 150-
166.

27 ²³ Steven C. Eames, *Rustic Warriors: Warfare and the*
28 *Provincial Soldier on the New England Frontier, 1689-1748* (New
York: New York University Press, 2011), 121-122; Neumann, *Battle*
Weapons of the American Revolution, 206-210.

1 some were modified to carry a bayonet.²⁴ However, because of
2 their lighter weights and sleeker construction, they were not
3 necessarily as sturdy or as "soldier-proof" as a musket nor as
4 effective as a club.

5 14. Many residents living in the colonies stretching
6 from New York to Virginia owned "trade guns." These were
7 inexpensive, muzzle-loading, single shot, smooth-bore firearms
8 designed and produced for trade with Native Americans. Some of
9 these guns weighed as little as 5.5 pounds, had bores of .57 to
10 .62 caliber, and barrels only 36 to 40 inches long.²⁵ Because of
11 these features, they were much easier to handle than a musket and
12 employed about half the weight of lead and powder than a musket
13 for each shot fired. However, these light, often cheaply
14 constructed firearms did not function well as clubs and were not
15 designed to carry a bayonet.

16 15. In the backcountry of Pennsylvania and the colonies
17 further south there was a distinct minority of men who owned more
18 expensive locally made long rifles. As a rule, these firearms
19 weighed from 7 to 8 pounds, had .58 to .62 caliber bores—though
20 some were even smaller—and barrels averaging 42 inches in length,
21 and fired projectiles weighing much less than musket balls.²⁶

22 ²⁴ Douglas D. Scott, et al., "Colonial Era Firearm Bullet
23 Performance: Live Fire Experimental Study for Archaeological
24 Interpretation" (April 2017), 26, 36; Tom Grinslade, *Flintlock
25 Fowlers: The First Guns Made in America* (Texarkana, Texas:
26 Scurlock Publishing 2005), 59, 72, 73, 75.

27 ²⁵ M. L. Brown, *Firearms in Colonial America: The Impact on
28 History and Technology 1497-1792* (Washington, D.C.: Smithsonian
Institution Press, 1980), 283; Neumann, *Battle Weapons of the
American Revolution*, 203-205.

²⁶ Author's estimate of barrel averages calculated from (continued...)

1 Because of the barrel's rifling, these guns were more accurate
2 than smoothbore muskets and outranged them. However, they took
3 more time to reload because riflemen had to use powder horns and
4 bullet pouches instead of paper cartridges, and reloading became
5 harder as gunpowder residue built up in the grooves of the
6 barrel's rifling.²⁷ Additionally, these long rifles were not
7 designed to take a bayonet, and they could break if used as a
8 club.

9 16. Muzzle-loading pistols were not as popular as long
10 arms which—as experts have pointed out—“could economically be
11 used dually for protection and hunting.”²⁸ Pistols were therefore
12 found in only a minority of eighteenth-century probate
13 inventories (Table 1). It took about 15 seconds to reload a
14 pistol, and as a result, they were often made in pairs “so that
15 the owner might have two shots at his command.”²⁹ Instead of
16 taking time to reload a pistol on a battlefield, cavalry troopers
17 used discharged pistols as clubs or threw them at enemy
18 cavalrymen.³⁰ As it was, period pistols were discharged in close

19 _____
20 barrels lengths of individual muskets given in Neumann, *Battle
Weapons of the American Revolution*, 215-225.

21 ²⁷ John W. Wright, “The rifle in the American Revolution,”
22 *American Historical Review* Vol. 29, No. 2 (January 1924), 293-
299.

23 ²⁸ Jeff Kinard, *Pistols: An Illustrated History of their
24 Impact* (Santa Barbara, CA: ABC-CLIO, 2004), 45.

25 ²⁹ Harold L. Peterson, *Treasury of the Gun* (New York: Golden
Press, 1962), 189.

26 ³⁰ For use of muzzle-loading pistols as clubs and missiles on
27 battlefields see C. H. Firth, *Cromwell's Army* 2nd ed. (Oxford:
28 Oxford University Press, 1911), 142; David Blackmore, *Arms &
Armour of the English Civil Wars* (London: Royal Armouries, 1990),
49.

1 proximity to their targets because their low muzzle velocity of
2 330-440 f/s limited the range and impact of their projectiles.
3 By comparison, muzzle velocities produced by reproductions of
4 eighteenth-century muskets (780 f/s to 870 f/s), fowlers (1160
5 f/s to 1444 f/s) and rifles (1195 f/s to 1320 f/s) are much
6 higher.³¹

7 17. Civilian officials and military officers generally
8 had a low opinion of trade guns, fowlers and even the period's
9 American-made long rifles. During the French and Indian War,
10 firearms in use in New Hampshire were said to be "in general of
11 the meanest Sort" while those in Connecticut "which belong to
12 private persons [were] mostly poor and undersized and unfit for
13 an expedition."³² In 1756, most of New York's militia were armed
14 with guns "chiefly for the Indian Trade," and not muskets.³³
15 Later, George Washington referred to such smooth-bore long arms
16 as "trash or light arms."³⁴ Over the course of the Revolutionary
17 War, he and his officers even phased out the use of rifles in the
18

19 ³¹ Scott, et al., "Colonial Era Firearm Bullet Performance,"
20 26, 36; Douglas D. Scott, et al. "Firearm Bullet Performance:
21 Phase II, Live Fire Experimental Study for Archaeological
22 Interpretation," 31. Both reports are available online.

22 ³² "Blair Report on the State of the Colonies" in Louis K.
23 Koontz, *The Virginia Frontier, 1754-1763* (Baltimore: The Johns
24 Hopkins Press, 1925), 170, hereafter cited as the "Blair Report";
25 Governor Thomas Fitch to Sir Thomas Robinson, August 1, 1755 in
26 *Collections of the Connecticut Historical Society*, Vol. 1, 265-
27 266.

28 ³³ "Blair Report," 171.

³⁴ General George Washington to Gentlemen, Feb. 7, 1777 in
Nathaniel Bouton, ed., *Documents and Records Relating to the
State of New Hampshire during the Period of the Revolution from
1776 to 1783* (Concord, N.H.: Edward A. Jenks, State Printer,
1874), Vol. 8, 485.

1 Continental Army, rearming soldiers with muskets fitted with
2 bayonets.³⁵ Governor Thomas Jefferson characterized most of the
3 privately owned smoothbore guns carried by his state's militiamen
4 as "such firelocks [i.e. flintlocks] as they had provided to
5 destroy noxious animals which infest their farms."³⁶

6 18. Data drawn from group of probate inventories of males
7 who died during the second half of the eighteenth-century confirm
8 these period observations concerning the preferences of American
9 gun owners (Table 1). These sources can be particularly useful
10 and quite reliable for assessing the preferences of period gun
11 owners for different types of firearms. Even cursory
12 descriptions of firearms as "a gun" can be revealing when
13 combined with the price that individuals taking the inventory
14 assigned. Most guns in the inventory were long arms valued at £1
15 (i.e. 20 shillings), which was the usual cost of a single shot
16 muzzle loading firearm. Such weapons would have been affordable
17 given the fact that a daily wage during the period for unskilled
18 day labor usually varied between 1 and a half and 2 shillings.
19 While there was an obvious preference for long arms, muskets and
20 rifles constituted a minority of such weapons.

21 19. The more expensive guns found in these 3,249
22 eighteenth-century probate inventories were also likely to be
23 some type of muzzle loading, single-shot long arms. As a rule,
24 rifles were valued at £2 to £3, which was twice or three times
25 the cost of common muzzle-loading smoothbore long arms.

26 _____
27 ³⁵ Wright, "Rifle in the American Revolution," 297-298.

28 ³⁶ Thomas Jefferson, *Notes on the State of Virginia*, edited
by William Peden (New York: W. W. Norton, 1982), 88.

1 Expensive smoothbore weapons were likely to be imported fowlers
2 or guns ornamented with silver mountings. Occasionally, one sees
3 double barreled guns which, along with a pair of pistols, was the
4 period's more realistic provision for being able to readily
5 discharge more than one shot. Only one gun found in this
6 database of 3,249 probate inventories may have been a repeater:
7 an "air gun" owned by Philippe Guillaume Chion [aka Philip
8 Williamson], Charleston merchant, who died in 1797.³⁷ However, as
9 is noted below in paragraph 41, not all air guns available in
10 America were repeaters.

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25 ³⁷ Inventory of Philippe Guillaume Choin, 1797, South
26 Carolina Inventories and Appraisement Books, Vol. C, 1793-1800,
27 212-213. at Fold 3 by Ancestry
28 [https://www.fold3.com/publication/700/south-carolina-estate-
inventories-and-bills-of-sale-1732-1872](https://www.fold3.com/publication/700/south-carolina-estate-inventories-and-bills-of-sale-1732-1872) <Accessed online
1/23/2023 at 6:00 P.M.>.

1 **Table 1: Firearms in Probate Inventories of Male Decedents Filed**
 2 **between 1740-1800**

3 Region	4 Number of Sampled Male Inventories	5 Percentage of Inventories with Firearms	6 Percentage of Inventories with Muskets	7 Percentage of Inventories with Rifles	8 Percentage of Inventories with Pistols
9 New England 1740-1798	1057	46.1%	0.8%	0.0%	2.8%
11 New York and New Jersey 1740-1798	569	35.0%	1.9%	0.5%	5.8%
12 Pennsylvania 1740-1797	532	32.0%	0.2%	2.3%	5.1%
13 Maryland and Virginia 1740-1797	632	58.4%	1.3%	5.1%	9.0%
14 South Carolina 1740-1797	459	62.9%	3.7%	4.1%	23.3%
15 Totals	3249	46.6%*	1.4%*	2.0%*	7.8%*

16 **Note:** *The percentages at the bottoms of the columns are not
 17 averages of the percentages in the columns, but percentages of
 18 the total of 3249 inventories found in each category: 1514
 19 inventories with firearms, 45 inventories with muskets, 66
 20 inventories with rifles and 254 inventories with pistols.

21 **Sources:** The sources for the probate inventories used in this
 22 table are listed in Kevin M. Sweeney, "Firearms Ownership and
 23 Militias in Seventeenth- and Eighteenth-Century England and
 24 America" in Jennifer Tucker, Barton C. Hacker, and Margaret
 25 Vining, eds., *A Right to Bear Arms? The Contested History in
 26 Contemporary Debates on the Second Amendment* (Washington, D.C.:
 27 Smithsonian Press, 2019), 70-71.

28 20. Partial militia returns from the state of Virginia
 dating from 1781 to 1784 provide additional evidence that
 American consumers preferred smoothbore firearms that were not
 muskets. Even though state law required "every militia-man to
 provide himself with arms [i.e. muskets] usual in regular service

1 [i.e. the Continental Army] . . . this injunction was always in
 2 differently complied with."³⁸ Most did not own muskets, even in
 3 wartime. Only about 16.7% of the privately owned long arms were
 4 muskets, while another 20.3% were rifles owned by residents of
 5 the state's western counties.³⁹ By contrast, 63.0% of the
 6 privately owned long arms were smoothbores that were not
 7 muskets.⁴⁰

8 **Table 2: Partial Virginia Militia Returns Indicating Types of**
 9 **Arms in Use, 1781-1784**

Year	Number of Counties	Number of Public Muskets	Number of Private Muskets	Number of Private Long Arms*	Number of Private Rifles	Number of Private Pistols	Total Number of Guns
1781	27	1502	1333	4225	1293	204	8557
1782	10	565	242	2113	767	60	3747
1784	15	541	441	1260	392	68	2702
ALL	52	2608	2016	7598	2452	332	15006

19 **Note:** *Number of "private long arms" are privately owned long arms
 20 that were not muskets and not rifles.

21 **Sources:** Militia Returns 1777-1784, microfilm, Accession 36929;
 22 State Government Records Collection; "General Return of Arms,
 23 Accoutrements, and Military Stores, 19th May, 1784," Accession
 24 36912, House of Delegates, Executive Communications, Library of
 25 Virginia, Richmond

26 21. A large portion of the firearms used in eighteenth-
 27 century America would have been imported from England. At the
 28 time, most English firearms were fabricated by large-scale

³⁸ Jefferson, *Notes on the State of Virginia*, 88.

³⁹ Calculated from data in Table 2.

⁴⁰ *Ibid.*

1 putting-out systems that obtained barrels from one set of
2 suppliers, got gunlocks from other sources, and assembled the
3 parts at yet another site where the firearms also would have been
4 stocked by craftsmen who were woodworkers. By the mid-
5 eighteenth-century, gun manufacturing in Birmingham, England
6 involved "at least thirty different 'sub-trades' or manual
7 manufacturing processes."⁴¹ In particular, this is how firearms
8 were made for the British army and for the export trade to Africa
9 and England's colonies.⁴²

10 22. Other than American long rifles and some New England
11 fowlers, most eighteenth-century firearms used by colonists were
12 not likely to have been custom made or "one-off" products.
13 During the years from 1756 to 1763, at least 36,592 firearms were
14 imported into the thirteen American colonies from England for
15 civilian customers.⁴³ Another 18,900 trade guns were imported to
16 sell to Native American customers.⁴⁴ Advertisements indicate that
17 urban gunsmiths in the colonies sold imported firearms and made
18 use of imported gunlocks and barrels. Most of the pistols sold in
19 the colonies were not produced in the colonies.⁴⁵ A rare
20 surviving account book of an inland gunsmith, John Partridge Bull
21 of Deerfield, Massachusetts indicates that he made only three new

22 ⁴¹ David Williams, *The Birmingham Gun Trade* (Stroud,
23 Gloucestershire, Eng.: The History Press, 2009), 21.

24 ⁴² Williams, *Birmingham Gun Trade*, 21-24; De Witt Bailey,
25 *Small Arms of the British Forces in America 1664-1815*
(Woonsocket, R.I: Andrew Mowbrey, 2009), 93-102.

26 ⁴³ Bailey, *Small Arms*, 237.

27 ⁴⁴ De Witt Bailey, "The Wilson Gunmakers to Empire, 1730-
28 1832" *American Society of Arms Collectors Bulletin* No. 85, 19.

⁴⁵ Jeff Kinard, *Pistols: An Illustrated History of Their
Impact* (Santa Barbara: ABC-CLIO, 2003), 46.

1 guns over a period of 20 years from 1768 to 1788, while
2 performing 452 repairs on existing firearms.⁴⁶ When it came to
3 his gunsmithing business, this skilled craftsman may have had
4 more in common with a twentieth-century TV repairman than he did
5 with Samuel Colt or Eli Whitney.

6 **II. REFERENCES TO REPEATING ARMS IN EIGHTEENTH-CENTURY MEDIA**

7
8 23. So, how common were repeating weapons in eighteenth-
9 century America? The short answer is not very common; they were
10 in fact extraordinarily rare. Information drawn from eighteenth-
11 century advertisements and news reports found in *America's*
12 *Historical Newspapers*—a searchable database of 5,000 newspapers,
13 with 450 dating from before 1800—tells much the same story.⁴⁷
14 This newspaper database was searched by entering the terms “gun,”
15 “musket,” “fowler,” “rifle,” “pistol,” “shot” and “militia.” The
16 search turned up 9 references to what appear to be repeating
17 guns. To the information discovered by searching period
18 newspapers can be added one more well-known instance of an
19 unpublicized demonstration of a repeating firearm that took place
20 in Philadelphia in April of 1777. This makes a total of 10
21 references to eighteenth-century repeaters in the period from
22 1720 to 1800.

23 24. What do these period references to repeating guns
24 tell us about their features and how they were employed, how they

25 _____
26 ⁴⁶ Susan McGowan, “Agreeable to his Genius: John Partridge
27 Bull (1731-1813), Deerfield, Massachusetts” (M.A. thesis, Trinity
28 College, 1988), 5, 39-40, 74-75.

⁴⁷ *America's Historical Newspapers* (Chester, VT: Readex,
2004).

1 were regarded, and why they remained relatively uncommon in
2 eighteenth-century America? The earliest known reference in an
3 American newspaper to a repeating firearm is reported in the
4 *Boston News-Letter* of September 12, 1723: "Delegates from
5 several Nations of Indians were Entertained with the sight of a
6 Gun which has but one Barrel and one Lock," but fired "Eleven
7 Bullets successively in about Two Minutes" after being loaded
8 only once. This firearm was made by John Pimm, a Boston
9 gunsmith, who was active in the 1720s, but had died by 1730.
10 This gun was not being offered for sale; no examples of a
11 repeating long-arm by Pimm survive; it was a novelty. There is,
12 however, a six-shot revolver with a flint ignition system made by
13 John Pimm in the collection of the Cody Firearms Museum at the
14 Buffalo Bill Center of the West.⁴⁸

15 _____
16 ⁴⁸ John Pimm's 1715 revolver with a hand rotated cylinder and
17 flint priming system bears an apparent resemblance to a modern
18 Smith & Wesson .38 caliber revolver. Brown, *Firearms in Colonial*
19 *America*, 255-256. Cut into the rotating cylinder were six chambers
20 into which a small amount of gunpowder and a ball could be placed.
21 The shooter rotated by hand the cylinder to align one of the
22 chambers with both the barrel and firearm's hammer which held a
23 flint. The shooter then slid open the priming vent on the cylinder
24 for the chamber aligned with the hammer and the barrel. He then
25 pulled back the hammer by hand. Finally, pulling the trigger
26 caused the hammer to strike the metal frizzen with the flint,
27 creating a flash which entered the open vent on the cylinder and
28 set off the powder in the chamber and discharged the ball. To fire
again, the shooter again rotated by hand the cylinder to align a
loaded chamber with the barrel and hammer and repeated the process
outlined above. Primm's pistol could deliver six shots after being
loaded once, but it was not a rapid-fire weapon, and it took time
to reload the individual chambers with powder and ball. At least
one scholar believes that the inscription on this pistol -- "*J.*
Pim in Boston fecit" -- is spurious. See Baxter, *Superimposed Load*
Firearms 1360-1860, 153.

(continued...)

1 25. The next reference in an American newspaper to a
2 repeating firearm is contained in an advertisement in the March
3 2, 1730 issue of Boston's *New-England Weekly Journal*. It was for
4 a firearm employing an uncertain type of mechanism that made it
5 possible to fire a succession of twenty projectiles "at once
6 Loading." It is unclear if this firearm had a detachable or
7 internal magazine or, alternatively, employed a system that
8 lacked a magazine and instead placed in the barrel multiple
9 bullets that alternated with charges of gunpowder. This
10 advertisement does suggest the novelty of such a repeating
11 firearm. Samuel Miller, a Boston gunsmith, was charging Boston
12 residents 9 pence each just to see the gun and 2 shillings—the
13 equivalent of a day's wage of unskilled labor—to see it fired.
14 Basically, this gun was being used in an eighteenth-century
15 version of a sideshow. There is no indication that Miller was
16 producing or selling such firearms.

17
18 Similar pistols and long arms with revolving cylinders moved
19 by hand first appeared in Germany between 1490 and 1530. Brown,
20 *Firearms in Colonial America*, 50. However, they remained rare in
21 the American colonies, expensive, and suffered from mechanical
22 problems because of the inability of gunsmiths to fit together
23 the moving parts with enough precision to prevent loose powder
24 from jamming the cylinder or producing an accidental discharge of
25 the six chambers simultaneously. Brown, *Firearms in Colonial*,
26 *America*, 50-51; Graeme Rimer, et al., *Smithsonian Firearms: An*
27 *Illustrated History*, (New York: D. K. Publishing 2014), 56. The
28 revolver patented by Samuel Colt in 1836 and produced in his
factory in Paterson, New Jersey employed percussion caps in its
priming system and remains the first practical revolver to enter
production. The cylinder rotated when the gun was cocked and
fired when the trigger was pulled. However, even sales of this
mechanically successful firearm were insufficient to prevent the
bankruptcy in 1843 of Colt's first gun manufactory. See
Peterson, *Treasury of the Gun*, 211.

1 26. However, in the *Boston Gazette* for April 12, 1756,
2 gunsmith John Cookson advertised for sale a gun capable of firing
3 9 bullets in rapid succession. It was "A handy Gun of 9 and a
4 half Weight; having a Place convenient to hold 9 Bullets, and
5 Powder for 9 Charges and 9 Primings; the said Gun will fire 9
6 Times distinctly, as quick, or slow as you please, which one turn
7 with Handle or the Said Gun, it doth charge the Gun with Powder
8 and Bullet, and doth prime and shut the Pan, and cock the Gun."
9 The advertisement provides a spot-on description of three
10 repeating firearms found in the collections of the Milwaukee
11 Public Museum, Royal Armouries Museum in Leeds, and the Victoria
12 and Albert Museum in London that were all produced sometime
13 around 1690 by John Cookson, an English gunsmith.⁴⁹ These were
14 expensive and heavy firearms that weighed about 9 and a half
15 pounds unloaded and over 10 pounds when loaded with 9 balls and
16 powder charges.

17 27. John Cookson's English repeater employed what was
18 known as the Lorenzoni breech-loading system.⁵⁰ This system
19 placed at the breech-end of the barrel a complex and delicate
20

21 ⁴⁹ Brown, *Firearms in Colonial America*, 144-146; David S.
22 Weaver and Brian Godwin, "John Cookson, gunmaker," *Arms & Armour*,
Vol. 19 (June 2022), 43-63.

23 ⁵⁰ Sometime around 1660 Michele Lorenzoni, a Florentine
24 gunmaker, produced a repeating flintlock firearm that employed a
25 lever system to feed into the breech powder and shot. His
26 firearm drew upon earlier versions of this system developed by
27 Giacomo Berselli, another Italian gunsmith, who had built upon
28 earlier innovations by gunsmiths, Peter and Mathias Kaltoff.
Brown, *Firearms in Colonial America*, 105-107, 144-145; Peterson,
Treasury of the Gun, 229-231. Today this type of repeating
firearm is generally identified by English and American
collectors and curators as employing the Lorenzoni system.

1 gunlock operated by a handle or lever attached to the left side
2 of the lock. The firearm's butt stock contained internal
3 magazines that were filled with gunpowder for each charge and 9
4 to 11 balls. The shooter pointed the gun barrel towards the
5 ground and pushed the handle or lever down and forward, which
6 rotated a mechanism located inside the gun lock that
7 simultaneously brought forward one ball, enough gunpowder to
8 discharge it, and enough primer to set off the charge in the
9 barrel when the trigger was pulled. To recharge and again fire
10 the gun, the shooter again pointed the barrel towards the ground,
11 pushed on the lever and then pulled the trigger. If the parts of
12 the gun lock did not fit tightly or if the shooter failed to lock
13 it in the proper position when firing, flame might leak back and
14 explode the black powder stored in the butt. Catastrophic
15 failures happened because the period's methods of fabrication
16 were not reliably capable of producing the fitting precision
17 parts needed to prevent such malfunctions caused by errant
18 sparks.

19 28. Sometime before 1701, the English gunsmith John
20 Cookson moved to Boston. Recent research by David Weaver and
21 Brian Godwin documents Cookson's migration to Boston.⁵¹ At the
22 same time, their findings raise serious questions about the
23 Plaintiffs' assertions that "innovation and proliferation of such
24 arms [i.e. those employing the Lorenzoni system] continued
25 through our nation's early history" and that "the most common
26 American repeaters of the early 18th century were probably

27

28 ⁵¹ Weaver and Godwin, "John Cookson, gunmaker," 51-56, 59-61.

1 Lorenzoni variants known as Cooksons."⁵² Despite Cookson's
2 exceptional skill as a gunsmith, he apparently did not produce
3 repeating firearms during his 60 years in Boston, and there are
4 no surviving eighteenth-century, American-made Cookson
5 repeaters.⁵³ This fact is actually not surprising given the fact
6 that American-made guns were typically "utilitarian in nature,
7 certainly nothing like the fine magazine breech-loading repeaters
8 normally associated with the name John Cookson."⁵⁴ In their
9 article, Weaver and Godwin, suggest that the 1756 newspaper
10 advertisement by Cookson "could have involved one of the
11 repeaters which he had brought from England when he emigrated and
12 which, at his age of 82 at the time, he had decided to sell."⁵⁵
13 Four firearms that John Cookson did make in America are different
14 types of single-shot firearms: one is a breech-loader, the others
15 are muzzle-loading.⁵⁶ The newspaper data also fails to provide
16 evidence to support the Plaintiffs' claim that there was a
17 "proliferation" in the American colonies of repeating firearms
18 employing the Lorenzoni breech-loading system."⁵⁷

19 29. The next appearance of an identifiable repeating
20 firearm dates to April of 1777 and comes from the records and
21 correspondence of the Continental Congress. Joseph Belton wrote

22 ⁵² Memorandum of Points and Authorities in Support of
23 Plaintiffs' Motion for Summary Judgment, Dkt. 123-1 ("MPA"), at
16, 17.

24 ⁵³ *Ibid.*, 56, 60. Weaver and Godwin make clear that the
25 firearm referred to as a "Volitional Cookson Repeating Flintlock"
in the collection of the National Firearms Museum in Washington,
D.C. was made in the late 1600s by John Shaw, a London gunsmith.

26 ⁵⁴ *Ibid.*, 55.

27 ⁵⁵ *Ibid.*, 60.

28 ⁵⁶ *Ibid.*, 56-57.

⁵⁷ MPA, at 16.

1 to the Continental Congress claiming that he had a method
2 "wherein a common small arm, may be maid [sic.] to discharge
3 eight balls one after another, in eight, five or three seconds of
4 time."⁵⁸ He also claimed that such a gun could be made to
5 discharge "sixteen or twenty, in sixteen, ten or five seconds."⁵⁹
6 Its stated range was a mere 20 to 30 yards. On July 10, 1777,
7 Belton demonstrated a firearm that successively discharged 16
8 bullets. He also claimed that this weapon could "do execution
9 [at] 200 yards" which would have been a dramatic—and somewhat
10 inexplicable—increase in the weapon's supposed range of 20 to 30
11 yards.⁶⁰ In any event, Belton and Congress failed to agree on a
12 financial arrangement. Belton requested the princely sum of
13 £13,000—£1000 from each of the 13 states—to compensate him for
14 inventing this system, though he subsequently reduced his demand
15 to only £500 from each of the states.⁶¹ There is no documentary
16 or physical evidence indicating that Belton produced any of these
17 firearms in 1777.

18 ⁵⁸ Quoted in Brown, *Firearms in Colonial American*, 317. This
19 letter and others are reproduced in their entirety at Joseph
20 Belton to the Continental Congress, April 1, 1777 at
21 "Correspondence between John [sic.] Belton and the Continental
22 Congress" at
https://en.wikisource.org/wiki/Correspondence_between_John_Belton_and_the_Continental_Congress.

23 ⁵⁹ *Ibid.*

24 ⁶⁰ Letter with Enclosure, Joseph Belton to the Continental
25 Congress, July 10, 1777, at "Correspondence between John [sic.]
26 Belton and the Continental Congress" at
https://en.wikisource.org/wiki/Correspondence_between_John_Belton_and_the_Continental_Congress.

27 ⁶¹ Joseph Belton to the Continental Congress, May 7, 1777 and
28 Joseph Belton to John Hancock, May 8, 1777 at
https://en.wikisource.org/wiki/Correspondence_between_John_Belton_and_the_Continental_Congress.

1 30. The specific design of the firearm that Belton
2 demonstrated in 1777 remains unclear. There is a brass-barreled,
3 flintlock fusil in the collection of the Smithsonian Institution
4 that has been proposed as the actual gun or a prototype for the
5 gun that Joseph Belton demonstrated in 1777.⁶² It is engraved
6 "IOS. BELTON INVENTOR ET ARTIFEX – PHILAL-MDCCLVIII [i.e. 1758]".
7 An additional engraving on the gun refers to "CAPT JOSEPH BELTON
8 OF Philad."⁶³ However, the Joseph Belton who arrived in
9 Philadelphia in 1775 and who came into contact with Benjamin
10 Franklin and subsequently other members of the Continental
11 Congress and the Continental Army was a 1769 graduate of the
12 College of Rhode Island, which is today Brown University.⁶⁴ In
13 1758, this Joseph Belton was not in Philadelphia; he was not a
14 captain; and he was not then a gunsmith. Despite claims to the
15 contrary, it is unlikely that this particular gun was
16 demonstrated in Philadelphia in July of 1777.⁶⁵

19 ⁶² Robert Held, "The Guns of Joseph Belton Part I" *American*
20 *Rifleman* (March 1987), 36-39, 68-69; *Oregon Firearms Federation*
21 *v. Brown*, U.S. Dist. Ct. Civ. No. 2:22-cv-01815-IM (lead case),
22 Declaration of Ashley Hlebinsky (ECF 72) at 18, n 24.

23 ⁶³ Smithsonian National Firearms Collection:
24 [https://americanhistory.si.edu/collections/search/object,nmah_440](https://americanhistory.si.edu/collections/search/object,nmah_440031)
25 [031](https://americanhistory.si.edu/collections/search/object,nmah_440031) <Accessed 2/2/2013>.

26 ⁶⁴ Benjamin Franklin to Silas Deane, August 27, 1775 in
27 *Papers of Benjamin Franklin*, Vol. 22, 183-185, especially
28 footnote 2.

29 ⁶⁵ Quite distinct from the questions raised by what is known
30 of Joseph Belton's biography is the claim in Adam Weinstein "I am
31 Tired of Being Tired" December 21, 2018 that his grandfather,
32 Kenneth Weinstein, a gunsmith, fabricated this particular
33 firearm. adamweinstein.substack.com/p/i-am-tired-of-being-tired
34 <Accessed 2/2/2023 at 12:00PM>.

1 31. However as Harold Peterson suggested many years ago,
2 it is quite likely that the firearm demonstrated in 1777 employed
3 some version of what is known as a superimposition system.⁶⁶ In
4 the simplest version of a superimposed or superposed system of
5 loading a firearm, a series of alternating powder charges and
6 balls are loaded directly into a gun's barrel. There is no
7 detachable or internal magazine, just a standard barrel that is
8 loaded from the muzzle in an alternating sequence of gunpowder
9 and balls. All of these charges were—ideally—set off in order
10 from front to back by igniting the powder charge located behind
11 the ball closest to the muzzle of the gun's barrel. There is no
12 magazine involved, and the ensuing discharge of balls is
13 uncontrolled after it is initiated.

14 32. The superposed system for discharging a succession
15 of balls had been tried as early as 1580 by a German gunsmith
16 working in London.⁶⁷ Today, early flintlock pistols that used a
17 simple superposed loading system are sometimes referred to as
18 "Roman candle pistols" because they employed "the same principle
19 as the firework" which involves setting off "a chain reaction of
20 multiple discharges."⁶⁸ Other writers also liken flintlock long
21 arms that employed a simple superposed system of multiple charges
22 to "Roman candles".⁶⁹

24
25 ⁶⁶ Peterson, *Arms and Armor in Colonial America*, 218.

26 ⁶⁷ Peterson, *Treasury of the Gun*, 195.

27 ⁶⁸ Jeff Kinard, *Pistols: An Illustrated History of their
28 Impact* (Santa Barbara, CA: ABC-CLIO, 2004), 37.

⁶⁹ Brown, *Firearms in Colonial America*, 100; Peterson,
Treasury of the Gun, 197.

1 33. Later in London, Joseph Belton was involved in
2 producing a sophisticated and controllable version of a firearm
3 employing a superposed system that used a detachable magazine.
4 In 1784, Belton went to England where he failed to interest the
5 English Ordnance Department in some version of his superposed
6 system. By 1786, he had entered into a partnership with London
7 gunsmith William Jover (active 1750-1810). Together they
8 produced for Britain's East India Company a smoothbore repeating
9 firearm with a sliding gunlock, that moved down the barrel to
10 ignite a succession of powder charges that propelled a series of
11 musket balls contained in a replaceable metal magazine holding 7
12 projectiles. There are two authentic examples of this particular
13 firearm in the collection of the Royal Armouries, National
14 Firearms Center in Leeds, England.⁷⁰

15 34. Belton's 1786 firearm allowed the shooter to control
16 the weapon's discharge and aim each shot, which was not possible
17 with the simpler superposed system. As the 1786 firearm's moving
18 gunlock lined up with the next powder charge and ball, the
19 shooter primed a pan, pulled back the cock on the sliding
20 gunlock, and then pulled a trigger firing off a single
21 projectile. Because of the need to cock and prime each time
22 before pulling the trigger and firing the gun, this was not a
23 rapid-fire repeating arm. This firearm was also something of a
24 challenge to handle. It weighs 10 pounds unloaded and would have
25 weighed close to 11 pounds when loaded.⁷¹

26
27
28 ⁷⁰ Baxter, *Superimposed Load Firearms 1360-1860*, 178-185.

⁷¹ Baxter, *Superimposed Load Firearms 1360-1860*, 178-185.

1 35. A much cruder version of a firearm employing a
2 superposed system was produced in America in the early 1790s. A
3 July 20, 1793 newspaper report in *Philadelphia's Gazette of the*
4 *United States* from Elizabeth Town, Pennsylvania describes a
5 firearm created by "the ingenious and philosophic Mr. Chambers of
6 Mercersburg in Pennsylvania." This was Joseph Gaston Chambers
7 (1756-1829). According to the news report, this pistol
8 "discharged six balls in succession, with only one loading and
9 once drawing the trigger, exclusive of the reserve shot, which
10 went off with the drawing of another trigger." Later in the
11 year, Chambers attempted to interest the United States War
12 Department in buying long arms employing his version of the
13 superposed system.

14 36. A drawing that was probably done later reveals that
15 Chambers's superposed system for a musket employed two gunlocks:
16 one near the front of the barrel and the other in the usual
17 location at the barrel's breech. First a powder charge was
18 poured down the barrel, followed by a traditional spherical ball
19 which was pushed down to the breech. This was the reserve shot.
20 Next a succession of 8 special, cylindrically shaped bullets with
21 conical tails and 8 powder charges were pushed down the barrel.
22 Pulling a cord triggered the lock near the front of the barrel
23 and ignited the first powder charge closest to the muzzle, which
24 fired the first cylindrical projectile. A hole in the next
25 projectile carried the charge through it and down its conical
26 tail, which ignited the charge, which propelled the second
27 cylindrical charge, and so on. Finally, the spherical ball
28 resting at the barrel's breech was discharged by pulling the

1 second trigger near the breech.⁷² Chamber's system did not employ
2 either a detachable or internal magazine, and once initiated, the
3 gun's discharge could not be controlled. A drawing of this
4 firearm is attached as **Exhibit B**.

5 37. Chambers's initial efforts to win government interest
6 in 1793 and a patent for his invention were unsuccessful. A
7 demonstration in May of 1793 failed to impress the War
8 Department. Later in 1813, Chambers did secure a patent and
9 supplied the U.S. Navy with 200 repeating muskets and 100
10 repeating pistols and also sold weapons to the state of
11 Pennsylvania.⁷³ The Navy's use of these weapons attracted the
12 attention of the British and Dutch governments. However, in the
13 end, Chambers's system with its unusual projectiles failed to
14 obtain sustained interest from any government. His guns did
15 work, but they could also produce devastating malfunctions. As
16 historian Andrew Fagal has pointed out, cramming the gun's barrel
17 with projectiles and gunpowder produced what was potentially a
18 pipe bomb.⁷⁴ All superposed weapons were difficult to load
19 correctly, and if the bullets did not fit tightly, flame could
20 leak around them and set off all the charges at once.⁷⁵ In the

21 ⁷² For the best description of the system and an illustration
22 of how the gun was loaded see Andrew J.B. Fagal, "The Promise of
23 [https://ageofrevolutions.com/2016/10/20/the-promise-of-american-
24 repeating-weapons-1791-1821/](https://ageofrevolutions.com/2016/10/20/the-promise-of-american-repeating-weapons-1791-1821/) (Oct. 20, 2016), pages 2-3 of 6
25 <Accessed online 10/25/2022 at 4:55 P.M.>. Fagal is currently an
26 assistant editor of the Papers of Thomas Jefferson at Princeton
27 University.

28 ⁷³ Peterson, *Treasury of the Gun*, 197.

⁷⁴ Fagal, "The Promise of American Repeating Weapons, 1791-
1821," page 4 of 6.

⁷⁵ Peterson, *Treasury of the Gun*, 198.

1 1820s, the “complexity and inherent dangers” of superposed
2 systems that filled gun barrels with multiple charges of
3 explosive gun powder “led to their wholesale abandonment.”⁷⁶

4 38. A safer alternative to the systems employed by
5 Cookson and Chambers was an air gun that did not use black powder
6 as a propellant. There are two advertisements—one for a
7 demonstration and one for an auction—that contained references to
8 an air gun able to fire 20 times with a single charging. The
9 February 10, 1792, issue of New York City’s *Daily Advertiser*
10 announced “To the Curious” daily exhibitions of an air gun. This
11 gun was supposedly made by a young man who was a native of Rhode
12 Island, though in an advertisement almost two years later, it was
13 claimed that the gun was made in New York City by “An American
14 Artist.” This gun discharged twenty times without needing to
15 renew the propellant provided by compressed air. Each pull of
16 the trigger provided enough air to send a ball through an inch-
17 thick board at a distance of sixty yards. For 6 pence, a
18 resident of the city could see Gardiner Baker demonstrate the air
19 gun twice a day—Tuesday and Friday afternoons excepted—at his
20 museum located at no. 13 Maiden Lane. There is no indication
21 that Gardiner Baker, “the young man in Rhode Island” or the
22 “American Artist” in New York was marketing air guns. Instead,
23 once again a repeater was being featured as a novelty in a show
24 put on for paying customers.

25 39. The air gun demonstrated by Baker appears to have
26 resembled or possibly might have been an actual example of a

27 _____
28 ⁷⁶ Fagal, “The Promise of American Repeating Weapons, 1791-
1821” page 2 of 6.

1 European air rifle designed by Bartholomeo Girardoni in 1779. A
2 Girardoni air gun had a magazine with a capacity of 22 balls,
3 each of which was propelled by discharges of compressed air from
4 a replaceable canister carried in the gun's stock. The gun
5 weighed about 10 pounds—which was about the same as a musket—but
6 was shorter, being only four feet in length overall. As
7 contemporaries in Europe reported, these air guns were not
8 without their problems: "Due to their construction, these guns
9 were much more difficult to use effectively than normal, as one
10 had to handle them much more cautiously and carefully."⁷⁷ In the
11 late 1700s, the Austrian Army, which had a peacetime
12 establishment of 304,628 men, purchased 1,500 Girardoni air
13 rifles that, theoretically, could have armed only 0.5% of its
14 soldiers.⁷⁸ As it turned out, "after a while no more than one-
15 third of them were in a usable state," and they were all phased
16 out by 1810 if not before.⁷⁹

17 40. The American military's use of a Girardoni air rifle
18 was more limited in number and briefer in its timespan, but is
19 also much better known. On their 1804-1806 expedition to the
20 Pacific Ocean and back, Lewis and Clark and their "Corps of
21 Discovery" carried with them a single Girardoni air rifle.⁸⁰

22 _____
23 ⁷⁷ Quoted in Frederick J. Chiaventone, "The Girardoni Air
24 Rifle: The Lewis and Clark Expedition's Secret Weapon" *Military
Heritage*, Vol. 14 No. 5 (January 2015), 19.

25 ⁷⁸ Richard Bassett, *For God and Kaiser: The Imperial Austrian
Army* (New Haven: Yale University Press, 2015), 186.

26 ⁷⁹ Chiaventone, "Girardoni Air Rifle," 19.

27 ⁸⁰ For the identification of the air rifle on the Lewis and
28 Clark Expedition as a Girardoni see Madeline Hiltz, "The Lewis
and Clark Air Rifle: A Blast from the Past" *War History on Line*

(continued...)

1 While it was occasionally used for hunting, their air rifle was
 2 primarily employed to impress Natives that they encountered along
 3 the way. As Private Joseph Whitehouse recorded in his journal:
 4 "Captain Lewis took his Air Gun and shot her off, and by the
 5 Interpreter, told them that there was medicine in her, and that
 6 she could do very great execution." "They all stood amazed at
 7 this curiosity."⁸¹ Eight decades after John Pimm's repeating
 8 firearm had been used to impress Native Americans in Boston,
 9 Lewis and Clark—like the showman Philadelphia Gardiner Baker—were
 10 still able to exploit the rarity of a repeating gun to awe and
 11 entertain.

12 41. It is possible that someone in the United States may
 13 have been marketing Girardoni air rifles or something very
 14 similar to them in the mid-1790s. An announcement for a public
 15 auction in the issue of the *Boston Columbian Centinel* for March
 16 7, 1795 listed among the items to be sold "a Magazine Air-Gun,
 17 equipped for hunting, and will carry ball or shot." This air gun
 18 appears to be a repeating gun because of its reference to a
 19 "Magazine." However, one should not automatically assume that
 20 all early air guns were repeaters. Air rifles made by Isaiah
 21 Lukens (1779–1846) of Pennsylvania were single shot air guns,
 22 though some writers erroneously assume that they were repeaters
 23 like Girardoni's air rifle.⁸² It wasn't until the 1880s that two

24 (June 16, 2021) [https://warhistoryonline.com/war-articles/lewis-](https://warhistoryonline.com/war-articles/lewis-and-clark-air-rifle.html?firefox=1)
 25 [and-clark-air-rifle.html?firefox=1](https://warhistoryonline.com/war-articles/lewis-and-clark-air-rifle.html?firefox=1) <Accessed online 1/21/2023,
 26 8:00AM>.

27 ⁸¹ Chiaventone, "Girardoni Air Rifle," 66.

28 ⁸² Nancy McClure, "Treasures from Our West: Lukens Air Rifle"
 August 3, 2014, Buffalo Bill Center of the West <Accessed online

(continued...)

1 Michigan companies—the most famous of which was the Daisy
2 Manufacturing Company—would begin marketing the first
3 commercially successful, mass-produced repeating air rifles,
4 aiming them at a youth market, employing a lever-action operating
5 system, and shooting BB-caliber pellets.

6 42. Two more references to what appear to be repeating
7 firearms were discovered in eighteenth-century newspapers. One
8 from the August 19, 1793 issue of the *Concord, New Hampshire*
9 *Mirroure* contains a vague report of a repeating weapon supposedly
10 designed by an “Artist in Virginia”. However, this particular
11 news report has been dismissed as a fabrication.⁸³ The other
12 reference to what does appear to be an identifiable type of
13 repeating firearm was contained in a large advertisement in the
14 October 26, 1785 issue of the *Columbian Herald* in Charleston,
15 South Carolina. It was placed by James Lambet Ransier, a native
16 of Liege, which was a center of small arms manufacturing in the
17 Low Countries. Ransier announced that he had “a beautiful and
18 complete assortment of Firearms” and in particular, he could
19 furnish guns “that will fire four different times, with only
20
21

22 on 10/31/2022, at 10:40 A.M>. On November 2, 2022, I received an
23 email from Danny Michael, Curator of the Cody Firearms Museum at
24 the Buffalo Bill Center of the West, confirming that their Lukens
air rifle is a single shot weapon.

25 ⁸³ Many aspects of the news report in the *Mirroure* raise
26 fundamental questions about its believability, as does the fact
27 that it was immediately followed by a news report on a Sea
28 Monster. An intensive search of Virginia newspapers in *America’s*
Historical Newspapers failed to uncover the supposed origin of
the news report. Because it could not be confirmed and because
of its lack of detail and credibility, the report was dismissed.

1 charging once; or, if the person pleases, he may fire four
2 different times one after another, with only one single lock.”

3 43. Ransier appears to be describing imported Belgian or
4 French-made Segales pistols which had four rifled barrels. These
5 were small pistols that had a box lock and a swiveling breech
6 attached to a cluster of four separate barrels: two upper barrels
7 placed on top of two lower barrels. The box lock had two
8 triggers and two hammers holding two flints, while the swiveling
9 or rotating breech had four frizzens that were attached to the
10 barrels. This weapon did not have a magazine. Each barrel was
11 loaded separately at the muzzle with powder and ball. The two
12 upper barrels could be fired one at a time by pulling each of the
13 individual triggers in succession or fired simultaneously by
14 pulling both triggers at once (which could be risky). After
15 discharging the two upper barrels, the shooter then swiveled the
16 rotating breech and the cluster of four barrels by pulling on the
17 pistol’s trigger guard. Once rotated to the upper position, the
18 two barrels formerly in the lower position could now be fired
19 when the triggers were pulled individually or simultaneously.
20 However, as experts have pointed out: “All revolvers, and other
21 multibarrel guns, of the muzzle-loading type were at risk from a
22 dangerous chain reaction, in which firing one chamber could
23 accidentally set off all the others.”⁸⁴ If this happened, the gun
24 would explode in the shooter’s hand.

25 44. American newspapers’ coverage of the English-made
26 Ferguson rifle during the Revolutionary War offers an instructive

27 _____
28 ⁸⁴ Rimer, et al., *Smithsonian Firearms: An Illustrated History*, 56.

1 contrast to the rarity of eighteenth-century newspaper references
2 to the era's repeating firearms. By the fall of 1776 fighting
3 had been going on for almost a year-and-a-half, and the free flow
4 of information between England and its rebelling colonies had
5 been disrupted. However, at least four American newspapers
6 carried a detailed report of the June 1, 1776 test firing at
7 England's Woolwich Arsenal of Captain Ferguson's "rifle gun, upon
8 a new construction."⁸⁵ Firing four or five times a minute,
9 Ferguson hit a target at 200 yards distance four times in a
10 minute. Another news story recounted a later demonstration of
11 the rifle at Windsor Castle that was attended by King George
12 III.⁸⁶ Subsequently, American newspapers contained advertisements
13 offering for sale of "A Patent Rifle Gun, A La Ferguson," a
14 "Rifle barrel'd Gun, of the late Major Ferguson's construction,
15 made in London by Mr. [Durs] Egg," and "a rifle gun English make,
16 of the new construction" which was likely another advertisement
17 for a Ferguson Rifle.⁸⁷ As stated above in Paragraph 7, Patrick
18 Ferguson's rifle was not a repeating firearm, but instead a
19 single-shot, breech-loading firearm.⁸⁸ Still, it was an
20 innovative, well-made, battle-tested weapon. Its availability
21 was limited by its high cost of 7 guineas [i.e. 147 shillings or
22 £7, 7 shillings] and only approximately 100 of these firearms
23

24 ⁸⁵ *Freeman's Journal* [Portsmouth, New Hampshire] September
25 21, 1776; *Pennsylvania Evening Post*, October 8, 1776;
26 *Pennsylvania Ledger*, October 12, 1776; *Dunlap's Maryland Gazette*,
October 15, 1776.

26 ⁸⁶ *New-York Gazette, and Weekly Mercury*, January 6, 1777.

27 ⁸⁷ *Royal Gazette*, July 14, 1779; *Royal Gazette*, November 28,
1781; *New-York Gazette, and Weekly Mercury*, August 24, 1778.

28 ⁸⁸ The loading procedure is described in Peterson, *Arms and
Armor in Colonial America*, 218-29.

1 made it to America.⁸⁹ Despite this fact, reports and
2 advertisements in eighteenth-century American newspapers indicate
3 that public awareness of an innovative and reliable firearm such
4 as the Ferguson made its mark on the era's documentary record.
5 Repeated references to the Ferguson rifle therefore provide a
6 striking contrast to the relative dearth of period newspaper
7 references to the different types of flintlock repeaters that the
8 Plaintiffs unconvincingly suggest proliferated in America during
9 the eighteenth-century.

10 45. Finally, something needs to be said about the Puckle
11 Gun which—ironically—was never found in the 13 Colonies, and was
12 never mentioned in eighteenth-century American newspapers.
13 Despite these telling absences, it has assumed an out-sized
14 importance in the minds of some writing about colonial Americans
15 and their presumed interest in and familiarity with repeating
16 firearms.⁹⁰ In the early 1700s, James Puckle, an English lawyer,
17 writer, and part-time inventor created what he called “the
18 Defence Gun,” a large firearm fed by a 9-shot magazine located at
19 the back of the gun that was rotated by a crank.⁹¹ Rotating the

20 ⁸⁹ Bailey, *Small Arms of the British Forces*, 180-182; Brown,
21 *Firearms in Colonial America*, 341-347; *Royal Gazette*, July 14,
1779.

22 ⁹⁰ Clayton E. Cramer and Joseph Edward Olson, “Pistols,
23 Crime, and Public Safety in Early America” *Willamette Law Review*
24 Vol. 44, No. 4 (Summer 2008), 716-717; David B. Kopel, “The
History of Firearm Magazines and Magazine Prohibitions” *Albany*
Law Review Vol. 78, No. 2 (2014-2015), 852.

25 ⁹¹ For claims that the Puckle Gun had an 11-shot magazine see
26 Cramer and Olson, “Pistols, Crime, and Public Safety in Early
27 America,” 217; Kopel, “The History of Firearm Magazines and
28 Magazine Prohibitions,” 852. However, patent drawings and
photographs of surviving guns show a 9-shot magazine. See Brown,
Firearms in Colonial America, 238-239; Howard L. Blackmore,

(continued...)

1 crank aligned a power charge and bullet in the detachable
2 magazine with the weapon's barrel. After locking the magazine
3 and the barrel together, the operator had to manually prime each
4 shot and pull back the cock before pulling the trigger for each
5 discharge of the weapon. Because of the time needed to prime and
6 cock the hammer before each shot and to change the magazine after
7 it was emptied, the gun had a rate of fire of only 9 rounds per
8 minute. It was never used in battle. The company producing it
9 went out of business before 1730. This gun had no discernable
10 impact on colonial Americans nor on the development of firearms
11 technology.⁹²

12 46. However, the Puckle gun lives on in the imaginations
13 of some.⁹³ Because of its weight, the Puckle gun used a tripod.
14 Visually the weapon bears an undeniable physical resemblance to
15 certain .30 caliber machine guns used in World War II. As a
16 result, some refer to it today as a "machine gun."⁹⁴ It was not a
17 machine gun as we understand and use the term today, in either
18 its mode of operation or its rate of fire. Puckle's firearm was
19 really a "large-caliber flintlock revolver,"⁹⁵ while a modern
20 machine gun is not an over-sized revolver. The first machine gun
21 was invented by Hiram Maxim in 1884 and used the recoil action of

22 _____
23 *British Military Firearms 1650-1850* rev. ed. (Mechanicsburg,
24 Penn.: Stackpole Books, 1994), 244, Illustration 77; Paul
25 Wilcock, "The Armoury of His Grace the Duke of Buccleach and
Queensbury" *Arms & Armour* Vol. 9 No. 2, (2012), 185-186, Figures
3a and 3b.

26 ⁹² Brown, *Firearms in Colonial America*, 238-239; James H.
Willbanks, *Machine Guns: An Illustrated History of their Impact*,
(Santa Barbara, CA: ABC-CLIO, 1002), 22-23, 154.

27 ⁹³ See footnote 90 above.

28 ⁹⁴ Willbanks, *Machine Guns*, 23.

⁹⁵ This description is in Willbanks, *Machine Guns*, 23.

1 the gun's barrel to load it continuously and discharge spent
2 cartridges.⁹⁶ Just pull the trigger and it kept firing bullets as
3 long as the operator's assistant kept feeding it an ammo belt.
4 Another less common version of a late-nineteenth-century machine
5 gun used some of the gasses produced by discharging the weapon to
6 automatically and repeatedly load the gun and eject spent
7 cartridges. (A modern assault rifle uses a similar system that
8 also employs diverted gasses to operate a piston.) The .30
9 caliber medium machine gun used by the American army during World
10 War II fired approximately 500 rounds a minute.⁹⁷ The only thing
11 this later weapon had in common with the eighteenth-century
12 Puckle Gun was its use of a tripod.

13 47. In summary, period probate inventories and newspapers
14 indicate that repeating firearms were extraordinarily rare in
15 eighteenth-century America. Like muskets, repeaters were usually
16 seen as military firearms. In 1777, the Continental Congress
17 demonstrated an interest in Joseph Belton's firearm, and in 1813
18 the United States Navy purchased 200 muskets and 100 pistols
19 produced by Joseph Gaston Chambers. However, such superposed
20 systems were in the assessment of military historian Joseph G.
21 Bilby "a developmental dead end."⁹⁸ Well into the third-quarter
22 of the nineteenth century, the American government armed the
23 overwhelming majority of its soldiers with muzzle-loading single-
24 shot long arms.

25
26 _____
⁹⁶ Willbanks, *Machine Guns*, 46-49.

27 ⁹⁷ *Ibid.*, 46-49; Rimer et al., *Smithsonian Firearms: An*
Illustrated History, 184-189, 192-193.

28 ⁹⁸ Bilby, *A Revolution in Arms*, 41.

1 48. Even during the Civil War, the Union army made only
2 limited use of the much more reliable repeating long arms made by
3 Samuel Colt, the Spencer Arms Company, and the New Haven Arms
4 Company, which was owned by Oliver Winchester and produced a
5 repeater designed by Benjamin Henry. All told, about 72,000 of
6 their repeating firearms may have seen service with the Union
7 Army before the Civil War ended, and most of these firearms were
8 Spencers with 7-shot magazines.⁹⁹ At the same time, about 2.2
9 million men enlisted in the Union Army indicating that at most
10 only 3.3% of these soldiers might have carried a repeater into
11 battle. By 1868, these Henrys and the Model 1866 Winchester had
12 a long way to go before they became "American legends".¹⁰⁰ Only a
13 total 14,094 Henrys and 7,290 of the Model 1866 Winchester had
14 been produced by the end of 1868 and presumably marketed to
15 America's nearly 38,000,000 residents.¹⁰¹ It was in twentieth-
16 century Hollywood that these lever-action repeaters became
17 ubiquitous and legendary, while late nineteenth-century residents
18 of the real American West had often made do with shotguns or
19 "varmint guns".

20 49. The earlier lack of enthusiasm for repeating firearms
21 among eighteenth-century Americans is unsurprising given the
22 colonists' demonstrated preferences for inexpensive, light
23 firearms that used less gunpowder and lead than did muskets. By

24 ⁹⁹ Bilby, *A Revolution in Arms*, 44-48, 60-67; Joseph G.
25 Bilby, *Civil War Firearms: Their Historical Background, Tactical
26 Use and Modern Collection and Shooting* (Combined Books, 1996),
197-198.

26 ¹⁰⁰ MPA, at 20.

27 ¹⁰¹ Production figures for Henrys from 1860 to 1866 and for
28 the Model 1866 Winchester from 1866 to 1868 were taken from
ProofHouse.com <Accessed on 4/16/2023 at 2:40 P.M.> The 1870 U.S.
Census recorded 38,558,371 inhabitants.

1 contrast, most of the period's repeating arms were expensive,
2 heavy, and required greater expenditures—that were often
3 uncontrollable—of gunpowder and lead. Because repeating firearms
4 contained multiple charges of explosive black powder gunpowder,
5 they were also more dangerous than a gun using a smaller charge
6 of gunpowder and a single projectile. Some of these repeating
7 firearms had the potential to turn into a Roman candle or a pipe
8 bomb. As Harold Peterson has observed “As long as the powder and
9 ball had to be loaded separately there was no hope for a simple
10 and safe magazine repeater.”¹⁰² For these reasons, eighteenth-
11 century advertisements and homes were filled with muzzle-loading,
12 single shot firearms.

13 50. The fact that some repeating firearms had been
14 produced in Europe for four centuries by 1800 does not
15 necessarily support the conclusion that Americans in the late
16 1700s would have assumed that such weapons would inevitably
17 become reliable, safe, and widely available. An individual
18 looking back from 1800 might have been just as likely to conclude
19 that very little progress had been made over the previous four
20 centuries. It was still not possible to manufacture with
21 precision and in any quantity firearms with closely fitting parts
22 that could contain the destructive explosive potential associated
23 with the use of black powder gunpowder. The superposed systems
24 employed by Belton and Chambers, the Girardoni air rifle, and the
25 Puckle Gun proved to be dead ends. Calling these weapons and
26 others like them “eighteenth-century assault rifles” or “an

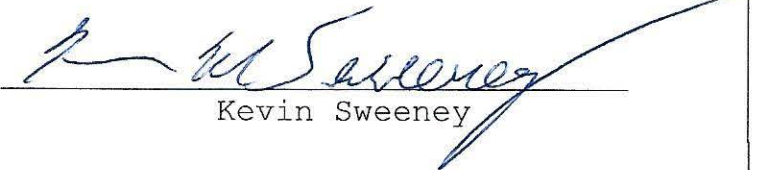
27
28 ¹⁰² Peterson, *Treasury of the Gun*, 233.

1 eighteenth-century machine gun" are examples of modern-day
2 rhetoric, not evidence of inevitable developments in firearms
3 technology. As George Basalla, an historian of technology, has
4 cautioned: "All too often it is assumed that the development of
5 technology is rigidly unilinear."¹⁰¹

6 I declare under penalty of perjury that the foregoing is
7 true and correct.

8 Executed on April 28, 2023 at Greenfield, Massachusetts.

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Kevin Sweeney

28 ¹⁰¹ George Basalla, *The Evolution of Technology* (New York: Cambridge University Press, 1988), 189.

EXHIBIT A

Curriculum Vitae: Kevin M. Sweeney

Home Address: 9 Orchard Street,
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Education: Ph.D. in History 1986, Yale University.
B.A. in History 1972, Williams College.

Employment:

2000-2016 Professor of History and American Studies, Amherst College.
1993-2000 Associate Professor of History and American Studies, Amherst College.
1989-1993 Assistant Professor of History and American Studies, Amherst College.
1986-1989 Director of Academic Programs, Historic Deerfield, Deerfield, Mass.
1985-1986 Assistant Professor, Winterthur Museum, Winterthur, Delaware.
1980-1984 Administrator-Curator, Webb-Deane-Stevens Museum, Wethersfield, Conn.
1978-1980 History Instructor, Westover School, Middlebury, Conn.

Other Academic Appointments:

2007 Visiting Faculty, American Studies Seminar, American Antiquarian Society, Worcester, Mass.
1987-1989 Assistant Professor of American Studies at Smith College under the Five College Program.
1985-1986 Adjunct Assistant Professor, Early American Culture, University of Delaware.
1982-1984 Visiting Lecturer in American Studies, Trinity College, Hartford, Conn..
1981 Adjunct, Art History Department, University of Hartford.

Declarations Filed as an Expert Witness

2022 *Hanson v. District of Columbia*, Case No. 1:22-cv-02256-RC.
2023 *Delaware State Sportsmen's Assoc., Inc. v. Delaware Dept. of Safety and Homeland Security*, United States District Court. District of Delaware, Case No. 1:22-cv-00951-RGA.
2023 *Oregon Firearms Federation Inc. et al v. Tina Kotek et. al. and Oregon Alliance for Gun Safety*, United States District Court, District of Oregon, Pendleton Division, Case No. 2:22-cv-01815-IM.
2023 *Rupp v. Bonta*, United States District Court for the Central District of California Western Division, Case No. 8:17-cv-00746-JDE

Academic Honors and Prizes:

- 2003 Book Prize, New England Historical Association.
- 2003 Award of Merit, American Association for State and Local History.
- 1995 Harold L. Peterson Award, Eastern National Parks & Monuments Association.
- 1986 Jamestown Prize of the Institute of Early American History and Culture, Williamsburg, VA.
- 1986 Frederick W. Beinecke Prize in History, Yale University.
- 1973 Mary Cady Tew Prize in History, Yale University.
- 1972 William Bradford Turner Prize in American History, Williams College.
- 1971 Phi Beta Kappa, Williams College.

Publications:**Books**

With Evan Haefeli, co-editors, *Captive Histories: English, French and Native Narratives of the 1704 Deerfield Raid* (Amherst, Mass.: University of Massachusetts Press, 2006).

With Evan Haefeli, *Captors and Captives: The 1704 French and Indian Raid on Deerfield* (Amherst, Mass.: University of Massachusetts Press, 2003). Awarded 2003 Book Prize, New England Historical Association and 2003 Award of Merit, American Association for State and Local History.

Articles/Book Chapters/Catalogue Essays

- “Revolutionary State Militias in the Backcountry and Along the Frontiers,” *The American Revolution on the Frontier*, edited by Seanegan Sculley, Sons of the American Revolution 2022 Conference Proceedings, (publication forthcoming).
- “Firearms Ownership and Militias in Seventeenth- and Eighteenth-Century England and America” in Jennifer Tucker, Barton C. Hacker, and Margaret Vining, editors *A Right to Bear Arms? The Contested Role of History in Contemporary Debates on the Second Amendment* (Washington, D.C.: Smithsonian Scholarly Press, 2019), 54-71.
- “Firearms, Militias, and the Second Amendment” in Saul Cornell and Nathan Kozuskanich, editors, *The Second Amendment on Trial: Critical Essays on District of Columbia v. Heller* (Amherst: University of Massachusetts Press, forthcoming August 2013), 310-382.
- “Mary Rowlandson: Taken by Indians,” *American Heritage* 58:5 (Fall 2008): 23-25.
- “Early American Religious Traditions: Native Visions and Christian Providence,” *OAH Magazine of History* (January 2008):8-13.
- With Jessica Neuwirth, Robert Paynter, Braden Paynter and Abbott Lowell Cummings, “Abbott Lowell Cummings and the Preservation of New England,” *The Public Historian* 29:4 (Fall 2007):57-81.
- With Evan Haefeli, “*The Redeemed Captive as Recurrent Political Text*” *The New England*

Quarterly (September 2004):341-367.

"The 1704 French and Indian Raid on Deerfield" *New England Ancestors* 5:1 (Winter 2004): 23-26.

"Regions and the Study of Material Culture: Explorations along the Connecticut River" for *American Furniture*, Luke Beckerdite, editor (Milwaukee, Wis.: Chipstone Foundation/ the University Press of New England, 1995), 145-166.

With Evan Haefeli, "Revisiting *The Redeemed Captive: New Perspectives on the 1704 Attack on Deerfield*" *William and Mary Quarterly* 3rd ser. 52:1(January 1995):3-46. Awarded the 1995 Harold L. Peterson Award, Eastern National Parks & Monument Association, and the 1995 Essay Prize, Society of Colonial Wars.

With Evan Haefeli, "Wattanummon's World: Personal and Tribal Identity in the Algonquian Diaspora, c. 1660-1712" in William Cowan, ed., *Papers of the Twenty Fifth Algonquian Conference* (Ottawa, 1994), 212-224.

"High Style Vernacular: Lifestyles of the Colonial Elite " in *Of Consuming Interests: The Style of Life in Eighteenth-Century America*, edited by Ronald Hoffman, Cary Carson, and Peter J. Albert (Charlottesville: University of Virginia Press, 1994),1-58. Volume awarded the Harold Hugo Memorial Book Prize, Old Sturbridge Village, 1995.

"Meetinghouses, Town Houses, and Churches: Changing Perceptions of Sacred and Secular Space in Southern New England, 1725-1850" *Winterthur Portfolio* 28:1 (Winter 1994):59-93.

"Using Tax Lists to Detect Biases in Probate Inventories," *Early American Probate Inventories: Dublin Seminar for New England Folklife Annual Proceedings 1987*, Peter Benes, ed. (Boston: Boston University Press, 1989), 32-40.

"Gentlemen Farmers and Inland Merchants: The Williams Family and Commercial Agriculture in Pre-Revolutionary Western Massachusetts," *Dublin Seminar for New England Folklife, Annual Proceedings 1986*, Peter Benes, ed. (Boston University Press, 1988), 60-73.

"Furniture and the Domestic Environment in Wethersfield, Connecticut, 1640-1800," *Connecticut Antiquarian* 36:2 (1984): 10-39. Revised and reprinted in *Material Life in America, 1600-1860*, Robert B. St. George, editor (Boston: Northeastern University Press, 1988), 261-290.

"From Wilderness to Arcadian Vale: Material Life in the Connecticut River Valley, 1635 to 1760" and "Gravestones" in *The Great River: Art and Society of The Connecticut Valley, 1635-1820* (Wadsworth Atheneum, Hartford, CT., 1985), 17-27, 485-523. Volume awarded the Harold Hugo Memorial Book Prize, Old Sturbridge Village, 1985.

"Where the Bay Meets the River: Gravestones and Stonecutters in the River Towns of Western Massachusetts, 1690-1810," *Markers III*, David Watters, ed. (Association for Gravestone Studies, 1985),1-46.

"Mansion People: Class, Kinship and Architecture in Western Massachusetts in the Mid-18th Century," *Winterthur Portfolio* (Winter 1984):231-255.

“Furniture and furniture making in mid-eighteenth-century Wethersfield, Connecticut” *Antiques* 125:5 (May 1984), 1156-1163.

"River Gods in the Making: The Williams Family in Western Massachusetts," *Dublin Seminar for New England Folklife, Annual Proceedings 1981*, Peter Benes, ed. (Boston University Press, 1982), pp. 101-116. Reprinted in a *Place Called Paradise: 1654-2004*, edited by Kerry Buckley (Amherst, Mass.: University of Massachusetts Press, 2004), 76-90.

Exhibitions:

- 2007-2008 Consultant, “Shays’s Rebellion,” N. E. H. Funded Web-Exhibition, Springfield Technical Community College and Pocumtuck Valley Memorial Association.
- 2003-2005 Consultant and Contributor, “The Many Stories of 1704,” N.E.H. Funded Web-exhibition, Pocumtuck Valley Memorial Association. 2005 Museums and Webs Award Winner; 2005 Award of Merit, American Association for State and Local History; 2007 Merlot History Classics Award and others.
- 1984-1985 Consultant and Contributor, "The Great River: Art and Society of the Connecticut Valley, - 1820" Catalogue awarded Charles F. Montgomery Prize for 1985 by the Decorative Arts Society; Award of Merit from the American Association for State and Local History, 1986; Honorable Mention, E. Harold Hugo Memorial Book Prize, Old Sturbridge Village, 1986.
- 1982 Consultant and Contributor, "Two Towns: Concord and Wethersfield - A Comparative Exhibition of Regional Culture, 1635-1850," 1982. N. E. H. Funded Exhibition.

Films/Videos:

- 2012 Contributor, *Cherry Cottage, The Story of an American House*, Dave Simonds, Williamstown, Mass.
- 2009 Contributor, *The Forgotten War: The Battle for the North Country*, Mountain Lake Public Television, Plattsburg, NY.
- 2005 Contributor, *Captive: The Story of Esther*, VisionTV and Aboriginal Peoples Television Network, Canada.
- 2003 Contributor, *New England’s Great River: Discovering the Connecticut*, Vermont Public Television, Burlington, VT

Memberships in Professional and Scholarly Societies:

American Historical Association.

Colonial Society of Massachusetts.
Massachusetts Historical Society.
Organization of American Historians.
Society of Military Historians

Other Professional Activities

2008-2010 Chair, History Department, Amherst College.
2005-2007 Chair, American Studies Department, Amherst College.
2003-2004 Consultant, "Remembering 1704: Context and Commemoration of the Deerfield Raid"
Pocumtuck Valley Memorial Association and Historic Deerfield, Inc.
1997-2001 Consultant, "Turns of the Centuries" Project, Pocumtuck Valley Memorial Association.
1997-1999 Chair, History Department, Amherst College.
1997-1998 Consultant, Exhibition entitled "Performing Arts: The Refinement of Rural New England,"
Historic Deerfield., Inc.
1996-1998 Member, Advisory Committee for the Dickinson Homestead, Amherst College.
1994-1995 Chair, Committee on Priorities and Resources, Amherst College.
1993-1995 Chair, American Studies Department, Amherst College
1992 Consultant, "Forty Acres: A Reinterpretation Initiative," Porter-Phelps-Huntington
Foundation, Hadley, Mass.
1991 Consultant, "Furniture-making in Central New England, 1790-1850," Old Sturbridge
Village.
1991-1994 Member, Five College Standing Committee on American Indian Studies.
1986-1989 Member, Five College American Studies Steering Committee.
1981-1986 Member, Advisory Committee for Historic Deerfield.

4/28/2023

EXHIBIT B

From the A. Cochrane

Repeating Gun,

invented by the Americans 1814.

