

# The Seven Deadly Pins—U.S. Rod Bayonets 1833–1903

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Bayonets started about three and a half centuries ago as simple belt-knife blades mounted in tapered handles which plugged into the bore of a musket. These gradually replaced the long pole arm, which for many years was the principal weapon of the foot soldier.

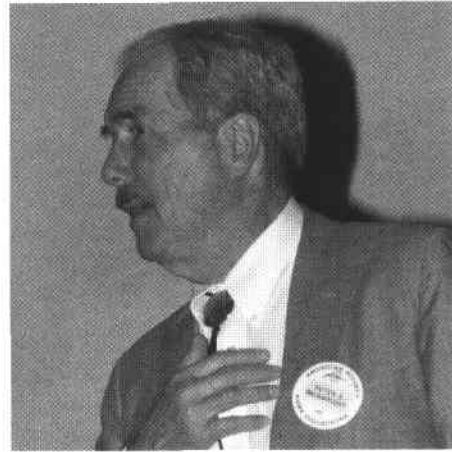
Plug bayonets had some obvious disadvantages. First, the blade would likely remain stuck in the object of one's aggression if it had not fallen out of the bore earlier. Also, one could not effectively fire or reload with the plug in the muzzle. Advantages were that the reach and use of a shoulder arm could be extended, even when empty, thus making it a dual-purpose weapon, and the ever-handy belt knife also now had an additional use. We have in recent years reverted to a short belt-knife/bayonet, though its handle includes a groove and catch that mates with a rail under the barrel. In between, the search for dual—or more—purposes followed the bayonet for all of its history through many mutations and is an important part of the story of “the seven deadly pins.”

The long-established angular or offset socket bayonet, which followed the plug, was a big improvement in that it did not obstruct the bore and it stayed in place when used; however, the bayonet and scabbard were added expensive pieces of equipment that had little intended dual use, although the blades were easy to insert and withdraw.

Soldiers discovered unofficial uses for bayonets such as barbing the blade tip to spear fish and roast them over the coals or placing them point in ground so the upraised socket could serve as a candle holder. Beyond that, the bayonet was a fairly useless piece of equipment except when employed on the muzzle of the firearm, where the combination became very long and awkward (particularly in confined areas such as a barracks) unless the bayonet was removed and put in its scabbard.

With costs, utility, and weight in mind, governments attempted to make dual-use implements out of bayonets by shaping them as entrenching shovels, saws, spikes, swords, bolos, and bowie knives, often with unintended consequences (Figures 1 and 2). For example, an entrenching tool (CC) was not a good bayonet for either penetration or withdrawal, and if left fixed in place while shoveling would likely bend the barrel of the musket or rifle.

A case could be made for the sword or saber bayonet to somewhat justify its expense and weight. It was flashy and



glittering if affixed while on parade, and it worked rather well in hand-to-hand combat as a short sword and also for nonofficial purposes. Nevertheless, it was extremely muzzle-heavy, affecting point of aim, accuracy, and handling of the principal weapon (Figure 2). In fact, the U.S. Marines apparently ground off the bayonet rail from the model 1870 Remington Rolling Block Rifle so that the muzzle would accommodate the lighter, handier socket bayonet in combat, but they left the stud so that the barrel could still hold the saber type for “show time.” The U.S. Navy “Plymouth” rifle accommodated both “official” saber bayonets (Figure 2.II) and alternate bowie bayonets, each for different purposes.

With the advantages of such hindsight we should forgive Captain John Hancock Hall, earlier of the Portland, Maine, Light Infantry, for inventing, and several successors for employing a total of seven times over a 70-year period, rod bayonets, herein called “the seven deadly pins.”

R. T. Huntington, in his book *Hall's Breech Loaders*, states: “The rod bayonet is probably Hall's own idea.” In 1832, before Hall had developed the dragoon carbine, a British officer visiting the rifle works noted that Hall demonstrated a rod bayonet that he had fitted to a rifle. Huntington relates that a set of trials held on 19 June 1832 compared several breech loaders. The board found Hall's breech loader with rod bayonet—the first of the “seven deadly pins”—“superior to the other arms for military use.”

The fact that both of the first two models of the Hall's Carbine, the 1833 and 1836, were for U.S. Dragoons (which were mounted infantry rather than cavalry) justified supplying each man with a bayonet, although jouncing around on a



U.S. Dragoon carrying a U.S. Mod. 1836 Hall (Harper's Ferry) Breech-loading Percussion Carbine with Rod Bayonet.

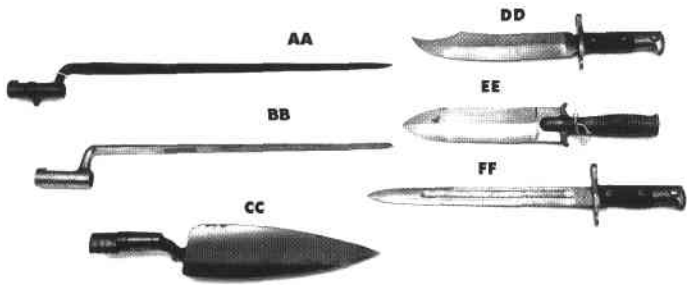


Figure 1. Dual-purpose bayonets: AA. Model 1873; BB. Model 1819 Hall; CC. Model 1873; DD. Model 1898; EE. Model 1880; FF. Model 1892

horse made a conventional socket bayonet (Figure 1.BB) and scabbard, such as the one employed on Hall's Model 1819 flintlock rifle, more of an impediment than a valuable instrument. The rod bayonet solved that problem but tended to raise the bullet's point of impact and introduced other concerns.

While a ramrod is less of a must for a breech loader than for a muzzle loader, it was still desirable with the wiper/jag screwed to the back end because the black powder and soft lead in use at the time built up quite a bit of residue in the barrel, eventually affecting accuracy. However, as with many compromises, a ramrod bayonet did not offer the best of either world. The need to harden the bayonet/rod was hard on the barrel, and among other drawbacks, the wiper was easy to lose. Thus the bayonet feature was dropped in favor of a cleaning rod on subsequent cavalry models.

Captain Hall was indubitably a firearms and tooling genius. He shared with his fellow but better-known New Englander, Eli Whitney of Connecticut, the dream of mass-producing firearms with completely interchangeable parts. He had succeeded in selling the U.S. government on adopting its first flintlock, breech-loading rifle, the Model 1819, but thereon employed the standard socket bayonet of the period with the exception that the bridge front sight notch had to be offset because of the center location of the flintlock.

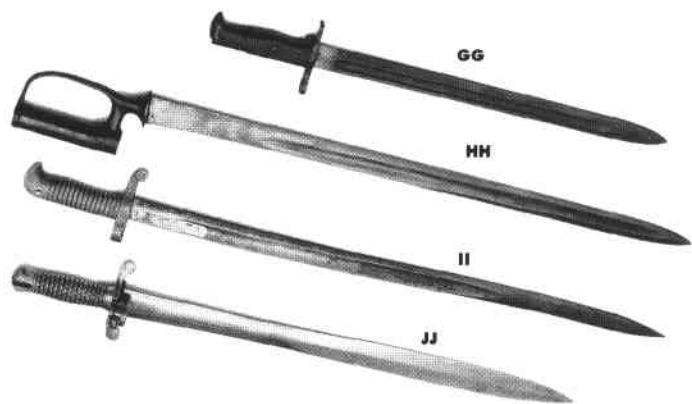


Figure 2. Sword or saber bayonets: GG. Model 1905; HH. Socket/Sword; II. Merrill Artillery Sword; JJ. Model 1847 Sappers Musketoon

According to Norm Flayderman, Hall's Model 1833 breech-loading percussion carbine (Figures 3 and 4).

is important historically as the earliest percussion weapon adopted officially by the U.S. (or any other) government, and the earliest breech loader so adopted. The bayonet device is also unusual and of special interest, and quite in advance of its time.

Captain L. Beall of the 2nd Regiment of U.S. Dragoons registered several serious complaints regarding the Hall Carbine. His letter of 12 March 1839 concluded with this observation: "The bayonet springs has (sic) become in such a state from the rust that it was almost impossible to spring them." The Model 1836 rod retaining device was similar to that of the Model 1833 but employed a stiffer spring because of the loss of rod bayonets (Figures 5 and 3).

With numerous complaints from the field, an ordinance board reviewed the arm but failed to discuss the rod in its report of 18 December 1839 to Secretary of War Joel R. Poinsett. The secretary, however, had his own ideas:

Approved, but the attention of the Board is directed to the bayonet of the carbine—is it necessary? Is it used in any other service than ours? Is it not cumbersome and calculated to injure the bore?

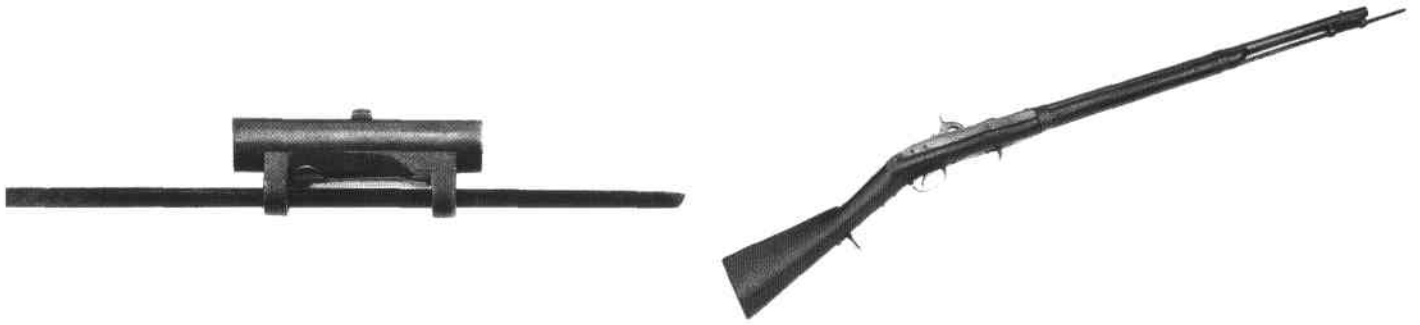
Lt. Colonel George Talcott of Ordinance took the hint from his big boss and on 23 January 1840 told Simeon North:

It is probable that the bayonet will be suppressed and a cleaning rod substituted at no distant day as it has been found inconvenient in the service and the spring is often lost—thereby rendering it worse than useless.

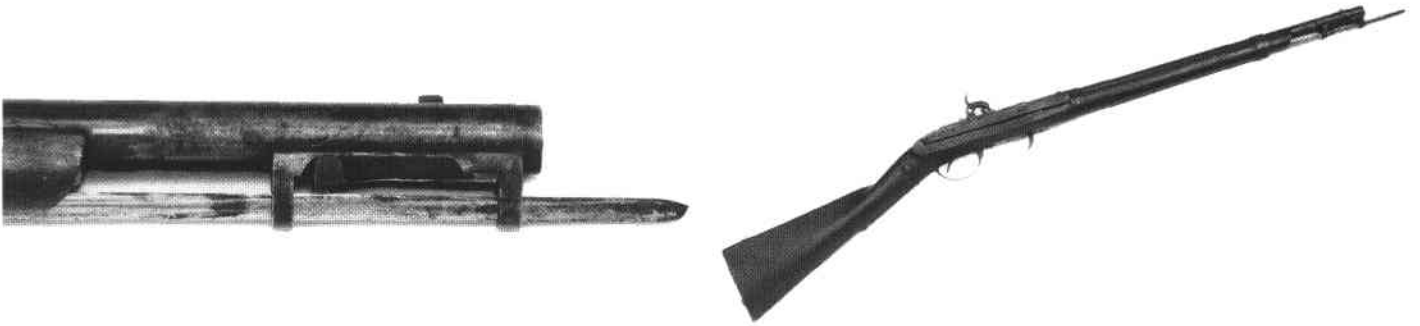
The above was made official in an ordinance board report of 3 March 1840: "To substitute for the ramrod-bayonet a light steel rod like that of the Musketoon. . . ." The rod bayonet was not again in production for 40 years.

Of the approximately 158,000 rod bayonet shoulder arms produced for U.S. troops from Models 1833 through 1903, with the exception of the Models 1836 and 1888, a disproportionately low number still exist for several reasons, which we will discuss as we proceed.

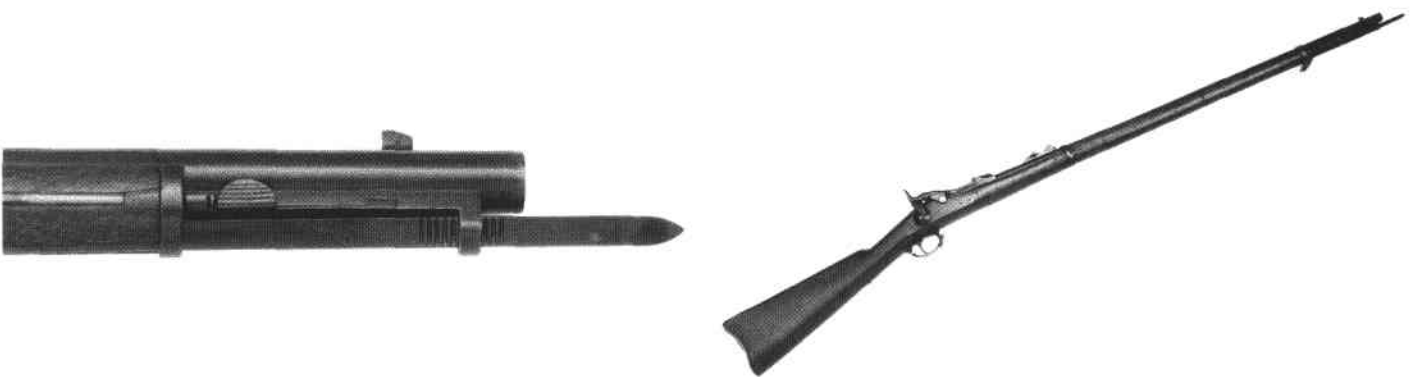
The 9,183 Hall Model 1833 and 1836 carbines made by Simeon North and Harpers Ferry, respectively, were for the First and Second U.S. Dragoons, mounted infantry dispatched to the remote reaches of the west or the dismal southern swamps of the Seminoles. Many men and Hall-North 1833 carbines did not return intact from such far-flung and rugged duty. There were orders for replacement parts in the field, including triangular rod bayonets which may have escaped from their retaining springs. Because of these and other problems previously reviewed, a number of Model 1836 Harpers Ferry Halls were not issued but were later sold as



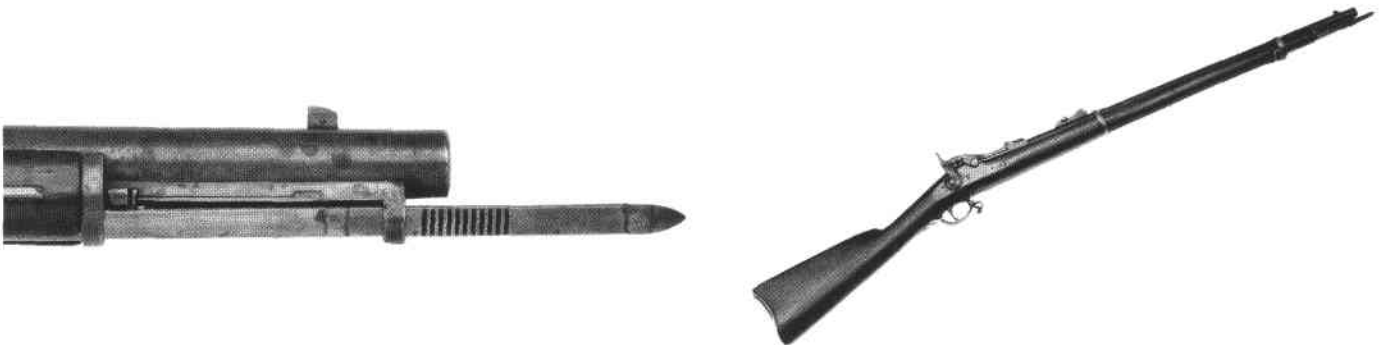
Figures 3 and 4. Model 1833 Hall-North.



Figures 5 and 6. Model 1836 Hall (Harpers Ferry).



Figures 7 and 8. Model 1880 Springfield.



Figures 9 and 10. Model 1882 Experimental Springfield.

surplus once supplanted by the “improved” Model 1840 with cleaning rod only. This accounts for the higher survival rate of the Model 1836, the second of “the seven deadly pins.” It seems, given the circumstances of Indian warfare in swamp or savannah, that few if any Indians fell victim to the rod bayonet.

The resurrection of the triangular rod bayonet on a Model 1880 Trapdoor Rifle employed an improved locking and retaining device for the bayonet at the muzzle in its trial form, in which form only 1,014 of the third of “the seven deadly pins” were produced (Figures 7 and 8). The motivation for this resurrection was that the supply of surplus Civil War socket bayonets was running low, and starting up a new production line would be very expensive considering the relatively limited number of bayonets in demand. Bayonets from the Civil War, often referred to as the U.S. Model 1855-1870, had sockets designed to fit around a .58 caliber barrel. However, a cold press or swedging process developed by Pratt & Whitney (now of jet engine fame) had been very satisfactorily employed to reduce those sockets, at low cost, to fit around a .45 caliber barrel (Figure 1.AA). Thus the U.S. government, penurious as ever with the military in times of relative peace, saw future savings in the resurrection of the rod bayonet rather than the commencement of new socket bayonet production. The Springfield Mod. 1880 knife is closely associated with this rifle (Figure 1.EE).

The Model 1880 experiment must have been considered reasonably successful, because in 1882 the government made 52 short infantry/cavalry rifles with a 28-inch barrel rather than the standard 32 $\frac{5}{8}$ -inch barrel. Half of these, the fourth deadly pins (Figure 9 and 10), were equipped with the triangular rod bayonet similar to the Model 1880 but with a square rather than a round locking cutout (Figures 7 and 9). Half were intended to be adapted to a socket bayonet for comparison, but with its slightly larger muzzle diameter, none were made for those 26. Both kinds had wraparound front sling swivels to insert into a boot, as a possible substitute for both rifle and carbine. It was hoped that further savings would be achieved by using only one shoulder arm and one load for all branches.

The .45-.70 rifle cartridge was too powerful for the existing carbine. The carbine load of 55 grains of black powder rather than 70 was considered weak and also made for logistics problems and expense. This 28-inch barrel project, which would have solved the two-cartridge problem, had both favorable and adverse reviews and was dropped. The single-purpose rifle had to wait until the Model 1903 was produced some years later.

Production then commenced on conventional carbines

and rifles known as the Model 1884, similar to previous standard models but utilizing a new and improved Buffington rear sight.

In 1885 and 1886, an additional 1,013 Model 1884 Experimental Trapdoor Rifles (Figures 11 and 12) were made, the first with *round* rod bayonets rather than the triangular bayonets used for the four prior models. These 1,013 were widely distributed for trial, and the survival rate of the fifth deadly pin is extremely small. The Model 1884 Experimental Rifles must have been deemed a success, because the final production run of trapdoor rifles, the Model 1888, the sixth deadly pin, was likewise made with round rod bayonets of only slightly modified design improving the locking arrangement and the rod channel (Figures 13 and 14). Approximately 65,000 Model 1888s were manufactured between 1889 and 1893. Relatively few saw battle because the pipeline was filled with earlier models. While volunteer and militia units utilized trapdoors in Cuba and the Philippines, most of these were earlier models and thus the Model 1888 is frequently found in excellent condition.

The U.S. Army adopted the Krag, a Norwegian-designed Danish military rifle with a knife bayonet (Figure 1.DD & FF) in 1892 and commenced production in October 1894, but it did not forget its fascination with the rod bayonet. After October 1894, the Krag reigned supreme among Regular Army units and some others until around 1905 or 1906. However, in 1901 and 1902, having learned in Cuba that the Krag was outclassed by the German Mauser in Spanish hands, the U.S. Army started work on a Mauser-type bolt-action rifle. Some of the prototypes and the eventually adopted U.S. Model 1903 Springfield returned to the rod . . . the seventh deadly pin (Figures 15 and 16).

What the members of Army Ordinance did not count on when they proudly displayed their new rod bayonet rifle in caliber .30-03 was a very decisive President Teddy Roosevelt who took an instant dislike to the appendage and demonstrated its shortcomings in no uncertain terms, right in the White House.

The story goes that he handed the demonstration Model 1903 rifle to his Marine guard and took the Marine's Krag with its knife bayonet. Upon insisting that the Marine thrust in his direction with the Model 1903 rod, he slashed across it with the Krag-mounted knife bayonet, breaking the slender rod of the Model 1903.

Bill Brophy, in his seminal work *The Springfield '03 Rifles*, reproduces President Roosevelt's irate letter of 4 January 1905 to the secretary of war. It reads in part:

Sir, I must say that I think the ramrod bayonet is about as poor an invention as I ever saw. As you observed, it broke short off



Figures 11 and 12. Model 1884 Experimental Springfield.



Figures 13 and 14. Model 1888 Springfield.



Figures 15 and 16. Model 1903 Springfield.

as soon as hit with even moderate violence. It would have no moral effect and mighty little physical effect. I think the suggestion of a short triangular bayonet a great improvement. After you have gone over this subject of the bayonet and the sword, do take it up with me.

With those moderately violent words from President Roosevelt in mind, the chief of staff of the Army convened a committee to inquire about and report on the subject of the bayonet. The committee found the Model 1903 rod bayonet "lacking." It was also the opinion of the chief of staff, as well as the

committee, that the bayonet should not be considered an entrenching tool. The bayonet recommended by the committee was of the style of the Krag bayonet except that the blade would be 16 inches rather than the 10 inches of the Krag's. They also decided that a bayonet should be designed for use as a bayonet only, and that the bolo bayonets and combination bolo bayonets submitted for tests were mainly hand weapons and would not be considered. Also rejected was a separate bayonet in the form of a pike that required a scabbard.



Fortunately for the Army, few of the 74,500 Model 1903 units produced by Springfield had yet received wide distribution. West Point cadets were so equipped and some test arms were in the field. A very few rifles had been sold outright to state governors to see if they wished to outfit their state troops. These latter rifles, including the one pictured, were among the very few that were not immediately recalled by the Army and converted to take the knife bayonet now known as the Model 1905 (Figure 2.GG).

The rationale for a 16-inch blade rather than a 10-inch blade, as on the Krag, was to compensate for the 24-inch barrel of the Model 1903, which was a good deal shorter than the 30-inch barrel of the Krag.

President Roosevelt had his way, as he did in most cases that he tackled with his usual vigor. He not only killed the 70-year-old concept of a rod bayonet when he spoke out so strongly, but also had the effect of killing the long-cherished idea of an officially dual-purpose bayonet. Soldiers, of course, put the Model 1905 to innumerable unofficial uses, as well as to some uses anticipated by the committee.

The committee, according to Brophy, noted that "of the great military powers of the world, none have a rod bayonet, while most of them, as a result of their experience, have adopted the knife bayonet." Their decision was in part tempered by the experience of the very successful Japanese fight with the Russians, a fight mediated to a peaceful conclusion by President Roosevelt. The small Japanese troops carried bayonets with blades ranging from 16 inches up to 24 inches without the length apparently interfering with their work. In a further observation, the committee concluded that

if the knife bayonet is adopted, a ramrod or cleaning rod in one piece can be adopted in place of the jointed rod now furnished in the base of the new rifle. As a matter of practical common sense it is believed that the jointed ramrod would never be used on the firing line. It is too much to expect that under conditions of actual combat a man will screw together the various joints and eject his cartridge shell. What he will do, practically, under those circumstances, will be that he will throw away his gun and take one from the nearest wounded or dead man. The one piece ramrod possible with a knife bayonet would do much toward obviating this state of affairs and is recommended. Furthermore, a one piece rod could be made of soft metal.

This last concept, abandoned when the early Krags were revised to the Model 1896, was never adopted for the Model 1903. Another death blow to the concept of having an officially dual-purpose bayonet was stated in the 1905 report:

The rod bayonet has one other important disadvantage as compared with the knife type. While it is not desirable to use the bayonet as an entrenching tool, if the worst comes to

worst and it has to be done, the knife can be used for that purpose while the rod cannot. The absence of the cutting edge is, too, an essential disadvantage inherent to the rod types.

This report also made an observation concerning the possibility of a rod is being "bent up into the path of a bullet."

Why all these drawbacks had not been seriously enough considered during the 70-year march toward the 1903 Model rod bayonet is hard to imagine. A number of them were examined by the 1839/1840 Ordinance Board that reconvened when Secretary of War Joel R. Poinsett had directed "the attention of the Board . . . to the Bayonet of the Carbine." The actions of the secretary of war in January 1840 and the president in January 1905 would appear to ratify twice the wisdom of the Founding Fathers in placing the military under civilian control.

Pray, however, that we do not have the need to test that principle today.

## The Seven Deadly Pins: U.S. Rod Bayonets, 1833–1903

1. Model 1833 Hall-North breech-loading percussion carbine.
2. Model 1836 Hall (Harpers Ferry) breech-loading percussion carbine.
3. Model 1880 "Trapdoor" rifle with sliding combination ramrod bayonet.
4. Model 1882 Experimental "trapdoor" rifle or "short rifle."
5. Model 1884 Experimental "trapdoor" rifle with ramrod bayonet.
6. Model 1888 "trapdoor" rifle aka "ramrod-bayonet" model.
7. Model 1903 rod-bayonet rifle.

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