Automatic Priming Systems

By Dick Salzer

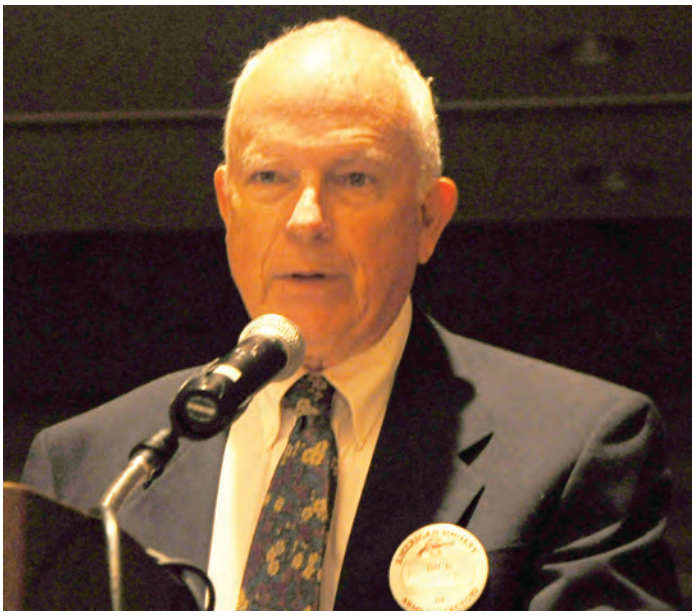
The period from the mid-1830s to the mid-1860s was probably the most significant period in arms development since the invention of gun powder. During that 30-year stretch, we saw the rapid leap from the flintlock system to the cartridge era.

Within that time span, inventive genius ran rampant. The V.D. Stockbridge book, *A Digest of U.S. Patents Relating to Breechloading and Magazine Small Arms,* shows that literally hundreds of inventors developed mechanical systems to accomplish their own visions of how that progress should be made and how they might profit from the opportunities presented. The vast majority of those inspirations died on the vine—some because they were impractical, others because they were poorly marketed. Very few systems persevered to extend in popularity beyond those developmental years.

One small niche in arms history was the apparent obsession with developing automatic priming systems that could be applied to a variety of both muzzle- and breech-loading arms. This preoccupation is especially puzzling when one considers the application to muzzle-loading guns. Priming a muzzle-loaded pistol, musket, or rifle was the least of the loading processes, yet a significant number of inventors spent a lot of time developing proprietary systems, all of which, if successful, would have had the disadvantage of requiring yet another special type of priming system. One which was different from the conventional "top hat" or Maynard tape priming systems already in general use.

It was probably the Ordnance Department's fascination with Edward Maynard's tape priming system that encouraged inventors to exercise their own ingenuity in the direction of automatic priming. Starting with the Nippes musket conversion to the Maynard system modifications as applied to model 1840 muskets, the Ordnance Department began insisting on the application of the Maynard tape priming system to all new arms up to and including the model 1855 Springfield pistol carbine and model 1855 rifled muskets. When Ambrose Burnside submitted his first model Burnside carbine to the Ordnance board, for example, it was initially rejected until he applied an "afterthought" version of the tape priming system. Burnside, however, had the last laugh because he made the tape feed slot too narrow for the then-standard Maynard priming systems necessitating the purchase of his own proprietary primers.

By the late 1850s, one which had lost its appeal with the lone exception of the Lawrence pellet primer which continued to be a feature of Sharps rifles and carbines during the



Civil War. Although both Maynard and Sharps automatic priming systems used special primers, each could also be used with conventional musket primers. A lesser-known system found in Perry patent rifles and carbines used standard pistol primers in an automatic feed device. These automatic priming systems made much more sense when applied to breech-loading arms (Figure 1).

By the end of the 1850s, Ordnance warehouses were full of obsolete model 1836 flintlock pistols and obsolescent model 1842 percussion pistols. These warehouses became a playground for inventors to develop their own, often bizarre, ideas for automatic priming systems (Figures 1 and 2). Many of the automatic priming systems we will discuss were applied to those weapons. It is surprising that so little research has been done on these rare and interesting guns. What we have is little more than the few surviving specimens that are left to speak for themselves.

I had considered titling this article "Bad Ideas Well Executed," because the ingenuity of design is apparent, but the resultant execution was often somewhere between useless and dangerous.

One is tempted to conclude that tool room employees must have had a lot of time on their hands to play with weird and wonderful mechanical concepts. Many of the systems covered in this article are probably one-of-a-kind experiments that went nowhere. A few, such as the Gedney and Rupertus Systems, were produced by established firms and, at least in the minds of their creators, had market potential. The Gedney System seems somewhat unique in that the

Reprinted from the American Society of Arms Collectors Bulletin 106:22-26
Additional articles available at http://americansocietyofarmscollectors.org/resources/articles/

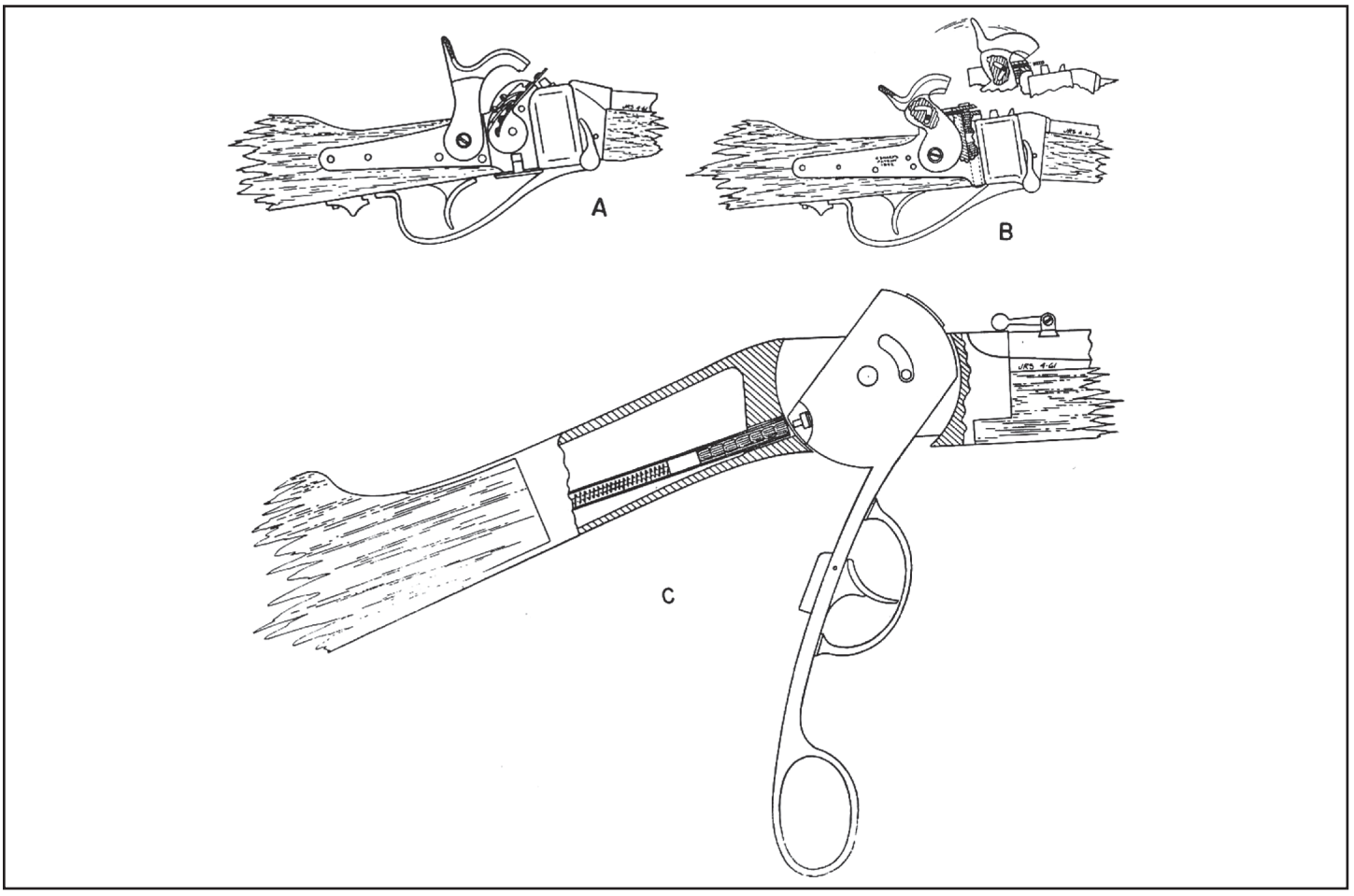


Figure 1. The three basic automatic priming systems applied to arms that were actually used by military and sporting weapons are shown: (A) the Maynard Tape Priming System as applied to the model 1855 Sharps carbine, (B) the Lawrence Pellet Priming System as applied to the model 1852 Sharps carbine, and (C) the primer feeding system applied to the Perry carbine or rifle.

Figure 2. The model 1836 Martial pistol, which was obsolete and available in quantity for modification.

Figure 3. The model 1842 Martial pistol, which was obsolescent and a perfect plaything for ingenious modification.

complicated hammers were mass produced by a contractor, the AMS Priming & Arms Company of New York. Although few finished guns were produced, complete hammer assemblies are frequently found with the tumbler hole unfinished (Figures 4–12).

Lewis Winant, in his book *Early Percussion Firearms,* mentions that William H. Bell took out at least three patents on automatic priming systems, at least two of which were dated 1859. All of this adds to the mystery since the Gedney patent (number 23241, March 1859) and the Rupertus patents (number 23711, April 19, 1859, and number 23952, May 10, 1859). The date of 1859 seems well beyond the point of serious interest in automatic priming systems.

We may never know or understand the thinking that went into these inventions because they took place during a time when strange and fascinating patents were being requested and granted in virtually every field imaginable. For the purpose of this article, we'll let the guns speak for themselves.

All of the unusual hand guns shown are from the collections of Rick Starbuck and Bob Sadler.

Reprinted from the American Society of Arms Collectors Bulletin 106:22-26
Additional articles available at http://americansocietyofarmscollectors.org/resources/articles/

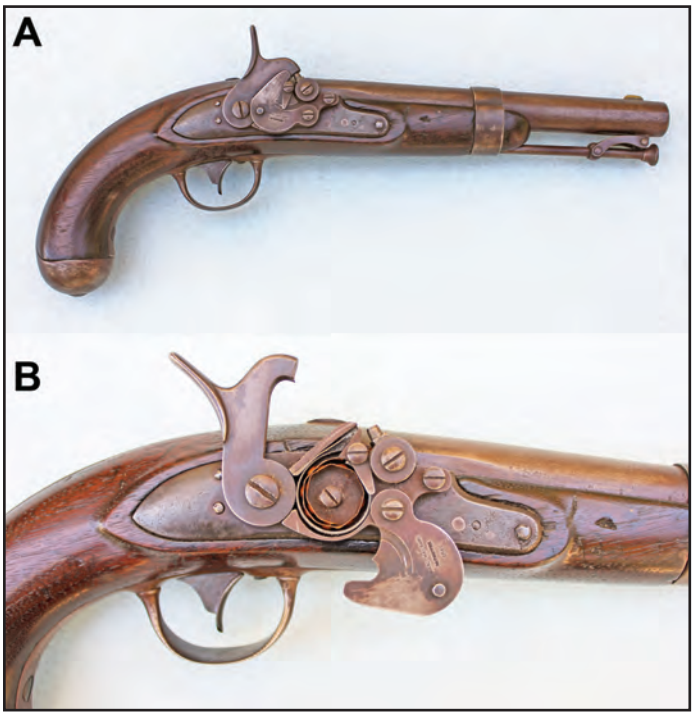


Figure 4. (A) An early version of the Maynard Tape Priming System applied to a model 1836 pistol. (B) A detailed view of the Maynard mechanism.

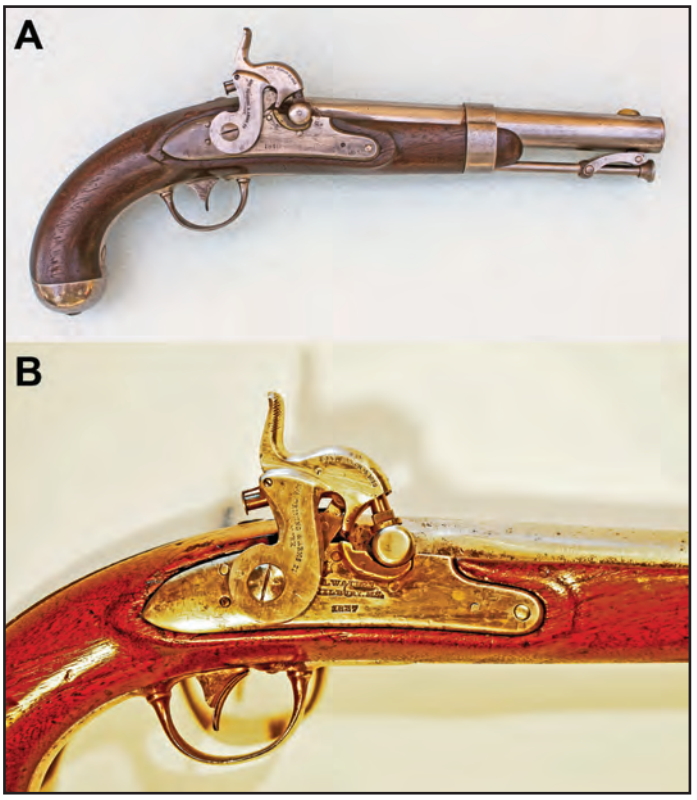


Figure 5. (A) The Gedney patent, 1859. A disc priming system with a tube of primers is located inside the head of the hammer. (B) A close-up of the Gedney system as mounted on a surplus model 1836 pistol.

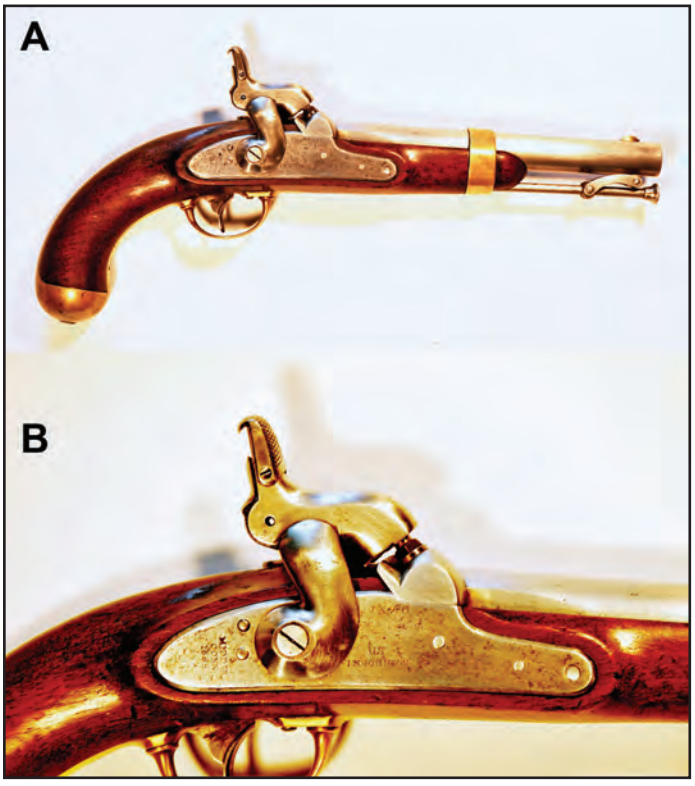


Figure 6. (A) The Rupertus system (1859). A roll of tape primers located inside the head of the hammer. (B) Close-up of the Rupertus mechanism (the host gun is a Johnson model 1842 pistol).

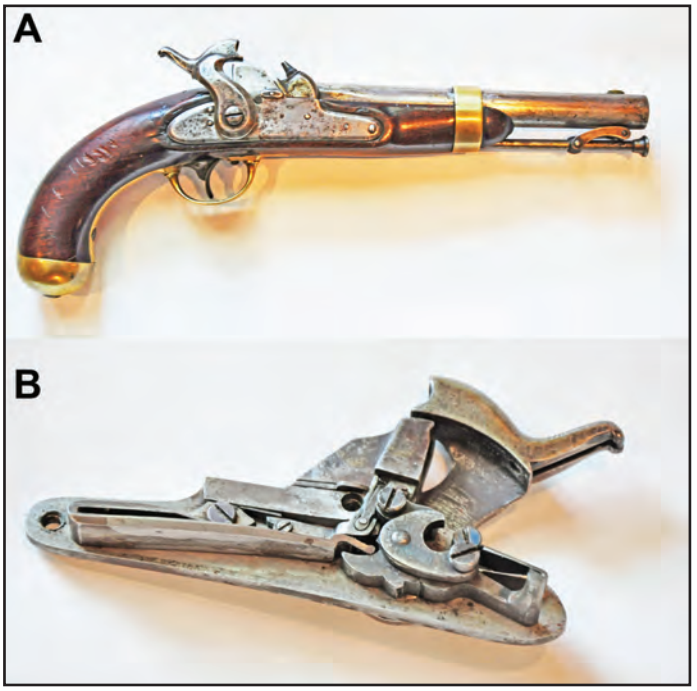


Figure 7. (A) An unknown system with a tube of disc primers inside the hump between the hammer face and the nipple. (B) The inside of the lock of the gun shown in A. Note the mechanism that lifts the primer into position.

Reprinted from the American Society of Arms Collectors Bulletin 106:22-26
Additional articles available at http://americansocietyofarmscollectors.org/resources/articles/

Figure 8. An unknown system with a disc primer device built into the hammer—perhaps a version of the Rupertus system shown in Figure 6.

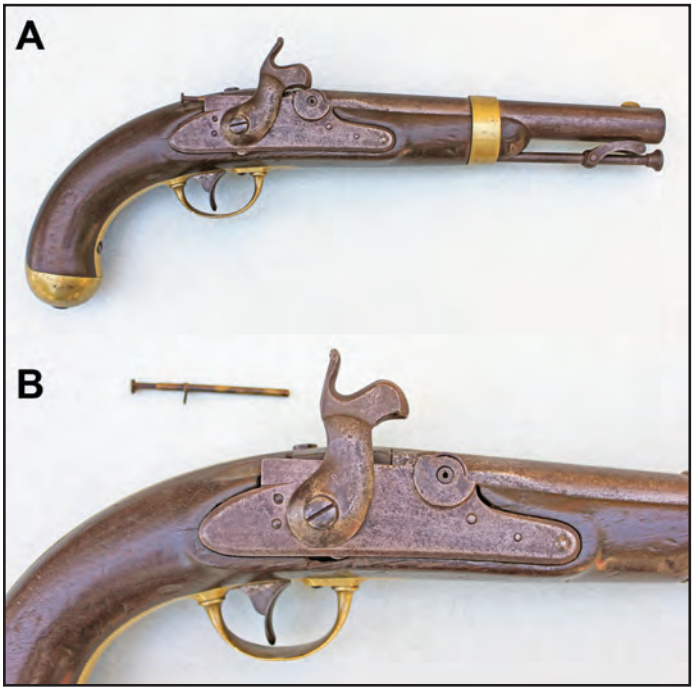


Figure 9. One of a trio of strange conversions: (A) This model 1842 pistol has a rotating drum that is primed with loose fulminate. (B) The tube primer fits into a groove behind the hammer. After the hammer is cocked, the shooter pushes the "nail head" with his thumb, forcing loose fulminate into a hole in the drum. As the hammer falls, the drum rotates such that the hammer strikes the primer compound. Should the remaining fulminate in the primer explode, the entire primer tube would fly toward the shooter, possibly taking out an eye.

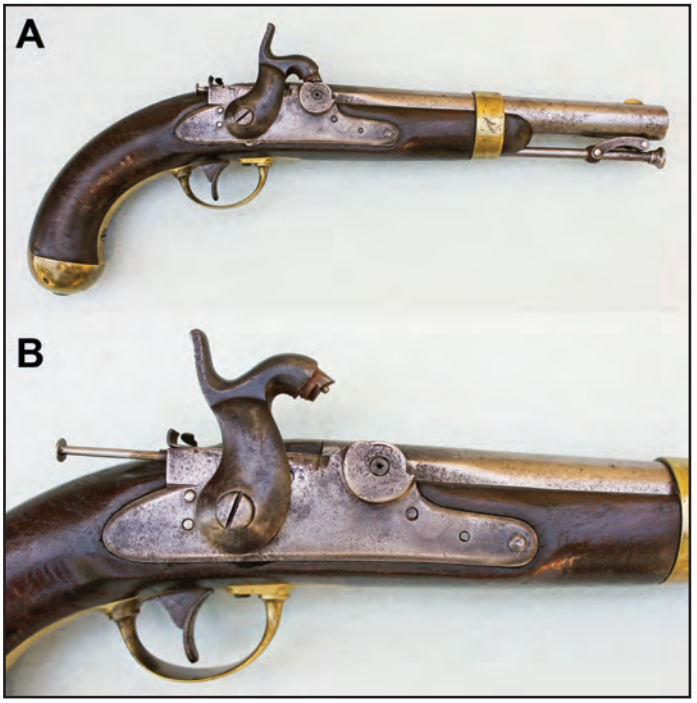


Figure 10. (A) Another version of the gun shown in Figure 9. (B) The "nail head" feature can clearly be seen in this view.

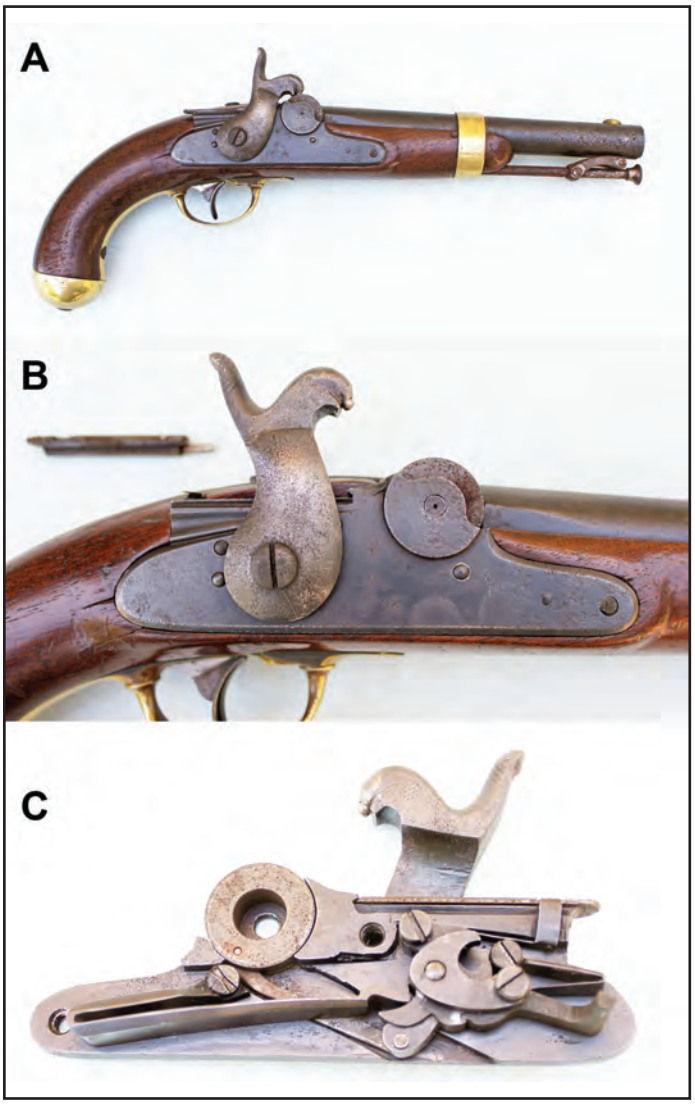


Figure 11. (A) Yet another version of the two guns shown in Figures 9 and 10. (B) A close-up of the action of the gun. (C) The complex activating mechanism of the gun.

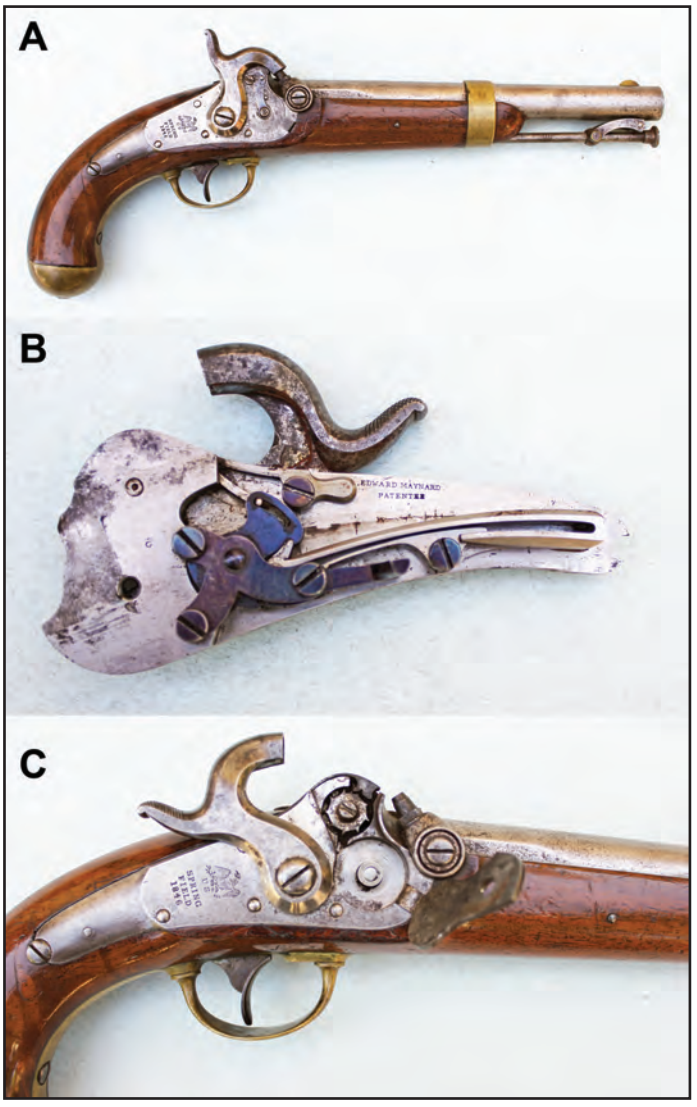


Figure 12. (A) The Springfield Arsenal was also working on a self-primed Martial pistol, probably much earlier than those shown above. (B) The inside of the Springfield Arsenal lock. (C) A close-up of the Maynard system on the Springfield Arsenal pistol.

BIBLIOGRAPHY

Flayderman, E. Norman, *Flayderman's Guide to Antique American Firearms, 9th edition*, Gun Digest Books, 2007.

Kopser, Arnold W., *An Enigma...*, Man-At-Arms Magazine, March/April, 1989.

Sellers, Frank, et al, *The William M. Locke Collection,* Antique Armory Inc., East Point, GA, 1973.

Stockbridge, V.D., *Digest of U.S. Patents Relating to Breechloading and Magazine Small Arms 1836 to 1873,* Flayderman reprint, 1963 (original 1874).

Winant, Lewis, *Early Repercussion Firearms,* William Morrow & Company, New York, 1959.