The Thompson Submachine Gun Model of 1919

By Tracie L. Hill

In 1916, the Auto-Ordnance Corporation was established to create a new automatic rifle for the armed forces. The company was the creation of John T. Thompson (Figure 1), one of America's leading firearms experts of his day, and financed by Thomas Fortune Ryan, a powerful Wall Street financier. General Thompson had been in charge of small arms production for the U.S. Army prior to retiring to work in the private sector for Remington Arms Company. While working for Remington, General Thompson was responsible for the set up and operation of Remington's Eddystone Arsenal.

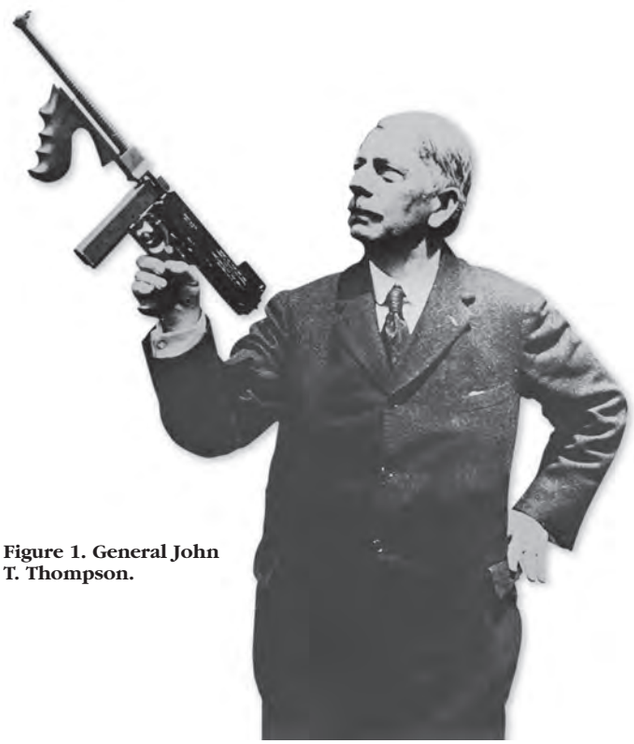

Figure 1. General John T. Thompson.

Figure 2. "The Blish Pistol" built by Capt. John Blish as a patent model for demonstrating his principle of metallic adhesion. This pistol using a Luger barrel was studied by Auto-Ordnance Engineers before creating the Model of 1919s. (Photo credit NRA Museum)

General Thompson believed that through the initiative of a private corporation the creation of new firearms would be possible. The stated goal of Auto-Ordnance was to develop a new automatic rifle for the U.S. military. The innovative design was to incorporate a "new" principle for locking the bolt and breech of the firearm based on the "Blish Principle of Metallic Adhesion" (Figure 2).

The Engineering Department was established in Cleveland, Ohio (Figures 3 and 4) to work with the Warner-Swasey Company. General Thompson was very familiar with their work on optics and artillery laying sights. General Thompson put two young engineers in charge of design and development: Theodore Eickhoff, a graduate of Purdue University who had worked for the U.S. Ordnance Department since graduation, and Oscar Payne, a self-taught practical tinker and draftsman (Figure 5).

A patent demonstration model was built by Capt. John Blish, who is the American patent holder and inventor of the Blish Principle of Metal Adhesion. The principle, simply stated, is that two different metals will adhere to one another under high pressure, but will move against each other (i.e., slide) when high pressure is removed.

The pistol uses a .30 (7.65 mm) Luger barrel attached to the frame. When the pistol is loaded, the bronze lock is

Figure 3. The offices of Auto-Ordnance.

Figure 4. The machine shop of Auto-Ordnance, "Sabin Building" facility.

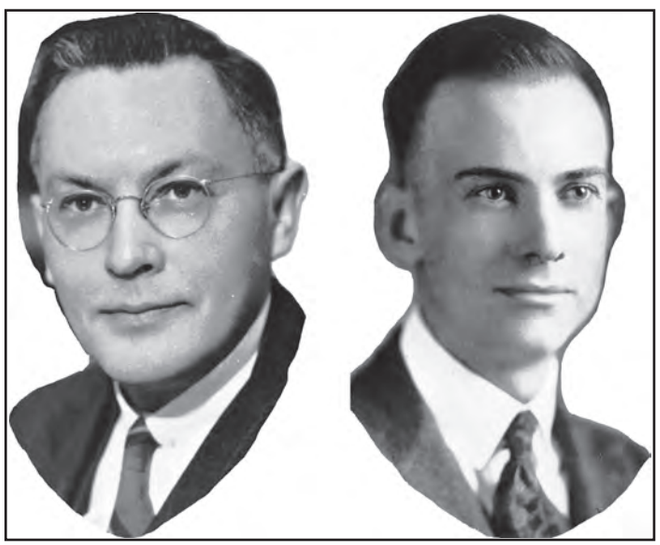

Figure 5. The two principle engineers responsible for the design of the Thompson submachine gun were Theodore Eickhoff (*left*) and Oscar Payne (*right*).

closed on the chambered round. The bronze lock is held in place when fired by the chamber pressure from the cartridge until the bullet leaves the barrel. At this point the pressure drops, and with the residual gas pressure, the bronze wedge is forced back and down the rails, and the shell of the cartridge flies out of the back and is deflected to the right by the pistol frame.

The pistol was used to demonstrate Blish's patent application and later to the engineers of Auto-Ordnance to display his theories. The Engineering Department worked for two years with limited success to develop an automatic rifle using the "Blish Locking System" (Figure 6).

During experiments with rifle calibers this system failed to work unless the cartridges were oiled. There was too much shell contact resistance with the chamber walls. During one of the later tests, the new .45 ACP cartridge was found to function flawlessly with the new breech locking system. The engineers were directed to begin work on a new design incorporating the .45 ACP in September 1917.

With the full backing of General Thompson, who had been instrumental in the original development of the .45 caliber cartridge and had overseen the development of the Model 1911 Colt, the design team developed a series of submachine guns collectively known as the Thompson Submachine Guns, Model of 1919s (Figures 7 and 8).

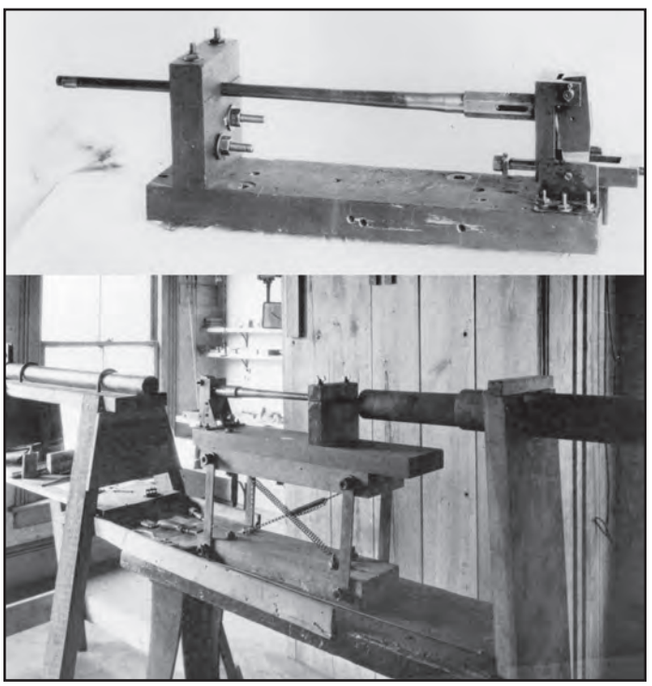

Figure 6. The initial test apparatus used to determine the best ammo for use with the "Blish Lock" (*top*) is the first design test system up close. The apparatus set up to fire into a steel tube from one room into another and then into a sand trap is shown (*bottom*).

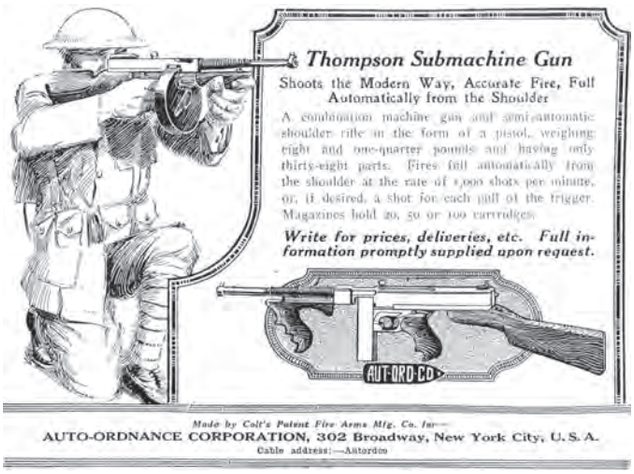

Figure 7. An early advertisement for the new Thompson Submachine Gun. This advertisement was published prior to production of Colt Thompsons and displays a Model of 1919.

Figures 9. The "Persuader" Thompson Submachine Gun was the first version of the Model of 1919. This is a belt feed hand held firearm. The rate of fire was so fast that the web belt of ammo would jam the feed mechanism. (Photo credit West Point Military Museum)

Figure 8. Demonstration of the Model of 1919 Thompson Submachine Gun to the Cleveland, Ohio Police Department. The Model of 1919s were all produced in Cleveland by Auto-Ordnance.

The Model of 1919 Thompson was not a single production design, but rather a series of experimental prototypes. Each serial numbered receiver is a slightly modified version of the proceeding receivers. The Model of 1919 Thompsons are divided into two different series of designs, with the second series divided into four families, each subsequently divided into several submodel designs. The total number of Model of 1919s produced is believed to be about 40. Of these 40 prototypes, 11 exist today, with only 5 prototypes known to be in private hands.

The first Model of 1919 was called the "Persuader" (Figure 9) and was built in November 1917. This Thompson was designed to fire the .45 ACP cartridges from a cloth belt of ammunition. The design proved to be an unreliable means of supplying the rapid firing Persuader. At best, engineers were able to fire only seven rounds before a malfunction of the feed system stopped the action.

Further development led to the second series of 1919s known as the "Annihilators." The first of these was a work bench "Annihilator Trial Mechanism." The Trial Mechanism was nothing more than a crude experimental receiver, bolt, and firing pin assembly mounted to a test stand. Originally this mechanism was designed to use a belt feed system. This was later replaced with a system that used Model of 1911 box magazines. This fixture validated a design based on improvements from the "Persuader."

The Trial Mechanism design was refined to produce the "Annihilator I, Number 1" Model of 1919 (Figures 10-11). Serial number one was designed to have "wings" in the receiver magazine well to support a group of Colt 1911 magazines which would feed the arm. This design was soon discarded in favor of a newly designed twenty-round box, and fifty- and hundred-round "spiral feed" drum magazines. The twenty-round box magazine required an adaptor mounted in the receiver. This adaptor had to be removed to mount a drum magazine.

While serial number one "functioned satisfactorily", several needed improvements were incorporated into the next family of Thompsons.

The "Annihilator II" family consisted of two finished firearms: serial numbers 2 and 3. These were the first Thompsons demonstrated to the public. Serial number 2 was demonstrated in New York City (Figures 12 and 13) in March 1919, test firing 18,000 rounds without a malfunction. Serial number two was designed to accept a .45 caliber Maxim Silencer. The silencer worked superbly, not only muffling the sound, but also considerably reducing the muzzle flare. For a period of time this feature was a heavily advertised feature of the Thompson.

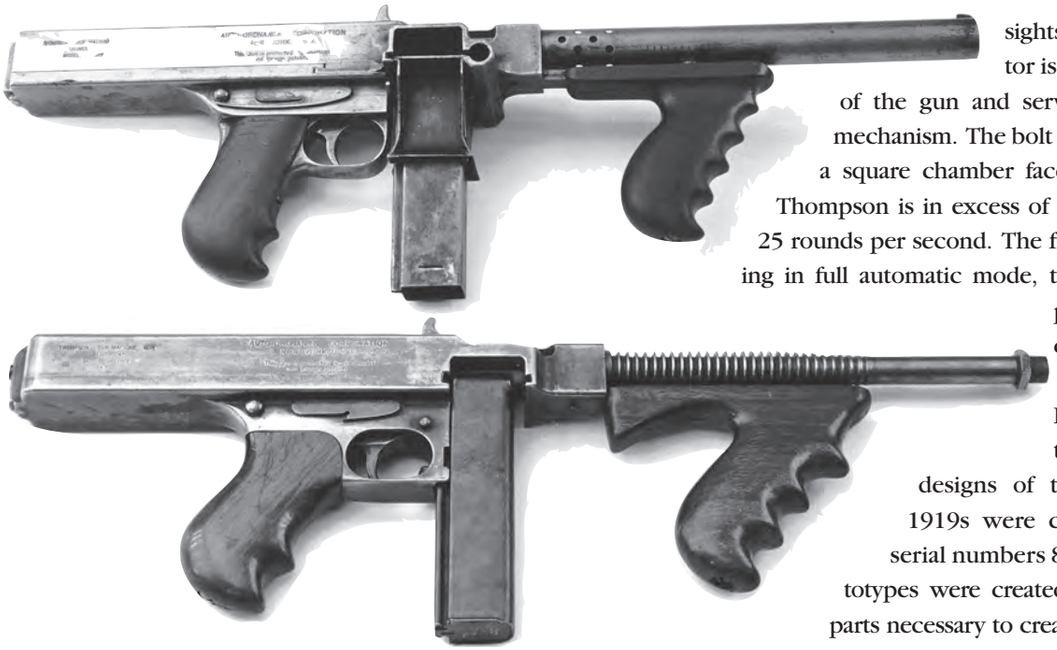

Figure 10. Serial number one (*top*) and serial number two (*bottom*). Serial number one uses an adaptor to hold the box magazine. This adaptor needed to be removed for installation of a drum magazine. Serial number two has the more refined magazine well to allow both box and drum installations. The threaded barrel also allowed the installation of a bipod, bayonet or Maxim Suppressor. (Photo credit West Point Military Museum)

Figure 11. (*Left*) Test firing of Model of 1919 Thompsons at the "Farm" in Painesville, Ohio. Theodore Eickhoff is shown firing a bust of .45ACP from a prototype. (*Right*) Oscar Payne standing near a table full of early Model of 1919 Thompsons.

Serial number 3 (Figure 14) was retained by the Engineering Department in Cleveland and used for testing of a bayonet mount.

Serial number 2 and 3 lead the progression to the final family known as the "Annihilator III" Thompsons. This family is divided into at least five separate submodel groups. The first of these groups was the "Annihilator III, Model Cs" of which there were originally 10 sets of components built, but not all were finished to completion. It is believed that only four were completed—serial numbers 4, 5, 6, and 7. Only two Model C, 1919s are known to exist today: serial number 6 (Figure 15) in the Rock Island Museum and serial number 7 (Figure 16) in a private collection.

The Annihilator III, Model C, serial number 7, is the oldest American made submachine gun in private hands today. This Thompson was not designed to have either front or rear sights, or a buttstock. The actuator is offset to the right hand side of the gun and serves as the gun's firing pin mechanism. The bolt face is square in profile with a square chamber face. The rate of fire for this Thompson is in excess of 1500 rounds per minute or 25 rounds per second. The firearm is only capable of firing in full automatic mode, though burst firing is made possible through trigger control.

In May 1919, Oscar Payne was given permission to build the Model F (Freak) designs of the 1919s. Two Model C 1919s were converted to this design—serial numbers 8 and 9. (Table 1) These prototypes were created to find out the minimum parts necessary to create a submachine gun. Serial

Figure 12. Demonstration for the New York City Police.

Figure 13. Demonstration for the Cleveland Police Department.

number 8 (Figures 17 and 18) used only 11 parts and serial number 9 used 18 parts. These Model of 1919s were heavily advertised by Auto-Ordnance, but were never developed beyond the prototype stage.

Figure 14. Early experiments with the Model of 1919 families included (*left to right*) serial number 3 with a bayonet attachment, another Model of 1919 with Warner Swasey sniper scope attached, and serial number eight.

Figure 15. Serial number six. (Photo credit Rock Island Museum)

The engineers of Auto-Ordnance discovered after several prolonged firing tests of serial numbers 2 and 3 the one piece actuator/firing pin design proved to be weak. It was decided to separate the two functions into three parts. Two Model of 1919s were built and tested with the new design—serial numbers 10 and 11. These were the first Thompsons built with the actuator handle symmetrical, or centered, in the receiver. Serial number 10 functioned flawlessly during a test firing of 20,000 rounds with the new design.

Serial number 11 (Figures 19 and 20) was retained in the Auto-Ordnance Engineering Department and used as a test bed to demonstrate various designs. This Thompson was originally built without sights, buttstock provisions, or semiautomatic selector lever. These changes all occurred later in the design evolution of the Thompson Model of 1919. Serial number 11 was used and modified for each of these changes before other 1919s were constructed, or before the Colt's production began. Sometime before Colt's production, serial number 11 was sent to Hercules Powder Company and used as a test bed for ammunition tests. Rate of fire for this Thompson is about 1000 rounds per minute.

Following the success of serial numbers 10 and 11, several more Model E 1919s were created for publicity and demonstrations.

Serial number 17 (Figures 21-24), submodel E, was originally created as a full automatic firing Thompson as shown in the figures. This gun was used for various advertisement photos and articles. It was later modified for the semiautomatic mode, buttstock attachment, and front and rear sights. Following the modifications it was

Figure 16. Serial number seven as it appears today. (Photo credit NRA Museum)

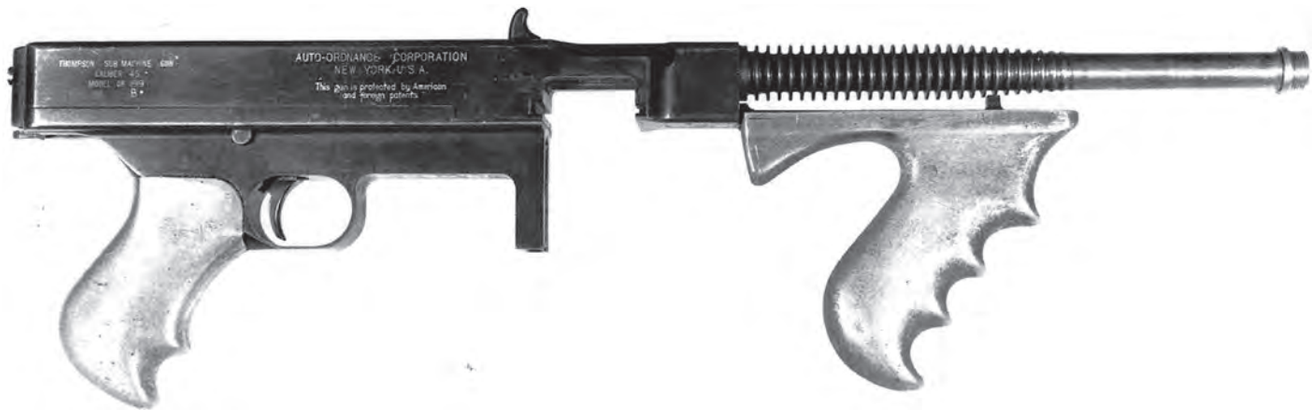

Figure 17. Serial number eight shown assembled. (Photo credit West Point Military Museum)

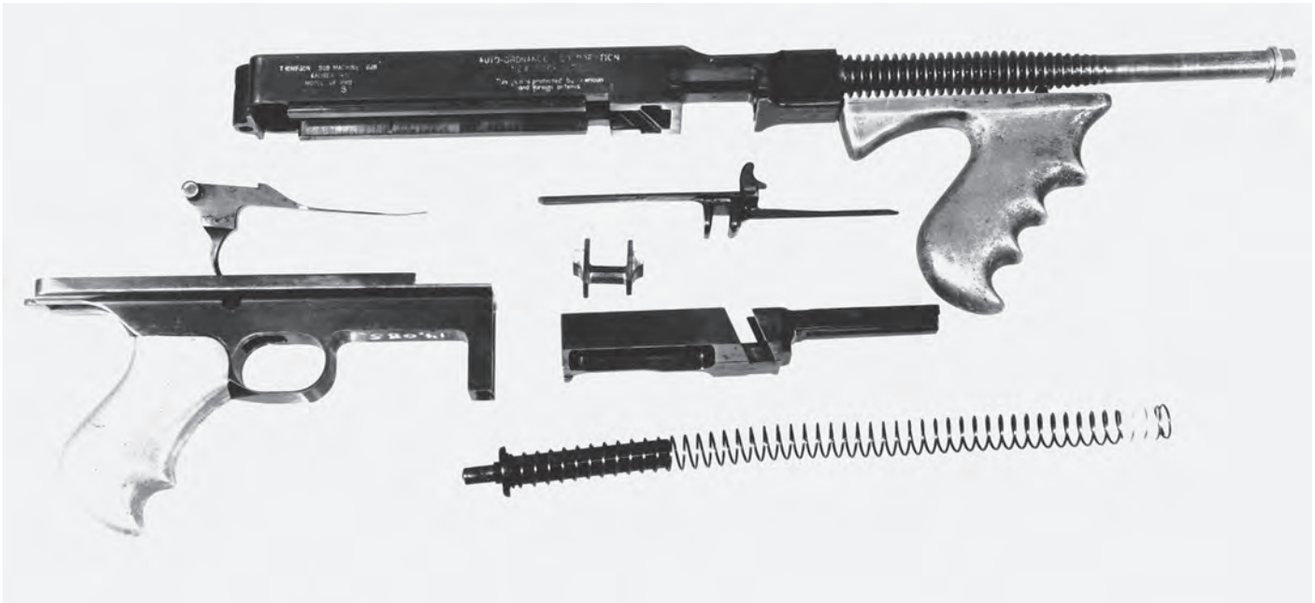

Figure 18. Serial number eight shown disassembled. This Thompson was created simply to study how few parts are needed to function. Though heavily advertised, it was never considered for production. (Photo credit West Point Military Museum)

Serial Number 8	Serial Number 9
1) Receiver w/ integral foregrip	1) Receiver
2) Bolt	2) Bolt
3) Extractor	3) Extractor
4) Lock	4) Lock
5) Firing pin (w/ integral actuator)	5) Firing pin (w/ integral actuator)
6) Recoil spring	6) Recoil spring
7) Buffer	7) Buffer
8) Ejector	8) Ejector
9) Frame w/ integral grip	9) Frame w/ integral grip
10) Sear Trigger	10) Sear
11) Barrel	11) Sear Spring
	12) Safety
	13) Trigger
	14) Pivot plate
	15) Magazine catch
	16) Magazine catch spring
	17) Barrel
	18) Fore grip mount w/ integral grip

Table 1.

later used to equip a salesman with the latest Thompson and equipment kit.

The salesman's kit included: Type "C" and Type "L" prototype drums, prototype Type "XX" 20 rd. box magazines, and all available canvas equipment (five cell single flap pouch, Model 1919 gun case, L drum and C drum pouches, all made by Mills Company). All of the magazines were produced by early in 1920 by John's Machine and Tool Company, Cleveland, Ohio.

In the late 1920s the kit was sent with an Auto-Ordnance salesman to Warsaw, Poland. At the time, Poland was in the middle of a revolution with both Poles and Ukrainians fighting the Bolshevik Army. The salesman brought the Thompson to Poland with hopes of selling some to the Poles and Ukrainians. In August 1920 Bolshevik forces threatened to overrun Warsaw, the salesman panicked and decided to return to the United States. He gave his sales kit to Col. Elbert E. Farman, Jr., the U.S. Military Attaché to Poland. This sales kit was passed down through Col. Farman's family and publicly displayed in the United States for the first time in 2003.

The firearm itself is in remarkable condition considering its age and travels. This Thompson retains about 80% of its original bluing. This bluing was not a hard finish bluing like that on the Colt's guns of this era, so it is remarkable that any remains. This Thompson is the only known Model of 1919 that has a butt stock. While serial number 11 is equipped for a stock attachment, no stock exists. The profile of the buttstock is elegant and very fragile, noted by the repaired crack near the stock release button. Examination of the trigger housing indicates the stock attachment was an afterthought, because a "No. 17" is visible on the frame through the attachment hardware.

The final submodel group of 1919s was the "Model G" Annihilator IIIs. These were the first 1919s to incorporate a round bolt face, centered actuator, and a redesigned firing pin system, providing improved reliability. After Auto-Ordnance personnel were satisfied with the firearm's looks and function, a production run of Thompsons was bid out to two firms—Colt's and Savage. Colt's was awarded the initial production contract for 15,000 Thompsons. Contract language states that:

> "The guns and magazines shall be manufactured by the Company (Colt's) the same as Sample Gun No. 26 and its accompanying magazine, and within tolerances to be mutually agreed upon which will be shown on blue prints to be supplied by the Corporation (Auto-Ordnance)."

The Model of 1919, serial number 26 is a combination of parts from several submodel series and shows the changes incorporated in the design evolution prior to and during production. Parts used in this Thompson originated in the full automatic designs with the semiautomatic features added later. Number 26 (Figure 25) is completely in the "white", meaning no bluing or markings were applied when provided to Colt's.

Figure 19. Serial number eleven. (Photo credit NRA Museum)

Figure 20. Serial number eleven, close up. (Photo credit NRA Museum)

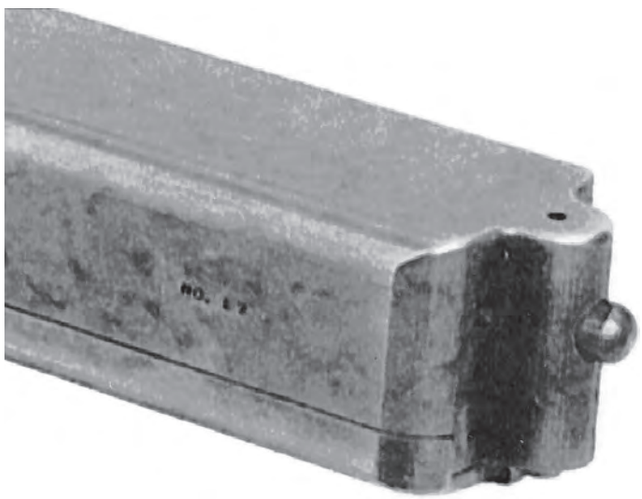

Figure 21. Serial number 17, close up.

Figure 22. Serial number 17 as it appears in early sales literature.

It is generally believed that 40 Model of 1919 prototypes were constructed by Auto-Ordnance's Engineering Department in Cleveland, Ohio. However, the Annihilator III, Model G, Serial Number "NO." (Figure 26) indicates this information may be incorrect. No Model of 1919s was serial numbered until completely assembled. This 1919 appears to be complete, but does not have a factory stamped serial number. This Thompson was given to a Cleveland area law enforcement officer sometime prior to 1921 by an Auto-Ordnance employee. This is the only unmodified Annihilator III, Model G known to exist.

The internal design of this Thompson is exactly the same as the later Colt's production guns. It is interesting to note on this Model of 1919 you can plainly see the scribe marks on the received surface used to lay out the machine cuts for manufacturing the firearm. This is another example of the truly fine American workmanship routinely exercised in firearm production during the early part of the century. This version of the Model of 1919 was used extensively in early sales demonstrations.

Figure 23. Serial number 17 converted into the salesman's sample as it is seen today. (Photo credit NRA Museum)

Figure 24. Serial number 17, converted into the salesman's sample, close up. (Photo credit NRA Museum)

Figure 25. Serial number 26. This Thompson was given to Colt's Manufacturing as a model for the production firearms. (Photo credit Reed Knight Museum)

Figure 26. Serial number "NO. was carried by several police officers in the Cleveland area prior to being retired. (Photo credit NRA Museum)