# PROGRESS OF FIREARMS FROM INSEPTION THROUGH FLINTLOCK

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I would like to picture for you the rough road of our ancestors in developing the firearms which made possible the elaborate collections we have today.

From the beginning of time to the present day, the battle has raged for the survival of the fittest or at least, for what each individual man or the association of man has considered to be the fittest.

Since the beginning of man, or from the time Adam and Eve were created, there have been vast changes in our universe that were of vital importance in determining the control of hunting grounds, food, the tribe, the family, and, in more recent years, morality, economy and politics. This necessitated improvement of weapons for protection, fighting, hunting, etc. As man became more civilized and educated, the scientists, craftsmen, mechanics and inventors along with the alchemists were striving to produce more effective weapons. They had learned that a rock thrown from a distance brought about the required result with the least harm to themselves. Then followed the era of the sling, the great engines of Ceasar, the bow and arrow, and the cross bow, when man was still striving for easier, simpler but more effective weapons. Foundries were progressing and man had discovered that ore smelted by heat could be pounded into shape. Metals, especially copper and tin, would liquify and could be case when exposed to great heat. So the bronze founder with his brazen mortar and pestle unintentionally allied himself with the alchemist in the discovery of man's most terrifying contribution to science . . . an explosive material that would propel missiles when released from a vehicle. Hence we have guns and gun powder. However, our search for authentic material on this subject and on the development of arms during the 13th Century has provided very little information about this crucial period in our history because of the lack of original documents available to us. Probably we will never know the date of invention or inventor of gun powder.

It is not the purpose of this paper to enter into any controversies, so let us just agree for the moment that the Chinese and the Muslems knew the incendiary qualities of a mixture of sulphur, slatpeter and charcoal sometime during the 11th and 12th Centuries and used it only for producing fire and thunder. We will also

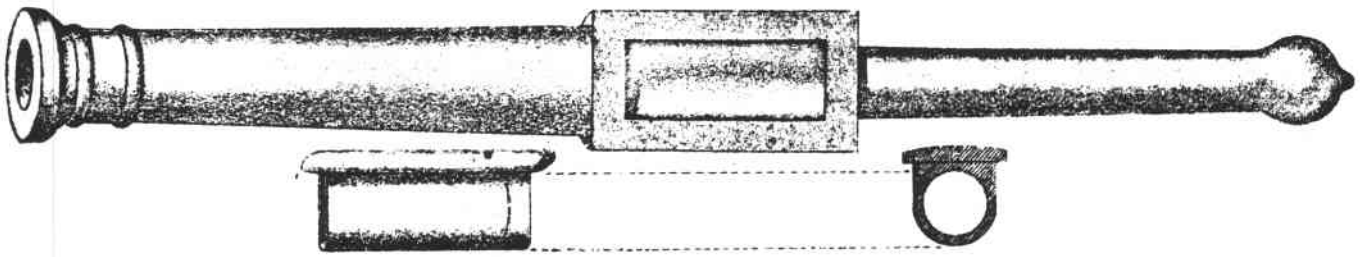

FIGURE 1. BREACHLOADING CANNON

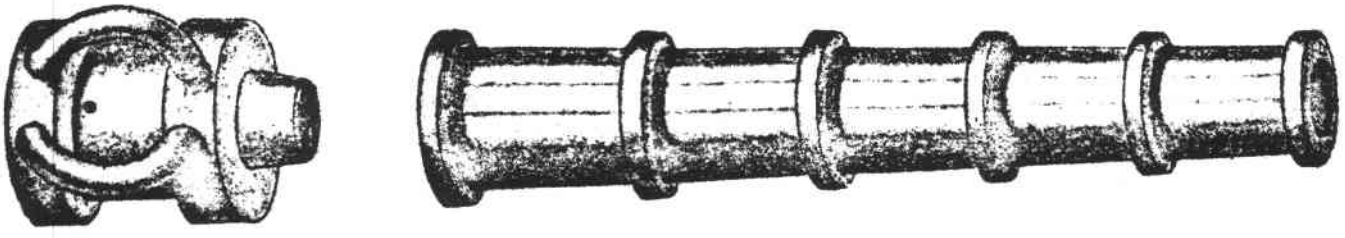

FIGURE 2. BREACHLOADING CANNON

agree that Friar Roger Bacon, a student and later a lecturer at Oxford, is credited with a major alchemical work written between 1257 and 1267 in which he gave in detail the formula for gun powder. This formula has remained the same throughout the years with changes only in the percentages of the ingredients.

This was demonstrated by an incident caused by the shortage of saltpeter during the War Between the States. A John Harrolson conceived the brilliant idea of extracting it from the urine. In Salem, Alabama, a barrel was sent through the town daily to collect the liquid contents of the chamber pots. In Richmond, Virginia, and other cities, barrels were placed on street corners. The Condederate Soldiers, upon learning this, composed a song:

"John Harrolson, John Harrolson! You are a wretched creature,
You've added to this bloody war a new and awful feature.
You'd have us think, while every man is bound to be a fighter,
The ladies, bless the dears, should save their P for nitre. . .
We thought the girls had work enough making shirts and kissing,
But you have put the pretty dears to patriotic pissing."

Some Yanks must have captured a copy of the ditty as a Northern version appeared:

"They say there was a subtle smell that lingered in the powder.
And as the smoke grew thicker and the din of battle louder,
That there was found, to this compound, one serious objection,
No soldier boy could sniff it without having an erection."

The foundries were able to form a vehicle with an explosive material at hand, but man had no vehicle to control this explosive powder. So gradual was the evolution of the gun and its varieties, that old names have persisted until the present day. The mortar is simply the chemist's utensil. The cannon is the tube (canna) from which the Greeks' fire was poured, and the gun is mrerly a contraption of the magnet or great stone throwing engines.

The primitive methods of construction were such that it was easier to make a large gun than a weapon of smaller caliber. Therefore, the cannons were the first to use gun powder. These were made in sections and hammered together, lead poured between the rings of iron. The chambers were then forced out with a tapered end to fit the breech. The earliest guns were breech loaders because it was impossible for the Smith to make the barrel proper without a mandrel, so it had to be opened at both ends. (Fig. 1) Breech loaded cannon from South East Asia. The breech block loaded separate. (Fig. 2) Mortars also were used early as they were easy to make.

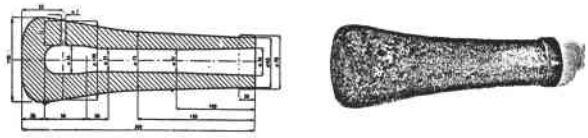

FIGURE 3. CANNON DATED 1326

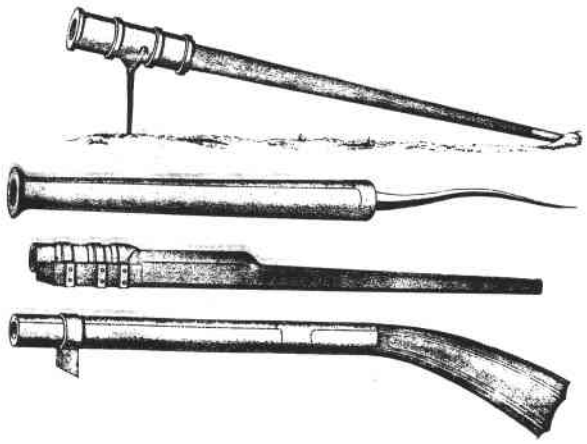

FIGURE 4. EARLY HAND CANNONS

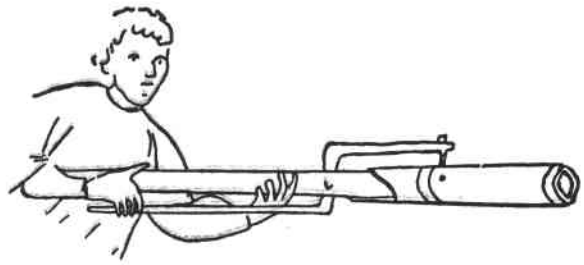

FIGURE 5. EARLY HAND CANNON

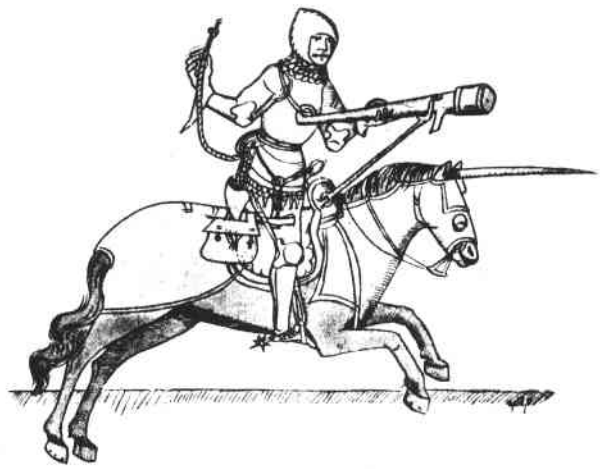

FIGURE 6. EARLY HAND CANNON

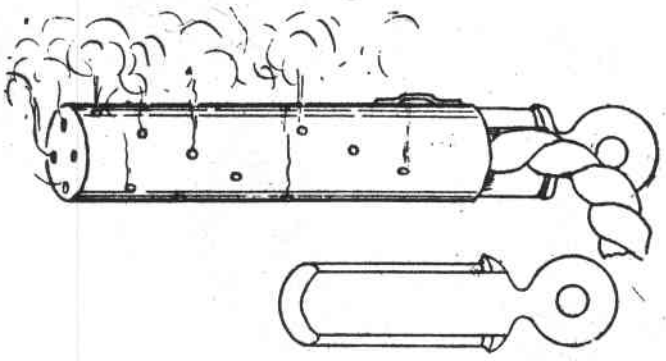

FIGURE 7. MATCH HOLDER

The exact time, place and individual that invented the hand gun is still controversial. But from 1326 onward, reference was made to guns of all sizes. The size and shape of the early hand cannons were influenced by the method of holding the piece. The earliest one referred to was in the shape of a vase dated 1326. (Fig. 3) Vase shaped gun with touch hole in the rear that discharges an arrow. The pole type hand cannon came from the early cannon — a long tube that was either shot from a tripos . . . (Fig. 4) . . . the pole end resting under the arm. . . (Fig. 5). . . or on top of the shoulder, like a Bazooka. Usually it was shot from horseback. (Fig. 6) Later the guns were shot from the shoulder, the butt end notched to fit against the shoulder. The match to furnish the spark could be an iron rod made hot on the end or a slow burning match. . , (Fig. 7). . . carried in a case or wound around the butt of the gun or around the waist.

Many improvements were made, not only on the stock which was now made to fit the shoulder, but on the barrel which was smaller and stronger, made as a tube with both ends opened and a screw plug fitted into the breech end and was made to fit the stock. The touch hole was covered to protect the priming powder.

The hand cannon was very inconvenient trying to do 3 things at one time:

1. Hold the gun
2. Aim the gun
3. Light the gun

This led to the invention of the matchlock that could be fired with two hands. A "Z" or "S" shaped lever called the serpentin was pivoted on the stock with the one end holding the match and the other the trigger.

Now that the gun could be held with two hands, there was a natural inclination to shape the stock so that it would fit into the shoulder. This was known as the LANOSKENEHT stock. The matchlock, being a very simple workable gun, soon befame popular. Many fancy guns were made for the nobility with beautiful inlays and engravings.

The matchlock enjoyed the longest usage of any gun. The period is usually credited from 1430 to 1580. Because it was easy and cheap to produce, it was fitted to the majority of military long guns and were made for use in fortified places as well as on small carts as a form of light artillery. The matchlock was used through the 19th Century. In fact, it is still being used in Northern China and Tibet.

Early in the 16th Century another form of ignition appeared. It was discovered that a spark could be produced better by striking pyrite against steel rather than that used in the Stone and Bronze Ages of striking iron pyrite with a sharp piece of flint. This was applied to the wheellock. It operated much in the same fashion as the modern cigarette lighters. A wheel with serrated edges was made to rotate rapidly in contact with a piece of pyrite to create a spark.

The wheellock is said to have been invented in Nuremberg in 1517. The place is not certain, but the time is about right. However, the earliest reference to what is presemably wheellocks all point to German origin for the lock.

In 1519 a young man of Augensberg accidently shot his Mistress through her neck with a gun which ignited itself. Shortly after this, the Emperor Maximillian I issued an edict banning the use of self striking hand guns which ignited themselves. The main reason was the realization that the wheellock could be carried concealed but ready for instant use.

In 1522 the Duke of Ferrara of Italy issued an ordinance, probably for the same reason, forbidding the carrying of arms in the streets of Ferrara. This included dead fire wheellock guns. You see, there were screwy Gun Laws in the 16th Century, too.

The decorations used on wheellocks was infinite in variety and reached some of the highest standards of workmanship. The most popular form of decoration was the use of engraved stag horn and bone inlays. In making the best and rarest guns, the decorations consisted of classical and biblical scenes which were copied and appeared on the engravings of the lock plates and the extensive engraved inlays of the stocks.

In order to prevent failure of the wheellock, ingenious combinations were made such as wheellock with matchlock, wheellock with cross bows, wheellock with sabres, swords, rapiers, axes, picks and hammers. To overcome failure by fracture of the pyrite, two locks or two cocks were fitted. Another failure was the loss of the Spanner wrench. Other combinations to prevent failure were double and triple locks, and double and triple barrels. To combat smoke from priming powder, special automatic covers were fitted.

Because of the intricate mechanisms of the wheellock and the expense in fabrication only the nobility could afford them. This accounts for the beautiful decorations and the best of workmanship throughout. There is no doubt that some of the best gun makers of all times were used in their fabrication. It would require at least six specialists to finish one gun:

1. Lock Smith
2. Barrel Smith
3. An iron chiseler to decorate or engrave the lock and barrel.
4. A guilder to finish the iron parts, different from the chiseler.
5. A stocker to make the stock and assemble the parts.
6. An engraver to embellish the stag horn, bone or ivory inlays of the stock.

But the wheellock was very popular and did lend itself to superior decorations. Because the wealthy and noble patrons continued to demand production, it retained popularity well into the 18th Century.

About 1650, wheellock manufactory ended. Meanwhile, the flintlock was invented about 1636 in the form of the snaphaunce. This was an improvement and more reliable. The pyrite was replaced by the more common flint and the wheel and chain by a simpler mechanism. Loading and priming were essentially the same. The spark was made by the flint striking the steel plate.

About 1650, the Miquelet or Spanish Mediterranean lock appeared. The principle and operation were essentially the same as the snaphaunce. The snaphaunce was simply a stepping stone to the next ignition system — the flintlock. The essential difference between the two systems is that the flintlock has the pan cover and steel together, but the spark is still made by the flint striking against the steel.

The gun makers throughout these periods were superb, producing many beautiful and effective guns. These guns have been used and misused in the same way. Since we cannot control who uses them, we, as gun collectors, should observe the basic rules and principles of gun handling.

In war, the finger on the trigger may belong to a Hitler or a Stalin determined to rule the world, or to a Pershing, Eisenhower, or Nixon, determined to keep the world free. In peace it may belong to a farmer shooting vermin to protect his crips, or to a bandit robbing a bank or a thief trying to relieve one of our members of his valuable collection. The gun has so far proven man's most effective friend in his struggle for survival. Let's keep it that way!