A WHEELLOCK PISTOL MADE FOR THE EMPEROR CHARLES V

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In the early days of firearms there was a general aversion to their use in war as contrary to humanity and calculated to eliminate military bravery, a viewpoint which was later presented so clearly in *Don Quixote* by Cervantes, who was twice wounded at the Battle of Lepanto. One of the final acts of the emperor Maximilian, “the last knight,” who died in January, 1519, was to forbid the use of the wheellock, which, when wound, contains considerable potential energy in the mechanism as well as in the powder and is therefore particularly dangerous to use. Rivalry among princes, however, caused them eventually to adopt firearms. Francis I, the constant adversary of the emperor Charles V, Maximilian’s grandson, had an arquebus with seven barrels, richly engraved and damascened. Certainly the ruler of the Holy Roman Empire could not allow himself to fall behind the French king in military equipment, and in 1544, during a war against his French rival, Charles V armed his cavalry with pistols.

Charles V’s interest in arms was not solely professional. The Royal Armory at Madrid was built around the arms and armor he accumulated for his personal use, and the collection still contains no less than eleven firearms which belonged to him. Charles V was not only a great warrior—he fought his first war at fifteen and fought somebody somewhere every year of his reign—but he was also a great huntsman. Near the monastery at Groenendael, Belgium, he once made a very long, successful shot with his rifle at a heron standing on the brink of the pond, a feat which the head of the order commemorated by erecting on the spot a column surmounted by a bronze effigy of the bird.

During a month’s visit to the Armor Department of the Metropolitan Museum in 1919 the Director of the Madrid armory, Don José Florit, confirmed the Museum’s identification of numerous objects which belonged to the court of Spain, among them a wheellock pistol of Charles V. Until 1889 the pistol was in the collection of Señor Don José de Argáiz. The Argáiz catalogue states that it was presented by the emperor to “the Captain” at the monastery at Yuste and that the Marquis of Casamena, a descendant of the captain, inherited it and wore it during his administration of Estremadura. No document is available which traces the pistol to Yuste, but it is known that when the emperor forsook the world and retired to the monastery he took with him not only a group of Titian’s paintings, but some armor, to remind him of his military victories, and some hunting weapons—a fowling piece and various crossbows, quivers, and other trappings and furniture of the chase—perhaps in the hope that he would still be able to use them.

Charles V’s pistol is in every way the most valuable firearm in the Museum’s collection. Its historical associations are, naturally, of great importance; its mechanism includes a number of technical features which are valuable in the study of early firearms; and it was made by highly trained artists who have been identified. The pistol was custom-built—made to fit the emperor’s hand. The cherry stock, which has a spirally carved grip to enable him to hold the heavy weapon securely, is inlaid with engraved staghorn to represent the emperor hunting. The lockplate is etched with foliation, a dolphin, and birds against a plain background, and is mercury-gilded all over. The forward wheel cover is etched with the Hapsburg double-headed eagle; the rear wheel cover bears the emperor’s usual and favorite device, a pair of columns with the motto PLUS ULTRA. The columns represent the Pillars of Hercules, the twin rocks of Calpe and Abyla, at the western
Double-barreled wheellock pistol made for the emperor Charles V by Peter Pech of Munich about 1540. Length 193/8 inches. Gift of William Henry Riggs, 1913
gate of the Mediterranean, which that hero rent asunder. The double-headed eagle reminds one that Charles V was not only Holy Roman Emperor but also King of Spain, of Naples, and of Sicily; the motto pointed to the new world beyond the Atlantic, a fabulous and wealth-producing domain that extended from Mexico and Lower California to the extreme tip of South America, over which the house of Austria, in right of the crown of Castile, claimed universal sway.

The emperor’s pistol is a comparatively early one, dating about 1540. As the history of the wheellock is little known and generally mistold, it seems appropriate here to give a few notes on its origin. According to the most common account, it was invented in 1517 by an unidentified Nuremberg gunsmith. This belief originated from the fact that the Teurdanckh, the great epic poem of the emperor Maximilian that was published in Nuremberg in 1517, contains what is generally supposed to be the earliest reference to the wheellock. Eleven years before that, however, in 1506, the Statutes of the Shooting Range at Geislingen had already forbidden the use of the wheellock.

There is better reason to believe that the wheellock was invented in the fifteenth century, and not in Germany but in Italy. At any rate, the earliest information on the subject is found in the work of Leonardo da Vinci. Four pages with the drawings of this mechanism are included in Il Codice Atlantico. These drawings cannot be dated precisely, but we know that Ludovico Sforza, the Duke of Milan, seriously considered Leonardo’s recommendation of himself as an expert designer of military devices, and it has been noted that some of Leonardo’s drawings of military equipment were made for the duke’s armorer, Gentile dei Borri, about 1483-1485.

The Leonardo wheellock drawings show early features which occur but rarely in extant firearms. These include the spiral mainspring, which is compressed when the wheel is wound, the release sear on the outside of the lockplate, the unsupported sear, and the U-shaped spring which acts as both doghead spring and sear spring. Other Leonardo types of wheellock with coil springs work on the rack-gear and worm-gear principles and have a long lever for winding. These features are derived from the crossbow and indicate the early date of the drawings.

While the earliest available information points to Italy as the place of origin of the wheellock, the interest of the Hapsburg rulers in firearms led them to play an important part in its development. The earliest extant wheellock with which a date may be associated is a combination crossbow and wheellock pistol in the Bavarian National Museum, in Munich, which bears the heraldic arms of the archduke Ferdinand, brother of Charles V and his successor as emperor of the Holy Roman Empire, and the initials F and A, representing the names of the archduke and his wife Anna, daughter of King Vladislav III of Hungary and Bohemia. This weapon may reasonably be
dated 1521, the year of the archduke’s marriage. In any event, it antedates 1526, the year Ferdinand became King of Bohemia, for the heraldic arms on the crossbow-wheellock do not include the quartering of Bohemia.

The wheellock had a complicated mechanism, and, unlike later types of firearms, it never became more popular than the simple bow and arrow. In order that it might compete successfully with other weapons it was often combined with crossbow, mace, axe, hunting spear, hunting knife, or sword, all of which combination types are represented in the Museum’s collection of arms. The competition between crossbow and firearms continued for some time. An account is given in the Weisskunig of the emperor Maximilian shooting a mountain goat at long range with a crossbow after having discarded a double-barreled gun because its range was insufficient for this particular quarry.

In spite of his aversion to the use of firearms in war, Maximilian was famous for his hunting weapons. His marriage, in 1494, to Bianca Maria Sforza, the niece of Ludovico, undoubtedly gave him occasion to discuss Leonardo’s inventions with his ally the Duke of Milan. Maximilian’s grandson Charles V employed some of the best gunsmiths of the time. Wolf Danner of Nuremberg was in Charles’s service when he invented the hair trigger in 1543, and the oldest dated wheellock, a carbine in the Royal Armory in Madrid which bears on the barrel the date 1530, was made by Simon Marcuarte (corruption of Marckwart) the Elder, one of two gunsmith brothers whom Charles brought from Germany to Spain.

The breechblock of the Museum’s pistol is stamped with the letter P, and the same letter is stamped on the adjacent area of the barrel. Double P is the mark of Peter Pech (1503-1596) of Munich, who is listed as the maker of twelve firearms, including two pairs of pistols, in Count Valencia de Don Juan’s catalogue of the Royal Armory in Madrid. Less than a dozen other firearms by this master have been recorded, but the expense accounts of Don Philip of Austria, Prince of Spain, list five payments to Peter Pech for guns between 1549 and 1551. Charles V’s pistol was probably etched by Ambrosius Gemlich, a Munich and Landshut artist who etched a combination wheellock pistol and hunting knife in the Metropolitan Museum. Gemlich was in the emperor’s service, for in 1530 he etched the calendar blade for the emperor that is now in the Kunsthistorisches Museum in Vienna.

Technically the emperor’s pistol is unusual. It has two smoothbore barrels, brazed together. They are both .46 caliber, the upper barrel being 10 and the lower 7$\frac{3}{4}$ inches long. The construction is ingenious and the elements are made with great care and skill. On the lockplate are mounted two separate wheellock mechanisms, each with a hairpin mainspring, the forward one for the lower barrel and the rear one for the upper barrel. The wheels fit in an embossed area on the outside of the lockplate, and the wheel housings, each pivoted on one side only, act as springs for the dogheads, which face each other. This wheel-housing extension spring is characteristically Bavarian. It appears on six other firearms in this Museum, one of
ABOVE: The lockplate of the pistol made for Charles V. Its length, 13 inches, is exceptional. This lockplate carries all the mechanism except the triggers and the forward safety lever. In the view above, the rear lock is released, and the forward lock is spanned, with the doghead resting on the pan cover, ready to fire.

OPPOSITE PAGE: The lockplate with the elements of both locks dismantled. The elements shown above the lockplate are those that are mounted outside, except for the wheels and the axles with their chains. Most of the elements on the left belong to the forward lock and most of those on the right to the rear one. The elements are: 1. Wheel. 2. Axle, with chain. 3. Wheel cover, with pan. 4. Pan cover. 5. Pan-cover spring. 6. Doghead. 7. Wheel housing, with extension doghead spring. 8. Rear safety lever. 9. Rear safety-lever spring. 10. Mainspring. 11. Axle bridge. 12. Forward wheel sear. 13. Forward wheel-sear spring. 14. Forward trigger sear. 15. Forward trigger-sear spring (riveted in place). 16. Rear wheel sear with combination wheel- and trigger-sear spring. 17. Rear trigger sear.
The emperor Charles V hunting a stag. Detail of the inlaid decoration (engraved stag horn on cherry) on the stock of the emperor’s pistol

which is the wheellock gun of Ferdinand, Archduke of Austria and Count of Tyrol, second son of the emperor Ferdinand I and great-grandson of Maximilian I. An unusual feature of the pistol is a pivoted catch which locks the forward trigger. A safety that acts directly on the trigger is rarely seen; it appears on two pistols in the Royal Armory in Madrid. The safety for the rear trigger is a pivoted arm with a projection which locks the trigger sear on the exterior of the lockplate.

After the pistol is loaded and primed each wheel is wound clockwise about 355 degrees with a key. A cam on the axle closes the pan automatically as the wheel is wound. The pan cover is made in one piece with the arm on which it is pivoted and moves in an arc; in later pieces the pan cover and the arm were hinged, enabling the pan cover to move horizontally. The wheel is held in a spanned position against the tremendous force of the compressed mainspring by a sear which falls into a perforation in the wheel. The dogheads are next pulled down so that the face of the iron pyrites which produces the sparks rests on top of the pan cover. The pistol is now ready for discharge.

When the trigger is pulled it disengages the wheel sear, releasing the mainspring and causing the wheel to revolve rapidly. As the wheel turns the pan cover is thrown open by the cam on the axle, and the doghead falls so that the iron pyrites in its jaws contacts the serrated edges of the wheel, striking sparks of fire which fall upon the priming powder and ignite it.

It was necessary to use both hands to aim and discharge the pistol without much "flinch." Its weight of five pounds, ten ounces, the superimposed barrels, and the two locks give it a poor balance according to modern standards. Moreover, since its point-blank range was not much greater than the range of the sword blade, it was used somewhat like a sword—thrust forward towards the adversary. This probably accounts for the spiral, sword-like grip. However, one must take into consideration that this is one of the earliest pistols extant and it was made to pierce heavy armor; as armor was discarded pistols became lighter and developed graceful contours. Several devices helped to make the emperor’s pistol less unwieldy. The sears that hold the wheels and the sears released by the trigger are separate levers in each lock, although in the rear lock both sears are activated by a single double-action spring. This system of leverage, which is called a "supported sear," lessens the trigger pull considerably and improves the accuracy of the fire. A rare feature of the stock is the heel plate to which the trigger guard is screwed; this helped the emperor to balance the pistol when he aimed it.

German firearms were already highly esteemed by 1535. In his memoirs Cellini tells how much he admired a magnificent arquebus that Duke Alexander de’ Medici had received from Germany. Cellini’s admiration for this gun has particular significance, for the artist was also a marksman—at the siege of Rome he wounded mortally the constable of Bourbon—and he himself told us that he made a fowling piece by his own hands. The artists who made the emperor’s pistol are not so well known as Cellini, but the pistol they made is one of the most extraordinary extant works of the renaissance gunsmiths.