

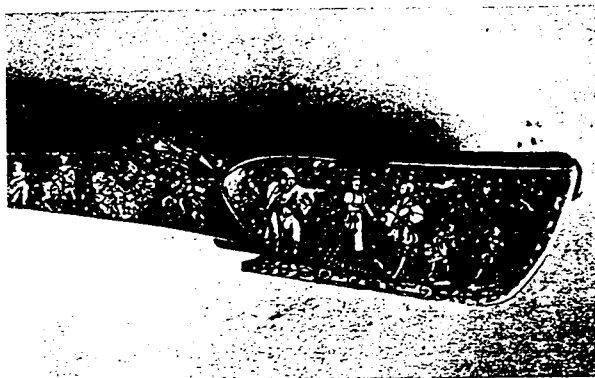
Late Firearms with Snap Matchlock

By Arne Hoff

In the earliest examples of firearms, i.e. arms from which a projectile was ejected by means of gunpowder, the gunpowder was ignited by means of a red-hot object: a piece of coal, an iron bar which was red-hot at one end, or the like. This is seen already in the earliest known drawing of a firearm, a marginal drawing in colours from 1326 in the well-known Milimete manuscript at Christ Church in Oxford.¹ It shows a knight, wearing the clothes of those days, firing a cannon mounted on a base. The knight uses a rod at the free end of which a short crossbar is fastened, red-hot at one end. However, the necessity of a red-hot object made firearms applicable practically only in fixed localities with fireplaces. Therefore it was a great progress when matches were introduced for ignition.

A match is a loosely spun hemp-cord, the thickness of a finger. Having been boiled in potash and nitre the cord will burn very slowly and will not go out easily. With the already lighted match the fire for ignition of the gunpowder could be taken out into open air so that the firearms could be used wherever wanted. The use of matches for firearms is mentioned in books on gunnery from the end of the 14th century, but probably the knowledge of matches as such dates back a great deal farther.

It lay near at hand to fix the rod with the ember or the match to the gunstock. Thus, at the beginning of the 15th century we find on the side of the gun an arm with two angular bends, in hinged connection with the stock by means of a pin, very similar to the trigger mechanism of a crossbow from which it originates, no doubt. When the rear end of the arm - the trigger - is pressed, the opposite end - the cock - with the ember or the match is brought into connection with the gunpowder and will ignite the latter. When using such a system the gunner needed no longer watch the ignition process but could concentrate on taking aim. An ignition mechanism of that kind, using an ember, can be seen in for instance a drawing from 1411, while in the notes of 1475 by Martin Mertz, the gunsmith, we have a similar lock with a match.² Here the trigger mechanism has been divided into several parts, transmitting the movement of the trigger to the cock. To prevent untimely

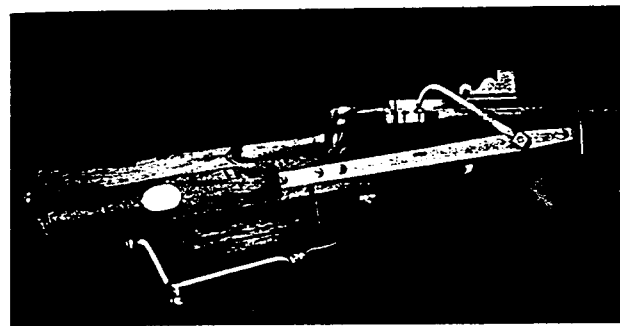


6. Left-hand side of rifle with snap matchlock, the stock dated 1584, Bayrisches Nationalmuseum, Munich, No. 1447.

detachable a groove has been carved in the stock for the trigger which is attached to the lock. The stock is also signed C. P. HOCH and S, probably standing for sculpsit (i.e. carved), and has a butt with finger-holds below but no projecting beak. Along the back curve of the butt there is a carved, rough frieze of leaves which is the only decoration of the firearm, apart from a couple of small bone plates with very simple engraving.

C. P. Hoch is known only from one arm besides the one mentioned above: a snap matchlock in James D. Lavin's collection in Tallahassee, Florida (figure 7). The barrel of this gun is practically similar to the barrel of the gun belonging to Neal, but it is signed with the master's name in full: CHRISTOPH PAULUS HOCH.⁷ The lock corresponds to the one mentioned above, with the only difference that it is activated by means of a button and not by means of a cord. Barrel and lock have here been re-mounted in an ordinary stock which has also the above-mentioned groove for the trigger to make the lock more easily detachable. Judging by its shape the present stock is from abt. 1620-40.

In Sir Walter Scott's collection at Abbotsford there is a rifle with snap matchlock which is probably from 1590.⁸ The barrel of this rifle is of the type characteristic of these firearms: octagonal with edges forming, in the front part, a hog's back, and slightly thicker wall in the muzzle. A somewhat faint date can probably be read as 1590. The lock is of the same type as the



7. Gun with snap matchlock in James D. Lavin's collection, signed CHRISTOPH PAULUS HOCH. Barrel and lock abt. 1590, stock abt. 1620-40.

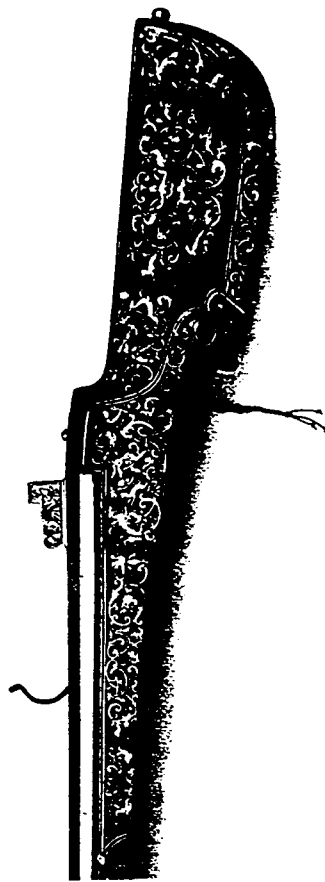
ones mentioned so far, but the cock has a toe which rests, when the rifle is cocked, against a tooth projecting through the lock-plate. The trigger is of ordinary pin-shape. The stock has a butt which is rounded behind, with a beak reaching under the trigger, and for the fingers there is a hollow in the underside of the butt. The decoration is delicate grotesques with figures, on the left-hand side of the butt a cartouche with a cavalry skirmish. On the butt-plate there is a coat of arms which can be traced back to Ferdinand of Tyrol (died in 1595), an elder brother of Charles, Duke of Steiermark, who has been the owner of the above-mentioned gun from 1570.

From the end of the century there is a very beautiful matchlock rifle in Wallace Collection in London, No. A 1072 (figure 8).⁹ The barrel, which has three fields with foliage engraving, has in the front part edges forming a hog's back. Over the chamber there is three times a mark with LH and standing unicorn, further a mark IP and a man's figure, a W in shield, and finally an N (i.e. Nuremberg). None of these marks are to be found in Stöckel. In the front part of the hog's back there is a small brass foresight. The back sight is a four-sided tubular sight with inserted sighting disc. The latter has two sight holes, one under the other. The priming pan is screwed into the barrel and is much profiled on the outside. The lock is marked with IW and hand (not in Stöckel) and has foliage engraving by the same artist who engraved the barrel. The hair trigger mechanism has been operated by means of a cord pulled horizontally, but besides there has probably been an ordinary trigger cord like the one known in the rifles belonging to the Toijhusmuseum.

from the 15th century, has no doubt been introduced to facilitate the aim. The back sight consists of two carved and engraved walls. The much profiled priming pan is screwed into the barrel and has a round depression. The lock is stamped H.D. (not in Stöckel) and is very similar to the locks of the guns B 288 and 289 belonging to the Tøjhusmuseum. The only difference is that in Grancsay's rifle the trigger mechanism is activated by means of a cord pulled horizontally, the cord emerging from a hole in the lock-plate. On the other hand the trigger is of ordinary pin-shape. The cock is very simple and quite thin and is probably intended for tinder. The stock (figure 5) is beautifully inlaid with delicate grotesques. It is signed HD behind the barrel tang, and has the said date behind the hindmost of 3 finger-holds which are carved into the lower edge of the butt. The rifle gives no clue to its origin, but at the Metropolitan Museum there is a wheel-lock bock-pistol (Acc. 47.98) the stock of which must be supposed to come from the same workshop – according to kind information from Stephen V. Grancsay. On its lock the pistol has a Nuremberg stamp and the marks Stöckel 2294-95 (CR and arrows) which also come from that town.

Nearly contemporary is a rifle at the Bayrisches Nationalmuseum in Munich (No. 1447). Here the simple, octagonal barrel has a box-sight. Unfortunately a barrel mark with a bird's foot (Stöckel 4994) is known nowhere else. The priming pan is exactly similar to that of the rifle mentioned immediately above. The lock is a simple snap matchlock with ordinary match-cock with thumb-screw. The stock (figure 6) has an ordinary, slightly curved trigger. It is beautifully inlaid with figures wearing the clothes of those days, pistol-armed horsemen, flute-player and drummer, a dancing couple, a poor winegrower, hunter and game, etc., everything surrounded by dense foliage. Moreover, on the left-hand side there is an owner's coat of arms, belonging to the von Cronenberg family. According to kind information from Alexander von Reitzenstein it can probably be traced back to Deutschmeister Franz von Cronenberg. On the underside of the stock there is an inscription: "Wolf Lucz Schifder zu Mergendahl 1584". The stock-maker is unknown elsewhere, as well as the barrel-maker. Mergenthal is the old name for Mergentheim in northern Württemberg.

In W. Keith Neal's collection in Warrminster, England, there are two guns of the above type, both of them with edged barrels, the edges of the outer sixths forming hogs' backs. The barrel of one of the guns is signed C. P. HOCH and dated 1589. The back sight consists of two profiled walls with exchangeable sighting disc. The outside-profiled priming pan is screwed into the stock and has a round depression. The lock is similar to the lock of Stephen Grancsay's above-mentioned rifle. It is activated by means of a cord pulled horizontally, and the trigger is of the ordinary pin-shape. To make the lock more easily



6. Left-hand side of rifle with snap matchlock from Stephen V. Grancsay's collection, the stock dated 1584.

guards. The heads of the stocks are inlaid with long, white bone stripes and between them small motifs consisting of one large and two small bone spots. The butts and the middle of the stocks are inlaid with spiral patterns of round leaves.

It is remarkable that the fore-stocks have plane, undecorated undersides and no ramrods. Another remarkable thing is the snap matchlock which had, as mentioned above, already long before the time in question fallen out of use for hunting and been superseded by wheel lock and snap lock. The reason is not that the gunsmith in question has not mastered another type of lock, as the Tøjhusmuseum has also an ordinary wheel-lock rifle, No. B 290, with the same barrel marks (and dated 1608). That in this case the barrel mark does not stand for barrelsmith but for gunsmith is seen from the fact that under the barrel the wheel-lock rifle has two further marks (Stöckel 3588 and a not reproduced mark).

The gun bought in 1960 (No. B 825:1) has a barrel corresponding to the two barrels mentioned above. It has the same HR mark (Stöckel 3070) and is dated 1607, besides under the barrel a mark with the orb (Stöckel 5743), probably an Augsburg mark. The shape of the walnut stock is very similar to that of the two stocks mentioned above, but the stock is quite undecorated apart from a carved lion's mask in the back angle. As mentioned above the crowned CA is burnt into the flat underside. The stock has probably been equipped with a snap matchlock like the two guns mentioned above. A stopped hole a little behind the barrel screw shows where the trigger has been, whether it has been a cord or an ordinary trigger. Instead of the lock there is now a lid with a latch, covering a kind of patch-box containing a wooden handle, at the top ending in a U-shaped peg, at the bottom in an awl. It is thinkable that this instrument has been used as a holder of a loose match.

In its main characteristics B 825:1 is so closely related to the two other guns that in its present form it must be a repaired gun. Most likely it has originally been like the others, but at some time in the 17th century its stock has been lost and replaced by the present stock, which has been given the shape and proportions of the previous stock but on which inlaid work has not been spent. At the end of the century the gun has, like the two others, been marked with Christian August's armoury mark. Later on the matchlock has been removed and replaced by a hollow space in the stock, covered with a hinged lid of nearly the same shape as that of the original lock-plate, and at the same time the hole for the trigger has been stopped. Unfortunately nothing is known about the gun from the time when it left the armoury at Gottorp up to the time when it was put up to auction.

Of matchlock guns with very nearly the same type of lock and stock as the two intact rifles at the Tøjhusmuseum there are quite a number in various collections, the earlier specimen being a rifle from 1570 at Waffensammlung des Kunsthistorischen Museums in Vienna, No. A 2305. It has once belonged to a member of the House of Habsburg, Charles II, Duke of Steiermark, who died in 1590 and whose coat of arms is seen on the butt-plate. The barrel is octagonal with eight straight grooves. Over the chamber there is a back sight consisting of two walls with a sighting disc inserted between them. On the top side of the chamber and further ahead on the barrel there are oval fields with a Roman warrior surrounded by a row of pearls, and furthermore the barrel is, in all its length, inlaid with a foliage in gold damascening. A corresponding ornament is seen in the long, narrow lock-plate the chiselled cock of which is shaped like a dragon with inlaid gold spots in its scales. In contradistinction to most matchlocks this one strikes forward in the down-stroke. The stock is inlaid with engraved bone figures (Venus and Cupid, Marcus Curtius, fighting monkeys, etc.). The projecting beak on the lower edge of the butt reaches the trigger which is here of the ordinary type.

Behind the barrel tang the stock is dated 1576 and signed HP, a signature identified by Bruno Thomas as Hans Paumgartner of Graz, who is mentioned in the records of 1st November, 1590, on the division of Duke Charles's estate, as having been employed by the Duke.¹ John Hayward has advanced the opinion that barrel and lock are made in Italy or at any rate made by a craftsman who had learned damascening in Italy.² Especially he rests his argument on a reference to two velveted sporting matchlocks in the Vienna collection (D 56 and 157) which are generally recognized as Italian. Most likely Hayward is right, but it is worth mentioning that the Vienna guns are probably 30-40 years older than Duke Charles's rifle and that from the period about 1570 there are many gold- and silver-damascened barrels in guns with German marks, e.g. at the Tøjhusmuseum the guns B 74 and 75 and a loose barrel and lock B 77.

Next in time after Duke Charles's rifle is a rifle at Skokloster, No. W 29, stamped on both barrel and lock with HL (Stöckel 2972-73), 3 bugles (Stöckel 5219), and the mark of the town of Ulm (Stöckel 6208). The rather coarse, octagonal barrel has a long sighting groove behind the back sight which is a simple, upright back sight. The lock is an ordinary snap matchlock with backwards-striking cock and pin-shaped trigger. The lock-plate is dated 1572. The stock has been sparsely inlaid with bone.

From 1581 there is a rifle from Stephen V. Grancsay's collection, lent to the Metropolitan Museum of Art, New York (No. L.56.61.12). At the outer sixth of the edged barrel, twice marked with a Nuremberg mark, the edges form a hog's back. This system, which is often seen in early hand-guns

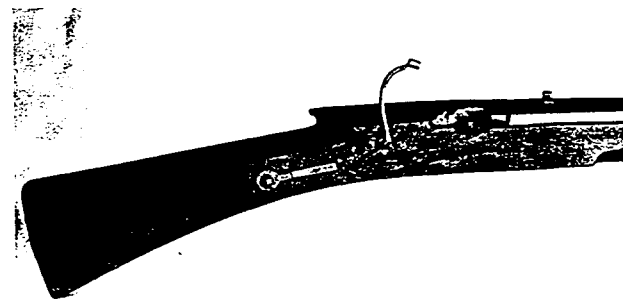
firing there usually was a small spring to keep the cock from the gunpowder, and the weak pressure of the spring had to be overcome when pulling the trigger. All the parts of the mechanism were mounted on a lock-plate, originally nailed on to the stock, later on screwed on to it, so that it could easily be removed for cleaning or repair.

The next step in the development is the snap matchlock, the first real gun-lock. A very early specimen from abt. 1500, a harquebus at Landeszeughaus in Graz, is shown in figure 1. As was the case with Martin Mertz's matchlock the cock was mounted on a small lock-plate and had here a long foot turned backwards. From below the foot was actuated by a mainspring, the other end of which was fastened to the side of the stock. So opposite the ordinary matchlock in which the spring kept the match-cock away from the priming pan, here it tried to force it towards it. Inlaid into the stock behind the lock-plate there was a flat sear-spring, the front end of which was fastened to the lock-plate while the rear end was equipped with a round press button. In the middle there was a projection, ending, through a hole in the lock-plate, over the foot of the cock and locking the latter when the gun was cocked. When the button was pressed the projection was withdrawn into the stock, releasing the cock which struck into the priming pan.

To keep the match in the cock the outer end of the latter was split and equipped with a thumb-screw. Sometimes, as in figure 1, tinder (*Agaricus chirurgorum*) was used instead of a match. If so the head of the cock was formed as a short length of tube into which a piece of tinder was pressed and lit, e.g. by means of a match. The tinder had to be renewed after each shot, which was very inconvenient, as compared with the match, when used for hunting or in the field.

Soon the snap matchlock was developed so far that all parts of the lock were mounted on a long and narrow lock-plate and the cock struck the priming pan with a backwards stroke. That type of lock is seen for instance in a number of guns bought in 1510 for the armoury of Basle.¹ The press button is situated rather far towards the front part of the lock-plate and has probably been activated by the middle finger of the left hand which gripped the stock with under grip a little in front of the chamber. A little later a snap matchlock appeared with normal trigger as it is known to-day. Military guns with that type of lock from abt. the middle of the century are known for instance from the armoury of Graz.

However, soon after the snap matchlock fell out of use. For hunting it was superseded by the wheel lock and the snap lock which were perhaps not so reliable as far as ignition goes, but did not necessitate a burning match. For military use the ordinary matchlock was preferred, as it was both much cheaper and so simple that it could easily be repaired even in the field. How-



1. Harquebus with snap matchlock with trigger button, abt. 1500. Landeszeughaus, Graz.

ever, in certain cases the snap matchlock was retained: partly in a number of early wheel-lock arms in which, for extra safety's sake, also a snap matchlock had been mounted on the lock-plate, partly in the remarkable group forming the background of the following research.

At an auction in London in 1960 the Tojhusmuseum (the Royal Danish Arsenal Museum) bought a remarkable matchlock.² According to the mark burnt into the stock – a crowned CA – it must come from the Holstein-Gottorp armoury at the castle of Gottorp, inventoried and marked during the reign of Christian Albrecht, Duke of Holstein-Gottorp, i.e. before 1694.

Besides coming from the said armoury – which has later on in its entirety been taken over by the Tojhusmuseum – the gun, mus. No. B 825:1 (figure 2 at the top), was of interest as it was obviously an altered form of a type of which the museum has two specimens, Nos. B 288-89 (figure 2 at the bottom). These guns, which are quite identical, also come from the armoury of Gottorp and bear its mark. The barrels are octagonal and rifled with 8 very faint (worn out?) grooves and a calibre of 14 millimetres. In front there is an oblong foresight of brass on an inserted base and a little in front of the rear end there is an oblong back-sight tube consisting of two walls and a ceiling of iron. Once there has been a sighting disc, inserted in a groove in the middle of the tube. The priming pans are screwed into the barrels and are of a very early form with a circular depression and revolving lid with an unusual hooked

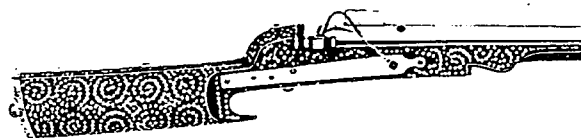
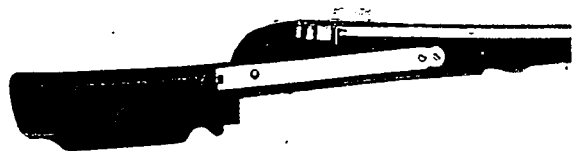
have trumpet-shaped muzzle ends, and block back sights with peep-holes. They have the same barrel mark, a crowned key (not in Stöckel), and are dated 1616 and 1611 respectively. On the block for the left hand the stock of the Vleescherhuis gun is dated 1642, and judging by its carved scrollwork also the stock of the other gun seems to be most of 50 years younger than the barrel. Its lock has probably had a second match-cock besides the present one. From about the end of the century there is one more snap matchlock at the Vleescherhuis, No. Fa. 6, which is completely undated. A big and coarse gun for target practice belonging to the Porte de Hal in Brussels (No. 65 D) has on the block for the left hand the town arms of Diest and on the small of the butt the crowned initials of the Danish King Christian V. The connection between Diest and Christian V is unknown, except that the King passed the district in 1662 on his long journey abroad and may have visited the town.¹¹ Finally can be mentioned a beautifully carved gun from the 18th century, signed on the lock: Francis Doomas Lovain. The gun had a single, forward-striking match-cock and is known from an American arms dealer's catalogue.¹² As a curiosity it can be mentioned that of that type also a gun with wheel lock is known: No. K.O.J. 869 at Rijksmuseum (figure 11 at the top). The lock has a peculiar trigger mechanism activated by pressure in the horizontal plane as in the earliest snap matchlocks. The barrel of the gun is dated 1626 and has a bell mark (approx. Stöckel 4863) which can probably be traced back to Antwerp.

As proved by Lenk these arms have in common that they are of Dutch origin. A connecting link between all this group and the group without trigger guard is the above-mentioned Tower gun (No. XII:10) which has got for its stock of the latter type, dated 1621, such a Dutch barrel for target practice: a barrel half of which is box-shaped and which has trumpet-shaped, fluted muzzle end.

The theory that the guns with snap matchlock are intended for target practice is in keeping with the generally known conservatism found in shooting societies.¹³ The gun with wheel lock at the Metropolitan Museum is probably the exception proving the rule: a case where the owner has defied convention and had his gun made with the latest lock of those days. A scrutiny of still existing rules for such shooting matches has apparently not been made so far. It might throw an interesting light on the slowness and reluctance with which the shooting societies gave up time-honoured practice, also as regards the types of arms prescribed at the shooting matches.

Notes

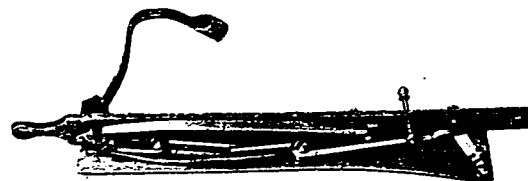
1. In several recent publications there are excellent illustrations in colours of this drawing, e.g. in »Opfindelses historie« by Umberto Eco and G.B. Zorzi, published by Gyldendal, Copenhagen 1962, page 343, and in »The Treasury of the Gun« by Harold L. Peterson, New York 1962, page 32.
2. Codex ms. 3069, Hofbibliothek Wien; here after ZHWK I, page 225 ff. Codex germ. 599, Hof- und Staatsbibliothek München; here after Essenwein »Quellen zur Geschichte der Feuerwaffen«, plate B VI.
3. Preserved specimens in the Historisches Museum in Basle (No. 1905.4498 2 and b), Germanisches National Museum i Nuremberg (depicted in Essenwein »Quellen«, plate B VIII c), Schweizerisches Landesmuseum in Zurich (depicted in J. Alm »Eldhandvapen«, I, page 79).
4. Sotheby and Co.: Catalogue of the Greener Collection of Important Firearms, 25th July, 1960, No. 54.
5. Kind information by Dr. Bruno Thomas of Vienna.
6. John F. Hayward »The Art of the Gunmaker«, page 35.
7. This master is known only from these two works. A family of gunmakers by name Hoch, living in Coburg, is known in the first half of the 17th century. Stöckel »Haandskydevaabens Bedømmelse«, I, page 134.
8. Published by A. V. Norman in Apollo, September 1962, page 529 ff.
9. Wallace Collection Catalogues. »European Arms and Armour« by Sir James Mann, London 1962, II, page 494.
10. Hayward »The Art of the Gunmaker«, page 34.
11. Le Musée de l'Armée. »Armes et armures anciennes«, II, page 99 ff., plate XXXVI and XXXVI bis.
12. »Inventory of the Armouries of the Tower of London« by Charles Foulkes, II, page 333.
13. Le Musée de l'Armée. »Armes et armures anciennes«, II, page 101 ff., plate XXXVI and XXXVI bis.
14. »The armoury of Windsor Castle. European Section« by Sir Guy Laking, page 112 and plate 19.
15. M. v. Thierbach »Die geschichtliche Entwicklung der Feuerwaffen«, I, page 15.
16. Le Musée de l'Armée. »Armes et armures anciennes«, II, page 103, plate XXXVI.
17. W. Boheim in »Jahrbuch der kunsthistorischen Sammlungen des A. H. Kaiserhauses«, V, page 66.
18. »The Bashford Dean Collection of Arms«, Portland (Maine) 1933, page 230 ff.
19. Essenwein »Quellen«, plate B VI a.
20. Kind information by Dr. E. Königer, of Nuremberg.
21. Depicted in E. A. Gessler »Basler Wehr- und Waffenwesen im 16. Jahrhundert«, Basle 1938, page 52.
22. »The Armoury of Windsor Castle«, page 113.
23. Torsten Lenk »En nederländsk malskultningsbössa i Skoklosters rustkammare« in »Livrustkammaren«, III, page 162 ff.
24. »Inventory of the Armouries of the Tower of London«, II, page 331.
25. A. Tuxen »Fra Christian den Femtes Ungdom« in »Museum 1892«, II, page 130 ff.
26. Robert Abels, 860 Lexington Ave., New York. Catalogue 26. Suppl. page 172.
27. Wilh. Ewald in »Wir Schützen« (published by W. Ewald and others), Duisburg 1938, page 153.



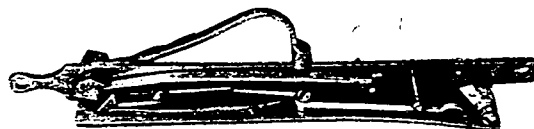
2. At the top: Rifle without lock, the barrel dated 1607. At the bottom: Rifle with snap matchlock, the barrel dated 1613. The Tøjhusmuseum, Nos. B 8:8:1 and B 8:8:9.

handle. Besides, the barrels are marked Stöckel 3070 (HR in shield), twice 1613 (die-stamp with double-headed eagle), and the date 1613.

The lock (figures 3 and 4) is a rather complicated kind of snap matchlock. It is mounted on a narrow, rectangular lock-plate which is L-shaped on the inside so that it forms a shelf on which the parts of the lock are placed, namely the sear, an intermediate link, and a flat, vertically movable trigger foot, each of them with its spring. The cock consists of a thin arm ending in a small cylinder for a piece of tinder. Inside the lock the cock has a nut, actuated by a straight mainspring. The nut has a notched inclined plane against which the sear point rests. At the back the said intermediate link has an outside finger-grip. When the latter is pulled the intermediate link enters a hook on the trigger. When the trigger is pulled the trigger foot tilts downwards and lets go the intermediate link, the opposite end of which will now hit the rear edge of



3. The lock of the rifle seen in figure 2 at the bottom, cocked.



4. The lock seen in figure 3 after firing.

the sear, disengaging the latter from the cock which will be released and strike down. However, the most remarkable thing is the trigger which has been a cord, passing from the trigger foot through a hole in the stock and further on through a projecting beak on the butt, outside which it had a knot. An activation of the cord, as of an ordinary trigger, would therefore release the shot. The original cord has been lost but has in our days experimentally been replaced by an ordinary twine.

The stocks are of walnut with straight butts which have a little cheek rest and a hollow below for the three last fingers of the right hand. On the right-hand bottom side the butts have the above-mentioned projection with a hole for the trigger cord. It follows that the guns have never had trigger

neither of the two guns is known to-day – if they are not identical with some of the arms mentioned above.

What remains to be mentioned is a gun which would have belonged to the group in question if it had not had a wheel lock. It is gun No. 04.3.184 at the Metropolitan Museum of Art in New York (figure 10). Its stock has the characteristic butt with finger-holds and projecting beak, no trigger guard and no ramrod. The stock is inlaid mainly in spirals with leaflets; much like the marquetry of the rifles Nos. B. 288-89 belonging to the Tøjhusmuseum. In most of its length the barrel is octagonal, and most of its surface is covered with a chiselled band pattern. In front it ends in a profiled head, not unlike the thistle-shaped heads of early Scotch pistols from the 17th century. The sights consist of a bead foresight and a conical, tubular back sight. The lock has internal cock spring and is decorated with gold- and silver damascening. Closely related locks are known from a number of arms from about 1550-75. Probably the latter date holds true for the whole gun. The stock is inlaid with a silver coin from Salzburg 1623 which coin must be a later addition, but may indicate the place of origin.

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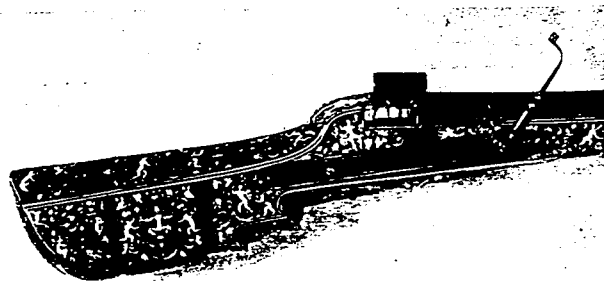
Already the extent of the material treated in this treatise, as much as about 20 preserved firearms, proves that these arms cannot be ascribed to the whims of one man, but that here we have a special type of guns. It is also seen from the spreading in time, with about 30 years on either side of the year 1600, and a fairly even distribution of the preserved pieces over the period. Geographically the group is not so spread, being localized to the triangle of Württemberg-Sachsen-Saiermark. In their design the guns are remarkable not only because the otherwise antiquated snap matchlock is still used in them, but also on account of the peculiar type of stock without trigger guard.

The type of snap matchlock with which most of the guns treated here are equipped (figures 3 and 4) is remarkable because of the spring-actuated intermediate link between the trigger and the sear, actually forming a kind of built-in hair trigger. Thanks to the intermediate link and its spring such a system means that when the trigger is pulled slightly the sear will be activated powerfully and suddenly. A related system is found in certain wheel locks, e.g. in two Dresden guns belonging to the Tøjhusmuseum: No. B 60, marked on the barrel 1574 and LD (Stöckel 3751, probably Lorenz Dresler), and No. B 59, dated 1583 on the lock and with Christof Dresler's monogram (Stöckel 2350) on both barrel and lock. Besides the intermediate link there is in both locks a small rocker which transmits the movement from intermediate link to sear. In B 60 the system is pull-activated as in our snap matchlocks, in B 59 it is pressure-activated. However, a few of the guns have not that system

but an external snap system where the cock has a toe which is stopped by a projecting tooth. And finally both the Hans Paumgartner gun in Vienna and the Wolf Lutz gun in Munich have simple matchlocks where the movement of the trigger forces, through a connecting link, the cock against the priming pan.

As will be known the function of the trigger guard is first and foremost to prevent that the trigger is pulled at the wrong moment. This is of extra importance in connection with real gunlocks as a slight pressure will here activate the already set mechanism and release the shot. The earliest firearms with match- or wheel-locks are without trigger guard, but at any rate about the year 1530 such guards are seen, first in a couple of small guns or long pistols belonging to Real Armeria in Madrid (Nos. K 32 and 30), dated 1530 and 1531. Already about the middle of the century firearms without trigger guard are seldom seen. A late example of a gun without trigger guard is the gun No. B 136 belonging to the Tøjhusmuseum. Besides the finger-holds on the underside of the butt the latter has a thumb-rest projection on its right-hand side. The barrel of the gun is marked AN (Stöckel 1928), and Stöckel has estimated the date to be about 1580, which date the author can fully accept – especially judging by the construction of the lock. In a few cases we see both finger-holds on the butt and trigger guard so that it has been possible to grip the arm in one way or the other at will. Such a gun at Musée de l'Armée in Paris, No. M – 51,¹⁶ has moreover on its lock two firing devices, corresponding to the two ways of gripping the arm. When the finger-holds in the butt are used, the arm is fired by means of a press button on the side of the lock-plate, otherwise by means of the ordinary trigger. The barrel of the last-mentioned gun was made by Peter Danner, the Nuremberg master, its lock has the spur mark also known from Nuremberg (Stöckel 1056), and the date on the gable of the priming pan is 1579. Another example is the Emperor Maximilian II's ivory-stocked wheel-lock gun at the Kunsthistorisches Museum in Vienna (No. D 71), which can, according to the form of its owner's coat of arms, be dated to 1563-64.¹⁷ Later on it has lost its trigger guard but there are clear traces of it. It is interesting that in the collection originally belonging to Bashford Dean, later on taken over by the Metropolitan Museum of Arts, there is a similar ivory gun (No. 187) which has belonged to Philip III, Duke of Croy. No doubt it comes from the same workshop but has got only an ordinary trigger guard.¹⁸

The origin of the type of stock in question is a late Gothic type of stock the shape of which is gradually altered, developing – where the curved lower edge of the small passes into the straight butt – a small projection to support the right hand when gripping round the small of the butt. An early example of that we have in a picture from Martin Mertz's sketch-book about 1475.¹⁹ On the other

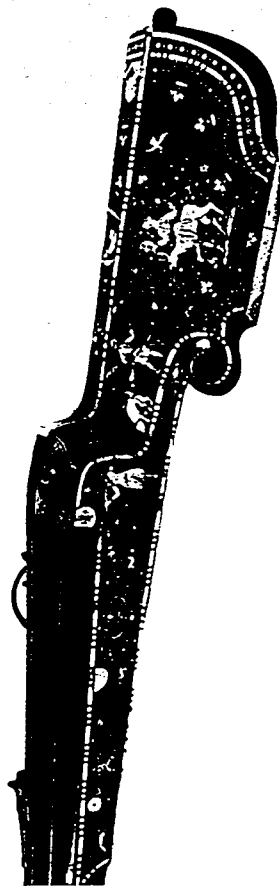


8. Rifle with snap matchlock, the stock dated 1598. Wallace Collection, London, No. A 1072.

The stock has a butt which is rounded behind and which has a hollow for the fingers below. The stock is very beautifully inlaid with mythological figures and grotesques. Under the butt a small pearl plate is dated 1598. According to Hayward¹⁰ the rifle is supposed to come from the armoury of Neuburg.

Next in the series of dated pieces we have the gun M 23 at Musée de l'Armée in Paris. On the barrel it has the CT of Christof Dressler, the Dresden master, and a flower mark (Stöckel 260-261), and the date 1607.¹¹ The barrel is octagonal with exactly the same types of tubular sight and priming pan as the one mentioned immediately above. The lock has gilt lock-plate. The head of the horizontal pin activating the hair trigger is formed like a shell. The cock has an outside toe in connection with a tooth projecting through the lock-plate. The trigger is pin-shaped. On either side of the butt the stock has a cartouche, on the slightly bulging right-hand side with a lying deer, on the left-hand side with a parrot. Moreover, when seen from the side the butt is edged and has in front a finger-hold and a protruding beak. The forestock has longitudinal white bone stripes and oblong cartouches round the pins. Behind the barrel tang there is a small field with the stock-maker's signature: FF. This master, whose name is unknown, is represented by nearly 20 works from the period between 1607 and 1634. Besides working for Dressler he has also worked for Georg Gessler and Zacharias Herold.

There is a similar gun by Christof Dressler at the Legermuseum in Leyden, No. 61/1a-1. However, here the barrel is dated 1611. This gun is remarkable by having in its stock the groove mentioned in connection with Keith Neal's gun, which groove makes it possible to take off the lock without taking off the



9. Left-hand side of rifle with snap matchlock in W. Keith Neal's collection, alt. 1600. Note the two marksmen and the target.

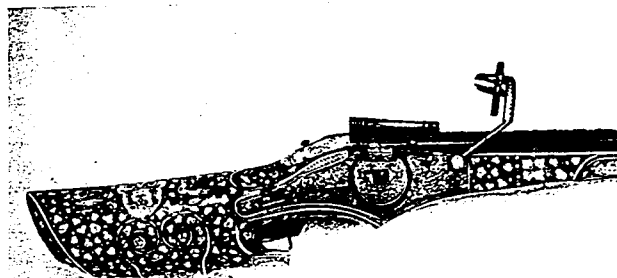
trigger first. While in Neal's gun it is uncertain whether the groove is a later addition, the inlaid work on the Leyden gun shows that here the groove is original.

In the Tower collection in London there is a gun with snap matchlock, No. XII:10, which is dated 1621 behind the barrel tang.¹² Its barrel of which a more detailed description will be given below, is not the original one, and the provenance of the gun is uncertain. At any rate it does not belong to the early parts of the collection. The lock is of the same type as the ones mentioned above, with a horizontal activation pin and ordinary pin-shaped trigger. The stock has rounded butt, with finger-holds carved below. It is very beautifully inlaid with grotesque-figures which are closely related to but not identical with the ones mentioned below in connection with the guns from Musée de l'Armée.

The last rifle in the series belongs to the Kunstsammlungen der Veste Coburg, No. IV E 1. Its barrel is signed AUGUSTINUS KÖTTER 1635 and is moreover marked RD or RN (Stöckel 4405). Even this late barrel has edges forming a hog's back in front, and besides that it has engraved grotesques near the muzzle, in the middle of the barrel, and over the chamber. The back sight is of the two-wall type with carved walls. The sighting disc has two holes. The stock is rounded at the butt-end and is decorated with grotesques of superior quality. Under the muzzle there is an imperial crowned double-headed eagle.

Besides the above dated pieces there are a few undated ones. In W. Keith Neal's collection there is a rifle with snap matchlock. Its octagonal barrel has a long sight groove behind the back sight – the latter is a much later replacement – and in front edges forming a hog's back. It is marked HF (perhaps Stöckel 2832). The lock is like the ones mentioned above, and so is the ordinary shape of the stock. Like the above-mentioned C. P. Hoch guns it has a groove for the trigger to facilitate removal of the lock. The stock is decorated mainly with a number of grotesque and partly obscene inlaid figures, probably referring to jesting stories known in those days. Further, in the middle of the stock (figure 9) there is a man who is shooting at a target, and on the small of the butt there is a figure who carries in his right hand a gun of the trigger-guardless type while in his left hand he has two marker- or rather prize-winner's flags. Behind the barrel tang there is a signature the two first letters of which are H G, the third is F. On the band round the fore-end of the stock the crowned imperial double-headed eagle is engraved. In various places on the stock some cyphers are stamped, no doubt old armoury numbers.

At Musée de l'Armée in Paris there are further two undated pieces of the above type.¹³ M 9 has the usual barrel with edges forming a hog's back in



10. Gun with wheel-lock and stock without trigger guard. Metropolitan Museum of Art, New York, No. 04.3.184.

front, while M 24 has had its original barrel replaced by another one, round in front and otherwise octagonal, which is probably most of 100 years later than the rest. Both locks are activated horizontally. The stocks have very deep hollows in the lower part of the butts and are decorated with very elegant grotesque marquetry, closely related to that of the above-mentioned rifle from 1581 belonging to Stephen Grancsay, but not necessarily from the same workshop. On the barrel of M 9 there are two Nuremberg marks (Stöckel 1601 and nearly 1582).

Further there is one of the guns in question in the collection at Windsor Castle, No. 351.¹⁴ The octagonal barrel has either been much smoothed or is a later replacement. The lock has a cock with an outside toe. It is activated by means of a press button with a cherub's head cast in brass. When the button is pressed a tooth projects in front of the toe of the cock. The stock is beautifully inlaid with foliage and grotesques. The butt is rounded behind, has a hollow below and a typical beak.

It can finally be mentioned that Thierbach depicts a lock of the type in question from a "tschinke, richly inlaid with bone" in Count Luckner's collection at Altfranken near Dresden.¹⁵ It is activated by means of a cord pulled horizontally, but has ordinary trigger. Thierbach dates the system to "abr. 1640-60", according to the above probably a little too late, and mentions that he knows a corresponding lock in Senator Culemann's collection in Hanover; however, such arms are "extremely rare, if not unique". Unfortunately

hand the well-known matchlock at the Germanisches National-Museum in Nuremberg (mus. No. W 492), ordered by the town of Basle in 1510, is unfortunately partly a reconstruction as far as the butt is concerned and consequently of doubtful weight as evidence.¹² Then, at the time when they began to provide the trigger guard of ordinary stocks with inflexed curves for the last three fingers of the right hand, the underside of the butt of the guard-stock is provided with corresponding hollows.

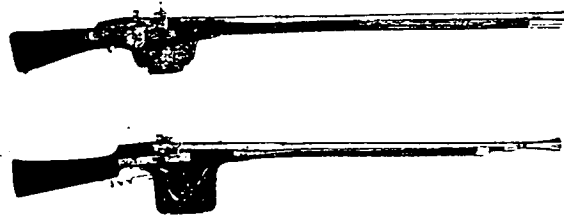
One more remarkable, old-fashioned characteristic of a number of the guns in question can be pointed out: the hog's back formed by the edges in the front part of the barrel. As mentioned this is frequently seen in early hand-guns from the 15th century and is occurring in nearly half of the material of this treatise, for instance as late as in the Coburg rifle, the date on the barrel of which is no doubt the date of the whole rifle.

*

It is natural to ask why in this restricted field, opposite the general trend towards a strong accentuation of practical use, features have been preserved which have fallen out of use everywhere else. What can have been the use of these special guns?

So far this phenomenon seems to have been rather unheeded in literature. The arms are simply called guns with no specification of their use. The exceptions are John F. Hayward who concludes, in connection with a description of their decoration which sometimes contains game, that they were meant as sporting guns, and the latest edition of the catalogue from Wallace Collection (1962) which simply stated that such rifles were used for target practice.

It is a significant characteristic in this connection that none of the stocks in the group in question are equipped with ramrods though the ramrod placed in the stock was known already in the 15th century and at any rate from the beginning of the following century was in common use. It makes it very likely that the guns were for stationary use, and as they are typical luxury arms that means that they were used for target practice. One more thing indicates that, namely that all the guns with original barrels have very fine sights in the form of tubular sights with sighting discs. A third indication is the construction with the hair trigger-like intermediate link where the slightest actuation of the trigger will release the shot. Further we shall remind of the decoration of the above-mentioned undated gun from Keith Neal's collection (figure 9) where guns of exactly that type were depicted in connection with target practice. A Swiss stained glass from 1599 also shows a marksman returning from a shooting match and carrying a gun the butt of which has exactly the



11. At the top: Gun for target practice with wheel-lock which is activated by pressure in the horizontal plane. The barrel is dated 1626. At the bottom: Gun with snap matchlock. The barrel is dated 1616. Rijksmuseum, Amsterdam, Nos. K. O. J. 869 and M. 517.

shape in question, unmistakably with protruding beak. The lock is probably a snap matchlock with a press button for the hair trigger, and the barrel has a tubular sight.¹³

In favour of the theory that the guns were meant for target practice we have also the fact that we know another group of very late guns with snap matchlock which must have been special arms for target practice. In the armoury of Windsor Castle there is such a gun with snap matchlock or rather snap tinder-lock.¹⁴ At the top the cock ends in a spiral, much like a question mark. Uppermost it has a short length of tube for the tinder. At the foot it has a toe which is turned backwards and supported by a knob projecting through the lock-plate. At the back of the narrow, rectangular lock-plate there is a press button for activation of the sear system of the lock. In front of the trigger guard the stock has a big block resting in the left hand when the arm is aimed. By that and by a special type of barrel which has an unusual block back sight with peepsight, adjustable from the side, this gun is characterized as an arm for target practice. The type of stock has been treated by Torsten Lenk who has proved its existence in the Netherlands in the period from the end of the 16th century, if not before, to far into the 18th century.¹⁵ An early example of a gun with a block for the left hand under the stock we have in Henry VIII's breech-loader No. XII:1 at the Tower which is at any rate earlier than 1547.¹⁶ On its sighting disc the Windsor gun is dated 1620, a date which no doubt covers the entire gun.

From about the same time there are two guns of the same type: No. M 517 at the Rijksmuseum in Amsterdam (figure 11 at the bottom) and No. Fa. 4 at the Vleeschherhuis in Antwerp. The barrels are box-shaped in the rear half.