# Introduction to Period Legal Documents and Seals

By: Pierre de Montereau

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## General Information

This information will look at the Seals and Legal Documents in the Middle Ages. In Modern Times, there are ways to determine if the document is authentic and did not get tampered with in any way. In the Middle Ages and Renaissance, they did not have the tools as in Modern times but they did have other tools so the document was still be authentic and did not get tempered with. The Tools of the Period Clerks includes inherent value, formulaic language, text positioning, flourishes and decoration, indenture and seals and marks. Most of the document will look at the Seals and Marks. [8]

## Inherent Value

In modern times, production legal documents, photocopier, paper and pens are cheap to produce. Almost every person has at least 1 legal document, birth certificate, leases, mortgage papers, marriage license, etc. [8]

In Middle Ages times, beside tax records, most people went thru their lifetime without seeing any legal documents. Most used verbal agreement for administration. Legal documents were largely used only by the upper class because of the time and materials. There was the Vellum and Parchment, the Ink and the Quill which were handmade and very expensive. [15,16,17,18,19]

Vellum and parchment are made from animal hide. It is time-consuming and the animal has to die so that is no longer producing milk, wool or breeding stock and no longer a source of wealth generation. The Vellum and parchment come from younger animals with fewest blemishes. Since the animal was young, the vellum will have a smaller size. All there factors produce a good quality writing surface and extremely costly. [8]

Different kinds of ink includes soot ink, carbon ink and oak gall ink and the list goes on. For the permanent and darkest ink, the oak gall ink was produced. The main ingredient is oak gall which is the source of tannin. The oak galls are very common but has to be collected and processed into ink. [8, 15, 17, 18, 19] (Appendix i Recipes)

The first five flight feathers of a Goose, Swan or Peacock feather are excellent for making a quill pen. The feather itself was not hard to get but the time and skill to convert the feather to the quill pen was. Also, the ability to read and write was a major skill and takes time and energy. The major clerks were trained in or associated with the religious group. The clerks can make a single legal document or duplicated it but it take time to do that which inherently valuable. [8, 16] (Appendix i - Recipes)

## Formulaic Language

Documents that the scribe made were very standard phrases which would add the validity of the document. For the English royal documents would open like "We, <Insert King's Name Here>, King of England." If the document did not follow the conventional phrases for the language and location then it will cast the authenticity of the document into question.

To prevent errors and misunderstanding in interpreting the text, the scribe will use lots of abbreviation and smaller variation of the text. This was to save space and to some text was so well known that it was not necessary to spell out the whole word. Also, the scribes were trained in the same type of school and spoke a common language.

At the end of the document, the scribe would put either "AMEN" or its abbreviation "A" or "VALETE" or its abbreviation "VAT" that means it is the end of the document and prevented any later amendment. The "AMEN" tended to appear more often on documents associated with religious houses. *"VALETE"* (Latin for "farewell to you") is more often found on secular documents.

The Roman numerals were exclusively used for the numbers. Arabic numerals were unknown to European people at the time. The Roman numerals were almost all written in lower case. To prevent tampering the number was written with a period before and after the number. The second tampering prove is the number *"i"* in the Roman number would be written *"j"* at the last *"i"*. For example, if you are written 8, it will be *.viij.*

The *v* for 5, *x* for 10, *l* for 50, *c* for 100, *d* for 500 or *m* for 1000, had no altered form, but relied on the dot mark to define the number's start and end. So, if the date of a document was May 1, 1542, the date would probably read *mai .j., .m.d.x.l.ij.* [8]

## Text Position

Velum was very valuable and to prevent tampering, they would fill the larger text on a page in a solid block without break for modern reading conveniences like paragraphs.

Adding a word after the document will be more obvious and might be questioned. The left and right margins are minimal compared to the top and bottom margins which are potentially unprotected. [8]

## Margin

The comfortable margin for the Scroll sheet is at least 1/8 of the width. That includes the side and the top. The bottom need more space for the attachment of the seal(s) and/or signing.

Some of the medieval illustrations has small margin but the pages has been trimmed because of book rotted.

For example: you should make the margin 1 to 1.25 inches of clear space between the paper's edge and the design for the 8 x 10" scroll. If you have a small scroll, leave ¼ inch on each sides.

## Flourishes and Decoration

In the Legal Documents, certain style of handwriting common by the clerks were used which itself was a security device. Over the century, changes in writing were common for legal documents. For top margin of the documents, there would be blank space for the Letter to be extended and exaggerated thus preventing any tampering for the first line of text. In adding to the first line of text, the clerks can add some drawing around the text to protect the contents as well. At the bottom margin were more space for the attach of a seal(s) which can lead to tampering. For that reason, the clerks will add "AMEN" or "VALETE" to the end of the document to prevent tampering. The clerks will also draw some decorative flourish to fill out the final line. [8]

## Indenture



Figure #1: Example of CYROGRAPHUM on an indenture, plus three separate types of seal attachments and a cross mark to attest to a signature

For a single document, the techniques were good but most documents have to have multiple copies for different people in the contract. The indenture was use for that. The text would be written in multiple times (normally two or three) on a single vellum sheet. Then between the contract, they would put "CYROGRAPHAM" which is in latin for "personal writing". The indenture came from latin for dens which mean "tooth" when you cut the contracts in a sawtooth or wavy pattern right thru the "CYROGRAPHAM". If necessary the cuts could be matched up to verify that the contract was the same for all parties. Not only the wavy lines has to be join but the word has to match. On rare occasions, the word "INDENTURA" was used instead of "CYROGRAPHAM". [8]

## Seals

The main way of proving the document valid was not always the personal signature but was the wax seal because most of the people cannot read and write. It is also used physically to seal, or close, items of importance. As early as 4,000 B.C., the seal as a mark of authenticity was know and used in the civilization of the Assyrians, Babylonians, and Egyptians. Each seal matrix was unique and was carefully guarded property because it validated a legal agreement. By the fall of the roman empire in the 5th Century AD, there was a decline in sealing in the west until around the early 9th century where Coenwulf (d. 821) is known to have used a seal as did a small number of other early kings and magnates include one of the first example of an official seal by an English King is that of Edward the Confessor (c1042 – 1066)

The seal matrices could be bought from the lower class to the princes, feudal lord, ecclesiastical authorities and monastic houses. With legal documents property and/or deeds to prove rights of title etc., the ownership of a personal seal became quite commonplace even amongst the lower classes. By the turn of the 13th century, sealing was being adopted by towns, civic corporations, merchants and universities, and was in common use by the 14th century. This continues until the gummed envelope in the 1840s that was easier to use than the wax seal. Today seals are no longer used for everyday correspondence, and with the spread of literacy and changes in legal practices they have been restricted to special occasions such as royal marriages and town charters.

The wax seals, called the matrix, had a variety ways to attaching the documents, some more tamper-proof then other. A seal is formed by putting a quantity of warm wax in a mold and impressing an image from a seal matrix on it; seals can be one- or two-sided. Seals were also used for the sealing of letters, and for this the smaller personal, or signet seal from either a ring or fob matrix was popular. [7,8,9]

The seal matrices in the medieval times were composed of bronze called latten most of the time. Silver was know to be used for the Great and Royal Seals and a gold matrix was use by Henry IV. The matrix of silver and latten are durable to survived to the present. The engraver would cut the matrix but some of the matrices were cast and then finished by hand for less expensive ways. Most of the matrices were more the 2 inches (5.1 cm) in diameter. In later years there was more matrices were ring seals.

The double sided matrix has two parts to the matrix. The obverse or face part and the reverse part. Both parts were either flat engraved metal slabs or cast slabs and finished by hand and between two and four lugs to secure the two parts firmly together. When impressing the wax matrix, the reverse side of the seal matrix was placed upwards on a flat surface, the wax having been prepared by immersing it in warm water until it was soft enough to take a good impression and hot enough to make the wax malleable without it melting. The wax was then formed into a disc shape, and placed on top of the bottom half of the matrix in layers. The cord, or tag, was then placed upon this with wax discs layered on top of the cord. The top half of the matrix was then placed obverse side down on to the wax and pressure applied.

The single matrix has only one piece for the matrix.  The piece is either flat engraved metal slabs or cast slabs and finish by hand.   In the back a handle which is set at right angles from the matrix and the matrix can be varied size and shape.  The handle usually had a hole in the center which allowed not only a grip for the removal of the matrix after impressing but the means of attaching it to a chain.   For the smaller matrices, most of the handles form a ring or double sided pendant.  The impressed lightly with the matrix and the back with the fingers which will leave the shaped of the finger print and  pressed into the back to gain a hold on the wax to remove the matrix.  For larger seals the matrix was turned face upwards, the handle secured where possible, and the wax disc forced on to the matrix using finger pressure. Sometime, colour wax disc was use for the impression and the rest of the wax was uncoloured.  This was alleviated by the use of French chalk which was used on the wax to ensure the easy removal of the matrix and to produce a clear impression. [1,2,8,9,11]

## Sealing and the Matrix

There are different ways for the Seal Tag, a length of vellum or a ribbon before putting the wax impression. One way and most tamper proof type of seals tag is to use the "tongue" of vellum.  The vellum has the text written and at the bottom of the vellum, cut a long part that does not fully detach from the whole document.   The result tongue then gets the wax seal which sometime is tied into a knot to add structural strength and security, because then the tongue cannot be pulled out of the seal without breaking it.[9]
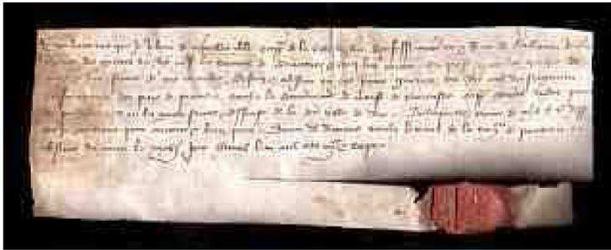


Figure #2 A "tongue" of vellum

The second best way of tamper proof is to use a tag. It is not directly attached to the document but hung from them on small strips of parchment, tablet weaving strip, or silk threads.  At the bottom of the vellum document, folded along bottom to create a stringer platform to attach the seal tag.  There are at least five examples of Seal Tag seen below.

Parchment Tag is a part of vellum strip.  You cut four slices in the bottom of the document, one at the top of the double vellum, two at the middle in the double vellum and one at the bottom.  You slide the part of Parchment Tag into the slice of the document.  Then you cut in the middle of the Parchment Tag bottom the document where the seal will be impressioned.  Then you twist the vellum so it goes into the other vellum strip and then twist the other back.  After that, you impression the seal.[2,9]

Figure #3 A multiple Parchment Tag

Tablet Weaving strip which someone made the tablet weaving band in silk, hemp, wool or linen.  As seen above, you cut four slices in the bottom of the document, one at the top of the double vellum, two at the middle in the double vellum and one at the bottom.  You slide the part of Tablet Weaving strip into the slice of the document. Then you impression the seal.[?]



Figure #4 A Tablet Weaving Tag

Twist Threats are two or three threads of silk, linen or hemp.  You pierce two holes in the middle of the bottom of the double vellum.  Thread thru the two holes so on the front of the document, there is a thread going into two holes and the back has two separate threads.  Twist the first thread and put the two back threads into.[11]
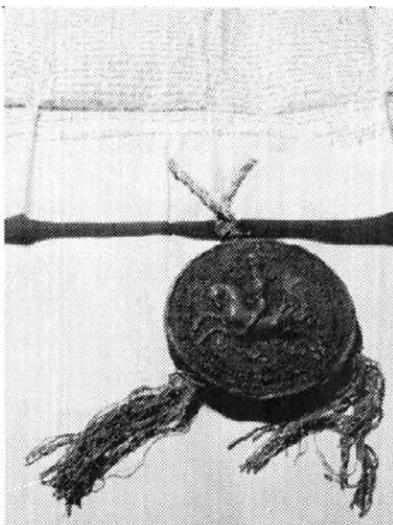


Figure #5 A Twist Threats Tag

Singleton Tag is either a small tablet weaving strip or 2 or 3 thread.  You pierce three holes in the middle of the bottom of the double vellum.  You put the thread into the left hole.  Then you put the thread into the middle hole and come out so it creates a loop.  Then you put the thread into the right hole and take both left and right thread and put it into the middle loop that you created with the thread.[?]

Diamond colour finger-loop braids tag is 2 or 3 thread.  You pierce three holes in the Top and two in the middle on either side of the bottom of the double vellum.  You put the thread into the left hole.  Then you put the thread into the Top hole and the come right.  Then you repeat it again with the next thread but on the opposite side.   Then you braid the thread at the bottom of the double vellum.[9]



Figure #7 Diamond colour
finger-loop braids tag

The third way for sealing a document is to directly seal it to the document similar to that with which we are familiar in envelope enclosures.  Without a wax sealing, which is fragile, on the document become questioning so great care was taken to preserve them.  They were not infrequently wrapped in cloth or vellum to try to protect them from breakage.  It was a single-sided seal, formed by dropping heated sealing wax on to the surface of a document and applying the matrix to the hot wax. Sometimes, the impression seal was erratic shapes but it take less time to preparation.  Good temperature control of the wax and the speed of production of the seal were important in order to achieve a fine impression**.**

## Shapes and Identification

In the medieval period there were different shapes for seals. The most popular shapes was the circular and the oval (With or without a pointed oval) although other shapes exist including triangle, square, oblong, diamond, hexagon, octagon and shield shaped. The ladies, high ranking ecclesiastics and members of the church preferred the vesica (oval shape), because this shape lent itself to the use of the standing figure for the design which was popular with both these groups. Royal, military and official seals were usually round on the obverse at least, as the reverse may have a different shaped impression.

The seal sizes range from approx. 1" to 6" (2.5 cm to 15.2 cm). Over the centuries the size of seals increased to 6". The privy (Secret) seals, personal seals, and ring or fob seals were generally smaller than general official seals. The Great Seal, which measured around 3 inches (7.6cm) in diameter in the Middle Ages, (e.g. that of William the Conqueror), is now 6 inches (15.2cm) in this century.

To authenticate the seal and to connect to the owner, the following methods were used below. The legend inscription would be placed on top from right to left starting at 12 O'clock and around the circumference. Some methods used double bands of writing with the legend written across the seal and more rarely legend would start at 6 o'clock. The legend related to the image, name and title of the owner or in monastics seals the name of the diocese, monastics, or building which the seal belonged was used. Before 12th century, Roman Capitals was common with the mottoes, verses or invocations written commonly in Latin but other languages exist including France, Spanish and England. After the 12th Century, Lombardic script and in the 14th Century Black Letter was common. At the end of the medieval period (around 16th century), Roman Capitals return as the norm.

For the Devices and designs, most nobleman used seals which depicted their arms which are place vertiile or inclined at a 45 degree angle call shield couché with beneath a large helm. Some portrait seal from the 11th century was popular with the head, head and shoulder, or full figure of the owner and sometimes a saint being represented. Some of the matrix cannot be dated because the matrix passed down the family line and some time slight alterations may have been carried out. [1,7,9]

## Material

The materials used for sealing wax different on various from one method to another. Beeswax was initially used to seal up to the 15th century but it would crack and peel off the surface. True sealing wax which was beeswax and resin, was used by the 16th century to make the seal impression sharper. Lac (shellac) was also used but it was in the 17th Century. Other materials was also used including leather, lead and silver and gold but they are not true seals but goldsmith's work. [9]

**Beeswax**

Beeswax is the product synthesised at less 2 species of bees that produce beeswax. The western honeybee Apis mellifera is the most important and widely used. It is native to Europe, Asia Minor and Africa. The Asiatic hive bee Apis cerana is native to Asia. It is a complex of hydrocarbons, esters, and free fatty acids.   Beeswax is harvested by removing the honey comb from the hive.  Then remove the wax capping from the honey comb and remove the honey.  The wax is broken up and washed either with boiling water or steam.  It removes the leftover honey, propolis, pollen insert remains and dropping. The beeswax will be plastic at $32^{o}$C and melt at $63\,^{o}$C  – $64\,^{o}$C.  Beeswax is quite resilient to general handling but it is brittle in low temperatures and the more you heat the wax, the higher the melting point temperature becomes. When the Beeswax cool, several days it remain plastic and could cause damage to the seal image. [9]

**True sealing wax**

The true sealing wax material was used at early as $16^{th}$ Century.  It was composed of beeswax and colophony, a resin from the pine tree which was added to natural wax to make the seal impression sharper[20]. (See Appendix i – Recipes - Sealing Wax) At the same time the wax both harden more quickly and to become brittle making the seal more susceptible to damage. [9]

**Lac (Shellac)**

The lac (shellac) was extract from the $17^{th}$ century account.  The shellac is the processed resinous secretions of the insect, *Tachardia lacca* native to India, Thailand, China and Burma and unprocessed resin which is the only known animal resin, all others being of vegetable origin.  The materials were available from the trade route to the East Indies. The recipe for Red Sealing has three ingredients but one now is hard to find.  The amount produced by the beetle is so small that 150,000 tachardia beetles are necessary to produce 1kg of shellac. It used to be produced by heating lac in a long muslin sleeve before an open hearth and filtering it through the muslin from which it was scraped and then stretched into wafer thin strips.  Once cooled, the lac was broken into small flakes. Today, shellac is mass produced using either solvents or heat. Shellac is a hard material with qualities of high mechanical strength, resistance to abrasion, elasticity, and good adhesion, all of which make it suitable for applied sealing.  It can be obtained in bead form or as sticks about 4 inches (10.2cm) in length, with or without a central wick which is lit to heat and melt the shellac so that it can be dropped on to the document. [9]

**Lead**

The lead was restricted only for the Papal documents and was never, as far as is known, used in England.  The lead sealing was used by the southern European countries because it will be less affected to warmer climate then other sealing materials but it susceptible to particular pollutants, such as some organic acids. [9]

**Other materials**

The other materials includes silver, gold and leather.  The silver and gold seals was restrictied for the monarchs.  Also, that was not a true sealing method, but are made of engraved metal.  The leather was probably wetting before stretching and then wax and the impression would be press in both the wax and the leather. [9]

**Colour**

The colour of the seals were used to denote the importance of the document in the Medieval period.  The wax at the time of its initial mixing adds the colour and not at the time of preparation for sealing because the higher temperatures were required for the mixing of the colour to the wax.  Then when sealing the wax, it is not molten but plastic and made the seal. There are two main colours beside natural colour was used, red and green.  The red (scarlet) wax was created by additional of vermillion and was use for diplomatic purposes.  The green obtained from verdigris and was used for grants documents.  The natural wax was used for Great Seals Sealing documents of routine business.  There were brown seals but it was originally green but it changed colour because of oxidation. On examination the centre of some of the 'brown' seals are found to be still green.  For economy measure, the two colours were sometimes used.  The large disc of natural wax may have a small central disc of coloured wax for the impression. Another economy measure is the seals were coated with varnish, painted or to prevent the further deterioration of the seals.  In times of mourning, seals were either painted or varnished black.  With Lac (Shellac), the seals as far as I know only have two colours scarlet and black and heated fully before use. [9]

## Storage

On completion seals were often placed in bags, or in boxes known as skippets, and were sometimes wrapped in a soft material, such as lambswool.  The attached document was folded around the seal and its enclosure and put into a document chest. The earliest type of storage was the bags and pouches.  The small pouch was made from vellum, leather, linen or even silk and sewn very crudely around the shape of the seal with the draw string around the top encircling the tag or cord that would be made just large enough to put the seal inside the bag.  By the later part of the medieval period, seal boxes or skippets replaced bags because bags were not really effective in protecting the seal.  Skippets would be a variety of sizes and shape for the seals to fit it with enough room to remove the seal from the box.  The materials including turned wood, bone, ivory and in later year, metal. The box provided simple and effective protection for the seal and reduced the danger of the seal breaking.  A single-sided matrix was sometimes applied to wax that had already been poured into a skippet. Some of the skippets, both the seal and the document were inside the box. For the Modern storage methods, the original skippets from the earlier storage century are similar to the skippets today.[9]

## Damage and Deterioration

There are different ways of the seal matrix and the wax seal can get damaged and deterioration including physical damage, biological damage and chemical damage.

There are different ways to have physical damage to the seal, the matrix and/or the document with the seal attached.  Poor storage, bad handling and not sufficiently protected in the skippet movement causes severe damage.  Brittle seals for the wax and resin mixtures could lead to chipping and fracturing.  The wax surface of the seals can have dust and dirt cause the damage of the impression.  The overheating of the wax can change the plasticity and making it brittle for the initial formation and/or repair of the seals.  For the tags on the documents can caused by poor handling, torn away from the document and/or the seals and the wax did not adhere well to paper or parchment means that the earlier, unprotected applied seals are rare; if found they are usually in small pieces.

The biological damage including some seals suffer from a form of desiccation, leaving them in a state of decay which are not treated, the wax continues to break down with the loss of both the impression and the actual body of the seal. There have been many suggestions for the cause of desiccation: in the early 20th century it was thought that it might be due to fungal attack, resulting in the loss of free fatty acids, the plasticisers, acids and alchohols. Another possibility is that the damage is caused by micro-organisms feeding on the small amounts of proteins found in wax seals.

The chemical damage is lime, which is used in the manufacture and cleaning of parchment and vellum, could be a factor in the desiccation of wax.  The bags in which seals were kept were generally made of parchment or vellum, as were the documents to which the seals were attached; each of these would have been treated with lime and may have caused the wax to dry out.[9]

**Appendix i – Recipes**

**Soot Ink**

Ingredients
Egg White
Soot
Honey

Procedure
Take a quantity of egg white and mix it with the soot.  Then add a quantity of honey and mix until it is smooth like paste.  The Soot Ink is ready to use. [15]

**Carbon Ink**

Ingredients
Soot
Gum Arabic
Water

Procedure
Mix Soot and Gum with water until it is smooth.  The ink will be very black and it simply adhered to the surface of the page rather than bonding into it.  Carbon ink was used in early printed books.[19]

**Oak Gall Ink**

Ingredients
Oak Galls
Vitriol (Iron Sulphate)
Gum Arabic
Water, Wine or Vinegar

Procedure

The Medieval Recipe in the 15th Century says take Oak Gall and break it up.  Put it in a pot and add Gum Arabic, vitriol (Iron sulphate) and either water, Wine or Vinegar. Stirring the liquid often.  After about two weeks it is ready to use.

In the Middle of the 12th Century, there is a recipe for Oak gall ink and it was the ink of choice because the ingredients was inexpensive and readily available.  Used in a quill, reed pen and/or brush, it was very popular with artist and scribes.  The colour was from the deep blue-black to the brownish.  It can be found in Logs, Official Document, Drawings, Manuscripts, Maps, etc. [17, 18, 19]

**Walnut Ink**

Ingredients
20 Walnuts
enough water to cover them
1 1/2 tablespoons Vinegar
1 1/2  tablespoons Gum Arabic.

Procedure
Gather the walnuts and crack it with the hammer.  Put the walnuts into a iron pot and simmer at low heat for approximately 2 hours or longer if necessary.  Stir the liquid often.  If the level of water is low, add more water.  Remove from heat and pour the liquid thru a strain into another container.  Dump the walnut pieces and clean the iron pot.  Pour the container of liquid back into the iron pot and simmer.  Add the vinegar and Gum Arabic.  Stir. Continue simmer until the liquid is reduce in half.  Strain it through a filter into a bottle. Now you have Walnut Ink.[12, 13, 14]

Note: Period Walnut Ink right now does not exist in any Period Documents in Europe.  I have look thru different documents and on the web and found Oak Gall Ink, Soot Ink, Carbon Ink and so on but no Walnut Ink.  Some people think European Walnut which contain less tannin compare with North American Walnut and that is why you cannot make European Walnut ink.  I found recipes that use North American Walnut production to make ink.  After conversations with several art historians, and reenactors and I am assured that European Walnut ink, right now, does not exist in the Middle Ages but you can use the North American Walnut Ink because it look and feels closer to period ink.

**Sealing Wax**

The common colours of the sealing wax in the Middle Ages were Black, Scarlet, Green, Red and Natural.  Before about the 16th Century, they use to seal the matrix with beeswax.  In around the 16th century a true sealing wax was composed of beeswax and resin was added to the beeswax and it has the seal impression sharper.  The seal wax was both harden more quickly and to become brittle making the seal more susceptible to damage.  The resin is from a Pine tree sap.  One way is wait for spring and you cut the bark of the Pine tree and the sap will slowly come out and you collect it.  The other way is to cut the tree and hot it in a pot on the fire and the sap will drip at the bottom of the pot.  If you put holes in the pot and have a funnel, and another pot not on the fire, the sap will drip thru the holing pot, into the Funnel and drop into the other pot. Some of the ingredients are restricted and/or hard to find.  Here is some recipes below with the colour that you can find at the artist store.[9]

Black Sealing Wax
¾ lb resin,
¼ lb Ivory Black artist's pigment
2 oz beeswax.
Melt over a slow fire and form into sticks by rolling on a piece of glass.

Red Sealing Wax
¾ lb resin,
¼ lb venetian red artist's pigment
2 oz beeswax.
Melt over a slow fire and form into sticks by rolling on a piece of glass.

Green Sealing Wax
¾ lb resin,
¼ lb verdigris artist's pigment
2 oz beeswax.
Melt over a slow fire and form into sticks by rolling on a piece of glass.

Natural Sealing Wax
1 lb resin,
2 oz beeswax.
Melt over a slow fire and form into sticks by rolling on a piece of glass.

**Cutting the Quill**

With a sharp knife and lots of patient and practice. You can make a quill.  Select the feather in the first five flight feathers from Goose, Swan, or Peacock. Soak the feather in hot water until it is soft and then harden it by pushing it into hot sand.



Figure 8: Remove the Feather

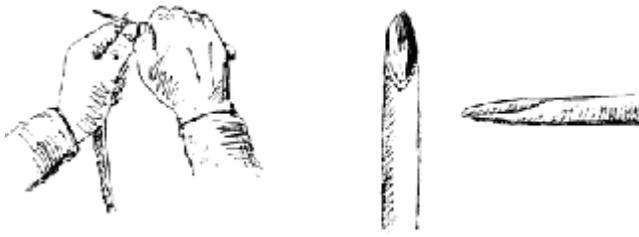Then shorten the plume and remove away the barb.

Figure 9: Cutting Feather

Then cut away the tip of the barrel at a steep angle and then remove the membrane from inside the feather.

Figure 10: slit the top center of the barrel
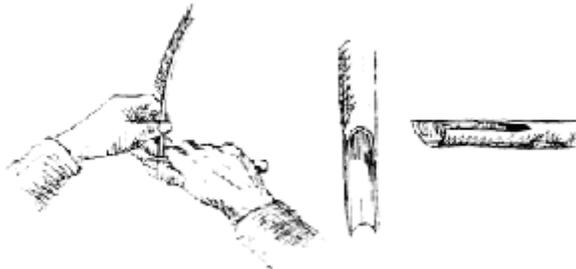
Make a slit in the top center of the barrel.

Figure 11: Scoop the barrel

Slice a scoop from the underside of the pen, to about half its diameter, and centered on the slit.
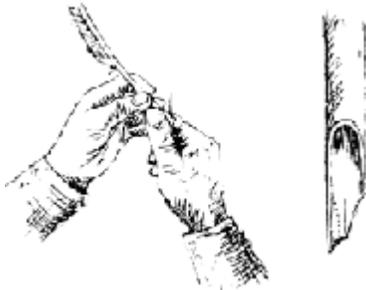
Figure 12: Shape the nib

Shape the nib on both side of the slit so it will ma

Figure 13: scrape the inside nib flat

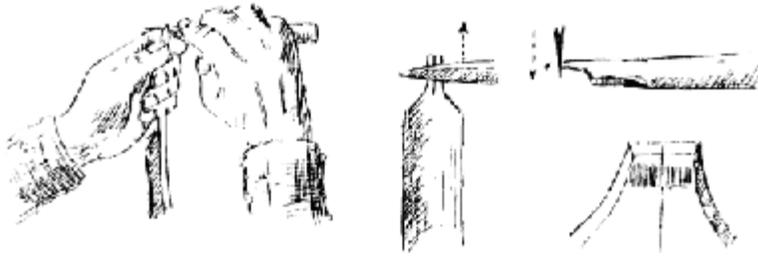If the underside of the nib is too concave, scrape the inside nib flat.

Figure 14: Cut the nib to create the quill

To "nib" the pen, rest the underside of the point on a smooth, hard surface. Thin the tip from the top side by 'scraping' the blade forward at a shallow angle; then make a vertical cut, either at right angles to the slit or obliquely. On a very strong feather the last cut can be repeated to remove a very fine sliver, avoiding a rough underside on the tip of the nib.[16]

### Appendix ii – Endnotes

1. Seal Matrix And Intaglio By Twinned With Midwest Historical Research Society USA
2. Richard III's Seals By John Ashdown-Hill
3. An Introduction To Medieval Seals By John Ashdown-Hill
4. York, 21-33 Aldwark Seal Matrix By Nicola Rogers
5. Seal Matrix By Museum Of London
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## <u>Appendix iii – Figure Note</u>

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