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Grinding Your Own Nibs - Ludwig Tan

I enjoy the contact with other pen enthusiasts. Through correspondence with Ludwig Tan I am pleased to share with you his article on Grinding Your Own Nibs.

It confirms for me that grinding nibs is not something I will take up, but it is an interesting article and brings to mind the skill associated with fountain pens. May we all hope this skills are not totally lost.

The article was published in the journal of the Society for Italic Handwriting, Writing Matters, autumn 2000 & Spring 2001.

Few italic writers will have abandoned their quest for the perfect pen – their 'Holy Grail', as Graham Last aptly calls it (Writing Matters, No.1). Despite being a fountain pen enthusiast myself, I have yet to encounter this elusive instrument of perfection: a pen that is a delight to behold, writes flawlessly, has a pleasant writing feel, and transforms one's handwriting for the better – a pen that is an extension of the hand, rather than an

In this article – which will be necessarily lengthy and detailed – I shall describe how monoline (round-pointed) nibs can be ground for Italic use, thereby overcoming some of the limitations of manufacturers' products. I hope to show what an amateur such as myself, without professional experience with pens, is able to achieve following a simple procedure and using some easily obtainable tools.

Why grind your own nib?

Grinding a nib allows you to customize it to your own specifications and liking, making the most of what is available to you. Fountain pens with Italic options are a decided minority, and the situation is likely to worsen: the recent demise of the calligrapher's old friend, Osmiroid, is a grim reminder that the

The main purpose of this article is, therefore, to demonstrate an increasingly useful survival skill for the Italic enthusiast: creating an Italic nib from a monoline one, following a six-step procedure. By following three of the steps individually, one can also grind a broad nib down to a finer size, creates an

Choosing a fountain pen - what is available?

There are two main types of fountain pen nibs: those which are not tipped. and those which are tipped with a hard-wearing metal (usually iridium). Most inexpensive fountain pens fall into the first category. Without an iridium tip they do not last long and may have to be sharpened frequently, particularly if one has a heavy writing pressure. Pens with un-tipped Italic nibs include Manuscript, and the calligraphy ranges by Pilot, Parker, Sheaffer, Rotring (literally 'red ring'), and

If you decide to buy either pen to grind yourself, imagine a line running across the widest point of the tip and assess for yourself whether an Italic nib of that width is sufficient. If it is not, ask to get the nib changed to a broader grade. If you normally use a fine or extra-fine Italic nib, the standard medium monoline should suffice; but if you prefer a medium or broad Italic, try to get a broad or very broad nib. Remember that when you grind an Italic nib from a monoline

(literally "red ring"), and Lamy.

Pens with tipped Italic nibs are more costly. These nibs are made of steel, gold plated steel, or solid gold (14 or 18K), and generally tipped with iridium. Whether a nib is made of steel or gold makes little, if any, difference to writing performance. Where the difference lies is writing feel: steel nibs are generally rigid, while gold nibs can either be flexible (e.g., Parker Sonnet, '75') or rigid (Parker Duofold, '51'). Some writers prefer flexible nibs; I favour rigid nibs as they tend to produce a cleaner, more defined writing line, and their ink flow is likely to be more consistent. Two manufacturers which cater

Italic nib from a monoline, you generally end up with a nib one size smaller. However, left-handers will find that grinding oblique nibs from standard ones gives them at least the same width as the monoline – a rare instance where pens work to the left-handler's favour! The Parker's iridium tip is longer and wider than the Sheaffer's, and will actually yield a medium (or broad-ish fine) Italic – it is therefore the obvious choice for writers favouring a broader writing point, especially if a broad nib cannot be obtained for either pen.

You may wish to try grinding these pens only after you have gained

GRINDING YOUR NIB

most model ranges from the Triumph Imperial upwards, but these in my experience are often imprecisely ground. Parker used to have Italic nibs for most model ranges but this is true now only of its flagship, the Duofold, whereas the Sonnet has a stub nib option. (Technically, a stub nib is like an Italic, but with a less

inexpensive pen. For L.K. members I recommend Woolworth's Standard Cartridge Pen, or W.H. Smith's Graduate Pen, both have iridium points and cost £2.99. If you are buying other pens, make sure that these have genuine tips, not ones that have been pinched into shape from the same sheet of steel forming the nib.

We can now undertake the task of grinding a nib. These are some things you will need:

- Suitable fountain pen
- Grindstone (such as Rotring Arkansas stone)
- Crocus paper (or emery paper, grade 8/0)
- Powerful magnifying glass (but preferably a jeweler's 10 or 20×

The Arkansas stone is used for the initial, rougher grinding, and the crocus paper (or emery paper) for smoothing and polishing. These are available from artists' or hardware shops, or from Penmandirect at 1 Towneley Road West, Longridge, Lancashire PR3 3AB; tel./fax: 01772-784 444. A cutting mat will help to hold the Arkansas stone in place when grinding, and

Preparing the pen

If you are working on a pen that has been filled with ink, expel the ink, soak the nib to remove any excess ink and ink sediments (which fill the inner recesses of the feed and collector), and allow the pen to dry. It is preferable to work on the pen with the nib fitted onto the barrel, but with the cap left off, as this will give you better control when grinding.

Before proceeding to grind your nib, do bear this important point in mind: always grind your nib little by little, because what you have taken away, you cannot put back. The key – especially during the 'decisive' stages of grinding which will determine how your new nib will write – is to stop and check your progress after every two or three strokes on the

Understanding the shape of an Italic nib

quality and lasting, but affordable pens, the Parker Frontier and the Sheaffer Triumph Imperial. The

the nib and bleed off any excess ink along the inner mouth of the bottle. You

subdued light as you will have to inspect your efforts from time to time.

The object of grinding your nib is to end up with a chisel. Looking from the side, your Italic nib should look as in Fig. la (not strictly a chisel) or 1b:

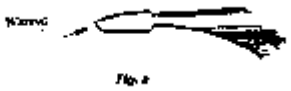

Fig. 1b is more difficult to grind but will produce finer hairlines and continue to write sharply for longer. Calligraphers often sharpen dip-nibs before use to achieve a maximum thick-thin contrast; this can also be done with fountain pens when their nibs become blunt. This process will be described later (as Step 5). A nib ground as in Fig. 1b writes more sharply because the angled edge means that a smaller area of the nib is in contact with the paper. Conversely, it would be wrong to grind the nib as below because too much of the edge is in contact with the paper, resulting in unsatisfactory hairlines:

LEFT-OBLIQUE ITALIC
Fig. 3a

STRAIGHT ITALIC
Fig. 3b

RIGHT-OBLIQUE ITALIC
Fig. 3c

Looking down upon your nib, your pen should have a flat (not rounded) writing edge, which can be straight, or left- or right-oblique:

A left-oblique nib is used by left-handers who write with the hand below the writing line. A straight nib is used by right-handers, as well as left-handers writing with the hand above the writing line. A right-oblique may be preferred by writers who find that a straight nib does not suit their hand; many vintage pens and some older dip-nibs for calligraphy are cut slightly right-oblique.

STEP 1: FLATTENING THE BASE OF THE

STEP I: FLATTENING THE BASE OF THE NIB

The first step is to flatten the base of the tip. We wish to take away the shaded area below:

Fig. 4

The base should be ground as horizontally as possible, not at an angle, because a horizontal base minimizes contact with the paper, giving a sharper hairline:

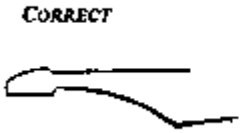

Fig. 5a

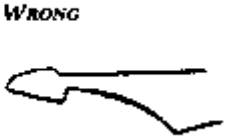

Fig. 5b

Place the Arkansas stone flat on the cutting mat, and align it to one edge. Hold the pen with your palm facing downwards, and with the base of the nib's tip resting on the Arkansas stone. Press upon the top of the nib section with your forefinger to apply pressure while grinding. Begin grinding the base with short left-to-right motions, with only your elbow resting on the table and acting as a pivot of movement. The following illustrates this from your point of view:

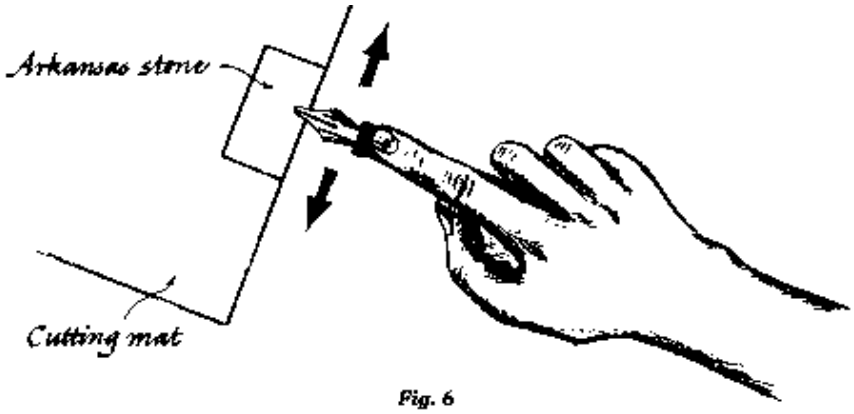

Fig. 6

Grinding with short strokes makes it easier to keep the pen at a constant angle. In the beginning you may use a moderate to heavy pressure to flatten the base. but as you get to the 'decisive stage' of the grinding, when the nib is assuming its final shape, you should release your pressure to a light to moderate pressure to avoid over-grinding it. At this stage it \would help to apply a drop of water on the Arkansas stone to act as a lubricant (or, simply dip the nib in water)

act as a lubricant (or, simply dip the nib in water).

When you have reached (as your unaided eye suggests) the end of this grinding process, rinse the nib in water to get rid of any metal shavings, and wipe it dry with the serviette. Placing the nib against a light background, and with the tip of the nib illuminated by the table-lamp, use your magnifying glass (avoid staring into the lamp) to check that the base is completely flat, and not wavy. If the nib is unsatisfactory, repeat the grinding process as above.

There are two good reasons for avoiding excessively heavy grinding pressure. One is the danger of breaking the iridium tip off from the nib, a very real risk if you are working on an older pen. The other is that the tines of the nib will flex under heavy pressure, resulting in a wavy, uneven base. This most seriously affects highly flexible gold nibs, but the rigid steel nibs of the Parker and Sheaffer are rather less susceptible. Nevertheless, a lighter pressure is always well advised since the changes to your nib will come about more gradually, and costly mistakes brought about by enthusiastic over-grinding can be avoided.

STEP 2: FLATENING THE TOP

Fig. 7

This is performed in exactly the same way as in Step 1 above, except of course that the pen is now facing downwards upon the grinding surface. As the top gets flatter, continue grinding it at a slight angle towards the writing edge. Your nib should look thus:

STEP 3: FLATTENING THE WRITING EDGE (OR, ACHIEVING, OR CHANGING, AN OBLIQUE ANGLE)

The object of this step is to wear down the rounded protrusion, shown as

protrusion, shown as the shaded area in Fig. 8a below, to achieve a square tip or writing edge as in 8b:

Fig. 8a Fig. 8b

This is the trickiest step of the grinding because of the difficulty in keeping the pen upright and at a constant angle to the Arkansas stone. Hold the pen upright with your thumb, forefinger and middle finger, with your wrist resting (on the table, but again with your elbow – as the pivot of movement. Grind only in one direction – that of a broad down stroke – using light to moderate pressure, applying a drop of water on the Arkansas stone to smooth the action. If the top of the nib faces you, then you will be grinding with the pen moving away from you. The pen should be held completely vertically if you are grinding a straight Italic, but at an appropriate angle to achieve an oblique edge:

LEFT-OBLIQUE ITALIC Fig. 9a STRAIGHT ITALIC Fig. 9b RIGHT-OBLIQUE ITALIC Fig. 9c

As in Steps 1 and 2, release the pressure when you find that you are getting your desired edge. The time to stop is when you have both tines perfectly straight and aligned, and the writing edge has met both the flattened top and base to create a square chisel. Check the result with the magnifying glass, after having rinsed and wiped the nib. Ensure that the corners are square, not rounded:

Fig. 10a Fig. 10b

You have now finally created your chisel edge and your nib has a generally Italic I, form. After inking your nib, try \writing on the progress sheet, beginning with crosses and zig-zags, then whole words. Your nib will be very scratchy, especially on upstrokes, and you should use only a very light writing pressure to avoid pulling fibers out from the paper and jamming the nib. Check that the writing line is clean and consistent (not jagged at the sides), and that the nib is writing at an angle suitable to your hand

(i.e., straight or oblique). You will now have a fairly good idea of how the finished nib will write. However, if you find the nib too broad, you can grind it to a finer width following Step 4 below.

STEP 4 (OPTIONAL): GRINDING A NIB DOWN TO A FINER WIDTH

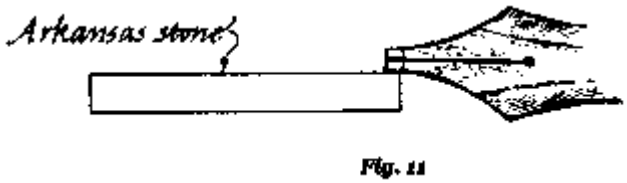

Fig. 11

A nib can be made finer by grinding down both sides of the nib. The pen should be held as in Steps 1 and 2, but with the nib now resting on its side on the Arkansas stone:

As in Step 3, grind the nib in the direction of a down stroke. Use roughly the same pressure and number of strokes for either side of the nib. After every few strokes, ink your nib and writing a few words to check that the width is correct.

Having now ground your nib to an ideal width, you will probably wish to sharpen your nib further to ensure that it writes sharply for longer, following Step 5 below. However, this process is not strictly necessary and you can choose to do so only when your nib gets blunt, or when you have gained confidence and experience in grinding your own nibs.

STEP 5 (OPTIONAL): SHARPENING THE CHISEL POINT (OR, SHARPENING A BLUNT NIB)

This is done by holding the pen at a constant angle of approximately 30 degrees. from the horizontal and with the nib facing downwards, and dragging the pen along the Arkansas stone in long strokes. You should begin grinding with moderate pressure. As the grinding nears completion, however, use a light pressure.

This is

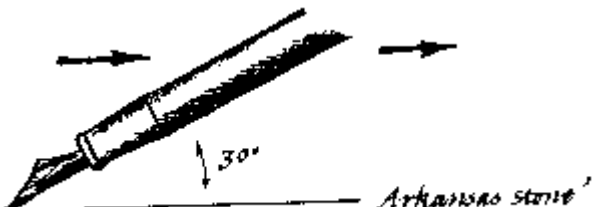

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Fig. 12

admittedly a very delicate process as it is extremely difficult to grind both tines equally, thus making a light grinding pressure necessary when the nib is taking shape. Check your results with the magnifying glass after every two or three strokes. You should end up with a sharpened chisel, as follows:

Fig. 13

Your nib is now almost ready for writing. But first its rough edges will have to be polished off before it becomes smooth enough for everyday use.

STEP 6: POLISHING/SMOOTHING YOUR NIB

Having flattened each side of your nib and sharpened the chisel, your nib will have many sharp edges that cut into the paper and pull fibers out from it. Smoothing the nib is an extremely delicate and sensitive process, requiring a gentle touch and the use of crocus or emery paper. Indeed, the pressure you should use is as light as could be: the weight of the pen itself, with your hand guiding it along and applying very light pressure. The purpose of smoothing is not to make vast changes to the writing

The first task is to smooth both corners of the nib. This is done by dragging the I nib on its side and on each tine, beginning with the pen almost horizontal to the crocus paper and gradually pulling it upright, applying light pressure as it I rounds the corner. The left and right tines should be ground equally. Guard against excessive grinding, which will result in your nib becoming finer than you desire.

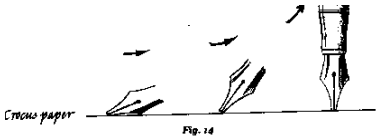

Fig. 14

line: heavy-handed and excessive smoothing will dull the nib's currently superb thick-thin definition. Some of this definition will inevitably be lost through smoothing, but using very light pressure can minimize this. It is up to the writer to choose a satisfactory compromise between thick-thin contrast and smoothness of writing - some writers prefer a sharper contrast, while others (especially those who write heavily or rapidly) favour a pen that glides effortlessly across the paper.

The next task is to smooth the chisel edge. Holding the pen as horizontally to the crocus paper as possible, and with the nib facing upwards and resting flat on the crocus paper, pull the pen gradually upright. Some very light pressure may be useful when the pen is upright:

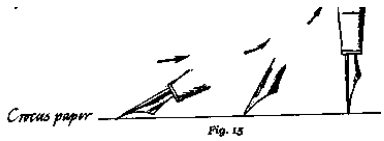

Fig. 15

Next, repeat the above, but now with the nib facing downwards:

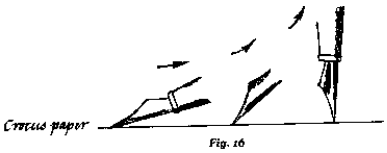

Fig. 16

Now, you should round off each corner of the bottom writing edge by placing the pen on each corner, and making a few very light sweeping motions on the crocus paper, each time moving in a different direction. This is difficult to illustrate accurately but the following figures will show the difference between an undesirable sharp corner (Fig. 17a) and the desired smoothed one (Fig. 17b):

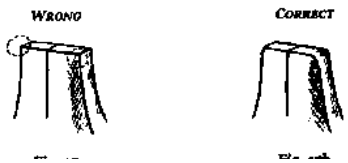

Fig. 17a Fig. 17b

Your pen is now very nearly ready for writing, having undergone the preliminary stage of smoothing to remove the most offending rough edges. Using the razor blade, clear away any metal shavings that may have become lodged in the slit between the tines. (You are strongly advised to skip this step if you find it too risky.) Carefully introduce the razor blade at an angle into the slit, from the top of the nib (not the bottom writing edge as even more roughness will result), guide it slowly downwards, then upwards, and slide it out gently:

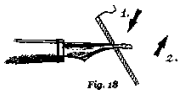

Fig. 18

Rinse the nib in water and dry it on the serviette, then ink the nib, taking care to remove any excess ink. Now write a few words on your progress sheet with the pen. You will notice that the nib is very much smoother than before.

However, you will wish to remove any minor roughness that remains. This is the second stage of smoothing, in effect a 'trouble-shooting' stage where you will be writing

with your pen in different directions and held at different angles, alternating

NOTES

After any of Steps 3-5, you must smooth your nib via Step 6.

I am grateful to Mr Leong Khoon Kinfor introducing to me this invaluable skill, and for his guidance. I also thank fellow Italic enthusiasts for whom I have ground nibs for their helpful and encouraging feedback.

Any feedback, suggestions and advice will be most gratefully received.

Please write either to Writing Matters, or to me at: Ludwig A.-K. Tan, Emmanuel College, Cambridge CB23AP, U.K.; E-mail: italicist@yahoo.com

much larger than normal as this would help to magnify) - the trouble spots. You will find the pushed broad strokes producing some roughness, especially the tails of such letters as f and g. In fact you should choose test words containing these elements. My favourite is Pfingsten, meaning 'Whitsun' in German, which I write in minuscule's and with exaggerated descenders and an overhead ligature between sand t. Other test words are suggested below:

Fig. 19

Other useful test patterns include an upright figure-