

Standards of Excellence Seminar  
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Titling by Hand

Including a title on the book is not just something that identifies the book. It is an acknowledgement of the many hands, mind, eyes, workshops, manufacturers, and others that went into the creation of the book. For me, this is important to bear in mind while designing and binding a book.

There are many ways to put a title onto a book, and within the confines of this presentation, we will be focusing on using finishing tools, both type holders and handle letters, using shellac glaire and gold leaf. The processes of titling are the same as with any other kind of tooling, though it has its own nuances and challenges.

Posture and positioning of the body are among of the most important aspects of tooling, as it affects both body and mind in your approach. Stand with your hips square to the edge of your bench, and tool with a type-holder on a perpendicular angle to the edge of the bench (and this is the same with line tools). Once this is practiced and implemented, your lines of type will be much easier to keep parallel to each other and will neither be climbing nor falling (unless this is an intended aspect of the design).

The other most crucial skill achieved in finishing is to be able to go back into an impression multiple times without straying outside of it. Learning this level of touch takes time and effort, but if you are able to do this, you will be successful in your tooling. If your blind-tooled impression is not executed well, it is more than likely that your gilded impression will not be successful.

This handout is meant to be thorough, but not exhaustive.

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Finishing tools are made of brass or bronze, with shanks set into wooden handles, and used to impress their design onto a book for a decorative purpose. For this presentation we will be focusing on proficiency with gold tooling titles on leather. Different finishing tools have different surface areas, and what is significant about this is the correlation between surface area and pressure needed to make your impression (e.g. you wouldn't want to use the same pressure for a dot as you would for a 30 square millimeter decorative tool as it would make a hole in your leather and go through some of the board; and the same is true for larger and smaller type, pieces of line, etc.).

**Handle Letters:** Handle letters effectively single decorative tools, where you make an impression downward and rock in all directions, working it so that the impression is of equal depth both in itself and with relation to all other tooling on the book. You do not want to rock the tool to sharp points, since this can dig in too deep, so when tooling a letter or tool with points, you'll rock the tool to the long sides.

**Type:** Type is used with individual letters in a type-holder set with or without spacers and allows you to tool an entire line of type in one go. You can also use type in a single piece type-holder to use letters like handle letters, which makes them versatile, but the sightlines aren't as nice as handle letters and swapping out each letter is time-consuming.

When choosing a typeface for your book, select one that works well with the content and style of the book. The main typefaces in my shop are Goudy Old Style which has serifs and Gill Sans which is sans serif; Goudy is a bit more traditional and formal while Gill Sans is more modern.

-Printer's type is lead and is not suitable for gold tooling as it doesn't give the polished reflection when gilt. It also runs the risk of being melted compared to brass or bronze. If it *is* to be used, it is

best to first heat the type-holder to just below a sizzle, set the type, tighten the screw, re-heat the type-holder, tool immediately, and leave the type-holder off of the stove.

-Brass or bronze type is the ideal type for titling in all cases. They hold the heat well, give a polished impression, and work with blind tooling, using metal leaf, or with foils.

-English type is flush at the top of the letter and is sighted from the top. French type is flush at the bottom and is sighted from the bottom.

**Type Holder:** A type-holder is a tool that keeps letters together and aligned for titling. There are many different kinds, but the goal is the same with each. Do not over-tighten the screws, as the metal will expand as it is heated. So-called “Super-Rapid” type-holders, while well-intentioned, are usually more of a hindrance than helpful since the sheer weight of the tool is something you must fight against.

**Gouges:** Gouges are curved pieces of line that are used by themselves or with pallets to make up complex lines, sighted down the inside of the curve.

**Pallets:** Line pallets are pieces of straight lines of various lengths used by themselves or with gouges to make up complex lines. Sight from the flat side.

**Lettering piece:** A lettering piece is different from a label. A label is a piece of leather that has been stamped off the book, often in a stamping press such as a KwikPrint or Kensol, but can also be tooled by hand, is then glued out and then applied. A lettering piece is a thin onlay of leather that has been pasted to the book, left to dry, and then tooled directly on the book, which gives a much cleaner, crisper result than a label.

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## Finishing

The four material factors that you will have to be mindful of are:

**Heat** of the tool, gauged by the sizzle of the cooling pad after removing the tool from the stove.

**Moisture** of the leather, which has two main factors: the amount of moisture added by sponge or cotton and the relative humidity of the room.

**Pressure**, the force used in each tooling impression.

**Dwell time**, which is the amount of time the tool is in the impression (with shellac glaire your dwell time should be short).

Secondary factors are physiological and psychological:

**Practice** The most important piece of advice that anyone can give about finishing.

**Confidence** shows in the results. Work up your confidence through practice. And when in doubt, fake it.

**Remain Calm** While you are tooling, make sure you are calm and collected, as agitation will show in the results. When you make a mistake, don't panic. Relax, step back, and approach the problem with a clear head.

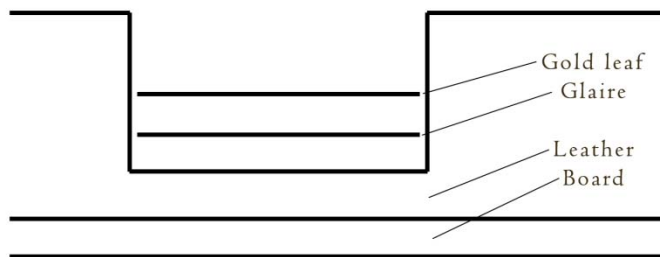
**Focus** Especially when you are building your skills, block out any peripheral distractions.

## Understanding the impression:

“Blind tooling” is making an impression with a tool into leather which you can build up in stages to make the impression permanent or tool directly with a heated tool on dampened leather.

For the tooling we are covering here, once that blind impression has been built up, glaire is applied to the bottom of the impression, allowed to dry, a second coat applied and allowed to dry, then tool with gold that has been picked up on the tool. You can also lay the leaf on the book and tool through it.

Here is a simplified cross-section of an impression. The impression should be well defined and shallow enough so that the light will reflect off it and not get lost in the walls of the impression. You want the glaire to sit at the bottom of the impression, which is where you want the gold to be, not on the walls and especially not outside the impression; if the gold sticks to the walls of the impression, your gilding can look fuzzy or look wider than intended, making the gilding read as an inconsistent thickness.



**Sighting:** I fall into the “English sighting” category, which has one standing and positioned over the tool. I prefer this over the “French sighting” which is done seated with the tool in front of you primarily because when standing, it is easier to use one’s body weight for pressure and alleviating the strain on the arms and wrists. Pallets are made with one flat side and one beveled side. The flat side allows for visibility, and is the side you will sight with, looking down at the left side of the tool (for a right-handed person). You should be able to see where you are tooling, and you want to keep in mind what is behind where you are tooling, where you are tooling, and where you will be tooling. One thing that ought to be mentioned is that once you have made the initial impression and it is where it should be, touch is just as important as sight—making sure that you feel the tool in the impression as you are tooling. When tooling a line next to the board edge, I always work clockwise, using the board edge as reference.

To sight a decorative tool or handle letter, your line of sight is over the top of the tool in the “English” style of sighting. Decorative tools generally have a nick in the shank of the tool to be used when going back into that impression, making sure the tool is pointing the same way it was for previous impressions. I use my left thumb to guide the tool when making an impression—a leather thumb cover can be helpful for this which can be made from a piece of leather and tape, or just the thumb cut off a leather glove, but over time you can build a tolerance. Gouges are sighted looking at the inside of the curve.

**Lighting:** Having correct lighting is critical when marking up and tooling. I generally have two task lights, a strong and bright light on my left and a weaker light on my right, but proper sunlight along with one task light pointed towards the sighting side of the tool works quite well. After gold is in the impression, the absence of light can be just as useful in seeing where you are going. Preferences for lighting will develop for you over the course of time and practice.

## Tools and Materials:

**Leather:** For this presentation, I am primarily using Harmatan vegetable-tanned goatskin leather and Russel's Oasis veg-tanned goatskin leather. Different leathers tool differently, and even different parts of the same skin can accept tooling differently. You want a leather that readily accept moisture and take gold well. When preparing for tooling a binding, always make a plaquette to see how the leather tools. Different thicknesses of leather will also tool differently, so it is worth spending time practicing using different thicknesses of leather. Polishing your leather before tooling will give you a nice, smooth, and compact surface which tools very well; your own preferences will develop with experience.

**Egg Glaire:** We won't be using egg glaire here, but it is an important part of gold-tooling. It is a heat-activated gilding size made of egg whites. Recipe: for each egg white, use one half-eggshell-full of vinegar (this keeps the proportions correct regardless of the size of the egg). Discard the yolk (or use it for culinary or craft purposes). Stir up the egg-white and vinegar vigorously with a fork or whisk and leave out for the night. The next day, strain the mixture and it is ready to use. If the humidity levels are too low, one drop of glycerin can be added per egg white. This will keep for a week or more, and I store it in the refrigerator.

**Shellac glaire:** A blonde shellac based synthetic glaire, which is heat activated. It was developed and popularized because of a shortage of eggs during the Second World War.

Recipe (slightly adapted from a recipe I got from Jeff Altepeter, which I believe was found and shared by Peter Geraty): 10 grams Borax, 30 grams blonde shellac flakes (I use #60450 shellac, very light, from Kremer pigments), and 250 mL distilled water. Dissolve the borax in nearly boiling water. Then sprinkle in the shellac and stir frequently under low heat until completely dissolved. While you do not want a rolling boil, a few "blubs" coming up from the bottom lets you know there is sufficient heat to help the shellac dissolve. After it has dissolved completely, let it sit overnight and then strain through a coffee filter. I would suggest getting a small pot to be used specifically for this purpose. Store your glaire in a cool, dark place. This will keep for years, if it becomes cloudy you can strain it through a coffee filter.

**Rapidograph pen:** For applying glaire to the leather we are using a Koh-I-Noor Rapidograph pen. I tend to keep a #1 (.50) and a #2 (.60) on hand, with the #1 being used for type and thinner lines and type, the #2 for wider areas. Use a light touch in applying the shellac glaire. Remember to clean your pen regularly to avoid clogging, flushing it several times with water or 50/50 isopropyl alcohol and distilled water after extended use, and if you will not be using it for a long period of time, fill it with distilled water instead of glaire so it won't clog up. Routine maintenance that can help lengthen the life of your pen: you can disassemble it completely and soak the parts in 50/50 isopropyl alcohol and distilled water overnight, and flush it many times with the cleaning bulb and the 50/50 solution the next day. I do this every two months, but see how things go in the environment you work in.

**Applying size:** "Glairing in" with the Rapidograph pen is my preferred method of applying size when using a shellac glaire. When drawing in the glaire, you don't want to get excess glaire on the walls of the impression, and you want to get no glaire at all where there will be no gold. You can also use a very fine watercolor brush and dip it into your glaire jar frequently to reload the brush.

The contact of the Rapidograph nib with the leather is what lets the glaire flow, and you do not need much pressure to make this happen. Do not work too fast or you can give an insufficient coat or scratch the leather or previous coat of glaire, and working too slowly can get too much glaire on the walls. Using excessive pressure will cause leather particles to work their way into the nib and clog it. When applying your second coat, use an exceptionally light touch so that the glaire from the previous coat does not clog the nib.

**Gold leaf:** Leaf for tooling is almost always an alloy, as 24K gold is more difficult to handle. Unless the tarnishing is intentional for the design, I don't use anything less than 22K since it is possible for it to tarnish. I will be using Manetti 23.5K Dukaten Double XX gold leaf.

Handling gold leaf is a skill that is developed over time. There are two ways that I was taught:

The first is a bit more approachable if you do not have experience with leaf. Open your book to a new leaf and carefully flip the book over and gently roll the leaf onto the gold cushion, press down on it lightly, and slowly lift the book up, which should leave your leaf on the gold cushion; then very carefully, close the book and set it down gently so as to not ruffle the book and disturb the remaining gold in the book. With your mouth a few inches directly over the leaf, make a "puh" sound to flatten the gold on the cushion. Close the gold book gently.

The second way, which I use, is as follows. Open the gold book to a new leaf. Gently tap the clean gold knife in front of it so that the air disturbance causes the gold to fold over on itself. Place your gold knife where the folded over part *was* and lightly blow the leaf so that it is back in its original position, just with the knife under part of it. Gently pick the gold leaf up from the booklet and transfer it to the gold cushion and rotate the blade of the gold knife out from underneath the leaf. With your mouth a few inches directly over the leaf, make a "puh" sound to flatten the gold on the cushion. Close the gold book gently.

**Gold knife:** The two factors about maintaining a gold knife that must always be observed are: (1) the gold knife must not have any grease or oil on it, and (2) it must always have a sharp edge. Never touch your gold knife's blade, as this will deposit oil on it which will grab the gold. Whenever your gold knife is sharpened or oil is detected, clean it off with a cotton ball with lighter fluid. Also, rub it on the pumiced gold cushion often. You want your gold knife sharp enough to break the leaf into smaller pieces, but not so sharp that it cuts through the suede of the gold cushion—a sharpening steel is a great tool for maintaining an edge, but I like to sharpen initially on a slack belt to give a convex, or "apple seed" edge.

**Gold cushion:** A 12" x 7" (or so) piece of plywood, with a 1cm thick stack of paper on top of it (cut just smaller than the length and width), which is then wrapped with a piece of suede, adhering it only to the sides and bottom of the wooden base with PVA. The top of the gold cushion should be sprinkled with fine pumice powder, or Bath Brick, which keeps the cushion oil free.

**Gold box:** For covering the leaf you are using when you do not need access to it. It can be made of 40pt or mat board, with the overall dimensions being 12.5cm x 12.5cm x 2cm. Take a 16.5cm x 16.5cm piece of mat board, score a line 2cm in from the edge with a pair of sharp dividers, cut out the corners, and fold the walls down, securing them with tape. You can also glue the walls together at the corners (instead of tape) and cover it with decorative paper, or use the top of a box that a pack (20 booklets) of gold comes in.

**Air shield:** To aid in keeping moving air from disturbing your gold, you can make a three-part wall that goes around the sides and back of the gold cushion to block air from blowing on your gold cushion. They can be made from pieces of binder's board and tape, or a more polished version with cloth.

**Finishing stove:** Thermolyne student hotplates are great for this kind of tooling. Keep the stove at a relatively hot setting and heat up the tool you are going to use when you are ready to use it. Larger stoves with tool rests are especially useful with designs that you need several tools to execute or if you are using handle letters or multiple type holders.

**Cooling pad:** This seemingly insignificant piece of cotton or sponge is extremely important, as it gauges the temperature of your tool, making sure it is neither too hot nor too cold. I use a wad of cotton or a sponge in a ceramic plate and saturate it with tap water so there is a little, but not much, standing water. In general, you want to cool the tool down so that it is either just below the sizzle for tooling or well below the sizzle—this can vary depending on covering material and environmental aspects, which will come with experience. A quick note about a “false read;” when a tool is too hot, it can sometimes not sizzle when initially touched on the cooling pad.

**Pointed bone folder:** For marking up straight lines directly on leather, you want to make sure you are using a bone folder that is the same thickness as the line you are tooling with.

**Plastic triangle or rule:** To avoid removing material from your bone folder as well as avoiding unnecessary marks in the leather, or transferring from anything metal to the leather, use a clean plastic triangle or rule.

**Suede pads:** You should have three sections for polishing the face of the finishing tool before each impression whether it is in blind or tooled with gold. One is plain suede, which is used for every impression, one that has Vaseline rubbed into it for picking up gold, and one that has a little bit of honing compound (or jeweler’s rouge) on it to clean any deposits off of the tool’s face. Do not overuse the pad with honing compound on it because it does remove brass while cleaning. Your gilt impression will only be as bright and reflective as the tool’s face is clean.

## Process: Titling with a Type-Holder or Handle Letters

The first kind of titling we will be practicing is using a type-holder with brass type across the spine using shellac glaire as a gilding size.

Blind tooling. There are four stages of blind tooling, and they are:

- Hot tool through template, dry leather
- Hot tool, dry leather
- Cool tool, dampened leather
- Hot tool, dampened leather

This way of titling progresses as such:

1. Make up your design and ink up a template with an acid-free stamp pad and the tools you are using. For type-holder designs, I do not use a digital design program, but the actual tools to make sure the spacing is all correct
2. Temporarily adhere the template to the leather
3. Blind tool through the template with a hot tool, remembering to clean the face of the tool before each impression
  - \*When using a type-holder with a lot of letters in it across the spine, you may need to begin your impression slightly before where the inked impression is, as the three dimensionality of the spine can make the letters go past their place on the template
4. Remove the template and blind tool with a heated tool
5. Add moisture and tool with no heat
6. Add moisture and tool with a heated tool
7. Glair in your title twice, allowing the glaire to dry after each coat
8. First gilding: pick up gold on a hot tool and go back into the impression
9. Clean the impression out with fine cheesecloth and/or a gold rubber

10. Second gilding: tool with gold until there are no breaks

If needed, you can re-glaire, you can check to see if the gold is sticking by rubbing it lightly with the pointed end of an orange stick

11. Wipe off any excess gold

12. Clean the walls of the impression with an “orange stick” or with a dull leg of a divider/needle

13. Burnish your impression by going back into the impression with a warmed tool, well below the gilding size’s activation point, and subtly rock the tool in all directions

Alternative technique of getting the gold on your book:

Should you prefer to, after step 7, you may do this:

8. Rub a thin layer of Vaseline over the area to be gilded

9. Pick up gold from the gold cushion using a cotton pad and lay it on the area to be gilded

10. Pick up another layer of gold from the gold cushion, blow onto the first layer of gold to put a little moisture on it and place the next layer on it, pressing straight down. Do this until you have solid coverage with at least three layers of gold

11. Heat your tool and tool as you normally would

12. Use a gold rubber to remove excess leaf (optional), and your cheesecloth wrapped around your finger to take off some of the gold, but making an effort not to rub it into the leather

13. Use lighter fluid on a cotton ball to neutralize the Vaseline and remove the rest of the gold

14. Finish the cleaning off using a clean cheesecloth and then a piece of ultrasuede

15. After the leather has dried completely, you can burnish your gold with a warm tool

## Fine Binding Titling with Handle-Letters

The working process is the same as above, titling using a template and a type-holder, except that here we will be using individual handle letters instead. Handle letters, because they are decorative tools, will need to be rocked in all directions when making an impression; it can be subtle with smaller tools, but it is still an important aspect.

## Mistakes

The best way to avoid the need to fix a mistake is to not make a mistake in the first place. Practice, then, is your most reliable aid to avoiding mistakes. When using a new leather, a new tool, or a new design idea you have not done before, make up a plaquette with the leather you will be using and practice what you will be doing on the book.

Approach your work with a deliberate precaution. This is a particular issue that will undoubtedly occur in your practice. There comes a point at which your tooling is particularly good, and perhaps one more pass will make it great. At this you must also consider: “I can make it great with one more pass, *but* I also run the risk of messing up, creating a double impression or, ruining much of my previous work.” This is *not* to say you should settle for a lesser quality of work, or frighten you into thinking about settling for it, but rather to have you consider the project, consider your skill level, and weigh the risks to arrive at a conclusion. The ideal approach is to practice until you are proficient, and to not try a design on a book for someone else which your skill set isn’t ready for.

**The earlier you catch the mistake the better.** This is one reason that we proceed with caution through each stage of blind tooling, assessing both the placement and quality of the impression at each, and then deciding if you are ready to move forward. Double impressions are made when you do not have the level of

touch needed to go back into an impression, practice is the best remedy to this. When you make a mistake, make a note of it on your design which you keep on your bench so that when you go back into that impression you are intentional about that particular spot, as the tool will want to go back into the initial incorrect impression. Also, remain calm. There is no level of frustration that can fix a mistake, and frustration will usually lead to making the mistake worse.

**Double Impressions or inaccurate tooling:** If you get to the stage of blind tooling with moisture, and especially with heat and moisture, this becomes much more difficult to fix. So, before *each stage* in blind tooling, examine your tooling to see if the placement is correct or if there are any other mistakes. If there are, relax, this happens. If you have dampened the leather, let it dry completely. Take a very fine needle and pick out the impression, going in at a shallow angle, lifting up, releasing the upward tension, and come back out. Do this from multiple angles. Add moisture to the area with a cotton ball or water pen, and wait until that area is dry before working on it again. When completely dry, burnish with a teflon folder through paper to flatten. \*Don't try this on calf, as the marks don't disappear the way they can with goatskin, you will either want to keep your inaccurate tooling inaccurate and gild crisp and cleanly, or do some sort of onlay or inlay.

If you find a line of text is not properly placed, minor mistakes can be helped by using a reference point, whether a ruler or jig, or even some blue tape that has had its tack removed to give a visual boundary.

**Off-center impressions:** When an impression is off center or not as aligned as it should be, one possible way to fix it is to wet the leather, and, using a cool tool, go back into the impression with a firm grip and twist the tool until the impression is correctly aligned. You will have to go slightly further than its original intended alignment, as the leather will relax.

**Burning the leather:** The building up of the impression in blind tooling is structured to avoid burning the leather, since this is the main time moisture is present while you are tooling when using shellac glaire. If just the bottom of the impression is burned, and the depth of impression is what it needs to be, you may still be able to gild it, but you may need more layers of gold or more glaire to make the impression work. Should your burning extend to the walls of the impression but not much further, a feathered onlay from a part of the skin with similar grain can be done over the area, disguising the area and then you can re-tool and gild. If this is not workable, you can remove the leather and do an inlay in that spot to give yourself a clean surface to work with.

One exercise I make my students do is to dampen out leather and burn it with a hot tool intentionally. You'll want to pay attention to what it feels like going into an impression and burning the leather so that if it does happen on a book, you can notice it immediately and lift the tool out to avoid burning it completely. Familiarity is your best defense.

## Mistakes in Gilding

**Breaks in the gold or weak reflection** have a few possible culprits. First, practice is necessary to aid in not causing mistakes in the first place, but also, knowing what the tool feels like when you are in the impression correctly will let you know if you are striking the impression where it needs to be. If you are not tooling with the correct pressure, heat, and dwell time, these steps will not work, and if you are not going back into the impression, these steps will also not work. But, assuming you are going back into your impression and the gold is not sticking or has breaks, follow this progression of steps:

- I. Check the face of the tool. If it is not clean and polished, and especially if there is glaire residue on it, you will never get a clean and reflective impression. Use the suede pad with honing compound on it to clean the tool, but do not over-do it, as you are removing brass while rubbing the tool on it.



2. If there are not enough layers of gold, causing the leather to be visible, retool the impression with two more layers of gold.
3. Make sure that your temperatures are correct. If the tool is not hot enough to activate the size, the gold will not stick properly. Heat the tool hotter than you had been and retool with two layers of gold and that hotter tool.
4. If you get this far, it is most likely that there has been an insufficient application of shellac glaire. Apply another layer of shellac glaire, wait for it to dry, and retool with two layers of gold until the impression has solid coverage. Because of shellac glaire's tenacity to stick, as long as there is glaire in the impression and you are striking the impression as hot and with the pressure you need to, the gold will stick.

**To reiterate**, practice is the best way to avoid mistakes.

**Stubborn gold:** If you have excess gold, and the orange stick & saliva is not cleaning off unwanted gold, and if a dull divider/needle isn't working, it is possible to prick out the gold very carefully with a sharp needle. Again, this needs to be done very carefully so you do not mar the surface of the leather. You can also use a thinned out paste slurry to loosen the hold on the gold and clean it out with an orange stick, but be careful that you don't get tide lines from the paste, and do not use so much that you get the shellac to dislodge and spread onto your leather.

### Further reading and sources:

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### Finishing Tools:

- Brien Beidler, finishing tools, paddle dividers, and more: <https://www.beidlermade.com/>
- Revinga Grabados: <https://fersadorer.com/>
- Alivon: <https://maison-alivon.com/english/>
- Bookbindesigns: <https://bookbindesigns.co.uk/>
- Fine Cut: <https://www.finecut.co.uk/about-us/our-brands/ps-engraving/>