



Jurgen J. Maerz  
Platinum Guild International, USA

Jurgen M. Maerz is Director of Technical Education at Platinum Guild International USA. He has a long history as jeweller and participates regularly at the most important international conferences in the goldsmith field.

*Simple and practical methods will be discussed, to facilitate platinum processing for jewellery production. This paper will illustrate tricks that can be implemented immediately: some of them are for general use, while some others are specific for platinum processing.*

# Bench Tricks for the Platinum Smith

## Abstract

This paper is designed to give the bench jeweler useful information which will help to simplify their creative work. Bench tricks are a useful tool every jeweler needs to be successful. Over time, jewelers will find ways to simplify and streamline fabrication and manufacturing. This paper will provide some of this information immediately, with the benefit, that these bench tricks can be applied as soon as one sits down to work.

## Introduction

Being a bench jeweler for over 40 years, I had the opportunity to learn a great many short cuts and bench tricks that help making jewelry a lot more fun. Some of these things can be as simple as filling a small jar with water and sand to place a ring in when it needs to be soldered and the stone has to be protected, or simply holding the ring by the stone with your fingers and quickly soldering the seam. You want to be sure to have a cup filled with water nearby to quickly quench the ring after soldering. You also might not try this one with a silver ring.

It has always been my desire to present a paper with bench tricks. Someone once told me that it is fairly simple to learn the basics of becoming a bench jeweler. It is the 40,000 bench tricks that make you a good one. How do bench tricks come about? Well, the answer to that question is simple. Experiencing a problem and finding a creative solution is what bench tricks are.

What a blessing it is to find jewelers willing to share some of these tricks with you and thus give you the opportunity to be better than you already are. I have asked several well-known jewelers to contribute bench tricks to this paper and it is my great pleasure to bring you the results.

## Polishing and cleaning

After a small bezel would repeatedly fly out of my hands during polishing, I found that a wooden cloth pin worked very well. I ground and filed the end down somewhat so that, if squeezed, it fit inside the bezel. Now after letting go, the spring action would keep the bezel on the cloth pin and polishing was a simple task, Figure 1.



Figure 1

Wooden cloth pins are wonderful for aiding in gluing pearls to posts. Just a slot on one side to allow for the post and then insert the pearl and the finding and clamp it for gluing.

Paul Peterson, a setter in Los Angeles gave me this great little trick. When polishing a piece of jewelry, polishing compound will become attached to the metal and it is sometimes difficult to remove it, especially under stones. Dipping the piece into water and then into baking soda will coat it with the powder. Then, when polishing, the compound will stick to the baking soda and not the stones. During cleaning, the water-soluble baking soda will disappear and the polishing compound will easily come off, leaving a clean, sparkling piece, Figure 2.



Figure 2

When running a magnetic tumbler, the steel needles often turn black. This can lead to stains on the jewelry that is actually in the tumbler to be polished. Running the tumbler with Coca Cola for a few minutes will clean the needles to a bright finish. The tumbler is then ready to be used again. This trick was given to me by Blaine Lewis.

Stubborn dirt can be removed from jewelry using drain cleaner, such as Red Devil or Draino (Sodium Hydroxide). I use a stainless beaker, of about 500ml, add one teaspoon of the powder to water and slowly heat it to simmer. Placing worn jewelry into this solution (**careful, no stones except diamonds**) it will be very clean in a

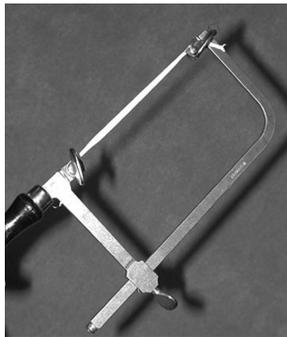
short time. The lye will dissolve hair, skin lotion and other dirt. Cleaning is important before any soldering is done. But even after some dirt has been burned onto a diamond, this solution will clean it.

Electric tooth brushes work very well for cleaning jewelry . The vibrating sonic ones work best.

Dipping a toothpick into a small amount of superglue and then into a cotton ball, will make a small amount of cotton stick to it. Charged with rouge and placed into a flexible shaft motor, it will make a wonderful polishing tool. The same thing can also be done with a cue tip. I prefer the ones that have hollow straw like shaft. It is easy to push a small toothpick inside that tube, after the cue tip is cut in half and use it as a rotating polishing tool.

For fine polishing, of platinum soft sponge nail files work excellent. These are available in any beauty supply and have several different grits. It is also a fine idea to purchase some of the available polishing papers, spray the back with a fine contact cement and then place craft sticks (popcicle) on the back. After the glue is dry, use a razor blade and make sanding or polishing sticks. Color or mark the back of the stick so you know which grit it is.

I like to place a strip of scotch tape on the back of polishing paper. This is the folded in half, the long way and placed into a saw frame. The tape will prevent the paper from tearing as you polish hard to get areas, Figure 3.



*Figure 3*

Polished piano wire placed in the saw frame will act as a fine burnisher. There are many more tricks available for polishing and cleaning. A great source of information is the Orchid bulletin board on the net. I have used some of the information in the previous chapter from this source: <http://www.ganoksin.com>

## **General tricks and shortcuts**

This chapter deals with tricks in all sorts of situations. Helpful things that will make repairing jewelry less challenging.

Did you know that dull burrs can be sharpened by dipping them in a solution of Nitric Acid of about 20%. Dip the burr for about 10-20 seconds and then rinse and neutralize with baking soda and water. Be sure to apply all precautions that are associated with acid when you do this. After etching and neutralizing, rinse in an Ultra Sonic or steam.

Screwing a slotted wood screw into the side of the bench provides a great tool for opening jump rings and such. Just place the ring in the slot and twist.

*How can you tell if a ring or other piece of jewelry is made of platinum?* Well, it is heavy. But that can be deceiving. So take a sharp graver and remove a small splinter of the metal from an inconspicuous place. Lay that small splinter on a soldering surface and try to melt it. If it balls up right away, it is not platinum. If it glows like a bright star and is difficult to melt, it is platinum. While this does not tell you which alloy it is, it is a sure little quick tip to find out for sure if the item is platinum.

Filing a small v-groove into the bench pin will prevent the setting burr from rotating around a prong during seat cutting. Just place the prong into the groove and cut. If the burr runs away, it will end up in the bench pin.

## **Working with platinum**

To separate the tools you use for working with platinum, use a color code. That way, it is easy to tell which tool is used for which purpose.

To reduce the possibility of contaminating platinum, use a separate bench pin for this. If you use a removable pin mount, it is easy to switch them. I recently needed to replace the top of a ring with a new top in platinum. It seems the white gold top had worn over the years and the diamonds were no longer secure, Figure 4.



*Figure 4*

After cutting the top off, I used a marker to blacken the upper edge of the ring, Figure 5.



*Figure 5*

This made it possible to create the exact outline of the original top on a small piece of label paper. That outline was then cut and after peeling off the back, placed on the platinum for precise piercing and fitting of the new top. In this case this simple trick saved a great deal of time, Figure 6.



*Figure 6*

Working with platinum requires a clean workspace. When doing sizing and piercing there will be small pieces of the same platinum alloy that remain. These pieces can be re-melted and rolled to make sizing stock. Melting and pouring platinum into an ingot mold is not all that easy for the small bench jeweler, so this little trick will work well. Using a large ball bur, grind a groove into a Wesco-type dish crucible. It is now feasible to melt small snips of platinum onto a ball using the regular torch. Just be sure it is not acetylene driven.

As the Platinum is melting, it will drip into the groove, making an oblong object, which can be hammered and rolled in a rolling mill, Figures 7 and 8.

Larger ingots can be made by welding several smaller ingots together and then rolling them. Once a solid weld has been achieved the pieces can be considered to be one piece.



*Figure 7*



*Figure 8*

When soldering platinum, you need eye protection. I found it a good solution to clamp a #5 lens to the end of the torch. It is thus possible to look through the lens as you solder, without being restricted by wearing dark glasses. It is also possible to tape a rectangular lens under the lamp and then work on the other side while looking through the lens. Do never just use sunglasses.

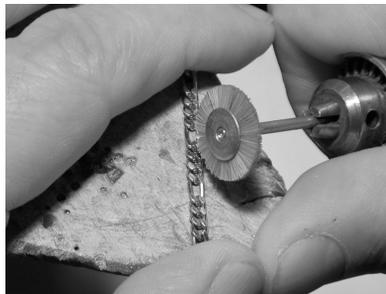
When working with platinum, remember that graver angles are different. A graver for stone setting will be around 15 degrees rather than 30-45. Bright cutting is achieved by alternately cutting and then pulling the graver back over the cut. This will allow the polished bottom of the graver to burnish the metal thus creating the bright cut.

## **Chains**

When taking in chains for repair, check also the jump rings and clasp connectors. Chances are they too will need to be repaired.

To solder chains, use a copper plate on each side of the break. This will act as a heat sink and you can solder a single link in that fashion.

To polish a soldered chain, lay the chain flat on the bench pin and then use a bristle brush and your flex shaft to just touch up the seam. Never polish a chain on the regular polishing motor. The chain can wrap around the spindle and injure you, Figure 9.



*Figure 9*

To take kinks out of a chain, lay the chain flat on a piece of glass and use a wall paper roller to roll across the chain.

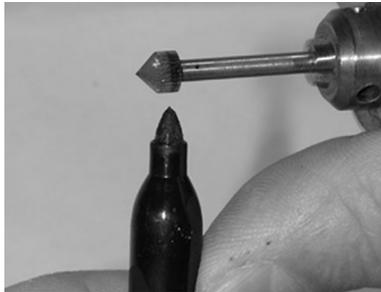
## Setting

If a job requires you to set loose stones, write the weight and description of the stones on the costumers file. That way, when you need an appraisal at a later date, you have the precise information and need not remove the stones. I thank Bradney Simon for this good advise.

For channel setting, I like to file the top of the channel to a slight angle away from the stones. Then it is easy to just hammer the higher edge and not the entire thickness of the wall. This will result in less distortion and makes the setting job far simpler.

When setting an oval stone or an marquise cut, a small dot with a permanent marker at one end of the stone and at one end of the piece the stone goes into, will make sure that the stone is always placed in the same direction. As some stones are not calibrated, this little trick will save a lot of grief.

Marking the table height on a stone setting burr with a permanent marker, will turn the marker into a gauge. It is now very easy to cut the proper depth, as one must simply burr until the top of the prong reaches the bottom of the line on the marker. This is especially helpful when several stones need to be set to the same depth, Figure 10.



*Figure 10*

## Prong repair

If a piece of prong needs to be added to an existing prong, this little trick will be handy. Flatten each ends using a file. Then shape the end of the prong addition to be round and use a ball burr to cup the end of the existing prong.

The result will be a self-aligning, as the round wire will automatically center in the cup, Figures 11 and 12.

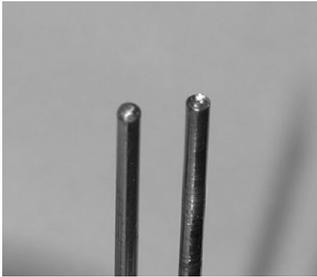


Figure 11



Figure 12

## Custom carving burrs

Using a brass brazing rod and a little imagination, rotating burrs can be made that aid in the carving of wax. These burrs will do anything from texture to precise grooves for design and stone setting. Jeff Mathews provided this excellent idea.

## Conclusion

Bench tricks are a wonderful thing. While this paper provided just a small glimpse, I would like to invite the trade to e-mail suggestions and bench tricks to me so that I can continue to make them available to the bench jeweler.

## Acknowledgements

I would like to thank all the colleagues who helped with providing information for this paper. Many bench tricks are as old as our trade, but new tricks are invented every day. My thanks to:

Jeff Mathews, Blaine Lewis, Paul Peterson, Bradney Simon, Alan Revere, Charles Lewton-Brain and Orchid Bulletin board

Some material came from Maerz, Jurgen J. "The Platinum Bench" MJSA/AJM Press 2001

