

Rock Salt and Nails¹

The Turner's Challenge of Unexpected Foreign Bodies in a Wood Blank

Santa Cruz Woodturners

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One of the great advantages of "urban forestry" is the availability of ample sized logs at an affordable price. The disadvantage, of course, is that "urban" necessarily means people have been around those trees for a long time. For a big tree, that can cover the better part of a century during which ferrous fasteners became widely available. A lot of those fasteners have been totally encased by sequential growth rings...just waiting for a turner to start roughing out.

Most turners share the experience of a tell-tale metallic "click" as their freshly sharpened bowl gouge bores into the interior of an innocent looking block of wood.

We find nails from long forgotten signs, tool hangers, and funky tree house ladders. Shrouded hook eyes from long abandoned clotheslines and hammocks do a nasty thing when they meet a gouge at 10-20 miles per hour. Lag bolts definitely get your attention. Tree trunks from an agricultural fence line often harbor rusted staples and barbed wire. Other surprises lurk in there, too...like horseshoes.

Other than trudging back to the grinder, there remains the question: ***How am I going to get this thing out?*** We asked our members to tell some stories and relay how they handled the challenge. We'll share some interesting responses!



This long abandoned bracket was not yet engulfed by the tree, but in 10 or 15 years it would become an unhappy surprise for the chainsawyer or the turner.

Jim Baker shared this photo of a surprise buried in a piece of sycamore.



Jim writes: “Fortunately, I spotted the metal before my cutting tool found it. I put a bend in the bolt in order to get my crowbar on it...but no luck with that method.”

“I tried several ways to remove this piece of iron only to finally learn it was screwed into the wood. All I had to do was turn the bolt counterclockwise and it was out.”

Larry Thibault has another story with some Santa Cruz woodshop history!

This doesn't involve a turned piece of wood, but we had a large slab of walnut from one of several trees planted to commemorate students from Santa Cruz High School who died in WWI. We intended to make some benches from this tree of honor.

The wood was gorgeous, but it had several nails in it. We used diamond-tipped small Dremel bits to grind directly along the axis of the nails until the remaining metal was deep enough below the surface that they would not interfere with any planer blades or sanding belts. This method left holes that were only slightly larger in diameter than the nails themselves and those were easy to fill.

One other time we purchased 1 x 10 red oak boards. We found an entire 16d nail hidden almost in the very middle of the board and oriented exactly in line with the grain of the board. It didn't show on either surface of the board when it came from the mill. I can't imagine how it ever got into the tree in that direction since normally one would pound a nail in at 90 degrees to a tree trunk.

Larry T goes on to add:

I am sure others probably use metal detector wands to find nails, staples, etc. in wood before they find and ruin sharp edges. I don't know up to what depth or distance they are reliable. I had a cheap one where I practically had to find the nail myself first before the detector worked.

Do you have experience with better ones? It's probably a good practice to always use a metal detector on any recycled lumber or wood from urban trees.

A friend and I once planed a lot of old-growth redwood from a barn, and we went through a couple of sets of planer blades even after we thought we had located and removed all the nails. It was still worth it, but the planer sure was loud running with dull blades!

*Our club, of course, boasts **two** resourceful Larry's! **Larry Dubia** contributed:*

I once found three nails in a triangular formation in a blank. I pulled them out with pliers which took a better part of a day to accomplish. After turning the blank to the dimensions I wanted and sanded it, I then found three stainless steel nails of the same diameter, cut them to 3/16" pieces and put them back in the vacated holes. Then I burned a fireworks look around them including the trail shooting them up.

After I was done, I put down a wipe-on finish and sold it. It was well received by shoppers! I got \$350 for it. Apparently, pieces with a story sell much better.

Larry added a note about the reliability of metal detectors and yet another workaround:

I had a blank that had been cleared with a metal detector by Jim Baker. Later when I got ready to turn the blank, I dropped a magnet on the blank and it stuck. I dug around but couldn't get the object out. I used a plug cutter to cut around the shaft, loosen it up, and get it out. It was a broken-off steel drill bit!

Wells: Did that solve the problem, Larry?

Nope. I tried the magnet again just to be sure...and it stuck. I drilled from the other side and found another piece of steel. It took two tries got that one out. I cleaned the wood and the pieces matched up. It was the other half of the drill.

WS: As the jingle goes, Larry: Shave and a haircut, two bits!

Speaking of plug cutters, **Dan Aldridge** gives credit to Larry Dubia for the hint, and then takes it deeper with dowel cutters.



The dowel cutter makes a big hole, granted, but it will reach further down the shank of the nail than a plug cutter. The hole will have smooth edges and lend itself to resourceful patching.

However, if the nail is bent, as Dan states is often the case, it's helpful to straighten it out before trying to pull it. That's where an old, narrow gouge comes into play to slink along the culprit and bend it back. The rawhide mallet comes in handy as a persuader.



Woodturner's Dental Extraction Tools

Roy Holmberg found “the prettiest piece of redwood burl I’ve ever seen” as a piece of a broken table at the Flea Market. Two gnarly 3/8” lag bolts were broken off flush and stuck in the bottom.

Roy spends as much time working metal as he does wood, so this was not too challenging. He punched dimple and then drilled a pilot hole into the broken bolts and then used his “Easy Outs” to simply unscrew them without making a mess of the adjacent wood.

Roy also confides that he has a set of left hand, hardened drill bits. He mentions that by using the left hand bit, the offending bolt will sometimes unscrew itself in the process.



1. The challenge: sheared off lag



2. Center punch a dimple



3. Bore a pilot hole



4. Insert Easy-Out and unscrew



5. Voila!

It's rare to achieve victory when you lag behind....



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Wells Shoemaker also found a 3/8" lag bolt embedded deep into a five foot diameter walnut trunk that lived for 110 years in the back yard of a friend on the West Side. More accurately, the chainsaw found it. *RIP Chain!* It eventually unscrewed after excavation and torque with vise grips, but it left an ugly crater.

Sometimes you just have to go pick out another blank.

Nails, fortunately, are a more common nuisance than bolts. I use a small caliber twist drill and try to probe right along the shaft of the nail. You can usually figure out the direction after a couple passes. Work around the circumference of the nail with 4-5 passes to create a "rosette" pattern. It's not as elegant as the dowel cutter...but cheaper if you happen to scrape along the nail.



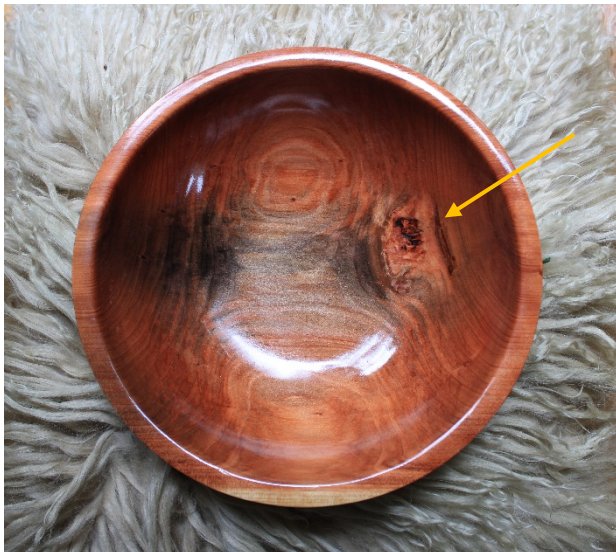
After making the rosette, use a small chisel or a Dremel to carve out enough wood so the shaft of the nail protrudes a quarter inch. Use a gripping tool of your choice—my favorite is slip joint pliers because you can "roll" the pliers over the surface and get extra leverage. Regular pliers or a Vise Grips work OK. I haven't had much luck getting a grip with a crowbar. If the nail wiggles, you can probably tease it out. If not, go back to the drill until it loosens. Needless to say, this strategy will leave a defect that needs creative attention.

Nails do not always play fair. If you discover that you're trying to pull the head of the nail through firm wood...*forget about it*. It's definitely not fair if you're wrestling with a 4" (20d) common nail! Older non-galvanized box nails can rust enough that they simply break off with torque, and that prolongs the aggravation.



Nails are a nuisance, true, but even nuisances have their day.

In this case, about 6 feet above ground, somebody long ago nailed a sign onto a redwood tree...driving that spike through the bark, the wet cambium, and into the sap wood.



As the nail rusted, the iron reacted with tannins in the wood to make a black stain, which tracked at least a foot along the axis of the tree to add a color "feature." Call it "ferrous faux spalting."

Eventually the nail was encased in the pigmented heart wood.

Additionally, the tree created a healing burl near the nail entry.



Not all foreign bodies need to be removed, as **Sue Broadston** decided with this chunk of black acacia!



Large bore rifle bullet in Sue's Ballistic Bowl
Copper jackets and lead turn nicely with a sharp HSS gouge.

Maarten Meerman added that it's not always an ancient nailer who ruins your day:

He asks: Does hitting faceplate screws count?

He adds: Trick to avoid them? Put brain in gear before selecting screw length, and remember where they are located.

Yes, Professor!



Well, that about does it for the uninvited steelers and rusty intruders. Now go out and find some of your own!

Here's an afterthought with a mineral note. It was once fashionable to fill rotting knotholes in beloved trees with concrete, figuring the termites wouldn't eat it. Maybe true, but a determined tree may eventually grow around the chunk. Modern tree surgeons don't do that anymore, but the concrete from the last century appears regularly when folks try to mill urban lumber. That's especially common at crotch and branching points...the very places we wood rats expect to find deluxe figure.

If you find concrete, there's just not much you can do about it. On a similar note, if you're turning root balls, you have to be philosophical about rocks.

Know when to say...*When*.

And...please protect your eyes always. Just tugging at a rusty nail can create nasty projectiles.

Wells Shoemaker

President, Santa Cruz Woodturners

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ⁱ *Rock Salt and Nails* is a song written by Utah Phillips 50 years ago. I first heard it when Joan Baez covered it back before I had any gray hair. It really doesn't have anything to do with the lathe, but Nails surely do on bad days. It is a mournful song about betrayal, which is the way I feel sometimes when my chainsaw or the gouge finds a fat nail in the wood. WS