

BAY AREA



# WOODTURNERS

## ASSOCIATION

A CALIFORNIA NONPROFIT CORPORATION  
LOCAL CHAPTER AAW

January 2023

Volume 27 Issue 1

## 2023 January Holiday Party



**When:** 14 Jan 2023 11:00 AM, PST  
**Where:** Elks Club 1475 Creekside Dr., Walnut Creek

**EVENT DETAILS:**

**It's time for the BAWA Holiday Party!**

**Featuring food by La Piñata restaurant**

Plan to bid on raffle baskets and silent auction items to support the club.

Items have been donated by:

- Several generous members
- WoodTurnings
- Niles bottle stoppers by Carl Jacobson
- Craft Supplies
- Lee Valley
- Treeline
- D-Way Tools
- Several local wineries
- ...and more!

There will be plenty of great looking wood (Carob, Acacia and Walnut) and private lessons with our premier instructors to bid on! So don't miss it!

There is still time for donating items for the silent auction or raffle to raise funds to support the club. You can contact Larry Batti at: [larrybattiwoodturning@gmail.com](mailto:larrybattiwoodturning@gmail.com) to coordinate handoff of any donations you may have.

\$25 for members and guests

Pay online or contact Larry Batti to make arrangements.

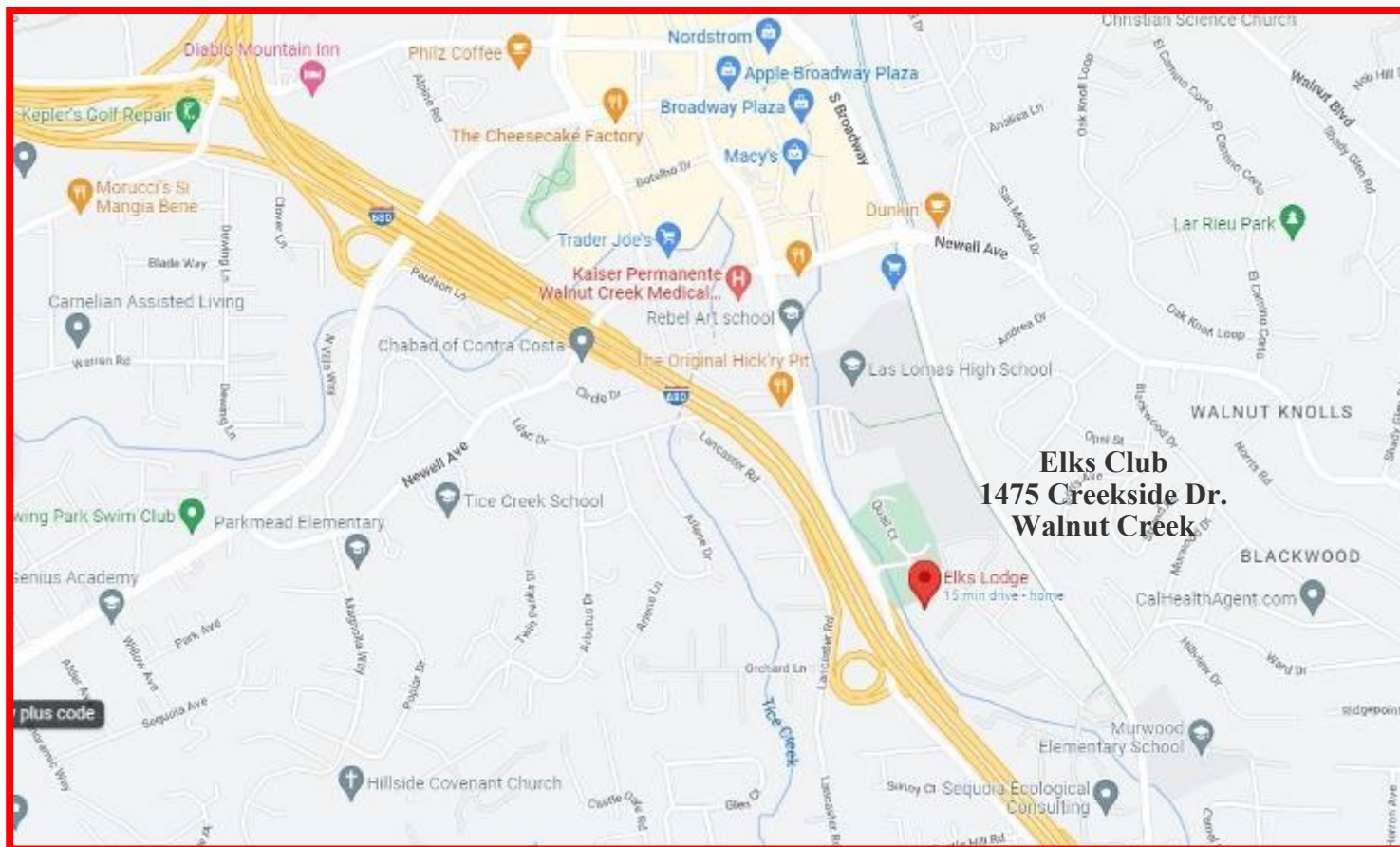
Hope to see you.

Best regards,  
[Bay Area Woodturners Association](http://BayAreaWoodturnersAssociation)



Directions on following page

# Directions to Elks Club



## President's Letter *December 2023*

### *It's BAWA Party Time!*

After these past couple of years of zooming, I am really looking forward to our BAWA Annual Party on Saturday, January 14, from 11:00 to 2:00. Many of you have signed up already but if you haven't, I encourage you to do so (you can sign up through the party announcement email or by logging into the BAWA website and clicking on the party notice in the calendar). We will have all the traditional events:

**Instant Gallery** – bring up to five turnings to put on the table, and enjoy looking at what everyone else has been creating lately.

**Raffle Items** – there will be baskets with all kinds of goodies, both woodturning-related and other items (can wine be considered woodturning-related if consumed in the evening as you contemplate your latest creation?). So, buy some raffle tickets during the party and see what you can take home!

**Silent Auction** – come bid on a whole bunch of items, including a variety of wood blanks, such as Carob, Locust, Birch and more . . .

**Food** – Of course!

**Camaraderie** – Best of all, time to hang out with all of our woodturning buddies.

Looking forward to seeing you there,  
Steve



# BAY AREA WOODTURNERS ASSOCIATION

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LOCAL CHAPTER AAW

## Club Meetings

### Club Meetings-

Meetings are held on the 2nd Saturday on each month. We meet in person with attendance simultaneously available via zoom. Meetings are held at the PHEC Woodturning Center at 1 Santa Barbara Road, Pleasant Hill, CA. The doors open and the simultaneous zoom session starts at 8:30am. The meeting start time is 9:00am. See our website at [bayareawoodturners.org](http://bayareawoodturners.org) for more information.

Guests are welcome to attend in person or via zoom by request to: [membership@bayareawoodturners.org](mailto:membership@bayareawoodturners.org).

See [bayareawoodturners.org/](http://bayareawoodturners.org/) for club information.

### BAWA Officers Meeting -

The Association's officer meetings are held each month. Contact Steve Griswold at: [president@bayareawoodturners.org](mailto:president@bayareawoodturners.org) for more information.

## 2023 Event Schedule

January 14th	Annual BAWA Party 11:00AM-2:00PM
February 11th	Brad Adams Turning a Natural Edge Bowl 8:30AM-12:00PM
March 11th	Steve Forrest Photographing Wood Turned Works 8:30AM-12:00PM
April 8th	Dave Bentley The Hand Pulled Top 8:30AM-12:00PM

The Bay Area Woodturners Association is a local chapter of the American Association of Woodturners. Our purpose is to provide a meeting place for local turners to share ideas and techniques and to educate the general public regarding the art of turning. The Association usually meets the second Saturday of each month. The Association periodically sponsors exhibitions and demonstrations by local and internationally known turners.

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## Jim Rodgers Demo Box and Tool Making

It has long been a tradition for BAWA to end or begin each year with a demonstration by Jim Rodgers. 2022 was no exception. At the December meeting, Jim showed why he is considered among the top demonstrators in the country.

The goal for Jim's demo was to make a box using as many tools as possible. Not only did he do that, but of the 14 tools he used, five of them were homemade. His live demonstration contained inserted videos detailing how to make a thin parting tool, a negative-rake scraper, a diamond point tool, a decorating tool, and a beading tool all on a par with the commercial versions. He carefully explained each move he made and periodically gave away tools, parts, and finally the completed box to randomly selected attendees.

This was a hybrid meeting with 33 folks in the room and another few dozen online. Due to technical difficulties, the meeting was not able to be recorded so Jim and Dave Bentley returned later in the week to make a video of the demo. The video will soon be available to all BAWA members on the website.

Thank you, Jim, for another excellent demo full of tips and techniques for beginning and experienced turners alike. We're honored to have you in our group.



Truing up blank



Hollowing lid



Negative rake scrapers



Texturing with home-made tool



Hollowing box



Shaping top of lid



Interior of lid



Completed top



Completed bottom



Parting tool



Negative rake scrapers



Point tool



Texturing tool



Beading tools



Jim Rodgers



# BAWA NEWS & NOTES



## Brad Adams

Members may be interested in a human interest piece that aired on local station KPIX. The piece focused on our own Brad Adams, professional woodturner and long time BAWA member.

The story tells how Brad left the high tech industry to focus completely on woodturning. Successfully, I might add.

To view the video, you can either type in the address:

<https://www.youtube.com/watch?v=pDUdT3hb7oE> or entering 'Bay Area artisan left tech career' in the YouTube search box.

Don't forget that next month, Brad will be the featured BAWA presenter with the subject, 'Turning a Natural Edge Bowl.'

Try not to miss it!



## OREGON WOODTURNING SYMPOSIUM



The 2023 Oregon Woodturning Symposium is now open for Registration.

<https://www.oregonwoodturningsymposium.com/Register/Registration-Store>

March 17th - 19th, 2023 at the Albany Fair and Expo Center see world renowned demonstrators: Eric Lofstrom, Keith Gotschall, Trent Bosch, Mike Mahoney, Stuart Batty, Nick Cook, Nick Agar, Cynthia Carden, Rebecca DeGroot, and Sally Ault. Also be inspired by the Instant Gallery, enjoy the company of turners from all over and spend time and money at the vendor booths.

Hope to see you there.



## Faces of BAWA



John Cobb



Vern Stovall & John Lawson



David Fleisig



Steve Griswold



Joel Albert



Wood Raffle



# *One Way to Bleach Wood*

*By Steve Griswold*

At a couple of recent show-and-tell sessions I have shared claro walnut woodturnings that I had bleached to reveal the figure better. A number of members have asked me about the process, so I'm describing below how I do it. There are other ways of bleaching wood, but I cannot vouch for those.

***Caution: Just like turning wood on a lathe, bleaching wood can be dangerous. It involves mixing and applying highly caustic chemicals which could cause injury or blindness if mis-handled. Use a face shield and nitril or similar gloves at all times when mixing and applying the solution, and use appropriate containers when doing so. Also take care how you store these items.***

***I prefer to do this outside with a hose nearby. You really don't want this stuff spilled anywhere in your home or shop.***

***Make sure to follow best safety practices and do not attempt this if you don't feel confident in how to do it safely.***

## Supplies

Roebic crystal drain opener that is 100% lye flakes (available at Lowes). This is extremely caustic.

Handle with care. Do not use Drano, it has impurities that can stain the wood.

Aqua Silk chlorine-free shock oxidizer from a local pool supply store (this is a concentrated hydrogen peroxide solution, much stronger than what is sold at a drug store. Handle with care).

A Pyrex bowl or Pyrex 2 cup measuring cup (Pyrex is ideal for mixing the chemicals since they produce heat when mixed, which could crack ordinary glass). Do not use plastic or metal containers for this process since the solution may degrade them.

A wooden mixing stick (restaurant chopsticks are perfect, you can toss them when done).

1-inch-wide foam brushes (a flexible foam head attached to a birch handle, available online or at an artists supply store).

A face shield.

Nitrile or similar gloves.

## Prepare the solution

*Use a face shield and nitril gloves throughout the preparation and application of the bleaching solution. The chemical reaction of these ingredients is exothermic — it can get very hot when mixed, and they are caustic at all times. Take necessary precautions!*

1. Make a solution of lye and water in the Pyrex container – I find that 3/4 teaspoon of lye to 1/4 cup of water works well. Don't use a metal container because it can react with the metal. First put the water in the Pyrex container, then add the lye and mix well until the lye crystals have dissolved. Do not start with the lye and add the water on top because the lye can clump and result in a dangerous uncontrolled reaction that could result in splattering.

2. In the Pyrex container, add an equal portion of Aqua Silk oxidizer to the lye/water solution, resulting in a 50%-50% mixture. I make very small quantities - about 1/2 cup of the resulting solution is plenty to treat a

*Continued on following page*

## Apply the solution

Only the surface of the wood will be bleached, so the solution should be applied to a completed piece that has already been sanded to final grit (at least 400 grit).

I use a foam brush to apply the mixture to the wood. Reapply as necessary while it absorbs into the wood. The longer the solution is on the wood, the more it will be bleached. I have found that about 15 minutes was plenty to dramatically lighten very dark dry claro walnut. I have experimented with different exposure times between 5 and 15 minutes and the difference is noticeable. You can also paint the solution only on the sapwood to lighten it and increase the contrast with the untreated heartwood. This is especially helpful when you have sapwood that has discolored while drying. I have not tried bleaching green wood. I have also not tried it on other types of wood but have read that it has different effects on each species.

## Neutralize

When you are done, rinse the wood thoroughly under running water. I also then rinse the wood thoroughly in a solution of roughly 1/3 household distilled white household vinegar and 2/3 water. Then I rinse again with running water (another reason to do this outdoors – a hose is very handy).

## Finish

Once the piece is thoroughly air dried (a day or more depending on thickness, weather, etc), I re-sand the piece with the last grade or two of grit to smooth the fibers raised by the application of the solutions. Then apply finish as usual.

Be safe, have fun, and I look forward to seeing your pieces at future show-and-tell sessions!



A claro walnut platter Steve bleached using this process



## **BAWA Classified Ads**



We want members and others with items to sell or trade, services to render or if you're just looking to find a specific item from fellow BAWA members.

Please send ads to Louie Silva at:  
[newslettereditor@bayareawoodturners.org](mailto:newslettereditor@bayareawoodturners.org)

You can't beat the price...FREE!!

## **Rockler Helps BAWA Members**

BAWA members receive a 10% discount when purchasing directly at the Concord Rockler Store at:

<http://www.rockler.com/retail/stores/ca/concord-store>.

Mention your BAWA membership when checking out, to receive your discount. Rockler also donates part of the proceeds back to the club which help support our Holiday Party raffle.



# Show & Tell December

*Vern Stovall-Forms*



*Don Gouveia-Plate, Box & Urn*



*Bob Ackley-Box*



*Continued on following page*



# Show & Tell December

*John Cobb-Hollow Forms*



*Carl Mercer-Tool Handle*



*Joel Albert-Pens & Acorn Box*



*Continued on following page*

# Show & Tell December

*Bill Walzer-Bowl*



*Gary Bingham*



*Charlie Saul*







A small turned box is held in threaded soft jaws made of high density polyethylene for finishing the bottom. You can customize your soft jaws according to what the workpiece demands.

## Make YOUR OWN Soft Jaws

Bill Ooms

One of the challenges in making boxes is how to hold the box when you are doing the final turning on the bottom. Jam chucks are the traditional approach, but that requires making a custom jam chuck for every box you turn. Many of us have difficulty in getting a fit that's not too loose and not too tight. It would be nice to use a regular four-jaw chuck, but there is always the danger of leaving marks on the wood.

Several years ago, Bonnie Klein showed me a chuck with soft jaws that were threaded to fit the threads on the boxes she made (although she says Jon Magill implemented it before she did). I liked the idea, and since then I've made a number of different sets of soft threaded jaws in many different sizes. It's easy to make your own soft jaws—threaded, dovetail, expanding, or some other special configuration.

### Starting materials

I use 1/2" (13mm-) thick sheets of high density polyethylene, or HDPE

(although you could use thicker material, too). Polyethylene is easy to work with and is sufficiently soft so it won't leave a mark on the wood. You can buy sheets of HDPE in various sizes from many sources, including Enco, MSC, OnlineMetals, or McMaster-Carr.

The dimensions for jaws on chucks vary by manufacturer and chuck

### Mimic regular jaws



The underside of a typical jaw has a circular tenon that registers in a corresponding groove in the backing jaw. Custom soft jaws are mounted in the same manner.

size. For this article, I'll be making jaws for a Vicmarc VM100 chuck. The critical dimensions are metric, so I'll use metric for those dimensions. Once you see how these jaws are made, you'll be able to adapt the technique to other brands and sizes of chucks.

The jaws of most chucks are aligned by a circular tenon on the back of each removable jaw that fits in a matching groove in each of the backing jaws on the chuck (Photo 1).

### Making a circular tenon

It is much easier to do the first part of the work with a single piece of polyethylene rather than starting with four separate jaws. I start with a piece of polyethylene about 3" (8cm) square and mark lines across the diagonals to find the center and mark the center with a punch. Then I draw a circle 72mm in diameter with a pair of dividers.

When marking lines, I use a sharp-pointed awl to make a scratch and

## Lay out and turn a circle



Layout lines are "scratched in" with an awl, then filled with a marker. The HDPE is rough-cut on a bandsaw, then trued on the lathe.



## Turn the circular tenon



A parting tool is used to form the circular tenon, used later for mounting the jaws to the chuck.

then fill in the scratch with a china marker (or crayon) or a felt-tip marker. Use a rag to wipe off the excess, leaving the color only in the scratch mark (Photo 2).

Rough-cut the disk on a bandsaw, then mount the disk on your lathe by bringing up the tailstock and pressing the surface of the disk up tight to the jaws of a regular chuck (Photo 3). Use a spindle gouge to clean up the rough edge left by the bandsaw.

Now that the disk is perfectly round, you can grab it in your regular four-jaw chuck. Cut back the surface by about 1.1mm with a small parting tool over the entire surface of the disk, except for the raised tenon, whose width should be sized to fit the groove in the backing jaws of your chuck. For my VM100 chuck, I need the tenon to be 45mm outside diameter and 35mm inside diameter (Photo 4). The most important dimension is the width of the tenon (5mm in my case). You can clean up the recessed cut surfaces to make them nice and flat with a negative-rake scraper.

Check to make sure the tenon on the disk fits tightly in the groove in the backing jaws. You will have to expand/contract the backing jaws a bit to adjust to the diameter of the tenon on the polyethylene disk. Look

at the disk from the side to make sure the cut surface of the disk rests on the top surfaces of the four backing jaws.

### Drill the mounting holes

On the top surface of the disk, mark the location of the holes for the mounting screws and center punch. For my VM100, the holes are 11mm and 29mm from the center (Photo 5).

Drill the holes on a drill press (my holes are 5.2mm and I used a #7 drill bit). Next you will countersink the holes for the heads of the mounting screws. You want to make sure not to drill the countersink too deep. I measured how high the screws

extended out of the backing jaws when they were all the way in (i.e., when the screws hit the bottom of the hole and wouldn't go in any farther). In my case, the screws protruded 4.6mm, so I set a depth stop on the drill press to stop at 5.6mm just to be safe. I used a  $\frac{5}{32}$ " (10mm) drill bit to drill the countersink holes (Photo 6). Large drill bits can easily grab in the soft plastic, so be sure to hold your work securely.

### Cut into four pieces

Mark additional lines at 45-degree angles to the original lines. ▶

## Mark and drill mounting screw holes



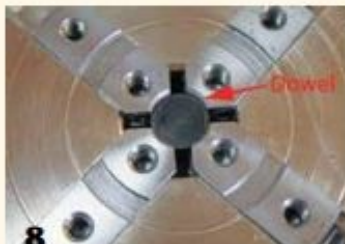
Precisely mark the location of the mounting screw holes. First drill the shank holes, then countersink to recess the screw heads.



## Cut and mount



7 Lay out and cut the four jaws on the bandsaw. Before mounting them on the chuck, tighten the backing jaws onto a dowel to eliminate excess play.



8

## Customize your jaws



9 With the soft jaws mounted, shape them to best hold your workpiece. Shown here is a recess being cut with a parting tool and threads that will accept the threads of the box being mounted, as shown in the opening image.



10

Depending on your application, you may want to leave the jaws in the shape of a quarter of a disk or cut them narrower. In my case, I decided to make them  $\frac{3}{4}$ " (19mm) wide, so I marked some additional lines before cutting them out on a bandsaw (Photo 7).

Clean up the sawn edges by sanding on a disk sander. Clean up the remaining fuzzies on the edges with a sharp utility knife.

### Cut the shape of the jaws

Prior to mounting the four pieces on your chuck for final shaping, it is important to make sure the backing jaws are pressing firmly against something. This eliminates the

backlash between the teeth of each backing jaw and the scroll inside the chuck. I turned a small hardwood dowel to a diameter of 11.5mm and clamped the backing jaws firmly onto the dowel (Photo 8). Be sure the dowel doesn't stick out and interfere with mounting the polyethylene jaws.

It is important to number the four pieces so you can always put the same jaw onto the same number backing jaw. This ensures optimum accuracy.

Now mount the four pieces on the backing jaws of the chuck and turn a profile that will grab onto your work. For this example, I'm going to recess the center for a diameter of

1.3" (33mm), being careful to stop before I hit the heads of the mounting screws. As before, a small parting tool works well for this operation (Photo 9).

### Cut the threads

If you want simple jaws without the threads, you can stop now. For holding onto the male threads of a box with a threaded lid, you'll want to cut the threads using a threading jig (like the Bonnie Klein jig or similar product). Hand chasing is probably not a good choice. I'm going to cut 20 tpi threads, but you can cut the threads to whatever spacing you prefer (Photo 10). Remove the jaws and clean up all the fuzzies again with a sharp utility knife.

### Using the jaws

These threaded jaws work well for a range of diameters. You can also make larger ones if needed, as well as expanding threaded jaws for holding the interior of female-threaded box lids.

Soft jaws are not intended for harsh cuts or hollowing operations. Use a tailstock to support your work whenever possible. When making the final cuts without the tailstock, be gentle and take very light cuts (being sure to stand out of the line of fire). Remember, your work is only being held by a "thread." ■

*Bill Ooms learned woodworking from his father. After a career as an engineer, Bill became a full-time woodworker. He works with rose engine and ornamental turning, which combines his woodturning skills with his math and engineering background. For more, visit [billooms.com](http://billooms.com).*



# Balloon Assist for Filling Voids

Peter M. Smith

**T**urquoise dust makes a striking inlay to fill voids and imperfections in turnings. Inspired by an *American Woodturner* article on dealing with cracks in bowls (vol 30, no 4, page 20), I dug up a spalted maple vase I had turned; it had large cracks and had been crying out for attention for several years. It was finished but unsatisfactory and had been consigned to “bowl limbo.” I was inspired to improve it.

The cracks in this vase were more than slight imperfections—they called for a large amount of inlay and filler bound with glue. But how was I to fill the voids without having the glue pour through the gaps and into the vase? A balloon inflated inside the vase provided the necessary support.

## The process

Inflate a balloon inside the vase and tie it off. Be careful not to overdo the

pressure and create more cracks. To prevent the glue from adhering to the balloon, I applied paste wax to the balloon through the crack (carefully avoiding the sides) with a small paintbrush, as shown in the *opening image*.

Add filler pieces in the cracks against the balloon and fix in place with a small amount of thin cyanoacrylate (CA) glue. Be sure the glue makes contact with the outer walls of the crack, and try to keep these larger filler pieces below the surface of the workpiece. I used turquoise nuggets (*Photo 1*), which I had on hand. If the design allows, wood chips would also do here.

Then mix turquoise dust with CA or epoxy in about a 30:70 ratio to keep the mix thin, and fill in the rest of the space, smoothing as much as possible. Alternatively, the glue can be added into the crack directly and the dust mixed with it *in situ* (*Photo 2*).

After the glue has cured, burst the balloon and remove as many of the balloon fragments as possible.

## Sand and finish

Sand the turquoise flush with the workpiece by hand or with power-sanding discs. I did not remount the piece on the lathe to do this. Be sure to wear an appropriate dust mask while sanding. Wipe the area clean of sanding dust and add more inlay material as needed for any low spots or gaps. Resand. Finish and buff according to your preference (*Photo 3*). ■

*Peter M. Smith is based in Princeton, New Jersey, and has been turning for more than 30 years. He emphasizes classical bowl forms at the intersection of art and craft that have persisted down the ages. He is currently trying for the perfect bowl. He can be contacted at peter@sandsmith.com.*



### Fill voids in two steps



**1** Use larger filler pieces to take up the majority of space in the void. Glue them in place with a small amount of CA glue.



**2** Mix turquoise dust with glue to fill the remaining space.

### Sand, finish, buff



**3** Sand the turquoise flush with the workpiece. Finish and buff.



## TURN A Square BOX



Michael Hamilton-Clark

**W**hen I came across two off-cuts in the oddments box at a local mill, the wood's intriguing grain patterns caught my attention. They were figured maple, with beautiful patterns on the square faces. It occurred to me they could be made into attractive small bowls. But back in my shop, as I turned one piece around and over to decide which face would best be uppermost in a bowl, I changed my mind. Recalling that I had some cylindrical magnets left over from a previous project, I decided the block of wood should become a square box with a turned interior and a lid attached with a magnetic hinge at one corner. I have since made several boxes in this style, using the following methods.

### Turn a square box

You can use any type of wood, but start by dimensioning it to 2" (5cm) thick and 3" (8cm) square. Identify the side of the block with the most attractive grain and cut off a 3/8" (9.5mm) slab for the lid (Photo 1). Next, hold the lid piece in place on what will be the box body, and make a reference mark across the joint so you'll know later how to match them up again.

Mount the body block on the lathe and hollow the box's interior as you would a small bowl, leaving 1/4" (6mm) at the outer edges for the magnetic hinge. I prefer using Cole jaws for this mounting, but you could also use regular chuck jaws if they are large

enough. To prevent jaw marks or bruising, wrap masking tape around the block several times (Photos 2–4). If you prefer a straight-sided interior, use a ▶

### Cut lid from box blank



Cutting the lid from the box blank ensures continuous grain flow from lid to body, as well as uniform sizing of parts.

### Mount square box on lathe



(2) Masking tape protects the box's edges as it is held and turned on the lathe.

(3–4) Two methods of mounting square stock—jumbo, or Cole jaws, and in the open gaps between regular chuck jaws. Mark a circle indicating the interior hollowing limits.

small bedan or square-nose scraper. In any case, leave about 1/4" thickness in the bottom (Photos 5, 6).

After you have hollowed the box interior, the flat top surface should be scraped to remove any saw marks and to ensure there is a good interface between lid and body. For this scraping, or skimming, I use the blade from a 2" jackplane, as shown in Photo 7. The blade is wide enough to cover the

entire width of wood being scraped, and I find it gives a better result than using a gouge for a truing cut. Check the surface for flatness with a straight-edge—no light should be seen between the wood surface and the metal edge (Photo 8). The tape wrapping also helps prevent tearout/chipping when turning the flat surface at the outside corners. Do not use abrasives here, as they will likely round over the edges.

The block should then be reverse-mounted so the bottom can be scraped in a similar manner as the top and checked for flatness.

### Turn the box lid

Now mount the box lid in a similar fashion as the body, except a flat spacer should be positioned behind the lid so the lid's surface will protrude above the jaw's grips (Photo 9).

Both sides of the lid should be given the same surface scraping treatment; again, I use a plane blade for this (Photo 10). Upon completion of the scraping, match the body to the lid to check that the surfaces adjoin nicely (Photo 11). Scrape more to flatten the lid as needed.

### A magnetic hinge

The box lid is attached to the body using two 1/4"-diameter x 1/4"-long cylindrical magnets set in holes at one corner. One is installed in a corner of the body, countersunk 1/8" (3mm) deep, and the other is installed in the matching corner of the lid and protrudes just slightly less than 1/8" (Photo 12). To ensure the lid and body will line up when assembled, clamp the parts together prior to drilling. Drill a 1/4"-diameter hole on the corner-to-corner diagonal and centered between the corner and the box's cavity. A piece of tape positioned on the drill bit indicates the hole's depth, which should run

### Hollow the box



5 The box cavity can have straight or sloped sides, depending on your preference.



6 Use a depth gauge to ensure about 1/4" thickness at the bottom.

### Refine the flat box top



7



8

The author uses a sharp hand plane blade as a scraper, then checks for flatness with a straightedge.

### Mount box lid



9

When mounting the thin lid part, position a spacer behind it so its surface protrudes above the holding buttons on the chuck.

### Refine lid-to-box union



10



11

Scrape the underside of the lid to remove saw marks, then test for a good union by holding up the box.



through the lid and a bit more than  $\frac{1}{8}$ " into the body (Photo 13).

The magnets will be a "press fit" in the holes, so once the body magnet is in, there is no way to remove it. The lid magnet should be pushed in and adjusted as necessary by tapping it further in or down from the top. Prior to installing the magnets, take care to mark their matching faces with the correct polarity to ensure they will face the right way. Once the smooth operation of the lid is obtained, both magnets should be secured with a drop of instant glue.

The exposed upper part of the hole in the lid should be plugged with a decorative turned button, as shown in the opening image. Turn the button with a  $\frac{1}{4}$ " shaft and  $\frac{1}{2}$ " hemispherical crown. An off-cut of a pen blank could be used (Photo 14).

### A magnetic catch

The lid catch, which holds the box closed, is also magnetic, though I used smaller magnets for this purpose— $\frac{1}{8}$ "-diameter  $\times$   $\frac{3}{8}$ "-long cylindrical magnets installed in the corners opposite the hinge set. The catch magnets are installed flush with the wood surface. To ensure the lid and body line up properly when installed, a template should be used to drill the  $\frac{1}{8}$ "-diameter holes. I made a template from a piece of thin aluminum sheet, forming a 1" (25mm) square with two edges cut so half can be folded up and the other half folded down. This will allow the template to fit snugly on the corner of both the lid and body, locating the hole in the same position on each.

Drill a  $\frac{1}{8}$ " guide hole through the template  $\frac{3}{8}$ " from the corner on the diagonal. Mark one face of the template "up," so you'll be able to position it one way to drill into the box and the opposite way (flipped) to drill into the lid (Photos 15, 16). All of this is meant to ensure the two holes—and magnets—will be properly aligned.

If all goes well, the lid should revolve quite freely on its hinge and close onto the catch magnet with a satisfying "click" without any over-travel.

### Finishing up

To finish the box, lightly sand and apply an oil or polish. To keep the flat surfaces flat, sand them on a sheet of abrasive applied to a flat surface. Apply light pressure, alternating between circular and side-to-side motions.

I like to use an oil/varnish mix: 25% pure tung oil, 25% boiled linseed oil, and 50% satin wipe-on polyurethane, together with odorless mineral spirits at 20% by overall volume. This mixture brings out the grain nicely, feels velvety to the touch, and affords a degree of protection. I wipe on three coats, with light sanding between applications. ■

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### A magnetic hinge



**12** The box magnet (right) is recessed  $\frac{1}{8}$ ", and the lid magnet (left) protrudes just less than  $\frac{1}{8}$ ". The magnetic pull and mechanical fit make this a clever hinge.

### Drill and plug hinge holes



**13** Clamp the box and lid together before drilling the magnet holes. One hole, drilled through the lid and into the box body, ensures perfect alignment.

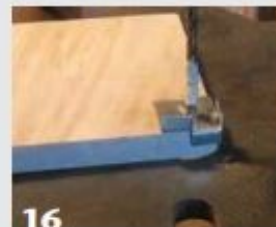


**14** After the magnets are installed, the exposed hole on top of the box lid can be concealed with a decorative button of a contrasting wood species.

### A magnetic closure catch



**15**



**16**

The author's shopmade drill guide template positions the hole location consistently, ensuring proper alignment of the catch magnets in the body and lid.