

# A Touch of Class

## Jazzing Up a Hobby Knife

by Kurt Hertzog

### EVERYBODY HAS ONE

No, not that! But virtually everyone does have at least one Xacto® (or another brand) “razor” hobby knife in their home. The uses for this tool range widely from cutting coupons to being a marking knife in the woodshop, with a whole host of arts and crafts uses in between. From stock factory versions to private labeled knives with advertising, nonslip grips, etc., they are pretty plain for the most part. This article will walk you through the process to convert a plain-Jane Xacto knife into a tool with just a “touch of class.”

### PICK A KNIFE—ANY KNIFE

There are many manufacturers of the style of knife used in this project. Some of the more recognized brands are Xacto®, Fiskars®, Excel®, and Grifhold®, but there are many others available, including the generics with no brand name. These knives are readily available through stationery, craft, discount, or woodworking supply stores. The knife used to illustrate this project is a No. 1 Xacto knife, but the larger-sized knives or those from other manufacturers could also be used (see **Fig. 1**). You simply would adapt the same project concepts to allow for the changes in size.

### PROJECT SUMMARY

The entire project can be summarized as making a new handle for the blade clamp. The hobby knife, in all of its permutations, is basically just a clamp for the replaceable blade and a way to hold it for use. Most of them are fabricated from aluminum and composed of three pieces (see **Fig. 2**). There is a handle, a knurled tightening band, and a blade squeeze/clamp mechanism. All three pieces will be used for this project, but we will cut the handle into a short nub which will then be inserted into the new handle.

### PREPPING THE PARTS

Once your knife has been selected, remove the blade and set it aside. It won't be needed until the project is completed. Always use care when handling and storing these blades, because they are extremely sharp. I wrap the cutting portion of the blade with a few wraps of tape (see **Fig. 3**), so it can be safely handled and also be easier to find later.

The size and anticipated end use of the knife selected will dictate the minimum size of the finished handle.



## SUPPLIES

**Wood:** handle blank from any of the pen blank suppliers or cut from personal stock; scrap piece of hardwood

**Tools:** lathe, hacksaw, bandsaw, chuck with spigot jaws, center drill\*, 21/64" drill bit\*\* or bit according to knife size, drill press, skew or small spindle gouge, 1/8" parting tool, clamps, vise, file

No. 1 Xacto® Knife (or equivalent)

Assorted grits of abrasive paper

Quick-set epoxy glue

Deft High Gloss Spray Lacquer or surface finish of choice

Painter's tape

Laser personalization is available from Kallenshaan Woods ([www.kallenshaanwoods.com](http://www.kallenshaanwoods.com); phone: 702-523-9236)

\*Available from Grizzly Industrial, Inc., PO Box 2069, Bellingham, WA 98226; phone: 800-523-4777; website: [www.grizzly.com](http://www.grizzly.com); use any of these sizes for this project—H4459 (1/8" Ground Center Drill), H4460 (3/16" Ground Center Drill), H4462 (1/4" Ground Center Drill).

\*\*Available from Enco, 400 Nevada Pacific Highway, Fernley, NV 89408; phone: 800-873-3626; website: [www.use-enco.com](http://www.use-enco.com); Order: 300-0121 (21/64" HSS drill bit).

Because this is a turning project, we'll focus on materials that can be readily turned on a wood lathe. The same concept would work with a host of other materials, from polymer clay (turned or not) to casting materials, should you desire to make a form or moldable grip for your replacement handle. A shape can be created that molds to the contours of your grip, or a handle can be made for those with special grip requirements (such as an arthritic person), or you can design something that's really artsy.

### "BOBBING" THE HANDLE

Depending on the size of the original knife and its intend-

ed end use, you must cut the handle to a much shorter length. If you are going to cut coupons with it, you'll just need a minimal amount of the original handle embedded into the new handle material. Only enough length to contain the threads for the blade clamp is really needed. However, if you are going to carve with it or do other heavy-duty work, you should adjust the length of handle stub to be embedded accordingly. Make the stub longer to provide more strength for these more strenuous uses, particularly if you intend to have a relatively thin wall in the final handle.

My finished knife will be used for cutting stencil material and/or veneer, and will also be used as a marking knife in the shop. All of these are light-duty applications, and I want a "pen-like" finished product for its dexterity. Therefore, I cut the clamp end off about 2" with a hacksaw (see Fig. 4). Clamp the handle in a metal or wood vise with the required length protruding and cut it free. Cutting through it with a hacksaw takes less than a minute. I use my belt sander to remove the sharp edges created by the cut.

### DRILLING THE BLANK

As mentioned earlier, you can use just about anything that can be turned, cast, molded, or otherwise used to create a handle. Some of the many possibilities are shown in Fig. 5.

If you use the No. 1 Xacto knife (or one of its clones), the aluminum handle diameter is nominally 0.312". I use a 21/64" drill bit (0.328") to drill the hole. However, if you've selected a different style or size knife, measure the diameter of the handle shaft and use a drill size that is slightly larger in diameter. A slip-fit is desired so you can slide the pieces with glue into the drilled hole. If the clearance is too small, it will be difficult to slide the pieces in when gluing, and most of the glue will be stripped off during insertion. If the clearance is too large, a sloppy fit will be created and need to be filled with excess glue.

I used a pen blank for my handle material, but feel free to use any stock that you desire or have handy based on its color, texture, or special meaning. Drill the blank to sufficient depth to accommodate both pieces, plus a bit of length for the saw kerf loss when they are cut apart. A bit of tape on the bit (see Fig. 6) will help you with this. It's helpful to add a little extra stock for truing up the ends as well.



Fig. 1

There are many different styles and sizes from which to choose.

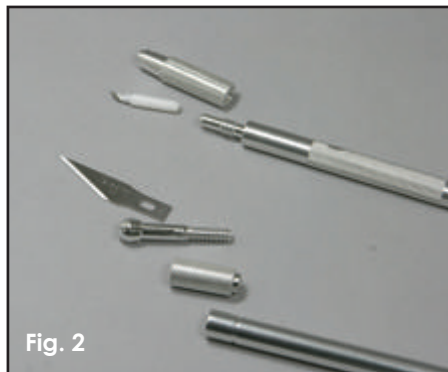


Fig. 2

Most razor knives have three parts.

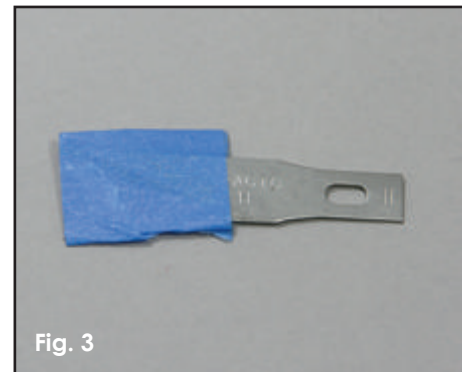
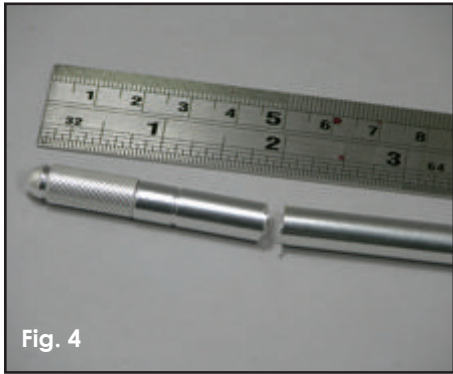


Fig. 3

Wrap the cutting end of the blade with tape for protection.



**Fig. 4**  
Cut off the end of the aluminum handle with a hacksaw.



**Fig. 5**  
Many different materials can be used for the new handle.



**Fig. 6**  
A little tape on the bit acts as a depth gauge.

Drill the blank on a drill press, in the lathe, or with a hand drill by clamping the stock into a vise. Centering the hole is desirable, but once it has been drilled, the turning will be done using the drilled hole as a center. Minor misalignment will not be an issue providing there is sufficient wall thickness.

### GLUING THE BLANK

The blade clamp-tightening band is usually knurled, so the glue will have plenty of "tooth" to grip. Unfortunately, this is not the case with the threaded portion of the handle; it is normally smooth. To give the glue a better surface with which to bond, rough up the stub with a piece of coarse abrasive paper. If you use paper in the 60-, 80-, or 100-grit range, a set of pretty deep scratches will be created, giving the glue a better grip. Scuff up the surface in all directions (see **Fig. 7**).

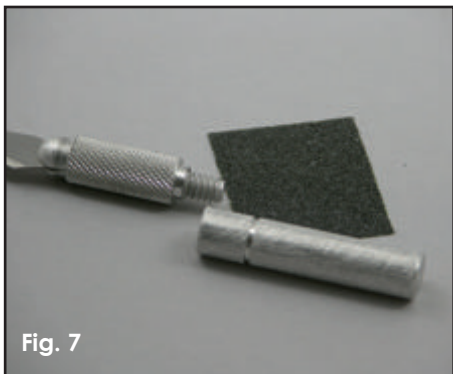
Mark the drilled blank at the cut point that will create the two pieces: the short clamp-tightening piece and the remainder of the new handle. Depending on your material selection, you may wish to mark the blank to maintain orientation for grain alignment. I've marked the blank (see **Fig. 8**) with a cutline as well as a few marks to show the orientation, and I do this as a matter of habit from my penturning experience. Cut the blank on a bandsaw or with a hand saw on the cutline, thus creating the two

handle pieces for gluing (see **Fig. 9**).

Glue the aluminum pieces into the new handle material using quick-set epoxy glue (several brands are shown in **Fig. 10**). You might even wish to use epoxy with a longer open time. Other types of glue could be used, but I find that the epoxy works well with the open time I need, the gap-filling properties required, and the strength needed after it cures. The directions for my quick-cure epoxy say it can be used after one hour, but I let it cure overnight to ensure that it is at full strength.

Mix the epoxy per the manufacturer's instructions and lightly coat the inside walls of the wood blocks. Coat the pieces of aluminum with a light coat of epoxy as well and slide them into their respective wood blocks. Obviously, you want to install the bobbed handle piece correctly, so the threads are showing at the open end and the stub has bottomed in the hole. Press this piece in slowly to allow the trapped air to bleed by the aluminum as it bottoms. Slide the knurled clamp ring into the short wood block, again paying attention to the top and bottom ends so the grain alignment marks will be properly maintained should that be desired (see **Fig. 11**).

Center this piece within the wood block so there will be a little bit of excess wood at both ends to allow for squaring up and for a lead-in taper (more on this later). Set these pieces aside to completely cure before proceeding to the next step.



**Fig. 7**  
Scuff up the aluminum tube to provide tooth for the glue.



**Fig. 8**  
Make witness marks to help with future alignment.



**Fig. 9**  
Cut the parts to length on the bandsaw.



Fig. 10

Several brands of epoxy are available, from quick setting to those having a longer open time.



Fig. 11

Insert the tubes carefully to preserve alignment and depth.

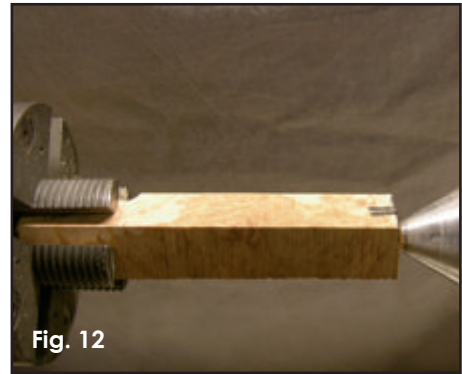


Fig. 12

The live tail center fits into the hole.

### TURNING THE NEW HANDLE

There are several ways to turn the new handle and I'll explain a method easily accomplished by most turners. Though it might seem a bit tedious, it will yield good results. Naturally, there are other methods available, and if you have a better, quicker, or more preferred method that works for you, by all means use it.

Mount the long part of the new handle in the lathe with the open end at the tailstock end. I am using a chuck with spigot jaws, but you can use a standard drive center or drill chuck in the headstock if you don't have a chuck. You might need to turn the handle between centers to round it and put a spigot on it to allow it to fit your drill chuck.

Use the tail center in the drilled and glued end (see Fig. 12). Lightly tighten the headstock clamping and use the tail center to align the piece based on the drilled hole. After things are centered based on the drilled hole, properly tighten the headstock clamping, followed by securely tightening the tailstock. This sequence will center what will become the main body of the handle (based on the actual drilling) and will help compensate for any minor centering error you might have created during the original hole drilling.

Turn the corners off the stock and take it to round for

as much of the blank as can be safely turned, based on your mounting technique. My handle looked like that shown in Fig. 13 at this point. Don't be concerned about any sections of the blank that can't be safely turned now; we'll take care of that later in a different mounting. Face the end of the blank so it is flush with the aluminum insert now if you can easily access it (see Fig. 14). If the tailstock prevents easy access, wait to do this until we remount the blank.

### REVERSING THE MOUNTING

Reverse the mounting using the newly rounded surface as the mounting and alignment mechanism (see Fig. 15). The outside surface in this area of the blank should now be reasonably concentric with the drilled hole and will provide pretty good alignment. When mounting it, focus on getting good alignment in the headstock mounting and let the tailstock end of the material go to its natural position. We'll be turning away more material on the barrel portion that is in the chuck, so don't worry about minor jaw marks made on the blank at this point.

Once the blank is mounted, create a new center on the tailstock end based on the current mounting. Use a center drill mounted in the chuck in the tailstock if you have one (see Fig. 16). If you don't have a center drill, you can create this center using the long point of a skew or a



Fig. 13

Round off the blank as much as possible.



Fig. 14

Square the end off now if possible.

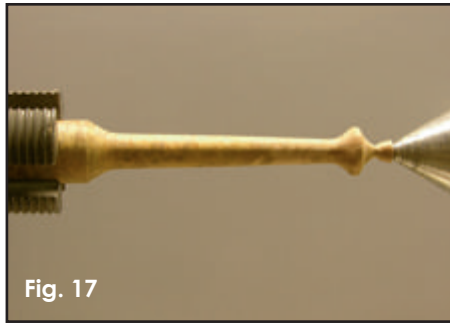


Fig. 15

Reverse the blank and mount the opposite end in the chuck.



**Fig. 16**  
A center drill works best to locate the new center on this end of the blank.



**Fig. 17**  
Get as close to the final shape as possible.



**Fig. 18**  
Make a jam chuck from a scrap piece of stock.

small spindle gouge. The blank is now securely mounted with the body concentric with the original drilled hole and the appropriate center in the far end of the blank. Tighten up the tailstock into this center for support.

**Shape the handle:** Do the major shaping now. The blank is mounted in the chuck, the tail center in place, and everything is tightened. This is the most secure grip you're ever going to have on the blank, so do all of the heavy work now. Use the tool(s) of your choice to shape most of the upper end of the handle. Continue shaping the handle until you've gotten close to the final shape on the portion of the blank that can be safely turned (see **Fig. 17**).

You may want to create and use a template for the final shape. Sketch your ideas on paper until you are satisfied with the design, then use this template to transfer key measurements to your turning. The goal is to create a handle shape and size that will be pleasing to hold while using the knife. After you've achieved the shape you want on the portion of the blank that can be safely reached, it's time to change the mounting.

### REMOUNT

Remove the blank from the chuck and mount a scrap piece of hardwood into the chuck (or drill chuck) to make a jam chuck for use as a drive center (see **Fig. 18**). Turn this

scrap block to a size and shape to create a wooden mandrel that will tightly fit into the aluminum insert glued in the end of the handle. Press the aluminum lead-in onto the wooden mandrel. Now mount the handle blank by pressing it onto the jam chuck in the headstock and use the tailstock for support (see **Fig. 19**). Make the fit pretty tight, as friction will provide the drive for the blank.

With the full blank exposed now, shape the grip area of the handle. Again use the tool(s) of your choice to get the blank close to your final design (see **Fig. 20**). This is not the place for hogging off material; use a light touch and let the tool do the cutting.

If you didn't square up the front end of the handle back at **Fig. 14**, now is the time to do it. Square up the front end and cut the blank until it is flush with the aluminum insert. Doing it during this mounting might be easier, and you can safely cut into the wooden mandrel rather than having to avoid the aluminum or steel tail center. At this point, I cut a tapered lead-in on the blank (see **Fig. 21**). While this isn't absolutely necessary, I like the fit of the two pieces when the tightening nosepiece pulls up on a tapered lead-in versus the inherent fit without this taper to taper fit. I make this cut with a 1/8" parting tool; it can be made at an angle of your choice because we'll cut the mating part to match it later.

Make sure you have thinned the top end of the



**Fig. 19**  
Bring up the tailstock for additional support.



**Fig. 20**  
Turn the other end to approximate shape.



**Fig. 21**  
The end can be shaped further now.



Fig. 22

Blue tape aids in securing the blank to the headstock mandrel.

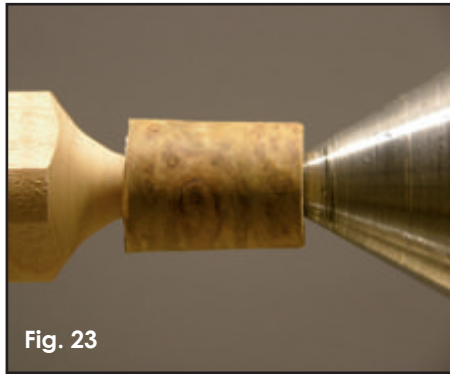


Fig. 23

Mount the smaller blank between centers.



Fig. 24

Retract the tailstock once rough shaping is completed.

handle very close to your finished shape. Keep in mind that the mountings will be progressively less secure as we go forward. Relax the tailstock pressure while continuing to thin the material. Too much pressure and the thin piece will break.

Tape can be used to secure the blank to the headstock mandrel and ensure rotation if necessary (see Fig. 22). Use only sufficient tailstock pressure to support the tail end of the blank.

### THE NOSE JOB

With the upper part of the handle near completion, remove it from the lathe and set it aside while we take care of the nosepiece.

Use the same scrap piece of wood (or another piece if necessary) and turn it appropriately to make a jam chuck for the nosepiece blank. Trial and error will allow you to turn the jam chuck until the nosepiece slips on a very slight taper with enough friction to align the part and provide the grip for turning. Make it a tight fit, but remember that you will have to remove it later. Turn the mandrel long enough to run through as much of the length of the inside of the aluminum ring as you can. This will provide the best alignment. Mount the nosepiece on the mandrel with the interface side of the nosepiece towards the tailstock. I bring up the tailstock to align and support the piece as I

round it (see Fig. 23). Do as much of the shaping as can be done while the tailstock is in place, then retract the tailstock for the next step (see Fig. 24).

Square the interface surface of the nosepiece and cut the mating taper to match the one put into the handle. This is a trial and error cut until you get the desired fit (see Fig. 25). I like the taper to align the parts, pull up pretty close when seated, yet not be an edge-to-edge fit when tightened (see Fig. 26). If they are edge to edge, you might not be taking advantage of the taper.

Once you are satisfied with the taper fit, leave the nosepiece mounted on the mandrel and mount the balance of the handle in the lathe. Press the tapers together and use the tailstock pressure to create a light press into the taper (see Fig. 27). This will provide sufficient force to hold the pieces together with enough friction to drive both pieces. Turn the nosepiece to match the body or to whatever shape called for in your final design (see Fig. 28).

Sand the entire handle through all the grits until both pieces are ready for the application of finish. Notice the intentional gap left between the nosepiece and the remainder of the handle (see Fig. 29). Since it will be nearly impossible to hide the seam, why not accent it? I put a slight bevel on both corners to help prevent dinging with use and to show the gap was intentional. The size of this joint and how it is accented is your decision.

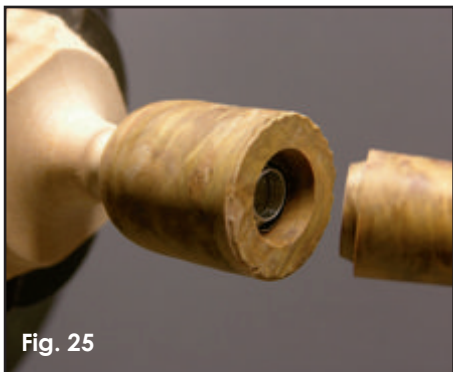


Fig. 25

Cut the mating angle on the nosepiece.



Fig. 26

A slight uniform gap indicates that the tapers are mating properly.

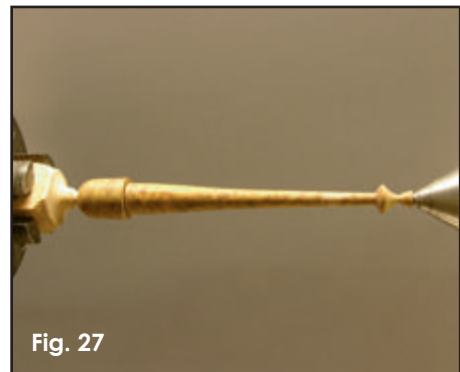


Fig. 27

Remount the handle in the lathe along with the nosepiece.



**Turn the excess material from the nosepiece.**



**Hide any misalignment "in plain sight."**



**The end of the handle is hanging on with just a prayer.**

With the project turned to shape and sanded for finishing (except the very tip at the tailstock left only large enough for strength) (see **Fig. 30**), there is one more thing to do. If you don't want the knife to roll around on the table, or more likely roll off the edge of the table and onto the floor, now is the time to add some flats to help prevent this. Use a file to shape some flats on the detail at the end of the handle (see **Fig. 31**). If there is no appropriate file available, use abrasive paper with a backing block of scrap wood. Make the flats at every 90° as shown or use some other pattern. This measurement is not critical and it is easily done by eye if your headstock doesn't have an indexing system.

### APPLYING THE FINISH (WELL MOST OF IT)

I started the finishing process by dyeing the burl black, allowing it to dry, and then sanding away most of the finish. I think that this "punches up the burl figure," but you can skip this step if you wish.

Next, apply a surface finish of your choice. A friction polish will certainly work, but I prefer a sprayed-on lacquer finish—do this with the lathe running slowly. Be sure to mask off the headstock portion of the lathe. Be sure to use the appropriate personal protection equipment while applying finish. Spray on several coats, allowing the finish to dry between applications.

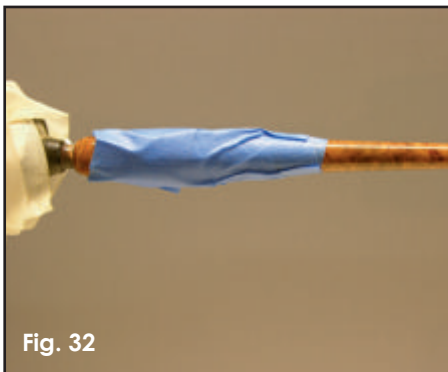
Once the finish is completely dry, I tape the interface joint with painter's tape (see **Fig. 32**) to keep the pieces together and to help provide drive because the tail center will be further relaxed and then ultimately removed. While any tape can be used, I find that a quality painter's tape can be left in place for quite some time and still be removed without causing harm to the substrate or leaving an adhesive residue.

With the handle taped to the nosepiece (which is still securely pressed onto the wooden mandrel), it is time to finish turning and apply finish to the very end of the handle. Relax the pressure on the tailstock until it is just supporting the end but not pressing on the column. Run the lathe slowly and help support the tailstock end of the handle with your fingers as the end is thinned until it is completely parted off (see **Fig. 33**). Feel free to cut this off with a small saw or parting tool if you are more comfortable doing that. Once the handle has been parted off, run the lathe slowly, supporting the free end with your fingers to keep it running true while the very tip is sanded. After sanding, apply the chosen finish to the small area still requiring it and let it dry. When you are ready, remove the handle from the jam chuck mandrel by rotating it as you carefully pull it back (see **Fig. 34**).

The finished project: The turned handle is now ready for assembly. Remove the tape and insert the threaded



**Flats prevent the knife from rolling around.**



**Tape the pieces together again with painter's tape.**



**Be sure to support the fragile end with your fingers until it is parted free.**

blade clamp. Insert the blade into the nosepiece and tighten it to secure the blade. If the grain can be matched, rotate the blade clamp so that the grain aligns when the clamp is tightened. Voilà, the old and the new, or plain-Jane and a "touch of class"



Fig. 34

**Carefully remove the mandrel from the end of the nosepiece.**

(see main photo on page 34). You now have a hobby knife that you'll be proud to have on your workbench, lay-out table, or in your craft box.

When you create your masterpiece or that special gift for someone, consider having it personalized. One of the best ways is to have a name, logo, or design laser-engraved on the finished piece.

This whole concept can be taken to whatever extreme you wish. If you want to make a desk or bench holder for the knife, why not make a dip pen and ink bottle motif (see **Fig. 35**)? Though the handle was done in blackwood, it is a bit pricey to use blackwood to make the base. In this case, the ink bottle was turned from cherry (or any other piece of scrap wood in the shop) and painted black. The hollowing in the ink bottle can be done to hold the knife at any desired angle and can even be lined with some cork if you wish.



Fig. 35

**Here's a bit different concept for the knife.**

Some other examples I'll offer as inspiration for this project are knives with a burnishing ball (graphic artists will appreciate this); various wood species; hand-painted knives; hand-cut spirals; plastic-handled knives; and fountain pen styles with a matching, slide-on cap, some of which are shown in **Fig. 36**. Your only limit is your imagination.



Fig. 36

**You are only limited by your imagination.**



**Kurt Hertzog**

Kurt Hertzog is an avid hobby turner, frequent woodturning demonstrator, and instructor. He is an officer in three of his local AAW chapters and an active member of the Pen Makers Guild. You can see more of his work at [www.kurthertzog.com](http://www.kurthertzog.com), and in his galleries at [www.wnywoodturners.com](http://www.wnywoodturners.com), [www.penmakersguild.com](http://www.penmakersguild.com), and [www.rochesterwoodworkers.org](http://www.rochesterwoodworkers.org). You can contact Kurt with questions or comments at [khertzog@rochester.rr.com](mailto:khertzog@rochester.rr.com).

**Editor's Notes on  
WOODTURNING SAFETY**

There are as many different ways to turn as there are turners. Techniques presented by individual authors represent those methods that work best for them. *Woodturning Design* magazine does not certify any particular method as the "best and only way" to complete any specific turning task and will strive to offer different alternatives. You should always choose the method that you feel comfortable with, the one that works for you, and the one that is safe.

Woodturning can be a dangerous activity. Always wear the proper eye and ear protection and take the necessary precautions to eliminate nuisance dust. Read and understand the manuals that come with your tools and never use a tool in a way that endangers you or anyone around you. If you are not comfortable performing any operation or technique presented in *Woodturning Design*, **DON'T!**