

# Stars and Stripes Bullet Pen

by John Johnson • process photos by Ken Nelsen



Every now and then, I will be working on a project and that little voice creeps in and asks me, "What if?" That question was the origin of this article. Now, before anyone starts with the "not another pen project" objection, let me state that the purpose of this article is to demonstrate that each of us is capable of pushing the limits to come up with some good ideas. The inlay process that I describe in this article may apply to any type of woodturning, should you wish to enhance it. For example, I have made several hundred bullet pens (see *Woodturning Design* Issue #19) over the past several years, and I have been trying to develop a way to enhance them so that they are unique and different from what others are making. I think you will agree that I just might have discovered a method.

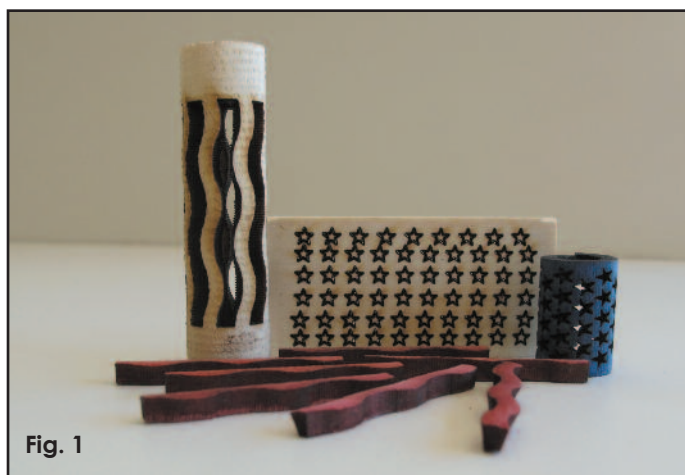


Fig. 1

These are all the lasered parts that come from Kallenshaan Woods.

## GETTING STARTED

In order to build the stars and stripes for the upper barrel, I went down the road (literally—it is a mile down the street)

to visit my friend, Ken Nelsen, at Kallenshaan Woods (see Supplies). We discussed the challenges inherent with making

## SUPPLIES

**Tools:** lathe (with a 60° dead center and a 60° live center); bandsaw; Jacobs chuck with MT No. 2 for use in the tailstock; 7mm drill bit; 3/8" spindle gouge; thin parting tool; calipers; Beall collet chuck (optional); magnifying glass; tweezers  
**Nickel- or brass-plated .30/06 shell casing\*  
Star & Stripes 7mm Pen Kit\*\***  
**Pen hardware (any of the slimline kits will typically work)**  
1/4" heat shrink-wrap  
Assorted grits of abrasive paper  
Micro-Mesh  
Two-part epoxy  
Thin and medium cyanoacrylate glue (CA or superglue)  
Accelerator (optional)  
No. 0000 steel wool  
Brasso polish and plastic polish  
White sheet or something similar

\*Available from Huntington Die Specialties,  
PO Box 991, Oroville, CA 95965; phone: 866-735-6237;  
website: [www.huntingtons.com](http://www.huntingtons.com).

\*\*Available from Kallenshaan Woods,  
940 Crazyhorse Way, Las Vegas, NV 89110;  
phone: 702-523-9236;  
website: [www.kallenshaanwoods.com](http://www.kallenshaanwoods.com).

Please refer to all manufacturers' labels for proper product usage.

an accurate flag, complete with fifty stars and thirteen stripes, on such a small scale. Eventually, Ken came up with a workable solution, and after checking our concept on a few prototypes, we were off and running. **Fig. 1** shows all the parts and pieces that I got in the Kallenshaan kit.



Fig. 2

**You must keep track of these little stars.**



Fig. 3

**A magnifying glass is a must—unless you have super eyes!**

## BUILD THE PEN

Start construction by inserting the stars into the blue field, and as you can imagine, this is no easy feat. **Fig. 2** shows the relative size of one star. I use tweezers and a stationary magnifying glass (that I purchased from Harbor Freight) to insert the stars (see **Fig. 3**). The light on the glass is invaluable.

It is not uncommon for the stars to “jump” out of the tweezers and be forever lost; therefore, I’ve learned that it is best if you work in a clean environment on a white sheet or something similar. Fortunately, Ken anticipated this problem and thoughtfully includes sixty stars with each kit.

The stars are tapered and cut so accurately that they almost snap into place. However, when you are punching out the stars, one of the points is sometimes left behind. *Do not* be tempted to use that star. I didn’t find missing points to be a major problem, and if you find a few broken

points, the extra stars provided are more than sufficient to compensate.

Insert all the stars around the entire background first, making sure that they are pushed solidly into the blue field. Then apply a few drops of thin cyanoacrylate glue (CA or superglue) over the entire blue background so that they are secure. I will either set that part aside to dry, or if I’m in a hurry, spray the assembly with accelerator before setting it aside. Next, align all the stripes, and when they are in the proper order, apply a small amount of CA to the stripes to secure them.



Fig. 4

**This is the assembly of the blue field and the stripes.**

Once you’re sure the assembly is completely cured, dry-fit each section onto the 7mm tube that is provided with the pen hardware, which you purchase separately (it does not come with the kit). I’ve found that some sanding is usually required on the inside of the assembled pieces in order for them to fit correctly on the brass tube.

Lightly sand the surface of each tube to provide a little “tooth,” apply the CA, slide on the star-filled blue field, and align it with one end of the tube (see **Fig. 4**).



Fig. 5

**A slight undercut will work here.**

Next, mount the tube on the lathe, and with a thin parting tool, square up the end that will butt up against the stripes. This is vital to having a well-fitting pen (see **Fig. 5**). Note that I mount the tube between centers using a 60° dead center in the headstock and a 60° live center

in the tailstock. I've found that this is much more accurate than using a mandrel.

After similarly squaring one end of the stripe assembly, dry-fit it onto the tube with the blue field, making sure that there are no gaps between the two tubes. (**Important:** Be sure you have cut off the solid portions of the stripe assembly so that you are working with the stripes only. This task is best accomplished using a bandsaw.) When all is square, remove the stripes, apply CA, and glue the stripe assembly in place. Finally, cover the entire assembly with CA, making sure that it has filled every star and every stripe. Let the assembly dry on its own or spray it with accelerator if you are in a hurry.

## TURNING

Once the assembled tube is fully cured, mount the blank on the lathe, using the mounting method described previously. In looking at the finished pen in the main photo (on page 50), you can see that I fashioned this one so that it roughly resembled the shape of the casing at the opposite end of the pen. However, the pen can also be turned so that there is very little shape to it as well. Ken was extremely generous with the wood (thickness-wise) that is provided with the kit, which gives you many design options; so use your imagination.

I use my calipers to determine the final diameter at each end, instead of relying on bushings—I think it is far more accurate. I wanted the fitting to be flush with the hardware at the star end and to approximate the size of the shell casing used for the bottom end of the pen at the stripe end.

When the shape is completed, sand to 320 grit. I applied four coats of medium CA for the finish, and finally sanded to 12mm with Micro-Mesh. The finish was topped off with some plastic polish to enhance the shine.

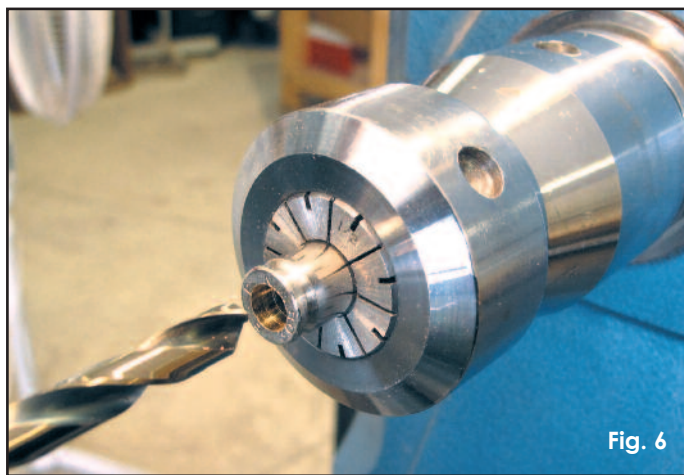


Fig. 6

I find it to be more accurate to drill on the lathe.

## SHELL CASING

Typically, I use a .30/06 shell casing for the bottom of my bullet pens. The finish on the hardware will dictate whether to use a brass-plated shell casing or a nickel-plated shell casing. With this particular pen, you may select gunmetal,

copper, gold, or any other colored hardware finish that is available from your supplier.

To prepare the case, drill a 7mm hole in the bottom (see Fig. 6). (Note: I shouldn't have to mention this but...for safety and accuracy, **NEVER** drill a casing with a primer still in; always remove the primer first.)



Fig. 7

Use the 7mm tube that comes with the slimline pen kit.

I always use the lathe for drilling, because I find it to be more accurate. I use a *Beall* collet chuck to hold the case. After drilling, epoxy in a 7mm tube with 1/4" heat shrink-wrap around one end. There is approximately 1/4" length of wrap on the tube—I bought mine from Harbor Freight (see Fig. 7). After drying, square the ends of the casing, mount it on the lathe to remove any debris with steel wool, and polish it with Brasso.

Then, mount the nib and twist mechanism into the casing, and press the finished stars and stripes onto the twist mechanism.

## FINAL THOUGHTS

As I stated in the beginning, this kit can be adapted to many different applications. The size of an inlay can be turned smaller than you may think and it could even be used in a bowl or on a spindle turning. Assembly may be a bit fussy and even might require the use of tweezers and a magnifying glass, but the end result is well worth it. Everyone that has seen this pen is quite impressed and cannot believe the workmanship that went into the inlay.

### John Johnson

John Johnson has been turning wood since he "semi-retired" from his financial planning business nearly fifteen years ago. In 2010, he (along with his children) started the Shallus Pen Company, which makes pens for the executive market. He and his wife, Patsi, are longtime residents of Las Vegas, Nevada. He can be reached at [john@shalluspenco.com](mailto:john@shalluspenco.com).

