Snake Box

Materials and Tools

The snake box requires one 6"x12" sheet of PG medium maple. It will work with the original (~3.5 mm thick) or the newer (~3.0 mm) material. In addition you will need about a foot (30cm) of button thread or thin, slippery, non-stretchy string or fishing line (e.g. braided Dacron), a 16ga x 5/8" (15 x 1.2mm) finish nail, CA glue, some denatured alcohol, a paper towel or small piece of cloth and a soft mallet to knock the pieces together.

Forging Instructions:

Cutting and scoring takes two "printing" passes in the GlowForge. Pin the sheet down at the start and don't move it until all the cutting and scoring is done.

For the first pass, cut the dark blue vectors, then draft-score the light blue. Finally, cut the green. Ignore the red.

For the second pass, remove Side A and Side B, flip them over left to right and put them in the opposite holes from which they removed. (Side A goes in Side B's hole and vice versa.) Ignore the dark blue, light blue and green vectors and draft-score the red.

Assembly Instructions

1. Remove all the masking. Then, using a paper towel or piece of cloth, rub the two Slider Guides, the top edges of the Snake Guides (the long ones nearest the circular holes) and the Slider itself on their cut sides with alcohol to remove the sticky residue and char. This will make the Slider slip much more easily.

2. Use the mallet to knock the Bottom and Side A together so that they are at right angles. Make sure the fingers of the joint are fully engaged. The Chinese characters should be on the outside.

3. Similarly, install the Open Side and the Closed Side, fully seating the finger joints.

4. Glue Snake Guide A to Side A, making sure its bottom edge is snug against the Bottom and that the tiny hole in Side A is in the center of the circular hole in Snake Guide A.

5. Glue a Slider Guide to the inside of Side A so that its top edge is even with the top edge of Side A and its left and right ends align with Side A's left and right edges. (There's a slot in the Closed Side to accomodate it.)

6. From the outside, push the finish nail through the small hole in Side A. The top of the nail head should be flush with the outside.

7. Turning now to Side B, glue the remaining Slider Guide to the inside of Side B so that its top edge lines up with the top of Side B and its ends are flush with the left and right edges of Side B. When it's positioned correctly you should just be able to see the scored line below the Slider Guide.

8. Glue Snake Guide B to the inside of Side B. Position it so that the corners next to the "B" on each piece line up with one another and the edges of Snake Guide B line up with the bottoms of the finger joints on Side B. The hole in Snake Guide B should be to the right of center. This completes Side B.

9. Glue the Spindle Blocks to the tail end of the Snake, one on each side, so that their holes and edges align forming a three-layer stack with the Snake in the middle.

10. Tie a slip knot in one end of the button thread and use it to lasso the Snake tightly right where the Snake's body joins with the spindle block. Arrange the lasso so that the thread's free end is on the inside of the curve of the Snake and centered in the Spindle Block stack. Affix it with a bit of glue.

11. Place the Snake/Spindle Block assembly over the finish nail sticking through Side A so that the Snake's head rests on the Snake Guide and against the Closed Side. Arrange the free end of the thread so that it wraps around the spindle block and exits the box between the Slider Guide and the Snake Guide on the Open Side.

12. Carefully line Side B up with the Bottom, and the two sides attached to Side A. Use the soft mallet to fully mate the finger joints and to drive the point of the finish nail into Side B. (It won't go all the way through.)

13. From the Open Side, insert the Slider between the Slider Guides and the Snake Guides. Make sure that the end farthest from the small round hole goes in first. Arrange the free end of the thread so that it lies between the Open Side and the Slider. (There's a small gap there for it.)

14. Pull the Slider part way out and give the thread a tug. The Snake should pop out. Assuming this works, feed the thread through the round hole in the Slider. Lead it across the top of the Slider and feed it down through the nearby rectangular hole.

15. Insert the Stop into the other rectangular hole in the Slider. Make sure the hole is over the interior of the box, and push the Stop through the hole until its top surface is even with the top of the Slider. It should fit tightly enough not to need glue.

16. Extend the Slider as far out of the box as it will go. Without moving the Slider, pull on the free end of the thread where it comes out of the rectangular hole, making the Snake pop out of the box. Adjust how much thread you pull out so that when the Slider is fully extended and the thread is taut, the mouth of the Snake rests on the top of Slider.

17. Pin the thread in place by inserting the Tab through the rectangular hole from the top. Drive the Tab through the Slider until its end is even with the bottom of the Slider.

18. Test the box to make sure it works correctly. When the Slider is extended fully by pulling on the Tab, the snake should pop out and "bite" the finger on the Tab. Add a dab of glue to the Tab and the thread to tack them in place. Trim the free end of the thread.