PORCH SWING

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I've seen a number of porch swing designs that look great at first but become a bit rickety over time. This is usually due to the joints that make up the frame of the swing loosening up. Given the forces exerted when one or two people swing back and forth, this is hardly surprising, and it almost starts to seem inevitable. I realized that the most vulnerable part of the swing is the portion of the frame that makes up the sides. It struck me that this problem could be solved in a number of ways, and one unique solution might entail constructing a frame that doesn't have joints at all. With no pivot points that could loosen up over time, the whole structure would seem likely to hold up for much longer, as long as it was finished appropriately to handle the weather.

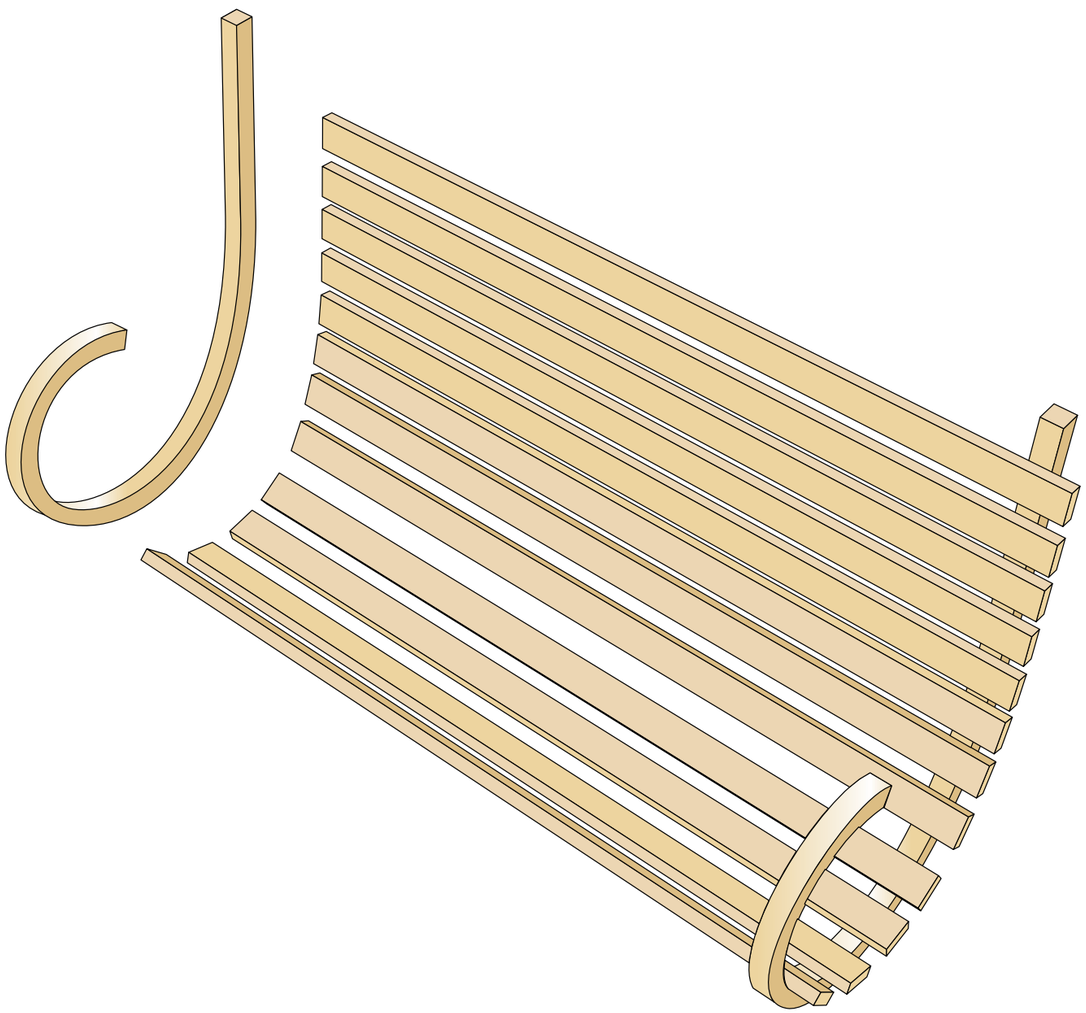
I initially considered building a side out of ¾" plywood, as it would certainly have enough stiffness, but I wanted to present a slightly more challenging solution. Since I'm always looking for ways to incorporate laminating techniques into my projects, this seemed like a neat way to do it.

If you've never laminated parts before, now's your chance. One of my main goals for this chapter — in addition to illustrating how to build the swing, of course — is to present a comprehensive set of guidelines and tips for building bent laminations so that you can confidently add this useful technique to your repertoire of design strategies.

There are a few specialized techniques that people have traditionally used to create laminations. This includes methods such as steam bending, soaking the strips in water beforehand, or using a hot pipe. Some of these techniques are particularly useful when you want to bend thicker pieces of wood or you need to form a tighter radius, and while all of these techniques have their place, it was my goal to demonstrate that cold-bending thin strips around a moderately-sized radius is actually both simple, fast and effective.

PORCH SWING • INCHES (MILLIMETERS)

REFERENCE	QUANTITY	PART	STOCK	THICKNESS	(mm)	WIDTH	(mm)	LENGTH	(mm)	COMMENTS
A	2	sides	pine	1½	(38)	1½	(38)	96	(2438)	after glueup, cut to length
B	12	seat/back slats	1×3	¾	(19)	2	(51)	48	(1219)	rip to width

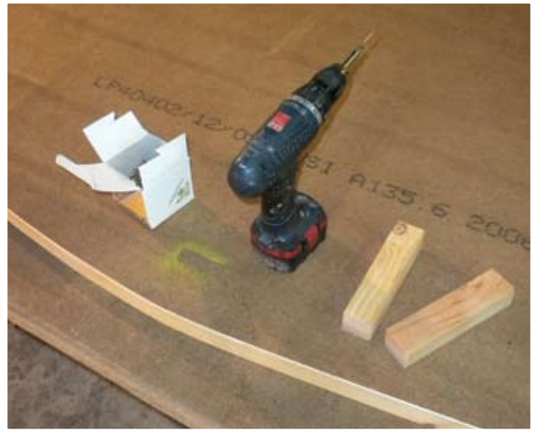


1 To create the laminations for the sides of the bench, I needed 11 strips, slightly thinner than ⅛", per side to create a 1½" thick component. I cut almost thirty strips to get 22 usable ones, and the easiest way to do this is to set the fence in where you need it and then use a couple of standard accessories to safely cut the strips (safety items removed for this photo).

2 I suggest using a featherboard to keep the workpieces from wandering and producing non-standard strips.

3 A sacrificial push stick is also essential equipment. My shop has an unwritten rule that all push sticks must be shaped like animals, but this humor-intensive requirement isn't necessary.

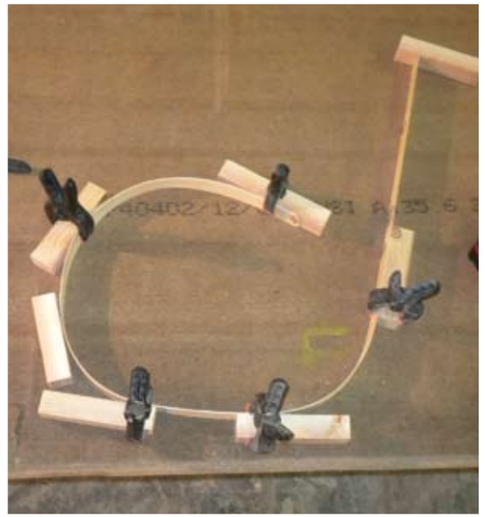
4 The strips that I used for this lamination were 8', which was about 18" longer than I needed. I simply let the excess shoot out at the top. It will be trimmed later.



5 The basic components required for building a laminated side for the porch swing are simple. A flat surface that is big enough to hold the side (4'×4' is more than adequate), a set of clamping blocks (scrap 2×2s or whatever is handy) and a drill and screws that will be used to fasten the blocks in place. Working from a full-sized drawing would be a good idea for a project like this, and I usually do, but in this case, the approximate shape and dimensions for the side were clear in my mind.

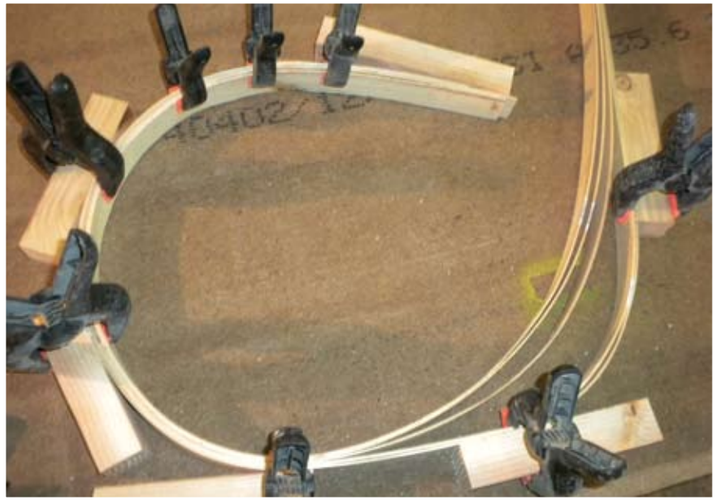
6 Working with a circular diameter of about 14", I just went for it and began laying out the required contour using one of my laminating strips and a few clamping blocks. The degree to which the strips will bend without breaking will depend on their thickness, the type of wood used, the presence (or absence) of knots, and how gingerly you work.

7 I secured the clamping blocks to the worksurface with screws that I drove in from the underside. I suggest working one curve at a time. As the blocks go into place, they can be used to hold the strip in position and then you can move onto the next spot that needs to be supported.



8 This technique results in a form that doesn't support every inch of the workpiece, but it provides excellent support on the key places in the lamination. This approach is fairly organic, and you have to pay close attention to how the strips are reacting as you lay out the blocks. You may find that in some places, you'll need to place a block right on the apogee of a curve, while other instances may require you to place blocks on either side of a curve.

TIP You may find, once you have all of your blocks in place, that the contour of the lamination doesn't seem quite right. It may be too flat in some places or not curvy enough in others. It is a simple matter to just unscrew the required blocks and reposition them so that they push the strips into the desired shape.



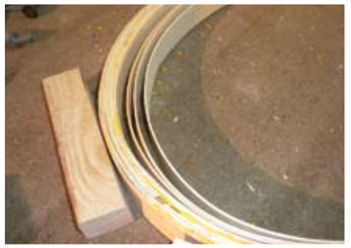
9 **(ABOVE)** Once you've finalized the blocks on the form, you can begin adding other strips so that they can start to bend themselves into the final shape. You'll pull them out later to apply the adhesive, but this step helps the strips start assuming their new shape and it will make the glue-up go more easily. It is also a critical way of testing the integrity of the strips — if any are going to crack (due to a knot or other problem), best to find out now.

10 **(ABOVE RIGHT)** When you're ready to glue up the first lamination, you can remove the strips from the form. Keping them in their exact order shouldn't matter. You can see how much the strips have already begun to conform to their new shape, even after only 15 or 20 minutes in the form.

11 **(RIGHT)** Applying glue to the strips goes fairly quickly — I use a disposable foam brush to make sure that all surface are coated evenly. A certain amount of glue squeeze-out is inevitable. I find that small spring clamps like this are the most convenient way to hold everything in place. I think that every shop should have a bucket full of them — they're inexpensive and very useful.

12 Some of the clamps were used to anchor the lamination to the blocks, while others served to apply pressure to the lamination alone.

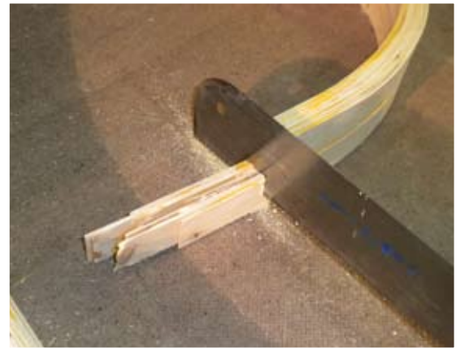
13 If the finished component sticks to the worksurface, a tap with a chisel and mallet should free it. If you really overdo the glue, you could have a problem with this, so setting down wax paper or the equivalent beneath the lamination wouldn't be a bad idea.



14 For my first lamination, I glued up eight strips — mostly because I was a bit nervous and was eager to see how it would come out. This required me to add three more strips and endure a second round of waiting for glue to dry, but this wasn't critical. In fact, breaking things down like this is a good strategy if you haven't done a lot of this kind of work in the past.

15 Because this sort of form doesn't support every bit of the lamination, there is room for variation each time it is used. I could readily imagine producing a set of parts which actually ended up being off by as much as ⅜"! To produce consistent results, I traced the contour of the lamination on the worksurface and used it as a guide to align the second set of strips. This common sense approach worked perfectly.

16 When I added the remaining three strips to complete the first lamination, I found that I could set the whole thing on the floor. This freed up the form for me to begin laying out the second side.



17 Trimming the excess on both ends of the lamination could probably be accomplished in any number of ways. I used a hand saw because it was fast and easy.

18 **(ABOVE LEFT)** People often recommend flattening the edges of the laminations on the jointer. This wasn't practical in this case because of the shape of the side, but it is an efficient method for simpler shapes.

19 **(ABOVE RIGHT)** I used a power planer instead — talk about quick and easy! Taking off about 1/32" per pass worked well.

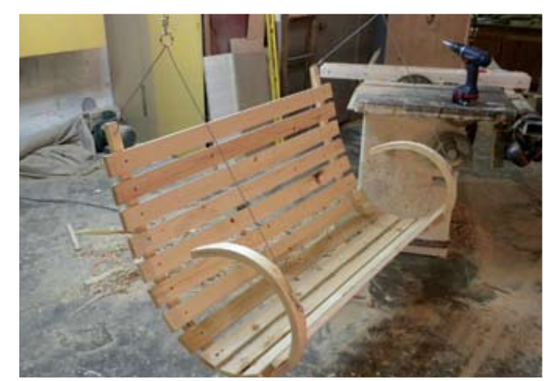
20 **(RIGHT)** A belt sander would be a reasonable alternative if you don't have a power planer. It works just as well and almost as quickly.

21 To begin laying out the seat slats, I clamped the sides in an upright position. Even though the swing was laying on its back, it was the most definitive look yet at how the finished swing would shape up, and it helped me to see how to proceed.

22 Beginning at the top of the seat, I began screwing slats to the sides, using an extra slat as a spacer.

23 Here you can see the swing sitting upright — finally!

24 I thought a cable might be a nice complement to the clean, modern design of this swing, but you could use chain or rope, too. Either way, a pair of eye hooks will need to be installed. Cable swages can be crimped using an inexpensive tool designed for the purpose. Just squeezing them in a vise is tempting, but it may not result in a strong and durable connection.



25 **(FAR LEFT)** The cable attachment at the back of the swing was a little different — I inserted a hard plastic ferrule to ensure that the cable wouldn't abrade the surrounding wood.

26 **(LEFT)** A small metal hoop serves as a friction-free point of attachment for the cables that will connect the swing to the ceiling. I set the swing up in my shop first to see if it would work.