Mark in Mississauga has a semi-circular staircase and he has to replace the floor moldings that will make a semi-circle. How to bend the moldings? Water or steam will allow most wood to bend, and is especially effective with oak.

The Pipe Soaker
One simple rig is simply to take a large PVC drain pipe, block off on end and then either stand it up or lean it on an angle that will allow you to fill it with water and then slide in the molding. You may need to hold the wood down as it will want to float. Let it soak for a couple of days.

The Curve Mold
Then cut a plywood pattern or mold to a circle a bit tighter than the final curve. There is no science here, only art as to just how much tighter a circle you will need, as after you have bent the wood to the mold it will spring back a bit. In the photo you can see that I drilled a hole in the plywood to allow me to clamp one end of the floor molding to the pattern with a block of wood. Tight against the molding is a web clamp that will give even pressure on the molding. You could use a series of clamps but you will have more chance of splintering or having a curve made up of a series of flat sections.

The Bin Soaker
The whole thing is sitting in a water tight trough made up of some scrap wood and a plastic sheet. Then I put hot soaking towels over the molding to keep it wet as every few hours I tighten the web clamp until it is tight against the form. You could keep it under water if you use exterior grade plywood. Then let it all dry before releasing it. If you have a high mineral content in your water, or a lot of chlorine, you may have to use distilled water to avoid staining or bleaching the wood.

Faster with Steam
The whole process can work faster if you set up a box with a steam kettle under it to steam soak the wood rather than water soak the wood.

A trick to the jig
You will be amazed at how thick a piece of molding can be bent in both of these manners. One trick that is not obvious in the photos is that my mold is made up of two circles of plywood, one slightly smaller than the other one. That matches the different levels of the face of the molding so that there is even support as it is bent.