Shoji lamp

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Shoji Lamp

I have always been fascinated by this type of joint where three pieces of wood seemingly interlock as if passing through one another. So, when I came across a similar lamp on Pinterest, I thought, “Yes, this is it.”

For building the lamp, you won't need much wood or many tools. I designed it as a small table lamp to enhance the ambiance, but there's nothing stopping you from creating a large lamp that could serve as the centerpiece of a living room.

Materials

- American walnut: 200x300x15 mm
- Basswood: 150x180x10 mm
- Rice (Shoji) paper: 150x500 mm
- Rice glue (or any glue that bonds wood and paper)

Tools

- Fine saw (Japanese dozuki)
- Stanley plane No. 4 or No. 220
- Chisel 5 mm or smaller
- Chisel 3 mm for kumiko panels (or anything sharp and thin)
- Table saw (if you don't want to cut everything by hand)
- Marking gauge
- Pencil
- Square
- Caliper (for those who want precision)

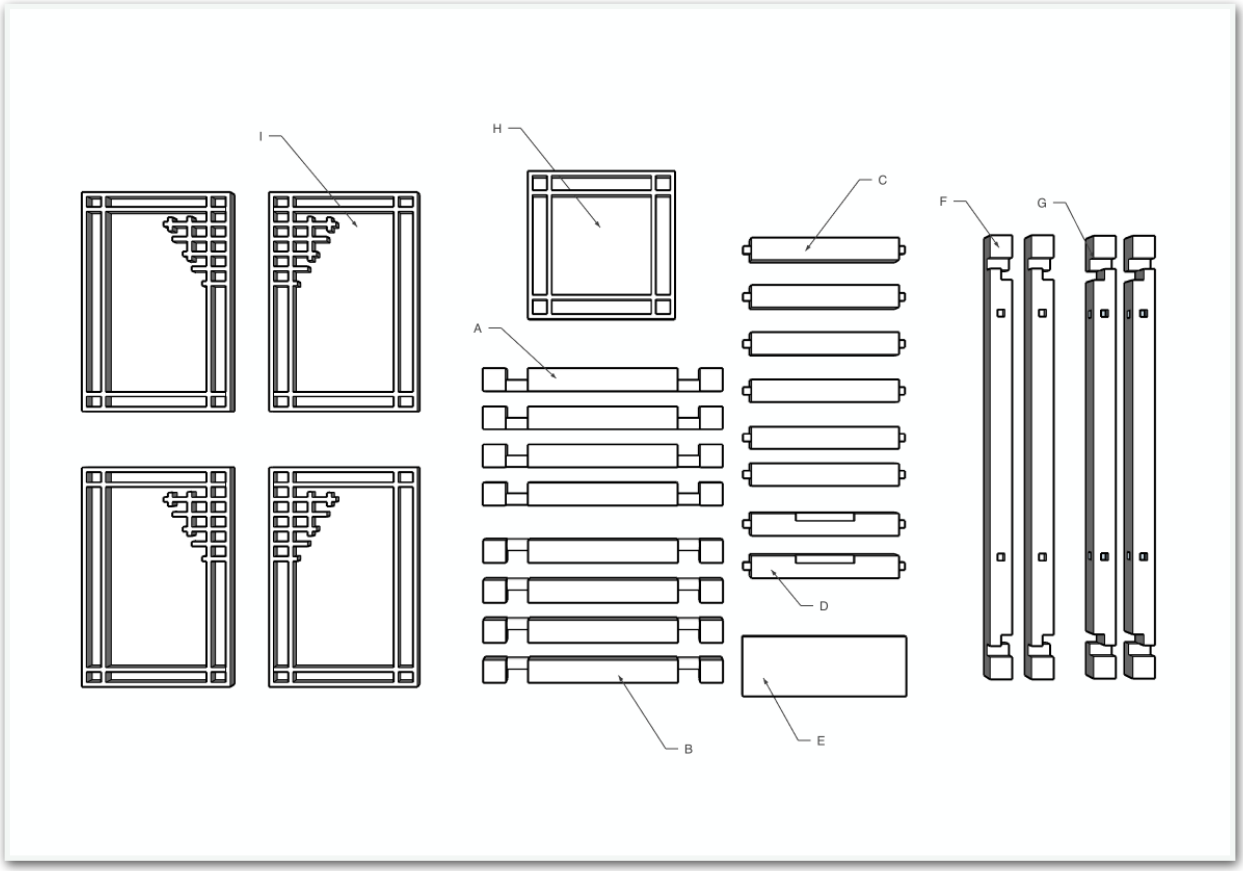
Lamp Frame Construction

First, let's look at what the lamp consists of. In this guide, I will refer to the parts using letters for clarity.

Start by preparing all the materials for the lamp's construction. While using a table or band saw is helpful, woodworking enthusiasts can also manage this by hand, though it might take a little longer.

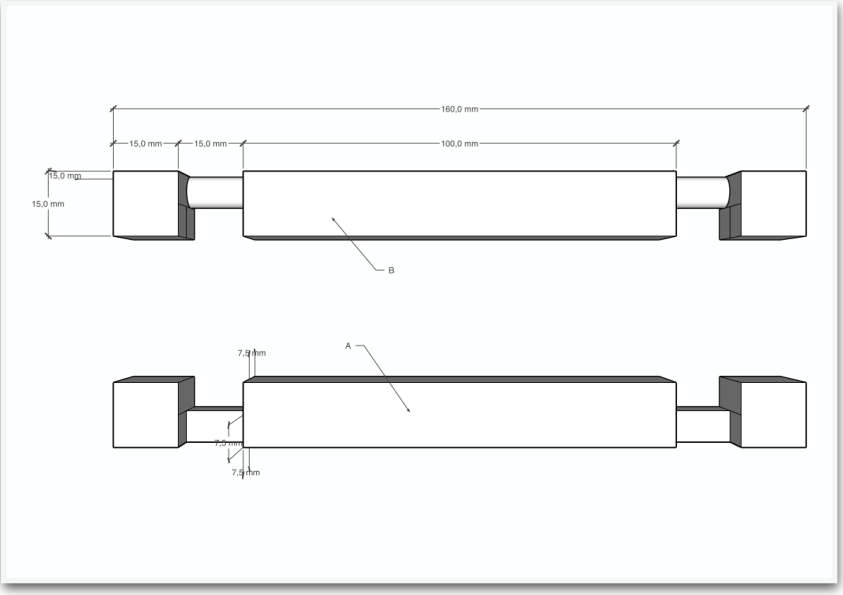
Cut all the rods to the same dimension: 15x15 mm. You'll need a total of 12 rods. Precision is critical how well you cut the rods will determine the ease of assembly and the quality of the final product. Make sure the rods are exactly the same size; otherwise, they won't align properly. Finish the surface at this stage, ideally with a plane. I generally don't like using sandpaper, but it could be used as an alternative.

Once the rods are ready, you can start making the individual parts.



Picture 1. Parts list

Parts (A) and (B): Crosspieces



Picture. 2

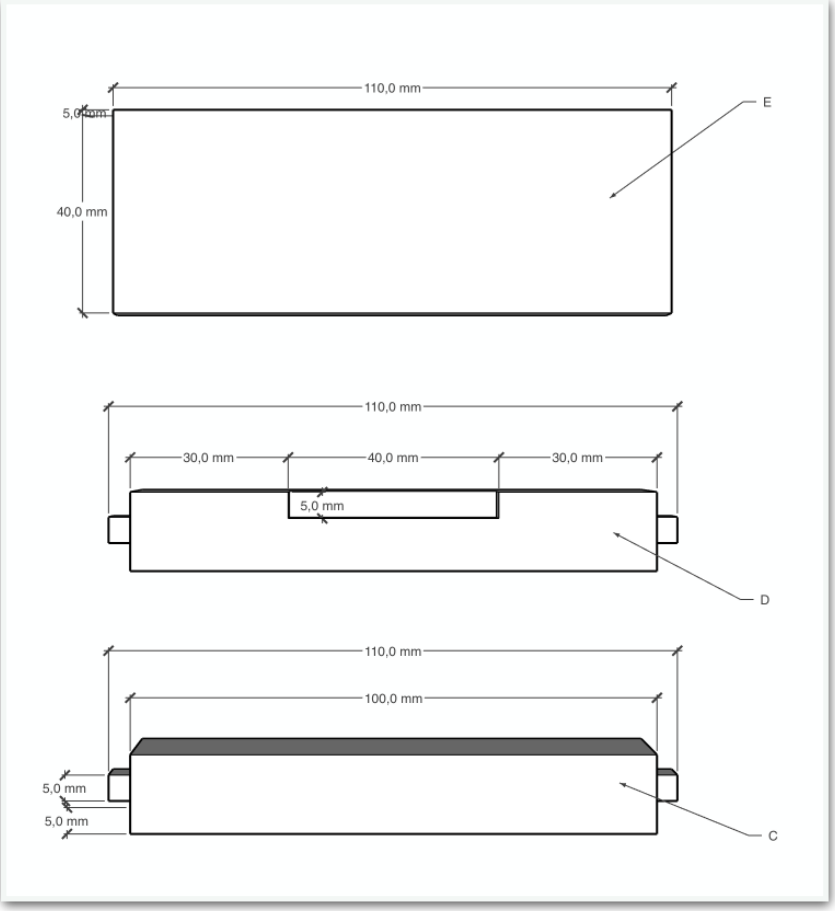
Start with the crosspieces (A) and (B). These parts are very similar, so begin by preparing eight identical pieces for part (A).

Cut the rods to 160 mm in length.

On both ends, carve a 15 mm deep half-lap joint to half the thickness of the rod.

After preparing all eight pieces, take four of them and round out the notches so they can rotate. These four pieces become part (B).

Parts (C), (D), and (E): Decorative Braces



Picture 3.

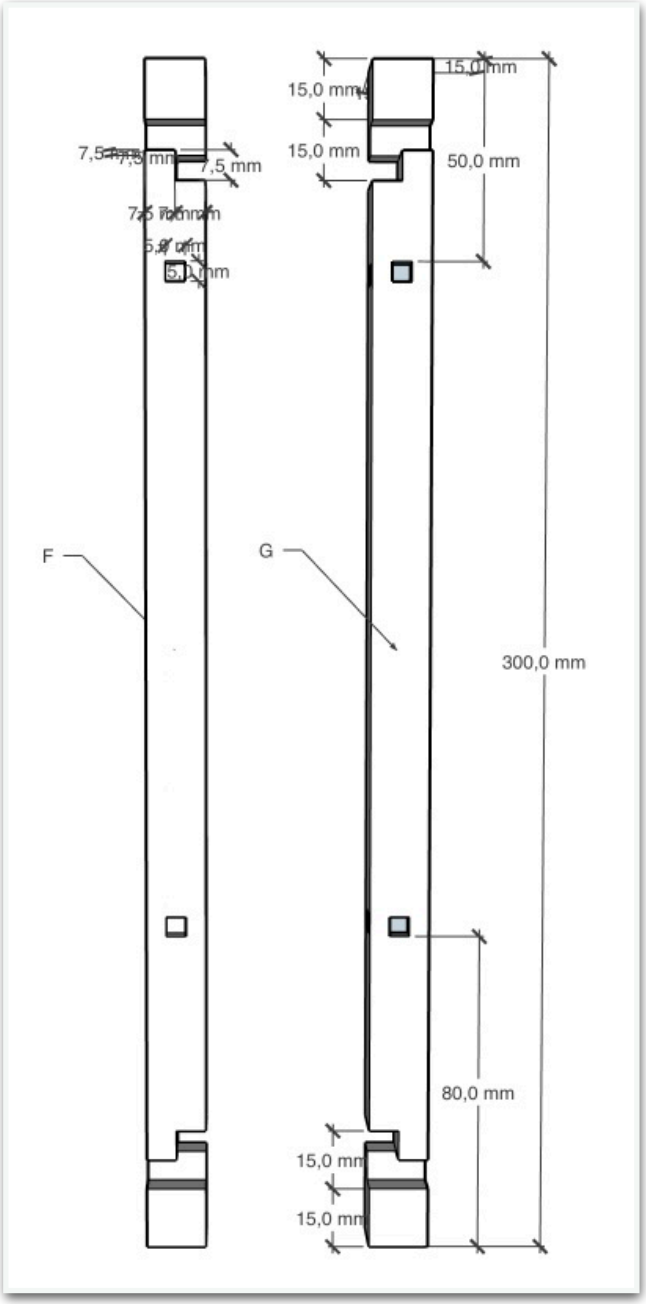
Next, create decorative braces (C) and (D). Use offcuts from the production of parts (A) and (B).

Cut the rods to the required length and add 5 mm tenons on the ends.

Make eight braces (C). From these, take two braces and carve a 5x5x40 mm mortise into them; these will support the bulb base.

Lastly, create part (E), a simple rod that fits into part (D).

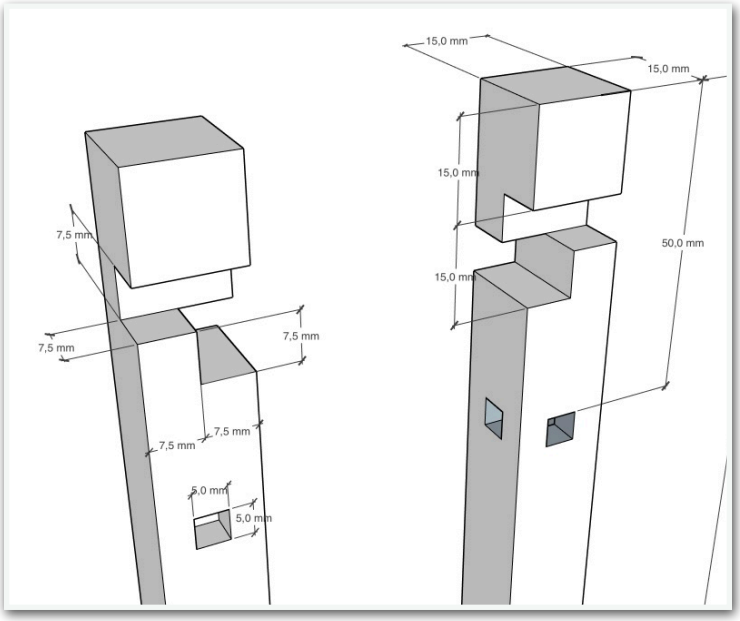
Parts (F) and (G): Vertical Supports



Picture 4. Vertical support

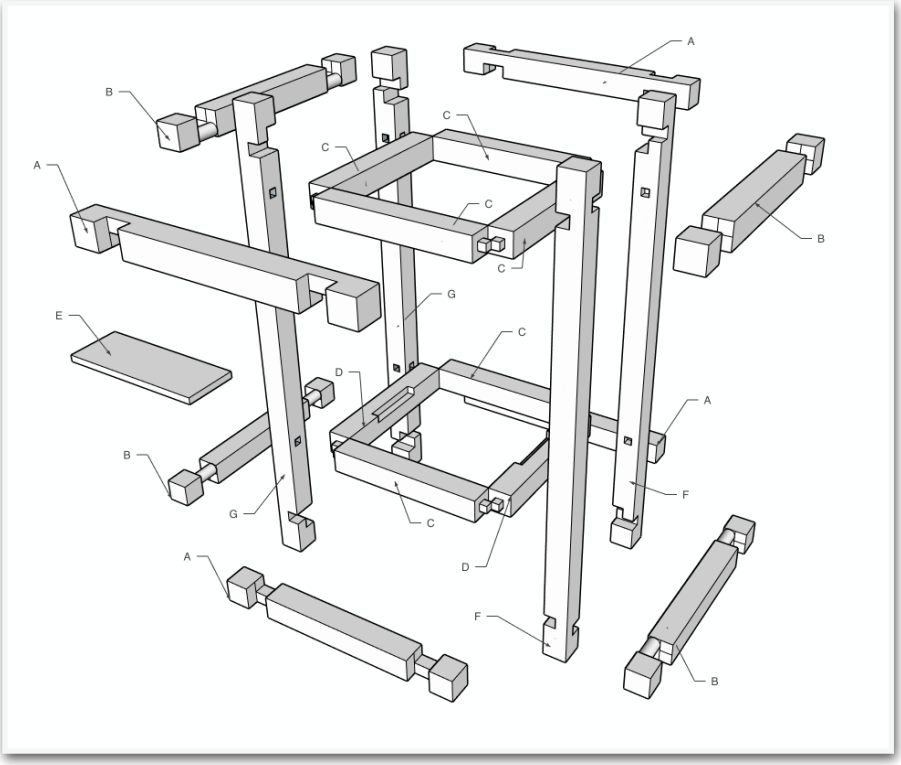
Now make the vertical supports (F) and (G). These might look a little more complicated, but they're not too hard. The supports are mirror images of each other, so be careful not to mix them up. If you do, you may need to start over. (Don't worry, I made the same mistake and ended up making six pieces, but at least I got some saw practice.)

Finally, carve mortises for the braces (C) and (D).



Picture 4a. Mortise detail

Assembling the Lamp Frame



Obr. 5 Složení kostry lampy

Once all parts are ready, you can start assembling the frame. This step is a bit like solving a puzzle. If you enjoy puzzles or LEGO, this will be fun. If not, it might feel frustrating[1].

1. Start with two vertical supports (F) and attach decorative braces (C) and (F) between them.

2. Secure the structure using two parts (B). This should hold everything together.

3. Repeat the same steps with the other vertical supports (G).

4. You'll now have two separate side frames.

5. Lay one side frame on a flat surface and insert the remaining braces (C).

6. Place the second side frame on top and secure it.

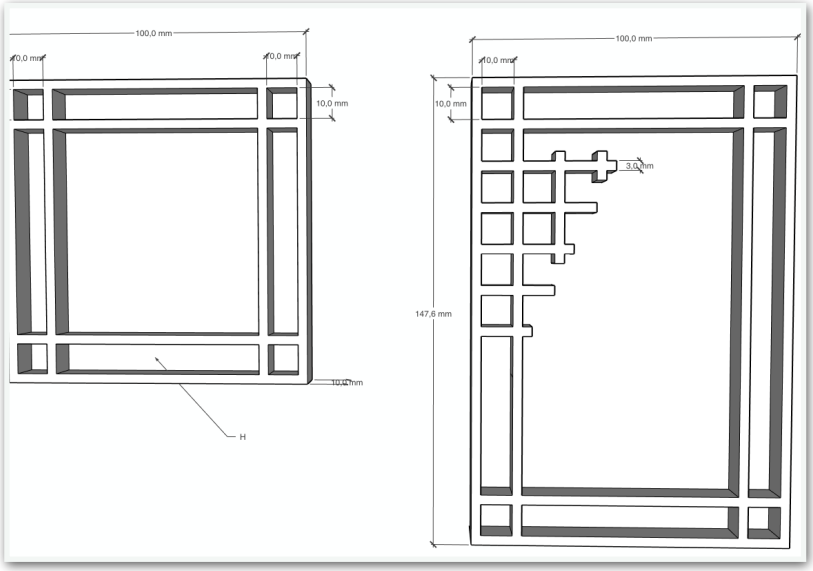
7. Use the remaining parts (A) to lock everything in place. If the parts don't fit, try rotating part (B) so it doesn't block the joint.

8. Rotate parts (B) to tighten the assembly. This will complete the lamp frame.

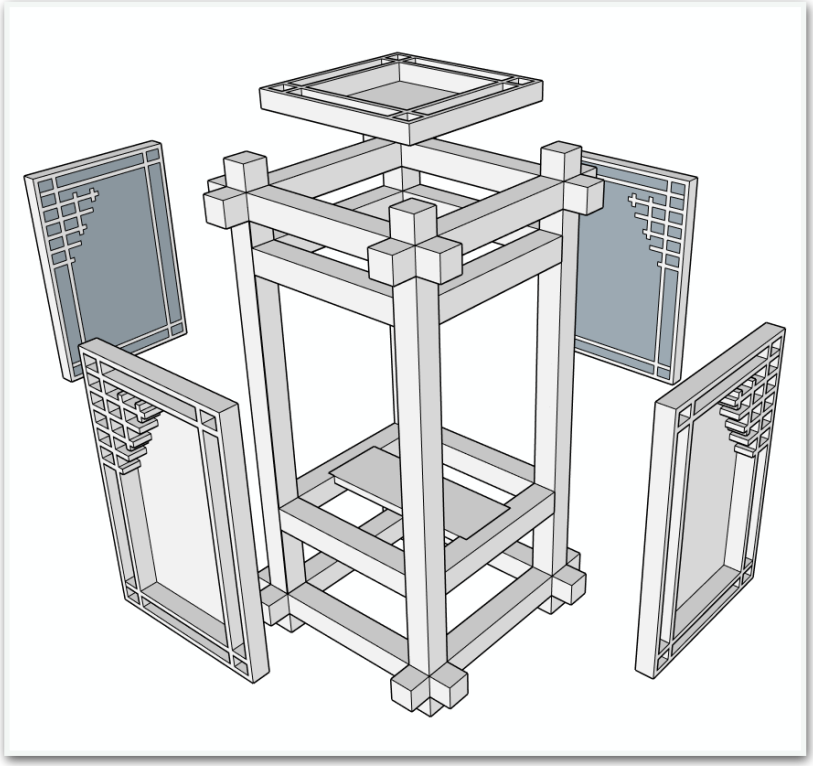
9. Finally, insert part (E).

[1] Tip: If there are any gaps or imperfections, you can mix sawdust with wood glue to create a paste. This paste is sandable and will match the wood's color. Use glue sparingly.

Kumiko Panels



Picture. 6 kumiko panels



Obr. 8 Kompletace

Kumiko panels are like wooden stained glass made from interlocking wooden strips in repeating patterns. Here's how to create them:

1. Prepare Strips

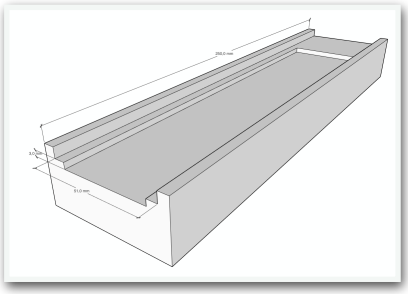
Cut basswood into strips 3x10x150 mm. Use a plane to ensure all strips are uniform in thickness. A jig can help (see diagram).You'll need at least 45 strips.

2. Assembly

Use a half-lap joint by carving a groove halfway into the thickness of each strip. Precision is crucial: uneven strips won't fit properly. If necessary, add a little glue for extra hold, but don't overdo it to avoid excess glue cleanup. Once assembled, sand the entire panel to ensure a smooth, even surface.

3. Add Paper Backing[2]

Glue rice paper to the back of each panel. For two panels, glue the paper to the reverse side; for the other two, glue it to the front. This creates two mirrored pairs.



Picture 7. Thickness jig

[2] Note: Rice paper is traditional and has a unique texture. It's available in various forms, such as sheets or rolls, and sometimes includes decorative patterns.

Lighting

The type of lighting is up to you:

For decoration, use an electric tealight with a flickering flame effect. **Avoid real candles since the lamp is highly flammable**.

For functional use, I recommend a 12V 2W LED bulb with a dimmer. This provides enough light for both ambiance and reading.

Final Thoughts

Thank you for trying this project! In today's fast-paced world, woodworking with hand tools is a form of relaxation and mindfulness for me. I hope it is for you too.

When you look at photos of Japanese interiors, you'll notice translucent panels (often used as walls) made of rice paper. Don't hesitate to experiment with larger surfaces using these techniques.

Let me know if you'd like diagrams or images explained!