French Cleat Workshop Organization

Intro: French Cleat Workshop Organization

I've always found keeping my tools easily accessible and visible to be a challenge. When I moved into my new workshop, I looked for a flexible, inexpensive, and easy-to-build solution that would grow with me. I chose to build a system based on French cleats. French cleats let me mix specialized tool holders, pegboard, and cabinets - all on the same strong, easy-to-make wall mounts.

French cleats are a remarkably simple mounting system that use gravity and friction to hold things in place. In the pictures above, you can see a simple shelf I built as an example of how this works. The 45 degree angle facing away from the wall allows the tool holders and shelves to push down and out against it, securely holding heavy loads while still allowing easy adjustments and placement. To put a tool in place, you simply lower it down onto a cleat so that its cleat hooks onto the one mounted to your wall.

To build this cleat system you will need:

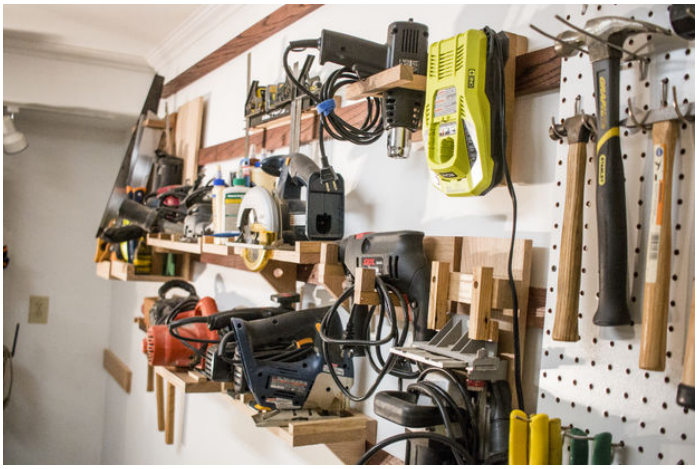
- A saw that can cut long boards at 45 degrees. You can accomplish this with a table saw or a circular saw.
- A drill
- A drill bit smaller than your screws
- A screwdriver (a powered driver is really helpful!)
- Material for cleats - I used oak 1x4 boards for hanging tools, but 3/4 inch plywood or most other 3/4 inch or thicker wood works well too.
- A level
- A pencil for marking
- A tape measure
- A stud sensor to locate studs to mount your cleats to
- Screws long enough to mount your cleats to studs or another strong mounting material.

Note: If you're mounting through drywall, you need to account for the 1/2 inch thick drywall in addition to your cleat material, so you'll probably want screws that are 2.5 inches long or longer.

I also used a few other tools that can make this easier:

- A laser line level
- A chalk line
- A combination square
- A battery powered impact driver
- A 45 degree square
- A countersink bit for my drill

None of these last six tools are absolutely necessary, but they can make the job easier or provide more accuracy.



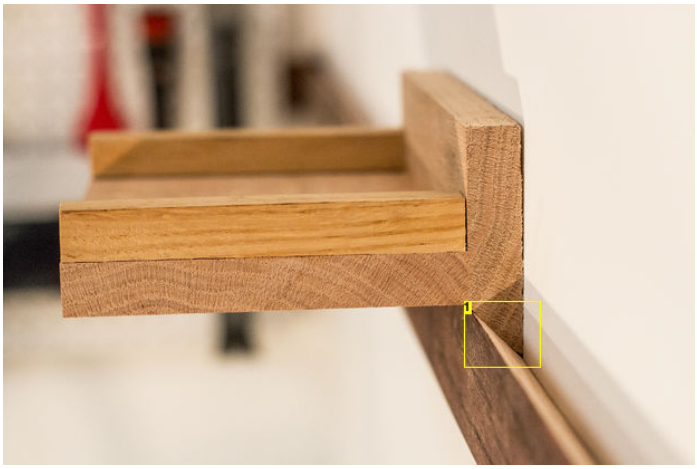
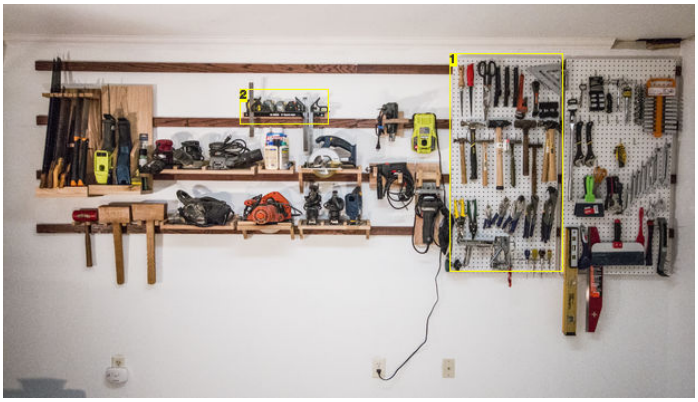
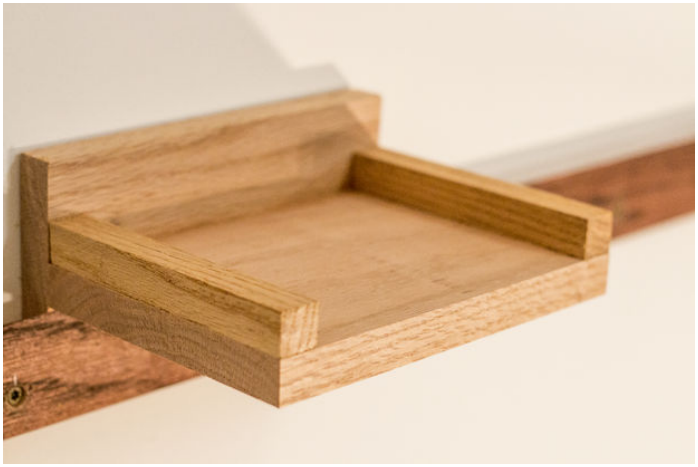
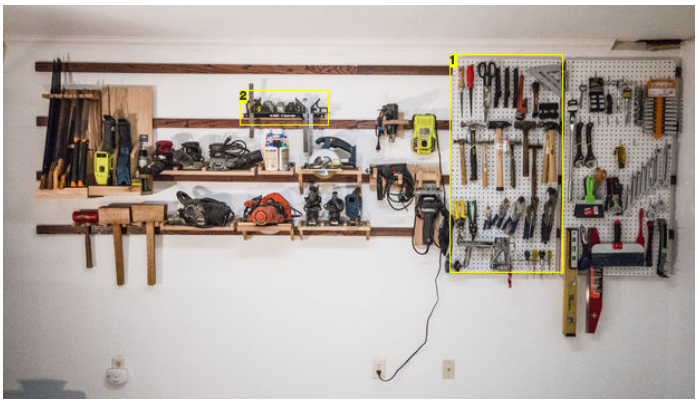


Image Notes
1. The shelf pushes down and outward against the 45 degree angle of the cleat, making it a secure, sturdy mount.







1. Movable pegboard makes it easy to re-design how I hang my smaller hand tools.
2. A magnetic tool holder on a cleat makes a convenient holder for squares. Tape measures simply sit on top.

Step 1: Cutting cleats

French cleats are easy to make: you simply cut a board lengthwise at a 45 degree angle, leaving enough space to screw each half to the wall or to a hanger or other mount. To cut my cleats, I set my table saw up at a 45 degree angle, marked the boards at their midpoint, lined up the blade so half was on either side of the mark, and ripped 1x4 boards lengthwise.

A few tricks can really help you out:

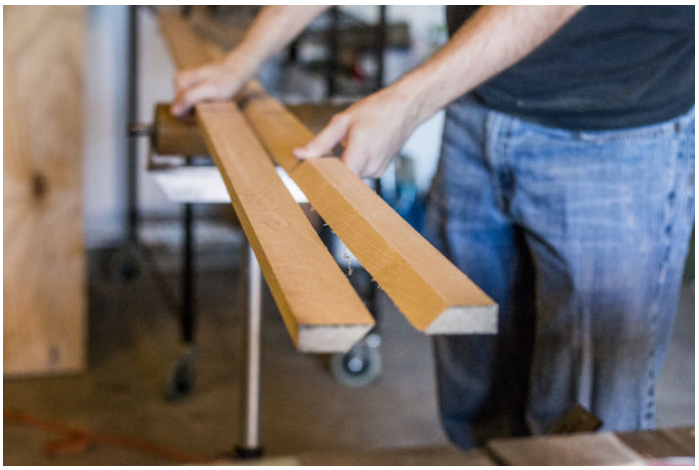
- You may have to remove the guard from your saw to make a 45 degree cut (and your saw may tilt left instead of right like mine does) - be careful when you're operating it, and always use a pusher block instead of getting your hands near the blade. A helper is really useful.
- Cut a scrap piece of lumber that is the same width as the boards you'll be cutting for the actual cleats first to make sure you're making an even cut. You can be a little off, but with a 1x4 you'll want to be pretty close to the middle.
- Getting a perfect 45 degree cut isn't absolutely necessary - just make sure that you are consistent on which half you use for the wall side and the hanger side if you want them to fit perfectly.
- If you're using wider material you can decide how big your cleat should be, then simply use the first cut piece to mark the next one for a 90 degree vertical cut if you want them to match.
- Remember to cut some extras so you have cleats to use to hang things from your new cleat system!

I wanted cleats well above the top of my workbenches and tool carts which meant starting above waist height. That meant that I needed to cut enough strips to allow me to put four cleats spaced one foot apart vertically above that on my workshop wall.

Step 2: Sand and prep your cleats

Your cleats will have a sharp edge, so spend a few minutes with some sandpaper or a sanding block to prevent splinters and cuts later on. As you can see, my sanding block saved my fingers from some nasty splinters!

A few minutes now can make the installation process a lot more comfortable, and can prevent problems later on. This is also a great time to stain your cleats if you want to - you'll see that I did to create some contrast in my bright white shop.



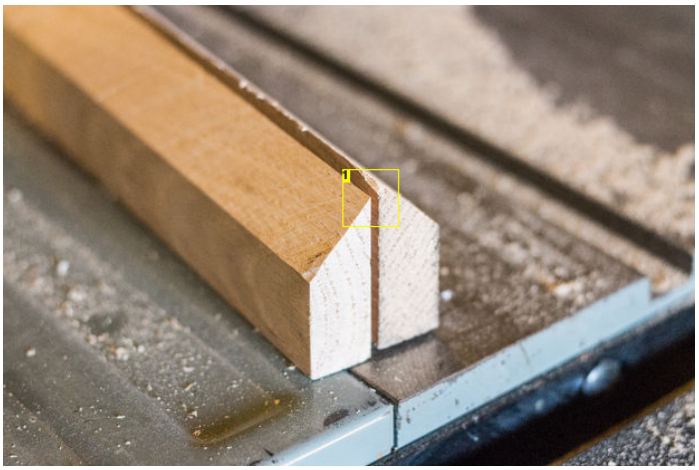
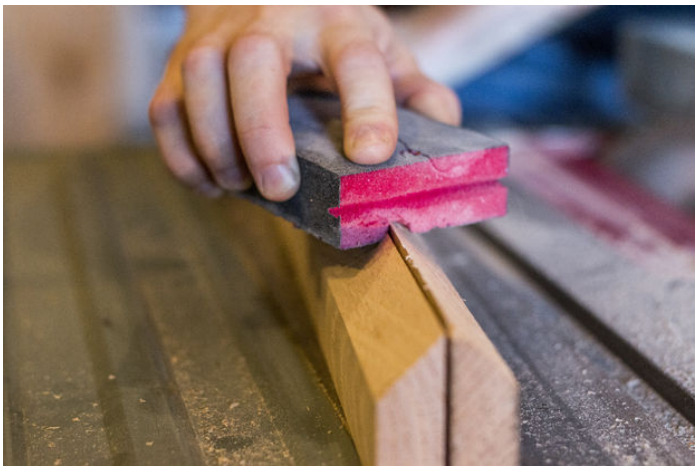


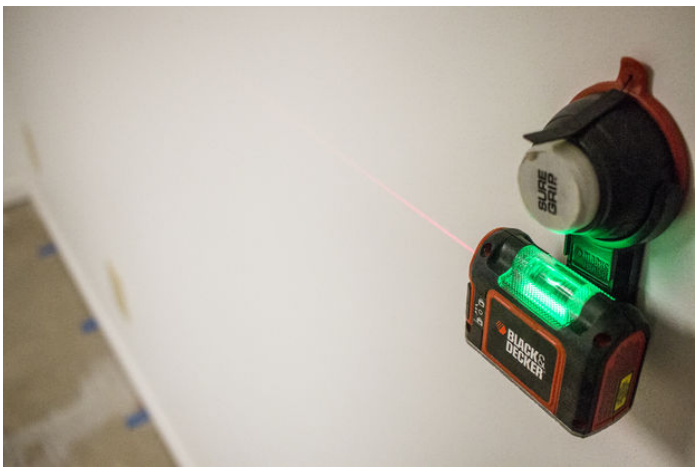
Image Notes
1. A little difference is fine here.



Step 3: Lay out your cleat setup

Your cleats should be placed so that you can comfortably reach tools that you hang from them. For me, that meant starting just above waist height and placing four rows of cleats 12 inches apart. If you want tighter or wider spacing, feel free to adjust how you place your cleats, bearing in mind the size and type of tools and cabinets you may want to hang.

I used a laser level to give me a nice straight line along my wall, and then snapped a chalk line to have an easy reference. If you don't have a laser level or a chalk line, you can simply measure up from the floor or down from the ceiling (look for the surface with less variance - my basement shop has a real drop in the concrete floor!). The key with measured markings is to make sure you level the first cleat, then keep each level after that equally spaced and level as well.



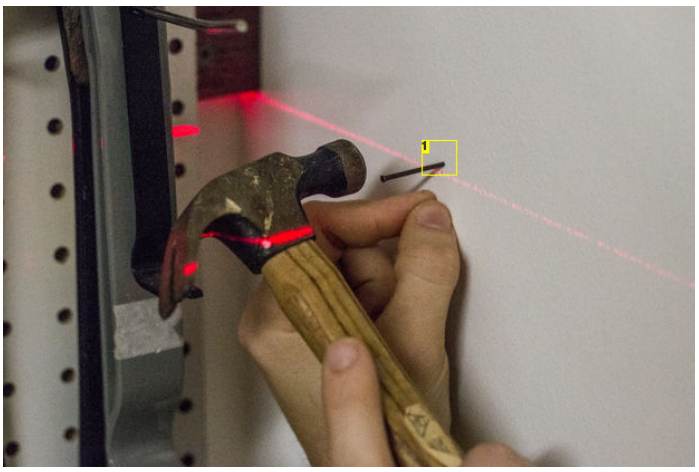
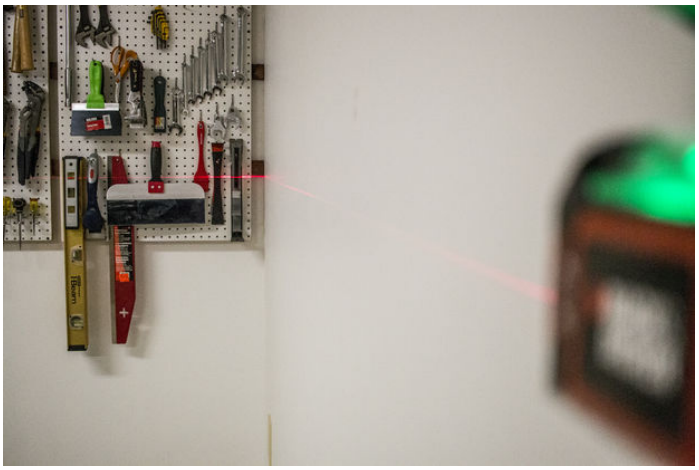


Image Notes
1. This nail will hold the end of my chalk line, but it's still a two person job for long runs.



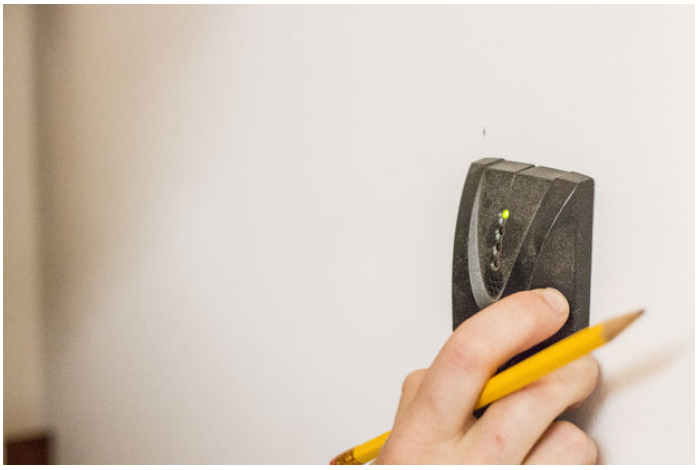
Step 4: Locate studs and prepare your first cleat

It's important to have something solid to mount your cleats to, so you'll want to locate your studs. Using a stud sensor, you can usually find them quite easily.

Note: Remember that most US construction places studs 16 inches on center (or, in other words, every stud's center should be 16 inches away from the previous stud's center). Once you find the first stud, you can mark 16 inches away for each successive one - just make sure to verify using your stud sensor!

Once you have your studs marked, you're ready to transfer those measurements to your cleat for the screws that will hold it to the wall. You can be off by a bit, but you want the screws to be close to the center of the stud so they provide solid support. You can see that I measured both horizontally and vertically (using a combination square) on my cleats to make sure I drilled my screw holes with enough wood to support the cleat. Make sure to take advantage of every stud that you can for more strength - my six foot long boards ended up with four screws holding them up.

Since my cleats would have tools hanging right against them and they're made of oak which won't let the screw sink into it, I chose to countersink the holes for my screws. You can skip that step if you don't mind a slightly protruding screw or you are using plywood for your cleats, but you will probably want to pre-drill the holes to prevent splitting the cleats.



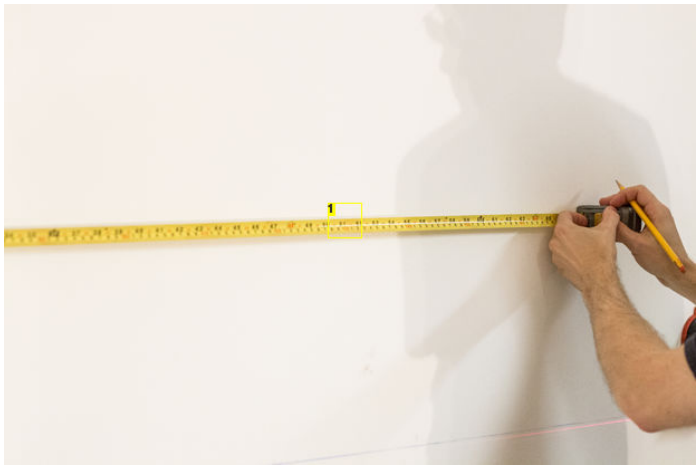


Image Notes
1. It's hard to see, but I've marked a stud's center here.

Image Notes
1. I measured in 3/4 of an inch, which left plenty of material above and below my screws.

Step 5: Mount your cleat to the wall

Hold your cleat up along the marks you made on the wall in step 3, and then place a level along the top. Screw one end in using a screw long enough to hold solidly through the surface. Since I'm mounting mine over drywall, I chose 2 3/4 inch heavy duty deck screws to make sure I can hold up heavy tools.

Once one end is in, you can move to the other end. Ensure the cleat is still level - it's ok to move slightly from your line, as you'll use this cleat as your base for the rest, and being level counts for more than following the line. With the board level, screw in the other end.

Continue through the rest of the screws you marked out. You've got your first cleat up!

Step 6: Mount additional cleats

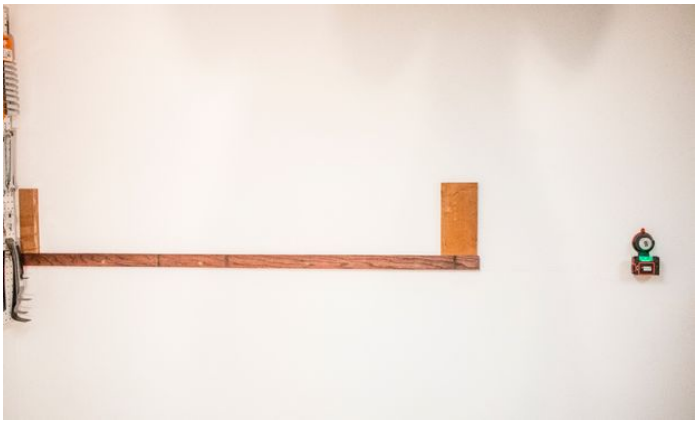
To make mounting more cleats easy, simply cut two boards to the same length as the space you want between your cleats.

Note: If you cut the end of your spacer blocks at a 45 degree angle, they'll take advantage of the cleat's design to stay in place, but you'll have to allow for the length of the 45 degree cut in your measurements. To do this, just cut the 45 degree bevel first, then make your measurement from the "low" end of the angle. Hold onto your spacers once you're done since they'll help you put cleats onto heavy cabinets which need support from multiple cleats in the future.

It's easy to transfer your measurements from the first cleat to the second: just place a straight edge long enough to reach from the first cleat to the second over the middle of each screw and transfer your mark up. A level will ensure you're staying on track, but this is safe to eyeball too.

Now repeat the pre-drilling and mounting process you used for the prior cleat. Remember to use your level - a little difference from cleat to cleat is acceptable, so don't worry about perfection.

Repeat this process for each cleat you want to mount. Once you're done, your rail system is ready to hold things!



Step 7: Build tool holders and mounts

Once you have cleats on your walls you can build tool holders, mount cabinets or shelves, or hang any of a multitude of tough to store workshop or household items on your cleats. I've included pictures of some of the tool holders I built for my shop here to get you started.

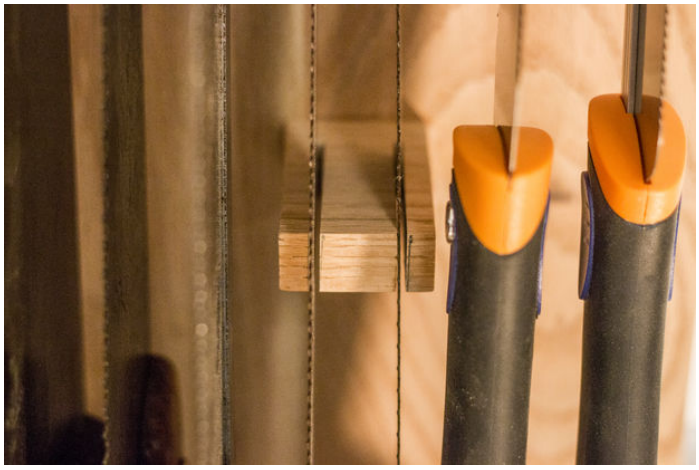
Here are a few tricks that I found useful:

- Use small angled blocks to provide additional support. The three jig saws you see in the pictures above were too heavy for an unsupported shelf, so I added simple 45 degree spacers that keep it stable.
- Light but tall tool holders may only need one cleat - my handsaw rack has a cleat just below its top edge, and rests against the lower cleat.
- Heavy cabinets should get multiple cleats - to properly space them, just re-use the blocks you used to space the original cleats on the wall.
- Tough to mount tools like the plate joiner in the pictures make take some thought. My first design efforts weren't very safe, and I had to re-design the rotating clips to hold it more securely to keep my toes safe!
- Building many smaller cleat mounts allows you to move things around easily. I've used the flexibility of the cleat system to adapt my storage to how I'm working, and I can move tools for projects to be closer together for easy access.
- Small magnets like those used a the top of the handsaw holder can help hold tools in place. If you don't have magnets, a simple tie or bungee cord can also work.
- Use small scraps to create a lip around shelves to prevent items from falling off.
- When mounting pegboard, it helps to build a narrow frame behind the pegboard. This keeps the cleats from blocking pegboard holes and makes the pegboard

itself less flimsy.

As you work with your french cleat system you'll probably find yourself coming up with more and more ideas - it's a great way to re-purpose shop scrap into useful storage.

Image Notes
1. An inexpensive magnet attached with a screw pulls blades in easily and keeps them from accidentally tipping out if they get bumped.
2. An inexpensive magnet attached with a screw pulls blades in easily and keeps them from accidentally tipping out if they get bumped.



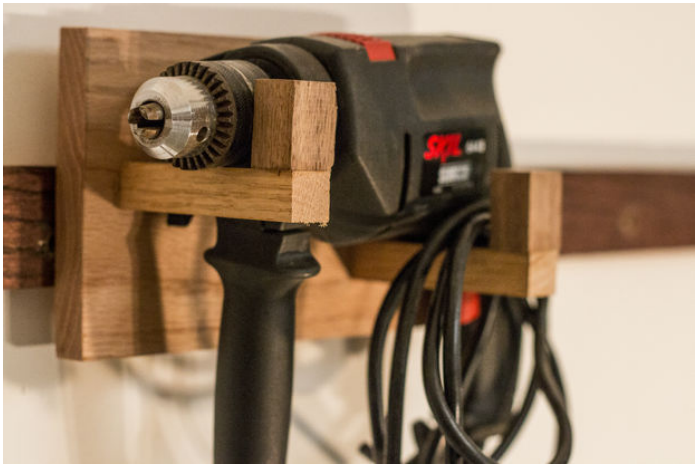


Image Notes
1. Rough cut holes let me leave my jigsaw blades in place. They don't have to be pretty!

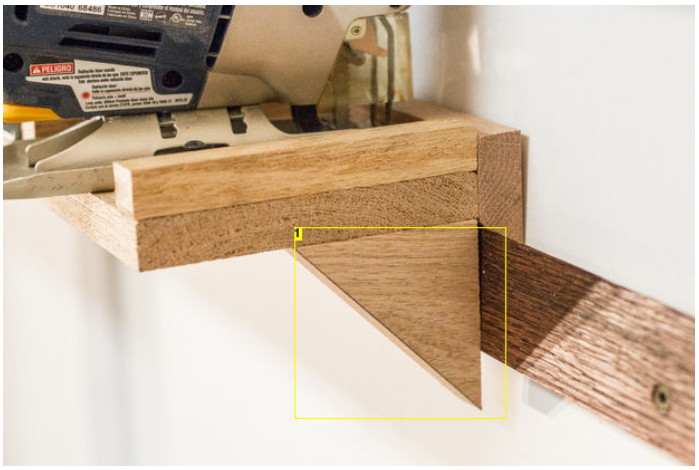


Image Notes
1. These simple supports make sure the shelf can't tip with three jigsaws weighing it down.