

WINTER PROJECTS

Use Those Winter Months To Get Ready For Spring - Here Are A Couple Of Projects To Get You Started.

Ed Simon

Build A Multiple Frame Jig

Frames are needed by the tens and hundreds or even thousands. A jig to ensure alignment is almost required when working with thin and light pieces of wood. It saves an unbelievable amount of time when you have to produce large numbers of the same item with consistency. Unlike the single frame jig, this jig will allow you to build 10 to 20 or more frames at one time.



Parts (Thickness x Width x Length)

1. $\frac{3}{4}$ " x $4\frac{1}{2}$ " x $12\frac{3}{4}$ " - End plate (2)
2. $\frac{3}{4}$ " x $4\frac{1}{2}$ " x $15\frac{3}{8}$ " - Side plate (2)
3. $\frac{3}{4}$ " x $4\frac{1}{2}$ " x 7" - Hinge plate (2)
4. $1\frac{1}{2}$ " x $9\frac{1}{4}$ " x 15" - Pressure plate (2)
5. 2" x $\frac{1}{4}$ " - Carriage bolts (6)
6. Hinges (2)
7. Tension spring - Stretch to 20" (1)

Disclaimer

Due to the wide variety of wooden frames available, the dimensions provided are the ones used by the author. They should be close enough to be used for any manufacturer's wooden frame. But to be on the safe side, check them before cutting the parts.

Construction

This frame jig consists of three pieces. The first is a box that fits inside the frames. This is built to fit very snugly inside the frames and keep the ends square while gluing and nailing them to the frames. The second two pieces are hinged doors that keep the frames solidly

positioned (clamped) against the inner box.

The dimensions provided in the parts list are for a jig that will allow you to assemble ten medium or large frames at a time. To increase this number you have to make parts #1 and parts #4 a different length.

Step 1: Cut parts #1, #2, #3 and #4

Before cutting the side plates (part #2), measure the distance between the end bar grooves cut in a top bar. This measurement minus $1\frac{1}{2}$ " will be the length of the side plate.

The length of the end plates is the width of the number of frames you want to assemble when they are positioned for assembly plus $\frac{1}{2}$ ".



Note: The end bars are positioned with every other one upside down. This allows the end bars to interleave and keeps the bars straight.

The length of the pressure plates (part #4) is the length of the end plate plus two inches.

Step 2: Assemble the inner box

Warning: Before assembling the inner box, position a frame as it



would be positioned on the box for assembly.

The frame must be able to be slid off the box. This may result in the need to shave a little off the length of the side plates.

Be sure the box's corners are a true 90 degrees by measuring the diagonals of the box. When finished your test frame should just be able to slide off the box.

Step 3: Add the hinge plates

Mark three positioning holes on the hinge plates (part #3). These holes will allow the hinge plate to be adjusted for different thickness end bars should the need arise.

The hinge plates are positioned on the sides of the box just so their ends cover the end bars. Check your positioning markings to make sure they will not cause problems when you mount them with the carriage bolts.

Drill $\frac{1}{4}$ " holes where you marked the hinge plates. Then remove the plates and enlarge the holes on the plates (not the side plates) with a $\frac{1}{2}$ " drill. These larger holes will allow you to position the hinge plate for variations in the thickness of the frame end bars.

When you are finished drilling the holes, use the carriage bolts to secure the end plates to the inner box. The end of the hinge plate should just cover the end bars



Step 4: Mount the pressure plates
Using the hinges (part #6) mount the pressure plates to the hinge plates. They must be positioned to allow the pressure plate to swing away from the inner box. These hinges allow the plates to be released

and will allow the frames to slide off the inner box.



Step 5: Add the tension spring
Attach one end of the tension spring (part #7) to a pressure plate at the opposite end from the hinge. A screw through a few of the end coils of the spring will do the trick.

Step 6: Add a tension spring latch or keeper
On the opposite pressure plate, drill a starting hole and pound in a 16d. nail. Leave 1/2" of the nail shank showing. Then cut the head off of the nail. A loop of the spring slips over this nail to keep the tension on the pressure plates.



Note: The nail should be on a slight angle away from the spring to keep it from slipping off.



Usage

To use the jig:

- 1) Attach the spring to its keeper.
- 2) Lay the jig on a flat surface.
- 3) Insert the end bars between the inner box and the pressure plate. Every other end bar should be turned upside down. This will keep the end bars aligned.
- 4) Put pressure on the end bars at the spring end and at the top of the jig to seat them.
- 5) Add glue to the slots in the end bars and add the top bar or the bottom bar as needed.
- 6) Nail or staple the exposed top or bottom to the end bars
- 7) Wipe the excess glue from the end bars
- 8) Flip the jig upside down, exposing the end bars at the opposite end
- 9) Reseat the end bars both vertically and horizontally
- 10) Put glue in the slots in the end bars and add the top bar or the bottom bar as needed.
- 11) Nail or staple the exposed top or bottom to the end bars
- 12) Wipe the excess glue from the end bars.

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- 13) Release the spring from its keeper
- 14) Remove the frames and allow the glue to dry
- 15) Clean the excess glue from the jig.
- 16) Add additional nails/staples as needed

Warning: Failure to remove the frames from the jig before the glue dries may result in the frame being glued to the jig.

Note: Failure to clean the jig of excess glue will eventually cause the frames to be misaligned.

Conclusion

Once you get the rhythm of it, creating frames goes pretty fast. The jig can also be expanded very easily to accommodate more frames.



Gargoyles Are Useful And Free

Five years ago when I started building my own woodenware, I made a very unscientific survey. The question I asked was:

What is the most common problem when working with colonies of bees?

A few of the most common answers were:

- 1) Unable to find the queen
- 2) Propolis sticking to everything
- 3) Hive bodies rotting out – usually at the corners
- 4) Stings hurt

I was unable to do anything about problems one, two and four but I thought I might be able to help with the hive body rotting problem. At least it was related to woodenware. After watching a couple of the more experienced beekeepers examine a hive, it became apparent that problem number two – propolis – was also related to problem number three – wood rot. Being unable to get the hive bodies separated, a hive tool was usually inserted at a corner and forced between the hive bodies. Sometimes this worked but many times it required more force and the wood on the corner was torn or chipped. Since the hives bodies were usually reassembled in the same order the propolis built up and it required additional effort each time the hive was opened. Then I realized that the combination of damaging the corner wood with a hive tool and the subsequent rain water remaining in the corner accelerated the rotting of the wood.

The solution was an established architectural invention called a **gargoyle**. The Wikipedia definition of an architectural gargoyle is:

A **gargoyle** is a carved stone grotesque, usually made of granite, with a spout designed to convey water from a roof and away from the side of buildings thereby preventing rainwater from running down masonry walls and eroding the mortar between.

Therefore, let me introduce the **Hive Body Gargoyle**. It is a very simplified version of a gargoyle and is guaranteed to be free (just a little labor). Additionally, it will not scare young children when they see it.

It is the triangular shaped notch



that is removed from the top corners of a hive body. It is very simply made with a belt sander. Four corners can be formed in less than five seconds when you are building or reconditioning a hive body. This little notch provides two very important functions:

- 1) You can now get an initial purchase for your hive tool without chewing up the corner and
- 2) When water runs down the corner of a hive it is less likely to remain in the corner because of the slope and the width of the cut.

For a trial run, add the notches to a couple of your hive bodies and see if they make your life – well at least the hive inspection part – easier. **BC**

Ed Simon is a frequent contributor to Bee Culture and is author of Bee Equipment Essentials, a book on how to build your own beekeeping equipment. It is available from Wicwas Press 1620 Miller Rd. Kalamazoo, MI 49001 or by emailing Ed at OronocoHoney@PITel.Net. This full color book provides all the dimensions and step by step instructions on how to create the basic beekeeping equipment.

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