



Rigs *and* Jigs





INTRODUCTION – Kevin Inglin

10+ year hobbyist beekeeper - 22 hives

EAS Master Beekeeper

Past President – NWNJBA

Day Job > IT Manager for Web/Mobile Solutions

Bristol Myers Squibb

Beekeeping Podcaster

Sunshine Hill Apiary

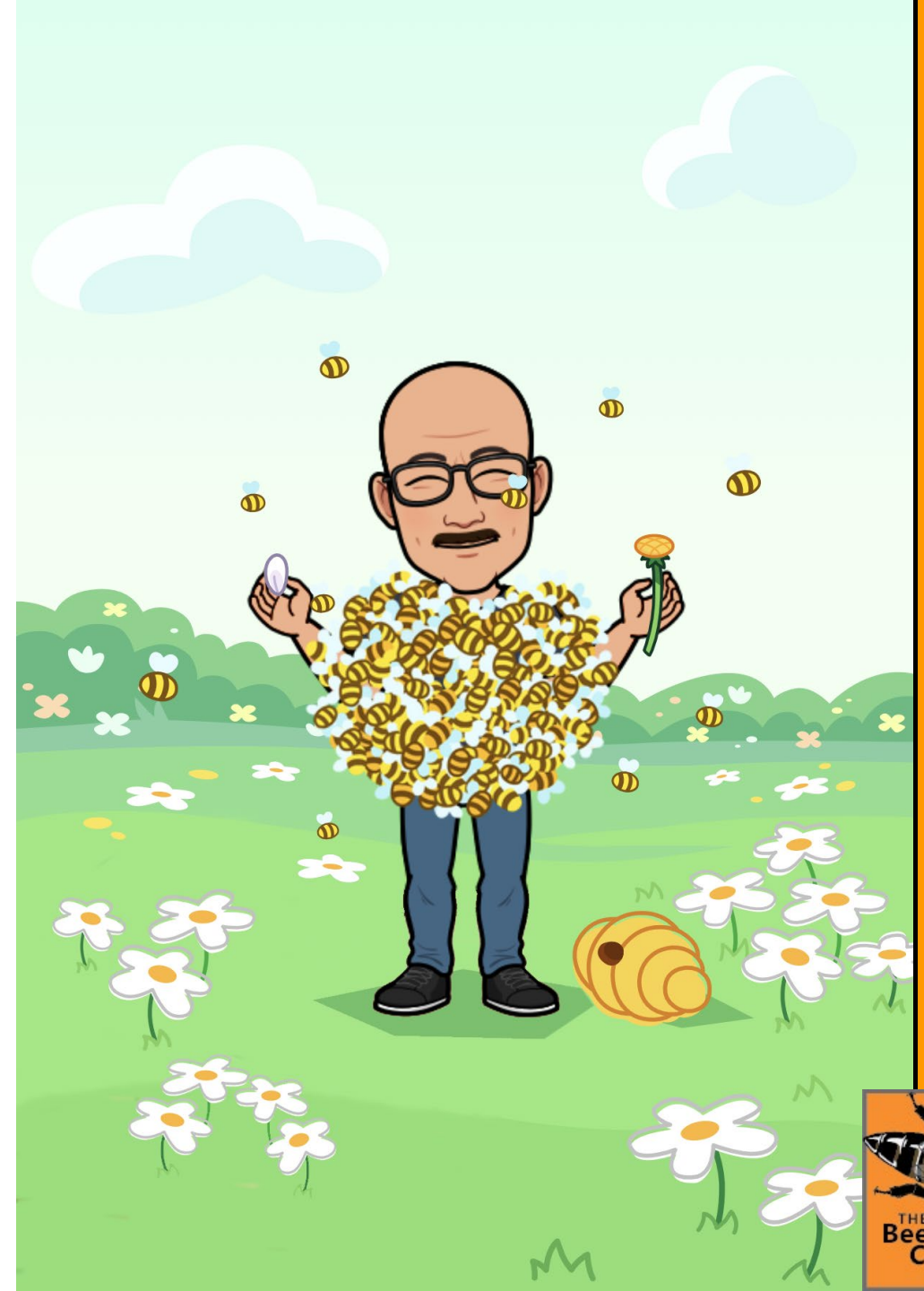


Note

□ This presentation is available for download

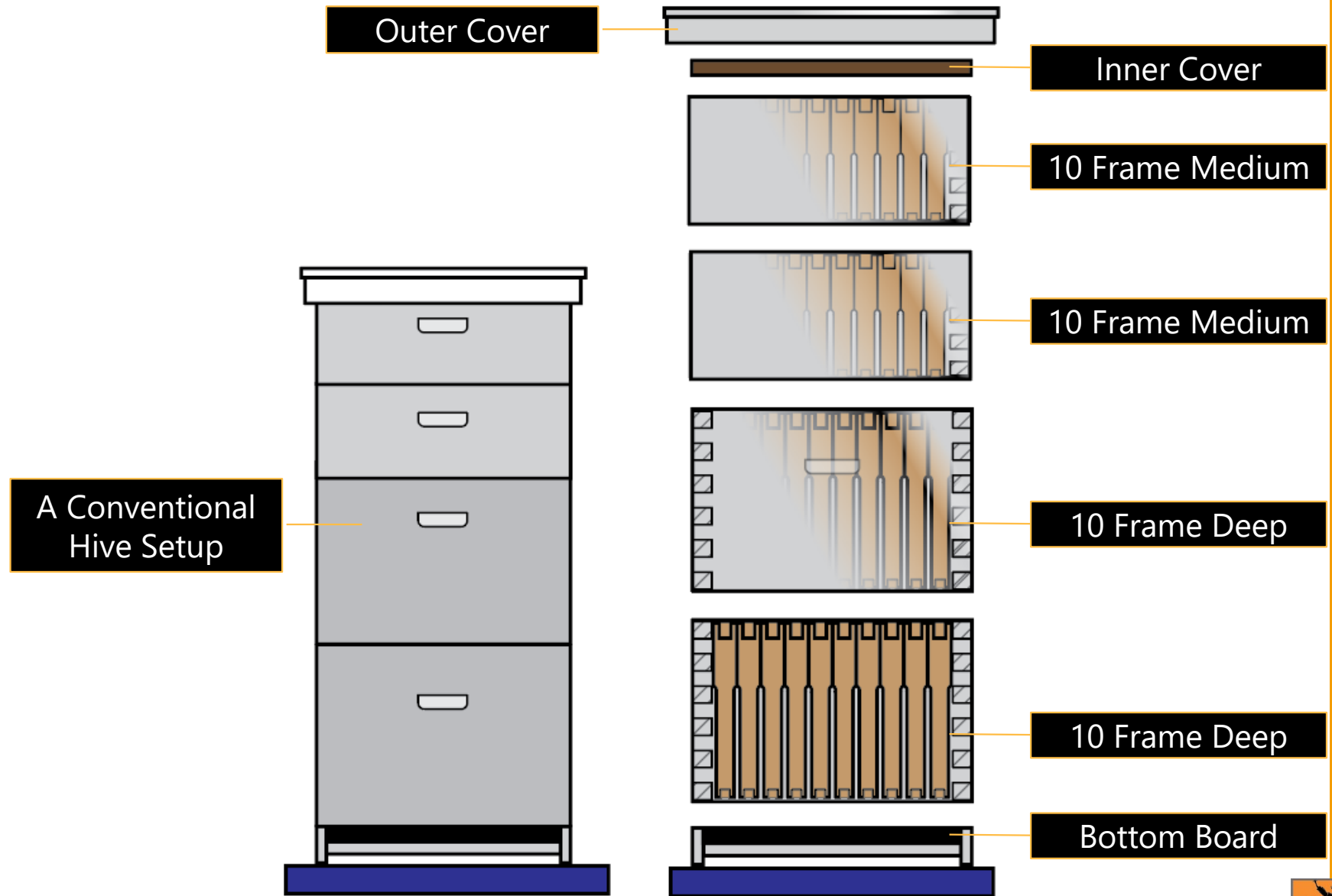
<https://www.bkcorner.org>

- *Search for presentations, it will appear in the search results*
- *Presume it will also be on the EAS website*



The Conventional Stack

We are all familiar with the common hive setup...



***But..* there is another 'fun' side of beekeeping**

- ❑ We have a beekeeping side hobby...
 - *The Gadget Garage is a fun side of beekeeping for us*
 - *It started with one gadget and built from there*

- ❑ So, let's visit the "Gadget Garage"
 - *Some are ours, some we have been shown along the way, and most can be credited to the ingenuity of others*

CRAZY
ABOUT
BEEKEEPING



Simple Solar Wax Melter

Source
Linda Tillman



- **Styrofoam Cooler Wax Melter**
 - *Simple, Effective, Low Cost*

Water Pan in the Bottom



- **Storage Container for Water**
 - *'Shoebox' plastic storage container*
 - *Melted Wax floats in the water pan*

Wax Vessel

Plastic lined with
Paper Towels



- **Wax Tray with slits**
 - *'Plastic tray has horizontal slits cut through the bottom for the wax to drain through*

Second Storage Tray To hold the Wax

It Nestles
Inside



- **Tray placed inside cooler**
 - *It nestles in perfectly to hang over the water bath below*

Glass or Plexiglass Cover

Great for small batches of wax



- **Glass Cover**

- *The sunshine radiates down into the device and the heat is trapped under glass*



Recycled Window

I carefully removed one of the panes, of this double pane window

More Robust Solar Wax Melter

Hinged Window



- **Hinged Window**
 - *Provides for easy loading and unloading.*

Wax Drip Tray and Screen




- **Tilted sheet metal for wax deposits**
 - *Wax melts and flow down to the collection pan underneath.*

Collection Tray



- **Aluminum Chaffing Dish**
 - *The floor is flat and level. When water is added and the wax floats.*



Mounted on an
old wheelchair

Homemade Drone Brood Frame

■ Drone Brood Culling

- No special equipment needed. Just affix a bar 1/3rd of the way down and the bees will put drone below
 - *Incidentally, they often put honey above in the small space*



Hive Manipulation Cloth

- Keeps the bees quiet by covering the frames you are not working on.
- You Slide the ring right and left to cover the frame you want to expose

Dave is mimicking pulling a frame for this demo



Quilt Box

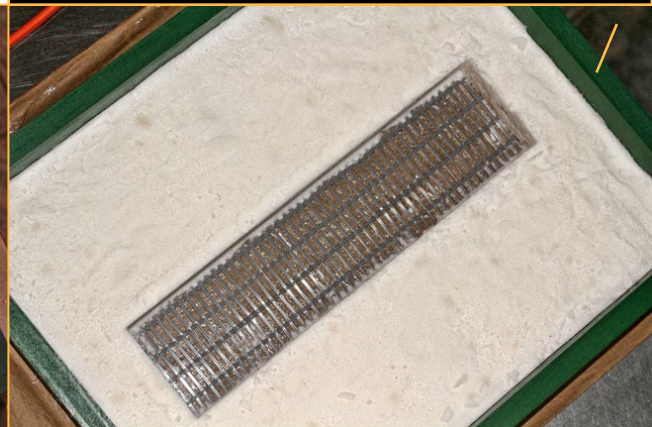
- Like an inner cover with an extended top
- Fill with insulated foam or bag with fill.
 - It has a raised edge underneath, like an inner cover, and a slot for the bees to get out.
 - Place under an inner cover and roof



➤ Candy Board

- *Similar Idea – Using a queen excluder*
 - It is a queen excluder sandwiched between a frame and an Imirie Shim.
 - This can be set under the inner cover and you can place fondant on it.
 - This could also be used similar to a mountain camp feeder system for delivering dry sugar and pollen patties

Image Credit: Honeybeesuite.com





Top Bar Feeding Frame

❑ Custom Frame & Plexiglas

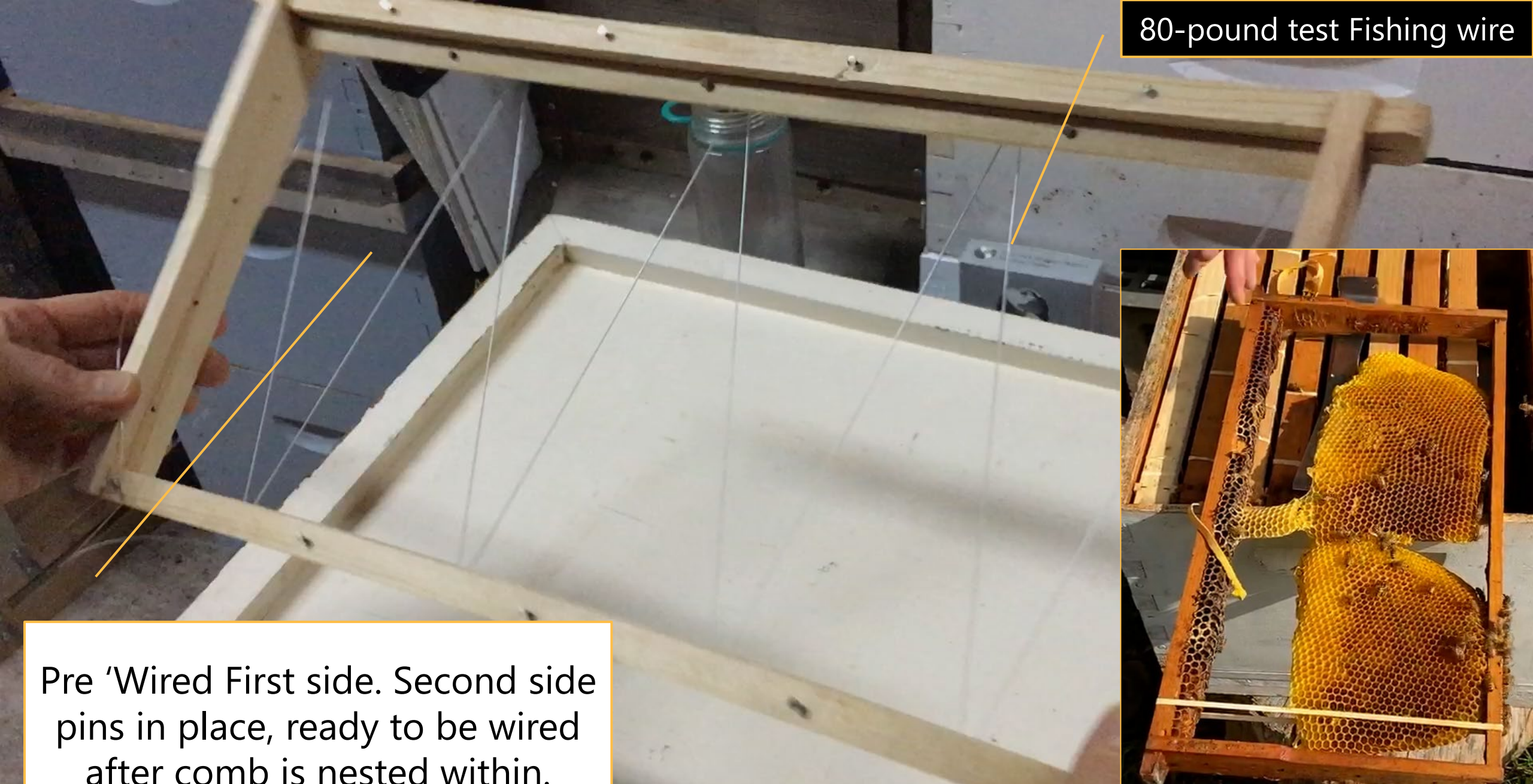
- *Purpose built frame with Plexiglas sides secured with flat screws and sealed with wax or silicone.*

A Screen is slid into the interior of the feeder for bees to walk down; this is to thwart drowning

Top Bar Feeding Frame



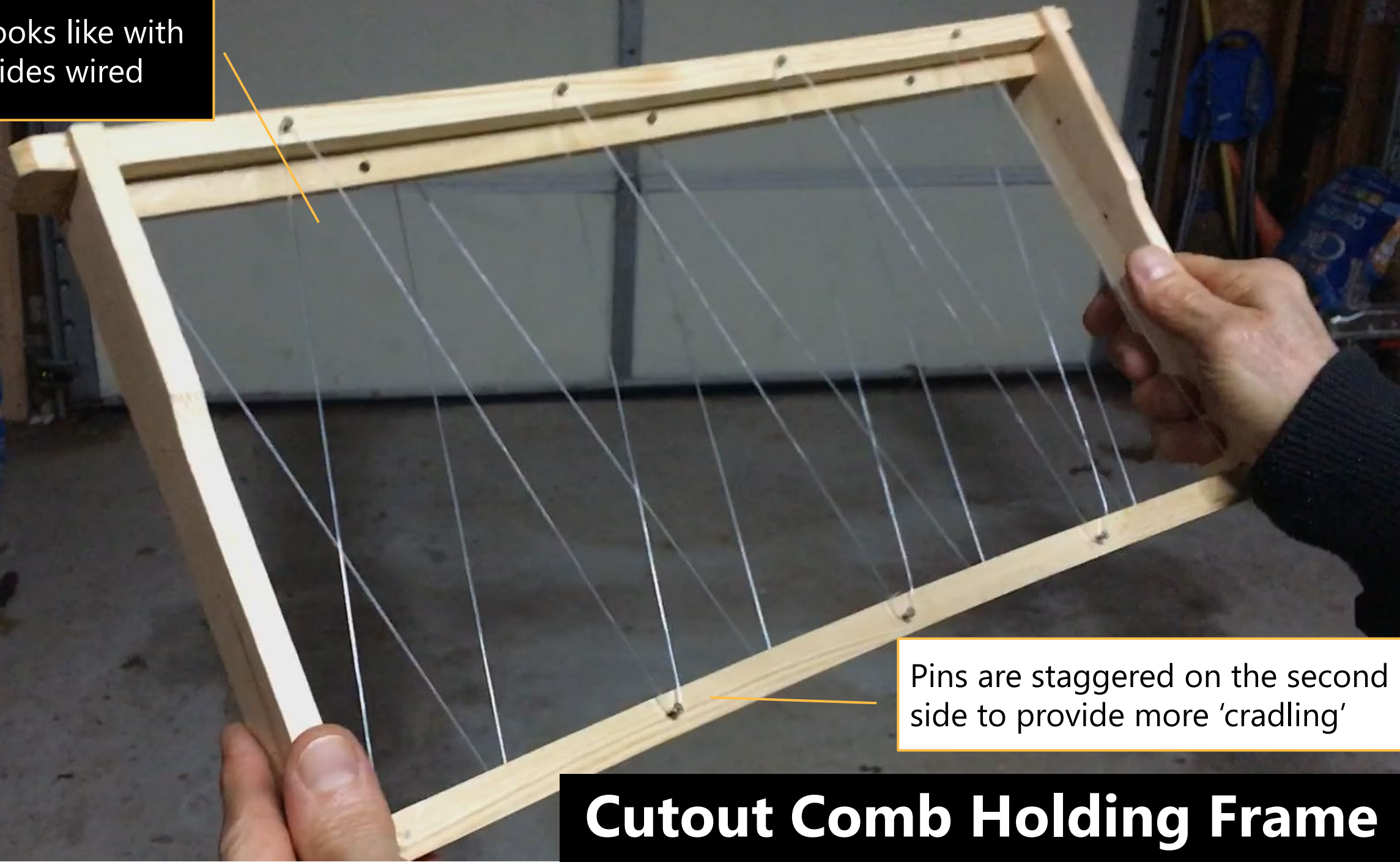
80-pound test Fishing wire



Pre 'Wired First side. Second side pins in place, ready to be wired after comb is nested within.

Cutout Comb Holding Frame

What it looks like with both sides wired



Pins are staggered on the second side to provide more 'cradling'

Cutout Comb Holding Frame

Waxing Tube



Place a wax foundation Sheet into the frame



Weld the edges to the top and side bars with a continuous bead of melted wax. Secure as usual with pins on each side.

Endoscope and FLIR Cameras



Inserting Endoscope
Into Top Bar Hive

Endoscope Video Footage



Endoscopes Cell Phone FLIR Cameras

*Hardware and
software packages*



SanSiDo 1M WiFi Endoscope

\$36.00



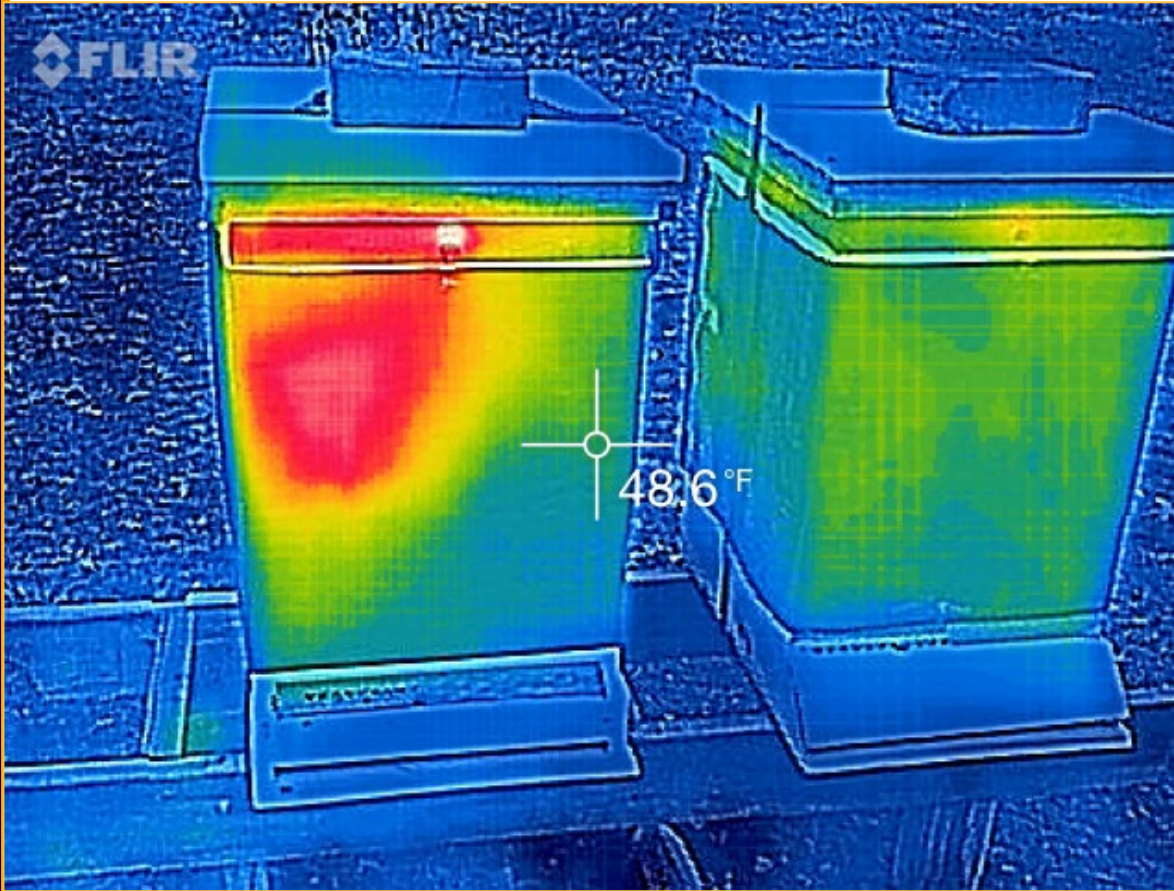
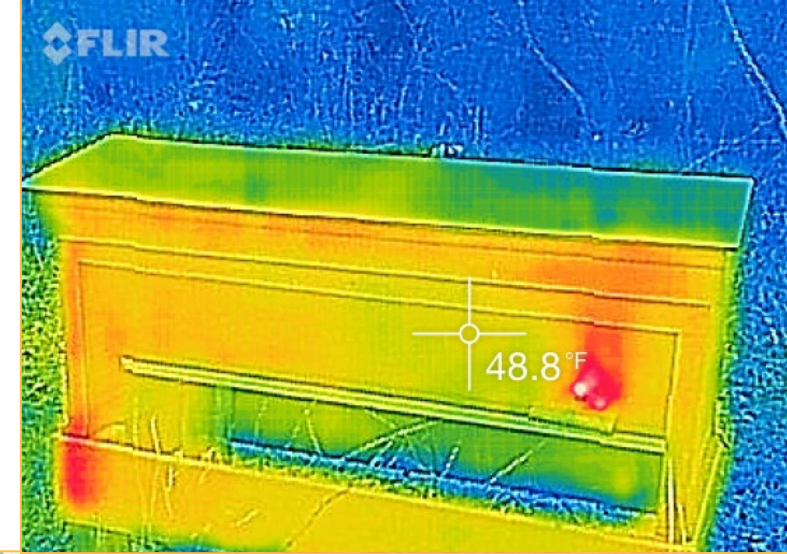
FLIR Add-On Cameras

- **The Hardware is pretty much identical. Difference is the connectors to the phone.**



FLIR Image Shots

- *The top bar made it to spring with a small colony >*
- *Below; The hive on the right did not make it.*



PVC Hive Stand

□ BKCorner Hive Stand

- Plans at www.bkcorner.org
- Advocate argument for how strong they are; he put his car on it





❑ Virginia 2018 EAS Hive Stand

- *The apiary hives at EAS Virginia were on these substantial wooden stands*

Wooden Hive Stand

4-Chamber Queen Castle

- ❑ Four separate compartments for rearing queens





2-Frame Nuc. Could easily be converted to three chambers

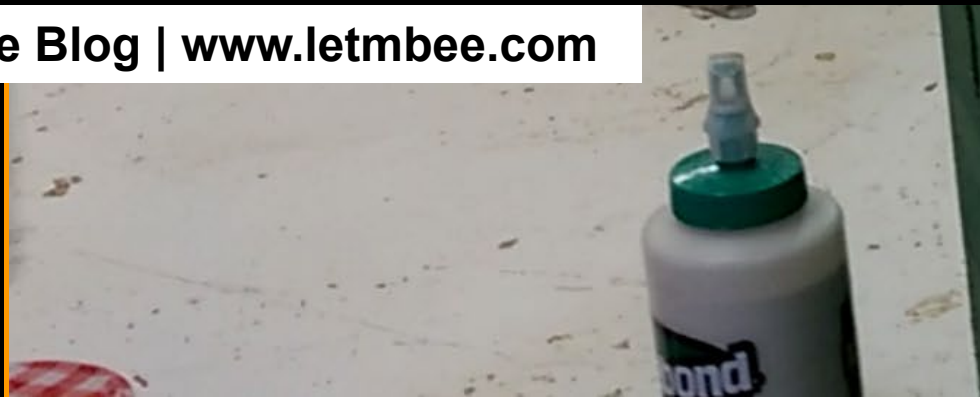


The groove goes all the way to the floor so the bees cannot pass through



Swarm Traps and Swarm Jib

LetMBee Blog | www.letmbee.com



Two features



- ❑ Pin to keep the birds from nesting
- ❑ Bracket for mounting to tree

Search for: [Swarm Trap / Jib Video](#) (YouTube)



Swarm Trap Jib

Bee Culture Magazine
Feature: March 2014





Bee Yard Hive Bench

Bee Culture Magazine
Feature: JAN 2012

Water Delivery



There are *dozens* of devices in this world designed for the purposes of providing a water source to bees. These are just a few simple water delivery devices for inspiration.



Credit: Nick Rozak – Green Stinger Beekeeping Services



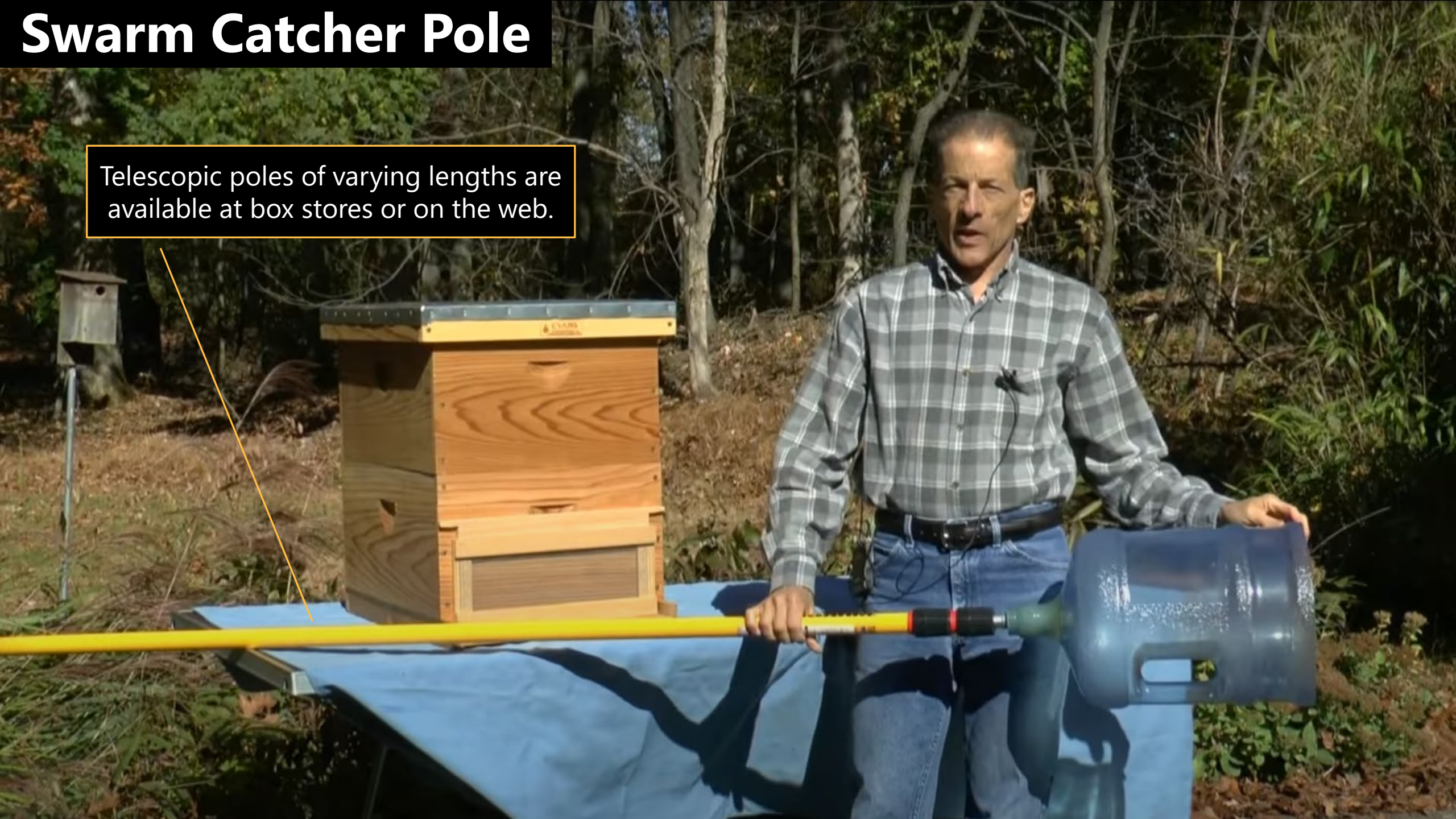
Simple Swarm Catcher Pole



Other Variations of this design are out there for consideration

Swarm Catcher Pole

Telescopic poles of varying lengths are available at box stores or on the web.



Alcohol Wash Shaker

*Inspiration
Propolis etc.*

■ **Homemade Varroa Sampling Device**

- Made from two peanut butter jars
- 'Welded' with a soldering iron



Do you ever have a small amount of honey to extract?

Kitchen Crush and Strain

■ Dual Purpose Design

- Same principle as the *Varroa Sampling device*.
- Two glass **mason jars** set over each other
 - *The bottom mason jar lid with a screen inside*
 - *The top mason jar is just the ring*
 - *Simple painter's tape joins the two together and keeps humidity out.*
- This was the result after leaving it overnight



Bucket Feeder



Bucket Feeder



Imirie Shim

*Source
George Imirie Pink
Pages*

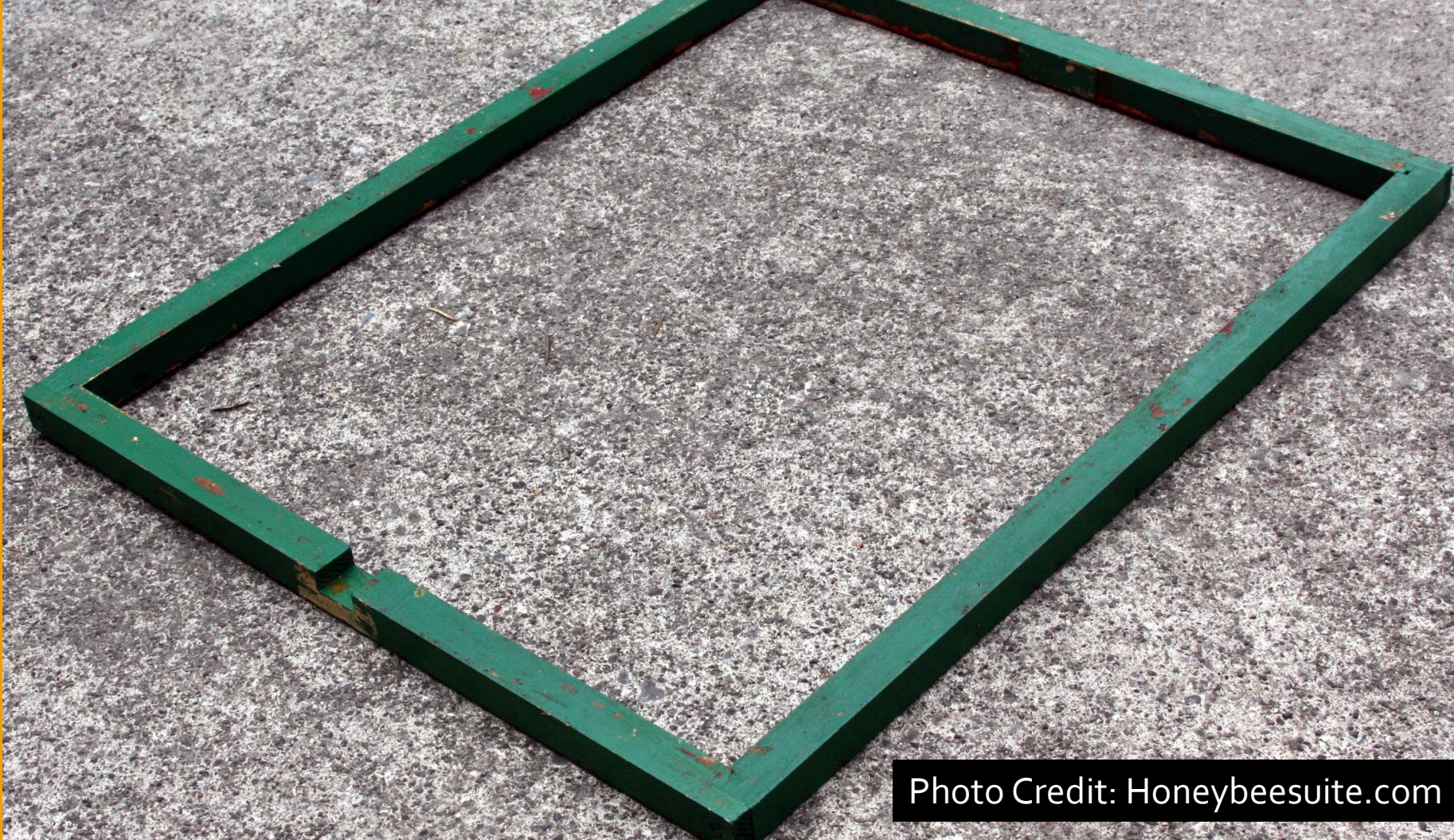
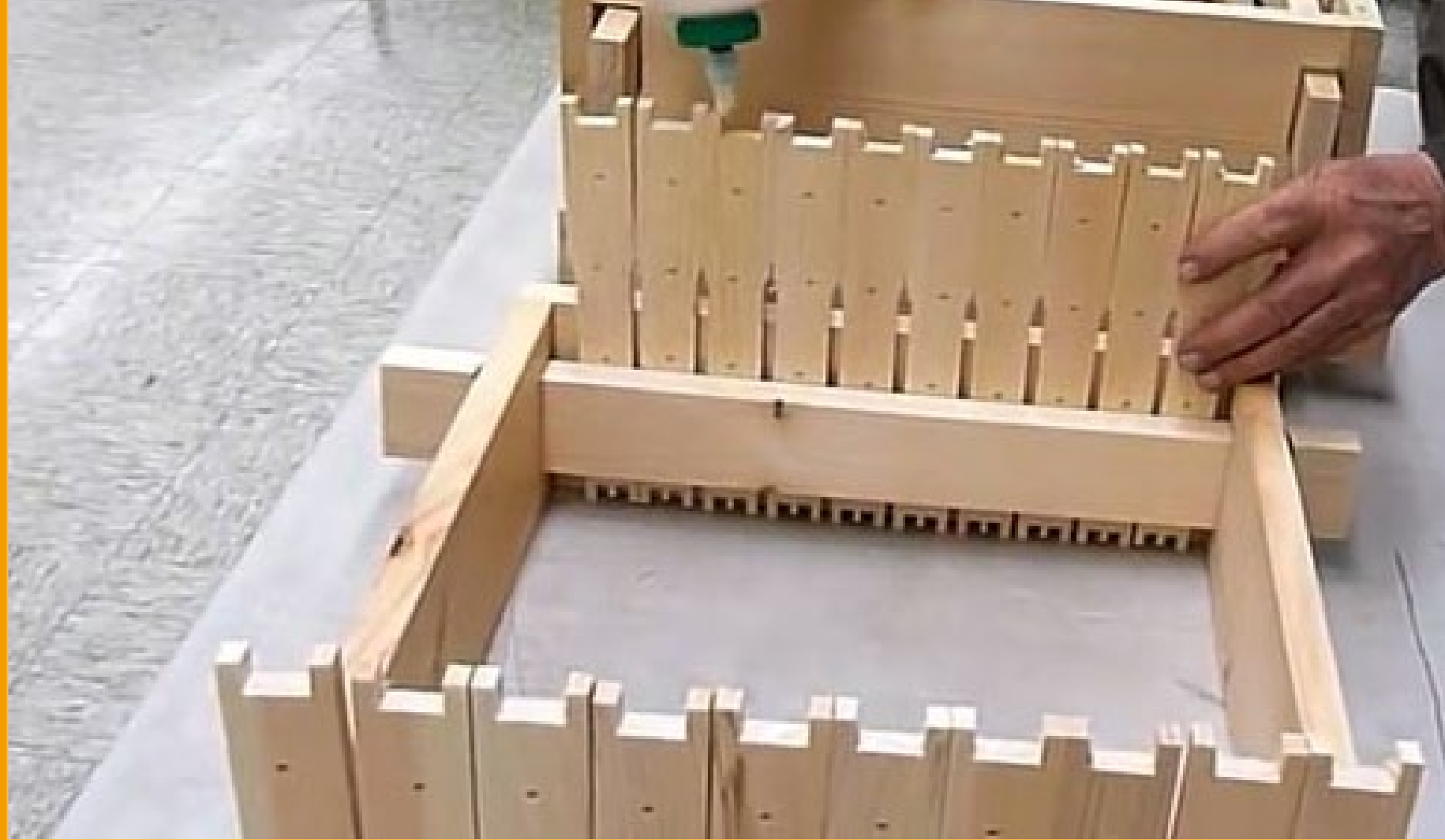


Photo Credit: Honeybeesuite.com

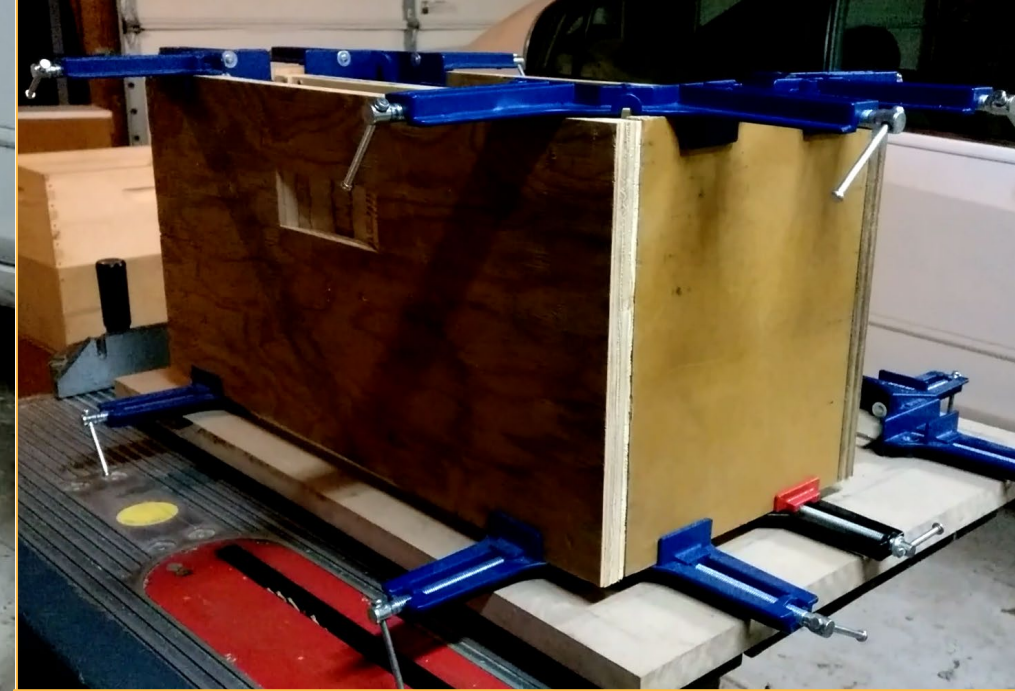
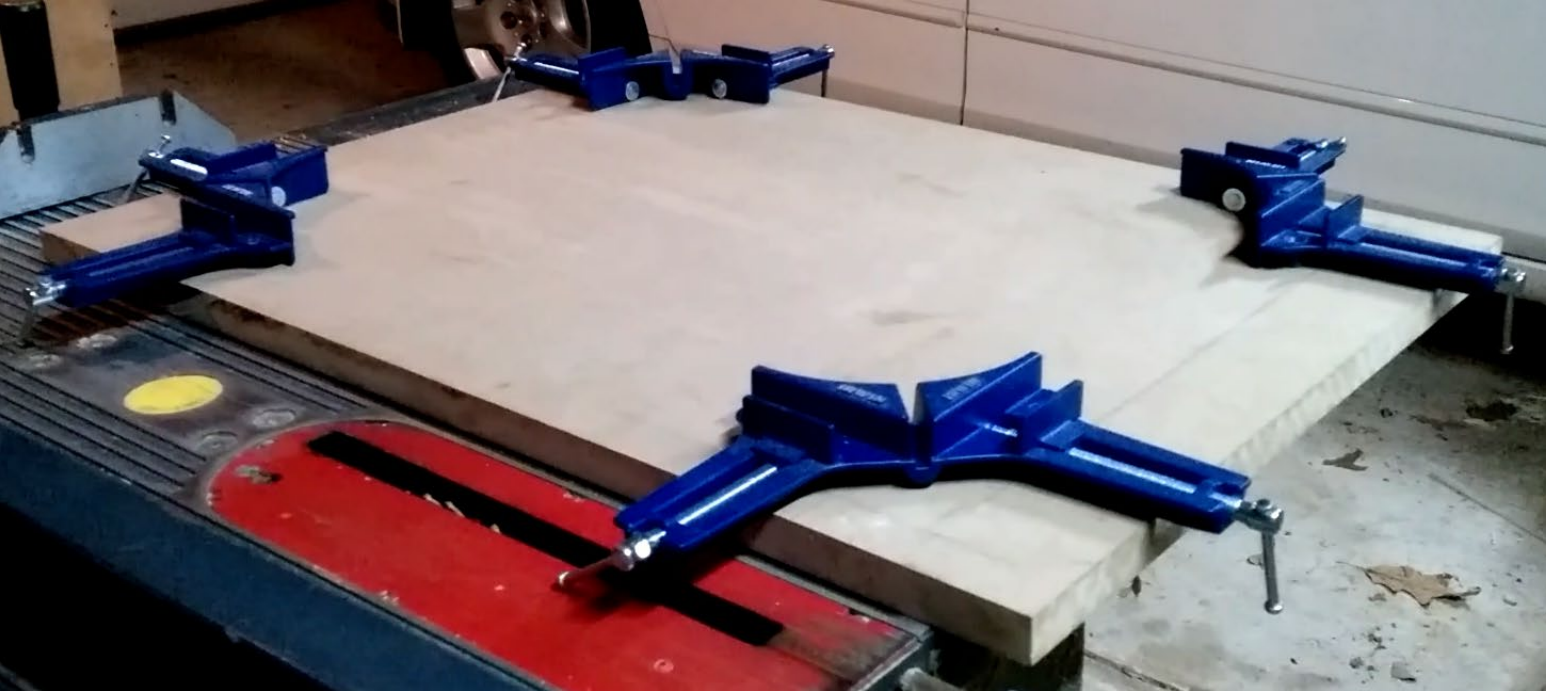
- **Imirie Shim**
 - *Simple middle entrance to give easier access to honey chamber*

Frame Assembly Jig

Source
Robo Bushkill



- **Langstroth Hive Frame Assembly Jig**
 - *Makes quick work of building frames top to bottom*
 - *Like an extra set of hands and far more efficient than building one at a time.*



Box Building Jig: Nuc and/or Full

- **Jig to build boxes square and true**

- *Would be best to use a solid base that will not 'warp' or 'twist in time. This one uses wood; not optimal*
 - The clamps have preset holes to mount to the base
- *Enhances speed and ease for creating boxes.*

Note: Buy better quality clamps... These particular IRWIN clamps proved to be cheap and the tabs broke off very easily



Upper Entrance Protection

*Source
Justin Shiffler*



- **Upper Entrance Protection Guard**
 - *Protect the entrance from the weather*
 - *Make it more difficult for robbers*

Frame Shaker Tool

❑ Modified Jig Saw

- *Custom made frame grasp*
- *Shakes the bees off, clearing the frame*
 - Use for shaking bees into a box
 - Use for clearing bees off a frame during honey harvesting
- *Have not seen this for sale yet in the US Market.*



1 秒抖蜂 太快了!

Hive Tool Holster

- **Beekeepers usually go one of two ways...**
 - *Build their own*
 - *Repurpose some other device*
- **Possible Sourcing Options**
 - *Garden tool holders*
 - *Knife holsters*
 - *Tool Belt add-ons*
 - *Beekeeper Inventions*
 - *Build your own*

SOG P37
Knife
Holster



CLC 418
Plier
Holder



Holy Grail Item



Bee-Lining Box

Source

Kevin Inglin

Inspired by Tom Seeley Bee-Lining Box



- **Bee-Lining Box**

- *Capture bees and then release to track them back to their hives.*

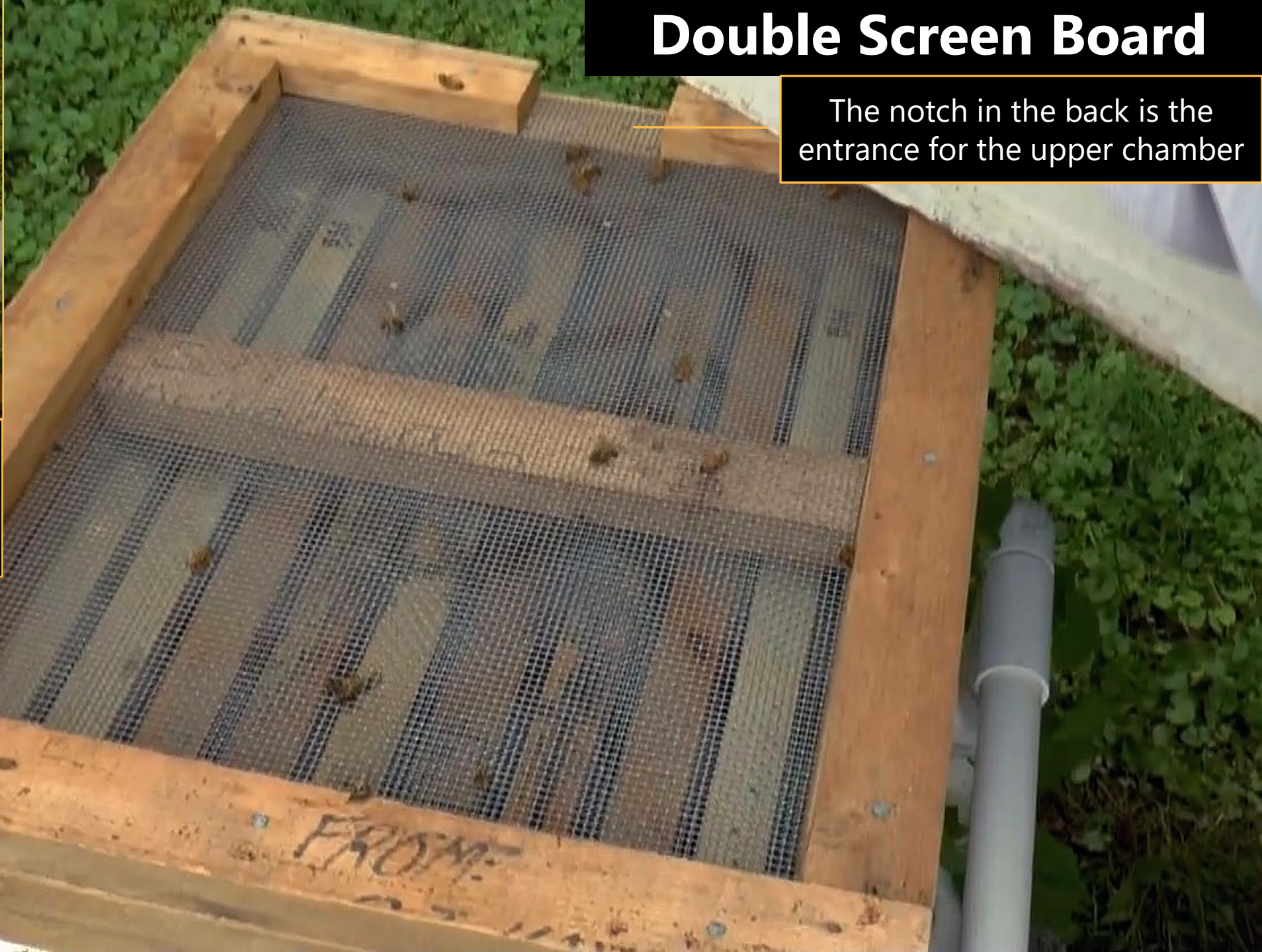
- Recommend Tom Seeley and Meghan Denver's book for the methods.

- Hopefully, you got to see Tom do this, this week

Double Screen Board

The notch in the back is the entrance for the upper chamber

Used to separate two single chamber colonies placed over one another.

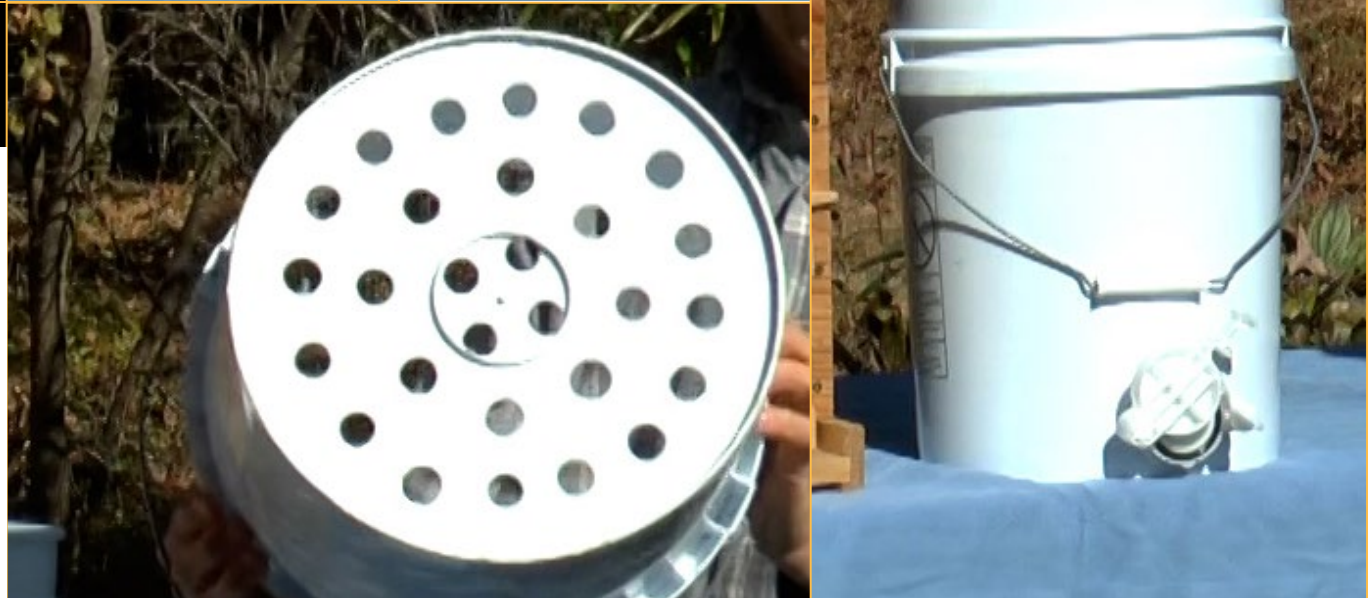




Crush and Strain Setup

❑ Two food grade buckets

- *Honey set in overnight strains through to the bottom pail*
- *The large holes are necessary, or the flow will become clogged*



Search for: **Crush and Strain Walkthrough** (YouTube)

Double Stack Bottom Board

❑ Screened over Solid

- *A screened bottom board is affixed to a solid bottom board that is facing the*

The premise is for Oxalic Acid Vaporization Access & Mite Counts

Double Stack Bottom Board



Front View



Side View



Back View

Foam is inserted into the slot during the winter

You can insert a wand into the slot and the bees will not come into contact

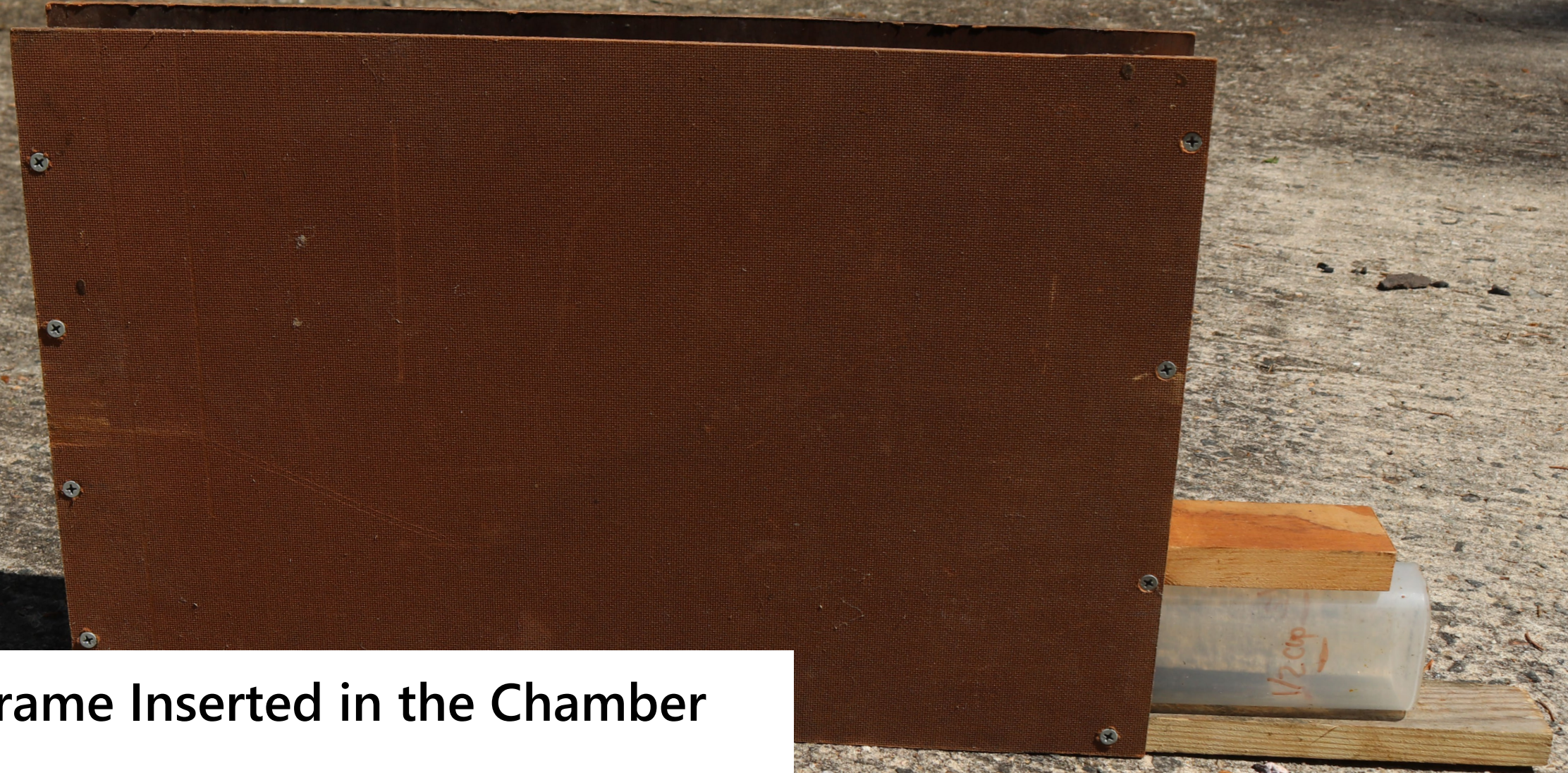


You can also place a cafeteria tray under the screen to do a mite drop assessment


Varroa Mite Sample Collection Device

□ Frame Inserted in the Chamber

- *Bees are shaken down to the bottom, and then tipped into the collection device*



Varroa Mite Sample Collection Device

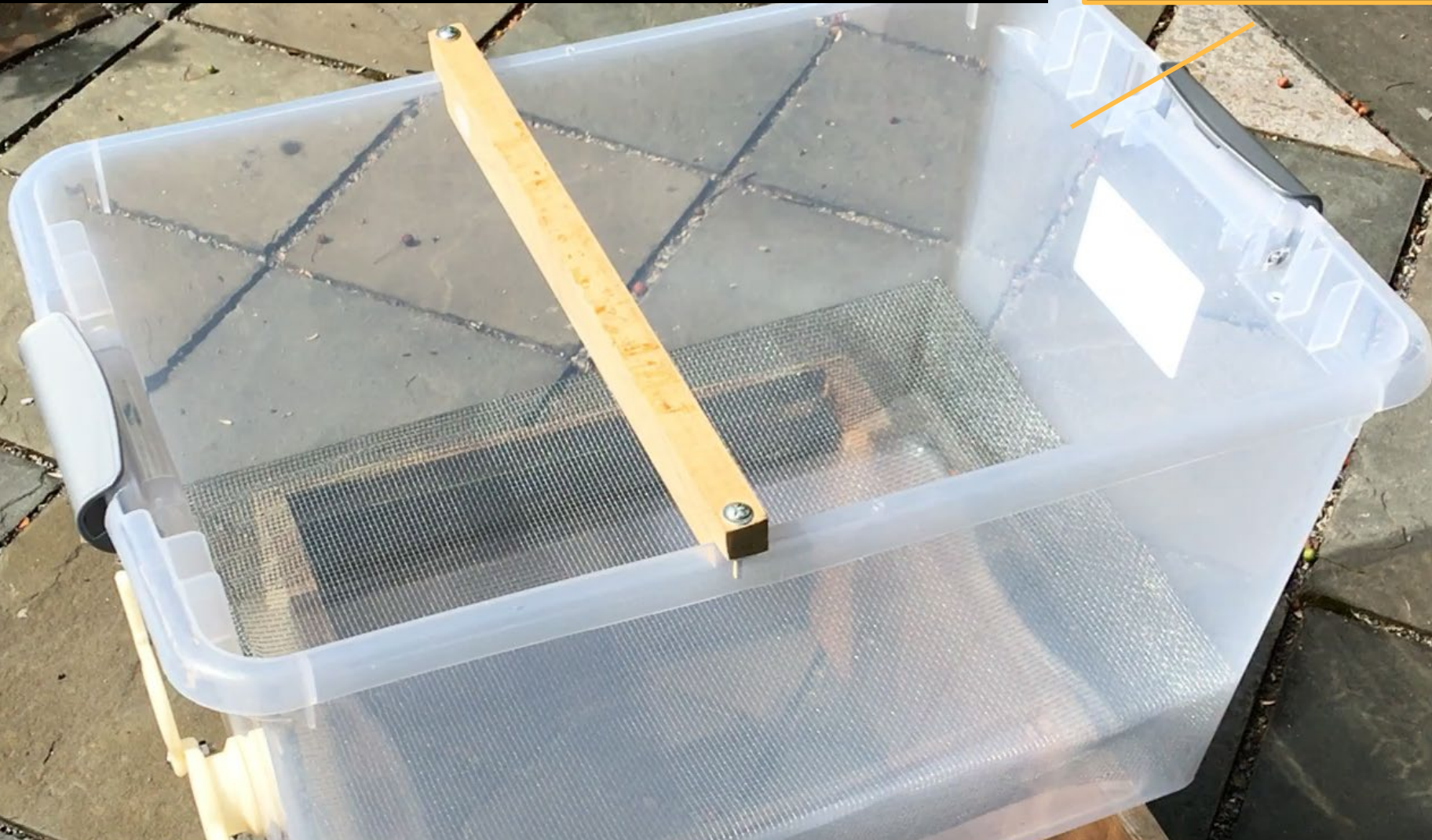


This plastic container originally held powdered drink packets. It is marked with a pre-measure capacity of $\frac{1}{2}$ Cup for collection

Extra Width for accommodating a frame loaded with Bees

Homemade Uncapping Tank

Get Food Grade
from Restaurant Supply



❑ Food Grade Plastic Tote

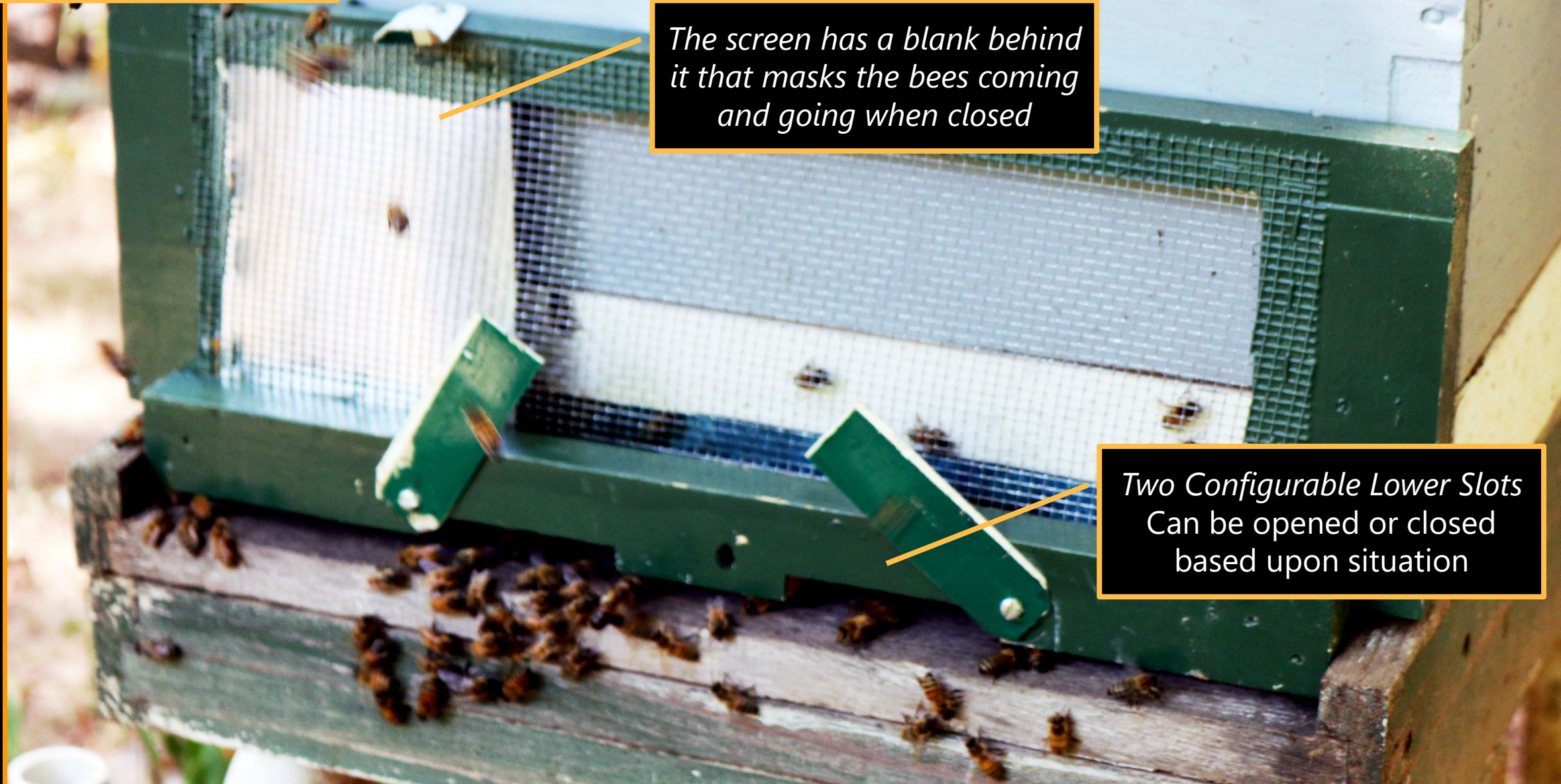
- *Honey Gate and wire mesh screen insert*

Robbing Screen Device

Top Entrance Slot
Currently Shown as open...
Can be closed in an event

The screen has a blank behind it that masks the bees coming and going when closed

Two Configurable Lower Slots
Can be opened or closed
based upon situation

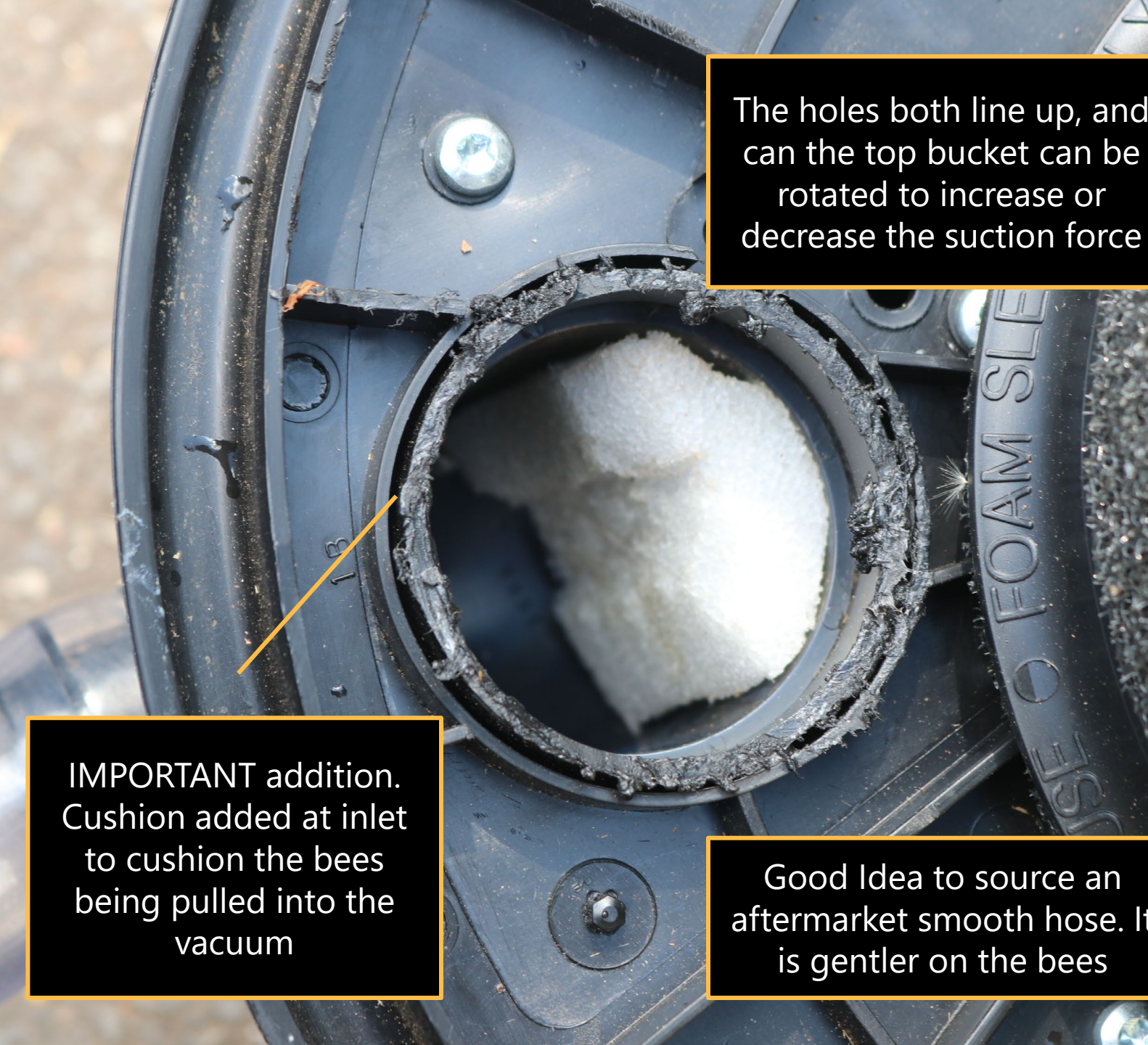


Swarm Vacuum



□ 5-Gallon Bucket Vacuum

- *Combined with nested buckets*



The holes both line up, and can the top bucket can be rotated to increase or decrease the suction force



IMPORTANT addition. Cushion added at inlet to cushion the bees being pulled into the vacuum

Good Idea to source an aftermarket smooth hose. It is gentler on the bees



Any Questions

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is available for download

<https://www.bkcorner.org>

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□ **Kevin Inglin**

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