



Sunshine Hill
FARM LLC



THE GADGET GARAGE

BEECON 2025 | October 18, 2025

NY BEE
CLUB 

Note

- ❑ **This presentation is available for download**

<https://www.bkcorner.org>

- *Search for presentations, it will appear in the search results*





15+ year hobbyist beekeeper – 15 to 20 hives

EAS Master Beekeeper

Past President – NWNJBA

Day Job > IT, Paper Strategies Inc.

Beekeeping Podcaster

Managed Mentoring Program for Getting Started in Beekeeping

INTRODUCTION
– Kevin Inglin

Our Home Yard

What is the Gadget Garage?

- **Ingenuity, Craftsmanship, Creativity!**
 - We enjoy the craft and practice of beekeeping
 - But we also enjoy the creative side of gadgets
 - This includes great products in the marketplace
- **A diverse mix of items**
 - Many homemade
 - Some store bought
 - Some creative ideas for using non beekeeping things...



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

Simple Solar Wax Melter

Source
Linda Tillman





Water in the
bottom pan

The image shows a laboratory experiment. A white rectangular pan is placed on a surface, containing a liquid. The pan is surrounded by a thick layer of yellow insulation material. To the right of the pan, there is a blue container. The entire setup is on a dark, textured surface. The text 'Water in the bottom pan' is overlaid on the left side of the image, with a thin orange line pointing towards the pan.

Plastic Tray lined with Paper Towels

□ Wax Tray with slits

- A plastic tray sourced at a home good store
- I cut slits in the bottom of it with a oscillating tool
- Then it is lined with paper towels which act as a filter

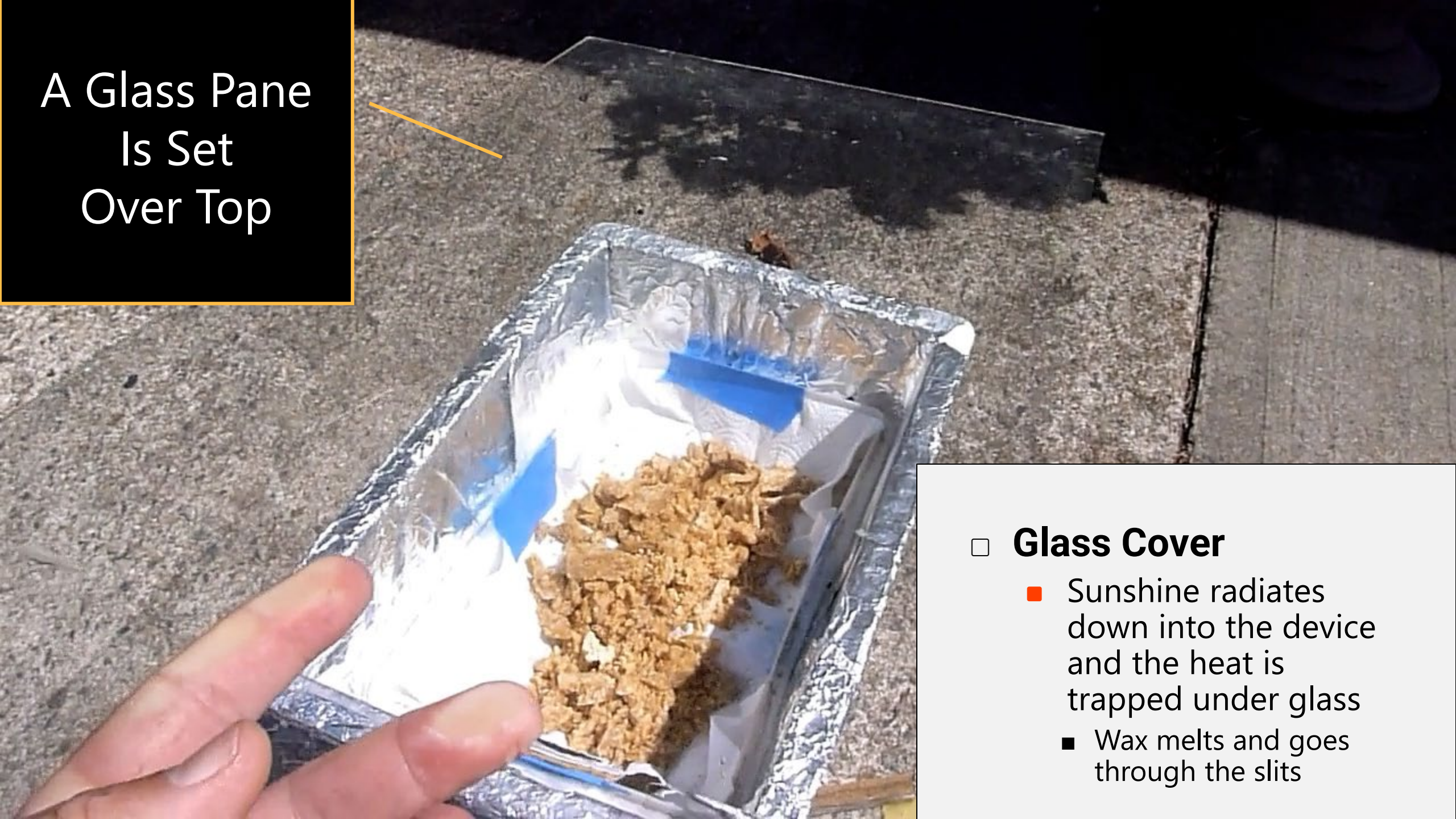


The Tray Slides Inside the Cooler

- **Nestle the tray inside cooler**
 - It nestles in perfectly to hang over the water bath below



A Glass Pane
Is Set
Over Top



□ **Glass Cover**

- Sunshine radiates down into the device and the heat is trapped under glass
- Wax melts and goes through the slits



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.

□ Tilted sheet metal for wax deposits

- Wax melts and flow down to the collection pan underneath
- Screen catches any large chunks

Wax Drip Tray And Screen





Mounted on an
old wheelchair

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

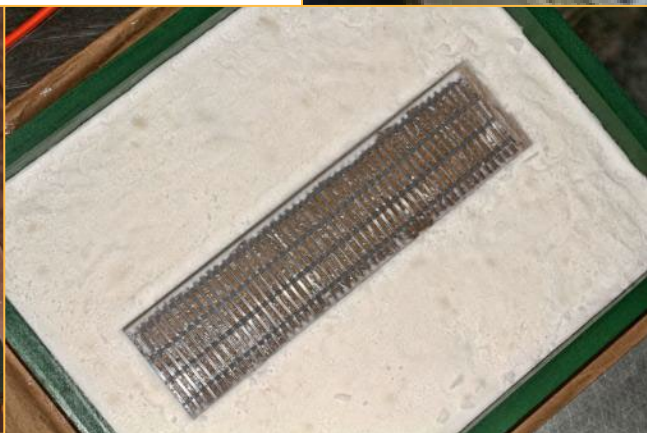
Quilt Box and/or Utility Box

- **Like an inner cover with an extended top**
 - Fill with insulated foam or other items (food, combination of both...) Place under the roof as an inner cover
 - It has a raised edge underneath, like an inner cover, and a slot for the bees to get out.



Candy Board

- **Similar Concept Using a queen excluder base**
 - This can be set under the roof and instead of an inner cover
 - You can place fondant or pollen patties on it
 - Bees have direct access to the food over them





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



Homemade Drone Brood Culling Frame



Store bought version

□ 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, bees often put honey above in the small space





4-Chamber Queen Castle

- Four separate compartments for rearing queens





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



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

The image shows a workshop environment. In the foreground, there is a green-painted wooden box or frame. Inside this frame, several long, yellow-painted wooden slats are laid out horizontally. To the left of the green frame is a larger wooden structure made of plywood, with a small white label on its side. In the background, various workshop items are visible, including a red plastic container and some tools. A bottle of wood glue is in the bottom left corner.

Swarm Traps and Swarm Jib

LetMBee Blog | www.letmbee.com

Two features



1. Pin to keep the birds from nesting



2. Tree mounting bracket



Search for: **Swarm Trap / Jib Video** (YouTube)



Swarm Trap Jib

**Bee Culture Magazine
Feature: March 2014**



Portable Aluminum Work Platforms

- **Hive Box Stands**
 - 30"/40 Aluminum Portable Work Platforms
 - Sold at box stores, Harbor Freight, Northern Tool, etc.





Bee Yard Hive Bench

- ❑ **Set this behind your hives**
- ❑ **It is designed to hold several boxes and frames**

<https://www.bkcorner.org/bee-yard-hive-bench>



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.

80-pound test Fishing wire

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

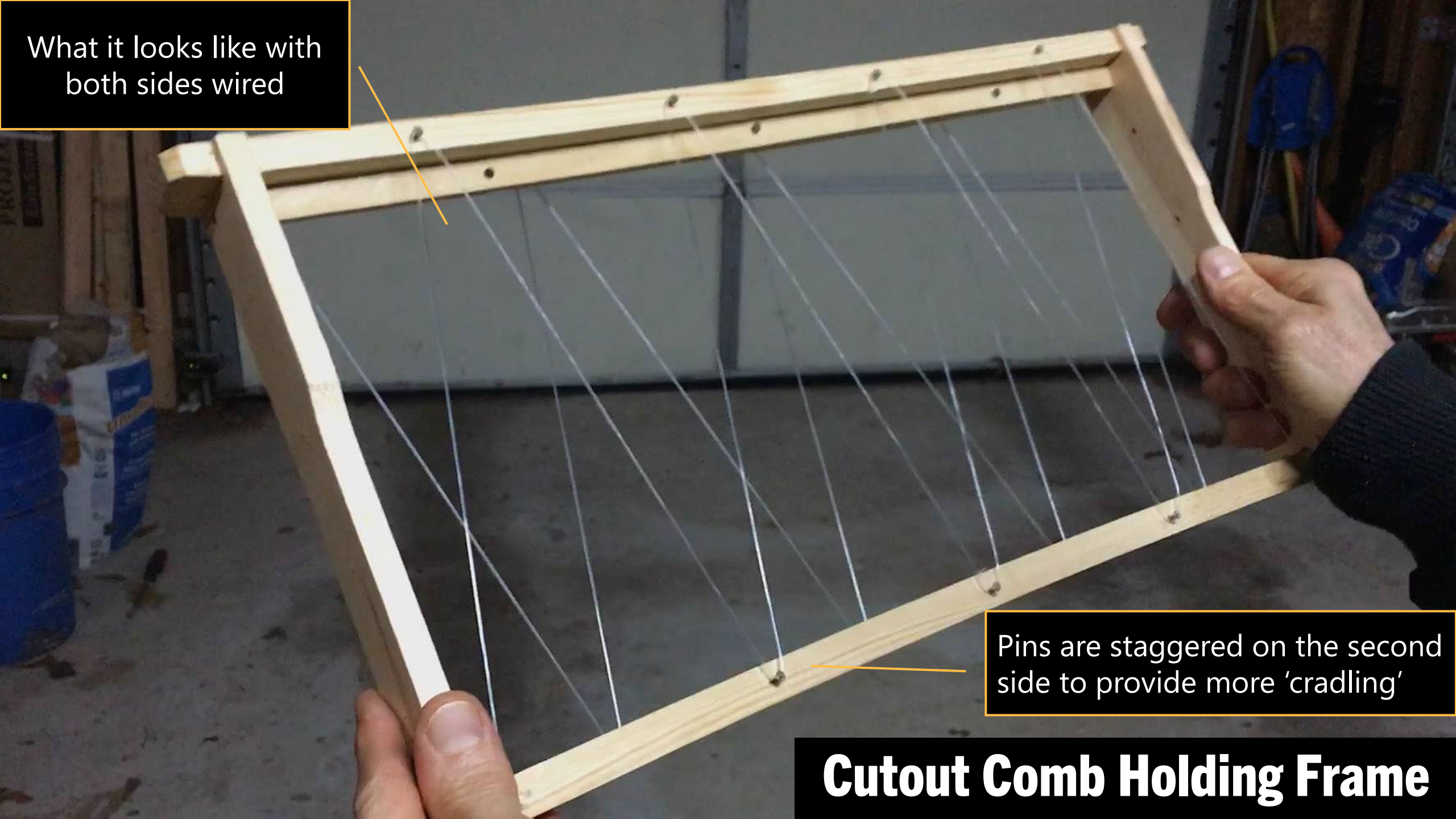
Cutout Comb Holding Frame



What it looks like with
both sides wired

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

Cutout Comb Holding Frame



PVC Hive Stand

□ BKCorner Hive Stand

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





Wooden Hive Stand

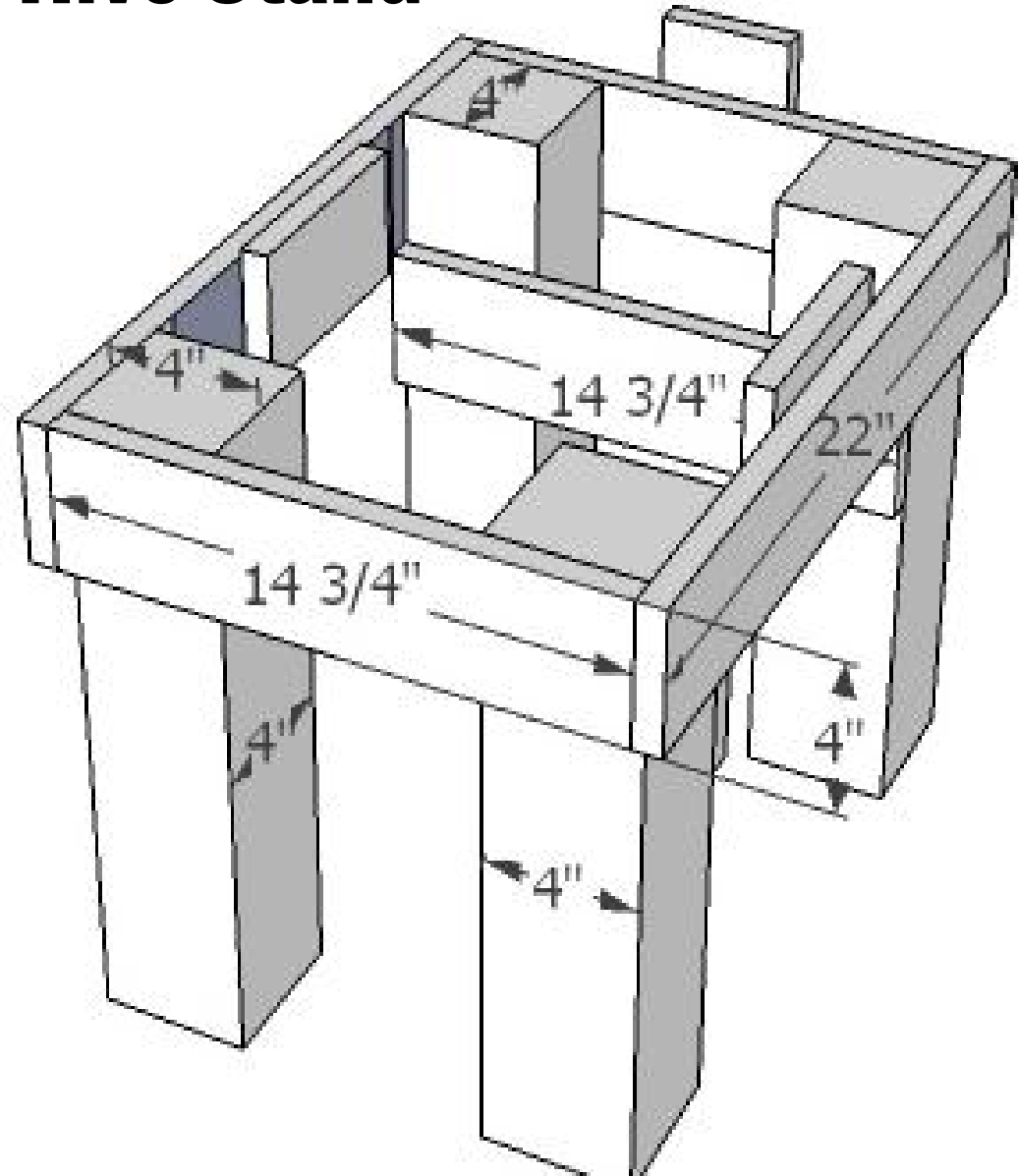
□ **Virginia 2018 EAS Hive Stand**

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

Little House on the Big Hill Hive Stand

□ Simple Wooden Stand

- This website has the plans to make this device
 - Some use it just as is, others get creative and tweak it to their liking
 - We have something like this in our NWNJBA teaching apiary, they are very good stands



Simple Swarm Catcher Pole



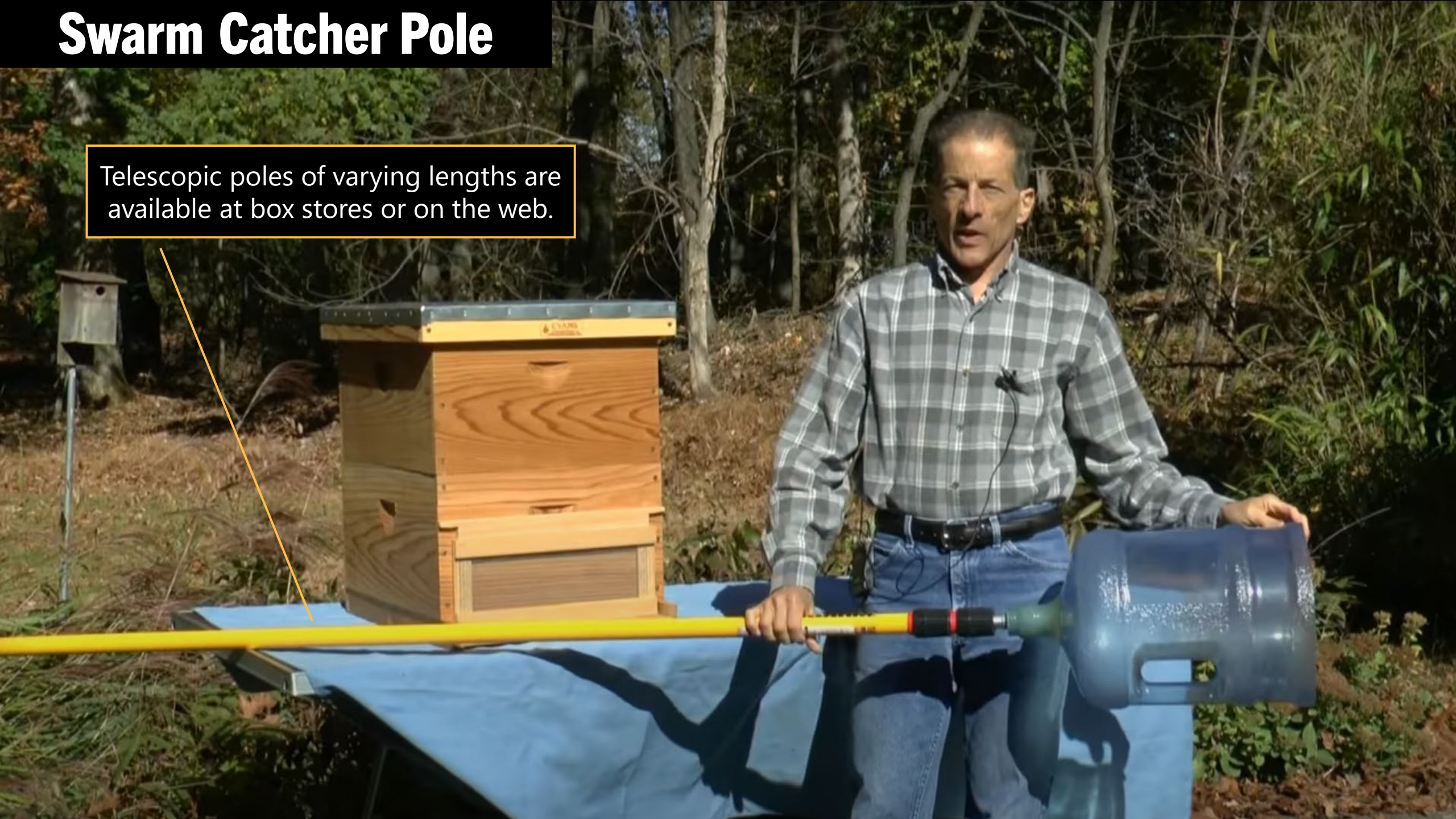
Donor Handle

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.



Bucket Feeder



Bucket Feeder



Frame Assembly Jig

Source
Robo Bushkill



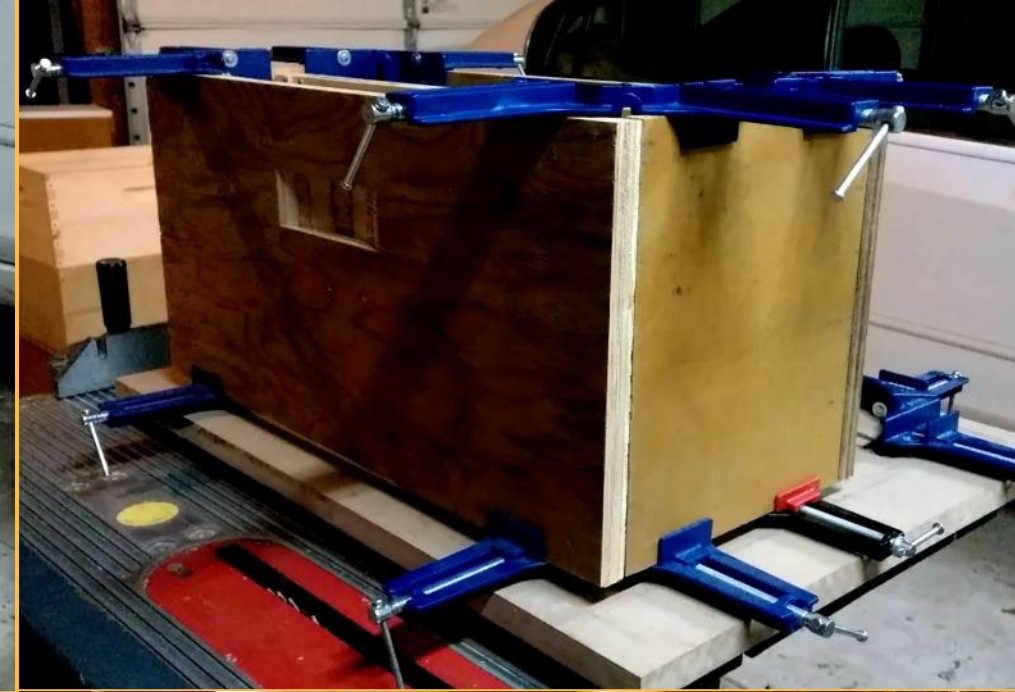
- **Langstroth Hive Frame Assembly Jig**
 - Makes quick work of building frames
 - Like an extra set of hands and far more efficient than building one at a time.

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





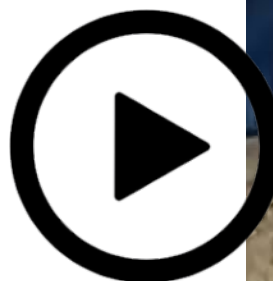
Box Building Jig – Full/Nuc Boxes

- ❑ **Jig to build boxes square and true**
 - Use a solid base that will not 'warp' or 'twist' in time. This one uses wood; which is not optimal
 - Clamps have preset holes to mount to the base
 - Enhances speed and ease for creating boxes.



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
 - Now in the US Market.



1 秒抖蜂 太快了!

Hive Tool Holster

- ❑ Beekeepers usually go one of two ways...
 - Build their own or repurpose
- ❑ Sources...
 - Garden tool holders
 - Knife holsters
 - Tool Belt add-ons
 - Beekeeper Inventions
 - Build your own

Holy Grail Item



Magnet Options are all quite trendy!

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 Meghan Denver's book (with Tom Seeley) for the methods.



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)

Conventional Mite Sampling Tub

Using $\frac{1}{2}$ cup
Measure



Image credit: Randy Oliver

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

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.



Homemade Uncapping Tank

Get Food Grade
from Restaurant Supply



- ❑ **Food Grade Plastic Tote**
- Honey gate and wire mess screen insert

Double Stack Bottom Board

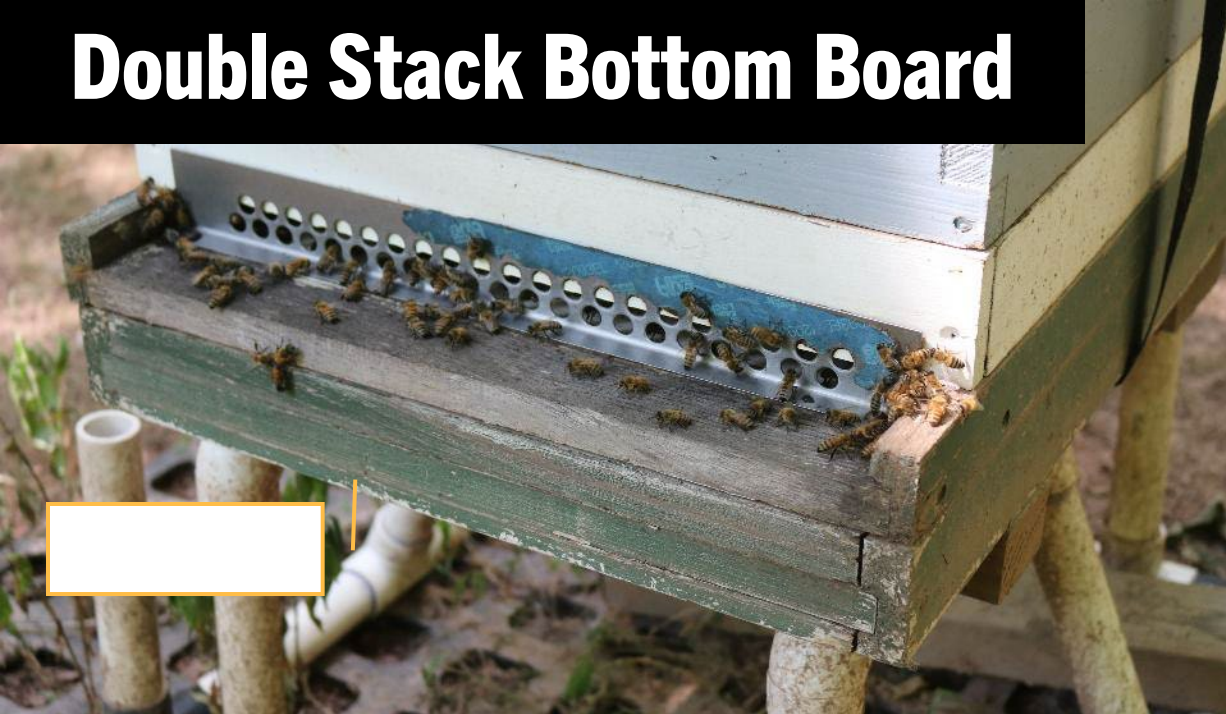


□ Screened over Solid

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

The premise is for Oxalic Acid
Vaporization Access & Mite Counts

Double Stack Bottom Board



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



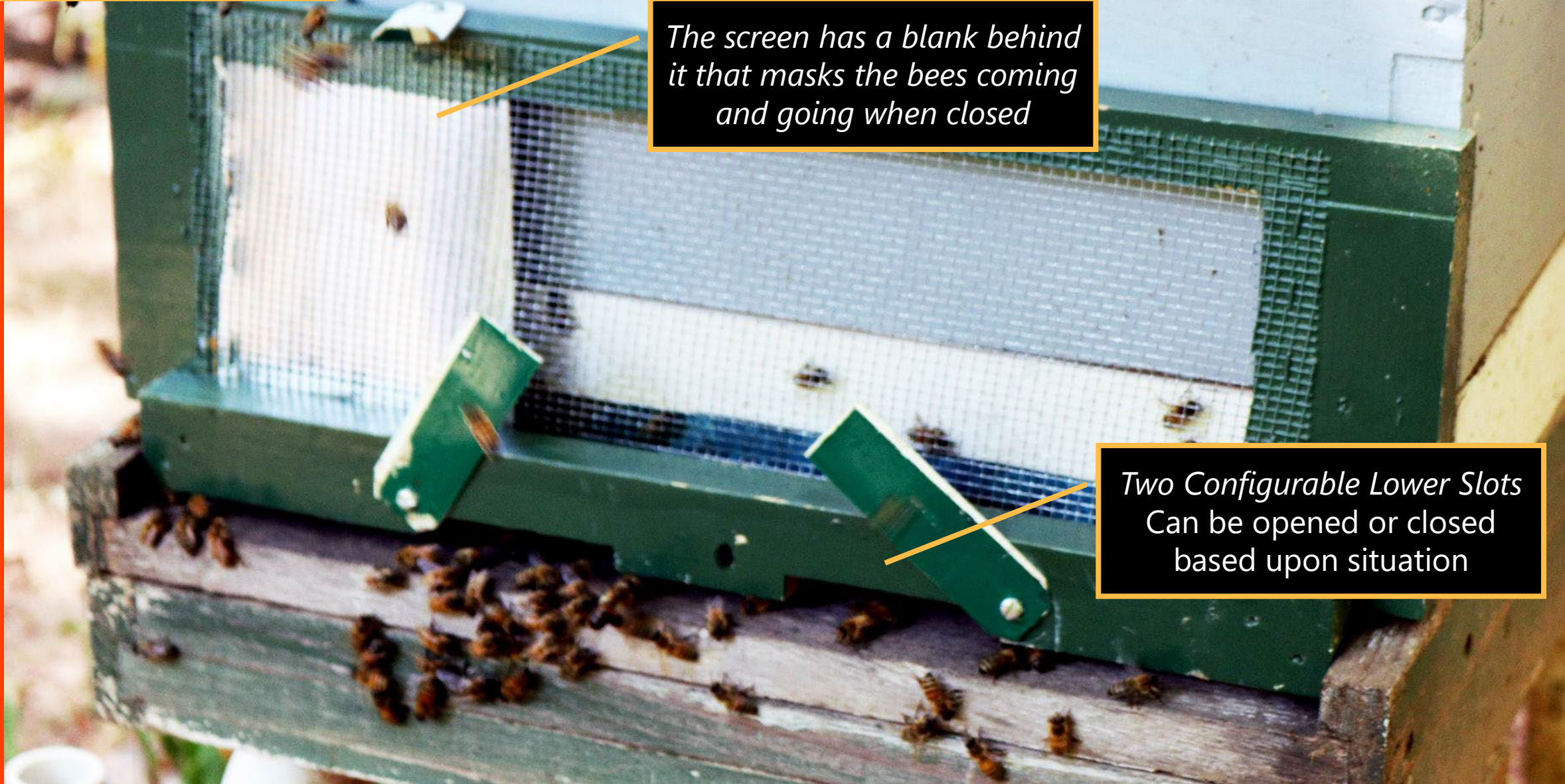
You can also place a cafeteria tray under the screen to do a mite drop assessment

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



Randy Oliver's method(s)

<https://youtu.be/D8lbm53JS5A>

NWNUBA VIDEO
White Checks-Sugar Shake and Alcohol Wash Demonstrations



Cut hole with heated tomato paste can.



Cut #8 hardware cloth to fit.



Weld lids with soldering gun.

Randy Oliver Links:

www.Scientificbeekeeping.com

Randy's site has info on using this device, based on the PROPOLIS-ETC design (Right)

Randy also speaks of other tools, including an extensive feature on doing mite washes with a solo cup design



Provider of beekeeping equipment out of Canada
.....Website is in French



BEE SHAKER

\$19.00

- 1 +



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



Frame Scraping Tools

- **Special tools that clean groove in frames**
 - Frame scraper (Yellow Handle) – Available in some bee catalogs
 - Gearwrench Window Molding Remover (Red Handle)



Wire Frame Holder for Uncapping



Upper Entrance Protection

Source
Justin Shiffler



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

Political/Real Estate Sign Panels (Coroplast)

□ Invaluable Uses

- If you can source some of these sign panels, they have dozens of uses in a beekeeping operation

Some Examples...

- Set under and over a hive box on the side to keep the bees quiet
- Use to cover honey boxes when pulling boxes off for honey harvesting
- Set under hive boxes in garage



Imirie Shim

Source
George Imirie Pink
Pages



□ Imirie Shim

- Simple middle entrance to give easier access to honey chamber

Endoscopes Cell Phone Cameras

Hardware and
software packages



Endoscope and FLIR Cameras



Inserting Endoscope
Into Top Bar Hive

**Endoscope
Video
Footage**



FLIR Heat Sensor Cell Phone Cameras

Hardware and
software packages



There are other brands available besides FLIR, but FLIR are the most well known

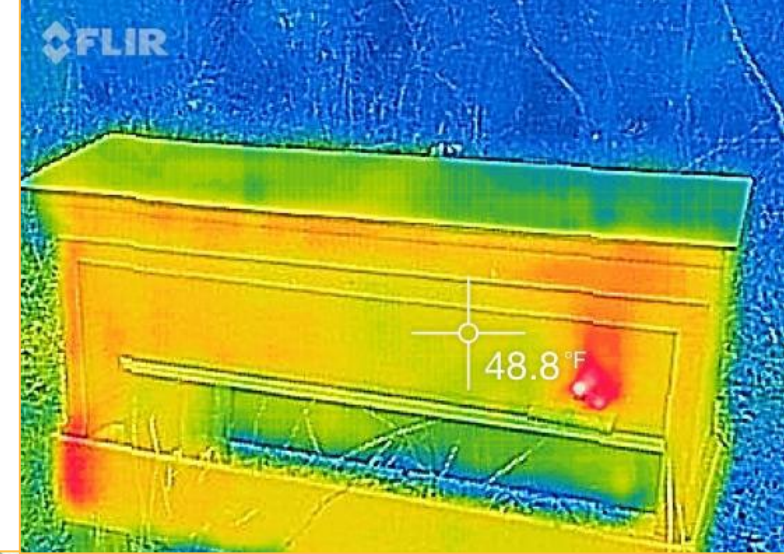


- **The Hardware for both is similar**
 - The software is tailored to the O/S
 - Now use USB-C Connectors
 - Connectors are available iPhones with the older lightning connector



FLIR Image Shots

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

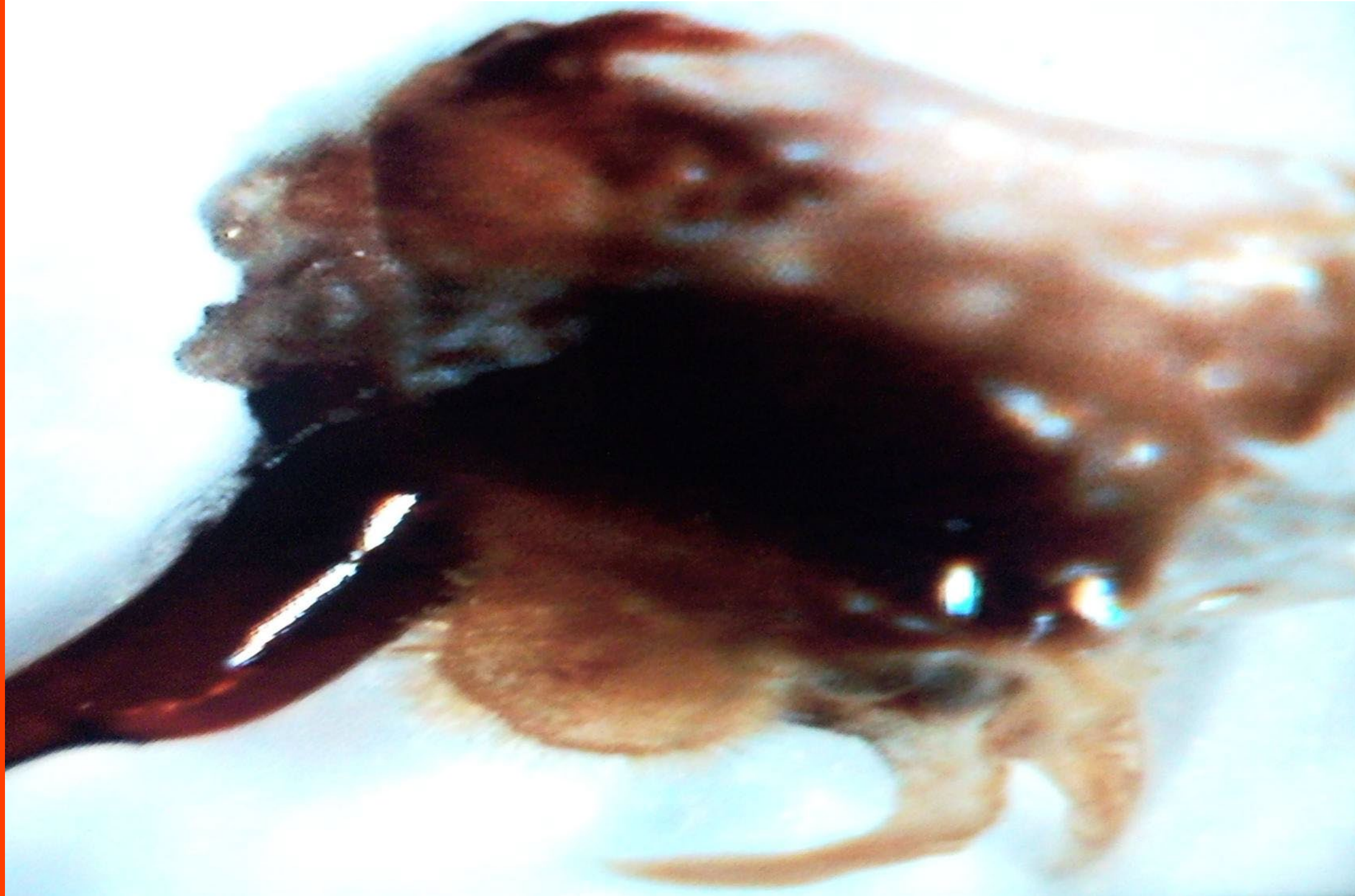


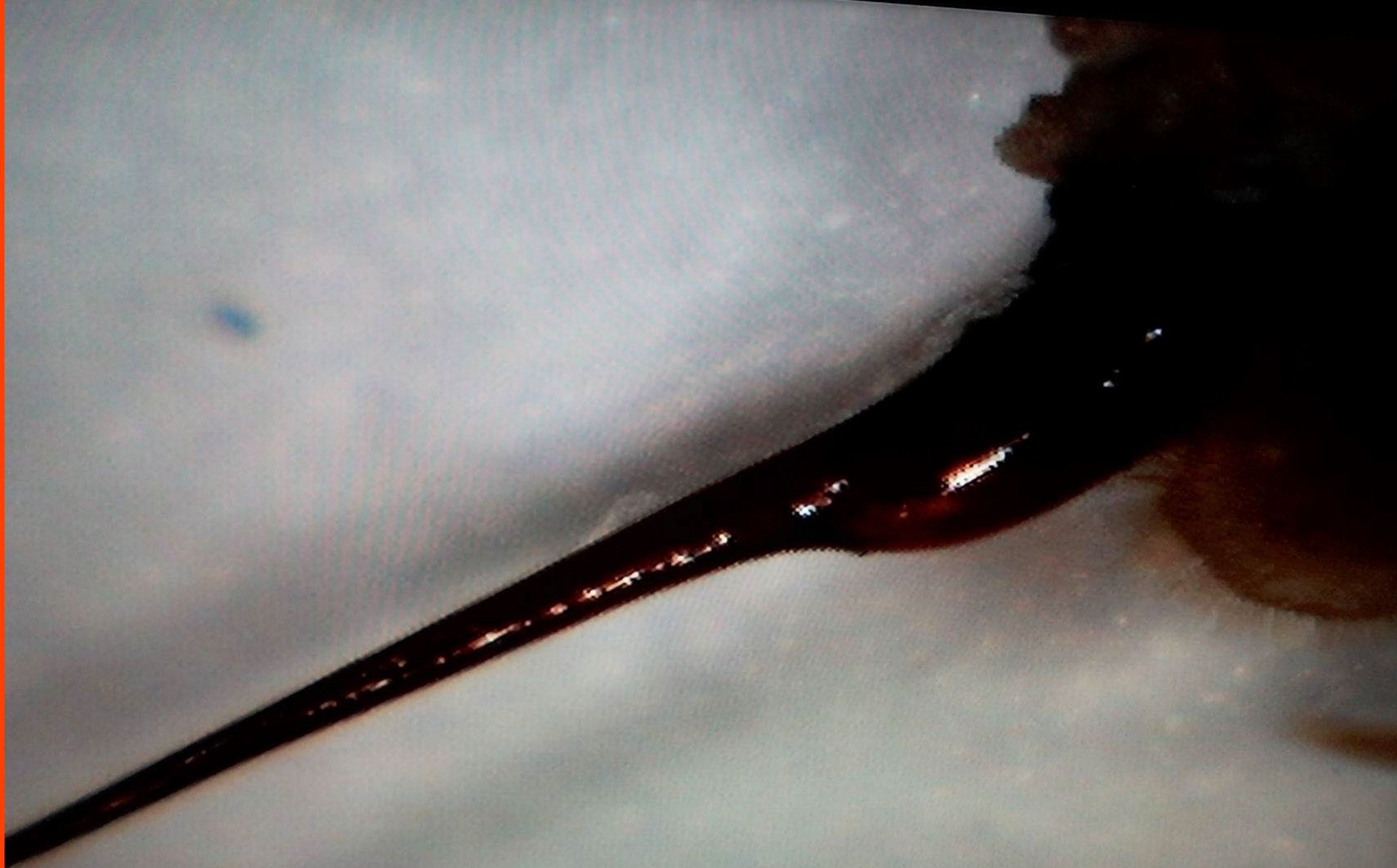
Digital Microscope

- **1000x magnification**
 - Works with WIFI to your IOS and Android devices
 - Works with USB Cable to Windows or MAC







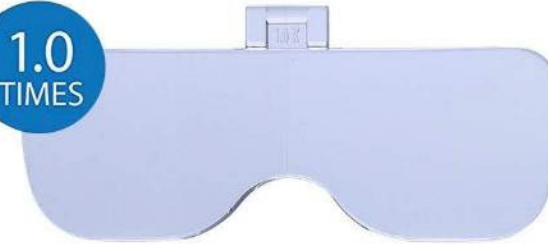


LED Head Magnification Lamp



3.5
TIMES

1.0
TIMES



1.5
TIMES



2.0
TIMES



2.5
TIMES

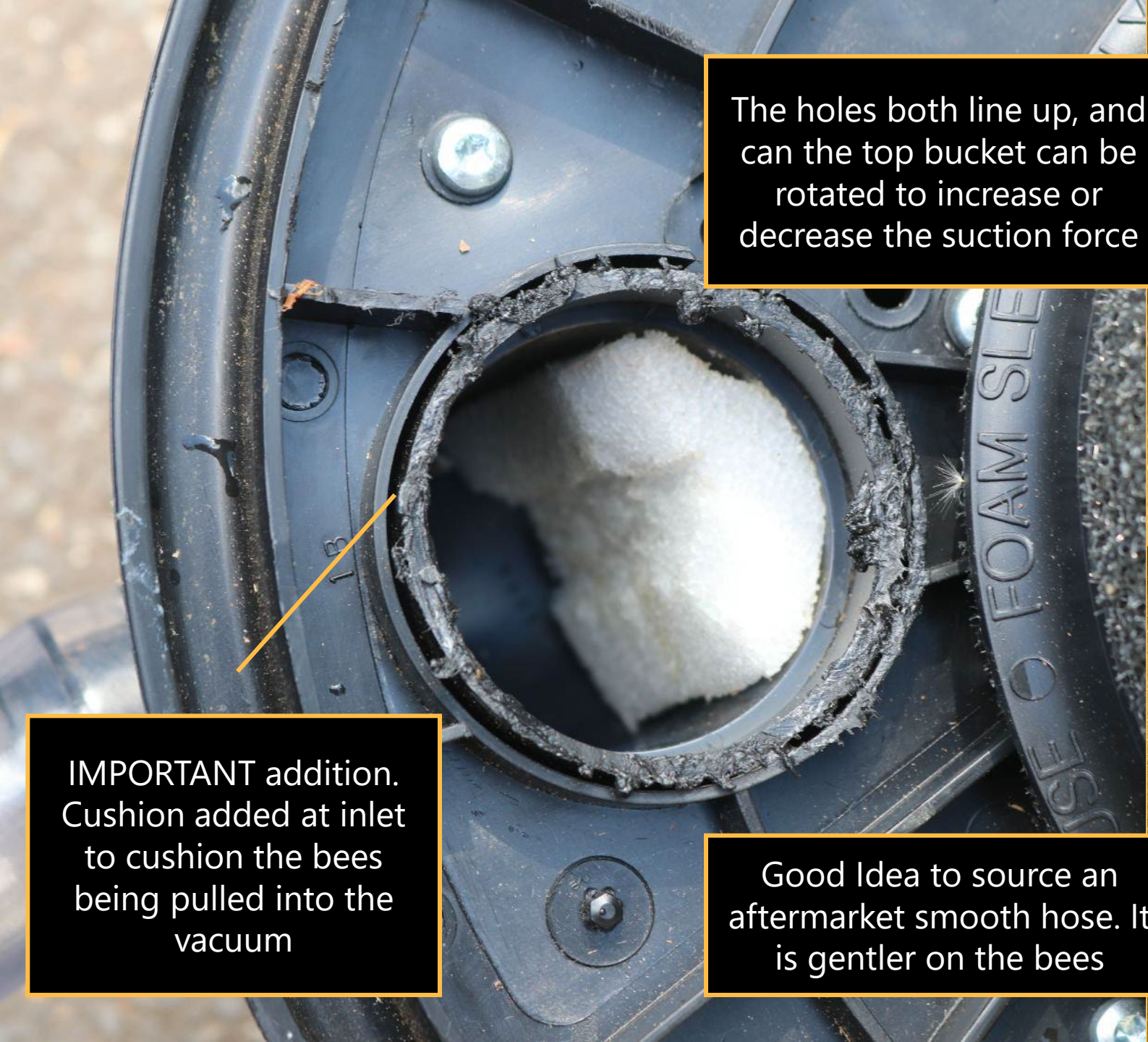


YOCTOSUN

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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QUESTIONS

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