



Non-Langstroth Hive Designs

Essex County Beekeepers Association
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Rose Hive <http://www.rosebeehives.com/>



The agenda

□ Bee “Vessels”

- *The origin of hives – Pre Langstroth and Langstroth and beyond*

□ Alternative Hives envisioned and in the marketplace

- *Creativity of hive design – a gallery of hives*

□ Hives in Practice

- *Hives in use around the world: What, where, and why...*

Vessels: Early Days

❑ The Tree

- *Climbing trees or cliffs to get to cavities for honey and comb.*

❑ Earthenware

- *Clay or mud pots to host colonies, sometimes in boles*

❑ Barrel

- *In West Africa barrels, imported by the Portuguese, were adapted for use as hives.*

❑ The Gum

- *Hollowing out trees for the purpose of housing colonies...*

❑ The Skep

- *No wood, no problem... Hives made from reed or straw, sometimes cloamed.*

❑ The Gourd

- *The gourd provides a natural hollow for bees, but most gourds are too small for an average bee colony, so that their use often induces swarming.*

Vessels: Woodenware

❑ The carboy box

- *Precursor to a hive body?*
- *There is some speculation that these storage/shipping boxes had some influence on the woodenware that ultimately became the Langstroth hive*



Vessels: Langstroth *Hive of today*

Influenced by
Huber and Dzierzon's designs

Vessels: We got there by way of...

Langstroth Influencers

❑ Influence by Huber's Leaf hive

- *Francois Huber* **1789**

- The leaf hive was a fully movable frame hive, but had solid frames that were touching and made up the "box".
- The combs in this hive were examined like pages in a book.

❑ Influenced by Dzierzon's designs

- *Johann Dzierzon* **1835**

- Some indicate that modern designs, and specifically Langstroth's designs, may have been derived by Dzierzon's designs.
- It is said that Langstroth had access to Dzierzon's translated manuscripts.

***Langstroth's
Bee Space &
Movable Comb
System
1851 & 1852***

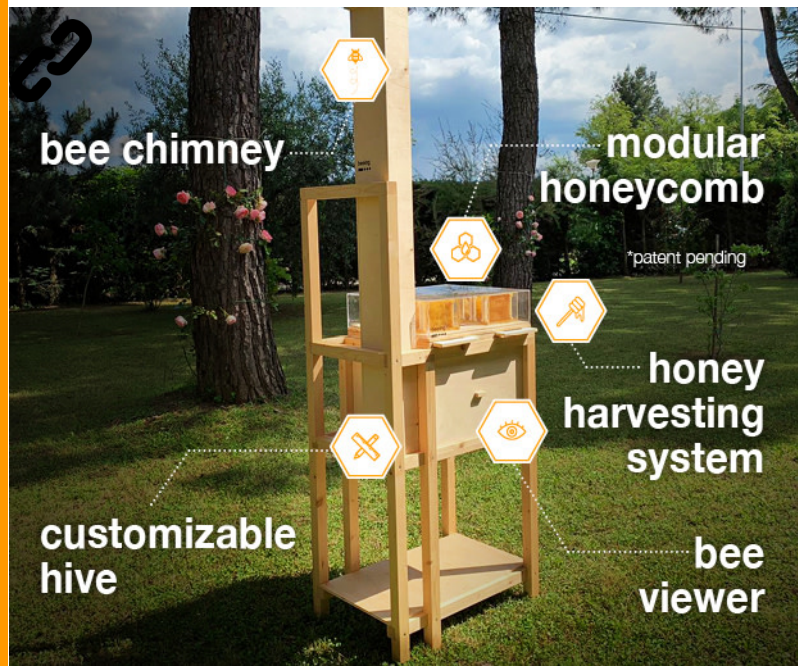
JOURNEY OF IDEAS

Langstroth is not the only way. Let us take a look at other ideas

The Bee Box Hive

□ Unique Features

- *Urban beehive that solves the problems of stinging insects in a close environment – and easy honey harvesting!*



■ The T-Slant Hive

□ The premise of this hive is:

- *The bees start at the top of the hive and work their way down.*
- *Question is how the heck would you work it?*



Birkey Hybrid Top Bar

- ❑ Uses the premise that the Bees will build in a loop (Golden Mean).



The Sun Hive

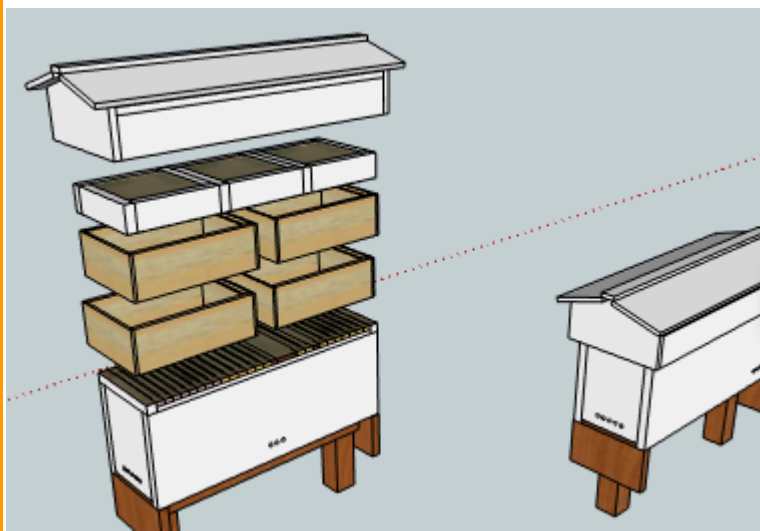
❑ Combination of Skep and engineered structures

- *Mounted 8 foot in the air*
- *No movable comb*
- *Akin to the Natural Beekeeping way of keeping bees*



■ The “Frankenhive”

- ❑ Contains up to three colonies.
- ❑ Can be managed separately, or managed vertically like a Warre.



The Hex Hive

- ❑ Made from cedar that is smooth on the outside and rough on the inside.
- ❑ The 5 middle frames are removable for easy honey harvesting.
 - *(The 4 outside frames are intact for the bees to build comb on and left alone or could be removed if needed.)*



Dunford Urban Beehive

- ❑ The Urban Beehive concept by NZ Rowan Dunford

- *Modular for shipping...*



■ The Beehaus from Europe.

□ Plastic and Metal

- *Insulated design*
- *Accepts supers on top*
- *Mesh floor*
- *Many other engineered features but follows conceptually a Dartington Hive design*



Outer Lid

This keeps the weather out all year round. It is secured using a strong, elasticated cord.

Supers

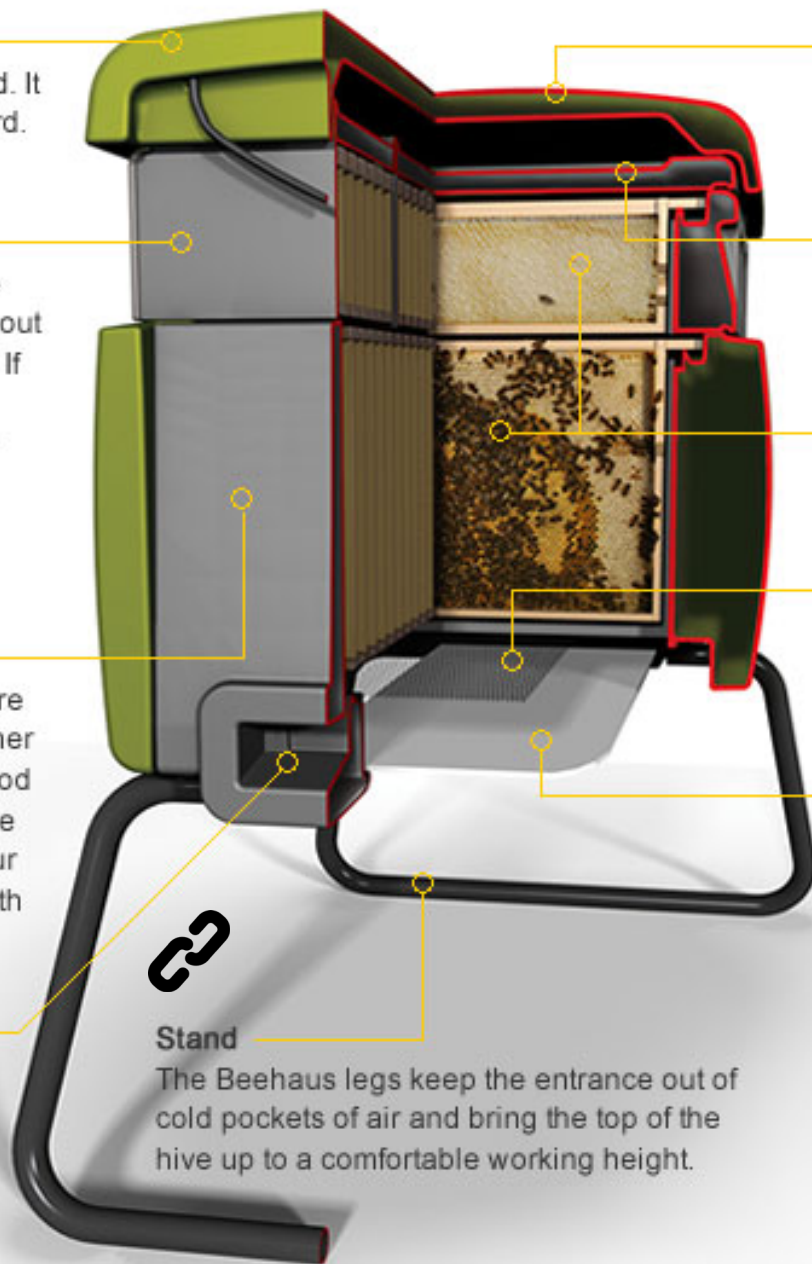
The supers are used by the bees to store honey. A colony will store honey throughout the summer in preparation for the winter. If your bees are successful they will have surplus honey which you can harvest for your family and friends. Your Beehaus comes with 10 super frames with wax foundation sheets

Brood box

This is the colony's home, the place where the bees live and where the queen lays her eggs. These large frames are called 'brood frames'. When inspecting your bees these are the frames that you look through. Your Beehaus comes with 10 brood frames with wax foundation sheets.

Entrance

This allows the bees to come and go. The entrance has a large landing board which is sheltered from the wind and rain. Because the Beehaus can be divided and used as two separate hives it has an entrance at either end.



Insulation

This is really important because bees need to maintain a constant temperature to raise their young.

Cover board

These sit on top of the brood box or supers and keep the bees in.

Frames

These hold the wax foundation that the bees build the comb on.

Mesh floor

The floor is made of mesh. This ensures your bees always have fresh air and it also allows debris and mites to safely fall out.

Inspection tray

This is located under the mesh floor of the house. It catches any mites or debris that fall from the hive which you can then examine to learn about the health of your bees.

Sterilisation

You can disinfect the plastic surfaces of the Beehaus against disease using common disinfectants such as bleach.

Tanzanian Long Hive

❑ Similar to a
Kenyan Top Bar

● *Straight sides*

Tip:



▪ T Shaped = Tanzanian



▪ K Shaped = Kenyan



Polystyrene – Bee Box

- ❑ Developed in Finland.

- *High Density – Harder polystyrene Hive in a Langstroth form factor.*

- 8X more insulation than wood hives
- Resistant to mold, Impervious to Rot

< Lyson Poly Hive



Large Format Layens

- Pennsylvania Dutch Vendor Layens hive



Drebbieville Hive



❑ US Based "Slovenian Hive"



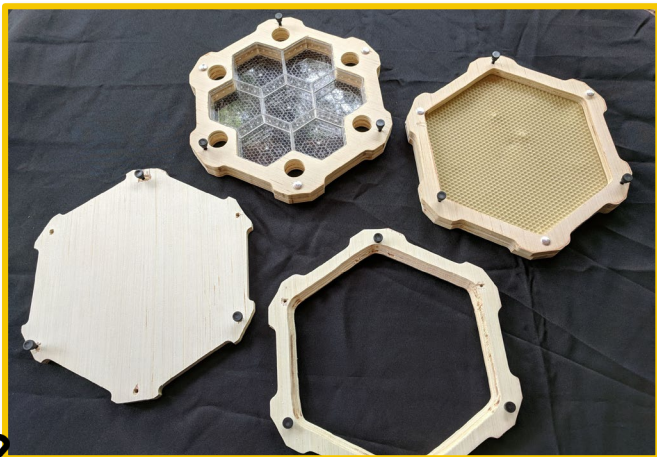
Rose Hive

- ❑ Irish Beekeeper, Tim Rowe, that standardized a 'European' style hive to single sized boxes
 - *Same dimension as a British National hive for the box, but the frame is shorter*
 - 11-inches vs. conventional 12-inches for national



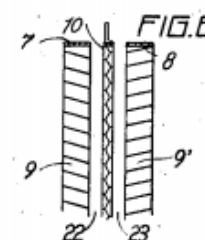
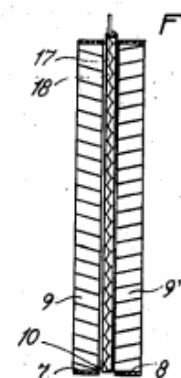
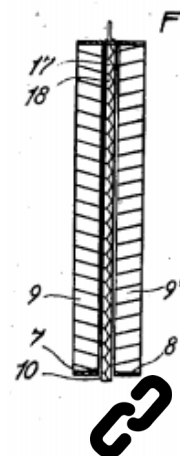
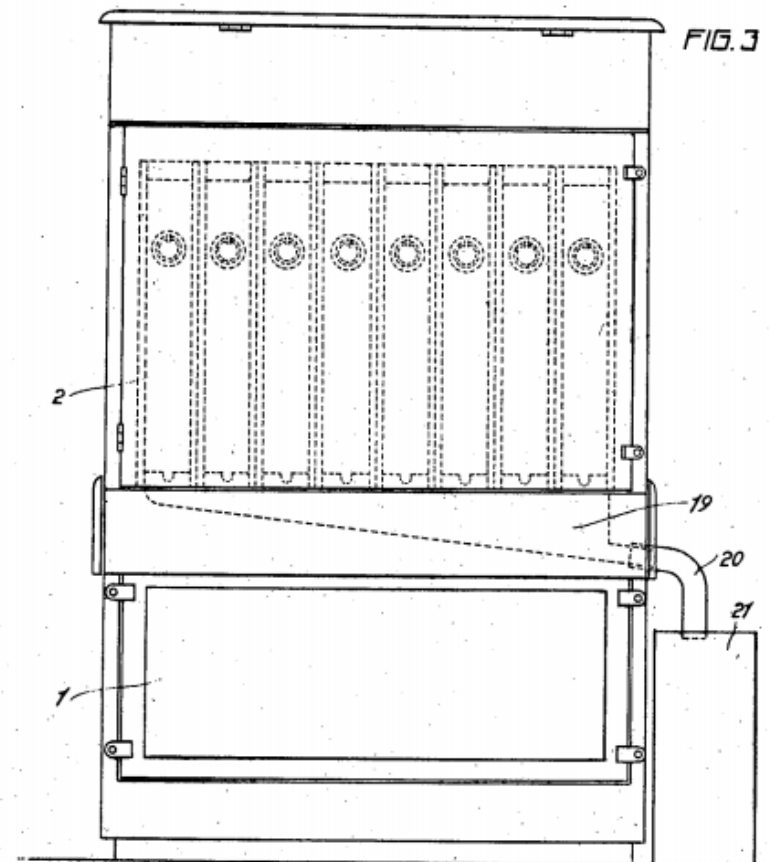
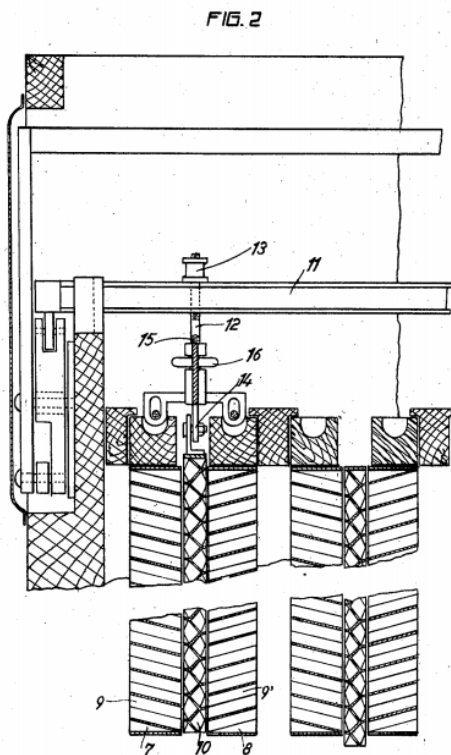
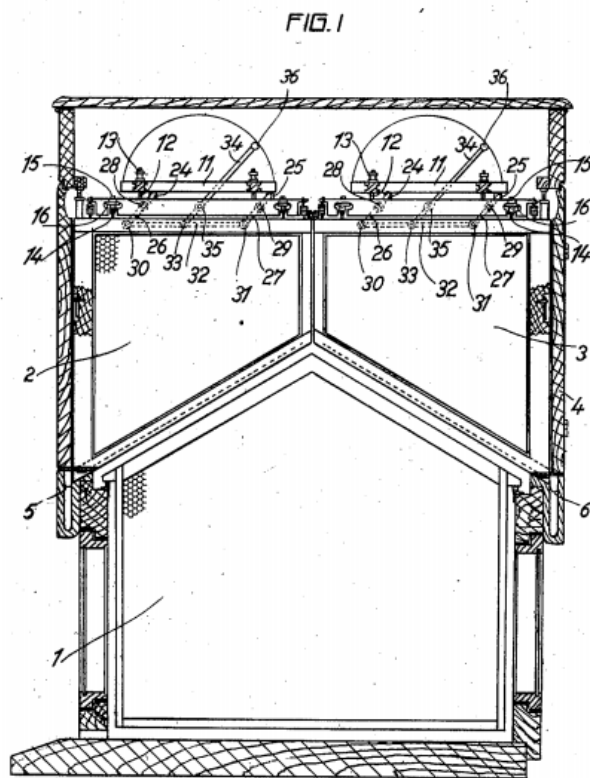
HoneyComb Hive

- ❑ Sold from North Carolina
 - *"Machined" & Engineered approach to hive construction*



Garriga Hive – Dec 1940

□ Look Familiar?



Inventor
J. B. Garriga
by
W. S. Swans
Attorney.

REAL WORLD HIVES

BKcorner

National Hive

2019- London

□ Talking Points

- ~1" Wood Panels
- Deep Frames.
- Box is 18 1/8" x 18 1/8" Square
- Deep National Frames are 14 x 12
- National (Super) frames are 14 x 8 1/2
- Square shape, warm or cold way
- Thin but long top bars
- Widely spaced – 10 or 12 frames
- Run with single with honey super



United Kingdom Hive Variations

□ Understanding the form factors

- **National** = $18 \frac{1}{8}'' \times 18 \frac{1}{8}''$ with (11) $14'' \times 8 \frac{1}{2}''$ Frames
 - Most commonly used due to weight
- **Deep National** = $18 \frac{5}{16}'' \times 18 \frac{5}{16}''$ with (11) $16'' \times 10''$ Frames
- **Commercial** = $18 \frac{1}{8}'' \times 18 \frac{1}{8}''$ with (11) $14'' \times 12''$ Frames
 - These are promoted for more honey production
- **Dadant/Langstroth JUMBO** = $20'' \times 16 \frac{1}{4}''$ with (11) $17'' \times 11 \frac{1}{4}''$ Frames
 - Rectangle, not square. Takes "Langstroth" like frames

Dadant Blatt

2016 - Italy

□ Talking Points

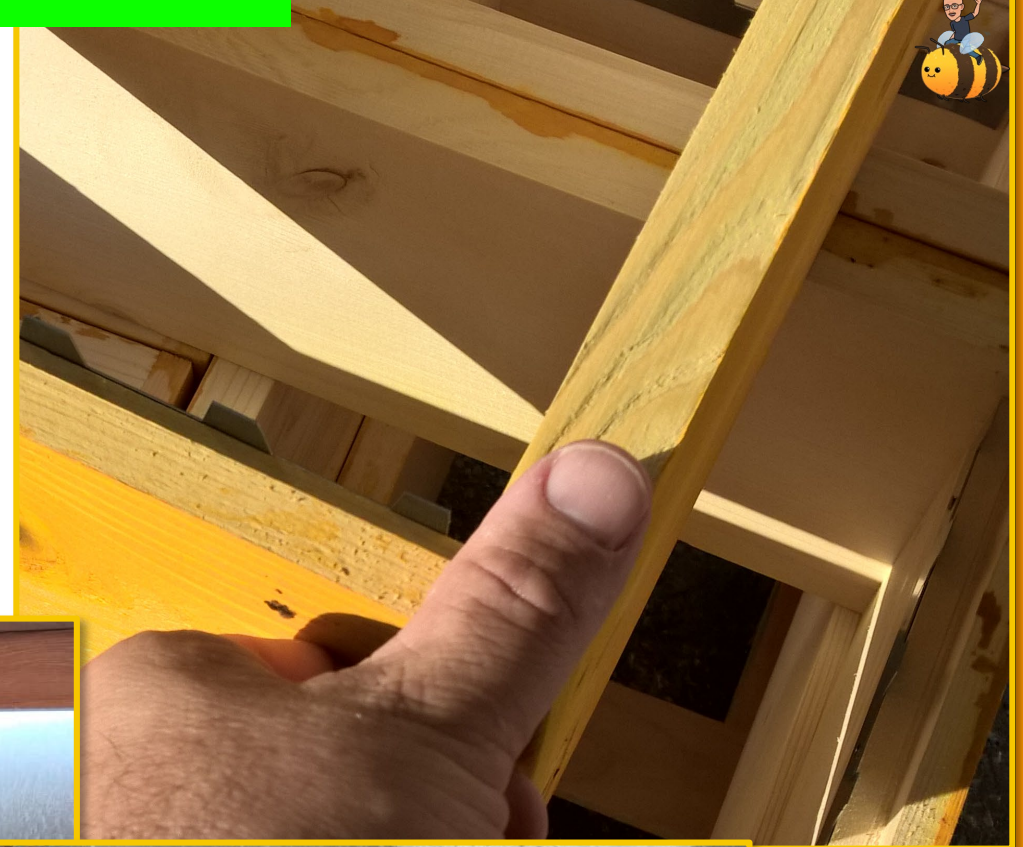
- *Dadant Variant*
- *2 ½" deeper than Langstroth but with a 1 ⅛ shorter top bar*
- *Can have 10 to 12 frames*
 - 11 Frames seemed conventional
- *Used as one 'deep' nest with honey super placed on top*



Dadant Blatt

Features

- Thick wood boxes
- Luggage handles
- Front Porch



WBC Hive

2019 - London



□ Talking Points

- *Expensive*
- *Wide spacing; a hive "in a shell"*
- *Telescopic: Originally double wall; now interior with a shell*
 - Insulation and shedding water is the catalyst for the design
 - Now considered a 'boutique' hive in England. Most use national hives.



WBC Hive

2019 - London

❑ 8-Frame



Top Bar

2018 - Malawi

❑ Talking Points

- *Very crude*
- *Hung from 'greased' wires*



Langstroth

2019 - South Africa

□ Talking Points

- *Simple construction and inner covers. Conventional frames*
- *Placed on ground, or some makeshift hive stand*
- *Harvest means taking the whole box*



The Flow Hive

2019 – My Apiary

□ Talking Points

- *Incredible engineering, beautiful*
- *Hit and Miss on building out*
- *Requires super strong colony*
- *Prime the frames*
- *Wish me luck*



The “Garden” Hive

2019 – **My Apiary**

❑ Talking Points

- *Considering queen banks*
- *Unfortunate turn of events*
- *Shows potential*
- *Planning to put it in the um, Garden...*



Bee Box Poly Hive

2015 – My Apiary

❑ Real World ❤️

❑ Talking Points

- *Great in winter & summer*
- *Prolific hive*
- *Some fussiness with glue, fixed...*
- *Space above frames little too small*
- *Regular wood boxes can go on top*





Warre Hive

2016 - **My Apiary**

□ Talking Points

- *Pleasurable Hive*
- *No extraction capabilities*
- *Small form factor / boxes*
- *Requires some expertise*
- *Nadir Concepts*

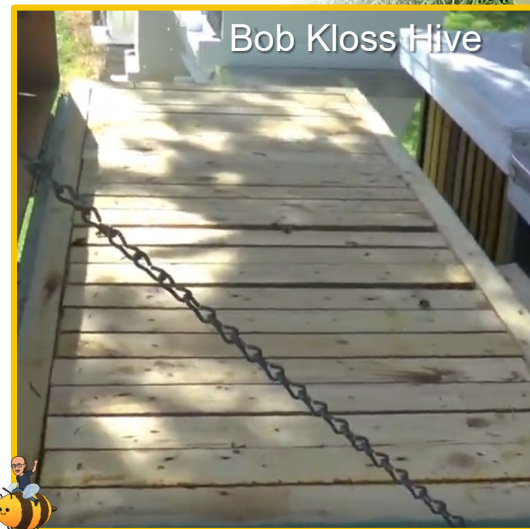


Layens Hive

2019 – My Apiary*

□ Talking Points

- *Hive commonly used in Spain*
- *Leo Sharashkin promotes these*
- *20 frames, 13" x 16" frames typical*



Top Bar Hive

2016 - **My Apiary**

❑ Talking Points

- *Originally fussy... not very successful at getting it populated*
- *Attempt at an innovative hybrid design in Langstroth format*
- *Bigger is not better*
- *Want to keep trying*



Are you alternative?

□ Tips

- *For different, but known hives, do some research first. Learn the ways.*
- *Think of all the angles,*
 - Extra non conforming equipment, extracting, expansion, robbing guards, hive stands, feeders, and all of the other one off things you have to think through
- *Be willing to go it on your own. Maybe there's a community...*
- *Follow the basics – mind bee space and cavity size*
- *If it is too good to be true, it probably is*

Comments and Questions?

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After tonight this will be posted at www.bkcorner.org

□ Slide Image Credits

- Slide 6 | Carboy Box*: <http://etsy.com/>
- Slide 10 | The Bee Box hive: <https://www.indiegogo.com/projects/b-box-1st-ever-hive-designed-for-home-beekeeping#/>
- Slide 11 | T-Slant Hive: <https://mylocalbees.wordpress.com/category/beehives/beehive-7/>
- Slide 12 | Birkey Hive*: <http://www.beesource.com/resources/elements-of-beekeeping/alternative-hive-designs/hybrid-top-bar-hive-barry-birkey/>
- Slide 13 | The Sun Hive: <https://offgridworld.com/the-sun-hive-a-majestically-beautiful-bee-hive-that-could-save-the-honey-bees/>
- Slide 14 | The Frankenhive: <http://www.ruchewarre.net/viewtopic.php?f=49&t=2319>
- Slide 15 | The Hex Hive: <https://randysuesbeehaven.wordpress.com/2010/06/13/hex-hive-is-now-for-sale/>
- Slide 16 | The Dunford Hive: <https://grossmannsbees.wordpress.com/2015/03/05/015914110/>
- Slide 17 & 18 | The Beehaus: <https://www.omlet.ie/shop/beekeeping/beehaus/>
- Slide 21 | Bee Box: <https://beegood.co.uk/blogs/news/11957677-why-we-use-polystyrene-beehives>
- Slide 23 | Rose Hive: <http://www.rosebeehives.com/>

□ Slide Image Credits

- Slide 24 | Honeycomb Hives: <https://www.honeycombhives.com/>
- Slide 25 | Garriga Hive: <https://www.frameapatent.com/farming-patent-prints-c-33/>
- Slide 35 | Flow Hive: <https://www.honeyflow.com/>
- Slide 42 | Fish tank Image: <https://www.amazon.com/Aqueon-Aquarium-Fish-Tank-Size>
- Slide 42 | This End Up: <https://thisendup.com/collections/classic-collection/>

** These images are no longer available at the source location from where they were obtained.*



Johann Dzierzon - Wikipedia

- ❑ In 1838 he devised the first practical movable-comb beehive, which allowed manipulation of individual honeycombs without destroying the structure of the hive.
 - *The correct distance between combs had been described as 1½ inches from the center of one top bar to the center of the next one.*
 - *In 1848 Dzierzon introduced grooves into the hive's side walls, replacing the strips of wood for moving top bars. The grooves were 8 × 8 mm—the exact average between ¼ and ⅜ inch, which is the range called the "bee space." His design quickly gained popularity in Europe and North America.*
 - *On the basis of the aforementioned measurements, August Adolph von Berlepsch [de] (May 1852) in Thuringia and L.L. Langstroth (October 1852) in the United States designed their frame-movable hives.*