

V. V. KUNKEL.
 HONEYCOMB FOUNDATION.
 APPLICATION FILED MAR. 17, 1919.

1,323,870.

Patented Dec. 2, 1919.

Fig. 1.

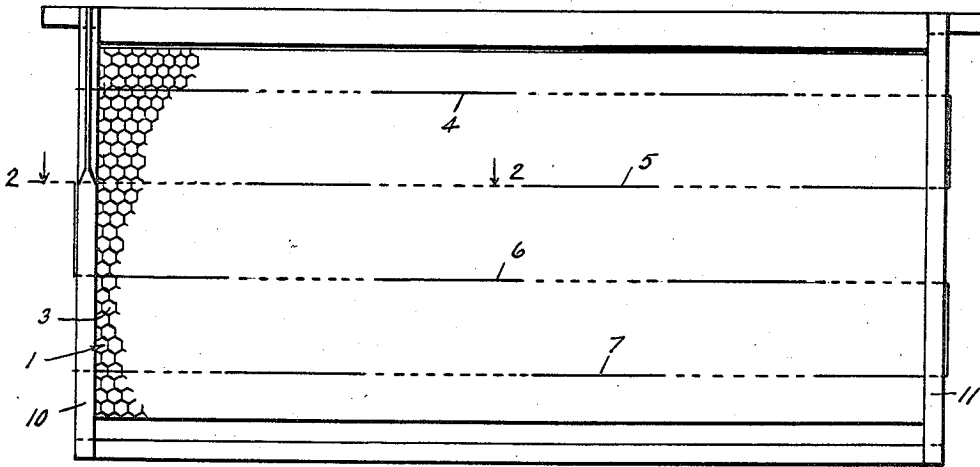


Fig. 2.

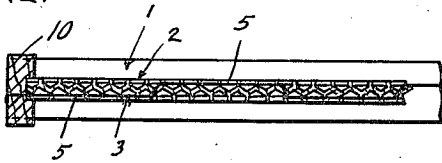


Fig. 3.

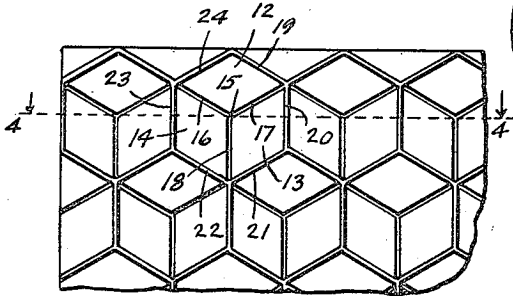


Fig. 4.

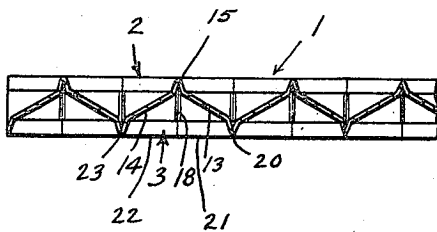


Fig. 5.

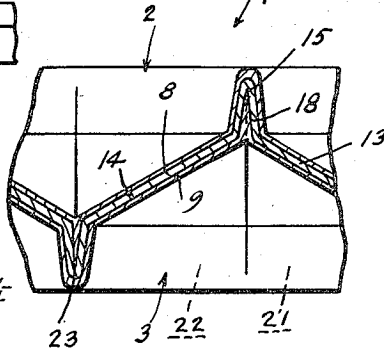
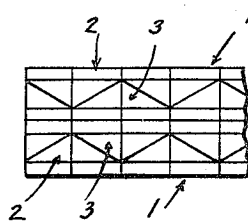


Fig. 6.



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UNITED STATES PATENT OFFICE.

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HONEYCOMB FOUNDATION.

1,323,870.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, VICTOR V. KUNKEL, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Honeycomb Foundations, of which the following is a specification.

My object is to make a honeycomb foundation having a metallic base covered with beeswax; and my invention consists of the novel features herein shown, described and claimed.

Figure 1 is a side elevation of a beehive slide provided with a honey comb foundation having a metallic base in accordance with the principles of my invention.

Fig. 2 is a fragmentary sectional detail as on the line 2—2 of Fig. 1.

Fig. 3 is a fragmentary detail elevation of a piece of the metallic base of the honey comb foundation upon an enlarged scale.

Fig. 4 is a fragmentary sectional detail as on the line 4—4 of Fig. 3.

Fig. 5 is a greatly enlarged fragmentary sectional detail upon the same plane as Fig. 4 with the beeswax covering applied to the metallic base.

Fig. 6 is a fragmentary diagrammatic edge view showing two foundations placed together back to back or side by side.

The metallic base 1 is a rectangular piece of thin sheet metal such as aluminum and the sheet is pressed from both sides to make the honey comb cell depressions 2 and 3. The supporting wires 4, 5, 6 and 7 are threaded back and forth through the metallic base 1 in parallel longitudinal lines with the ends of the wires extending beyond the ends of the metallic base 1. The metallic base 1 thus constructed and carrying the wires is coated on both sides with beeswax 8 and 9. The wires 4, 5, 6 and 7 may be a single wire threaded back and forth through the metallic base and through the end bars 10 and 11, or each line of wire may be independent and the ends of the wire attached to the end bars 10 and 11 so as to hold the honey comb foundation securely in the frame.

Heretofore it has been usual to make a honey comb foundation of beeswax pressed to the desired form, but these honey comb foundations are more or less fragile, and an object of my invention is to make a honey comb foundation more durable and which

may be renewed from time to time simply by applying new coatings of beeswax.

In my honey comb foundation the metallic base 1 makes the foundation strong so that it will stand indefinitely the extracting process, and so that it is less liable to accidentally injure it and so that the coating may be renewed or repaired from time to time as desired.

Heretofore the supporting wires have been embedded into the beeswax and were very likely to tear loose in the extracting process. In my construction the supporting wires are threaded back and forth through the metallic base 1 and then covered with beeswax, and then the wires are attached to the side bars 10 and 11 to mount the foundation in the slide.

In forming the metallic base 1 the honey comb cell depressions 2 and 3 each have three flat faces 12, 13 and 14, each of said faces being diamond shape in plan and the three faces meeting at a common center 15 and along lines 16, 17 and 18 radiating from this common center thus forming a hexagon having the outer edges 19, 20, 21, 22, 23 and 24. When seen in side elevation, as in Fig. 3, the lines 16, 17 and 18 are troughs and the lines 19, 20, 21, 22, 23 and 24 are elevations. The cells 2 upon one side are staggered relative to the cells 3 upon the other side so that the troughs of the first side produce the elevations of the second side, and the elevations of the second side produce the troughs of the first side. Forming the depressions of troughs 16, 17 and 18 on one side produces the elevations on the other side to produce a rim around the hexagon so as to make a good start for the honey comb cells. This rim may extend more or less as is found necessary.

After the metallic base 1 has been thus cut and depressed it may be dipped in melted beeswax, or coatings of beeswax may be applied to either, or both, faces in any suitable way and to any desired extent. The metallic base 1 may be formed by punch press work, or by running it through forming rollers.

In Fig. 6 I have shown a diagram of two honey comb foundations placed together side by side, so that the bees may work upon the outer faces of each foundation, this will make a stronger and heavier construction, and in this construction only the outer faces need be finished to receive the bee work.

Various changes may be made without departing from the spirit of my invention as claimed.

I claim:

5 1. A honey comb foundation consisting of a metallic base pressed to form honey comb cell depressions with integral rims around the depressions, supporting wires threaded back and forth through the base, and a
10 covering of beeswax applied to both the base and wires.

2. A honey comb foundation having a base made of a sheet of metal and having a plurality of honey comb cell depressions,
15 each depression having three sides diamond shape in plan meeting in radial lines, the radial lines being depressed to form grooves on one side and rims on the other side.

3. A honey comb foundation having a
20 base made of a sheet of metal and having a plurality of honey comb cell depressions,

each depression having three sides diamond shape in plan meeting in radial lines, the radial lines being depressed to form grooves on one side and rims on the other side, and
25 said honey comb foundation being covered with a coating of wax.

4. A honey comb foundation having a base made of one sheet of metal and forming honey comb cell depressions, with integral
30 rims around the depressions.

5. A honey comb foundation consisting of two bases placed together side by side, each base being made of one sheet of metal and pressed and finished to form honey comb
35 cell depressions upon their outer faces, there being integral metallic rims around the depressions.

In testimony whereof I have signed my name to this specification.

VICTOR V. KUNKEL.