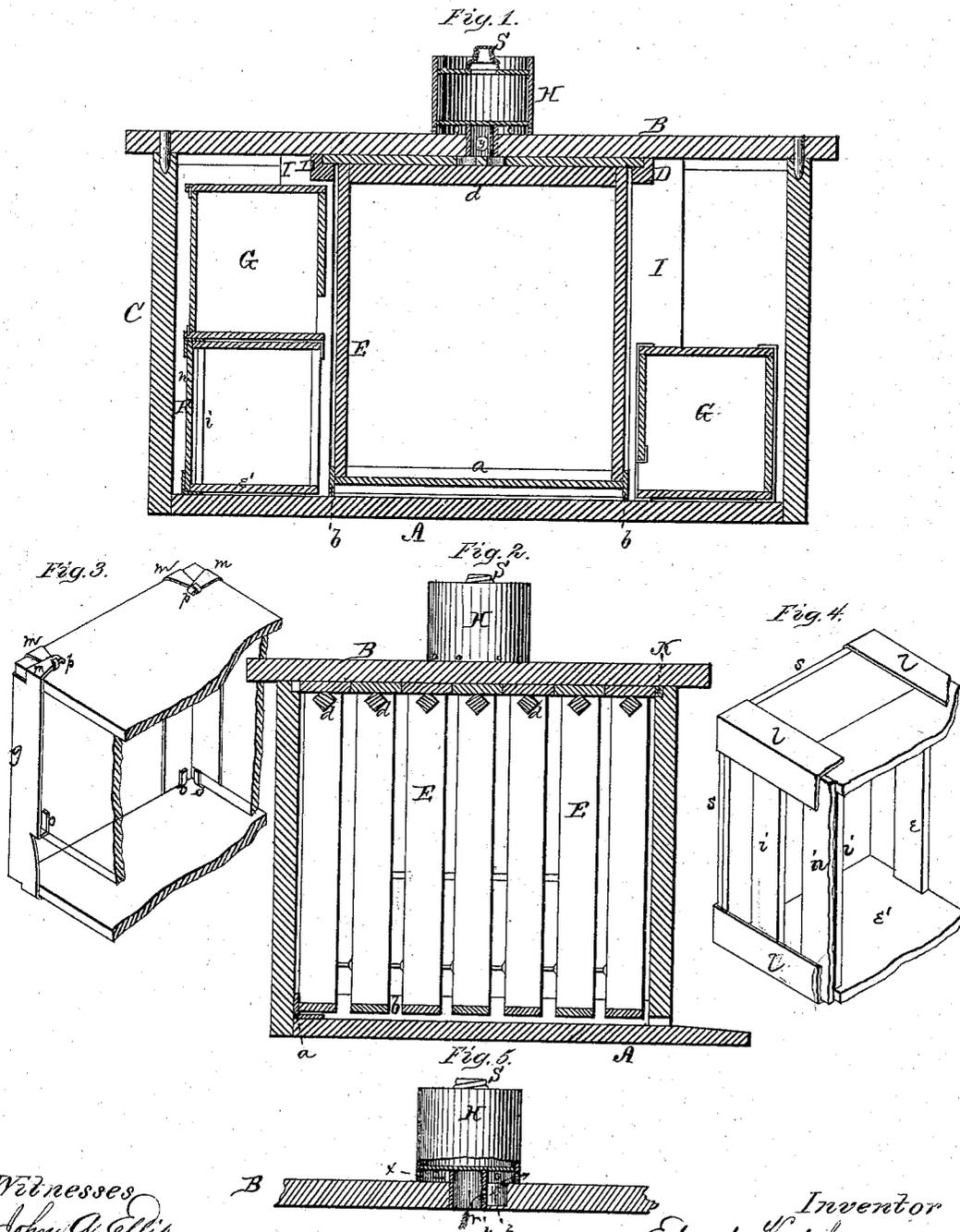


E. KRETCHMER.
Bee-Hives.

No. 138,661.

Patented May 6, 1873.



Witnesses
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UNITED STATES PATENT OFFICE.

EDWARD KRETCHMER, OF COBURG, IOWA.

IMPROVEMENT IN BEE-HIVES.

Specification forming part of Letters Patent No. **138,661**, dated May 6, 1873; application filed December 30, 1872.

To all whom it may concern:

Be it known that I, E. KRETCHMER, of Coburg, in the county of Montgomery and the State of Iowa, have invented certain new and useful Improvements in Bee-Hives; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

The nature of my invention consists in the construction and arrangement of a bee-hive, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a longitudinal vertical, and Fig. 2 a transverse vertical, section of my entire bee-hive. Figs. 3 and 4 show portions of the honey-boxes, and Fig. 5 shows the feeder and ventilator.

A represents the bottom board, B the roof, and C C the end doors forming the outer body or case of the hive. D D are the upper cross-rails of the frame-holder. E E are movable comb-frames; F F, sectional honey-boxes; G, glass-sided honey-boxes; and H, the combined bee-feeder and hive-ventilator. The frame-holder is set loose inside of the case, leaving a suitable distance between it and the doors C C. This frame-holder consists of cross-rails, D, and vertical bearers, I, which rest on the bottom A. These are kept at suitable distance from each other by the piece K and metal strips *a* and *b*. On the rabbets cut in the rails D rest the comb-frames E, as shown in Fig. 1, arranged side by side in such a manner that all the frames with the frame-holder can be lifted out of the case without disturbing the boxes; and then the frames can be taken from the frame-holder either vertical or horizontal, as circumstances may require, thus giving free access to the brood without disturbing the surplus honey-boxes even should the combs not be built true. The under side of the top bar of each comb-frame E is provided with a waxed comb-guide, *d*. This comb-guide is made to approach nearly the natural shape of a comb about one-half inch

deep—namely, V-shaped. The comb-guide of my frame consists of a square bar, (the angle of the bar may, of course, be slightly varied,) one corner and part of two next adjoining sides being coated with wax, and by passing it over an engraved wheel the waxed parts are shaped, not as the foundation or base of comb-cells, nor as their sides, but to a shape as viewed when cutting a comb at an angle of about twenty-five degrees or equal to the lower part of a newly-built comb, whereby the bees are induced not only to commence and continue the building of straight comb, but also to build either worker or drone comb, according to the size of cells impressed, in a more thorough manner than is usually the case. Honey-boxes are arranged at each end of the frame-holder. These boxes are placed between the bearers I I, being kept at suitable distance by these pieces from the sides of the case, so as to admit the fingers for easy removal of the boxes, said boxes nearly touching the ends of the frames E with no partition between the boxes and frames, thus giving the bees free access to the boxes. The metal strips *b* hold the boxes sufficient distance from the ends of the frames to allow a passage to the bees. One series, F, of these boxes consists of several sections, *e*, as shown in Fig. 4, each holding one comb, and the tops and bottoms *e'* being made wide enough to have the several edges touch each other, and the rear-end pieces narrow forming bee-passages between the sections. The front-end pieces *i* are likewise narrow and set back about one-quarter of an inch from the ends of the top and bottom. After several sections are arranged side by side a glass, *n*, is placed against them, being kept a suitable distance from the pieces *i* by the projections of the top and bottom. The sides of the outside sections are closed by boards *s*, and the several sections, side boards, and glass are held firmly together by strips, *l*, of tin folded at right angle over each corner. Thus constructed a view is obtained of both sides of every comb, a substantial box for shipping is obtained, and when the honey is used one section may be removed, the side board slipped within the tin corners against the next section and retained by simply bending the tin.

In such parts of the country where golden-rod blooms abundantly bees store a large quantity of surplus honey late in the season, but at such times they will not build comb sufficiently straight to use the sectional boxes; hence a different style of box must be furnished. I prefer the box G, the sides being of glass, the top and bottom of wood held together by pieces of tin bent at right angles around the corner. The pieces *g* of tin are first properly shaped and bent at right angles in the center. When adjusted to the box the parts *o* each hold one side of the glass from falling to the center, the parts *m* lap over the corner of the wooden top and bottom, and the point *p* is driven into the wood. I also provide my hive with a bee-feeder and ventilator, H, consisting of a round cup, the disk at each end being set back from the edge. One disk is perforated and a metal screw-cap, S, fastened over the perforation. The screw-cap itself is perforated in such a manner that each hole forms a miniature tube, from which the food comes in separate drops. To use it the cap is unscrewed, sirup or liquid honey placed in the can, the screw readjusted, and the screw-cap placed in a hole bored through the roof-board B, the bees drawing the food from the miniature tubes of the screw-cap. As the pressure of air prevents the liquid from running the bees are directed to it by pressing on the then upper disk, whereby a portion of the food is ejected below. It can also be used to furnish bees with water or meal. The projecting part of the sides gives the feeder a firm stand on the hive, and also receives any sirup that may run past the central hole while filling it. The opposite end of this feeder is arranged as a ventilator to be used when not used as a feeder, as shown in Figs. 1 and 5. A tube, *r*, is

fastened to the center of the end disk, which tube fits closely in the hole of the roof B. On one side of this hole is cut a recess, *z*, communicating with a hole, *y*, in the side of the tube *r*, allowing foul and heated air to pass into the chamber *x* formed by the projecting sides of the cup, which are perforated, allowing foul air to pass out as indicated by the arrows. By turning the ventilator so that the hole *y* is changed from the recess *z* all upward communication is closed.

When it is desired to use frames only, so as to extract the honey with a honey-extractor, the boxes and frame-holder are removed and the frames hung on rabbets cut on the upper edges of the sides of the case, holding thus a double number of frames. Honey can thus be taken in large quantities, and when the honey season is past a division-board may be inserted, dividing the number of frames into equal halves, and a queen raised for the queenless part.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The parts S and *r* of the feeder and ventilator H, in combination with the roof B or its equivalent, in the manner and for the purpose set forth.

2. The ends of metal corners of glass-sided honey-boxes, made with parts *o o*, *m m*, and *p*, in the manner and for the purpose set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

EDWARD KRETCHMER.

Witnesses:

I. BRETSCHMER,
H. BABB.