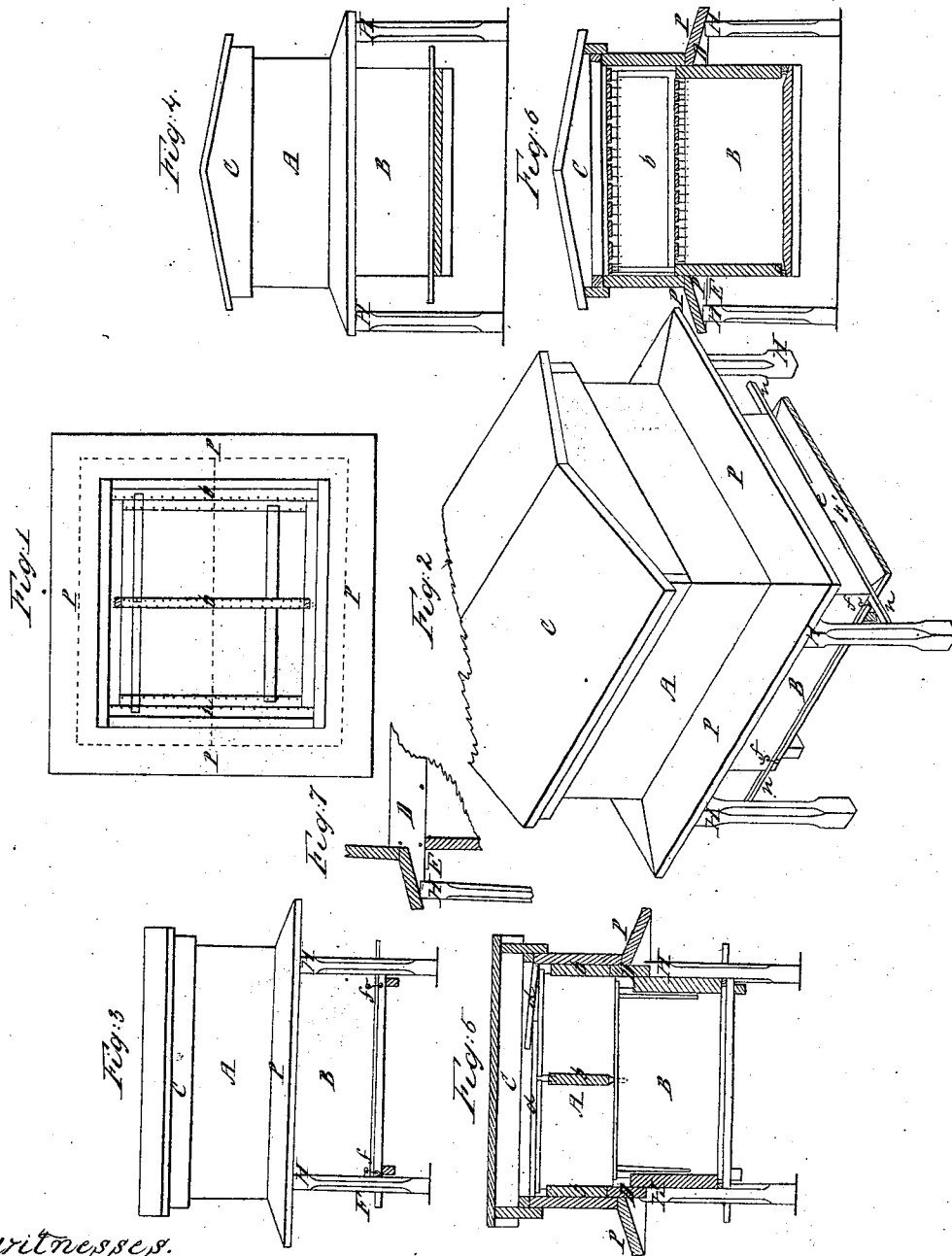


S. L. Richardson, Moth Exterminator,

No. 85,401.

Patented Dec. 29, 1868.



Witnesses.
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S. L. RICHARDSON, OF WEBSTER CITY, IOWA.

Letters Patent No. 85,401, dated December 29, 1868.

IMPROVEMENT IN BEE-HIVES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, S. L. RICHARDSON, of Webster City, in the county of Hamilton, in the State of Iowa, have invented several new and useful Improvements in Bee-Hives; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a plan, with cap and honey-board of hive removed;

Figure 2 is an isometrical elevation;

Figure 3 is a side elevation;

Figure 4 is a front elevation;

Figure 5 is a longitudinal section;

Figure 6 is a transverse section; and

Figure 7 is a section showing projection E, of end-piece D, which forms the seat for the bearings in the brood-box.

My bottom board is a rectangular board, of the same size, laterally, as the brood-box B, except upon the front side of the hive I have it project from two to six inches for an alighting-space, F. (Fig. 2.) I fasten it by nailing to cleats or bars, placed across near the ends on the under side, to prevent warping, and bevel the edges on the upper side to carry out moisture.

I fasten the bottom board to the lower edge of the brood box by hooks, *f*, placed on the sides near the ends, as clearly shown in figs. 2 and 3.

Above the bottom board I place the brood-box B. This is a rectangular box, without top or bottom, and is prevented from contact with the bottom board by nails, driven into the lower edge, one near each corner, thus leaving a shallow space between the lower edge of the brood-box and bottom board. This space I close by strips of wood, *n*, fig. 2, placed at the outer edge, leaving the inner portion of the shallow space open, and communicating with the inside of the brood-box. In this open space the moths or worms will naturally hide to spin their cocoons, to await their transformation to millers, where, by occasionally taking out the narrow strips, they can be easily destroyed, without raising the hive or disturbing the bees.

Around, near the top of the brood-box, I place a movable portico, P, which is a rectangular frame, slanting downwards, and rests upon projections, E, fig. 7, of the end-pieces D, (forming the seats for the bearings in the brood-box,) and can be put on or taken off at pleasure, like the shade of a lamp, and will be found useful for affording shade and shelter in summer, and facilities for convenient protection in winter.

Instead of making these strips *n* of one piece for the front of the hive, as I do for the sides and back, I make two pieces of equal length, and by withdrawing these towards the sides, I form an opening for the entrance of the bees, which opening may be enlarged or diminished at pleasure.

For the bearings of the comb-bars or frames, both

in the brood-box and spare-honey chamber, I use pins, of metal or wood, driven into the upper edge of the end-pieces of the brood-box and into the upper edges of the bearing-boards *b*, in the spare-honey chamber A. (Figs. 5 and 6.) The comb-bars are strips of wood, of proper width and thickness, and supported near the ends by the bearing-pins above described, which are shown in fig. 1 by dots, and in fig. 6 by rows of short marks.

The comb-frames are the bars above described, with thin strips nailed endwise to the under side, near the ends, and extending downwards far enough to prevent the bees from fastening their combs to the sides of the brood-box, as shown in fig. 5.

Above the brood-box, I place the spare-honey chamber, which is a rectangular box, without top or bottom, and shuts down over the upper edge of the brood-box, and rests upon the inner edge of the portico. I take spare honey by means of bars, frames, or boxes, placed in the spare-honey chamber, as suits my convenience. When using bars or frames, I place bearing-boards in the spare-honey chamber, one at each end and one across near the middle. Those at the ends rest upon the end-pieces D, fig. 7, forming the seats for the bearings in the brood-box, and are held in position by their own weight and that imposed upon them. That across near the middle has upright pieces nailed to the ends, which project below and hold it in position, by being inserted in holes in the sides of the brood-box for that purpose. They are simply plain pieces of boards, with bearing-pins in their upper edges, and may be removed entirely when desirable.

In the spare-honey chamber, I place a thin partition, or honey-board, *d*, fig. 5, composed of two pieces of thin boards, lapping one upon the other, to facilitate removal or change of position. This honey-board may be laid upon the comb-bars or frames, or be supported above them on pins, blocks, or screws. In fig. 5 it is shown as resting upon the comb-bars in the surplus-honey chamber.

Above the spare-honey chamber, and resting upon it, I place the shallow cap or cover C. This is a rectangular box or frame, with a double-sloping roof to facilitate the shedding of water, and shuts down over the upper edge of the spare-honey chamber, and is supported by cleats nailed upon the inside, which rest upon the upper edge of the spare-honey chamber.

I support my hives by posts, H, set in the ground, upon which the projection E, of the piece D, fig. 7, rests, and is secured by nailing, or by a notch or mortise in the top of the posts, into which the projection E drops, by which means the brood-box B is held suspended between the posts, as is clearly shown in the drawings. By this arrangement the bottom board can be unhooked and cleaned, without disturbing the hive, and will be a security against accidental oversetting.

I do not claim the bottom board, brood-box, spare-honey chamber, cap, comb-bars or frames, honey-board,

portico, or the method of supporting hives by posts, as heretofore used.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. Pins of metal or wood for the bearings of the comb-bars or frames, when constructed and arranged substantially as herein set forth.

2. The portico P, constructed and arranged substantially as set forth.

3. The hive, as herein described, when its several parts are constructed, combined, and arranged substantially as set forth.

4. The bearing-boards *b b b*, in the spare-honey cham-

ber, substantially as described and for the purposes set forth.

5. The shallow space between the brood-box and bottom board, in combination with narrow strips of wood, *n*, to act as a moth-trap.

6. The projection E, of the end-pieces D, to support the portico, and form bearings, upon which the hive is supported by the posts H.

7. The honey-board *d*, in two pieces, lapping one upon the other, for the purposes specified.

Witnesses: S. L. RICHARDSON.

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