

Paddock & Estep,

Comb Frame.

No. 92348.

Patented July 6. 1869.

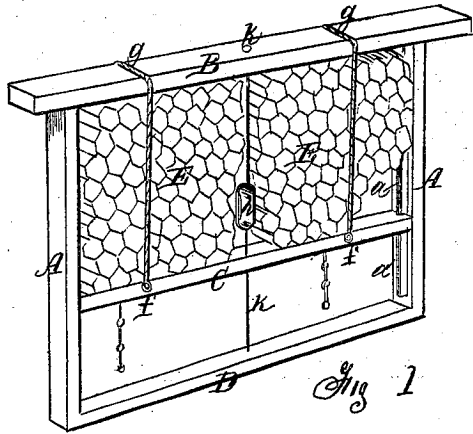


Fig 1

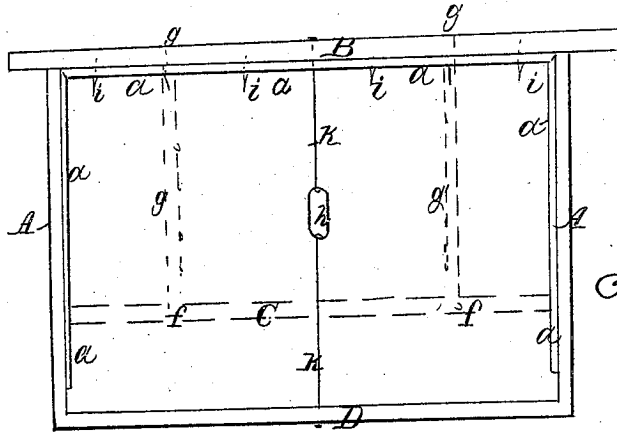


Fig 2

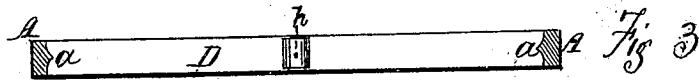


Fig 3

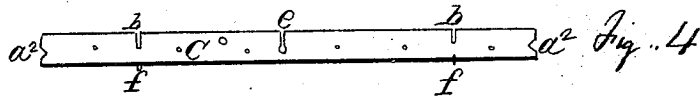


Fig 4

Witnesses
W. S. Reed
Scri. maker.

Inventor
Joseph A. Paddock
Jeremiah S. Estep

United States Patent Office.

JOSEPH A. PADDOCK AND JEREMIAH S. ESTEP, OF CASS COUNTY,
ILLINOIS.

Letters Patent No. 92,348, dated July 6, 1869.

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 we, JOSEPH A. PADDOCK and JEREMIAH S. ESTEP, of the county of Cass, and State of Illinois, have invented a new and useful Improvement in Bee-Hives; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawings, making a part of this specification, in which like letters of reference refer to like parts, and in which—

Figure 1 represents a perspective view.

Figure 2 is a longitudinal elevation.

Figure 3 is a horizontal section.

Figure 4 is a view of adjustable brace.

This frame has for its object to receive honey-comb in pieces of any size, at pleasure.

The brace being beneath the inserted combs, is kept against them by elastic bands, until the bees have fixed the combs, when the brace is removed, and the bees suffered to fill the balance of the frame; and when full of comb, the honey can be removed, and fresh comb replaced in the same manner.

This frame A A B D is made as follows:

A wooden bar, B, fourteen inches long, one inch wide, and three-eighths of an inch deep, forms the top of the frame, a V-shaped ridge, or guide, *a a*, projecting along the centre of the under side of the bar, three or four sharp wires, *i i i*, being inserted in this ridge, to help to hold the comb.

This bar is supported by two vertical ones, A A, forming the sides, about ten inches high and of similar thickness as the top one, joining and fastened to the latter, so as to leave three-fourths of an inch of either end of the bar projecting beyond each of the upright bars, the V-shaped ridge, or guide *a a* being continued down the inside of each bar, to within one-half an inch of the cross-bar D, at the bottom.

This cross-bar D is dovetailed, or fastened, in any secure way, to the vertical bars, and has no projecting ends.

The bar C, called the "adjustable brace," is of the same shape and size as the other bars, but without the V-shaped edge, but may have short wires, for retaining the comb.

The ends of this brace C are notched, to fit and slide up or down the V-shaped guides *a a a*.

On each side of the frame are two elastic bands, or equivalent devices, *g g*, secured to the edges of one side of this bar, and then passing over the top bar of the frame, and coming down again to the brace, is retained, by a knot, in a slot, or saw-cut, *b b*, in the edge of the other side of the brace, thus holding the latter, C, in a horizontal position against the under edges of the comb E E, when they are inserted.

The knots can be made at any point, to accommodate the width of the inserted comb.

Near the centre of the frame is placed one or more short tubes, *h*, of tin or other material, to preserve a passage through the comb, for egress, regress, and ventilation.

When a series of these frames and combs is set up, these passages form an easy communication through the hive, and distribute warmth therein.

This passage may be one and a half inch high by one-half an inch across, the length of the tube *h* being equal to the width of the frame, or comb.

This tube is confined by wires *k k*, carried to the top bar and bottom bar of frame, one wire passing through a slot, *e*, cut in the adjustable brace C, so as not to interfere with the adjustment of the latter.

A series of these frames, filled with comb, are set in the ordinary manner, side by side, in square hives, at about one-half an inch apart, the ends of the top bars resting in a rabbet at the top of the hive.

We make two boxes, with parallel sides, each twelve inches high, and fourteen by sixteen inches square, with bottoms and movable top to each, one set on the other, by means of a rabbet, the entrances for bees being at base of narrowest sides.

The frames are set in the longest diameter of the boxes, the ends resting on a ledge, or rabbet, in top of each box, thus bringing the ends toward the side in which entrance is made for bees.

The frames are set one-half an inch apart all through the hives.

The operation of this device is as follows:

Comb E, of any size, is inserted, large or small, in the upper part of frame A B A, which is retained there by bringing up the "adjustable brace" C, and passing the elastic string *g* over the top bar B, and slipping a knot on the same, beneath the saw-cut *b b*, in the brace.

When the bees have fastened the comb to the frame, the brace is removed, and the bees allowed to fill the remainder of the space in the frame, the V-shaped guides *a a a* controlling the location of the base of the new cells, at or near that ridge, keeping the cells, or comb in a uniform plane and thickness.

When the frame is filled and stored, it can be removed, and fresh comb inserted in the same manner; and this substituting-process can be repeated, either for honey or brood-comb.

The tube *h*, or passage, forms a communication with all parts of the hive, distributing warmth and causing ventilation.

The advantages of this frame are self-evident.

First. Both honey and brood-comb can be set up in large or small quantities, without damage to cells or to the brood, and the brace will retain the comb in any required position, until the bees fasten the comb to the frame.

Second. The certainty of securing straight comb by means of the V-shaped guides.

Third. The insuring of warmth and ventilation in winter, as well as at other seasons, by which breeding is facilitated.

Having thus fully described our invention,

What we claim therein as new, and desire to secure by Letters Patent, is—

1. The self-adjusting brace, formed by the combination of the horizontal bar *U* and elastic bands *g g*, substantially as and for the purpose set forth.

2. The combination of the adjustable brace *C* with the triangular guides *a a*, as described and represented.

In testimony that we claim the foregoing improvement in bee-hives, we hereunto set our hands, this 5th day of March, 1869.

JOSEPH A. PADDOCK.
JEREMIAH S. ESTEP.

Witnesses:

N. S. READ,
LEVI MCKEE.