H. HATFIELD.

BEE-HIVE.

No. 186,728. Patented Jan. 30, 1877.

Fig. 1

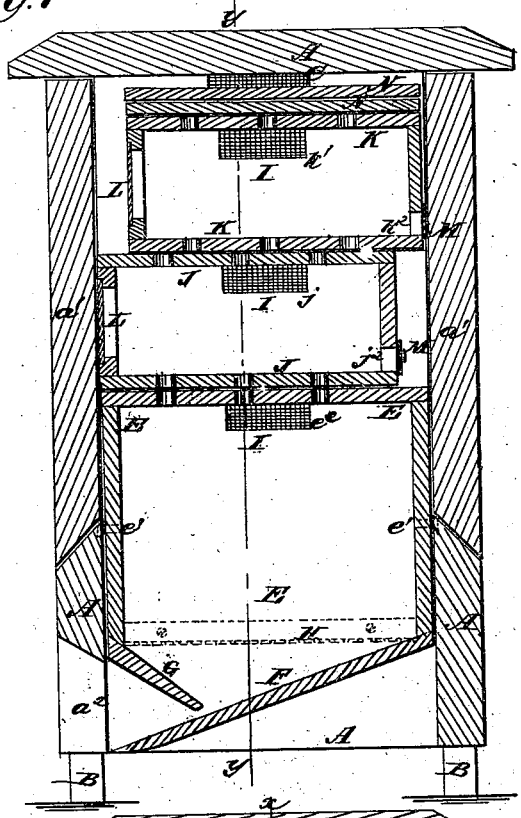
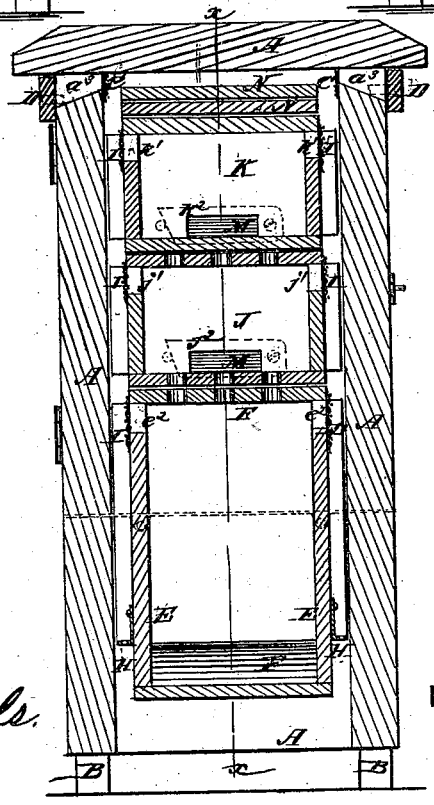


Fig. 2.



WITNESSES:

Francis M. Austin.

John Goethals.

INVENTOR:

H. Hatfield

BY Munn & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

HIRAM HATFIELD, OF OSSIAN, INDIANA.

IMPROVEMENT IN BEE-HIVES.

Specification forming part of Letters Patent No. **186,728**, dated January 30, 1877; application filed September 22, 1876.

To all whom it may concern:

Be it known that I, HIRAM HATFIELD, of Ossian, in the county of Wells, and State of Indiana, have invented a new and useful Improvement in Bee-Hives, of which the following is a specification:

Figure 1 is a vertical longitudinal section of my improved hive, taken through the line $x\,\bar{x}$, Fig. 2. Fig. 2 is a vertical cross-section of the same, taken through the line $y\,y$, Fig. 1.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved bee-hive, which shall be so constructed as to prevent the moth from entering; which will enable the hive to be thoroughly ventilated; which will enable the honey boxes or drawers to be arranged, exchanged, and removed, without danger to the bees or to the operator; which will protect the bees from changes of temperature; and which shall be simple in construction.

The invention will first be described in connection with the drawings, and then pointed out in the claim.

A is the outer case or shell of the hive, the upper parts of the front and rear sides of which are formed of the doors a^1, which are hinged at one edge, and are secured at the other edge, when closed, by hooks and eyes or other convenient fastenings. The lower edges of the doors a^1 have their inner corners beveled off to fit upon the beveled upper edges of the stationary parts of the front and rear sides, to prevent rain from entering. The lower edge of the stationary part of the front side of the shell A is recessed to form an entrance, a^2, for the bees.

The four corners of the case A rest upon four blocks, B, to allow air to have free entrance all around and to render it impracticable for vermin to enter the hive. In winter the blocks B are removed, to protect the bees from cold winds. In the upper parts of the sides of the case A are formed openings a^3 for the escape of the warm and impure air from the hive, which openings a^3 are covered upon the inner side with wire-gauze C, and upon the outer side are provided with pivoted, hinged, or sliding doors D, to enable the ventilation to be controlled as desired.

E is the bee-chamber or main hive, which is made of such a length as to fit in between the stationary lower parts of the front and rear sides of the case A, where it is supported by pins or screws e^1 attached to it, and which rest in notches in the beveled upper edges of the said stationary parts of the front and rear sides of the case A. The chamber E is made narrower than the cavity of the case A, so as to leave air-passages between the sides of the said chamber and case. The side edges of the front and rear sides of the chamber E project, so as to rest against the sides of the case A, and thus keep the air-passages upon the opposite sides of said chamber E always of the same size.

The bottom of the chamber E is made in two parts, F G. The larger part F is attached at its rear edge to the lower edge of the back of the bee-chamber E, and projects forward to or nearly to the front of said chamber, and is arranged at such an inclination that the refuse of the bees will slide down it and pass out of said chamber. The smaller part G is attached at its forward edge to the lower edge of the front of the chamber E, and projects to the rearward until its inner edge nearly meets the upper side of the other part F, sufficient space being left to allow the bees to pass in and out freely. The part G is also arranged at such an inclination that the refuse of the bees will slide down it to the part F, and thus pass out of the chamber.

The part of the bottom piece F that projects in front of the piece G serves as a platform for the bees to alight upon and take flight from. The sides of the chamber E project downward to meet and fit upon the parts F G of the bottom.

To the sides of the chamber E, about upon a line with the lower edges of the front and rear of said chamber, are attached sheet-metal flanges H, which project across the air-passages, so that their outer edges may be in contact with the sides of the case A.

The flanges H are perforated with numerous small holes, which allow the air to pass through, but prevent moths or other insects from entering the air-passages.

In the upper part of the sides of the bee-chamber E are formed openings e^2, to allow

the heated and impure air to escape from said chamber into the air-passages, and pass out through the openings a^3. The openings e^2 are covered upon the outer side by wire-gauze I.

J K are two honey-boxes or drawers, which are placed, the one above the other, upon the top of the chamber E, which are made of the same width as the said chamber E, and which are made with the side edges of their front and rear sides projecting to rest against the sides of the case A, and thus keep them in place laterally.

In the top of the chamber E, and in the bottoms and tops of the boxes or drawers J K, are formed holes for the bees to pass through, which holes are so arranged as to coincide with each other when the front sides of the chamber E and boxes J K are in line with each other.

The boxes or drawers J K are made enough shorter than the chamber E to allow said boxes, or either of them, to be pushed back far enough to cover and close the bee-holes. The drawings represent the upper box as being pushed back.

The middle parts of the fronts of the boxes J K are cut away, and in the openings thus formed are secured glass plates L, to allow the interior of said boxes to be inspected.

In the upper parts of the sides of the boxes J K are formed openings j^1 k^1, to allow heated and impure air to escape into the air-passages, which openings are covered upon the outer sides by wire-gauze I.

In the lower parts of the rear sides of the boxes or drawers J K are formed openings j^2 k^2, to allow the bees to escape from said boxes when the bee-holes are closed, which openings are closed, when not desired for use, by the pivoted, hinged, or sliding doors M.

The boxes J X are made enough lower than the space between the top of the chamber E and the top of the case A to allow two boards, N, of the same size as the tops and bottoms of said boxes to be laid upon the top of the upper box, and still leave an air-passage above them.

In setting the bees to work the lower box, J, is arranged with its front in line with the front of the chamber E; and the upper box, K, is pushed back, so that the bees can only enter and work in the said lower box J.

When the lower box J has been filled, at daybreak, or before the bees have begun to fly, a thin board is shoved into the space between the parts F G of the bottom to prevent the bees from coming out. The two boards N are then removed from the top of the upper box K, and with one of said boards the upper box K is pushed off the lower box J, the said board covering the holes in the top of the lower box, J, and preventing the bees from coming out. Then, with the empty box K the full box J is pushed out, and is received upon the other board N, held in proper position to receeve it upon the other hand. The full box J is then pushed from the board upon which it rests upon the top of the empty box K.

The boxes J K have thus changed places; and the empty box has been placed next the bee-chamber, without having injured or disturbed the bees, every bee remaining just where it was. Then adjust the front of both boxes to range with the front of main hive, and let alone until both boxes are well filled. Then the door M of the full top box is opened, which allows the bees in the said box to pass out, which bees re-enter the hive in the usual way, and the box J is thus freed from bees. The upper box can be removed, when freed from bees, by pushing it off with a board, or with an empty box. Then, by the first operation, throw the full box above and the empty one in the center again.

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

The combination of the perforated flanges H with the bee-chamber E and the case A, to guard the lower ends of the air-passages between the case A and the bee-chamber and honey-boxes E J K, substantially as herein shown and described.

HIRAM HATFIELD.

Witnesses:
W. P. SWAIM,
L. F. WILSON.