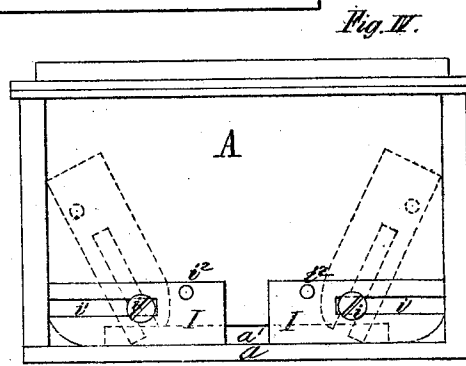
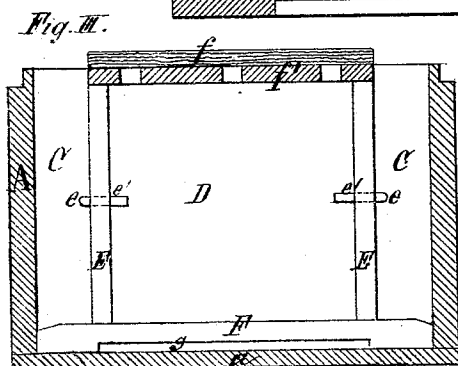
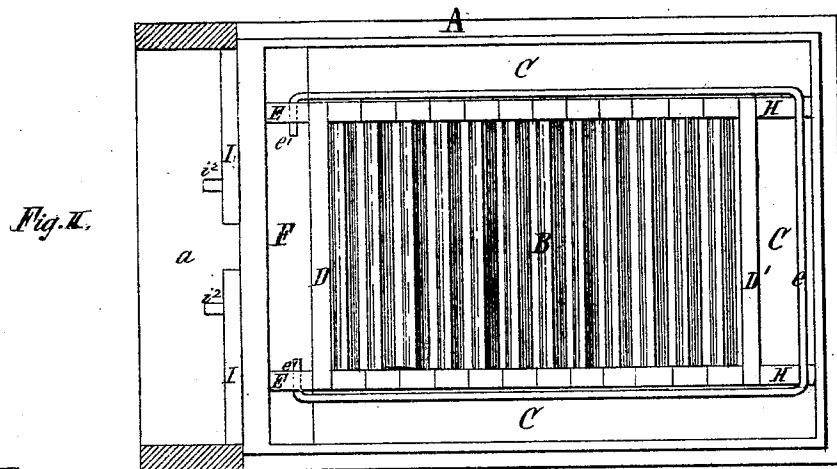
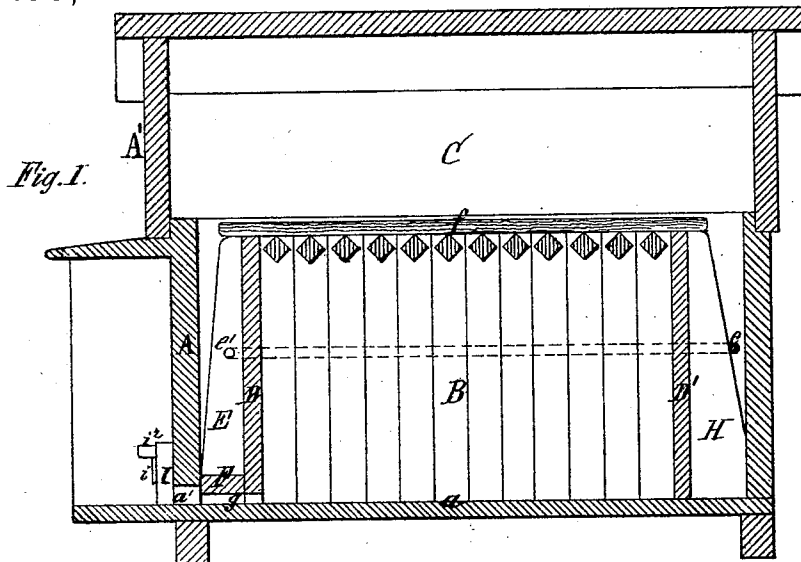


J. M. BEEBE.

Improvement in Bee-Hives.

No. 130,101.

Patented Aug. 6, 1872.



James J. Bonner
Edward Wilhelm } *Witnesses*

James M. Beebe *Inventor*
by Jay Hyatt *Att'y*

UNITED STATES PATENT OFFICE.

JAMES M. BEEBE, OF CASADAGA, NEW YORK.

IMPROVEMENT IN BEE-HIVES.

Specification forming part of Letters Patent No. **130,101**, dated August 6, 1872.

SPECIFICATION.

I, JAMES M. BEEBE, of Casadaga, in the county of Chatauqua and State of New York, have invented certain Improvements in Bee-Hives, of which the following is a specification:

My present improvements relate to an invention secured to me by reissued Letters Patent of the United States, No. 2,984, dated June 16, 1868, reference being here made to said reissued Letters Patent for a full description of my original invention.

In the accompanying drawing, Figure I is a longitudinal vertical section of my improved hive with the auxiliary honey-boxes removed. Fig. II is a plan view of the hive with the upper portion of the outer case removed. Fig. III is a view showing the outer case in cross-section and the front of the inner hive. Fig. IV is a front elevation of the hive with the upper portion of the outer case removed.

Like letters refer to like parts in each of the figures.

For the preservation of bees in winter it is necessary to protect them from the extreme cold. This has been found to be a matter of great difficulty, as by packing the hives tightly, so as to give full protection against the cold, the external air is entirely excluded from the interior thereof, which results, in many instances, in the suffocation of the bees. On the other hand, even the admission of a limited quantity of air into the inner hive for the purpose of ventilation is liable to cause the destruction of the bees by cold.

As shown in my aforesaid Letters Patent, and in the accompanying drawing, my improved bee-hive consists of an outer case, A A', and inner hive, B, the space between the same being filled in winter, after removing the auxiliary honey-boxes, with suitable packing material C. To prevent the latter from sifting through the apertures in the top of the inner hive into the interior thereof, and to form passages for conducting the moisture, &c., exhaled by the bees from the inner hive into the surrounding packing material, I employed a device called a ventilating-board in my aforesaid Letters Patent. As I have found by experience, this ventilating-board does not exclude the external air and cold from the inner hive so completely as to fully protect the bees.

To remedy this defect is the object of the first part of my invention, which consists in the combination with the inner hive, provided with apertures in its top for the supply of air and escape of the moisture, an outer case, and interposed packing material, of a piece of felt cloth, covering the top of the inner hive, so as to prevent the packing material from entering the inner hive and to protect the latter against the cold, while allowing, on account of its porosity, of the escape of the exhalations of the bees from the inner hive into the surrounding packing material, which absorbs the same, and, at the same time, permitting of the entrance of sufficient air to the bees to prevent suffocation. In my aforesaid patented invention the inner hive B consisted of a series of comb-frames forming the top and sides thereof, and resting on the bottom board *a* of the outer case, while the front and rear of the inner hive are closed by end boards D D', and the whole secured together by a wire bail, *e'*, secured at one end and fastened on the other by a removable wedge. Upon withdrawing the latter the bail is loosened and the comb-frames may be taken out and replaced; but, owing to the lack of supports for the end boards, the entire inner hive is liable to fall to pieces during this operation, while the locking-wedge is liable to be lost. The second part of my invention is designed to remedy this defect; and consists in the combination, with the series of comb-frames and the clamping-bail, of the front end board, two upright standards, and a bottom bridge-piece, secured together in one piece, and the rear end-board, provided with a wedge-shaped standard at each side, so that when the bail, which is pivoted to the uprights of the front end board, is placed over the wedges of the rear end board and pressed downward thereon, the end boards and comb-frames are firmly clamped together, while, upon loosening the bail, any number of comb-frames may be taken out and replaced without causing the whole inner hive to fall apart. The third part of my invention consists in the combination, with the passage through which the bees enter the hive, of two gates or doors, the pivots of which pass through horizontal slots in said doors, so that the latter may be swung out of the way to uncover the whole passage, or be adjusted by sliding on their

pivots so as to cover a greater or less portion of said passage, or entirely close the same, as may be desired, the lower corner of each door being rounded, as shown, to permit of its being turned up at right angles.

In the accompanying drawing, A A' represent the outer case, *a* the bottom, and *a'* the aperture in the front thereof. B represents the comb-frames of the inner hive; C, the packing material surrounding the same; D D', the front and rear end board of the inner hive; and *e*, the wire bail securing the parts of the latter together. All of these parts are old and well known. *f* represents the piece of felt arranged on the top of the inner hive in winter so as to cover the apertures thereof. It is an excellent material for protecting the inner hive against cold, while answering all the other requirements hereinbefore stated, as I have found by the experience of two winters. The slotted board *f'*, which is interposed in summer between the comb-frames and the auxiliary honey boxes, may either be retained in winter and the felt placed upon the same, as shown in Fig. III, or it may be removed with said honey-boxes. E E represent the upright standards or braces, to which the front end board D is secured; and F, the bridge-piece connecting the standards E at the bottom, and fitting snugly between the sides of the outer case. The bridge-piece F and end board D are provided at the under side with a recess or passage-way, *g*, forming a continuation of the aperture *a'* into the inner hive, which passage is obviously protected against becoming closed by the packing material. The wire bail *e* is pivoted to the standards E, as shown at *e'*. H H represent two tapering or wedge-shaped standards secured to the outside of the rear end board D' at each end, as clearly shown in Figs. I and II. By engaging the rectangular outer end of the bail over the wedges H H and pressing the same downward the end pieces and intervening comb-frames are securely clamped together. The two wedges H engage in the corners of the bail *e*, whereby

the springing of the bail, incidental to the use of the single wedge in the middle, is entirely prevented. I I represent the two doors or gates, arranged on the front of the case A for the purpose of regulating the size of the passage *a'*. They are each pivoted to the case by a screw, *i*, passing through a horizontal slot, *i'*, in the door, and provided with a handle, *i''*. When the passage *a'* is required to be fully opened to admit air freely into the hive, as in hot weather, the gates I are swung upward, as shown in dotted lines, Fig. IV. When only a small portion of the aperture *a'*, sufficient for the passage of the bees, is required to be uncovered, as in spring and fall, the doors I are arranged resting on the bottom *a*, as shown in full lines, Fig. IV, and adjusted by sliding them toward each other. It is obvious that the aperture *a'* is entirely closed by bringing the doors I together in the middle, in which position they may be secured for the cold season by tightening the pivot-screws *i*.

I claim as my invention—

1. The combination, with the outer case, the inner hive B, and surrounding packing material C, of the felt *f*, interposed between the packing material and the top of the inner hive, substantially as and for the purpose hereinbefore set forth.

2. The combination, with the comb-frames B and wire bail *e*, of the front end board D, upright braces E E, and bridge F, rigidly secured together, and the rear end piece D' provided with two wedge-shaped standards, H H, substantially as and for the purpose hereinbefore set forth.

3. The combination, with the outer passage *a'*, of the doors I I, provided with horizontal slots *i'* and pivots *i*, so arranged that the doors can be swung on said pivots or adjusted by sliding, substantially as hereinbefore set forth.

JAMES M. BEEBE.

Witnesses:

EUGENE A. CUMMINGS,
CHARLES V. BEEBE.