

J. DONNEL.

Bee Hive.

No. 37,741.

Patented Feb. 24, 1863.

Fig 1,

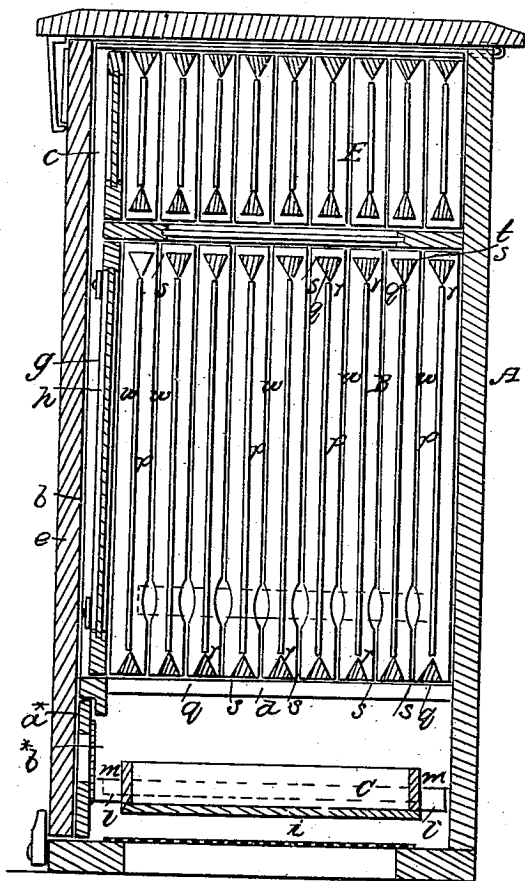


Fig 3,

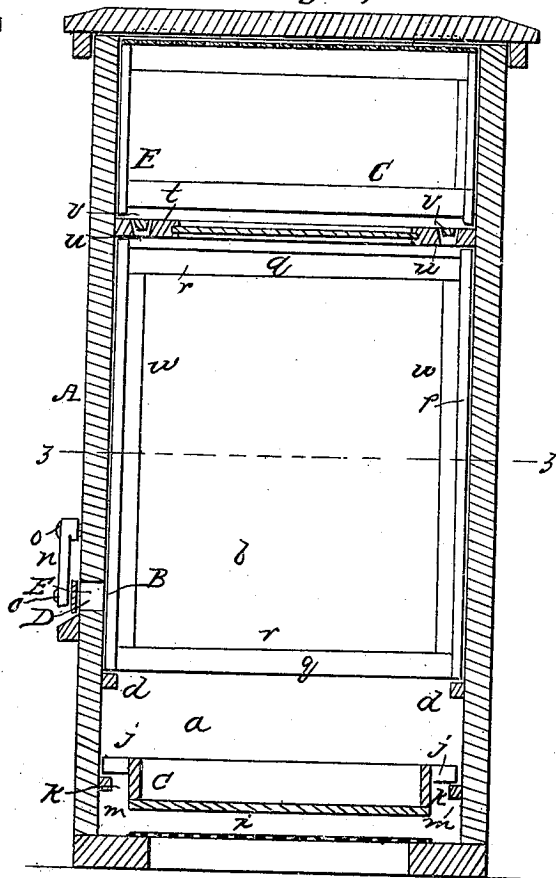
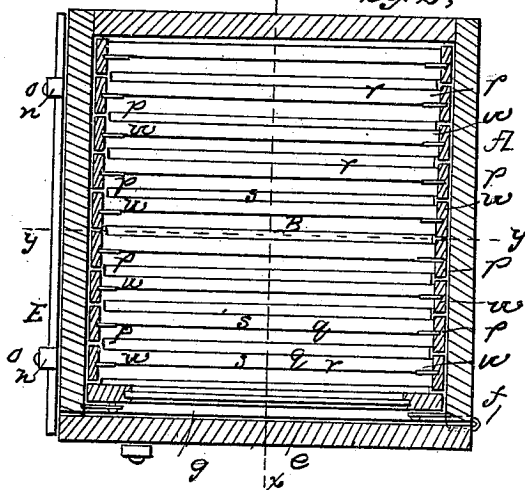


Fig 2,



WITNESSES:

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G. W. ...*

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# UNITED STATES PATENT OFFICE.

JAMES DONNEL, OF DAVENPORT, IOWA.

## IMPROVEMENT IN BEE-HIVES.

Specification forming part of Letters Patent No. 37,741, dated February 24, 1863.

*To all whom it may concern:*

Be it known that I, JAMES DONNEL, of Davenport, in the county of Scott and State of Iowa, have invented a new and Improved Bee-Hive; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a vertical section of my invention, taken in the line *x x*, Fig. 2; Fig. 2, a horizontal section of the same, taken in the line *y y*, Fig. 3; Fig. 3, a vertical section of the same, taken in the line *z z*, Fig. 2.

Similar letters of reference indicate corresponding parts in the several figures.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a rectangular box, which may be of wood—that would probably be the preferable material—and constructed of any proper dimensions. This box A has three compartments, *a b c*. The central compartment, *b*, is the largest and contains the comb-frames B, which rest on cleats *d d*, attached to the inner sides of the hive, as shown clearly in Fig. 3. One side, *e*, of the hive or box A is a door hung on hinges *f*, so that it may be opened to admit of the removal of the frames B laterally from the hive, a movable frame, *g*, provided with a glass, *h*, being fitted in the hive adjoining the door *e*, to confine the bees when the door *e* is opened, and at the same time admit of the inspection of the contents of the hive. The chamber *a*, below *b*, is the ventilating-compartment, and is considerably smaller than *b*. The bottom of this chamber is formed of a wire-cloth, *i*, attached to the bottom of box A, and within the compartment *a* there is placed a drawer, C, the end pieces of which extend past the side pieces at their points of contact therewith, so as to form projections *j*, which, when the drawer is fitted within its compartment, rest on cleats *k k* at two opposite sides of the hive. The side pieces of the drawer also extend past the end pieces, and form projections *l*, which serve as bearings for the end of the drawer, and in connection with the projections *j* insure a space, *m*, all around the drawer, between it and the sides of the hive or box A, to admit of air passing freely up from the compartment

*a* into the compartment *b*. This will be fully understood by referring to Figs. 1 and 3.

D represents the opening through which the bees enter the hive. This opening is an oblong slot made in one side of the hive, at the lower part of the compartment *b*, and extending nearly its whole width. This opening D may be contracted as desired and entirely closed when necessary by means of a bar, E, which is suspended to the side of the hive, directly above the opening by parallel bars *n n*, connected to the hive and bar by pivots *o*.

The comb-frames B are of rectangular form, and constructed of two upright side pieces, *p p*, and an upper and lower cross piece, *q q*. The cross-pieces *q q* are of tri-lateral form in their transverse section, as shown clearly in Fig. 1, and are so fitted between the side pieces that an angle or corner, *r*, will face toward the center of the hive and to be in the same plane with the centers of the side pieces, *p p*, as shown clearly in Fig. 1. The side pieces, *p p*, however, are wider than the cross-pieces *q q*, so that when the frames B are adjusted in the hive spaces *s* will be allowed between the tops and bottoms of the frames, to allow the bees to pass from the compartment *a* into *b*, and from *b* up into the compartment *c* above, the partition *t*, which forms the bottom of the compartment *c*, being provided with openings *u* for the bees to pass through, said openings, when required, being closed by lids *v*. (See Fig. 3.) The side pieces, *p p*, of the frames B have each inserted in their inner sides a metal plate, *w*. These plates are inserted centrally in the side pieces and in line with the corners or angles *r* of the cross-pieces *q q*, as shown clearly in Fig. 1. The plates *w* are quite thin—tinned plate would answer for the purpose—and they do not require to project a great distance from the side pieces, *p p*. The plates *w*, in connection with the angles or corners *r* of the cross-pieces *q q*, serve as guides and insure the honey-comb being built straight within the frames B, as the bees in constructing the comb will follow the edges of the plates *w*, commencing on the edge or angle *r* of the upper cross-pieces, *q*. The compartment *c* of the box or hive A is the spare honey box, and it is provided with frames E, which are constructed precisely similar to the frame B. The outer surfaces of

the side pieces, *p p*, of the frames B E are in close contact with the inner surfaces of the hive, and the edges of said side pieces are in close contact, so that no space is allowed for the bees at the outer sides of the frames, and they therefore cannot stick or glue the frames to the hive nor to each other. The frames consequently can be readily removed at any time when desired.

The drawer C serves a twofold purpose—to wit: it catches all the dirt and trash that escape from the compartment *b*, and also serves to obstruct the light which would otherwise pass unobstructed up through the wire-cloth bottom *i* into said compartment, and, as a space, *m*, is allowed all around the drawer, the hive will be perfectly ventilated. The side of the ventilating-chamber *a* opposite the door *e* is provided with a removable side, *a*<sup>x</sup>, which is perforated, and has its perforations covered with wire-gauze *b*<sup>x</sup>.

I am aware that comb-frames have been constructed with guides precisely similar to the cross-pieces *q q*, but they alone are not

sufficient to insure the straight building of the combs within the frames, for when the combs are built down some distance the bees, having then no guide, are liable to work crooked. The strips *w* effectually prevent this, as they form perfect guides the whole length of the frames, the corners or angles *r* of the upper cross-pieces, *q*, serving to enable the comb to be commenced correctly, and the corners or angles *r* of the lower cross-pieces serving to insure a correct finishing of the comb.

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

The drawer C, made in the manner described, and arranged in relation to the hive and comb frame as set forth, so as to ventilate the comb and at the same time exclude the light therefrom and catch the refuse from the hive.

JAMES DONNEL.

Witnesses:

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J. M. DUNN.