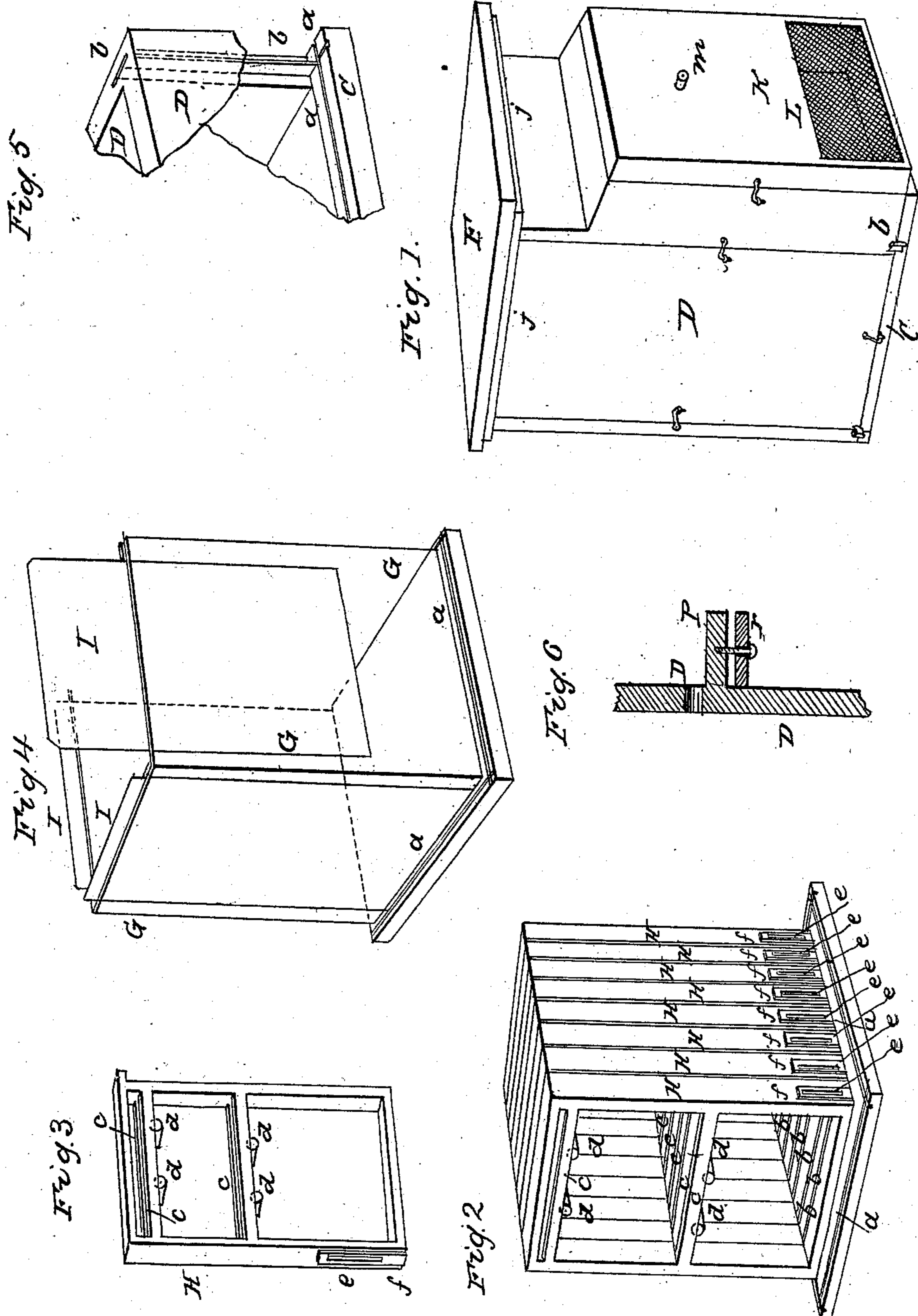


O. REYNOLDS.

Bee Hive.

No. 32,484.

Patented June 4, 1861.



WITNESSES
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OLIVER REYNOLDS, OF WEBSTER, NEW YORK.

BEEHIVE.

Specification of Letters Patent No. 32,484, dated June 4, 1861.

To all whom it may concern:

Be it known that I, OLIVER REYNOLDS, of Webster, in the county of Monroe and State of New York, have invented a new and Improved Method of Constructing Beehives; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1, is a perspective view representing the external appearance of my improved hive. Fig. 2, is a perspective view of the comb-sections, arranged in the position which they occupy in the hive. Fig. 3, is a view of one of the series of comb-sections, detached. Fig. 4, is a view of the glass partition which occupies the space between the comb-sections and the exterior walls. Fig. 5, is a fragmentary view showing the manner of connecting the sides together, and with the bottom. Fig. 6, is a section of a portion of the front side of the hive, and a transverse section of the moth trap *r*.

Like letters designate corresponding parts in all of the figures.

I construct my hive by connecting the sides, bottom and top without the use of nails or screws, but by a joint of simple construction, which admits of the immediate separation of those parts whenever it is desired. The bottom having been prepared of suitable size and dressed smooth, is grooved on its upper surface at about half an inch from the edges on all the sides. The grooves *a, a*, Figs. 2, 4 and 5, made thus, are sunk to the depth of about $\frac{3}{8}$, or $\frac{1}{2}$ of an inch, and are only wide enough to receive a piece of strap or band iron edgewise, and may be expeditiously and accurately formed by passing the board against the edge of a small circular saw, on a table arranged for the purpose. The side pieces are grooved in like manner, on their lower edges, and also on those edges that are contiguous when placed together in the form of a box. Pieces of strap or band iron about $\frac{3}{4}$ of an inch in width are then inserted in the grooves in the lower ends of the side pieces, and in each alternate edge of the sides thereof, so as to connect them when brought together by the method known as "tongue and groove"; the projecting edge of the iron strips forming the tongue which enters the groove in the adjoining piece, as represented in Fig. 5, *a* being the grooves—*b* the iron tongue, *C* the bottom, and *D, D*,

the sides of the box. The board which forms the top or cover *F*, is sufficiently large to project beyond the sides; and a strip or bead, *j j*, Fig. 1, is attached to it in any convenient manner, and when it is on, holds the sides from separating at the top, while they are effectually secured by the tongue and groove at the bottom. Hooks are also used on the sides and bottom to insure against disconnection of the parts. This is a cheap mode of construction, and presents the advantage of enabling the hive to be taken apart readily for any purpose required, such as the removal of a portion of the honey,—cleansing the hive, or examining and dividing the bees to prevent their swarming. It also forms a perfectly tight joint which prevents moths or insects from entering, and entirely excludes moisture.

The interior of the hive is principally occupied with a series of comb-sections, arranged as shown in Fig. 2. They do not reach quite to the top of the hive but leave a space in which temporary honey boxes may be placed, to be removed when filled. These comb-sections consist each of a light quadrangular frame *H*, Fig. 3, with two transverse slats *c, c*, across each side near the top, and two more about equally distant between the top and bottom. These serve for the bees to attach the combs to, and cause them to be kept distinct from each other, so that any one may be taken out without disturbing the other.

Between each pair of slats, two pins or wires are put through and support short tubes, which may be made of tin or other suitable material, about half an inch in diameter. These form passages for the bees through the sections of comb. These pins are placed near the bottom of the slats, so that the tubes hang far enough below them to allow the bees to pass readily through from one comb to another. (They may be more or less in number, though I consider four sufficient for all purposes). They are purposely so distributed through the different sections *H*, as to not be in range with each other. Each of the sections is provided with a slot *e*, in the rear, which is provided with a slip of glass *f*, which slides in its fastenings, so that they may be opened and closed readily for the purpose of removing dead bees or other matter.

The sections *H*, are placed side by side with a very slight space between them, suffi-

cient only to slide a piece of tin or sheet-iron between them, if it is required to separate the swarm, or cut off their ingress from a certain portion of the hive. They are kept thus far apart and also held in their places by strips of band iron, *b*, set edgewise in grooves across the bottom, in the manner previously described for joining the sides and bottom. This enables one or any number to be removed without disturbing the remaining ones. A wire or strip of band iron may be placed transversely across the top of the sections with its ends turned down to form a clasp to hold them together, if thought necessary.

Surrounding the comb-sections *H*, *H*, or at least on all sides except the front, I provide a double-glass partition *G*, Fig. 4. It is made by putting two panes of common window glass together with something intervening at the corners or edges to preserve a little space between the two. They may be held together by clasps of wire or tin at the corners, or by any convenient means. In the space between the glass partitions I insert pasteboard slides *I*, which may be drawn out from the top with ease, when required. This forms a winter protection for the bees, the double glass and space of confined air between being highly non-conducting, and the paper or paste-board slides adding to this quality and also excluding the light, favors the continuance of the bees in a dormant and inactive state, while they are fully protected against injury from extreme cold. It is also found that the bee moth, if it enters the hive, will naturally deposit its eggs on the inside of the pasteboard slides, as being the warmest and securest place. The ready withdrawal of these slides, therefore, affords an easy way of removing the eggs and destroying them.

I provide a box *K*, which I attach to the front of the hive by hooks or other convenient means. The lower portion of it consists of an open space covered with wire-cloth *L*, which freely admits light and air, while its meshes do not allow of the passage of bees. I insert a tube *m*, in the front above, which is designed for the ingress of the working bees. When this attachment to the hive is used, and when the hive is attacked by robbers, the passages which admit the bees into the hive are closed temporarily until evening, excluding all. At evening, it may be opened, when the robbers will return to their own hives, and the excluded occupants are admitted. The hive is again closed and kept

so the day following, when the robbers will be found to have entered the box *K*, through the orifice *m*, from which they cannot readily escape when they may be destroyed.

This box is to be applied at the approach of winter and allowed to remain during the season, when it affords the bees an opportunity to emerge from the hive and enjoy the light and air, when the warmth of the sun tempts them to go forth, while it prevents them from going far enough from their domicile to be unable to return, which is a fruitful cause of the destruction of bees during the cold season.

Below the orifice *o*, for ingress and egress, a shelf *p*, is ordinarily placed for the bees to alight on. To the underside of this, I hang a small slip of wood *r*, by two pins or screws, so that it will be parallel with the shelf but leave a small space or crevice between. This affords a convenient place for the bee-moth to deposit its eggs, and as the hanging piece moves easily on the pins, it can be pressed up against the shelf, and the eggs are crushed between the two. It may also be cleaned out occasionally by inserting some small thing that will scrape out the refuse. The weight of this piece is such that it will drop itself, and thus keep the crevice open.

I do not claim the use of separate and distinct comb-sections merely; but

I claim—

1. Constructing sections consisting each of a frame of suitable dimensions for a full sized comb, when provided with suspended tubes *d*, *d*, arranged transversely of the comb structure, in such a manner that the bees may fill the frame with comb wrought around said tubes, and, at the same time, they will be left to form passageways for the working bees, substantially as set forth.

2. The double glass partitions *G*, with the slides *I*, for surrounding the swarm and maintaining greater uniformity of temperature in winter, substantially as described.

3. The winter portal *K*, or attachment, consisting of a box, with screen *L*, and tubular orifice *m*, constructed and applied substantially as and for the purpose set forth.

4. The hanging moth trap *r*, constructed substantially in the manner and for the purpose set forth.

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Witnesses:

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