Sheet 1-2 Sheets.

F. Moore.

Bee Hive.

No. 78,813. Patented Jun. 9, 1868.

Fig. 1.

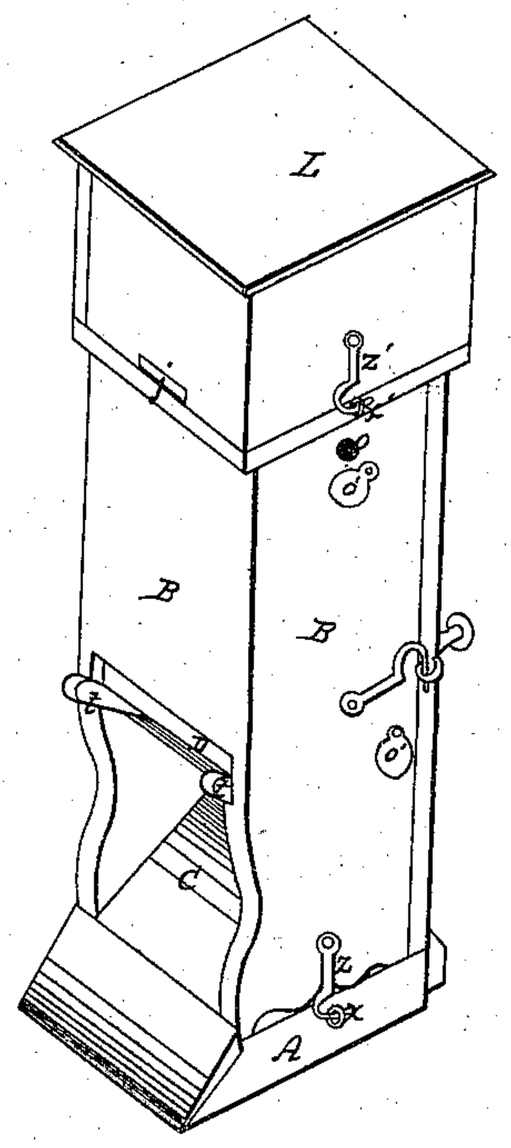


Fig. 2.

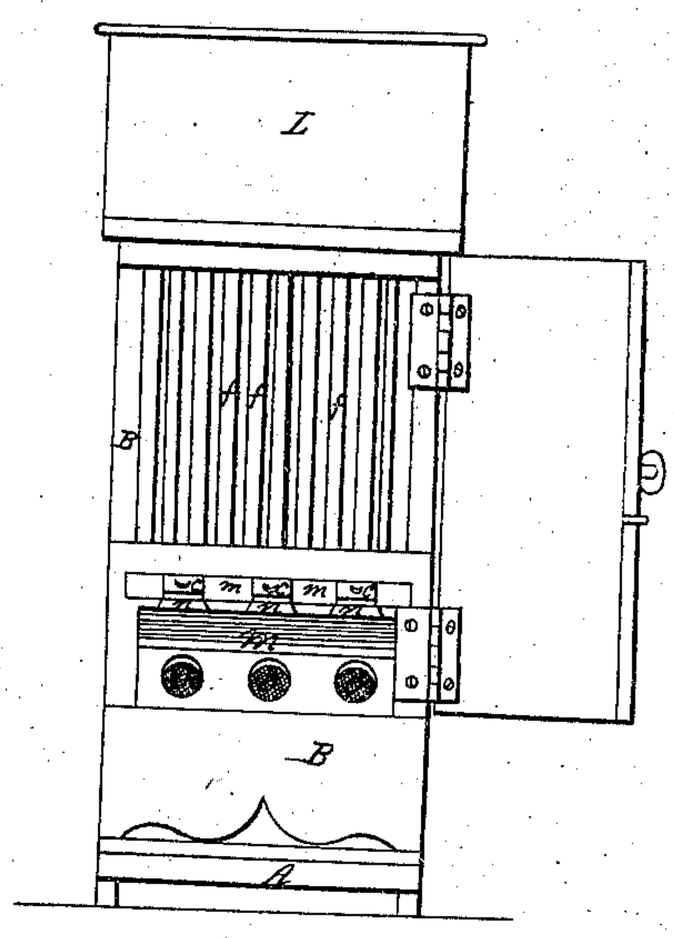


Fig. 3.

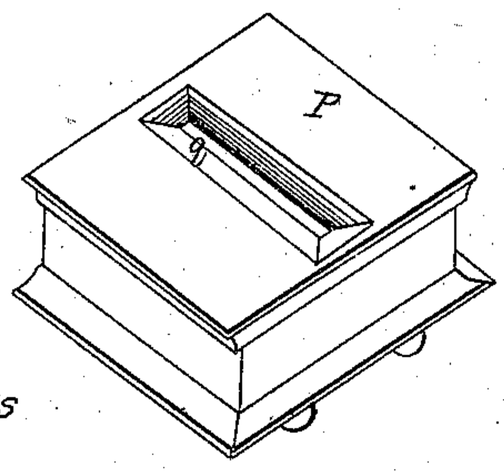
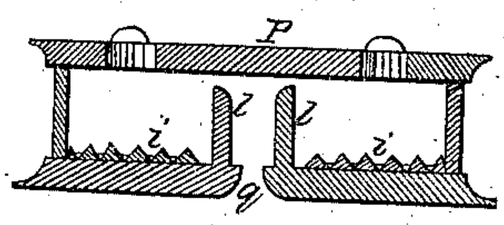


Fig. 4.



Witnesses
Ruby Fox
W. D. Stockbridge

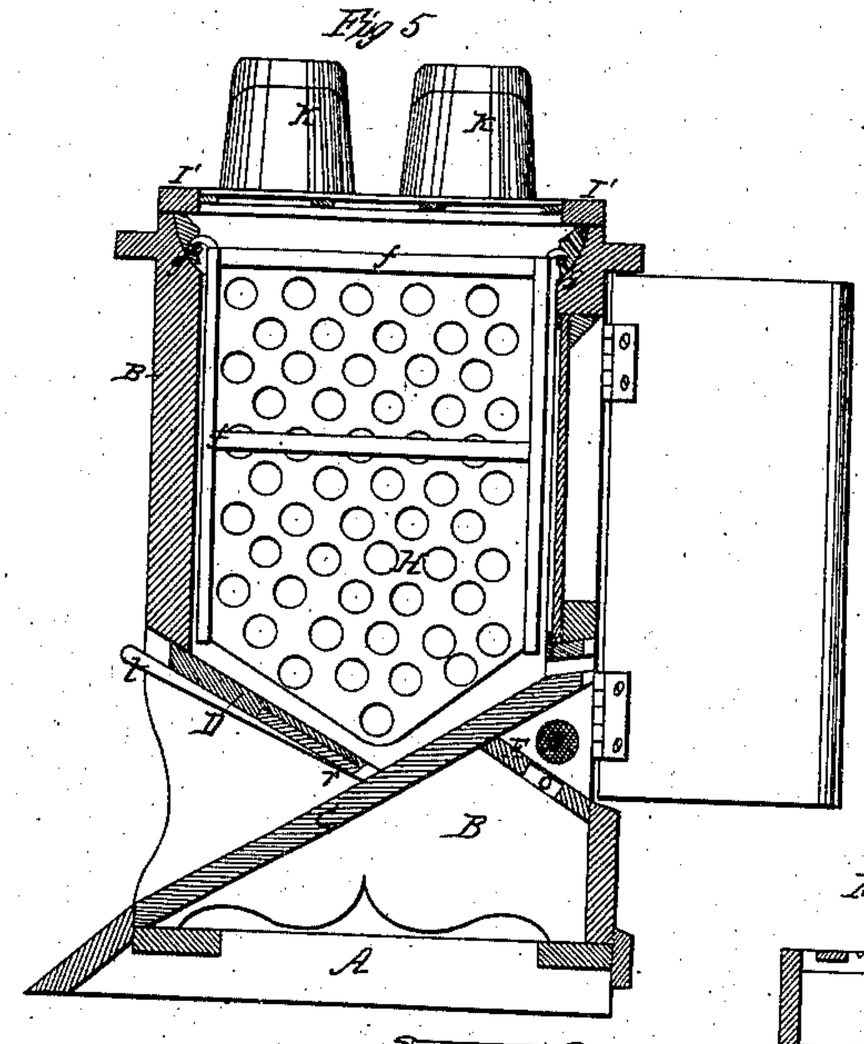
Inventor
Freeman Moore
by
Alexander Mason
Atty.

F. Moore. Sheet 2-2 Sheets.

Bee Hive.

No. 78,813. Patented Jun. 9, 1868.

Fig 5



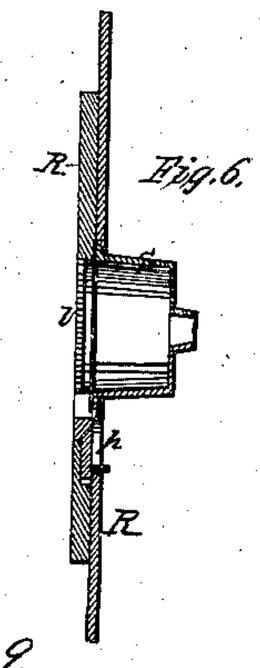
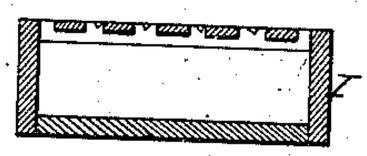


Fig. 6.

Fig. 9.



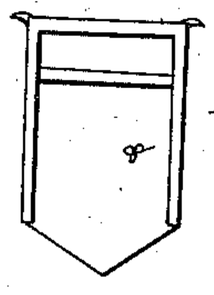


Fig. 10.

Fig. 7.

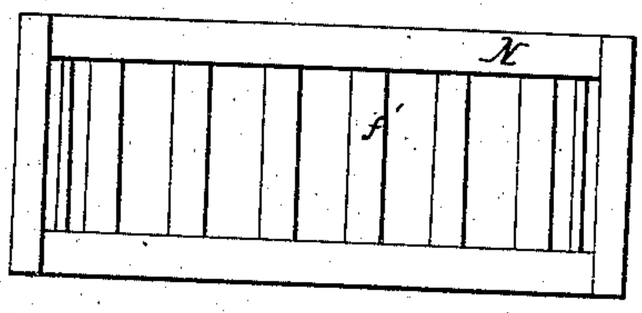
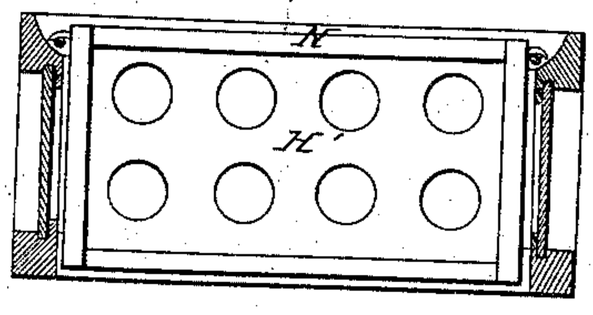


Fig. 8.



Witnesses

Cornelius Coy

W. D. Stockbridge

Inventor

Thomas Moore

per

Alexander Mason

atty

United States Patent Office.

FREEMAN MOORE, OF CARROLLTON, ASSIGNOR TO HIMSELF AND J. H TRESSEL, OF CARROLL COUNTY, OHIO.

Letters Patent No. 78,813, *dated June* 9, 1868.

IMPROVEMENT IN BEE-HIVE.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, FREEMAN MOORE, of Carrollton, in the county of Carroll, and in the State of Ohio, have invented new and useful Improvements in Bee-Hives; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and the letters of reference marked thereon.

In the annexed drawings, making a part of this specification—

Figure 1 represents a perspective, and

Figure 2 represents a rear view of my improved bee-hive.

Figure 3 represents a plan view, and

Figure 4 a cross-section of the feed-box attachment of my hive.

Figure 5 represents a section of the main hive, slotted honey-board I′, and surplus-honey receptacles K K.

Figure 6 represents a section of the queen-cage and movable cover.

Figure 7 represents a plan view, and

Figure 8 represents a section of one of my surplus-honey boxes or "observatory."

Figure 9 represents a section of another surplus-honey box and case.

Figure 10 represents my divider, made of pasteboard, as will be hereinafter described.

A, in the annexed drawings, represents a stand or base, made of any suitable material and dimensions, the front side of which is inclined from the ground backward, so as to correspond with and form a continuation of the permanent bottom board of the main hive, as shown in figs. 1 and 5, and is provided with staples, *x*, on each side, for hook, *z*, to catch in, and thereby securely fasten the main hive to it, and forms a convenient and improved base therefor.

B represents a rectangular oblong box, which is set on and fastened to the base, A, and forms the main hive.

The hive B is provided with a door, hinged to its back side. The bottom of the main hive, B, is composed of two boards, C and D, placed at any desired angle with each other and with the sides of the hive. The board C forms a continuation of the bevelled front of the base, A, and is called the permanent bottom board. The other bottom board, D, is adjustable and movable, and is provided with a movable slide, *r*. Said board is made so as to fit in grooves in the sides of the hive, and extends backward from the front thereof at an angle, and is fastened or adjusted at any desired place in said grooves, by means of wedges *t t*. The front side of the main hive extends down only as far as the movable adjustable bottom board D. There is, therefore, an open space between the two bottom boards in the front part of the hive, which I call a portico, and is very useful as a protection for bees during a sudden storm of wind or rain. The bees can readily approach and enter the portico, but might be unable to get into the hive, as the passage is ordinarily so small that but few bees can pass or repass at the same time, and in the hurry of a large number, the passage would become completely blocked up, and those that were so unfortunate as to be late in their arrival at the hive would be blown or washed away by the wind or rain, and thereby perish. This device obviates all of that difficulty. The board may be so adjusted as to give passage for bees the whole length of the bottom of the hive, or in good weather may be taken out altogether, thus affording a direct passage for the bees to the honey-frames *f*, and thereby save much valuable time for the bees. Should, however, other swarms or stocks of bees attempt to rob the colony in the hive B, the board D may be pressed close to the permanent bottom board C, and the slide *r* adjusted so as to give only a short and narrow opening, which is easily guarded, and as the attacking party is compelled to approach up the inclined plane of the permanent bottom board C, the bees in the hive, having the choice of position, are thereby enabled to resist the attack of a superior force, and thus piracy and robbery are prevented, and the weak protected against the strong.

By closing the movable board D and its slide *r*, the bees are prevented from escaping, and my hive needs no alteration or addition to make it a safe and convenient box to transport bees in from one place to another.

By the use of the slide *r*, or the adjustable board D, I regulate the time of the swarming of bees to whatever time I choose. I withdraw the wedges *t t*, which are made just five thirty-seconds of an inch in thickness, and slide the bottom board D or the slide *r* down in their grooves, until the lower edge rests on one of the wedges *t*, which I use as a gauge, and there secure said board or slide, or both, as the case may be. The entrance so arranged will allow the worker-bees to pass, but will prevent the passage of a queen, and thereby effectually prevent swarming until the entrance is enlarged.

The gauge is made exactly of the size given above, so that it is of the dimensions required to confine the queen and allow the workers to pass. It will be seen that the size of the passage may be regulated by either the movable board D or the slide *r*.

It will readily be seen that the inclination of the two boards, C and D, is such as to cause all dirt, dead bees, and broken comb, or other foreign substance, to slide down and out of the hive. It is, therefore, a self-cleaner.

In the back or rear of the hive, I secure a pane of glass above the bottom board C, and directly in front of the door of the hive, for the purpose of furnishing light, whenever the same may be required for observation.

A board, E, is placed at an angle with the back side of the hive, and fits between it and the bottom board C, through which are a suitable number of holes, *o*, covered with wire screens, for the purpose of ventilators to allow the passage of air upward, and to circulate through the passages in the hive.

On the back side, between the glass and the bottom board, I make a number of grooves, in which I place slides, C, so as to be able to shut off the too free circulation of air between the chamber in the rear of which are made the boards C and E, and the movable comb-frames *f*. On the sides of the hive, leading into the above-described chamber, and also near the top of the hive, I have other holes, covered with wire screens, *o*, and buttons or metallic covers, *o'*, for the purpose of more completely regulating ventilation.

The upper ends of the front and back boards of the main hive are bevelled or cut away for the purpose of giving room for and in which are secured wire rods, *g*. These rods *g* are for the purpose of affording a convenient and superior device, upon which to suspend the comb-frames *f*. The movable frames which I use, and are marked *f* in the annexed drawings, are constructed either rectangular in form, with the lower sides closed, or the lower side may be left open by putting a stay-slat across at any distance from the bottom or lower end thereof, that may be deemed most desirable. These frames, *f*, are made so as to nearly fit in the hive from front to back, and are provided with suitable metallic hooks, to catch on the wire rods *g*, and are thereby suspended. I use a perforated comb-guide, H, and either rectangular or with its lower end made to correspond with and fit against the bottom boards C and D. The guides H are suspended in the same manner and by the same means as the frame *f*. *f'* represents my divider, and is made of pasteboard, and tacked or fastened to the side of one of the frames *f*, the bottom thereof made to correspond with the angular shape of the hive. The comb-guide is made of pasteboard, and pasted or fastened to bent wire frames, of similar shape to the comb-frames, and the divider *f'* is perforated, and the comb-guides are coated with a solution of melted bees-wax and resin, (one part wax and two parts resin,) which makes such pasteboard comb-guides impervious to moisture, and saves the bees the labor of covering them over with propolis.

I prevent the building of drone-combs by means of the perforated guides H. When I wish to confine the bees to the main hive, I set the movable top or cover R thereon.

N represents a rectangular box-frame, in the sides of which I set glass, and in which I suspend six or more movable comb-frames, *f*, and comb-guides H, similar in construction, (except those frames have bottoms,) and suspended in a similar manner with the movable frames *f* in the main hive. This box contains the same number of frames and comb-guides, and is suspended or set the same distance apart, and is designed to produce the same effect, as will be hereinafter specified, in my ordinary or common case or box I. This box, N, I call my observatory, for by means of the transparent sides I am able to see what is doing inside, and by removing a part of the frames when all are filled, leaving one-half remain, I, in this way, can cause the bees to build and store all the season in said observatory, or while honey can be obtained from the flowers.

This observatory, or its equivalent, is indispensable to my new mode of breeding queens, and its use is as follows: Early in the spring the movable comb-frame *f* is filled with worker-combs, and placed in the observatory, which is placed on the main hive, and the bees at once allowed to occupy the observatory N. The upper rear passage is at once opened and the bees permitted to use this rear upper passage when about to commence to breed queens. The queen is caught and placed in the cage, in the movable cover R, and the communication cut off between the observatory N and the main hive by means of a sheet of pasteboard, cut to exactly fit the top of the main hive, and the observatory is again set on the main hive. The bees in the observatory N retain their queen, and are reconciled. Those in the main hive have no queen, but the means to rear one, so they at once commence queen-cells. In twelve days every queen-cell is taken from them, and this leaves them hopelessly queenless, and they will accept any queen offered to them. The queen in the observatory N is again caught and placed in the cage on the movable cover R, and the pasteboard is removed from the main hive, and used in the observatory N as a cover, and the movable cover R, with queen-cage attached, and queen in the cage, is placed on the top of the main hive B, and left caged for a short time, as was done when she was first placed in cage on the observatory.

In or during the time the queen remained in the observatory N, she filled all the combs or cells with eggs. The observatory, now being deprived of its queen, at once proceeds to rearing queens, and the main hive has no eggs, but has the original queen, which is depositing eggs in the cells. In twelve days the observatory is deprived of its sealed queen-cells, which cells can be at once transferred into old stocks, from which artificial swarms should be taken, or such queen-cells can be placed in cages, and set on hives, to hatch, where the young queens can remain till needed. From eight to ten queen-cells, on an average, can be procured at each change

of the queen, and can be continued during the whole summer season, without detriment to the old, original colony, while honey-gathering and breeding are continued. When no more queens are needed, remove the cover from the main hive, and the colony is the same as when the queen-breeding was commenced.

The honey-board I′ is very simply constructed, being made of two main or cross-pieces, and then tacking or fastening across a series of parallel slats thereto, making a rectangular slotted frame of size equal to the top of the main hive. This honey-board I′ is desirable for the purpose of allowing free passage upward through the hive, and yet preventing the bees from attaching their comb to the top of the frames *f*, as they build from above downward.

Upon this honey-board I′, I place a piece of perforated pasteboard or other material, the perforations of any size or shape to correspond with such vessel, receptacle, or tumbler, K, as it may be desired to have the bees fill. In this way bees may be made to build their comb, and to fill any desired vessel with honey, and thereby contribute to and gratify the fancy of the keeper, and furnish such fancy or ornamental shapes for the table. I have a case or box, I, which may be used or not, as the operator may think proper, which is partly composed of glass, so that all operations within it may be observed, which just fits over the honey-receptacles, or which may be used by itself as a honey-box. Said case or box is also provided with a series of parallel slats on or across the top, and with a series of small notches between said slats, so as to suspend movable comb-guides H.

When I use the surplus-honey box I, the slotted honey-board I′ is first adjusted on top of the main hive, and the said honey-box set thereon, and the movable cover R then adjusted on top of said box I.

The bees attach their comb to the horizontal slats on top of the surplus-honey box I, as a suitable base. I adjust movable comb-guides in each of the notches in the box I, which are made two inches or more apart, and the space between said guides being too narrow for two combs, the bees begin one comb on each slat, and continue to lengthen the cells until the entire space is filled by one comb, which is very desirable in surplus-honey boxes. Such combs are entirely unfit for rearing broods, and therefore the queen will never deposit eggs in such comb or surplus-honey box.

While the bees are made to build none but thick combs in the surplus-honey boxes, the guides are arranged close in the main hive, so as to prevent the building of combs thick enough for breeding "drones." It will therefore be seen that I can regulate the number or quantity of drones in a new swarm to suit.

The box I is also useful in winter, as a chamber in which I put charcoal or dry corn-cobs, and adjust the same on top of the main hive.

The charcoal or corn-cobs absorb all the moisture in the hive, and are preferable to upward ventilation.

Over this case or box, and of equal size with the main hive, is an adjustable outside case, L, which is provided with hooks *z′*, which catch in staples *x′* in the main hive, and hold said case L securely to the top thereof.

The top case L has on each side, or in front and rear, a small elongated notch or groove, *j*, which may be closed or opened at pleasure, which extends back into and directly above the movable frames *f* in the main hive. This notch is designed for a convenient door or passage for the bees into the surplus-honey box above the main hive, whenever the operator chooses to open the same for that purpose.

N represents a rectangular box-frame, in the sides of which I set glass, and in which I adjust movable comb-frames *f′* and dividers H, similar in construction and suspended in a similar manner with the movable frames of the main hive. This box I call my observatory, for by means of the transparent sides I am able to see what is going on inside, and by removing the adjustable comb-frames *f′* as they are filled, I keep the bees at work in said box or observatory N.

R represents a movable cover and queen-cage. This cover is made just so as to fit on the top of the main hive, or on the top of either of the boxes I or N, and is provided with a small recess, *v*, over which I secure a wire screen. Leading into this recess *v* is a small groove, in which is adjusted a suitable slide, *p*, which opens and closes the passage through the slat into the recess *v*. This slide *p* is operated from the top or outside by means of a small pin, extending upward through the top, R. On the top, and directly above the recess *v*, I adjust a metallic cup or vessel, S, which I use for breeding queens.

The vessel or cup S is provided with an adjustable bottom, and is itself adjustable, so that it may be removed, together with its bottom, whenever it may be desired to do so for the purpose of caging a queen. The cup S is provided with a small hole in its top, through which a queen may be inserted, if desired, and is closed by any suitable device, having ventilating-holes through it.

When it is desired to introduce the queen into the recess *v*, the adjustable bottom of the cup S is partially removed or slipped one side, so as to allow the queen to pass, after which it is readjusted, and the queen is held or caged in said recess.

The queen will be fed and cared for while in the recess *v* by the bees, which will pass food through the wire screen over said recess.

After the queen has been kept as above for a short time, she may be liberated, and the bees will receive her as their queen without objection or disturbance.

The cup S is also used to suspend queen-cells containing unhatched queens, which are matured and hatched by means of the animal heat passing up from the hive below the recess *v*. The adjustable bottom of the cup S is removed during the above operation. As soon as the queens are hatched, they will receive food, as above, through the meshes of the screen below the recess *v*.

By watching the bees in my observatory N, I am able to see when the queen goes into the recess, and then, by moving the slide *p*, she is easily and securely confined therein.

This cover R may be used on top of the main hive, or on top of the case I of the surplus-honey receptacle, or on top of the observatory N when it is adjusted upon the main hive, as the case may require.

The outside case L is dispensed with when the bees are confined in the main hive B, by adjusting the cover R on the top of the main hive.

P represents a feed-box for bees, the top having suitable ventilators, and made so as to be easily removed, so that food may be put in the receptacles, and provided with a slot, *q*, through the bottom, for the bees to pass through, and thence over the top of the partitions *l* to the perforated or slotted floats *i*, through which the bees obtain their food, without any danger of getting stuck or drowned.

I usually make three apartments in my feed-box, for the different kinds of feed required by bees when they are short of honey. This feed-box P may be set on top of the frames of the main hive, or on top of either of the main frames, and thereby all the bees may obtain food alike, and without danger of perishing, or of being robbed by strong stocks.

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

1. The movable bottom board D, provided with a slide, *r*, in combination with the wedges *t* or their equivalent, when constructed and arranged substantially as and for the purpose specified.

2. The slotted honey-board I, in combination with perforated pasteboard and fancy honey-receptacles K, when constructed and used substantially as and for the purpose herein set forth.

3. The cover R, when provided with a queen-cage, *i* S, and slide *p*, substantially as and for the purpose specified.

4. Suspending the movable frames *f* and the dividers *f'* by means of metallic hooks thereon, and the horizontal wire rods and braces *g*, as and for the purpose herein set forth.

5. The air-chambers *m*, and the double ventilators *o* and *n*, in combination with the slides *u*, when arranged and used as and for the purpose herein set forth.

6. The comb-guides H, when constructed and used in the manner and for the purpose set forth.

7. The dividers *f'* when constructed and used in the manner and for the purpose set forth.

8. The combination of the honey-box N, as constructed, with the pasteboard separator, and arranged in the hive, as and for the purposes specified.

In testimony that I claim the foregoing, I have hereunto set my hand, this day of , 1868.

FREEMAN MOORE.

Witnesses:

C. W. NEWELL,

A. P. MORTLAND.