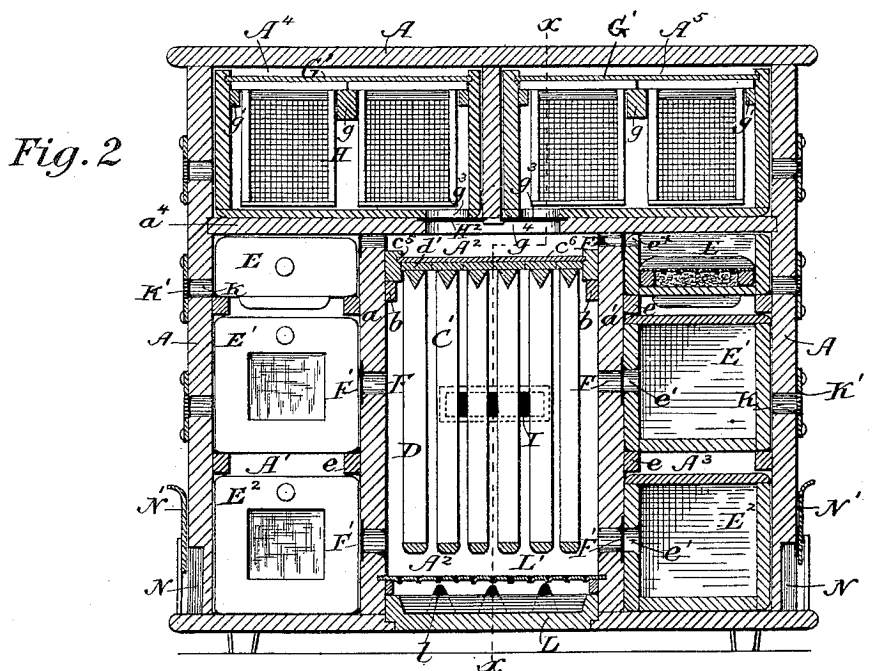
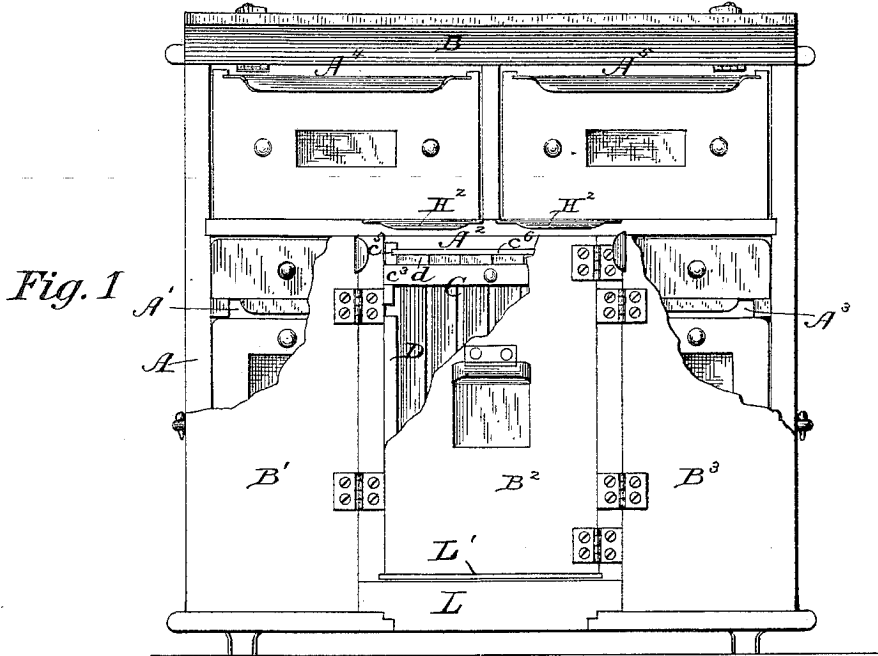


H. PENOYER.  
BEE HIVE.

No. 399,281.

Patented Mar. 12, 1889.



WITNESSES,

*G. M. Copenhagen,*  
*H. L. Davis,*

INVENTOR,

*Hiram Penoyer*  
By *Wm. H. Rowe,*  
Attorney.



# UNITED STATES PATENT OFFICE.

HIRAM PENOYER, OF WESTERN SARATOGA, ILLINOIS.

## BEE-HIVE.

SPECIFICATION forming part of Letters Patent No. 399,281, dated March 12, 1889.

Application filed May 29, 1888. Serial No. 275,486. (No model.)

To all whom it may concern:

Be it known that I, HIRAM PENOYER, a citizen of the United States, residing at Western Saratoga, in the county of Union and State of Illinois, have invented certain new and useful Improvements in Bee-Hives; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain details in the construction of bee-hives, the nature of which is hereinafter described and specifically claimed.

In the accompanying drawings, Figure 1 is an elevation of the back of the hive with the upper door open and with the three lower doors broken away to show the arrangement of the various drawers and comb-frames. Fig. 2 is a vertical section in line  $yy$  of Fig. 3. Fig. 3 is a similar section in line  $xx$  of Fig. 2. Fig. 4 is a perspective of one of the comb-frame drawers belonging to the upper compartment of the hive, with one of the comb-frames raised or partly removed from the drawer; and Fig. 5 is a perspective of one of the comb-frame sections removed from the central lower compartment of the hive.

A is a rectangular inclosing box or casing having three lower compartments,  $A^1 A^2 A^3$ , separated by partitions  $a a'$ , and two upper compartments,  $A^4 A^5$ , separated from the lower compartments by a horizontal partition,  $a^1$ . A hinged door, B, covers the two upper compartments, and similar but vertical doors,  $B^1 B^2 B^3$ , cover separately the three lower compartments. The central or main lower compartment,  $A^2$ , has cleats  $b$  upon its sides near the top, upon which slide two independent frame-sections, C C', which carry comb-frames D, supported and held thereon in a novel manner, as hereinafter described, the said frame-sections being easily removed separately when the door of the compartment is open.

The frame-sections C C' have end pieces  $c^2$ , upon which the projecting ends  $d$  of the comb-frames rest and from which they are suspended, and have side pieces,  $c^1$ , which project above the top bars,  $d'$ , of the comb-frames, and are grooved at  $c^3$  to receive a top slide,

$c^6$ , which fits closely down upon the top bars,  $d'$ , of the comb-frames, and thus serves to hold and prevent the said frames from being moved about and pressed one against the other.

The ends  $c^2$  of the frame side pieces,  $c^1$ , project beyond the end pieces,  $c^3$ , a sufficient distance to leave the required space between the two frame-sections and between the ends of the frame-sections and the casing to permit the bees to pass freely around the frames.

Each of the lower side compartments,  $A^1 A^3$ , contains feed-drawers E and box honey-drawers  $E^1 E^2$ , located one above the other to slide freely upon cleats  $e$  on the inner side walls of the compartments, and the said honey-drawers have corresponding openings,  $e'$ , located opposite to openings F in the partitions  $a a'$ , which are covered by slides  $F'$ , passing across the box and projecting at the back thereof exteriorly therefrom, by which means communication may be established between any one or more of said honey-drawers and the main lower compartment,  $A^2$ , and said slides may be closed between the main compartment and the remaining honey-drawers contained in either or both of the said compartments. Communication with the feed-drawers is had through openings  $F^x$  and  $e^x$ .

The upper compartments,  $A^4 A^5$ , contain surplus honey-comb frame-drawers G, each holding a double row of comb-frames, H, resting by their inner projecting upper ends, respectively, upon a central longitudinal strip,  $g$ , and at their outer ends upon longitudinal side strips,  $g'$ , secured to the inner side of the said comb-frame drawers. The surplus comb-frames are thus packed side by side in two parallel rows, in which position they are securely held by means of a sliding cover,  $G'$ , preferably of sheet metal, which fits longitudinally and horizontally in grooves in the upper and inner edges of the sides of the drawers and presses closely upon the upper surfaces of the comb-frames, thus firmly holding them down upon their supporting-strips. This cover also serves to exclude light, dust, and insects, and when the drawer is removed from its compartment it may be handled or upset without letting the comb-frames drop out of place.

The end surplus-comb frames,  $H'$ , in the drawers  $G$  have pins or knobs  $h$  projecting from them to permit the said end frames to be easily removed from the drawers, after  
 5 which the remaining frames may be easily removed, and notches  $g^2$  in the ends of the draw-covers  $G'$  will permit the ends of the covers to slide past the said pins and enter grooves in the ends of the drawers to completely cover  
 10 the latter.

Each of the drawers  $G$  is provided in its lower side or bottom with a bee-opening,  $g^3$ , which registers with a bee-opening,  $g^4$ , in the horizontal partition  $a^4$ . Slides  $H^2$  are fitted  
 15 in the partitions  $a^4$ , above the openings therein, and project exteriorly from the back of the box, to admit of their being shifted to open and close communication between the main compartment  $A^2$  and either of the said comb-frame drawers.  
 20

The front of the box is provided at or about the middle of its main compartment  $A^2$  with an entrance-tube,  $I$ , having a slide,  $I'$ , fitted therein for closing the same when threatened  
 25 with robber bees or while the hive is being smoked.

The letter  $I^2$  designates a trap-door, the upper edge of which is hinged to the outside of the mouth of the tube  $I$  at a sufficient height  
 30 to permit of the inward and outward passage of the working-bees between its lower edge and the bottom of the tube-opening. The drones, being larger than the working-bees, in their efforts to escape press against the trap  $I^2$ , and thus cause the same to swing outward to a sufficient extent to admit of their passing  
 35 beneath the same. The return of the drones through the same passage is prevented by reason of their inability to press the trap inward.  
 40

The hive is ventilated by holes  $K$ , bored through the ends of the boxes and covered by punctured pieces of tin,  $K'$ , which prevent the admission of insects, but admit of ventilation.  
 45 A litter-drawer,  $L$ , is located beneath the main or brood compartment  $A^2$ , and is supported at the sides thereof by cleats or floor projections, as shown in Fig. 1, on which it is adapted to freely slide, and a perforated bottom,  $L'$ , is arranged to slide in the grooves  
 50 in the walls of said compartment above and independently of the drawer  $L$  to close the bottom of the same, and thus admit of the re-

moval of the litter-drawer without allowing the bees to escape.

Holes  $l$  at the front of the hive allow the moths to pass into the litter-drawer; but they are prevented from getting up into the hive by the intervention of the perforated bottom.

The outer surface of the hive is provided  
 60 with niches or dark closets  $N$  at both ends of the box, and, if desired, at both sides of the holes  $l$ . Each niche or closet is provided with a sliding face,  $N'$ , for regulating the size of the entrance thereto, as well as for  
 65 darkening the interior thereof. The walls of the closet are intended to be rubbed with comb or beeswax, and serve to ensnare the moths and receive their egg deposits.

The closets are entirely independent of all  
 70 other parts of the hive, and by simply raising their slides  $N'$  access can be had to their interiors for cleaning or other purposes. The perforated slide is not only located above the litter-drawer to slide independently thereof,  
 75 but projects at its rear end from the back of the hive a sufficient distance to admit of its being grasped and withdrawn from the box when it is desired to deposit the litter in the  
 80 drawer beneath, and then pushed back to its place to completely close the hive before the litter-drawer is removed without exposure.

All of the drawers and slide-boxes have glass-covered openings through which the interior workings of the bees may be safely ex-  
 85 amined when the top and side doors are opened, and the main lower compartment is similarly provided with a window and a hinged dark cover of well-known construction.

What I claim as my invention, and desire to  
 90 secure by Letters Patent, is—

In a bee-hive, the combination of a series of surplus comb-frames,  $D$ , each having end projections,  $d$ , with a surplus comb-frame section composed of two end pieces,  $e^3$ , and  
 95 two side pieces,  $e^4$ , the latter provided with projecting ends  $e^2$ , inner grooves,  $e^5$ , and a cover,  $e^6$ , adapted to operate in said grooves and hold the frames in position, as specified.

In testimony whereof I hereby affix my signature in presence of two witnesses.

HIRAM PENOYER.

Witnesses:

WM. H. ROWE,  
 ALLEN E. HILL.