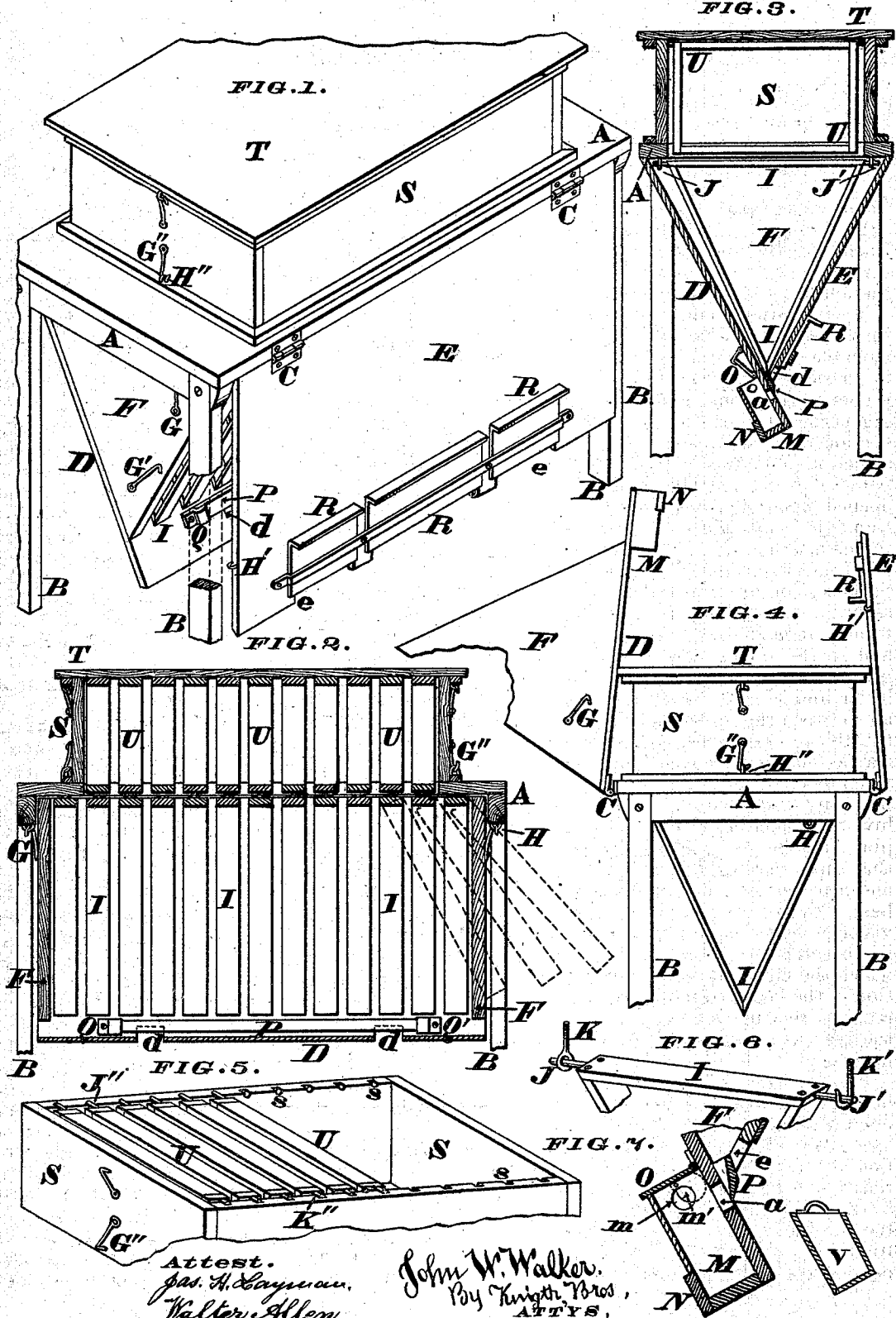


J. W. WALKER.  
Bee-Hives.

No. 146,731.

Patented Jan. 20, 1874.



Attest.  
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# UNITED STATES PATENT OFFICE

JOHN W. WALKER, OF NASHVILLE, TENNESSEE.

## IMPROVEMENT IN BEE-HIVES.

Specification forming part of Letters Patent No. 146,731, dated January 20, 1874; application filed August 2, 1873.

*To all whom it may concern:*

Be it known that I, JOHN W. WALKER, of Nashville, Davidson county, Tennessee, have invented a new and useful Bee-Hive, of which the following is a specification:

My invention comprises improvements in those bee-hives which are provided with removable "comb-frames;" and consists, first, in so suspending the frames from a pair of pivots or gudgeons as to permit of their hanging perpendicularly in the hive, and, in connection with such suspended frames, a construction of folding external shell or case capable of being partially unfolded or entirely opened upon all sides, so as to expose the frames to inspection, enable them to be swung to one or other side for examination, removal of moths or queens or diseased comb, or other purposes, or for ventilation in hot weather; secondly, an arrangement of surplus comb-frames immediately above, nearly touching, and in the same plane with the principal or brood combs, so as to receive heat from the latter, and so as to permit a free circulation of air between the brood and surplus chambers; thirdly, an arrangement whereby said surplus frames may be removed bodily from the hive when desired, their place being then supplied by a cap or cover to close the opening in the hive-top, which cover is removed when the surplus chamber is replaced, it being intended that there shall exist a free interchange of air and heat between the brood and surplus chambers. My invention further comprises the provision of a peculiarly-formed moth-trap, adapted to catch the debris of the hive, and into which the moths have free access, to the exclusion of the bee, said moth-trap also, at certain seasons, serving as a drone-trap, and, later in the year, as a means of feeding the bees when necessary.

Figure 1 is a perspective view of a hive embodying my invention, portions of the top and one leg being omitted. Figs. 2 and 3 are, respectively, a longitudinal and transverse section of the hive. Fig. 4 is an end elevation of the hive with the brood-chamber exposed. Fig. 5 represents, by perspective view, a portion of the surplus chamber, its cover and some of its frames being omitted. Fig. 6 represents, by perspective view, the upper portion of one of

my swinging brood-frames. Fig. 7 is an enlarged transverse section of my moth-trap and feeding-tank detached.

The top of my hive proper or brood-chamber consists of a rectangular frame, A, which may be held aloft at a suitable distance from the ground by legs B, or be suspended by cleats, or hooks or eyes, or other customary or approved instrumentalities. Connected by hinges C to this frame are the two sides D and E, of which one, D, has permanently attached to it the ends F, of the represented triangular form, the said side D and ends F thus constituting a box or trough having the form of a triangular prism, closed at one side and both ends, and capable of being closed at its other side by the member E. The box D F is held to its closed condition by means of hooks G, which enter eyes H on the under side of frame A, and the side E is held to its closed condition by hooks G', which enter eyes H'. The brood-chamber, when closed, has the form of a horizontal triangular hollow prism, (see Figs. 1, 3, and 4,) whose sloping and converging sides operate to conduct to their common inverted apex all the droppings and debris of the hives. My brood-comb frames have the same triangular shape as the chamber D E F, but are as much less than it as not to touch its sides at any part when hanging in position in the hive. Each comb-frame has, near its top, at opposite ends, two pivots, J J', which rest in eyes K K', that project from the frame A. One of these eyes, K', may have the form of a hook, to facilitate the removal and insertion of the brood-frames. (See Fig. 6.) A long horizontal slot, d, in side D affords communication with a moth-trap, consisting of a long narrow trough, M, having a glass frame, N, at its rear side, and a cover, O, on top. The ends or rear side of said trap may be pierced by orifices m, just large enough for the escape of any workers who may get into the trough, but too small for the passage of a drone. These orifices m will be closed by covers m' at all times, save when being used as a drone-trap. Except when being used as a drone-trap or as a feeding-chamber, the entrance a to the moth-trap is partially closed by the gate P, the same consisting of a strip of wood or metal, having, preferably, beveled upper and lower edges, and occupying, at its ends, sockets Q Q', from which

it can be readily removed when desired. In the bottom edge of side E are notches *c*, constituting customary entrance-apertures, capable of closure by sliding doors R. My surplus chamber consists of a rectangular frame or box, S, open at top and bottom, and adapted to be placed upon top of brood-chamber, and to be secured in position by hooks G'', which enter eyes H'' on the frame A. The said surplus chamber is thus made to inclose the otherwise open top of the brood-chamber, and is itself closed on top by a cover, T, which, when the surplus chamber is removed, discharges the function of cover for the brood-chamber. Notches *s* in the edge of the surplus chamber, at equal distances to those which separate the brood-combs, and immediately over the same, receive the pivots J'' K'' of the surplus frames U, so that said frames are in the same vertical planes with the brood-comb frames, and immediately over the same, without any intervening partition. V is a trough to be placed within the trap M for feeding a weak colony that requires artificial aid to bring it through the winter, said trough V being, for this purpose, supplied with sirup and float in the customary manner.

When intended to receive a swarm or colony, my hive is filled with comb-frames, and may have its upper part either surmounted with the surplus chamber or closed with the cover T, the latter being the preferred condition. The entrances *c* or the entire side E being opened, and the gate P closed, so as to exclude bees from the moth-trap, the swarm is induced to enter in the usual manner of hiving bee-swarms; or, for artificial swarming, one of the empty brood-frames is replaced by a frame containing the selected queen. The hive, having been thus habilitated, is placed in position, and is ready for work. All droppings and refuse matters are conducted by the sides D and E into the moth-trap, and serve as a bait for the moths, which on their part are readily induced to seek retirement, food, and a place of breeding through the narrow chink *a* beneath the gate P, the more so as its instinct informs it that the bees cannot follow it through that narrow

passage. Finding here light and abundant provender, it remains contentedly, and, at proper intervals, can be destroyed, with its larvæ, and the trap again set.

For inspection or manipulation of the frames, it is only necessary to unhook and elevate either the side E and box D F, (see Fig. 4,) when the frames may be inspected and, if necessary, swung to one side. (See dotted lines, Fig. 2.)

If it be desired to remove a frame, it is easily accomplished by simply unshipping the pivot occupying the hook K', and then, by a lateral movement, withdrawing the remaining pivot from its eye.

The brood-chamber having become filled up, additional capacity is created by application of the surplus chamber, as shown.

For catching drones or marauding bees, the gate P is removed and the doors R closed sufficiently to exclude them, which, if for drones merely, need not prevent the entrance of workers. In the case of drones, a proper time of the day being selected—usually near noon—the hive is set in the above-described manner, and the drones, seeking entrance into the hive, enter the trap, and can be readily killed.

For artificial feeding, the trough V, properly supplied with sirup, is inserted in the trap, and the entrances to the hive being then closed, robber bees will be excluded.

I claim as new and of my invention—

1. The combination of the trough-shaped brood-chamber D E F, the removable suspended triangular comb-frames I, projecting pivots J J', and suspension hooks or eyes K K', all as herein described, for the purpose set forth.

2. The combination of the surplus-honey box S, removable top T, notches *s* *s*, and projecting suspension-pivots J'' K'', as and for the purposes specified.

In testimony of which invention I hereunto set my hand.

J. W. WALKER.

Attest:

GEO. H. KNIGHT,  
J. F. KINNEY.