

Dec. 4, 1923.

1,476,453

H. McKAY

BEEHIVE

Filed June 26, 1922

3 Sheets-Sheet 1

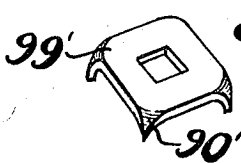
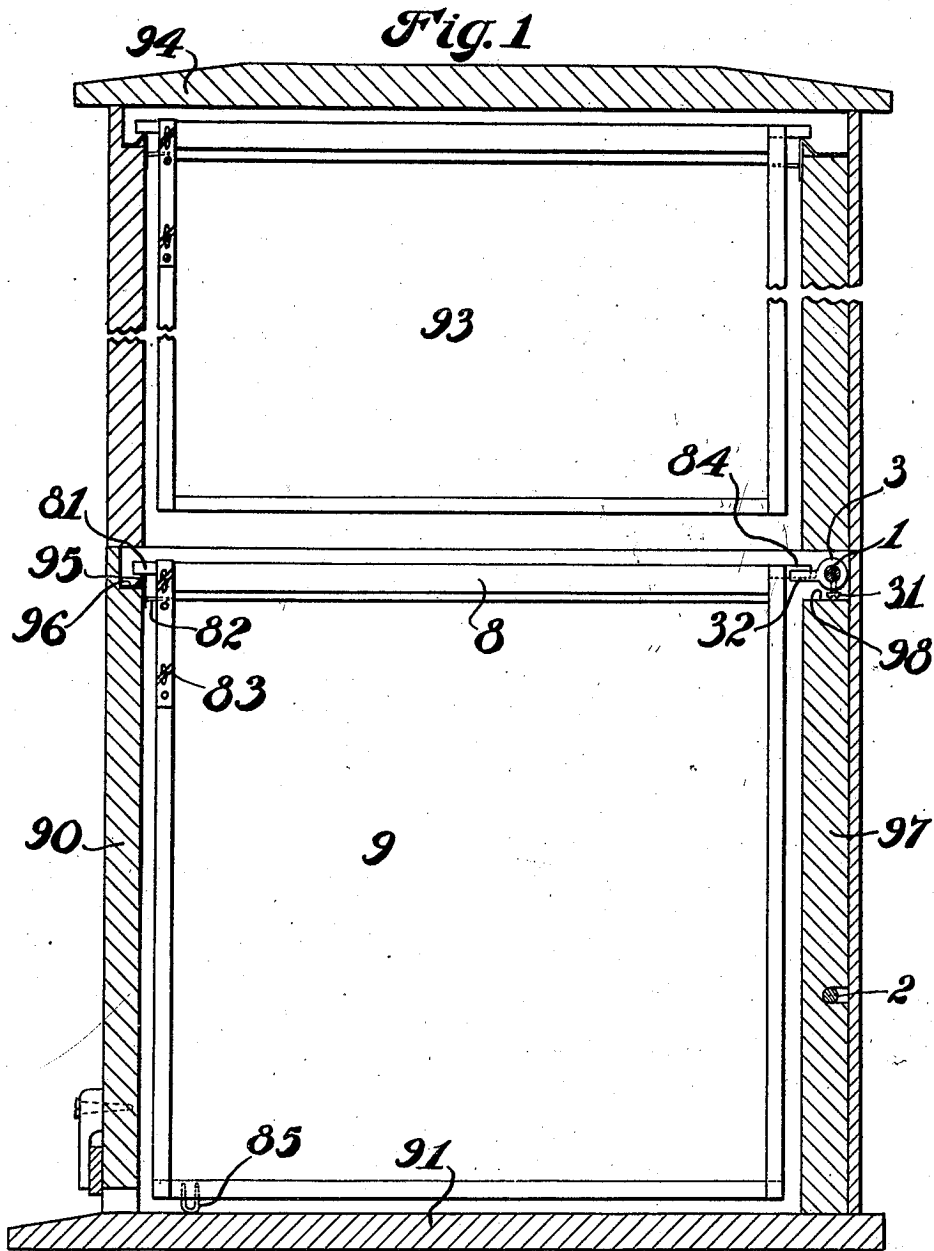


Fig. 5

Inventor
Herbert McKay

By **H. L. & C. A. Reynolds**
Attorneys

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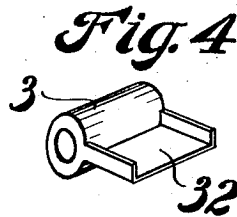
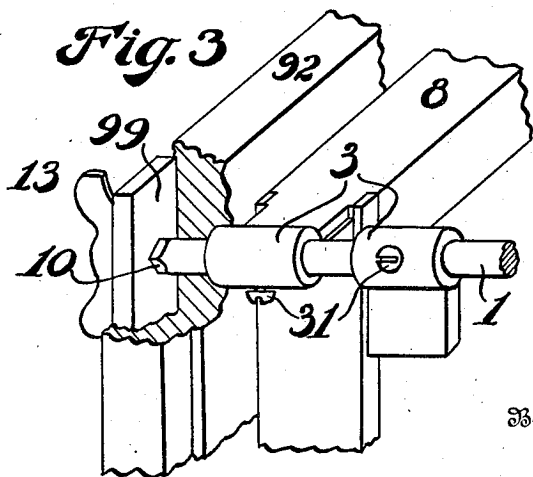
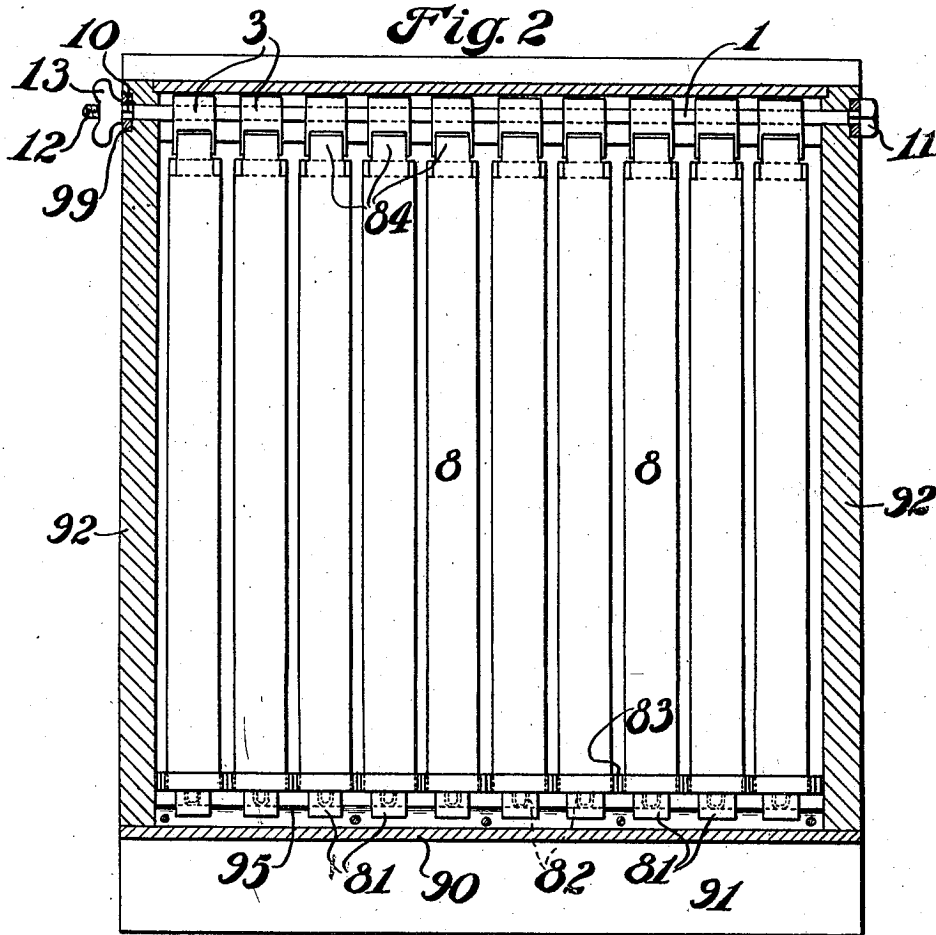
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3 Sheets-Sheet 2



Inventor
Herbert McKay

By *H. L. & G. L. Reynolds*
Attorneys

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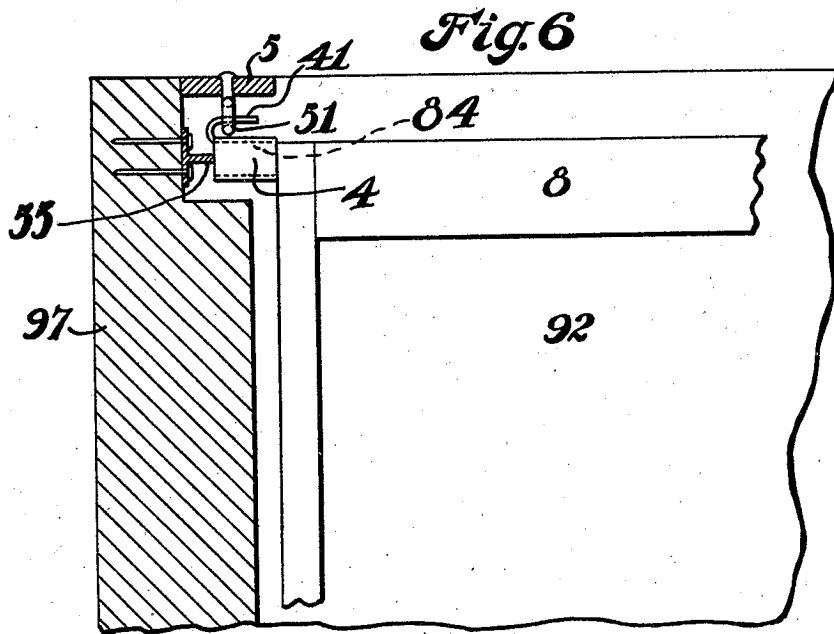
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H. McKAY

BEEHIVE

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3 Sheets-Sheet 3



Inventor

Herbert McKay

By *H. L. & G. L. Reynolds*

Attorneys

UNITED STATES PATENT OFFICE.

HERBERT MCKAY, OF MONROE, WASHINGTON.

BEEHIVE.

Application filed June 26, 1922. Serial No. 570,929.

To all whom it may concern:

Be it known that I, HERBERT MCKAY, a citizen of the United States of America, and resident of the city of Monroe, in Snohomish County, State of Washington, have invented certain new and useful Improvements in Beehives, of which the following is a specification.

My invention comprises an improvement in bee hives and particularly relates to the brood chambers and to the means for withdrawing the brood frames for inspection.

It is an object of my invention to provide means in connection with the hive whereby the individual brood frames may be easily withdrawn from the brood chamber without disturbing the remaining frames and without disturbing the cells which are contained in the frame withdrawn.

A further object is to provide means which will permit endwise withdrawal of a frame from the brood chamber without injuring bees which may be beneath or in the path of the frame as it is withdrawn.

A further object is to provide frame supporting means within the brood chamber which are simple and convenient for engagement of or disengagement from the frames.

My invention comprises those novel parts and combinations thereof which are shown in the accompanying drawings, described in the specification, and particularly defined by the claims terminating the same.

In the accompanying drawings I have shown my invention in forms which are now preferred by me.

Figure 1 is a vertical sectional view through the hive, taken on a plane parallel with the plane of the brood frames.

Figure 2 is a horizontal sectional view through the top of the brood chamber, showing the frames in plan.

Figure 3 is a detail perspective of a frame and frame supporting means.

Figure 4 is a detail perspective of an individual frame supporting member.

Figure 5 is a detail perspective of a slightly modified portion of the frame supporting means.

Figure 6 is a vertical section through the rear hive wall, showing frame supporting means of a modified construction.

It is my intention to employ parts which will conform to the standard dimensions and proportion of hives now in use and to employ, as far as possible, standard equip-

ment in my hive. I have shown, therefore, a standard hive comprising a brood chamber 9 having a front wall 90, a bottom 91 and side walls 92. Above this brood chamber 9 and suitably secured thereon is a super-box which forms the surplus honey storage chamber. This is designated in general by the numeral 93 and forms no part of the present invention. A top 94 covers the honey chamber 93, or is seated directly upon the brood chamber 9 when the super-box 93 is removed.

Within the brood chamber 9 are a plurality of standard brood frames 8. These may be supported in any suitable manner at one end, preferably the front end. I have shown a metallic track 95 secured upon a ledge 96 rabbeted from the upper portion of the front wall 90. Upon this track 95 rest the forwardly projecting ends 81 of the frames 8. Suitable spacers 82 may be provided to space the frame from the inside of the front wall 90, this being shown as a staple driven into the frame 8. The frames themselves are also spaced from each other by spacers 83. As such details form no part of the present invention they are not described in more detail, and any suitable or standard device may be employed.

It is my desire to avoid the necessity of lifting out the brood frames 8 from above from time to time. The frames must be inspected at regular intervals, and with most hives now in use it is necessary to lift off the super-box 93 and to lift the frames 8 directly out of the brood chamber 9. This results in considerable disturbance to the remainder of the brood frames and disturbs the bees. It is also difficult to replace the frames properly. I propose to provide a removable rear wall 97 for the brood chamber and to provide means whereby the rear end of the frames 8 may be supported releasably to permit endwise withdrawal of the frames through the opening left by removing the rear wall 97.

I have shown the rear wall 97 as having a ledge 98 at its upper portion, this leaving a recess through which passes a shaft 1 transversely of the hive. The shaft 1 passes through the side walls 92 and is provided therein with means to prevent its rotation. I have shown the shaft as provided with squared ends 10 which pass through similarly squared holes in straps 99 secured in the side walls 92. At one end

a head 11 may be provided upon the shaft 1 and the other end, outside of the squared portion 10, may be threaded as is indicated at 12. A wing nut 13 threaded thereon prevents withdrawal of the shaft. I have also shown a shaft 2 which extends through the side walls 92 and through a recess provided therefor in the rear wall 97. The shaft 2 is suitably held in place and prevents withdrawal of the wall 97 until it has first been withdrawn. It is clear that any suitable means for securing the wall 97 in place may be employed.

Upon the shaft 1 at intervals I secure a plurality of brackets 3, each comprising a collar and a forwardly-projecting trough 32, preferably integral. These brackets correspond in number to the maximum number of frames 8 which it would be desired to support in the chamber 9. The brackets 3 are rotatable upon the shaft 1 and are spaced thereon by the amount it is desired to space the centers of the frames 8. Means are provided for securing the brackets against rotation relative to the shaft, these being shown as the set screws 31. The frames 8 are provided at their rear ends with extensions 84 similar to the forward extensions 81 and the troughs 32 are made of a size to receive these ends 84.

Assuming that frames are to be placed within the brood chamber 9 without disturbing the super-boxes 93, the rear wall 97 is first removed by removing the shaft or bolt 2 and by releasing the compression caused by threading up the wing nut 13 on the shaft 1. The frames 8 are then pushed endwise one at a time into the chamber 9 and their forward extensions 81 are lifted upon the track 95. A small skid 85 may be provided projecting downwardly from the forward bottom corner of the frames 8. These are shown as staples lying in the plane of movement of the frames, and are intended to ride along the bottom 91 to support the frame above the bottom and to prevent its crushing bees which may be in its path as it moves in or out of the chamber 9.

Having supported the forward extension 81 of the frame upon the track 95 the rearward extension 82 of the frame is engaged in a trough 32 of one of the brackets 3. The bracket is rotated upon the shaft 1 until its trough 32 is approximately horizontal, and it is then set in this position by means of the set screw 31. The frame 8 is then supported by means of its extensions 81 and 84 upon the track 95 and the bracket 3, respectively. In this manner it is spaced properly from the front and rear walls and from the bottom of the brood chamber. The rear wall 97 is replaced when all of the brood frames have been inserted in this manner. Removal of the brood frames is

accomplished by a reversal of this method of operation, releasing the individual brackets 3 as its frame is to be withdrawn.

Withdrawal of the brood frames endwise permits the operator to concentrate on the handling of the frame rather than upon its support, for it is supported upon the skid 85, and he is thus enabled to withdraw it for inspection without disturbing the remainder of the frames. It will be noticed that at all points where there is contact between the frames and the hive, metal touches wood. This prevents sealing of the frames in place, as the bees will not attempt to seal a joint which contains metal.

In Figure 5 I have shown a washer 99' which may be substituted for the straps 99 and which is provided with points 90' to enable it to be driven into the wood of the side walls 92. The squared portion 10 of the shaft 1 is received in the squared opening of the washer 99' to prevent rotation of the shaft. This permits my supporting means to be installed in old hives with very little work or change in the hives.

In Figure 6 I have shown a modified supporting means for the rear ends of the frames 8, which is readily and cheaply adaptable to hives now in use. Their rearward extensions 84 are received in clips 4 having formed thereon a forwardly projecting hook 41. A bar 5 extends between the side walls 92 of the hive and is provided with a plurality of depending eyes 51 secured therein. These eyes 51 are spaced, as are the brackets 3, by an amount equal to the spacing between the centers of the frames 8. The frames 8, after their forward extensions 81 are supported upon the track 95, are moved forward until the hooks 41 are engaged in the eyes 51. In this manner the forward end of the frame is supported removably by the eyes 51 and the bar 5. To maintain the frames in place, and to prevent accidental disengagement of the hooks 41 from eyes 51, particularly when the hive is moved about, I secure a flanged bar upon the rear wall 97, the flange 55 of which projects forwardly to engage the rear ends of extensions 84 of the frames. As the frames can only be withdrawn by movement in this direction, the flange 55 effectively prevents disengagement of the frame and its supporting means.

What I claim as my invention is:

1. In a beehive, in combination, a removable back wall, a plurality of frames, a support for the front ends thereof, a second support extending transversely across the rear opening and elevated above the floor sufficiently to permit frames to pass therebeneath, and individual frame supports for supporting each frame from said second support to permit its endwise withdrawal therefrom and from the first support inde-

pendently of the other frames when said back wall is removed.

2. In a bee-hive, in combination with a plurality of frames, means for supporting an end of said frames including a transversely extending bar, a plurality of individual supports spaced along said bar, said frames each having means at one end removably engageable with its respective support to suspend the frame therefrom at this end, and to permit its removal independently of the other frames and their supports.

3. In a beehive, in combination, a removable back wall, a plurality of frames, a transversely extending hanger support, individual frame supports carried by the rear end only of each frame and engageable by endwise movement thereof into the hive with said transverse support, said back wall being operable upon its replacement to prevent disengagement of the individual supports from the transverse supports.

4. In a beehive, in combination with a plurality of frames, a transversely extending bar, a plurality of eyes spaced therealong, and a forwardly facing frame-supporting hook carried by the rear end of each of said frames and engageable each with its respective eye as said frames are individually slid forward.

5. In a bee-hive, in combination with a plurality of frames slidable thereinto from the rear and a removable rear wall, a trans-

versely extending bar, a plurality of eyes secured therein, forwardly-facing hooks carried by the rear ends of said frames and engageable in said eyes to support this end of the frame, and means operable to lock said hooks and eyes against disengagement while said rear wall is in position in the hive.

6. In a bee-hive a brood chamber having a frame support extending along its front side, a removable rear wall, a bar extending across the rear side of the chamber at an elevation permitting passage of the brood frames from the rear beneath them, and brood frames and means for engaging the rear ends of the brood frames with said bar to support them in such manner as to permit individual release therefrom.

7. In a beehive having an integral front wall and a removable rear wall, in combination, a plurality of frames slidable thereinto from the rear to contact with the front wall, a transversely extending bar, a forwardly facing hook carried by the rear end of each frame and engageable with said bar to support this end of the frame, and a spacer rib upon the inside of said rear wall engageable with the rear ends of all of said frames to prevent rearward movement thereof.

Signed at Monroe, Snohomish County, Washington, this 17th day of June, 1922.

HERBERT McKAY.