

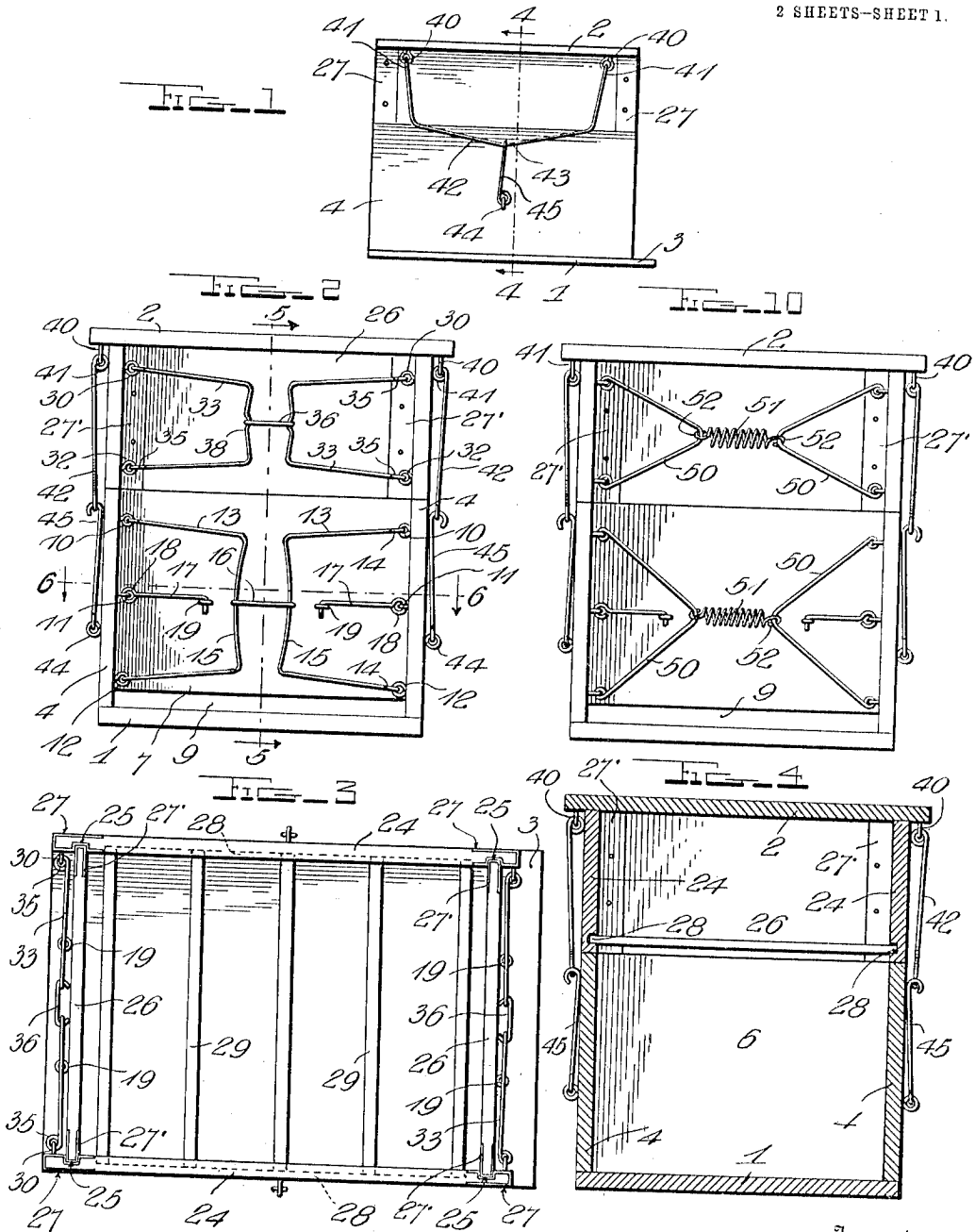
C. M. OSBORNE.
BEEHIVE.

APPLICATION FILED JAN. 16, 1913.

1,073,701.

Patented Sept. 23, 1913.

2 SHEETS-SHEET 1.



Inventor

Witnesses

Charles M. Osborne

N. J. Colamer

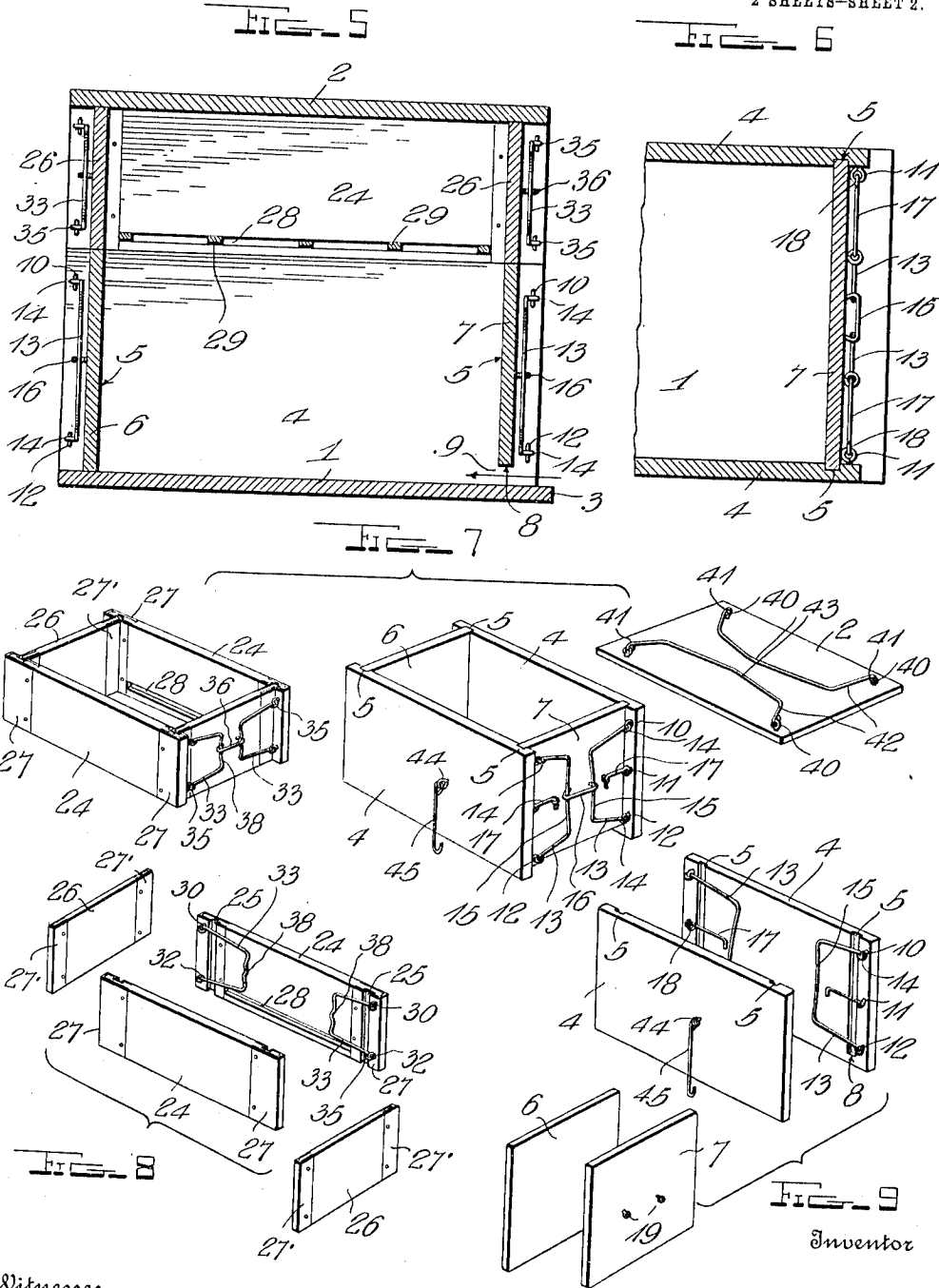
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UNITED STATES PATENT OFFICE.

CHARLES M. OSBORNE, OF BRAINERD, MINNESOTA.

BEEHIVE.

1,073,701.

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To all whom it may concern:

Be it known that I, CHARLES M. OSBORNE, a citizen of the United States, residing at Brainerd, in the county of Crow Wing and State of Minnesota, have invented certain new and useful Improvements in Beehives; and I do 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.

This invention relates to bee culture, and more especially to hives; and the object of the same is to construct a hive body and its super on the knock down principle so that either member may be removed and its parts disconnected from each other and laid out flat as for storage, repair or transportation.

A further object is to effect certain improvements in the details, all as will hereinafter more fully appear and as are shown in the drawings wherein—

Figure 1 is a side view of this hive complete. Fig. 2 is an enlarged front end view thereof. Fig. 3 is a plan view with the cover removed. Fig. 4 is a cross section on the line 4—4 of Fig. 1 but on a larger scale. Fig. 5 is a vertical longitudinal section on the line 5—5 of Fig. 2, and Fig. 6 is a horizontal section on the line 6—6 thereof. Fig. 7 is a perspective detail of the body, the super, and the top removed from each other. Fig. 8 is a perspective detail of the parts of the super disconnected from each other, and Fig. 9 is a similar detail of the parts of the body disconnected from each other. Fig. 10 is a front end elevation of a hive having a slightly modified form of the connecting means, as hereinafter referred to.

This improved hive is by preference made of lumber as far as possible, on account of its cheapness and because if it be the proper lumber it is attractive to the bees whereas metal is rather repellent to them, and I therefore locate the metal portions of the hive entirely outside of it or at least I place it where the bees will not come in contact with it.

The main object sought by the present invention is to construct a hive on the knock-down principle so that its members and the parts thereof may be stored or shipped in small compass and so that the apiarist can store the parts of the hive and may also store his supplemental supers in small space

and may at any time bring them out, connect their parts, and set them up so as to amplify the size of a hive that contains an especially thrifty colony.

I have not considered it necessary in the accompanying drawings to show the comb-boxes, as it is my intention to use the ordinary boxes of commerce and of standard size in this hive, and no novelty is claimed thereon.

Coming now to the specific details of the structure, the numeral 1 designates a base or bottom, which is by preference made of a single piece of board of proper dimensions, and the numeral 2 likewise designates the top which also may be made of a single piece of board which is preferably slightly wider than the bottom so as to overhang it as seen in Fig. 2 and slightly longer than the length of the body and the super yet to be described so as to overhang these members as seen in Fig. 1. The bottom is by preference disposed flush with the rear ends of said members, but its front end 3 projects slightly so as to form a lighting place for the bees.

The body (best seen at the center of Fig. 7) is a frame-like structure which rests upon the bottom 1 and is by preference composed of two sides 4 having upright grooves 5 in their inner faces near their ends, and two ends 6 and 7 whereof the former fits in the rearmost groove and is of equal height with the sides, and the latter (7) fits in the foremost grooves which purposely terminates at points 8 slightly above the lower edges of the sides 4, as seen in Fig. 9, so that a bee entrance 9 is formed under the lower edge of the front end 7 and over the projection or lighting place 3. The parts of this member are held together by a peculiar form of hook-and-eye connection which is duplicated at its ends. Beyond its grooves 5 the sides 4 carry three eyes 10, 11, and 12, and the numeral 13 designates a bail whose extremities have eyes 14 interengaging the uppermost and lowermost eyes 10 and 12 and whose center 15 is preferably deflected outward slightly toward the sides 4 as best seen in Fig. 2. The corresponding bail at the other side has its center 15 connected with that of the one just described by a double-hook 16, as best seen in Fig. 7. Between the upper and lower arms of each bail is disposed an ordinary hook 17 having an eye 18 at its outer end interengaging the

intermediate eye 11 in the side 4 and the bill of this hook engages a staple or eye 19 seated in the ends 6 or 7 as also seen in Fig. 7. With this construction it follows that when the bails are turned inward and their centers 15 sprung toward each other, the bills at the extremities of the double-hook 16 can be engaged with said centers and the resiliency of the latter will draw the sides 4 toward each other; and meanwhile the bills of the hooks 17 may be engaged with the eyes 19 to positively hold the sides 4 with their grooves 5 engaged with the ends. In like manner each super is composed of two sides 24 having upright grooves 25, and front and rear ends 26 whose extremities enter said grooves; and these parts are connected by bails 33 whose arms have eyes 35 interengaging eyes 30 and 32 in the sides 24 and whose centers 38 are connected by double-hooks 36, as best seen at the left of Fig. 7. It will be seen that the structure is substantially that employed at both ends of the body member, excepting only that the hooks 17 are omitted because the height of the super is not so great as that of the body. The bails and hooks may be folded inward as seen in Figs. 8 and 9 when the parts are disconnected, and the little double-hooks 16 and 36 can be conveniently laid away. The super (and also the body if desired) may have the extremities of its ends 26 protected or covered with metal as indicated at 27', and the extremities of its sides 24 similarly covered at 27, and the same perhaps around in the grooves 25 to render the wood at these points moth-proof, and yet care should be taken that the metal nowhere reaches the interior so that the bees may come in contact with it. The inner faces of the sides 24 are also by preference grooved longitudinally as shown at 28, and in these grooves rest the extremities of strips or slats 29 upon which the comb-boxes (not shown) will rest when they are assembled within the super; and obviously, when this member is removed from the hive and its parts disconnected, the slats easily come out of the grooves and may be stored with the other parts. Provisions may be made for suspending a group of comb-boxes within the body member, but as such feature forms no part of the present invention I will omit its illustration and description.

The top of this improved hive has been described as composed by preference of a single piece of board, and in width it is slightly greater than that of the super so that its edges overlie the same as seen in Figs. 2 and 10. Said edges carry eyes 40 in their under faces, with which are interengaged eyes 41 at the extremities of rather long V-shaped wire bails 42 whose arms are upright but whose centers 43 make gentle bends so that they shall have some resiliency.

With eyes 44 in the sides 4 of the body member are interengaged eyes at the inner ends of hooks 45 whose bills are adapted to engage with the centers 43 of said bails 42, when said centers are deflected by springing them downward a little, as seen in Fig. 1; and by this means the top 2 is connected with the body member, and the super member is clamped between them. No means seem necessary to attach these members to the base or bottom 1, and in fact the latter may be an ordinary piece of board upon which the hives rest easily without any attachment. When all members are disconnected the long bails 42 fold inward over the top 2 as seen inverted at the right of Fig. 7, and the hooks 45 on the sides 4 will turn out of the way as understood.

A slight modification is illustrated in Fig. 10. Herein the bails 50 of both the body and super-member have arms which are substantially straight so that the bails themselves are V-shaped, and the outer ends of the arms are provided with eyes interengaging eyes in the sides as described above. As there will therefore be no resiliency to these bails their centers are connected in pairs by coiled springs 51 whose end-most coils carry hooks 52 so that in effect these springs become double-hooks like those described above. The action and result is the same, save that the resiliency is in the length of the double-hook, instead of in the center 18 of the bail.

A hive as thus constructed is assembled in a manner which will be obvious, the comb-boxes resting upon the slats within the super and the latter being by preference of such dimensions that it will contain a group of boxes, say four in one direction by six in another, all spaced a little from each other so that the bees may pass between them and build a comb therein.

The members of this hive are connected with each other in such manner that they cannot become accidentally dislodged, or blown apart by the wind; yet when it is desirable to gain access to the interior of the hive, the hooks at the sides are disengaged from the centers of the long bails 42 and the cover lifted off, and as this removes the only means which held the super in place, the latter can then be removed from the body of the hive and another super substituted for it—the cover being hooked on as is obvious. Or, as happens in some cases, where the colony of bees is exceedingly active, if the owner finds that the super is nearly filled with comb and honey he may detach the cover and add another super to the structure illustrated in Figs. 1 and 2—substituting longer side hooks 45 engaging the bails of the uppermost super only, or connecting the bails of the two supers by added hooks as will be clear.

When desired the members of this hive

can be entirely disconnected in the manner just described, and then the parts of each member separated by disengaging the bills of all hooks from the bails to which they are attached; after which the various parts may be packed in small space for storage or transportation. This feature is valuable in a super when the comb-boxes stick therein, because by thus "knocking down" the super the boxes may be easily removed. Also this feature is especially valuable when the hive is to be shipped from its point of manufacture to the user, or where the apiarist is to store away supplemental supers, ready for use as above indicated.

I do not wish to be limited to details further than as set forth in the following claims, and as above suggested the materials and proportions of parts are not essential to this invention.

What is claimed as new is:

1. The herein described knock-down bee hive, the same comprising a body, a super, a top extending over said super, long U-shaped bails whose arms have their extremities loosely connected with the edges of said top and whose centers make gentle bends and are resilient; and hooks having their lower ends loosely connected with said body and their bills detachably engaging said centers, for the purpose set forth.

2. The herein described bee hive made in members whereof each comprises end pieces, side pieces having upright grooves in their inner faces removably receiving the extremities of said end pieces, and means for detachably connecting the projecting ends of the side pieces outside the end pieces.

3. The herein described bee hive made in members whereof each comprises end pieces, side pieces having upright grooves in their inner faces removably receiving the extremities of said end pieces, and resilient connecting means between the projecting portions of said side pieces and outside said end pieces.

4. The herein described bee hive made in

members whereof each comprises end pieces, side pieces having upright grooves in their inner faces removably receiving the extremities of said end pieces, eyes in the inner faces of the projecting portions of the side pieces, two bails whereof each has eyes at its extremities interengaging the eyes on one of said side pieces, and double-hooks connecting the centers of said bails.

5. The herein described bee hive made in members whereof each comprises end pieces, side pieces having upright grooves in their inner faces removably receiving the extremities of said end pieces, eyes in the inner faces of the projecting portions of the side pieces, two bails whereof each has eyes at its extremities interengaging the eyes on one of said side pieces and their centers detachably connected with each other, and other hook-and-eye connections between said pieces.

6. The herein described bee hive super, the same comprising side pieces having upright grooves in their inner faces near their extremities, sheet metal strips covering said extremities and lining said grooves, end pieces whose extremities are adapted to rest in said lined grooves, and means for detachably connecting the projecting ends of said side pieces outside said end pieces.

7. In a super for bee hives, the combination with the side pieces having in their inner faces upright grooves near their extremities and horizontal grooves near their lower edges, and the end pieces whose extremities rest in said upright grooves; of means for drawing said side pieces toward each other to clamp said edges in position, and strips whose extremities rest in said horizontal grooves, for the purpose set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CHARLES M. OSBORNE.

Witnesses:

FREDERICK L. BRITTON,
ANDREW J. HALSTED.