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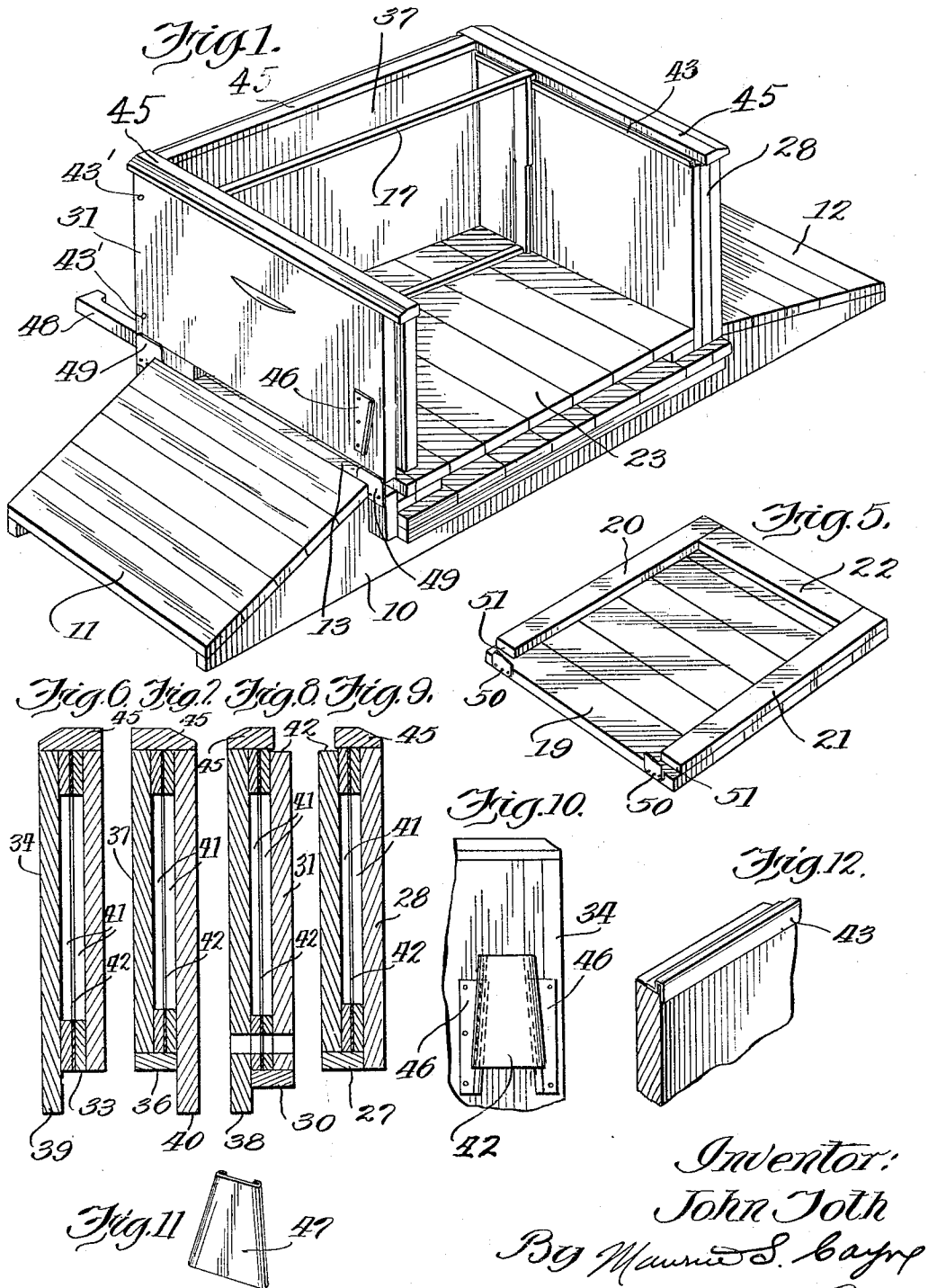
J. TOTH

1,896,334

BEEHIVE

Filed July 10, 1930

2 Sheets-Sheet 1



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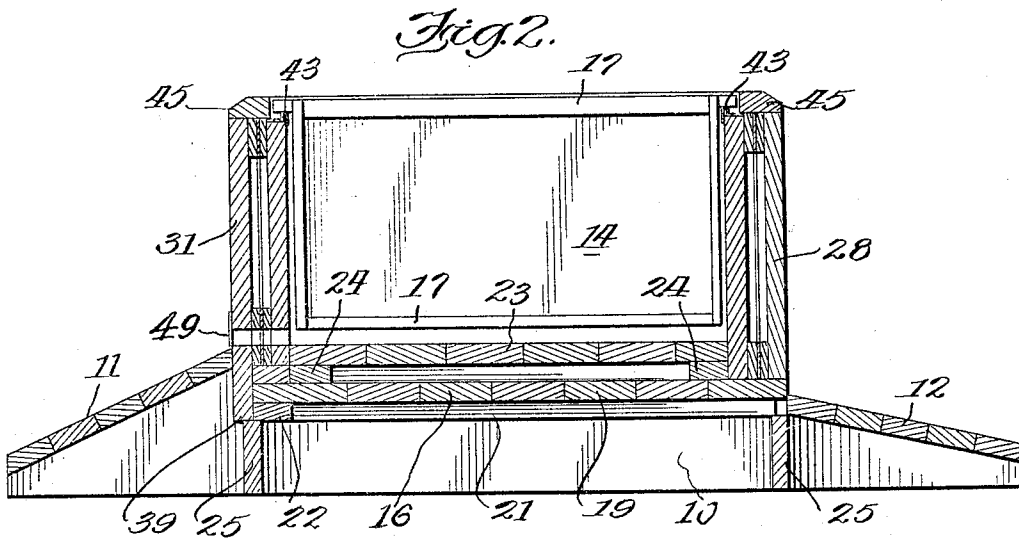
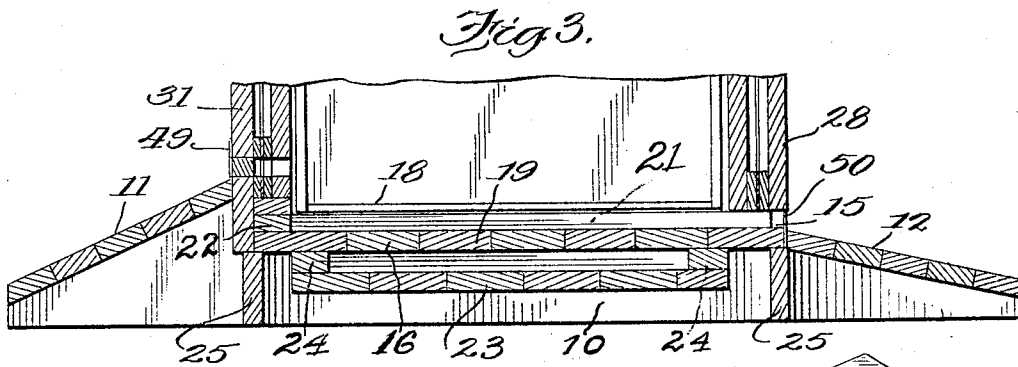
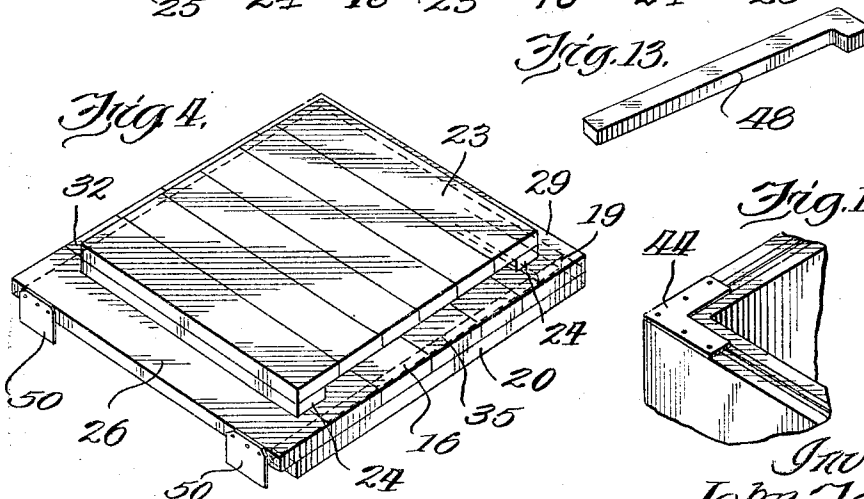
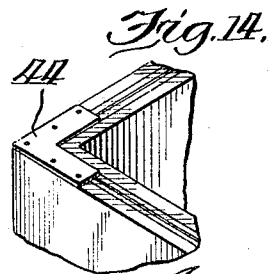


Fig. 14.

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UNITED STATES PATENT OFFICE

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BEEHIVE

Application filed July 10, 1930. Serial No. 466,950.

This invention relates to improvements in beehives, pertaining particularly to the construction of a hive whereby the removal of honey therefrom may be made quite easy and altogether safe even for novices, and that in opening the hive there will be no danger of destroying the bees as results in the case of hives as commonly heretofore constructed.

An object of the invention therefore is the construction of a hive that will permit one side thereof to be removed with the result that the frames bearing the honey may be separated in a lateral direction from one another and removed through the open side of the structure, instead of lifting them vertically in their own planes through the top of the structure.

Another object of this invention is to construct a hive, the brood chamber of which comprises three vertical walls rigidly joined together, while the fourth vertical wall may be detachably secured in place to close the chamber on all four sides, whereby the said wall may be removed at will without disturbing the other parts of the structure.

A further object of this invention is to provide in a beehive of the character described, a reversible bottom or base member whereby the same is adapted for assembly with the side walls in either one of two positions, so as to permit of disposition in the assembled beehive of either a shallow or deep honey frame, depending upon the arrangement of the bottom or base board.

A still further object of this invention is to provide a novel and improved stand or support for the beehive, said stand having alighting boards at both ends thereof in order to meet the changed condition when the bottom or base board is reversed.

A still further object of this invention is to provide a beehive of the character described, comprising a stand, a bottom board, and a plurality of side walls, all of which may be readily assembled to form the completed structure, but which is adapted for shipment in a knocked-down condition, thereby not only facilitating the packing and shipping of the same, but also necessi-

tating only a minimum of space in the storing of the same prior to shipment thereof.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention consists in certain novel features of construction, arrangements and combination of parts, hereinafter more fully described, illustrated in the accompanying drawings and particularly pointed out in the appended claims, it being understood that various changes in the form, proportion, size and minor details of construction may be made without departing from the spirit or sacrificing any of the advantages of the invention.

For the purpose of facilitating an understanding of my invention, I have illustrated in the accompanying drawings a preferred embodiment thereof from an inspection of which, when considered in connection with the following description, my invention, its mode of construction, operation and many of its advantages should be readily understood and appreciated.

Referring to the drawings, in which similar characters of reference are employed to indicate corresponding or similar parts throughout the several figures of the drawings:

Figure 1 is a view in perspective of a beehive embodying my present invention, said hive showing the front wall thereof removed and also showing my improved beehive stand;

Figure 2 is a longitudinal sectional view through my improved beehive and supporting stand for the same;

Figure 3 is a fragmentary longitudinal sectional view similar to Figure 2, but showing the bottom or base board in reversed position;

Figure 4 is a view in perspective of one face of the base board;

Figure 5 is a view in perspective of the other face of said base board;

Figure 6 is a sectional view through the rear wall of my improved beehive;

Figure 7 is a sectional view through the front wall thereof;

Figure 8 is a sectional view through the one side wall thereof;

Figure 9 is a sectional view through the other side wall thereof;

Figure 10 is an elevation of part of one side wall of the hive showing a portion of one end of the front wall and means for securing them together;

Figure 11 is a view in perspective of the securing means shown in Figure 10;

Figure 12 is a view in perspective of a detail of a brood frame supporting means;

Figure 13 is a view in perspective of an entrance regulator; and

Figure 14 is a detail showing the connecting means for securing to each other adjacent ends of the side walls.

Referring to the drawings more specifically by characters of reference, the numeral 10 designates generally my improved beehive stand, said stand being provided with the alighting board 11 at one end thereof and a similarly constructed alighting board 12 at the opposite end thereof. As shown more clearly in Figures 2 and 3, the alighting board 11 is arranged so as to cooperate with the opening 13, provided in its adjacent side wall for permitting the entrance of the bees into the brood chamber 14 when the base board is disposed in the position shown in Figure 2, and the alighting board 12 is adapted to cooperate with the opening 15 provided in the other side wall for permitting the entrance of the bees into the brood chamber 14 when the base board is disposed in the position shown in Figure 3 of the drawings.

The stand 10, is adapted to have supported thereon in assembled position my improved beehive, which consists of a base board 16, said base board being constructed so as to permit the disposition of the same in either one of two positions, which two positions are illustrated in Figures 2 and 3 of the drawings.

When the said base board 16 is disposed in the position shown in Figure 2, a comparatively shallow honey frame 17 may be used in the brood chamber 14, but when disposed in the position shown in Figure 3, a deeper honey frame 18 may be disposed within the brood chamber 14. The said base board is so constructed that it may be assembled with the side, front and rear walls to form a rigid and tight brood chamber irrespective of the disposition of the base board 16 on the stand 10.

The base board 16 in its preferred embodiment consists of a panel 19 to the under surface of which is secured the slats 20, 21 and 22 adjacent three of the side edges thereof as shown in Figure 5 of the drawings. On the opposite surface of the panel 19 is secured a panel 23, which panel is disposed as shown in Figure 4 of the drawings, said panel 23 being spaced from the panel 19 by the slats 24 which are disposed between the

panels 19 and 23 adjacent the ends of said panel 23.

When the base board 16 is disposed in position for use with a shallow honey frame, the said base board will be arranged as shown in Figures 1 and 2 of the drawings, in which position the slat 22 and the free ends of the slats 20 and 21 will rest on the cross beams 25 of the supporting stand 10. The distance that the free edges of the panel 23 extend inwardly from the free edges of the panel 19 will be a width necessary to form a ledge on the panel 19, a portion of the bottom edge of the side, front and rear walls when the latter are assembled in the position shown in Figures 1 and 2. Thus the ledge 26 is of a size to receive thereon the bottom edge 27 of the right hand side wall 28; the ledge 29 is of a size to receive thereon the bottom edge 30 of the left hand side wall 31; the ledge 32 is of a size to receive thereon the bottom edge 33 of the front wall 34; and the ledge 35 is of a size to receive thereon the bottom edge 36 of the rear wall 37.

It will be noted that each of the walls 31, 34 and 37 are provided with the overlapping portions 38, 39 and 40, as shown in Figures 6, 7 and 8, which portions overlie the vertical edges of the base board, thus providing a joint or joints that will exclude cold and make a very substantial arrangement.

Each of the side walls 28, 31, 34 and 37 are preferably of a laminated construction, being made up of a plurality of thicknesses of wood placed in position to provide in each of said walls a pair of dead air spaces 41, the said dead air spaces 41 being separated from each other by a suitably disposed panel 42 of paper, cardboard or the like. The side walls 28 and 31 are rabbeted as shown at 42' in Figures 8 and 9 to permit the attachment thereto of an angle strip 43 upon which strip are adapted to be supported the honey frames 17 or 18.

In assembling the device, if it is desired to use the same for the shallow honey frame, the base board 16 is disposed on the stand 10 with the panel 23 facing upwardly as shown in Figure 1. The side wall 28, the rear wall 37 and the other side wall 31 are then disposed in place on their respective ledges on the base board 16, said walls being then rigidly secured to each other by means of suitable wood screws 43 or the like, extending through said walls and into its adjacent wall. In order to further insure the rigidity of the finished structure the said walls may be further secured to each other at their corners by means of reinforcing top and bottom corner angles 44, as shown in Figure 14. After the said walls have been secured in place as shown in Figure 1, the facing strips 45 may be secured to each of said walls 28, 31 and 37, said strips not only concealing the reinforcing angles, but also being effective

tive in making a more rigid wall, as well as presenting a neat and finished appearance, and also securely sealing the dead air spaces 41, thereby making the said side walls more effective in excluding cold.

To secure the front wall 34 to the side walls 28 and 31 I preferably employ a pair of flanged plates 46, one being attached near each end of said front wall, one also being secured to each end of each side member. These plates are thus disposed in pairs as shown in Figure 10, and their flanges which are opposite one another lie at an angle to one another receiving upon them a plate 47, Figures 10 and 11, acting after the manner of a wedge to closely clamp the said front wall to the said side walls.

In the assembly of the device illustrated in Figures 1 and 2, the entrance for the bees into the brood chamber 14 is provided by the opening 13 extending through the wall 31, the bottom wall of said opening being in alignment with the upper edge of the alighting board 11, thereby producing easy access for the bees into the brood chamber through said opening 13. In order to regulate the extent of said opening, I provide the entrance regulators 48, there being one such regulator provided adjacent each end of said wall 31, said regulators extending into the opening provided in said wall and being adapted for sliding movement therein. Suitable guide clips 49 are provided on said side wall 31 as shown in Figure 1, for guiding said regulators in their sliding movement. Thus it will be noted that by actuating the front and rear regulators 48, the size of the openings 13 may be varied, or the same may be completely closed if desired. In Figure 1 only one such regulator is illustrated, the front regulator being omitted for the purpose of clearness.

When it is desired to assemble the device for use with a deeper honey frame, the base member 16 is disposed as shown in Figure 3 of the drawings, with the panel 23 facing downwardly. When in this position it will be noted that the base board 16 may be disposed on the cross beams 25 on the supporting stand 10, with the panel 19 resting on said cross beams 25.

As shown in Figure 3, the bottom edge 30 of the side wall 31 will rest on the strip 22, and the bottom edge 36 of the rear wall 37 will rest on the strip 21, and the bottom edge 27 of the side wall 28 will rest on the free ends of the strips 20 and 21, there being a space formed between the upper surface of the panel 19 and the bottom edge of the side wall 28, this space being provided for permitting entrance of the bees into the brood chamber 14 from the alighting board 12. The space just mentioned is the opening 15 shown in Figure 3 and the bottom wall of said opening being formed by the upper sur-

face of the panel 19, which upper surface is, as shown in Figure 3, in alignment with the upper edge of the alighting board 12. Suitable guide clips 50 are secured to the panel 19 on the edge disposed adjacent the alighting board 12, said guide clips cooperating with the free edges 51 of the strips 20 and 21 for receiving therebetween regulators 48 by means of which the size of the opening 15 may be regulated.

It will thus be apparent that I have provided an improved beehive construction and supporting stand therefor, which is adapted for quick assembly and when in such assembled position will provide a very rigid and tight construction which will exclude cold and which in addition is adapted for use with honey frames of varying depths. Also it will be noted that I have provided an improved means whereby in order to remove the brood or honey frames it is only necessary to remove the front wall which is detachably held in place, thereby enabling the ready removal of the brood frames from the open front end, eliminating the necessity for raising the said frames vertically in their own planes one by one as is necessary with the common type of hive whose parts are nailed or screwed together permanently.

It is to be understood that fastening means other than that shown and described may be used, however, since I do not wish to limit myself in that respect.

Besides being enabled to reach the interior of the hive thus readily and safely the matter of shipping in "knocked-down" form is an advantage coupled with the ability of the buyer to readily assemble the parts of the hive in a minimum of time and with a minimum of skill.

The construction of the side, rear and front walls is also of such a nature as to provide a plurality of spaced dead air spaces, whereby a sound cold excluding structure is attained.

It is believed that my invention, its mode of construction and operation and many of its advantages, should be readily understood and appreciated from the foregoing without further description, and should also be manifest that while a preferred embodiment of the invention has been shown and described for illustrative purposes, the structural details are, nevertheless, capable of wide variation within the purview of my invention as defined in the appended claims.

Having described my invention, what I claim and desire to secure by Letters Patent of the United States is:

1. A beehive including in its construction a base board, a stand having a pair of alighting boards for supporting said base board in either one of two positions, four vertical walls for erection upon said base board to form a rigid brood chamber, three of said

walls being permanently and rigidly secured to each other, the other of said walls being detachably secured in place whereby the same may be readily removed to permit access to the inside of said brood chamber, means provided in said brood chamber for supporting a plurality of honey frames, said frames being removable laterally through said opened wall, one of said walls having an opening therethrough for establishing communication between one of said alighting boards and the interior of said brood chamber, and means for regulating the size of said entrance opening.

2. A beehive of the character described, including in its construction a base board built up of a plurality of sections, means for supporting said base board in either of two positions, four walls for erection upon said base board when the latter is disposed in either of its two positions to form with said base board as a bottom a rigid and tight brood chamber, three of said walls being rigidly secured to each other whereby the same may be permanently held in place on said base board, the other of said walls being detachably secured in place whereby the same may be readily secured to or removed from the other of said walls to provide for an open end for said brood chamber, means for supporting in said brood chamber a plurality of honey frames, the depth of the frames that may be received within said brood chamber depending upon the position in which the said base board is disposed, said open end permitting the removal of said honey frames laterally therethrough, one of said walls being provided with an opening therethrough for establishing communication between the outside and inside of the brood chamber whereby the bees may enter into the latter, regulating means for varying the size of said entrance opening, and guide means for guiding said regulating means in their sliding movement.

3. A beehive of the character described, comprising in combination a supporting stand having an alighting board at each end thereof, a base board for disposition in either of two positions on said supporting stand, four walls for erection on said base board to form therewith a rigid and cold excluding brood chamber, each of said walls being provided with a plurality of dead air spaces separated from each other by a partition of paper or the like, three of said walls being rigidly secured to each other, and the last of said walls being detachably connected whereby the same may be readily removed to permit ready access into said brood chamber, means for supporting a plurality of honey frames in said brood chamber, said honey frames being removable laterally from said brood chamber through the open end thereof when said removeable wall is removed, two of said

walls being so erected on said base board as to provide an opening therethrough for permitting the entrance of bees into said brood chamber, regulating means for said entrance openings, one of said openings cooperating with one of said alighting boards when the base member is disposed in one position, and the other of said openings cooperating with the other of said alighting boards when the said base board is disposed in its other position.

4. A beehive of the character described, including in its construction a base board, four walls for erection on said base board to form therewith a rigid and cold excluding brood chamber, said base board permitting the erection of said walls thereon when the base board is disposed in either of two positions, when disposed in one of said positions said base board provides a plurality of ledges adjacent the outer edges thereof, upon which ledges are to be disposed the said walls, three of said walls having overlapping portions for overlying the outer edges of said base board for preventing the entrance of cold or insects into said brood chamber, one of said walls being provided with an opening therethrough for permitting the entrance of bees into said brood chamber, means for regulating the size of said opening, said base board when disposed in said first mentioned position permitting disposition in said brood chamber of relatively shallow honey frames, but when disposed in the other of its positions will permit the disposition within said brood chamber of a deeper honey frame.

5. A beehive of the character described, including in its construction a base board and a plurality of walls for erection thereon to form therewith a rigid brood chamber, said base board being constructed in such a manner as to permit the erection of side walls thereon when the said base board is disposed in either of two positions, when said base board is disposed in one of said positions it will produce a brood chamber for housing a shallow honey frame, and when disposed in the other of its positions will permit the disposition within said brood chamber of a deeper honey frame, the said base board forming with said walls when the former is disposed in either of said two positions a rigid and cold excluding brood chamber.

6. A beehive of the character described, including in its construction a base board built up of a plurality of sections, four walls for erection on said base board to form therewith a rigid and cold excluding brood chamber, said base board being capable of assembly with said walls when the base board is in either of two positions, when disposed in one of said positions the brood chamber formed will permit the housing of a shallow honey frame, and when disposed in the other of its positions the said base board will per-

mit the housing in said brood chamber of a deeper honey frame, said walls cooperating with said base board when the latter is in either of its two positions to form therewith
5 a rigid and cold excluding brood chamber.

In testimony whereof I affix my signature this 16th day of June, 1930.

JOHN TOTH.

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