

Nov. 12, 1963

W. DULLAS  
MOLDED BEEHIVE

3,110,044

Filed June 30, 1961

2 Sheets-Sheet 1

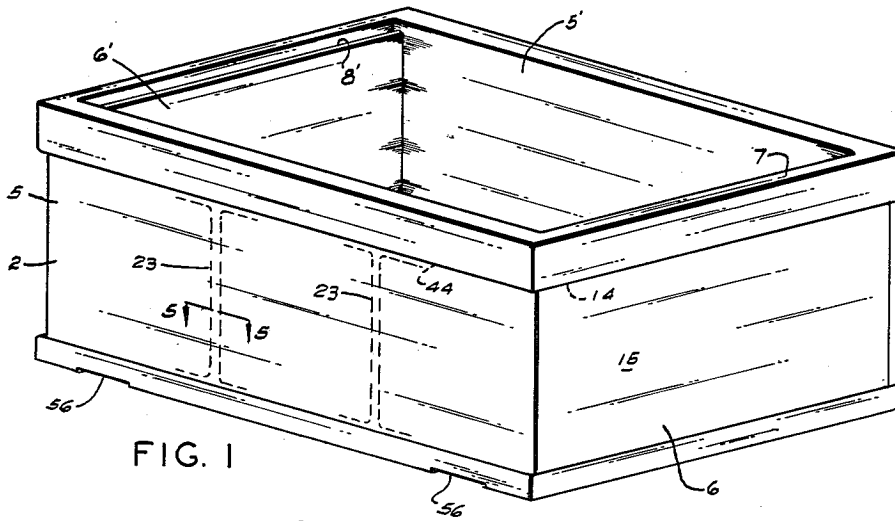


FIG. 1

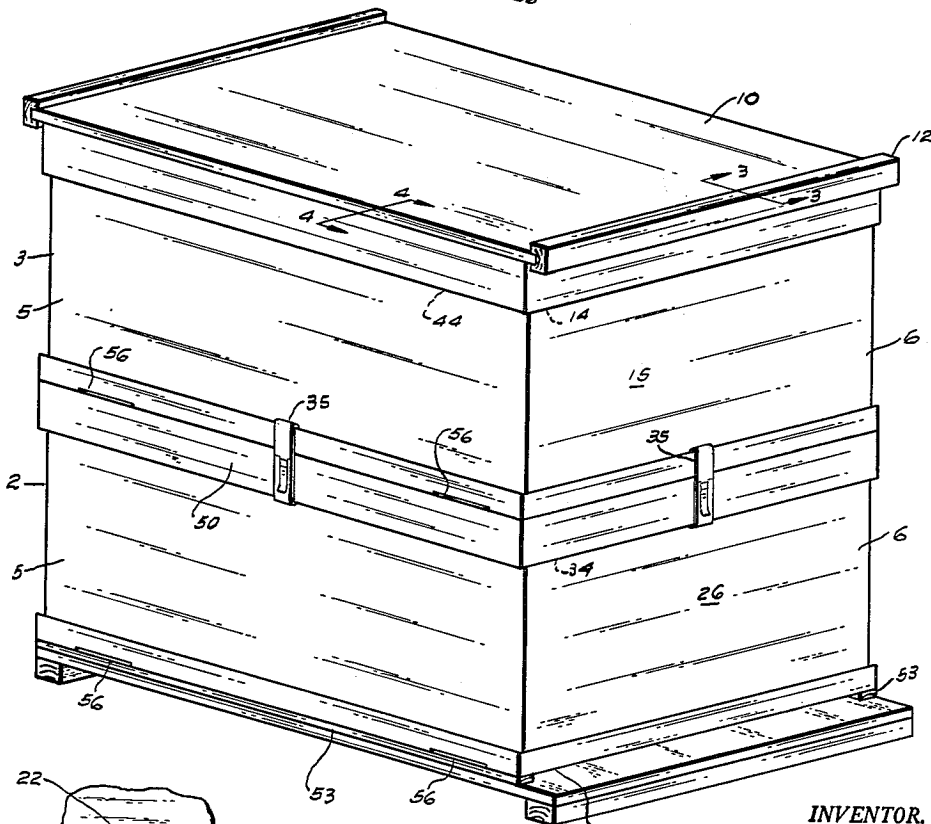


FIG. 2

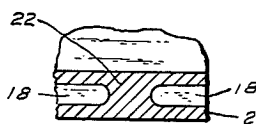


FIG. 5

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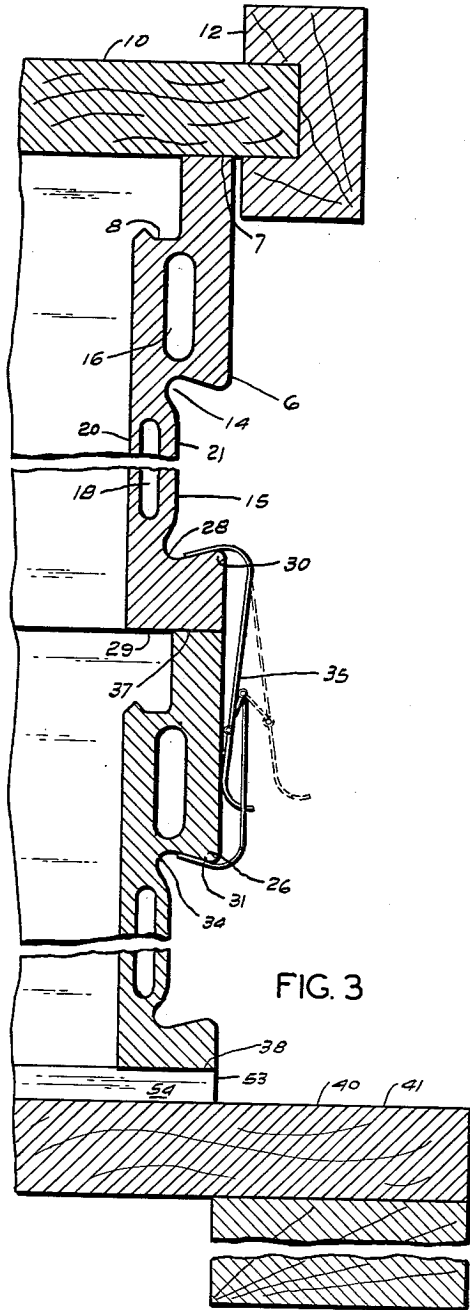


FIG. 3

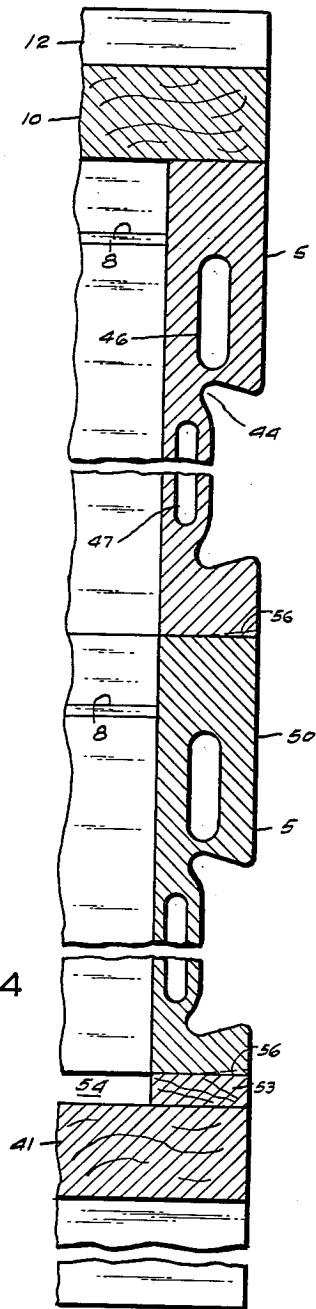


FIG. 4

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1 Claim. (Cl. 6-1)

This invention concerns an improved beehive.

Heretofore beehives, aside from the type made of straw, etc., have been made of standard size having uniform width, height and depth. This made it possible to have combs within the hive of uniform size either for use when the honey was extracted from the comb or when the combs were removed as a unit. The size and structure of the combs is not concerned in this invention except that it should be understood that the hive here concerned will accept standard comb frames of all types.

One of the objects of the invention is to provide a hive which can be made of substances other than wood which will nevertheless have the properties desirable for the best health and behavior of the bees.

Another object of the invention is to provide a hive which can be assembled as a unit at the factory.

Still another object is to provide a hive which has the side and end walls made of plasticizable material which can be moulded with handles all around, both on the ends and on the sides.

Still another object is to provide a hive with walls as above mentioned which will accept standard bottom plates and top covers made of wood, according to the usual practice.

Still another object is to provide sides and ends which have rests to hold comb frames built into the end pieces so that separate strips or groove forming devices are not necessary.

Still another object is to provide a hive having sides made of plasticizable material having lifting grooves which are slightly bevelled upward and having bevel grooves in the top and the bottom which will enable the user to clamp two hive units together by a simple appliance to form a hive with a super.

Another object is to provide hives having the side and end walls of plasticizable material shaped so as to have light weight and to provide openings therein to minimize the weight and also increase the insulating properties of the sides and ends and also increase their structural strength by having inside partitions constructed in a vertical position.

Another object is to provide a hive box having side wall plates provided with grooves to receive a hive tool to aid in removing it from the rest of the hive. These grooves are bevelled so that there will be enough space for a hive tool to fit between boxes on the hive. The outside surface of the box exposes the largest opening of the groove, with the inside surface being tight and showing no apparent groove in that it diminishes about midway between the outer and inner surface of the hive box.

Other objects will appear hereinafter.

I attain the foregoing objects by means of the structure, shape and design of the hives in a manner illustrated in the accompanying drawings, in which—

FIGURE 1 is a perspective view of a lower hive part including my improvements.

FIGURE 2 is a perspective view of the lower hive parts with the bottom plate added and a super positioned on top of the bottom hive part and a cover or top in position.

FIGURE 3 is a sectional view taken through an end of the hive shown in FIGURE 2, substantially on line 3—3, with portions broken away to lower the full height of the figure as shown; the parts in the figure are drawn on a larger scale than those in FIGURE 3.

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FIGURE 4 is a sectional view taken through the sides of the hive shown in FIGURE 2 with portions broken out and drawn on an enlarged scale; and

FIGURE 5 is a fragment of the side of the hive taken substantially on lines 5—5, FIGURE 1, and showing a means for supplying a strengthening rib and air space insulating holes within the side structure.

Similar numerals refer to similar parts in the several views.

The hive, as illustrated here, consists generally of the lower part 2 and the upper part called a super, marked 3, however, more supers may be added if needed.

Following my method of forming the hive these parts can be made interchangeable with what is currently on the market, and, therefore, are of uniform construction.

Each unit of this structure has sides 5 and 5' and ends 6 and 6'. These parts may be termed plates and are preferably made of plastic or plasticizable material, for example polyethylene. This material may be cast and moulded and thereafter worked as necessary to form the finished structure. Referring to FIGURE 3, it will be noted that the end plate 6 is made with a flat top edge 7 and a groove or shelf 8 on the inner face. This groove or shelf with a triangular hump is to accommodate the ends of frames this triangular hump is provided to aid the bee keeper in removing frames that may be adhering to the frame resting portion of the end plate. The top edge 7 will accommodate the standard top plate 10, usually made of wood, and usually provided with an edge cap 12. On the outside face of this plate there is a groove 14 providing a hand-hold that is slightly bevelled upward which surrounds the entire section. The bevelled portion of the hand-hold will provide a surface to minimize the chances of ones fingers slipping from the box. At the outer portion of the hand-hold where the bevelled surface begins, notice that the edge is slightly curved or rounded. This is used in lifting the sections which may be the upper or lower section, as the case may be. Below groove 14 there is a flat area 15 which provides the flat sides of the plate. Within the upper portion of the plate there is a transverse opening 16 which may be termed a core opening and may be moulded into the plate when it is originally formed. Or may be formed as two mating grooves of two slabs which may thereafter be welded together, as can be done with plasticizable material by applying heat to the parts to be welded. This opening tends to lighten the plate, to diminish the total amount of plastic needed and to aid in insulating and stiffening the hand plate longitudinally.

Within the central portion 15 of the end plate 6 there is also an opening 18 which is formed similar to the opening 16. This opening may also be formed by moulding two portions of the plate separately, forming grooves which are mating halves of the opening and then welding the halves together. This opening extends longitudinally of the plate and is used for lightening and insulating the material. Since this opening may tend to make the flanks 20 and 21 too weak, a web strip, such as 22, may be formed within the opening, as shown particularly in FIGURE 5 to strengthen the plate. This web extends vertically within the opening 18 and webs of this type are indicated in dotted lines 23, FIGURE 1.

The lower end plate 26, as shown in FIGURE 3, is made the same as the upper plate 6. Note that there is a groove 28 adjacent the lower edge 29 of plate 6. This forms a rim 30 which matches the rim 31 formed by the groove 34 at the top of the lower plate 26, as illustrated in FIGURE 23. The rim 31 is rounded to minimize finger irritation. In addition, rims 30 and 31 may be held together by fastener such as 35 shown in detail in FIGURE 3 and also illustrated in FIGURE 2. The top edge 37 of end piece 26 forms a surface on which the bottom 29 of the top plate 6 rests. In the same manner

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the bottom edge 38 of the lower end plate 26 forms an edge rest. This edge is supported above the top face 40 of the bottom plate 41 on cleat 53. This bottom plate may be made of wood and is of standard construction the same as is ordinarily used with hives made with wooden sides and ends.

The side plates 5 and 5' are made in the same manner and with similar moulds as the end plates 6 and 6' previously described. These side plates have grooves formed at 44 to form finger holds the same as grooves 14 in plate 6. They also have longitudinally extending insulating and lighting holes 46 and 47 made in the same manner and for the same purpose as the longitudinal holes 16 and 18 in the plates 6 and 6'. The lower side plate, marked generally 50 in FIGURE 4, is made the same as the upper plate 5, FIGURE 4.

In manufacturing hives of this type all the plates may be made and cut to the proper lengths and their end edges cemented or welded together at the factory, or the entire assembly, including the sides and ends, may be moulded as one unit at the factory. In either case the sides and ends of the hive body are made of plastic, shaped and constructed as above described and when one part 2 is set upon a base such as 40 the corresponding super 3 may be set upon it and the two held together by the clips 35 as indicated. The lower edges of the lower part 2 may then be set upon baseboard or plate 40 and supported a slight distance above it by strips 53. This provides a space 54 for the bees to enter and leave the hive. This space is indicated at the end of the hive nearest the viewer in FIGURE 2. The opposite end opening, such as 54, may be closed by a strip similar to 53 if it is so desired. With the cover 10 in place the hive is ready for use and it will be found that it is both light and durable and can be made as permanent as the nature of the plastic used in moulding the side and end plates.

Along the bottom of the side plates, such as 50, shown in FIGURE 4, I provide a number of grooves 56 into which a spade shaped tool may be inserted and used to pry the bottom edge of the sides of the hive away from the bottom base 40. This is known to the art as a hive

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tool and is used to break the edges loose from the bottom because the bees are known to close the contacting edges between the side and the bottom with wax and propolis according to their custom and instincts.

The same is true in separating the super from the bottom section when desired. These grooves, marked 56, will also be found along the lower edges of the sides of the super.

Due to the fact that wood suitable for the construction of the hives is becoming scarce and is increasingly expensive I have provided the above described structure, for the purposes above explained and wish to be limited only by the following claim.

I claim:

15 A unitary beehive body comprising flat end plates and side plates of moulded plastic material arranged to have smooth top edges and smooth bottom edges, relieved at intervals to provide entrance grooves for a hive tool, and smooth inner faces with comb frame grooves adjacent the top edges, and longitudinal bevelled finger hold grooves formed along the top portions of smooth outer faces having undercut top edges, and longitudinal lightening and insulating holes; said end plates being molded of plastic material and having smooth top and bottom edges and smooth inner faces, and bevelled longitudinal grooves extending inwardly and upwardly relative to the top edges of said plates to receive the clamp fasteners, and substantially C-shaped clamp fasteners of spring like material hooked over the edges of adjacent grooves, to hold said plates together in superposed position.

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