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3,439,364

LAMINATED BEEHIVE AND FRAME SUPPORT THEREIN

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Sheet 1 of 2

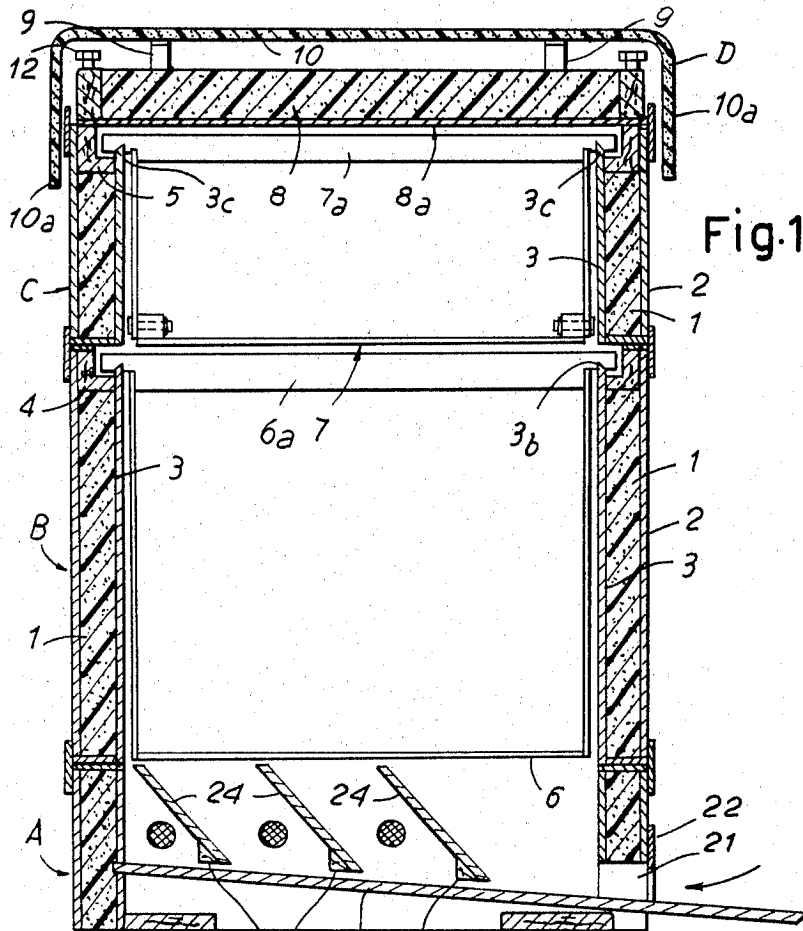


Fig. 1

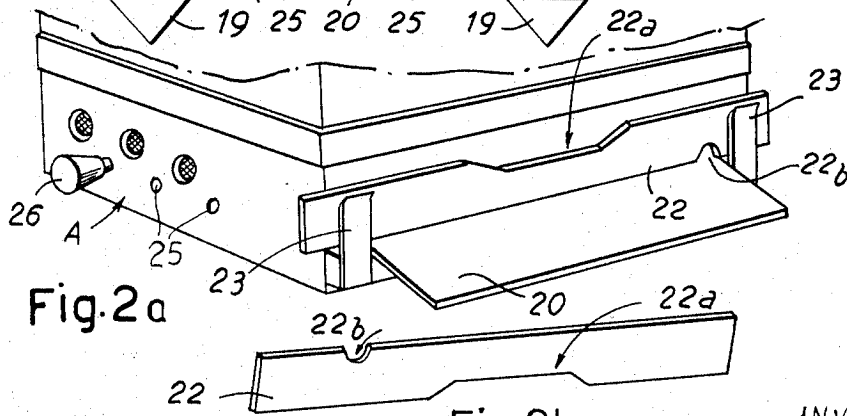


Fig. 2a

Fig. 2b

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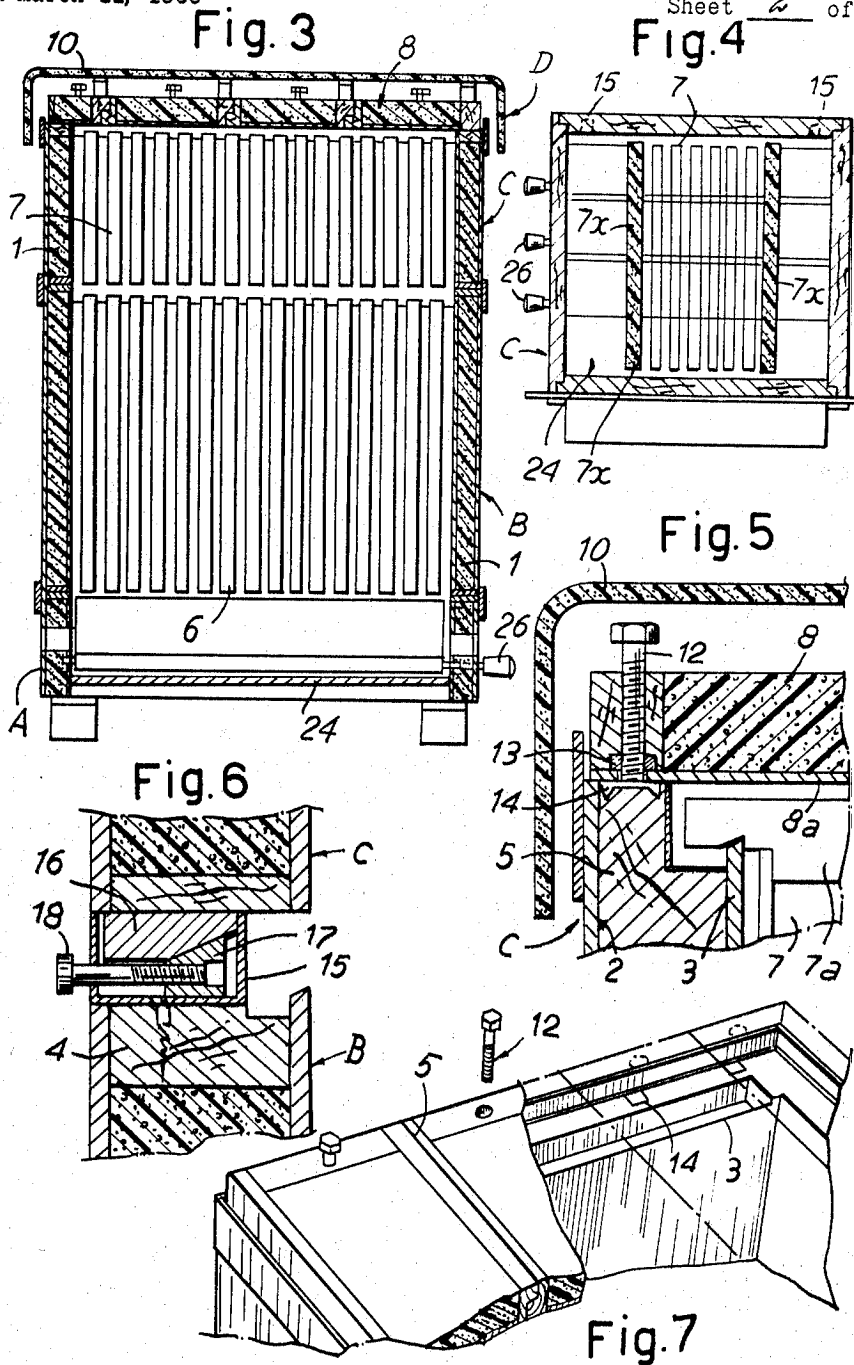
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**LAMINATED BEEHIVE AND FRAME  
SUPPORT THEREIN**

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4 Claims

**ABSTRACT OF THE DISCLOSURE**

A multi-section beehive is disclosed as including walls formed of synthetic heat insulating material, each wall comprising an inner synthetic resin layer, an outer synthetic layer and a synthetic resin filler between the two layers. The upper edges of the side walls of two of the sections are formed as bevelled edges to support cross bars suspending frames, each cross bar having a pair of longitudinally spaced downwardly opening triangular notches arranged to engage over the bevelled edges of a pair of opposite walls, both the bevelled edges and the notches being of right triangle form and the apex angle of the notches being somewhat larger than the apex angle of the bevelled edges. Pressure exerting means are provided to separate the sections and to remove a roof or top closure even though parts may be adhered together by propolisation.

*Background of the invention*

The invention relates to a beehive wherein the structures generally, and in particular the walls, are not made of solid wood and thus heavy, as presently, but are made of relatively light and highly insulating materials.

In accordance with the invention, the beehive comprises walls each including inner and outer panels of synthetic material enclosing an intermediate filler of insulating and generally expanded synthetic material. The inner panels are formed with edges at their upper ends for suspending the frames for the wax sheets, with the beehive being arranged to accommodate up to thirteen of these frames. The upper edges of the inner frames may also be used to suspend panels of insulating material arranged to limit the cavity when the latter contains a smaller number of frames than the maximum. These upper edges of the inner panels are preferably formed with bevelled edges.

The present invention is illustrated in the drawings enclosed according to an embodiment. In the drawings:

FIG. 1 shows an overall longitudinal section of the beehive;

FIGS. 2a and 2b are perspective views of portions of the base of the beehive;

FIG. 3 shows the beehive in cross-section;

FIG. 4 shows the beehive in horizontal section in reduced size;

FIGS. 5 and 6 show two details; and

FIG. 7 shows in perspective view the upper portion, the cover being dotted.

As shown in the drawing enclosed, A indicates the beehive base, B the portion overlying the beehive case, on which the small frames are mounted, C the third portion of the beehive case, wherein the frames for honey are mounted, and D the covering portion.

The different side walls in the sections A, B and C are made of an intermediate insulating material thickness 1 flanked by a laminar outer coating 2 and an inner one 3, made of plastic material such as plastic laminate or the like. The three components of the walls in the three sections A, B and C are denoted by the same references.

At the upper edges of sections B and C there are angle-shaped bars 4 and 5, respectively. Each bar 4 and 5 forms, with the upper corner of the inner panel 3, a channel having one leg 3b and 3c, respectively, arranged to support the upper bar 6a and 7a of frames 6 and 7, respectively, for the wax sheets. Frames 6 are in section A and frames 7 are in section B. The largest number of frames which can be accommodated is thirteen.

When the number of frames is reduced with respect to the maximum which can be mounted in the beehive, insulating panels 7x, shown in FIG. 4, may be hung in the position of the absent frames 6 and 7, these insulating panels having a substantial thickness. Thereby, the smaller number of frames may be enclosed either between two panels 7x or between one of the beehive walls and a panel 7x, leaving the excess space vacant.

An upper closing wall, denoted by 8, is provided with an inner coating plate or panel 8a, while the upper edge of the wall 8 may have supporting posts 9 designed to support a covering 10; this covering is developed like a parallelepiped box made of hot deformed thermoplastic material or the like, whose side walls 10a surround the covering and the case side walls.

The covering D, i.e. panel 8-8a, may be detached from section C by means of screw members. Said screw members include screws 12 engaged in nuts 13 incorporated in the frame of covering 8 and designed to act on small plates 14 mounted at the upper end of the side walls of section C. With this arrangement, by acting on the hexagon screws 12, the cover may be detached from section C even if the slot between said section C and the cover is sealed by propolisation. For the same reasons, i.e. in order to obtain the detachment of section C from section B, screw means may be provided. For this case, in the frame formed by the upper bars 4 of section B, two metal boxes 15 are embedded, each of which comprises an inclined wall heel 16 cooperating with a wedge 17, capable of being operated with screw means 18 from the outside, also in order to effect detachment in case of a sealing due to propolisation.

In the base inferior section A, which has suitable supports 19, there is provided an inclined bottom plane 20 projecting from the access opening 21; a board 22 (see especially FIG. 2b), which may be received in seats formed by plates 23 on base A, may be located in one of two vertical positions, so as to rest on the plane 20 either with the edge forming a wide cavity 22a (in order to have a relatively wide opening) or with the edge having a small cavity 22b, when a relatively limited opening is required. Additional walls 24, linked at 25, may be adjusted through outer knobs 26.

What I claim is:

1. A beehive comprising, in combination, a base; pairs of opposed side walls extending upwardly from the base, each pair including an inner side wall and an outer side wall, one pair of opposite inner side walls constituting frame support means; at least one frame supported on the frame support means; said frame supporting opposite inner side walls having bevelled upper edges, and the inner surface of said frame supporting walls extending in a substantially vertical plane and the tops of said supporting walls sloping downwardly and outwardly toward the associated outer walls; each frame including a frame suspending bar extending across its upper edge and formed with a pair of spaced, downwardly opening triangular notches to engage over said bevelled edges; each notch having a substantially vertical inner edge and a sloping outer edge; the distance between the inner edges of said notches being substantially equal to the distance between said inner surfaces of said frame supporting walls, and the outer edges of said notches having a slope angle greater than the slope angle of said tops of said frame supporting

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walls, whereby the outer edges of said notches diverge from the outer surfaces of said bevelled edges at a relatively small angle of divergence; and a cover seated on said side walls.

2. A beehive, as claimed in claim 1, in which said side walls are formed of heat insulating synthetic material.

3. A beehive, as claimed in claim 2, in which each of said side walls includes inner and outer panels of synthetic material and a substantially thick filler of synthetic material enclosed between said inner and outer panels.

4. A beehive, as claimed in claim 1, including plural superposed sections including a base section having said base and at least two intermediated sections supported on said base; and force applying means operable between said roof and the upper one of said intermediate sections and between said two intermediate sections to force said roof and said upper intermediate section apart and to

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force said two intermediate sections apart, irrespective of propolisation between said two sections and between said upper intermediate section and said cover.

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U.S. Cl. X.R.

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