

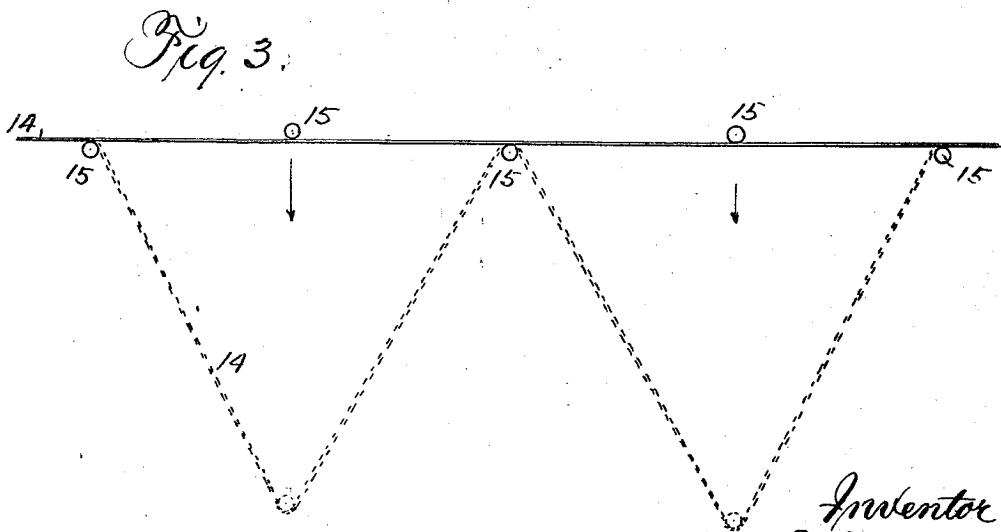
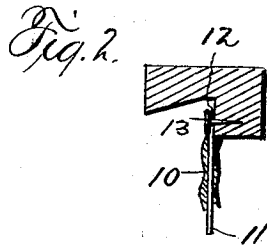
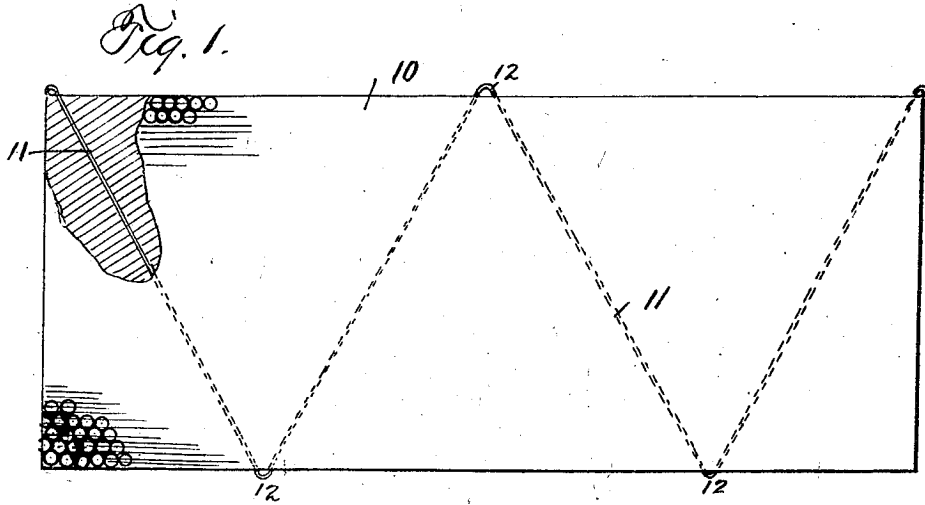
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E. R. ROOT

REINFORCED COMB FOUNDATION FOR BEEHIVES

Filed June 29, 1920



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UNITED STATES PATENT OFFICE.

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REENFORCED COMB FOUNDATION FOR BEEHIVES.

Application filed June 29, 1920. Serial No. 392,710.

To all whom it may concern:

Be it known that I, ERNEST R. ROOT, a citizen of the United States, residing at Medina, in the county of Medina and State of Ohio, have invented new and useful Improvements in Reenforced Comb Foundations for Beehives, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to what is known as comb foundation that consists of a sheet of wax which, by the use of dies, or an embossing operation, is formed on opposite sides with the beginnings, in greater or less degree, of the brood or honey-receiving cells. As the sheet of wax is of considerable area, and quite thin, sagging of the sheet, which stands vertical in the hive, is apt to occur, with the result that cells are distorted and are not utilized by the bees. By proper reinforcement of this wax sheet this condition can be prevented, and as all the cells can be utilized by the queen in laying eggs, the capacity of the hive is increased as much as twenty per cent, and thereby swarming controlled, and, if the queen fails to deposit eggs in all the brood comb, the bees will store honey therein and thus the honey storage capacity of the hive is augmented.

Again, reenforced foundation stands the strain of the centrifugal extractor better than unreenforced, and that means more complete removal of the honey because the extractor can be run at a higher speed.

My invention has for its object the reinforcement of comb foundation in such a manner as to secure to a maximum, the benefits of reinforcement, and to secure other advantages, all as hereinafter set forth.

In the annexed drawings:

Fig. 1 is a side elevation of a sheet of wax foundation reenforced by wiring in accordance with my invention, a portion of the sheet being broken away to show the wires, in part, in full lines, the remainder being in dotted lines;

Fig. 2 is a detail view, in vertical section, through the top bar of a brood frame in which the wired sheet is secured by nails; and

Fig. 3 is a diagrammatic view illustrating a simple method of bending the wire preliminary to its embedment in the wax sheet.

In the drawings 10 designates the sheet

of wax, of usual oblong form, and 11 the reinforcement, which consists of wire or other proper filament, of a gage or thickness less than the thickness of the wax sheet, so that it may be wholly embedded in the latter. The wire is zigzagged or looped back and forth, and preferably, as shown in Fig. 1, it extends in oblique lines from top to the bottom of the sheet, forming a succession of V's, alternate ones being inverted; that is to say, the direction of obliquity is downward and laterally. By reason of this obliquity, the wires prevent downward slip of the wax over them, as may occur when the wires run vertical, and the limbs of the V's being in comparatively short stretches from top to bottom of the frame (to which they are attached as hereafter explained) they are stiffer or more rigid than is the case with wires that run horizontally from side to side of the frame, and which, by reason of the long stretch from point of support on one side bar to another, and the greater total load of wax thereon are apt to sag or flex downward.

At the angles or corners of the bends, the wire is rounded, and continuous, so that no burrs or points exist, apt to catch or tear the wax, or to catch into objects and cause the wire to tear out of the wax; and these rounded corners form loops 12 for the passage of, and to engage, nails 13 driven through them into the top and bottom bars of the frame.

The connection of the wax supporting wires with the top bar of the frame is very important as without such connection the load of the sheet of wax on the wires may carry the wires downward and thus sagging result, and in this connection the positive connection which I secure by loops 12 which engage the nails in the top bar is of especial importance.

I show in Fig. 3 a simple method of making the V-shaped bends. The wire 14 coming from the reel in a straight line is passed between two rows of slender, uniformly spaced fingers 15, so positioned that alternate ones are on opposite sides of the wire. By simultaneously moving all the fingers on one side of the wire, to force it against the opposite set of fingers, and carry it beyond them a distance corresponding to the width of the sheet of wax from top to bottom, the wire will be bent into the zigzag form

shown in dotted lines in Fig. 3. If now, a sheet of wax is dropped on the bent or looped wire, and the latter momentarily heated, as by means of an electric current, the wax will melt, and the sheet will settle over and envelop the wires, later being embossed to provide the rudimentary cells.

I claim:—

1. A comb foundation sheet of wax reinforced by an embedded filament that passes back and forth within the sheet adapted to receive fastening devices, at the angles or bends, said angles or bends being at or near the margins of the sheet, and the filament extending in a straight line from one bend to an opposite bend.

2. A comb foundation sheet of wax having a filament that is embedded therein, and extends from the upper part of the sheet downward in straight diverging lines throughout the entire extent thereof in the sheet, and adapted to be fastened at the top to a horizontal supporting member.

3. A comb foundation sheet of wax having a filament that is embedded therein, and extends from the upper part of the sheet downward in straight diverging lines throughout the entire extent thereof in the sheet, and a frame from the top bar of which said filament is suspended.

4. A comb foundation sheet of wax having a filament that passes back and forth within the sheet in the form of a series of

V's, alternate V's being inverted, the apexes of the V's being respectively at or near the top and bottom of the sheet and the filament extending directly in straight lines from an upper apex to a lower apex.

5. A comb foundation sheet of wax having a filament that passes back and forth within the sheet in the form of a series of V's, the angles of the V's providing nail-engaging bends and the sides of the V's extending directly in straight lines from top to bottom of the sheet.

6. A comb foundation sheet of wax reinforced by a filament that passes back and forth within the sheet and adapted to receive fastening devices, at the angles or bends, and a frame to the top and bottom bars of which the sheet is attached by nails at such angles, the filament extending in straight lines and at an incline directly between such bars.

7. A comb foundation sheet of wax having a filament that passes back and forth within the sheet in the form of a series of V's, the angles of the V's providing nail-engaging bends, and a frame to the top and bottom bars of which the sheet is attached by nails at such angles, the filament extending in straight lines and at an incline directly between such bars.

In testimony whereof I affix my signature.

ERNEST R. ROOT.