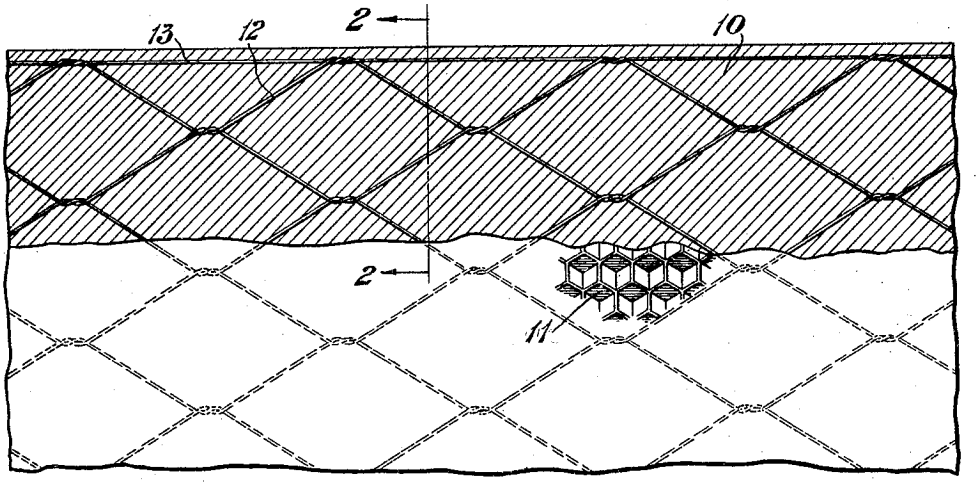
Nov. 3, 1931. G. D. C. CODDINGTON 1,830,592

HONEYCOMB FOUNDATION

Filed Dec. 4, 1928

Fig. 1.



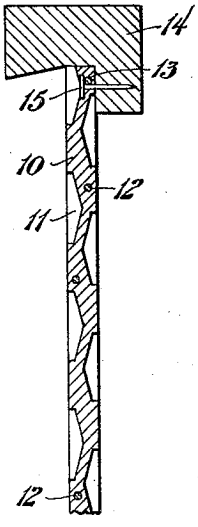


Fig. 2.

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UNITED STATES PATENT OFFICE

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HONEYCOMB FOUNDATION

Application filed December 4, 1928. Serial No. 323,628.

This invention relates to honeycomb foundations adapted to be mounted in frames and suspended in beehives and, among other objects, aims to provide an improved reenforced foundation sheet that will not sag or stretch or tear away from the foundation frame.

In the accompanying drawings,

Fig. 1 is a fragmentary face view, partly in section, of the preferred form of foundation sheet; and

Fig. 2 is a fragmentary sectional view taken on the line 2—2 of Fig. 1, showing the sheet applied to a foundation frame member.

Heretofore, many attempts to reenforce wax foundation sheets have been made but so far as I am aware they have not been entirely successful. Such foundations are usually made of relatively thin sheets of beeswax which is quite expensive and applied to wooden frames adapted to be suspended in beehives. Without sufficient reenforcement, the sheets will stretch, sag, buckle or tear loose during hot weather, because the wax is softened and has very little tensile strength.

A relatively strong, wax coated textile fabric has been tried but found unsatisfactory because the indentations or cells will stretch open due to the weight of the bees and the accumulating honey. Further, the selvedges of the sheets where they are nailed or secured to the frames crack or break so that the sheets easily tear loose or buckle. Moreover, it has been found that bees will not use the cells in such prepared cellular sheets, but will bore into the sheets perforating and practically destroying the sheet in their efforts to tear out the said fabric which is objectionable to them in building their own cells.

In an effort to obviate the foregoing difficulties, many experiments have been made with metal wire reenforcing elements pressed into the formed cellular sheets by means of star rollers and other devices. While such wire reenforcements are self-sustaining, they are not wholly incorporated within the cell walls and, hence, the wax foundation sheets will peel off or crumple during hot weather and their utility is impaired if not destroyed. Such crumpled or bent sheets have stretched cells on one side (the outside) and contracted or closed cells on the other. Now, bees raise workers in the normal cells and drones in the enlarged cells. Hence, if a great many cells are enlarged or stretched open in the foundation sheets, an undesirable number of drones or non-workers will be propagated.

It is therefore an important object of the present invention to provide a reenforced, honeycomb foundation that will hold its shape and in which the wax will not crumple or separate from the reenforcement under ordinary temperature conditions. Also, another and important aim is to produce relatively thin sheets so that they can be made and sold at a low cost.

Referring now to the illustrated embodiment of the invention, there is shown a rolled wax sheet 10 having the ordinary hexagon cells or indentations 11 in the opposite faces preferably produced by die rolls. The sheets are preferably made in long strips of standard width and cut off in sheets of the desired sizes.

To reenforce the wax foundation sheets in accordance with my invention, woven diamond mesh wire 12 made of strands of small diameter, is incorporated within the cell walls during the rolling operation to insure that the strands will be completely imbedded within the zigzag cell walls. As will be seen in Fig. 2, the strands of the wire are distorted or bent to lie parallel with cell walls so that they will not cross the cells. The distortions will not stretch under the ordinary weights or strains to which they are subjected. This arrangement of the strands also prevents them from crossing the open spaces in the cells so that the bees will not use them.

Referring to Fig. 1, the wire reenforcement is shown as having longitudinal selvedge strands 13 adjacent to the upper and lower edges of the sheet. These strands are utilized to secure the sheets to the usual frame bars 14 by means of tacks or nails 15 as shown in Fig. 2. The diamond mesh wire is preferred because the strands are twisted together and lie diagonally of the sheets so that

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