No. 846,396. PATENTED MAR. 5, 1907.

J. T. CALVERT & F. G. MARBACH.

BEEHIVE FRAME.

APPLICATION FILED MAR. 5, 1906.

Fig. 1.

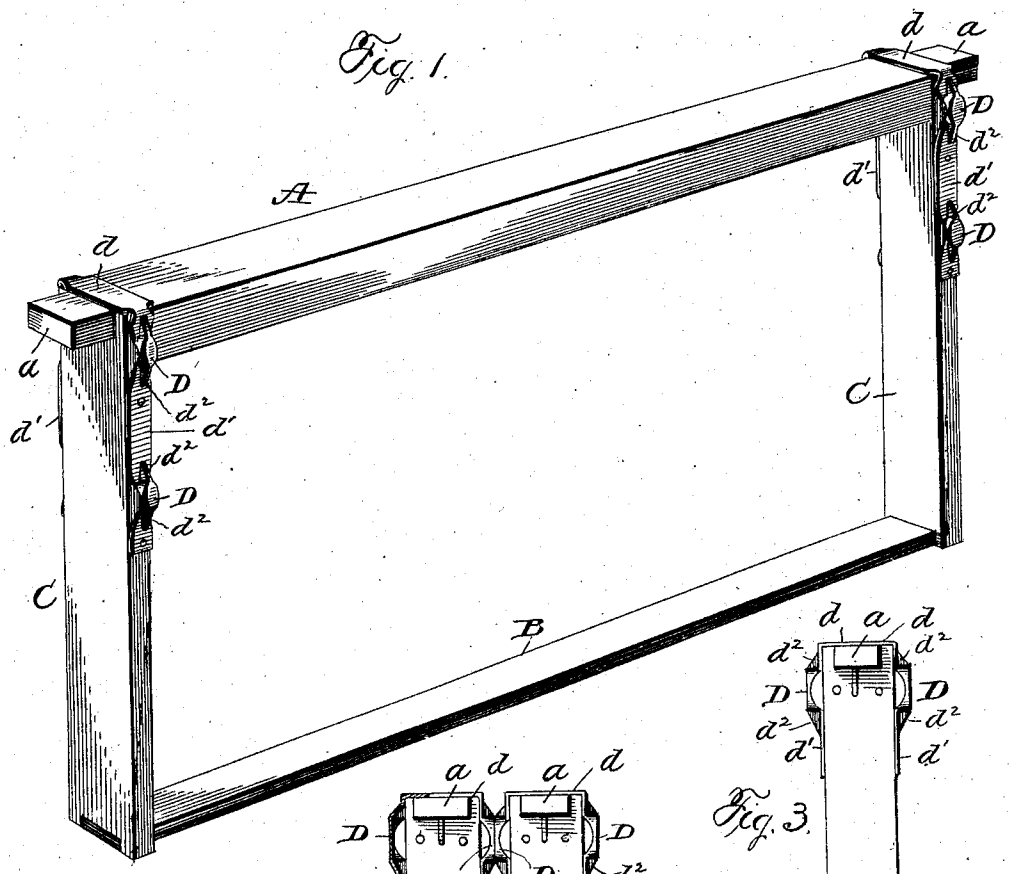


Fig. 2

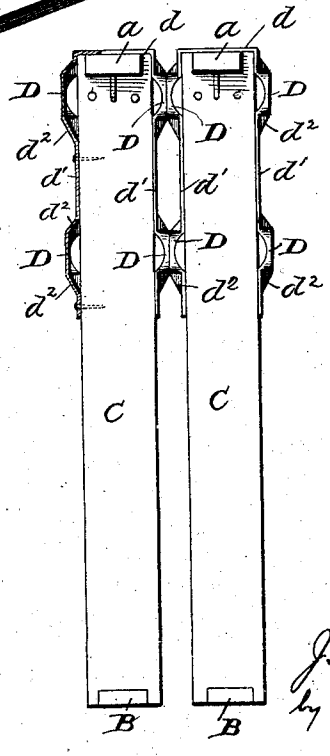
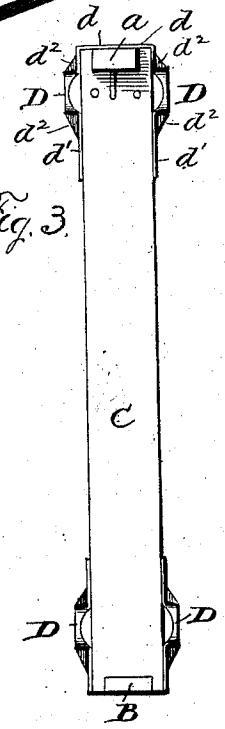


Fig. 3.



WITNESSES

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BEEHIVE-FRAME.

No. 846,396. Specification of Letters Patent. Patented March 5, 1907.

Application filed March 5, 1906. Serial No. 304,245.

To all whom it may concern:

Be it known that we, JOHN T. CALVERT and FRANK G. MARBACH, of Medina, in the county of Medina, and in the State of Ohio, have invented a certain new and useful Improvement in Beehive-Frames; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a frame embodying our invention; Fig. 2, an end elevation of two frames such as shown in Fig. 1 arranged side by side as when in use in a hive, and Fig. 3 a similar view of a frame with a different embodiment of our invention.

Our invention relates to frames for beehives; and our object is to provide a frame having metal spacers, because of certain advantages derived therefrom, and yet retain practically the advantages of the all-wood frame; and to this end our invention consists in the frame constructed substantially as hereinafter specified and claimed.

The frame we illustrate in the drawings as embodying our invention is of well-known construction and composed of two parallel top and bottom bars A and B, respectively, and two parallel end bars C, the end bars being notched at the ends to receive the top and bottom bars and the top bar being provided with a tongue or projection *a* of reduced thickness for resting on a rabbet or shoulder in the hive, whereby the frame is supported in position therein. The frames must be supported in the hive the distance of a bee-space apart, and projections of various sorts on the frames have been used for this purpose. In one embodiment of our invention the means we employ for this purpose consist of lugs or bosses D, formed on a strip of sheet metal of inverted-**U** shape, the horizontal member *d* of the strip being placed across the top of the frame where the top bar rests in the notch in the upper end of the end bar and the vertical members or legs *d'* being carried down along the side of the end bar and secured thereto, as by means of nails. Thus applied the metal strip not only carries the frame-spacing projections, but adds most substantially to the strength of the frame and at the point where, by means of its construction, it needs reinforcement. The frame-supporting tongue or projection *a* is of necessity frail and under the strains upon it is liable to split or break off; but likelihood of this is obviated by the application of the spacer-carrying strip, as described.

The spacing bosses or lugs D are formed by stamping or striking up the stock of the metal strip by diework, and, as preferably made, they have an oval or elongated form, which gives a good bearing-surface, and at each end of the oval there is a vertical rib-like formation d^2, which imparts stiffness or rigidity and whose outer sides incline inward from the face or surface of the boss or lug to prevent the lugs or bosses of two adjacent frames interlocking or catching in each other when one frame is slid past the other in manipulating them in the hive. Each lug or boss projects from its frame half a bee-space, so that the whole bee-space is provided between adjacent frames by two abutting lugs or bosses.

Preferably a plurality of lugs or bosses is provided on each side of the frame in a vertical series, and the formation of the lugs or bosses on the strip lends itself admirably to this arrangement, as thereby the one fastening means serves for several bosses or lugs, and our construction is also of value whether one or more than one boss or lug on a side is employed, because as all the strips of all the frames are made and applied uniformly alike, with the bosses in the same relation, the abutting bosses of adjacent frames always aline when the frames are in the hive. As, because of its **U**-shape form, both sides of the device are alike, there are of course no rights and lefts, and this facilitates the work of applying the device, as the care is not required in applying it which would be necessary if there were rights and lefts. In some cases where several spacer-lugs are desired on each side of each end bar of the frame the arrangement shown in Fig. 2 may be used, which involves merely the cutting off from the strip, as shown in Fig. 1, the lower lug or boss on each leg and applying it separately to the side of the end bar at or near the bottom end of the end bar.

In making our combined brace and spacers the bosses or lugs are first stamped or struck up from the straight strip of sheet metal, and then the strip is bent to its **U** shape. The use of metal is very advantageous, because

bees do not deposit propolis or bee-glue as freely upon metal as upon wood, and it does not adhere if applied to metal so tightly as to wood, and this of course is an important consideration, for it facilitates the separation of the frame for removal from the hive.

Having thus described our invention, what we claim is—

1. A hive-frame composed of vertical and horizontal bars, and a metal band extending over the horizontal bar and along each side of the vertical bar, and carrying frame-spacing means.

2. A hive-frame comprising horizontal and vertical bars having a combined strengthening and spacing device consisting of a U-shape metal band having bosses or projections.

3. A hive-frame having horizontal and vertical bars provided with a combined strengthening and spacing device consisting of a metal band extending over the horizontal bar and along both sides of the vertical bar, and provided with similar bosses or projections on both portions which extend along the vertical bar.

4. A hive-frame comprising a top bar and vertical end bars, the top bar having a portion which projects beyond each of the end bars, and a metal band extending over the top bar near each end thereof, down along both sides of each end bar, and provided with frame-spacing means.

5. A spacing device for hive-frames, consisting of a lug or boss, stamped or struck up from a metal strip, and having a stiffening rib or ribs extending from the lug or boss, the outer surface of the rib or ribs being inclined.

In testimony that we claim the foregoing we have hereunto set our hands.

JOHN T. CALVERT.
FRANK G. MARBACH.

Witnesses:
E. R. ROOT,
FRANK SPELLMAN.