

J. E. HETHERINGTON.  
Artificial Honey-Comb Foundation.

No. 208,595.

Patented Oct. 1, 1878.

Fig. 1.

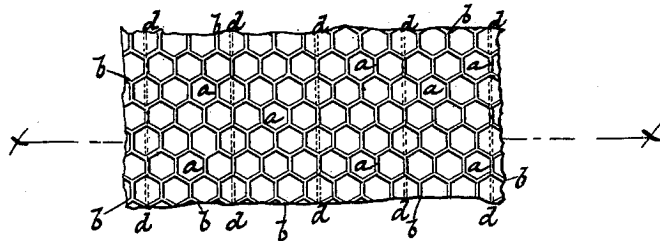
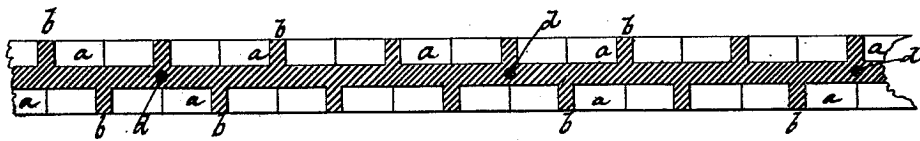


Fig. 2.



Witnesses

Otto Skupeland.  
W. C. Hauff.

Inventor.

John E. Hetherington.

by  
Van Santvoord & Hauff  
his attys.

# UNITED STATES PATENT OFFICE.

JOHN E. HETHERINGTON, OF CHERRY VALLEY, NEW YORK.

## IMPROVEMENT IN ARTIFICIAL HONEY-COMB FOUNDATIONS.

Specification forming part of Letters Patent No. **208,595**, dated October 1, 1878; application filed August 28, 1878.

*To all whom it may concern:*

Be it known that I, JOHN E. HETHERINGTON, of Cherry Valley, in the county of Otsego and State of New York, have invented a new and useful Improvement in Artificial Honey-Comb Foundations, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a front view. Fig. 2 is a transverse section in the plane *xx*, Fig. 1, on an enlarged scale.

Similar letters indicate corresponding parts.

This invention consists in the combination, with an artificial honey-comb foundation, of wires, which pass through the foundation and prevent it from sagging and stretching, and also strengthen it, thereby making it less liable to breakage while being handled.

The invention also consists in the combination, with a honey-comb foundation, of one or more supporting wires or strands, extending across the cake at suitable points, to prevent sagging when in the hive and breakage in handling.

As is well known, artificial honey-comb foundations consist of sheets or cakes of wax, which are pressed between rollers or dies, whereby the sheets receive a series of hexagonal depressions, presenting the appearance of a honey-comb in section. These cakes or foundations are placed in the bee-hives, and by this arrangement the bees are caused to build their cells regularly. It has been found, however, that these foundations stretch or sag when they are put into the hive, by which defect their utility is greatly impaired. Another objection is that these cakes are very frail, and consequently they are easily broken or cracked while being handled.

Referring to the drawings, the letter *a* designates the depression in the cake of wax, and *b* are the elevated rims or edges separating these depressions from each other. The letters

*d d* indicate a series of wires which pass through the foundation. These wires may be inserted into the sheets of wax before they are pressed between the rollers or dies; or they may be inserted during the process of manufacture, in any suitable manner, the characteristic feature or principle of the invention being that the wires or strands of inelastic material are embedded in the cake or comb, or traverse the same on either or both sides. These wires pass through or are inserted into the foundation at a distance of about seven-eighths of an inch apart. Of course, I do not limit myself to this precise distance, but I have found that the best result is obtained if the wires are thus placed.

By this arrangement I strengthen the honey-comb foundation, making it less liable to injury while being handled, and also prevent it from sagging or stretching.

Of course, I do not limit myself to wires to produce this result, since threads or strands of any inelastic or non-expanding material may be used as well.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a honey-comb foundation, of wires embedded in and passing through the foundation to increase its strength and durability, substantially as set forth.

2. The combination, with a honey-comb foundation, of one or more supporting-wires extending across the cake, whereby the sagging of the cake is obviated when in the hive and the liability to breakage in handling is prevented.

In testimony that I claim the foregoing I herunto set my hand and seal this 23d day of August, 1878.

JOHN E. HETHERINGTON. [L. S.]

Witnesses:

EDWIN JUDD,  
DEXTER R. EACKER.