

(Model.)

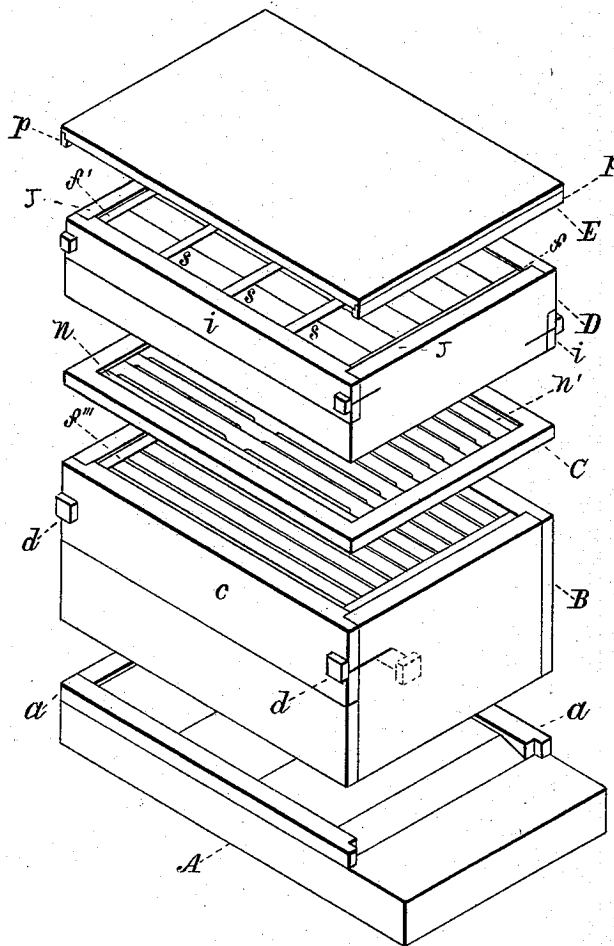
3 Sheets—Sheet 1.

E. S. ARMSTRONG.
BEE HIVE.

No. 384,819.

Patented June 19, 1888.

FIG. 1.



Witnesses.

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Inventor.

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By his Attorney F. S. Davenport.

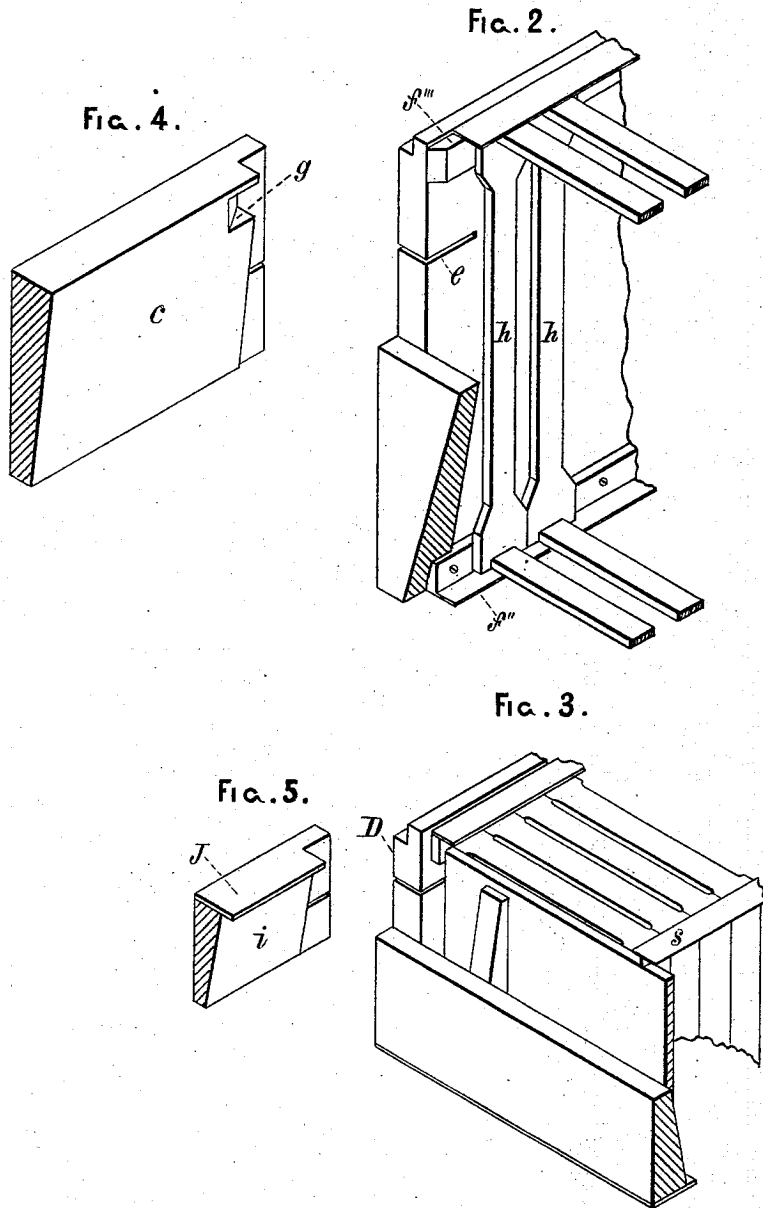
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3 Sheets—Sheet 3.

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FIG. 6.

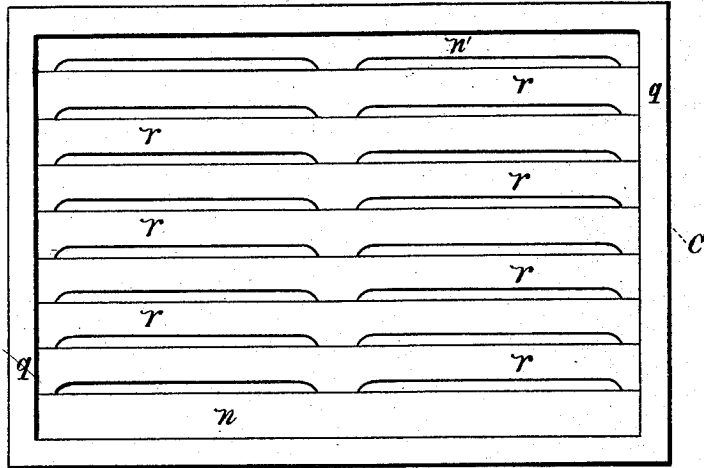


FIG. 7.

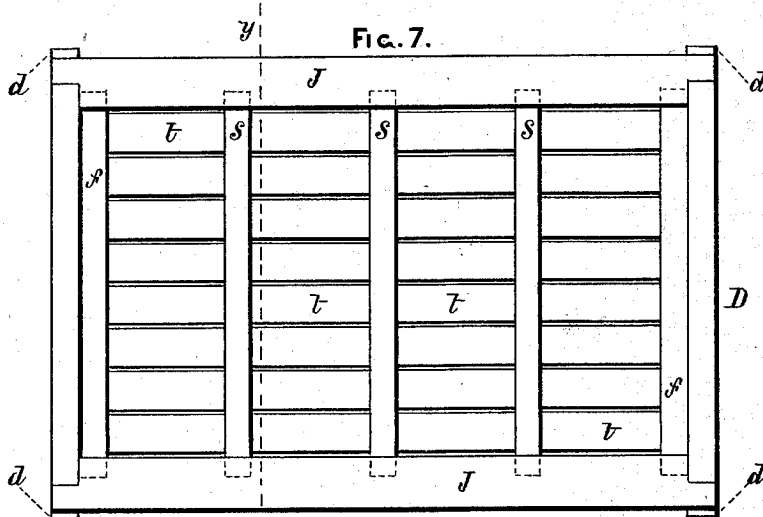


FIG. 8.

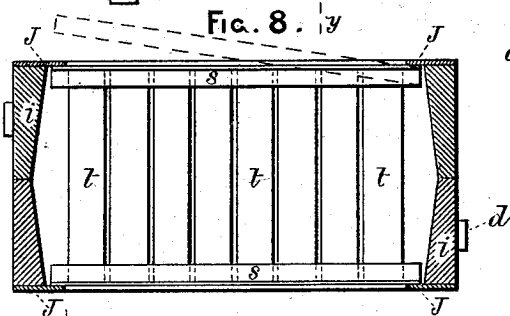
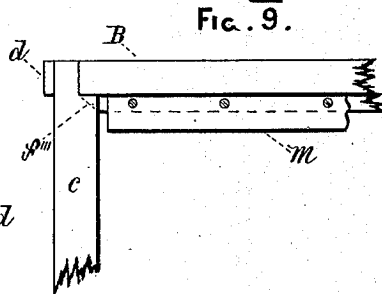


FIG. 9.



Witnesses

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UNITED STATES PATENT OFFICE.

ELVIN S. ARMSTRONG, OF JERSEYVILLE, ILLINOIS.

BEE-HIVE.

SPECIFICATION forming part of Letters Patent No. 384,819, dated June 19, 1888.

Application filed May 2, 1887. Serial No. 236,754. (Model.)

To all whom it may concern:

Be it known that I, ELVIN S. ARMSTRONG, of Jerseyville, in the county of Jersey and State of Illinois, have invented a new and Improved Bee-Hive; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to an improvement in bee-hives, my object being to provide a more simple and convenient means than heretofore in use for securing the honey-boxes in position in the honey-rack; also, to provide a very simple and reliable fastening for the removable portions of the sides of the honey-rack and brood-chamber; and, further, to provide a novel and improved means for retaining the brood-frames at a proper distance from the walls and bottom of the brood-chamber.

With these ends in view my invention consists in certain details of construction described in the following specification and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the hive, the several parts being raised one above the other to exhibit the interior structure. Fig. 2 is a perspective view of a portion of the interior of the brood-chamber, showing parts of the brood-frames and their supporting angle-bars. Fig. 3 is a similar view of a part of the honey-rack. Fig. 4 is a perspective view of one end of the inside of one of the removable parts of the side wall of the brood-chamber. Fig. 5 is a similar view of one of the removable parts of the side walls of the honey-rack. Fig. 6 is an enlarged plan view of the honey-board. Fig. 7 is an enlarged plan view of the honey-rack. Fig. 8 is a vertical sectional view of the honey-rack, taken in the line *yy*, Fig. 7; and Fig. 9 is a top view of one corner of the brood-chamber.

In Fig. 1, A represents the base of the hive; B, the brood-chamber; C, the honey-board; D, the honey-rack, and E the hive-cover.

In the construction of the floor of the base of the hive the boards are, for the purpose of economy, laid down crosswise, as shown in the figure; but to prevent unsightly openings at the sides of the hive that would result from the shrinkage of the wood, and through which

cold air would enter the hive in winter and insects in summer, I flank the ends of said boards with strips *a* secured to the base A.

The brood-chamber is provided with a removable part, *c*, of the side, said removable part being secured to the ends of the brood-chamber by fastenings *d*, which consist of flat pieces of metal having T-heads, as shown in the drawings, Fig. 1, the flat shanks being pivotally secured in slits *e* in the end walls of the brood-chamber and adapted to swing horizontally through a quarter of a circle into a slit in each end of the removable part of the side, so that the T-heads will clamp it firmly to the ends. This device, it will be observed, I also employ in the honey-rack.

f, *f*', Figs. 1, 2, 3, and 9, are angle-bars, consisting each of a strip of wood and a strip of metal, *m*, the former adapted to rest against the end walls of the brood-chamber, to which the lower angle-bars are fastened by screws or other suitable means, so as to support the brood-frames, the upper or free angle-bars being held in position by the removable part *c* of the side of the brood-chamber, (see Figs. 4 and 9,) which is provided at each end with a cavity, *g*, for the reception of one end of each of the upper angle-bars. The opposite ends of said angle-bars are secured in cavities like the one shown at *g*, Fig. 4, with which the opposite and immovable wall of the brood-chamber is provided.

It will be observed that the horizontal parts of the upper angle-bars overlap the ends of the top bars of the brood-frames, as shown in Fig. 3, and thus secure the latter downward upon the horizontal parts of the lower angle-bars.

It will be seen by reference to Figs. 1 and 3 that the honey-rack is, like the brood-chamber, provided with an angle-bar at each end, both top and bottom, and has on each side a removable part, *i*, (see Fig. 8,) secured to the ends of the honey-rack by the same means as the removable part of the side of the brood-chamber is secured to the latter—namely, by fastenings *d*.

The central part of the honey-rack is provided with cross-bars S, preferably made of tin, and are of a cross-sectional T form, the vertical parts of which rest between the rows

of honey-boxes *tt*, &c., and the horizontal parts on the top thereof, as shown in Figs. 1 and 3, both ends of each bar projecting beyond the honey-boxes and reaching beneath the flanges 5 *J*, with which the sides of the honey-rack are provided, both top and bottom, as shown in Fig. 8. The purpose of these flanges is to secure in position the cross-bars *S*, and likewise the angle-bars *f f'*, which in turn secure in 10 position the honey-boxes, as shown in Fig. 8. It will be observed that this honey-rack is of that type commonly termed "reversible"—that is, it may be used either side up—hence the purpose of the angle-bars and cross-bars 15 projecting beneath the flanges *J*, which securely retain the honey-boxes in position whichever side of the honey-rack may be uppermost.

In order to lessen as much as possible the danger of crushing the bees while working the 20 hive, the vertical end bars, *h*, of the brood-frames are cut away upon their edges, as shown in Fig. 2, thus reducing the area of the parts in contact, and consequently the liability to crush the bees when manipulating the brood- 25 frames.

The honey-board *C*, consists of a rectangular frame, *g*, filled in with thin slats *r*, (see Fig. 6,) secured at the ends to said frame, a portion of one edge of each slat being cut away, as 30 shown in the drawings, so that a short length only of the central part and a similar length on each end will be in contact with the straight edge or back of the adjoining slat, to which it is secured by glue. Between the two outer 35 slats, *n* and *n'*, there is a difference in breadth such as to make the openings between the slats, when the honey-board is placed on the brood-frames, coincide with the openings between them, and when turned end for end to make 40 the openings in the honey-board fall between those separating the brood-frames. By this means communication between the brood-frames and the honey-boxes may be either direct or indirect, as circumstances may require. 45

In order to adapt the cover *E* to fit the honey-board for the purpose of closing the hive when the honey-rack is removed, it is provided with end strips or cleats, *p*, which, when the cover is placed upon the honey-board, fit over the 50 ends of the latter, thus effectively closing the upper part of the hive.

To take out the honey-boxes, the fastenings

d are turned back, as shown in dotted lines, Fig. 1, the free part of the side is then removed and the bars *S* raised, as shown in dotted 55 lines in Fig. 8, after which any or all of the boxes may be examined or removed. The brood-frames may in a similar manner be examined or removed.

Having fully described my invention, what I 60 claim, and desire to secure by Letters Patent, is—

1. The combination, in the honey-rack, of the side walls thereof, provided with flanges *J*, the angle-bars *f f'*, and cross-bars *S*, said angle- 65 bars and cross-bars being secured in position by having their ends prolonged so as to project beneath the flanges *J*, all constructed substantially as and for the purpose set forth.

2. The combination, with the fixed ends and 70 removable parts of the sides of the hive, of the fastenings *d*, consisting of flat pieces of metal provided with T-heads, as described, the flat parts or shanks thereof being pivotally secured in slits *e* in the ends or fixed walls of the hive 75 and adapted to swing around horizontally into similar and corresponding slits in the removable parts of the walls, so as to clamp said parts securely in position, all constructed and adapted to operate substantially as and for the 80 purpose specified.

3. The combination, with the brood-chamber having a portion of its front wall removable, and the brood-frames, of supporting angle-bars *f''*, secured to the lower part of the 85 inner faces of the end walls of the brood-chamber, and removable angle-bars *f'''*, adapted to rest upon the ends of the top bars of the brood-frames and secured in position by a prolongation of the ends thereof fitting into cavities *g*, 90 located in the upper part and near the ends of the removable portion of the side wall of the brood-chamber, the opposite or fixed side wall being provided with similar cavities for the reception of the opposite ends of said remov- 95 able angle-bars, all constructed substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 25th day of February, 1887.

ELVIN S. ARMSTRONG.

Witnesses:

J. W. McEVERS,
G. R. SMITH.