March 14, 1944. O. A. COLLEY 2,344,284

COMB FRAME FOR BEE HIVES

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Fig. 1.

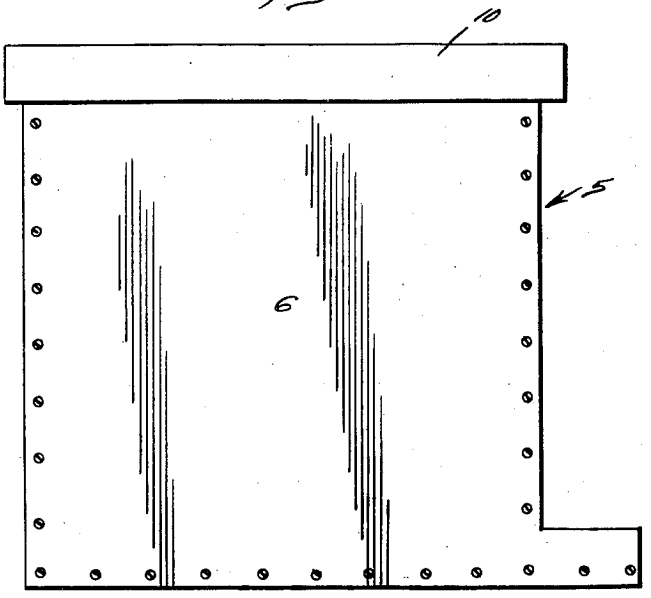

Fig. 8.

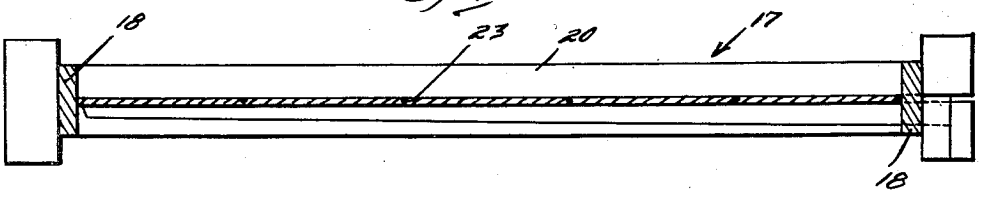

Fig. 9.

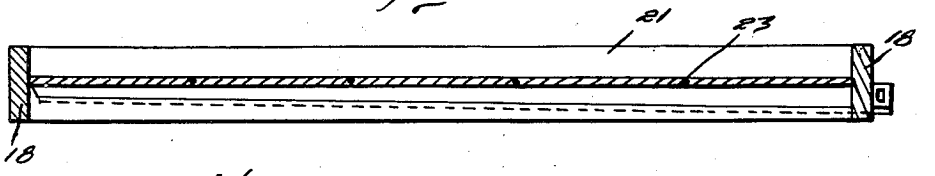

Fig. 11.

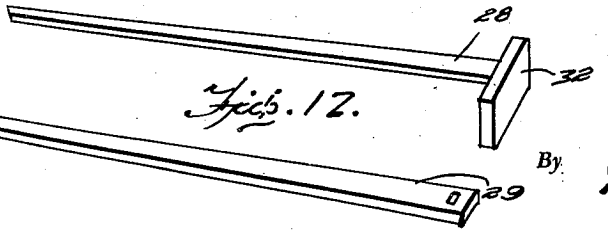

Fig. 12.

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Fig. 7.

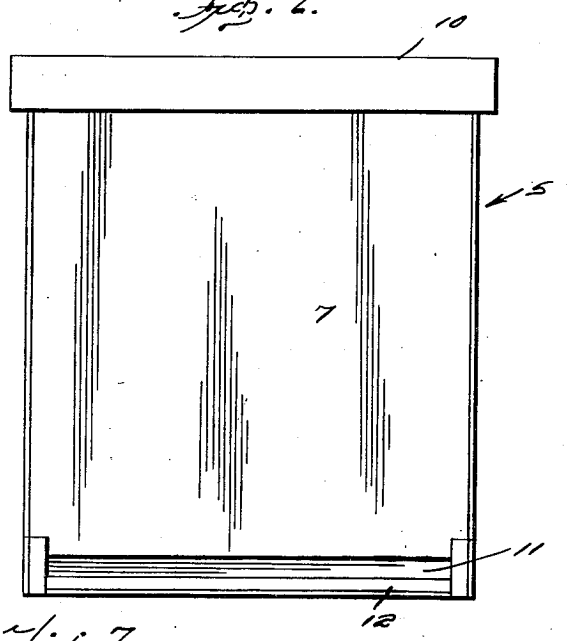


Fig. 7.

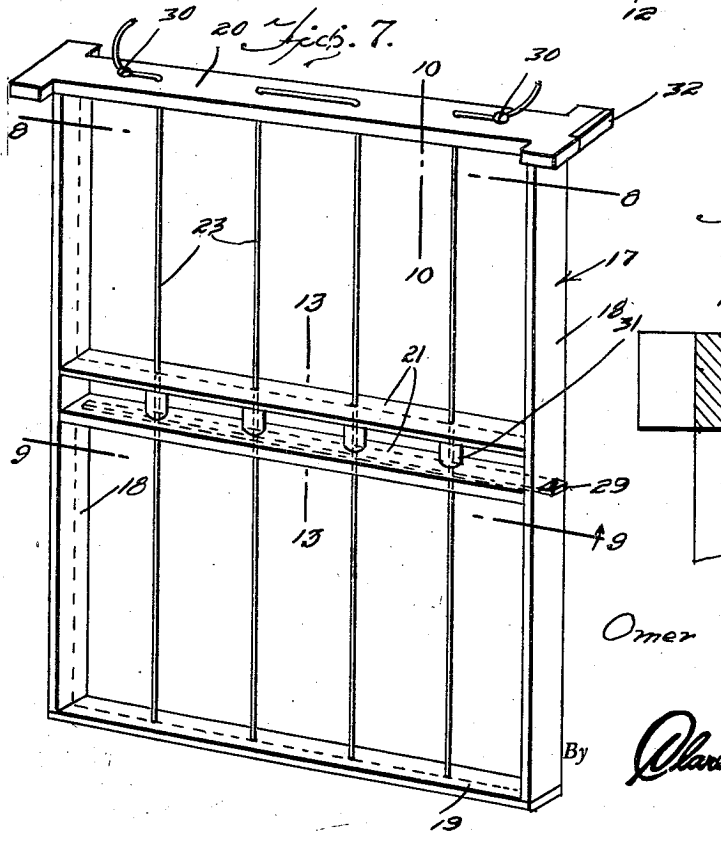
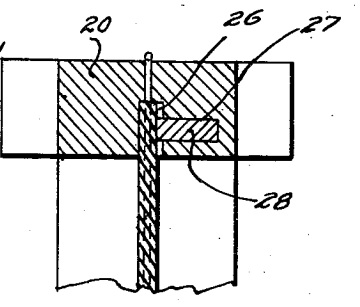


Fig. 10.



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COMB FRAME FOR BEE HIVES

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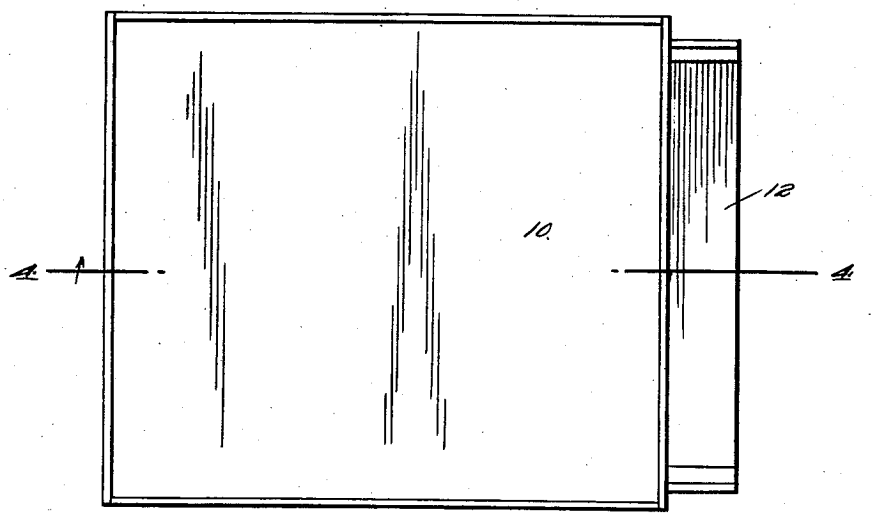
Fig. 3.



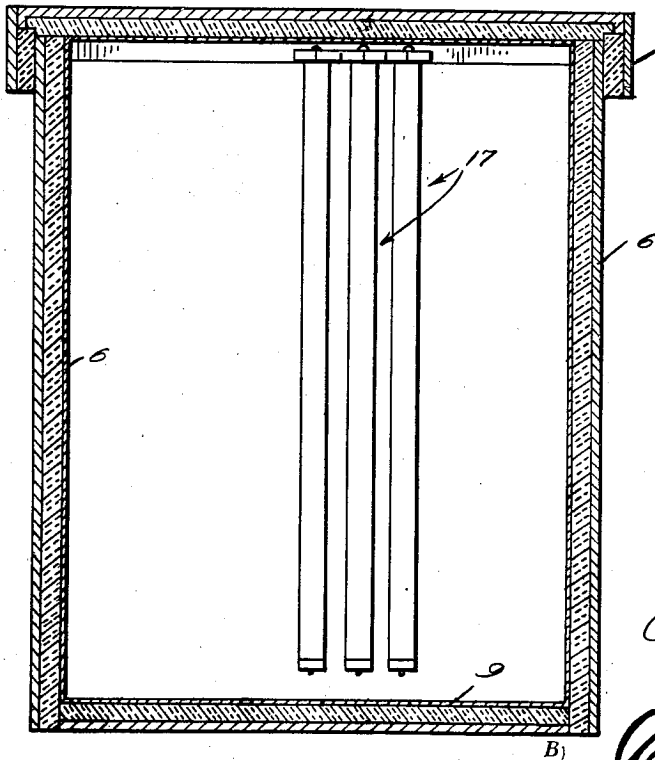
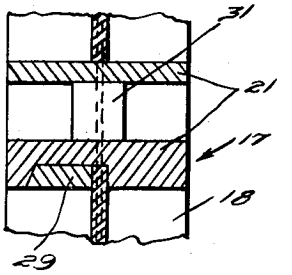


Fig. 5.

Fig. 13.



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COMB FRAME FOR BEE HIVES

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Fig. 4.

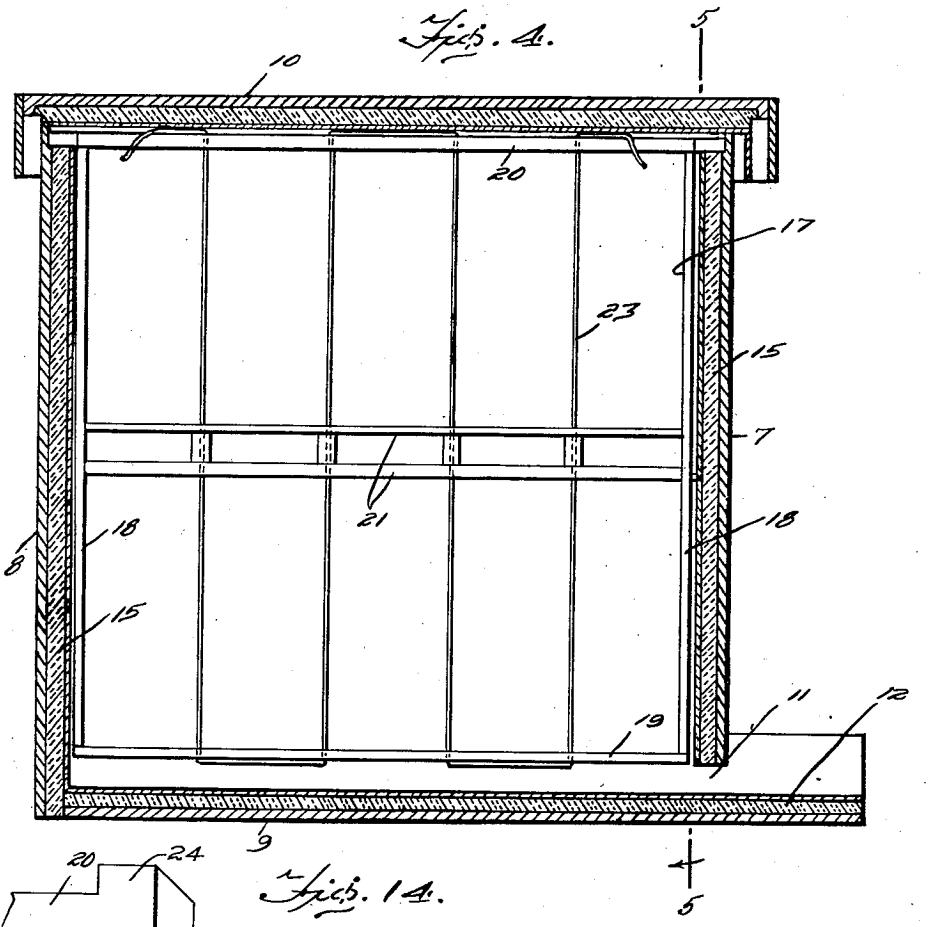


Fig. 14.

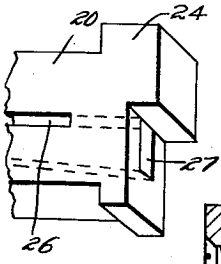
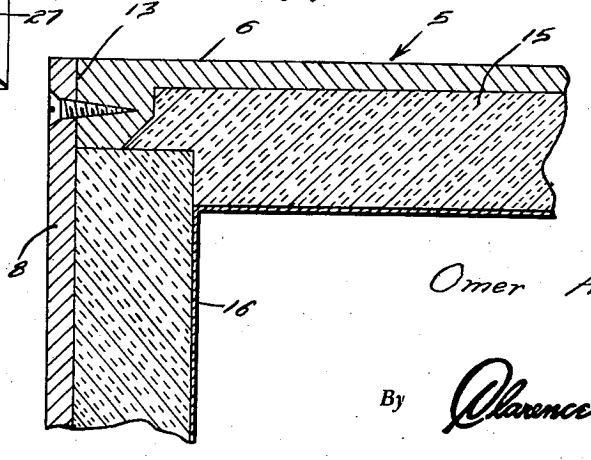


Fig. 6.



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2,344,284

UNITED STATES PATENT OFFICE

2,344,284

COMB FRAME FOR BEEHIVES

Omer A. Colley, Astoria, Long Island, N. Y.

Application February 4, 1941, Serial No. 377,383

4 Claims. (Cl. 6—10)

This invention relates to bee hives and more particularly to comb foundation supports, and has for the primary object the provision of improved means for the support of standard comb foundations and which will provide ample spaces and clearance within the hive for the bees to pass from one side of the foundation to the opposite side and from one foundation to another and further permits the honey-laden combs, which the foundations will form a part of, to be easily removed without unduly disturbing the bees.

With these and other objects in view as will become more apparent as the description proceeds, the invention consists in certain novel features of construction, combination and arrangement of parts which will be hereinafter more fully described and claimed.

For a complete understanding of my invention, reference is to be had to the following description and accompanying drawings, in which

Figure 1 is a side elevation illustrating a bee hive constructed in accordance with my invention.

Figure 2 is a front elevation illustrating the device and showing clearly the entrance for the bees to the hive.

Figure 3 is a top plan view illustrating the device.

Figure 4 is a vertical sectional view taken on the line 4—4 of Figure 3.

Figure 5 is a transverse sectional view taken on the line 5—5 of Figure 4.

Figure 6 is a fragmentary sectional view illustrating the means of joining the walls of the bee hive together.

Figure 7 is a perspective view illustrating one of the comb frames.

Figure 8 is a sectional view taken on the line 8—8 of Figure 7.

Figure 9 is a sectional view taken on the line 9—9 of Figure 7.

Figure 10 is a detail sectional view taken on the line 10—10 of Figure 7.

Figure 11 is a perspective view illustrating one of the retaining wedges.

Figure 12 is a perspective view illustrating another retaining wedge.

Figure 13 is a detail sectional view taken on the line 13—13 of Figure 7.

Figure 14 is a fragmentary perspective view illustrating one of the upper corners of the comb frame with the wedge removed.

Referring in detail to the drawings, the numeral 5 indicates as an entirety a beehive composed primarily of side walls 6, a front wall 7, a rear wall 8, and a bottom wall 9 and a removable cover 10 preferably of telescopic construction, that is, the depending flanges of the cover will receive the upstanding walls of the hive and may be easily removed from said upstanding walls when examination of the interior of the hive is necessary or for carrying out any type of work necessary for the betterment of the bees within the hive.

By referring to Figure 4 it will be seen that the front wall terminates short of the bottom wall to provide an entrance 11 for the bees to pass into and pass from the hive. Further it will be seen that the bottom wall 9 projects a limited distance beyond the front wall for the purpose of providing a landing 12 for the bees.

Suitable fasteners, as shown at 13, are employed for detachably connecting the upstanding walls to each other and to the bottom wall.

Each wall as well as the cover 10 is constructed of a densely molded weatherproof plastic material having sufficient strength to withstand loads that may be placed thereon by stacking one hive upon the other or placing supers upon the hives. Such a material is exemplified by commercially designated "Resinox" or "Bakelite." Further each wall and cover includes a layer of suitable loosely woven cellular insulating material 15 having a low rate of thermal conductivity over which is placed a covering 16 of a material readily acceptable to bees. Commercially designated "Celotex," or "Superlight" may be used for this purpose and an inner finish acceptable to bees.

Thus it will be seen that the walls as well as the cover are of laminated construction. The securing of the insulation to the composition outer layers of the walls and cover may be carried out in any well known manner. A hive constructed in accordance with the foregoing description will be extremely durable and capable of withstanding weather elements for long periods of time and further will provide a very desirable insulation to the interior of the hive against either hot or cold temperatures. Furthermore it will be seen that the construction generally speaking is such that a hive of this kind may be readily used in conjunction with bee equipment now in use, consequently obviating the necessity of the bee keepers discarding present-day equipment.

The upper edges of the front and rear walls, as shown in Figure 4, are notched for the support in suspended condition within the hive of any selected number of comb frames 17, the latter being so constructed that when placed in operation within the hive there will be provided between ad-

joining frames ample space for the bees to move without undue crowding. Also by referring to Figure 5 it will be seen that the bees are free to move either over or under the comb frames as well as between said comb frames. It is to be understood that the comb frames are for the purpose of supporting in the hives standard comb foundations and the spacing of the comb-frames is important so that the bees may fill the combs with honey on either face of each foundation and will not be hampered or disturbed in their work upon the foundations.

Each comb frame 17 consists of end vertical members 18 connected by a lower member 19 and an upper member 20 and relatively spaced intermediate members 21. The members 18, 19, 20 and 21 are of integral construction and preferably constructed of a suitable plastic material.

The members 19, 20, and 21 are provided with openings through which may be laced a wire 23 in such a way as to provide parallel runs and which runs coact with the members of the comb frame in supporting comb foundations.

By referring to Figure 4 it will be seen that the upper member 20 of the comb frame is of a greater length than the lower member 19 and projects a limited distance beyond each of the vertical members 18. The projected ends of the upper member 20 are cutaway to form a shoulder 24 at each end of said member to engage and rest upon the notches formed on the front and rear walls of the hive thereby suspending the comb frames within the hive with sufficient clearance to permit bees to readily pass about each comb frame and between the latter and the walls of the hive.

Each upper member 20 of the comb frames 17 is provided with a groove 26 to receive therein a portion of the foundation, also the upper member is provided with a groove 27 opening outwardly through one of the shouldered ends of the upper member and in communication with the groove 26 for the purpose of receiving a wedge type key 28 which may act upon the foundation for wedging the latter into the groove 26 and against accidental displacement therefrom. The lower edge of the foundation rests upon the uppermost intermediate member 21 while the lower intermediate member has grooves equivalent to the grooves 26 and 27 to receive a wedge type key 29.

The key 29 performs the same function as the key 28, that is securing the lower foundation in the lower portion of the comb frame. It is to be understood that the lower edge of the lower foundation rests upon the member 19 of the comb frame. Further, it is to be understood that when the foundations are placed in the comb frame 17 as shown in the drawings and above described in detail that the foundations are pressed against the runs of the wire so that the wire becomes embedded therein further assisting in securing the foundations in place within the comb frame. The ends of the wire are secured on the upper member 20 by screws or like fasteners 30 which will permit easy renewal of the wire in the comb frame when necessary or when removing a foundation therefrom the wire can be easily detached from the sash frame.

Suitable spacers 31 are mounted on the runs of the wires and located between the intermediate members 21 for reinforcing said members. It will be seen that the intermediate members 21 provide ample space therebetween for the passage of bees from one side of the foundation to another intermediate the upper and lower ends of the sash frame.

The key 28 has an end portion 32 which will readily fit in or fill a notch provided in one of the extended ends of the member 20 as clearly shown in Figure 7 so that the key in no way will interfere with the extended end fitting in the notch of the wall of the hive.

It is to be understood that any number of comb frames may be placed in the hive and spaced a selected distance from each other and in no instance can the comb frames be brought together to such an extent that free passage of bees between the comb frames would be prevented.

The use of a hive of the construction shown in the drawings and described heretofore in detail will materially simplify the care of bees in all seasons of the year and from actual use of such a device it has been found that in warm weather bees when housed therein will not tend to swarm out around the sides of the hive and clog the entrance and which assists in preventing bee crowding and swarming and consequently increases honey gathering by permitting bees of healthier condition to be reared. In cold weather the bees will be maintained sufficiently warm to prevent casualties and in spring weather a condition of even temperature prevails within the hive thus inducing early brood rearing and assuring strong early colonies of bees.

Further through the use of a device of this construction the bees are left on the same stands winter and summer which renders a large saving in labor, expense, packing and otherwise handling of the bees for winter time.

While I have shown and described the preferred embodiment of my invention, it will be understood that minor changes in construction, combination and arrangement of parts may be made without departing from the spirit and scope of the invention as claimed.

Having thus described my invention, what I claim is:

1. In a comb foundation support for a bee hive, a substantially rectangular shaped composition frame including vertical members and horizontal upper and lower members and intermediate and spaced horizontal members, a supporting wire laced through the intermediate members and the upper and lower horizontal members of the frame, said upper member of the frame and the lowermost of the intermediate horizontal members having grooves with the grooves of each member in communication with each other and with one groove opening outwardly through one of the vertical members of the frame, one groove of each of said members receiving a standard comb foundation with the lower edges of said foundations resting on the uppermost longitudinal member and the lower member of the frame with the runs of the wire impressed within said foundation.

2. In a comb foundation support for a bee hive, a substantially rectangular shaped composition frame including vertical members and horizontal upper and lower members and intermediate and spaced horizontal members, a supporting wire laced through the intermediate members and the upper and lower horizontal members of the frame, said upper member of the frame and the lowermost of the intermediate horizontal members having grooves with the grooves of each member in communication with each other and with one groove opening out-

wardly through one of the vertical members of the frame, one groove of each of said members receiving a standard comb foundation with the lower edges of said foundations resting on the uppermost longitudinal member and the lower member of the frame with the runs of the wire impressed within said foundations, and wedges to enter the grooves of the frame for securing the foundations within their respective grooves.

3. In a comb foundation support for a bee hive, a substantially rectangular shaped composition frame including vertical members and horizontal upper and lower members and intermediate and spaced horizontal members, a supporting wire laced through the intermediate members and the upper and lower horizontal members of the frame, said upper member of the frame and the lowermost of the intermediate horizontal members having grooves with the grooves of each member in communication with each other and with one groove opening outwardly through one of the vertical members of the frame, one groove of each of said members receiving a standard comb foundation with the lower edges of said foundations resting on the uppermost longitudinal member and the lower member of the frame with the runs of the wire impressed within said foundations, wedges to enter the grooves of the frame for securing the foundations within their respective grooves, and spacers mounted on the runs of the wires and located between the intermediate and longitudinal members of said frame, said wires having their ends detachably secured to the upper member of the frame.

4. In a comb foundation support for a bee hive, a substantially rectangular composition frame including vertical members and horizontal upper and lower members, a supporting wire laced through the upper and lower horizontal members, the upper horizontal member having grooves therein in communication with each other, and one groove opening outwardly through one of the vertical members, one of said grooves receiving a standard comb foundation with the lower edge of the foundation resting on the other horizontal member and with the runs of the wire impressed therein, and wedge means coacting with a groove to secure the foundation therein.

OMER A. COLLEY.