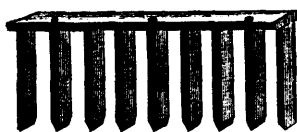


### The Wilcox Spacer.

**T**HE Spacers that I am using are made with top bars as long as the width of the hive, inside,  $1\frac{1}{2}$  inches wide and about  $\frac{1}{2}$  inch thick. These are designed to rest on the ends of the frames over the rabbet of the hive, one in each end of the hive. To these I nail strips of wood a little less than  $\frac{1}{2}$  inch wide, 4 inches long and a little more than  $\frac{1}{2}$  inch apart, so as to make downward extending arms to go between the end bars of the frames, and give the proper spacing to the frames. These spacers will not stand rough handling, but are strong enough for practical use in the hive, and have the merit of being cheap. For making a hive reversible, I make holes through the top bar for screws, so that they catch in the rabbet of the hive and hold the frames when the hive is inverted.

IN REGARD TO THEIR MERITS.



An ordinary hanging-frame hive is converted into a reversible or movable hive. A hive is quickly and correctly spaced, and the frames are held in their proper position, and will not be lifted when removing the cover if they are fastened to it by brace combs. A contracted hive is made movable or invertible. By having the downward extending arms as long as the end bars of the frames, and suitable division boards in place of the outside frames, a hive is converted into a double-walled hive with the spaces between the end bars of the frames closed. This is a great aid to a weak colony in building up in the spring, if the hive is well packed on top of the frames. By putting one in the middle of the bottom board, and one on each side of the middle of the hive on the top of the frames, combs can be put into empty frames and held in position by the spacers until the bees fasten them to the top bars of the frames, when the spacers can be removed.

They prevent the bees getting to the ends of the frames over the rabbet of the hive, therefore, the frames are not stuck to the hive with propolis. By cutting the top bar into sections of any desired length, the sections can be easily pried apart and lifted out of the hive. In adapting this it requires no change in a hanging-frame hive with  $\frac{3}{4}$  inch frame giving the advantages of the Hoffman frame, with a better form of frame for extracting purposes.

The amateur with a small number of colonies, who does not have fixed distances or swarming device, can commence the use of spacers by getting a few pairs, and putting them in hives prepared for swarms. If the frames should be too large to let the spacers go down easily, they can be rasped off with a coarse flat file; and if there is not sufficient bee space above the frames to let the top of spacer down even with the top of the hive, the ends of the top bars of the frames can be rasped thinner, either on the upper or under side. When the swarm clusters on the limb of a tree, the hive can be taken to the bees and by shaking the bees into a dish-pan on the end of a pole, and pouring them in front of the hive, they are quickly hived, the spacer preventing the frames being disarranged when handling the

hive. The spacers should be left in the hive until the combs are formed, when they can be removed.

Those with large numbers of colonies would use them in moving bees to out-apiaries, shipping cases, and experimental purposes that cannot be as well performed with loose frames. Should they wish to invert a contracted hive, they can cut a  $\frac{3}{4}$  inch board to fit the inside of an empty frame, and nail it in for a division board. If the bottoms of the frames are even with the bottom of the hive a  $\frac{1}{2}$  inch rim should be tacked on the bottom of the hive to make a bee space when the hive is inverted. To invert, remove the cover and put a bottom board in its place. Then put a cord twice around the hive near the middle and tie. Draw the cord taut toward the ends of the hive and invert the hive. Whole spacers can be worked in warm weather, when propolis is soft and yielding. In cool weather propolis becomes hard and unyielding; but by cutting the top bar into sections, and having a division board at one side of the hive, a section can be removed as easily as a single frame where spacers are not used, and after it is lifted from the hive, frames can be easily pried out. It is important that the apiarist should have system, and cut all spacers by a gauge, so that a section in one hive will correspond with one in all hives.

J. B. WILCOX.

Manistee, Mich.

Having the ends closed to save heat is a good point. That is one advantage with the Hoffman frames or the closed end frames. This device actually makes closed end frames, and yet use ordinary frames. With the improved machinery now in use, there should be no difficulty as to their fitting, as all pieces are cut to certain sizes with absolute accuracy. Any one wishing to try the reversed principle may do so, and test it thoroughly with this device. There is this point about it, that Mr. Wilcox in his description has failed to mention, that by reversing the hive as soon as the combs will permit it, they would become attached firmly to the bottom bar, which becomes the top bar when inverted. Combs will attach to the bottom bar the same as to the top bar, and are much more easily and safely handled. Such combs are worth more, in our opinion, not only for shipping, but for ordinary purposes, as queens can be found more readily and the ordinary manipulation of the hive carried out more rapidly and satisfactorily. This is one good point we found in connection with the Heddon hive. The narrow combs would be attached all round, and in fact we had hundreds of them that were so attached that one could not tell which was the top or bottom bars when the combs were out of the hive.