

inch apart. Some simply use distance pins as seen at Fig. 2 others use wire staples instead of pins, others again tack on small blocks of wood on each side of the top bar just where the pins are in the cut. Mr. Abbott makes a frame with a top bar shown at Fig. 3.



FIG. 3.

It is known as Abbott's 'broad shoulder' top bar. There are thousands of these in use, but the most popular of all distance guides are what is known as 'metal ends.' All my own hives are fitted with them. They are made of type metal and cast in a mould. Lead is too soft and zinc is too hard, they must be tough so a mixture of lead and antimony are used for it. They are sold for 4s. 6d. (\$1.00) a gross and are made very rapidly; the labor price being about 2s. 2d. per gross.

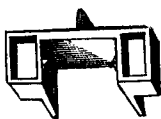


FIG. 4.

These metal ends (Fig. 4) are forced on the top bar tight. When you wish to extract they are drawn off and replaced before you return the frame to the bees. These various devices make the distance very arbitrary, but by drawing off every other one you can reduce the distance to $1\frac{1}{2}$ in. but it leaves the tops of your bar unlevel. It is more simple to expand them for winter, but that is seldom done with us.

In manipulating you can push your whole set of frames from one side of the hive to the other without fear of injury to the bees. The distance pins or metal ends prevents a 'jam,' and the side walls of the hives prevent lateral movement to the frames; the metal ends especially prevent propolizing and form very easy runners for the frames. We get our combs built in the frames as true and level as boards consequently they are interchangeable, are easy to uncap for extracting and when fitted with distance pins or some kind can be pressed together with the confidence that you have not given the bees a night's work at cutting fresh 'bee ways' between some of the combs. I believe metal ends are unknown with you, we have used them seven or eight years, and they are yearly getting more popular. A standard frame is too stereotyped an idea for you to adopt I suppose, but after all

a bee hive is like a plow; much of the success or failure lays 'behind the handles.'

My next must be a few samples of British hives but they all take the standard frame.

AMATEUR EXPERT.

England, Oct. 26th, 1887.

SUNDRY SELECTIONS.

GEO. H. HALL.—I put 16 swarms into winter quarters the 12th for the purpose of experimenting. Part are very weak and part are very strong. I will post you from time to time in regard as to how they are wintering. It has been the poorest honey season I have known during my eleven year's experience.

Rumney, N.H., Nov. 23, '87.

A GOOD WORD FOR FORCE PUMPS.

J. K. DARLING. The pumps came to hand in good order but literally "one day after the fair" as I was just getting my stuff home again. I am well pleased with them but have not been put to the necessity of using them as the danger had passed by the time they arrived. I do not think, however, that I will ever be without them around the place again. It is surprising to see with what force they throw a steady stream.

Almonte, Nov. 18th, 1887.

THE EXTENT OF VENTILATION REQUIRED IN REPOSITORIES.

ADOLPHE BLAIS.—Will you be good enough to favor me with your opinion on the following point? I have a small cellar, 16 ft. square, and 3 ft. deep, and in it I have 50 colonies of bees, placed there the last day of October. The only ventilator in the cellar is one three inches square that runs up through the loft, but not through the roof. Some of my friends advise me to put in another ventilator, connected with the stovepipe. I have no other way of giving them ventilation than through the roof, or up the chimney by way of the stovepipe. The cellar is a very dry one. I wintered in it, last winter, 25 colonies, and all came out in good condition and strong. It may be that I have put my bees into winter quarters a little early, but it is a sort of experiment.

Glen Sandfield, Nov. 6, 1887.

If they will keep cool enough (say from 45 to 47°), we think the one ventilation pipe is sufficient, but if you find the temperature running up to 50° or more, you might put in the other ventilator. Putting double as many colonies in the same repository will change the temperature considerably, making it much warmer. If you find them getting too warm during this fine weather, you might open the windows at night and allow the cellar to cool off, closing them again in the morning before daylight.