

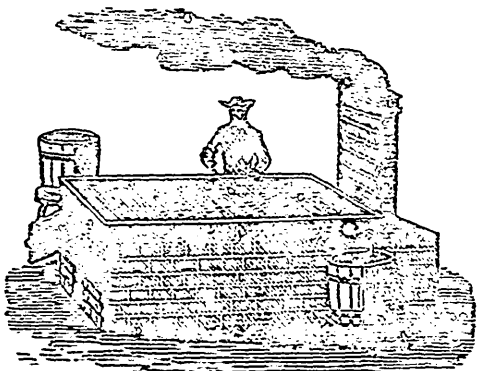
"Having bought your iron, get it cut the proper size by the tinsmith, or if you have shears large enough to cut it, you can do it yourself. Turn over three-quarters of an inch of each inside edge, and lock them closely together with a hammer. Place it on a solid block of wood, and with a punch make a row of holes, half an inch apart, the whole length of the seam. Then put in your rivets, and clinch them tightly. Now with a straight edge mark off 7 inches all around the edge of your iron, then cut it in the shape shown in fig. 1.

"Turn up the ends first, next the sides, which will project beyond the ends; these must be bent over and riveted with two rows of rivets to the ends. Scrape the inside lower corners with a file till they are bright—then apply with a brush a few drops of muriatic acid, diluted with as much zinc as it will dissolve. It can then be soldered the same as tin. The bale should be an iron rod $\frac{1}{2}$ inch in diameter. Get the blacksmith to bend the corners and weld it. To put it on, cut down each corner one inch and bend the iron round the bale. The last thing is the handles, four in number, which the blacksmith will also make, and you have a finished pan, warranted not to leak, at a cost of say .

30 lbs. iron, at 7 cents.....	\$2 10
Punch.....	12
Rivets, acid, solder, etc.....	25
Iron for bale and handles, and making same	75—\$3 22

"Such a pan," he says, "will last 12 to 16 years, and be large enough for 200 trees, without much night work. The rivets may be bought at hardware stores for 25 cents per 1,000. It should have ears or handles riveted on at the corners, for convenience in lifting."

A better contrivance than that just described is the Evaporating Pan represented in the accompanying illustration. The entire arrangement as shown in the engraving, consists of a brick chamber, which encases a fire-box; a brick



chimney to carry off the smoke; a raised barrel to supply sap to the pan; the pan itself, made of tin, sheet iron, or copper, and crossed by raised ledges with open spaces at alternate ends to produce a lessened flow of the liquid to the outlet; and finally a tub or vessel to receive the syrup when the boiling process is finished.

The philosophy of this Evaporator is embodied in the following principles:—

1. To evaporate with the utmost rapidity. Too long boiling darkens the syrup and injures the crystals.

2. To heat intensely and cool quickly for skinning purposes. This operation secures a more perfect clarification than by the use of chemicals.

3. To remove the syrup from the evaporator upon the instant it has attained the point of crystallization, and yet in such a manner that there is no danger of the syrup scorching after it is deposited in the coolers, as it is liable to do when removed in large batches.

To secure rapidity of evaporation, a very shallow body of juice is used; and, as this shallow body would be liable to burn if not in continual motion, a running stream of juice is introduced. But this would be of little avail were no means provided for increasing or retarding its speed to correspond with the heat, so that it shall always reach the outlet just as it has attained the right thickness. For this purpose gates are used. By means of these it is easy to change the motion, and thus increase or retard the speed of the current.

Cool surfaces are afforded at the sides, to which the scum will retire, and thus prevent remingling with the sap and injuring the sugar, as is the case in common pans.

The ledges are introduced:—1. To lead the juice back and forth, first, over the heated centre of the pan; then to the cool sides, where the scum is collected. 2. These ledges serve as arrests to prevent the scum passing down the pan into the finished syrup. 3. A great advantage in the use of a transverse current is that the syrup may be safely brought to a sudden and much higher heat than in the common pan, for it is immediately led to the cool side, the scum deposited, and all danger of scorching obviated.

The Evaporating pan is constructed of sheet metal, copper or iron, with wooden sides, and so divided by ledges as to form a continuous transverse channel.

From the foregoing description any competent tinsmith can make the pan in question, but we have authority from Mr. L. F. Bungay of Norwichville, Ont., for stating that he is prepared to furnish them at the following prices:—

No. 1. Iron, 40 in. by 104.....	\$20
No. 2. Iron, 40 in. by 123.....	27
No. 3. Iron, 40 in. by 144.....	30
No. 4. Iron, 40 in. by 164.....	35

We add the following directions for using this Evaporating Pan:—

1. Place the pan upon the arch, perfectly level, and close the outlet with a cloth-covered plug; cover the bottom of the pan with juice. As the juice becomes reduced, draw off some from the lower channels, and return to the upper, until the syrup in the last channel has become of the right thickness, when the plug may be opened sufficiently to allow of the escape, into coolers, of a small stream.