from the preparing pan into the ſalt pans. Various other contrivances have been invented to leſſen the ex­pence of fuel, and ſeveral patents have been obtained for that purpoſe; but the ſalt-boilers have found their old methods the moſt convenient.

Between the ſides of the pan and walls of the boiling-houſe, there runs a walk five or fix feet broad, where the workmen ſtand when they draw the ſalt, or have any other buſineſs in the boiling-houſe. The ſame walk is continued at the end of the pan, next to the chimney; but the pan is placed cloſe to the wall at the end adjoining to the fore-houſe.

The roof of the boiling-houſe is covered with boards faſtened on with nails of wood, iron nails quickly mouldering into ruſt. In the roof are ſeveral open­ings, to convey off the watery vapours; and on each ſide of it a window or two, which the workmen open when they look into the pan whilſt it is boiling.

Not far diſtant from the ſaltern, on the ſea-ſhore, be­tween full ſea and low-water marks, they alſo make a little pond in the rocks, or with ſtones on the fand, which they call their *ſump.* From this pond they lay a pipe, through which, when the tide is in, the ſea- water runs into a well adjoining to the ſaltern; and from this well they pump it into troughs, by which it is conveyed into their ſhip or ciſtern, where it is ſtored up until they have occaſion to uſe it.

The ciſtern is built cloſe to the ſaltern, and may be placed moſt conveniently between the two boiling- houſes, on the back fide of the fore-houſe; it is made either of wood, or brick and clay; it ſometimes wants a cover, but ought to be covered with a ſhed, that the ſalt-water contained therein may not be weakened by rains, nor mixed with ſoot and other impurities. It ſhould be placed ſo high, that the water may con­veniently run out of it, through a trough, into the ſalt pans.

Beſides the buildings already mentioned, ſeveral others are required; as flore-houſes for the ſalt, ciſterns for the bittern, an office for his majeſty’s ſalt officers, and a dwelling-houſe for the ſalt-boilers.

All things being thus prepared, and the ſea-water having ſtood in the ciſtern till the mud and fand are fettled to the bottom, it is drawn off into the ſalt pan. And at the four corners of the ſalt-pan, where the flame does not touch its bottom, are placed four ſmall lead pans called *ſcratch pans,* which, for a ſalt-pan of the ſize above-mentioned, are uſually about a foot and an half long, a foot broad, and three inches deep; and have a bow or circular handle of iron, by which they may be drawn out with a hook, when the liquor in the pan is boiling.

The ſalt pan being filled with ſea-water, a ſtrong fire of pit coal is lighted in the furnace; and then, for a pan which contains about 1400 gallons, the ſalt- boiler takes the whites of three eggs, and incorporates them well with two or three gallons of ſea water, which he pours into the ſalt-pan while the water con tained therein is only lukewarm; and immediately ſtirs it about with a rake, that the whites of eggs may every where be equally mixed with the ſalt water.

Inſtead oſ whites of eggs, at many ſalterns, as at moſt of thoſe nigh Newcaſtle, they uſe blood from the butch­ers, either of ſheep or black cattle, to clarify the ſea-

water: And at many of the Scots ſalterns they do not give themſelves the trouble of clarifying it.

As the water grows hot, the whites of eggs ſeparate from it a black frothy icum, which ariſes to the ſurface of the water, and covers it all over. As ſoon as the pan begins to boil, this ſcum is all riſen, and it is then time to ſkim it off.

The moſt convenient inſtruments for this purpoſe are ſkimmers of thin aſh boards, ſix or eight inches broad, and ſo long that they may reach above half way over the ſalt-pan. Theſe ſkimmers have handles fitted to them; and the ſalt-boiler and his aſſiſtant, each hold­ing one of them on the oppoſite ſides of the pan, apply them ſo to each other that they overlap in the middle, and beginning at one end oſ the pan, carry them gently forward together, along the ſurface of the boiling li­quor, to the other end; and thus, without breaking the ſcum, collect it all to one end of the pan, from whence they eaſily take it out.

After the water is ſkimmed, it appears perfectly clear and tranſparent; and they continue boiling it briſkly, till ſo much of the freſh or aqueous part is evaporated, that what remains in the pan is a ſtrong brine almoſt fully ſaturated with ſalt, ſo that ſmall ſaline cryſtals begin to form on its ſurface; which operation, in a pan filled 15 inches deep with water, is uſually performed in five hours.

The pan is then filled up a ſecond time with clear ſea-water drawn from the ciſtern; and about the time when it is half filled, the ſcratch-pans are taken out, and being emptied of the ſcratch found in them, are again placed in the corners of the ſalt-pan. The ſcratch taken out of theſe pans is a fine white calcareous earth found in the form of powder, which ſeparates from the ſea-water during its coction, before the ſalt begins to form into grains. This ſubtile powder is violently agi­tated by the boiling liquor, until it is driven to the cor­ners of the pan, where the motion of the liquor being more gentle, it ſubſides into the ſcratch pans placed there to receive it, and in them it remains undiſturbed, and thus the greateſt part of it is ſeparated from the brine.

After the pan hath again been filled up with ſea-water, three whites of eggs are mixed with the liquor, by which it is clarified a ſecond time, in the manner before deſcribed; and it is afterwards boiled down to a ſtrong brine as at firſt; which ſecond boiling may take up about four hours.

The pan is then filled up a third time with clear ſea- water; and after that, a fourth time; the liquor being each time clarified and boiled down to a ſtrong brine, as before related; and the ſcratch-pans being taken out and emptied every time that the pan is filled up.

Then, at the fourth boiling, as ſoon as the cryſtals begin to form on the ſurface of the brine, they ſlacken the fire, and only ſuffer the brine to ſimmer, or boil very gently. In this heat they conſtantly endeavour to keep it all the time that the ſalt corns or granulates, which may be nine or ten hours. The ſalt is ſaid to granulate, when its minute cryſtals cohere together into little maſſes or grains, which link down in the brine and lie at the bottom of the ſalt pan.

When moſt of the liquor is evaporated, and the ſalt thus lies in the pan almoſt dry on its ſurface, it is then