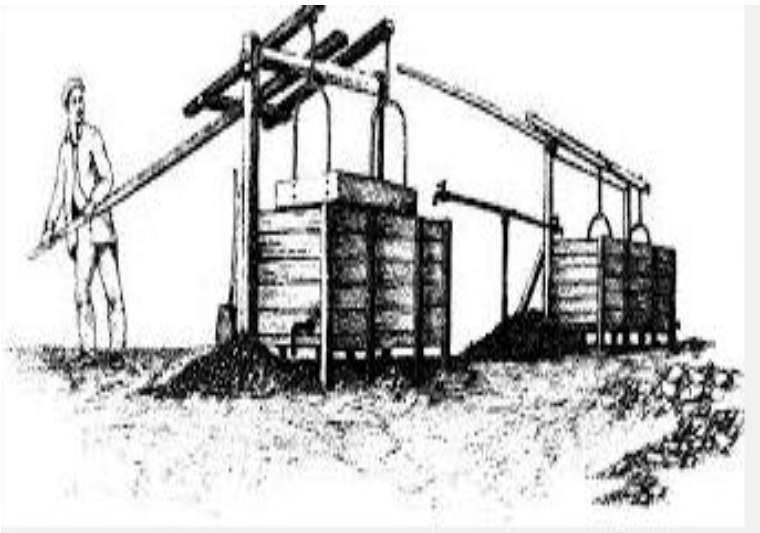
Dressing the Ore

When the ore was brought out of the mine it was described as ‘bouse’ as it was still mixed with rock, clay and other minerals and so needed ‘dressing’ to prepare it for smelting. The ore was tipped into bouse teams; these were rows of stone storage bays and many can still be seen today. Each mining partnership had their own bay so the mine agent could keep an accurate record of ore produced and ensure correct payment to the miners.

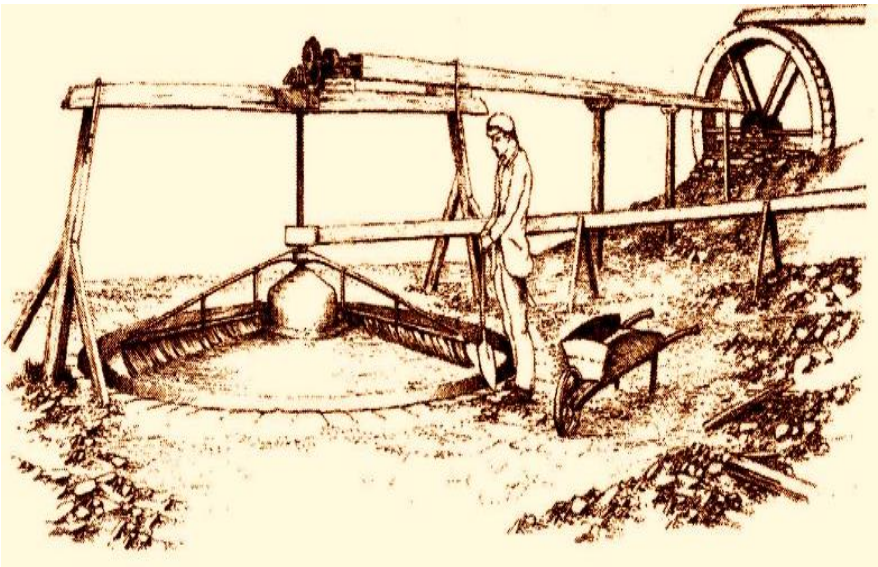
The bouse was separated by hand into three categories: pure ore (which went straight to the bingsteads), mixed ore and rock *(chats)* and waste rock. The mixed ore and rock was crushed either by hand with stone hammers *(buckers)* on a knock stone, or by crushers powered by a waterwheel. From 1800 onwards larger mines installed large crushers that could process about 10 tons per hour. This saved considerable time and labour costs and as a result allowed previously poor veins to be worked profitably. Any pieces too large to go in the crushers still had to be broken into smaller pieces with sledgehammers. Women and children worked on the dressing floors.



Hotching Tub

The crushed material was then transferred to a hotching tub, this was a rectangular box with a wire mesh bottom which was suspended in a tub of water. The box hung from two handles which could be jiggled by a longer handle. The mineral was placed onto the mesh box and was agitated by the handle. The finer material *(smitham)* would pass through the sieve and remaining material sorted for the next stage. The heavier ore would be on the bottom level of the sieve, mixed ore and rock in the middle and waste rock on the top. As lead ore had the heaviest density it always settled first.

When the hotching tub was full of smitham, the contents were taken out and treated in a buddle. This had a sloping floor of flagstones or wooden planks with low walls around. The back wall allowed a steady stream of water in and piles of smitham were placed at this end. The smitham was then raked against the water flow so allowing the heaviest particles to settle at this end and the lighter particles that had no ore to be washed out of the buddle. The material left in the buddle head was pure ore and taken to the bingsteads for smelting, the light waste was then transferred to slime pits for settling out.



Circular Buddle

The remaining material at the buddle bottom still held some ore so it had further treatment in a trunk buddle, and was reworked until the material that was left *(slime ore)* was ready to be transferred to a dolly tub. The tub was filled with water and slime ore poured in and mixed thoroughly; workmen then hit the side of the tub with hammers which helped the heavier lead particles settle to the bottom.

These labour intensive, complex processes ensured the maximum amount of ore was extracted from all dressed bouse and indicates how valuable the lead ore was.

References: Gill, M. (1993) Swaledale Mines & Smelt Mills. Landmark & Mills, A. (2011) Mining & Miners in Swaledale)