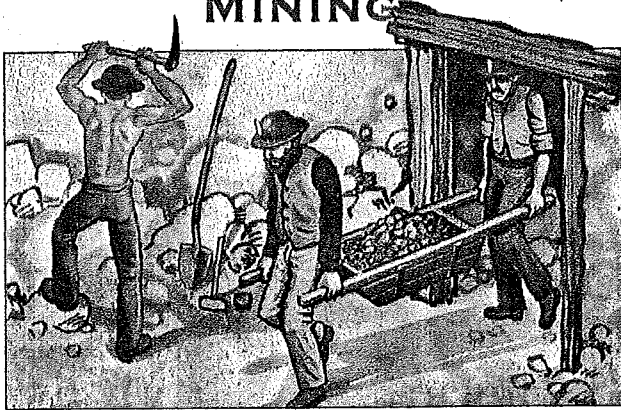


MINES

MINING



EARLY mining operations were labour-intensive. Most of the copper ore lay beneath the surface, and had to be dug out using picks and shovels. The miners worked long hours, six days a week.

Miners usually worked a stope - an excavated wall of the mine which was supported by timber.

After the miners removed the copper ore from under the lode (a vein-like deposit), it was carried to a kibble (large iron bucket) by a mine cart, or with a special barrow.

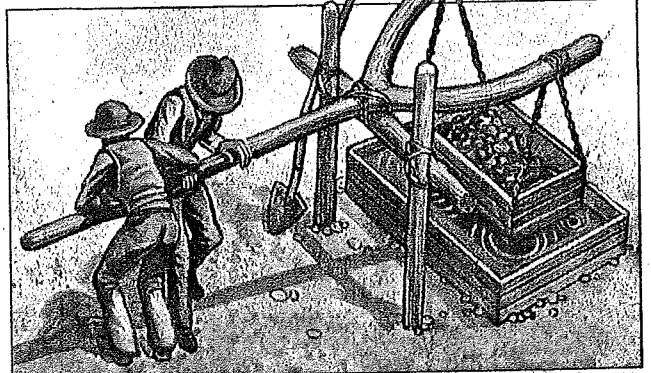
Once the rocky ore had been brought to the surface, it had to be crushed.

CRUSHING



THE ore, which came from the mine in rough chunks, had to be broken down into small lumps. Usually a team of boys was employed for this job because child labour was cheap, and they had good eyesight. The boys would use a special hand-held crushing tool to break the ore. The lumps were then fed into a crusher, a manually operated revolving trommel (a cylinder-shaped sieve), which reduced the lumps to a coarse sand.

JIGGING

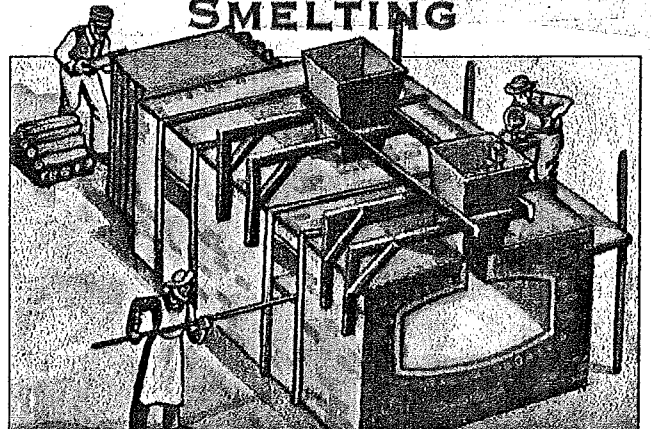


BY this stage, much of the copper mineral had been detached from the waste rubble, but the copper and waste rocks were still mixed together. Separating the remaining copper and waste from the crushed sand involved a process called jiggling. The ore being treated was placed on a sieve in a wooden box. Men would move a large lever up and down, jiggling the sieve over the box, which was filled with water.

This jiggling motion caused the heavier copper to concentrate on the sieve and allowed the rubble to fall through.

After it had been dried on the floor, the concentrated copper was assayed (examined for purity), ready for smelting.

SMELTING



THE smelting process involved heating the copper ore in a series of stages so the impurities could be burned off or removed. The final product was almost pure copper. This was poured into cast-iron bullion moulds known as ingots. This made the copper easier to handle, store and transport.