

ore is milled or broken down, being blasted into the raise. Suitable faces and benches are soon established, and a better command obtained of the size of the rock going down the chute or raise. Very deep holes are drilled and very heavy blasts set off, thus breaking the ore quite rapidly and economically. The benches are arranged in such a manner that a great amount of the rock rolls down into the chute, which is always partially filled, without much handling.

The advantages of this method are as follows:—

Practically no expense for timber.

No bad air to work in and hence no time lost.

Few drill holes needed and comparatively little powder used.

The ore is handled mostly by gravity.

The disadvantage is that there is a limit to the depth at which the ore can be excavated, because of the caving or falling in of the sides.

On the deeper levels of the mine the usual method of underground development was carried out. The system of mining the ore was very similar to that in vogue in the Le Roi, which has been already described. The timbers, however, were stouter, and the method of lagging was different. In arranging the lagging the object was to place it in such a way that the broken ore could be rolled into the chutes with the least possible amount of shovelling. To accomplish this, lagging, about 10' long was laid on the caps, close together, and, if the poles were weak, perhaps a double layer. A space two setts square had the poles laid parallel, and the adjacent squares were poled at right angles to these. The caps and collar braces were of the same dimensions, hence it did not matter which way the lagging was arranged. In this way the poles had a good support at both ends, because they reached well over two 5' setts. When it was desired to remove the muck, all that was necessary was to move a pole so that the ore could drop through. As it rolled down, with the aid of a pick or bar, another and another pole could be rolled from beneath it. In this manner the writer has rolled into the chute 40 or 50 tons in four or five hours. Any very large boulders, of course, were smashed with a sledge hammer. Fig. 11 is meant to show the arrangement of the lagging. It is a plan of the floor immediately under the ore to be mined, while Fig. 12 is an elevation of the same.

A special method of chute building was adopted here. Above the first floor they were built in the shape of a long trough-like V, running from one brace down and across to the next. Poles were used for this work, and spiked securely to the square setts. Figs. 13 and 14 show the arrangement of the chutes in plan and elevation.