

MINE TUNNELS AND TUNNEL TIMBERING.

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Location.—In the selection of the site for the tunnel-entry care is taken to choose a place (1) as easy as possible of access by trail or road, (2) but chiefly at the lowest point, so that the greatest possible area of the ore deposit may be worked over-head after the tunnel reaches it, and at the same time be drained naturally of water, all geological data having been sought out by surface examination and test-pits. Good and sufficient dumping-ground is also provided for, care being taken by survey if at all doubtful, that the tunnel will be on the right territory and that the waste rock on the dump will not fall so as to trouble other property or block public roads, or by any possible means incur litigation or impede future mining operations.

Often in the early life of a claim to develop the character and value of the ore-body, a tunnel is run at a point high up so as not to be at first of too great length and cost, but afterwards a longer tunnel is driven in at a much lower level after the upper one has proved the claim to be good, and enriched the none-too-plentiful supplies in the company coffers. Again a tunnel may sometimes be profitably driven as from the other side of the hill or mountain, so that its mouth will be in a most advantageous position for connection with an aerial wire-rope tramway, by which arrangement, although the first cost will be more, the cost of transport of ore from the stope to mill or railroad will be so lessened as to quickly repay the extra initial outlay. For this reason it may be wiser to use a tunnel instead of a shaft, even if the latter is much the more preferable for the mining of a deposit, and when work must be done below the tunnel level. This is now rendered very easy by sinking inclines and placing at their head rapid and powerful hoists operated by electricity or compressed air, and, if water is encountered, pumps can now be got that will do, beyond peradventure, most efficient work with either of these sources of power.

In all cases the tunnel must be run right straight for the vein, and for this it may be well to call in the aid of the surveyor, whose directions should be then closely followed, for if even a slight deviation is made, say to work along softer ground, one's course is quickly lost underground