

SINCLAIR REFINING COMPANY

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Underground carbonization of oil shale

This invention is an amendment to the German Patent (F. 85, 89) referring to the underground carbonization of shale; at first a tunnel is mined running with the strike of the bed; starting from it, crosscuts are mined along the bed levels; by blastings effected in these crosscuts, the adjacent oil shale rock is loosened up in such a manner that the loosened zones meet near the bed level or overlap there; finally the tunnel is closed up between the individual crosscuts and, starting from the remotest crosscut, the loosened oil shale rock is kindled while suitable amounts of combustion air are introduced, and the carbonization products are sucked off from the front crosscut; the carbonization zone is always in front of the combustion zone, the front of which advances from crosscut to crosscut.

In this invention, we do without crosscuts. A single horse-shoe tunnel is mined into the mountain so that the front and back openings are accessible. At certain intervals, the backs are blasted so as to loosen up the rocks; between the individual blasting zones crowns were left in the backs. Then, the loosened shale rock is ignited at one of the ends and the carbonizations' products evolving in the carbonization zone which precedes the combustion zone are sucked off at the other end of the gallery. The crowns left standing in the back press the combustion and carbonization zones always down to the footwall of the bed, thus improving the course of the carbonization process.

According to this principle we may also work a main gallery into the rock and cut, starting from it several crosscuts either into the open or into another main gallery, subdividing them likewise in the manner in question by the crowns left standing at the roof, which press the carbonization gases down to the footwall.

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