nificant, compared with the achievements of modern times. They show what can be accomplished by the despotic ruler of millions of people, with the stolen wealth of nations at his command; a ruler who counts the lives of his subjects as nothing when weighed against his slightest whim. They do not, however, keep pace with the grand march of science in this nineteenth century.

Could these ancient builders re-visit the earth from that realm to which their spirits have fled, and behold the mighty achievements of our present age, they would be rendered speechless with an astonishment bordering upon awe. The mighty steamship, plowing the ocean at race-horse speed; the telegraph, flashing intelligence around the world with the rapidity of thought; the telephone, carrying articulate speech instantly to distances farther than many of them ever traveled; the electric light, dispelling the darkness like a mid-night sun; the printing press, disseminating knowledge among the masses; the railroad, uniting, with bands of steel, countries of which they never dreamed; great engines and substances of destruction, capable of razing to the ground in a brief period the mightiest structure their hands ever reared; these seven only, of the multitude of the products of science which have become so common to us that we cease even to think of them, would be classed by them as the "seven miracles of the world," beside which their "seven wonders" would sink into nothingness.

Of the achievements of modern science, the feats of railroad engineering rank among the first. The traveler of today is carried through tunnels that pierce the rocky hearts of mountains, is suspended at dizzy heights above deep gorges and turbulent rivers, on trestles and bridges, threads the mountain mazes on a sinuous trail, clings to the face of precipices upon a narrow shelf blasted from the solid rock, and crosses the summits of mountain ranges at altitudes bordering upon the region of perpetual snow. But let him journey from one end of the continent to the other, he can not find such another piece of eccentric railroading as that which he will experience in crossing the Cascade mountains by the famous switchback on the Northern Pacific.

When the Northern Pacific finally selected its route across the Cascade mountains by the Stampede pass, the engineers, in order to save a long and tortuous line across the mountains, expensive to construct and operate, located a tunnel, nine thousand eight hundred and fifty feet long, through the heart of the highest peak in the pass, at a level of eleven hundred feet below the lowest point on the summit. The estimated time necessary to complete the tunnel was two and one-half years, more than a year longer than was required for the construction of the road.

The company was very anxious to establish the route across the Cascades as speedily as possible, and so referred the question of a line over the summit to Adna Anderson, chief engineer. The problem was to overcome an elevation of eleven hundred feet in less than two miles, the length of the tunnel. The engineer reported he could carry the line over the mountain on the "switchback" principle, by building seven miles of track, about one-half on each side of the summit, with an average grade of nearly three hundred feet, and at a cost of $300,000.00. The original cost of construction, provided the plan was adopted, did not by any means represent the expense incurred. The purchase of locomotives of enormous power, and the expense of operating such a line, where but a few cars could be handled at a