

THE EVENING NEWS.

Friday, March 12, 1892.

THE GREAT TUNNELS.

UNDERGROUND WORKS, BOTH ANCIENT AND MODERN.

THE TUNNELS OF ALBANO—OF CLAUDIUS—OF THE THAMES—OF MOUNT CENIS—OF THE HOOSAC—OF THE STRAIT OF CALAIS—OF THE HUDSON.

(CONTINUED.)

IN THE MIDDLE AGES the art of tunneling was almost unknown, and it only revived in our own time with the spread of the railway system. There are at present about eighty miles of tunnel in England, the longest passage, of 5,500 yards, being at Huddersfield. The longest in France, on the St. Quentin Canal, has a length of over 18,000 yards. But the English distanced all competitors in that line when they built the Thames Tunnel. The idea of this originated in 1785, when Mr. Ralph Dodd proposed to make a way under the river between Gravesend and Essex. In 1804 Mr. Trevethick made a trial on the present site of the tunnel. He made a passage five feet high and three feet wide, and this he had carried nearly across to Wapping, when the river broke in and spoiled the experiment, throwing such a quantity of mud into the project that the English became disgusted and would have no more of it. They felt uncomfortable just then, knowing that the united fleets of France and Spain were ready to try conclusions with Lord Nelson in the chops of the channel. But in 1825 the project was taken up by Robert Stephenson (about a quarter of a mile across) was again attempted, under the guidance of Mr. Brunel. In 1827 the water burst in, in spite of the caution with which the shield was advanced, and the labor was suspended for a time. In 1828 a like accident occurred, and six men were drowned. After this the work ceased for seven years. It was renewed in 1835, and continued till the passage was completed. It is a tunnel below the bed of the river, and is 1,200 feet long between the shafts on either bank—that is, something about a quarter of a mile. It has two arched ways, each sixteen and a half feet high by fourteen feet wide, with a wall between them. It cost about £200,000, and was never remunerative, being only used by pedestrians, who paid the toll of a penny, and furnished just enough to keep it in repair. In 1895 it was sold to the London Railway Company for £200,000, and is used as a connection between their roads running on the northern and southern sides of the Thames. The tunnel was in fact a failure, and in time to come a better one will no doubt be built near that locality, one that will allow the passage of heavy trains or wagons. In 1890 another tunnel was carried under the Thames at Tower Hill, and completed in a year at the cost of £200,000. This allows the travel of omnibuses. Another (a land tunnel) has been made in Arthur Street, and another from Poplar to Greenwich. With these London has dug three and a half miles of tunneling for its great subterranean railway, and will probably dig a great many more. So that it is not correct to say that the catacombs, like so many other great cities, it seems bent on making up the subterranean deficiency in another and more utilitarian way.

MOUNT CENIS.

Fourteen years after the opening of the Thames Tunnel, the governments of France and Sardinia encouraged the far grander enterprise of a passage through the Alps, under the height of Grand Vallon, near Mont Cenis. The idea was conceived in 1841, when Joseph Medail, of Bardonecchia (the Italian end of the tunnel), proposed to pierce Mount Cenis. In 1857 it was decided that the way should be run under the Grand Vallon from Modane, on the upper side, to Bardonecchia, on the Italian, a subterranean distance of seven miles and a half. Count Cavour warmly patronized the undertaking, and the cutting of the first sod at Modane, in the above year, was witnessed by King Victor Emmanuel and Prince Napoleon. As the height of the Grand Vallon did not permit any intermediate shaft sinking, the labor was begun and carried on from the two ends toward the centre. The work of boring was done in the old way, by hand, till 1861, when the engineers—Sommeiller, Grandis, and Grattoni—devised a piece of machinery, set in motion by compressed air, which was driven as fast as before. In 1866 half of the distance had been excavated, and in 1870 the workmen meeting at last, shook hands through an opening in the tunnel. In 1871 the way was open for travel, after the labor of fourteen years. This great achievement encouraged men to hope for the removal of other alpine difficulties, and at the present time another railway tunnel is making its way under the heavy mass of Mount St. Gothard.

In our own country the necessities of travel and trade have originated a great many tunnels, the most recent being the Hoosac, the unfinished passage through mica slate and quartz rock under the Hoosac Mountain, 18 feet high by 14 feet wide, and destined to be 400 feet or more and a half mile long.

(TO BE CONTINUED.)

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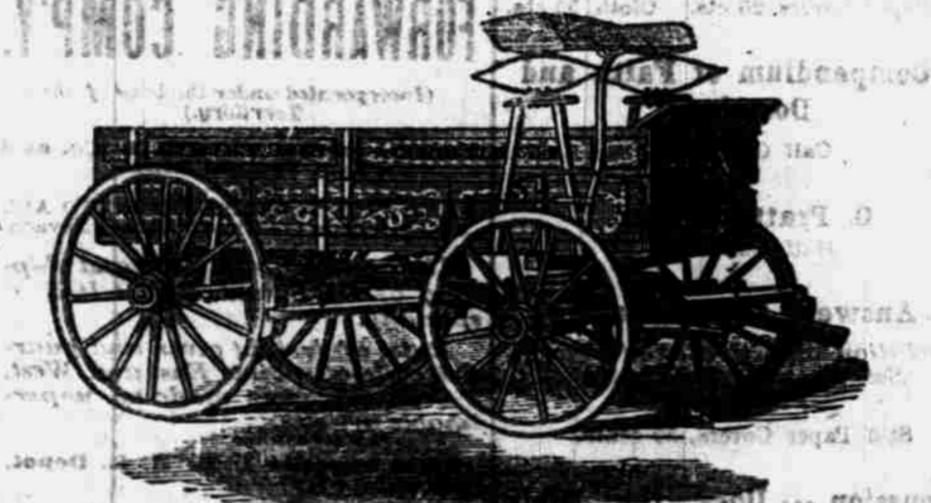
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