



AN ELEVATED RAILROAD AND LOG CARRIER FOR LUMBERMEN'S USE, ETC.

was to put down a 600 foot artesian well in the center of the plot, for the supply of water required for the engines, for building purposes, and for subsequent use. The first two stories of the building are to be of Colorado granite, the balance of Colorado brick. The interior will be constructed with steel beams and fireproof tile arches. The building, together with the plot (125 × 200 feet), will cost \$1,880,000.—*Scientific American*.

#### VALLEY'S RAILROAD FOR LUMBERMEN, ETC.

A railroad of inexpensive construction, and which is designed to be strong and durable, and especially adapted for use in timber lands for getting out logs, or in the neighbourhood of mines, for transporting coal, ores, or refuse, is shown in the accompanying illustration. This road, with a carriage particularly designed for use therewith, having a novel and effective style of brake, forms the subject of five patents issued to Mr. John N. Valley, of No. 643 Jersey Avenue, Jersey City, N. J.

The single rail or track of this railroad is supported by hangers from overhead longitudinally-ranging stringers, which are themselves sustained by downwardly diverging pairs of posts or struts set into (or on) the ground, the tops of these posts being let into opposite sides of the stringer, where they are fastened by a bolt. Where the road curves more or less sharply to the right or left, the adjacent ends of the stringer sections are pivotally connected by means of a pair of links and bolts, but where the road is ordinarily straight, the ends of the sections are simply halved and bolted together. The hangers pass centrally through the timber sleeper, each side of the top outer edge of which constitutes the track, and the lower ends of the hangers are screw-threaded, and carry nuts, on which the sleeper rests. This allows

the sleeper to be readily set higher or lower on any particular hanger, to regulate the level of the sleeper and the track rail, by simply screwing the hanger nuts up or down. The hangers are also preferably connected to the stringer by screwing their threaded upper ends into the stringer, thus allowing the hangers to be adjusted higher or lower in the stringer, to supplement the vertical adjustment of the sleeper and rail by the hanger nuts, to level or grade the track.

The carriage designed for use with this railroad is U-shaped in cross section, with upwardly ranging sides supporting the wheels at their upper ends, the frame substantially consisting of two yokes braced and connected together. At or near the top the yokes are connected by side bars bolted or riveted to the legs, and near the bottom they are connected by a tie band extending horizontally entirely around the carriage. At each side the yokes are further braced by two oppositely disposed V-shaped braces, while from near the bottom of the carriage a cross brace extends downwardly and inwardly toward the centre, where it has a horizontal central part on which is bolted a longitudinal drawbar, the upturned ends of which extend beyond the carriage and are adapted to act as buffers, while they are provided with eyes to receive coupling bolts, by means of which several cars may be connected together. To the bottom of the carriage two or more depending hooks are secured for suspending the load, these hooks having each a threaded shank to receive a nut by which the hook is secured in place. At the top of the carriage are longitudinal bars, bent downwardly and outwardly at their ends, and, should the carriage become slightly displaced laterally, the curved ends of these bars will strike the hangers or suspension rods, thus righting the carriage on the track. The axles of the wheels are in the form of bolts, in order to be readily removable for reversing the wheels, as may be desired where the main line of a track is supplied with metal rails, consisting of flat bar iron attached on each side of the top outer edge of the