

The following is a synopsis of the grades :—

Level	13.20 miles.
From 1 to 10 feet per mile.	12.39 "
Do. 10 to 20 " " "	5.79 "
Do. 20 to 30 " " "	4.69 "
Do. 30 to 40 " " "	3.82 "
Do. 40 to 45 " " "	5.11 "
Total distance	45 "

The track of your road consists of longitudinal sills 8 x 12 inches square, embedded in gravel or broken stone. Cross ties of Tamarack timber, 2½ inches thick and 6 inches wide, are inserted in the upper side of the sills by a dovetail joint, and retained in their places by wedges of the same description of timber.

The ties have a shoulder of three-quarters of an inch abutting against the inner side of each sill, which, with the action of the wedges, draws the whole together to an exact line, and effectually prevents any spreading of the track.

When it is required to renew ties, it is only necessary to knock out the wedges, remove the defective tie, and insert others without disturbing the iron.

The surface of the tie and the longitudinal sill is on the same plane which gives a continuous bearing for the rail.

The rail is of the bridge pattern, weighing 63 lbs. per yard, and is laid along the centre of the sills, to which it is spiked at intervals of about 3 feet. The joints of the rails are secured by cast iron chairs, 5 inches wide, 8 inches long, and three-quarters of an inch in thickness, weighing about 11 lbs. each.

There are three upward projections in the chair, the two outer ones being equal to the thickness of the base of the rail : the middle projection is one inch in height, and fits into the cavity in the centre of the rail.

The chairs are fitted into the sill even with its surface and spiked down, the head of the spikes lapping over the base of the rail, which, together with the projection in the chair, prevents any displacement of the joints.

This form of fastening permits the removal of a rail without disturbing the adjoining one or the chair. To provide for the changes