

situation upon the section of the line between Euston terminus and Camden Town. Although the surveyors struggled hard, they found it absolutely impossible, owing to physical configuration, to secure

method of signalling the engineman in the winding-house, to notify him when to start his plant, had to be devised. The train was connected to the winding rope by means of a messenger, and when all was



THE FAMOUS OLIVE CUTTING ON THE LIVERPOOL AND MANCHESTER RAILWAY, NOW FORMING PART OF THE LONDON AND NORTH WESTERN SYSTEM

a rise of less than 4 in 70 between the two points. They made no attempt to work it by adhesion. Instead, all trains proceeding out of Euston were assisted as far as Camden Town by a cable, which was hitched on to the train and wound in by a stationary winding plant, comprising two engines placed underground at Camden Town. They were of 60 nominal horsepower, and the main pulleys had a diameter of 20 feet. The rope was about 13,000 feet in length, and cost over £150.

The system of operating this cable incline was quite in keeping with the times. As they were pre-electric days, another

ready, a lever, connected to a bell having its edge submerged in water, and suspended over an inverted bell mouth forming the end of a tube, was depressed sharply. This action caused the air within the bell to be driven downwards through the tube, which extended from the terminus to the engine-house. At the latter point the air-tube was connected to a large whistle—virtually an organ-pipe—and the puff of air sent through the pipe produced a blast on the whistle. Owing to the distance which the air had to travel about four seconds elapsed in transmitting the signal. The winding engine was set in motion, and the