a less height, independently of affording room for the locomotive. But taking in that consideration, there can be no doubt of the propriety of giving to an 80 feet stretch, this height of truss.

Reducing the height of truss 1 foot, and the space between bearing points ½ a foot, will afford a stretch of about 75 feet, and still afford room for the engine, by a proper arrangement of track, &c.

It is not necessary that the height of truss be exactly once, twice, or thrice the space between bearing points or cross beams; even with the uniform rectangular crossings of the diagonals or cancels. The height may be once and a half, or twice and a half the length of said space. Hence, the skillful engineer will find little difficulty in arranging the proportionate height of truss, and preserving the distance between bearers within such limits as to secure economy in the use of rail timbers, &c.

The estimate for an 80 feet bridge is, 920 cubic feet of timber, and 1250 lbs. of iron.

LXXI. It is hoped that enough of detail and specification have already been given, to make the peculiarities of the plans I recommend, intelligible to those conversant with the subject, or to those desirous of acquiring a knowledge thereof. I will therefore, after some remarks upon the adaptation of these plans to sustaining the load on the top of the trusses, and to the use of common roads, dismiss the consideration of the subject for the present.

It will appear obvious enough, that all these trusses in the preceding plans, are equally well, and even better calculated to sustain the weight on the top, than at the bottom, as they have been regarded to do in what precedes. Some difference would take place, on making the transfer of weight, in the action of some of the parts. The amount of tension would be increased in some places, and thrust in others, and vice versa. This is necessary to be taken into account in apportioning the dimensions,