

views then entertained upon the subject.

∴ I observe, however, that many practical builders adopt a ratio considerably larger—even to 10 or 12 to 1. I understood an Engineer of ability and experience, to express an opinion in favor of 12 to 1, as the most economical proportion for a truss. The announcement, coming from such a quarter, excited some surprise, as the incorrectness of such a conclusion seemed so obvious. For, it is readily shewn, that in a truss in the proportion of 6 to 1, the amount of *action*, (being the products of number and lengths of parts, into their respective maximum stresses, and proportional to the required weights, very nearly,) upon the Chords, exceeds that upon all of the intermediate parts: and, the stress upon chords being inversely as the depth of truss, it follows that, the depth being reduced to 1 to 12, the action upon Chords alone, in this condition, (and consequently, their weight and cost,) must exceed that of the whole truss, when proportioned with length and depth as 6 to 1.

Not only is so small a depth of truss objectionable from considerations with respect to economy, but the increased amount of material rendered necessary in the construction of low-trussed bridges, causes them to “labor with their own weight;” as well as to deflect and vibrate to an undesirable extent when in use.

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