cast iron truss, one hundred feet long, by 12½ feet deep, may be depressed 2½" in the centre by a distributed load (including structure), with tension not exceeding 15, and thrust, not exceeding 11 thousand pounds to the square inch in cross-section of iron.

WOODEN BRIDGES.

STRENGTH OF TIMBER, &c.

CXL. The qualities of wood as a building material, have been extensively treated of by authors whose works have long been before the public, with a degree of ability and research to which the present writer can make no pretensions. He will therefore at this time, simply state the conclusions arrived at from reading and observation (coupled with some experimental research) with respect to the average absolute strength, positive, negative, transverse, and to resist splitting, in certain cases; of the timbers principally in use for building purposes; as also, the forces they will bear with safety under various circumstances; leaving it, of course, for others to adopt his views for their own practice, or to modify and correct them, according as their greater experience or better judgment may dictate.

At the same time, the author may be allowed to express his firm belief, that the views about to be presented, if fairly observed, will lead to the adoption or continuance of a safe and economical practice as to the proportioning of timber work in bridge construction.

Pine timber in this country is perhaps to be ranked as among the most valuable timber in use for building purposes; especially in bridge building. White oak,