The Howe bridge is probably the most extensively adopted wooden truss in the United States. Why it is so is probably owing to a variety of circumstances, some of which may possibly not have their origin in the scientific merits of the combination; but the fact of its continued success must be taken as evidence in its favor, and it may therefore be assumed to be one of the best wooden bridges in general use. The original Howe truss is too familiar to those interested in bridge construction to need any minute description. Fig. 9 will serve to illustrate its general design. Previous to its invention, what was generally known as the Burr bridge, commanded the greatest share of attention; but upon the introduction of railroads, it became necessary to devise a structure possessing the elements of stability under a moving load to a greater extent than could be obtained in the Burr. The Howe patent certainly effected a great improvement in dispensing with the arch in combination with a parallel truss, and in the practical application of the counter brace, so as to admit of a certain amount of rigidity under a moving load; but it soon became evident that even this arrangement was not adapted to spans of more than one hundred and fifty feet, if confined to the simple truss, by reason of the difficulty in providing for the increased vertical strain near the points of support. This will appear more clearly when a particular case is subjected to the test of calculation. Suppose a single-track railroad bridge to be required of one hundred and fifty feet span, the weight of a maximum applied load being taken at one and a half tons per lineal foot, and the weight of structure at a half ton, making a total load of two tons per lineal foot of bridge. The total weight to be sustained by the bridge will be three hundred tons; and since very nearly one-half of this strain is transmitted to the abutments through the web on each side the centre, it will be necessary to proportion the rods and braces in the last panels to resist such strain. The exact figures are one hundred and forty tons for each end of the bridge; taking a divisor for safety of five tons per square inch of section in iron, we require twenty-eight