while they also exert a longitudinal action upon the chords, thereby increasing or diminishing the stress upon chords, due to the action of structure and load. Chords, however, are usually proportioned without provision for increase of stress liable to accrue from action of sway-rods; and, from the small sizes of the latter, as compared with the former, and the obliquity of their action, seldom expending more than half their direct stress upon the chords longitudinally, this small action may be neglected, as forming one of the contingencies for which a large surplus of material is always provided in chords, over what is actually required to withstand the effects of any probable vertical action.

Certain modes of inserting and connecting sway-rods have been previously alluded to, sometimes with the beams by means of eyes and bolts [cvi, Figs. 31 and 33], and sometimes more directly with the chords [cxix, Fig. 35, d, and Fig. 39, d.]

The best connection is that which gives the nearest approximation to central and uniform action upon all parts of the chord, and also of the beam or strut. The plan described in section cxx, and seen in Fig. 37, when admissible, affords a good connection for bottom sway rods.

Undoubtedly there may be better devices for the purpose under consideration, as well as for other details, than any that have occurred to the author. But such as are herein described have mostly been put in successful practice, and are thought not to be seriously faulty.