both upper and low chords must be overcome before a collapse could take place. In the case of iron trusses, the chords are supposed to have no lateral stiffness at the nodes; consequently, counterbraces or ties, as the case may be, are always necessary in one or two panels each side of the centre.

Fig. 63 represents a Six Panel truss, as arranged and recommended by the author 16 or 18 years ago, and adopted by the Canal department of the State of New York, for farm and country road crossings over the State canals, upon which several hundreds of them are in use.

The arrangement of upper and lower chord timbers, and the divergent suspension rods, to maintain the erect position of trusses, as well as the assignment of correct proportions to all the parts throughout, are believed to have originated with the author of this work.

The lower and longer portion of the bottom chord, is usually in two pieces, spliced with double locking and bolting (see Fig. 57), over the centre beam. Transfer blocks are also inserted between upper and lower timbers, to transfer a part of the stress of the longer to the shorter portion, and thus diminish the strain at the splicing.