ends of the truss, the intermediate portions of arch and chord are under horizontal stress greater than that of the end portions, by an amount equal to the aggregate horizontal action of all the acting diagonals inclining toward the respective ends.

Now, as no more than two diagonals inclining toward the end bearing the greatest weight, can be in action at the same time, in a seven panel truss, the question resolves itself into — whether two diagonals acting in one direction, can ever exert force enough to over balance the loss of action of the end section, resulting from diminished bearing at the abutment, consequent upon the removal of load, on which removal, the action of diagonals depends?

As to that question, the removal of weight from the central portion of the truss, must bring into action inwardly inclined diagonals, while removing weight from one end only, can bring into action no diagonals inclined toward the full loaded end, whence the weight bearing at that end indicates the greatest stress of any part of chord and arch which, of course, is less than under the full load of the truss.

There remains then, only the case of removal of load from both ends of the truss, which can produce any considerable action upon diagonals inclined outward, so as to give greater stress to the middle, than the end portions of the arch and chord. If the weights at \( b \) and \( g \) be removed, the pressure at each abutment is diminished by \( \frac{1}{3} \) of the maximum, or, by \( 7w'' \); and \( jj \), sustaining only \( 3w'' \) at the maximum, and having the same inclination as \( jj \), its horizontal action could only balance the effect of \( 3w'' \) removed from \( jj \); while \( ek \), even if it sustained its greatest weight of \( 5w'' \), as it evidently does not, in this case, would only exert the