upon each, that the load will be in proportion to the several portions. If, for example, a truss be constructed, and the falseworks removed before the introduction of the arches, if the latter be bolted to the posts, the weight of the whole structure is sustained by the truss itself, and the arches will not bear a single pound, unless they are called into action by an increased degree of settling in the truss; but if the bottom chord of the truss is connected with the arches by means of suspension rods with adjusting screws, the whole truss may be raised upon the arches, and in this case the latter will bear the whole weight, and the former none.

"Again, if we suppose the arches to be connected with the truss before the removal of the falseworks, and the joints be equally perfect in both systems, there is a prospect of a more nearly uniform distribution of the load, but even in this case we cannot tell what portion is sustained by each system, because this will depend upon their relative rigidity. If, for example, one of the systems should experience double the deflection of the other, with a given load, the less flexible would sustain twice as much as the other when combined, provided they are so nicely adjusted as to bear equally when unloaded, except with the weight of the structure. In practice, the most convenient way of securing an equal bearing, appears to be to remove the falseworks before the arches are introduced. After the arches are in place, examine the level of the roadway, and screw the nuts of the suspension arch rods, until the truss begins to rise very slightly. As there is necessarily a certain degree of elasticity in the truss, it will then be certain that both systems are in action. With all these precautions, there are still difficulties in estimating the exact strain upon the parts of a bridge which is sustained by two