iron were made and broken, the material was in some instances increased to a degree that might be deemed impracticable, and while a minute description of each particular experiment might serve to amuse the reader, little useful information would be elicited in doing so. Suffice it to say, that many of these models were as fallacious in conception, as they were expensive in execution.

Nevertheless, however absurd and unnecessary many of these experiments now seem to be, they served at the time to undeceive the writer, and had the effect of correcting many preconceived opinions; but while acknowledging this, he must be permitted to remark, that he is occasionally amused, even now, in witnessing combinations, substantially the same, executed on a larger scale, and in actual practice, and may be allowed to offer by way of apology, that the process by which he arrived at the result, although somewhat costly, was by far the least expensive of the two.

Much labor has been expended in perfecting what was believed to be vast improvements in bridge construction, and to which great importance has been frequently attached, which although sometimes creditable to their originators, really amounted to nothing more than simple alterations in detail, the general action of the truss being the same.

In order to simplify and make clear the real points of difference existing in the combinations of the various plans of trusses, of the same general outline, it may be stated that the material composing any bridge truss, whether of wood or iron, or of both, is subjected either to tension or