itself into a distinction, without any real difference in mode of action.

There are now in use miles in length of the "Inflexible Arched Truss," consisting of spans, varying from 30 to 260 feet in clear, which in several instances have been (as will hereafter be shown) subjected to the most severe and extraordinary practical tests. It is not, therefore, certainly too much to expect, that the engineering profession will readily concede that this plan of structure is, at least, no longer a matter of experiment. And if the reader will carefully peruse the following pages, which contain evidence of an incontrovertible character in support of this position, he cannot fail to discover, that the claim for this particular form of truss is not made unadvisedly.

Fig 1 is what is known as the "Burr Bridge." It is composed of lower and upper chords, and posts and braces. The posts are framed into the chords, and the braces are framed into the posts. Arches are placed on each side of the truss, securely fastened thereto, and extending below the lower chords, abut against the masonry.

This form of truss was extensively used throughout the United States previous to the introduction of railroads. Many spans were of great length, and in cases where the arches were large, and the masonry sufficiently permanent, this bridge was comparatively successful. Much difficulty was, however, experienced, by reason of the absence of counter braces. A moving load produced a vibratory and undulating motion, tending to loosen the connection of the timbers, which generally resulted in failure.

Many of the first railroad bridges in this country were built upon this plan, but much greater difficulty was found in adapting it to the use of railroads, than had been previously experienced in its use upon common roads. This