Arch Truss Bridges.

ing failed, and, being rebuilt, failed a second time, many years ago; so that, at the present time, a certain Iron Truss Bridge built by the author of this work in 1841 and 42, upon the Arch Truss plan, essentially as described in the last few preceding pages, is believed to be the oldest Iron Truss bridge in use in this country, if not in the world.

At that time, it was not thought advisable to attempt more than the construction of Iron Trusses, to be used in connection with wooden beams, joist, &c.; which latter portions could be renewed as required, with comparatively little trouble, and at much less cost, than the interest upon the extra expense of iron beams would amount to within the lifetime of wooden beams. But as the public mind seems now to have become convinced, not only of the safety and expediency of the use of iron for the trusses, but also for the beams of bridges, it becomes a question of interest to determine the best manner of constructing and inserting such beams.

CVIII. Four general plans of iron beams have been used successfully; namely, the cast iron web and flange beam, the wrought iron skeleton, the composite (wrought and cast iron), and the solid wrought iron rolled web and flange, or I beam. These may all be used with good results, in particular cases, and under modifications adapted to respective circumstances.

For general use, however, I regard the solid rolled I beam as entitled to a decided preference; and, without discussing relative merits in this place, I propose simply, at this time, to suggest plans for adapting the last named beam to the Whipple Arch Truss, thus making the plan about all that can be hoped to be at-