

which 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 life-time 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.

Four general plans of iron beams have been used successfully; namely, the Cast Iron web & flange, the Wrought Iron skeleton, the Composite, (wro't & cast iron,) and the Solid wro't iron Rolled web & flange 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 beam as entitled to a decided preference; &, 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 attained, as a cheap, substantial, and durable Iron Bridge for general use, for spans varying from 40 to,—perhaps 125 feet.

For bridges 16 to 18 feet wide in the clear, and panels 10 or 11 feet long, a 9 inch beam, weighing 30 lbs to the foot, is in good proportion; and when side walks are not required, the beams may be cut