book p. 78. "The several pieces forming one built member must fit closely together, and when rivetted shall be free from twists, bends, or open joints. * * * * * * Abutting joints in truss bridges shall be in exact contact throughout," etc. If the ironwork does not comply with these specifications, it is not accepted.

The next and worst point of offence to your correspondent is my statement that the Americans lead the world in bridge building. Being a Britisher myself, I surely cannot make such a statement without arrogance. His retort that there are many great engineers and bridge builders in Europe, who were in practice before America adopted iron bridges to any notable extent, is truly characteristic of a conservative Britisher. Does he think that the world is standing still? Not one of the bridges of those days is to be compared with the bridges of to-day: they are inferior in everything except massiveness. Think of comparing the tubular bridges at the Menai Straits and Montreal with the Bismarck and Plattsmouth bridges across the Missouri and the great cantilever at Niagara! As well compare an old three-decker to one of England's latest made and fastest ironclads!

In treating of iron bridge construction it is necessary to ignore all structures built over fifteen, or at most, twenty years ago; for the science has been developed gradually. In England, where the funds at the command of engineers were practically unlimited, the tendency was to make bridges very strong, regardless of weight and expense; for instance take the bridge over the Ouse, near York, the Leith Docks Swing Bridge, for a long time, if not still, the largest swing bridge in the United Kingdom, and all of the numerous plate girders exceeding sixty feet in length. In America, on the other hand, where money was scarce and the amount of work to be done was great, the tendency was to make bridges light and cheap, too often at the expense of strength. This accounts for the facts that most of the old English bridges are excessively heavy, and that many of the old American bridges are not strong enough to carry the greatly increased engine and train loads of the present time.

As the study of bridge designing has continued, English engineers have endeavoured to reduce the weights of their bridges, and American engineers to increase the strength of theirs. But as progress is much more rapid in the United States than in conservative England, the American engineers have pushed ahead in bridge building, leaving their English brethren far behind.

Is it heresy for a Britisher to make such a statement? I think not. Did not England's representative technical periodical, Engineering, state not long since in reference to the Suakim-Berber Railway, that it would be well for English engineers to go to America to learn how to build railways rapidly? They spent three months in building twenty miles of comparatively level road, while in the wilderness of the North-West of Canada five hundred miles were built in a single season working from one end of the line; and ten miles were laid in one day.

Your correspondent says that he has no knowledge of any of the great bridges of Europe and Asia being manufactured in America. His knowledge is correct: until lately, America has had enough bridges to build for herself, but now she sends iron bridges to some of the British colonies and