Bridge Materials.

A material for building purposes. Wrought iron resists compression nearly equally with cast iron. But its cost is twice as great, which gives the cast iron a decided advantage.

On the other hand, wrought iron resists a tensile force nearly four times as well as cast iron, and 12 or 15 times as well as wood, bulk for bulk.

Not only are these the strongest materials, but they are also the most durable. In fact, with proper precautions, they may be regarded as almost imperishable.

It would seem then, that wrought iron for tension, and cast iron for compression, were the best materials that could be employed in building bridges. But wood, though greatly inferior in strength and durability, is much cheaper and lighter, so that, making up with quantity for want of strength, and by frequent renewals, its want of durability, it has hitherto been almost universally used in this country for bridge building; and, in the scarcity of means, and the unsettled state of things in a new country, where improvements are necessarily, to a great extent, of a temporary character, this is undoubtedly the most economical material for the purpose.

But it is believed that the state of things has now assumed that degree of settled permanency in many parts of this country, and available means have accumulated to that extent which renders it consistent with true economy to give a character of greater permanence to our improvements; and, in the erection of important works, to have more reference to durability, even at the cost of a greater present outlay. In this view

*This remark, made originally some twenty-five years ago, may require some modification at the present time, when steel is being employed extensively for railway track, and in some important arch and suspension bridges; but not in truss bridges, to the writer's knowledge.