that it will sooner or later be racked to pieces. The integrity of such a bridge depends on the stiffness of the framing, and that stiffness must be preserved or the bridge will fall. [See Note A.]

But we have seen that a 20 tons engine will depress the flooring of this bridge 3½ inches, allowing nothing for the rigidity of its framing. And this amount of bending, it is concluded, could do no shade of damage, because it takes place daily on other similar bridges of much shorter span and does them no injury.

The flexure of this bridge, produced by the passage of a 20 tons engine, is less than that to which an ordinary steamboat is constantly subjected, without starting a timber or opening a seam. On the western waters of this country, boats 150 feet in length are frequently bent ten or twelve inches in crossing over shoals, without apparent detriment to their hulls or machinery. Yet this is a case in which a slight motion would be comparatively dangerous—for if the bending exceed what is due to the elasticity of the material, the joints must open, and the boat will sink.

But in this bridge there are no seams to open, no frames to become disjointed, or other danger to be apprehended; and the greatest possible movement of the flooring, due to the action of a single locomotive engine is less than that which actually takes place in the hulls of many approved boats, at almost every change in the position of the cargo.

The depression of the flooring of this bridge, under the weight of a 20 tons locomotive engine, is too small