be then well compared to an arc cut out of the end grain of one immense log of timber: as each of the logs composing the whole of an extended arc are so tabbed or indented into each other, that no one single log can of itself move out of its place.

COR. 2.

Therefore it cannot be true, in any degree, that either the arms, distinct, or the arc, as a whole, depend in any measure for strength, or can derive any essential support from their being united in the centre, as must be the case in all arcs on the old plan of lateral pressure.

For the only advantages to be derived from such an unity in this plan is, first, the preventing that vibration which the gravity and motion of bodies create in passing over any extended arm; secondly, By the unity of this Bridge in the centre, the arcs on the sides thereof, which are perpendicular to the horizon, are perfected. This last article is a valuable acquisition in the author's Bridge, and not possessed by any other. We shall explain it more particularly under our next proposition.

PROP. 1.

SHAPE. The external shape of all Bridges on this invention will of necessity be as various as the sites on which they are required to be built; and will also differ widely in this respect from all other Bridges heretofore invented, especially as security against the extra pressure produced by wind and tempests is hereby furnished.