

and without the aid of machinery. In small or light bridges therefore, this kind of cable is found to be most advantageous. But the tensile strength of a straight wire is ten per cent. larger, than of one twisted; hence, in large bridges a rope cable in the first place would not be economical, requiring more material and costing more per pound than one formed of straight wires. Secondly, the bulk of the former will exceed the latter by forty per cent., offering therewith so much more surface to the wind and to the corroding action of the atmosphere. This is very important, and would in case of the East River Bridge, which is exposed to great gales and to salt water air, alone decide in favor of a cable of straight wires. Finally there is great difficulty in making good attachments of heavy wire ropes with the anchor chain, which at best will always be clumsy and require more extensive masonry than the compact and neat wire connection. A cable of wire ropes for the East River Bridge, consequently must be rejected.