

were shrunk on to the cable. The lower ends of these bands were elongated and thickened, to receive a bolt of  $1\frac{1}{8}$  inch iron. The upper end of each suspender is made fast in a wrought iron socket having an eye through which the bolt passes, attaching it to the band. The lower end of the suspender is fastened in a cast iron "bell," or "cone" socket. To these sockets are attached  $1\frac{1}{2}$  inch round iron stirrup rods, and in them rest the floor beams. The suspenders are 5 feet apart, from centres.

There are 25 "overfloor" stays, made of  $2\frac{1}{4}$  inch wire rope, on each side, at either end of the bridge. They pass over the towers and are attached to the iron floor beams, at proper intervals, by means of bell sockets and stirrups. They extend toward the centre of the bridge, as far as suspender 66 from the towers. They are fastened to all the suspenders where they cross, by annealed wire wrappings. Their use is to strengthen the floor and prevent vibration, during the passage of heavy bodies and in high winds.

Diagonal wire rope stays are attached to the bridge underneath, in a sufficient number and in a manner to prevent all lateral motion. All these are attached by stirrups and nuts, so that like the suspenders, they can be tightened as occasion requires.

Besides the support and steadiness derived from the wire work, above described, a heavy wrought iron truss railing extends the whole length of the bridge, dividing the carriage way from the sidewalk. This railing is 10 feet high, and so arranged with truss rods, as to be capable of supporting a great weight, independent of the wire work. A lighter truss railing, 4 feet high, protects the outside of the sidewalk and helps to support it.

#### THE FLOOR.

The floor beams are double T shaped, 7 inches deep, with flanges  $3\frac{1}{2}$  inches wide. They are each 19 feet 6 inches long. Two of them spliced together, by heavy iron plates and bolts, form the full width of the bridge, 39 feet; though the space actually covered by the floors and high railings, is only 36 feet, the balance being occupied by the sidewalk railing and its braces. Each beam is strengthened by iron truss rods underneath.

The "backbone" of the bridge, as it is sometimes called, is composed of two girders, shaped like the beams, only