an iron grating for the free passage of the wind, to which they are dangerously exposed in their lofty position.

The cradle cables which support the cradles, consist of $2\frac{3}{4}$ inch crucible cast steel ropes with an ultimate strength of 180 tons each. One of the four ropes, which at the same time supports the footbridge is $2\frac{3}{4}$ inches in diameter, and able to sustain 240 tons. The following is the weight on each cradle rope:

- Its own weight (9 lbs. per foot)...... 14,580 lbs.
- One half of three cradles.......... 6,000 lbs.
- Working rope..................... 600 lbs.
- About 6 men..................... 960 lbs.

\[ 22,140 \]

It is suspended with a deflection of 73'-3" hence the largest tension in the rope is:

\[ 22140 \sqrt{800^2 + 4 \times 73.25^2} \]
\[ \frac{4 \times 73.25}{4 \times 73.25} = 61000 \text{ lbs.} = 30\frac{1}{2} \] tons. This gives a margin of safety of 5.8 times.

On top of towers the cradle ropes rest on wooden blocks, and at each anchorage they are attached to separate anchor bars.