

from the effects of oxidation. It received two coats in England, one of boiled linseed oil, laid on hot as soon as the parts were fitted, and another of red lead, before shipment. It has since received a third coat and it is intended to give it another during the present season, which will probably be sufficient to protect it for several years.

So far as experience has gone, there seems to be no limit to the durability of an iron bridge if kept properly and thoroughly painted to prevent oxidation.

STRENGTH OF THE BRIDGE.

The iron of which the bridge is built was thoroughly tested in England. That of which the tie bars are made is capable of bearing a strain of 24 tons to the square inch before breaking, and that used for the chords has been likewise tested with a strain of 20 tons to the square inch of section.

The several spans are intended to bear a rolling load of one ton to the lineal foot in addition to the weight of the bridge, with a due allowance for snow and the effects of the wind.

The total load for which the several spans are proportioned, including the weight of the bridge, is as follows ;—

For the canal span, $2\frac{1}{4}$ tons to the foot.

For the tow-path span, 2 tons to the foot.

For the draw span, 2 tons to the foot.

For the 88½ feet spans, 2 tons to the foot.

For the channel span, $2\frac{1}{2}$ tons to the foot.

For the 25½ feet span, $2\frac{1}{2}$ tons to the foot.

It is calculated that with the greatest load that can possibly come upon the bridge, that there shall be no tensile strain upon the iron of over five tons to the square inch, and no compressive strain of more than four tons to the square inch on the chords, and none of over three tons to the inch on the vertical posts.

TESTING.

During the construction of the bridge, as soon as any part was finished and the track placed upon it, heavy trains, weighing about one ton to the foot, were run over it to test its safety. These